TSU
Technical Surveillance Unit Equipment
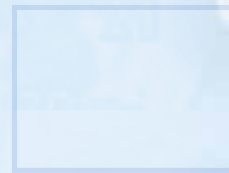

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX

TSV
Technical Surveillance Vans

TSU INDEX

Technical Surveillance Vans

Ref	Number	Description
1	7000 Overview	Surveillance & Command/Control Vehicle General Overview
2	7000	Surveillance Van
3	7001	Surveillance Van - Sprinter Mercedes
4	7000 GMC	Surveillance Van - GMC
5	7002	Surveillance Van - Satellite Transmission
6	7003	Surveillance Van Kits
7	7005	Intell Command Trailers

Surveillance & Command/Control Vehicles   Overview

Surveillance Van

Command & Control Van

Covert Satellite Van

Surveillance Van Kit Assembled

Surveillance & Command/Control Vehicles   Overview

Elaman is a company backed by many years of experience in technical intelligence techniques and equipment.

Elaman works exclusively on behalf of authorized Government Security Departments and Law Enforcement Agencies. As a result of many years of "active service" for clients worldwide, Elaman's assistance is highly sought after.

Elaman will individually design surveillance vehicles to your exact requirements, meeting with you at all the major milestones during the design and integration process to ensure that each vehicle, not only meets your current needs, but can also be upgraded in line with future technological developments.

No two surveillance vehicles are alike. These vehicles are especially designed to meet individual needs, such as, vehicle type, finish, operational usage, equipment for integration, etc.

Whatever you are looking for, from a very basic surveillance, command or communications vehicle, to a complete mobile command and control center, Elaman can provide a complete design and integration service.

Elaman manufactures a wide range of vehicles to suit every operation, built to exacting standards and specifications:

- Model 7000 Series -- General Surveillance Vans
- Model 7001 Series -- Sprinter Surveillance Vans
- Model 7002 Series -- Surveillance Vans Satellite Transmission
- Model 7003 Series -- Command Surveillance Vehicles
- Remote Controlled Surveillance Vehicles
- Direction Finding
- Communications, Surveillance Vehicle Kits
- Specialist Audio Vans
- Communication Monitoring Vehicles
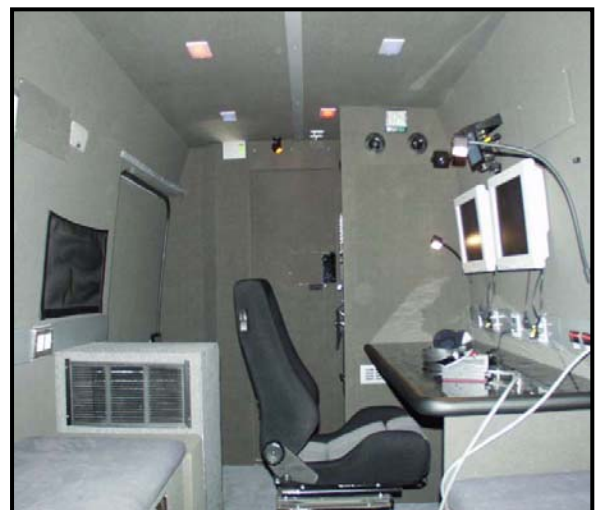
Surveillance & Command/Control Vehicles   Overview

SOME EXAMPLES OF THE EQUIPMENT INSTALLED IN OUR SPECIALIST SURVEILLANCE VEHICLES:

For perfect concealment and long range observation the Periscope is fitted to the vehicle, combining the Ultra Low Light Camera and the Zoom Lens, thereby, achieving long range observation.

The main control and recording equipment are housed in our custom built rack unit to allow smooth operation and ease of maintenance.
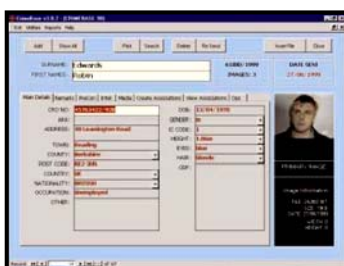
The heart of the surveillance vehicle is the Midas Command and Control Software that enables the monitored media (audio/video/data) to be collated and transmitted fully encrypted to the HQ operation center.

Video/Audio surveillance operations (Analog/Digital) can be received and recorded directly in the surveillance van for further processing.

Surveillance & Command/Control Vehicles   Overview

Climate control inside the vehicle is very important. Elaman have developed a low noise air conditioning system that maintains a cool environment for both the equipment and operator during long operational periods. It can maintain a 20°C interior in a 40°C exterior temperature.

Covert antenna systems are installed to allow operators to communicate, monitor, receive audio & video transmissions, and transmit GSM satellite and other signals easily and without detection.

Externally concealed audio microphones are installed to pick up conversations outside the van.

Video cameras are covertly fitted around the van, including the sunshield of the cab, providing full 360° observation.

Surveillance & Command/Control Vehicles   Overview

EXAMPLES OF SURVEILLANCE VAN MODELS

Mercedes-Ford-Renault-VW-Toyota-Nissan-GMC

MERCEDES SPRINTER

The Mercedes Sprinter range of vehicles comes in short wheelbase (SWB), medium wheelbase (MWB) and long wheelbase (LWB). There are also medium and high roof variations.

Also available as a chassis cab that can be converted to a recovery truck are the Luton van, flat bed drop-side, single or three-way tipper, box van, horse box or cherry picker.

All Mercedes Sprinters have good towing capacity. There is a choice of single or twin rear wheel back axle for heavier loads.

FORD TRANSIT

The Ford Transit Van range has held market leadership for over 40 years by giving you real choice, so you can find the perfect vehicle for your business needs. Depending on which model, the Transit Van offers short, medium or long wheelbase and front or rear wheel drive, plus three roof heights for ultimate flexibility.

GMC SAVANA

The 2007 GMC Savana Cargo (GMC also refers to it as the "Work Van") is a full-size van meant primarily for commercial use. The standard wheelbase (135-inch) Savana comes in half-ton (1500), 3/4-ton (2500) and 1-ton (3500) configurations, while the extended-wheelbase version (155-inch) is available on the 2500 and 3500 series vans only.

TOYOTA HIACE

The Hiace is a strong, hardworking, but stylish asset, offering a choice of engine and equipment levels to meet a wide range of commercial needs. In addition, it offers impressive load capacity, complemented by the choice of swing out rear doors or a two-stage lifting tailgate on the GS grade. Available in standard or long wheelbase it's easy on the driver and easy on the budget.

NISSAN

Distinctive and fresh in appearance, Nissan van drives as well as it looks. With an intelligent cabin design, smart load space, smooth driving performance, it gives you something to look forward to. It gives you all the cargo space you need. With two lengths and heights to choose from and a multitude of options, it's entirely adaptable to your business.

Surveillance & Command/Control Vehicles   Overview
SURVEILLANCE PRODUCTION FACILITIES

Floor Lining

Foil lining

Paneling

Interior

Rack & Door to Cab

Rear View

Surveillance Van   Model 7000

The Model-7000 basic surveillance van represents a new era in Mobile Surveillance Platforms!

The Model-7000 is constructed from high quality material and built by craftsmen with over 40 years of experience in vehicle design and conversion.

All our surveillance platform designing is engineered with AutoCAD, and the manufacturing is produced at our Production and Training Facility.

On premise manufacturing provides strict 24-hour security, maintaining confidentially of the customer's platform designs and appearance.

Model-7000 Command, Communications & Surveillance Vehicle Conversion includes Isuzu, VW, Toyota, Ford, Nissan, or Mercedes Van, and delivery to country. Other vehicles are available to suit client's needs.

VEHICLE CONVERSION OVERVIEW:

- Includes floor, walls, and front bulkhead, ceiling framing; minimum of 50-mm polar fiber insulation. The operational area inside the van has 85 percent ECM screening
- Equipment, counters and cabinets, carpeting, Formica finishing, wiring in plastic and flexible conduit and junction boxes are provided
- The interior lighting package includes all necessary equipment and installation
- Air exchange system
- Bench seat with 2 seatbelts (fitted when space allows)
- Storage pockets
- Fixed front bulkhead wall with sliding entry and exit door; side door window disguises video viewing ports, IR Plexiglas inserts and lens boot
- Main operator's control panel controls all surveillance equipment and also monitors the battery status and current draw of the operating equipment
- Operator's chair with adjustable back, 360-degree swivel base, rail mounted
- Auxiliary Power System
- Freon Compressor Powered Low Noise Air Conditioner
- IR Viewing Port Panels

EQUIPMENT INSTALLATION (PLEASE REQUEST FULL SPECIFICATIONS)

- Video Observation System 360° day and night
- Specialist Audio Receivers (Digital & Analog) with Remote Control
- Video Diversity Receivers plus Outstation Remote Control Links
- Audio Control System
- Video Audio Matrix
- Video and Audio Processing of Targets
- Command and Control Software
- Communications Equipment
- Vehicle Security Alarm System
- Specialist Covert Antennas

Surveillance Van   Model 7000

UPGRADE OF EQUIPMENT

We build each surveillance vehicle to the client's specifications, but during the planning stage other tactical surveillance systems can be installed.

- Mobile GSM Monitoring Units (Passive or Active)
- GSM/GPS Tracking Systems
- Mobile MIDAS Link (Modular Intelligence Data Analysis System) for linking the surveillance or command vehicle with the monitoring center
- Direction Finding Equipment
- Remote Control Car Systems
- Central Antenna Bus Bar. A system unique to Model that allows clients to fit roof mounted antennas anytime during the life of the vehicle

TRAINING

Elaman will train (4) Department or Agency operators for two weeks in the maintenance and operation of the surveillance platform.

Surveillance Van – Mercedes Sprinter   Model 7001

The Model-7001 Mercedes Sprinter Surveillance Van represents a new era in Mobile Surveillance Platforms integrating command, communication and surveillance.

The Model-7001 is constructed from high quality material and built by craftsmen with over 40 years of experience in vehicle design and conversion.

All Elaman surveillance platform designing is engineered with AutoCAD, and the manufacturing is produced at Elaman's Production and Training facility.

Model-7001 Command, Communications & Surveillance Vehicle Conversion for Mercedes Sprinter Van includes delivery to Country

VEHICLE CONVERSION OVERVIEW:

- Includes Floor, walls, and front bulkhead, ceiling framing; minimum of 50mm polar fiber insulation. Inside the van the operational area has 85 percent ECM screening
- Equipment, counters and cabinets, carpeting, Formica finishing, wiring in plastic and flexible conduit and junction boxes are provided
- The interior lighting package includes all necessary equipment and installation
- Air exchange system
- Bench seat with 2 seatbelts (fitted when space allows)
- Storage pockets
- Fixed front bulkhead wall with sliding entry and exit door; side door window disguises video viewing ports, IR Plexiglas inserts and lens boot
- Main operator's control panel controls all surveillance equipment and also monitors the battery status and current draw of the operating equipment
- Operator's chair with adjustable back, 360-degree swivel base, rail mounted
- Auxiliary Power System
- Freon Compressor Powered Low Noise Air Conditioner
- IR Viewing Port Panels
- Command and Control Software/Laptops with Transmission Media

Surveillance Van – Mercedes Sprinter   Model 7001

EQUIPMENT INSTALLATION (PLEASE REQUEST FULL SPECIFICATIONS)

- Video Observation System 360° day and night
- Specialist Audio Receivers (Digital & Analog) with Remote Control
- Video Diversity Receivers plus Outstation Remote Control Links
- Audio Control System
- Video Audio Matrix
- Video and Audio Processing of Targets
- Command and Control Software
- Communications Equipment
- Vehicle Security Alarm System
- Specialist Covert Antennas

UPGRADE OF EQUIPMENT

We build each surveillance vehicle to the client's specifications, but during the planning stage other tactical surveillance system can be installed

- Mobile GSM Monitoring Units (Passive or Active)
- GSM/GPS Tracking Systems
- Mobile MIDAS Link (Modular Intelligence Data Analysis System) for linking the surveillance or command vehicle with the monitoring center
- Direction Finding Equipment
- Satellite Communication Links
- Remote Control Car Systems
- Central Antenna Bus Bar. A system unique to Model that allows clients to fit roof mounted antennas anytime during the life of the vehicle

TRAINING

Elaman will train (4) Department or Agency operators for two weeks in the maintenance and operation of the surveillance platform.

Surveillance Van-GMC

Model 7000 GMC

The Model-7000 basic surveillance van represents a new era in Mobile Surveillance Platforms!

The Model-7000 is constructed from high quality material and built by craftsmen with over 40 years of experience in vehicle design and conversion.

All Elaman surveillance platform designing is engineered with AutoCAD and the manufacturing is produced at Elaman's Production and Training Facility.

On premise manufacturing provides strict 24-hour security, maintaining confidentially of the customer's platform designs and appearance.

Model-7000 Command GMC, Communications & Surveillance Vehicle Conversion includes Isuzu, VW, Toyota, Ford, Nissan, or Mercedes Van, and delivery to country. Other vehicles are available to suit client's needs.

VEHICLE CONVERSION OVERVIEW:

- Includes floor, walls, and front bulkhead, ceiling framing; minimum of 50-mm polar fiber insulation. The operational area inside the van has 85 percent ECM screening
- Equipment, counters and cabinets, carpeting, Formica finishing, wiring in plastic and flexible conduit and junction boxes are provided
- The interior lighting package includes all necessary equipment and installation
- Air exchange system
- Bench seat with 2 seatbelts (fitted when space allows)
- Storage pockets
- Fixed front bulkhead wall with sliding entry and exit door, side door window disguises video viewing ports, IR Plexiglas inserts and lens boot
- Main operator's control panel controls all surveillance equipment and also monitors the battery status and current draw of the operating equipment
- Operator's chair with adjustable back, 360-degree swivel base, rail mounted
- Auxiliary Power System
- Freon Compressor Powered Low Noise Air Conditioner
- IR Viewing Port Panels

EQUIPMENT INSTALLATION (PLEASE REQUEST FULL SPECIFICATIONS)

- Video Observation System 360° day and night
- Specialist Audio Receivers (Digital & Analog) with Remote Control
- Video Diversity Receivers plus Outstation Remote Control Links
- Audio Control System
- Video Audio Matrix
- Video and Audio Processing of Targets
- Command and Control Software
- Communications Equipment
- Vehicle Security Alarm System
- Specialist Covert Antennas

Surveillance Van-GMC   Model 7000 GMC
UPGRADE OF EQUIPMENT

We build each surveillance vehicle to the client's specifications; during the planning stage other tactical surveillance systems can be installed.

- Mobile GSM Monitoring Units (Passive or Active)
- GSM/GPS Tracking Systems
- Mobile MIDAS Link (Modular Intelligence Data Analysis System) for linking the surveillance or command vehicle with the monitoring center
- Direction Finding Equipment
- Remote Control Car Systems
- Central Antenna Bus Bar. A system unique to Model that allows clients to fit roof mounted antennas anytime during the life of the vehicle

TRAINING

Elaman will train (4) Department or Agency operators for two weeks in the maintenance and operation of the surveillance platform.

Surveillance Van – Satellite Transmission   Model 7002

The Model-7002 Satellite Command Surveillance Van represents a new era in Mobile Satellite Surveillance Platforms integrating command, communication and enabling communication transmission to HQ via the satellite links.

The Model-7002 is constructed from high quality material and is built by craftsmen with over 30 years of experience in vehicle design and conversion.

All Elaman surveillance platform designing is engineered with AutoCAD, and the manufacturing is produced at Elaman's Production and Training facility.

Model-7002 Command, Communications & Surveillance Vehicle Conversion for Mercedes Sprinter and others on request and includes delivery to country.

VEHICLE CONVERSION OVERVIEW:

- Covert Concealed Satellite Antennas for auto tracking
- Inmarsat Transmission with Live Color Transmission via talking head
- Includes Floor, walls, and front bulkhead, ceiling framing; minimum of 50mm polar fiber insulation. The operational area inside the van has 85 percent ECM screening
- Equipment. counters and cabinets, carpeting, Formica finishing, wiring in plastic & flexible conduit and junction boxes are provided
- The interior lighting package includes all necessary equipment and installation
- Air exchange system
- Bench seat with 2 seatbelts (fitted when space allows)
- Storage pockets
- Fixed front bulkhead wall with sliding entry and exit door, side door window disguises video viewing ports, IR Plexiglas inserts and lens boot
- Main operator's control panel controls all surveillance equipment and also monitors the battery status and current draw of the operating equipment
- Operator's chair with adjustable back, 360-degree swivel base, rail mounted
- Auxiliary Power System
- Freon Compressor Powered Low Noise Air Conditioner
- IR Viewing Port Panels
- Command and Control Software/Laptops with Transmission Media

EQUIPMENT INSTALLATION (PLS REQUEST FULL SPECIFICATIONS)

- Video Observation System 360° day and night
- Specialist Audio Receivers (Digital & Analog) with Remote Control
- Video Diversity Receivers plus Outstation Remote Control Links
- Audio Control System
- Video Audio Matrix
- Video and Audio Processing of Targets
- Command and Control Software
- Communications Equipment
- Vehicle Security Alarm System
- Specialist Covert Antennas

Surveillance Van – Satellite Transmission   Model 7002
UPGRADE OF EQUIPMENT

We build each surveillance vehicle to the client's specifications; during the planning stage other tactical surveillance system can be installed.

- Mobile GSM Monitoring Units (Passive or Active)
- GSM/GPS Tracking Systems
- Mobile MIDAS Link (Modular Intelligence Data Analysis System) for linking the surveillance or command vehicle with the monitoring centre
- Direction Finding Equipment
- Remote Control Car Systems
- Central Antenna Bus Bar. A system unique to Model that allows clients to fit roof mounted antennas at anytime during the life of the vehicle

TRAINING

Elaman Model will train (4) Department or Agency operators for two weeks in the maintenance and operation of the surveillance platform.

Intell Command Trailers   Model 7005

The Model-7005 Intell Command Trailer represents a new era in Intell Surveillance Platforms enabling on-site command and control of specialist intelligence operations. The integrated intelligence sharing requires on the ground coordination between the various governmental departments. The intell command trailer enables the national security intell department to manage all operations while in real-time communication (video/audio) with the relevant higher authorities.

The Model-7005 is constructed from high quality material and built by craftsmen with over 30 years of experience in vehicle design and conversion.

All Elaman surveillance platform designing is engineered with AutoCAD and the manufacturing is produced at Elaman's Production and Training facility.

On premise manufacturing provides strict 24-hour security, maintaining confidentially of the customer's platform designs and appearance.

Model-7005 Intell Command Trailer provides the following facilities depending of the size selected for 6-10 persons (20-40 feet):

1. Communications Room
2. Briefing Room
3. Intel Room (also for hostage negotiations)
4. Bed, Shower, Toilet & Small Kitchen (optional)
5. Onboard silent generator with a/c and external tent also with a/c
6. Video Observation day and night incl. rotating mast
7. Specialist Audio and Video Receiving Systems
8. Radio Monitoring
9. Tetra Communications
10. Voice/Video Recorder
11. Satellite Communications (live video/audio feed)
12. Audio/Video/Data Matrix Router
13. GSM Communications
14. Computers and ruggedized Hard Disk
15. Tracking Maps
16. Command and Control Software
17. Wireless IP Network (depending on local setup)
18. External Illumination

For full conversion overview please request further information

TSC
Technical Surveillance Cars

TSU INDEX

Technical Surveillance Cars

Ref	Number	Description
1	7100 Overview	Remote Video Surveillance Vehicle System
2	7102	Remote Video Surveillance Car System
3	7101	Remote Video Surveillance Car System Fixed Frequency
4	7103	COFDM Remote Surveillance Car System
5	7105	Remote Controlled Motorbike System

Remote Video Surveillance Vehicle System   Overview

The Remote Video Surveillance Vehicle System is designed to allow covert video and audio surveillance of a target area without detection, allowing greater flexibility in surveillance operations.

The system allows the operator to park the vehicle close to the target location, house, office, restaurant etc. and transmit the information gathered back to the command location in a surveillance van, observation point or another support vehicle.

It allows the operational surveillance team to monitor by video, for example, the target location images from the four cameras concealed within the vehicle.

It allows the surveillance team to monitor audio transmissions from the target location from deployed room or body-worn equipment, and activate hidden microphones linked to the Remote Case.

It also allows the operational surveillance team to connect external video and audio equipment to allow long range observation of a target in a difficult environment or remote location.

Control of the system is via a digital telemetry link, allowing full control over camera selection, pan, tilt, zoom functions, plus repeat incoming video and audio signals form the room or body-worn systems, used by the undercover surveillance team.

These remote systems are usually fitted into vehicles (saloon cars, 4x4s) that can then be left unattended in the surveillance area, transmitting the intelligence information required to the Command Surveillance Vehicle on microwave, VHF, UHF or Cellular Telephone (GSM).

Using our unique Motorbike Remote System, as part of the total surveillance operation, allows even greater flexibility in the covert surveillance operation. The Motorbike remote System allows the surveillance team to link several video audio remote systems within the total surveillance concept.
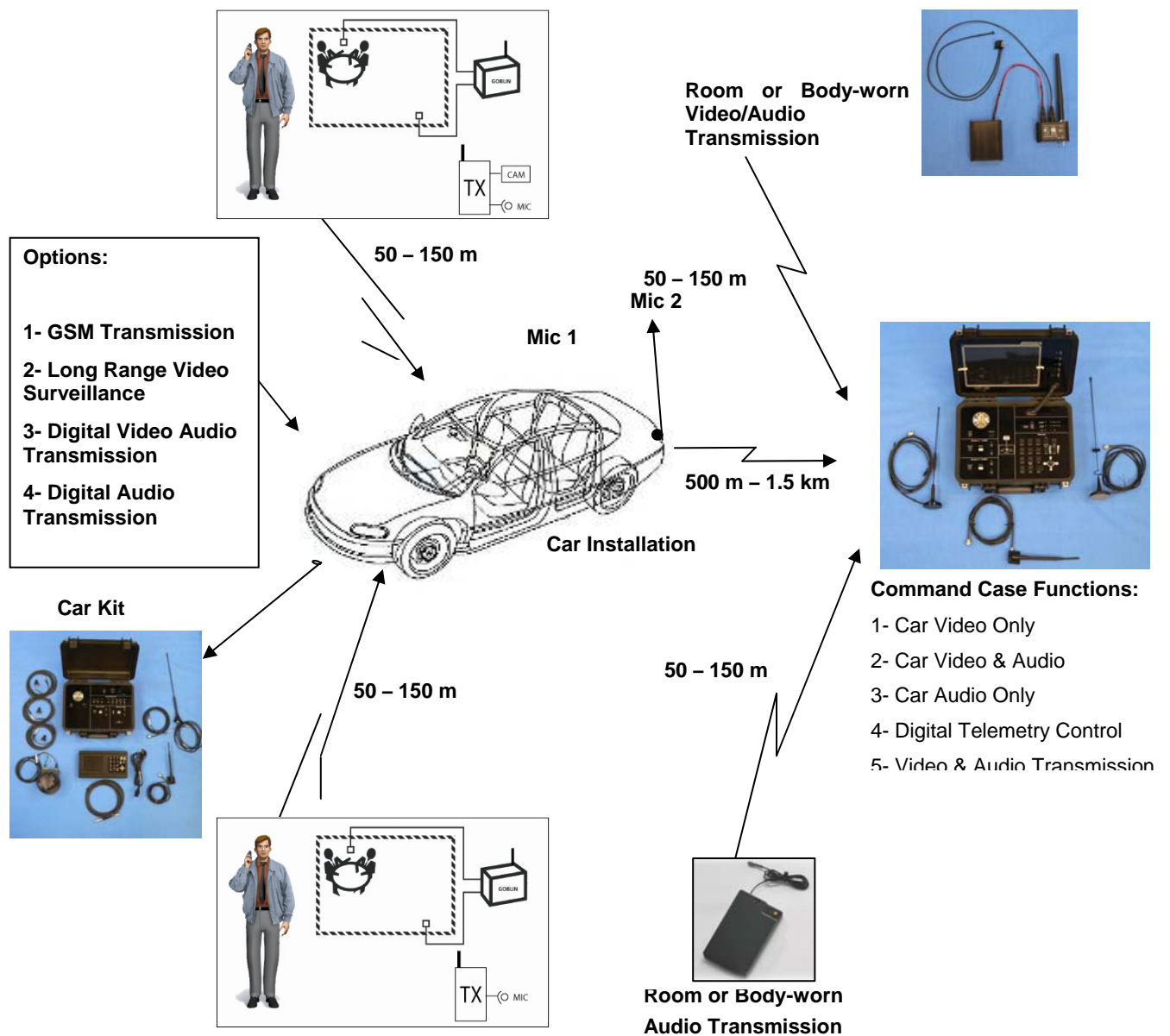
Remote Surveillance Car System — Model 7102

The car based section of the system uses the latest technology to transmit, receive video and audio signals, repeat the signals to the Remote Command Case, and record all incoming signals on the latest Ruggedized Digital Recorder fitted in the surveillance platform. The signals can also be recorded at the Remote Command Case, should the client wish this facility.

Transmission from the main surveillance platform can be via, RF Microwave Links, Cellular (GSM) Links, and/or Audio RF Links. In keeping with the total surveillance concept, just about any transmission medium can be employed with the Remote Surveillance Vehicle Car Surveillance System.

Diagram of Total Surveillance Concept

Room or Body-worn Video/Audio Transmission

50 – 150 m

Options:

1- GSM Transmission

2- Long Range Video Surveillance

3- Digital Video Audio Transmission

4- Digital Audio Transmission

Mic 1

50 – 150 m
Mic 2

Car Installation

500 m – 1.5 km

Car Kit

50 – 150 m

50 – 150 m

Command Case Functions:

1- Car Video Only

2- Car Video & Audio

3- Car Audio Only

4- Digital Telemetry Control

5- Video & Audio Transmission

Room or Body-worn Audio Transmission

Remote Surveillance Car System
SYSTEM COMPONENTS

Model 7102

Main Control Cases

Room/Body-worn System

Portable Command Control System

Car Installation Kit

REMOTE SURVEILLANCE CAR SYSTEM

Remote Surveillance Car System
VEHICLE INSTALLATION

Model 7102

Main Battery & Fuses

Master ON/Off Switch

Connection Cables

Main Transmitter/ Receiver Case in Stowed Position

960hr Time Lapse Video Recorder

Zoom, Pan and Tilt

Digital Video Audio Recorder

Video Recorder

Periscope Camera

(Optional)

Fixed Wide Angle Lens

Fixed Covert Fitted Camera

Remote Surveillance Car System   Model 7102

KEY FEATURES

CAR SYSTEM

- Video & Audio Transmission
- Video Receiver
- Channel Selector with Display
- Adjustable Power Output
- Digital Telemetry Receiver
- Quad Processor
- 3 x Fixed Color Cameras
- 1x Zoom, Pan & Tilt Color Camera
- 2x Electret microphones
- Local Control Monitor
- Ruggedized Digital Video & Audio Recorder
- Covert Antenna system

REMOTE COMMAND CASE

- S Band Video Receiver
- L Band Video Receiver
- Audio Receiver
- Digital Telemetry Transmitter
- Video Channel Selector
- Audio Selector
- Video Level Control
- Integrated Speaker
- Integrated 12 inch Color TFT Monitor
- Mains or 12 VDC Car Powered
- Joy Stick Controls for Pan, Tilt, Zoom
- Button Controls for Focus, Day, Night
- Color or Black & White

Remote Controlled Car System   Model 7101

Complementary to our Surveillance Vehicles, Elaman also manufactures Remote Controlled Case Systems, again to the client's requirements, allowing greater flexibility in surveillance operations.

These remote systems are usually fitted into vehicles (saloon cars, 4x4 ORVs or motorbike helmet boxes) that can then be left unattended in the surveillance area, transmitting the required intelligence information to the Command Surveillance Vehicle on microwave, VHF, UHF or Cellular Telephone (GSM).

From the Command Van it is possible to control all the camera functions, pan, tilt, zoom and focus, switch between cameras, and activate hidden microphones linked to the Remote Case.

The cases can be used as a single link to the Command Van or be combined with a repeater link for greater distances.

Car System

When the occasion arises that it is impossible to use the Command Van, Elaman has manufactured a Portable Command Case that duplicates the control functions of the Command Van. It can also record all incoming videos, cellular videos, audio transmissions, with the main control being a laptop computer.

Portable Command Case

Remote Controlled Car System   Model 7101

SPECIFICATIONS

The basic case is filled with the following items, which can be upgraded according to the client's specifications and requirements:

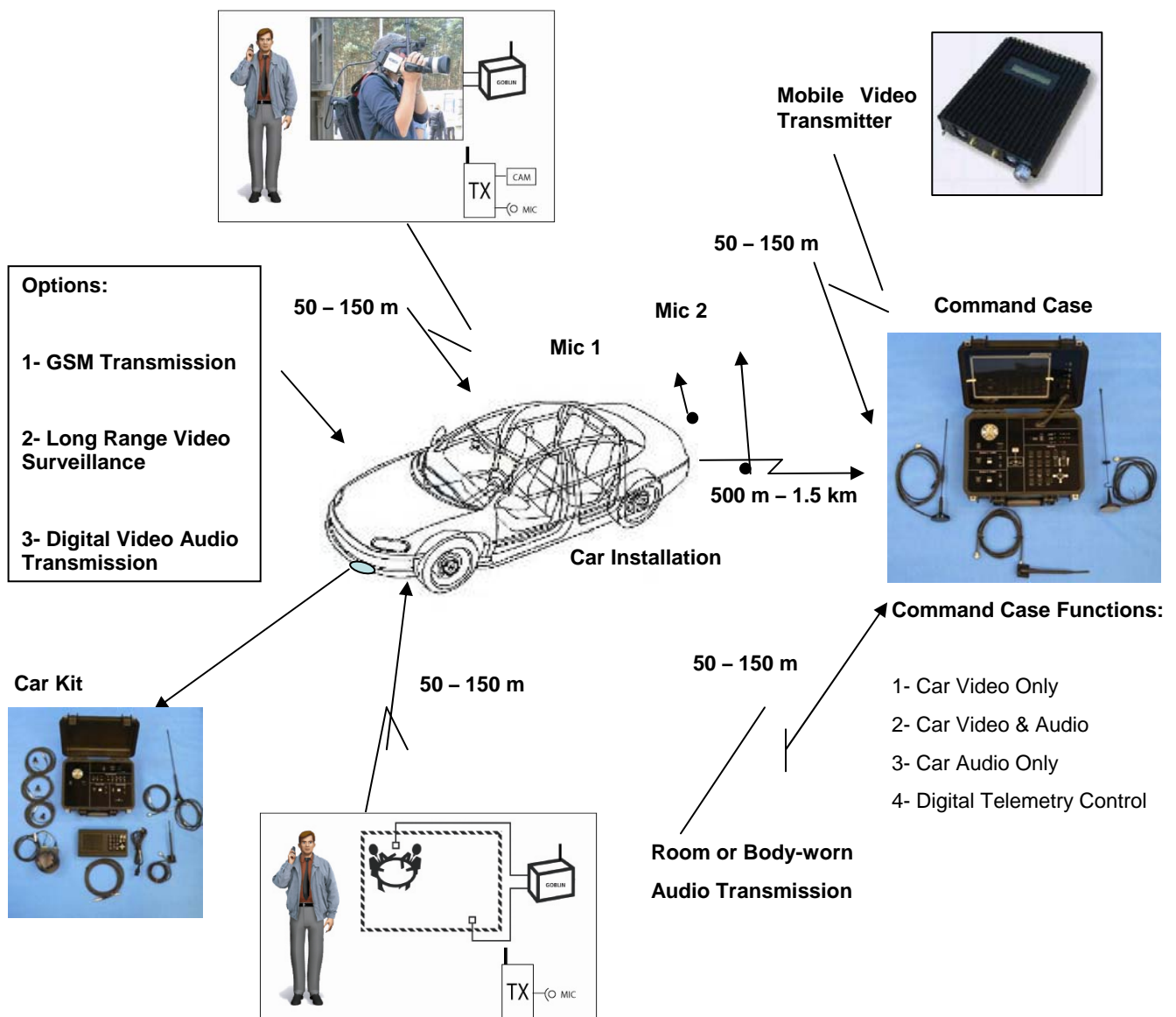| BASIC CASE SPECIFICATIONS	OPTIONS
Digital Recorder	Digital Time Lapse Recorder
1 watt VHF/UHF 320-380 MHz Video Transmitter with Audio/Data	1-5 Watt L or S Band Microwave Transmitter with Audio/Data Channel
VHF/UHF 320-380 MHz Video Receiver with Audio/Data	Remote Controlled 1-5 Watt L or S Band Microwave Transmitter. Power output change, Frequency Select, On/Off. RS232 Control
Microwave Receiver L or S Band with Audio/Data Channel	5 watt VHF/UHF 350 MHz Repeater with Audio/Data
Built-in 6 inch Color TFT Monitor with Audio	5 Watt L or S Band Microwave Repeater
Switched Mode Power Supply 110/220 VAC/12 VDC	Diversity Microwave Receiver with Audio/Data Channel
Built-in 12 VDC Battery and Charger	Digital Cut & Rotate Encryption for Transmission & Repeater
4 Way Camera Switcher	Wireless Telemetry System
Telemetry TX & RX	Combined Handheld 6 inch Color TFT Monitor with Telemetry Controls
Remote Telemetry Hand Controller for Camera Operations	12-volt Gel-Cell Battery & Military Specification Split Charge System for vehicle fitting
Remote 4 inch Color TFT Monitor	Range of "Hides" for the Pan & Tilt Head and Camera
Covert Antennas	
High Gain Directional Overt Antennas	
One Miniature Pan & Tilt Head	
One Sony OEM Camera with Zoom Lens	
Three Pinhole Color or B&W CCD Cameras	

COFDM Remote Surveillance Car System Model 7103

The car based section of the system uses the latest COFDM technology to transmit, receive video and audio signals, repeat the signals to the Remote Command Case, and record all incoming signals on the latest Ruggedized Digital Recorder fitted in the surveillance platform. The signals can also be recorded at the Remote Command Case should the client wish this facility.

Transmission from the main surveillance platform can be via RF Microwave Links, Cellular (GSM) Links, and/or Audio RF Links. In keeping with the total surveillance concept, just about any transmission medium can be employed with the Remote Surveillance Vehicle Car Surveillance System.

DIAGRAM OF TOTAL COFDM SURVEILLANCE CONCEPT

Mobile Video Transmitter

50 – 150 m

Command Case

Options:

1- GSM Transmission

2- Long Range Video Surveillance

3- Digital Video Audio Transmission

50 – 150 m

Mic 2

Mic 1

500 m – 1.5 km

Car Installation

Command Case Functions:

1- Car Video Only

2- Car Video & Audio

3- Car Audio Only

4- Digital Telemetry Control

Car Kit

50 – 150 m

50 – 150 m

Room or Body-worn

Audio Transmission

COFDM Remote Surveillance Car System

SYSTEM COMPONENTS

Model 7103

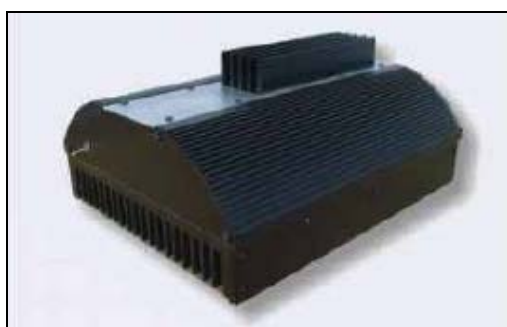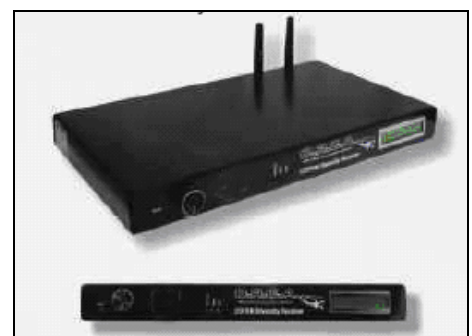Main Control Cases

Mobile Video Transmitter

Portable Command Control System

Car Installation Kit

Amplifier (Optional)

Diversity Receiver (Optional)

COFDM Remote Surveillance Car System   Model 7103

VEHICLE INSTALLATION

Main Battery & Fuses

Master ON/Off Switch

Connection Cables

Main Transmitter/ Receiver Case in Stowed Position

960hr Time Lapse Video Recorder

Zoom, Pan and Tilt

Digital Video Audio Recorder

Video Recorder

Periscope Camera (Optional)

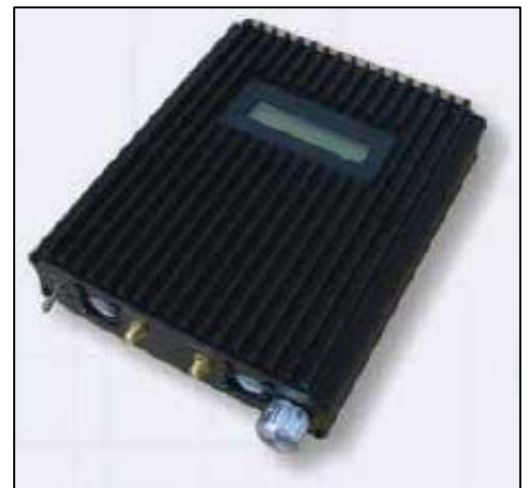**Fixed Wide Angle Lens**

Fixed Covert Fitted Camera

COFDM Remote Surveillance Car System   Model 7103

KEY FEATURES

CAR SYSTEM

- Video & Audio Transmission
- Video Receiver
- Channel Selector with Display
- Adjustable Power Output
- Digital Telemetry Receiver
- Quad Processor
- 3 x Fixed Color Cameras
- 1x Zoom, Pan & Tilt Color Camera
- 2x Electret microphones
- Local Control Monitor
- Ruggedized Digital Video & Audio Recorder
- Covert Antenna system

REMOTE COMMAND CASE

- S Band Video Receiver
- L Band Video Receiver
- Audio Receiver
- Digital Telemetry Transmitter
- Video Channel Selector
- Audio Selector
- Video Level Control
- Integrated Speaker
- Integrated 12 inch Color TFT Monitor
- Mains or 12VDC Car Powered
- Joy Stick Controls for Pan, Tilt, Zoom
- Button Controls for Focus, Day, Night
- Color or Black & White

Remote Controlled Motorbike System   Model 7105

Complementary to our Surveillance Vehicles, Elaman also manufactures Remote Controlled Case Systems, again to the client's requirements, allowing greater flexibility in surveillance operations.

These remote systems are usually fitted into vehicles (saloon cars, 4x4 ORVs or motorbike helmet boxes) that can then be left unattended in the surveillance area, transmitting the required intelligence information to the Command Surveillance Vehicle on microwave, VHF, UHF or Cellular Telephone (GSM).

From the Command Van it is possible to control all the camera functions, pan, tilt, zoom and focus, switch between cameras, and activate hidden microphones linked to the Remote Case.

The cases can be used as a single link to the Command Van or be combined with a repeater link for greater distances.

Motorbike System

When the occasion arises that it is impossible to use the Command Van, Elaman has manufactured a Portable Command Case that duplicates the control functions of the Command Van. It can also record all incoming videos, cellular videos, audio transmissions, with the main control being a laptop computer.

Portable Command Case

Remote Controlled Motorbike System   Model 7105

SPECIFICATIONS

The basic case is filled with the following items, which can be upgraded as per the client's specifications and requirements:

BASIC CASE SPECIFICATIONS	OPTIONS
Digital Recorder	Digital Time Lapse Recorder
1 watt VHF/UHF 320-380 MHz Video Transmitter with Audio/Data	1-5 Watt L or S Band Microwave Transmitter with Audio/Data Channel
VHF/UHF 320-380 MHz Video Receiver with Audio/Data	Remote Controlled 1-5 Watt L or S Band Microwave Transmitter. Power output change, Frequency Select, On/Off. RS232 Control
Microwave Receiver L or S Band with Audio/Data Channel	5 watt VHF/UHF 350 MHz Repeater with Audio/Data
Built-in 6 inch Color TFT Monitor with Audio	5 Watt L or S Band Microwave Repeater
Switched Mode Power Supply 110/220 VAC/ 12VDC	Diversity Microwave Receiver with Audio/Data Channel
Built-in 12 VDC Battery and Charger	Digital Cut & Rotate Encryption for Transmission & Repeater
4 Way Camera Switcher	Wireless Telemetry System
Telemetry TX & RX	Combined Handheld 6 inch Color TFT Monitor with Telemetry Controls
Remote Telemetry Hand Controller for Camera Operations	12-volt Gel-Cell Battery & Military Specification Split Charge System for vehicle fitting
Remote 4 inch Color TFT Monitor	Range of "Hides" for the Pan & Tilt Head and Camera
Covert Antennas	
High Gain Directional Overt Antennas	
One Miniature Pan & Tilt Head	
One Sony OEM Camera with Zoom Lens	
Three Pinhole Color or B&W CCD Cameras	

MIDAS
Modular Intelligence Data Analysis Systems

Modular Intelligence Data Analysis System

Analysis Systems
- Intelli - base
- Video Enhancement
- Audio Enhancement
- Tracking System
- GSM Analyser
- Sim Reader
- Internet Traffic Reader

Bug
- TSE 6501
- TSE 6502
- FALCON
- GSM Bug- Recorder
- GSM Key Logger
- Scale Audio Recorders
- SomData Audio Recorders
- Live Video Phone Link
- Microphone Array

Media Players
- Windows Movie Maker
- Windows Media Player
- Media Converter

Communications
- Intelliconnect
- Communications Link

Programming Function
- Receiver Programmer
- Transmitter Programmer

Contacts
- Contact Information

γ

Launch Program

MIDAS

T   S   E

TECHNICAL
SURVEILLANCE
EQUIPMENT

⊕

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX

MIDAS Systems

Ref	Number	Description
1	200 General	MIDAS System - System Overview
2	201	MIDAS System - Standard Version
3	202	MIDAS System - Video/Audio Version
4	203	MIDAS MC AddOn Command & Control System

Midas System – System Overview

Overview

ROLE AND PURPOSE

The MIDAS System has one main central role. That is the accurate collation and storage of intelligence data for inclusion in a central Database from one location. This Database, in the full MIDAS System, is stored in a minimum of three locations on an isolated Network for security and System redundancy. The System is capable of Database information replication, which is done manually to ensure that the replication process does not take necessary operational bandwidth from the plethora of communication channels that can be available to the System in the updating process.

The main Information Transportation and Intelligence Data pre-processing Application, which is incorporated operationally within the Central Database Application, is used for the processing of Media into the PC from various Internal, External and Communication Channel sources, before being directed into the Central Database. It can be viewed as the Data processing vessel between the outside world and the Central Database, although it is not the only Data processing medium.

The System is tailored to each customer's defined requirements, which can include the following:

- External Camera Equipment with a USB, Firewire, DV, Composite or S Video

- External Audio signals, Stereo or Mono, Jack or RCA

- Media Data Presented on a CD, DVD or Standard Memory Device

- Media Data Transferred to the System via Telecommunication Channels

- Documents Presented on a CD, DVD or Standard Memory Device

- Documents Transferred to the System via Telecommunication Channels

- Files Presented on a CD, DVD or Standard Memory Device

- Files Transferred to the System via Telecommunication Channels

Telecommunication Transportation Method Capabilities, dependant upon Telecommunications System available to the Client that are requested in the MIDAS System design, include: ADSL, ISDN, PSTN, Satcom – Inmarsat, GSM/GPRS/3G, WiFi, Bluetooth, Ethernet including Fiber Optic, E1.

The MIDAS System has been developed to incorporate many different Communication Interception Methods to facilitate the requirement for the gathering of Intelligence information at all costs. These include Telecommunication Interception and Recording, IT System Data Interception, Decoding and Recording, the use of many Analogue and Digital "Bugs", Mobile Phone and SIM Card Readers.

The MIDAS System incorporates Printers, Scanners, Fax, Headphones, Speaker Systems and Monitors for the live viewing and handling of Data, as and when it arrives, and facilitating an appropriate method of information dissemination to interested and involved parties or agencies.

The MIDAS System allows live Audio/Video Data transfer links between the HQ and the External Surveillance Units during operations, facilitating the operational control capability of the HQ location on the operation. It should be noted that this facility, its quality and speed, is determined by the characteristics of the Communication Channel employed to establish the connection.

Midas System – System Overview

Overview

THE MIDAS SYSTEM INCLUDES:

Internet and IT Data Interception – This enables the MIDAS system to be used for Internet interception and Data decoding at a local level for Ethernet, Bluetooth, WiFi, PSTN, ISDN, ADSL, Internet interception and decoding, to enable Information gathering. This facility is still under development.

Mobile Phone Interception and Call Re-Routing/Recording – This enables mobile phone voice and data interception and caller identity discovery and disguising. The system can gather mobile phone network data, record telephone conversations and intercept and record SMS transmissions. The system can be controlled and monitored remotely, and calls can be instigated by the recorder.

Mobile Phone and SIM Card Reading – The MIDAS System incorporates a mobile phone and SIM card reader.

Remote Live Video Monitoring – The MIDAS System incorporates a live video link facility which can be contacted over a clients chosen telecommunications medium.

Ghost Phones – The MIDAS System incorporates the use of ghost mobile telephones for the gathering of intelligence data.

Remote Micro Bug Monitoring – This is a complex system of mains, line, RF, GSM and telephone bugs, all accessible through a PSTN phone line from anywhere in the world. This facilitates remote bugging. This is for covert installation within the target building or location.

Key logging – A complex key logging system, incorporating RF and GSM communications to facilitate remote monitoring of a computers keyboard. Key ghost allows an external connection for key logging. Various software packages are also available to e-mail key logging files to a remote location.

Tracking and Remote Control and Recording – Although designed to be a tracking system and a GSM audio recorder, this equipment is in fact so much more. Signal re-routing and alerts are just one of the advanced features that can be utilized for intelligence gathering. This equipment also interfaces with other equipment to make more advanced products.

Micro Audio and Video Recorders – The MIDAS System incorporates a range of covert audio and video recorders that generate untamperable data for intelligence gathering.

MEDIA Streaming – MIDAS incorporates a media streaming facility which means that at the TCP/IP level of network connection, and with the appropriate media encoding session initiated, network participants can view live video from sources with an associated time delay of between 5 to 10 seconds, which is inherent with the use of such technology. The quality of the video, as ever, is dependent upon the speed of the telecommunication channel being employed.

MC Integration – Midas can be integrated into a GSM/PSTN monitoring system

Video Enhancement System – One of the most professional video enhancement systems in the world.

Audio Enhancement – One of the worlds most advanced audio enhancement and processing systems.

Midas System – System Overview

MIDAS Systems

> **201 - MIDAS Standard Version System**
>
> **202 – MIDAS Video-Audio System**
>
> **203 – MIDAS MC ADD-ON Command & Control System**

MIDAS is a revolutionary computer interface system designed to control incoming Intelligence Information direct from surveillance operations or from post operational activities.

MIDAS can control GSM tracking systems, transmitted video signals from GSM modules, enhance audio recordings and transfer information between the IntelliBase intelligence database, as well as updating all the databases in operation with the latest intelligence.

MIDAS Control of the Quick Enhance Professional Audio Filtration System, allows the operator to filter out extraneous sounds, noises and music to allow the full recorded information to be heard for evidential purposes and operational tasking.

MIDAS Control of GSM Tracking Systems makes life easier for the control of surveillance operations and vehicles, under surveillance, during long- or short-term operations.

MIDAS can individually control up to 100 target transmitters, giving the operator the entire GPS mapping coordinates and positioning on the local map display. It may also be possible to monitor audio from inside the vehicle, if fitted.

RECEIVING

- Video Transmission SAT/RF
- Data Files
- GPS Data
- Monitors
- Recorders
- Telemetry
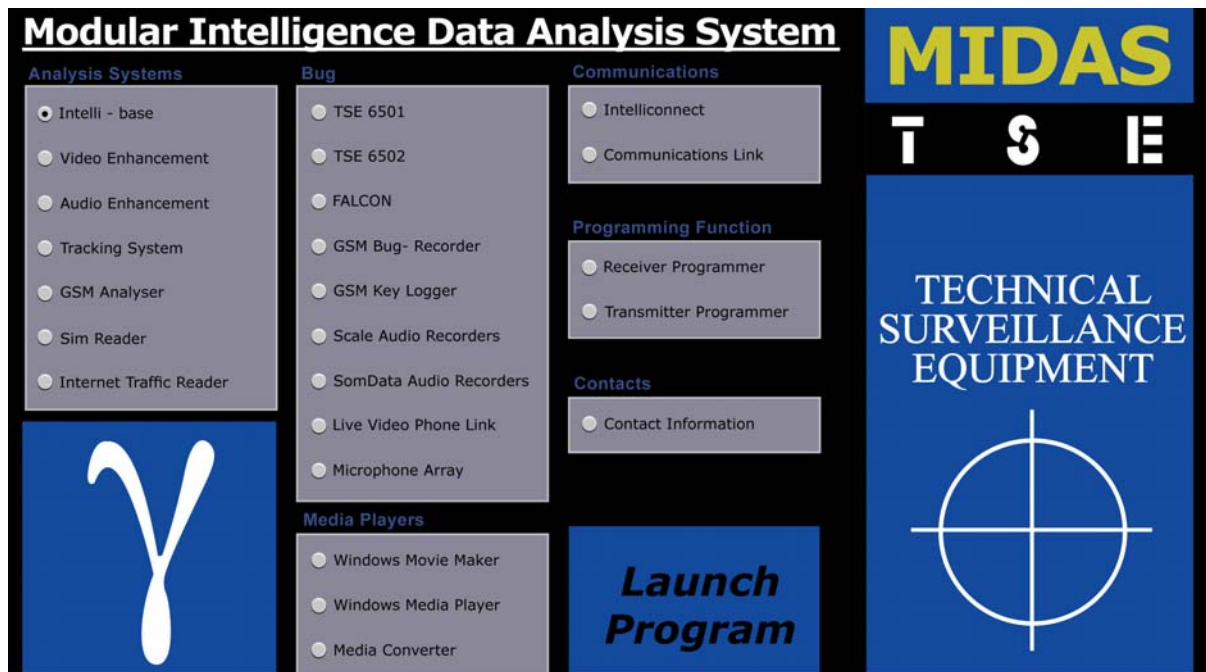- SAT
- Link Analysis
- Video enhancement
- Tracking

Midas System – Standard Audio Version   Model 201

MIDAS is a revolutionary computer interface system designed to control incoming audio Intelligence Information direct from surveillance operations or from post operational activities.

MIDAS can control the audio intelligence system, transmitted audio signals from GSM modules, enhance audio recordings and transfer information between the IntelliBase intelligence database, as well as updating all the databases in operation with the latest intelligence.

MIDAS Control of the Quick Enhance Professional Audio Filtration System, allows the operator to filter out extraneous sounds, noises and music to allow the full recorded information to be heard for evidential purposes and operational tasking.

MIDAS standard version makes life easier for the control of surveillance operations and vehicles, under surveillance, during long- or short-term operations.

MIDAS 201 consists of:

- MIDAS Software/Laptop
- Model 4004 - Monitoring via Telephone Lines
- Model 4016 - Informant
- Model 6403 - GSM Data and Audio Recorder
- Model 6401 - Ghost Phone
- Model 6603 - Filtration System
- Model 6201 - Digital Transmitter GSM Modem

Midas System – Standard Audio Version   Model 201
EXAMPLES OF MIDAS COMPONENTS

Model 6201 – Digital Transmitter GSM Modem

Model 4004 – Monitoring via Telephone Lines

Model 6401 – Ghost Phone

Model 4016 – The Informant

Model 6603 - Filtration System


Model 6403 – GSM Audio and Data Recorders

Midas System – Video/Audio Version   Model 202

MIDAS is a revolutionary computer interface system designed to control incoming audio Intelligence Information direct from surveillance operations or from post operational activities. Midas can be custom-built or delivered as a standard version FOR AUDIO-VIDEO/AUDIO OR INTEGRATED INTO an MIC.

MIDAS 202 can control video/audio intelligence system, transmitted video/audio signals from gsm modules, enhance audio recordings and transfer information between the intellibase intelligence database, as well as updating all the databases in operation with the latest intelligence.

MIDAS 202 Control of the Quick Enhance Professional Audio Filtration System, allows the operator to filter out extraneous sounds, noises and music to allow the full recorded information to be heard for evidential purposes and operational tasking.
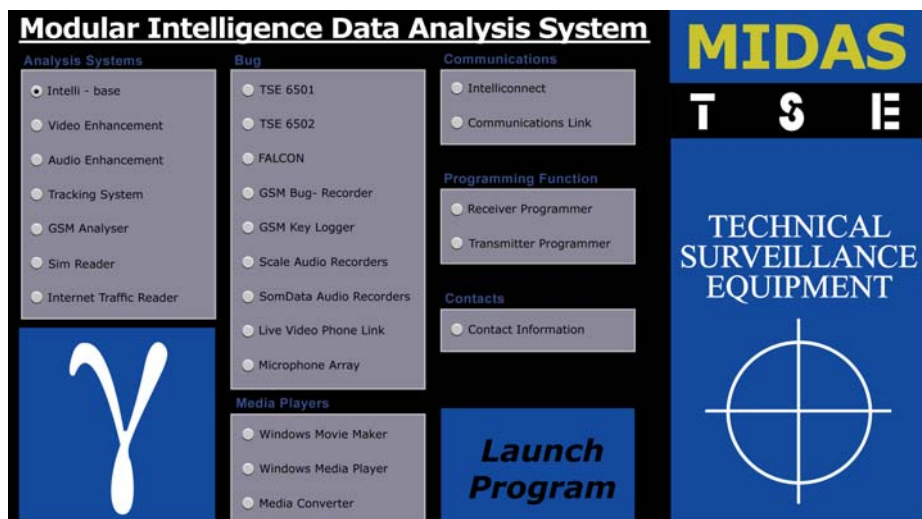
The MIDAS standard version makes life easier for the control of surveillance operations and vehicles, under surveillance, during long- or short-term operations.

MIDAS 202 consists of:

- Midas Software/Laptop
- Model 5302 - Video Transmission GSM/GPRS
- Model 4508 - Intell Database
- Model 4509 - Image Transfer Software
- Model 4004 - Monitoring via Telephone Lines
- Model 4016 - Informant
- Model 6403 - GSM Data And Audio Recorder
- Model 6401 - Ghost Pphone
- Model 6603 - Filtration System
- Model 6201 - Digital Transmitter GSM Modem

Midas System – Video/Audio Version   # Model 202
EXAMPLES OF MIDAS COMPONENTS
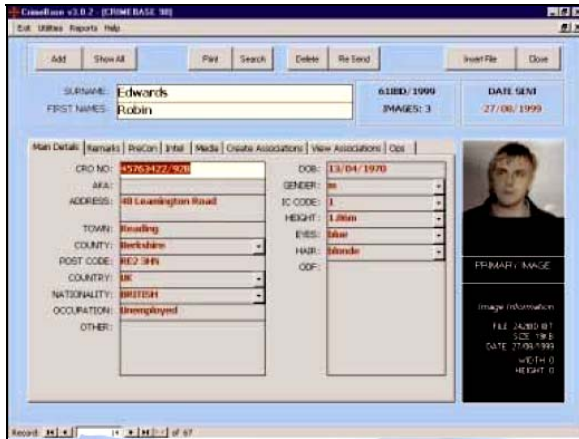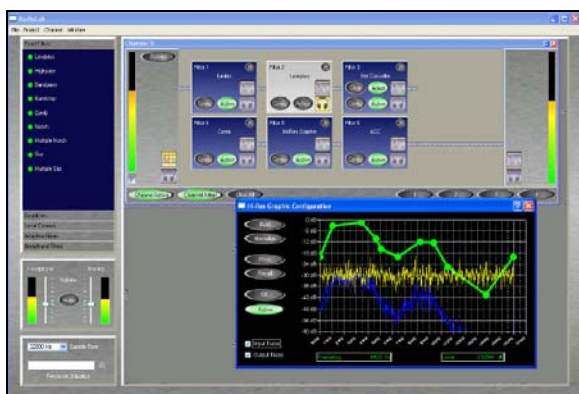

Model 4508 - Intell Database

Model 4509 Intell Photophone

Model 5302 – Video Transmission

Model 4016 – The Informant

Model 6603 - Filtration System

Model 6403 – GSM Audio and Data Recorders

Midas Mc Add-On Command & Control System   Model 203

MIDAS is a revolutionary computer interface system designed to control incoming intelligence information direct from surveillance operations or from post operational activities. Midas systems can be custom built or delivered as a standard package.

The MIDAS can be integrated within a Monitoring Center GSM/PSTN interception for remote target surveillance. This unique MIDAS system enables the operators of the monitoring center to listen to room/vehicle conversation and not just limited to phone interception, therefore, expanding the intelligence profiling of the target.

MIDAS Control of the Professional Audio Filtration System, allows the monitoring center operator to filter out extraneous sounds and noises originally recorded in the monitoring center, to allow the full recorded information to be heard for evidential purposes and operational

tasking.

MIDAS 203 standard version can individually control up to Multiple target transmitters, giving the operator crucial audio intelligence information, which to date was not available on the MC.

MIDAS 203 consists of:

- Midas software/laptop
- Model 4004 - Monitoring via Telephone Lines
- Model 4508 - Intell Database
- Model 4509 - Image Transfer System
- Model 4016 - Informant
- Model 6403 - GSM Data and Audio Recorder
- Model 6401 - Ghost Phone
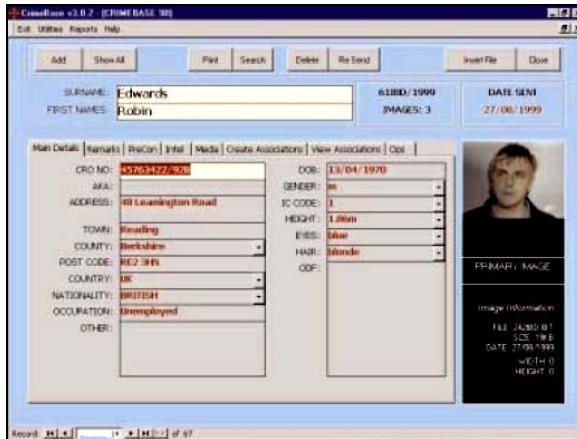- Model 6603 - Filtration System

CONFIDENTIAL

Midas Mc Add-On Command & Control System   Model 203

- Model 6201- Digital Transmitter GSM Modem

EXAMPLES OF MIDAS COMPONENTS

Model 4508 - Intell Database

Model 4509 Intell Photophone

Model 6401 – Ghost Phone

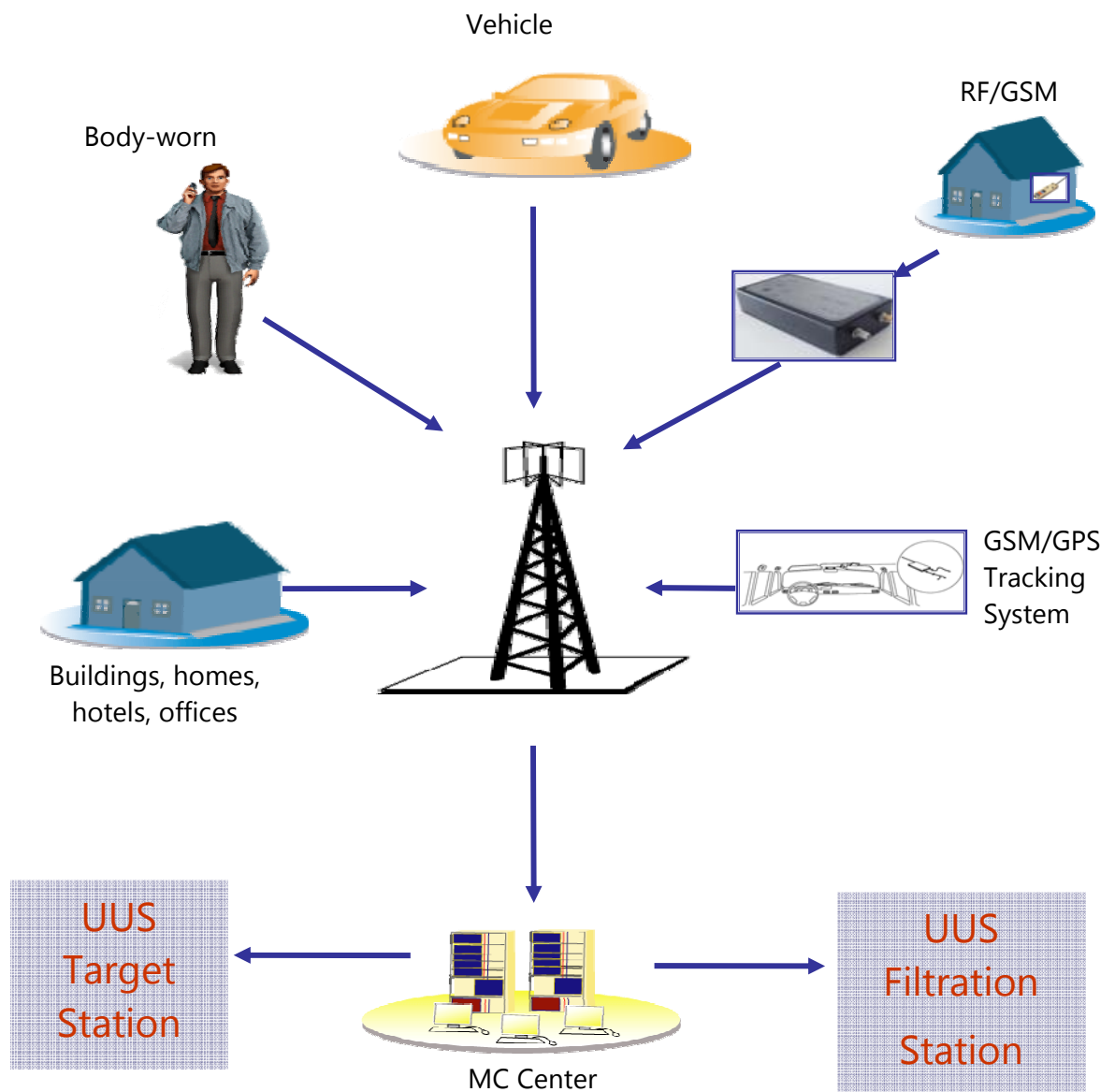Model 4016 – The Informant

Model 6603 - Filtration System

Model 6403 – GSM Audio and Data Recorders

Midas Mc Add-On Command & Control System   Model 203

NETWORK SURVEILLANCE – ADD-ONS

GSM NETWORK – TARGET INFORMATION

Vehicle

RF/GSM

Body-worn

Buildings, homes,
hotels, offices

GSM/GPS
Tracking
System

UUS
Target
Station

MC Center

UUS
Filtration
Station

VTS
Vehicle Tracking Systems

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
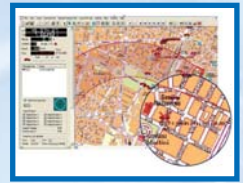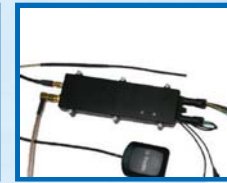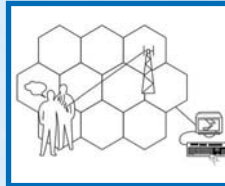
Vehicle Tracking Systems

Ref	Number	Description
1	7301	Vehicle Tracking System with Magnet Base
2	7302	GPS Vehicle Tracking System
3	7303	Vehicle Tracking Management Software
4	7304	Container Tracking System
5	7305	Tracking via SMS Finder
6	7306	BTS Cell Site Information Software
7	7307	Covert RF/GPS Vehicle Tracking System
8	7308	Covert RF/GSM/GPRS/GPS Vehicle Tracking System

Vehicle Tracking System with Magnet Base   Model 7301

Model 7301 is a professional GPS location system for monitoring and tracking of uncooperative target vehicles.

The development of the Model 7301 was the result of a cooperative effort between Elaman and members of the intelligence community. Utilizing tracking system design and manufacturing experience, Elaman developed the Model 7301 based on requirements from real world intelligence professionals, for a system with a rapid deployment capability. The result was a complete, highly flexible system with a wide range of options for the collection, transmission and electronic map display of geographic position data that can be installed quickly and covertly.

The system consists of:

- The Model 7301 remote unit is a self-contained tagging device. It has a magnetic mount for fast and easy installation. The internal and not rechargeable high capacity battery, combined with the low power consumption of the remote unit, supports extended deployments without operator intervention. The Model 7301 remote unit can store up to 300,000 positions between downloads.
- The 7301 Management Software interface provides control of the following Model 7301 remote unit functions:
- *Localization* - real-time reporting or historical log download of geographic position via GSM or GPRS
- *SMS transmission* - time schedule, time intervals or alarm activation for reporting of the geographic position via SMS to a mobile phone or a PC with a GSM wireless modem card enabled for SMS
- *Low Power Consumption* – Motion Sensor

The 7301 Management Software stores the information sent from the Model 7301 remote unit and manages the display of data seamlessly on raster, MaPoint maps or Google Earth.

FEATURES:

- *separate power supply for GSM* and GPS modules: the remote unit can get points according to parameters chosen by the user and keeps the GSM module off, thus prolonging battery life
- *alarm loss GPS* position: in case of lack of GPS position after a certain chosen time, the device sends an alarm SMS with the last fixed position
- *sends GSM position*: in case of lack of GPS signal and with a movement the device sends an SMS with the information regarding the primary GSM cell to which it is registered
- *SMS sending to two different SIM numbers*: the information can be sent to two preset GSM numbers
- *forced wake up*: it is possible to keep the unit in a dormant status to conserve the battery and it is possible to set a forced wake up cyclically or one shot
- *geo fence*: it is possible to manage two independent rectangular areas. Entering or exiting from an area generates an SMS to the preset GSM numbers

Vehicle Tracking System with Magnet Base   Model 7301

MODEL 7301 REMOTE UNIT WITH NON-RECHARGEABLE BATTERY

GPS receiver with memory and digital data transmission through GSM modem 900/1800, 850/1900 or GPRS

power supply	3.6 V dc
	5 V – 36 V with Model 7301 Interface
memory	300.000 points
acquisition modes	time or space
GPS received channels	16
high capacity battery (not rechargeable)	SAFT LSH 20 13.0 Ah (Li-SOCl$_2$) D Size cell
weight (g) without magnetic base and battery	140
dimensions (mm)	85 x 38 x 47
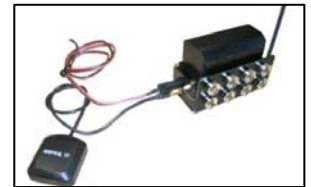
MODEL 7301 INTERFACE FOR DOWNLOADING TO A PC AND CONNECTION FOR AN EXTERNAL POWER SUPPLY

power supply	4.75÷35 V d
output	USB
dimensions (mm)	85 x 38 x 11

MANAGEMENT SOFTWARE

Compatible with Windows 2000/XP

- developed for Windows 2000/XP
- management of all models of Elaman's remote units
- management of a remote unit book, with different settings for each remote unit
- total control of remote unit functions
- usage of different communication channels (serial cable, GSM-data)
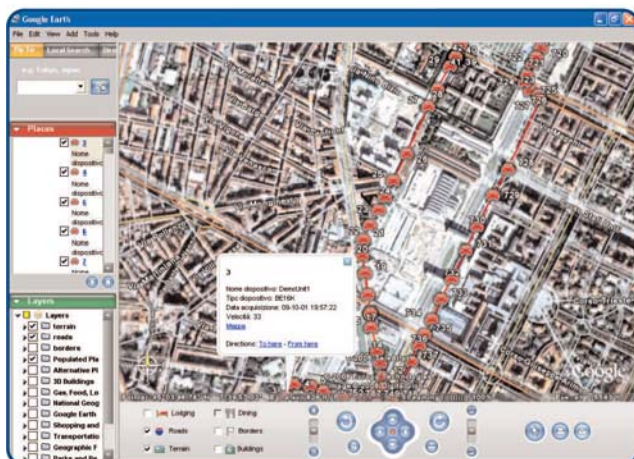
Model 7301 Software license - dongle for serial port

Model 7301 Software license - dongle for USB port

GPS Vehicle Tracking System   Model 7302

The Model 7302 is a covert real-time tracking, locating and monitoring system for uncooperative mobile targets. The Model 7302 is the newest revolutionary advancement in the well established line of Elaman Tracking Systems. The Model 7302 is the result of a cooperative effort utilizing the extensive design and manufacturing experience of Elaman and the real world knowledge of intelligence professionals. It is a complete, extremely flexible system with a wide range of options for the collection, transmission and electronic map display of geographic position data.

The system consists of:

- The Model 7302 remote unit, which is concealed on or inside the target vehicle. The Model 7302 includes a connection for two remotely selectable microphones for audio monitoring that can be hidden in different areas inside the vehicle. It communicates with the monitoring station over the cellular network (GSM/GPRS or CDMA). The Model 7302 built-in memory stores up to 300,000 positions, which provide a downloadable historical tracking record in situations when real-time communication is not possible.

The 7302 Management Software interface can set the following Model 7302 remote unit operating options via the cellular link:

- Call type – select between the voice, data or GPRS communications modes
- Audio monitoring – enable/disable and control audio monitoring of target vehicle
- Localization – control the real-time or historical download of geographical position data via GSM/GPRS or CDMA communications link
- Alarm activation – set movement, VOX, entrance/exit from a predefined area (geo-fence), digital commands, device operating conditions
- SMS transmission – set a time schedule, timed interval cycle or alarm activation condition for reporting the geographical position to a mobile phone or to a PC with a GSM or CDMA wireless modem card enabled for SMS
- Energy saving – utilization of special hibernation states, and programming the remote unit to turn on and off at specific times or for alarm events

TECHNICAL FEATURES

MODEL 7302 REMOTE UNIT

GPS receiver, track memory and data transmission via the GSM 900/1800, GSM 850/1900, GPRS or a CDMA network, as specified at time of order

power supply	4.75÷35 V dc
consumption	fFrom 70 microA to 200mA @ 12V
memory	300.000 points
acquisition period	1 sec to 18 hours
digital & analog input and output	5
GPS received channels	16
audio microphones	2 mono, remotely selectable
Weight (gr). with magnetic base	280
Weight (gr). without magnetic base	100
dimensions (mm)	135 x 50 x 14

GPS Vehicle Tracking System　　　　　　　Model 7302
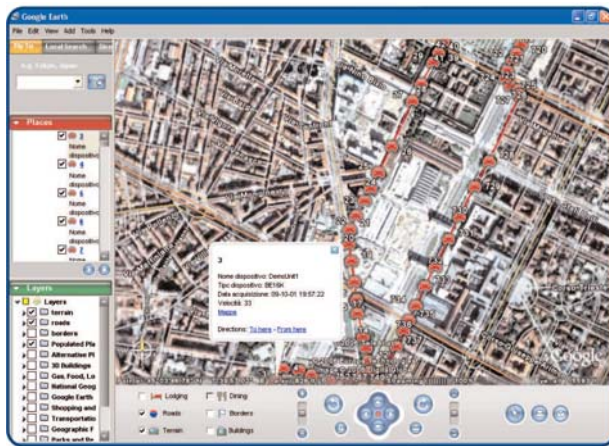
MANAGEMENT SOFTWARE

Compatible with Windows 2000/XP or higher

- developed for Windows 2000/XP
- management of remote units
- management of a remote unit book
- total control of remote unit functions
- usage of different communication channels (serial cable, GSM–data, GSM-voice, GPRS, radio)
- management of database recorded tracks, with time-base analysis

Model 7302 Software license - dongle for serial port

Model 7302 Software license - dongle for USB port

COMPUTER NOTEBOOK

Features

- Screen: 10.4" XGA (1024 x 768 Pixel)
- Intel Pentium M (753)
- CPU – 1100 MHz
- RAM: 512/ Max
- RAM: 1024 MB
- HDD: 40 GB
- DVD/CD-RW Combo
- Graphic Card: Intel 855 GM
- Graphics memory: Shared Memory
- Slot Extension: PC- Card Type I
- PCMCIA SM Modem
- Pre installing of client SW

ACCESSORIES

- MS02 – Magnetic mount for the 7302 remote unit
- PK01- Rechargeable external battery pack with magnetic mount
- DP - Dual port PCMCIA adaptor for Notebook PC
- PM GSM - PCMCIA GSM modem for Notebook PC

Vehicle Tracking Management Software   Model 7303

MANAGEMENT SOFTWARE
Compatible with Windows 2000/XP

- Developed for Windows 2000/XP

- Management of all models of Elaman's remote units

- Management of a remote unit book, with different settings for each remote unit

- Total control of remote unit functions

- Usage of different communication channels (serial cable, GSM-data)

- Management of database recorded tracks, with time base analysis

- Compatible cartography: raster maps and vectorial Windows MapPoint based maps

- Internal software able to georeference raster maps

- Possibility to use Divitech maps

- Possibility to load raster maps format GEOTIFF

- Integration with Google Earth - it is possible to visualize the fix in real-time and the downloaded tracks on the maps of web tool Google Earth
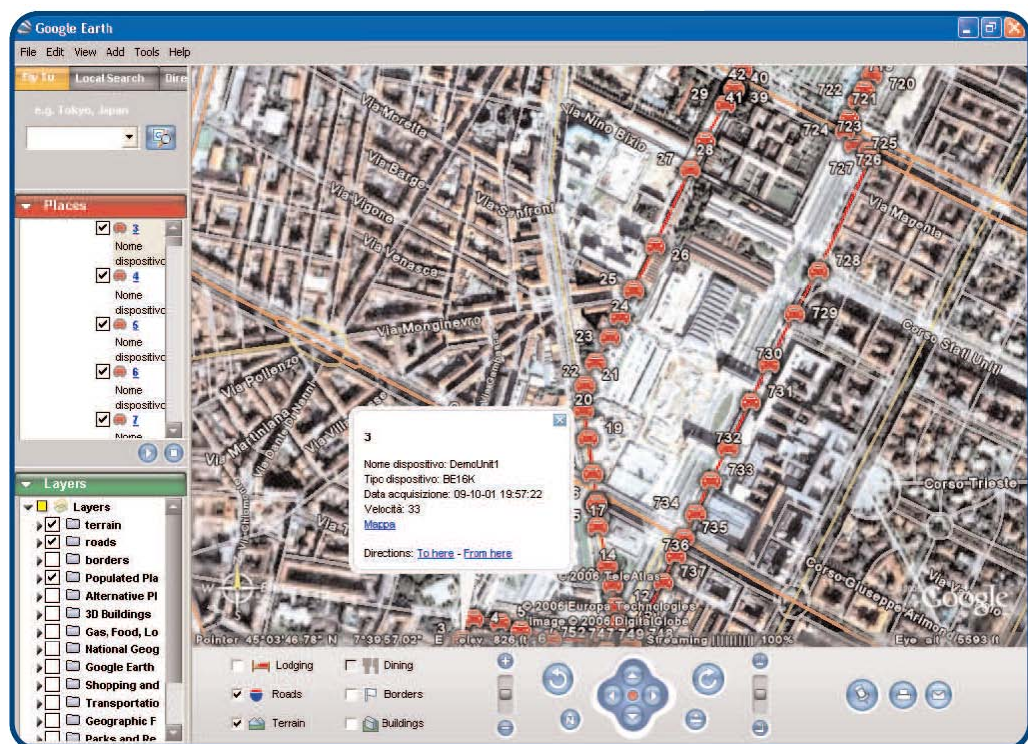
Container Tracking System   Model 7304

Model 7304 is a professional GPS tracking system designed for covert deployment on a cargo shipping container. The physical appearance of the unit remote's steel case resembles the undulations of a cargo container. The Model 7304 remote unit is designed to be welded onto the shipping container so that the container can be tracked during transport. The Model 7304 remote is a stand alone unit that can be used to monitor the movement of goods transported in

a shipping container by truck, rail or sea. The unit communicates with the monitoring station, via the GSM network, to provide both geographic position data and audio surveillance capability. If the container moves to an area without GSM coverage, the remote unit stores up to 300,000 geographic positions, which can be downloaded when communications are re-established.

The system consists of:

- The Model 7304 remote unit composed of a sealed steel case with 4 individually selectable microphones – one on each side. The remote unit has a rechargeable battery and a magnetically activated power on/off switch
- The Management Software interface provides control of the following Model 7304 remote unit functions:
  - *Call* – via the data channel of the GSM network
  - *Localization* - real-time reporting or historical log download of geographic position via GSM network
  - *SMS transmission* - time schedule, time intervals or alarm activation for reporting of the geographic position via SMS to a mobile phone or a PC with a GSM wireless modem card enabled for SMS
  - *Energy saving* – utilizing special hibernation states and programming the remote unit to turn on and off at specific times and events

The Management Software stores the information sent from the Model 7304 remote unit and manages the display of data seamlessly on raster, MaPoint maps or Google Earth.

The Management Software programs the functions of the remote unit, has the flexibility to handle the varied needs of different customers, and is password protected to prevent unauthorized use.

Container Tracking System   Model 7304
MODEL 7304 REMOTE UNIT

GPS receiver with memory and digital data transmission using an internal GSM modem (either a 900/1800 MHz or 850/1900 MHz)

power supply	in-built battery
consumption	from 70 microA to 400mA @7.2 V
memory	300,000 points
acquisition modes	1 sec. to 18 hours
GPS received channels	16
audio microphone	4 mono, remotely selectable

MANAGEMENT SOFTWARE
Compatible with Windows 2000/XP

- developed for Windows 2000/XP
- management of all models of Elaman's remote units
- management of a remote unit book, with different settings for each remote unit
- total control of remote unit functions
- usage of different communication channels (serial cable, GSM - data)
- management of database recorded tracks, with time-base analysis
- compatible cartography: Raster maps and vectorial windows MapPoint based maps
- internal software able to georeference raster maps (settable by customer)
- possibility of using topographic and professional aerial photos
- possibility of using third party cartography software to receive GPS data
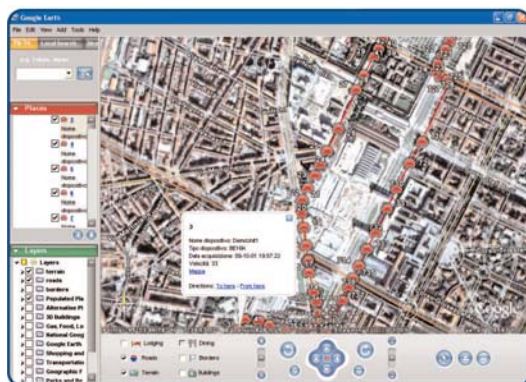
Model 7304 Software license - dongle for serial port

Model 7304Software license - dongle for USB port

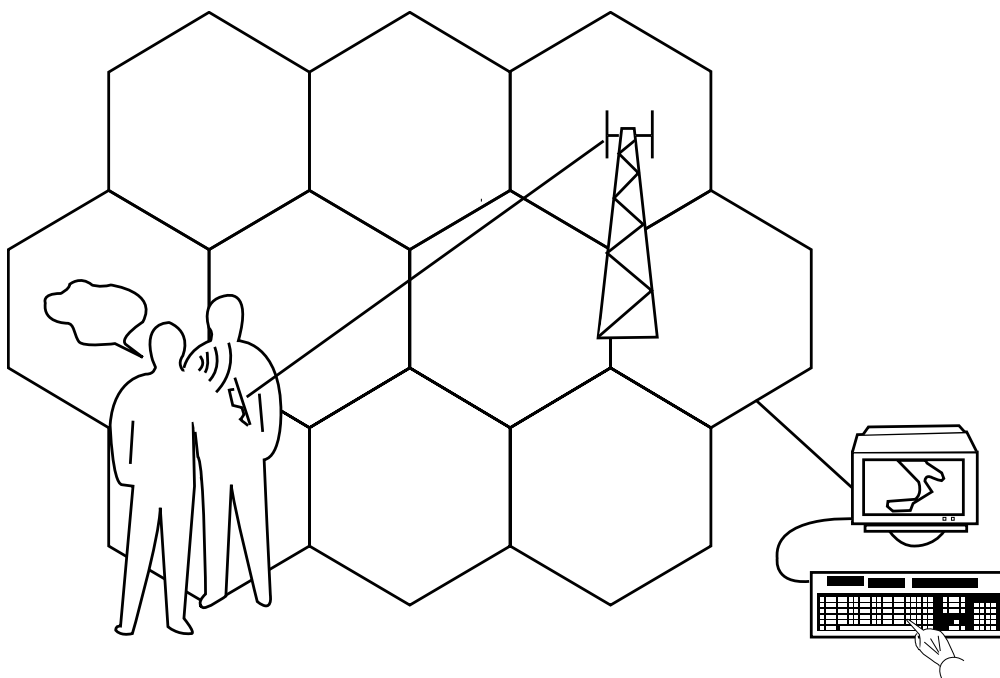# Tracking Via SMS Finder   Model 7305

Elaman is proud to introduce a new generation of GSM tracking systems with the Model 7305, a versatile tool with a wide range of audio monitoring and tracking application possibilities:

- it can easily be hidden virtually anywhere, or on anything, and can communicate its position via the GSM network to the monitoring station, which provides a display of its location on dedicated maps

- it is equipped with a variable gain microphone for audio monitoring in situations where it is not possible to use conventional RF transmitters

- Its operating configuration is programmed using SMS messages. There are many functions that can be programmed, including alerting the monitoring station when the unit has entered a predefined area and audio monitoring control

- It also includes a micro switch, which when pressed, initiates a call to a previously designated phone number that can also be used as a duress alert.
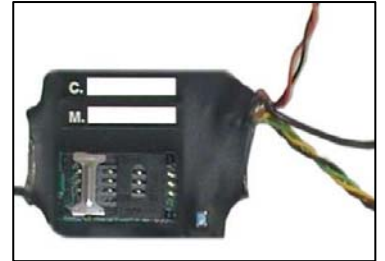
The device has been totally redesigned using the latest generation components to provide major performance enhancements:

- *Quadriband*: The new GSM module allows Model 7305 to operate on 850, 900, 1800 and 1900 MHz frequency bands, enlarging its use to several countries

- *Half dimensions*: the already compact dimensions of the previous version of Model 7305 have been reduced almost by half, enabling easier concealment

- *Reduced power consumption*: the stand by power consumption has been reduced by a factor of 10 to provide a longer battery life

Tracking Via SMS Finder   Model 7305

TECHNICAL FEATURES

compatibility	GSM 850/900/1800/1900
power supply	3,6÷4,5 V
microphone	one, with sensitivity adjustment
stand-by consumption	0,3 mA @ 3,6 V (with inside motion sensor)
digital outputs actionable with SMS	2
external input	1
weight (gr)	25
dimensions (mm) without antenna and power supply cables	45 x 35 x 8

VISUALIZATION

The information on the target location sent by the Model 7305 can be processed and reported on maps using SMS Machine software, which displays the area associated with the BTS(s), where the device is located (Time Advance location estimation).

When no database of the BTS position is available, it is possible to create the GSM map of an area using the BTS cell information software, thus tracking targets without GPS availability.

BTS cell information software is a useful tool for all customers who use the Model 7305 for the GSM tracking because it provides more precise target localization than Time Advance estimation alone can.

The BTS cell information software system is composed of a collector unit, which acquires the GPS positions for an area and then correlates them to those of the BTS sites of the different provider, and by a software that manages the download of the collector unit, processes the recorded data and generates a database for display of the surveyed locations on the appropriate map.

The information sent by the Model 7305 is compared with data stored in the database and the most likely target positions are visualized on the mapping display.

When the BTS location database is available from the service provider, the estimated target location area, based on Time Advance, is also displayed.
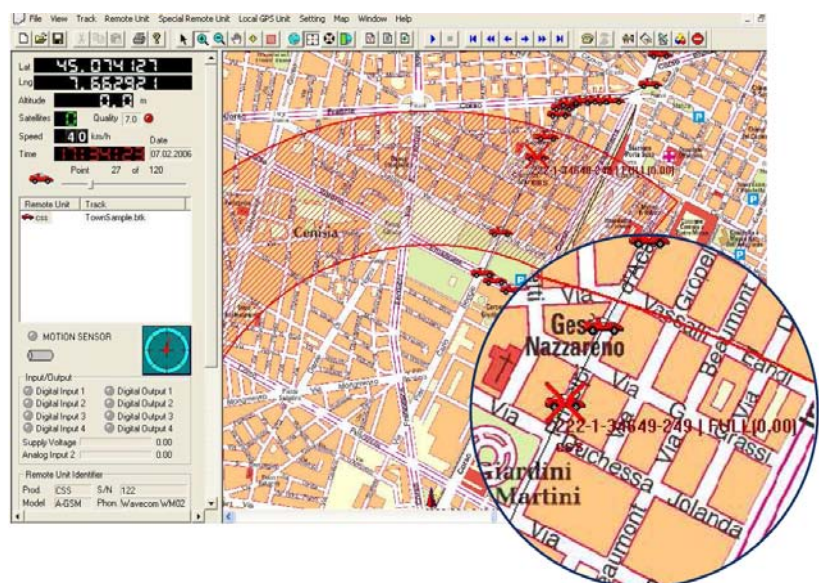
BTS Cell Site Information Software   Model 7306

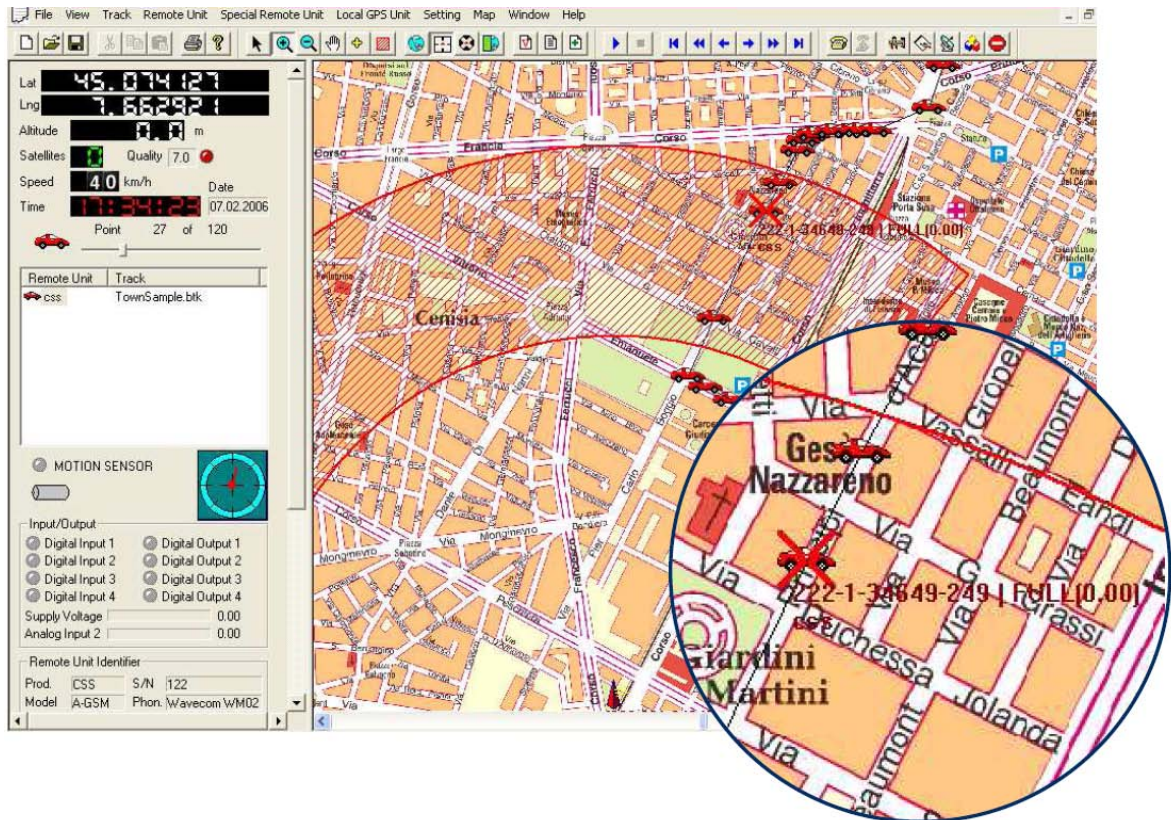The BTS cell site information software is a new system that allows the GSM map of an area to be created, thus tracking targets without a GPS localizer.

The system is composed of:

- The collector unit that acquires the GPS information of an area and correlates it to those of the BTS sites of the different local providers

- The software, to manage the unit to download the recorded data and show it on the map.

OPERATING MODE

During the survey phase, the collector unit records a set of information about the main BTS to which it is registered and of its adjacent cells.

The unit acquires one provider at a time, according to the SIM card installed.

The recorded data is downloaded on the PC via a serial cable and managed by a flexible and reliable database (PostgreSQL extension GIS).

The information sent by the SMS finder is compared with that stored in the database and the most likely target position is visualized on the mapping display.

When the BTS location database is available from the service provider, the possible target location area based on Time Advance is also displayed.

Covert RF & GPS Vehicle Tracking System Model 7307

The unit is an RF tracking and GPS location system built into one easy-to-use package. The equipment fits into one suitcase and can be deployed onto any tracking vehicle in less than 5 minutes.

FEATURES

- Installed and ready to use in under five minutes
- RF tracking signal and live GPS fix transmitted back to tracking vehicle
- Maps on a Laptop PC display GPS fixes of both target and tracking vehicle
- Automatic adjustment of averaging reduces the influence of multi-path bearing
- Single page controller display shows all tracking information including beacon status
- Audible tone varies according to range for ease of use
- Audible alarms may be triggered by changes in beacon status
- Built-in transmitter commands Elaman's beacons
- Digital signal processing removes need for operator tuning and improves sensitivity

The unique feature of the unit is the benefit of adding live GPS data to the tried and tested RF tracking capability of the previous generation.

This provides the operator with the best of both worlds.

DEPLOYMENT OF THE DIRECTION FINDING SYSTEM

1. Place the beacon and GPS antenna on the target vehicle
2. Connect the unit to the car's cigarette lighter
3. Connect Laptop to the unit
4. Place the antenna pod on the roof (arrow pointing towards the front of the car)
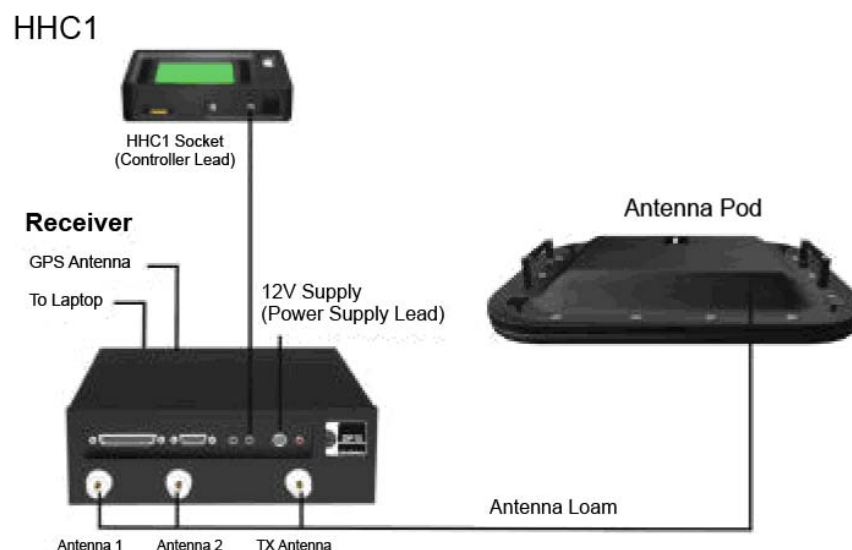5. Connect antenna pod to the unit and switch on

Figure 1: Deployment of the Tracking System

Covert RF & GPS Vehicle Tracking System   Model 7307

SIMPLICITY FOR THE FIELD OPERATOR

Once deployed, the field operator can use the hand-held controller to locate and follow the target. The direction to the target is displayed as a pointer. Simple icons display the status of the beacon (parked, stopped or moving, and the state of the sense input). The relative signal strength is shown as a bar graph. Both the direction and signal strength are displayed numerically. The audio tone increases in frequency as the unit gets closer to the target, giving a clear warning of a close encounter.

Simultaneously, GPS fixes of both target and tracking vehicle can be displayed on a digital map on a laptop PC. The display also gives an indication every time there is a valid GPS fix. The live GPS signal from the target vehicle is transmitted back to the unit via the RF link (up to 3 kilometers.

For long-term operations the Elaman series of beacons can be commanded by the unit. This allows the beacon to be deployed on the target and then put to sleep and woken up, as the operation requires.

SIMPLICITY FOR THE FIELD STATION CONTROLLER

A field station controller may have many beacons at different frequencies and of differing types to control. The unit can be programmed with 26 channel frequencies, which can then be linked to specific beacons.

Once this has been done, the unit need only be told to select, say beacon 1 and it will automatically configure and optimize itself to that beacon.

THE MODEL 7307 SIMPLY ADDRESSES ALL TRACKING REQUIREMENTS

Whether your requirement is for a single beacon, or numerous implant beacons deployed at any one time, the unit responds to your needs.
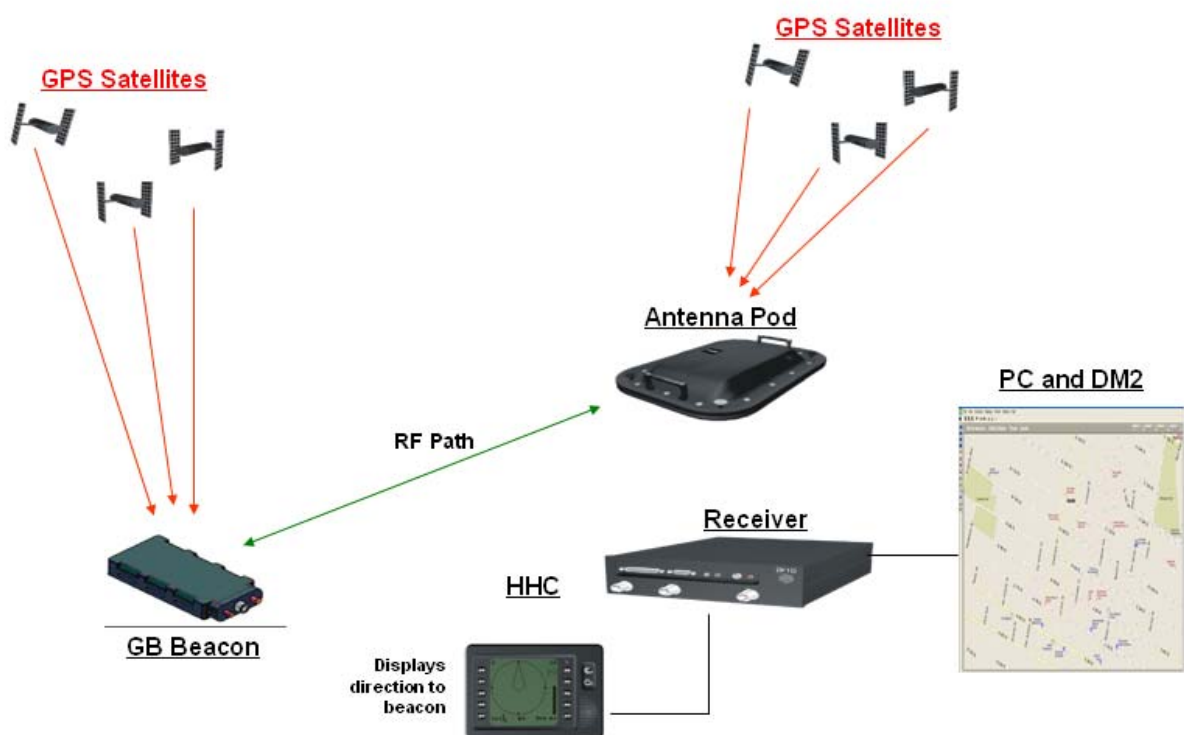
Covert RF/GSM/GPRS/GPS Vehicle Tracking System   Model 7308

This unit is a fully integrated tele-commandable GPS beacon with both RF transmitter and GSM/GPRS back-link facilities. Its features and functionality are optimized for use with Elaman's RF/GPS tracking systems and takes GPS tracking to new levels of performance. Powerful behavior modes allow the operator to live track and command over RF, GSM and GPRS links. This combination offers the ultimate in flexibility and range allowing the operator to respond to operational threats and opportunities to maximize mission life and minimize the possibility of beacon compromise.

FEATURES

- Real-time GPS tracking and command over RF, GSM Data, SMS and GPRS
- Full beacon functionality
- SMS alert functions
- Fast logged data download over RF or cellular back links
- Microphone input for audio over the GSM link
- Combined SMS tracking and audio transmission
- Combined RF and SMS tracking
- Trigger sensing input and output switch
- Zone dependent behavior linking the beacon's behavior to its geographical location
- Mapping and beacon configuration application available for PC
- External power connection for user's preferred power supply
- Compact size maximizing deployment possibilities

TRACKING MODES

The beacon can be programmed or commanded into any of the tracking modes. Furthermore, the beacon can be programmed to operate in different modes, according to its geographic location or level of threat.

Tracking Mode:

The unit pulses and GPS location is transmitted over same RF.

GPRS Tracking Mode:

GPS location transmitted over GPRS link.

Town Mode:

The beacon transmits GPS positions at distance intervals instead of time intervals with RF Pulses on.

GPRS Town Mode:

The beacon transmits GPS positions at distance intervals, instead of time intervals over the GPRS link.

Highway Mode:

For high-speed tracking where GPS data is transmitted at long distance intervals and at highway exits.

GPRS Highway Mode:

For high-speed tracking where GPS data is transmitted at long distance intervals and at highway exits.

Transponding Mode:

Only the unit pulses are transmitted, but GPS location can be requested by RF command.

Covert RF/GSM/GPRS/GPS Vehicle Tracking System   Model 7308

Roaming Mode:

Only beacon status information is transmitted (ID number, motion status and logging status).

Mute Mode:

All RF output is switched off, but GPS location can be requested by RF command.

GSM Ready Mode

No GSM transmission, but GSM module is powered up ready to receive either an incoming CSD connection, or an incoming SMS command. This mode can be used during normal tracking.

GPRS Ready Mode

Whilst the beacon is awake, it will maintain a GPRS connection to the network. No tracking data will be transferred, to allow timely response to commands from the control point.

TECHNICAL SPECIFICATIONS

RF TRANSMITTER	
Center Frequency Range:	150 - 180 MHz or 390 - 420 MHz
Power:	0.3W ±1.5dB (normal power)
	1W ±1.5dB (high power mode)
Channels:	16 users defined in 5MHz band
Spurii:	<-60dBc
Stability:	Stable up to SWR 1:7
Output Impedance:	50 Ω
RF Antenna Connection:	SMA
Transmission Modes:	6
Data Rate:	38400 Bits per sec nominal
RECEIVER	
Frequency Range:	150 - 180 MHz
	390 - 420MHz
Customer Retuneable Band:	±2.5MHz from chosen center frequency
Channels:	16 user defined in 5MHz band
Type:	4kHz FSK
Sensitivity:	+5 to -120dBm
IP3:	-28dBm @ 25°C, -33dBm @ 60°C, -44dBm @ -30°C,
Blocking:	65dB @ 25°C, 59dB @ -10°C, 56dB @-30°C
GPS MODULE	
TTFF:	<60 seconds average from a cold start
Antenna:	3.3V SSMA connector
Logging Modes:	4
Number of data points:	532,480

WASS
Wireless Audio Surveillance Systems

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
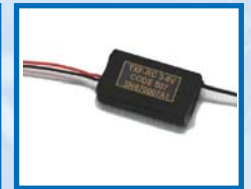
Wireless Audio Surveillance Systems

Ref	Number	Description
1	6006a	Ultra Sub Miniature Transmitter With Internal Microphone
2	6006b	Remote Controlled Audio Transmitter
3	6006c	Remote Controlled High Power Audio Transmitter
4	6006d	Remote Controlled PSTN Transmitter
5	6006e	Body-Worn Remote Controlled Transmitter
6	6006f	Body-Worn High Power Transmitter With Remote Control
7	6006g	Wireless Remote Controlled Transmitter
8	6006h	Remote Controlled Recorder with Built-in Transmitter
9	6006i	Belt Transmitter with Kill Switch
10	6006j	Plug Socket Transmitter
11	6006k	Concealed Audio Transmitter
12	6006L	Bubblegum Transmitter
13	6006o	Programming Unit For Model 6006 Transmitter Family
14	6006p	Audio Receiver for Mobile and Stationary Use
15	6006q	Tactical Pocket Receiver
16	6006r	Tactical Pocket Receiver with Built-in Digital Recorder
17	6006s	Remote Control Activator for Controlling Transmitters
18	6006t	Pocket Remote Control Activator
19	6006u	Advanced Audio Analog Transmitter Receiver Kit

TSU INDEX

20	6006v	Advanced Concealment Body Transmitter Kit
21	6006w	Short Range remote Control
22	6006x	GM keyfob with concealed miniature audio transmitter
23	6006y	Slim high power Transmitter
24	6007	Micro Power Adapters
25	6007-7	Covert Surveillance Vest
26	6007-6	Lithium Battery Pack
27	6201	Audio Wireless Digital Surveillance System
28	6201-1	Remotely Controlled Receiver with Digital Recorder
29	6201-2	Digital Audio Standard Transmitter
30	6201-3	Digital Audio Higher Power Transmitter
31	6201-4	Digital Audio Body-Worn Transmitter
32	6201-5	Digital Audio Belt Transmitter
33	6201-6	GSM Modem Repeater Kit
34	6201-7	Covert Vehicle Antenna
35	6201-8	Repeater Filter Kit
36	6201-9	Bubble Gum Transmitter
37	6201-10	Flex Transmitter
38	6201-KIT	Advanced Digital Audio Surveillance Kit
39	6202	Miniature Digital Receiver/Recorder

Audio Wireless Surveillance   6006 SERIES

MODEL 6006A - ULTRA SUB MINIATURE TRANSMITTER WITH INTERNAL MICROPHONE

APPLICATIONS

The size of the new mini transmitter also makes it ideal for use in custom made concealments. Since the Model 6006a can easily be built into a multitude of everyday appliances, the possibilities for covert monitoring are numerous.

TECHNICAL SPECIFICATIONS

Output power, UHF/VHF	30 mW into 50 Ω load/ 45 mW into 50 Ω load
Supply voltage	2.5 V-5.5 V
Dimensions HxWxD (without flex)	14.5x7.2x3.5 mm

MODEL 6006B - REMOTE CONTROLLED AUDIO TRANSMITTER

The new Elaman 6006b transmitter breaks new grounds with the way it functions, such as its Remote Controllable Frequency, Scrambler On/Off, AGC (Automatic Gain Control) On/Off, VOX On/Off and NTIA On/Off (VHF version only).

APPLICATIONS

The Elaman 6006b module is ideal for use in operations requiring special custom concealment, long-term installation with extended stand-by time, low probability of detection, low power consumption, long range and exceptional voice clarity.

It is also ideal as an officer safety transmitter for concealed use.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 4 to 6 V)	> 60 mW into 50 Ω load/> 80 mW into 50 Ω load
Supply voltage	3.0 V-6.0 V
Dimensions HxWxD (without flex)	32x18x5.6 mm
Remote control frequency (standard)	433.92 MHz

Audio Wireless Surveillance   6006 SERIES

MODEL 6006C - REMOTE CONTROLLED HIGH POWER AUDIO TRANSMITTER

The new Model 6006c high power transmitter incorporates functions, such as Remote Controllable Frequency, Scrambler On/Off, AGC (Automatic Gain Control) On/Off, VOX On/Off (voice activated transmission), High/Low Output Power between 1 W (VHF)/0.75 W (UHF) and 0.25 W output power and NTIA Compliant On/Off (VHF version only).

APPLICATIONS

The Elaman 6006c module is ideal for use in operations requiring special custom concealment, long-term installation with extended stand-by time, low probability of detection, high output power, long range, and Exceptional voice clarity.

It is also ideal as an officer safety transmitter for concealed use.
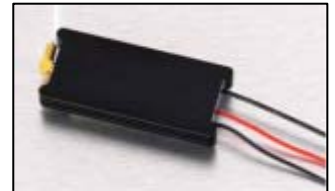
TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-174 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt.=3.3 to 15 V)	750 mW into 50 Ω load/1000 mW into 50 Ω load
Supply voltage	3.3 V- 15.0 V
Dimensions HxWxD (without flex)	53x23x7.5mm
Remote control frequency (standard)	433.92 MHz

MODEL 6006D - REMOTE CONTROLLED PSTN TRANSMITTER

The Model 6006d is a wireless transmitter designed to tap standard phone lines. The transmitter works together with the Elaman 6006p/Model 6006q and the Model 6006s hand-held remote control. The PSTN transmitter is connected in parallel to a standard analog telephone line. The transmitter is not powered from the telephone line, but needs power from a battery.

APPLICATIONS

The Elaman 6006d module is ideal for use in operations requiring tapping of standard phone lines, long-term installations with extended stand-by time, low probability of detection, low power consumption, long range, and exceptional voice clarity.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-174 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 4 to 6 V)	> 60 mW into 50 Ω load/> 80 mW into 50 Ω load
Supply voltage	3.0 V-6.0 V
Dimensions HxWxD (without flex)	33.5x18x5.6 mm
Remote control frequency (standard)	433.92 MHz

Audio Wireless Surveillance 6006 SERIES

MODEL 6006E - BODY-WORN REMOTE CONTROLLED TRANSMITTER

The new Elaman 6006e transmitter incorporates many of the unique features from Elaman's existing Model 6006b transmitter.

APPLICATIONS

The Elaman 6006e unit is ideal for use in operations requiring officer Safety, low probability of detection, low power consumption, exceptional voice clarity, and quick installation.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 4 to 6 V)	> 60 mW into 50 Ω load/> 80 mW into 50 Ω load
Supply voltage	3.0 V-6.0 V
Dimensions HxWxD (without flex)	33.5x18x5.6 mm
Remote control frequency (standard)	433.92 MHz

MODEL 6006F - BODY-WORN HIGH-POWER TRANSMITTER WITH REMOTE CONTROL

The Elaman 6006f transmitter is designed to be used where body concealment, high output power and long range are all required. The transmitter is a part of the Elaman family and works together with the Elaman 6006p and the Elaman 6006q.

APPLICATIONS

The Model 6006f unit is ideal for use in operations requiring officer safety, high output power, long range, low probability of detection, low power consumption, exceptional voice clarity, and quick installation.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-174 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 3.3 to 6 V)	750 mW into 50 Ω load/1000 mW into 50 Ω load
Supply voltage	3.0 V-6.0 V
Dimensions HxWxD (without flex)	75x53x12 mm
Remote control frequency (standard)	433.92 MHz

Audio Wireless Surveillance   6006 SERIES

MODEL 6006G - WIRELESS REMOTE CONTROLLED TRANSMITTER

The new Elaman 6006g transmitter with rechargeable batteries is designed for use in highly sensitive, mission-critical applications. It features functionalities, such as Remote Controllable Frequency, Scrambler On/Off, AGC (Automatic Gain Control) On/Off and VOX On/Off.

APPLICATIONS

The Elaman 6006g transmitter is ideal for use in operations requiring low probability of detection, low power consumption, exceptional voice clarity, quick installation, and Officer Safety.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 3.3 to 6 V)	> 60 mW into 50 Ω load/> 80 mW into 50 Ω load
Supply voltage	Internal 3.7 V Lithium-Ion, rechargeable
Dimensions HxWxD (without flex)	110x45x7 mm
Remote control frequency (standard)	433.92 MHz

MODEL 6006H – REMOTE CONTROLLED RECORDER WITH BUILT-IN TRANSMITTER

The Model 6006h can intercept and record all audio through its microphone without transmitting any RF signals in order to avoid detection during a sweep. The recorded audio can be transferred at any time to the receiver by sending a command from the 6006S remote control unit.

APPLICATIONS

The Elaman 6006h is ideal for use in operations requiring long-term installations, recording capabilities, low probability of detection, exceptional voice clarity, and low power consumption.

TECHNICAL SPECIFICATIONS

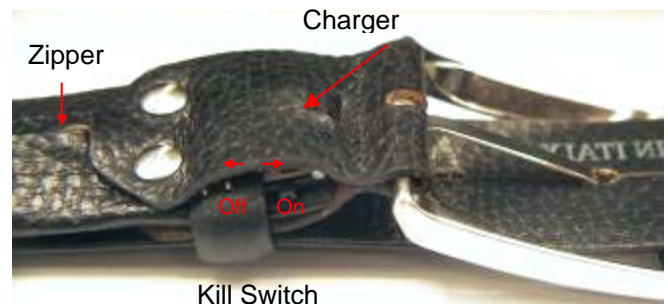|	
Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 3.3 to 6 V)	> 60 mW into 50 Ω load/> 80 mW into 50 Ω load
Supply voltage	4.0V – 15.0V
Dimensions HxWxD (without flex)	70x41x20 mm
Remote control frequency (standard)	433.92 MHz

Audio Wireless Surveillance   6006 SERIES

MODEL 6006I - BELT TRANSMITTER WITH KILL SWITCH

Like other Elaman transmitters, the belt transmitter is operated from the Model 6006s.

To disconnect the transmitter completely, use the kill switch.

The RCM code and serial number are placed in the belt below the zipper.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	12.5 kHz
Output power, UHF/VHF (Vbatt. = 4 to 6 V)	> 60 mW into 50 Ω load/> 80 mW into 50 Ω load
Supply voltage	Internal 3.7 V, 6x 220 mAh, Lithium-Ion, rechargeable
Dimensions HxWxD (without flex)	32x18x5.6 mm
Remote control frequency (standard)	433.92 MHz

MODEL 6006K - CONCEALED AUDIO TRANSMITTER

The size and versatility of the Model 6006k transmitter makes it possible for the unit to be incorporated into a wide range of concealed locations for professional use. When concealed, the unit retains all the remote controlled functions of the Model 6006k transmitter module.

APPLICATIONS

The Model 6006k battery is intended for use in operations requiring remote controlled officer safety transmitter, back-up system in conjunction with modified dial-in phones i.e. rat-phone types, placing a remote controlled transmitter on a non-suspecting target person, monitoring/transmission of both sides of the telephone conversation, scrambled link, low probability of detection, low power stand-by consumption, and long battery life.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	12.5 kHz
Continuous transmit time – fully charged battery (Nokia)	> 10 hours
Battery pack capacity (Nokia)	900 mA hour
Dimensions HxWxD (without flex)	33x24x7mm
Remote control frequency (standard)	433.92 MHz

Audio Wireless Surveillance 6006 SERIES

MODEL 6006L - BUBBLEGUM TRANSMITTER

The Bubble Gum transmitter is a miniature, compact TXFM transmitter with one internal rechargeable lithium battery, measuring only 35 x 20 x 8 mm / 1.34 x 0.78 x 0.3 inches.

APPLICATIONS

The size of the new mini transmitter also makes it ideal for use in in operations requiring Low probability of detection, Low power consumption, Exceptional voice clarity, Quick plant - "Drop and walk" and Covert operations

TECHNICAL SPECIFICATIONS

Output power, VHF (Vbatt. = 3.7 VDC)	Typ. 45 mW into 50 ohms load
Output power, UHF (Vbatt. = 3.7 VDC)	Typ. 30 mW into 50 ohms load

MODEL 6006O - PROGRAMMING UNIT FOR MODEL 6006 TRANSMITTER FAMILY

The Elaman 6006o is a miniature programming device for changing various settings in the Elaman 6006 family of transmitters.

FEATURES

- Wired and wireless control of INCA transmitters

- Changeable settings
    - TX frequency
    - Scrambler On/Off
    - AGC On/Off (Automatic Gain Control)
    - Sleep mode
    - VOX (Voice activation)
    - Power level (TXFH-RC only)
    - Remote control code
    - NTIA compliance (VHF versions only)

TECHNICAL SPECIFICATIONS

Transmitting Frequency	14.7456 MHz
	433.92 MHz
	868.35 MHz
Receiving Frequency	100 – 1000 MHz
Power requirement	Supplied by the USB
Dimensions (H x W x D)	54 x 55 x 16 mm/2.13 x 2.16 x 0.63 inches

Audio Wireless Surveillance   6006 SERIES

MODEL 6006P - AUDIO RECEIVER FOR MOBILE AND STATIONARY USE

The Model 6006p allows use of a smaller transmitter that draws less power and thus requires a smaller battery. This aids concealment and prolongs operational life, while still providing excellent coverage and range.

APPLICATIONS

The Model 6006p is ideal for operations requiring officer safety, high RF sensitivity, easy remote control of surveillance transmitters, easy connection to PSTN network, long-range reception, low probability of detection, low power consumption, exceptional voice clarity, and quick installation.

FEATURES

- Available in UHF and VHF versions

- 8 channel factory pre-programmed PLL synthesized and crystal controlled (all 8 channels installed as standard)

- Optimized for reception of narrowband analog transmitters

- Built-in high quality switchable wideband analog descrambler

- De-emphasizing for maximum audio quality

- VOR/VOX setting

- Channel activity indicator

- Time and date settings in automatic function mode enable easy programming and automatic monitoring routines

- Access password in command software

- Built-in remote control transmitter

- Can operate with Model 6006s remote control and Model 6007-1 modules

- Highly robust metal housing

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
Min. channel raster	25 kHz
Receiving frequency	100-1000 MHz
Power supply – mains feed	115 / 230 VAC (50 / 60 Hz)
Power supply – external DC input	11-15 VDC
Current consumption - external DC input	< 200 mA 12 VDC
Dimensions HxWxD (without flex)	265x260x82 mm
Remote control frequency (standard)	433.92 MHz

Audio Wireless Surveillance   6006 SERIES

MODEL 6006Q - TACTICAL POCKET RECEIVER

The Model 6006q is Elaman's high performance tactical pocket receiver, specially designed for the reception of narrow-band signals from the range of Elaman Officer Safety and Intelligence Transmitters.

APPLICATIONS

The Model 6006q receiver is ideal for operations requiring high reliability and flexibility to ensure maximum officer safety, long operating distance, high RF sensitivity, selectivity and exceptional voice clarity, scrambling/descrambling of signal transmission, reception from officer safety transmitters in micro concealments, and long operational time.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
channel raster	12.5 kHz
Sensitivity UHF/VHF	-113 dBm for 20 dB SINAD, typ./ -117dBm for 20 dB SINAD, typ.
Supply voltage	3.5 – 5.5 VDC
Dimensions HxWxD (without flex)	88x55x18mm

MODEL 6006R - TACTICAL POCKET RECEIVER WITH BUILT-IN DIGITAL RECORDER

The Model 6006r is Elaman's new high performance tactical pocket receiver with integrated recorder, specially designed for the reception of narrowband signals from the range of Elaman Officer Safety and Intelligence Transmitters.

APPLICATIONS

The Model 6006r is ideal for operations requiring high reliability and flexibility to ensure maximum officer safety, high RF sensitivity, selectivity and exceptional voice clarity, scrambling/descrambling of signal transmission, reception from officer safety transmitters in micro concealments, long operational time, close to the scene audio recordings, fast download of recordings, and long operating distance.

TECHNICAL SPECIFICATIONS

Output frequency range	UHF 320-330 MHz/ VHF 150-175 MHz
channel raster	12.5 kHz
Sensitivity UHF/VHF	-113 dBm for 20 dB SINAD, typ./ -117dBm for 20 dB SINAD, typ
Supply voltage	3.5 – 5.5 VDC
Dimensions HxWxD (without flex)	88x55x18mm
Recorder analog input/output	1/1
Sampling frequency	16 Bit

Audio Wireless Surveillance   6006 SERIES

MODEL 6006S - REMOTE CONTROL ACTIVATOR FOR CONTROLLING TRANSMITTERS

The Model 6006s is a powerful, professional remote control system with miniature state-of-the-art technology, built specially for professional Technical Support Units (TSU). It is primarily designed for multipurpose remote control tasks using Elaman equipment and systems, but is capable of commanding products made by other manufacturers.

The Model 6006s can be used as a support system for various Elaman products, i.e. in situations where contact to a concealed transmitter is absent due to extreme interference. Using the Model 6006s, it is possible to get closer to the scene and activate the concealed system.

APPLICATIONS

The Model 6006s is intended for use in operations requiring extended battery life in officer safety equipment, remote control of Elaman products, multi-purpose remote control, remote control of video link systems, and remote control of solid state recording devices, remote kill switch, activation of long-term concealed installations, and minimized risk of detection i.e. sweeping.

TECHNICAL SPECIFICATIONS

Remote control frequency (standard)	433.92 MHz
Remote control frequency (868)	868.35 MHz
Output power into 50	>2.5W @ 9 VDC
TX LED output power	> 300 mW
Battery low LED lights	> 6.5 VDC
Dimensions (HxWxD)	112x62x33 mm

MODEL 6006T - POCKET REMOTE CONTROL ACTIVATOR

The Model 6006t is a professional remote control unit with miniature state-of-the-art technology, built especially for professional Technical Support Units (TSU). The pocket remote control is a short range On/Off remote control transmitter intended for the Model 6006b transmitter family and the Model 6007-1 RCM module. Concealed in an ordinary key ring, the Model 6006t is ideal for close proximity operations.

APPLICATIONS

The Model 6006t is intended for use in operations requiring activation/deactivation of Elaman products.

TECHNICAL SPECIFICATIONS

Battery voltage	Internal 12 V Alkaline
Output frequency	433.92 MHz
Output power	10 mW into 50 load
Current consumption, Transmit	Typical 18 mA DC
Dimensions (LxWxH)	67x36x17.5 mm

Audio Wireless Surveillance   6006 SERIES

MODEL 6006W – SHORT RANGE REMOTE CONTROL

The Model 6006W is a professional Short Range Remote Control on/off remote control transmitter concealed in an ordinary keyfob and it works with the Model 6006B/Model 6006C transmitter family.

APPLICATIONS

The Model 6006W is intended for use in operations requiring Activation/deactivation of our transmitters, Officer Safety and Panic Alarm

TECHNICAL SPECIFICATIONS

Output frequency	433.92 MHz
Output power	Typical 10 mW into 50 ohms load
Current consumption, Transmit	Typical 24 mA DC
Dimensions (L x W x H)	54 x 42 x 13.5 mm/ 2.13 x 1.65 x 0.53 inches

MODEL 6006X – GM KEYFOB WITH CONCEALED MINIATURE AUDIO TRANSMITTER

The Model 6006X GM Keyfob with Concealed Miniature Audio Transmitter is an ordinary GM keyfob concealing a miniature audio transmitter and is extremely suitable for undercover agents and covert operations.

APPLICATIONS

The Model 6006X is intended for use in operations requiring Under cover/covert operations and Officer safety

TECHNICAL SPECIFICATIONS

Output frequency range, UHF	320 - 330 MHz
Output frequency range, VHF	150 - 174 MHz
Supply voltage	Internal battery 3.6 VDC
Dimensions (L x W x H)	54 x 42 x 13.5 mm/2.13 x 1.65 x 0.53 inches

Audio Wireless Surveillance

6006 SERIES

MODEL 6006Y – SLIM HIGH POWER TRANSMITTER

The Model 6006Y is a slimmer version of the original Transmitter. By replacing the aluminum housing with a heat-shrink tube and lowering the output power, its size has been reduced considerably, thus making the Model 6006Y even more suitable for installation into a vast number of locations/devices.

APPLICATIONS

The Model 6006Y is ideal for use in operations requiring:

- Special custom concealments

- Long-term installations with extended stand-by time

- Low probability of detection

- High output power

- Long range

- Exceptional voice clarity

It is also ideal as an officer safety transmitter for concealed use.

TECHNICAL SPECIFICATIONS

Output frequency range, UHF	320-330 MHz
Output frequency range, VHF	150-174 MHz
Supply voltage	3.3 V to 15.0 V
Dimensions HxWxD	49x20x6 mm/1.93.1x0.79x0.23 inches

Audio Wireless Surveillance kits   6006 SERIES

MODEL 6006U – ADVANCED AUDIO ANALOG TRANSMITTER RECEIVER KIT

The kit consists of:

- Model 6006b - Remote Controlled Audio Transmitter
- Model 6006c - Remote Controlled High Power Audio Transmitter
- Model 6006d - Remote Controlled PSTN Transmitter
- Model 6006e - Body-Worn Remote Controlled Transmitter
- Model 6006i - Belt with Kill Switch
- Model 6006k - Concealed Audio Transmitter
- Model 6006p - Audio Receiver for Mobile and Stationary Use
- Model 6006q - Tactical Pocket Receiver
- Model 6006s - Remote Control Activator for Controlling Transmitters

MODEL 6006V - ADVANCED CONCEALMENT BODY TRANSMITTER KIT

The kit consists of:

- Model 6006e - Body-Worn Remote Controlled Transmitter
- Model 6006f - Body-Worn High Power Transmitter With Remote Control
- Model 6006g - Wireless Remote Controlled Transmitter
- Model 6006h - Remote Controlled Recorder with Built-in Transmitter
- Model 6006i - Belt with Kill Switch
- Model 6006k - Concealed Audio Transmitter
- Model 6006p - Audio Receiver for Mobile and Stationary Use
- Model 6006r - Tactical Pocket Receiver With Built-In Digital Recorder
- Model 6006s - Remote Control Activator For Controlling Transmitters
- Model 6006t - Pocket Remote Control Activator

Micro Power Adapters   Model 6007

The Model 6007 family is a series of micro-sized power adapters functioning as alternative power sources to batteries in surveillance installations. They are designed for long term installation and their small physical size and modular shape make them easy to conceal into almost any light sources or other electrical appliances. Since electrical noise is critical to a successful concealed installation, the adapters offer low EMC and ripple noise.

The micro-power adapters are specially designed for our range of transmitters, but are ideal for use together with other equipment or systems as well, e.g. small video-links.

The modules are supplied with flying leads both for mains connection (black silicone wire) and for DC output (black wire for the negative and red for the positive terminal).

The micro-power adapters are designed with respect to shock, vibration and humidity, assuring perfect functionality even under poor conditions

Warning!

Although the power supply is mains isolated, it is not able to fulfill international safety requirements and/or regulations due to its small size. Only professional users should use the Micro-Power Adapters. The Model 6007 family is not intended for private or commercial use.

APPLICATIONS

The Micro Power Adapters are intended for use in operations requiring:

- Long term installations
- No room for bulky battery installations
- Quick-plant, where long stand-by time is needed before active operation
- Frequent or daily operation

FEATURES

- Small size for easy concealment
- Universal input voltage range (85 – 267 VAC)
- Output short-circuit safe
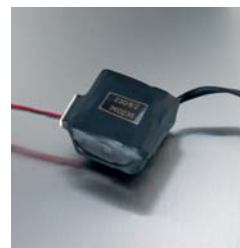- High efficiency
- Low ripple and noise

Model 6007-2 4VDC / 150 mA

For use with the 6006a

Model 6007-3 6VDC / 150 mA

For use with the 6006b and 6201 Transmitter

Model 6007-4 6VDC / 400 mA

For use with 6006b and 6201 Transmitter

Model 6007-5 12VDC / 250 mA

For use with the 6006c and 6201 transmitter

Micro Power Adapters   Model 6007
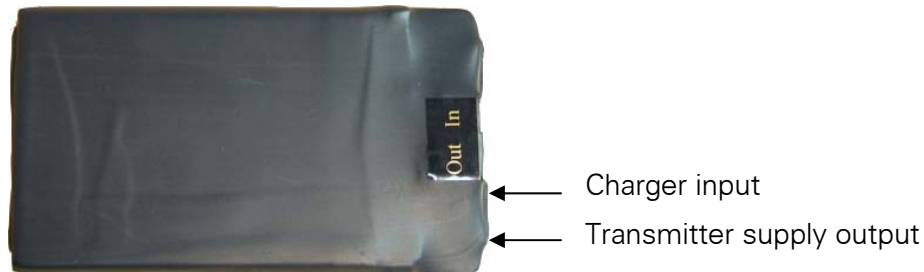
TECHNICAL SPECIFICATIONS

Model 6007 115/230 VAC/4 VDC/150 mA	
Isolation Test Voltage	500 VAC RMS
Mains Input	85 VAC to 267 VAC, 50/60 Hz
Input current at max. load (150 mA)	< 85 mA RMS
Input power at max. load (150 mA)	< 1.7 W
Input current without load	< 5 mA RMS
Input power without load	< 150 mW
Regulated output voltage	4 VDC
Output ripple voltage	< 10m VAC RMS
Output current	> 150 mA
Temperature range	- 5° C to 55° C/23 F to 131 F
Length of mains wires	50 cm/19.68 inches
Dimensions (HxWxD)	35x15x8.5 mm/1.5x0.6x0.3 inches
Model 6007 115/230 VAC/6 VDC/150 mA	
Isolation Test Voltage	500 VAC RMS
Mains Input	85 VAC to 267 VAC, 50/60 Hz
Input current at max. load (150 mA)	< 90 mA RMS
Input power at max. load (150 mA)	< 1.8 W
Input current without load	< 5 mA RMS
Input power without load	< 150 mW
Regulated output voltage	6 VDC
Output ripple voltage	< 10m VAC RMS
Output current	> 150 mA
Temperature range	- 5° C to 55° C/23 F to 131 F
Length of mains wires	50 cm/19.68 inches
Dimensions (HxWxD)	35x15x8.5 mm/1.5x0.6x0.3 inches
Model 6007 115/230 VAC/6 VDC/400 mA	
Mains Input - 115 V	85 VAC to 267 VAC, 50/60 Hz
Mains Input - 230 V	195 VAC to 267 VAC, 50/60 Hz
Output current Max.	400 mA
Temperature range	- 5° C to 55° C/23 F to 131 F
Length of mains wires	50 cm / 19.68 inches
Dimensions (HxWxD)	20x42x29 mm/0.78x1.65x1.14 inches
Model 6007 115/230 VAC/12 VDC/250 mA	
Mains Input - 115 V	85 VAC to 267 VAC, 50/60 Hz
Mains Input - 230 V	195 VAC to 267 VAC, 50/60 Hz
Output current Max.	250 mA
Temperature range	- 5° C to 55° C/23 F to 131 F
Length of mains wires	50 cm/19.68 inches
Dimensions (HxWxD)	20x42x29 mm / 0.78x1.65x1.14 inches

Lithium Battery Pack   Model 6007-6

RECHARGEABLE BATTERY

← Charger input

← Transmitter supply output

The rechargeable battery comes with a charger. It has two sockets: One for the charger and one for the transmitter.

TECHNICAL SPECIFICATIONS

Supply voltage	**3.7 V/3.2 A Lithium ion polymer battery**
Charging time	**Approx. 6 hours**
Consumption standard TX (High power)	**Approx. 24 hours**
Dimensions	**116x65x11 mm/4.6x2.6x0.5 inches**

THE CHARGER

The green power LED is on when mains supply is on. The red charger LED blinks with 1 sec intervals when nothing is connected to the charger.

The red charger LED will stay on during the charging of the battery and then go off when the battery is fully charged.

Charger:

DC connector

Charger:

Green power LED

Red charger LED

Rechargeable battery

Audio Wireless Digital Surveillance System   6201 series

Elaman's Model 6201 system must be regarded as the most powerful handheld Wireless Digital Stereo Transmission system on the market today.

With an operating range of up to 4 km/2.5 miles (depending on field conditions), the Model 6201 system sets new standards for digital transmission systems.

The Model 6201 unit combines a range of different functions into one single handheld and portable system that ensures easy operation in a wide range of surveillance applications.

With the Model 6201 system it is possible to control up to 256 transmitters, making the system extremely versatile in any surveillance operation.

One particular feature, which is unique to the Model 6201 system, is incorporated into the transmitter: when given a remote control command it transmits its status to the receiving unit. The operator can read this transmitter status in the RX display, thereby being informed of the battery condition, high/low power and mono/stereo and VOX/Cont.

The digital transmission method of coding and encryption eliminates unauthorized listening by a third party. The transmitter is frequency tunable. This means that in case of interference, both the RX and the TX can be retuned to another channel, where range and audio quality is optimum.

The Model 6201 transmitter can be connected to a Elaman Micro Mains Module (Model 6007-5) where long term surveillance operations are required.

Audio Wireless Digital Surveillance System   6201 series

APPLICATIONS

The Model 6201 is ideal for operations requiring high quality audio, high level security, long distance monitoring, portable operation, wireless remote control of transmitters, long term installation, and easy installation.

FEATURES

- Wireless remote controlled functions

  - Mono/stereo

  - High power/low power

  - VOX/Cont. – voice activation or permanent transmission

  - Select between 64 channels

  - Switch between 256 transmitters

- High quality stereo

- High level audio encryption

- Self detection of the optimum channel

- TX with or without AGC

- Transmitter status indication

- Repeater function (Optional)

- Easy to operate

MODEL 6201-1: REMOTELY CONTROLLED RECEIVER WITH DIGITAL RECORDER

The Model 6201-1 system is the most powerful and versatile digital stereo transmission system on the market today. It combines a range of different functions into one single hand-held and portable system.

With the ability to control up to 256 transmitters, the system is able to operate in multiple locations simultaneously. For secure transmission, the Model 6201-1 system uses a special digital transmission method of coding and encryption, which eliminates unauthorized listening by third party.

RECEIVER

The Model 6201-1 is the next generation digital wireless receiver in a new and compact design.

All control buttons are placed on the front of the receiver. The display has a simple layout, which makes it easy for users to operate and utilize the system to its fullest potential.

The Model 6201-1 uses minimal current consumption, both when supplied internally or externally. The high remote control output power, when powered from an external power source, and the receiver's sensitivity, provide excellent audio quality in long range operations.

Audio Wireless Digital Surveillance System   6201 series
RECORDER

This digitally advanced recorder is easily controlled from the front panel of the receiver unit and can be configured to offer anything from 6 to 95 hours of recording, depending on the sample frequency and compression.

One very unique feature is the supplied software, which is Windows based. All Model 6201-1 recordings are stored on internal flash using FAT 16 and the Microsoft wave audio format. This means that each recording can be played via any standard Windows media player.

The Model 6201-1 comes complete with the Elaman Wave Checker application designed to detect if a file has been modified after recording. Not only does the Wave Checker software detect modifications to the actual audio data, but also if the time or date has been modified, which is imperative when submitting as evidence in court.

RECEIVING UNIT

Receiver sensitivity - Mono/Stereo	-110 dBm/-107 dBm
RSSI-meter	Display value from 0 to 100
Remote control RF power	
Internal battery supply/External	0.7 W/5 W
Internal battery	2 x AA
External supply voltage	12 V (8 V min., 15 V max.)
Receiving operating period	Up to 16 hours
Dimensions (HxWxB)	165x82x34 mm/6.5x3.2x1.3 inches

RECORDING UNIT

Recorder memory	2 GB
Analog input output	1/1
Dynamic range	96 dB
Signal/Noise	> 80 dB
Sample frequency	6, 8, 9.6, 12, 16, or 24 kHz
Front end	16 Bit
Audio bandwidth	Half the sample frequency
Recording time	Up to 95 hours, depends on settings
	24 hrs @ 12 kHz sample freq., mono and linear
	12 hrs @ 12 kHz sample freq., stereo and linear
	47 hrs @ 12 kHz sample freq., mono and A-law
	24 hrs @ 12 kHz sample freq., stereo and A-law
Compression	Linear (1:1) or A-law (2:1)
USB Transfer rate	400 KB/second

Audio Wireless Digital Surveillance System   6201 series
TRANSMITTERS
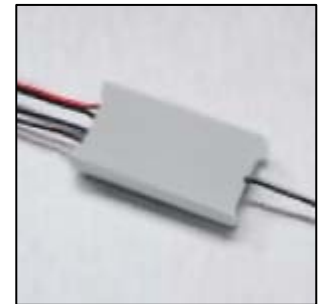
MODEL 6201-2: DIGITAL AUDIO STANDARD TRANSMITTER

The new versatile Model 6201-2 Transmitter can be powered from any power source between 3.6 to 18 VDC, including a car battery. The output power makes it ideal in operations where extended range and penetration is crucial. Range up to 500m.

TECHNICAL SPECIFICATIONS

HI power mode @ 6 V	170 mW/95 mA
LO power mode @ 6 V	12 mW/42 mA
INACTIVE consumption	0.14 mA – average value
Dimensions (HxWxB)	58x30x8 mm/2.3x1.2x0.3 inches

MODEL 6201-3: DIGITAL AUDIO HIGH-POWER TRANSMITTER

The Model 6201-3 High-Power Transmitter can also function as a normal target transmitter where very long range is necessary and also as part of the repeater kit.

After connection to a power supply the high-power transmitter will switch into an initial start mode. To change this setting – use the receiver. Range up to 2 km.

TECHNICAL SPECIFICATIONS

HI power mode @ 12 V	2 W/0.7 A
LO power mode @ 12 V	0.2 W/0.2 A
Dimensions (HxWxB)	100x51x39 mm (without connector)

MODEL 6201-4: DIGITAL AUDIO BODY-WORN TRANSMITTER

The Model 6201-4 Body-worn Transmitter is used as a part of the Model 6201 system. It incorporates all the unique features from the existing standard Model 6201-2 transmitter. The small and lightweight body-worn transmitter intercepts all audio through its external microphone making it extremely suitable for close proximity operations. Range up to 500 m.

TECHNICAL SPECIFICATIONS

HI power mode	Typ. 150 mW
LO power mode	Typ. 10 mW
Microphone	External
Microphone connector	Lemo
Battery	4 x AAA
Kill Switch	On/Off
Dimensions (HxWxB)	84x54x13 mm

Audio Wireless Digital Surveillance System   6201 series

MODEL 6201-5: DIGITAL AUDIO BELT TRANSMITTER

The new versatile Model 6201-5 Transmitter can be powered from any power source between 3.6 to 18 VDC, including a car battery. The output power makes it ideal in operations where extended range and penetration is crucial. Range up to 500m.

TECHNICAL SPECIFICATIONS

HI power mode @ 6 V	170 mW/95 mA
LO power mode @ 6 V	12 mW/42 mA
INACTIVE consumption	0.14 mA – average value
Dimensions (HxWxB)	58x30x8 mm/2.3x1.2x0.3 inches

ACCESSORIES

MODEL 6201-6 - GSM MODEM REPEATER KIT

The GSM Kit consists of:

- 1 GSM modem
- Adapter
- Cables
- Antennas

MODEL 6201-7 - COVERT VEHICLE ANTENNA

MODEL 6201-8 - REPEATER FILTER KIT

The Repeater Module Kit consists of:

- 1 RX filter
- 1 TX filter
- 1 Antenna
- 1 User Guide

Audio Wireless Digital Surveillance System   6201 series

MODEL 6201-9 – BUBBLE GUM TRANSMITTER

The Model 6201-9 Covert "Drop & Walk" Bubblegum Transmitter is an extremely flexible and compact transmitter with an internal rechargeable lithium battery.

The pocket-sized design with all connection wires and battery integrated, makes the transmitter an easy deployable "Drop and walk" solution for covert operations. Simply remove the pin at the top and the transmitter starts to transmit.

TECHNICAL SPECIFICATIONS

High Power, Typ.	150 mW/130 mA - 3.7 VDC
Low Power, Typ.	45 mW/55 mA - 3.7 VDC
Remote sensitivity	-113 dBm
INACTIVE consumption	0.14 mA - average value
Dimensions (L x W x H)	140 x 32 x 8 mm/5.5 x 1.3 x0.3 inches

MODEL 6201-10 – FLEX TRANSMITTER

The Model 6201-10 Covert "Drop and walk" Flex Transmitter is a compact transmitter with an internal rechargeable lithium battery.

The pocket-sized design with all connection wires and battery integrated, makes the transmitter an easy deployable "Drop and walk" solution for covert operations. Simply remove the pin on the top and the transmitter will start to transmit.

TECHNICAL SPECIFICATIONS

|	
High Power, Typ.	150 mW/130 mA - 3.7 VDC
Low Power, Typ.	45 mW/55 mA - 3.7 VDC
Remote sensitivity	-113 dBm
INACTIVE consumption	0.14 mA - average value
Dimensions (L x W x H)	140 x 32 x 8 mm/5.5 x 1.3 x0.3 inches

Audio Wireless Digital Surveillance System   6201 series

THE MODEL 6201-KIT - ADVANCED DIGITAL AUDIO SURVEILLANCE KIT

The Kit consists of:

- 2 Receiver/Recorder
- 2 Standard Transmitters
- 1 TXH Hi Power Transmitter
- 1 Receiver filter
- 1 Transmitter filter
- 2 GSM modems
- 1 Wire
- 6 Antennas
- 1 Stereo microphone
- 3 Power supplies
- 2 Headphones
- 2 Battery Compartments
- 1 User Guide
- 1 Pelicase
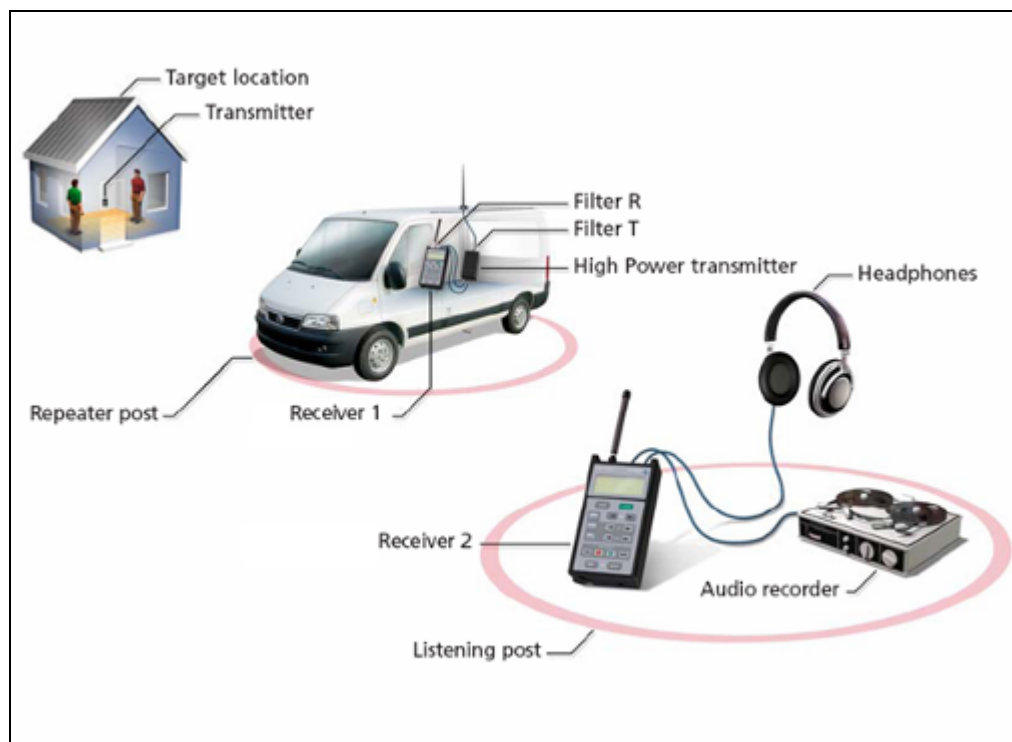
Miniature Digital
Receiver/Recorder

Miniature Digital Receiver/Recorder   Model 6202

MODEL 6202 MINIATURE DIGITAL RECEIVER/RECORDER

The Model 6202 is a five channel standalone receiver/stereo recorder in Model 6006Q housing. It functions as a listening/recording device only and is 100% compatible with our Model 6201 Series of transmitters.

By reducing the physical size of the receiver by half compared to the Model 6201-1 receiver, we have made the miniature receiver even more ideal for use in covert operations. It is easily concealed in a variety of locations, e.g. in a pocket.

Although small in size, we have been uncompromising to all the well-known Elaman features, such as unique audio quality, low power consumption and user friendliness.

The Model 6202 Miniature Digital Receiver/Recorder is intended as an expansion to the current Model 6201 family. Being a receiver without remote control, the small size and ease of use makes this receiver perfect as an additional monitoring device in the front line.

APPLICATIONS

The Model 6202 is ideal for operations requiring:

Audio surveillance

Recording of evidence

Monitoring device in complex operations

FEATURES

Small size

Very simple to operate

Recordings in high quality stereo audio

USB transfer of recorded data

4 PC programmable channels and 1 in-field programmable channel

Timestamps using real-time clock

Close to the scene audio monitoring

Secure transmission

Tamper-proof recordings

Miniature Digital Receiver/Recorder   Model 6202

TECHNICAL SPECIFICATIONS

Receiver

Audio-channel RF carrier	410 to 427 MHz or 310 to 327 MHz (not standard)
Number of permanent channels	Four, PC programmable
Number of in-field channels	One - Finding maximum RF carrier of ch00 - ch63
Audio bandwidth	300 Hz – 9 kHz (for decrease -3dB)
Audio-channel modulation	FSK: f ±53 kHz, 244kb/s (Stereo)
Audio-channel encryption	32x32 fields binary table – No. of combinations: 2.6x1035
Receiver sensitivity	-112 dBm / 0.5µV (Mono), -109 dBm / 0.8µV (Stereo)
Receiver line output	0.7V
Receiver repro output	4 , 1W
Voltage supply	1x AA - 1.5 V nom.
Receiving operating period	Energizer Lithium L91: Up to 10 hours. Depending on battery quality
Int. battery polarity reversal	Without any damage

Recorder

Analogue input/output	1/1
Dynamic range	96 dB
Signal/noise	> 80 dB
Recorder memory	2GB
Sample frequency	6, 8, 9.6, 12, 16 or 24 kHz
Audio bandwidth	Half the sample frequency
Real-time clock precision	+/-2 minutes per month
Data format	Microsoft Wave file
USB Transfer rate	400 KB/Second

Miniature Digital Receiver/Recorder   Model 6202

Connectors

|	
Headphone/Antenna	3.5 mm stereo jack
External antenna	Special antenna switch
Line in/out	3.5 mm stereo jack
PC interface	Mini - USB
Climatic operating conditions	-10°C to +60°C/14F to 140F, internal environment without humidity
Dimensions (LxWxH)	97 x 55 x 18 mm/3.82 x 2.16 x 0.71 inches

PC requirements

Operating system	MS Windows XP
Interface	USB 1.0 or higher

External supply Adaptors to USB

Mains	100 - 240 VAC (90 - 250 VAC if possible)
Car (cigarette)	12VDC with transient and reverse voltage protections.
USB	USB

ASN

Audio Surveillance for
GSM / PSTN / ACC / ADSL Networks

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
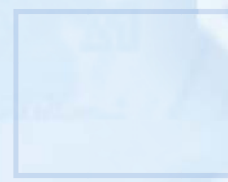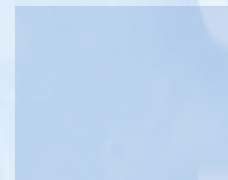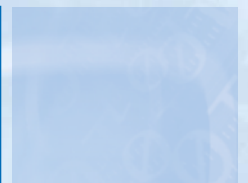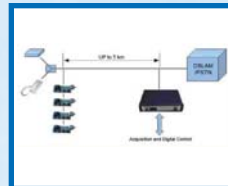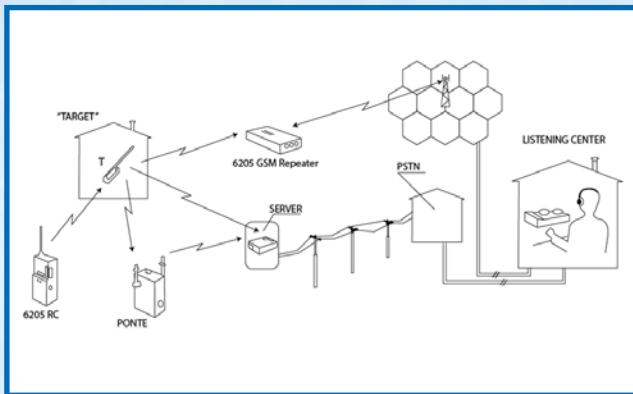
Audio Surveillance for GSM/PSTN/ACC/ADSL Networks

Ref	Number	Description
1	6401	Audio Surveillance GSM Spy Phone
2	6402	Audio Surveillance Via GSM Network
3	6403	GSM Data and Audio Recorder
4	6404	Audio Surveillance Software Manager
5	4016	The Informant
6	6205	Covert Audio Surveillance System With Remote Control
7	6205 RC	Remote Control Transmitter Activator For 6205 Transmitter
8	6206T	Covert Audio Surveillance Micro Transmitter
9	6206 HPT	Covert Audio Surveillance High Power Transmitter
10	6206 Receiver	Dedicate Receiver
11	6206 Programmable Receiver	Adjustable Frequency Receiver
12	6206DS	Local Docking Station
13	6206DSP	Local Docking Station with DSP
14	6206 Server	Micro Room Transmitter System
15	6206 Ponte	RF Repeater for Micro Room Transmitter System
16	6206 GSM Repeater	GSM Repeater System For 6206 Series
17	4004	Multi Room Monitoring via Telephone Lines
18	4005	Audio Monitoring via Power Lines
19	4020	Audio Surveillance Network
20	4029	Universal GSM Module

Audio Surveillance GSM Spy Phone   Model 6401

Incorporating the latest technology we are proud to announce the arrival of the GSM spy phone. These phones have the following features:

- Listen-in to the mobile conversations made/received on the Spy Phones

- Receive copies of all incoming & outgoing SMS (text) messages

- Notification, via SMS, of when a call is made or received with the number of the caller or number dialed

- Listen-in to the surrounding conversations/noises of the 'Spy Phone'

- Notification, via SMS, of when the SIM card has been changed and its new number

- Remotely change the 'AN' (Access Number) by simply sending an SMS (text) command

- No alert to the target as there will be NO logs, lights flashing, noises or vibration when a 'Spy' feature is activated

SMS INTERCEPTION

Simply give the target the Spy Phone and every time they send or receive a text message a copy will be sent to your phone (or a different predefined mobile number). Your copy will include the actual message, the sender/recipient's number and the time & date.

CALL INTERCEPTION

Every time the target makes/receives a call with the Spy Phone you will be notified via SMS with the caller's number or the number the target has dialed and if you ring the Spy Phone from the access number you will be able to intercept the call and hear both sides of the conversation.

ROOM INTERCEPTION

When the Spy Phone is on, but not in use, you can ring into the Spy Phone from the access number and listen-in to the surrounding conversations/noises. This is the latest and most popular method of monitoring mobile phone activity, whether it's to monitor partners/spouses, colleagues or even your children.

## Mobile Phone Examples

Audio Surveillance Via GSM Network   Model 6402

The Model 6402 series is the latest addition to the GSM audio surveillance product line. Elaman has updated the design of established GSM audio surveillance products to increase deployment versatility, while reducing enclosure size and power consumption.

The Unit is suitable for covert audio surveillance in both mobile target and fixed concealment applications. Because the Unit communicates with the listening center over the voice channel of the GSM network the operating range is unlimited. The two microphones supplied with the Unit can be concealed in different areas of the target vehicle or room. The unit can be used anywhere GSM network coverage is available, making it ideal for concealment in buildings and exposed locations where conventional RF devices do not provide sufficient operating ranges for safe monitoring.

Distinguishing characteristics are:

- small size and rugged construction

- exceptional audio quality

- reduced power consumption

- unattended operation, once installed no operator intervention is required
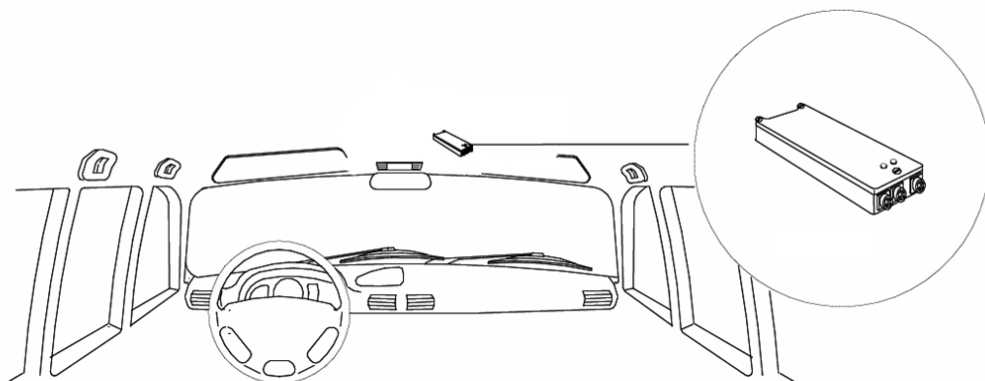
MAIN FUNCTIONS

- Automatic calling to the listening center in case of motor sensor activation, a VOX event or when its digital input - connected to the vehicle electrical circuit - receives any information from it

- Programmable with SMS and with DTMF tones/Transmission of status information via SMS

- Light sensor for discovery detection, sends an alarm via SMS

TECHNICAL FEATURES

Audio monitoring unit for covert audio surveillance using the GSM network, with dual SIM cards capability

Microphones	2, selectable - 7 levels 0+36 dB
Current drain	receiving; approximately 20 mA @ 12 V transmission; 80÷160 mA @ 12 V
Dimensions (mm)	90 x 39 x 11

GSM data & audio Recorder   Model 6403

The Model 6403 can be equipped with an internal solid state recorder for recording during periods when communications are lost or unadvisable. The unit automatically records when audio is detected and the device is not communicating with the listening center. This recording can be downloaded later when conditions allow GSM communications to take place.
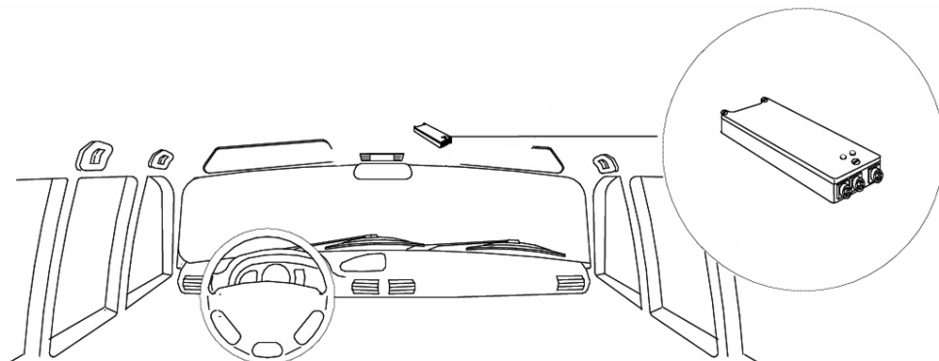
Other distinguishing characteristics are:

- small size and rugged construction

- exceptional audio quality

- reduced power consumption

- unattended operation, once installed no operator intervention is required

MAIN FUNCTIONS

- Automatic calling to the listening center in case of motor sensor activation, a VOX event or when its digital input – connected to the vehicle electrical circuit -- receives any information from it

- Programmable with SMS and with DTMF tones/Transmission of status information via SMS

- Light sensor for discovery detection sends an alarm via SMS

SPECIFICATIONS

Audio monitoring unit for covert audio surveillance using the GSM network, with internal solid state recorder.

Model 6403 Characteristics

Microphones	2, selectable - 7 levels 0÷36 dB
Current drain	Receiving: approximately 20 mA @ 12 V
	Transmission: 80÷160 mA @ 12 V
Dimensions (mm)	90 x 39 x 11

Recorder Characteristics

Bandwidth	300÷3400 Hz (telephone system quality)
Compression algorithm	ADPCM 2:1 at 4 bit
Sample rate	8 KHz
Recording time	2h 20 m

Audio Surveillance Software Manager   Model 6404
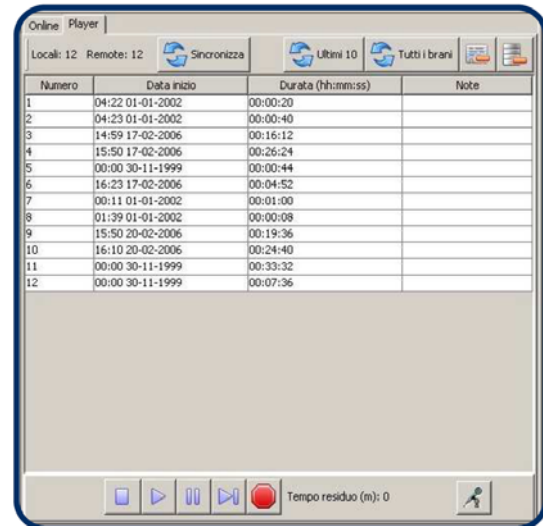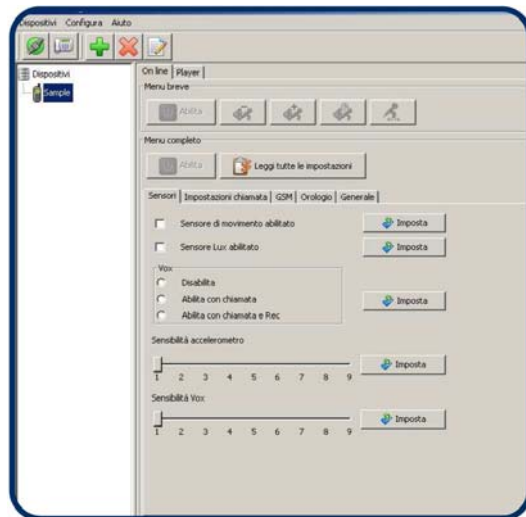
The Model 6404 is a graphic user interface to simplify the operator activity in setting and monitoring the Model 6402 and Model 6403 remote units.

With this software it is possible:

- to manage various units, each of them can be singularly called and set

- to listen-in to the audio of a single target unit in real-time and to record at the same time on the PC hard disk

- to manage the Model 6403 track list, operating on the commands play/record/delete

- to directly download the Model 6403 tracks on the PC hard disk

The Model 6402 is a small and compact device suitable for covert audio surveillance in both mobile target and fixed concealment applications, for safe monitoring.

To enhance the network accessibility and increase the reliability of the Model 6402 communication channels, a second SIM card from a different GSM provider can be installed in the unit. The unit can then be programmed to switch (automatically or manually) between the two GSM providers depending on which provider has the best coverage.

The Model 6402 can communicate to the listening center via SMS and act according to pre-set conditions or alarms arising from its sensors (motion sensor, vox, light sensor, digital inputs connected to the vehicle electrical circuits).

The Model 6403 joins the characteristics of the previously mentioned device with a solid state recorder and high-density flash memory.

The Model 6403 automatically records when audio is detected and the device is not communicating with the listening center. This recording can be downloaded later when conditions allow GSM communications to take place.

1

The Informant   Model 4016

OVERVIEW

Deployed in situations where a user's true mobile number needs to be withheld, The Model 4016 is a convenient means of providing untraceable communications by both voice and SMS text messaging and is ideal for:

- Law enforcement informant and operative management
- Intelligence and counter intelligence work
- Hostage/kidnap communications
- Witness relocation/protection communications
- Providing undercover operatives a covert communications recording facility
- Counter measures against GSM location services

The Informant is a remote call diverter for use with GSM cellular networks. It allows calls to a given GSM mobile to be diverted to another mobile, thereby ensuring the anonymity of the called party.

Where an incoming call has to be monitored e.g. kidnap scenarios, the Informant offers digital recording and live monitoring on all diverted calls.

Key features of the system are:

- Receive and transmit text messages from any GSM network
- Automatically redirect text messages to a predetermined mobile
- Internal logging of all received and transmitted messages
- Logging of all user interactions with the system
- Redirect voice calls to a predetermined number
- Change predetermined number via text message
- Digitally record voice calls. (Analog output also available)
- Operates with any GSM network provider (including pre-paid)
- Totally under the control of the operator. No network involvement
- Compact system, totally portable (12v dc power requirement)

THE INFORMANT

The GSM Call diverter the Informant system consists of:

- The informant communications module containing two GSM terminals and USB interface
- Controller PC running the application software and controlling the individual GSM terminals within the Model 4016

The system controls phones by answering calls, making calls, re-directing text messages and voice calls to other numbers, and logging CLI (caller ID) with or without answering the call. All voice and text information is stored in an easily configured database on a hard disk, for simple interrogation of data.

1

The Informant

# Model 4016

THE INFORMANT COMMUNICATIONS

The Model 4016 module contains two digitally controlled Tri Band GSM phone terminals, each capable of handling voice or SMS text messaging. The received audio and text from one module can be retransmitted by the other module, and vice versa. These modules are able to accept SIM cards, pre paid (or contract), which makes them virtually untraceable and allows easy replacement if any number is compromised. The Model 4016 provides an analog audio output (stereo jack socket) for live monitoring or analog recording. Two SMA aerial connections are provided with suitable aerials. Power required is 12V DC. A switch mode power supply and a vehicle 12v adaptor are supplied with the Model 4016.

CONTROLLER PC

Model 4016 communicates with the controlling PC via the industry standard USB interface. The PC can be equipped with a CD-writer for system backup and 10/100 LAN interface for connection and control over a network.

The software provides secure password protected control over the system configuration, as well as an audit facility that maintains a record of system changes and includes:

Date, time, and incoming, outgoing calls per facility (CLI and DNI)

SIM history (date inserted into module and module IMEI)

Handler history per facility

External time reference interface (Rugby/GPS/Internet)

Record of changes to any 'editable' function (Tamper Proof)

System administrator access. All received text messages

Digital recording and play back of all calls

Built in database to organize data, and aid in presentation of cases
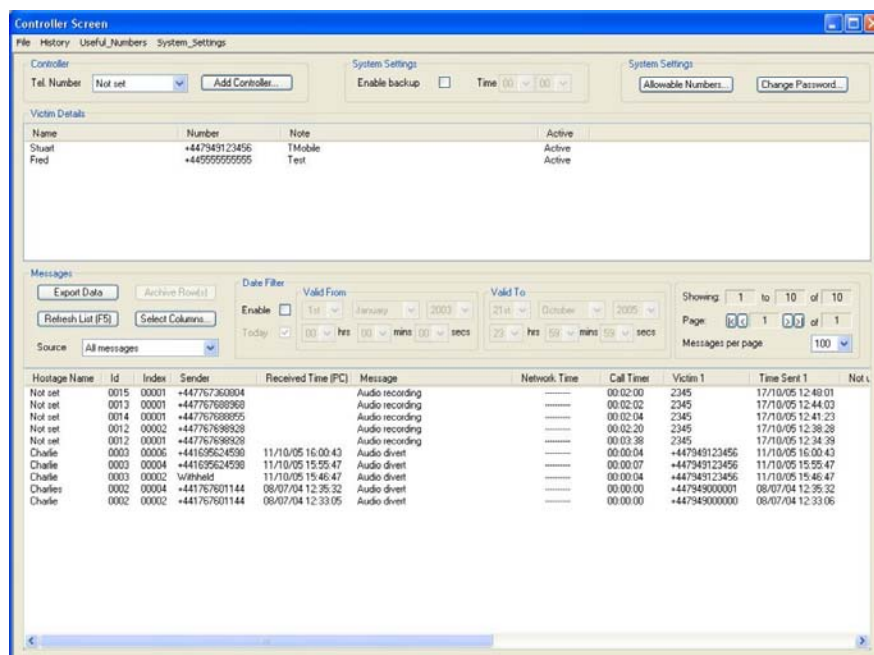
Covert Audio Surveillance System With Remote   Model 6205 Control

The Model 6205 is an audio surveillance system that employs an innovative Time Modulation Very Wide Band (TM-VWB) pulsed transmission technique. The TM-VWB transmission is very difficult to detect or intercept, using RF detectors and other conventional sweeping techniques. This unique transmission technique also drastically reduces power consumption. The operating battery life of the Model 6205 is over 30 times longer than conventional transmitters with the same peak output power level. These characteristics of the system, including integrated remote control, make the Model 6205 system ideal for both short- and long-term concealment installations.

The transmitter has an integrated AC receiver providing remote control of transmitter functions and auxiliary control outputs. This includes the ability to turn the transmitter on and off, extending battery life and helping to prevent detection.

Wide selections of complementary equipment provide many deployment options and increase the versatility and reliability of the Model 6205 system. An example is the ability to re-launch the signal over the cellular network, which provides unlimited operating range.
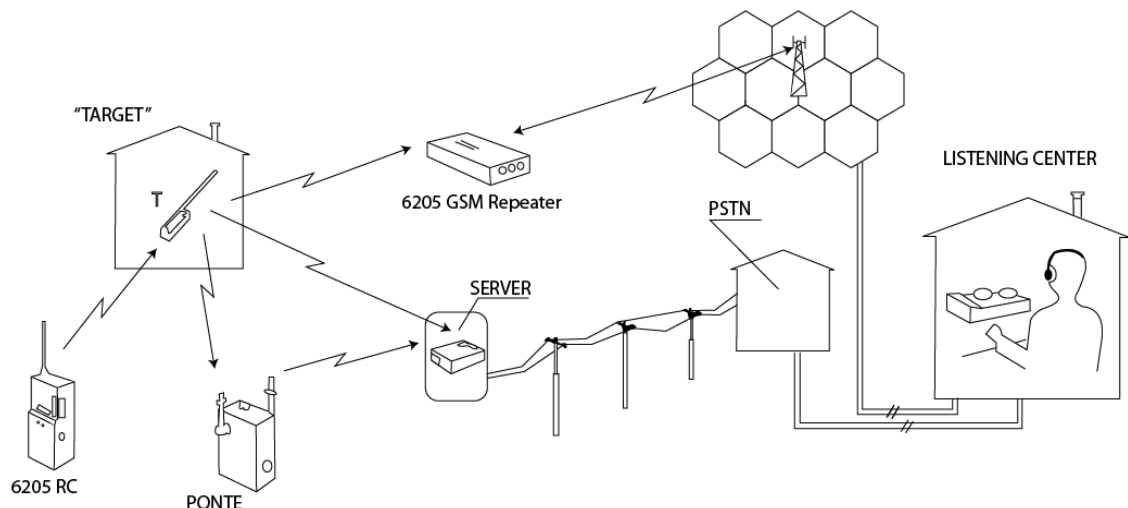
Covert Audio Surveillance System With Remote Model 6205 Control

MODEL 6205 TECHNICAL FEATURES

MODEL 6205 T

Micro transmitter – Concealment transmitter with integrated remote control receiver includes microphone for concealment near the target.

Range	305÷365MHz
Power supply	4÷12V
Stand-by consumption	0.5mA
Consumption	1.2÷3 mA
Output power	10÷200 mW
Audio dynamic range	60dB
Audio bandwidth, -3 dB	50 HZ ÷ 8 KHz
Dimensions (mm)	41 x 17 x 7

MODEL 6205 RECEIVER

Receiver Module – Fixed frequency receiver for the transmitter.

Range	305÷365MHz
Power supply	8÷14V
Consumption	36 mA
Audio level output	200 mVpp
Audio bandwidth, -3 dB	50HZ÷10 KHz
Sensitivity	-90dBm
Dimensions (mm)	73 x 45x 10

MODEL 6205 PROGRAMMABLE RECEIVER

Adjustable frequency receiver Module – Receiver used with the 6205 GSM Repeater and Model 6205 Ponte. Also compatible with Model 6205DS and DSP.

Range	300÷399.9MHZ
Power supply	8÷14V
Consumption	50 mA
Tuning Steps increment	100KHz
Audio level output	200 mVpp
Audio bandwidth, -3 dB	50HZ÷10 KHz
Receive Sensitivity	-90dBm
Dimensions (mm)	73 x 45x 10

Covert Audio Surveillance System With Remote Model 6205 Control

MODEL 6205DS

Local Listening Base – Docking station for either the Model 6205 Receiver or the Programmable Receiver with the signal strength meter. Headphones, recorder and phone line connections are provided. A wide variety of deployment requirements are supported with real-time monitoring, using headphones or unattended operation utilizing the VOX control and recorder.

External Power supply	from 100 to 240 V ac/12 V dc
Internal power supply	1.5 Ah rechargeable batteries
Front panel meter, switch selectable	RSSI(dBm) – B.F. (mV) Vlin.(v)
Recording level	external adjustment
VOX level	external adjustment
Audio outputs	earphone and recorder jack
Internal voltage booster	28 V out
B.F. generator	1V p.e.p. out
Dimensions (mm)	130 x 90 x 40

MODEL 6205DSP

Local Listening base – functionally the same as the Model 6205 DS, the 6205 DSP adds a DSP filter to significantly reduce background noise.

External power supply	from 100 to 240 V ac/12 V dc
Internal power supply	1.5 Ah rechargeable batteries
DSP	4 steps of noise reduction
Front panel meter, switch selectable	RSSI(dBm) – B.F.(mV) Vlin. (V)
Recording level	external adjustment
VOX level	external adjustment
Audio outputs	earphone and recorder jack
Internal voltage booster	28V out
B.F. Generator	1V p.e.p. out
Dimensions (mm)	130 x 90 x 40

Covert Audio Surveillance System With Remote Model 6205 Control

MODEL 6205 SERVER

Phone Line Interface – with a Receiver Module installed, the Model 6205 Server re-launches the received audio through a dedicated phone line.

Power Supply	**18÷60V**
Audio output level	**2 Vpp max**
Level adjustment	**external by screwdriver**
Line isolation	**> 20 M Ohm towards the box**
Dimensions (mm)	**80 x 58 x 27**

MODEL 6205 PONTE

RF Repeater – Using the Programmable Receiver Set turned on the frequency of the micro-transmitter, the Model 6205 Ponte re-launches the range of the transmission.

Power supply	**9÷24V**
Consumption	**<80 mA**
Output power	**1W**
RX sensitivity	**-90 dBm**
Dimensions (mm)	**80 x 58 x 27**

MODEL 6205 GSM REPEATER

Re-launch over the cellular network – using the internal programmable receiver module the Model 6205 GSM Repeater can re-launch the receiver audio from the Model 6205 T over the cellular network. There are many functions that can be programmed, including automatic re-launch when events are detected. Programming is accomplished using DTMF tones. The 6205 GSM Repeater is protected from unauthorized use by a security code, which must be entered before audio monitoring can take place.

Setting	**from Listening Center**
Audio selection	**Microtransmitter: Model 6205 T**
	Auxiliary microphone
VOX sensitivity	**10 levels**
F Set Module	**frequency range: 300÷399.9**
	Step: 100 KHz
Power supply	**6÷36V**
Transmission	**250 mA @ 12V**
Dimensions(mm)	**123 x 64 x 30**

Covert Audio Surveillance System With Remote Model 6205 Control

MODEL 6205 RC

Remote control – RC Transmitter for the remote control of the Model 6205 T

Internal power supply	Ni-Mh 1.5 Ah rechargeable batteries
External power supply	220 vac/12 V cc mains power supply
Out peak power	2 W
Codes	100
Functions	On/Off Microphone tone Microphone gain Power adjustment for Model 6205 T with Model 6205 T var.
Dimensions mm	120 x 60 x 40

MODEL 6205 T VAR

TX Power Adjustment Module – Remote controlled Model 6205 transmitter Transmit power adjustment. Works with 6205 RC.

Cyclical out peak power adjustment of	4 steps pre-defined Microtransmitter Model 6205 T
Dimensions (mm)	22 x 9 x 4

PW 10-12

Power Supply – 10 mA 12 V power supply for the Model 6205 T

| Power available	0.3 W
Input voltage	220 V ac ± 10%
Output voltage	12 V
Max current	15 mA
Dimensions (mm)	44 x 26 x 10

Covert Audio Surveillance System　　　　Model 6206

The Model 6206 is an audio surveillance system that employs an innovative Time Modulation, Very Wide Band (TM-VWB) pulsed transmission technique. The TMVWB transmission is very difficult to detect or intercept, using RF detectors and other conventional sweeping techniques. This unique transmission technique also drastically reduces power consumption. The operating battery life of the Model 6206 T is over 30 times longer than conventional transmitters with the same peak output power level.

The characteristics of the system, including low probability of interception, high audio quality, micro-miniature size and extremely low transmitter power consumption, make the Model 6206 system ideal for both short- and long-term concealment installations.

Wide selections of complementary equipment provide many deployment options and increase the versatility and reliability of the Model 6206 system. An example is the ability to re-launch the signal over the cellular network which provides unlimited operating range.
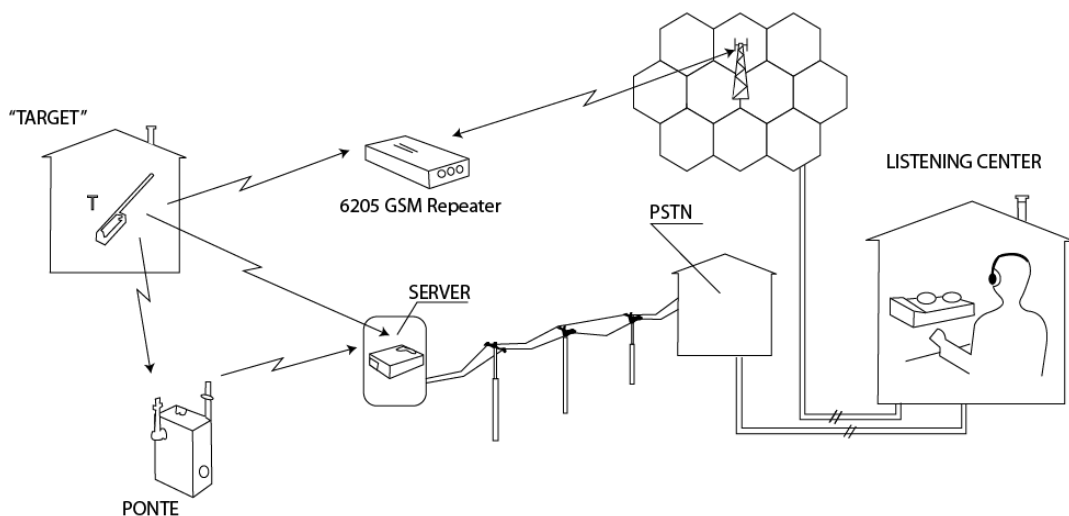
Covert Audio Surveillance System   Model 6206

MODEL 6206 T

Micro transmitter – radiofrequency transmitter with microphone for concealment near the target. Very small and compact, the extremely low power consumption allows for extended operational time without human intervention.
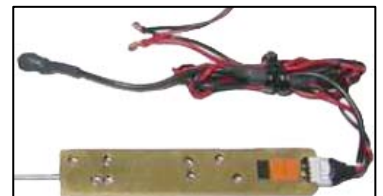
Range	**330÷390 MHz**
Power supply	**4÷12 V**
Consumption	**0.8÷1.5 Ma**
Output power	**10÷200 mW**
Audio dynamic range	**60 dB**
Audio bandwidth, -3dB	**50 Hz ÷ 8 KHz**
Dimensions (mm)	**33 x 10 x 3**

MODEL 6206 HPT

High Power Transmitter - radiofrequency transmitter with microphone for concealment near the target. Because of the internal power booster, this transmitter is capable of increased output power. This system provides a solution to applications where longer distances to the receiving equipment are required and repeaters are not practical. The Model 6206 T HP maintains the same characteristics of the standard Model 6206 T including lower power consumption and high quality audio.

Range	**330÷390 MHz**
Power supply	**6÷12 V**
Consumption	**4÷14 mA**
Output power	**60÷600 mW**
Audio dynamic range	**60 dB**
Audio bandwidth, -3dB	**50 Hz ÷ 8 KHz**
Dimensions (mm)	**65 X 13 X 6**

MODEL 6206 RECEIVER

Receiver – dedicated receiver for either micro transmitter.

Range	**330÷390 MHz**
Power supply	**8÷14 V**
Consumption	**36 mA**
Audio level output	**200 mVpp**
Audio bandwidth, -3dB	**50 Hz ÷ 10 KHz**
Sensitivity	**-90 dBm**
Dimensions (mm)	**73 X 45 X 10**

Covert Audio Surveillance System Model 6206

MODEL 6206 PROGRAMMABLE RECEIVER

Adjustable Frequency Receiver – receiver used with the Model 6206 GSM Repeater and Model 6206 Ponte (See below). Also compatible with Model 6206 DS and DSP.

Range	**300÷399.90 MHz**
Power supply	**8÷14 V**
Consumption	**50 mA**
Audio level output	**200 mVpp**
Audio bandwidth, -3dB	**50 Hz ÷ 10 KHz**
Sensitivity	**-90 dBm**
Dimensions (mm)	**73 X 45 X 10**

MODEL 6206 DS

Local Listening Base – docking station for either the Model 6206 Receiver or programmable receiver connections for the headphones, recorder and phone line are provided. Real-time monitoring with headphones or unattended operation utilizing the VOX control and recorder allow for flexibility in its use that can handle practically any situation.

External power supply	**from 100 to 240 V ac/12 V dc**
Internal power supply	**1.5 Ah rechargeable batteries**
Front panel meter, switch selectable	**RSSI (dBm) – B.F. (mV) Vlin. (v)**
Recording level	**external adjustment**
VOX level	**external adjustment**
Audio outputs	**earphone and recorder jack**
Internal voltage booster	**28 V out**
B.F. generator	**1 V p.e.p. out**
Dimensions (mm)	**130 x 90 x 40**

MODEL 6206 PONTE

RF Repeater – Using the Modulo F Set tuned to the frequency of the micro-transmitter, the Model 6206 Ponte extends the range of the transmission.

Power supply	**9÷24 V**
Consumption	**< 80 mA**
Output power	**1 W**
RX sensitivity	**-90 dBm**
Dimensions (mm)	**80 x 58 x 27**

Covert Audio Surveillance System　　　　Model 6206

MODEL 6206 DSP

Local listening base with DSP – functionally the same as the Model 6206 DS, the 6206 DSP adds a DSP filter to significantly reduce background noise.

External power supply	**from 100 to 240 V ac/12 V dc**
Internal power supply	**1.5 Ah rechargeable batteries**
DSP	**4 Steps of noise reduction**
Front panel meter, switch selectable	**RSSI (dBm) – B.F. (mV) Vlin. (v)**
Recording level	**external adjustment**
VOX level	**external adjustment**
Audio outputs	**earphone and recorder jack**
Internal voltage booster	**28 V out**
B.F. generator	**1 V p.e.p. out**
Dimensions (mm)	**130 x 90 x 40**

MODEL 6206 SERVER

Phone Line Interface - using the Model 6206 Receiver the Model 6206 Server re-launches the received audio through a dedicated phone line.

Power supply	**18÷60V**
Audio output level	**2 Vpp max.**
Level adjustment	**external by screwdriver**
Line Isolation	**>20 M Ohm towards the box**
Dimensions (mm)	**80 x 58 x 27**

MODEL 6206 GSM REPEATER

Re-launch over the cellular network – using the programmable receiver the Model 6206 GSM Repeater can re-launch the received audio from either the Model 6206 T or the Model 6206 HPT over the cellular network. There are many functions that can be programmed, including automatic re-launch when events are detected. Programming is accomplished using DTMF tones.

Audio selection	**microtransmitter: Model 6206T/Model 6206 T HP auxiliary microphones**
VOX sensitivity	**10 levels**
F set Module	**Frequency range: 300÷399.9. MHz step: 100 KHz**
Power supply	**6÷36 V**
Transmission consumption	**250 mA @ 12 V**
Dimensions (mm)	**123 x 64 x 30**

Multi Room Monitoring Via Telephone Lines   Model 4004

The Model 4004 Wired Room Monitoring System is a highly professional system designed for remote monitoring where full transmitter control via standard PSTN lines is needed.

Model 4004 is designed to allow the user to install up to 8 transmitters, using a combination of active phone lines or spare wires and mains lines.

The individual transmitters can be switched on and off remotely.

The modular Model 4004 system consists of transmitter(s), one receiver module, PSTN modules and of control software for PC.

Transmitters

The Model 4004 transmitters incorporate the following advanced features: scrambler, AGC and remote control receiver.

The remote controlled functions of the transmitters are power on/off and scrambler on/off.

Two different types of transmitters have been developed for the Model 4004 system. The Model 4004 Wired Monitoring transmitter (HWM) is to be used on active phone lines or spare wires. The Model 4004 Carrier Current transmitter (HCC) is to be used on active mains lines.

RECEIVER SYSTEM

The RX module is a small, flat and compact cabinet, which is only 44 mm high. One RX module handles 2 transmitters simultaneously.

The RX module has the following features:

- Target line interface for both PSTN and spare wires (HWM) and mains wires (HCC)

- Dual tuner - each with 4 channels

- High impedant input for LF audio. Enables monitoring of PSTN line without transmitter

- Audio descrambler

- Remote control of transmitters

- Noise masking for HWM transmitters

- Line output for recording

- Output for headphones

It is possible to have both HWM and HCC transmitters operating at the same time, enabling the operator to monitor, for example, one HWM transmitter and one HCC transmitter simultaneously.

The RX module is powered from an external low voltage source. The RX module is delivered with a mains adapter, but can also be powered from a car battery.

Multi Room Monitoring Via Telephone Lines   Model 4004

PSTN MODULE – REMOTE SET-UP

The PSTN module provides a link from the listening post to the monitoring site. One PSTN module is needed at the monitoring site and one at the listening post. The PSTN module can handle 2 lines simultaneously and transfers both the audio from the transmitter and the remote control commands.

The PSTN module at the monitoring site can also be dialed up from standard telephone equipment, including mobile phones. Access to the system is done by means of the telephone keypad. This feature enables the operator to make a quick control of the TX / RX / PSTN set-up.

The PSTN module is very easy to install – it is connected to the receiver via one single cable, containing all the required signals and power.

CONTROL SOFTWARE

All facilities in the Model 4004 system can be software controlled via a PC. The control set-up can be provided by connecting the control PC directly to the receiver module or to the local PSTN module at the listening post.

APPLICATIONS

Model 4004 is ideal for operations requiring:

- Single room monitoring
- Multi-location room monitoring
- Phone lines, spare wires and mains lines
- Local set-up
- Remote set-up
- Undercover "black-box" set-up

FEATURES

- 4 active transmitter channels
- High audio quality
- Small size transmitters
- Audio scrambling
- Remote control of transmitters
- PSTN module for link of intercepted audio to remote listening post
- Current re-injection on phone lines for system security
- Small "black-box" receiver unit
- Control of software via PC
- Easy to install
- Easy to use

Multi Room Monitoring Via Telephone Lines Model 4004

SPECIFICATIONS

RX module	Number of channels	4
	Frequency range	110-240 kHz
	Sensitivity	10 dBuV / 20 dB SINAD
	Number of built-in tuners	2
	Modulation	FM
	Remote control transmitter	28 kHz, OOK
	Serial interface to PC / PSTN module	RS-232
	Power source	7-11 VAC or 10-15 VDC
	Dimension (HxWxD)	44x130x164 mm / 1.7x5.1x6.5 inches
Transmitters General data	Number of channels	4
	Frequency range	110-240 kHz
	Type of modulation	FM
	Audio scrambling	Frequency inversion
	Remote controllable	Yes
	Packing	Shrink tube, black
HWM specific data	Transmitted power	50 mVRMS into 100 Ω
	Line voltage range	6-80 VDC
	Dimensions (HxWxD)	Approx. 7.5x32x20 mm / 0.3x1.3x0.8 inches
HCC specific data	Transmitted power	500 mVRMS into 2 Ω
	Mains voltage range	85-265 VAC
	Dimensions (HxWxD)	Approx. 15x35x23 mm / 0.6x1.4x0.9 inches
PSTN module – Remote set-up	PSTN interface	Global compliant, SW controlled
	Number of PSTN lines	2
	Data mode	FSK / DTMF
	Tape control	VOX controlled, adjustable from PC SW
	Serial interface to PC / RX module	RS-232
	Dimension (HxWxD)	44x130x84 mm / 1.7x5.1x3.3 inches

Audio Monitoring Via Power Lines   Model 4005

FEATURES

- Micro-size FM transmitter
- FM/PLL signal transmission
- Parametric equalizer
- Scrambled model available
- Long range
- Proven technology
- Smart VOX with noise cancellation

OPTIONS

STANDARD TRANSMITTER MODEL 4005-TXS

Model 4005-TXS is the standard micro transmitter module with onboard audio circuits.

EXTENDED MICROPHONE MODEL 4005-TXR

Model 4005-TXR is a module where the miniature microphone element is separated from the transmitter board and mounted on 2 meters of wire, making counter-measure detection extremely difficult.

SCRAMBLED MODULE MODEL 4005-TXS-S AND MODEL 4005-TXR-S

In order to maintain a low probability of detection and to counter casual interception, We have designed a micro-sized circuit for scrambling intelligence audio with minor degrading of the audio quality.

Mains based operational set-up
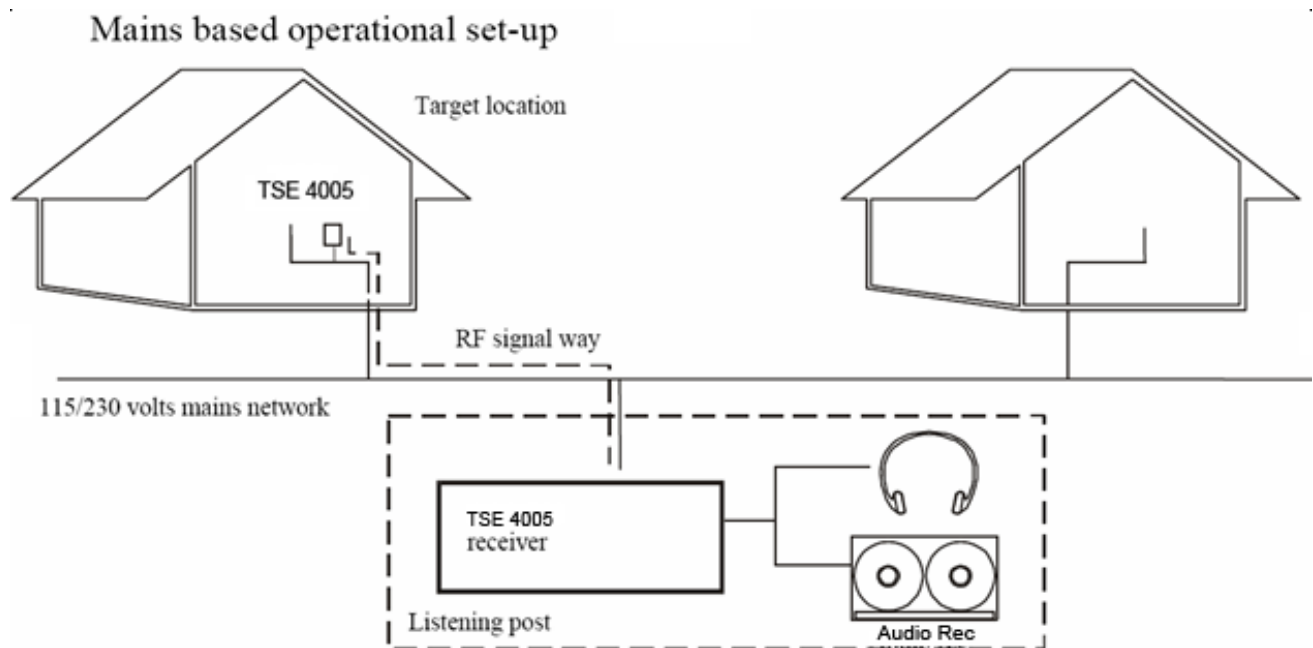
Audio Monitoring Via Power Lines   Model 4005

TECHNICAL SPECIFICATIONS

RECEIVER MODEL 4005-RX	
Carrier frequency to be specified by customer or standard	140 kHz +/- 500 Hz
Sensitivity (fmod. = 1 kHz, deviation +/- 3 kHz)	- 82 dBm at 20 dB S/N
Sensitivity (fmod. = 1 kHz, deviation +/- 3 kHz)	- 48 dBm at 50 dB S/N
Selectivity - 30 dB	+/- 20.65 kHz.
Common mode rejection	70 dB
AM rejection (Vin = - 20 dBm, AMmod = 30 %)	40 dB.
Distortion (Vin = - 20 dBm, deviation = +/- 3 kHz)	0.55 %, 1 kHz
Input impedance	275 ohm
Audio frequency response - 3 dB (line out)	300 Hz to 5 kHz
Output voltage line out (deviation = +/- 3 kHz)	700 mV (no load)
Output voltage tel. out (deviation = +/- 3 kHz)	230 mV (600 ohm load)
Output impedance tel. out	600 ohm
Output impedance line out	1 kohm
Output impedance headphones out	47 ohm
Parametric equalizer frequency adjustment range	100 Hz to 10 kHz
Parametric equalizer Q adjustment range	0.4 to 4 kHz
Parametric equalizer gain adjustment range	+/- 15 dB
Meter range RF level	- 80 to -20 dBm
Power supply	115 / 230 VAC (50 - 60 Hz)
Dimensions	265 x 255 x 82 mm / 10.43 x 10.04 x 3.23 inches
Weight	2.8 Kg. / 6.17 lbs.

# Audio Monitoring Via Power Lines   Model 4005

TRANSMITTER MODEL 4005-TXS	
Carrier frequency	140 kHz +/- 500 Hz
Output impedance	10 ohm
Output voltage (140 kHz sine)	500 mV RMS into 10 ohm.
Max. modulation	+/- 5 kHz
Frequency response	150 Hz to 3.5 kHz - 3 dB
Current consumption	3 mA DC
Audio amplifier AGC range	< 66 dB
Microphone vibration sensitivity	< 66 dB
Dimensions Model 4005-TXS	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
Dimensions Model 4005-TXR	14 x 9 x 7 mm / 0.55 x 0.35 x 0.27 inches
	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
Dimensions Model 4005-TXS-S	14 x 9 x 7 mm / 0.55 x 0.35 x 0.27 inches
	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
	35 x 12 x 4 mm / 1.37 x 0.47 x 0.16 inches
Dimensions Model 4005-TXR-S	14 x 9 x 7 mm / 0.55 x 0.35 x 0.27 inches
	42 x 22 x 12 mm / 1.65 x 0.86 x 0.47 inches
	35 x 12 x 4 mm / 1.37 x 0.47 x 0.16 inches

Audio Surveillance Network   Model 4020

1 PRODUCT DESCRIPTION

Audio Surveillance Network (ASN) is a complete solution for law enforcement agencies to collect, transmit, store and analyze audio coming from distant targets at a centralized location. ASN consists of both hardware and software elements suitable for building a countrywide audio surveillance system, or to conduct stand-alone tactical operations. A typical ASN layout consists of various target locations, remote location sites, a central headquarters and a set of observer terminals.
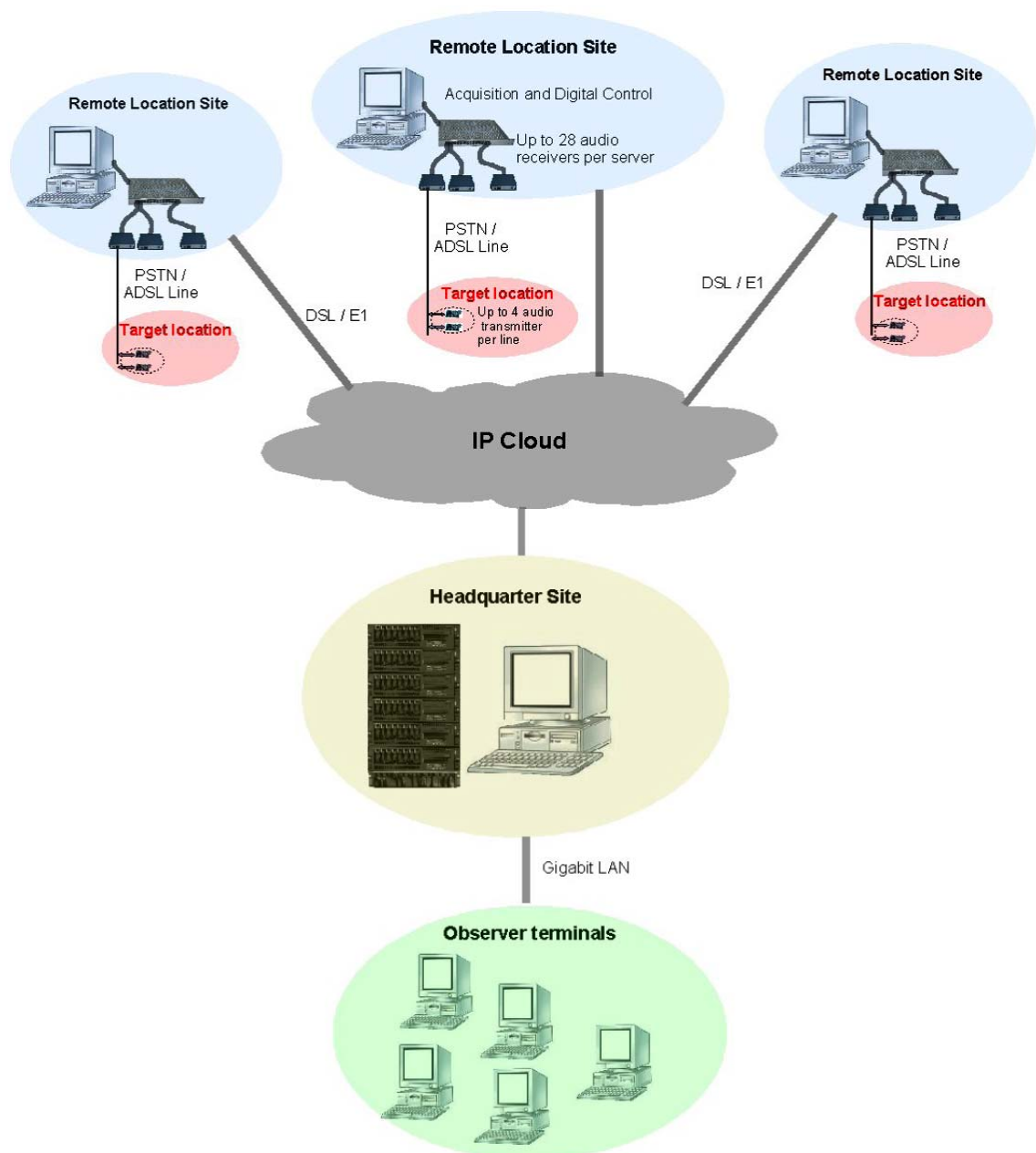
Audio Surveillance Network   Model 4020

Audio is captured form a target location by audio transmitters containing tiny microphones, and transferred to the remote location site over a telephone line. Usually, a remote location site exists near a location exchange. It contains a large bank of receivers to collect audio from various target locations. The received audio channels are digitized and stored in a remote location server. The audio data is sent to the headquarters using a DSL or E1 link. The headquarters stores digital audio coming from a number of remote locations in a huge database. Observer terminals access the headquarters database using custom written audio surveillance software. An ActiveX based audio player offers audio analysis capability and on-line comment tag submission to the observers. ASN is the only system of its kind that offers real-time audio surveillance from a number of distant targets from beginning to end.

2 SYSTEM ELEMENTS

The Following system elements have been developed to build an ASN.

TARGET LOCATION

- Xad Audio Transmitter (XTL-ATx)

REMOTE LOCATION SITE

- Xad Audio Receiver (XKL-ARx)
- Xad Audio Acquisition Platform (XRL-ACQ)
- Xad Remote Location Server (XRL-SER)
- Xad Remote Location Software (XRL-SW)

HEADQUARTERS

- Xad Headquarter server (XHQ-SER)
- Xad Headquarter Software (XHQ-SW)

2.1 AUDIO TRANSMITTERS (XRL-ATX)

Audio is collected from the target location using Audio Transmitters (XTL-ATx). Each transmitter contains a high gain, sensitive microphone. It is installed on the target line irrespective of the location and polarity. The installation does not interfere with the normal operation of telephone equipment. XTL-ATx comes in two versions – XRL-ATP works with standard POTS, while XRL-ATA is designed for ADSL enabled telephone lines. For major operations, up to four XRL-ATx units can be deployed per target. A user can remotely activate the desired XRL-ATx leaving the others in standby mode.

Each XRL-ATx has built-in intelligence to sense the line status and start-stop its operation independent of the user intervention. Salient features of an XRL-ATx are listed below:

- Small size 16 x 9 mm
- Low current consumption (active 4mA, standby 4µA
- High gain microphone 48 dB
- Polarity free installation
- Seamless operations on PSTN and ADSL enabled lines
- Automatic start-stop and mute functions
- Choice of 4 transmitters per line

# Audio Surveillance Network   Model 4020
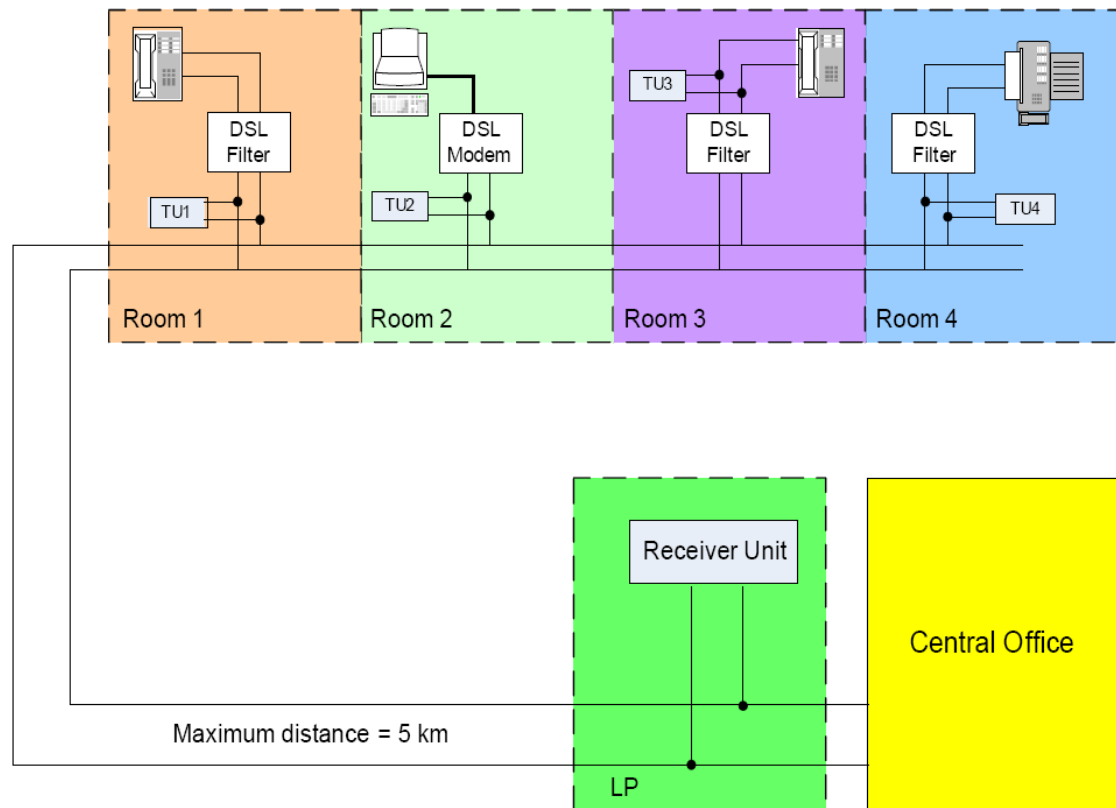
2.2 AUDIO RECEIVER (XRLS-ARX)

Audio Receiver (XRLS-ARx) is a very low noise state-of-the-art receiver to extract clear audio signals from noisy telephone lines at a distance of 5 Km from the target location. XRLS-ARx outputs receive audio to the headquarters and phono sockets. There are manual control buttons on the XRLS-ARx to switch between multi-transmitter installations or mute all, if required. XRLS-ARx also provides a digital interface which is used to control XRLS-ARx from the headquarte's software. Main features of XRLS-ARx are listed below:

- Transparent operations on PSTN and ADSL enabled lines
- Standalone and network operation
- Automatic voltage control
- Manual button control for standalone operations
- Digital control interface
- Logic circuitry to control up to 4 audio transmitters
- Built-in digital voltmeter
- Audio Vu-meter
- Automatic volume control
- Phono socket
- Headphone socket

Audio Surveillance Network   Model 4020
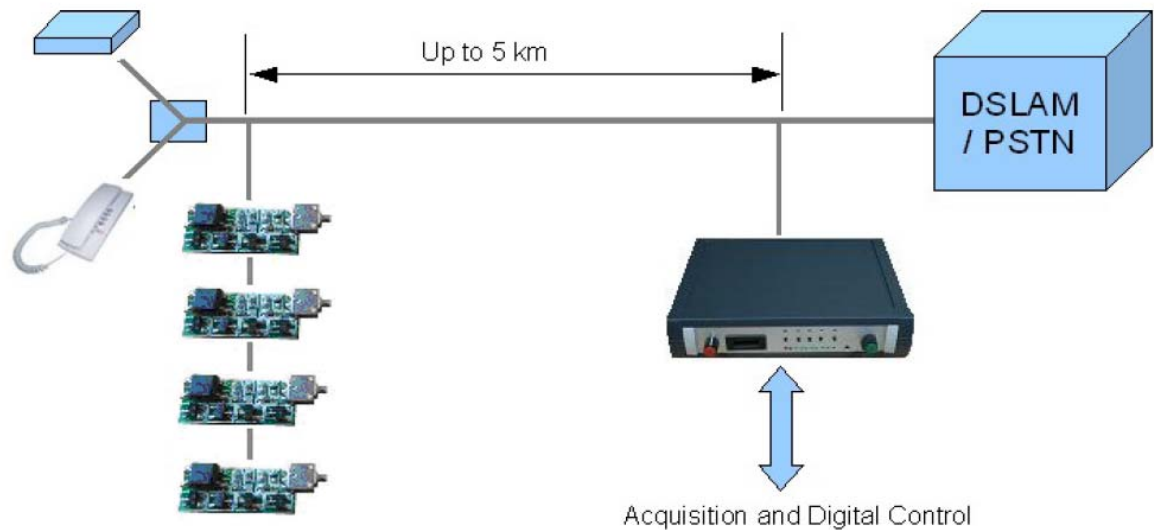
2.3 AUDIO ACQUISITION PLATFORM (XRLS-ACQ)

The Audio Acquisition Platform (XRLS-ACQ) is a 1U height 19 inch rack mount unit. It consists of a custom built PCB to acquire, digitize and transfer 28 audio channels to a Remote Location Server (XRLS-SER)

ACQ uses four 8-bit analog to digital converters to digitize the audio channels. The digital audio samples are buffered before sending them to XRLS-SER using a USB 2.0 interface. Main features of the XRLS-ACQ platform are listed below:

- 19 inch rack mountable casing
- Parallel A/D conversion of 28 analog audio channels
- 64KB buffer memory to ensure data continuity
- High speed data transfer using USB2 interface
- Integrated interface for audio and transmitter control using RJ45 ports
- Acquisition status display

Audio Surveillance Network   Model 4020

2.4 XAD REMOTE LOCATION SERVER (XRLS-SER)

The Remote Location Server (XRLS-SER) is a powerful machine built with 64 bit AMD 2.0GHz dual core processor and Linux operating system. The industrial PC casing with front and rear fan support provides ruggedness to operate in extreme temperatures expected at a remote location site. The remote location server is lockable at the front providing extra security to the system.

2.5 REMOTE LOCATION SERVER SOFTWARE (XRLS-SW)

The remote location server software (XRLS-SW) runs on XRLS-SER and controls the main functionality of a remote location site. It is written in C++ under a Linux operating system. For security reasons, a user interface has not been built in the remote location software. The remote location operator uses a console window to execute commands for each task. Main features of XRLS-SW are listed below:

- Command line interface for added security and reliability
- Security database installation without user interaction
- Built under Linux for easy integration, faster speed and stability
- Database storage for systematic archiving of audio streams
- Automatic audio acquisition and uploading according to the headquarters schedule
- Thread based real-time audio encoding and uploading
- Local audio offload option for emergency
- Segmentation of audio streams into packets for quick transmission
- Synchronized time stamping of audio data cross the ASN
- Lossless compression of audio data for integrity and completeness
- Remote control of attached audio devices from the HQ software
- Password protection, activity logging and secure reporting to HQ software
- Memory management and automatic deletion of contents
- Separate audio device set-up and local testing utility

TRANSMISSION HARDWARE

The requirement for transmission hardware (E1 routers, DSL and related components) may differ in each case. Depending upon the requirement, we can specify the transmission hardware to be used in an ASN.

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Audio Surveillance Network   Model 4020

2.6 HEADQUARTER SERVERS (XHQ-SER)

The HQ is the main control center of the ASN. It is connected to remote location sites in a star network topology. The XHQ-SER comprises two database servers, a storage server, and an application server. The database servers are similar in specification to XRLS servers. The storage configuration is tailored according to the requirements. To build redundancy, the database servers are connected to the storage server in cluster configuration. The application server is an apache based server, which hosts web-based HQ server software. It allows the observer terminal to access the huge audio database.

2.7 HEADQUARTER SERVER SOFTWARE (XHQ-SW)

The headquarter server software (XHQ-SW) provides the main control of the ASN. XHQ-SW software is accessed by the Microsoft Internet Explorer through a Web-based environment. The complex system information remains hidden behind a user friendly graphical user interface (GUI). All the software pages are interconnected. A user can navigate across them using a dynamic menu bar. The menu items vary according to the user access privileges.

The main features of the XHQ-SF are listed below:

- Secure login feature with individual access rights
- Personalized home page portal for each user
- Easy and dynamic remote location site creation
- Site and target location based user access
- Hierarchical user and group management structure
- Entity based access rights and on the fly user creation
- Automatic information update across the network
- Time, tag and target based audio content search
- ActiveX based audio player with audio range control
- Custom audio play list with forward/backward audio search options
- Real-time audio access and analyze feature
- Observer comment tagging and retrieval
- Audio save option for privileged users
- Automatic e-mail feature within the groups
- Audio transmitter control for each remote location site
- Network site status reporting
- Advanced audio download scheduler for target locations
- Activity log and reporting

2.8 OBSERVER TERMINALS (OT)

Observer Terminals are standard PCs connected to the HQ server in an intra net configuration. They access XHQ-SW to access and listen to audio records stored in the HQ database. ASN setup does not require an installation of the client software. Updates are automatically reflected to the observer terminals when XHQ-SW is updated on the headquarter application server.

Universal GSM Modules   Model 4029

UNIVERSAL GSM MODULE

The Model 4029 Universal GSM module is a multiple function remote controller and surveillance device. The unit can be controlled by DTMF tones over the GSM network and be used as an audio repeater at the same time.

The Universal GSM module can be dialed up from any telephone on the public telephone network.

FEATURES

- Both the GSM module and external equipment can be controlled by DTMF tones through the GSM network.

- Two line outputs and two line inputs are available for controlling and listening to external equipment, such as the Model 6202-1 Receiver.

- To control other external equipment, the Universal GSM module also has an internal 3-pin relay and an internal 12 VDC, 00 mA supply source, controllable via DTMF tones.

- An audio input for our MPA (Microphone Pre-Amplifier) is available.

- A Target PSTN input (POTS) for monitoring of phone lines is available.

- A Sense input activated by a high or low level can call a preprogrammed phone number.

- The module is prepared for RS232 and Model 6006S On/Off commands trough the RJ45 connector.

FEATURES CONTINUED

- The GSM dial-in can be protected by a pin code or by preloading up to eight phone numbers that are allowed to call the modem

- The module can be set into VOX mode that will make the unit dial out automatically when the audio level on any of the two line inputs, MPA and PSTN is above a certain level for a specified amount of time. If the VOX function is activated, a preprogrammed phone number can be dialled automatically, the 12 VDC turned on or the internal relay can be switched

- The module has an alarm handler. If the alarm function is activated, a pre-programmed phone number can be dialed automatically, the 12 VDC turned on or the internal relay can be switched

- The module is also prepared for sending SMS during alarm handling

1

# Universal GSM Modules   Model 4029

- All settings can be adjusted by the supplied PC set-up program. Functionalities can be changed or added by uploading new firmware

- The Universal GSM module comes as default with two antennas: one portable antenna and one discreet car antenna

TECHNICAL SPECIFICATIONS

Power requirements	Externally powered
DC input range	3.6 – 15 V
Power consumption leveling for max power save/control	By e.g. the WAVECOM Wireless CPU Module Q2686
Power consumption max, Active	TBD
Power consumption max, Standby	TBD
Internal rechargeable backup battery	3.7V Li-Po with 2100 mAh.
GSM Bands	850/900/1800/1900 MHz
Audio Input output level	0 dB, 775 mV, adjustable
ADC	10 bit
SIM Card Interface	3V / 1.8V
Relays (In general)	30 VDC, 1A
Antenna	SMA connector
USB	Mini USB
Control (RS232/Relay1)	RJ45
Sense in	2 way screw terminals
Relay 2	3 way screw terminals
12 VDC/100 mA out	2 way screw Terminals
Target PSTN (POTS in)	2 way screw Terminals
Line in/Line out/MPA	Mini jack 3.5mm
Power	2.1mm DC Connector
Dimensions (H x W x D)	29 x 105.4 x 80 mm

ASMD

Audio Surveillance Microphones & Deployment Kits

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
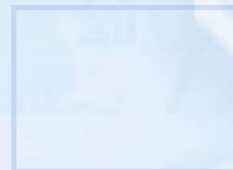
Audio Surveillance Microphones & Deployment Kits

Ref	Number	Description
1	6303-1	Fiber Optic Microphones 10m Length
2	6303-2	Fiber Optic Microphone 20m Length
3	6303-probe	Fiber Optic Microphone 10m Including Probe
4	6303-st	Fiber Optic Stereo Stethoscope Microphone
5	6303-ext	Fiber Optic Extension Cable 100m
6	6303-amp	Amplifier With Volume Control
7	6303-rc	Digital Recorder Integrated Into The Amplifier
8	6303	Fiber Optic Microphones Kit
9	6303ST	Fiber Optic Microphones Stethoscope
10	6303 kit	Tactical Fiber Optic Kit
11	6301	Advanced Stereo Stethoscope System
12	6302	Tactical Stereo Audio Amplifier
13	6304	Tactical Audio Microphone Kit
14	6305	Tactical Stereo Accelerometer Kit
15	6804	Body-Worn Array Microphone
16	6803	Clarifying Array Microphone
17	6802	Directional Microphone Array System
18	6806	Steerable Array Microphone
19	6807	stereo contact Microphone

TSU INDEX

20	2102	Keyhole Microphone Installation Kit
21	2103	General Purpose Microphone Installation Kit
22	2105	Complete Audio Deployment Kit
23	2106	Complete Vehicle Audio Deployment Kit
24	2108	Concealment Fixing Screws
25	2121	Manual Covert Drilling Kit
26	2122	Automatic Covert Low Noise Drilling Kit
27	2131	Complete Covert Carpets and Floor Kit

Fiber Optic Microphone Kit
Model 6303

The Model 6303 Optical Microphone is for surveillance operations and applications requiring RFI/EMI immunity

- Undetectable by conventional means
- EMI/RFI immunity
- Ultra-sensitive microphone
- Excellent sound accuracy
- Miniature size, lightweight
- Easy to conceal
- Fiber length - up to 1 KM with minimal quality loss
- Optional built in audio recorders
- Optional microphone heads

Reflective Membrane
Distance
Reflected Light
Optical Head
Optical Fiber
Photodetector
Awarded worldwide patents
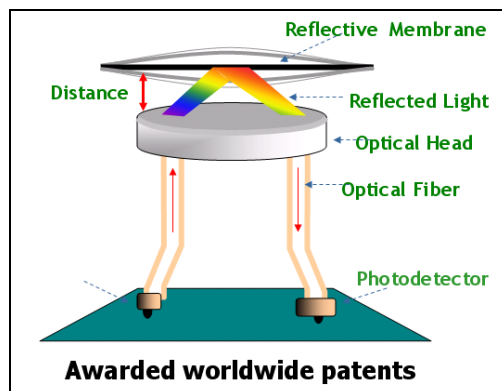
Model's ultra-sensitive Model 6303 optical microphone captures a range of sounds with excellent sound accuracy from normal conversation to soft whispering or the shuffling of papers. The Model 6303 is based on Model's unique optical sensor technology. A beam of light is sent through an optical fiber to a sound sensitive membrane. Sound signals causes the membrane to vibrate and modulate the intensity of the light reflected off the membrane, which is then translated into an electrical signal.

The Model 6303 delivers a high signal to noise (S/N) ratio, so even very low-level sound inputs can be heard clearly and accurately from many meters away. With an omni-directional polar pattern, the Model 6303 can capture sound from all directions, thereby maximizing voice representation. The Model 6303's excellent frequency response provides true-to-source sound reproduction.

The Model 6303 cannot be detected by electromagnetic means, since the microphone head neither contains metal parts nor generates electromagnetic fields, and is separated from its electronic components by many meters of optical fiber. With its miniature dimensions and versatile configurations, the Model 6303 can be installed in a variety of ways to elude discovery, both by the naked eye and sophisticated detection equipment, such as non-linear junction detectors. Because of its RFI and EMI immunity, the Model 6303 can continue to operate even in the harshest of environments, without any effect on its performance. These capabilities and characteristics have made the Model 6303 the microphone of choice among law enforcement agencies.

Fiber Optic Microphone Kit   Model 6303

The Model 6303 can be customized to your needs, with the following variables: fiber length, fiber type, fiber color, and the head type. Model 6303 options include: oise reduction software, extension cable, Model 6303 Extra with built-in battery and volume control and recording device.

It can be used for a variety of applications, including body and room surveillance through the wall

TECHNICAL SPECIFICATIONS

Polar Pattern	Omni-directional
Frequency Range	250 - 4500 Hz
S/N Ratio	67 dB(A) @ 1 KHz 94 dB SPL
Sensitivity	200-850 mV/Pa
THD	<1% at 84 dB SPL
Max. Acoustic Pressure	130 dB SPL
Output Impedance	<100 Ω(standard line input)
Supply Voltage	9-12 V DC
Current Drain	80 mA
Operating Temperature	-20°C to +60°C
Humidity	Up to 95% R.H. @ 40°C
MTBF	>100,000 hours
Standard Optical Fiber Length	10 up to 1000 meter
Dimensions of Microphone Head	Length - 16 mm Diameter - 6.0 mm Weight - 1 gram
Dimensions of Extension Tube	Length - 6 mm Diameter -1.5 mm

Fiber Optic Microphone Kit

Model 6303

DIFFERENT PRODUCTS

6303-MICROPHONE–10/20 M

6303-PROBE MICROPHONE

6303-MICROPHONE AMPLIFIER MICROPHONE

6303-STETHOSCOPE

6303-ANTI NIGHT VISION MICROPHONE

6303-EXTENSION CABLE

Fiber Optic Microphone Stethoscope   Model 6303 ST

INTRODUCTION

"Stethoscopes" are used in surveillance applications for listening through walls, doors, windows or other obstacles. They are used when the only possible way to listen to people in a room is from the outside or when people are trapped in a collapsed structure. Stethoscopes can permanently be installed if concealing the listening device is important, especially during a temporary tactical operation requiring quick deployment, such as during a hostage scenario.

Optical technology produces maximum intelligibility when listening through structures, which is achieved by high SNR and optimal frequency response.

We have offered the FOS (Fiber Optical Stethoscope) for several years, which is completely undetectable and is offered in a Stereo or a Mono version.

Recently a new model was introduced – the OCM (optical contact microphone), which has improved intelligibility and is designed to withstand any impact during rapid deployment operations. Following are the specifications of both

THE PRINCIPLE OF OPERATION

1- Fiber Optical stethoscope (FOS)

The FOS consists of an acoustic sensor head and a remote electro-optic unit which are connected via fiber optic cable.

All components of the pickup head and the fiber optic cable are made of plastic and glass, making it ideal for complete covert operation where the electro-optic unit can be positioned far away from the sensor (up to 1 km).

A beam of light is sent through an optical fiber to a vibration sensitive membrane. Sound signals cause the membrane to vibrate and modulate the intensity of the light being reflected off the membrane, which is then translated into an electrical signal.
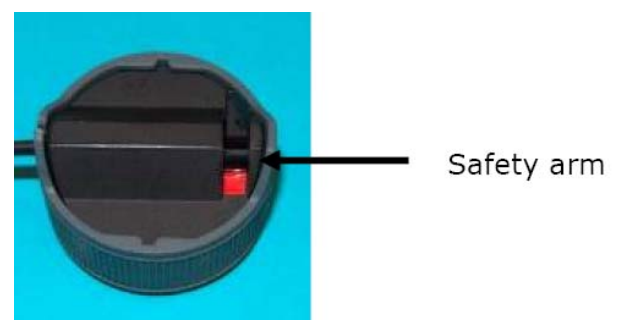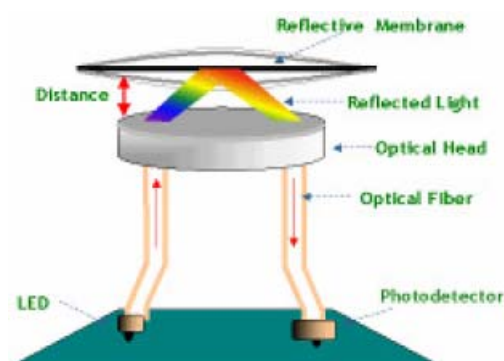
Fiber Optic Microphone Stethoscope   Model 6303 ST

Key optical sensor signal parameters are: high sensitivity, frequency response, high signal-to-noise ratio (SNR), wide dynamic range, passiveness and stability.

Due to its nature of being very sensitive to vibrations in the range of micro G, and the sensor head being very sensitive to mechanical shock it is not ideal for rapid tactical use as it needs to be handled with extreme care!

A special locking safety arm is used in the sensor head to protect it during transportation and installation from physical damage.

Due to its light weight and being waterproof it is, however, ideal for permanent installations in structures and walls. The fiber connecting the sensor to the electro-optic unit is completely undetectable and cannot be tapped into by a third party listening.

> ⚠️ **Important note: If the sensor falls when the safe arm is "ON", the sensor head will be permanently damaged, EVEN FROM A HEIGHT OF 8"!**

2- Optical Contact Microphone (OCM)

The OCM is from the second generation of Optical Stethoscopes and is designed for harsh environments and rapid deployment in tactical operations.

In this version all the optical components have been built into the sensor head, making the whole unit robust and immune to mechanical shocks and high impact. It is unlikely that the sensor head could be damaged by misuse.

Furthermore, the new design takes into account the additional requirements for real-time adaptive filtering of ambient noise like air conditioners, fans and other devices that may interfere with the audio.

The built-in noise reduction feature can be activated by the user by a simple push of a button which activates a DSP in the electronic unit.

The sensor head has the same form and structure as the FOS, however, the cable connecting it to the electronic unit is an electric cable. The standard cable is of 5 meters, but 10 meters can be provided if ordered.

This stethoscope is ideal for listening through plaster walls in tactical operations using its additional needle kit.

Fiber Optic Microphone Stethoscope Model 6303 ST
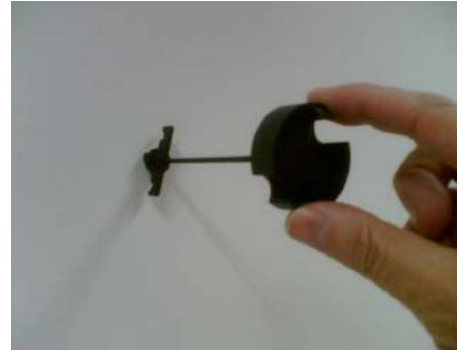
The needle allows listening to audio inside a room by penetrating through the plaster facing the outside of the room

COMPARISON TABLE

Feature	FOS	OCM
Immune to high impact	Sensitive	very good
With safe arm on:	Will be damaged	won't be affected
With safe arm off:	Might be damaged if falls from 1 m	won't be affected
Tactical operation		Best suitable
Permanent installation	Best suitable	
Intelligibility	Very good	Very good -Improved via DSP
Active noise reduction	none	Built-in via DSP
		(ambient noise reduced by 12-18 dB)
Concealing	Ideal – including non linear junction detection	none
Cable type	Fiber – any length	Electric – up to 10 meters
Waterproof head	Yes	Yes
Battery operated	Yes	Yes
External power connection	Yes	Yes
Line out for recording	Yes	Yes
RFI immunity	Excellent	no
EMI immunity	Excellent	no

Tactical Fibre Optic Kit   Model 6303 kit

Optical Audio Kit for through-air and through-wall audio surveillance operation

DESCRIPTION

The kit includes two sensors, FOS (Fiber Optical Stethoscope) and FOM (Fiber Optical Microphone), which are based on Gamma's unique patented optical sensor technology. A beam of light is sent through an optical fiber to a vibration sensitive membrane. Sound signals cause the membrane to vibrate and modulate the intensity of the light being reflected off the membrane, which is then translated into an electrical signal.

The electro-optic unit has a built-in battery (9V) to enable operation without external power for at least 8 hours. It also enables simultaneous listening through a built-in amplifier with volume control via the supplied headphones, as well as recording through a line-out connector.

The Kit includes: FOS sensor, FOM sensor, electronic box, needle kit for false walls, optical extension cable, audio cable for recording, high-quality headphones, 9V battery and power supply (when external power source is available). Options: different fiber length and types for the sensor and extension tubes for the FOM head.

APPLICATION

The Optical Audio Kit combines an all-in-the-box tactical audio listening solution based on Gamma's unique optical technology for through-air and through-wall audio surveillance.

The FOS (Fiber Optical Stethoscope) enables listening through: concrete walls, doors and windows without the need to be inside the place. The Fiber Optical Stethoscope can be used for special units as a rapid listening device in hostage scenarios. The kit includes a unique needle kit for using the FOS when listening through false (plaster) walls. The sensor is also ideal for permanent instillation as it is waterproof and cannot be detected.

The FOM (Fiber Optical Microphone) is a high quality undetectable microphone used for covert and overt purposes. The FOM records a wide range of audio from whispering, typing on a keyboard to regular conversations. The optical head does not contain metal and the electronic part is connected remotely via an optical cable.

This makes it undetectable by electromagnetic means or non-linear junction detection devices; therefore, it is optimal for surveillance and law enforcement applications.

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Tactical Fibre Optic Kit   Model 6303 kit

FEATURES:

- All you need for tactical audio surveillance

- Includes Optical Microphone and Stethoscope

- Non Detectable, high SNR microphone and stethoscope

- Through-the-wall audio surveillance including false walls!

- Battery or external power operated

- Designed for SWAT, Special Task Forces, to capture audio

- Ease of use: set sensor and listen

TECHNICAL SPECIFICATIONS

	FOM	FOS
Frequency response (±10 dB)	200-4500Hz	200-5000Hz
Line-out sensitivity	300 mV/Pa	> 10mVrms
Gain control range	> 45 dB	
Supply Voltage	9-15 V DC or 9V Battery	
Power consumption	<0.5 W	
Output impedance (standard line output, 3.5 mm plug)	< 100	
Operating Temperature range	-20°C to + 60°C	
Fiber Length	10 meters as a default or longer	5 meters as a default or longer
Dimensions of sensor head	Length – 21.5 mm Diameter – 6mm Weight – 1 g	Height: 20 mm Diameter: 35 mm Weight 16 g
Extension fiber (Zipcord)	10 meters long	

Advanced Stereo Stethoscope System   Model 6301

THROUGH-THE-WALL LISTENING SYSTEM

FEATURES

- Two channels for stereo or dual audio input from a variety of sources
- Parametric EQ for audio enhancement and improved intelligibility
- Single integrated compact unit
- Compressor to protect the operator against excessive output volume
- Battery powered for portable use
- Variable gain control for use in a wide variety of audio eavesdropping scenarios
- High quality audio, stereo for greater intelligibility and spatial awareness
- Supplied with a variety of audio pick-ups - microphones and accelerometers

INTRODUCTION

The Model 6301 is a self-contained portable hand-held stereo audio amplifier for covert intelligence gathering operations. Designed to extract high quality audio in the most demanding situations, it provides the ability to reduce unwanted sound signals and filter excessive volumes, enabling the operator to tune into human conversation against a wide range of background interference.

The unit accepts inputs from a wide range of sources, including through-the-wall listening accelerometers, specialist surveillance microphones, balanced or unbalanced commercial microphones and line level signals. Output to balanced line drivers allows high quality recordings for later analysis or presentation as evidence. The compact unit can be used handheld, suspended by its integral belt clip, or placed on any available shelf, desk or table. Two identical channels are provided, allowing stereo sound for improved special awareness, or alternatively, the channels can be used independently to listen in to different signals.

Advanced Stereo Stethoscope System   Model 6301

PARAMETRIC EQ

The parametric EQ is similar to high level audio mixing equipment, and allows the user to either boost or reduce specific signal bands. The ability to tune the mid-range frequency to be enhanced is especially useful for either boosting intelligibility or cutting unwanted noise. This form of equalizer gives the highest level of audio control without making the controls over complicated.

Each band of the parametric EQ can either boost or cut the signal by ±15dB. With the controls centered, audio is not affected. The sub low frequency switch is provided to cut very low frequency signals that may interfere with the wanted microphone audio signal. These low frequencies may, however, be useful if using the unit with an accelerometer to detect footsteps, etc.

COMPRESSOR

Each channel has a separate audio compressor that protects the user from sudden loud noises, which can be dangerous when using headphones at high gains. At low to medium input signals the unit passes the signal straight through with the gain set on the gain control. At high signal levels, the gain is reduced to keep the output signal within safe levels.

TECHNICAL SPECIFICATIONS

|	
Inputs:	Accelerometer 20V 2mA (2 pin lemo)
	Surveillance mic 1.5V bias (3 pin lemo)
	Commercial mic (3 pin XLR) 48V phantom power
	Line I/P (stereo °″ jack)
Outputs:	Headphones (stereo 3.5mm jack)
	Balanced line O/P (3 pin XLR)
Power supply:	Internal PP3
	External 9V mains PSU (2.5mm power jack)
Current:	Approx. 30mA standby (increases with increased volume)
EQ:	Hi shelving filter ±15dB at 12 kHz
	Mid filter ±15dB sweep able between 100Hz – 8kHz
	Lo shelving filter ±15dB at 80Hz
	Lo cut at 75Hz –18dB
Gain:	Adjustable 0dB to +60dB

Tactical Stereo Audio Amplifier   Model 6302

The Model 6302 Tactical Stereo Audio Amplifier was developed in response to the varied needs of law enforcement personnel for audio monitoring. It is a high gain stereo amplifier with lower noise and distortion than any other unit on the market. Recorder outputs may be adjusted manually or by automatic level control (ALC). An LED provides warning of both signal overload and low battery. The extremely advanced ALC is capable of a wide range of adjustments without pumping or distortion. Super high efficiency circuits assure a long operating life from the internal 9 volt battery, while providing plenty of drive for two sets of stereo headphones.

Through careful attention to detail, we have designed into the Tactical Stereo Audio Amplifier many features which make it a flexible and reliable tool for a wide range of law enforcement technical operations. The amplifier is ideal for hostage situations, covert operations, interview rooms, etc. A wide range of general purpose and specialized types of microphones are available.

FEATURES

- **Easy Fully Automatic Operation**
  - Power turns on when microphone is connected
  - Mono/stereo selected by connecting 1 or 2 microphones
  - Two or three wire microphone sensed by unit
  - Wide range ALC circuit
  - Turns off headphone drivers when not used to save power
- **LED Indicator**
  - Overload warning for both audio channels
  - Low battery advance warning
- **Two Stereo Headphone Drivers**
- **Compact Size – Rugged Construction**
- **Internal 9V Battery or Mains Power Via Adapter**
- **Advanced Circuit Design**
  - High efficiency for long battery
  - Low noise – low distortion
  - Bandwidth automatically adjusted to gain
  - Unique dual gain cell ALC
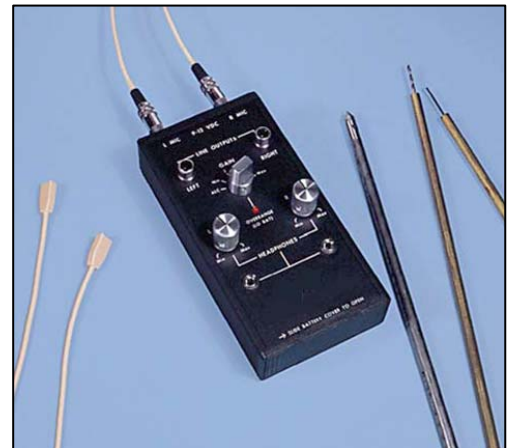
TECHNICAL SPECIFICATIONS

Frequency response	125 Hz to 8 kHz ±2 dB
	5 KHz at high gain to minimize noise
Automatic level control range	50 dB
Channel separation	line output 68 dB
	headphone output 45 dB
Input (2)	Two or three wire electrets microphone
Line output (2)	1.5 volts RMS (+6 dBm)
Headphone output (2x2)	1.5 volts RMS, 75 mW per channel into 8
	any load impedance allowed (protected)
Power supply	8.5 to 18 volts DC
	10 to 200 (18 typical w/headphone) mA
Dimensions	135 W x 70 D x 28 H (44 mm inc knobs)mm
Weight	290 grams

Tactical Audio Microphone kit   Model 6304

TACTICAL AUDIO MICROPHONE KIT

The Model-6304 Tactical Audio Microphone Kit was developed in response to the various needs of law enforcement officers for audio monitoring.

When the pressure is on it is important to have the right tools at hand to provide good quality audio to gather the intelligence required to conclude any operation successfully.

The Model 6304 range of Tactical Audio Kits has everything required to quickly deploy a through-the-wall or a room-to-room listening system. The kit is ideal for operation in hotels, offices, hostage situations and many covert operations.

The Model 6304 kit comes complete with audio amplifier, wall scanner, push through microphone, probe microphone, under door microphone, contact microphone, high output wide band contact microphone, room microphone with 20-m of cable, room mini-microphone for better concealment, dual head contact microphone, universal microphone extension cable reel, high quality closed headphones, stereo recorder, and a pelican ABS carrying case.

When the pressure is on, having the right tools at hand is essential! Hearing what is happening on the other side of a wall can provide the intelligence you need to safely conclude an incident. The Model 6304 series of tactical audio kits have everything required to quickly deploy a through-the-wall listening system. All of the kits are in a rugged Pelican case.

The Kit consists of:

6304-TA	The most versatile, efficient, fully automated stereo amplifier available. Drives two headsets plus line or transmitter feed to a mobile command post or recorder.	

Tactical Audio Microphone kit   Model 6304

6304-SWS	Three mode silent wall scanner. Finds studs, metal, and live AC lines. Helps to safely place the microphones correctly.	
6304-PTM	Push-through microphone with hole-starter. Hardened steel tip and special port design goes through plaster and wallboard without clogging. Removable tip for easy cleaning. Mic element is on the target side of the wall for best sound quality of any "spike mic".	
6304-PM-ITK	Probe microphone with installation tool kit. Makes a practically invisible 1/16inch hole with no protruding parts. Clog resistant port and element within one inch of the target side. Drill with stop collar goes through masonry and wood up to ten inches thick and stops in just the right place. Guide tube easily aligns mic with drilled hole.	
6304-UDM	Under door microphone with instant telescoping handle. Transparent sound tube is nearly invisible. Onboard amplifier drives the earphone included. Easy one handed operation leaves the other hand free.	
6304-CM 16	Small inconspicuous contact microphone with high energy transfer mounting tape for use in the corner of a window.	
6304-CM 30	High output wide band contact microphone with assorted mounting materials for both smooth and rough surfaces to insure greatest sound transmission. Best audio quality of any contact microphone available.	
6304-EM	Room microphone, small size, best intelligibility. Standard length is 25 feet. Available in any length and choice of black or beige color.	
6304-EC	Universal extension cable for all types of microphones. Standard is black, 100 feet, on a reel. Other lengths and colors available.	
6304-R	High efficiency closed headphones. These allow you to hear every detail, even in noisy situations.	

Tactical Stereo Accelerometer Kit Model 6305

When entry is not possible and you need to hear what is being said as well as where people are located, this system is essential. The Model 6305 has everything you require to quickly deploy a through-the-wall listening system.

THE KIT CONSISTS OF:

6305-TA	The most versatile, fully automated, low noise stereo amplifier available. The dual gain cell ALC and multi-stage peak limiter out performs any other amplifier available.	
6305-SAI	Ultra low noise electronic interface which is designed specifically for the RSS accelerometers and the 6305-TA stereo amplifier.	
6305-RSS	Accelerometers created for optimum voice detection. More sensitivity with less rumble and interference.	
6305-MS	Mounting stud with self drilling screw for installing the RSS on masonry and other irregular materials.	
6305-SWS	Three mode silent wall scanner. Finds wood studs, metal, and live AC lines.	
6305-QZ	High intelligibility closed headphones. Designed for maximum acoustic isolation to allow you to hear every detail.	

Body-Worn Array Microphone   Model 6804

The Model 6804 picks up subjects directly behind you, while rejecting noise from all other directions. Even minimizes your own voice. It is completely concealed under normal clothing and fits like a shoulder holster. It comes complete with a digital recorder.

FEATURES

- Discrete, highly directional microphone system
- 24 Microphones
- Outputs for headphones, transmitter and recorder
- Effective pick-up range 10-12 feet
- Ideal for pub or restaurant type environment

The unit works by creating a highly directional microphone pickup pattern from a collection of individual microphones. Each unit processor board takes up to 24 microphones to provide its directed mono audio output. A basic system is supplied with 12 microphones with the recommended minimum being 8 microphones. The primary pickup pattern is perpendicular to the line (or plane) of the microphone arrangement, with smaller patterns on either side (see illustration). Simply steer the pickup pattern in the direction of the subject and listen in real-time. Audio sources outside of the pattern are reduced; sources within the pattern are amplified. The unit is designed with audio quality as a primary criterion. Linear response, low-noise, dynamic range, frequency and spatial filtering, and careful component selection all went into the design of this state-of-the-art system.

Clarifying Array Microphone

Model 6803

- Discrete, highly directional microphone system
- Ideal for remote indoor/outdoor audio collection
- Each board accepts 2 to 24 microphones
- Combines multiple boards for improved performance
- Works with headphones, recorders and transmitters
- Battery powered
- Simple to operate
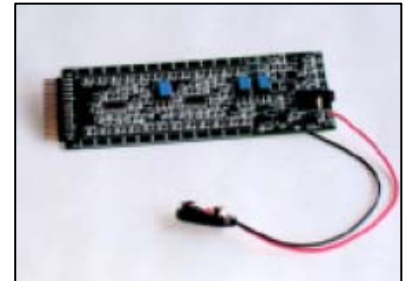
The Model 6803 Clarifying Array Microphone (CAM) is a unique and powerful audio collection device. No longer do you have to be in close proximity to subjects to discretely pick up conversations. Using the CAM, audio can be remotely captured, even in noisy environments, such as restaurants and bars. Outdoors, audio can be captured from subjects more than 100 feet (33 meters) away, depending on the setup and surrounding noises. This makes the Model 6803 ideal for situations where personnel safety is an issue. Being able to remotely monitor conversations frees an undercover officer from wearing equipment that could be detected.

The CAM works by creating a highly directional microphone pickup pattern from a collection of individual microphones. Each CAM Processor Board takes up to 24 microphones to provide its directed mono/audio output. A basic system is supplied with 12 microphones with the recommended minimum being 8 microphones. The primary pickup pattern is perpendicular to the line (or plane) of the microphone arrangement, with smaller patterns on either side (see illustration). Simply steer the pickup pattern in the direction of the subject and listen in real-time. Audio sources outside of the pattern are reduced; sources within the pattern are amplified. The CAM is designed with audio quality as a primary criterion. Linear response, low-noise, dynamic range, frequency and spatial filtering, and careful component selection all went into the design of this state-of-the-art system.

The CAM Processor Board has a low-profile design to facilitate concealment. It can be powered by standard 9V, AA, or AAA disposable batteries for convenience; however, it can also operate with any 3 to 15 VDC power source. The flexible design of the board allows each to use up to 24 microphones to create the audio pickup pattern. The number and arrangement of the microphones determines the size, shape and gain of the pickup pattern, and thereby, the performance. This flexibility allows a single processor board to be used for widely varying operational scenarios simply by using a new microphone configuration. Multiple boards -- up to a maximum of 5 boards or 120 microphones -- can be combined to provide a narrower pickup pattern and/or greater distances for audio capture. Line, microphone and headphone audio outputs are available for recording, transmitting and real-time monitoring. Gamma offers an option for a small transmitter and in-ear receiver for discrete live monitoring and to assist in steering the pattern.

50 feet (outdoor)

15 feet (indoor)

6803
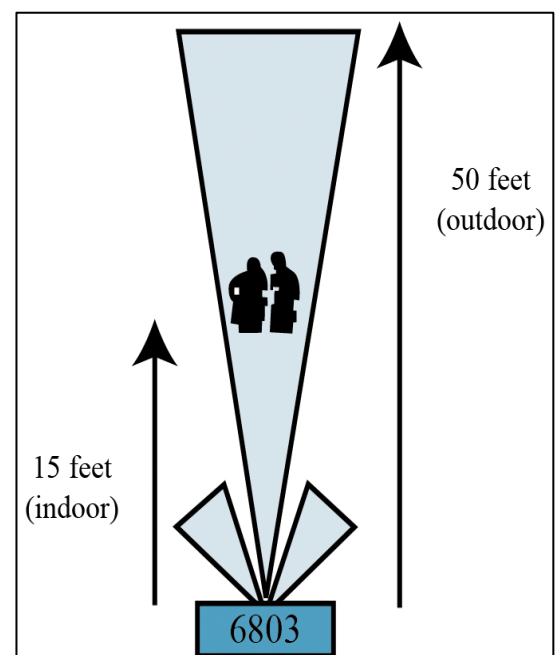
Directional Microphone Array System — Model 6802

Audio collection in large, open areas can often require pinpoint accuracy to isolate specific audio sources. Only Model 6802 can deliver the technology to electronically steer multiple beams through a sound field collected by a fixed microphone array. Key features of the Model 6802 system:

- Provides a high-gain electronic beam steering capability
- Steers three separate beams from one set of microphones
- Supports a wide variety of custom microphone arrays, handling up to 96 microphones on 16 channels of input
- Features a unique stereo beam mode for a natural listening experience
- Offers hardware and software based steering controls for maximum flexibility
- 3-D beam forming (azimuth, elevation, and distance) available under software control
- Can be used in real-time surveillance or post-processing of multi-track recordings

SPECIFICATIONS

ANALOG

Microphone Inputs	•Two 25-pin DSUB connector interfaces (Tascam format)
	•Supports 8 differential line level inputs per channel (16 channels total)
	•25k ohm input impedance per channel
Bandwidth	•7.5 kHz Analog Conversions
	•24-bit stereo A/D and D/A Sigma-delta technology
Dynamic Range	•> 120 dB

DIGITAL PROCESSING

Microprocessor	•Four ADSP-21062 SHARC ® processors for beam forming
	•One ADSP-21062 SHARC ® processor for interface control and hosting
Beam-Forming	•Three beams (or one stereo beam and one mono beam)
	•Adjustable azimuth (0.1 degree increments)
	•Adjustable gain (1 dB increments)
	•Adjustable elevation (0.1 degree increments), software control only
	•Adjustable distance (0.5 meters to infinity), software control only
	•30th order, digital low pass filters for fractional delays
	•Memory based sample delay lines (200 deep)
Memory	•Two 512K x 8 flash memory for program and coefficient storage
Computer Interface	•RS232 serial interface for system control

GENERAL

Enclosure	•17 W x 3.5 H x 12 D inches black aluminum
	•Optional rack mount kit available
Power	•90-264 VAC, 47-63 Hz at 2.5 A (max)

# Directional Microphone Array System   Model 6802

Steerable Array Microphone   Model 6806

- Discrete, highly directional microphone system
- Pickup pattern can be electronically steered
- Ideal for tactical remote outdoor audio collection
- Expandable, modular design
- "Steer by ear" or sound field display (future upgrade option)
- Works with headphones, recorders and transmitters
- Battery powered
- Simple to operate

Gamma's new electronically steerable analog array microphone (SAM), is a powerful and flexible way to collect remote audio in tactical environments. It provides the discreteness and portability of the popular CAM and then adds the ability to steer the pickup pattern without physically moving the array. Audio can be captured from subjects in excess of 150 feet (46 meters) away, depending on the number of SAM boards and surrounding noises.

The SAM works by creating a highly directional audio pickup pattern from a collection of individual microphones.
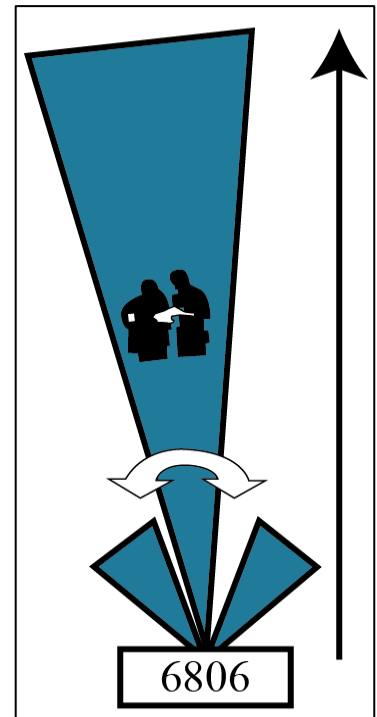
The SAM is available in various sizes and configurations. Sizes start at 8 microphones and increase from there by 8 (i.e. 8, 16, 24 …). The microphones are arranged in a line with the microphones equally spaced 2.5 inches (6.35 cm) apart. The pickup pattern's main lobe reaches out in an arc from the line of microphones, with smaller side lobe patterns on either side (see illustration). Audio sources outside of the pattern are reduced; sources within the pattern are amplified

The SAM is comprised of microphones, processor boards (coming in matching pairs, each supporting four microphones), and a controller module. Additional optional upgrades are already being developed.

The SAM can be supplied in a small metal enclosure. Operation is intuitive - simply turn the knob to steer the beam and listen in real-time (see conceptual illustration below). Sensitivity, AGC, on/off, and headphone volume controls are available on the front panel.
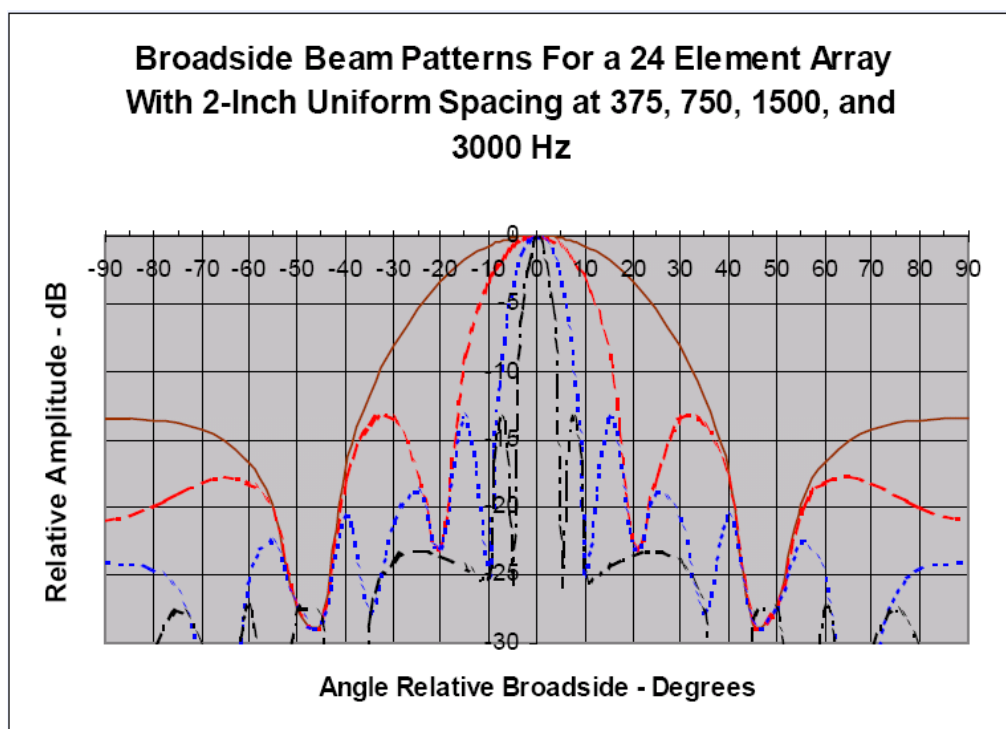
The SAM operates from 9-18 VDC power, allowing it to work from a variety of sources, such as automobile lighter plugs and AC-to-DC converters. Line, microphone and headphone audio outputs are available for recording, transmitting and real-time monitoring.

An optional sound field bar graph display will let you see from what angles the sounds are coming from – including the sounds from the subject – so you can 'see' where to steer the pattern even in the dark. An optional telephone interface module can allow the user to dial-in (over a telephone circuit), remotely steer the beam (using DTMF keypad tones), and listen to the SAM audio output.

Steerable Array Microphone   Model 6806

The SAM is also available in a kit format (i.e. without a housing) to facilitate concealment and to allow the user to construct and control the microphone array to meet unique mission requirements. Shorter arrays are good for short range or general area coverage. Longer arrays are used for long range collections or in 'cluttered' situations where having a narrow pattern lets you pick out individual subjects or groups more easily.

Beam Patterns For a 24 Element Array With 2-Inch Uniform Spacing Steered to Angles of 0, 30, 60, and 90 Degrees at 1500 Hz

Broadside Beam Patterns For a 24 Element Array With 2-Inch Uniform Spacing at 375, 750, 1500, and 3000 Hz
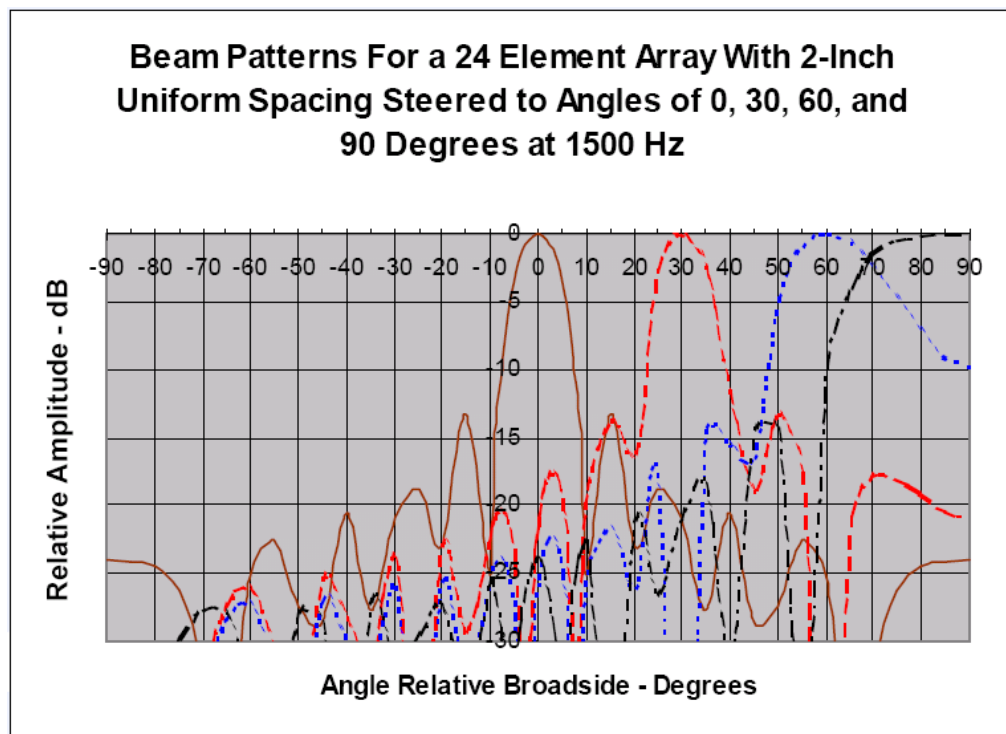
Stereo Contact Microphone   Model 6807

THROUGH WALL AUDIO & TACTICAL SURVEILLANCE

The Model 6807 is based on a new generation stereo contact sensor specifically designed for through-the-wall surveillance and localization.

Use the Model 6807 to overcome the most challenging barriers. Its outstanding ultra-low noise and two-channel signal produces stereo audio that enhances voice intelligibility – even underwater and through concrete walls up to 80 cm thick

The Model 6807 allows placement of its two sensors as far apart as 10 meters, enabling high fidelity and wide stereo imaging. Wider imaging means more accurate time and level information, enabling you to localize target positions more quickly and intuitively than ever before.
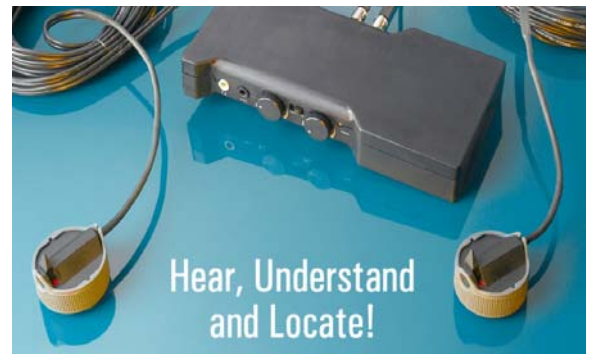
With its state-of-the-art digital signal processor (DSP), the Model 6807 provides three discrete, selectable levels of advanced ambient noise reduction for a variety of settings and situations.

The Model 6807 is rugged enough to survive high impact and is completely waterproof.

The Model 6807 system is comprised of dual lightweight contact microphones, an industry leading DSP-based electronic control unit, connection cables, a power supply, batteries, a surface attachment kit, a needle kit for plaster walls and a ruggedized carrying case

You will find no rival for performance, quality and value.

FEATURES AT-A-GLANCE.

- Ideal for SWAT and Tactical Task Forces

- Stereo signal improves target intelligibility and localization

- Extremely high sensitivity and gain

- Ultra-low noise system, 3 discrete levels of DSP ambient noise reduction

- Supports wide stereo imaging of 10 meters and more

- Ruggedized sensor withstands high impact forces

- Completely waterproof sensor, submersible to 10 meters

- Wide frequency range: 30 to 8000 Hz

- Operates on internal batteries or external power supply

- Professional carrying case

- Option for long connecting cables

- Quick start system - simply connect, attach and listen

TECHNICAL OPERATIONS EQUIPMENT 2100 series

AUDIO DEPLOYMENT EQUIPMENT

2102 - KEYHOLE MICROPHONE INSTALLATION KIT

For installing audio microphone equipment within small access holes of up to 280mm in floor/ceiling cavities, using a pinhole air-path for audio pickup. A longer system allows for up to 450mm.

2103 - GENERAL PURPOSE MICROPHONE INSTALLATION KIT

A general kit for the deployment of audio microphone equipment.

2105 - COMPLETE AUDIO DEPLOYMENT KIT

A combination of some of the essential tools from various microphone installation kits and the floorboard cutting & lifting kit. Also includes additional equipment, such as microphones, air-path drills, tech-amp and making-good-kits to enable a full range of audio deployment options to be utilized in a target premises. Optional extras include the Door Jig and Circular Floor Cutter.

2106 - COMPLETE VEHICLE AUDIO DEPLOYMENT KIT

A combination of some of the essential Items from various microphone installation kits that include additional tools, which are specifically for vehicle audio deployments, such as brackets, punches and drills, enabling an operative to implement a range of audio deployment options on a target vehicle.

2108 - CONCEALMENT FIXING SCREWS

A range of screw sizes for the fixing of concealment devices. Can be purchased in small packs of individual sizes or a complete kit, which contains 25 each of 50mm, 75mm, 85mm and 100mm screw sets with a pilot drill.

Ancillaries, such as making-good-kits, mounted microphones, adaptors and a full range of spares, are also available.

TECHNICAL OPERATIONS EQUIPMENT

DRILLING EQUIPMENT

2100 series

2121- MANUAL COVERT DRILLING KIT

An operational kit that allows manual drilling operations for deployment of audio microphones.

2122 - AUTOMATIC COVERT LOW NOISE DRILLING KIT

A covert, operational, mains-powered drilling system, with accessories, for the deployment of audio microphones. It is designed to allow precise drilling into any building fabric, enabling the operative to control the speed and feed of cut, angle of attack and drill depth.

OPERATIONAL EQUIPMENT

2131- COMPLETE COVERT CARPET & FLOOR KIT

A comprehensive range of professional standard trade tools and equipment that an operative can take to a target. They enable the covert lifting, refitting and making good/repair of a range of fabric based carpets, floor coverings and laminated flooring during audio deployment operations.

Manual Covert Drilling Kit   Model 2121

This kit consists of a comprehensive range of tools and equipment, in a single case, that an operative can take on-target in order to undertake drilling operations for the covert deployment of audio microphones.

OVERVIEW

The kit is a combination of some of the essential items from our manual drilling kit with the addition of a more extensive range of pinhole drills, main bore drills and other accessories, to enable the kit to be suitable for almost all operational requirements. It includes mounted microphones and tools for making good the area.

KEY FEATURES

- Complete operational kit in one case
- Simple to use
- Achieves exceptional operational results
- Allows accurate deployment
- Full range of spares and extra items available

THE KIT CONSISTS OF:

1 drill brace	4 extension drills main bore
1 push handle	3 200 mm lengths probe tube
2 adaptors	1 one meter flexible tubing
1 pinhole handle	1 glue
1 pinhole stop	1 fixed bar rod 600 mm
1 main bore stop	1 drill tip
1 wall grip	20 foam tips
2 300 mm long main bore extensions	6 mounted microphones
2 300 mm long pinhole extensions	1 tech amp
4 1.0 mm, 50 mm mount pinhole drills	1 making good kit
10 1.5 mm pinhole drills, various sizes	1 packing case
3 main bore drills	

OPTIONAL EXTRAS

- Audio Mic Kit
- Video Probe Kit

Automatic Covert Low Noise Drilling Kit   Model 2122

The Model 2122 is a covert operational, mains powered drilling system, with accessories, for the deployment of audio microphones.

OVERVIEW

The powered drilling system is designed to allow precise drilling into any building fabric. It enables the operative to control the speed and feed of cut, angle of attack and drill depth.

The vacuum and spoil extraction system removes the drilled material. It allows the controlled feed of water to assist in the cutting and cooling of the diamond core drill. There is the option of straight vacuum suction for clearing dust through the centre of the hollow rods for spoil clearance.

Drilling kit and extraction system consists of:

- 1 powered drilling head
- 1 wall bracket
- 1 drilling motor
- 1 control system
- 1 drill extractor
- 1 core cleaner
- 1 hand control
- 1 union
- 1 packing case
- 2 150 mm hollow rods
- 2 main bore drills (threaded shank)
- 2 300 mm hollow rods
- 1 125 mm threaded drill
- 3 diamond core drills
- 1 vacuum pump
- 1 water feed pump
- 1 vacuum filter

- 1 drip trap
- 1 flexible tubing

KEY FEATURES

- Complete operational kit
- Fully controllable speed
- Fully controllable feed
- Low noise emission
- Can run on 24v DC
- Emergency cut-off
- Vacuum & spoil extraction system available
- Operationally proven

OPTIONAL EXTRAS

- Audio Mic Kit
- Video Probe Kit

Automatic Covert Low Noise Drilling Kit   Model 2122

KIT
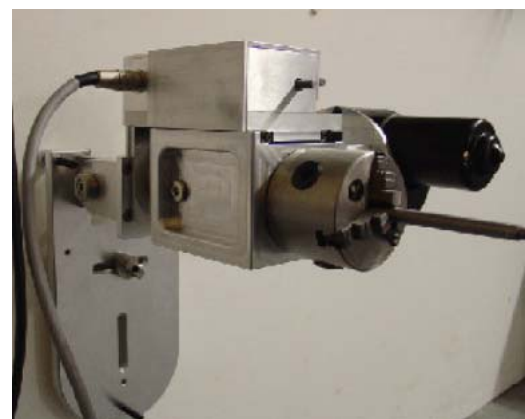
Powered Drilling System

Vacuum & Spoil Extraction System

INDIVIDUAL ITEMS AND SPARES

Extract Handle

Drill Head Motor

SPARES

Diamond Core Drill

Union

Single Pin Fixing

150 -300 mm Hollow Extensions

10.5 mm flat end bit

Main Bore Drills

10.5 mm threaded shank

10.5 mm lip & spur

CONFIDENTIAL   2

DAR
Digital Audio Recorders

TSU INDEX

Digital Audio Recorders

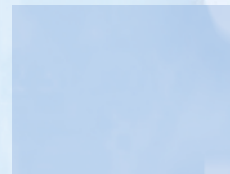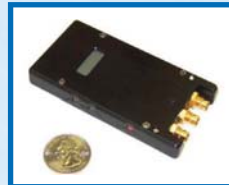| Ref	Number	Description
1	6501	Digital Stereo Audio Recorder
2	6503	Digital Stereo Audio Recorder
3	6510	Covert Audio Recorder
4	6511-1	Digital Recorder built into Belt
5	6511-2	Digital Recorder built into a cell phone battery
6	6511-3	Digital Recorder built into a G-shock Watch
7	6511-4	Digital Recorder built into a chassis
8	6511-5	Digital Recorder built into a Key fob
9	6511-6	Digital Recorder built into a key chain
10	6511-7	Digital Recorder built into a Zippo lighter
11	6511-8	Digital Recorder built into a Calculator
12	Accessories	Accessories for 6510 and 6511 series
13	6512	Desktop Telephone Recorder
14	6508-SL	Long Play Audio Surveillance Recorder – Standard Lemo Version
15	6508-M	Miniature Audio Surveillance Recorders
16	6508-S	Long Play Audio Surveillance Recorder – Standard Version
17	6508 USB	Digital Recorder Concealed in a USB
18	6508 Light	Digital Recorder Concealed in a Lighter
19	6403	GSM Data & Audio Recorder
20	6006h	Remote Controlled Recorder with Built-in Transmitter
21	6805	Multi Channel Digital Audio Recorder

# Digital Stereo Audio Recorder   Model 6501

The Model 6501 is the latest addition to Models growing line of premium audio collection products. Specially designed for covert applications, the recorder combines control software with re-engineered hardware that is loaded with new benefits! With the best quality, and the best features in its class, the Model premium digital audio recorder is now the best choice!

KEY BENEFITS:

- Covert packaging
- Loss-less compression
- Super fast downloads
- Easy to use software
- Up to 36 hrs. mono or 18 hrs. stereo capacity

BEST USES:

- Body-worn surveillance
- Fixed installations
- Interview recordings
- Personal duty recorder
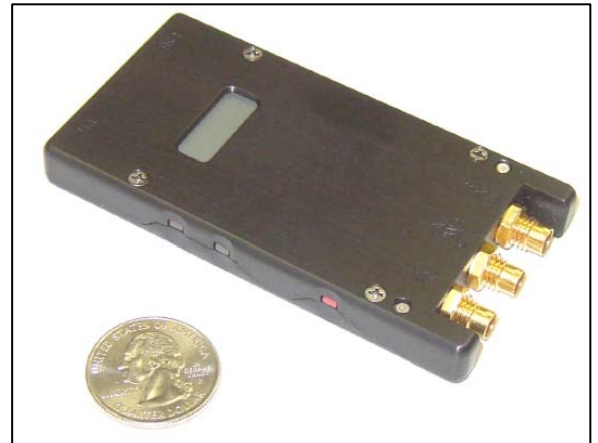
WHO NEEDS THIS?

- Live surveillance teams
- Technical investigators
- Intelligence and counter-intelligence operators
- Military law enforcement groups

KEY FEATURES:

- Fastest download speed in the industry
- LCD display for instant feedback on record time and battery life
- Built-in, high-performance stereo microphones
- User-defined security controls to restrict unit access
- External body-worn microphones supplied
- Remote control switch
- Body-worn harness

TECHNICAL DATA:

- Independent Telocate 4-pin connectors for attaching optional mono or stereo microphones, control switch, and/or external power supply (compatible with similar Microtech 4-pin connectors)
- Improved ON/OFF, NEXT/PREV track control buttons for clean, tactile response to commands
- Mini-B USB connector for standard connection to host PC
- 512 MB flash memory (optional 3GB flash memory version available)
- Maximum record capacity of 36 hours mono or 18 hours stereo
- Rugged carrying case, USB cable, software, and user manual supplied
- Enclosure: 45w x 90L x 10h mm milled aluminum

Digital Surveillance Recorder   Model 6501

Digital evidentiary material is under more scrutiny now than ever before in the law enforcement arena. "Has this recording been tampered with?", "Is this an original or a copy?", "Which recorder was used and when?", "Has my evidence been compromised?" The Model 6503 Digital Surveillance Recorder closes the door on all digital evidence questioning with its built-in, patent pending, data authentication and verification system. Data security, affordability, premium feature set, and the finest audio quality in a covert recorder makes the Model 6503 Digital Surveillance Recorder the first choice in law enforcement recorders.

PRODUCT HIGHLIGHTS:

- **True Digital Signature** -- creates a unique digital signature for recorded audio to ensure integrity of data
- **True Verifier Package** (sold separately) -- provides the USB hardware key and software system to easily verify the signature file
- **Transmitter Friendly** -- connect any external transmitter or our customized transmitter to protect your officers in the field
- **Locking Airborne Connectors** for simple and secure accessory attachments
- **Standard 2GB** of internal flash memory
- **Post-Operation Convenience** -- users can download case-specific tracks to separate files, regardless of the order in which they were recorded
- **Record both sides of any cell phone or telephone conversation** with the new RF shielded adaptors designed specifically for the Model 6503
- **Base Package Includes** -- The Model 6503 Digital Surveillance Recorder unit, 2 GB flash memory, USB downlink cable, 9V battery & line output adaptor, Transmitter "pigtail" adaptor, Software CD, manual, and carrying case

KEY BENEFITS:

- Digital Authentication and Verification
- Covert Packaging
- Transmitter adaptor
- Lossless compression
- Super fast downloads
- Easy-to-use software
- Flexible record options
- Robust feature set

BEST USES:

- Body-worn surveillance
- Fixed installations
- Interview recordings
- Personal duty recorder

SPECIFICATIONS
Construction:

Digital Surveillance Recorder   Model 6501

- Dimensions:1.9 W x 2.6 L x 0.4 H inches
- Weight: 4 ounces
- Case: Black anodized, milled aluminum, and RF Shielded

User Controls:

- LCD display indicates record time, battery capacity, and track number
- Programmable Button Safeguard Mode (prevents accidental activation or deactivation of recorder)
- Simple to use recessed buttons with tactile feel

Ports:

- USB 5-pin "Mini-B" connector to PC USB port
- Locking Airborne connectors for accessories
- 2.5mm earphone jack for local playback

Power:

- Internal 3.7V, 650mAh Lithium Ion rechargeable cell
- Charges via USB or external power source
- 11 ½ to 14 hour run time (optimal settings)
- Approx. 1.5 hours recharge time from fully discharged to full battery capacity

Software:

- CDU-Configuration and Download Utility (included)
  - Allows downloading of recorded images and programming the unit

- WFCU-WAV File Creation Utility (included)
  - Allows converting specified tracks to WAV format

- IFP-Image File Player (included)
  - Allows direct playback of recorded image files
  - Burned onto CD or DVD along with audio data which allows evidence playback on any Windows PC with a soundcard

- True Verification Software (optional)
  - Processes image and signature files using True verification hardware key to validate image files

Record Time:

- Recommended: 11.5 hours (5kHz Bandwidth, Stereo, Pak Lossless compression)
- Minimum: 4.5 hours on highest quality settings (22kHz Bandwidth, Stereo, Pak Lossless compression)
- Maximum: 14.5 hours (3.2kHz bandwidth, Mono, Lossy 4:1 compression)
- External Power: 149 hours (3.2kHz bandwidth, Mono, Lossy 4:1 compression)

Digital Surveillance Recorder   Model 6501

Digital Processing:

- Audio Memory: 2 GB
- Digital Compression
  - 2:1 Pak lossless compression (provides 16-bit quality using ½ the memory space)
- Automatic Gain Control
- Digital Signature:
  - True digital signature ensures validity of recordings
  - Downloaded with every image file
  - Verifies image integrity with time stamp and recorder ID

General:

- Stereo in/out
- >90dB dynamic range
- 117 dB SPL maximum (w/o overdriving)
- Two built-in Knowles FG mics
- Texas Instruments codec, 24-bit resolution
- Sample rates: 8.0, 11.025, 16, 22.05, 32, and 44.1kHz options
- Local playback

ACCESSORIES

External 9V Battery Adaptor

Landline Telephone Recording Interface

External ON/OFF Slide Switch

True Evidence Verification Key

Car Charger

External Microphones

Cell Phone Recording Interface

Covert Audio Recorder   Model 6510

The Model 6510 is a state-of-the-art covert surveillance recorder using flash memory technology that offers up to 13 hours of stereo recording. Data is transferred to any PC via a Universal Serial Bus (USB). Standard audio hardware commonly found on most PCs may be used for data playback. User friendly software running under Windows 98/2000/XP ® will cut CD media for archive, and can also create audio CDs, which can be played on any CD player. The 6510 flash memory can be optionally upgraded for 107 hours recording.
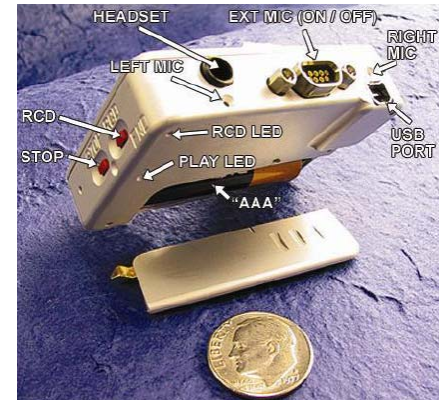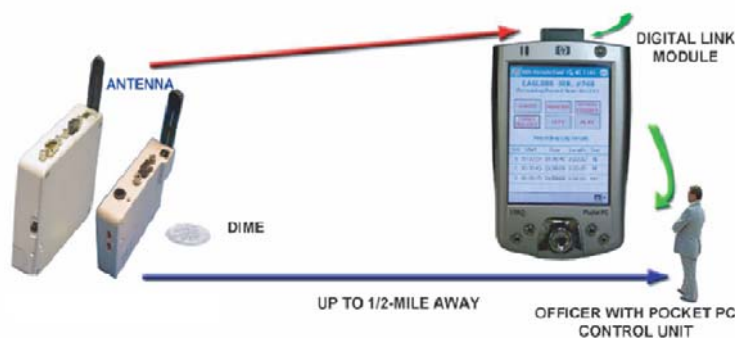
HIGH PERFORMANCE FEATURES

- 13.4 Hrs. of stereo recording

- Selectable (5 or 7.5) audio band

- USB Interface for fast transfer

- Remote and built-In stereo microphone input

- Manual or timer programmable "ON/OFF"

- Local audio playback controls

- Records up to 8.5 hours on 1 single AA battery

- Small Size 5 x 3 x 1 cm

- Optional "officer safety" RF transmitter

- Software support for ".WAV" Files and audio CD

- Weight: 56g

SPECIFICATIONS

Size:		5 X 3 X 1 CM
Weight:		56g
Operating Voltage:		3V
Stereo Recording times:	No compression	6.7 hrs
	2:1 compression	13.4 hrs
Battery life:	1 battery	8.5 hrs
	2 battery	16.6 hrs
	1 battery lithium	12 hrs

Built In Digital Recorder   6511 Series

The Model 6511 series is our most covert recorder. The solid state electronics, built on an ultra thin form factor, assures inconspicuous evidence recording in highly transportable packages. Data is transferred to any PC via a Universal Serial Bus (USB). Standard audio hardware commonly found on most PCs may be used for data playback. User friendly software running under Windows 98/2000/XP ® will cut CD media for archive, and can also create audio CDs which can be played on any CD player.

SYSTEM FEATURES:

- Local record START/STOP
- Playback via standard audio cards
- Programmable timer ON/OFF
- 6 hrs to 13 hours of recording
- Local microphone inputs
- Interface to USB port
- 1:1, 2:1, 4:1 record compression
- Optional "officer safety" transmitter
- Tiny Package (4.5 x 2.25 x 0.425cm)
- Powered by one rechargeable flat Lithium battery

TYPICAL CONCEALMENTS

Model 6511-1 into a belt

Model 6511-2 into a cell phone battery

Model 6511-3 into a G-shock watch

Model 6511-8 into a cCalculator

Model 6511-4 into a chassis

Model 6511-5 into a key fob

Model 6511-6 into a key chain

Model 6511-7 into a Zippo lighter

SPECIFICATIONS

Size of recorder board		5 X 3 X 1 CM
Weight of recorder board		56g
Operating Voltage		3V
Recording times vs quality	No compression	6 hours
	2:1 compression	13.4 hours
Recording time vs battery life	1 battery lithium	Various capacity

Optional Accessories For 6510 & 6511　　　Accessories

1.1. RF On/Off Switch Remote ON/OFF switch for use with any recorder.	
1.2. IR Motion Detector Small infrared sensor turns on recorder when motion is detected within a range of 30 feet. Multiple units can be joined together for longer/wider operating range. Ideal for situations in which the unit must be securely hidden before the time of recording. Runs on internal CR-2032 coin cell for 100 hours, or can be used with external power for longer times.	
1.3. Transcriber Transcribe audio directly from all recorders; uses standard foot pedal control and word processing software; can be used with ".wav" files; plugs into RS-232 serial port of computer.	
1.4. Officer Safety Transmitter The most cost effective way to monitor live audio during an operation; optional for all our recorders; real-time audio monitoring via hand-held radio, with range up to 1.200 feet.	
1.5. Secure Digital Link Each recorder has a built-in digital transceiver; monitors live audio/video via pocket PC for officer safety; user settings for optimal range of battery usage; ideal for "Buried" audio and video applications; playback audio while recording new data; transmitter does not increase size of recorder.	
1.6. Mobile Phone Cell Capture The unit allows the user to plug directly into the recorders and capture cell phone conversations.	
1.7. Microphones Cables We have a range of custom microphones cables for all our recorders.	

Desktop Telephone Recorder   Model 6512

The Model 6512 is a revolutionary system for recording telephone calls. This unique telephone is designed to record 175 hours of high quality calls onto an ordinary recordable CD. The Model 6512 utilizes a variety of technological innovations, such as, ultra flat CD Recorders and sophisticated audio compression.

- Telephone with integrated call recorder
- Automatic recording of telephone conversations
- Minimum capacity of 175 hours and 15.000 recordings per CD
- Integrated answering machine
- Rolodex feature with over 500 names and numbers
- Features handset and hands-free operation
- Uses standard CD Recordable media
- No installation needed, works on standard telephone lines

A completely new design could be the first thing you notice about the Model 6512. It resembles and can function as a high-end business telephone. But the ease with which you can be in total control of your entire phone conversation will make you wonder why it has not been done before.

The Model 6512 automatically records your calls. Initially, these recordings are stored in flash memory. For permanent archive storage, conversations are written to a built-in CDRW, which uses standard CD-R disks. The telephone offers many advanced features and operates just like any standard phone, making it compatible with 100% of the public switched telephone network, and most digital switches that offer analog ports.

1. Handset
2. Menu-keys
3. Backlight display
4. Function-keys
5. Speaker
6. Handset cord
7. Numerical keys
8. CryptoCard reader
9. CD drive
10. Recorder-keys
11. Speakerphone key
12. Volume-adjustment
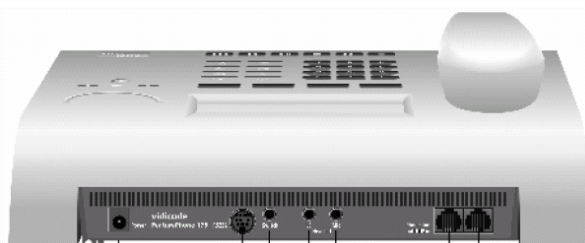
1. Power supply
2. RS 232 serial port
3. Start/Stop switch
4. Loudspeaker
5. Microphone
6. Phone line Out
7. Phone line In

Recorder Keys

Record   Backward   Stop

Pause/Play   Forward   Skip

Miniature Audio Surveillance Recorders   Model 6508

The Model 6508 Miniature Audio Surveillance recorders are our new high performance, standalone recording devices with storage capabilities from 3 hours in highest quality to 48 hours in lowest quality.

The very small, lightweight recorders intercept all audio making them extremely suitable for close proximity operations. The recorders are operated easily using only a single button and the feed-back from three LEDs.

The supplied PC software handles all software downloads to CD/DVD and at the same time it configures options such as real-time clock, sample frequency, recording format, compression, input gain, etc.

Model 6508 Miniature - The Model 6508 Miniature is a 1-GB solid state recorder with an internal Lithium battery, rechargeable through the USB port. There is also a version available with external microphones.

Model 6508 Standard - The Model 6508 Standard has, in addition to the internal rechargeable Lithium battery, an extra AAA cell for up to 20 hours battery life time. There is also a version available with external microphones.

Model 6508 Standard Lemo - The Model 6508 Standard Lemo has the same features as the Model 6508 Standard and in addition, a programmable input for external microphones or line in level recording.

The Model 6508 Miniature Audio Surveillance is a complementary line to our Solid State Recorders. The Standard Model 6508 line gives full freedom to downloading, verifying and burning the recordings, whereas the Model 6508 line uses a strict set of rules for the same.

FEATURES

- All collected evidence is transferred directly to an external medium (CD/DVD)

- The recorder will not allow the user to backup, overwrite or erase an existing recording on the recorder before it has been downloaded

- There will be no avalanche capability that allows the user to erase recordings on the recording device

- The recorder will not allow anyone to pick and choose specific sessions and then discard the remainder

- The end-user will be able to play the file using Microsoft Windows Media Player or any compatible media player

- Each recording has a unique session number running in sequential order and a time stamp documenting the beginning and end of each recording. Each time the recorder button is pushed, a new session is generated

- All recordings have a strong watermark embedded in each file. With the aid of the Wavechecker software, the integrity of each recording can be verified

Miniature Audio Surveillance Recorders   Model 6508

SPECIFICATIONS

General	
Power requirements	
Main battery	Internal rechargeable Lithium for Model 6508 Miniature
	Internal rechargeable Lithium and AAA cell for Model 6508 Standard + Model 6508 Lemo
Power consumption	
Voltage range	0.8-1.6 VDC
Current consumption	Typical 60 mA @ 1.5 VDC
Sleep mode	< 1 uA
Main battery lifetime	
Miniature	Internal rechargeable: Min. 3 hours
Standard + Standard Lemo	AAA (1250 mAh) + Internal recharg.: Min. 20 hours
Recorder Memory	1 GB
Input frequency response	20 Hz – 12 KHz
Recording modes	Stereo or mono
Sample rates	6, 8, 9.6, 12, 16 and 24 KHz
Compression	None, A-law
A/D converter resolution	16 bit
Signal to Noise Ratio (SNR)	89 dB
Line-In voltage range	1.5Vpp
Real-time clock precision	+/-2 minutes per month
File System	Microsoft FAT16 compatible
Data format	Microsoft Wave
USB transfer rate	Minimum 400 KB/Second
Dimensions	**(H x W x D)**
Miniature	10x51.1x18.7 mm/0.4x2.0x0.7 inches
Standard (AAA)	12x51.4x30 mm/0.5x2.0x1.2 inches
Standard Lemo	12x54.1x41.1 mm/0.5x2.1x1.6 inches
Connector	Mini-USB

Miniature Audio Surveillance Recorders   Model 6508

Recording time in hours versus sample frequency (1 GB memory)

Frequency	6 kHz	8 kHz	9.6 kHz	12 kHz	16 kHz	24 kHz
Recording Settings						
Mono	24 (48)	18 (36)	15 (30)	12 (24)	9 (18)	6 (12)
Stereo	12 (24)	9 (18)	7.5 (15)	6 (12)	4.5 (9)	3 (6)

The values in brackets are recording time using A-law compression.

Digital Recorder Concealed in A USB Stick   Model 6508 USB

The Model 6508 USB contains a concealed 1 GB Model 6508 Miniature digital audio recorder with an internal rechargeable Lithium battery. The device can operate for a minimum of 5 hours on a fully charged battery and has storage capabilities from 3 hours in highest quality, to 48 hours in lowest quality.

The Model 6508 USB has two different modes, depending on the requirements of the surveillance task:

- The USB recorder: When switched on, the Model 6508 USB will continue to record whether inserted into the USB port or placed, for example, on a table.
- The ordinary USB: When inserted into a computer the device will function as an ordinary USB key showing a normal dialogue box.

The audio is stored on internal flash using FAT16 and the Microsoft wave audio format. When the recorder is connected to a USB port on an MS-Windows compatible PC, it functions as a normal removable drive. Model 6508 USB is configured from the supplied PC software and options, such as real-time clock, sample frequency, recording mode, recording format, compression, input gain, etc. are available.

APPLICATIONS

The Model 6508 USB is ideal for operations requiring:

- Covert recordings
- Trojan Horse recording device
- Long operational time
- Quick installation

FEATURES

- Small size
- One button operation
- Recordings in high quality stereo audio
- Tamper proof timestamps using real-time clock
- Dual functions - works either as an audio recorder
  or as an ordinary USB key

SPECIFICATIONS

Power requirements	Internal rechargeable Lithium battery
Main battery lifetime	Internal rechargeable: min. 5 hours
Recorder memory	1 GB
Input frequency response	20 Hz - 12 kHz
Recording modes	Stereo or mono
Sample rates	6, 8, 9.6, 12, 16 and 24 kHz
Compression	None, A-law
A/D converter resolution	16 bit
Signal to Noise Ratio (SNR)	89 dB
Real-time clock precision	+/- 2 minutes per month
File System	Microsoft FAT16 compatible
Data format	Microsoft Wave
USB Transfer rate	Minimum 400 KB / Second
Dimensions (H x W x D)	15 x 74 x 27 mm / 0.6 x 2.9 x 1.1 inches

Digital Recorder Concealed in A USB Stick   Model 6508 USB

Digital Recorder Concealed In A Lighter   Model 6508

The Model 6508 Lighter contains a concealed 1 GB Model 6508 Miniature digital audio recorder with an internal rechargeable Lithium battery.

The device can operate for a minimum of 3 hours on a fully charged battery and has storage capabilities from 3 hours in highest quality, to 48 hours in lowest quality.

The Model 6508 has a built-in gas chamber and can function as an ordinary lighter. The audio is stored on internal flash using FAT16 and the Microsoft wave audio format. When the recorder is connected to a USB port on an MS-Windows compatible PC, it functions as a normal removable drive.

The Model 6508 lighter is configured from the supplied PC software and options, such as real-time clock, sample frequency, recording mode, recording format, compression, input gain, etc. are available.

APPLICATIONS

The Model 6508 Lighter is ideal for operations requiring:

- Covert recordings
- Trojan Horse recording device
- Long operational time
- Quick installation

FEATURES

- Small size
- One button operation
- Recordings in high quality stereo audio
- Tamper proof timestamps using real-time clock
- Dual functions - works either as a recorder or a lighter

SPECIFICATIONS

Power requirements	Internal rechargeable Lithium battery
Main battery lifetime	Internal rechargeable: min. 3 hours
Recorder memory	1 GB
Input frequency response	20 Hz - 12 kHz
Recording modes	Stereo or mono
Sample rates	6, 8, 9.6, 12, 16 and 24 kHz
Compression	None, A-law
A/D converter resolution	16 bit
Signal to Noise Ratio (SNR)	89 dB
Real-time clock precision	+/- 2 minutes per month
File System	Microsoft FAT16 compatible
Data format	Microsoft Wave
USB Transfer rate	Minimum 400 KB / Second
Dimensions (H x W x D)	15 x 74 x 27 mm / 0.6 x 2.9 x 1.1 inches

GSM Data & Audio Recorder   Model 6403

The Model 6403 can be equipped with an internal solid state recorder for recording during periods when communications are lost or unadvisable. The unit automatically records when audio is detected and the device is not communicating with the listening center. This recording can be downloaded later when conditions allow GSM communications to take place.

Other distinguishing characteristics are:

- small size and rugged construction

- exceptional audio quality

- reduced power consumption

- unattended operation, once installed no operator intervention is required

MAIN FUNCTIONS

- Automatic calling to the listening center in case of motor sensor activation, a VOX event or when its digital input – connected to the vehicle electrical circuit -- receives any information from it

- Programmable with SMS and with DTMF tones/Transmission of status information via SMS

- Light sensor for discovery detection sends an alarm via SMS

SPECIFICATIONS

Audio monitoring unit for covert audio surveillance using the GSM network, with internal solid state recorder.

Model 6403 Characteristics

Microphones	2, selectable - 7 levels 0÷36 dB
Current drain	Receiving: approximately 20 mA @ 12 V
	Transmission: 80÷160 mA @ 12 V
Dimensions (mm)	90 x 39 x 11

Recorder Characteristics

Bandwidth	300÷3400 Hz (telephone system quality)
Compression algorithm	ADPCM 2:1 at 4 bit
Sample rate	8 KHz
Recording time	2h 20 m

Remote Controlled Recorder With Built-In Transmitter

Model 6006H

For use by local, state, federal and international authorities

The new Elaman Model 6006h transcorder incorporates many of the unique features from Elaman's existing 6006b transmitter, combined with those of our new recorder.

Elaman Model 6006h can intercept and record all audio through its microphone without transmitting any RF signals in order to avoid detection during sweeping. The recorded audio can be transferred at any time to the receiver by sending a command from the 6006s remote control unit.

The combination of its built-in recorder, remote controlled functions and small size makes the transcorder perfect for long-term installations and operations where continuous RF transmissions must be avoided.

The compact design makes the Model 6006h a versatile and easy deployed unit.

The low power consumption makes it ideal in operational situations where an extended battery life is crucial. The transcorder can be powered from any power source, battery or external, as long as the supply voltage is between 4-15 VDC. Elaman recommends our 2 W micro power supply (Model 6007-4) as the external power source. From 6 to 24 hours recording time is possible, depending on compression and sample rate.

As a full member of our Elaman family, the Model 6006h transcoder signal can be received by all Elaman receivers and controlled by the Model 6006s remote control.

APPLICATIONS

The Elaman Model 6006h is ideal for use in operations requiring:

- Long-term installations
- Recording capabilities
- Low probability of detection
- Exceptional voice clarity
- Low power consumption

FEATURES

- From 6 to 24 hours recording time
- Remote recorder functions:
- Delayed playback for recording security
- Audio monitoring, transmitter mode
- Functions as removable drive when connected to a PC
- Remote transmitter functions:
- Available in UHF and VHF versions

Remote Controlled Recorder With Built-In Transmitter   Model 6006H

TECHNICAL SPECIFICATIONS

GENERAL

Supply voltage	**4.0 V-15.0 V**
Current consumption, (V supply = 6 V)	**< 65 mA DC**
Current consumption, sleep mode	**< 500 µA DC**
Dimensions (H x W x D)	**70 x 41 x 20 mm/2.8 x 1.6 x 0.8 inches**

TRANSMITTER DEVICE TXF-RC

Output frequency range	**UHF 320-330 MHz**
Output power	**UHF > 60 mW into 50 load**
Audio amplifier, AGC range	**45 dB**

REMOTE CONTROL RECEIVER

Remote control frequency	**433.92 MHz**
Sensitivity	**< -90 dBm**

RECORDING DEVICE

Dynamic range	**96 dB**
Signal/noise	**> 80 dB**
Recorder memory	**500 MB**
Audio bandwidth	**Half the sample frequency**
Recording time	**Up to 24 hours, depends on settings**
	6 hours @ 12 kHz sample freq. and linear
	12 hours @ 12 kHz sample freq. and A-law
USB Transfer rate	**400 KB/Second**
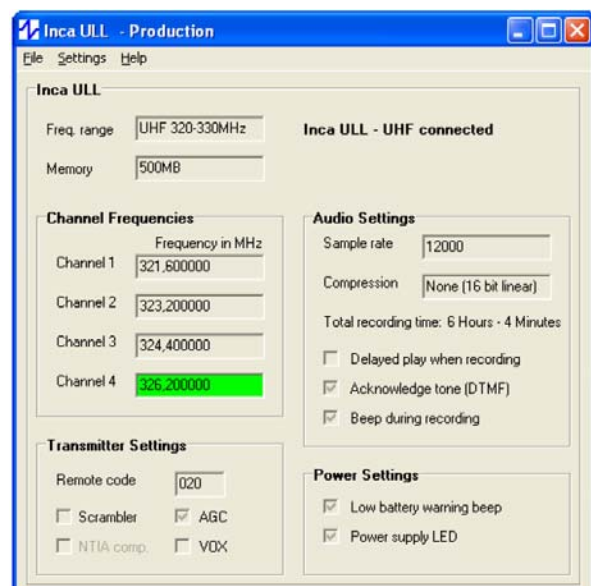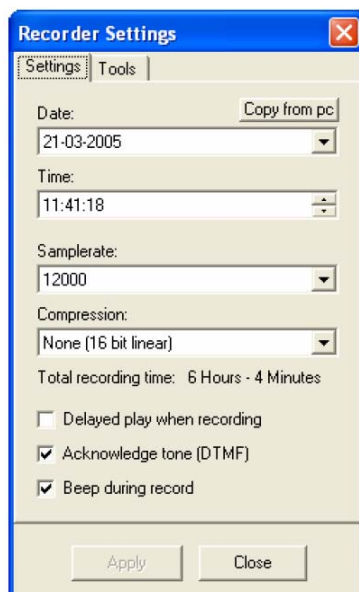
Multi-Channel Digital Audio Recorder   Model 6805

FEATURES:

- Records up to 64 audio channels simultaneously
- Ideal for recording raw microphone array audio
- Small
- Portable
- Battery powered
- Simple to operate
- Perfect for capturing and transporting audio from large installations
- Prisons
- Jail cell blocks
- Evidence quality audio
- Time stamps
- Integrity check sums

Elaman's new multi-channel recording system is a convenient and flexible way to capture, transport and store audio. Never before has it been feasible to record high quality, long duration audio from so many audio sources outside of a laboratory.

The system is comprised of microphones, one (or more) digitizer boards, a Capture Unit, and a Recorder Unit (See illustration below). Each digitizer board accepts microphone or line level audio, digitizes it using 24-bit CODECs, and passes the digitized multi-channel audio on to the Capture Unit. The Capture Unit formats the audio from the digitizer board(s) and streams it out via fast (100Mbps) Ethernet. At some (possibly very distant) location, the Recorder Unit receives the Ethernet audio stream and stores it as a multi-channel audio file on a removable USB2 HDD (Hard Disk Drive). Finally, the HDD can be carried to a Microsoft Windows ®-based personal computer and the multi-channel audio file is played using the included software.

The user can remotely adjust the input microphone gain from the Capture Unit. Level metering and monitoring are provided on the Recorder. The system is compatible with standard commercial USB2 HDDs.

The current size supplied with the unit is 60GB, which is sufficient to store over 5 hours of 24 channel audio, for example. Additional USB2 HDDs can be attached for even longer record times using the external connector on the rear panel.

Up to four systems can be synchronized for a total of 256 channels of simultaneously sampled and recorded audio.

The system operates from 9-18 VDC power, allowing it to work from a variety of sources, such as car lighter plugs and AC-to-DC converters. Contact Elaman or your local dealer for more details about this useful capability.

AFS
Audio Filtration Systems

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
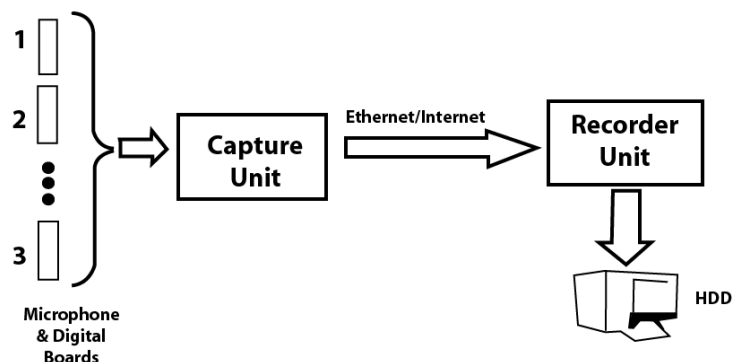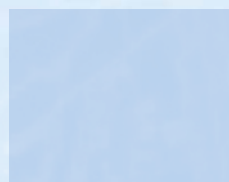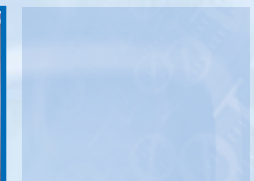
Audio Filtration Systems

Ref	Number	Description
1	6601	Compact Audio Filtration System
2	6602	Portable Audio Clarification System
3	6603	Audio Noise Canceller
4	6604	Audio Processing Laboratory
5	6605	Turnkey Filtration Lab System

Compact Audio Filtration System   Model 6601

Our most popular forensic audio system, the Model 6601 raises the bar again with 50 percent more processing power, new broadband filtering capabilities, reporting functionality, and an improved software interface. Designed for both tactical and lab environments, the Model 6601 effectively reduces complex background noise problems and enables users to capture intelligible speech signals from live or recorded surveillance audio.
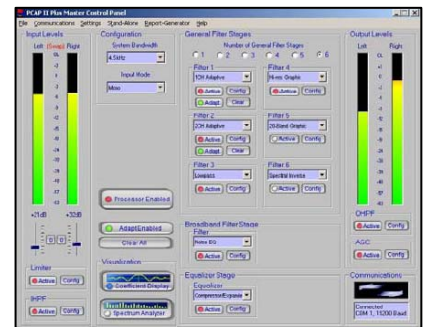
KEY FEATURES:

- Adaptive Spectral Inverse Filter (ASIF): The latest in automated filtering capability, ASIF dramatically improves the intelligibility of almost any speech signal by precisely re-equalizing to the optimum spectral characteristics
- Comprehensive Filter Technology: Twenty-three different filter types to attack the widest array of surveillance noise problems, including power hum, echo, muffling, engine sounds, music, tape hiss, and tonal imbalance
- NoiseEQ™ Stereo Broadband Filter: Our new selective stereo broadband filter attacks difficult random noises, such as wind, hiss, and RF static from body wire kits

- Enhanced Digital Media Processing: Our new Auto SYNC technology means seamless integration into any PC-based audio workstation for easy processing of digital evidence
- Powerful Visualization and Analysis Tools: The dual-channel Spectrum Analyzer and Coefficient Display modules help you see through the noise to find the underlying signals of interest
- Flexible and Intuitive Interface: The updated graphical user interface is easy to navigate, allowing for quick filter setup and changes
- More Science - Better Results: Our proven methodology and built-in scientific approach help produce the kind of results that win cases and survive legal challenges

Key Benefits:	Best Uses:	Who Needs This?
• Easy-to-use software • Powerful digital filters • Spectrum analysis • ASCLD reporting • Lab or field use	• Forensic audio labs • Live surveillance • Reference cancellation • Handling difficult noise problems	• Forensic audio • Examiners • Technical investigators • Intelligence Operators • MC Users

Sample screen shots

Spectrum Analyzer   *2CH Reference Canceller*   *NoiseEQ™ Control Panel*

Compact Audio Filtration System   Model 6601

SPECIFICATIONS

The forensic audio processing system includes the Master Control Software and the Model 6601 processor. The Master Control Software is easy to navigate and allows the user to access and configure the many filters and analytical tools to attack various noise problems. The Model 6601 system is organized to guide the user through a structured forensic problem solving methodology. This process ensures the highest quality audio processing for maximum noise reduction and speech intelligibility.

ANALOG	
Line Inputs (2)	Two rear-panel RCA
Line Outputs (2)	Two rear-panel RCA
Headphone Output	Front panel stereo jack with volume control
Bandwidths	3.2, 5.4, 6.5, 8.0, 11.0, and 16.0 kHz, selectable
Analog Conversions	24-bit sigma-delta stereo A/D and D/A
Dynamic Range	>90 dB
DIGITAL	
Interfaces	S/PDIF professional format with Auto SYNC feature RCA connectors
DSPs	One TMS3206713, 225 MHz Three TMS320C50 (20 MIPS) Thirty-two DSP56200 FIR filter microprocessors
Limiter	Microprocessor controlled Adj. release time and hold
Computer Interface	RS232 serial interface for system control and spectrum analyzer display

Compact Audio Filtration System   Model 6601

SIGNAL PROCESSING	
Adjustable Filters	Low pass, High Pass, Bandpass, Bandstop, Comb, Inverse Comb, Notch, and Slot
Digital Filters	1-channel and 2-channel adaptive
	6144-tap dynamically-configurable adaptive/fixed digital filter array
	Two dedicated 256-tap FIR EQs
	Two input and two output 255th-order linear-phase digital high pass and rumble filters
	Two dedicated broadband noise filter stages
Special Filters Equalizers, and Misc	Hi-res graphic filter, stereo spectral inverse filter (SIF), 20-band graphic, spectral graphic, and parametric EQ, Compressor/Expander, NoiseEQ
	Digital automatic gain control
Spectral Analysis	Dual-channel, 70dB dynamic range
	460-line resolution
CONSTRUCTION	
Packaging	• 3.25 H x 25 W x 23.75 D (cm), 2.8 lbs.
	• Rugged aluminum enclosure
Power	• 12VDC @ 2A
	• Universal AC adaptor supplied
Host Computer	• Windows 98 2nd Edition/NT/Me/2000/XP
	• CD-ROM and Serial or USB port

Portable Audio Clarification Software   Model 6602

Elaman introduces QuickEnhance ® Audio Suite (QE/AS) for use with Avid ® video editing systems and Digidesign Pro Tools ® systems.

QE/AS provides enhanced visual analysis, automatic filtering, and an intuitive user-design to efficiently and effectively meet the needs of law enforcement forensic audio professionals. QuickEnhance/AS is perfect for quickly reducing interfering noise problems and extracting intelligible speech signals from audio and video surveillance tapes.

KEY FEATURES:

- 1000-Band Spectrum Analyzer allows users to visualize the audio under investigation, thus increasing user efficiency (NEW!)
- Improved, easy-to-use graphical user interface (NEW!)
- Attacks a wide variety of common noises such as: power hum, static, echo, reverberation, acoustic resonance, hiss, muffling, low talkers, and engine sounds
- Five powerful digital processing stages including Hum Filter, Predictable Noise Reduction, Random Noise Reduction, 10-Band EQ, and Automatic Gain Control
- Auto-Tracking Precision Hum Filter (NEW!)
- Report generator outputs filter settings for future reference and accurate case documentation
- Save and recall filter configurations for future processing
- Bypass button for comparison of processed vs unprocessed audio (NEW!)
- 200 Hz highpass filter to remove DC offset and low frequency rumble
- Initial auto-normalization stages to maximize signal amplitude
- Operates with Avid Xpress systems running Windows 2000 or higher
- Operates with Digidesign Pro Tools systems version 6.0 or higher
- USB hardware key included

KEY BENEFITS

- Integrated with Avid forensic video system
- Simplified user controls
- Minimal training required
- Visual analysis
- Powerful digital signal processing
- Attacks a wide array of common noises
- Increases efficiency
- Saves time and money

BEST USES:

- Forensic video labs
- Avid video production workstations
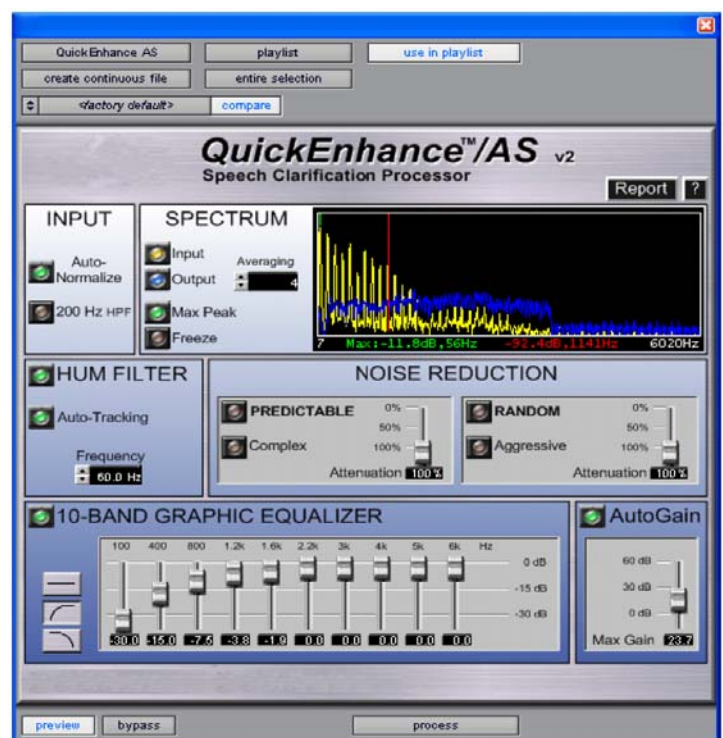
Audio Noise Canceller

Model 6603

The Model 6603 is introduced for maximizing "sharp-end" audio filtering applications. Our most popular tactical, digital adaptive filter has been upgraded to include unprecedented interactive, real-time performance and ease-of use. With up to three channels of reference canceling capability, pre-programmable filter sets, and interactive control, it is the perfect complement to your tactical surveillance efforts.

KEY FEATURES:

- M-Class: Model 6603 is the first entry in the new "M-Class" line of premium audio products. These digitally-interfaced, tactical filtering solutions can be built upon for operation-specific use
- Interconnectivity: Direct digital interconnection with common digital recorders, digital wireless microphone receivers, and other M-Class products
- Stereo results: Unlike its predecessors, Model 6603 enables reference canceling with high-quality stereo results – up to three references removed from a mono signal, or two from a stereo signal
- Intuitive design: LED lights and adjustable knobs promote ease of use for identifying and working with multiple audio signals
- Attacks common noises: Power hum, tones, music, TV audio, echoes, acoustic resonance, and muffling effects
- USB 2.0 interface: Allows user to interactively operate the unit "on the fly" under Windows software control (real-time filter customization)
- Practical functionality:
  - "Crash Detect" feature resets adaptive filters automatically
  - Pre-programmable custom digital filter combinations
  - Lockdown function to safeguard panel settings
  - Compact, slim-line design for easy installation and operation
- More precision: Utilizes latest floating-point DSP technology from Texas Instruments
- Special signal processing: Model 6603 is capable of performing multi-channel noise reduction techniques for reducing audio interference from one or more strong background noise sources (i.e. TV, radio) without requiring a reference signal to be obtained
- Basic package includes: USB interface cable, car lighter adaptor cable, universal AC adaptor, software CD, and user manual

KEY BENEFITS:

- Easy to operate
- High-quality stereo throughput
- Real-time results
- Powerful and effective
- Customizable
- Interactive PC control
- Stereo radio/TV cancellation

BEST USES:

- Live listening posts
- Multi-channel noise reduction
- Jail cell reverberation & echo removal
- Officer safety situations
- Surveillance vans
- Body-wire kits

Audio Noise Canceller   Model 6603

SPECIFICATIONS

Power:	
9-18VDC input, 2A:	• 2.1mm "barrel" connector, positive tip • Universal AC adaptor supplied
Analog:	
Line Inputs (4):	• Standard RCA jack • -39dBV to +6dBV input level, adjustable gain • ZIN = 25kW , AC coupled
Line Outputs (2):	• Standard RCA jack • +6dBV output level • ZOUT = 100W, AC-coupled
Bandwidth Options:	• 5kHz, 11.025kHz processing rate • 10kHz, 22.05kHz processing rate • 20kHz, 44.1kHz processing rate
Analog Conversion:	• Four channels of 24-bit, 256x-oversampling, sigma-delta stereo A/D conversion • Two channels of 24-bit, 256x-oversampling, delta-sigma stereo D/A conversion • >90dB SINAD, >100dB dynamic range
Digital:	
Audio Inputs (2):	• TOSLINK optical interface, 16-24 bit data resolution and 32-192kHz sample rates supported • S/PDIF coaxial interface, RCA jack, 16-24 bit data resolution and 32-192kHz sample rates supported
Audio Output (1):	• TOSLINK optical interface, constant 24-bit data resolution and 44.1kHz sample rate
Control Interface (1):	• USB 2.0 full-speed interface • Windows-based interactive control and programming utility
Processor Functions (DSP #1):	• 4500-tap (at 5kHz BW option) adaptive FIR stage, configurable as: • 4500-tap monaural 2CH filter • 2 x 2100-tap monaural 3CH or stereo 2CH filter • 3 x 1400-tap monaural 4CH filter • 4 x 1050-tap stereo 3CH filter • Adaptive filters derate to 2100 and 1000 total filter taps at 10kHz and 20kHz bandwidths, respectively
Physical:	• 8.5"W x 1.7"H x 6.6"D chassis, 8lbs • 1U rack mounting kit available

Audio Processing Laboratory — Model 6604

Model 6604 takes forensic audio processing and analysis to the next level. Fully integrating the capabilities of both hardware and software, Model 6604 seamlessly handles forensic analysis and processing of all analog and digital media, including file based digital media. Model 6604 represents productivity enhancement through a seamlessly integrated audio workstation environment, capable of blending the merits of superb audio filtering with comprehensive speech and signal processing.
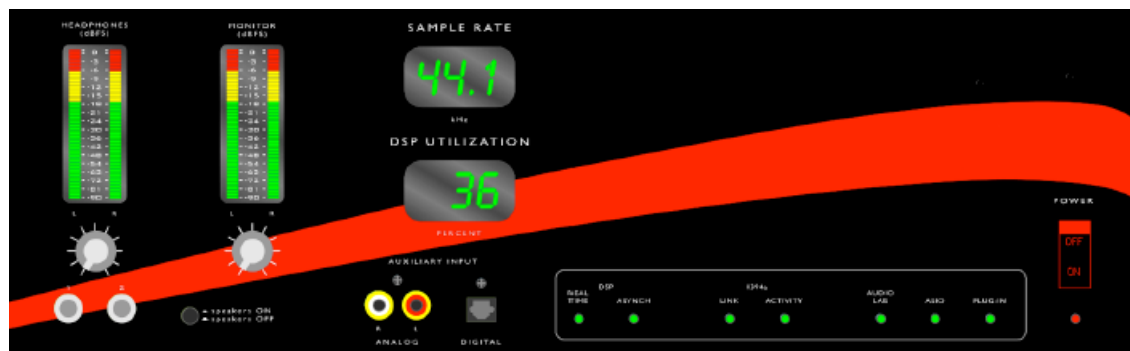
KEY FEATURES:

- Multi-tasking: Productivity-enhancing features such as asynchronous "batchmode" processing will allow multiple jobs to be handled simultaneously
- Power, Power, Power: The powerful AccelCoreÔ external processor hardware, based on the Analog Devices TigerSHARCÒ floating-point DSP, provides all audio I/O and performs lightning fast regardless of workload
- Handles All Media: Common analog and digital media formats, including filebased media, can be handled directly
- Seamless Integration: Both Direct-X and VST plug-ins will be supported within the AudioLab environment. AudioLab replaces the Master Control Panel found on previous products and allows software-based tools to be mixed and matched with others that are AccelCore-based. Further, the entire setup can be preserved in a single file for easy recall and repeatability at a later date
- Advanced Visualization: Advanced real-time visualization tools such as Precision Spectrogram, Cepstral Voice Pitch Analyzer, 3D Waterfall Spectral Analyzer, and DTMF/Caller ID Visualizer will be included
- Additional Software Tools: "Relative" speaker identification, transient reduction, automatic noise/effect analysis, multi-track alignment, and conversion to common law-enforcement audio formats will also be provided

KEY BENEFITS:

- Intuitive design
- Seamless integration
- Powerful digital filters
- Spectrum analysis
- Virtual patching capability
- Maximum flexibility
- File & tape media handling
- ASCLD reporting

Audio Processing Laboratory   Model 6604

ADDITIONAL CONSIDERATION

- Maximum Efficiency: All real-time filters and visualization tools support multiple instances up to the maximum resource limitations of the PC, the IEEE-1394 "Firewire" interface, and the AccelCoreÔ
- Building on Experience: Includes all filtering operations of the current-generation Model 6601 and MCAP products, plus many new real-time filters such as Clipped-Peak Restoration, Multi-band Downward Expander Noise Reduction, Precision Tracking Comb Filter, and Enhanced 1CH Adaptive and Reference Canceller filters. Simply amazing
- Sophisticated Timeline Management: Tool allows different processing to be applied to different portions of the recording while maintaining evidence integrity
- Flexible and Intuitive Interface: The redesigned graphical user interface is easy to navigate, allowing for quick filter setup and changes
- More Science - Better Results: Our proven methodology and built-in scientific approach help produce results that win cases and survive legal challenges

SPECIFICATIONS

ASIO Driver:	• To allow third-party software products to directly utilize the AccelCore for their audio I/O
Power:	•Built-in universal AC power supply
Software:	•Interfaces via IEEE-1394a Firewire Audio lab control software runs in Windows 2000/XP or higher, (dual displays recommended)
Audio I/O:	• 8 channels of balanced analog I/O, AES/EBU digital I/O, dual TOSLINK optical digital I/O, dual S/PDIF coaxial digital I/O, ADAT 8-channel optical I/O, dual monitor outputs for connecting amplified speakers, and dual front panel stereo headphone jacks Supports all industry standard rates up to 192 kHz
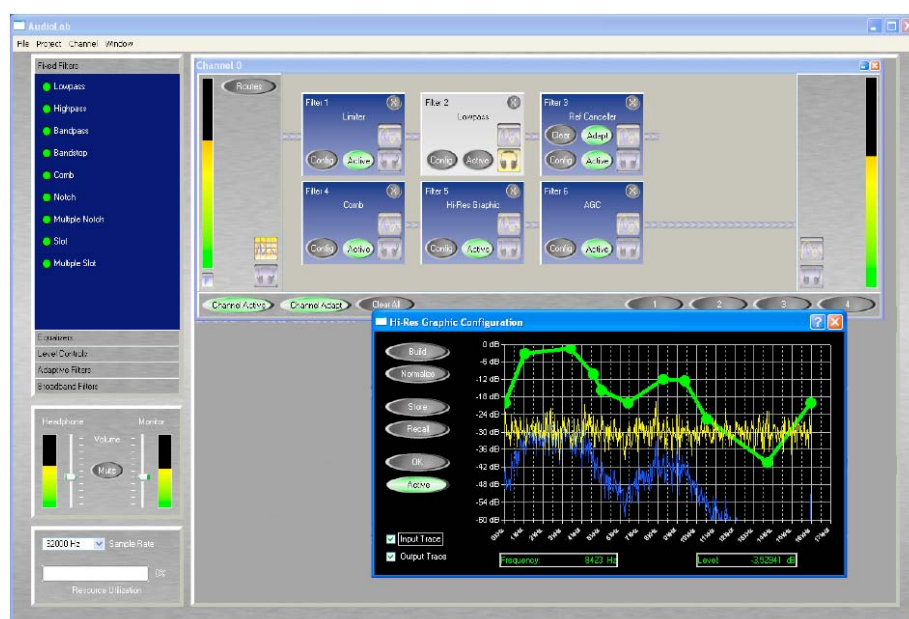
Audio Processing Laboratory   Model 6604

Digital Processing	
Control Microprocessor	• One Wavefront Semiconductor DICE II, with ARM core operating at 50 MIPS, ASIC-based digital audio routing, and Firewire audio interface supporting up to 96 channels of audio streaming between the Model 6604 and host PC • Includes Windows ASIO driver for intercommunication of digital audio data between Model 6604 and third-party software
DSP Farm	• Nine Analog Devices ADSP-TS201S TigerSHARC™ processors, each with 24Mbits of internal RAM and 491.52MHz clock speed • Total processing throughput of 106K MIPS, or 26.5GFLOPS
Other Processing	•Texas Instruments TMS320VC5410A front-panel controller processor, with 128kB of internal RAM and 100MIPS throughput •Xilinx Spartan-3 XC3S50 FPGA, configured as a DSP audio router
Digital Filters	• Highpass, lowpass, bandpass, bandstop, comb, notch, and slot canonical filters • LMS 1CH, and Reference Canceller (2CH) adaptive filters • Automatic Spectral Inverse, Spectral Subtraction, and NoiseEQ broadband noise reduction filters • Graphic Equalizers, AGC • Other special tools, including real-time clipped-peak restoration, multiband downward expander denoiser, and "de-clicker" modules
Digital Analysis	• Real-time spectrum analyzer, single- or dual-trace, 920-line resolution •Adaptive filter coefficient display
Construction	
Packaging	• 5.25" H x 17.0" W x 12.0" D, 10 lbs. Rugged aluminum enclosure with black powder-coat finish and multi-color panel overlays.
Power	• 85 - 264 VAC, 47-63 Hz universal with IEC320 inlet, 100VA maximum
Host Computer	• Recommended Intel Pentium IV 2.0 GHz (or higher) desktop or laptop PC with mouse, 1024x768 SVGA monitor (dual monitors recommended), 1GB RAM, CD-ROM, 80 GB HD, Windows XP SP2, and at least one free IEEE-1394a "Firewire" interface port available. Active matrix LCD display recommended if notebook used.
Streaming Interface	• Standard "ASIO" audio driver interface, supporting up to 16 channels of playback and record simultaneously. Provides capability to process WAV or other file-based data through the Model 6604 hardware via the Firewire connection. Compatible with Adobe Audition 2.0 and Sound Forge 8.0 software.

Turnkey Filtration Lab System   Model 6605

Based on the next generation forensic audio processor this turnkey solution provides a complete forensic audio processing solution for handling many types of media, both analog and digital. The system includes the following items: Audio lab software; Windows XP-based process control unit with dual 19 flat screen monitors, 120GB hard disk, 1GB of RAM, and multi-format media card reader; Adobe Audition Software; two cassette recorder decks; two CD recorder decks; dual loudspeaker monitors; two pairs of professional-grade stereo headphones; dual 19 equipment racks, all necessary power strips, cabling, mounting hardware, and setup.

THE SYSTEM CONSISTS OF:

Qty	Description
1	Model 6604 audio processing system
2	Tascam CC-222 Cassette/CDRW Recorder Combo
1	Tascam MD350 MiniDisc Player
1	Denon DN-V200 Universal DVD Player
1	Process Control Unit (Generic Desktop Tower-not Dell)
	Minimum specifications
	3.0GHz P4, 1GB RAM, 120GB HD, WinXP Pro
	Dual 19" FP Mon, DVD-ROM, DVD-RW
	Firewire, legacy RS232 interconnect
	3.5" floppy drive
1	Adobe Audition 2.0 Multitrack Audio Editor Software
1	M-Audio Delta 1010 24/96 8CH Audio Interface
1pr.	Edirol MA-15D Desktop Monitor Speakers
2	Mid Atlantic 12U Rack Cabinets
1	Kramer VS1616A Audio Switch Matrix
2	8-position Rack Power Strip
2	Stereo Headphones
1	All required cables, hardware, installation, instructions and NRE

CMOE

Covert Methods of Entry
Locks - Alarms - PIR - Safes - Cars

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GERMAN SECURITY SOLUTIONS

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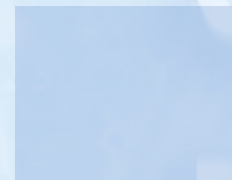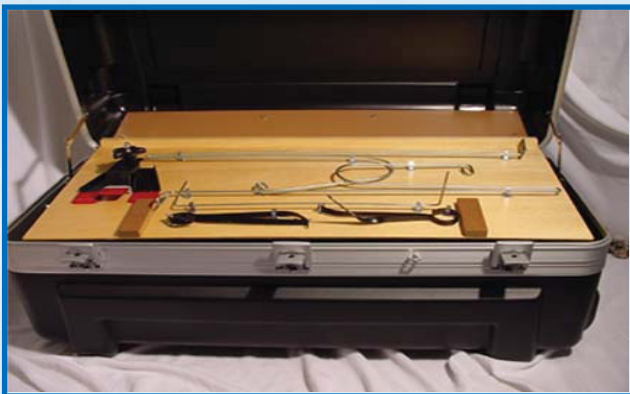
Covert Methods of Entry

Ref	Number	Description
1	2001	Covert Methods of Entry for Doors
2	2002	Covert Methods of Entry for Cars
3	2003	Covert Methods of Entry for Safes
4	2004	Professional and Government Key Cutting Machines
5	2005	Workshop Items for Analyzing Locks
6	2006	Training Locks for Doors and Cars
7	2201	PIR Entry Cloak
8	2204	PIR Complete Flipper Protection System
9	2205	PIR Protection Screen
10	2211	Alarm Defeat Keypad Decoder
11	2212	Microwave Alarm Detector
12	2231	Pin Cylinder Decoder

Covert Methods of Entry Workshop 2000 series

MODEL 2001 – COVERT DOOR OPENING EQUIPMENT
THE KIT CONSISTS OF:

1. 1 "Sputnik"
2. 1 "Tubular"
3. 1 Multi-Lock Pick Set
4. 1 E-Pick Professional Set "New Generation"
5. 1 Door Opening Set"
6. 1 Dental Pick Set
7. 1 Falle Lock Picks
8. 1 Pin Tumbler Decoder
9. 1 Hobbsche Hooks (Set of 4 different sizes)
10. 1 Cross Pick
11. 1 Matador Pick Set
12. 1 Duplicate Key Set
13. 1 Multi-pick Set
14. 1 Multifräße
15. 1 Lock-force "Professional Set"
16. 1 Tension Set (25 pieces)
17. 1 Milwaukee Mobil Reloader
18. 1 Accu-Light
19. 1 Replacement Lights (2 Pieces)
20. 1 Accu-Driller Lock-Tor
21. 1 Replacement Accu
22. 1 Kitbor Chubb Lever Set
23. 1 Jiggler Set (3 different Sets)
24. 1 Circle Manipulation Spiral-Needles (4 diff. pieces)
25. 1 Circle Manipulation Spiral-Needles small (2 pieces)
26. 1 Door Rod
27. 1 Window Opener
28. 1 European Percussion Spring System

29. 1 Door Panel Manipulation Hook
30. 1 Door Manipulation Card incl. 2 diff. Holders
31. 1 Manipulation Set for Lever Locks (13 Diff. Sizes)
   A: Length: 75mm Shaft: 45mm (10 Pieces)
   B: Length: 90 mm Shaft: 60mm (16 Pieces)
   D: Length: 90 mm Shaft: 60mm (20 Pieces)
   F: Length: 90 mm Shaft: 60mm (24 Pieces)
   G: Length: 90 mm Shaft: 60mm (24 Pieces)
   H: Length: 90 mm Shaft: 60mm (24 Pieces)
   J: Length: 100 mm Shaft: 80mm (12 Pieces)
   K: Length: 100 mm Shaft: 80mm (12 Pieces)
   L: Length: 100 mm Shaft: 80mm (12 Pieces)
   M: Length: 100mm Shaft: 80mm (24 Pieces)
   N: Length: 150mm Shaft: 120mm (24 Pieces)
   O: Length: 110mm Shaft: 80mm (15 Pieces)
   P: Length: 150mm Shaft: 120mm (12 Pieces)

Covert Methods of Entry Workshop   2000 series

MODEL 2002 – COVERT CAR OPENING EQUIPMENT

THE KIT CONSISTS OF:

1. 1 Car Key Simulator Set (15 pieces)-Simulator Set for Car Locks, Set of 15 Pieces
2. 1 Power Tool Set-For 2 & 4 Track Locks
3. 1 Car Key Jigglers Set-Set of 10 Car Key Simulators
4. 1 Wafer Reader Lock Decoder "Codigraph"-Elaborately Produces Special Tool Set for the Decoding of Disc Tumbler Locks
5. 1 High Security Lock Reader
6. 1 Build A-Key Set
7. 1 Laser Jiggler Set (Set A,B & C)-Set of 30 Key Simulators For 2 Track Locks
8. 1 Falle Tibbe Decoder Pick-Special Decoder for even the Newest Generation of Tibbe Locks
9. 1 Professional Lever Suction Cup Set
10. 1 Car Opener (incl. 600 g weight)-Quick Pulling Device
11. 1 Borescope PS3000
12. 1 Car Opener Vertical
13. 1 Car Opener Horizontal
14. 1 Power Wedge
15. 1 Special Case-Waterproofed Case with Specially Handmade Foamed Padding for Storing of the Tools (Pos.1-14)
16. 1 Car Opening Set -25 Openers & Accessories
17. 1 Car Opening Set -13 Car Openers & Accessories
18. 1 Car Opening Set (Inside Opening)-4 Special Openers for Car Opening from the Inside
19. 1 European Car Opening Set Basic -25 Openers & Accessories for European Cars
20. 1 Asian Car Set Basic-25 Special Openers & Accessories for Asian cars
21. 1 American Car Set Basic-25 Special Openers & Accessories for American Cars
22. 1 Books for Car Opening -Opening Methods for Most Cars from 1995-2004

Covert Methods of Entry Workshop   2000 series

MODEL 2003 - SAFE OPENING SET

THERMAL OPENING EQUIPMENT

1. 1 MSC Mini Hot Shot Kit
   1x Thermal Lance Grip
   1x Ignition Cable with Strike Plate
   1x Battery 12 V
   1x Oxygen Bottle
   1x Bearer Frame
2. 1 Thermal Lance 4 mm x 450 mm (50 Stck.)
3. 1 Thermal Lance 6.35 mm x 450 mm (50 Stck.)
4. 1 Thermal Lance 9.53 mm x 450 mm (50 Stck.)
5. 1 Thermal Lance 9.53 mm x 900 mm (50 Stck.)
6. 1 Collet 6.35 mm
7. 1 Collet 9.53 mm
8. 1 Safe-man's Uniform
   1 Safety Helmet
   1 Safety Jacket
   1 Safety Trousers
   1 Safety Gloves

DRILLING OPENING EQUIPMENT

1. 14 Drill Set "Premium Set A" (14 Pieces)
   2 x 3.17 mm
   2 x 4.76 mm
   2 x 6.35 mm
   2 x 7.93 mm
   2 x 9.52 mm
   2 x 11.11 mm
   2 x 12.76 mm
2. 10 Drill Set "Winner" (10 Pieces)
   2 x 6.35 mm x 101 mm
   2 x 6.35 mm x 152 mm
   2 x 7.93 mm x 101 mm
   2 x 7.93 mm x 152 mm
   2 x 9.52 mm x 152 mm
3. 18 Drill Set "Karbid Force" (18 Pieces)
   2 x 4.76 mm x 101 mm
   2 x 6.35 mm x 101 mm

    2 x 6.35 mm x 152 mm
    2 x 6.35 mm x 203 mm
    2 x 6.35 mm x 254 mm
    2 x 7.93 mm x 152 mm
    2 x 7.93 mm x 203 mm
    2 x 9.52 mm x 152 mm
    2 x 9.52 mm x 203 mm
4. 6 Drill Set "King Drill" (6 Pieces)
   2 x 6.35 mm x 152 mm
   2 x 7.93 mm x 152 mm
   2 x 9.52 mm x 152 mm
5. 1 Drilling machine Holder
6. 1 Safe Power Drill
7. 1 Drilling Jig "Safe Buster"
8. 1 Safe & Treasure Repair Kit
9. 1 Safe Opening-Set

Covert Methods of Entry Workshop   2000 series

MANIPULATION EQUIPMENT

1. 1 Electronic Stethoscope
2. 1 Dialer Safe Automatic Master 1
3. 1 Dialer Safe Automatic Professional
4. 1 Mad Mike's Manipulator
5. 1 Manipulation Combination Unit
6. 1 Laser Manipulation-Set
7. 1 Change Key Set
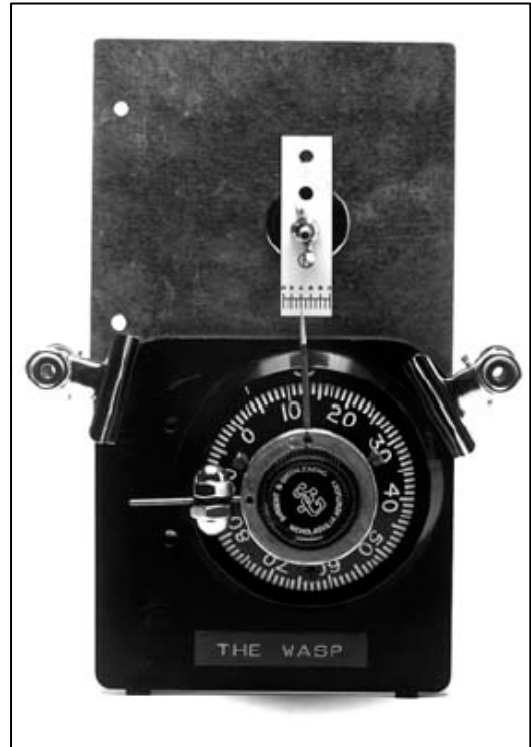
LEAVER LOCK EQUIPMENT
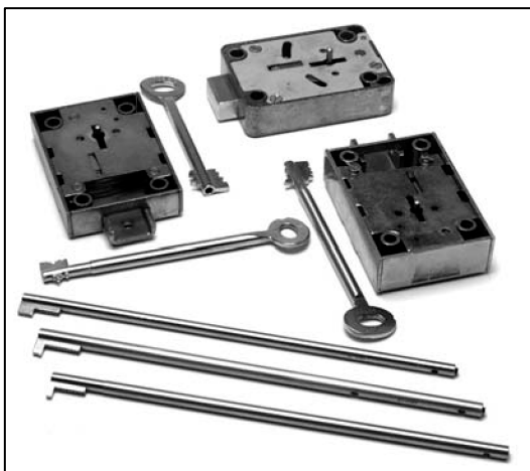
1. 1 Hobbsche Hooks Set (4 Pieces)
2. 1 1 x 9 mm
3. 1 1 x 10 mm
4. 1 1 x 12 mm
5. 1 1 x 15 mm
6. 6 Safe Manipulation Keys Differ. Sets
7. 1 Jay Felch Tool
8. 1 Ultimate Safe Deposit Opening Kit
9. 1 Kitbor Chubb Opening-Set
10. 1 Wasps
11. 1 Hook "Kromer Novum" 7 Lever
12. 1 Hook "STUV" 8 Lever
13. 1 Hook "TANN" 9 Scheiben
14. 1 Hook "BERNARDINI" 7 Lever
15. 1 Hook "CONVAR" 8 Lever

Covert Methods of Entry Workshop   2000 series

OPTICAL ACCESSORIES
1.   1 Borescope Micro Lens
2.   1 Micro Borescope Slim

MECHANICAL ACCESSORIES
1.   1 Safe Tool Mobil Kit (weather resistant)
2.   1 Straight Light
3.   1 Pin & Chisel Punch Set
4.   1 X-07 Change Key
5.   1 X-07/X-08 Cover Removal Tool
6.   1 Set, Mosler Replacement Drawer Susp.
7.   1 Deluxe 8-Piece Screwdriver
8.   1 High Security Set X-0 Dial Pullers
9.   1 Dial Puller
10. 10 GSA Safe Saver Repair Pins
11. 1 Emergency Dial for Broken Spindles

MANUALS
1.   4 Safes Manuals and Learning Material

TRAINING EQUIPMENT
2.   8 Safe Demo Units for Training Manipulation Dialing and Safe Locks Different Types

Covert Methods of Entry Workshop   2000 series

MODEL 2004 - PROFESSIONAL AND GOVERNMENT KEY CUTTING MACHINES

THE KIT CONSISTS OF:

1. 1 Mobile Key Cutting Machine for profile and round cylinders and car keys installed in a solid metal box

2. Boxes for storage of different key blanks, incl. charger & accu-pack for mobile production of key duplicates & mother keys (imprisoning)

3. 1 Special Key Blank Machine Government Version, incl. 40 Key blanks; functions as with the standard version; a key can be produced just by having digital picture of the original key.

4. 1 Set of Tools for Workshop

5. 1 Multipoint High Security Car Key Cutting Machine

MODEL 2005 - WORK SHOP ITEMS FOR ANALYZING LOCKS

1. 1 Digital Vernier Calliper 0-500 mm

2. 1 Stereo Microscope, incl. Software

3. 1 Impressioning Set Professional (20 pieces)

4. 1 Proxxon Micro Miller MF 70 – Miller & Drilling Machine

MODEL 2006 - TRAINING LOCKS FOR DOORS AND CARS

1. 1 Training Set Door locks-4 small doors of wood with different profile and round cylinders

2. 1 Training Set Car locks-10 small metal racks with different car locks including keys

CME/Specialist Operations Equipment   2200 series

PIR LIGHT & CAMERA DEFEAT/NEGATION

2201 - PIR ENTRY CLOAK

A unique piece of equipment worn by a CME officer using integrated shoulder and waist straps, which cloaks the thermal signature. This allows movement and work within a PIR protected environment.

2204 - PIR COMPLETE FLIPPER PROTECTION SYSTEM

This kit is a complete set of parts to assemble either flipper unit under either control system. The unit can then be disassembled to build the alternative unit.

2205 - PIR PROTECTION SCREEN

A portable self-raising unit that provides a protection wall to allow movement unobserved by PIR.

ALARM DEFEAT

2211 - ALARM DEFEAT KEYPAD DECODER

A radio-based unit that decodes, transmits, and records user activity on target alarm keypads. The equipment consists of an implant and a receiver, with each implant specific to a make/model of intruder alarm panel. Once the implant is covertly deployed, data can be in real-time or stored for later retrieval.

2212 - MICROWAVE ALARM DETECTOR

This unique equipment is a portable, ruggedized unit for detecting microwave emissions in the three allocated UK frequency bands from a distance. It is able to detect the presence and triangulate the location of microwave detectors, from afar, without activating them.

LOCK DEFEAT

2231 - PIN CYLINDER DECODER

A portable self-contained decoding tool that is effective against all conventional pin tumbler cylinders. It is a cost effective addition to any CME officer's toolkit. This is the first useable tool employing the age-old technique of push keying, combined with an accurate measuring device to decode the bottom pins in most conventional pin tumbler cylinders.

1

CVOC

Covert Video Observation Cameras

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GERMAN SECURITY SOLUTIONS

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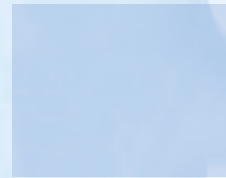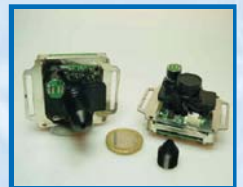
Covert Video Observation Cameras

Ref	Number	Description
1	5001	Color/BW audio camera with illumination regulated automatic filter switch
2	5002	High resolution CCD camera B/W
3	5003	High resolution CCD camera color
4	5004	High resolution CCD mini camera color
5	5005	Ultra Micro CMOS camera series I B/W
6	5006	Micro CMOS camera B/W
7	5007	Micro CMOS camera color
8	5008	high resolution CCD mini CAMERA B/W with separate head (Lens M12)
9	5009	High resolution CCD micro stick CAMERA color
10	5010	High resolution CCD mini button CAMERA color
11	5011	High resolution CCD CAMERA B/W with tele lens
12	5012	High resolution CCD CAMERA color with tele lens
13	5013	CCD mini CAMERA with separate head (Lens M9) Screw OR BUTTON LENS
14	5014	High resolution video glasses
15	5015	Ultra high Resolution Corner Camera Color
16	5016	High resolution CCD color tie CAMERA
17	5017	High resolution CCD jacket color CAMERA
18	5000R	Portable recording kit
19	5018	High resolution color CAMERA and frame buffer (MMC) with junction box

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20	5020	Video Camera Kit
21	5021	Camcorder Observation Set I
22	5022	Camcorder Observation Set II
23	5023	Mobile Room Observation Set I & II
24	5024	Mobile Alarm System
25	5025	Compact Electro-Optical Airborne Surveillance
26	5026	High Performance Airborne Electro-Optical Surveillance
27	5101	100X Zoom Mini Camera
28	5102	220X Zoom Camera
29	5103	Zoom Camera for Indoor & Outdoor Applications
30	5104	Cylinder Cameras with Pan & Tilt
31	5105	Airvent Camera Hide for Vehicles
32	5106	Pan & Tilt For Covert Installations
33	5109	Mini Weatherproof Pan & Tilt
34	5108	Weatherproof Housing
35	5107	Manual Eyeball Pan And Tilt With Remote Head Color Camera
36	5112	Cutting Kit For Covert Pinhole Cameras
37	5113	Digital Telemetry System

Covert Video Cameras
Also Available with Audio Microphones

5000 series

MODEL 5001 - COLOR/BW AUDIO CAMERA WITH ILLUMINATION REGULATED AUTOMATIC FILTER SWITCH

This new camera type contains an illumination controlled IR filter removal mechanism. The IR filter is pulled away from the chip by a small electric motor when switching from color to b/w mode.

TECHNICAL DATA: SERIES V - VERSION C

Image sensor:	1/3" CCD image sensor (ExView HAD)
Effective pixels:	752 (H) x 582 (V) PAL / 450 TV lines
Power consumption:	150 mA @ 12V DC
Minimum illumination:	0.25LUX (at video output 50%, AGC=ON +39dB, F1.4)
Board size:	42 x 42 mm (without the mountings)

MODEL 5002 - HIGH RESOLUTION CCD CAMERA B/W

This new generation of high resolution cameras is based on the latest CCD chip technology. The small dimensions and the low power consumption recommend this camera for covert installation. The extensive dynamic range of the camera offers excellent over exposure protection.

TECHNICAL DATA: SERIES III – VERSION B

Image sensor:	1/3" CCD (ExView HAD)
Minimum illumination:	0.8 LUX F: 1.2
Resolution pixels:	795 (H) x 596 (V) PAL / 600 TV lines
Power consumption:	120 mA @ 12V DC
Dimensions incl. case:	53 x 42 x 16 mm

MODEL 5003 - HIGH RESOLUTION CCD CAMERA COLOR

This new generation of high resolution cameras is based on the latest CCD chip technology. The small dimensions and the low power consumption recommend this camera for covert installation. The extensive dynamic range of the camera offers excellent over exposure protection.

TECHNICAL DATA: SERIES III – VERSION B

Image sensor:	1/3" CCD (ExView HAD)
Minimum illumination:	0.8 LUX F: 1.2
Resolution pixels:	795 (H) x 596 (V) PAL / 580 TV lines
Power consumption:	120 mA @ 12V DC
Dimensions incl. case:	53 x 42 x 16 mm

Covert Video Cameras
Also Available with Audio Microphones

5000 series

MODEL 5004 - HIGH RESOLUTION CCD MINI CAMERA COLOR

This new generation of high resolution cameras is based on the latest CCD chip technology. The small dimensions and the low power consumption recommend this camera for covert installation. The extensive dynamic range of the camera offers excellent over exposure protection.

TECHNICAL DATA: SERIES II - VERSION B

Image sensor:	1/4" CCD
Minimum illumination:	0,5 LUX F: 1.2
Resolution pixels:	512 (H) x 582 (V) PAL / 470 TV lines
Power consumption:	65 mA @ 12V DC
Dimensions:	29 x 42,5 x 12 mm

MODEL 5005 - ULTRA MICRO CMOS CAMERA SERIES I B/W

This camera is recommended for covert installation because of its high resolution, small dimensions and low power consumption. An adapter for BNC and power supply is included in delivery.

TECHNICAL DATA: SERIES I - VERSION A

Image sensor:	1/4" CMOS
Minimum illumination:	< 1 LUX @ f1.2
Resolution pixels:	352 x 288 PAL / 280 TV lines
Power consumption:	10 mA @ 12V DC (7,5V DC to 12V DC)
Dimensions:	14 x 15 x 9 mm

MODEL 5006 - MICRO CMOS CAMERA B/W

This camera is integrated in an elaborately machined casing of solid material. The advantages are better heat lead-away (12 V version) and mechanical protection against damage by rough handling, as well as a shield from the outside (lines frequency, which can be located by special detectors). Adapter for BNC and power supply is included in delivery.

TECHNICAL DATA: SERIES I - VERSION B

Image sensor:	1/3" CMOS
Minimum illumination:	1 LUX @ f1.2
Resolution pixels:	628 x 582 PAL / 280 TV lines
Power consumption:	10 mA @ 12V DC (7,5V DC to 12V DC)
Dimensions:	17 x 21 x 11 mm

Covert Video Cameras
Also Available with Audio Microphones

5000 series

MODEL 5007 - MICRO CMOS CAMERA COLOR

This camera is integrated in an elaborately machined casing of solid material. The advantages are better heat lead-away (12 V version) and mechanical protection against damage by rough handling, as well as a shield from the outside (lines frequency, which can be located by special detectors). An Adapter for BNC and power supply is included in delivery.

TECHNICAL DATA: SERIES I - VERSION C

Image sensor:	1/3" CMOS
Minimum illumination:	< 3 LUX @ f1.2
Resolution pixels:	628 x 582 PAL / 380 TV lines
Power consumption:	40 mA @ 12V DC (7,5V DC to 12V DC)
Dimensions:	26 x 30 x 11 mm

MODEL 5008 - HIGH RESOLUTION CCD MINI CAMERA B/W WITH SEPARATE HEAD (LENS M12)

This new generation of high resolution cameras is based on the latest CCD chip technology. The small dimensions of the lens holder, with the camera chip separated by a cable or flexible band from the main board, and low power consumption, recommend this type of camera for flexible covert installation. Because of the different types of lenses and camouflage, installation possibilities in all fields of application are possible where regular cameras fail.

TECHNICAL DATA: SERIES III - VERSION C

Image sensor:	1/3" CCD SONY Super HAD
Minimum illumination:	0.08 Lux @ F1.2
Resolution pixels:	795 x 596 PAL / 600 TV lines
Power consumption:	120 mA @ 12V DC
Dimensions:	Head 15 x 15 x 13 mm / Case 49 x 38 x 14 mm

MODEL 5009 - HIGH RESOLUTION CCD MICRO STICK CAMERA COLOR

This new generation of high resolution cameras is based on the latest color CCD chip technology. The small dimensions of the case and low power consumption, recommend this type of camera for flexible covert installation. Because of the different types of lenses and camouflage, installation possibilities in all fields of application are possible where regular cameras fail.
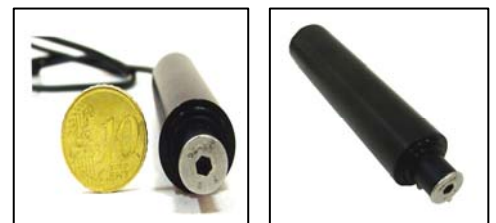
TECHNICAL DATA: SERIES IV - VERSION C

Image sensor:	1/4" CCD
Minimum illumination:	0,5 LUX F: 1.2
Resolution pixels:	542 x 586 PAL / 470 TV lines
Power consumption:	100 mA @ 12V DC
Dimensions:	70,5 x 17 mm (L x Ø)

Covert Video Cameras
Also Available with Audio Microphones

5000 series

MODEL 5010 - HIGH RESOLUTION CCD MINI BUTTON CAMERA COLOR

With this set, fastening the camera onto garments, such as jackets or shirts, is easy and simple. True to detail we make different lenses with special disguises, e.g. jeans buttons, brooches, pins, etc. Even the threads of the buttons are recreated. The camera is integrated in an elaborately machined casing of solid material. This assures a higher heat lead-away, when the camera is body-worn.

TECHNICAL DATA: SERIES II CCD – VERSION A

Image sensor:	1/4" CCD
Minimum illumination:	0,5 LUX F: 1.2
Resolution pixels:	512 (H) x 582 (V) PAL / 470 TV lines
Power consumption:	65 mA @ 12V DC
Dimensions:	29 x 29 x 12 mm

MODEL 5011 - HIGH RESOLUTION CCD CAMERA B/W WITH TELE LENS

These telephoto lens cameras are especially designed for professional surveillance of objects at great distances. Surveillance is even possible with the smallest apertures (just 2.2 mm), e.g. rivets, with transmission quality are not in the least impaired. Conventional lenses do not attain such high focus.

TECHNICAL DATA: SERIES IV – VERSION B

Image sensor:	1/3" Sharp CCD
Minimum illumination:	< 0.05 LUX F: 1.4
Resolution pixels:	752 x 582 PAL / 600 TV lines
Power consumption:	100 mA @ 12V DC (9V to 15V DC)
Dimensions:	21,5 mm diameter x 56 mm (L)

MODEL 5012 - HIGH RESOLUTION CCD CAMERA COLOR WITH TELE LENS

These telephoto lens cameras are especially designed for professional surveillance of objects at great distances. Surveillance is even possible with the smallest apertures (just 2.2 mm), e.g. rivets, with transmission quality are not in the least impaired. Conventional lenses do not attain such high focus.

TECHNICAL DATA: SERIES IV VERSION B

Image sensor:	1/4" CCD
Minimum illumination:	< 0,5 LUX F: 1.2
Resolution pixels:	542 (H) x 586 (V) PAL / 470 TV lines
Power consumption:	65 mA @ 12V DC
Dimensions:	21,5 mm diameter x 56 mm (L)

Covert Video Cameras
Also Available with Audio Microphones

5000 series

MODEL 5013 - CCD MINI CAMERA WITH SEPARATE HEAD (LENS M9) SCREW OR BUTTON LENS

This new generation of high resolution cameras is based on state-of-the-art color CCD chip technology. The compact size of the lens holder with the camera chip separated from the main board by a cable or flexible band, as well as the low power consumption, recommend this type of camera for covert installation construction.

TECHNICAL DATA: SERIES II CCD – VERSION C

Image sensor:	1/4'' CCD
Minimum illumination:	0.5 LUX F: 1.2
Resolution pixels:	512 (H) x 582 (V) PAL / 470 TV lines
Power consumption:	65 mA @ 12V DC
Dimensions:	Head 14 x 12,5 x 13 mm / Case 36 x 26 x 9 mm

MODEL 5014 - HIGH RESOLUTION VIDEO GLASSES

This new generation of high resolution cameras is based on state-of-the-art color CCD chip technology. The low power consumption and special form recommend this type of camera for covert installation construction. The camera is placed in high quality sunglasses and ensures high wearing comfort and brilliant image qualaity.

Also available with portable-recording-kit Model 5000R.

TECHNICAL DATA: SERIES II – VIDEO GLASSES

Image sensor:	1/4'' CCD
Minimum illumination:	1 LUX F: 1.2
Resolution pixels:	512 (H) x 582 (V) PAL / 470 TV lines
Power consumption:	65 mA @ 12V DC

Covert Video Cameras
Also Available with Audio Microphones

5000 series

MODEL 5015 - ULTRA HIGH RESOLUTION CORNER CAMERA COLOR

The ultra-high resolution corner surveillance camera is designed to be used in corners giving a wide, full view of a room/area. The very small pinhole (0.8 mm) is hard to detect, yet provides a crystal-clear wide-angle view of a room/area of up to 60 m^2 using only one camera.

This new generation of high resolution cameras is based on our state-of-the-art color CCD chip technology. Due to the great variety of lenses and camouflaged packaging available, installation is possible in various places where regular cameras fail. A small audio amplifier, including a high-sensitivity microphone and a connecting cable, are also available from us.

TECHNICAL DATA: SERIES VIII

Image sensor	1/3" CCD
Field of view (lens) H/V	92°/118° Pinhole
Auto electronic exposure	1/50 up to 1/120,000 sec
Minimum illumination	0.8 Lux F 1.2
Lens hole diameter required	0.8 – 1.2 mm
Resolution pixel	795 (H) x 596 (V) PAL / 580 TV Lines
Power supply	12 V
Power consumption	120 mA @ 12V DC
Dimensions:	Mounting 84 x 70 mm / Installation Depth 18mm
Options:	Various materials can be manufactured upon request.

Ø 0.8 mm
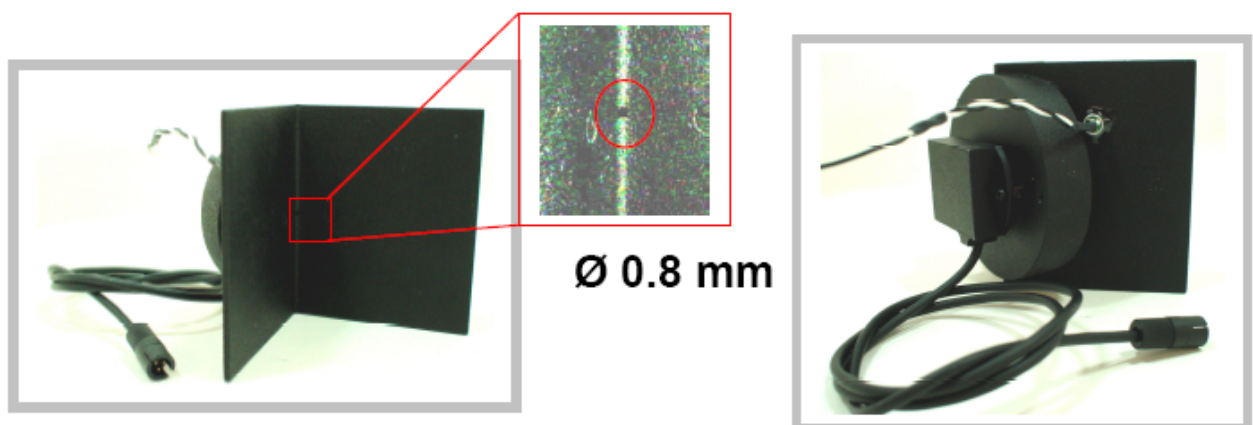
Covert Video Cameras

Also Available with Audio Microphones   **5000 series**

MODEL 5016 - HIGH RESOLUTION CCD COLOR TIE CAMERA

This new generation of high resolution cameras is based on the latest CCD chip technology. The small dimension and low power consumption recommend this camera for covert installation.

Also available with portable-recording-kit Model 5000R.

TECHNICAL DATA: SERIES VIII – TIE CAM

Image sensor:	1/4" CCD
Minimum illumination:	0.5 LUX F: 1.2
Resolution pixels:	512 (H) x 582 (V) PAL / 470 TV lines
Power consumption:	65 mA @ 12V DC

MODEL 5017 - HIGH RESOLUTION CCD JACKET COLOR CAMERA

This new generation of high resolution cameras is based on the latest CCD chip technology. The small dimension and low power consumption recommend this camera for covert installation.

Also available with portable-recording-kit Model 5000R.

TECHNICAL DATA: SERIES VIII – JACKET CAM

Image sensor:	1/4" CCD
Minimum illumination:	0.5 LUX F: 1.2
Resolution pixels:	512 (H) x 582 (V) PAL / 470 TV lines
Power consumption:	65 mH @ 12V DC

MODEL 5000R – PORTABLE RECORDING KIT

Suitable for all our 12V DC cameras.

This adapter-kit for the ARCHOS high quality A/V-recorders "Generation 4" allows easy one-button controlled recordings. The movie is stored in one continuous mpeg-4 clip on the integrated harddisk with up to 160 GB.

All of the recorders are provided with a high quality TFT-color-display.

Even the camera is powered by the recorder.

TECHNICAL DATA:

Display	i.e. 4,3" 16/9 LCD Color Screen, 16 Million Colors
Hard Disk	30 GB / 40 GB / 80 GB / 160 GB
Video-Encoding	MPEG-4
Resolution	VGA (640 x 480)
Interface	USB 2.0

7

Covert Video Cameras
Also Available with Audio Microphones   **5000 series**

MODEL 5018 - HIGH RESOLUTION COLOR CAMERA AND FRAME BUFFER (MMC) WITH JUNCTION BOX

The built-in high resolution color camera with digital frame buffer function records up to 65,528 color images depending on the memory card used and the resolution selected.

TECHNICAL DATA:

Power supply	• Built-in rechargeable Li-ion battery 3000 mAh for up to 6 weeks operating time, or • mains adaptor for continuous operation (not included)
Resolution pixels	Max VGA 640 x 480
Memory capacity	Up to 65,528 images max. using the 512 MB memory stick (MMC Standard) supplied
Lens system	Pinhole

Video Camera kits   5020 series

The Model 5020 Video Camera Kits provide an assortments of portable high quality, low light miniature board cameras for a variety of covert installations.

All the cameras have industry standard RCA and 2.1 mm power plugs and cables that attach to the camera bodies via quick connectors. The flexible video power cables allow the cameras to be positioned at any angle for the best possible camera view and operate at 9 – 13.5 VDC.

The cameras are encased with a protective covering allowing installation in tight spaces without shorting the camera circuitry.

Wide angle and pinhole lenses provide a variety of near and far camera views, with some cameras allowing interchangeable lenses.

The Video Camera Kits are packaged in a rugged ABS case with a snap-and-lock lid, with custom foam inserts for camera separation and shock protection during transportation.

Video Camera kits   5020 series
MODEL 5020-STANDARD
Wired VIDEO Camera Kit Includes:

- 1 CCD Color High Resolution Camera 470 TV-Lines (Model 5004)
- 1 CCD Color High Resolution Button Camera 470 TV-Lines (Model 5010)
- 1 CCD Color High Resolution Camera, cylindric, 470 TV-Lines, Version A (Model 5011-A/CL)
- 1 Micro CMOS Camera B/W (Model 5006)
- 1 Ultra-Micro CMOS Camera B/W (Model 5005)
- 5 Microphones with Amplifier and Connecting Cable
- Handheld Test monitor 2.5″ TFT
- 1 TX/RX-SET for Video/Audio/Power or Video/Data/Power for transmission up to 200m over CAT5 or standard telephone cable
- Lenses for Series II (Model 5004) and Series IV (Model 5011)-A/CL: 2x pinhole flat, 1x pinhole cone, 2x screw lens, 2x rivet lens, 2x hexagon lens, sticker set for pinhole, 5x Barcode, 5x CE, 5x High voltage
- Lenses for Series II (Model 5010) 1x button lens 15 mm
- Lenses for Series I (Model 5006) pinhole flat and pinhole cone (M12)
- Lenses for Series I (Model 5005) pinhole flat and screw lens (M9)
- 4x adequate replacements for particular camouflage (4x screws, 4x rivets...) except stickers
- 5x Camera Video & Power Cables
- Wall Mounting Attachments, Adhesive Pads, Tweezers, etc.
- 2 Battery Packs 12V 8xAAA
- 3 Miniature Power Supply Units 220V/12VDC
- 3 Extension Cables (1 x 1m, 1 x 3m, 1 x 5m)
- PELICASE
- Optional, available with digital video/audio HDD recorder (30GB) with integrated brilliant 4.3″ TFT display (ARCHOS 604) instead of 2.5″ Handheld Test Monitor

Video Camera kits   5020 series
MODEL 5020-EXTENDED
Wired VIDEO Camera Kit Includes:

- 1 CCD Color High Resolution Camera 470 TV-Lines (Model 5004)
- 1 CCD Color High Resolution Button Camera 470 TV-Lines (Model 5010)
- 2 CCD B/W Ultra High Resolution Camera, 600 TV-Lines, (Model 5002) 1x with mounting flansh (standard, see photo) and 1x without
- 1 Corner Cam CCD B/W Ultra High Resolution, 600 TV Lines (Model 5015)
- 5 Microphones with Amplifier and Connecting Cable
- 5 spare microphones
- Handheld Test Monitor 2.5" TFT
- 1 TX/RX-SET for Video/Audio/Power or Video/Data/Power for transmission up to 200m over CAT5 or standard telephone cable
- Lenses for Series II (Model 5004) and Series III (Model 5002): 3x pinhole flat, 3x pinhole cone, 2x screw lens, 2x rivet lens, 2x hexagon lens, 1x button lens 20 mm, sticker set for pinhole, 5x Barcode, 5x CE, 5x High voltage
- Lenses for Series II (Model 5010) 1x button lens 15 mm
- 4x adequate replacements for particular camouflage (4x screws, 4x rivets...) except stickers
- 5x Camera Video & Power Cables
- Wall Mounting Attachments, Adhesive Pads, Tweezers, etc.
- 2 Battery Packs 12V 8xAAA
- 3 Miniature Power Supply Units 220V/12VDC
- 3 Extension Cables (1 x 1m, 1 x 3m, 1 x 5m)
- PELICASE
- Optional, available with digital video/audio HDD recorder (30GB) with integrated brilliant 4,3" TFT display (ARCHOS 604) instead of 2,5" Handheld Test monitor

Video Camera kits   5020 series
MODEL 5020-PROFESSIONAL
Wired VIDEO Camera Kit Includes:

- 1 CCD B/W Ultra High Resolution Camera, 600 TV-Lines, (Model 5002)
- 1 CCD Color Ultra High Resolution Camera, 570 TV Lines, (Model 5003)
- 1 CCD B/W Ultra High Resolution Camera with separate head, 600 TV Lines, (Model 5008)
- 1 CCD Color High Resolution Micro Stick Camera, 470 TV Lines (Model 5009)
- 1 CCD Color High Resolution Camera with separate head, 470 TV Lines, (Model 5013)
- 1 CCD B/W Ultra High Resolution Camera with Tele Lens, 600 TV Lines (Model 5011)
- 1 CCD COLOR/B/W Audio Camera with Illumination regulated filter switch, 450 TV Lines (Model 5001)
- 7 Microphones with Amplifier and Connecting Cable
- 1 TX/RX-SET for Video/Audio/Power or Video/Data/Power for transmission up to 200m over CAT5 or standard telephone cable
- Lenses for Series V (Model 5001) and Series IV (Model5011) 2x 10mm Tele, 2x 30mm Tele
- Lenses for Series II (Model 5013) M9 1x pinhole flat, 1x pinhole cone, 1x screw lens, 1x hexagon lens, 1x rivet lens, 1x button lens
- Lenses for Series III (Model 5002/5003/5008) and Series IV (Model 5009): 3x pinhole flat, 3x pinhole cone, 2x screw lens, 2x rivet lens, 2x hexagon lens, 1x button lens 20 mm, 1x button lens 15 mm, sticker set for pinhole, 5x Barcode, 5x CE, 5x High voltage
- 4x adequate replacements for particular camouflage (4x screws, 4x rivets...) except stickers
- 7x Camera Video & Power Cables
- Wall Mounting Attachments, Adhesive Pads, Tweezers, etc.
- 2 Battery Packs 12V 8xAAA
- 3 Miniature Power Supply Units 220V/12VDC
- 3 Extension Cables (1 x 1 m, 1 x 3 m, 1 x 5 m)
- PELICASE
- With digital video/audio HDD recorder (30GB) with integrated brilliant 4.3" TFT display (ARCHOS 604) instead of 2.5" Handheld Test monitor

MODEL 5952 POWER SUPPLY KIT INCLUDES

12V LITHIUM-ION AKKU POWER PACK
Battery Charger 220/240 V
Connectors
Technical Data:

12V DC 3200 mAh Li-Ion	150 x 118 x 25 mm
2A continuous current	deep-discharge protected
additional 11V DC out 300mA	short-circuit protected
built-In intelligent charging technique	

Camcorder Observation Set I   Model 5021

SET INCLUDES:

- 1 Pinhole lens (40 x 19 mm) with adapter for camcorder
- 3 camouflaged shutters, which can easily be attached to the lens. At the same time they serve as fixation and storage for the lens
- 1 adapter ring Sony analog (37 x 0.75 mm)
- 1 adapter ring Sony digital (30 x 0.75 mm)
- 1 adapter ring Sony digital (25 x 0.5 mm)
- 1 adapter ring Panasonic (30.5 x 0.5 mm)
- 1 adapter ring JVC (27 x 0.5 mm)

SPECIAL FEATURES:

Pinhole Camcorder Set with 1 lens and 3 exchangeable shutters.

The lens can be fixed onto any current camcorder with the corresponding adapter rings. The camouflage can be changed corresponding to the specific requirements.

Additionally, available for the attachable shutters are original screws, such as cross head, leather rivet, case rivet and hexagon socket.

The Camcorder Set comes in a plastic case with cut out foam, fitted to the respective parts and camcorder type.

The camcorder can be supplied by the customer or can be purchased directly from us and is not included in the set.

Camcorder Observation Set II Model 5022

SET INCLUDES:

- 1 Pinhole lens (40 x 19 mm) with adapter for camcorder
- 3 camouflaged shutters, which can easily be attached to the lens. At the same time they serve as fixation and storage for the lens
- 2 fixing brackets to support the camcorder incl. mounting screws
- 1 adapter ring Sony analog (37 x 0.75 mm)
- 1 adapter ring Sony digital (30 x 0.75 mm)
- 1 adapter ring Sony digital (25 x 0.5 mm)
- 1 adapter ring Panasonic (30.5 x 0.5 mm)
- 1 adapter ring JVC (27 x 0.5 mm)
- 1 quick change adapter version 1, including 3 different Pinhole shutters
- 1 quick change adapter version 2, including 3 different Pinhole shutters
- 1 quick change adapter version 3, including 3 different Pinhole shutters
- 1 external miniature microphone with amplifier and adapter cable for power supply

NEW: IR extender Kit for original remote control + Audio/Video TX/RX 2,4 GHz 4Ch.

SPECIAL FEATURES

Pinhole Camcorder Set with 1 lens and 3 exchangeable shutters.

The lens can be fixed onto any current camcorder with the corresponding adapter rings. The camouflage can be changed corresponding to the specific requirements.

Additionally, there are various shutters available for the quick change adapter, such as cross head screw, leather rivet, case rivet and hexagon socket.

The Camcorder Set comes in a high quality Pelicase transport case with cut out foam, fitted to the respective parts and camcorder type.

The camcorder, which can be supplied by the customer or can be purchased directly from us, is not included in the set.

IR-EXTENDER-SET
Audio/Video TX/RX

1

Mobile Room Observation Set I   Model 5023
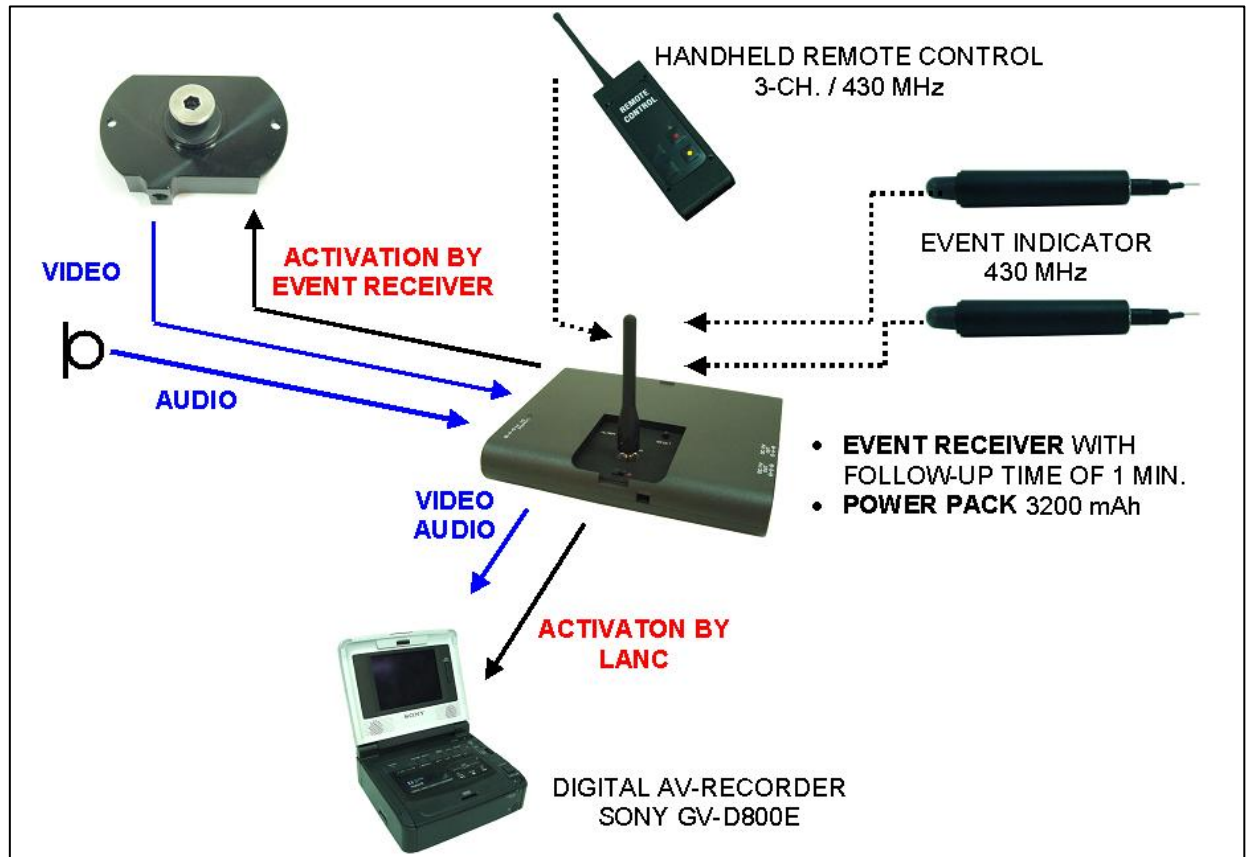
RADIO RECEIVER UNIT WITH LANC CONTROL AND POWER PACK

SPECIAL FEATURES

The Model 5023 has four different features. The timer feature for transmitting the PIR radio signal and the relay activates the LANC commands. The Sony recorder connected to the receiver immediately starts the video/audio recording. The radio alarms are added up with a follow-up time of 1 minutes. The feature Continuity ON/Continuity OFF can be activated by a hand-held radio transmitter.

TECHNICAL DATA

Receiving frequency:	430 MHz
Battery:	12V DC Ltihium Ion Technology 3200 mAh
	1.5A continuous current
	Built-In intelligent charging technique
	deep-discharge protected
Receiver:	Standby time up to 7 days

Mobile Room Observation Set I   Model 5023

MICRO RADIO PIR

The start delay impedes the alarm for about 60 seconds. This gains time for the mounting of the radio PIR without simultaneously triggering the alarm.

TECHNICAL DATA

Transmitting power:	50 mW
Transmitting frequency:	430 Mhz
Special features:	PIR range about 6-8m at an opening angle of approx. 80°
	PIR head also available in white
Power supply:	3 x 1.5 V button cells
St Time:	at least 21 days

MINI DIGITAL 8 VIDEO REC WITH LCD-DISPLAY

Technical Data

- TV standard PAL
- 4" LCD screen with 123,200 pixel
- Integrated cut control
- 20 settings are programmable
- Digital 8 recording/replay mode SP/LP
- Hi8/Video8 replay mode SP/LP
- Time Base Corrector (TBC)
- Digital Noise Reduction (DNR)
- Info LITHIUM
- LANC
- Audio-Syst. PCM Digital Stereo (12 Bit/16 Bit)
- Weight GV-D800: 930 g
- Color black

Delivery scope

- Receiver unit with omni directional antenna
- High Resolution CCD Camera Series II Color
- Audio amplifier and highly sensitive microphone
- 2 Micro Radio PIR 50 mW with batteries
- 3 camouflaged lenses with different camouflage and mountings
- Remote control hand-held transmitter 100 mW
- Battery pack 9 V for portable use
- Instruction manual
- Contents comes in robust high-quality plastic case with cut out foam

FOR MORE EVENT INDICATORS, SEE MODEL 5024 - MOBILE ALARM SYSTEM KIT

Mobile Room Observation Set II   Model 5023
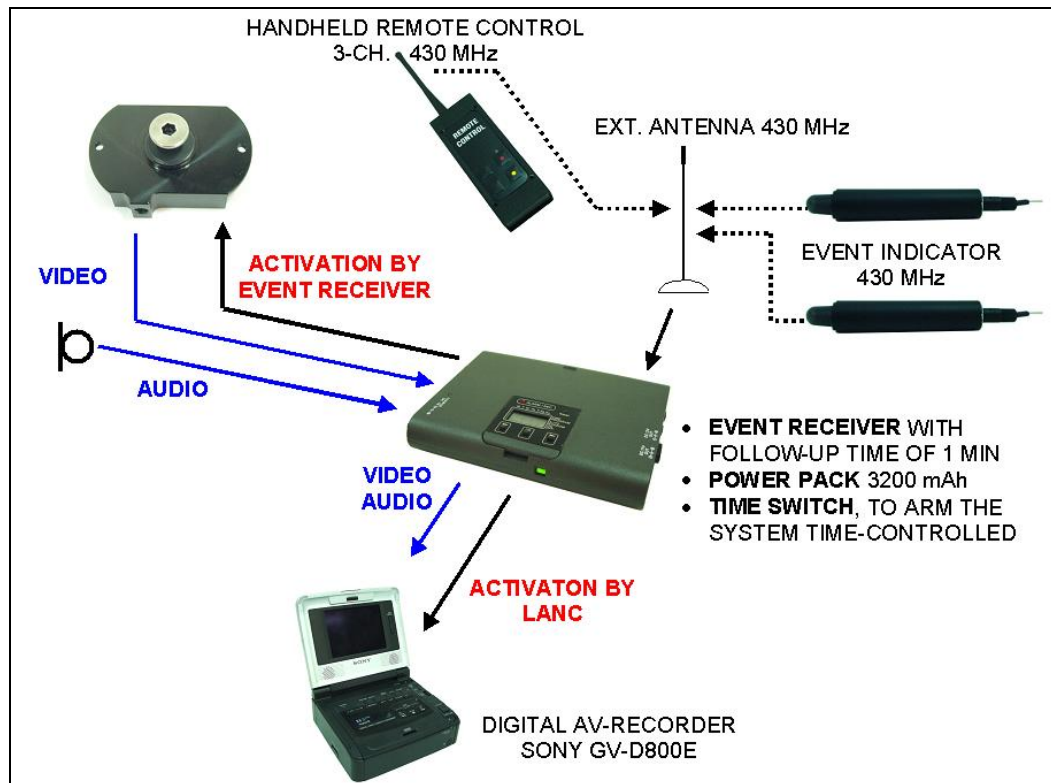
RADIO RECEIVER UNIT WITH LANC CONTROL, POWER PACK AND TIME SWITCH

SPECIAL FEATURES

The Model 5023/T has five different features. The timer feature for transmitting the PIR radio signal and the relay activates the LANC commands. The Sony recorder connected to the receiver immediately starts the video/audio recording. The radio alarms are added up with a follow-up time of 1minute. The feature Continuity ON/Continuity OFF can be activated by a hand-held radio transmitter.

In addition to the Model 5023 the Model 5023/T has a time switch wich allows time-controlled activation and deactivation of the receiver. Thereby it is possible to place the system in areas, which are to be observed only at a specific time.

TECHNICAL DATA

Receiving frequency:	430 MHz
Battery:	12V DC Ltihium-Ion technology 3200 mAh
	1.5A continuous current
	built-In intelligent charging technique
	deep-discharge protected
Receiver:	Standby Time, up to 7 days

Mobile Room Observation Set II   Model 5023

Time Switch:	Digital time switch
	minute-exact programming
	allows 2 activations and 2 deactivations per day

MICRO RADIO PIR

The start delay impedes the alarm for about 60 seconds. This gains time for the mounting of the radio PIR without simultaneously triggering the alarm.

TECHNICAL DATA

Transmitting power:	50 mW
Transmitting frequency:	430 Mhz
Special features:	PIR range about 6-8m at an opening angle of approx. 80°
Power supply:	3 x 1.5 V button cells
St	Time:	at least 21 days

MINI DIGITAL 8 VIDEO REC WITH LCD-DISPLAY

Technical Data

- TV standard PAL
- 4″ LCD screen with 123,200 pixel
- Integrated cut control
- 20 settings are programmable
- Digital 8 recording/replay mode SP/LP
- Hi8/Video8 replay mode SP/LP
- Time Base Corrector (TBC)
- Digital Noise Reduction (DNR)
- Info LITHIUM
- LANC
- Audio-Syst. PCM Digital Stereo (12 Bit/16 Bit)
- Weight GV-D800: 930 g
- Color black

Delivery scope

- Receiver unit with omni directional antenna
- High Resolution CCD Camera Series II Color
- Audio amplifier and highly sensitive microphone
- 2 Micro Radio PIR 50 mW with batteries
- 3 camouflaged lenses with different camouflage and mountings
- Remote control hand-held transmitter 100 mW
- Battery pack 9 V for portable use
- Instruction manual
- Contents comes in robust high-quality plastic case with cut out foam

FOR MORE EVENT INDICATORS, SEE MODEL 5024 - MOBILE ALARM SYSTEM KIT

Mobile Radio Alarm System Kit   Model 5024

MODEL 5024RX - RADIO HANDHELD ALARM RECEIVER 4-CH.

The receiver unit indicates incoming alerts from four radio alarm sensors. You will be notified by a LED, a vibra-alarm and a sound, which can be switched off.
Because of its dimensions, it can also be inconspicuously placed in an inside jacket or trouser pocket, held in the hand or placed on a table.

TECHNICAL DATA

Receiving frequency:	430 MHz
Batteries:	4 x 1.5V AAA Micro Cells
Channels:	4 receiver channels for 4 alarm sensors
Alarm indication:	4 x LED, vibra-alarm, disengageable sound
Dimensions:	112 x 58 x 23 mm without antenna

MODEL 5024PIR - MICRO RADIO PIR

The start delay impedes the alarm for about 60 seconds. This gains time for the mounting of the radio PIR without simultaneously triggering the alarm.

TECHNICAL DATA

Transmitting power:	50 mW
Transmitting frequency:	430 Mhz
Transmitting range:	up to 300 m
Special features:	PIR range about 6-8m at an opening angle of approx. 80°
	PIR head also available in white
Dimensions:	88 x 16 mm (L x Ø)
Power supply:	3 x 1.5 V button cells (357)
Standby time:	at least 21 days

Mobile Radio Alarm System Kit   Model 5024

MODEL 5024V - MICRO RADIO VIBRATION SENSOR

The vibration sensor sets off alarms if the sensor itself is moved. It is useful to secure movable things like bags, cases, windows, doors, paintings or even cars. Because of its aluminum chassis, it is splash proof and suitable for outdoor use.

The start delay impedes the alarm for about 60 seconds. This gains time for the mounting of the radio PIR without simultaneously triggering the alarm.

TECHNICAL DATA

Transmitting power:	50 mW
Transmitting frequency:	430 Mhz
Transmitting range:	up to 300 m
Dimensions:	70 x 51 x 9 mm
Power supply:	2 x 3 V Lithium button cells (2032)
Standby time:	> 100 days

MODEL 5024P - RADIO PREASURE MAT

The wireless **PREASURE MAT** is suitable for monitoring doorways or corridors. The ideal position for the preasure mat is under a doormat or carpet, completely covering the preasure mat.

The transmitter module is placed in a solid flat aluminum chassis (see vibration sensor), so it resists even heavy bodyweights.

TECHNICAL DATA

Transmitting power:	50 mW
Transmitting frequency:	430 Mhz
Transmitting range:	up to 300 m
Dimensions mat:	710 x 400 mm
Dimensions transmitter:	70 x 51 x 9 mm
Power supply:	2 x 3 V Lithium button cells (2032)
Standby time:	> 100 days

Mobile Radio Alarm System Kit   Model 5024

MODEL 5024RA - MICRO RADIO RADAR MOTION SENSOR

The radio **RADAR** motion sensor offers a significantly more sensitive detection of persons and objects. It also reacts to objects, whose body temperature is the same as or hardly differs from its surroundings. It penetrates even walls and enclosures, so it allows a perfect invisible installation.
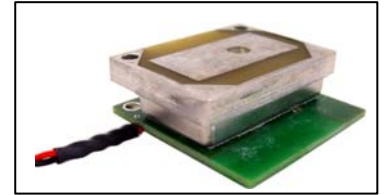
Due to the insensibility to extraneous influences, like lighting conditions, it is suitable for outdoor installation, too.

TECHNICAL DATA

Transmitting power:	50 mW
Transmitting frequency:	430 Mhz
Transmitting range:	up to 300 m
Radar frequency:	2.4 GHz
Dimensions:	38 x 38 x 19 mm
Special features:	Detection area about 0.3 ~ 5 m at an opening angle of approx. 60°
Power supply:	12 V power pack or 9 V battery
Power consumption:	20 ~ 30 mA

MODEL 5024RC - HANDDHELD REMOTE CONTROL 3-CH.

The handheld remote control is suitable for video recording kits to manually start/stop the recording. For the alarm system kit, it can be used as a test-transmitter.

TECHNICAL DATA

Transmitting power:	100 mW
Transmitting frequency:	430 Mhz
Dimensions:	122 x 40 x 22 mm, without antenna
Power supply:	integrated 9 V battery
Power consumption:	120 mA approx. in operation
	20 μA approx. in sleep mode

Compact Electro-Optical Airborne Surveillance   Model 5025

MULTI MISSION, MULTI SENSOR GIMBALS FOR AIRBORNE SURVEILLANCE

The Model 5025 is a high performance stabilized gimbals equipped with state of the art electro-optic sensors dedicated to law enforcement, surveillance and border control. The Model 5025 is designed around a six axis stabilization platform (4 active and 2 passive) thus providing the highest stabilization accuracy of its class. It is built from high stiffness composite materials insuring the lowest weight available at a minimum cost.

FEATURES

- 275mm (11'') external diameter
- 2 LRU Systems, with no control box
- Lightweight high stiffness composite body
- Multiple FOV's 3-5µm thermal imagers
- High definition zoom color camera
- 4 axis active stabilization
- EASA Certified installations
- Fixed wing & helicopters installations
- UAV applications

SYSTEM SPECIFICATIONS

Turret size	275 mm (D) x 400mm (H)
Turret Weight	11 kg typical
Hand Controller Unit	0.8 kg, 230 mm height
Control Unit	253 mm x 142 mm, 3 kg
Power supply	18-32 VDC < 150 W
Environmental	RTCA DO-160
LOS Pan range	360 degrees continuous
LOS Tilt range	+20 / -120 degrees
AZ/EL slew rate	Up to 60°/s
Stow	Magnetically held in stow position

Thermal imager specifications

Sensor	3rd gen. 640x512 3-5 µm sensor
Fields of view	WFOV: 18°
	NFOV: 4°
Focus	Auto focus and manual focus available

Color camera – zoom lens

Sensor	Super HAD Color
Resolution	740,000 pixels
Fields of view	45° to 2° optical continuous zoom
Low light level	Without IR cut-off filter

Optional features

Auto-tracker
INS
Geo-pointing /Geo-location
Laser Range Finder

Compact Electro-Optical Airborne Surveillance   Model 5025

TYPICAL RANGE PERFORMANCE

I @ 0.95km
R @ 1.8km
D @ 5.2 km

I @ 2.2km
R @ 3.9km
D @ 5.8km
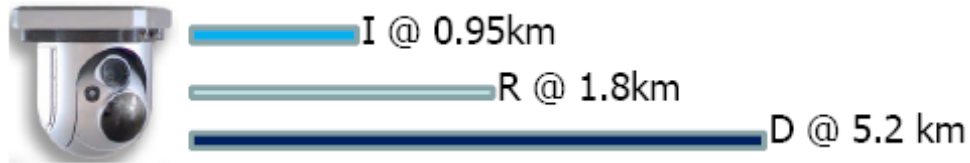
D: Detection with IR camera
R: Recognition with IR camera
I: Identification with IR camera

High Performance
Airborne Electro-Optical surveillance   Model 5026

MULTI MISSION, MULTI SENSOR GIMBALS FOR AIRBORNE SURVEILLANCE

The Model 5026 is a high performance stabilized gimbals equipped with state of the art electro-optic sensors dedicated to law enforcement, surveillance, border control and search & rescue. The Model 5026 is designed around a six axis stabilization platform (4 active and 2 passive) thus providing the highest stabilization accuracy of its class. It is built from high stiffness composite materials insuring the lowest weight available at a minimum cost.

FEATURES

- 350 mm (14'') external diameter
- Lightweight high stiffness composite body
- Multiple FOV's 3-5µm thermal imagers
- High definition zoom color camera
- 4 axis active stabilization
- EASA Certified installations

SYSTEM SPECIFICATIONS

Turret size	350 mm (D) x 490 mm (H)
Turret Weight	20 kg typical
Hand Controller Unit	0.8 kg, 230 mm Height
Control Unit	253 mm x 142 mm, 3 kg
Power supply	18-32 VDC < 150 W
Environmental	RTCA DO-160
LOS Pan range	360 degrees continuous
LOS Tilt range	+20 / -120 degrees
AZ/EL slew rate	Up to 60°/s
Stow	Magnetically held in stow position

Thermal imager specifications

Sensor	3rd gen. 640x512 3-5 µm sensor
Fields of view	WFOV: 22° x 16°
	MFOV: 6.6° x 5.2°
	NFOV: 1.7° x 1.3°
Focus	Auto focus and manual focus available

Color camera – zoom lens

|	
Sensor	Super HAD Color
Resolution	740,000 pixels
Fields of view	45° to 2° optical continuous zoom
Low light level	Without IR cut-off filter

Optional features

Auto-tracker
INS
Geo-pointing /Geo-location
Laser Range Finder
Laser pointer
Spotter Scope

High Performance
Airborne Electro-Optical surveillance

Model 5026

TYPICAL RANGE PERFORMANCE

I @ 1.2km
R @ 2.3km
D @ 8.2km

I @ 2.6km
R @ 5.1km
D @ 13.4km
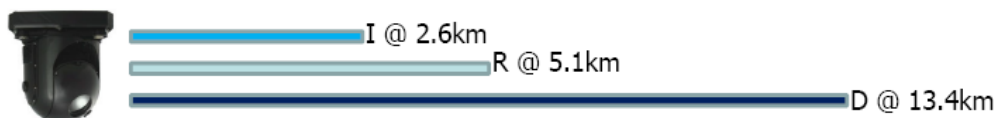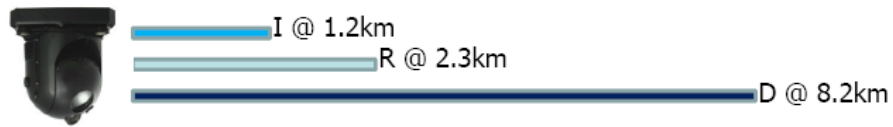
D: Detection with IR camera
R: Recognition with IR camera
I: Identification with IR camera

Zoom Cameras   Model 5101/2

MODEL 5101 - 100X ZOOM MINI CAMERA SPECIFICATIONS:

TV system:	PAL
Image sensor:	1/4" CCD image sensor
Minimum illumination day:	2.5 Lux F1.8
Minimum illumination night:	0.07 Lux F1.8
Resolution:	480 TV lines
Zoom:	100 x (10 x optical 10 x digital)
Focus:	auto/manual
Power supply:	DC 12V 1V/3.6W (max.) ±
Dimensions:	56.2 (l) x 38.5 (w) x 32 (h) mm
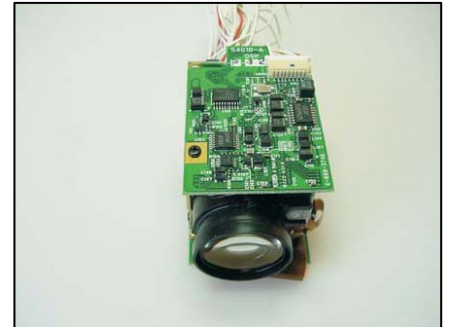
Exceptionally small camera module (only 56 mm in length) with integrated zoom lens; 10 x optical and 10 x digital zoom. Remote control possible with RS 232/485 interface.

MODEL 5102 – 220X ZOOM CAMERA

TV system:	PAL
Image sensor:	1/4" CCD image sensor
Minimum illumination day:	1.5 Lux F1.2
Minimum illumination night:	0.02 Lux F1.2
BLC function:	48 zone BLC
Zoom:	220 x (22 x optical 10 x digital)
Focus:	auto/manual
Power supply:	DC 12V 1V/3.6W (max.) ±
Dimensions:	120 (l) x 59 (w) x 80 (h) mm

The Model 5102 is an exceptionally small camera module (only 120 mm in length) with an integrated zoom lens, 22 x optical and 10 x digital zoom; Remote control possible with RS 232/485 interface.

Pan and Tilt head not included in delivery

Zoom Cameras
For Indoor & Outdoor Applications
Model 5103

INTRODUCTION

The Model 5103-1/2 Zoom Cameras for Indoor and Outdoor applications are compact, lightweight color video cameras that incorporate a 380,000/440,000 pixel 1/4 type CCD and a 10x optical zoom lens. They feature a built-in field memory allowing for slow shutter speed operation, and have a position preset function to save and recall up to six camera settings. Camera settings and control can also be made from a host computer/controller via VISCATM RS-232C.

FEATURES

- Super HAD technology and 10x optical zoom lens
- Compact and lightweight: 38 (W) x 44 (H) x 73 (D) mm, approx. 100 g
- 4x digital zoom
- Built-in field memory
- Slow shutter (long time exposure)
- Backlight compensation
- Exposure compensation
- Auto focus/One push auto focus
- VISCA/RS-232C and TTL signal level control (9600 bps)
- Mirror image, image memory freeze
- Picture effects (negative/positive, monochrome…)
- Digital effects
- Preset function
- Built-in camera ID
- On screen/Date and time display
- 6 months memory backup

SPECIFICATIONS

	Model 5103-1	Model 5103-2
Image Sensor	1/4 type IT CCD	
Picture Elements	768 (H) x 494 (V)	752 (H) x 582 (V)
H. Resolution	470 TVL	460 TVL
Lens	10x Zoom, f=4.2 to 42 mm (F1.8 to F2.9)	
Digital Zoom	4x (40x with optical zoom)	
Angle of View (H)	approx. 46° (wide end), approx. 4.6° (tele end)	
Min. object distance	10 mm (wide end) 1000 mm (tele end)	
Sync System	Internal	
Min. Sensitivity	4.0 lx (F1.8, normal shutter speed)	
Back Light Compensation	ON	/OFF
Electronic Shutter	1/4 to 1/10,000 s, 20 steps	1/3 to 1/10,000 s, 20 steps
White Balance	Auto, ATW, Indoor, Outdoor, One Push WB, Manual WB	
Gain	Auto/Manual (-3 to 18 dB, 3 dB steps)	
AE control	Auto, Manual, Priority mode, Bright, EV compensation, Back light compensation	
Video Output	VBS: 1.0 Vp-p (Sync Negative) and Y/C	
Weight	approx. 100 g (3.5 oz)	
Dimensions	(W x H x D) 38 x 44 x 73 mm (1 9 /16 x 1 3 / 4 x 2 3 / 4 inches) (Lens filter) ø30 mm, (Filter screw) P=0.75 mm	

Cylinder Camera with Pan & Tilt   Model 5104

The Model 5104 is capable of an amazing 400° pan view and a tilt range of 20° up and 40° down. Thanks to the pressurized and fully weatherproof housing, there is no need to hesitate leaving the Model 5104 outdoors in any weather.

Concealing the Sony 480/980, this cylindrical weatherproof {rated IP-68} Peri-cam made from black anodized aluminum, has been designed & built by us and is 75mmd x 265mmh (weight 0.9kg).

It is easy to hide in light bollards, vent pipes, car seat head-rests etc thanks to the application of a telescope mirror allowing the camera to sit upright in a confined space without compromising viewing angle.

We have outfit these cameras with an internal Interface Board allowing telemetry to effect Zoom, Focus, Auto Focus, Night Shot, Auto Night Shot, Back Light and Power-up Preset on the 980 camera. The RS232 input allows full control of the camera via the Internet, PC etc.

The Schrader valve is utilized to prevent condensation related damage or interference by extracting the air from inside the Model 5104 & purging it with dry nitrogen.

Features include a telescope mirror, optional mounting brackets, limit switches, tapped mounting holes at each end, plus a single military connector.

Hidden Air Vent Camera for Vehicles   Model 5105

OVERVIEW

The Flettner vent hide has been designed to provide the best possible covert surveillance capability using this type camera mounting arrangement. The unique design of the unit is modular and has been built for flush fitting onto a roof of a vehicle to prevent detection or raise suspicion. The vent rotates with the camera and the lens is set behind a neutral density film, which ensures clear and high picture quality, whilst keeping the camera out of sight.

The proven periscope camera is fitted in the hide and provides a 345° viewing platform. This camera also has a 26x zoom "SMART" lens, which features high telephoto zoom capability and an image stabilizer function, allowing the user to zoom in on small or distant objects with exceptional clarity and stability.
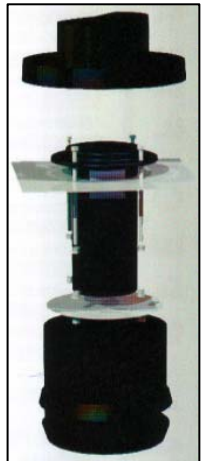
FEATURES

- Covert appearance
- Flush roof fitting
- 345o viewing platform
- Pan & tilt capability
- 26x optical zoom & 12x digital zoom, 312 mx. Zoom
- SMART lens control (Sony Modular lens Reset Technology)
- 6 presets
- High-performance Digital Signal Processing (DSP)
- Various customizable settings
- Weatherproof to IP64
- PAL or NTSC (different specification)
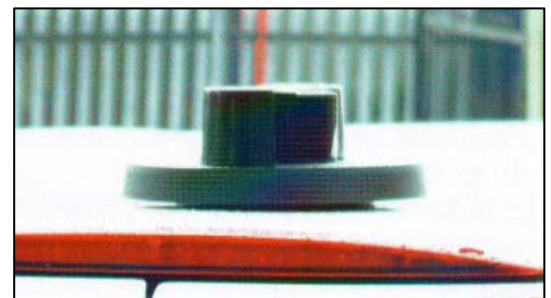
SPECIFICATIONS

Image device	1/4 type ExView HAD™ CCD
Effective picture elements	Approx 440,000 pixels
Lens	26x optical zoom, f=3.5 mm (Wide) to 91.0mm (Tele) F1.6 to F3.8
Digital zoom	12x (312x with optical zoom)
Viewing angle (H)	54.2° (Wide end) to 2.2° Tele end)
Minimum working distance	320mm (Wide end) to 150mm (Tele end)
Minimum Illumination	1.0 lx (typical) (50 IRE)
Electronic shutter	1/1 to 1/10,000s, 22 steps
Focusing system	Auto (sensitivity: normal, low), One push AF, Manual, Infinity, Interval AF, Zoom Trigger AF

Pan & Tilt for Covert Installations   Model 5106/9

MODEL 5106A - MINI FRONT PIVOT PAN & TILT UNIT

The Model 5106a is a miniature front pivot pan & tilt unit for operation on 12Vdc systems drawing ~10mA. It is suitable to move cameras with lenses, the weight of 'lipstick', at around 6° /second at 12Vdc.

The Model 5106a weighs 300 grams and is 13w x 6.5d x 10cmh with angulations of:
Pan +/-45° - Tilt Up 15° - Tilt Down 40°.

Applications include covert concealment in vehicles, signs, ornaments, walls etc.

When using a pinhole camera in combination with the Model 5106a mini front pivot pan and tilt unit, you can achieve a much wider viewing angle than you would with a static (non moving) pinhole camera.

MODEL 5106B - FRONT PIVOT MICRO PAN UNIT

The Model 5106b is a miniature front pivot pan unit for operation on 12Vdc systems.

It is suitable for board or cylinder cameras with pinhole lenses, as well as small conventional cameras up to 500g. Dimensions: 62w x 28d x 30mmh (excluding camera). Weight: 50 grams. The optical pivot point is 5mm forward of the front face of the device, which will allow an additional 50° of horizontal field of view, through a very small hole in the covert hiding place.

Applications include covert hides in vehicles, signs, ornaments, walls etc.

When using a pinhole camera in combination with the Model 5106b front pivot unit, you can achieve a much wider viewing angle than you would with a static (non moving) pinhole camera.

Pan & Tilt for Covert Installations — Model 5106/9

MODEL 5106C - PAN & TILT UNIT

This compact and hardy Model 5106c pan and tilt unit offers precision controlling for cameras, IR lights, small antennas or anything up to 1kg (balanced load).

Belt-driven from two high quality Swiss 12Vdc gear motor, the Model 5106C has maximum pan/tilt angulations of 270° at 15°/second (maximum) with adjustable internal limit switches and only draws a tiny ≈10mA to 30mA.

Weighing a mere 300 grams (70x70x60mm) this device can be mounted or concealed almost anywhere. Made from black Delrin acetyl and powder coated aluminum the Model 5106C will not rust.

MODEL 5109 – MINI WEATHERPROOF PAN & TILT

This new pan/tilt unit (shown right) is *weatherproof*! The unit pan/tilt has an IP64 rating and offers precision controlling for cameras, IR lights, small antennas or anything up to 1kg (balanced load).

The unit (optional preset model) complements our Sony 480 series block cameras when fitted with the IP68 rated S480WH Weatherproof Housing (shown below).

Belt-driven from two high quality Swiss 12Vdc gear motors, the unit has maximum pan/tilt angulations of 270° at 15°/second (maximum) with adjustable internal limit switches and only draws a tiny ≈10mA to 30mA.

Weighing a mere 400 grams (75x75x70mm) this device can be mounted/concealed almost anywhere. Made from black Delrin acetyl and black anodized aluminum the unit will not rust.

Weatherproof Housing   Model 5108

Perfect for the Sony 480 & 980, the Model 5108 Weatherproof Housing {rated IP-68} has been designed and built by us and at 125 x 65 x 60mm is suitable for use in almost any application.

We outfit these housings with an optional internal Interface Board allowing voltage reversals to affect zoom, focus, auto focus, night shot, auto night shot, and back light & power-up preset.

A valuable additional feature to these housings is the inclusion of a Schrader Valve, which is utilized to prevent condensation related damage/interference by extracting the air from inside the housing and purging it with dry nitrogen.

Both the weatherproof and non-weatherproof versions can be supplied with blank back panels or fitted with specific connectors to meet various requirements.

INDOOR HOUSING

This snug housing is designed for the Sony 480 & 980 series block camera. The professional internally mounted Interface Board described above is also suited to this unit and provides each camera with different modes of controller operation, including controlling by 'Switch to Ground' inputs.

Also available various Remote Control Systems, Pan & Tilt units and a Hand-held Controller to suit the Sony 480 & 980 Series block cameras.

Specialist Observation Cameras   5100 series

MODEL 5107- MANUAL EYEBALL PAN & TILT WITH REMOTE HEAD COLOR CAMERA

The Eyeball Camera is designed to be secured to a window pane or similar using double-sided tape. Simply position the eyeball for the desired picture and twist the outer ring to secure it in place.

Remote head camera technology reduces the weight to a minimum, with a 150mm long by 2.5mm diameter cable connecting to the camera PCB aluminum box. Power supply is 12VDC @ 120mA. The 30mm diameter manual pan & tilt provides up to 25° additional field of view from the centre axis.

Remote Head Camera fixed here

2xSided Tape is fixed to Rim

Thread locks Directional Ball into Stocket Halves
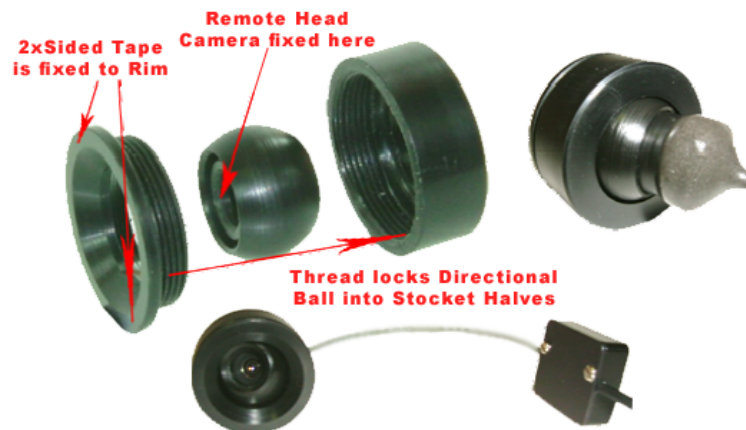
MODEL 5112-CUTTING KIT FOR COVERT PINHOLE CAMERAS

This is a precision-ground cutting tool kit for mounting a concealed pinhole camera into plaster or gyprock. The final hole can be as small as 0.9 of a millimeter on the target side. We also modifies the camera that is seated into the wall and hot glued/epoxied in place.

The 'kit' includes the cutting tool, 0.8, 1.0 & 1.5mm drills with pin vice, 1mm tapered reamer and is neatly presented in a Pelican Case.

Cameras are fitted with 4.2mm super cone pinhole lenses & the cable exit can be factory positioned as required. Cameras available include a standard B&W, Sony 600 line High Resolution 0.0007 lux Low Light and Sony Color 380 line 1 lux in Pal or NTSC.

Digital Telemetry System   Model 5113

The unit is a sixteen channel digital telemetry system for the remote control of CCTV cameras and associated equipment.

It will operate over three different transmission mediums.

A standard twisted pair voice grade audio channel. (Balanced 600Ω line level FSK output).
A standard voice grade radio channel. (Unbalanced low level FSK output with PTT).
An asynchronous RS232 radio or slow scan television link.

Up to 16 remote units can be addressed from each control unit over the same voice grade or RS232 channel.

Control Unit   Remote Unit

Pan & tilt, zoom, focus, iris, lens extender, momentary and latching switches are all controlled with keyboard push button switches.

Channel selection is via a sixteen position hexadecimal thumbwheel or internally on the circuit board.

The speed control, which is common to all motors, is via a rotary potentiometer.

The balanced 600 Ω and low level data outputs have separate level/deviation potentiometers on the PCB.

The Model 5113 receives the FSK or RS232 data and provides simultaneous operation of all functions including motor reversal and variable speed.

Standard auxiliary switch functions are one momentary and one latching dry contact changeover.

FEATURES:

- FSK Radio or cable communication
- Asynchronous RS232 communication
- Simultaneous functions
- Speed control
- Digital camera control
- 12Vdc operation

OPTIONS:

- Expansion with additional hardware and software
- Circuit boards available for OEM
- Indoor and outdoor pan & tilt units
- Multi channel

Digital Telemetry System   Model 5113

PTFZ CONTROLLER FAMILY

INPUTS

RS232 or FSK   via Cable, Radio, GSM, ADSL, W/LAN etc

OUTPUTS

SONY VISCA   To drive Sony Block Cameras including Domes
P & T Volts   To drive 12Vdc Pan & Tilt Units
Auxiliary Relays   Momentary OR 1 Latching

OPTIONAL OUTPUTS

P & T Presets   Preset Memories for 12V Pan & Tilt Units
Lens Volts   To drive Conventional Motorized Zoom & Focus Lenses
Lens Presets   Preset Memories for Motorized Zoom & Focus Lenses
Mil-C Connector   Single Cable Connection to our W/proof Cameras
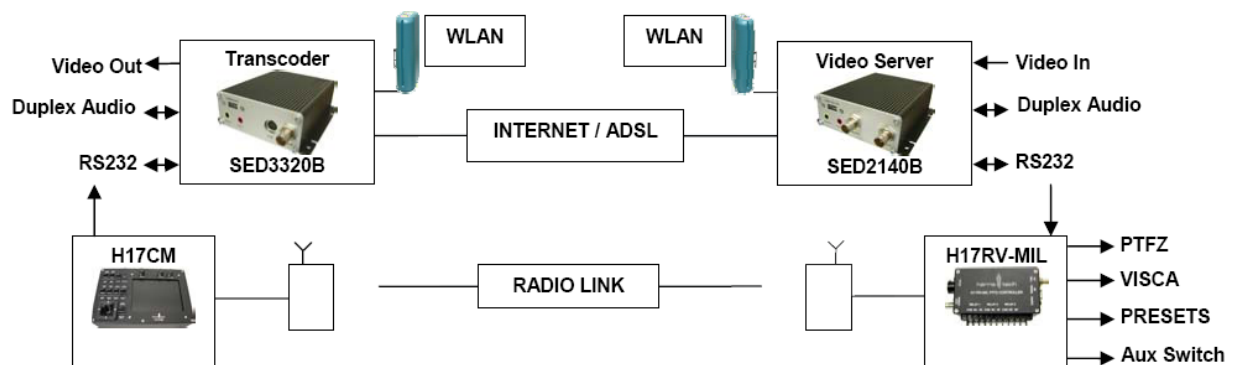
VOCL
Day & Night Video Observation Cameras & Lenses

TSU INDEX
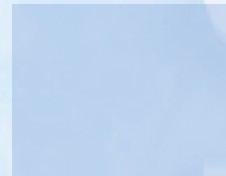
Day & Night Video Observation Cameras & Lenses & Fiber optics

Ref	Number	Description
1	5110	Day/Night Video Camera Low Light Level
2	5115	Color Night Camera
3	5120	Longjohn Long Range Lens
4	5121	Longjohn Wireless Control System
5	5125	Manpack Portable Long Range Lens
6	7505-2	Thermal Imaging for Surveillance Applications
7	5200	Night Vision Monocular System
8	5201	Night Vision for Canon XL2 Cameras
9	5202	IR Laser Illumination for Night Vision
10	5203	Handheld Thermal Imaging CCD Camcorder
11	5204	Thermal Handheld Camera
12	5205	Fixed Day/Night/Thermal Observation System
13	5501	Under Vehicle Surveillance System
14	5502	Under Door Viewing System
15	5502 NV	Night Vision Under Door Viewing System
16	5503	Under Door Viewing System with audio
17	5504	Audio Pencil Probe
18	5505	Fiber Optic Surveillance System
19	5508	Audio Borescope and Fiberscope
20	5509	Surveillance Kit with Microphone & Endoscope probe
21	5510	Covert Fiber Optical search System
22	5511	Ultracam Videoscopes
23	5512	Low Noise drilling system

Day/Night Video Camera Low Light Level   Model 5110

The Model 5110 offers high resolution and ultra lowlight sensitivity, which would normally be expected from an Image-Intensifying Camera, but the Model 5020 is significantly lower in price and has a longer life expectancy of up to 120,000 hours.

It is available in 1/3″ or ½″ CCD format and utilizes the latest Sony Ex view Chip set.

The lowlight is ideal for use with our Lolass 3 or 5 lenses and is also suitable for use with conventional CCTV motorized zoom lenses, also available from Elaman.

The Model 5020 also utilizes the latest in DSP circuitry to help produce such outstanding performance. It can be programmed to operate using up to 4 frames of integration to provide even greater low light sensitivity.

FEATURES

- Designed for low light level applications
- Air-Cooled ExView Had™ CCD sensor
- High resolution 480TV lines
- IR response up to 1000nm
- Automatic white balance
- 100% center position for CCD to improved bore sight
- Manual shift to B/W mode
- Accepts C and CS mount
- Automatic shift to integration in low light
- 10 bit DSP
- On-screen menu for setup
- Back-light compensation
- Setup By Windows 98/NT/2000 (from RS 232)
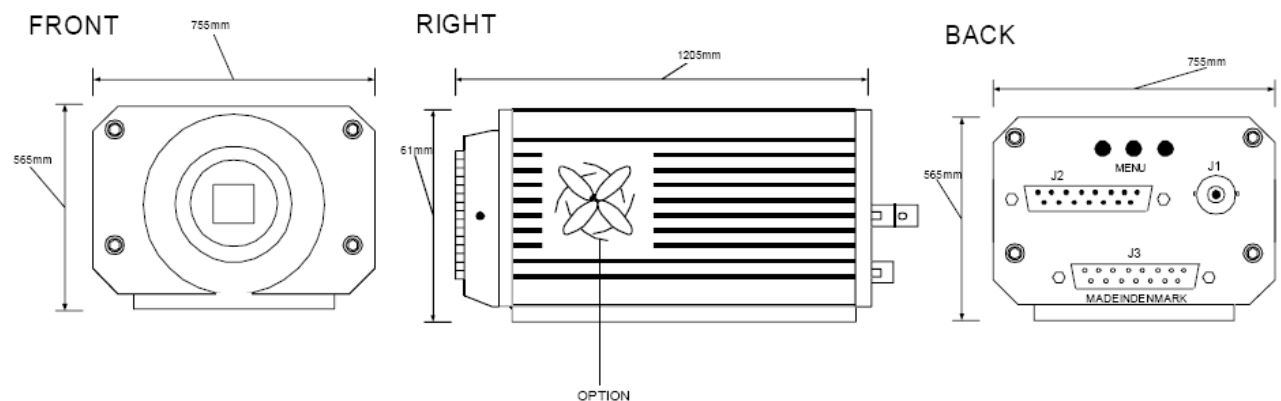
Day/Night Video Camera Low Light Level   Model 5110

SPECIFICATIONS
Electrical and Optical Specifications

SENSOR AND SCANNING	
Sensor Type	ILT CCD HAD Color Exview Air Cooled
Input	12 mm useable
Image Format In	1/2 inch 6.4(h)x4.8(v) mm
Spectral Response	S 25. 400-950 nm
Effective Pixels PAL	752 H X 582 V
Effective Pixels NTSC	768 H X 494 V
Scanning PAL	625 lines 25 frames/sec 2:1 Interlace
Scanning NTSC	525 lines 30 frames/sec 2:1 Interlace
Resolution	480 TV Lines
Sensitivity At Ccd	0.0006 lux with 30% video out. max AGC 0.00015 lux with 30% video out. 4 Field integration
Sensitivity F 1.4 Lens	0.006 lux scene illumination. 30% video. Max AGC 0.0015 lux scene illumination 30% video out. 4 field Integration
Geometric Distortion	0%
Lag	0.5% after 20msec (1/50 shutter speed)
Expected Lifetime	min. 120.000 hours in operating
Internal	with X-tal
External Lock Input	VBS or composite sync
Scanning Reversal	off, on horizontally mirrored
Shutter	off 1/50 PAL 1/60 NTSC, 1/125, 1/250, 1/500,1/1000, 1/2000, 1/4000, 1/10000 and CCD Iris
Camera Setup	
Serial	RS 232 and function buttons for on-screen menu

Mechanical Specifications

Size	120 x 76 x 56 mm (LxWxH)
Weight	Approx. 480g
Shipping Weight	Approx. 600g
Lens Mount	CS-C-Mount ASA –PH 22.76 1-32 UN
Flange Back	CS-MOUNT 12.52 adjustable ± 3 mm
Flange Back	C-MOUNT 17.52 adjustable ± 3 mm
Optical Filters	Option. KG 4 Ø 24 mm

Color Night Camera   Model 5115

Regardless of whether it is day or night, full color surveillance with sharp images is possible

The color night camera employs newly developed DSP (Digital Signal Processing). When bright, the camera has high performance and high efficiency, equivalent to a broadcast camera. Furthermore, in a place darker than moonlight, digital noise reduction ensures low noise video images allowing color images in the dark.

FUNCTIONS

- In addition to +42dB of electric gain, the camera has pixel addition and storage function to realize minimum subject luminance of 0.00005lux
- The camera employs not only in-field digital noise reduction circuit without persistence of vision, but also frame cyclic noise reduction, and you can change settings based on shooting conditions
- Also employs the Automatic Sensing Function (ASC) to automatically adjust the sensitivity to subject luminance. The built-in Automatic White Balance Function (FAW) will enable users to get sharp color images regardless of day and night
- A maximum of 4 time digital zoom is realized by highly efficient processing, and the digital zoom makes it possible to expand and display the object

SPECIFICATIONS

Pick-up Devices	Inter line transfer CCD R,G,B 3 chip	
Sensitivity	F11/2000l x (89.9% x white)	
Minimum Illumination	0.009 lx (F1.4,+42dB,H add)	
	0.00007 lx (F1.4,+42dB,HV add,64FR slow shutter)	
Gain Selection	Gain up	0,+6,+12,+18,+24,+30,+36,+42dB
	Pixel add	Horizontal (X2), Horizontal and Vertical (X4)
	Slow shutter	2F(Frame),3F,4F,8F,16F,32F,64F
	D.GAIN	OFF,x2,x4,x8
Electric Shutter	1/60(off),1/100,1/125,1/250,	
	1/500,1/1000,1/2000,1/4000, 1/10000	
	VAR	1/60.1~1/10156

Color Night Camera   Model 5115

3-CCD HIGH IMAGE

- 1/2″ 3-CCD high image quality

- Horizontal resolution: 850lines

- Signal to noise ratio: 67dB (DNR on) NTSC, 65dB (DNR on) PAL

- High sensitivity: 2000lx, F14

- Minimum illumination: 0.005 lx, 0.00005 lx (2 seconds CCD charge accumulation)

- Compact size, light weight and low power consumption

BROADCAST LENS

- 16X Auto Focus MD Lens

- 7-122mm (F1.9-2.0)

MASTER CONTROL PANEL FOR CAMERA + PAN & TILT

Specifications

Power supply 12 DC

Power Cons.   Approx 0.7A

Dimensions   210(W)X88(H)X177(D)mm

WeightApprox 2.2kg

CAMERA REMOTE CONTROL FOR UP TO 5 CAMERAS

Specifications

Power supply: DC12 V, Approx 3.8 W

Weight Approx: 1.4 kg

Dimensions: 100(W)X85(H)X266(D)mm

Accessories: Pan-tilt controller connection cable

"Longjohn" Long Range Lenses   Model 5120

The two LongJohn Long Range Lenses have been specially designed for Intelligence and Special Forces Units, who are required to undertake long term long range observation on target locations, operations or suspects.

Each of the lenses is to Model Specifications and come in the following focal lengths:

LongJohn Two	- 750mm & 1250mm
LongJohn Three	- 750mm, 1250mm, 2500mm & 3750mm

These lenses will allow the operational team to maintain an observation from 1 to 3 kilometers with the LongJohn Two and 1 to 8 kilometers using the LongJohn Three lens.

At these distances the observation team cannot be seen or detected, yet, they obtain high quality video footage of the target and operation that is acceptable as identification evidence.

When fitted with the Color/Black & White Ultra Low Light Changeover Camera, superb results are achievable.

In countries where heat haze is present, it is recommended the Video Enhancement Module be used with the camera-lens combination to enhance the color, contrast and focus of the video footage.

LongJohn Two   LongJohn Three

SPECIFICATIONS:

Focal Lengths	2 positions: 787mm and 1250mm	
Fields of View (1/3" Camera)	**787mm**	0.5m to 55m
	1250mm	0.4m to 20m
Primary Mirror:	Pyrex glass	
Optical Coating	Acromat BK7-SF5 coating	
Dimensions	300mm x 125 mm (diameter) Including cover	
Recommended Camera	Low light camera	
Minimum Focus Distance	3.5 m to infinity @1250mm	
Weight:	3.5 kg	

Longjohn Wireless Control System   Model 5121

In a revolutionary new design concept, We are introducing the new Model 5121 serial camera wireless control system.

This addition to the already extensive range of Model microwave video link control systems, allows the user to enjoy serial data control over a video/telemetry link via a Model protocol RS485 interface.

This major design development enables full serial and parallel control of single camera systems and the ability to access and command many of the new developments in camera technology. For instance, in conjunction with our Model 5121 (Sony based) camera system, the user has control of 72x zoom, black and white/color change-over, IR capability, automatic focus, shutter speed, backlight compensation, and field integration that allows images to be gathered at very low lux, as well as many other functions. In addition, the Model Telemetry System Hand Controller can be added to the system, enabling the user to have direct cable control of a camera via a patch box or to use the command structure through a remote communications link to enable the user to have proportional control of camera movement.

The Model 5121 controller is also ruggedly designed for covert rural operations where rapid deployment and 12V battery operation is paramount. The essential keyboard functions are luminous.

As many as fourteen single or multi-camera outstations can be controlled from one Model 5121, and the system is fully compatible with the Model VT/VR range of microwave transmission modules.

This unique technological advance by Model will allow operatives to move into a new world of handset, radio and GSM control of surveillance systems, with the Model 5121 Software and ISDN CODEC solutions.

FEATURES

- Rugged and rapid deployment
- Microwave links L, S, C or X Band
- Full duplex control at VHF or UHF
- Compact cameras
- High zoom capabilities
- Serial data
- Windows software
- Weatherproof
- Membrane keypad
- TFT screens
- 4 Outstation options
- 3 Camera options
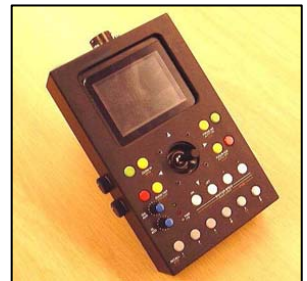
Man Pack Portable Long Range Lens   Model 5125

USAGE

The Man Pack Portable Long Range Lens is designed to cater for all static urban and rural surveillance operations.

The Model 5125 provides ultra long range Surveillance Target Acquisition using its combination of day or night sensor technology, providing many times higher magnification than normal spotting scopes in service today.

The Model 5125 is man portable and can be deployed rapidly within a few minutes. With its unique remote monitoring system, surveillance operators are able to monitor and record information observed from the target area, well away from where the sensor platform is deployed. This allows operators to work in complete safety and allows the use of multiple observers without compromising the position of the sensor platform.

Control Tower from 2Km

OPERATION

Simply find a location, set up the scope and tripod, connect the battery and monitor. The pictures will be relayed in live video to the waterproof LCD monitor base station up to 90 meters away.

Use the coarse adjustment, along with the finder scope, to get close. Then target very precisely using the fine vertical and horizontal knobs. Further zooming or extra magnification is then available.

Control Tower from 2Km

Microwave transmission is available as an option for the LCD monitor/sensor platform, with distances up to 1Km (line of sight) and fiber optic transmission over several kilometers, if required.

The sensor platform can be quickly released from the low profile tripod and attached to any full size tripod fitted with world standard 1/4″ UNC thread, while maintaining full use of the special coarse/fine pan and tilt head.

CAPABILITY

- Color video display up to 711x magnification
- Optional night vision image intensified video up to 519 x magnification
- Optional naked eye night vision image intensified observation up to 253x magnification
- Rapid deployable – man-portable (20kg approx.)
- Long range high magnification
- Provides extra security and stand off for operators
- Able to monitor and record target information away from sensor platform
- All equipment is self contained within its own webbing back pack

Man Pack Portable Long Range Lens   Model 5125

standard day use version

in night vision mode showing also finder scope

with optional PNP Night Scope Module for
naked eye image intensified operation

Close up of fine/coarse tripod adjustment

Rugged waterproof 6.4" LCD monitor with sunshade

4 x 20 Finder Scope with cross hair mounted on
Picatinny rail (rail fitted to both sides).

TECHNICAL DATA

Lens system dual zoom ratio as standard

	FoV Degrees*	FoV mils*	Zoom Magnification*
Color Camera			
High zoom range	0.475 to 0.162	8.44 to 2.87	83x to 249x
Low zoom range	0.165 to 0.056	2.94 to 1.00	242x to 711x
II Camera			
High zoom range	0.668 to 0.228	11.87 to 4.06	59x to 175x
Low zoom range	0.232 to 0.077	4.12 to 1.37	172x to 519x
II Scope			
High zoom range	1.336 to 0.457	23.74 to 8.12	29x to 87x
Low zoom range	0.464 to 0.158	8.25 to 2.81	85x to 255x

* ±5% Nominal Values

Thermal Imaging for Surveillance Applications   Model 7505-2

HANDHELD IMAGER FOR LAW ENFORCEMENT

Traditionally, thermal imaging is used by law enforcement helicopters and specialist teams.

The Model 7502-2 has been identified as a cost effective solution for all law enforcement operations and has been well received by various Police Forces worldwide after trials within TSU, Firearms and other teams.

- Surveillance
- TSCM Operations
- Recently used vehicle detection

THE IMAGER UNIT

An innovative handheld thermal imager that offers outstanding imaging performance, together with flexibility and ease of use at minimal cost.

This handheld unit delivers affordable thermal night vision for many practical law enforcement uses.

Technical details

- Large clear display
- Simple operation
- Weighs just .75kg
- Lowest cost high definition imager on the market
- 150+ m image range
- Image storage to SD card
- Temperature measurement ideal for hydroponics
- 160 * 120 image

Proven Technology

The technology within this small unit has been used in industrial and commercial applications for over a decade.

Range of options and accessories

- Car and desk chargers
- Unit with higher image updating speed (35 frames/second)
- Unit with twice the image range (250+ m)

Thermal Imaging for Surveillance Applications   Model 7505-2

SURVEILLANCE APPLICATIONS
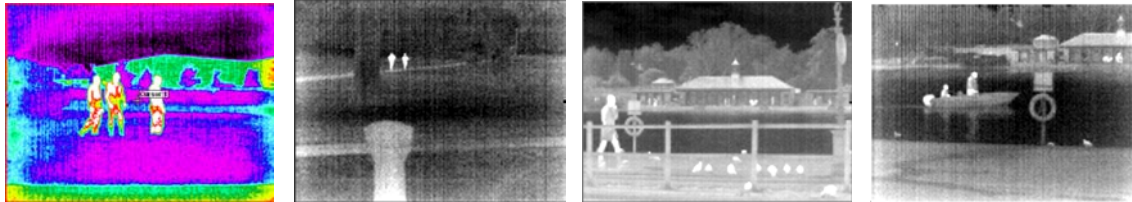
Detects people in total darkness and allows covert distance surveillance

- Covert Surveillance
- Monitoring of arrivals and departures
- Monitoring of open areas
- Safer parks initiatives

In darkness, thermal imaging gives the ability to "see" in zero light conditions proving valuable in many situations.

Surveillance features include

- High resolution 160x120 pixel image
- Large clear screen
- Auto hotspot tracker – useful for highlighting people
- Selectable color palettes
- Digital x2 zoom
- Optional screen shade to prevent light emission/reflection image storage to SD card

An important tool for "sweeping" buildings

For non-alerting bug detection, the unit provides measurement of surface temperatures and visible indication of irregularities.

Where a listening device/bug is working, it may alter the temperature of the adjacent material/wall.

- This temperature difference will be shown as a "hot spot"

During a house search, the unit can be used at arm's length to scan cupboards, difficult to reach places, lofts and hatches, etc.

- A picture is taken first, then unit is withdrawn so the image can be looked at before the officer enters the confined space

Firearms teams have successfully been using this unit during recent exercises and operations.

SCOPE OF DELIVERY

The unit comes with

- Camera and rechargeable battery
- Wrist strap
- Carry case
- Charger
- Software on CD
- SD Memory card/SD memory card reader

Night Vision Monocular System   Model 5200

The range is an image intensifier monocular night scope, which incorporates the latest technology in a compact body. The cost effective unit is compatible with SLR still cameras and palm-corders for evidence gathering in low-light conditions. The night vision scope is fully waterproof and also has waterproof and zoom lens options.

It is available in Generation 2 plus, HyperGen, XD-4, XR5 and XH72.

SYSTEM DESCRIPTION

It is ideally suited for covert night-time observation and intelligence gathering purposes, using standard photographic media as well as an effective aid to night-time field missions.

The Model 5200 employs an image intensifier tube characterized by high resolution and a clear, bright image. It is equipped with its own IR LED-type illuminator, which provides additional, close-range covert illumination when ambient light is insufficient, especially effective inside buildings, etc. A unique feature is the standard "C" mount for the objective lens, enabling standard CCTV camera lenses to be used. Special purpose adaptors enable the Model 5200 to be mounted onto a wide variety of 35mm SLR and video cameras (including CCTV cameras).

STANDARD SPECIFICATIONS

Optical	
Magnification	2x (other lenses available)
Field of view	20° (33 meters at 100 meters)
	(with standard 50mm lens)
Objective lenses	
Mounting type	"C" mount (1"-32 TPI) interchangeable
Standard lens	50mm, F1.4, 1 inch format
Lens options	A complete range of 1 inch "C" mount lenses including zoom, tele and wide-angle

Night Vision Monocular System   Model 5200

Electrical	
Power source	Twin 1.5V "AA" size alkaline batteries
Operating time	Minimum 112 hours (viewing), 31 hours minimum (viewing with infra red illuminator)
IR source	IR LED
Output wavelength	880nM
Output power	20mW/sr
Dimensions (body only)	100 (L) x 50 (W) x 63mm (H)
Weight	395 gms. (without batteries & objective lens)
Standard lens (2x mag)	203gms
Waterproof (body only)	To IP67 (meter for 30 minutes)
Waterproof lens (2x mag)	183gms
Tripod mount	Standard ¼" UNC threading
Construction	Black, anodized aluminum with rubber armored finish

CCTV Camera

Camcorder

Helmet Mount

SLR

PNP

Zoom Lens

Waterproof Lens

Spotting Scope

Head Harness

Night Vision for Canon XL2 Cameras   Model 5201

The Model 5201 introduces a new level of performance for Night-time Video Imaging. Similar to other Elaman Night Vision Modules, the Model 5201 maintains all the camcorder's important electro-optical features, even at night, when they make the most difference! These features include auto focus, auto-iris, power zoom and optical image stabilization. The result is video images that are incredibly bright and sharp - even in the lowest light conditions.

The unit is a high performance night vision module incorporating a state-of-the-art image intensifier that transforms dark scenes into bright, high resolution imagery. The unit is specifically designed for the Canon XL series camcorders and seamlessly installs between the camera body and lens in seconds. The patented design maintains communication and power between the camera and lens, which ensures that lens stabilization and zoom functions are maintained.

APPLICATIONS:

- Night-time News Gathering
- Government Surveillance
- Law Enforcement
- Security

DEDICATED

Designed exclusively for use on the XL2, the Model 5201 series integrates seamlessly with the camcorder, permitting full use of the camcorder functions.

SYSTEM

Available as a complete system, the Model 5032 Day/Night Surveillance Kit has everything needed for daytime or night-time video recording.

The kit includes:

- Model 5201 Night Vision Module/adapter/option zoom laser
- Canon XL2, Camcorder, 16 x Zoom lens with optical image stabilization, battery and recharger
- Customized black carrying/storage case

Central Intensifier Unit
(CIU™)

XL Lens   Front Lens   Back Body
                 Adapter   Adapter
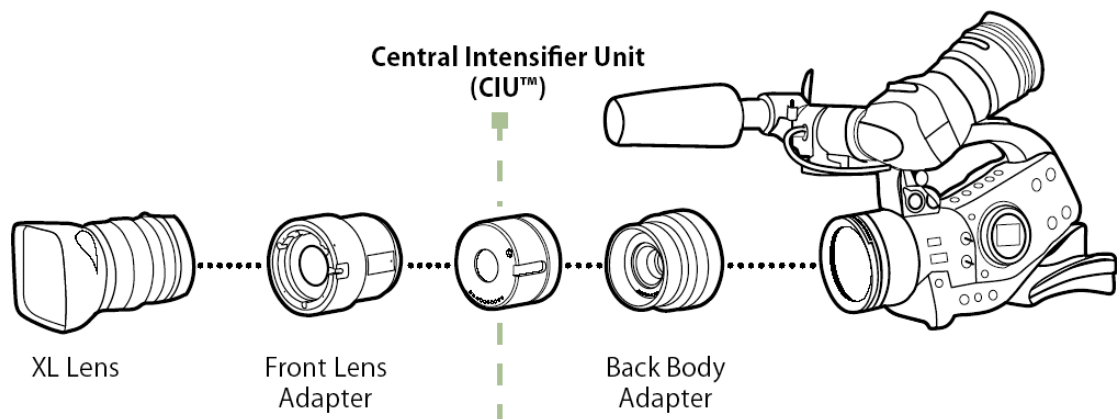
Thermal Hand-Held Camera   Model 5204

INTRODUCTION

The Model 5204 thermal hand-held camera is a high performance thermal camera, which uses the latest micro-bolometer focal plane arrays operating in the 8-12µm waveband. Advanced image processing algorithms, such as auto-manual AGC or histogram equalization are built-in to provide the best sharp and clear image in any conditions. A binocular viewer provides superior display and comfort for the user. The viewer is detachable from the camera's main body for remote and safe operation. The camera can be operated from a standard battery pack or from external power supply.

APPLICATIONS

- Surveillance and security
- Border patrol
- Night driving
- Police force

SPECIFICATIONS

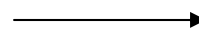| Focal length / F-number	FOV	IFOV
25 mm/F/1.1	32° x 24°	1.8 mrad
60 mm/F/1.1	14° x 10°	750 µrad
100 mm/F/1.3	8° x 6°	450 µrad

Detection range	
Standing man	1.2 km
Car	2.7 km
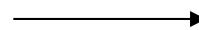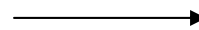
Thermal Hand-Held Camera   Model 5204

Item	Specifications
Pixel number	320 (H) x 240 (V)
Sensor material	Uncooled micro bolometer
Cooling type	Uncooled with temperature stabilization
Spectral response	8-12 μm
Thermal sensitivity	90mK @ F/1.1 @ 30°C typical
Operability	>99.5%
Frame rate	50Hz or 60Hz
Analog output	CCIR 50Hz or RS170 60Hz, black & white
Viewer	Binocular display FoV 27°x20° Detachable from the main body for remote operation
Weight (inc. Battery & 100mm lens)	<2 kg
Input voltage	7-14 VDC (external)
Battery pack	Rechargeable battery pack NiMh or Li Ion
Operational temperature range	-20°C +55°C
Operating time per charge	5 hours with Li Ion battery pack
Power conservation	Standby mode, low power
Software command	RS 232, software communication control available
Image processing	Auto and manual gain and offset, histogram processing, color palette inversion…
Magnification (NTSC mode)	X3.3 with a 100mm lens
User inter-pupil distance range	58mm to 72 mm (fixed by design)
Pupil size	10mm
Dioptre correction	-6 to +3
Immersion in water	1 meter for 2 hours
Dimensions	255mm x 165mm x 80mm

2

Fixed Day/Night/Thermal Observation System   Model 5205

INTRODUCTION

The Model 5205 surveillance observation unit, which incorporates the highest technology as standard, is designed to cater for all surveillance requirements in normal to extreme environmental conditions. Model 5205 provides short, medium to long range Surveillance Target Acquisition, using all 3 sensor technologies with the added benefit of incorporating Image Fusion. Model 5205 is capable of infinitely variable integration of two or three different sensor technologies at the same time. Remotely powered and supplied ready for use.

FEATURES

- Rapid deployable fixed system
- Housed inside ruggedized air portable boxes
- Sensors include Day, Night and Thermal cameras incorporating image fusion technology
- Variable speed head with motorized zoom & focus

SPECIFICATIONS

STANDARD

- Sensor Head: MIL Thermal Camera, 12°, 9° or 6° FOV Horizontally
- Color Day Camera with 22x zoom lens, 21° to 1° FOV horizontally
- Hypergen or MIL intensified Camera with 22 x zoom lens, 41° to 2° FOV Horizontally
- Head support bracket, cabling, tripod and motorized pan/tilt
- Sensor outstation rechargeable battery pack in hard transit case, with 220-240/12v AC/DC converter
- Flexible cabling 20 meters (extendable) to/from control station
- MSMS 10.4" LCD display control station/rechargeable battery pack in hard transit case, including all camera, Image Fusion and pan/tilt controls. 220-240/12v AC/DC converter and 12v DC/DC converter
- Image Fusion on any 2 cameras and on all three by simple controls
- Full operating instructions and transit cases for the complete installation
- Operating temperature range -20°C to +50°C Environmentally tested to IP6

Fixed Day/Night/Thermal Observation System   Model 5205

CAMERA OPTIONS

MIL Thermal Cameras

320x240 Hybrid ferroelectric uncooled staring focal plane array detector

Spectral range 7 - 14 microns

NETD .08 degrees C

Polarity control black/white hot

Gain automatic/selectable

Focus motorized

MIL 75

75mm F1 lens	
Angle of view	12° horizontal
	9° vertical

MIL 100

100mm F1 lens	
Angle of view	9° horizontal
	6.75° vertical

MIL 150

150mm F1 lens	
Angle of view	6° horizontal
	4.5° vertical

17mm-374mm Lens

Angle of view	41°-2° horizontal
	30°-1.5° vertical
MIL or HyperGen Image Intensifier	

Day Camera DC

High resolution color CCD camera complete with

17mm-374mm long range zoom lens

Angle of view	21°-1° horizontal
	15°-0.75° vertical

PAN/TILT POSITION

Speeds (degrees/sec):	
Pan	0-20°/sec continuously variable
Tilt	0-7°/sec continuously variable

OPTIONAL

Video transmission command system

Night Vision Intensified Camera

High resolution monochrome CCD, with 17mm-374mm long range zoom lens

Under Vehicle Surveillance System   Model 5501

INTRODUCTION

The Model 5501 Under Vehicle Surveillance System is designed for temporary deployment and portability between sites. The system comprises:

Galvanized Steel Ramp with integral metal housed cameras and LED illuminators. These can be color cameras and white LED illuminators, or monochrome and IR LED illuminators.

Control/Monitor Pack is housed in a portable rack mount case with removable front and rear protection covers. The rear cover contains the 10 meter interconnection cable assembly used between the monitor pack and the ramp. At the front of the pack are 2 digital video HDD recorders with hot swappable drives. An in-built video motion detector automatically starts the recording process when a vehicle comes into view. The images from the digital recorders are displayed on 2 in-built 6.4" high resolution monitors. A UPS unit is included to provide approximately 30 minutes of operation in the event of power failure. The system can be operated from mains or 12V dc. The control panel also contains an intensity control for the lamps and BNC outputs for each of the digital recorders to allow the images to be recorded or displayed on external devices. A hand-held control unit is also provided to allow simultaneous operation of key functions on the digital recorders.

DESCRIPTION

- Rack Mount Case with Protection Covers
- 2 x Digital Video Recorders with Hot Swappable Drives
- 2 x 6.4" High Resolution Video Monitors
- Integral UPS for 30 Minutes Back-up
- Operates from Mains or 12V dc
- Lamp Intensity Control
- Outputs from both Recorders to External Devices

FEATURES

- Galvanized Steel Ramp and Shoulders
- Weatherproof Cameras and LED Lamps
- Modular Construction for Easy Service
- All internal Connections use Weatherproof Plugs and Sockets
- Connection from Either Side
- Highly Portable for Temporary Deployment

Under Door Viewing System   Model 5502

A completely self contained and portable unit designed to slide under any door where there is a 4 mm gap. A high resolution fiber optic imaging system with a wide viewing angle is integrated, with a miniature microphone into the under door insertion plate. Images inside the room are relayed back to a TFT screen on the unit.

Audio & video out sockets permit remote audio monitoring and recording. The unit is ruggedly constructed for use by military and law enforcement agencies and has a carry handle, and built-in rechargeable batteries. Optional accessories include an image intensifier for low light conditions.

FEATURES

Thinnest ever insertion plate - just 4 mm
Long 220 mm length to cover all door types
Integrated unit with built-in video and audio
High resolution imaging system with 85° field of view and 20° upward viewing direction
5″ TFT screen

STANDARD SUPPLY

Under door scope with camera & screen, ear phones, battery charger and carry case

Optional Supply

Image Intensifier Mains Adapter 100-240V AC input, 12V DC output
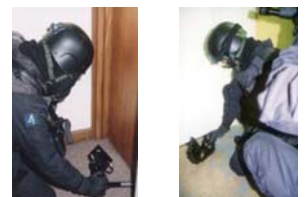
TECHNICAL SPECIFICATIONS

Image System	High resolution 30K pixels, 85° field of view
	Depth of field is to infinity
	Overall viewing direction 20° up
Video Camera	B&W PAL (NTSC available)
	½″ CCD 570 line, 0.0003 lux on Hi Gain (AGC)
TFT Screen	5″ color with wide viewing angle in rugged metal case
	224,640 pixels (960 x 234 dots). Monochrome option switch
	PAL (NTSC available)
Microphone	Miniature Electret type with excellent response and sensitivity
Outputs	BNC for video, 3.5 mm jack socket for audio
Power	Built in rechargeable miniature NMH batteries (one hour duration)
	Or mains power using optional adapter
Frame	Black anodized aluminum with heavy duty carry handle
Dimensions	300 x 330 x 220 mm (w x d x h), Weight: 2.3 Kg
	Product dimensions: 330 x 328 x 260 mm (w x d x h)
	Case dimensions: 430 x 380 x 260 mm (w x d x d)

Under Door Viewing System with Audio   Model 5502 NV

Completely self-contained and portable units designed to slide under any door where there is a 4mm gap offering a wide 85° field of view with a 20° upward viewing direction.

Three choices – a video-based system with built-in screen (Watec Camera), Night Vision (Star 300 Camera) or a fiber optic system for viewing with the eye plus add-on cameras if required. All options have built-in audio.

APPLICATIONS:

Designed for Firearms Teams, Drug Enforcement and Special Forces, etc. to provide audio and visual real-time intelligence, prior to entry into target premises.

SPECIFICATIONS

Cameras: Watec 902 1/3″ CCD 570 lines 0.00009 lux (MK2) or Night Vision Star 300 1/3″ with image integration CCD 580 lines 0.00005 lux (MK3).

Screen: 5″ TFT color with wide viewing angle in rugged metal case with audio and video out to allow remote operation.

Under Door Viewing System with Audio   Model 5503

Completely self-contained and portable units designed to slide under any door where there is a 4mm gap offering a wide 85° field of view with a 20° upward viewing direction.

Three choices – a video-based system with built-in screen (Watec Camera), Night Vision (Star 300 Camera) or a fiber optic system for viewing with the eye plus add-on cameras if required. All options have built-in audio.

APPLICATIONS:
Designed for Firearms Teams, Drug Enforcement and Special Forces, etc. to provide audio and visual real time intelligence, prior to entry into target premises.

SPECIFICATIONS

Fiber optic Cable: High Resolution 30K Pixel, 1500mm long cable leading to focusing eyepiece, which allows the operator to stand well away from the door.

Power & Controls: PPS 9V Battery plus 12V input for external supply, on/off switch, fuse and two audio out sockets.

Audio Pencil Probe   Model 5504

Obtaining intelligence at siege and hostage scenes is vital. Using the same high quality amplifiers found in our Audio Borescope, this probe delivers excellent sound quality in an inexpensive and compact kit.

The microphone is built into the Pencil Probe handle and can be used on its own or with interchangeable small diameter listening probes which snap-lock onto the handle.

SPECIFICATIONS

- 'Pencil' handle with integrated Electret 2.6mm microphone with excellent response and sensitivity
- 2.5 meter lead from handle connects to pocket-sized battery-powered (PP9) amplifier box. Includes phono/audio out socket for recording
- Three interchangeable listening probes which snap-lock to 'Pencil' handle (1mm x 50mm, 1mm x 100mm and 2mm x 250mm – others available upon request)

Fiber Optic Surveillance System   Model 5505

Our high-performance Model 5505 provides clear, sharp images of inaccessible areas, making remote inspection, evaluation and imaging possible in almost any situation.

The system offers durable construction and exceptional value in a range of diameters and lengths. Simple knobs control the articulation, while a focusing eyepiece enhances high-resolution imaging and accommodates 35mm and video cameras. The flexible shaft resists water, gasoline or diesel and jet fuels, simplifying inspection of liquid filled vessels. Assured non-conductive safety by direct grounding.
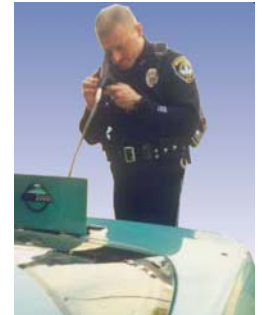
APPLICATIONS

- Surveillance
- Bomb Squad
- Police Investigation

OPTIONAL EQUIPMENT

- Compact color video camera
- Separate light guides for remote light sources
- Monitors and recorders

EASY TO USE INSPECTION SYSTEMS

The 6mm two-way articulation and the 8mm four-way articulation Model 5505 quickly locate contraband in hard-to-reach areas. These systems are used daily by national, international, and government law enforcement agencies to successfully detect concealed materials. Both the 6mm and 8mm systems include a fuel proof fiberscope, portable illuminator and all the accessories needed for on-site inspection, together with Integral Ground Connection with a 471/2" (1.21 m) ground lead for non-conductive safety.

In order to enhance performance, these systems have been totally redesigned to improve articulation, image and brightness. Our Fiber Optic Surveillance System is a critical equipment addition for surveillance teams.

2-way articulation 6mm	4-way articulation 8mm
6mm fuel tight flexible – 2m length	8mm fuel tight flexible -2 m length
Fiber optics inspection system	Fiber optics inspection system
Shoulder strap	Shoulder strap
Rubber eye-cap	Rubber eye-cap
Camera adapter	Camera adapter
Lens cleaner	Lens cleaner
Carrying case	Carrying case
Available in several length	Available in several length

Audio Borescope and Fiberscope   Model 5508

Audio Borescopes & Fiberscopes bring together the very latest advances in optical and audio engineering. These all seeing/all hearing endoscopes combine high resolution fiber optic image bundles with an exceptionally sensitive, state-of-the-art miniature microphone.

Excellent response miniature microphone and images can be viewed with the eye or on video using an optional TV adapter.

	RIGID	FLEXIBLE
Specifications	Rigid Flexible Probe Diameter: 4.9 mm Length: 300 mm (other lengths upon request)	Flexible Probe Diameter: 6 mm Length: 1500 mm (other lengths upon request)
Applications	Discreet surveillance in buildings, aircraft etc.	In situations where flexibility is required e.g. Air Vents
Image System (same for both types)	High resolution 30,000 pixel image bundle; forward viewing 0° with 80° field of view; depth of field to infinity; focusing eyepiece, without illumination	
Audio System (same for both types)	Integrated Electret 2.6 mm microphone at viewing end with excellent response & sensitivity; 2.5 meter lead from endoscope head section to pocket-size battery-powered amplifier box; on/off switch and phono socket for audio out.	

Surveillance Kit With
Microphone & Endoscope Probes

Model 5509

CONTENTS:

- Audio Pencil Probe with 3 snap locking insertion tubes
- High resolution 17K pixel Pencil Probe Endoscope with 0.96mm x 300mm insertion shaft
- 'C' Mount TV adapter – TV-ULT28
- Pocket light source
- Kit Case with hard foam cut-outs

APPLICATIONS:

A universal covert intelligence kit providing sight and sound through 1mm hole. Ideal for use with silent drills particularly in hostage situations and long-term monitoring of terrorist suspects.

Covert Fiber Optical Search System

Model 5510

Particularly suited to law enforcement and surveillance operations, this probe incorporates a long-exposure mode for superior viewing in low-light situations. Dedicated controls allow the operator to switch off the lamp and lower the speed of the ventilation fan for diminished noise and reduced detection. The Covert System can also be carried on a Covert Backpack and powered by the PowerBar™ battery pack.
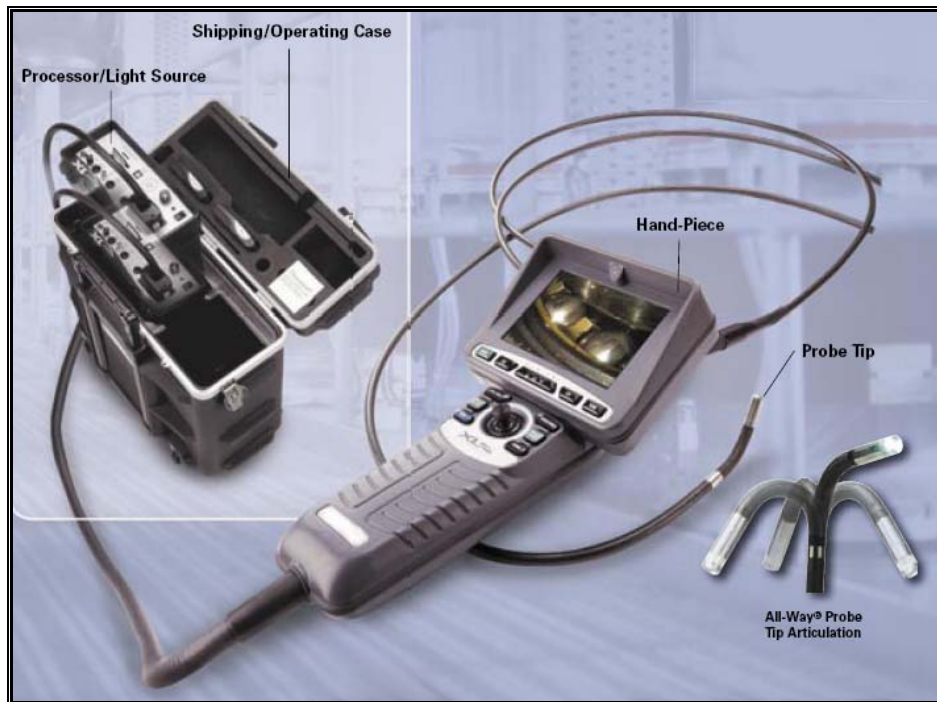
FEATURES

- Specially designed for reduced noise and lampless operation
- Adjusted focal range for crisp image at long distances
- Probe is interchangeable with XL PRO and XL PRO Plus systems
- Available in XL PRO and XL PRO Plus models
- CompactFlash ® removable storage media – XL PRO Plus
- USB Streaming digital video output – XL PRO Plus
- Integrated viewing, recording, measuring, comparing and playback

PROCESSOR/LIGHT SOURCE

A dedicated lamp On/Off switch is standard on the covert model to ensure complete control over lighting in dangerous situations. When the lamp switch is in the off position, the exhaust fan speed is reduced, also ensuring quiet operation:

XL PRO PLUS

- Removable CompactFlash ® data storage for Video and Still images
- Full-motion MPEG1/MPEG2 audio/video recording and playback
- USB streaming video port
- Internal 32 MB Flash memory

Pre-entry room sweep in SWAT operation

Covert Fiber Optical Search System   Model 5510

HAND-PIECE

The ergonomic Hand-Piece provides one-handed operation with intuitive joystick articulation, large control buttons and a high-resolution color LCD. The innovative Hand-Piece features:

- Joystick for All-Way articulation and menu control
- Shock-mounted LCD monitor
- Integrated microphone
- Insertion tube torsional strain-relief
- Impact-absorbing rubber bumpers

PROBES

The Covert Fiber Optical Search System is offered in 6.1 mm and 8.4 mm diameters with custom diameters available upon request. The probes are interchangeable, ruggedly constructed, and are protected by:

- Titanium or stainless steel camera heads
- Quad-wall insertion tube construction
- Tungsten braid over entire insertion tube and bending neck
- Force-limited, servo-motor articulation

Covert Backpack with PowerBar™ Battery Pack

System		
Case Dimensions:	55.9 x 55.9 x 26.7 cm (22.0 x 22.0 x10.5 in.)	
Weight:	In case 15.9 kg (35.0 lbs.), Without case 7.7 kg (17.0 lbs.)	
Power Supply:	AC Power	Nominal input: 100-240 V (min 90 V, max 250 V); 50-400 Hz; 150 W max, 2 A max
	DC Power Nominal	input: 11-14 V, 11 A max +28 VDC via accessory adapter
Camera		
6.1 and 8.4 mm diameter Fiber Optical Search Systems		
Image Sensor:	1/6 in. Color SUPER HAD™ CCD	
Pixel Count:	380,000 pixels NTSC; 440,000 pixels PAL	
Hand-Piece		
Dimensions:	30.5 x 14.7 x 12.7 cm (12.0 x 5.8 x 5.0 in.)	
Weight:	2.3 kg (5.1 lbs.) typical; includes insertion tube,	
LCD Monitor:	12.7 cm (5.0 in.) diagonal integrated TFT color LCD	
User Controls:	Joystick and complete button function set	

Covert Fiber Optical Search System   Model 5510

XL PRO Plus Specifications	
Memory:	32 MB internal Flash memory
Disk Drives:	CompactFlash ®, Type I, accepts all memory sizes
Still Image Storage:	BMP uncompressed – 900 KB typical file size
	JPG Super High Quality – 200 KB typical file size
	JPG High Quality – 90 KB typical file size
	.JPG Low – 30 KB typical file size
Video Recording:	MPEG2: High and Low Quality Settings, Up to 42 min. recording on High w/1 GB CF card
	MPEG1: High, Medium and Low Quality Settings, Up to 92 min. recording on Med w/1 GB CF card
Video Output:	S-Video and USB 1.1 streaming digital video

Ultracam Videoscopes

Model 5511

ULTV PLUG-&-PLAY RANGE – FOR MAXIMUM PORTABILITY – NO CONTROL UNIT – USE ANY MONITOR & LIGHT SOURCE

- Color systems available in 6mm without angulation, and in 6mm & 8mm with 2–way and 4-way tip angulation
- Black & White systems (IR illumination compatible) available in 8mm without illumination and 10mm with illumination
- Tungsten braid insertion tube – inter-changeable objectives (0°/58° and 0°/90° supplied as standard - 90°/50° optional extra)
- Resolution: 8mm = 1/4″ CCD 330 lines
- Video signal: PAL (Std) NTSC on request

STANDARD VIDEOSCOPES WITH TIP ANGULATION

CODE	Diameter mm	LENGTH mm	DIRECTION OF VIEW	FIELD OF VIEW	TIP	COLOR OR BLACK/WHITE
ULTV.Z2-8-150	8.0	1500	0°	58°/90°	2 –way	Color
ULTV.Z4-8-150	8.0	1500	0°	58°/90°	4 –way	Color
ULTV.Z4-8-200		2000				
ULTV.Z4-8-300		3000				
ULTV.Z4-8-500		5000				
ULTV.Z4-8-600		6000				
ULTV.Z4-8-750		7500				

SIDE VIEW TIP ADAPTERS FOR ULTV VIDEOSCOPE RANGE

ULTV.4-8SVAT   Side Viewing (90°/58°) for 8 mm Probes

BLACK & WHITE PORTABLE VIDEOSCOPES & KITS

CODE	Diameter mm	LENGTH mm	DIRECTION OF VIEW	FIELD OF VIEW	TIP	COLOR OR BLACK/WHITE
ULTV.BW 4-8-100	8.0	1000	0°	58°/90°	4 –way	B/W
ULTV.BW 4-8-150	8.0	1500	0°	58°/90°	4 –way	B/W

Ultracam Videoscopes

Model 5511

RECOMMENDED CONNECTION OPTIONS:

To 6.5″ Screen & Image Capture System SX650	To Handheld Display ULTZ-PVIEW	To Ultracam Multi-Function Video Workstation ULTCAM.MVW-1

CONNECTING OPTIONS

SX650	6.5″ Combi screen & image capture device with harness
ULTZ-PVIEW	2.5″ Handheld Display
ULTCAM.MVW-1	Convenient compact system incorporating remote head color camera, flip-up 10.4″ screen, 50W high intensity Xenon lamp and image capture onto USB stick

ULTRACAM CLASSIC RANGE – WITH ADVANCED FEATURES INCLUDING MOUNTABLE PDA

- Truly outstanding image quality resulting from the very latest optical design
- Available in 6mm & 8mm diameter each with single hand operation, 4-way tip angulation and interchangeable objectives
- Standard lengths 2000mm and 3000mm
- Viewing options include flip-up screen on MP500 Workstation, snap-on screen, or snap-on PDA to Videoscope head
- The PDA combination allows for image viewing, storage and transmission via Bluetooth, email or MMS. Adjustable pan and tilt for optimized viewing
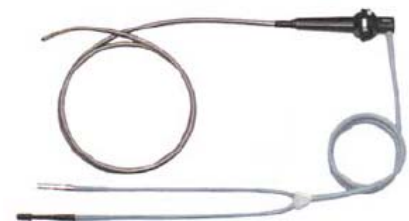
CODE	Diameter mm	LENGTH mm	RANGE OF ARTICULATION	STD FIXED OBJECTIVE
FSC.V1.082000.2	8.0	2000	4 x 120°	0°/45°
FSC.V1.083000.2	8.0	3000	4 x 120°	0°/45°

Ultracam Videoscopes

Model 5511

OPTIONAL OBJECTIVES:

Each Videoscope is supplied with a fixed objective. The following optional interchangeable objectives can be attached to the fixed objective.

CODE	Direction of View	Field of View	Depth of Sharpness mm
For 8mm:			
FSC.VO08.0080	0°	80°	45 – infinity
FSC.VO08.9050	90°	50°	45 - infinity

RECOMMENDED CONNECTION OPTIONS:

FSC. 180x.301 Workstation	Ultraview Hi-Light MP500 Workstation	5.6'' monitor FA.TVMON56TFT	PDA-Fujitsu LOOX. 720
• Desktop • 180W Xenon lamp • 4-camera control unit for workshop applications • Add screen to suit	Feature packed mobile unit includes 50W metal Halide lamp & image integration for low light	Snap locks to Videoscope head augments or can replace MP500 screen	Snap locks to Videoscope head to provide every conceivable image storage & transmission option

CONNECTING OPTIONS
- FSC.180X.301 180W Xenon lamp & 4-camera control for workshop applications
- MP500 Mobile Unit with 50W metal Halide lamp & image integration
- FA.TVMON56TFT Compact 5.6″ monitor which snap-locks to Videoscope head
- PDA-L00X.720 Snap-locks to Videoscope head to provide image storage & transmission

Low Noise Drilling System

Model 5512

- The development of this new Low Noise Drilling set is the result of many years of professional operational experience
- The complete system is stored in a discreet briefcase to enable quick set-up & user-friendly operation
- In hostage situations, knowledge is vital to a successful outcome and the technique of low noise drilling allows audio and visual intelligence to be gained without alerting the hostage takers
- Unlike other drills the C7 will successfully drill through a wide range of construction materials using the specially developed main drills for long access holes and pinhole drills for the final breakthrough
- We are able to offer a complete family of micro endoscopes and audio probes to complement the C7 System

CONTENTS:

- Drill head & motor
- Wall-mounting bracket
- Variable speed control box with built-in batteries
- Charger & mains PSU
- Drill bits & extension tubes
- Mounting plates, metal raw plugs & tools
- Kit briefcase & user manual

SPECIFICATIONS

DRILL SPEED:	VARIABLE
POWER REQUIREMENTS:	INTERNAL— BATTERIES WILL RUN FOR UP TO 5 HOURS
	EXTERNAL— 12V DC OR MAINS VIA PSU
MAIN BORE SIZE: PINHOLE BORE SIZE:	6mm (OTHER SIZES AVAILABLE) 1mm
DRILL HEAD WEIGHT: SYSTEM WEIGHT IN CASE: CASE DIMENSIONS:	1.6kg 9kg 47 X 36 X 15cm

OPTIONAL EXTRA

HILTI TRANSPOINTER	Magnetic field positioning tool (2-part – Transmitter & Receiver) that locates drill exit or starting point and indicates wall thickness.
	N.B. Requires temporary access to target premises.

VES
Video Enhancement Systems

TSU INDEX

Video Enhancement Systems

Ref	Number	Description
1	5451	Video Enhancement Laboratory
2	5410	Digital Video Image Stabilizer

Video Enhancement Laboratory   Model 5451

Model 5451 system for video and still picture enhancement is designed for use by law enforcement agencies and organizations. In addition to the full range of image enhancement features listed below, the Model 5451 system also offers an audit trail with playback facility (to replay processing operations), case management and tools for court presentation. The processed video may also be displayed on a second external PAL video monitor. The Model 5451 also features de-blurring capabilities, integration of nonconsecutive frames and a macro builder facility.

The user interface enables operators with no previous detailed knowledge of image processing to use the Model 5451 effectively. The functional system is capable of digitizing up to 10 seconds of uncompressed live video to memory. This allows the operator to browse through the captured sequence to select optimal images.

The Model 5451 system runs as a 32 bit multi-threaded application under Windows XP Pro; normally supplied with a state-of-the-art PC, a suitable high performance graphics card and a video frame grabber.

A video source (PAL/NTSC/SECAM) can be connected and viewed live in a window. To record video in real-time uncompressed on a hard disk and manipulate the data is easy. Just as if it is on a VCR; press record and the computer does the work. After recording, operations can be performed on the sequence, e.g. integration, stabilization, moving object integration or applying filters on the complete sequence or subsequence.

IMAGE ENHANCEMENT FEATURES:

- Movie Pack
- Office Pack
- DV Pack
- Browsing
- Field/frame Conversion
- Replay
- Annotation
- Multi-selection
- Integration Display
- Dual monitor operation
- Live image operation
- Noise reduction
- Contour enhancement
- De-blurring
- Contrast enhancement
- Geometric correction
- Image integration
- Case management and security
- Image sequence browser
- Court presentations

MOVIE PACK:

Moving object integration is possible: a person or number plate in a sequence can be tracked and consequently integrated. A jolting sequence caused by a moving camera can be stabilized and all filters can be applied to a complete sequence, such as a filter/LUT, Stretch, Equalize and Moving Average operation.

Video Enhancement Laboratory

Model 5451

OFFICE PACK:

The operator can design his own report format and layout through MS-WORD. Own logo, address, image caption, etc, can be included and printed seamlessly with the processed images of the Model 5451.

DV PACK:

Model 5451 allows to load, display and process digital video (avi,jpeg); a number of digital formats can be loaded and processed. It is completed with a tool for controlling the digital recorder. A digital device is connected into the fire wire connection; a choice can be made as to which one is used as frame grabber.

RAID:

Besides providing image enhancement operations, the Model 5451 contains the RAID functionality; the capability of recording live uncompressed video up to 6 hours to a hard disk array. The recorded images are displayed in the live window and the scroller.

A variety of operations is possible with reference to sequences:

- **Browsing:** Scrolling through the sequence and selection an image
- **Field/frame conversion**: stepping per field/frame and deinterlacing
- **Replay:** replaying the whole (or part of the) sequence once or cyclic, back or forward and in different speed
- **Annotation:** images are assigned a unique sequential number. This annotation feature guarantees the integrity of the image capture and processing without the need for final storage of the entire sequence
- **Multi-selection:** selecting more images at the same time and saving as a new sequence (can be used for manual demultiplexing)
- **Integration:** efficient integration of images
- **Display:** adjustable display area sequence. The preview images in the scroller show an adjustable zoomed part of the images of the sequence
- **Dual Monitor operation:** use two large monitors for a more convenient and efficient operating environment

Separate packs are

- Offline Demultiplex packs
- TV output pack
- Track pack

NOISE REDUCTION:

Model 5451 offers three filters for noise reduction (average, median and low-pass) where the filter strength is determined by a single parameter.

CONTOUR ENHANCEMENT:

Model 5451 has a set of seven contour extraction filters and user definable kernels. The result of the filter is added to the weighted original image, giving the effect of contrast enhancement.

DE-BLURRING:

This may be accomplished by three different algorithms, based on "inverse filtering". De-blurring requires the operator to set only one or two parameters.

CONTRAST ENHANCEMENT:

Video Enhancement Laboratory

Model 5451

The contrast of the image can be stretched automatically and a manual grey level map may also be used for more complex scenes. Thermo-graphic images can be processed with a pseudo-color facility. Grey level mapping produces a live update of the image and its histogram.

GEOMETRICAL CORRECTION:

Portions of an image may be warped using a second-degree polynomial to compensate for perspective distortions.

IMAGE INTEGRATION:

Dark images can be enhanced using integration. The operator may do this manually, adding image by image, or automatically in real-time up to a maximum of 10,000 frames. Non-consecutive frames may be integrated as well.

CASE MANAGEMENT AND SECURITY:

All operations relating to a case are stored in an audit trail for that case. The Model 5451 can replay the functions contained in that audit trail.

IMAGE SEQUENCE BROWSER:

The Model 5451 has the ability to capture up to 10 seconds of uncompressed video to system memory. The user can easily step through the captured image sequence to select the most useful images. Since the VCR has not been operated in jog mode, the images retain maximum quality, while tape damage is minimized.

PRESENTATIONS:

Several dedicated drawing tools are included to allow the creation of (court) presentations. The tools are secured from image editing use. Presentations may be recorded directly to VCR or printed on hardcopy video printers.

TECHNICAL SPECIFICATIONS

Defocusing de-blurring	-frequency domain de-blurring (by FFT/inverse FFT)
	-iterative estimation filter and Landweber filter
Motion de-blurring	-frame shifting: lines/pixels, field replication
	-frequency domain de-blurring and iterative estimation filter, accounting for motion direction
Geometry	-perspective warping
	-image rotation 0-360° in 1 increment (with/without interpolation)
	-image flipping (horizontal/vertical)
Overlays (moveable)	-bright saturated colors, selectable color palette
	-text, arrows, circles, square boxes, square
	-alphanumerical) grids, rectangles blocking-out capability

Image integration	-up to 10,000 consecutive frames in real-time
	-manual selected set of frames or fields
	-direct intermediate result on screen
Registration of fields	-frame-to-field conversion for both fields
	-movement of odd and even fields horizontally/vertically
	-frame to field conversion switchable between line replication and interpolation
Sequences	-working with sequences: scrolling, selecting, pasting, cutting, etc. (Efficiency Pack)
	-de-multiplexing on the base of image contents (Optional De-multiplex pack)
Other functions	-Conversion of live and still color image to monochrome
	-inversion of image to negative
	-logic functions: and/or/xor/nor/not/nand
	-identification of images by filename text overlay
	-GUI free of blending/retouching, undo/redo option
	-calibration facility, global reset
	-macro builder facility
	-labeling of composite image as such
	-arrhythmic functions: +, -, * and threshold
Administration for each case	-operator, time interval of processing, audit trail, grabbed images
	-facility for VCR tape identification and frame counts integrated images
Storage, encryption, reading and writing	-storage drive is user definable, saving in proprietary and other formats
	-TIFF 6.0, bitmap BMP, secured proprietary format
	-visual image manager for fast browsing of images
Caption facilities	-automatically overlaid, positioned by user, including case details and print number
Zoom	-(any part of) images with variable magnification (up to x32)
	-zoom by pixel replication and pixel interpolation
	-zooming of (any part of) the still image controlled from GUI, adjustable in increments or any factor; zoom can pan across image (controlled from GUI)
	-live zoomed image can be displayed on 2nd monitor

Digital Video Image Stabilizer

Model 5410

- Real-time image stabilization of PAL or NTSC video images
- Improves the operational performance of high-zoom surveillance cameras
- Operates with live or recorded video
- Compact, simple to install hardware
- Can improve the performance of compressed video links
- Applications:
  Town centre CCTV

  Cross-border monitoring

  Long-range covert surveillance

  Mobile recording

  Video post-processing

The Model 5410 uses the very latest image processing technology to reduce camera shake leaving operators with clear, stable and steady video. Installing a Model 5410 increases the effective operational range of high-zoom cameras in windy conditions, ensuring best performance from surveillance systems, whatever the weather.

Model 5410 is simply installed in-line with the viewing monitor and is compatible with either live or pre-recorded video. The system operates by employing ultra-fast, real-time video analyzing techniques to keep surveillance images clear and jitter free. Model 5410 can also improve the performance of digital compression systems, such as Internet or ISDN video links, as stable images compress more efficiently.

The Model 5410 draws on our vast experience of video imaging for defense applications coupled with Model's production engineering capability. It is the culmination of over 10 years of hardware and software development.

DIMENSIONS AND INTERFACE
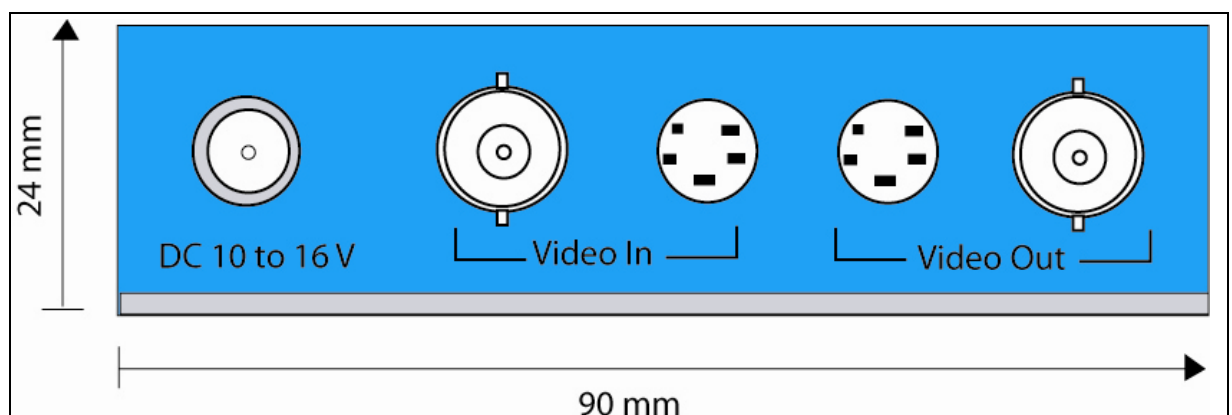
Digital Video Image Stabilizer　　　　　Model 5410

SYSTEM OPERATION
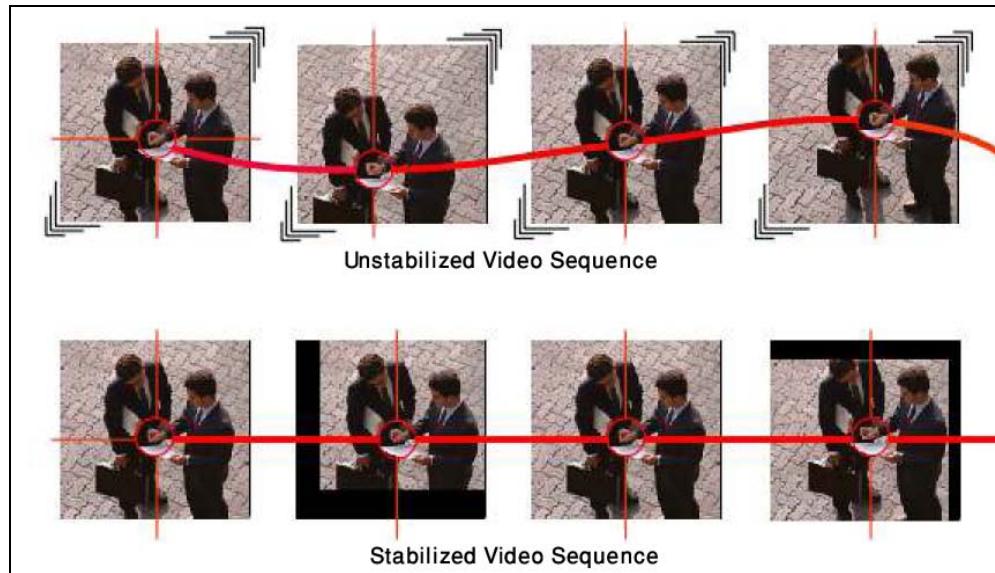
The Model 5410 operates by locking onto the detail within the center portion of the incoming video. It then examines each subsequent video picture 50 times per second and repositions them to best counteract any camera shake. This is achieved by complex software algorithms running on the very latest multimedia hardware chip - the Philips TriMedia ® . It has been specially developed to cope with demanding image stabilization situations, such as use with noisy video sources (e.g. low light video) and with pan and tilt installations.

SPECIFICATIONS

Outline Specifications:	
Mechanical size	160 x 90 x 24 mm
Operating temperature range	0 to + 40 deg C
Finish	Blue hard anodized aluminum
Weight	440g (approx).
DC power requirement	10 to 16 V DC at ~ 6 Watts (e.g. ~ 600 mA at 12 V DC).
Standard accessories	User guide, mains PSU & AC power lead.
EMC compliance	EN5502 class A, EN50082-1 FCC part 15B class A
Video:	
Video standards supported	PAL & NTSC
Video connectors	BNC & S-Video
Video input/output levels	1 Vpp 75 ohm
Digitizing resolution (PAL)	8 bit Y/UV, 720 pixels by 576 lines
System delay	< 80mS
Video by-pass	Active whilst powered down
Signal to noise ratio	> 55 dB (weighted)

VSR
Video Surveillance Recorders

"HAWKEYE" Shirt Button Camera

INT. STEREO MICS

EXT. MIC IN

USB

STOP

RCD

CAMERA INTERFACE

AUDIO OUT

Size 2.8" x 2.4" x 0.6"

Two Camera System

Suspect

Officer

Officer

Covert camera clock 12.7cm off floor

Color Camera or smoke detector

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
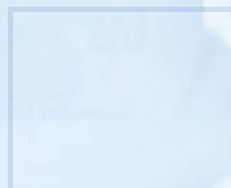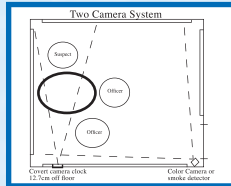
Video Surveillance Recorders

Ref	Number	Description
1	5608	Digital Video Audio Recorder
2	5609	Super Thin Video Audio Recorder
3	Access	Optional Accessories for 5608 and 5609
4	5610	Concealed Camera Video/Audio Recorder in a key ring
5	5601	Body-Worn Digital Video/Audio Recorder
6	5602	Portable Video/Audio Recorder
7	5603	Concealed Body-Worn Video/Audio Recorder
8	5604	Vehicle Recorder & Monitor Kit
9	5605	Digital Video Audio Recorder
10	5611	Rugged Portable DVR Recorder
11	5612	Digital DVR Video/Audio Recording System
12	5613	Portable Hard Disk Recorder
13	5614	Portable Room Monitoring Video/Audio Kit
14	5615	Interrogation Room Kit

Digital Video Audio Recorder

Model 5608

The Digital Video-Audio Recorder is a miniaturized, solid state, standalone device, which can be utilized for covert remote video and audio recording.

The unit's small metallic enclosure and totally silent operation makes it suitable for most covert activities where stealth and long-term reliability is the key to success.

The unit can record stereo audio and color or black white video from 1 to 30 frames per second, and image sizes of up to 640x480 pixels utilizing a standard composite video camera input.

The digital recorder will record up to eight hours of color video and can be expanded by 6 hours by adding an additional memory card.

Recorded date may be transferred, viewed, edited and archived on a standard PC.
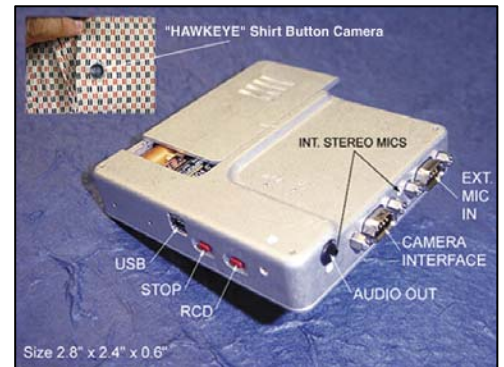
SYSTEM FEATURES

- Dual camera audio/video
- Shipped with two very low light color cameras
- Expandable with 6 hour memory cards
- Data archived via USB via USB 2.0 bus to DVD or CD
- View & create analog copies from your PC
- Interfaces to wireless remote interface system
- Uses two "AAA" Alkaline or lithium batteries
- Optional 4 "AAA" battery case available

DUAL CAMERA

Two camera sets with external power, great for use in cars, buildings, and open areas.

SPECIFICATIONS

Size:	5.33 x 4.82 x 1.19 cm
Weight:	56 g
Operating Voltage:	2.1V – 3.6V
Recording times vs quality:	
30 frames/sec	4 hrs
15 frames/sec	8 hrs
Recording times vs Battery type:	
Alkaline AAA	2 Hrs
Lithium AAA	4 hrs
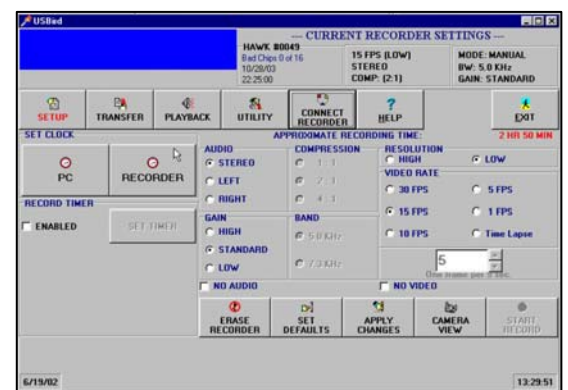
Recording Software

1

Super Thin Video Audio Recorder

Model 5609

The Super Thin Audio Recorder is an ultra miniaturized, solid state, standalone device, which can be utilized for remote video and audio logging and can be covertly installed.

The unit's small metallic enclosure and totally silent operation make it suitable for most covert activities where stealth and long-term reliability is the key to success.

The unit can record stereo audio and color or black and white video from 1 to 15 frames per second, and image sizes up to 640x480 pixels utilizing a standard composite video camera input.

The digital recorder will record up to 4 hours of color video and may be expanded by adding up to eight more memory cards.

Recorded date may be transferred, viewed, edited and archived on a standard PC.

SYSTEM FEATURES

- Dual camera audio/video recorder
- Shipped with 2 very low light color cameras
- Data archived via USB bus to DVD or CD
- View & create analog copies from your PC
- Connects to Wireless Remote Interface System
- Ultra thin design for more covert concealment
- 4 hrs of color VGA video and audio, 30FPS
- Optional 4hr/30FPS memory cards
- Shirt button and pin-hole camera included

SPECIFICATIONS

Size (cm):		4.82 x 3.81 x 7.62
Weight:		56 g
Operating Voltage:		2.6V – 3.7V
Recording times vs quality:	30 frames/sec	4 hrs
	15 frames/sec	8 hrs
Recording times vs Battery type:	Flat Lithium Battery	4-8 Hrs

Flat Lithium Rechargeable Battery

connector

Optional Accessories for 5608 & 5609   Accessories

1.1. Wireless Remote Interface System The WRIS is an option for both the Model 5608 & 5609 recorders that enables the user to see and hear everything live that the recorder captures. The user can be up to 1.500 feet away from the recorder monitoring the action via a laptop connected to a portable high gain antenna.	
1.2. Live Monitoring Covert Option The PWRIS is the covert package of the WRIS. Instead of monitoring the data with a laptop and high gain antenna, watch it live on a pocket PC. Be up to 600 feet away from the bad guys, while viewing and playing back the recording from the Model 5608 or 5609	
1.3. RF on/Off Switch Remote ON/OFF switch for use with any recorder.	
1.4. IR Motion Detector Small Infrared Sensor Turns ON Recorder when motion is detected within a range of 30 feet. Multiple units can be joined together for longer/wider operating range, ideal for situations in which the unit must be securely hidden before the time of recording. Runs on internal CR-2032 coin cell for 100 hours, or can be used with external power for longer use.	
1.5. Officer Safety Transmitter The most cost effective way to monitor live audio during an operation; optional for all our recorders, real-time audio monitoring via hand-held radio with a range of up to 1.200 feet.	
1.6. Secure Digital Link Each recorder has a built-in digital transceiver. Can monitor live audio/video via pocket PC for officer safety; user settings for optimal range of battery usage; ideal for "Buried" audio and video applications; playback audio, while recording new data. Transmitter does not increase size of recorder.	

Concealed Camera Video/Audio Recorder   Model 5610

MODEL 5610A – CONCEALED IN A KEY RING

The 5610 series is the latest design in concealed surveillance technology. It combines micro-electronics built on an ultra thin form factor with a camera/microphone and digital audio mpeg-4 recorder, all housed in a key ring allowing inconspicuous evidence recording. The 5610 can be used for digital still images or up to 90 minutes of video, audio recording in highly concealed packages. Data is transferred to any PC via a Universal Serial Bus (USB). Standard audio hardware commonly found on most PCs may be used for data playback. The 5610 can be used in varied applications from making still shots of documents/targets to recording room conversation both audio and video. As an option the camera/microphone and board can be delivered as PCB.
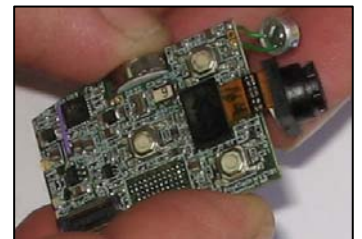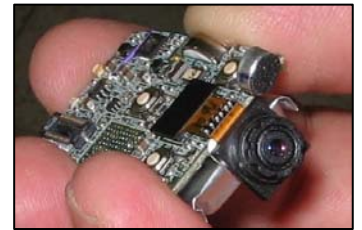
SYSTEM FEATURES:

- Ultimate concealment
- Still shots features
- Audio/video recording
- 90 minutes video recording
- Integrated-camera/microphones-recorder

SPECIFICATIONS

Camera Module:	1/2.7″ CMOS
Digital Still Image:	Resolution: 2 Mega pixels (1,600x1,200) Compression: JPEG
Video:	Concurrent audio and video recording Resolution: QVGA Compression: MPEG4 Frame Rate: 15-24 fps
Audio:	Sampling rate: 8KHz Compression: AMR, 12.2 kbps Digital AGC
Memory:	Built in Flash: 256MB
Power:	Battery: Li-Polymer Rechargeable: USB
User Interface:	Video & Audio Recording : 'Start'/'Stop' Audio Recording: 'Start'/'Stop' Still Picture: 'Shoot' Action Indication: By a short vibration

Concealed Camera Video/Audio Recorder   Model 5610

Operation:	Video Recording Time: 90 minutes
PC Interface:	USB
Module Size (Battery included):	Without the CMOS: 35.5x26x11 mm
	With the CMOS: 46.5x26x11 mm

MODEL 5610B- CONCEALED IN COFFEECUP

- Concealed in a disposable coffee cup
- Ideal for any meeting monitoring
- Deployment in a few seconds
- Can hold real beverage
- High quality low light color video picture
- High fidelity AGC audio

TECHNICAL SPECIFICATIONS:

General	
Operating Time	2 hours
Battery	Li-ion
Rechargeable	yes
One Button operating	yes
Camera	
Operating Temp.	-10° to +40°C (14° to 104°F)
CCD	1/4" color
Pixels	NTSC: 542(H) x 497(V) PAL: 542(H) x 587(V)
Lens	Glass f3.7, F 4.5
Lux	0.4
Recording	
Format	MPEG 2
Audio	Yes
Recording time	2 hours
Recording media	Changeable 4 GB Compact Flash

Body-Worn Digital Video Audio Recorder   Model 5601

INTRODUCTION

With 4GB flash memory this body-worn robust digital recorder provides 25 images per second with stereo audio recording. The recordings are stored on an internal flash memory and are powered from internal re-chargeable batteries.

PRODUCT FEATURES

- Ultra small size and robust
- 1 Video and 2 audio inputs
- 25 images/second
- Records via the unit toggle switch or external trigger
- LEDs for power, battery, charging and memory
- Rechargeable battery and 4GB compact flash (supplied installed)
- USB download to optional laptop
- Button camera color

SPECIFICATIONS

Activation	Manual switch, external triggers or timer
Media	4GB compact flash, supplied installed
Recording Duration	Typ. 2 hours
Power On Until Recording	<1 sec

Video Recording

Rate	25ips PAL, 30ips NTSC
TVL	540
Pixels	720 x 288 PAL; 720 x 240 NTSC
Format	MPEG - full image update
Input Signal	1 input; composite video 1V p/p; color/mono; PAL/NTSC
Embedded Text	Date/time plus 12 user-defined characters

Audio Recording

Type	Mono or stereo
Inputs	2 Mic level inputs 3V phantom powered (compatible with most condenser mics)

Connectors/Controls/Indicators

Toggle Switch	Off (USB2 to PC), On (record)
USB2/Control	Fischer 102 series 7 way (keyed); USB2 on
Camera Power	5V, 6V, 9V or 12V (menu selectable) supplied by the unit (max. 2W)

Portable Video Audio Recorder — Model 5602

INTRODUCTION

This handheld compact recorder with integrated monitor has 4 video input channels to enable multiple recording and quad displays on the monitor. Using mpeg4 technology and PAL/NTSC format this product is extremely multipurpose for room or other observations.

FEATURES

- High Quality Real-time Display - Max. 120fps(NTSC) 100fps(PAL)
- High Quality and High Speed Recording - Max. 120fps (NTSC) 100 (PAL)
- Various Resolutions on Display and Recording - 704×480, 704×240, 352×240(NTSC), 704×576, 704×288, 352×288 (PAL)
- MPEG4 Compression
- 1, 4 Division - Watchdog Function
- Remote Observation Through Network
- Emergency Screen Auto Transfer to Center Software

SPECIFICATIONS

Display	Speed	NTSC: 120fps PAL: 100fps
	Screen Division	1, 4 Division
Recording	Max. Speed (@ CIF)	NTSC: 120fps PAL: 100fps
Video	Resolution	NTSC: 704×480, 704×240, 352×240
		PAL: 704×576, 704×288, 352×288
	Recording Option	Continuous, Motion, Sensor and Pre-Alarm
	Format	NTSC/PAL
	CODEC	MPEG4
	Input	4ch
	Output	7'' Wide LCD (800×480), CVBS 1 Port (Quad)
Audio	Input	1ch (line input)
	Output	1ch
	CODEC	ADPCM
Alarm	Input	2 Ports
	Output	2 Ports
Network	Transmission	Ethernet (RJ45)
	Protocol	TCP/IP (support dynamic IP)

Portable Video Audio Recorder · Model 5602

Backup	Device	USB, Network
Other Functions	Remote Control	Remote Software (CMS)
	Remote Alarm	E-mail, CMS report
	PTZ	RS232C/485
	W/D Function	Yes
	Image Authentication	Watermark
	Language	10 Languages
	Password	Multi-Level User Password Authorization
	USB	1 Port (USB2.0)
Working Temperature		0℃ ~ +40℃
Power Source		AC 12V, 50/60Hz (Adaptor included)
Dimensions		186mm(W) × 60mm(H) × 265mm(D)
Weight (net)		1.5Kg (5.94lbs)

Concealed Body-Worn Video Audio Recorder   Model 5603

The latest in body-worn miniature solid state video & audio recorders designed for concealed recording. The Model 5603 unit is very compact - smaller than a notebook and will fit into a coat pocket. Operation is silent and vibration less, low-radiation and fail-safe. Operation can be via remote control, which is handy if the unit is concealed on a person. The unit can record in either TV (high) quality or long-play mode.

FEATURES INCLUDE:

Rechargeable & removable built-in battery pack – 700mAh or 1400mAh options available (can also supply 5V CCD camera power); currently up to 4GB compact flash memory allowing over 4 hours of recording time (unit comes with 1GB card = up to 110 minutes recording time); MPEG-2 compression TV Image Rate & Resolution; 2 built-in microphone amplifiers for Stereo/Audio Quality; Video can be read by USB Interface or CF unit.

This unit has been designed with police, military and other law enforcement agencies in mind, but is also very useful in any other application when undetected surveillance is required.

SPECIFICATIONS

Video	Pal/NTSC with complete TV resolution and 25 to 30 frames/second
Resolution	**Resolution** **PAL** **NTSC** D1 720 x 576 720 x 480 2/3 D1 480 x 576 480 x 480 ½ D 352 x 576 352 x 480 SIF 352 x 288 352 x 240
Audio	Microphone input (stereo)
Encoding	MPEG-2 MP@ML for video and MPEG-1 layer 2 for audio, additional encoding
Storage medium	Compact flash memory card type 1 or 2
Power supply	Lithium ion battery pack with 700mAh for 75min, (typ.); or 1.400 mAh for 150 min. (typ.); or permanent power supply via battery adapter
Interfaces	USB interface (slave) up to 12MBit/s, audio/video input, remote control
Camera power supply	5V/ ≤ 200mA
Status display	LEDs Operating mode/system error; battery status; storage status; LED's can be turned off
Temperature range	$0^{O}C$ to $50^{O}C$
Dimensions	130 x 80 x 22 mm

SCOPE OF DELIVERY

- Interchangeable and rechargeable battery pack for up to 1.5 hours of recording length
- External battery charger (Standard JVC AA-V100) with battery adapter for permanent power supply
- PC software for the configuration of unit, as well as for video decoding/verification, for playback and for export of videos via USB
- Standard compact flash memory card (1 GB) for up to 100 110 minutes of recording length
- USB cable

Vehicle Recorder & Monitor Unit

Model 5604

PRODUCT FEATURES

- Small size, low power consumption
- 4 or 16 video inputs and 2 audio inputs
- Proprietary mpeg format
- 25 images/second
- 4 levels of resolution
- Removable hard disk cartridges up to 120Gb
- GPS/GSM
- LAN/WLAN/automatic download
- RS232 control
- Normal, alarm, timer or stills recording
- Motion activation recording
- Vehicle brake/indicator monitoring
- 2 live view video switcher outputs
- Watermarked images
- Password protection
- Intuitive controls
- Flexible menu system with help screens
- Rapid search of recordings
- 3 Year warranty

USING THE SYSTEM
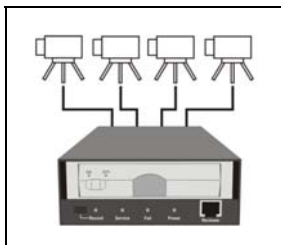
The Digital Video Recorder is used with a removable Hard Disk Cartridge to record from multiple video and audio sources.
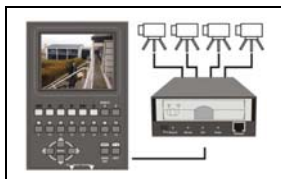
The Reviewer is used for on-site reviewing of video/audio recordings and to configure the optional menu settings of the Digital Video Recorder.
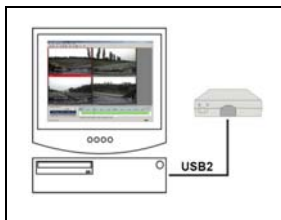
The Removable Hard Disk Cartridge is connected to a PC (via USB Kit) to analyze, copy or archive video/audio recordings and to download new operating software.
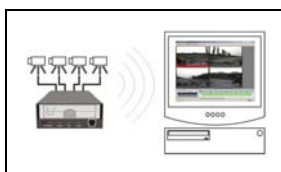
A Wireless Local Area Network (WLAN) system can be used to download recordings from the unit in a vehicle to a PC.

Vehicle Recorder & Monitor Unit

Model 5604

SPECIFICATIONS

Video Recording	
Max Rate	25ips PAL, 30ips NTSC, shared; selectable by camera
Resolution	Low, Medium, High, V.High
TVL	540
Pixels	720 x 288 PAL; 720 x 240 NTSC
Format	MPEG - full image update or optional conditional refresh
Input Signal	4 or 16 inputs; composite video 1V p/p; color/mono; PAL/NTSC auto-switching
Simultaneous Functions	Record, Playback, Live views, Ethernet
Recording Medium	2.5" IDE PC-compatible hard disk in customized cartridge
Recording Modes	Normal, timer, alarm, single/multi shot, loop or single pass
Alarm Recordings	Post-trigger recording; show alarmed cameras live on video switcher, pre-trigger write protection of existing recordings
Timer Recording	Weekly timer (7 day programmable) or interval timer, or both
Motion Activation	User configurable for cameras, areas and sensitivity
Embedded Text	Camera number, date and time plus 12 user characters for each camera; GPS* speed and position
Camera Focus Mode	External indication of relative camera focus
Audio recording	
Type	Mono or Stereo
Connections	2 line inputs; 2 line outputs
Sampling Rate	16kHz/8kHz
Sampling Res.	16 bits/8 bits
Max Level	Selectable: 0.12V to 2V RMS (0.35V to 5.6V pk-pk)
General	
Security	Proprietary files; password protection; fragile watermark every image (MD5+DES); embedded camera text
Power [DC]	12V DC nominal (8V-13V DC max range);
External PSU Specification	Output: 12V DC Regulated, 2A (Continuous) 3A (Peak)
Power Recording	0.60A, 12V (7.2W)
Power Not Recording	0.48A, 12V (5.8W)
Peak Current	2.8A peak start-up current @ 12V (X201 connected)
Power on Until Recording	< 5 seconds
Clock	TCXO (+/- 1 min/year); optional GPS locked clock*
Case	Mild steel, grey painted

Vehicle Recorder & Monitor Unit   **Model 5604**

Dimensions (mm)	210 x 112 x 47 (case)
Dimensions (mm)	220 x 116 x 52 (overall)
Weight	965g (without cartridge)
Environment	Indoor use
Operating Temp. Range	+5C to + 40C, 20% to 80% RH Storage
Temp. Range	-40C to +65C
Mounting	Free-standing or screw-mounted

Advanced Video Audio Recorder   Model 5605

Overview of the Covert Surveillance digital recorder:

The Advanced Audio/Video Recorder has been specifically designed for Law Enforcement applications where a concealable, high quality recorder is required. It is light and compact, making it easy to hide on an agent's body, in an automobile, in a wall or ceiling, or in virtually any other small space. It is housed in a rugged aluminum anodized case in order to withstand even the most difficult conditions in the field. The unit is delivered with a color camera, 2 microphones, a power supply and a covert vest. The recording capacity is from 240-minutes in high quality to 200-hours in time lapse mode. It can be stacked, i.e. linking 2 to 12 recorders together as an optional extra.

Highlights

- Extremely small 5.5 cm x 1.2 cm x 9.4 cm
- Superior Quality via MJPG compression
- Pixel resolution quality 720 x 576
- Video compression 720 x 288 at 25 frames p/sec
- Removable compact flash
- Twin stereo microphones
- Recording start/stop switch
- Low-battery signal with LED or vibration feedback
- Compact flash configuration via PC interface
- NTSC/PAL format
- Color and B/White recording mode
- Time-lapse frequencies: 25,12,6,3,1
- Weight 100g including batteries
- Hi-fi quality stereo audio recording
- No moving parts, no noise
- 5V/200 mAh power supply for camera
- Comment time/date stamping with OSD (On-Screen Demand) functionality
- Confidence indicator
- RS-232 control

Delivery Features

- Harding case IM2050
- Digital video recorder
- Color camera
- Surveillance covert vest
- 5-Volt power supply
- 2 External Knowles microphones
- 15-Pin MIL connector for input cable
- Remote record switch, video, audio, left and right channels
- 9 Pin MIL connector with cables
- Input for 5-volt power supply, video output, left and right channel audio output 9-pin connector for RS232 connection via PC
- CD-ROM manager software version user guide

4-Channel Mobile MPEG-4
Digital Video Recorder   Model 5611

FEATURES:

- built-in MPEG-4 compression/decompression with configurable quality
- variable recording speeds up to 100 IPS
- data archiving via USB 2.0 port
- programmable motion detection area (30x24) for each camera
- one hard disk for internal storage
- quad output for call monitor
- individual recording settings for each channel
- on-screen menu operation with multi-language support
- real time audio recording at any video recording speed
- Ethernet interface for remote network viewing and controlling
- fast network video transmission through either Internet Explorer (ActiveX application) or optional PowerCon 4.0 software
- shock- and vibration-proof mounting kit
- network operation independent from local operation mode
- e-mail alarm
- network alarm with optional PowerCon 4.0 software
- speed dome control via network
- optional RS-485 remote control (EKB 500)

SPECIFICATIONS

Video format:	PAL / CCIR
Video input:	4 video inputs, 1 Vp-p composite PAL, BNC, automatic 75 Ohm termination
Video output:	4 loop-through outputs, 1 Vp-p at 75 Ohm, BNC
	1 main monitor output, 1 Vp-p at 75 Ohm, BNC
	1 call monitor output, 1 Vp-p at 75 Ohm, BNC

1

4-Channel Mobile MPEG-4
Digital Video Recorder   Model 5611

Video compression:	MPEG-4
Display resolution:	720 x 576 or 720 x 288 or 360 x 288
Hard disk storage:	1 x 2,5" IDE HDD
Recording resolution:	Full D1 size: 720 x 576
Half D1 size:	720 x 288
CIF size:	360 x 288
Recording rate:	1 ~ 100 IPS (360 x 288)
	1 ~ 50 IPS (720 x 288)
	1 ~ 25 IPS (720 x 576)
Recording modes:	continuous, timer, schedule or event recording
Playback search:	via time/date or event
Video pause:	yes
Video loss detection:	yes
Motion detection:	yes, with configurable detection area (30x24) and 6 sensitivity levels
Event log:	yes (10240 entries)
Alarm input:	4 alarm inputs
Alarm output:	1 alarm output
Audio input:	2 mono (line) inputs
Audio output:	2 mono (line) outputs
Setup:	on-screen display
Control:	front panel control with jog/shuttle, IR remote control
	optional: keyboard control, network, RS-485 keyboard EKB 500
Title:	12-characters title generator for each camera
Archive:	USB 2.0 interface
Ethernet:	RJ45 network connector
RS-232:	9-pin Sub-D
RS-485:	2x RJ45 connector for remote control and PTZ
Power source:	12 / 24 V DC (230v ac power supply not included)
Power consumption:	60 W max.
Ambient temperature:	-10°C ~ +50°C
Operating shock:	8G, 11 ms (20 per 5 seconds max.)
Dimensions:	215 (W) x 100 (H) x 321 (D) mm (without mobile mounting kit)
	320 (W) x 108 (H) x 321 (D) mm (with mobile mounting kit)
Weight:	5.0 kg

Digital DVR Video/Audio Recording System   Model 5612

FEATURE

- Triplex Function: Live/Record/Network
- 16 Video Looping
- Records Maximum 100fps (Real-time Record/Playback)
- Provides Channel Masking
- Remote Viewing Via TCP/IP:Live/Play/Backup(Live/Playback (.DVR or AVI)
- Supports Multi Languages (English, Traditional Chinese, Japanese, French)
- Alarm: Input x4/Output x1 (NC,NO)
- Audio: Input x1/Output x1
- Alarm/Motion/Vloss/HDD Full/HDD Crash
- Data Backup: USB interface/Network/CDRW
- Hard Disk Data Readable in PC (Video Viewer AP)
- VGA Output (Optional)

SPECIFICATIONS

Model	MJPEG-16
Channel	16-CH
Input	16-CH Inputs 1.0Vp-p, 75ohm unbalanced (BNC Type)
Output	S-Video x 1 / VGA x 1 (Optional)
Horizontal Resolution	720 x 480 (NTSC) / 720 x 576 (PAL)
S/N Ratio	More than 40dB
Color	16.7 Million
Monitoring Method	
Split Screen	1,4,9 (Live / Playback)
Zoom	Live & PB Available, 2 x 2 zoom
Sequence	Available
	720(H) x 576(V) Active Pixels (PAL)
Screen Quality	1/4 Screen: 360(H) x 288(V) Active Pixels (PAL)
Display Rate	120 frames per second (4x30)

Digital DVR Video/Audio Recording System   Model 5612

Recording/ Play Function	
1/30(1/30), 1/15(1/15), 1/10(1/10), 1/5(1/5), 1/3(1/3), 1/2(1/2), 1(1), 2(2),	
Recording (Max) NTSC	3(3.13), 5(5), 10(8.33), 15(12.5), 30(25), 60(50), 120(100).
Record Quality	Super, High, Fine, Normal, Low
Compressed Picture	M-JPEG
REC. Mode	Normal, Schedule, Motion-detect, Alarm
Playback Mode	Date / Time search or event search
Mechanical	
Power Supply	DC 12V / 5A
Weight	N.W./ G.W.: 6.2g / 9.1kg
Dimension	430 (W) x 444 (D) x 100 (H)mm
Operating Temperature	41 °F~104 °F (5 °C~+40 °C)
Operating Humidity	Less than 90%

Portable Hard Disk Recorder — Model 5613

Ruggedized Digital Video Recording and Transmission System for mobile applications with 4 or 10 video inputs

- Long-term recording onto removable Hard Disk Drive with adaptive multi-track management for schedule-controlled permanent recording, or video motion and contact-triggered event recording respectively
- Suitable for public and private transport vehicles and compatible with remote monitoring centers
- Compatible to monitoring centers
- Integrated Multi-Unicast Server supporting multiple network and dial-up connections simultaneously
- Integrated Web Server for up to 4 IP-connections, enabling video transmission and camera control on a PC/Handheld using standard Web browser
- Manual or event-triggered connection for live video transmission to remote monitoring centers
- Multi-criteria evaluation of recordings with synchronous image forward and reverse playback and graphical analysis with direct image access
- Extensive image export functions for single images and video sequences including image authentication tool
- Up to 5 privacy zones per camera, configurable for live images or live and recorded images
- Removable Hard Disk Drive for offline evaluation via PC compatible USB adapter kit
- Extended power supply range and integrated voltage transformer for all cameras
- Compact design, suitable for surface, flush and ceiling mounting
- Vibration approval EN 50155 and "e-mark" (EMC in vehicles)

SPECIFICATIONS

Operating system/system design	Embedded Linux/dedicated hardware
Logging	Transmitter-side event logging of essential basic functionalities and device status
Power supply input	8 to 40 V DC
Power supply output	12 V DC for 4/10 cameras, max. power consumption 350 mA per camera
Current consumption	Typical 10 W without vehicle cameras
Ambient temperature	+5°C...+50°C/+41...+122°F
Housing/enclosure	Horizontal mounting: 221 x 88 x 300 mm (WxHxD)
Weight	4 kg with hard disks
Options	Removable hard disks, PC Kit CamDisc USB, PC Kit CamDisc, Dial-up Adapters, CamMount Kit

Portable Room Monitoring Video/Audio Kit   Model 5614

Sony Digital Video Walkman GV-D800E

AC Power Adaptor

Sony Remote Box: LANC, CAM, PIR, Mic, Video Out

i.e. CCD Colour Pinhole Camera

Battery Pack 12 V, 8 x AAA Alkaline

Digital8 Recording Tapes

Cable Set with PIR Motion Sensor

This Portable Room Recording Kit is ideal for combined event-triggered video and audio monitoring and includes the following items:

- Sony Digital Video Walkman GV-D800E
- AC Power Adaptor
- Sony Remote Box: LANC, CAM, PIR, Mic, Video Out
- CCD Color Pinhole Camera (as an example)
- Cable Set
- PIR Motion Sensor
 Digital 8 Recording Tapes

- Battery Pack 12 V, 8 x AAA Alkaline

Optionally available:

- Wireless PIR motion sensor (to be used for example for outside surveillance from a vehicle

Example: If a rearview mirror cam is used, the wired PIR motion sensor can be replaced by a wireless version, placed outside the car. In this case a receiver can be integrated in the Sony Remote Box that switches on the cam and starts the digital VCR.

Interrogation Room kit　　　　　　　　　Model 5615

INTERVIEW ROOM MONITORING SYSTEM

It is necessary to monitor interviews of suspects during an interrogation to obtain vital evidence. Often during an interview the interviewing officer is totally involved with the questions and answers that sometimes small vital clues to an investigation are missed.

The Model 5615 allows the backup team to monitor the interview using covert CCTV cameras and audio microphones. It is also possible to send questions to the interviewing officer by covert radio.

A typical system is comprised of the following components:

CCTV

Qty 2 Pan Tilt Zoom Color Cameras concealed in a Non-Smoking sign, or the like, focusing on the suspect from behind the interviewing officer

Qty 2 Camera controllers

Qty 2 Color LCD monitors

Qty 2 Video Cassette Recorders

AUDIO

Qty 2 High sensitivity electrets microphones

Qty 2 Microphone & headphone amplifiers

Qty 4 Headphones

Qty 2 Active loud speakers

Qty 1 Stereo audio cassette recorders

Qty 1 Audio patch panel to allow sound to record on video recorder

Qty 1 Audio enhance unit to improve the quality of low speech or audio

Optional-Audio filtration system in rack with 4 recorders and audio patch panel i.e. all in one system

COMMUNICATIONS

Qty 1 UHF Wireless earpiece for the interrogator to receive instructions

Qty 1 UHF Transceiver Radio with desk microphone & loudspeaker

ROOM FITTING

Flooring – Heavy duty rubber floor covering

Walls & ceiling – Acoustic tiles

Lighting – Lighting moved from center of room to sides to allow for better video pictures

Table – Fixed to the floor, light color to reflect light back up on the suspects face

Chairs – Suspect's chair to be fixed to the floor, officer's chair to be normal

Lighting Switches – Fitted outside the room

No internal power sockets, all must be removed

Air conditioning – Special low noise version with direct access to exterior wall

Installation normally takes two technicians 5-10 days, depending on the number and sizes of rooms in which to install the system and train the officers in the use and daily maintenance of the system.
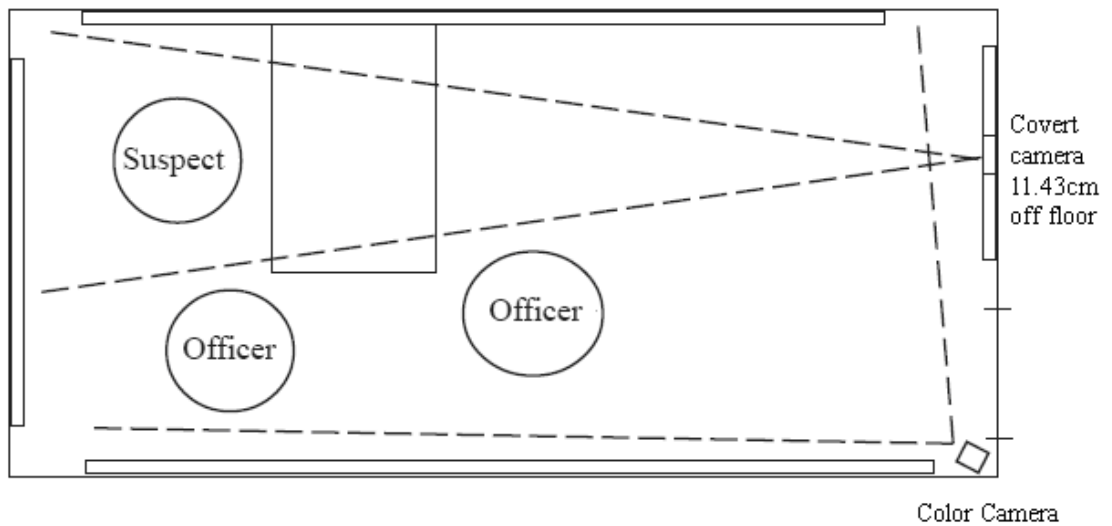
As an optional system, we can provide a portable Interview Monitoring System for cases where investigation interviews are carried out outside of the fixed HQ.

SAMPLES OF A TYPICAL INTERROGATION ROOM LAYOUT

Two Camera System
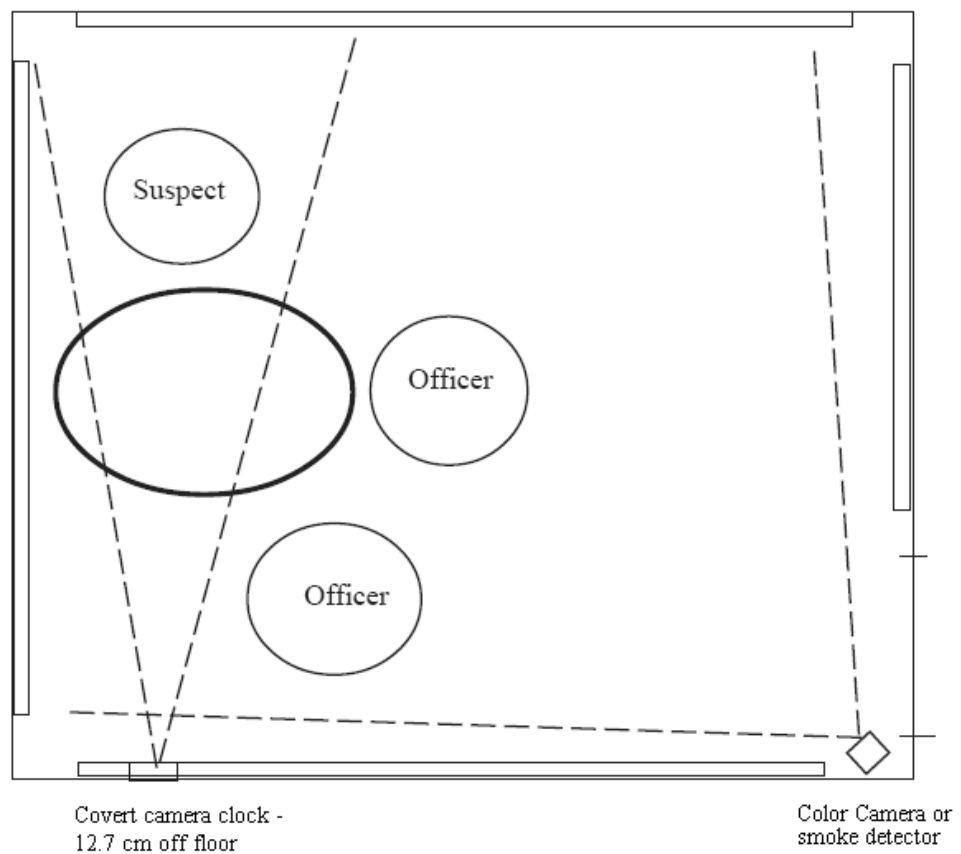
Covert camera 11.43cm off floor

Color Camera

Two Camera System

Covert camera clock - 12.7 cm off floor

Color Camera or smoke detector

VWT
Analog/COFDM
Video Wireless Technologies

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
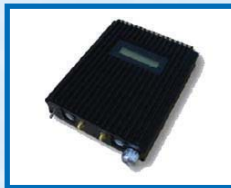
Analog/COFDM Video Wireless Technologies

Ref	Number	Description
1	5751	Video Audio Repeater
2	5801	100MW Video/Audio Transmitter
3	5802	250MW Video/Audio Transmitter
4	5803	1/5W Video/Audio Transmitter
5	5804	1/10W Video/Audio Transmitter
6	5805	Video/Audio Receiver
7	5806	Body-Worn Video/Audio Transmitter Kit
8	5807	Room Video/Audio Transmitter Kit
9	5808	Canon XL2 Camcorder Video Transmission System
10	5809	Sports Bag Video Transmission System
11	5810	Briefcase Video Transmission System
12	5811	Tissue Box Video Transmission System
13	5815	Video/Audio Portable Receiver Case
14	5820	Micro Video Transmitter
15	5821-1	Multi Channel High Power Video Transmitter - 1.5 W
16	5821-2	Multi Channel High Power Video Transmitter - 5 W
17	5822-1	Microwave Video Receiver External
18	5822-2	Microwave Video Receiver Internal
19	5823	Video Observation Controller
20	5824	Covert UHF Duplex Video Link System
21	7320	COFDM Digital Transmission System
22	7321	COFDM Digital Transmission System
23	7322	COFDM Digital Transmission System

Vehicle Audio Repeater   Model 5751

The repeater is a high performance, professional video/audio receiver with transmitter that can either be used as a standalone receiving unit, transmitter or relay station.

It is ready for integration into any transmission system. In a standard configuration, the unit receives in the 1.2 GHZ frequency range and transmits at 2.4 GHz with RF output power of 10W.

THE KIT CONSISTS OF:

- Video Audio Repeater (1x L band RX + S Band TX & 1 x S Band RX & 1 x L Band TX)
- 12vdc Power Lead to Car Cigarette Lighter Plug
- 240vac Switched Mode Power Supply
- Antenna Tripod
- Tripod Bag
- L Band Omni Directional stick Antenna
- 01 L Band Yagi Directional Antenna
- S Band Directional
- N - N Antenna Cable
- N – BNC Antenna Cable
- Carrying case

SPECIFICATIONS

Programmable steps	1MHz digital
Noise	10dB
Input impedance	75W connector F female
IF bandwidth	27/16MHz SAW filter 479.5MHz
Video deviation	±4MHz (±8.5MHz max), +ve /-ve Switchable
Video output	1Vpp on 75ohm adjustable (PAL, NTSC or SECAM)
De-emphasis	Standard CCIR Switchable
Video frequency response	50Hz–5MHz ±1dB with audio at 7.5MHz
	±2dB with audio at 5.5MHz
Differential gain	±4%
Differential phase	±4%
Video S/N ratio	>40dB outweighed deviation
	= 4MHz RF input 50dBm
Audio sub-carrier frequency	5.5MHz–7.5MHz Switchable
Audio sub-carrier deviation	±50kHz FM
Audio de-emphasis	50ms
Audio frequency response	50KHz–15MHz ±3dB
Audio output	0dBm on 1kW adjustable
Audio S/N ratio	>45dB outweighed
Power supply	12V stabilized 4A
LNA-LNC power	12Vdc 250mA maximum, Switchable
Dimensions	325 x 65 x 168 mm

100 mW Video/Audio Transmitter
Model 5801

The video audio transmitter Model 5801 is designed for short-range installations. It maintains its accuracy by being stable in frequency and is ideally suited for those who demand the ultimate for covert surveillance.

Dimensions of the 100 mW version are 50 mm X 13 mm X 5 mm. The Model 5801 100 mW comes with a 6 VDC input, but with an optional remote control (incl. switching the video camera on/off).

Transmitters operate at a frequency range between 985 MHz and 1.45 GHz. The Model 5801-VLR is perfectly suited to receive such a frequency. In addition, the receivers RV-2000 or RV-2400 can be used or the receiving/recording case RC-105, which provides receiving frequency selection between 950 MHz up to 2.05 GHz.

TECHNICAL SPECIFICATIONS

|	
Frequency range	985 MHz–1450 MHz
Programmable steps	1MHz digital, with switch
Noise	10db
Input impedance	75 ohms connector SMA female
IF bandwidth	27 MHz SAW filter
Video deviation	±4MHz (±8.5MHz max)
Video output	1Vpp on 75 ohms adjustable (PAL)
De-emphasis	standard CCIR switchable
Video frequency response	50Hz–5MHz ±1dB with audio at 7.5MHz,
	±2dB with audio at 5.5MHz
Differential gain	±4%
Differential phase	±4%
Video S/N ratio	>40dB unweighted deviation, = 4MHz RF input 50dBm
Audio sub-carrier frequency	5.5MHz–7.5MHz switchable
Audio sub-carrier deviation	±50kHz FM
Stereo version	7.500 MHz Ch1, 8.065 MHz Ch2
Audio de-emphasis	50 s
Audio frequency response	50 Hz 15 KHz ±3dB
Audio output	0dBm on 1kΩ adjustable
Audio S/N ratio	>45dB unweighted
Power supply	12 V stabilized, 150 mA
Dimensions	L+H+D < 180-
Working temperature	0–45°C
Storage temperature	-20°C - +50°C
Altitude	up to 2000m

250 mW Video/Audio Transmitter

Model 5802

The Model 5802 is a video transmitter using frequency modulation (FM) for both audio and video. It allows transmission via radio of images and sound from a video camera (B&W or Color) at a distance, which in ideal conditions can reach 4km.

The device is ready for the installation of an Omni-directional antenna directly mounted on the RF output connector. The transmitter can be used in a motor vehicle or in any other situation where the power is provided by a battery.

Depending on the use, a wide variety of antennas are available.

The Model 5802 may be linked to many different input devices including thermal imager, low light and infrared cameras, and color and black & white CCTV cameras.

The Model 5802 offers adjustable frequency Low Band, Mid Band and High Band, with ten channel selection.
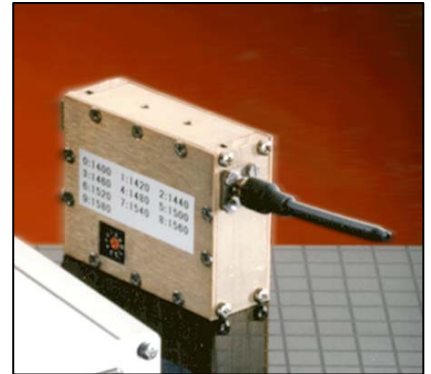
SPECIFICATIONS

250 MW AUDIO VIDEO TRANSMITTER

|	
Operating Frequencies	1GHz–2.7GHz
	Low Band 1GHz–1.4GHz in 10MHz steps
	Adjustment by external rotary switch
	Mid Band 1.4GHz–1.9GHz in 20MHz steps
	10 preset channels
	High Band 1.9GHz–2.7GHz in 25MHz steps
	16 preset channels optional
Rf Power Output	250mW ±1dB
RF Power Impedance	50W (SMA)
Frequency Stability	±300kHz
Video Carrier Deviation	±4MHz (FM)
Video Input Level	1Vpp adj. 75W (BNC)
Video Frequency Response	50Hz–5MHz +0/-2dB
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Stereo Version	8.065MHz Ch1, 7.500MHz Ch2
Audio Pre-Emphasis	Standard 50ms
Audio Frequency Response	20Hz–15kHz ±3dB
Audio Input Level	LINE 100mV into 5KW
	MIC input 20mV for electrets microphone (internal link selectable)
Power Req. Voltage	12.5Vdc, current 105mA
Dimensions	52mm x 64mm x 23mm
Working Temperature	-10/+50°C
Weight	150g
Rf Connector	SMA female
Video Connector	BNC female
Audio Connector	RCA female
Supply Connector	2 pole direct insertion

1/5W Video/Audio Transmitter

Model 5803

The Model 5803 is a high quality, professional video/audio transmitter, which provides the highest technical specifications. It has been designed for operation in broadcast, repeaters, industrial, airborne, and a host of security applications.

It is available in three models covering the frequency bands of 1.118–2.700GHz. Frequency is simply selected by direct entry rotary switches.

Power output is 1W & 5W (1.118–2.000 GHz) and 700 mW (2.100–2.700 GHz). Operator adjustments are available for pre-emphasis, sub carrier frequency, video/audio levels, etc. Its solid milled aluminum enclosure is precision machined to accommodate the dual module system boards.

Together with the RV2000A Receiver or the RV2000D Diversity Receiver, the Model 5803 will satisfy the professional user, who demands quality equipment built to the highest specifications.
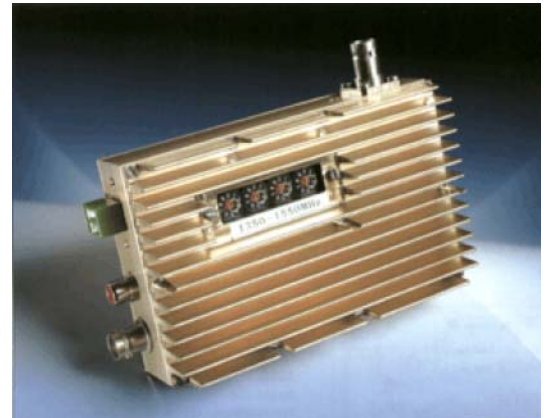
1& 5 watt Transmitter

SPECIFICATIONS:

1 & 5 WATT AUDIO VIDEO TRANSMITTER

Operational frequencies	1000–2000MHz 1 & 5 +1/-2dB
RF power output	Connector R.F. out BNC 2000–2700MHz 0.7W +1/-2dB
Frequency selector	1MHz steps by external rotary switches
Video modulation	BB video level by internal trimmer
Video input	1Vpp into 75_ (PAL, NTSC or SECAM)
Audio modulation	FM Sub carrier at 5.5MHz or 7.5MHz
Power	11–15Vdc 0.6A for 0.6W RF out
	0.8A for 1.0 or 1.5W RF out
Dimensions	123mm x 78mm x 36.5mm excluding connector
Weight	550g

1/10W Video/Audio Transmitter   Model 5804

The Model 5804 is a high quality, professional video/audio transmitter, which provides the highest technical specifications. It has been designed for operation in broadcast, repeaters, industrial, airborne, and a host of security applications.

It is available in three models covering the frequency bands of 1.118–2.700GHz. Frequency is simply selected by direct entry rotary switches.

Power output is 1W & 10W (1.118–2.000 GHz) and 700 mW (2.100–2.700 GHz). Operator adjustments are available for pre-emphasis, sub-carrier frequency, video/audio levels, etc. Its solid milled aluminum enclosure is precision machined to accommodate the dual module system boards.

Together with the Model 5805 Receiver or the Diversity Receiver, the Model 5804 will satisfy the professional user who demands quality equipment built to the highest specifications.

1& 10 watt Transmitter

SPECIFICATIONS:

1 & 10 WATT AUDIO VIDEO TRANSMITTER

Operational frequencies	1000–2000MHz /2000–2700MHz
RF power output	1 & 10W +1/-2dB
Frequency selector	1MHz steps by external rotary switches
Video modulation	BB video level by internal trimmer
Video input	1Vpp into 75_ (PAL, NTSC or SECAM)
Audio modulation	FM Sub carrier at 5.5MHz or 7.5MHz
Power	11–15Vdc 0.6A for 0.6W RF out
	0.8A for 1.0 or 1.5W RF out
Dimensions	123mm x 78mm x 36.5mm excluding connector
Weight	550g

Video/Audio Receiver

Model 5805

The Model 5805 is a high quality, professional video/audio receiver, which provides the highest technical specifications. It has been designed for operation in broadcast, repeaters, industrial, airborne, and a host of security applications and is the receiver for model 5804.

Together with the Model 5804 Transmitter, the Model 5805 will satisfy the professional user, who demands quality equipment built to the highest specifications.

The frequency is adjustable on the front panel by preset switches at intervals of 1MHz. It can be supplied with diversity switching, and a stereo option is also available. A RF level meter is included on the front panel. Power requirement is 12Vdc from battery or power supply.

The unit is complete in its own solid aluminum housing, measuring 103 x 42 x 168 mm.

A full range of antennas is available depending on application. Stereo audio transmission is available as an option.

SPECIFICATIONS:

1 & 10 WATT AUDIO VIDEO RECEIVER

Frequency range	950MHz–2700MHz (PLL)
Programmable steps	1MHz digital
Video deviation	±4MHz (±8.5MHz max), +ve/-ve switchable
Video output	1Vpp on 75W adjustable (PAL, NTSC or SECAM)
Audio sub-carrier frequency	5.5MHz–7.5MHz switchable
Dimensions	103 x 42 x 168 mm
Monitor output for received signal	analog meter full scale - 30 dBm dynamic 35-40 dBm

Body-Worn Video/Audio Transmitter Kit   Model 5806

The Model-5806 camera transmitter kit is designed to allow the operator true flexibility when using body-worn equipment.

Using the latest lens technology, it is possible to disguise the camera lens as a button, allowing the operative to fit the camera, transmitter, microphone and battery pack neatly, and importantly, covertly into a jacket.

The Model-5806 video/audio transmitter kit operates on low band frequency, giving the best transmission results when body-worn. The transmitter will not only transmit the video signal, but also the audio on the built-in audio sub carrier.

THE KIT CONSISTS OF:

- Video Audio Transmitter
- Stubby 0dB Antenna
- Color Button Camera
- Camera Battery Pack
- Set of Spare Buttons
- 12vdc Power Lead with Binder Connector
- Analog Microphone
- BNC – RCA Adaptor
- Battery Pack
- Battery Charger
- Equipment Vest

SPECIFICATIONS

VIDEO AUDIO TRANSMITTER

Operating Frequencies	1GHz–2.7GHz
RF Power Output	250mW ±1dB
RF Power Impedance	50W (SMA)
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Power req. Voltage	12.5Vdc, current 105mA
Dimensions - Weight	52mm x 64mm x 23mm - 150g

BUTTON CAMERA SPECS

Image Sensor	1/3" CCD (B/W) 1/4" CCD (Color)
Resolution	400 Lines (B/W) 380 Lines (Color)
Min. Illumination	.05 Lux (B/W) 1 Lux (Color)
Lens	3.7mm Wide Angle
Pixels	270,000 Sync

Room Video/Audio Transmitter Kit   Model 5807

The Model-5807 camera transmission kit system is designed to allow the operator true flexibility when installed in a room.

Using the latest lens technology, it is possible to disguise the camera lens screw allowing the operative to fit the camera, transmitter, microphone and battery pack neatly and importantly covertly behind walls/false ceiling.

The Model-5807 video/audio room transmitter operates on low band frequency, giving the best transmission results when used in installed in a room. The transmitter will not only transmit the video signal, but also the audio on the built-in audio sub carrier.

THE KIT CONSISTS OF:

- Video Audio Transmitter
- Stubby 0dB Antennas
- Color Pinhole Camera
- B&W Pinhole Camera
- Encryption Encoder Module (optional)
- IR Illuminator & Power Lead
- Short BNC-BNC RG 178 Video Cable
- Long BNC-BNC RG 178 Video Cable
- Powered Microphone
- 12vdc combined Power Lead (transmitter, camera, encryption)
- Battery Pack
- Battery Charger

SPECIFICATIONS:

Operating Frequencies	1GHz–2.7GHz
RF Power Output	250mW ±1dB
RF Power impedance	50W (SMA)
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Power req. Voltage	12.5Vdc, current 105mA
Dimensions - Weight	52mm x 64mm x 23mm - 150g

BUTTON CAMERA SPECS:

Image Sensor	1/3" CCD (B/W) 1/4" CCD (Color)
Resolution	400 Lines (B/W) 380 Lines (Color)
Min. Illumination	.05 Lux (B/W) 1 Lux (Color)
Lens	3.7mm Wide Angle
Pixels	270,000 Sync

Canon XL2 Camcorder
Video Transmission System   Model 5808

The Model-5808 camera transmission system is designed to allow the operator true flexibility when using a camcorder for surveillance applications.

Using the latest lens technology, it is possible to mount the camera lens, transmitter, microphone and battery pack onto the XL2. The diversity antenna is used for liable signals.

The Model-5808 operates on L or S band frequency giving the best transmission results. The transmitter will not only transmit the video signal, but also the audio on the built-in audio sub carrier.

THE KIT CONSISTS OF:

- Canon XL2 Camcorder
- Canon 20x Image Stabilized Zoom Lens & Lens Hood
- Canon Microphone
- Canon Camcorder Accessories
- Belt Battery Pack
- Battery Charger
- Video/Audio Transmitter Encryption
- Omni Directional Antenna Array
- Antenna Dust Cover
- Transmitter Dust Cover
- Pelican 1600 Carrying Case

SPECIFICATIONS:

Operating Frequencies	1GHz–2.7GHz
RF Power Output	250mW ±1dB
RF Power impedance	50W (SMA)
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Power req. Voltage	12.5Vdc, current 105mA
Dimensions - Weight	52mm x 64mm x 23mm - 150g

Sports Bag video Transmission system   Model 5809

The Model-5809 camera sports bags transmitter system is designed to allow the operator true flexibility when used in a covert role.

Using the latest lens technology, it is possible to disguise the camera lens allowing the operative to fit the camera, transmitter, microphone and battery pack neatly, and importantly, covertly into the sports bag.

The Model-5809 operates on low band frequency giving the best transmission results when used in sports bags. The transmitter will not only transmit the video signal, but also the audio on the built-in audio sub carrier.

THE KIT CONSISTS OF:

- Color Black & White changeover camera in housing
- Video audio transmitter with
- 0dB stubby antenna
- Powered microphone
- Encryption encoder module (optional)
- Combined 12vdc power lead (Transmitter, Encryption, Camera)
- Battery Pack
- Battery Charger

SPECIFICATIONS:

VIDEO AUDIO TRANSMITTER

Operating Frequencies	1GHz–2.7GHz
RF Power Output	250mW ±1dB
RF Power impedance	50W (SMA)
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Power req. Voltage	12.5Vdc, current 105mA
Dimensions - Weight	52mm x 64mm x 23mm - 150g

BUTTON CAMERA SPECS

Image Sensor	1/3" CCD (B/W) 1/4" CCD (Color)
Resolution	400 Lines (B/W) 380 Lines (Color)
Min. Illumination	.05 Lux (B/W) 1 Lux (Color)
Lens	3.7mm Wide Angle
Pixels	270,000 Sync

Briefcase Video Transmission System   Model 5810

The Model-5810 video transmission system is designed to allow the operator true flexibility when using the equipment in a covert application.

The Model-5810 operates on low band frequency giving the best transmission results when used in a briefcase. The transmitter will not only transmit the video signal, but also the audio on the built-in audio sub carrier.

THE KIT CONSISTS OF:

- Video Audio L Band Transmitter with Encryption Encoder Module
- Patch Antenna
- Sony GVD 1000E Video Recorder
- Remote Control Activator
- Color Black & White Changeover Camera
- Remote & Power Supply Box
- Battery Charger

SPECIFICATIONS:

VIDEO AUDIO TRANSMITTER

Operating Frequencies	1GHz–2.7GHz
RF Power Output	250mW ±1dB
RF Power impedance	50W (SMA)
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Power req. Voltage	12.5Vdc, current 105mA
Dimensions - Weight	52mm x 64mm x 23mm - 150g

BUTTON CAMERA SPECS

Image Sensor	1/3" CCD (B/W) 1/4" CCD (Color)
Resolution	400 Lines (B/W) 380 Lines (Color)
Min. Illumination	.05 Lux (B/W) 1 Lux (Color)
Lens	3.7mm Wide Angle
Pixels	270,000 Sync

Tissue Box Video Transmission System   Model 5811

A unique way to capture evidence from vehicles, rooms, offices, and hotel suites is to use the latest covert system.

The Tissue Box Camera Transmission System is the ideal unit for covert operations to gather intelligence information. It uses the highly reliable Model 250mW Video Audio Transmitter linked to either a color or black & white camera, fitted with pin-hole lens that transmits clear video and audio signals to the receiver station, allowing the information to be recorded for evidence or intelligence purposes.

Each Tissue Box is purpose-built for the application required. For example, if using the system in a vehicle, a "larger" size box will be needed to lift the camera above the window seals allowing for clear views. For rooms or offices the box is built to standard size, thereby, blending into the environment.

Each Tissue Box is supplied with a 1 x color & 1 x B&W CCD PCB camera, low light high resolution, linked to a Model 250mW Video/Audio Transmitter in the L band frequency range, electrets microphone and power supply, plus the remote control link to activate the system when required, and the 12vdc battery pack and battery charger.

Optional items are the Diversity Video Audio Receiver or the Portable Video Audio Receiver Case system.

SPECIFICATIONS:

VIDEO AUDIO TRANSMITTER

Operating Frequencies	1GHz–2.7GHz
RF Power Output	250mW ±1dB
RF Power impedance	50W (SMA)
Audio Sub Carrier Frequency	1.5MHz–7.5MHz
Audio Sub Carrier Deviation	±50kHz FM
Power req. Voltage	12.5Vdc, current 105mA
Dimensions - Weight	52mm x 64mm x 23mm - 150g

BUTTON CAMERA SPECS

Image Sensor	1/3" CCD (B/W) 1/4" CCD (Color)
Resolution	400 Lines (B/W) 380 Lines (Color)
Min. Illumination	.05 Lux (B/W) 1 Lux (Color)
Lens	3.7mm Wide Angle
Pixels	270,000 Sync

Video/Audio Portable Receiver Case   Model 5815

We design and manufacture a range of video transmission links suitable for all surveillance activities – overt and covert.

The links can be specific to each client in frequency (VHF/UHF, L & S Band), output power, RS232 controlled, or standard line items, such as, microwave transmitters and receivers.

Model 5815 is a high quality, portable, professional audio/video portable receiver case, monitor and recorder, all built to the highest technical specifications.

The Model 5815 is a rapid deployment system for use in VIP Protection and other security operations -- both covert and overt. The equipment is housed in a rugged Pelican case, providing a high degree of protection during transit and from the environment once deployed.

A selection of cameras is available for the camera positions, depending upon the main use, which is envisaged for the equipment.

The Portable Receiving Case incorporates a choice of Hi8 or DV recorder, audio/video receiver adjustable between 950–3000 MHz. Internal batteries provide initial power to operate the unit for a short time. The unit can also be powered from the mains, car battery or other external supply.

THE KIT CONSISTS OF:

- Receiver L & S Band combined
- Sony Hi8 Video Recorder
- 12vdc power lead for car cigarette lighter
- 220 vac power lead
- SMA – SMA antenna leads
- L Band omni directional antenna
- S Band omni directional antenna
- Stubby L Band antenna
- Stubby S Band antenna
- Headphones (analog audio)
- Amplified speakers (digital/audio)

OPTIONS
**The following options are available:**

1. Model Digital Video Audio Hard Drive Recorder in place of DV Cassette Recorder
2. Model Standard Video Audio Receiver Freq 905-2050MHz
3. Model Diversity Video Audio Receiver Freq 905-2050MHz
4. Model Diversity Video Audio Receiver Freq 905-2050 & 2100 –2700MHz

Video/Audio Portable Receiver Case   Model 5815

SPECIFICATIONS

Frequency range	950–3000MHz (PLL)
Programmable steps	1MHz digital
Noise	10dB
Input impedance	75ohm connector F female
IF bandwidth	27/16MHz SAW filter 479.5MHz
Video deviation	±4MHz (±8.5MHz max), +ve /-ve Switchable
Video output	1Vpp on 75ohm adjustable (PAL, NTSC or SECAM)
De-emphasis	Standard CCIR Switchable
Video frequency response	50Hz–5MHz ±1dB with audio at 7.5MHz
	±2dB with audio at 5.5MHz
Differential gain	±4%
Differential phase	±4%
Video S/N ratio	>40dB outweighed deviation
	= 4MHz RF input 50dBm
Audio sub-carrier frequency	5.5MHz–7.5MHz Switchable
Audio sub-carrier deviation	±50kHz FM
Stereo version	8.065MHz Ch1, 7.500MHz Ch2
Audio de-emphasis	50ohms
Audio frequency response	50Hz–15kHz ±3dB
Audio output	0dBm on 1kW adjustable
Audio S/N ratio	>45dB outweighed
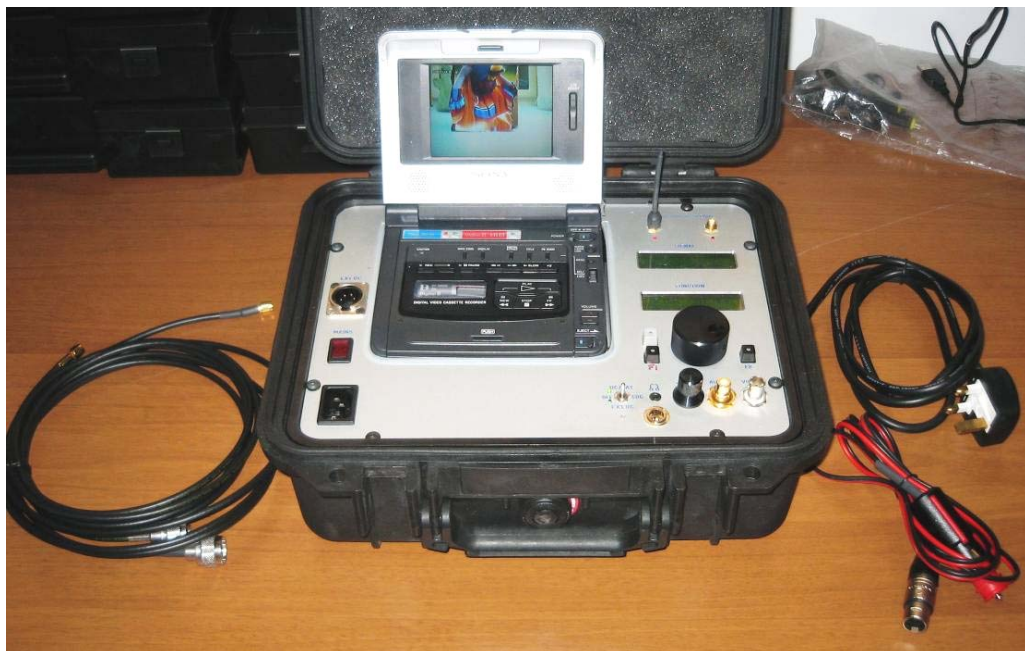
Micro Video Transmitter   Model 5820

The Model 5820 Micro Video Transmitter represents yet another innovation for our technology and was developed on demand from our customer base. The predecessor to the Model 5820 proved to be an extremely useful addition to our Electronic range of covert microwave video transmitters.

The Model 5820 offers a significant increase in power in a compact package, with low current consumption.

In addition to the increase in performance, We have developed human and electronic control interfaces, featuring a keypad with a display, a computer serial interface and connectivity to the transmission system.

Features

- 250mW RF Power
- S and L Frequency Band Variants
- 250mA Maximum Current Consumption
- 8-15V Supply
- 15 Selectable Frequency Channels
- Low Power Mode (100mW)
- Keypad Operation
- OWL System Compatible
- PC Connection
- PAL/NTSC
- Compatible with all Video Receivers
- Micro-View/AudioLock Compatible
- Micro-Gemini Compatible
- GPS Video Overlay Option

Applications

The size, compatibility and versatility of the Model 5820 makes it ideal for the following applications:

- Body-worn
- Covert Surveillance
- Hidden 'Bug" Applications
- Motor Car/Bike Vehicle Installation
- Dual Camera Transmission With Micro-Gemini
- Encrypted Transmission With Micro-Viewlock
- Audio Transmission With Micro-Audiolock
- OEM Integration

Additional modules can be enclosed within the Model 5820 Micro Expansion Box and interfaced to produce a single unit with a common footprint.

TECHNICAL SPECIFICATIONS

RF Output Power	250mW minimum per channel
Low Power RF Output	100mW minimum per channel
Frequency Band Variants	L and S Band (1.3, 1.7, 2.4GHz)
Frequency Channels	15 Selectable
DC Input	8-15V
Current Consumption	250mA (Normal Operation)
Video Input	PAL/NTSC 1V pk-pk @ 750
Serial Data Interface	RS232, RS484, 1^2C (Master)
Serial Protocols Supported	Transmission System Protocol, GAMMA Generic Radio Format
RF Connector	SMA Female Jack
Power, Video and Serial Connector	14-way Locking, Crimp Connection

# Multi-Channel High Power Video Transmitter   Model 5821

The Model 5821/2 series comes as an L or S band (1.25GHz to 2.25 GHz programmed over a 25% bandwidth) nominal output power for the Model 5821 is 1.5 watt and 5 watts for the Model 5821-2. The transmitted bandwidth is minimized to give optimum channel performance utilizing 725/6 or CCIR pre-emphasis curve, with little or no reduction in video bandwidth and performance. High and low power outputs can be selected for optimum power efficiency.

The video processing uses very tight filtering to optimize the channel bandwidth, and power GaAaFET technology in the output stages for efficiency and cleanliness. High quality audio techniques are utilized on the twin audio sub-carrier options.

The transmitter is housed in a rugged weather seal and alu-chromed aluminum milled housing with Lemo multi pin, BNC & N type connections (62GB types can be specified as an option).

FEATURES

- L or S band
- Fully synthesized
- 2 audio channels option
- Weatherproof & EMC sealed
- Alu-chrome finish
- Internally programmable
- Broadcast quality
- Color or monochrome
- PAL or NTSC
- 1.5/5 watts minimum output
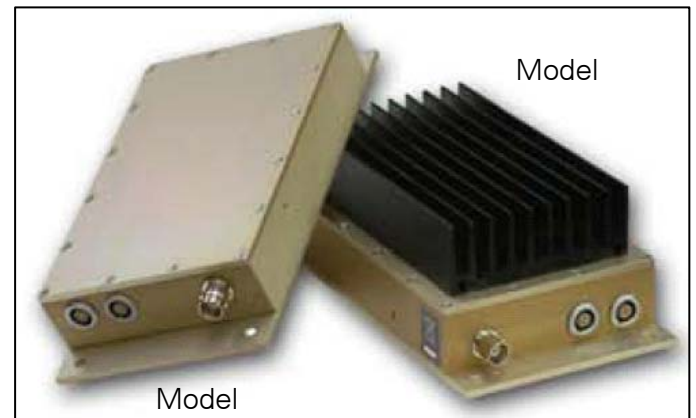
Model

Model

APPLICATIONS

The unit has an extended base plate for panel or wall fixing, or alternatively for installing into camera outstation systems

- Home office and FCC approvals

TECHNICAL SPECIFICATIONS:

RF power out	
Model 5821-1	1.5W + 2.0 -0dB (Hi), 100mW ±3dB (Lo)
Model 5821-2	5W + 2.0 -0dB (Hi), 500mW ±3dB (Lo)
Spurious outputs	Better than -60dBW
Frequency stability	Better than ±30 ppm
RF Channels	Up to 16 available, 1MHz spacing min
Deviation	Adjustable, 0 to 8MHz
Channel bandwidth	12MHz (for 99% power out)
Video pre-emphasis	725-6 or (CCIR 405)
Frequency range Model 5821-1/5821-2	1.10GHz-2.50GHz
Operational temperature range	-30° to +55° C ambient
Dimensions	180 x 95 x 65mm (with fixing plate)

Microwave video Receivers   Model 5822

The Model 5822 series of microwave receivers are L/S band (nominally 1GHz to 3GHz programmed over a 5% bandwidth) high sensitivity receivers, with up to 2 optional audio sub-carriers, which support full color video applications. The receive bandwidth is minimized to give optimum channel performance, while having superb adjacent and co-channel rejection in either case of using 725/6 or CCIR pre emphasis curve, with little or no reduction in video bandwidth and performance.

It consists of a low noise GaAaFET front end, crystal referenced, micro-controlled, multi-channel synthesizer, with tight IF & RF filtering and with superb video detection. High quality audio techniques are utilized on the twin audio sub-carrier option, which can also be included within the package.

FEATURES

- Compact design
- Built-in low noise GaAaFET preamplifier
- PAL & NTSC
- Fully Synthesized channels
- 2 audio channels option
- Milled enclosure
- Rugged & EMC sealed
- Internally programmed
- Efficient, 12V DC supply
- Model 5822-1 series are external
- Model 5822-2 series are internal
- Decryption option

SPECIFICATIONS:

Frequency Range	1GHz to 3GHz
RF bandwidth	12MHz
Ultimate S/N	>50dB weighted @ -60dBm
Signal meter range/Dynamic range	-80dBm to +10 dBm/>90dB
Threshold/image rejection	8dB C/N or less/>80dB
IF frequency/Frequency stability	Approx 500 MHz/better than ±20ppm
Frequency range up to 16 channels available	1GHz to 3GHz (5% bandwidth user specified)
Adjacent channel rejection	±15MHz>20dB ±50MHz>50dB
Video pre-emphasis	725-6 or CCIR 405 (internally selectable/ video inversion also selectable
Temperature range	-30° C to +55° C
Dimensions/Weight	196 x 112 x 33 mm/0.5 kg approx
Video connections	1 x BNC 75 @ 1V pk-pk (PAL or NTSC
Video bandwidth	20Hz to 5.5 MHz ±3dB (PAL)
Audio output	1V pk-pk into 600 x 2
Audio bandwidth	50Hz to 10kHz ± 1dB
Audio subcarriers	6MHz to 8MHz (up to 2)

Video Observation Controller   Model 5823

The Model 5823 video controller can control single or multiple camera systems & provide the ability to access and command the many new developments in camera technology.

The membrane keypad has basic functions, such as pan/tilt, zoom, color or B & W, presets, backlight, auto and manual focus, etc.

As many as fourteen single, two or four camera outstations can be controlled. Model 5823 may be powered from internal batteries or from an external 12 V DC source.

Supplied with AC PSU, it is compatible with the our VT/VR range of microwave transmission modules.

FEATURES

- 12V DC internal battery operation or external DC power supply, float charging
- Rapid deployment
- Rugged shower proof enclosure
- Built-in S, L or C-band video receiver
- Built-in TFT color monitor 6.4"
- Audio available if VR3 option or audio lock fitted
- Built in encryption options
- Luminous tactile keyboard
- Mil-spec connectors
- Multi channel frequency options
- Signal strength indicator
- Up to 14 outstation control
- PAL or NTSC
- Presets, 2 camera control, multiple speeds
- UHF or VHF channels
- FCC or ETSI approvals (radio modules)

APPLICATIONS

- Compatible with all our transmission systems
- Compatible with telemetry handheld controlled system for enhanced control features of more presets, VCR, proportional and variable speed and up to 15 cameras
- Compatible with Viewlock II & Microviewlock Video Decryption and Audiolock ll

TECHNICAL SPECIFICATIONS

DC connection	5-pin mil. Series 11.5-15V @ approx 2A max
Internal 12V battery pack	2 hours continuous, minimum
SHF connector	(N-Type Skt). Input from 50 L or S-band antenna
Audio connector	Phones Left & Right
Built-in loudspeaker/headphones	2 Watts/1/4" Jack
Video connector	2x BNC 75 @ 1V pk-pk/1 x 6.8" TFT LCD
Telemetry hand-held controlled system connector	12 way military spec. connector
Video receiver Model 8522	L or S band receiver
Radio telemetry transmitter	Depending on frequency (specify band UHF or VHF)
Video/Audio encryption	Optional Viewlock LI/Audiolock
Audio	Optional analog or Audiolock ll
Keypad (luminous) functions	Pan, tilt, zoom, AUX1, AUX2, TX on/off/low power, presets/auto/manual focus, day/night, etc

Duplex Video Link System   Model 5824

The Model 5824 Duplex Video Link System consists of digital audio and analog video.

Remote control allows the transmitter and voltage supply to the camera to be switched on/off from the receiver controls. It is possible to connect 3 cameras to 1 transmitter and remotely select between them

A unique audio encryption key for the digital audio transmission is available.

The receiver can handle up to 100 transmitters and each transmitter is identified by its own serial number. Remote control is also possible via the provided PC control software.

Suitable for very long range with high gain antennas and diplexer (optional).

FEATURES

- UHF/VHF duplex transmission
- Video scrambling (Pseudo-Random)
- Digital audio encrypted
- PC remote control access via USB
- Repeater option available
- Covert
- Small transmitters with microphones
- PAL
- Rugged suitcase

TECHNICAL SPECIFICATIONS

Carrier RF frequency	User tuned from 350 to 390MHz (can be factory tuned to another band)
Video modulation/video bandwidth	Analog FM (150 MHz wideband)/5 MHz
Video scrambling	Pseudo-random line inversion + pseudo-random FM dispersion
Audio modulation	Digital FM subcarrier on 5.5 MHz, data 122 kb/s
Audio sampling	20.3 kHz/8 bit quantization
Audio bandwidth	200 Hz to 9 kHz
Audio encryption	Binary table key 32 x 32 field

Duplex Video Link System   Model 5824

Transmitter parameters		
Spurious RF	<-50 dBc (harmonic & nonharmonic)	
CAM input	Jack 2.5-video 1 Vpk-pk/75 Ohm & 12V camera supply when transmitter activated, 0.5 A maximum	
Audio input	Jack 2.5-line 0.7/50 k Ohm, mic 0.5 mV/3K Ohm	
Baseband IN / OUT	Jack 3.5 - retransmission only (high power TX only)	
Supply voltage	12V (8V to 18Vmax) hi power transmitter has DC / DC converter	
RF Power consumption	Mini TX	Hi Power 0.5 W / 200 mA @ 12V
		Lo Power 0.05 W/ 110 mA @ 12V
	High power TX	Hi Power 3W / 800 mA @ 12V
		Lo power 0.3W / 230 mA @12V
Standby current consumption	Mini TX 0.5 mA / high power TX 0.7 mA	
Dimensions	Mini TX 54 x 55 x 16 mm (without connectors)	
	High power TX 84 x 60 x 28 mm (without connectors)	

Receiver parameters (remote control unit)		
Receiver sensitivity	7 u V drop out threshold	
Antenna input	50 Ohm/BNC (5V DC supply for an external amplifier)	
Remote control	149.125 MHz / 1W	
Synchronization capture	<0.5 sec. video (in crypto-mode) <0.2 sec. audio	
Video and Audio output (phono)	Video 1V (pk-pk)/75 Ohm. Audio 0.7V /1k Ohm	
Baseband IN/OUT	Jack 3.5 repeater BB input, remote control input	
USB port	USB-B, PC software for remote control	
Display	LCD 4 x 20 characters with backlight	
Supply voltage	12V (8V to 18V max) displayed on display	
Current consumption	270 mA stable receiving mode	
	600 mA peak during remote control transmission	

COFDM Digital Transmission System   Model 7320

The Model 7320 is an up-to-date technology. Its main advantage is the intelligent use of reflections, which makes a line-of-sight connection between transmitter and receiver no longer mandatory. Transmission problems like multipath transmission and ghost images are now problems of the past. Applications where a failure free image transmission has not been possible will especially benefit from this new technology.

The digital video transmission system O.R.C.A. (COFDM Radio Communication Appliance) provides a lot of useful features and technical innovations, which are unique. O.R.C.A. is the only system offering two frequency ranges in one system. If you are facing disturbances - no problem anymore! Just switch over to the other frequency band!

Data will be modulated with COFDM technology.

This is the best choice for applications where the environment of the transmission system is changing all the time. Due to the adjustment of several transmission parameters it is possible to adapt the whole system depending on the current application and environmental conditions. All adjustments can be made via simple and easy menus.

An important part of the development of the O.R.C.A., on the one hand, was to make the operation and adjustments of the system as simple as possible, and on the other hand, to integrate as many functions as possible. Also the optional digital 168bit encryption might be activated via rotary button. The encryption's Triple-DES-Technology ensures a very safe operation with first class encryption techniques. O.R.C.A has many different connectors for video and audio, which makes it compatible to the most terminal equipment.

8-Antenna Diversity

A 2- and 8-antenna Diversity System is optionally available, which improves the reception even more. Both systems feature a "Maximum Ratio Combining" (MRC) technique. This intelligent electronic analyzes the signals of each antenna and combines them in order to finally obtain a top quality video signal. Due to this technique a maximum transmission quality may be achieved.

2-Antenna Diversity

The application's range is huge. Typical applications are surveillance systems in the professional security branch, traffic and city surveillance for police, fire brigade and Special Forces. It is also suitable for video transmission for private, industrial or scientific use, as well as the transmission of high-quality videos of TV stations, specifically for mobile applications or live-events. For applications in harsh environments, where an undisturbed transmission has so far been impossible, the use of digital video transmission system will increase considerably in future, due to its potential. Such systems are best suitable for industrial sites or factory halls, in mountainous areas or tunnels.

COFDM Digital Transmission System   Model 7320

Digital Video Transmitter

Transmission power: up to 10W (HF)

Modulation: COFDM (QPSK, 16QAM, 64QAM)

Frequency range: 2.2 – 2.5GHz/5.73 – 5.87GHz

Signal band width: 6, 7 or 8MHz

Transmission rate: 4 - 31MBit/sec.

Compression: MPEG-2 (ML@MP; 4:2:0)

Video standard: PAL/NTSC/SECAM

Power supply: 9 - 30V DC

Dimensions: 215 x 60 x 218mm

Digital Video Receiver

De-Modulation: COFDM (QPSK, 16QAM, 64QAM)

Frequency range: 2.2 - 2.5GHz/5.73 - 5.87GHz

Frequency pattern: 0.5MHz/1MHz

Signal bandwidth: 6, 7 or 8MHz

Compression: MPEG-2 (ML@MP; 4:2:0)

Video standard: PAL/NTSC/SECAM

Power supply: 9 - 30V DC

Dimensions: 215 x 60 x 157mm

Mobile Video Transmitter

The handy mobile transmitter holds up due to its small dimensions, as well as its extraordinary performance. It features the same performance criteria as the stationary video transmitter.

However, the decisive advantage of our Mobile Video Transmitter is that all parameters may be adjusted directly on the device. You do not require any external peripheral devices like a Laptop or PC, as with similar devices of other manufacturers.

Antenna Diversity Systems

These digital video receivers have been especially developed for superior applications. We focus on an intelligent analysis of antenna signals based on a technique called "Maximum Ratio Combining". It analyzes the signals of the antenna and combines the best parts so that a final a top-quality, failure-free signal results. Depending on your application, you could choose either a 2-Antenna or 8- Antenna Diversity System.

COFDM Digital Transmission System   Model 7320

THE 10W AMPLIFIER

The power-booster with power increase

The 10W power amplifier is quickly and simply connected to the 2W video transmitter giving a 10W transmission power. Due to this impressive power one has always sufficient reserves to realize every application. Especially in difficult situations, as in mobile applications in built-up areas, the power increase is a guarantor for high-quality and interference free transmission.

- power increase to 10W
- quick connection to digital 2W video transmitter
    - simply connect and ready
- point-to-point transmission
- point-to-multipoint transmission

THE MOBILE VIDEO TRANSMITTER

Small, light and powerful

The mobile video transmitter holds up due to compact dimensions, as well as its range of activities.

It features the same performance criteria as the stationary video transmitter. All transmitter parameters may be adjusted directly using the wide display on the device. No external peripheral devices e.g. Laptop or PC are required, which is a major advantage over similar devices of other manufacturers.

- Pre-adjusted transmission parameters
    - For a fast and easy access
- all parameters are freely adjustable
- finest frequency tuning
    - frequency pattern in 2.4GHz range only 0.5MHz
    - frequency pattern in 5.8GHz range only 1MHz
- display for menu navigation

THE 2-ANTENNA DIVERSITY

More possibilities due to intelligent signal analysis

The digital video receiver has been especially developed for superior applications. Our Diversity System makes use of a new, intelligent analysis of the antenna signals called the "Maximum Ratio Combining" technique. It analyzes the signals of each antenna and combines the best parts to emit a high quality, interference free video signal.

- Maximum Ratio Combining (MRC)
    - intelligent analysis of the antenna signals
    - combines the best parts of each signal
- 2 antennas for signal reception
- for superior applications: In built-up areas, in mountains or tunnels

COFDM Digital Transmission System   Model 7321

The use of cameras for security applications in surveillance and intelligence gathering has mushroomed. This growth has largely been in the areas of fixed camera assemblies, where the signal is transmitted to permanent control rooms, via hard wiring or through custom installed wireless systems.

Where the transmit/receive station is mobile, or in areas subject to high levels of radio clutter, the outlook has not been so encouraging. The demand is there, but present analog systems find they are unable to reach the stringent requirements of their operators, providing unacceptable levels of picture degradation. The Model 7321 System, derived from Digital Video for Moving Objects is a high technology solution. It has been specifically designed to provide quality video under 'difficult' conditions and is packaged to meet and exceed the demands of the security industries and armed forces.

First, it is digital, the transmitter utilizes advanced encoding technology, yet uses less spectrum, and the result is a markedly improved picture quality compared with analog systems. It is able to operate within a wide range of frequencies.

The 7321 acts like a data pipe and can, if required, transport high quality video, two audio streams and a low bit RS232 data stream, all at the same time. In fact, with additional special version transmitters 'chained' together, up to three additional external transport streams can effectively be combined into one combined signal. What this means is that up to 4 images from individual cameras can be composited to allow the user multi viewpoints of the operation, all on the one screen.

Because it is digital, the signal can easily be encrypted to ensure the link is totally secure from intervention or prying of unauthorized parties.

The Model 7321 has solved the problem inherent with digital systems by reducing the time-lag, by fast processing of the digital signal to a very manageable, one twentieth of a second (50ms). In practice this allows the operator of remote controlled vehicles, e.g. bomb disposal robots, the ability to interact in virtual real-time to the transmitted pictures.

The system is highly immune to multipath interference. In fact it uses the very nature of these reflections to boost its operation. It does this in a number of ways -- the integrated receiver/decoder is fed by up to four receiver converters.

The receiver automatically switches to the optimum signal using a technique known as intelligent diversity reception using packet switching. To complement this technique the transmitter uses COFDM (Coded Orthogonal Frequency Division Multiplexing) technology. This is a system that sends the digital data by modulating many low-bit-rate data streams onto numerous narrow band radio channels of different and usually adjacent frequencies. The result is that any interference caused by multipath reflections only affects a percentage of the data stream. The Model 7321 receiver can usually recreate any lost data by using error correction techniques.

As with all technology, if you are unable to easily use it to its full potential, it is redundant. With this in mind, we have made great efforts to enable an end-user with even basic knowledge to be able to operate the system, simply and effectively. Aerial placement is not usually critical providing fundamental rules are observed.

The system has been built without compromise to perform in the most demanding of conditions. The state of the art circuitry is well protected in tough aluminum casings with integral heat sinks.

FEATURES

- High quality digital video, audio and data streams in one signal
- Uses COFDM transmission and MPEG compression formats

COFDM Digital Transmission System   Model 7321

- Very low video "end to end" delay of 50mS
- Multiple carrier transmission occupying minimal spectrum (<8MHz)
- High immunity to multi-path signal effects - suitable for urban and moving environments
- Wide range of operating frequencies Up to 4 video signals on one R.F. channel
- Ability to combine external data streams for Repeater Systems and Networking
- AES encryption option
- Diversity system improves picture reception in difficult situations
- Optional interfaces, Ethernet and disk storage applications
- Optional power amplifiers
- Wide earth free operating voltage range

SPECIFICATIONS

Video Encoding		
Compression Standard	MPEG DCT Codec	
Chrominance Profile	4:2:0	
Line Standard	525 and 625	
Resolution	Horizontal 720 pixels	
	Vertical 576 (625 line)	480 (525 line)
Video Bit rate	3Mbps to 15Mbps depending on modulation mode	
Delay	45ms at 5Mbps	
Service Identifier	Fixed PID	
Audio		
Mono Audio Channels (2)	Bit rate, 400kbps each (Option for use as data channels)	
	Sampling frequency,32kHz PCM	
Video Input		
Type	Composite, NTSC or PAL	
Luminance Bandwidth	5.2MHz (PAL), 4.5MHz (NTSC) -3dB	
Differential Phase and Gain	<2° and 2%	
Jitter	8ns peak to peak (over 1 field)	
Audio Input		
Peak Level	+12dBm (line input)	
Response	50Hz	- 15kHz (-3dB)
S/Noise (System)	>66 dB unweighted	
Data Input		
Interface	1200 to 38,400 baud RS232	
RF Parameters		
Frequency Bands	S Band, L Band and UHF options available	
Occupied Bandwidth	Selectable 6, 7, 8MHz	

COFDM Digital Transmission System　　　　Model 7321

RF Power Output	100mW max (adjustable in steps)
Antenna Connector	SMA socket
COFDM Modulation Type	QPSK or 16QAM
Modulation FEC	1/2 2/3 3/4 5/6 7/8
Modulation Guard Interval	1/32 1/16 1/8 1/4
QPSK Symbol Rate	26.7Msym (maximum)
Spurious	>50 dBc
COFDM Carriers	2000 (1705 active)
COFDM MER	>28dB
COFDM Standard	To DVB-T specifications
Output Flatness	<± 0.25dB
Output Filtering	To DVB-T specifications
Other Facilities	
On Screen Display (OSD)	Video Loss, RF Loss, High temperature, Low supply voltage,
	Received Signal Strength, PCR discontinuity, BER alarm
Encryption	AES (Rijndael algorithm)
Heart Beat	On screen icon
Programming Interface	Serial link to PC/PDA
	9600 baud RS232
Operational Controls	Profiler, front panel, serial PC/PDA or standalone
Options	Ethernet with TCP/IP and UDP
	EDH for disk storage or still frames
	RTP for streaming applications
Profile Parameters	RF power control/ frequency of operation/ modulation parameters
General	
Power Supply	9 to 33V DC (nominal 12V DC) isolated supply (38 to 75V option)
Supply Current (normal mode)	Transmitter single encoder: 1.6A @ 12V
	Receiver single decoder: 1.5A @ 12V + 0.25A per downconverter
Supply Current (shutdown mode)	Transmitter or receiver, 0-4 downconverters: 6mA @ 12V
Dimensions	Standard version: 61mm x 112mm x 225 mm (2.4" x 4.4" x 8.8")
	Manpack version: 30mm x 94mm x 175mm (1.2" x 3.7" x 6.9")
Weight	Standard Version: 1.4kg (3lb)
	Manpack version: 0.8kg (1.8lb)
Options	Power amplifiers; remote radio telemetry control

COFDM Digital Transmission System   Model 7321

The range consists of the following products:

T	100mW S band COFDM radio transmitter
R2	UHF COFDM radio tuner and demodulator
PA1	100mW to 1W RF power amplifier
PA5	10mW to 5W RF power amplifier
PA10	10mW to 10W RF power amplifier
DCV	S Band to UHF down converter
PRE	UHF preamplifier
MXE	Encoder-only version of the Transmitter (i.e. no RF section)
MXD	Decoder-only version of the dVMo-R2
Profiler	Portable 10-way Profile selector
SCP	Front panel with Profile selector and optional audio preamps
ADU	Line modem
4DD	Diversity selector and decoder for up to 8-way diversity
SSI	System Status Indicator
IPR	\
IPT	Ethernet interfaces
IPX	/
TM/TML	Portable transmitter pack

Figure 1 - View of the main components

4

COFDM Digital Transmission System   Model 7322

OVERVIEW

The Model 7322 COFDM digital video transmitter and receiver units, support as standard, full DVB-T compliant (6.7 or 8 MHz) channelization, with an easy software upgrade to allow narrow-band (2.5MHz). This means that the operator can utilize standard hardware across a number of applications and upgrade paths. These units are packaged to provide exceptional video quality in high multipath environments, where traditional analog equipment would suffer tearing and break-up. The footprint is identical to our Model 5821-1 and Model 5822-2, which provides existing users and easy upgrade route to digital.

The Model 7322 offers advantages over traditional analog systems including:

- Improved performance
- More efficient spectrum utilization
- More secure transmissions

FEATURES

- High efficient 2.5 MHz narrow band COFDM modulation
- Optional DVB-T compliant carrier modulation
- Standard hardware across different modulations
- 1 Watt COFDM RF output
- Excellent image quality in high multipath environments
- Optional Internal AES 128/256 bit encryption
- L or S band operation
- Very low delay video operation for real time applications
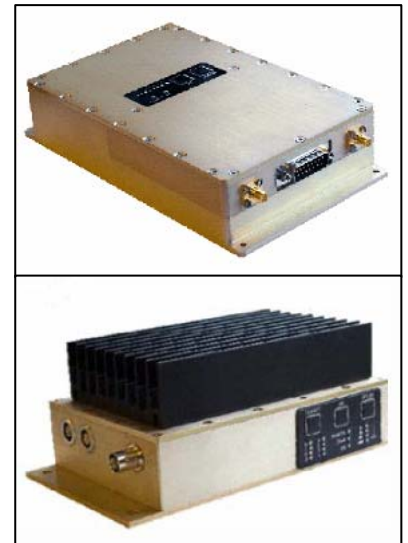
SPECIFICATIONS

TRANSMITTER UNIT
INPUTS

RECEIVER UNIT
INPUTS

Composite Video	BNC	UHF In	SMA
Stereo Microphone Audio	Lemo	12 V DC In	Lemo
RS232 Data	Lemo		
12V DC In	Lemo		

OUTPUTS   **OUTPUTS**

RF Out	N Type	Composite Video	BNC
		Stereo Line Level Audio	Lemo
		Chaining Interface	Lemo
		RS232 Data & Control	Lemo

VIDEO   **VIDEO**

Format	Pal /NTSC	Format	Pal /NTSC
Bit-rate Narrow Band	1.2Mb/s to 4.8 MB/s	Bit rate Narrow Band	1.2Mb/s to 4.8 MB/s

1

COFDM Digital Transmission System   Model 7322

Horizontal Resolution	720, 528 or 480 Pixels	Horizontal Resolution	720, 528 or 480 Pixels

AUDIO   **AUDIO**

Audio Bit rate Per Channel	64kb/s to 364kb/s	Audio Bit rate Per Channel	64kb/s to 364kb/s

DATA

RS 232 control port	Up to 115200 bps

RF   **RF**

Tuning Range L Band	1.15 to 1.40 GHz	Bandwidth	8/7/6 MHz (Standard – 2.5 MHz (Software Upgrade)
Tuning Range Low S Band	2.28 to 1.45 GHz	Tuning Range	Same as The transmitter Unit
Tuning Range High S Band	3.31 to 3.53 GHz		
Tuning Range UHF	340 to 470 MHz (100mW)		
Bandwidth Narrow Band	2.5 MHz		

CONTROL   **CONTROL**

Front Panel	8 User Selectable configurations	Front Panel	8 User Selectable configurations

PHYSICAL   **PHYSICAL**

Dimensions	185mm x 95mm x 70mm	Dimensions	192mm x 112mm x 40mm
Weight	1Kg	Weight	1Kg

POWER   **POWER**

DC Input	11 TO 16V	DC Input	10 to 16v
Power Consumption	<=15W active (0.1W Sleep Mode)	Power Consumption	12W

ENVIRONMENT   **ENVIRONMENT**

Temperature Range	-10^0 to $+50^0$ C	Temperature	-10^0 to $+50^0$ C

VACT

Video & Audio Communication Technologies
GSM/ PSTN/ SAT/ TETRA/ LAN

TETRA – Network Structure (Example: **ACCESSNET®-T**)

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX
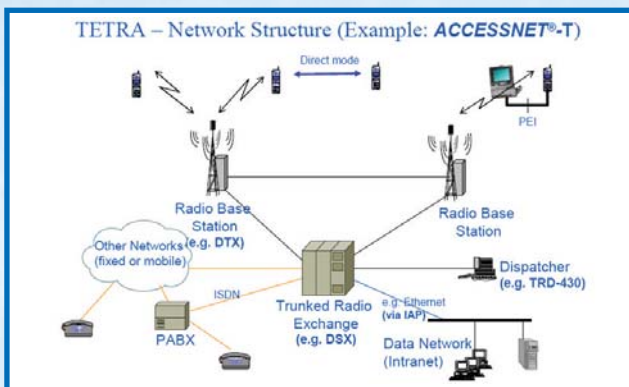
Video & Audio Communication Technologies

Ref	Number	Description
1	5302	Video Transmission via GSM Networks
2	5310	Portable Video/Audio Live Communication System
3	5320	Secure PSTN Landline Telephone
4	5321	Secure Quadband GSM Phone
5	5322	GSM Triband GSM PDA Phone
6	5620	Wireless LAN - IP System
7	5621	4 Channel Video Server
8	5900-1	Tubed Sound VIP Discrete Systems
9	5900-2	Covert Vests
10	5900-3	Covert Wireless Earpieces
11	5900-4	Covert Neck Loop
12	5900-5	Shoulder Harness
13	5900-6	Sub Miniature RF Receiver
14	5900-7	Ladies Handbag
15	5900-8	Sports Bag
16	5900-10	Covert Car Communication
17	TETRA	Tetra Communication System
18	5910	Tetra VIP Communication System

Video Transmission via GSM Networks   Model 5302

In our Model 5302 you find a powerful portable and compact system for the transmission of video images via the cellular phone network.

Easy installation allows you to begin operating within a few minutes. The video data transmitted live via the GSM network can be viewed on any Windows-based receiver device, e.g., Pocket PC, Notebook or PC, independently of whether the connection was created manually or the result of an alarm situation.

Model 5302 is the right approach to GSM-based video transmission.

SYSTEM STRUCTURE

The Model 5302 has been designed for video transmission via the GSM mobile phone network. The vehicle-adaptable device consists of 4 camera inputs and an audio input for optional extensions. To be able to carry out controlling functions, the Model 5302 comes with an RS232 interface with the aid of which cameras can be controlled or additional devices from Model can be attached. The use of the most modern standardized compression method allows the transmission of up to 3 frames/s through the GSM network, and up to 12 frames/s with an external modem using ISDN. The mounting rails integrated in the case allow easy installation of the device in the place of operation. For the operation of the Model 5302 a Windows PC with a modem is required on the receiver side, or, in case of higher mobility needs, a notebook with a GSM modem or a Pocket PC. The delivered receiver software must be installed in the computer in order to place a call to the Model 5302 or to receive video images from the place of operation in case of alarm.

RECEIVER SOFTWARE

The Software supports the following features:

- Video transmission after contacting the sender

- Live camera switch and control

- Simultaneous representation of the images from up to four attached cameras

- Automatic connection and transmission of post-alarm images in the event of an alarm detection by the sensor

- Acoustic and visual signal in the event of an alarm detection

- Automatic video recording at receiver side for later analysis

- Password-protected program settings of the system for alarm configuration

- Selection of different transmitter configurations

- Configuration of several senders

- Control of external, supplementary devices

Video Transmission via GSM Networks   Model 5302

TECHNICAL SPECIFICATIONS

Model	Model 5302
Video Input	4 BNC sockets: CVBS/PAL, NTSC
Resolution Field	(704 x 288 Pixels)
	CIF (352 x 288 Pixels)
	QCIF (176 x 144 Pixels)
	SQCIF (128 x 96 Pixels)
Video Transmission	Digitalization of the analog camera input signals, compression rates from 9.6 kbit/s to 128 kbit/s, depending upon resolution and image quality
	Transmission of: 1-3 images/s via GSM
	12 images/s via ISDN (external modem)
Compression Method	H.263+
Interfaces	1 x serial (RS-232 DSub9)
	1 x audio (in/out RJ45)
Power Supply	12V, 1A
Size	132 x 139 x 34 mm(5.2 x 5.5 x 1.3 in)
Weight	400 g (14 oz.)
Software	Receiver software with storage and control functions (24h ca. 120 MB)
	VideoPlayer software
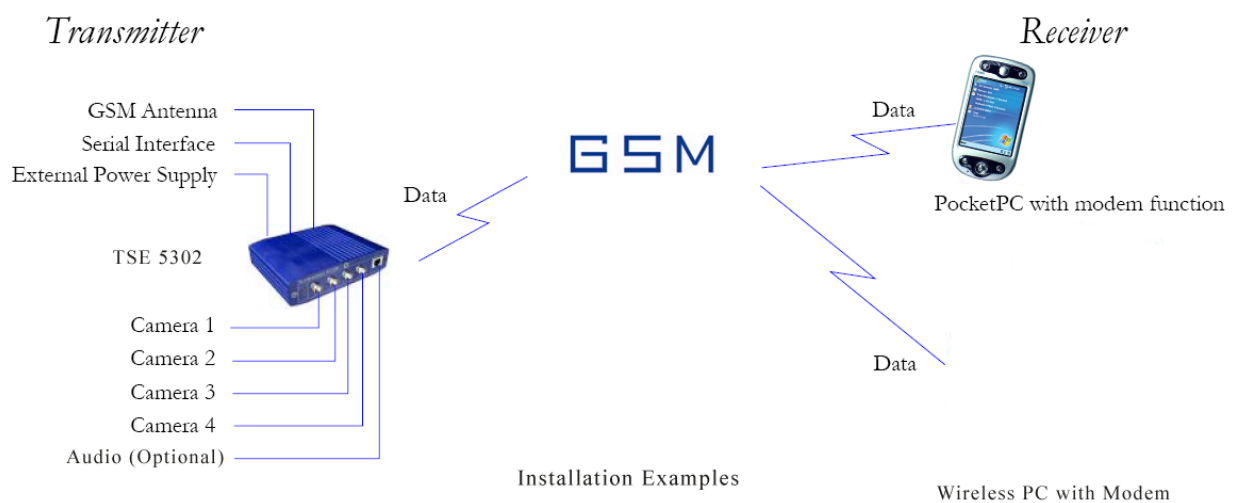
Portable Video/Audio Live Communication System

Model 5310

The Model 5310 series is rugged, portable and suitable for location work anywhere in the world where there is an ISDN line, or a suitable Inmarsat terminal. Housed in a waterproof case and using tried and tested technology, the unit can be used in the harshest of environments with complete confidence.

Simplicity and flexibility of operation for the lone reporter has been the keyword in the product's development, resulting in a minimum of complex controls. The unit can be powered from the local mains source (90- 264VAC), or a nominal 12V DC source, such as a BP- 90A camera battery.

Excellent picture quality at 64/128kbps is assured by the use of the latest H.263 compression algorithms, or if desired high quality (7.5kHz) audio and low speed pictures can be transmitted instead.

Model 5310 H.263 compression 64/128kbps system

Model 5311 H.264 compression IP connect 768kbps or 2mbs

Model 5312 Rack Mounted system for vehicle operations

A simple mixing facility on the unit enables low-Z microphones, and balanced or an unbalanced line sources to be connected simultaneously. A custom designed I/O processor optimizes the audio/video for transmission, while providing both professional (XLR/ BNC) and domestic (phono) connections. Headphone jack sockets provide both direct and cue (return) signals for monitoring purposes.

An adjustable 6.4" TFT color display with speaker completes the package.

Storage for cables, microphone, and headphones is provided within the case so that the unit is totally self-contained.

FEATURES

- Portable rugged
- Used by Intell dept in hostage/riot situation
- Integrated into Surveillance Vans
- Optional fitted with Thrane and Thrane sat Phone
- Optional secure communications
- Full color pictures and eco cancellation
- High speed transmission 2mpbs

Portable Video/Audio Live Communication System
Model 5310

SPECIFICATIONS

Video	ITU-T H.320, H.261 and H.263 and optional H.264
	CIF resolution (352 x 288 pixels) at up to 15 fps
	QCIF resolution (176 x 144 pixels) at up to 30 fps
	Input: Composite, 75W BNC/Phono (PAL or NTSC)
	Output: Composite 75W BNC (PAL or NTSC)
	Display: 6.4" TFT Camera: Single Chip (optional)
Audio	ITU-T G.728 AND G.722 Full duplex with echo cancellation
Data	RS-232 async. with T.120 to special order
Network	ISDN Basic Rate (2B+D)
	Euro-ISDN Interface compatible with Inmarsat-M4 & 7E S0DA
	10 number memory, Speed-dial, Last number redial
Physical	Dimensions: 356mm x 265mm x 155mm approx. (W x D x H)
	Weight: 4 kg
	Power: 90-264V AC; 50-60Hz or 12V DC, with stand-by mode
	Operating temperature: 0 to 40°C ambient
	Non-operating temperature: -10 to 60°C
	Operating humidity: 20% - 90% (non-condensing)
	Non-operating humidity: 10% - 95% (non-condensing)

Secure PSTN Landline Telephone   Model 5320

The Model 5320 Secure PSTN Landline Telephone comes with full source code available for independent review. Finally, you can perform an independent assessment to ensure that you can rely on strong encryption without any backdoors in the communications device that you entrust your security to. The Model 5320 enables you to put the trust where it belongs – in a trustworthy, open and scientific verification process.

Our secure landline telephone technology is based on well researched algorithms for both encryption and voice processing. It features the strongest encryption available combined with key lengths that provide peace of mind today and in the future.

TECHNICAL SPECIFICATIONS

TELEPHONE LINE INTERFACE
Standard analog PSTN/POTS interface with RJ11/RJ13 plug, ISDN connectivity is available with optional adaptor.

ENCRYPTION
Strongest and most secure algorithms available today - AES256 and Twofish, 4096 bit Diffie-Hellman key exchange with SHA256 hash function; readout-hash based key authentication, 256 bit effective key length encryption; key is destroyed as soon as the call ends.

The Model 5320 is the only secure phone on the market with full source code published for independent security assessments – no `proprietary´ or `secret´ encryption, no backdoors, no key-escrow, no centralized or operator-owned key generation, no key registration.

INTEROPERABILITY
Fully compatible with all our secure phone devices.

DIMENSIONS & WEIGHT
Encryption unit is 50 x 275 x 172 mm, 2000g in black aluminum with no moving parts or fans.

Telephone style may vary, customer specific model available for larger orders.

EXTERNAL PORTS
Standard analog audio port (separate 3.5 mm jacks for line in/out) for interfacing the Model 5320 with audio and videoconferencing equipment, RS232 serial port for connecting satellite equipment (Thuraya or Inmarsat, other networks on request). System runs on 12V DC power (provided by 100-240V AC power supply).

DISPLAY
Alphanumeric LCD display for key hash value verification and call information.

OPERATIONAL FEATURES
Last number redial function, programmable phonebook, speakerphone, ringer, and volume control.

STANDARD ACCESSORIES
100 – 240V AC power adaptor, full cable set, high quality lockable aluminum transport suitcase.

OPTIONAL ACCESSORIES
100 – 240V AC uninterruptible power supply, power line filtering, 12V cigarette lighter type power supply, solar power pack.

Secure Quadband GSM Phone Model 5321

The Model 5321 comes with full source code available for independent review. Finally, you can perform an independent assessment to ensure that you can rely on strong encryption without any backdoors in the communications device that you entrust your security. It features the strongest encryption available combined with key lengths that provide peace of mind today and in the future. The unit is upgradeable to full-mode secure GSM as well Thuraya sat communications

TECHNICAL SPECIFICATIONS

RADIO

GSM quad-band 850/900/1800/ 1900MHz, EDGE

EGPRS class B, multi-slot class 10, CSD

ENCRYPTION

Strongest and most secure algorithms available today — AES256 and Twofish. 4096 bit Diffie-Hellman key exchange with SHA256 hash function, readout-hash based key authentication, 256 bit effective key length, encryption key is destroyed as soon as the call ends.

The Model 5321 is the only secure mobile phone on the market with full source code published for independent security assessments.

Dimensions & Weight

98.5 x 51.4 x 15.8 mm, 99g md. battery, integrated antenna, slim line clamshell design, black color scheme.

OPERATIONAL FEATURES

Talk time up to 5 hours, standby time up to 150 hours, hardened WM5 operating system.
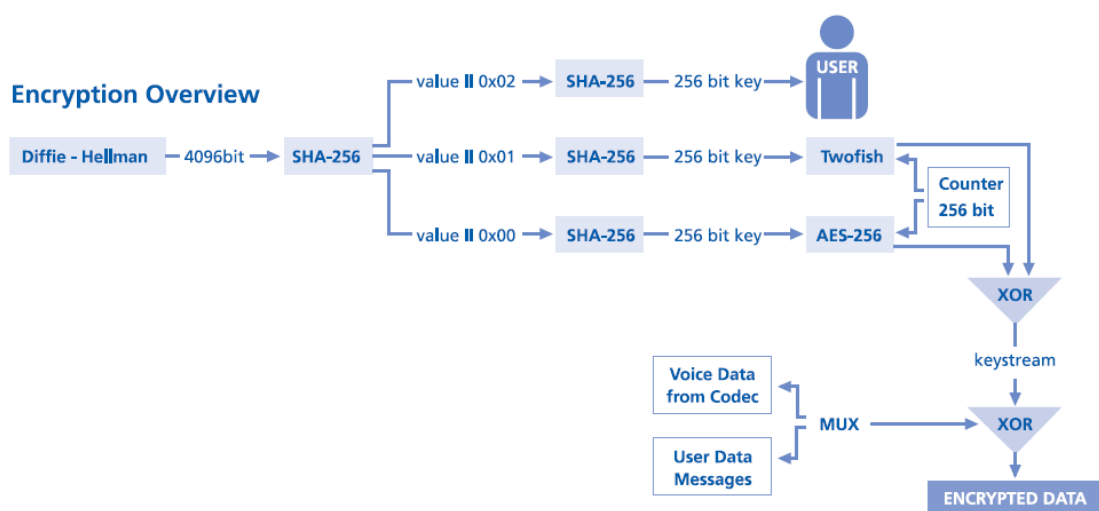
GSM Triband GSM PDA Phone   Model 5322

The Model 5322 comes with full source code available for independent review. Finally, you can perform an independent assessment to ensure that you can rely on strong encryption without any backdoors in the communications device that you entrust your security to. The Model 5322 enables you to put the trust where it belongs – in a trustworthy, open and scientific verification process.

Our technology is based on well-researched algorithms for both encryption and voice processing. It features the strongest encryption available combined with key lengths that provide peace of mind today and in the future.

TECHNICAL SPECIFICATIONS

RADIO
Tn-Band GSM 900/1 800/1 900 MHz or 850/1 800/1 900 MHz

ENCRYPTION
Strongest and most secure algorithms available today - AES256 and Twofish, 4096 bit Diffie-Heltman key exchange with SHA256 hash function, readout-hash based key authentication, 256 bit effective key length encryption, key is destroyed as soon as the call ends.

INTEROPERABILITY
Fully compatible with all our cellular, satellite and fixed-line products

DIMENSIONS & WEIGHT
108 x 58 x 18 mm, 160g md. battery, charcoal color scheme, integrated antenna

OPERATIONAL FEATURES
Talk time up to 3.5 hours, standby time 180 hours

STANDARD ACCESSORIES
1 00-240V AC adapter, USB sync cable, stereo headset with microphone (2.5 mm plug)

OPTIONAL ACCESSORIES
Spare batteries, 12V cigarette lighter charger, solar panel charger, vehicle mount kit, noise-canceling headset, ruggedized military carrying case

SATELLITE UPGRADE OPTION
Upgradeable to dual-mode secure GSM and Thuraya satellite communications using our T2 upgrade package

STANDARD ACCESSORIES
100 -- 240V AC power adaptor, full cable set, high- quality lockable aluminum case

OPTIONAL ACCESSORIES
100 -- 240V AC uninterruptible power supply, power line filtering, 12V cigarette lighter type power supply, solar power pack

Wireless LAN & I.P. System   Model 5620

LINK PROVIDES

- Video One Way – Composite In & Out
- Duplex Audio (2 Way)
- Duplex Data – RS232, 422, 485
- Alarm Inputs
- Motion Detection

Transcoder

Video Server

FEATURES

- Full Programming, Configuration & Operational Software
- Plug & Play
- 12Vdc Operation
- Relatively Compact Antenna/Transceiver Housing IP68
- I.P. Addressable
- Programmable Encryption 64/128/152 WEP & WPA
- Control PTFZ, etc. with FSK, DTMF, RS232, RS422, RS485, Sony VISCA, Telemetry, etc
- Monitor Remote Audio & Transmit Audio
- Programmable Motion Detection
- Includes Optional P.C. Operating & Recording Program

Wireless LAN Transceivers

IP VIDEO AUDIO CONTROLLER

ALCON Broadband Wireless links are useful up to 3km and IP68 rated for harsh weather.

- Wireless LAN IEEE 802.11 b/g Compliant
- Strong Network Security with 152 Bit WEP Encryption & WPA
- Up to 54MB/sec
- 186 x 106 x 61mm
- -10 to +70°C
- 12V Operation

With the ACTI Video Server & Transcoder, MPEG4 Video over Wireless LAN & the internet is possible.

- Video, Duplex Audio & PTFZ Control
- Plug & Play, IP Addressable
- Computer or Hardware Based Control & Recording
- Composite Video In & Out

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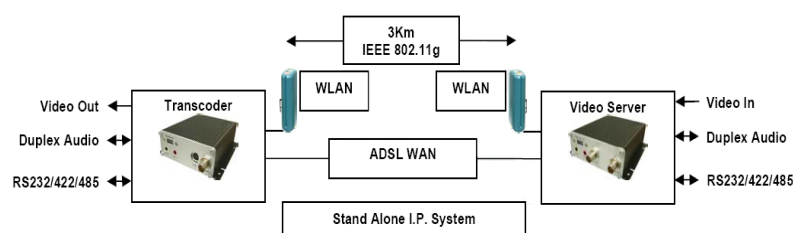
Wireless LAN & I.P. System   Model 5620
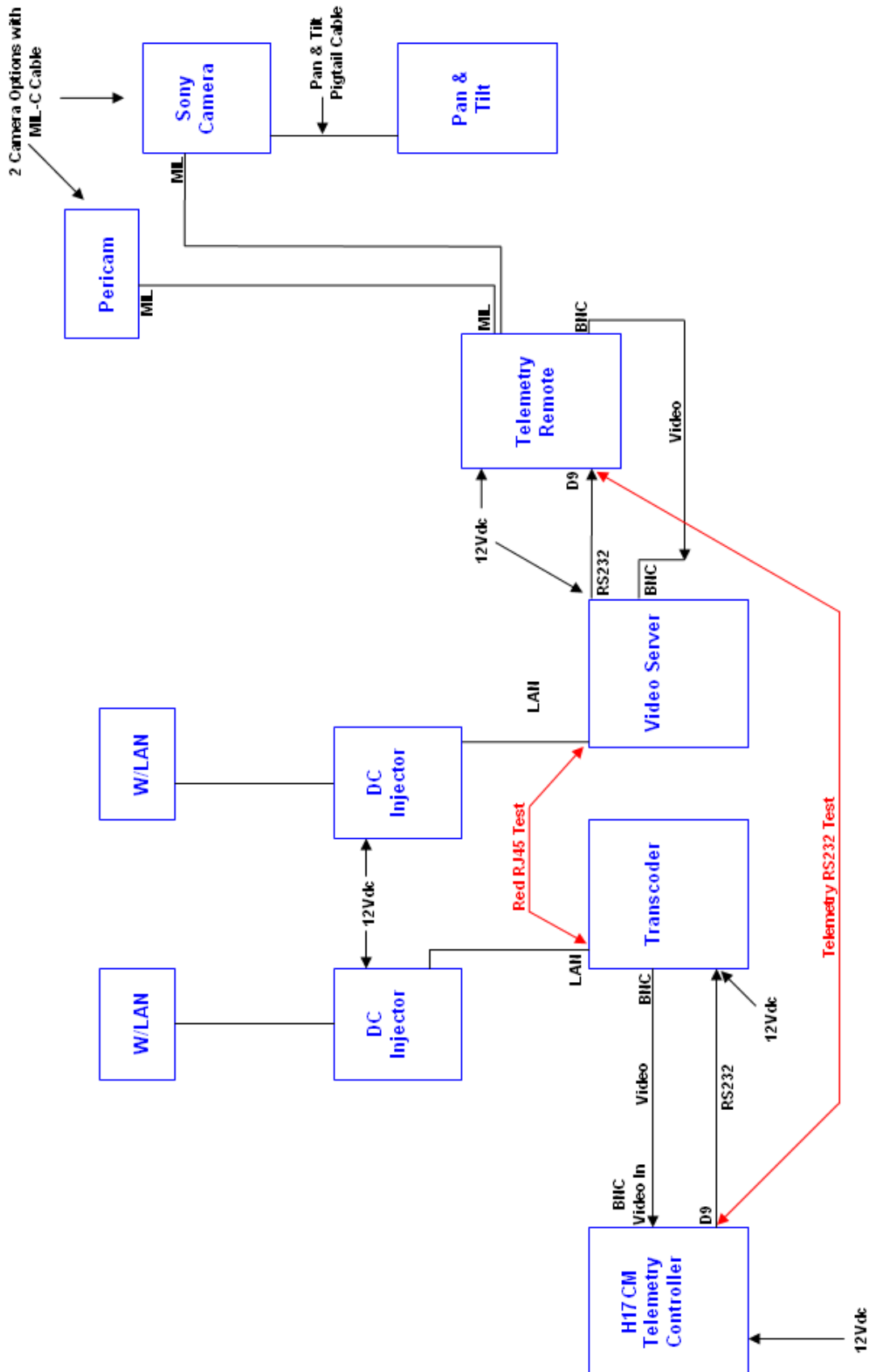
4-Channel Video Server   Model 5621

We now have a high performance video server for professional IP surveillance applications. It transmits up to four analog video streams over Ethernet or modem and provides additional video outputs for the connection of analog monitors or traditional multiplexers.

The video server is based on MJPEG technology, which offers the best ratio of performance over cost.

With the flexible integration interface and detailed documentation we can supply end users a wide range of applications in remote monitoring and surveillance.

Our RS232 interface, in conjunction with the unit, allows control of PTFZ, including Sony block cameras and our range of Pan and Tilt units, over IP networks.

FEATURES

- TCP/IP network remote video surveillance system
- High performance and fully configurable MJPEG compression engine
- Built-in web server
- In-image motion detection
- PPP dial-in and dial-out via external modem
- Adjustable network bandwidth
- Remote PTZ camera control
- Flexible integration interface
- 4 analog camera inputs, 4 analog video outputs
- Video stream- 30/25 frames/sec for single input, 6 frames/sec for Quad

Communication Technology Accessories   5900 series

MODEL 5900-1 - DISCRETE TUBED VIP SOUND SYSTEM

The Discrete VIP Sound System provides superb received audio quality using a tubed sound device, along with either an ear-bud or a customized ear mould. As an alternative, the tubed sound transducer can be replaced with an inductive neck loop, to allow full covert use in conjunction with a covert wireless earpiece.

Two and three wire versions are available, to provide either a low profile combined microphone and a push button switch to transmit (see drawing), or a separate miniature microphone and a hand-held "torpedo" transmit switch.
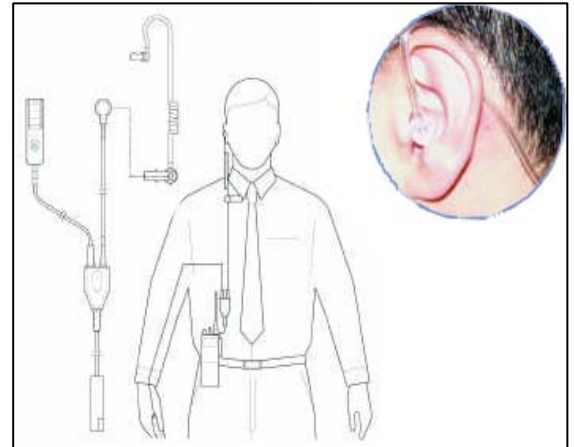
MODEL 5900-2 – COVERT VESTS

The Delta range of equipment-carrying garments provides an innovative and integrated solution to wearing radio terminals on the body in a covert manner. The versions illustrated show the Delta-*3* vest, available in either white or black. Delta-*3+* is available in white air flex with a thigh harness, which allows radio carriage below waist level.

The garments are manufactured in a breathable Tactel ® material, to hold body-worn equipment, such as TETRA terminals and associated accessories, close to the body to improve operator confidence and comfort over conventional carrying garments.

MODEL 5900-3 - COVERT WIRELESS EARPIECES

A range of inductive covert earpieces are available, to allow wireless reception of incoming radio messages, when used in conjunction with a suitable audio accessory such as the covert neck loop.

The range includes earpieces with level limiting circuitry in both a standard and micro package to ensure the sound pressure levels produced are within the relevant safety guidelines, along with customized and ethnic earpiece versions. Handy wax trap cleaning dispensers are also available to assist cleaning of the products.

Communication Technology Accessories   5900 series

MODEL 5900-4 - COVERT NECK LOOP

When dedicated covert operation is required, the covert neck loop system provides a combined microphone and inductive loop accessory to provide transmit, and receive capability, along with a choice of remote hand-held push buttons to transmit switch options.

Used in conjunction with a delta vest or thigh harness and a wireless earpiece, the undercover operator is fully equipped to carry out surveillance in a covert manner.
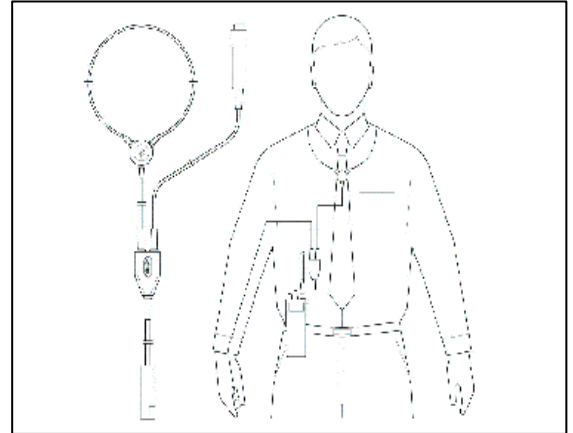
MODEL 5900-5 - SHOULDER HARNESS

Personal radios can be converted for use in covert applications by the use of a covert communications accessory, similar to that shown in the example.

Surveillance shoulder harnesses provide an integrated microphone and receive inductor, along with a hand-held push button switch to transmit, all designed for wearing underneath conventional clothing.

Reception of radio traffic is provided by the use of a wireless earpiece, to provide a truly covert accessory.

Shoulder Harnesses can also include a "Tone" transmit feature, if required.
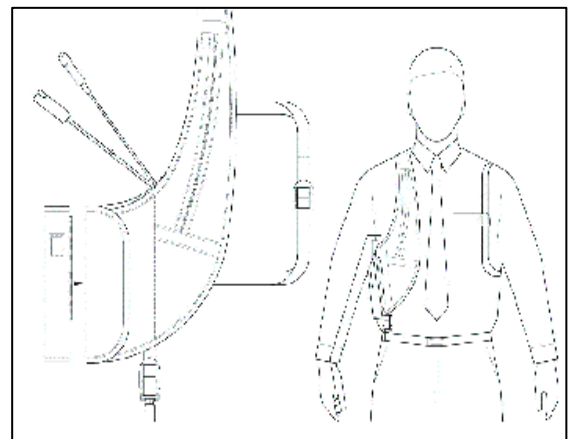
MODEL 5900-6 – SUB MINIATURE RF RECEIVE

The Sub Miniature RF Receiver is used for covert operations to receiver either communications or RF transmitters and is practically invisible, since it is placed inside the ear and disappears into the ear canal. Its ergonomic shape ensures not only greater comfort but also a more natural listening experience. The batters provide continuous operations for 10-13 hours. The frequency is set in VHF and with the optional input you can program your own frequency and settings.

Nylon feeler

Receiver

Battery ±

Open
Off
On/Low
On/High

Speaker

Wax Guard   *actual size*
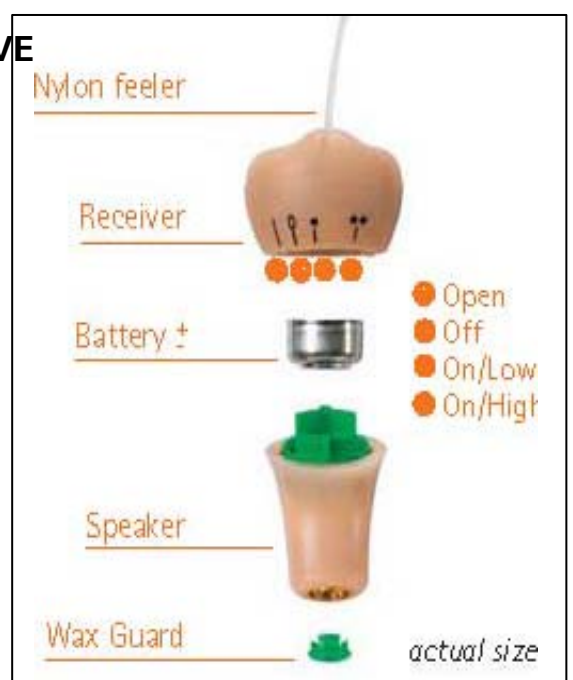
Communication Technology Accessories

5900 series

MODEL 5900-7– LADIES HANDBAG

Ladies Surveillance Handbags fitted with a concealed communications harness can be supplied from a selection of styles and colors and can be customized according to the end-user's needs.
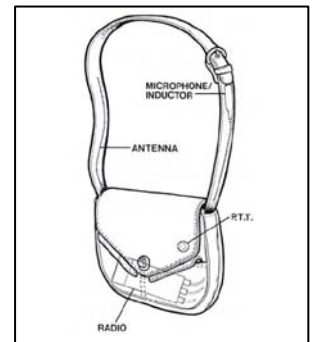
MODEL 5900-8 – SPORTS BAG

Our tough rugged looking sports bag constructed from hard-wearing nylon completely conceals any hand portable radio, including the microphone/inductor unit, which is concealed inside the shoulder strap.

The microphone produces excellent speech quality – even a whisper is transmitted clearly.

MODEL 5900-10 – COVERT CAR COMMUNICATION

The covert car communication system enables the occupants of a car to communicate in hand free mode with the PTT concealed either on the car gear stick or steering wheel. The microphones are hidden in the sunshield. The communication is received with the wireless earpiece. As an extra option, a mobile repeater system can be fitted enabling the operation car to be used as a covert repeater.

VIDEO CAR SURVEILLANCE

TETRA Communication System   TETRA

TETRA COMMUNICATION SYSTEM (TERRESTRIAL TRUNKED RADIO)

ACCESSNET®-T is a TETRA mobile radio network developed by Rohde & Schwarz in accordance with the specifications of the European Telecommunication Standards Institute (ETSI). It is a cellular digital radio network with a large range of scalability. Using single-cell networks as a basis, the same network elements can be used to build large networks covering entire countries. As the structure of the ACCESSNET®-T network is non-hierarchical and meshed. It is not subject to topological restrictions of any kind.

ACCESSNET®-T radio communication networks have been system-engineered specifically for use in the field known as PMR (Professional Mobile Radio -PMR), where mission critical applications for government security departments with high requirements in respect of the availability and reliability of the technology employed, are common.

A TETRA network such as ACCESSNET ®-T offers a variety of interfaces to external networks, both for voice and data. Standard interfaces, such as 64 kBit/s, E1 or Ethernet are implemented. Furthermore, the range of PABX systems increases the flexibility for interconnecting existing networks with the TETRA system. The VoIP option offered by several PABX has already opened the door to the next generation of telecommunication systems.

The TETRA infrastructure of Rohde and Schwarz provides the highest grades of scalability and offers the support of all manufactured radios which are operating in accordance with the ETSI TETRA standard. It provides easy interconnectivity to other communication equipmen, such as PSTN/PABX Systems, LAN/WAN, Internet/Intranet, analog VHF/UHF systems and other modern communication surroundings.

The end-to-end encryption service allows the set-up of secure voice and data calls between mobile and fixed users in the system (point-to-point, multipoint and broadcasting connections are possible).

TETRA – Network Structure (Example: ACCESSNET®-T)
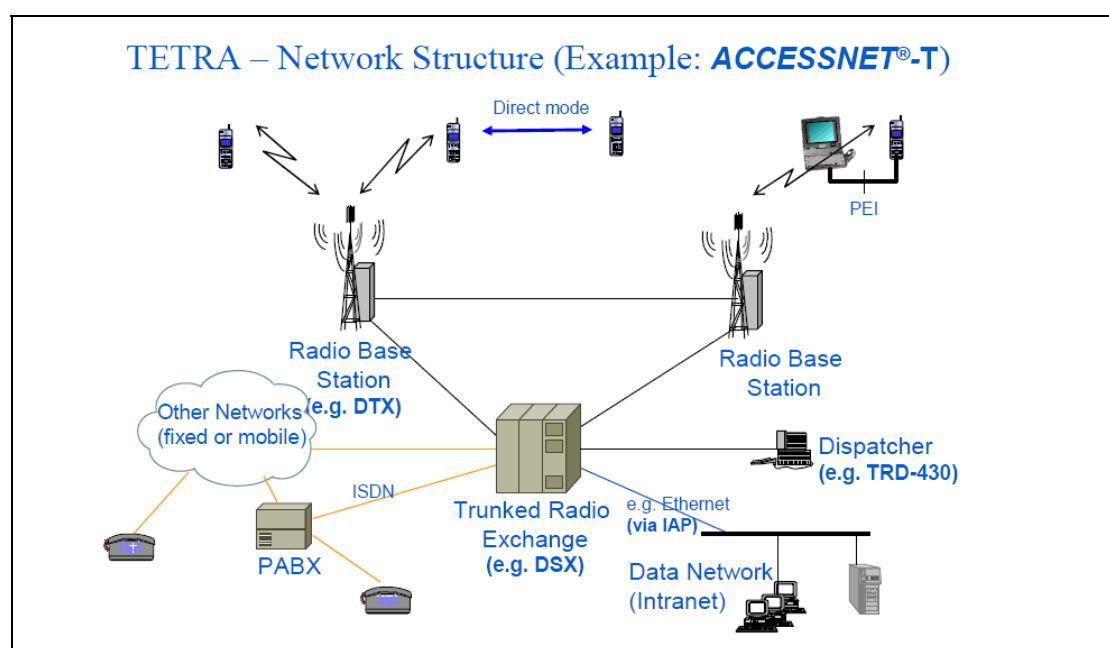
TETRA Communication System   TETRA

TETRA ADVANTAGES FROM ROHDE AND SCHWARZ

TETRA (Terrestrial Trunked Radio) is a feature-rich system, providing everything from specialized safety services to cellular operating modes.

TETRA is convincing with its unique advantages briefly described below:

Fast call set-up: The typical response time achieved by TETRA systems is less than 500 ms.; this is much faster than what is specified by other PMR systems. TETRA has been designed from inception to be used in mission-critical applications in the public safety environment.

Group communication: The ability to communicate within a work group simultaneously including mission-critical features is important for professional users.

TETRA V+D: The digital TETRA technology permits simultaneous voice and data transmissions from one and the same terminal.

DMO: Outside the coverage area of the radio infrastructure, voice and data transmissions take place in "Direct Mode" directly between radio devices ("walkie-talkie" functionality).

TDMA: The access method Time Division Multiple Access combines as many as four traffic channels or time slots per carrier. In terms of frequency usage, TETRA is 4 times more efficient than GSM, as more channels, and thus, more capacity to support very much higher traffic levels are available.

Data rate: TETRA allows a gross transmission rate of 28.8 k bit/s. The rate offered by traditional FDMA systems is considerably lower by comparison.

Voice quality: TETRA uses state-of-the-art voice encoding based on the so-called ACELP technology. A large number of users confirm its excellent voice quality.

Encryption: TETRA is the only system with encryption on the air interface encompassing all items of signaling information and relying on dynamic keys. This ensures encryption of all data on the organization channel, the subscribers' identities, as well as of the voice and data channels. Additionally, comprehensive end-to-end encryption is offered.

Security: In terms of network topology, TETRA infrastructure components are interlinked. Redundancies, such as duplication of computer units, guarantee network element reliability. In addition, base stations are protected by fallback operations, which would result in only temporarily lower performance instead of total failure. Authentication procedures between terminals and the infrastructure guarantee network access security.

SYSTEM OVERVIEW COMPONENTS

NETWORK MANAGEMENT

The Network Management System NMS-500 is needed for operation of the TETRA mobile radio system ACCESSNET ®-T. It is a powerful system, developed for commercially available hardware platforms and is suitable for all tasks concerning infrastructure and subscriber data.

The NMS-500 is based on client server architecture and can thus be used from a central location or locally in the field. The modular structure of the NMS-500 ensures scalability depending on network size or scope of functions according to the Network Management Package (NMP).

TETRA Communication System

TETRA

DIGITAL EXCHANGE AND BASED STATIONS

DIGITAL TRANSCEIVER EXCHANGE (DTX-500)

The DTX-500 can be configured with up to 8 TETRA carriers in a 19-inch cabinet, which results in a total of 32 logical channels with access to all functions and terminals from the front. The system is expandable in steps, up to a total of 16 carriers by the addition of an extension rack to the site system. All 16 carriers are controlled from the base station controller in the first cabinet, even if the channels are assigned to different radio cells.

Furthermore the DTX-500 provides support for interfaces and gateways to PSTN, ISDN and PDN.

DIGITAL INDOOR BASE STATION DIB-500

The digital TETRA indoor base station DIB-500 has been developed for indoor deployment.

The DIB-500 can be configured with up to 4 TETRA carriers, which results in a total of 16 logical channels with access to all functions and terminals from the front. The system is expandable, in steps, up to a total of 8 carriers by the addition of an extension rack to the site system. All carriers are controlled from the base station controller in the first cabinet, even if the channels are assigned to different radio cells. The DIB-600 is the redundant version of DIB-500.

DIGITAL OUTDOOR BASE STATION (DOB 500)

The DOB-500, a base station for outdoor use, is equipped with two carriers. The compact aluminum housing is designed according to IP65 and provides for operation with passive cooling.

Using a DOB-500 will significantly reduce the site expenses, both in terms of installation and rental fees during operation. As the DOB-500 is installed at the antenna mast, close to the antennas, the length of the antenna cable can be minimized. This not only cuts costs, but also helps to notably reduce cable attenuation. The only thing that is needed is a power connection if microwave technology is used within an ACCESSNET ®-T mobile radio system to connect the DOB-500 with the next DMX-500 exchange.

TRANSPORTABLE TETRA BASE STATION (CUBE)

ACCESSNET ®-T CUBE is a TETRA communications system for mobile deployment. Given its modular design, it can easily be transported. The system's portability ensures transportation to operational areas even under environmentally challenging conditions.

ACCESSNET ®-T CUBE is installed and fully operational within only a short period of time. Radio communication is guaranteed according to the TETRA standard's defined functions and services.

CONFIDENTIAL

TETRA Communication System   TETRA

Designed for outdoor operation, ACCESSNET ®-T CUBE can also be installed in containers and buildings.

The CUBE system consists of individual modules. The modules are built in boxes that ensure safe transportation and operation. The TETRA Cube system modules contain network elements, gateways and peripheral structured units. Further accessories for mobile deployment are also included.

TERMINALS HAND-HELD AND MOBILE

HAND–PORTABLE SRH 3800

The SRH3800 hand-helds are the smallest, lightest, rugged hand-held radios available in the market today. Designed and built to meet IEC529 IP54 standards, they can withstand day-to-day use in some of the harshest environments found in the public safety, military, transport, and utilities markets. The SRH3800 range has been built to address security by including a tamper-proof security processor and a smart card connector. E2E encryption can be implemented by a software upgrade and optional applications can be fitted.

MOBILE TERMINALS, SRM 2000/SRG 2000

SRM-2000 is a public safety and utility terminal combining high-level performance with a rugged construction. It is designed for vehicle-based users, such as traditional public safety users, High RF power output (10 Watts). The srm 2000 is available as desktop version with power supply and loudspeakers as well as for motorbikes. The SRM-2000 is available in several variants: With and without encryption.

The firmware of this mobile terminal is the same as the firmware used in the hand-portable terminals described above – Sepura SRP2000 and SRP2000 sGPS. For this reason, users will instinctively know how to use it, as there is no difference in the user interface.

The SRG2000 mobile radio has been developed specifically for use in the public safety market, but is suitable also for commercial environments. The SRG-2000 is a further development of the SRM2000 mobile terminal; it provides all of the features, functions and configurations of the SRM2000, but offers additional DMO gateway and DMO repeater functionality. An SRM2000 is not field-upgradeable to SRG2000.

TETRA Communication System   TETRA

DMO GATEWAYS AND REPEATERS

A DMO gateway is a special TETRA terminal that links direct mode (DMO) communications to a trunked network. Typically, such a gateway provides a network extension for direct mode user(s).
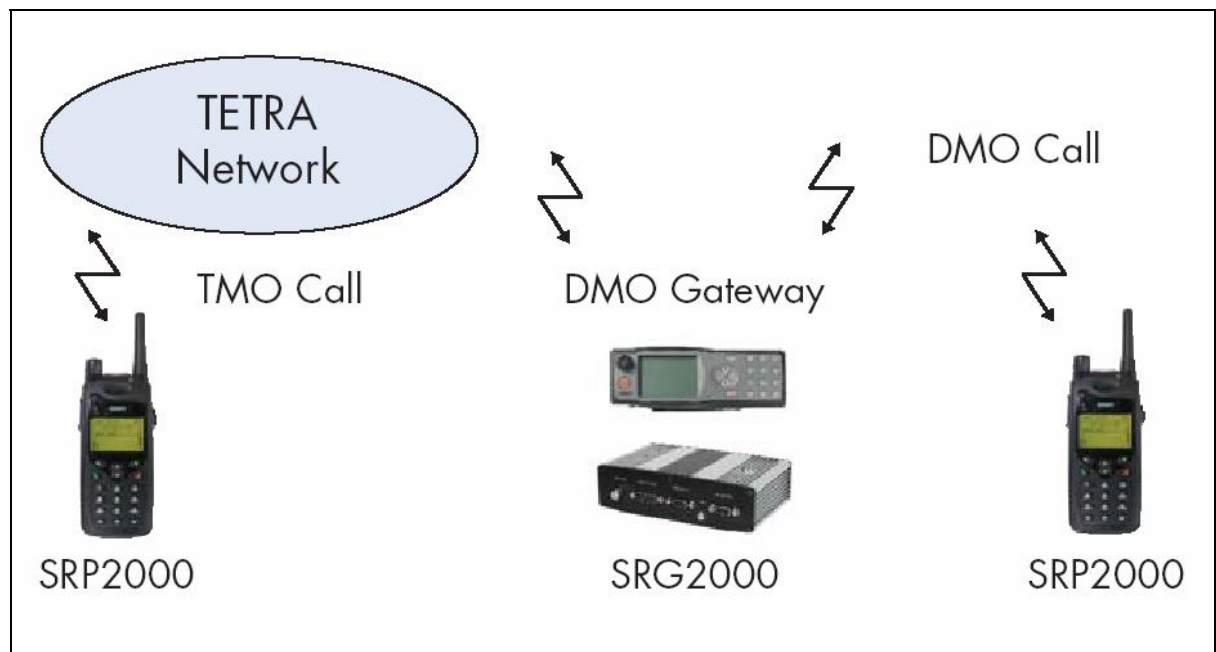
A DMO repeater is a special TETRA terminal that extends the range of direct mode communications. Typically, such a repeater is used to provide DMO coverage over a large area or across difficult terrain.
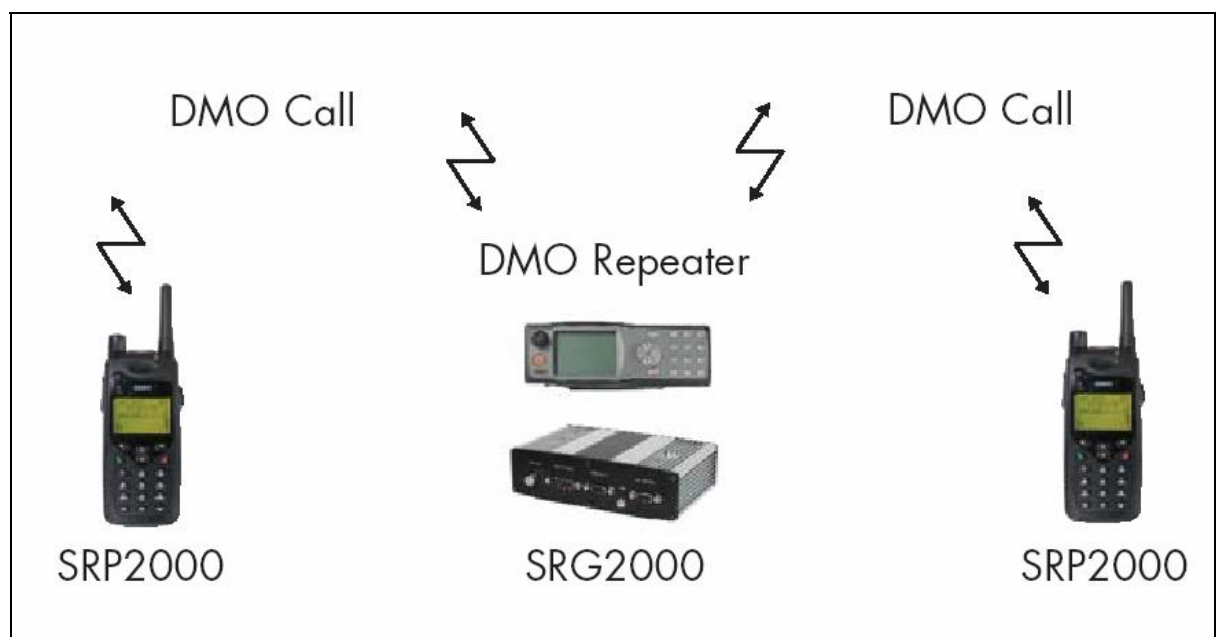
TETRA VIP Communication System   Model 5910

As mentioned in the TETRA introduction, Rohde & Schwarz manufactures a wide range of TETRA infrastructure elements. For customers, i.e. VIP protection teams and internal security, who need a secure TETRA communication system for mobile deployment, we have designed and developed the ACCESSNET ® -T Cube TETRA system. The radio communication is guaranteed according to the TETRA standard's defined functions and without any restrictions of application and under varying operating conditions in rough environment.

In the ideal case, you can reach a radius of 25 to 30 kms with a high mast. The ACCESSNET-T Cube can be equipped with up to 2 TETRA carriers, which mean 8 channels in total. One channel has to be reserved for control channel and the remaining 7 channels are available for voice and data transmission.

With an appropriate use of the frequency resources (use of the group call feature as much as possible), one transportable TETRA cell can serve easily up to 250 users.

The box's portable design requires only two people for transportation. The easiness of handling makes transportation, even over long distances, possible. The system is connected and fully operational within a short period of time.

ACCESSNET ® -T Cube consists of individual modules. Different module combinations determine what kinds of system functionalities are available. The modules are built in boxes that assure safe transportation and operation. The TETRA Cube system modules contain network elements, gateways and peripheral structured units. Further accessories for mobile deployment are also included. The modular structure enables functional installation, depending on deployment conditions.
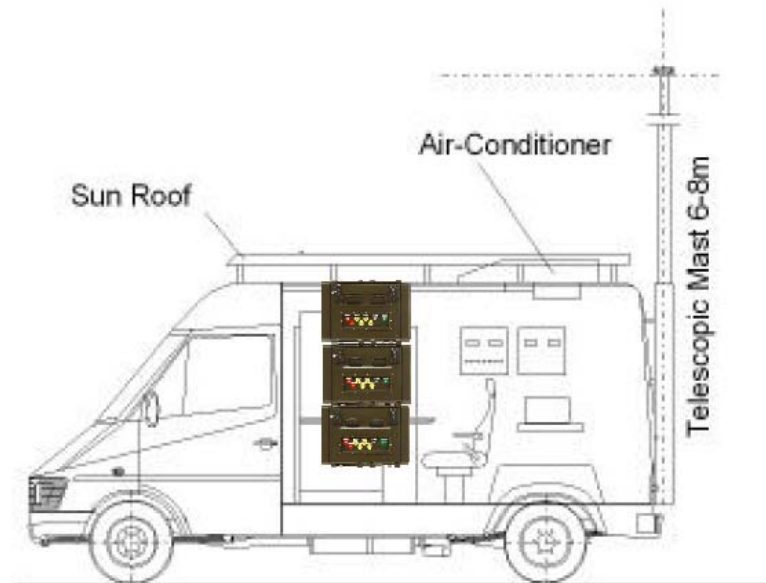

The ACCESSNET ® -T Cube is designed for outdoor operation, thus it can be put on the top of a building or deployed in field.

It can also be installed in a 4-wheel drive by using a telescopic mast.

TETRA VIP Communication System   Model 5910

Sun Roof
Air-Conditioner
Telescopic Mast 6-8m

Mast fixing device with security lock

Telescopic mast 6 m tiltable for antenna mounting and to open the rear door

Driver
Equipment Rack

Telescopic mast

Storage of the Diesel generator (optional)

Mains supply connection box

Power supply Equipment

Equipment Rack   TFT Display   Keyboard Drawer   Operator seat
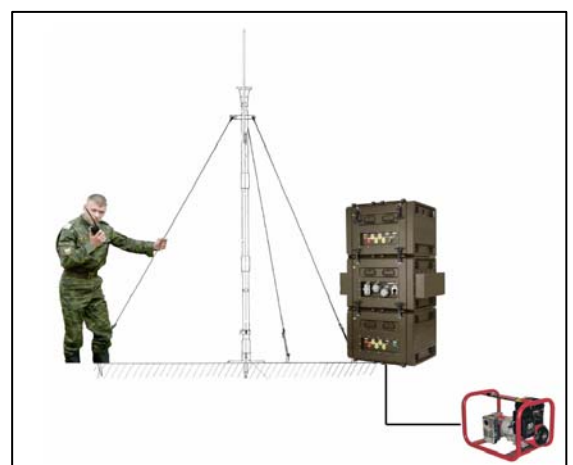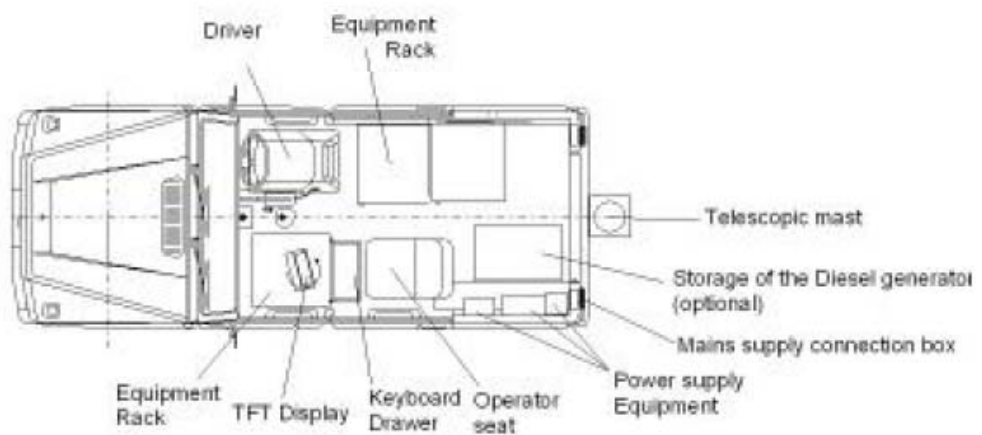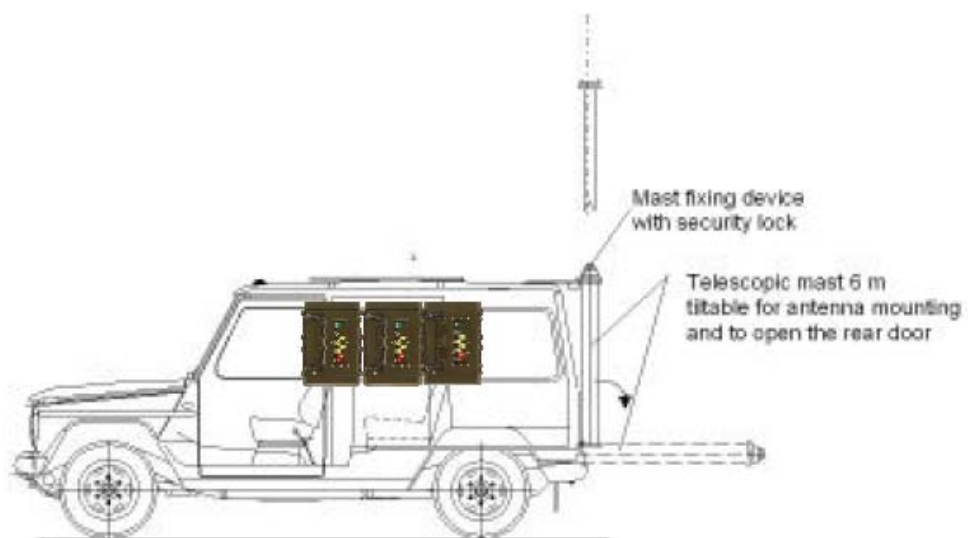
TETRA VIP Communication System   Model 5910

RECOMMENDED LIST OF EQUIPMENT FR VIP PORTABLE COMMS UHF

1. BASE STATION MODULE (BSM):

Base Station Module with integrated GPS-antenna connection (2 Carrier = 1 control channel + 7 channels for voice+data), control terminal SMT-500

2. BRANCHING EQUIPMENT HF MODULE (BEM):

Antenna filter and duplexer for maximum 2 carriers on Basis of TETRA branching equipment modules (TBE -500)

3. POWER SUPPLY MODULE (PSM)

Voltage (DC/AC) converter and voltage distributor

4. TELESCOPIC MAST (ABOUT 17M)

Will be fixed at the back side of the vehicle

5. ANTENNA EQUIPMENT MODULE (AEM)

Antenna set, 9m Ultra-light-mast for field use or in case the Cube system should be deployed On the top of a building

6. ACCESSORIES AND CABLE MODULE (ACM)

Cable, earthing connection, tools

7. NETWORK AND SUBSCRIBER MANAGEMENT SYSTEM (NMC)

8. VEHICLE

(It could be e.g. a 4-Wheel Mercedes Sprinter or Land Rover Defender 130)

9. HANDHELD TETRA AND MOBILE TERMINALS

10. QUESTIONS:

A) Are you interested in a turnkey solution?

B) How many TETRA Cube systems are needed?

C) In case more than one TETRA Cube system is requested, should the several cells be operated stand alone?

D) In case you are interested in a turnkey solution, is there any preferences regarding the vehicles? E) With regard to the mast, do you prefer a 'manual' or a 'telescopic' mast?

F) How many terminals are needed? How many hand portables and how many mobiles (Vehicle mounted)?

ISA
Intelligence Software & Analysis

Video capture

Transmitting an image

elaman
GERMAN SECURITY SOLUTIONS
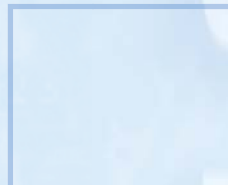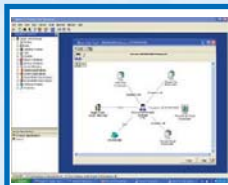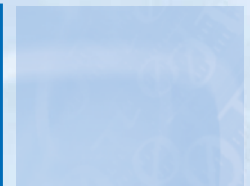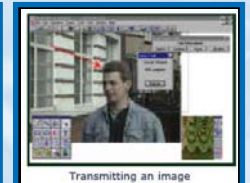
TSU INDEX

Intelligence Software & Analysis

Ref	Number	Description
1	4508	Operational Database Software
2	4509	Image Transmission System
3	4501	Analytical Notebook iBase

Operational Database Software   Model 4508

INTELLIBASE
TARGET TRANSMISSION DATABASE
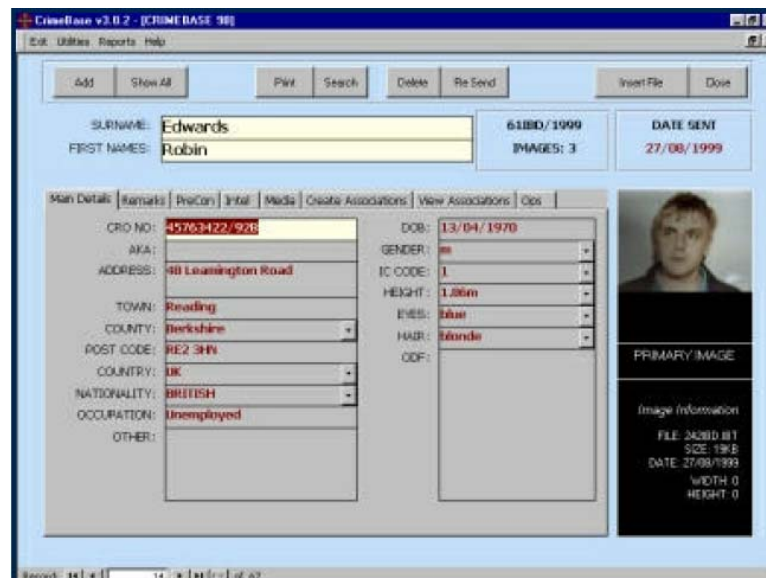
IntelliBase has been designed to help law enforcement agencies collect, store and retrieve intelligence data, while allowing rapid access to thousands of images. IntelliBase enables the user to create records about suspects with photographs or other images attached. Links can then be established between records within the database enabling easy navigation between associated targets. Once the data has been entered into one IntelliBase it can be transmitted to another using IntelliConnect, enabling law enforcement officers in different locations across the country, or on the other side of the world, to share the same data.

InteliBase is a database application that allows the storage and transfer of entire records relating to targets between users at different locations. Images or videos of targets can be imported from IntelliConnect for Windows or DOS, or from a disk drive, whether local or networked. Images can also be captured from a TWAIN device (e.g. a digital camera or a scanner) using InteliBase's own TWAIN interface. These images can then be entered into InteliBase along with related textual information, such as personal details and gathered intelligence. Targets can be associated with each other and with operations with which they are believed to have a connection.

Intelligence gathered can then be sent via IntelliConnect to another IntelliBase, so that both the originating site and the receiving site, or sites, have access to the same information. Each location where IntelliBase is sited has a unique identifying code that is attached to the pictorial and textual data. This allows data to be sent to, and received from, multiple locations, while still retaining the identity of the originating site. Furthermore, each individual record is updateable so that, for example, new images of a particular target can be sent at a later date to the original record and these images will appear at the receiving site within the original target record.

Operational Database Software   Model 4508

FEATURES

- User-friendly interface
- Send or receive data to or from any other IntelliBase; data is seamlessly incorporated into the existing IntelliBase
- Form Filter facility enables quick searching for particular records
- Full search facilities also available including viewing of resulting images
- Each IntelliBase location has a unique identifying code to identify source of information received
- Easy association of available target records
- Easy to navigate between screens
- Each record can have multiple images attached
- Quick searching available at any time
- Attach images, video, sound or documents to records
- Image manipulation tools available to brighten and increase contrast
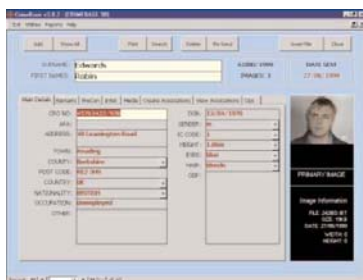
Viewing Records

Link Target to Operation

Associating Targets

Viewing Associations

Searching Targets

Importing Data Sent From another CrimeBase98

Image Transmission Software   Model 4509

INTELLICONNECT

IMAGE, VOICE AND DATA COMMUNICATION

INTELLICONNECT is a Windows based image capture, storage and transmission system, which rapidly sends high quality still images and live video feeds in seconds across standard or cellular (GSM) phone lines, ISDN Links, RF links, satellite communications and LAN or WAN networks. The system is fully interactive and allows either party to add text or to adjust the color or contrast of an image, and to zoom in and out on specific areas. An on-screen pointer allows either user to bring particular points of interest to the other's attention. INTELLICONNECT allows the communication of photographs and textual information about suspects to a wide variety of law enforcement agencies world-wide.

INTELLICONNECT is an image capture, storage and transmission system that is designed to quickly and efficiently send images and data across narrow bandwidths. Images can be captured using either an analog device, such as a video camera or CCTV, or by digital cameras or other TWAIN devices.

Alternatively, images can be opened directly from disk or screen captured from an open Windows application.

Images can then be transmitted across PSTN, GSM, ISDN and Satcoms as well as Internet, Intranet, LANs and WANs. While the image is being transmitted, the two parties can retain voice contact. After transmission, which takes only a few seconds due to the high rates of compression achieved, sent images can be annotated by either party using the Photo phone tools such as arrows, ellipses, freehand lines and text. Images are stored as thumbnails in user-named folders for easy viewing and retrieval.

Image Transmission Software

Model 4509

FEATURES

- Video feeds can also be transmitted
- Simultaneous voice and data communications
- Compatible with many file formats including INTELLICONNECT DOS (IDC) files
- Allows capture, import, export and transmission of images and files
- Easy-to-use familiar Windows menu/toolbar
- Encryption Module 'Photo phone Shield' available
- Input from: digital cameras, CCTV, camcorder, still video camera, scanner, and any other TWAIN device
- Output to any Windows compatible laser printer or direct to fax machine
- Chat box available, especially useful with data-only modems
- Images are highly compressed allowing faster transmission and using less disk space
- Phone book facility
- Can be run across Internet. (Particularly useful when making calls overseas)
- Copy images into other applications such as Word, WordPerfect, PowerPoint, Excel etc…
- 'Radio' function enables encrypted voice and data to be sent over a cellular phone connection
- Wide-range of image editing tools

Modem auto set-up

Folder view

Dialling a remote Photophone

Video capture
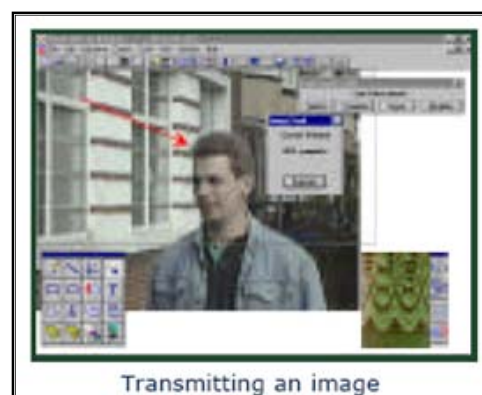
Transmitting an image

IBASE FOR ARABIC SPEAKING ORGANIZATIONS

To process and analyze large quantities of data (eg. to retain and be able to query mobile and landline billing data over longer periods of time), or to permanently store data, the i2 database component iBase should be considered. The database consists of two parts: iBase User and iBase Designer. The iBase User component is required to access and manipulate information in the database and display it in the Analytical Notebook. The iBase Designer component allows the user to design or change the way the database is set up and how it operates. Each organization needs only one of these 'Designer' components. The iBase Designer part of the course covers the design and maintenance of the database. There will need to be at least one person in each organization who has the technical ability to configure and permanently maintain the database.

The advanced querying facility in iBase allows for more effective data mining and significantly increases the analytical power of the software. There is the added advantage of providing the organization with a database to store and access their information easily.

i2's iBase 4 does not currently operate using Arabic characters. In spite of the work around solutions laid out below, it will still be necessary to assign an English speaking IT expert to be the key operator or 'super user' for the system.

Options for creating an English/Arabic iBase Database:

- Hyperlinks can be embedded into the individual database entries, which when activated open original Arabic documents, such as operational files, charts of police floor plans, Excel spreadsheets, PDFs, html documents, scanned documents, etc. (Photographs can be embedded into the database proper).
- A series of symbols attached to entities indicate to non-English speaking users that there are Arabic language documents (such as bio-data, agent reports, files, etc.), which relate to the entity. (see below)
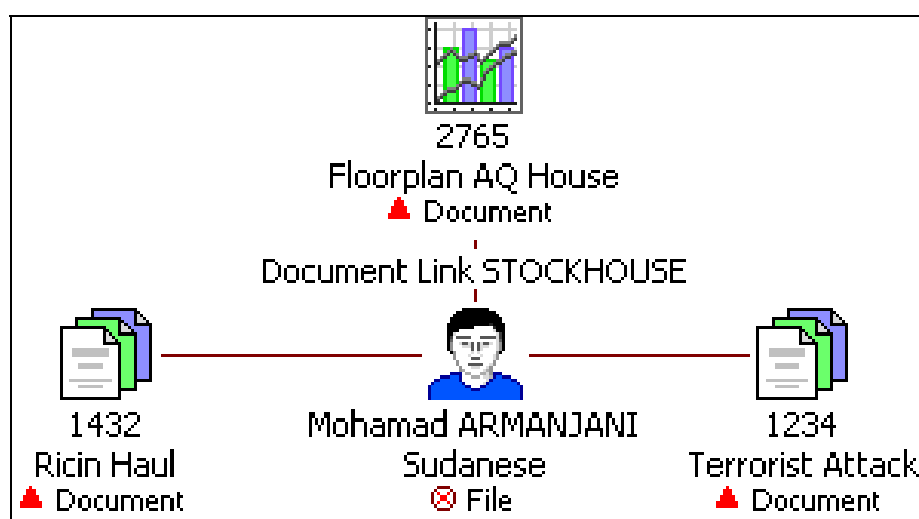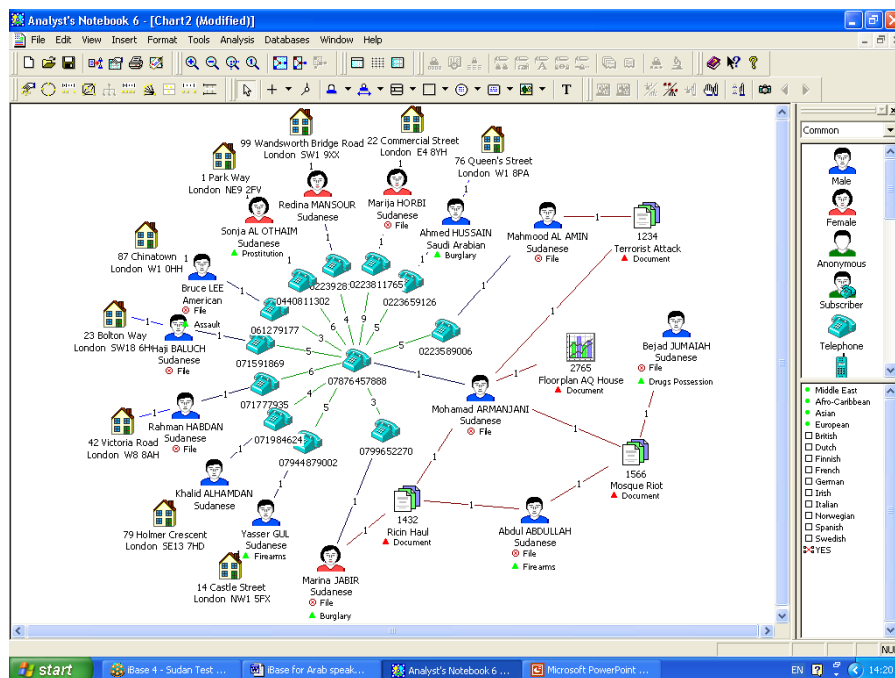
Analytical Notebook Ibase   Model 4501

IBASE SCREEN SHOTS

iBase 4 screen shot showing a 'Find Entry' screen and (below) a typical entry of a person's details. The designer of the database has included a field where a hyperlink to an Arabic file ('Associated Files') can be accessed from this screen.
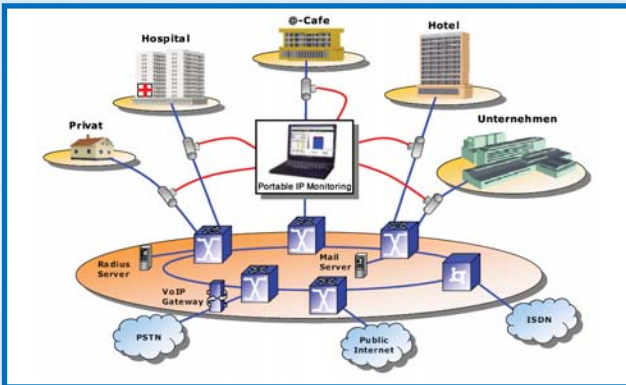

ANB can also be used as a data entry point. The analyst needs only to draw a visual interpretation of the relationships between people and other entities to be displayed, and the information will automatically be stored in iBase.

PMS

Portable Monitoring Systems
GSM/PSTN/IP/Radio FREQ

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX

Portable Monitoring Systems GSM/PSTN/IP/RF

Ref	Number	Description
1	4023 adv	Passive GSM Monitoring System
2	4001	Portable Modem Interception
3	4002	Portable Voice & Fax monitoring
4	4003	Portable Voice & Fax & Email Monitoring
5	4008	Key Ghost Keystroke Capturing Device
6	4010	Portable IP Monitoring
7	4012	Computer Keyboard Remote Monitoring System
8	4013	Tactical GSM IMSI Grabber
9	4018	Mobile Investigator/Cloner
10	4028	Road Warrior – Field version
11	4035	Computer Sniffer Activity Tool
12	GA900	Active GSM Portable Interceptor
13	GA2G	GSM Test System GA2G Lite
14	TMS 100/200	Radio Monitoring DF Portable

Passive GSM Monitoring System   Model 4023ADV

GENERAL DEFINITION OF PURPOSE

The Model 4023 - Advanced System is designed for surveillance tasks and monitoring of telephone conversations within the GSM 900/1800 networks. The system provides the option of both stationary and mobile operation.

TECHNICAL DATA

The system ensures monitoring of audio and data traffic within standard GSM 900/1800 networks:

- Without application of encryption algorithms
- Application of encryption algorithm A5/2 [real-time] (decoding time: 0.01 sec.)
- Application of encryption algorithm A5/1 [real-time] when Ki is known (A5/1 decoding optional)
- Default configuration of the system - 8 reception channels
- The system ensures registration of radio-electronic circumstances within the radio cells to be monitored (frequency and characteristics of BCCH-channels)
- Channels to be monitored are, according to task, manually selected by the user
- The system contains a database (up to 100,000 calling partners), operating in real-time, which can be accessed corresponding to the selected search criteria and parameters
- Calling partners are identified according to the IMEISV, IMSI, TMSI, ISDN number (local and international number)
- Assessment of the presence of calling partners is monitored and identification of specific parameters (TMSI) occurs automatically by means of a mobile phone with special software. The special software is contained in the scope of delivery
- Registration and storage of telephone conversations occurs on system's hard disk
- The system ensures registration and storage as audio codec - types FR, EFR, HR
- Playback of recordings may be carried out by the system itself (CoolEdit-Software)
- Identification of SMS and DTMF data
  System's coverage:
  - Down-Link - up to 10-km
  - Up-Link - up to 500-m in city
- Assessment of coverage between calling partner and base station with accuracy of up to 550m
- Delivery format: in a special PC casing and Notebook
- Operation System software: Windows XP

1

Passive GSM Monitoring System   Model 4023ADV

SCOPE OF DELIVERY

Model 4023 - ADVANCED, main components:

- PC Pentium 4-1.7 GHz or higher, 2 GB RAM, 80 GB HDD
- Circuit board with main generator and power supply module for receiver
- Circuit board with 8 duplex-channel receivers
- Circuit board with main processor ADP6201PCI for digital signal processing
- Data input module ADM214x10MX
- Antenna system with integrated amplifier
- Notebook with LAN interface and cable
- Special software for analysis and evaluation
- User-manual
- **Optional**: Mobile telephone with special function for assessment of calling partner's presence within the monitored GSM-cell (Ping-Handy)
- **Optional**: Mobile telephone with Net monitor

TECHNICAL DATA

	GSM 900	GSM 1800
Reception channels	8	
Target numbers	up to 1000	
Identification through	IMSI, TMSI, IMEI, Class mark, Telephone number, Distance	
Frequency range of Downlink (BTS_MS)	935 ... 960 MHz	1805 ... 1880 MHz
Frequency range of Uplink (MS_BTS)	890 ... 915 MHz	1710 ... 1785 MHz
Channel spacing	200 kHz	
Number of channel	124	375
Frequency deviation	45 MHz	95 MHz
Frequency stability	0.03 ppm	
Receiver type	wide range receiver	
Receiver sensitivity	-105 dbm	
Antenna impedance	50	
Time of frequency change in Hopping mode	< 500 µs	
Dynamics range	> 75 dB	
Volume range	25 dB	
Demodulator	GMSK, asynchrony	
Decoder	for Protocol A5-2	
Speech codex	RPE/LTP: FR, EFR	
Channel structure	TDMA/FDMA	
System software	Windows XP	
Audio format	standard Wave-format	
Power supply	220 VAC, 50 Hz; 110 VAC, 60 Hz or external battery 12 V DC	
Operating temperature range	+ 5 °C ... 40 °C	

Portable Modem Interception   Model 4001

The Model 4001 is a true portable modem intercept solution to be used in operations where direct access to the target lines is required.

This unit can be deployed in the field close to the target or installed on a permanent basis, for example, in a monitoring center. Due to the unique design of the physical line interface the system is completely undetectable by the target and is transparent to all parties on the line. making it ideal for all covert operations.

SYSTEM SUMMARY

The Model 4001 system is delivered as a complete turnkey solution, including all cables and accessories. It consists of a high quality and specially designed PSTN line interface and a lunchbox computer for recording and decoding. It is very easy to operate and it only needs a few hours of training to use it at its fullest potential.

The system intercepts all dialup modem traffic on a two wire analog PSTN line, and has no influence on normal voice or fax traffic on the intercepted target line.

V.90 and V.92 is supported but will be trained down to 33.600 from the interface box towards the target.

The target line is connected in sequence to the line interface box that in turn connects to the lunchbox computer; power it up and you are ready to go.

You can listen to any Voice over IP traffic. The audio player contains an automatic gain control filter to enhance the audio.

With these advanced tools you are able to follow whatever the target is doing on the internet and easily pinpoint any illegal activity.

Information can be copied to the built-in CD or DVD writer for presentation in court or other purposes.

The intercepted traffic is decoded into readable information for access to a broad range of tools for dealing with the intercepted data.

- Web pages
- E-mails
- Attachments
- Chat Sessions

- Web Mail
- Voice Over IP
- File Transfers
- Messenger Services

Portable Modem Interception   Model 4001

Applications	Features
• Field deployment and other temporary set-up scenarios • Permanent set-up in monitoring centers and offices • Operations where direct access to target lines are required • Internal investigations • Covert operations	• Easy set-up • Easy to operate • Automatic modem detection • Supports V.90 and V.92 • Web page decoder and viewer • E-mail decoder and viewer • Password acquisition for non-encrypted protocols

TECHNICAL SPECIFICATIONS

Internal Modems	
Protocols	V.21 Bell, V.22 Bell, V.22bis, V.23, V.32, V.32bis, V.34 (33.6 / 28.8), K56flex (56000), V.90 (56000)
Internet protocols	HTTP, POP3, SMTP, IMAP, NNTP, IRC, TELNET, FTP, VoIP H.323, ICQ, AOL IM, Yahoo IM, MSN Messenger, AOL 6, 7 & 8, Kazaa
PSTN Line Interface	
Connector	Modular plug (RJ11) in parallel with Banana Jack 4 mm with cross hole
Power Input	
Connector	IEC Plug, 115 / 230 V Selections
Power Supply	
AC input	250 W / 100-120 V / 50-420 Hz,
	200-250 V / 50-60 Hz auto select
	EN60950 EMI EN55022 Class B
Dimensions (HxWxB)	41x31x25 cm / 16.1x12.2x9.8 inches
Weight	9.75 kg / 21.5 lbs.

ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating temp.	0° C to +50° C / 32 F to 122 F
Storage temp. Range	-40° C to +70° C / -40 F to 158 F
Humidity	
Range	Max. 90%

OPTIONS

Hard Carrying Case, Dial-in Access

Model 4001 is also available with a stationary PC

2

Portable Voice & Fax Monitoring   Model 4002

The Model 4002 is a true portable voice and fax monitoring solution containing an extended set of features for carrying out monitoring operations on standard analog PSTN lines.

Use it as a plain Dialed Number Recorder or take advantage of the onboard facilities for doing Live Monitoring Operations with real-time access to your target's line and full control of recordings.

In Live Monitored mode the operator is in full control of the recording and has access to functions for doing legal recordings like:

- Minimize/Maximize
- Spot Monitoring
- Record On/Off
- Synopsis Editor
- Transcript Editor

The line mode can be changed dynamically throughout an operation. Recordings are triggered by:

- VOX
- On/off hook voltage
- Manually

Voice recordings are stored in GSM 6.10 format and fax recordings are stored as TIFF images in a SQL database.

APPLICATIONS

- Field deployment and other temporary set-up monitoring scenarios
- Temporary/permanent set-up in small scale listening posts
- Operations where direct access to target line is required
- Simultaneous probe and line monitoring
- Internal investigations
- Covert operations

FEATURES

- V.34 High speed fax decoding
- Voice and Fax monitoring
- 4 or 8 lines high impedant PSTN interface
- Real-time audio and signaling
- Fax Decoding – all known standards
- Remote access and administration

Portable Voice & Fax Monitoring   Model 4002

TECHNICAL SPECIFICATIONS

System Platform	Portable Lunchbox with built-in screen and keyboard
	Microsoft 2000/XP Operating System
	Microsoft SQL Server 2000 Database
Line Capacity	4 or 8 analog lines
Analog Line Interfaces	High Impedance interface according to ETS 300 001
	Voltage On/Off hook
	VOX
	DTMF according to ITU-T Q.24 ANNEX A
	Dial Pulses according to ETS 300 001
	Caller ID according to ETS 300 659-1 and BEL-202
Fax Decoding	
Protocols	All Group 3 and Group 3 Enhanced
Non Standard Transmissions	Non standard library included
Power Input	
Connector	IEC Plug, 210 / 230 V Selections
Power Supply	
AC input	250 W / 100-120 V / 50-420 Hz, 200-250 V / 50-60 Hz auto select
Dimensions (HxWxB)	41x31x25 cm / 16.1x12.2x9.8 inches
Weight	9.75 kg / 21.5 lbs.
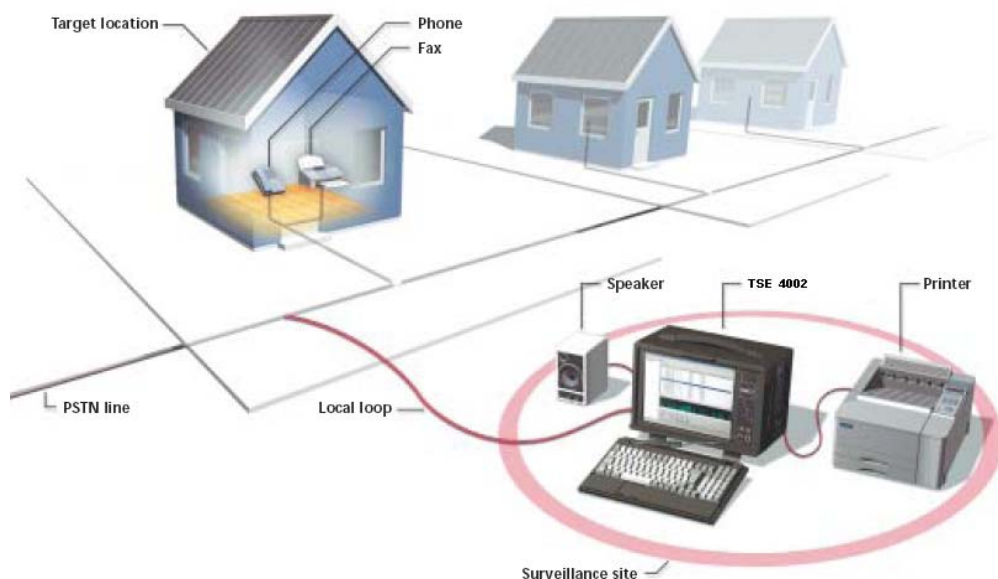
Options:

The Model 4002 comes with email monitoring option (Model 4003)

Keyghost Keystroke Capturing Device   Model 4008

The KeyGhost is powered by its own hi-tech internal chip and can store up to 2,000,000 keystrokes in non-volatile flash memory, which is a permanent memory that does not require power to retain storage.

This enables the KeyGhost to operate completely independent of the hardware and operating system that is running on the PC. These stored keystrokes are protected with state-of-the-art, 128-bit encryption.

When the KeyGhost fills up with keystrokes, the earlier keystrokes are dropped. Therefore, the user will always have a record of the latest keystrokes on the log.

Figure 1: External KeyGhost Device

The KeyGhost plugs into the keyboard cable, or alternatively, it can be hardwired inside the keyboard. It records all keystrokes from the moment the computer is turned on to the moment it is turned off. It starts operating immediately and silently, recording all keystrokes.

ADVANTAGES OF KEYGHOST:

- It picks up every keystroke – even those typed in the critical period between computer switch on and the operating system being loaded
- It cannot be removed easily if it is hardwired inside the keyboard or mounted on the motherboard
- It has a capacity of up to 2,000,000 keystrokes
- Impossible to disable from a remote location or using software alone
- It is impossible for a computer to detect it
- It is immune to magnetic fields, has no moving parts and is shock resistant
- Its access time is extremely fast
- The chance of failure is very low compared to conventional media like hard drives or CDROM discs, because it uses flash memory to store data and has no moving parts
- It is very user-friendly; users do not need to be computer experts to install it, just plug in the device to the keyboard cable
- The log cannot be modified in the KeyGhost. The log is an authentic record of what was typed, and therefore, it can be used


Figure 2. Internal KeyGhost Device

Portable IP Monitoring

Model 4010

The ever increasing mobility of communications in our society with laptops, mobile phones, WLAN and PDAs also has some drawbacks. The mobile criminal offender takes advantage of gaps in the criminal prosecution, like monitoring of WLAN-spots in internet-cafes, hotel rooms and at airports. With Model 4010 we want to help close these gaps.
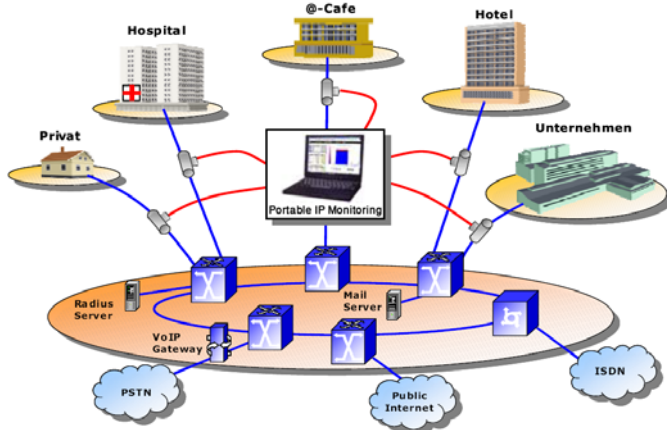
Model 4010 is a portable system for recording, reconstructing and evaluating IP-data and their applications, e.g. email, web-sessions, chat.

Model 4010 supports surveillance and S.W.A.T. teams to receive relevant information immediately on location and guarantees access.

Model 4010 read the data, filters it according to predefined filter criteria (depending on the specific usage and the legal regulations), adds a timestamp to the data and saves it in raw format in a database. Using the Analyzer User Interface the data can be reconstructed und evaluated – online or offline, residential or on location. For archiving purposes the saved raw data can be exported automatically or manually via FTP to already existing archiving media. Re-importing of archived raw data is also possible.

Model 4010 consist of three functional parts. The recording of the raw data, picked up from different kinds of communication lines, the database management for internal organizational purposes of this data and the reconstruction function to analyze and evaluate the recorded IP-based data.

Intelligence for a better world

The Internet has produced a veritable flood of communication options, which are also being used by criminal offenders.

We are an innovative provider of technology and services for monitoring, recording and reconstructing telecommunication data for carriers and law enforcement agencies. Our service concept enables carriers and Internet Service Providers (ISPs) to meet their statutory obligations in the most cost-effective way. With our Monitoring Center and its product line, state-of-the-art solutions are available for law enforcement agencies to reconstruct, analyze and archive all kinds of communication data (voice, facsimile, modem and IP-data). Elaman solutions are based strictly on the statutory specifications of the country concerned. In Germany, for instance, these are embodied in the Telecommunications Monitoring Ordinance.
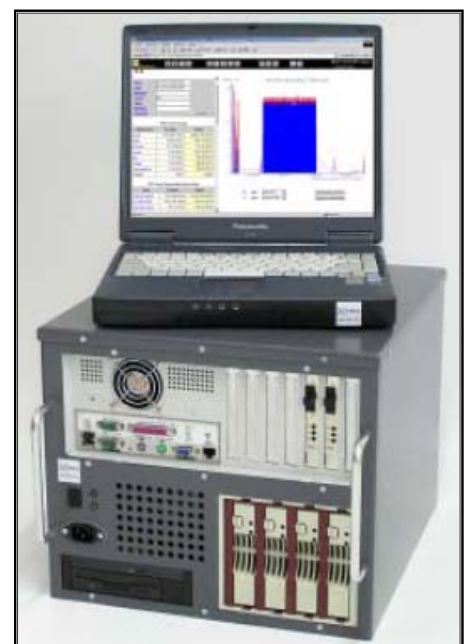
Computer Keyboard Remote Monitoring System   Model 4012

INTRODUCTION

The Model 4012 system monitors activity on the keyboard of a target computer, stores the keystroke activity and transmits collected data to a remote location. The system consists of the Model 4012 T micro transmitter, which is installed in the target keyboard and detects the code of each keystroke. The Model 4012 T then stores the codes and periodically transmits the codes in short data bursts to the Model 4012 R receiver. Model 4012 R supports four basic operational strategies:
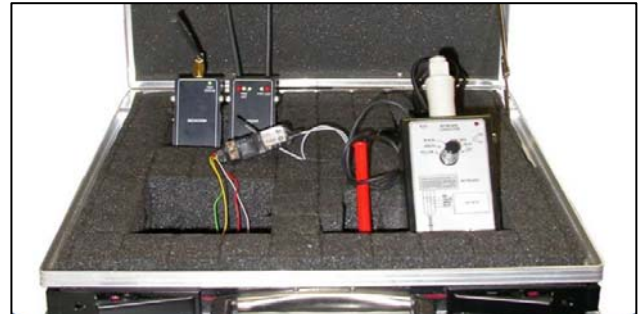
- Stores up to 2.5 million key codes in the Model 4012 R receiver memory. The Model 4012 R can then be removed or accessed to retrieve the key codes
- Displays the received key codes directly on a PC through a serial connection
- Re-launches the data using the Model 4012 GSM module for real time transmission or scheduled download
- Downloads the key codes with the Model 4012 UHF link and the Model 4012 DL. An operator within the UHF link radio range of the target can quickly download the key codes using the hand-held Model 4012 DL. The retrieved data is stored in the Model 4012 DL for subsequent display and analysis

The system operation and functional parameters can be controlled and viewed using the Model 4012 SW software, or through SMS messages. The Model 4012 SW software filters and elaborates visual analysis key code data without any modification of the original text.

FEATURES

Special features built into the Model 4012 DL simplify usage by:

- quickly downloading the key codes
- assisting in the identification of the correct connection points for the Model 4012 T
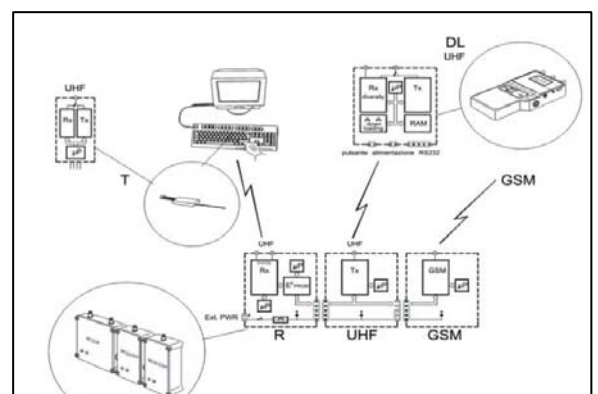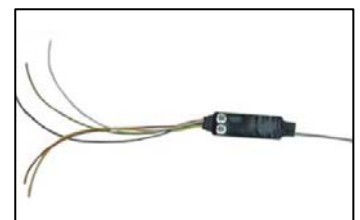
TECHNICAL FEATURES

MODEL 4012 T

Micro transmitter - Device to be installed into the target keyboard of a desktop PC

Range	300÷306 MHz at PLL
Power	0 ÷ +20 dBm (in 10 steps)
Max. Consumption	130 mA (+20 dBm) – 250 mA (+26 dBm)
Transmission	FSK a 10 Kbit/sec
	(Manchester with hamming code)
Burst	when buffer is full or periodically every minute

1

Computer Keyboard Remote Monitoring System   Model 4012

Live signal transmission every minute
Setting of 10 channels and of power
Carrier transmission for 1 minute at switching on, range check
High active digital alarm input (ex. keyboard opening sensors)
Dimensions (mm)   16 x 48 x 4

MODEL 4012 R

Receiver - Diversity receiver system, with data memory and management software

Range	300÷306 MHz at PLL
Power	supply external 12 V dc
Data receiving	FSK at 10 Kbit/sec
	(Manchester with Hamming code and Diversity)
Data memory	256 Mbit on FLASH (2.5 millions of digits)

Internal real time clock
Bar LED signaling the received signal intensity
Bar LED switching off   through SMS messages, if Model 4012 R is connected to Model 4012 GSM, or through PC
Key word alarm   alphanumeric sequence of 20 digits
Milled aluminum box
Dimensions (mm)   40 x 77 x 22

MODEL 4012 CK

Keyboard connection tester - Tester for use during installation to verify correct positioning of the cables in the target keyboard

Power supply   through 9 V PP9 alkaline batteries
Dimensions (mm)   101 x 62 x 30

MODEL 4012 GSM

GSM link - Module to re-launch data from Model 4012 R through the GSM network

Transmission on the GSM data channel
Remote control of Model 4012 R through cellular
Power supply   external 12 V dc taken by Model 4012 R
LED bar to indicate   GSM network Power supply level
Remotely controlled through SMS messages
Automatic sending of status and alarm SMS
Dimensions (mm)   40 x 77 x 22

MODEL 4012 UHF

UHF link - Module to re-launch data from Model 4012 R through UHF radio transmission with Model 4012 DL

Range   300÷400 MHz at PLL
Power supply   external 12 V dc taken by Model 4012 R
Out peak power   2 W out
Transmission   FSK at 40 Kbit/sec
Milled aluminum box

Computer Keyboard Remote Monitoring System   Model 4012

Dimensions (mm)   40 x 77 x 22

MODEL 4012 DL

Data downloader - Auxiliary module for direct down-link from Model 4012 UHF, testing and installation

LOGIC SECTION

Internal memory   32 MB
LCD graphic display   16 x 4
Menu with scroll reading
Functions   data downloading
                       Setting of new configuration
                       Download of internal configuration
Automatic data downloading procedure with GO command

RADIO SECTION

Down-link receiver
(8 preset channels)   300÷400 MHz
Systems with Diversity e retry
Down-link speed   40 Kbit/sec
Sensitivity   -107 dBm
Up-link transmitter (
8 preset channels)   300÷400 MHz
Output power   from +10 to +33 dBm in 9 steps
Power transmission adjustment into consideration of the receiving quality and internal battery status
Up-link speed   10 Kbit/sec

IN/OUT CONNECTORS

2 SMA antennas for Diversity Receiver
1 SMA antenna for the transmitter
1 USB output to program and to download data on the PC
1 jack (for audio-listening during down-link) with remote controlled GO button (automatic start of downloading procedure)
1 jack for the tester
1 miniDIN to connect PS2 PC keyboard connector (where to fix Model 4012T)
1 connector for external power supply   12 V
2 alkaline PP9 - 9 V inside batteries

Tactical GSM IMSI Grabber   Model 4013

OVERVIEW

The Model 4013 Unit is GSM Cell Simulation/Emulation equipment consisting of two dual band receivers and a dual band transmitter. The receivers are able to receive and decode clear data, transmitted by GSM cell sites and GSM mobiles. The transmitter can emulate the signals of a GSM cell site.

The equipment can be used to:

- Determine IMSI information of target mobiles
- Force position information from target mobiles
- Deny Network access for specific mobiles
- Used with Direction Finding equipment to locate specific mobiles

The unit is compact and self-contained.

The equipment offers the following functions:

- Dual band Receiver decoding Cell transmissions
- Dual band Receiver decoding Mobile transmissions
- Dual band Transmitter able to emulate local Network Cell
- In-built single board computer with hard drive
- WiFi connection to PDA terminal
- In-built battery, 12V DC operation
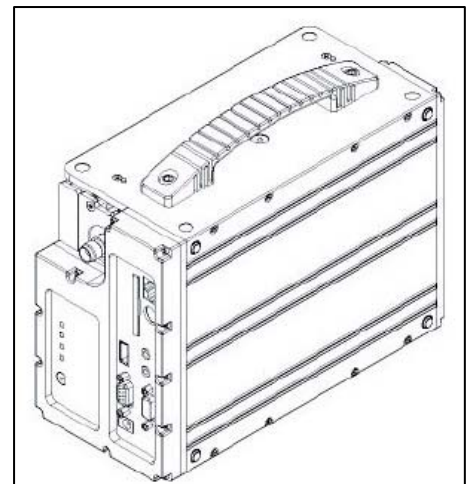
PRODUCT DESCRIPTION

The Unit has the ability to scan the local GSM network, and make a decision as to the best Cell to emulate. When transmitting the Model 4013 emulates the local cell, and elicits the IMSI and IMIE information from the target's mobile. The Unit also has the ability to send specific messages to target's mobile to gain a response, which could be used for location or direction finding purposes.

All of the Receiver functions of the GSM Network monitoring the Model 4013 are available for use in the Model 4013 application.

Tactical GSM IMSI Grabber   Model 4013

TECHNICAL SPECIFICATIONS

Interface:	WiFi, or direct connection. LAN 10/100 baseT
	CF Slot, USB, Audio sockets: Stereo out and Stereo in
	PS/2 Keyboard/Mouse 6 pin mini Din connector (combined)
	VGA connector
	RX antenna via TNC connector
	TX antenna via SMA connector
Protocol:	GSM
European model (900/1800MHz)	
Input frequency range:	
RX A 925-960MHz & 1805 -1880MHz, RX B 880 - 915 MHz & 1710 – 1785MHz	
Transmit frequency range:	
925-960MHz & 1805 -1880MHz	
American model (850/1900MHz)	
Input frequency range:	
RX A 869-894MHz & 1930 -1990MHz, RX B 824 - 849 MHz & 1850 – 1910MHz	
Transmit frequency range:	
869-894MHz & 1930 -1990MHz	
Power:	Internal +12v sealed lead acid battery
	External 12vDC at 6A max
Size:	167mm (6.6") h, 106mm (4.2") w, 235mm (9.25") d
Weight:	5 kgs. (11 lbs.) Approx

DIMENSIONS
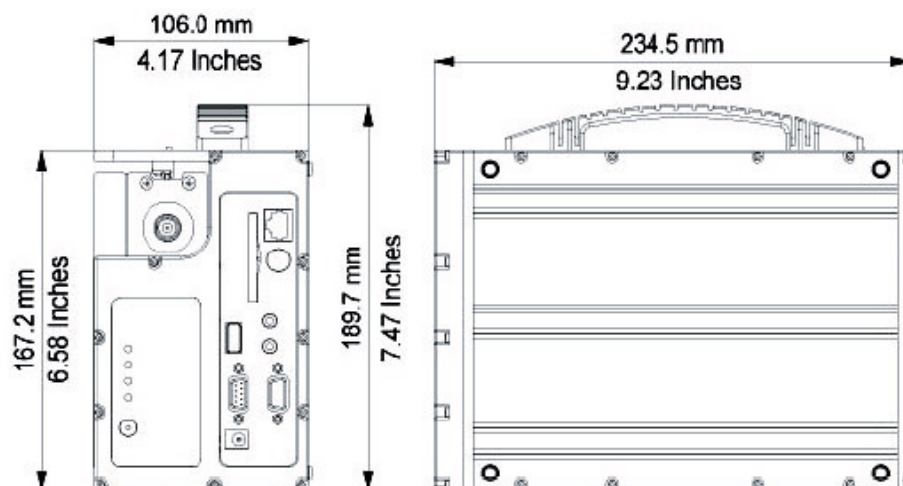
Mobile Investigator/Cloner　　　　　　　　Model 4018

A fast, secure and easy to use forensic system for mobile phone examination

With the Model 4018 Mobile Investigator System you can download data from the SIM and the handset in a mobile phone quickly and securely. A copy of all data is downloaded in only a few minutes and can be analyzed or used as evidence.

The Mobile Investigator software guarantees that the data in the mobile phone cannot be changed or deleted.

Examples of data that Mobile investigator can download:

- Phone books – names, numbers, e-mail etc.
- Text messages – sent, received, unsent and archived
- Calls – dialed, missed and received calls
- Pictures – stored pictures and pictures taken
- Calendar information
- Tasks
- Audio files
- IMEI, IMSI

The software automatically recognizes which mobile phone is connected to the communication unit. No special setup is required to start reading the mobile phone.

Mobile Investigator has been developed in consultation with Swedish Customs, the Swedish Police and the Swedish National Laboratory of Forensic Science with feedback from the UK Police.

COMMUNICATION UNIT
The Mobile investigator communication unit can communicate with the mobile phone via IR, Bluetooth or cable. The unit connects to a PC via a USB. The communication unit is built to be flexible, robust and portable, to suit both fieldwork and office work.

USB
Connection to a USB cable makes it easy to connect all kinds of mobile phones. Mobile Investigator is delivered with a USB interface. You can use either the mobile phone manufacturer's cables or our cables.

BLUETOOTH
Bluetooth is a standard feature of many newer phone models.

Mobile Investigator is delivered with Bluetooth interface.

IR
Infrared is still very common as a feature in mobile phones.

Mobile Investigator is delivered with IR interface.

Mobile Investigator/Cloner   Model 4018

HARDWARE KEY

Mobile Investigator Software can be installed in an optional number of computers. To carry out an examination of a mobile phone just connect the communication unit using the USB key that comes with the system.

The key also counts the examinations.

CHARGING

A smart universal charger is included in the Mobile Investigator System. You can easily charge the mobile phone before doing an examination.

COMPLETE REPORT

Mobile Investigator creates a report of all downloaded data. The report is also ready for administrative data as case reference, operator, exhibit ID and other information, useful to the investigation. Your own logotype, address and other contact details can easily be entered into the report. The time and date of the examination are generated automatically.

CALLS AND TEXT MESSAGES

A clear presentation of all incoming, outgoing and missed calls that the phone has the capacity to store is listed. Any name stored with a telephone number is also included. Text messages read, sent, unsent and archived are also listed. All the data is specified with its storage location in the phone – the SIM or in the Device.

CONTACT DATA

All data about the contacts in the phone are listed as name, phone number, and mobile number, e-mail etc. All the data is specified with its storage location in the phone – the SIM or in the Device.

PICTURES

All the pictures that are stored in the phone are listed in the report. The built-in preview function enlarges the picture for a first look.

AUDIO

All audio files that are stored in the phone are listed in the report. The audio files can be played directly from Mobile Investigator.

CONTINUOUSLY DEVELOPING

Mobile Investigator is continually being developed apace with new features in phones and new phone models on the market.

Road Warrior – Field Version   Model 4028

ROAD WARRIOR

FIELD VERSION IS IDEALLY SUITED FOR MOBILE UNITS IN DEMANDING CONDITIONS

In response to demand from our customers worldwide, we have developed a shock resistant, weatherproof all-in-one field version of our Model 4018 mobile phone forensics system – widely acknowledged as the industry standard. The new field version is available immediately.

The 15 kilogram (33 lbs) field version is designed for mobile units of military intelligence, law enforcement and international organizations, such as United Nations peacekeeping forces. These organizations often require portable, self-sufficient forensics kits that are flexible, quick to use and easy to link to headquarters or remote computers.

The all-in-one system features a built-in computer – with the latest version of Model 4018 installed and configured – cables, SIM card reader, infrared and Bluetooth communications, as well as a chargeable 6–220 voltage battery that lasts 3–4 hours.

SHOCK RESISTANT SUITCASE MEETS HIGHEST STANDARDS

Built into an Army-green, high performance resin suitcase that meets the highest shock resistant standards (mil-801), the field version contains everything – hardware and software – required to perform a complete and rapid analysis for a majority of all mobile phones.

"Military adapted" for the most demanding situations in the field, the field version is also equipped with a shockproof hard disk, which can be replaced with a 16 Mb flash disk – a less mechanically complicated device that is even more resistant to shocks.

All Model 4028 software and hardware, including all the cables for the different phone manufacturers, have been manufactured by us, ensuring all parts are fully integrated and validated. Customers enjoy the security of working with a solution in which all the elements work together effectively, significantly minimizing problems and support issues.

Completes our portfolio of forensics products

The field version completes our portfolio of products for mobile phone forensics: the in-office "basic kit" that includes the communications unit, cables, software and SIM card reader (laptop not included); the "mobile version" for office and field that includes an aluminum suitcase, the communications unit, cables, software and SIM card (laptop is an option); and the field version.

The highly robust suitcase, manufactured by Storm Case, feature press and pull latches, attached Vortex ® valve that automatically adjusts air pressure without letting in air, unbreakable molded-in hasps, unique hinges and double-layered, soft-grip, solid-core carrying handles.

The field version can be ordered with a keyboard in the local language required.

Our product is today recognized as the industry standard in phone forensics and is used by law enforcement and other organizations around the world.

Road Warrior – Field Version   Model 4028

FEATURES

The Model 4028 field version is a portable, self-sufficient mobile forensics kit that is flexible, quick to use and easy to link to headquarters or remote computer.

- Outer measurements 62.5 (length) x 50 (width) x 22 (height) mm
- IP66 when closed
- 12" TFT display: 1024 x768 pixels
- 512 MB RAM, max 1 GB
- Processor: Celeron M 800 MHz
- Data card with Intel 852GM chip, 1 x GBE Ethernet
- 1 x 40 GB Automotive hardware disc SATA
- Battery life: 3–5 h
- 3 USB 2.0 placed on front panel
- USB, IR and Bluetooth for communication with all phones; ability to switch on/off Bluetooth manually
- Speaker
- Line out
- Line in
- Key-board (US/UK/SV/TY/FR)
- Optional languages for key board upon request
- DC in 9–36 V with military 999 connectors
- DC/DC cable military 999 connectors in each end. Length approx. 1.8 m
- Capacity for approx. 45 phone cables, DC/DC cable and other accessories in the lid. The phone cables are provided by us
- Windows XP professional Service Pack 2, in English

The Model 4028 field version is built into a military green, high-performance resin suitcase that is waterproof and shock resistant

Computer Sniffer Activity Tools   Model 4035

The Model 4035 computer sniffer is a highly effective software tool that can monitor activity on the computer in which it is installed and send that information to a collection point. The Model 4035 was created as a software micro-spy with key logging, mouse logging, screenshots, photo logging and voice logging functions. To maintain secrecy, the Model 4035 remains passive in the system; in other words it never takes the initiative, but simply reacts to other events or situations to hide itself behind something that the user already expects. Even during communication it never attempts to make a connection, but continuously monitors the state of the connection to intercept the moment when the connection is available.
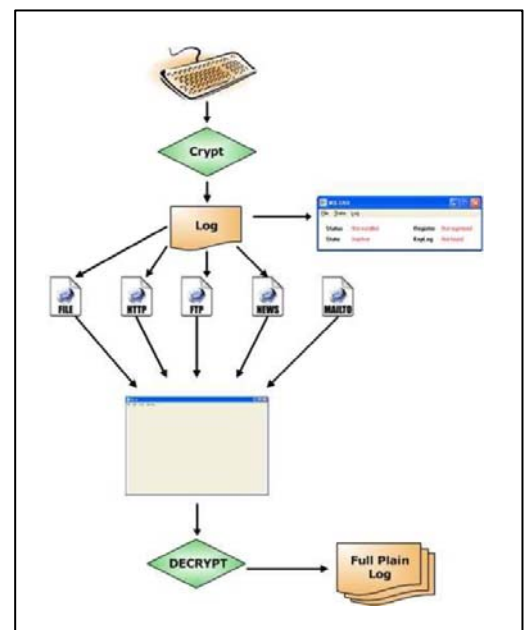
COLLECTED INFORMATION

The Model 4035 deals with different types of information, mainly on the monitored PC. In particular:

- It records any session data, i.e. user name, timestamp, computer name, etc
- It captures any activity on the keyboard and also provides an automatic transposition for special keys or other phenomena connected with keyboard layout
- When first installed, it refreshes itself remotely and silently, without any further external action on-site
- It can produce a video-screenshot and send it over the net to be reproduced as a simple jpeg. Screenshots are taken silently, either at specific time intervals or during particular events
- If it detects an installed webcam, it can use it to take user's photo
- Audio capturing from the PC microphone is useful to intercept VoIp (i.e. Skype)
- All the info (keyboard activity log, screenshot, photos, etc.) is sent in an encrypted manner to a specific target address using any standard protocol

HOW IT WORKS

The software is composed of a silent transmitter and an admin tool. The system works by installing the transmitter on the target PC and using the admin tool at the listening site. The transmitter sends the captured information through a pre-designated mail server, either via email or other protocols, based on various opportunities for installation and configuration. The information from the transmitter is sent in encrypted format.

TARGET OPERATING SYSTEMS

- Windows 98, ME, NT4, 2000, XP, 2003
- Unix, Linux, BSD (keylogger only)Related Software tools

Active GSM Portable Interceptor   GA 900

INTRODUCTION

The GA900 was developed for services without access to the GSM-switches. Interception refers to GSM900 and GSM1800. The GSM Test System GA900 is a monitoring system featuring the following functions:

- Scan Mode: Identification of active mobiles within the detection range of GA900
- Search Mode: Search for dedicated mobiles
- Jam Mode: Blocking of mobiles
- Report Mode: Evaluation of the database by data filters
- Optional directional finding of the target.

The following identifications are intercepted by GA900 even when the mobile is in the idle mode:

- Determination of the International Mobile Subscriber Identity (IMSI)
- Determination of the International Mobile Equipment Identity (IMEI)
- Determination of the telephone number of the called party
- Call to/from mobile for verification

MODULES OF GA900

The GSM Test System GA900 consists of the following modules (fig. 1):

- Commercial GSM Tx/Rx antenna
- Rx/Tx- (receive/transmit-) module
- Signaling unit
- Cell monitor
- Notebook PC (controller)
- Power supply
- Cable set
- Optional installation kit for cars
- Optional mobile portable case

OPERATION

The control computer, i.e. notebook, with the operator display (MMI) is based on standard-PC components. A modern state-of-the-art IBM-compatible PC with the operating system Windows 2000 is used. All recorded data is stored in files on the hard disk. An object oriented data base management system is integrated to make the data management more comfortable.

In the display of the Scan-Mode all the currently monitored subscribers are listed with their IMSI and IMEI. Additional data about the owner of the SIM-card, if edited by the operator of GA900, can be displayed by real-time operation of the database.

Furthermore, time and location of the first interception can be displayed.

With the help of the database, additional detailed information about the subscriber and his identity can be displayed. It is possible, for example, to request time and location of former interceptions from the database.

Active GSM Portable Interceptor   GA 900
FUNCTIONALITY

The determination of the IMSI and IMEI via the air interface is possible only by a method, which simulates a base station inside a GSM network.

This base station (GA900) transmits a beacon frequency with modified parameters. All mobiles in the vicinity of the simulated base station will now sequentially log-in on GA900 and it is possible to request IMSI and IMEI. This procedure is like a normal location update from one cell to another and therefore not noticeable to the subscriber.

IMSI and IMEI are stored as a list in a data file. If the Access Class was specified, it is possible to store the AC with IMSI and IMEI to speed up the following search processes.

For the duration the MS is logged to GA900, the MS is separated from the normal network. Calls originated by the mobile are now received by GA900 and the respective telephone number of the party called is displayed. However, the call will not be transferred to the normal network. These calls are responded by the Test System either by the operator of GA900 or by tones indicating that the subscriber is engaged or out of operation. Especially with the test extension the call can be established and the duplex voice channel can be intercepted. Mobile terminated calls cannot be intercepted.

After registration of IMSI/IMEI non-relevant MS will be released to the GSM network. These MS will be separated for a short time from the net.

Installed Vehicle Version


Portable Version

GSM Test System GA2G Lite   GA2G

Leveraging the success of GA900 to next generation speed and miniature hardware R&S is extending the mobile radio monitoring portfolio of its renowned GSM Test Systems GA900 and GA900M with a new family member -- the GA2G. This new GSM monitoring tool is a very small and lightweight test system for the detection of subscriber presence and determining their identities.

Providing two active virtual BTS-components, this highly portable multi band test system, which is the size of standard cabin luggage, allows special operations in more than one network Multi-channel at a time.

The usage of up to eight time slots per transceiver, which increases the acquisition speed to the maximum, together with Modern user interface -- the ideal form factor of the fully remote controlled GA2G -- a new field of close interception missions, is possible.
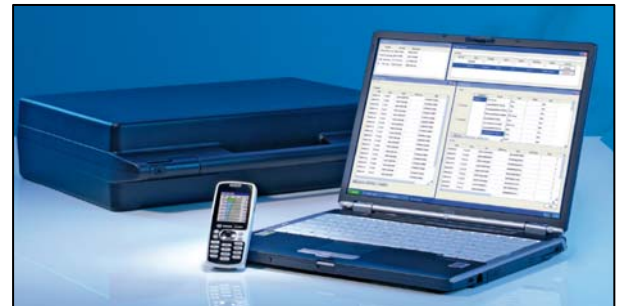
Modern software architecture GA2G excellently complements the successful R&S mobile Cabin luggage sized radio monitoring products portfolio by adding speed and parallel-processing to the existing feature set of GA900 and GA900M.

FEATURES

- Multi-band
  Up to 2 BTS in parallel, either in the same or in different networks at the same time
  GSM 900 including E-GSM
  GSM 1800
- Multi-channel
  Handling of up to 8 time slots per BTS
- Modern user interface
- Modern software architecture
- Attaché case size

PRELIMINARY SPECIFICATIONS

Transceivers (BTS)	1 or 2*
Timeslots used per transceiver	up to 8
Frequency Band(s)	GSM900 incl. E-GSM and / or GSM 1800
Max. output power (EIRP)	0.5 W in GSM900, 1.0 W in GSM 1800
Weight (Kg) starting from	7.9
Dimensions (mm)	380 x 447 x 127
Antenna	directed patch panel
Controller Concept	remote controlled (Laptop)
Operating modes	Presence, Target

Radio Monitoring DF Portable   TMS 100/200

The Transportable Monitoring and Direction Finding Systems R&S TMS100 and R&S TMS200 are optimized for mobile use at rapidly changing sites with unknown radio scenarios. They are designed for the following monitoring and DF tasks from 20 MHz to 1300 MHz, with an extendable range from 10 kHz (500 kHz for DF) to 3000 MHz. All measurement tasks can be performed either automatically (scheduled) or interactively.

The key advantage of transportable systems over fixed monitoring stations is that once the allotted tasks at one site have been completed, a transportable system can be moved to another site, and quickly set up. Owing to the system's compact design, it can even be installed on roofs or in difficult terrain. The antennas can be mounted on tripods.

For mobile remote-controlled and portable use:

- Reliable solution for monitoring and direction finding between 20 MHz and 1300 MHz, with extendable range from 10 kHz (500 kHz for DF) to 3000 MHz
- Compact and cost-effective
- Different power supplies available: 100 V to 240 V AC or 11 V to 32 V DC
- Can easily be carried by two persons
- Quickly ready for use because of the very short setup time
- Can be operated up to 24 hours per day
- Controlled via Monitoring Software R&S ARGUS

Transportable monitoring systems, either car-installed or portable, can perform all the measurement tasks usually associated with fixed or remote-controlled monitoring stations and have the extra advantages of being much more cost-effective and capable of changing location rapidly. This means that the coverage area of a network comprising fixed and remote-controlled monitoring stations can be expanded according to user requirement. No more than two persons are needed to the carry the system, which is on a portable rack.

1

Radio Monitoring DF Portable   TMS 100/200

The transportable system can be installed in all vehicle types and can be used as a mobile monitoring system. The portable rack containing the equipment can easily be fixed to the vehicle with four screws.

Special fixtures are used to mount the DF and monitoring antennas on the roof of the vehicle.

GPS receiver and compass can be added to the system so that location and bearing of the vehicle can automatically be determined. The transportable system installed in vehicles can also be remote-controlled. This is usually done via GSM/GPRS 900/1800 links. The system can be used even if the vehicle is moving. Antennas which are capable of withstanding the resulting forces must be mounted on the vehicle.

Operation as an unattended fixed station and operation as an attended fixed station are essentially the same. Routers and modems, as additional components, are integrated into the transportable systems to enable remote control.

Analog or digital dialing or leased lines or GSM/GPRS 900/1800 links are used with a data rate of at least 9.6 kbps. A control station can be created from a PC with the appropriate software, a router and a modem, or even from a transportable system when provided with the necessary communications equipment.

Direction finding can be performed with at least two transportable systems.
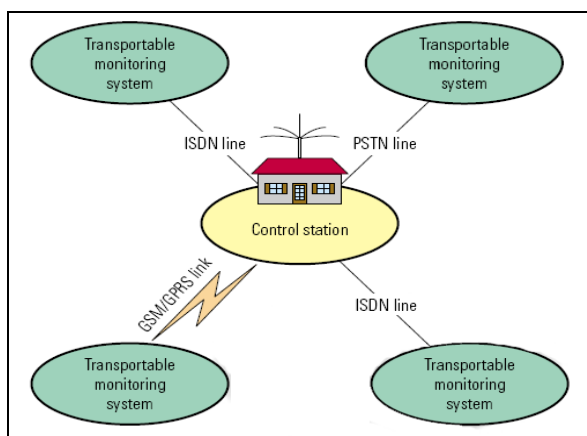
**4 mobile systems operated as remote-controlled, unattended fixed monitoring stations**
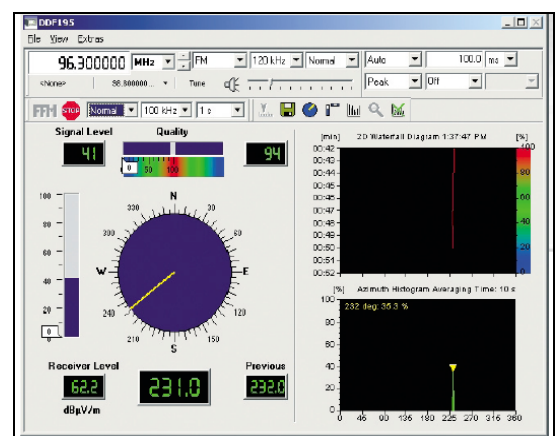
Software Radio/DF Monitoring Specifications

Radio Monitoring DF Portable   TMS 100/200

R&S TMS200

General data	
Operating temperature range	−10 °C to +55 °C with option R&S TMS-B1:
	−10 °C to +45 °C with option R&S TMS-B1 and option R&S TMS-B4:
	−10 °C to +50 °C
Storage temperature range	−40 °C to +70 °C
Humidity	95 % cyclic, +25 °C/+55°C with option R&S TMS-B1:
	80 % cyclic, +25 °C/+40°C
Sinusoidal vibration	5 Hz to 150 Hz
Random vibration	10 Hz to 500 Hz
Shock	40 g shock spectrum
EMC	meets EMC directive of EU (89/336/EEC) and German EMC law
Quality standard	developed and manufactured in compliance with ISO 900
Power supply	100 V to 240 V AC/47 Hz to 63 Hz/226 VA
Dimensions (W x H x D) (box)	555 mm x 358 mm x 720 mm
Weight of fully equipped portable rack	40.1 kg
	with option R&S TMS-B1: plus 6.6 kg
	with option R&S ZS129A1: plus 5.5 kg
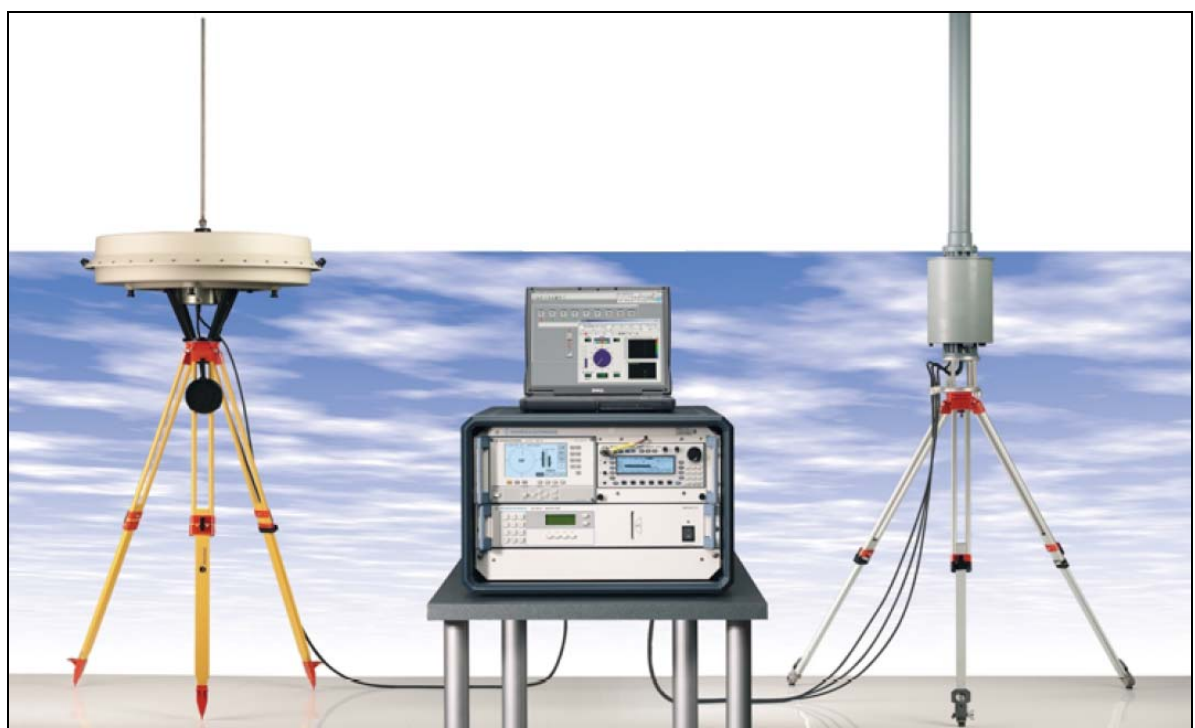
ITC
Intelligence Training Courses

Audio	Video	TSCM
Covert Drilling	Tracking	Filtration
Monitoring	CMOE	Tactical Observation
	System Analysis	

elaman
GERMAN SECURITY SOLUTIONS

TSU INDEX

Intelligence Training Courses

Ref	Number	Description
1	8500	Specialist Audio and Concealment Training
2	8501	Audio Fundamentals
3	8502	Specialist Video and Concealment Training Course
4	8503	Advanced Covert Antenna Course
5	2700 series	IEDD Operations Training Courses
6	2800 series	CME Training Courses
7	2900 series	Technical Operations Training Courses

Specialist Audio Concealment Training

Model 8500

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
SPECIALIST AUDIO & CONCEALMENT TRAINING (WEEK 1)					
Morning Session	• **Introduction** • Greetings • Introduction • Audio Surveillance • Working Practices • Equipment Selection • Transmission • Wired Systems	**Transmission** • Point-to-Point Audio Transmission • Analog & Digital • Setting-up • Deployment • Equipment Selection • Microphones • Accessories • Repeaters	**Covert installs** • Theory Covert Transmission • Body-worn • Concealment • Room • Cars • Antennas • Recorders • Audio	**Concealment Techniques** • Tools Required • Power Supplies • Fitting Transmitters • Body-worn • Room • Plugs • CDs • Cars	**Concealment Techniques** • Practical Exercises • Audio Transmission • Covert Fits • Antennas • Recorders • Audio

Evening Session	• Repeaters
	• Antennas
	• Frequencies
	• Covert Practical Surveillance
	• Tools & Test Equip
	• Health and Safety
		Practical Exercises
		
		• Audio
		  Wireless
		
		  Building
		
		  Encryption Commandable
		
		  Remote Control
		
		• Audio Wired Telephone Mains
			Practical Exercises
			
			• Covert Systems
			• How they Perform in Real Environments
				Concealment Techniques
				• Tools Required
				• Power Supplies
				• Fitting Microphones Body-worn
				
				  Plugs
				
				  Ashtrays
				
				  Briefcase
				
				  Cars
					Practical Exercise
					• Audio Transmission
					• Covert Fits
					• Antennas
					• Recorders
					• Audio
					
					• Weekly Overview

Specialist Audio Concealment Training   Model 8500

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
SPECIALIST AUDIO CONCEALMENT TRAINING (WEEK 2)					
Morning Session	**Introduction** **Overview of week one** **Planning** Operations Safety of Equipment Covert Insertion Operational Support Data Storage	**Introduction** **Specialist Systems** • Digital • Concealed Recorders • Stethoscopes • Fiber Optics • GSM Phones • Telephones	**Car Systems** Installation into Vehicles with and without Tracking System	**Wired Installations** Fitting Covert microphones in Rooms Tools Required Problems Encountered Remote Ccontrol Repeater via RF/GSM Miniature Recorders	**Practical Exam** Transmission Links Covert Fits Covert Transmission Wired Systems concealments
Evening Session	**Audio Enhancement** • Techniques • Equipment Available • Demonstration	**Practical Exercises** Using Specialist Systems for Practical Audio Tests	**Car Systems** Installation into Vehicles Practical Testing	**Wired Installations** Practical Exercises	**Course Overview**

Audio Fundamentals: Recording, Restoration, & Enhancement

Model 8501

COURSE SYNOPSIS

This 10-day advanced course covers the Fundamentals of Audio for Law Enforcement and Security Professionals, all the way from sound mechanics to evidentiary procedures, and includes recent advances in digital filtering technology and techniques. The course is designed to provide both the novice and the journeyman with a wide ranging introduction to the audio field, with a deeper understanding and sharpened proficiency in collecting and later recovering acoustic detail. The course is taught by two audio surveillance and forensic professionals with years of real world experience. Classroom lecture and practical hands-on exercises are combined to maximize the learning experience for the students. All coursework materials are provided, including how to make your own recorders.

AUDIO FUNDAMENTALS COURSE (WEEK 1)				
	MONDAY	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**
TOPICS 1ST WEEK	**Fundamentals of Sound and Acoustics:** • Terminology • Sound Propagation: Indoors & Outdoors • Noise	**Sound Recording & Playback I** **Practical Audio Surveillance: Tips & Traps** **Introduction to Digital Audio**	**Sound Recording & Playback II** **Forensics Process I** **Hands-On: Audio Forensics**	**Hands On: Processing of Field Exercise Recordings** **Review of Basic Restoration & Enhancement** **A/V Recording, Restoration, & Enhancement**	**Sound Propagation Review** **Sound-fields** **Hands-On: Beam-forming II**
Evening	**Field Exercise**	**Field Exercise**	**Field Exercise**	**Field Exercise**	**Field Exercise**

AUDIO FUNDAMENTALS (WEEK 2)				
	MONDAY	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**

TOPICS 2ND WEEK	**Hands-On: Sound Propagation & Measurement** **Hearing & Speech** **Psychoacoustics** **Hands-On: Hearing, Speech, and Psychoacoustics**	**Hands-On: Microphone & Recorder Installation & Maintenance** **Introduction to Audio Forensics** **Filtering Basics: Single Channel Fixed and Adaptive Filters** **Hands-On: Basic Audio Restoration & Enhancement**	**Midpoint Review** **Stereo Recording** **Filtering Basics: Multi-Channel Adaptive Filters** **Hands-On: Reference Cancellation**	**Hands-On: A/V Processing** **Multi-Channel Audio Recording** **Filtering Basics: Array Processing** **Hands-On: Beam-forming I**	**Forensics Process II:** • Authentication & Tampering • Digital Signatures • Audit Trail • Courtroom **Final Review**
Evening	**Field Exercise**	**Field Exercise**	**Field Exercise**	**Field Exercise**	**Field Exercise**

Specialist Video Concealment Training Course   Model 8502

COURSE SYNOPSIS

Our Specialist Video & Concealment Training Course is designed for the seasoned professionals who need refresher training on the latest techniques with video equipment for the Government Technical Surveillance Teams.

The nature of the course is also beneficial to newcomers to Video Surveillance, as it will give them the grounding needed to commence Technical Video Surveillance Operations.

The course is run over a two-week period and is very intensive, with exercises being carried out during the day following the subject instruction, and then followed by evening and night exercises using specialist video equipment.

The course is aimed at TSU operators and technicians who are interested in concealing equipment in everyday objects, rooms, cars and in body-worn situations.

During the course, specialist companies and instructors are on-hand to demonstrate the latest equipment and techniques, followed by student practical sessions; the course is very hands-on.

The general course is outlined, however, if the client has a special requirement or technique, it can be included in the course very easily, as the course is designed to be flexible to accommodate all levels of expertise, techniques and equipment available today.

The course will cover, analog and digital transmissions, wired and wireless systems, specialist equipment, such as thermal imaging and night vision, concealment of cameras, transmitters in all manner of everyday items, seen in each client's country; specialist items can be included for hijack and kidnap operations.

Specialist Video Concealment Training Course   Model 8502

SPECIALIST VIDEO & CONCEALMENT TRAINING: EUROPE (WEEK 1)					
	MONDAY	**TUESDAY**	**WEDNESDAY**	**THURSDAY**	**FRIDAY**

Morning session	**Introduction**
	• Greetings
	• Introduction
	• Video Surveillance
	• Working Practices
	• Equipment Selection
	• Transmission
	• Wired Systems
		Transmission
		• Point to Point Video Transmission
		• Analog & Digital
		• Setting up
		• Deployment
		• Equipment Selection
		• Cameras & Lenses
		• Accessories
		• Repeaters
			Covert installs
			• Theory Covert Transmission
			• Body-worn
			• Concealment
			• Room
			• Cars
			• Antennas
			• Recorders
			• Audio
				Concealment Techniques
				• Tools Required
				• Power Supplies
				• Fitting Cameras
				  • Tissue Box
				  • Jacket
				  • Book
				  • Briefcase
				  • Car Mirror
					Practical Exercise
					• Video Transmission
					• Covert Fits
					• Antennas
					• Recorders
					• Audio

Evening session	• Video Antennas
	• Encryption
	• Existing CCTV
	• Covert Practical Surveillance
	• Tools & Test Equip
	• Health and Safety
		Practical Exercise
		Video Link set up
		• Point to Point
		• Encryption
		• Video Stabilizer
		• Camera
		• Lenses Short & Long Range
			Practical Exercise
			• Covert Systems
			• How they perform in real environments
				Concealment Techniques
				• Tools Required
				• Power Supplies
				• Fitting Cameras
				  • Tissue Box
				  • Jacket
				  • Book
				  • Briefcase
				  • Car Mirror
					Practical Exercise
					• Video Transmission
					• Covert Fits
					• Antennas
					• Recorders
					• Audio
					
					Weekly Overview

CONFIDENTIAL

Specialist Video Concealment Training Course

Model 8502

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
SPECIALIST VIDEO & CONCEALMENT TRAINING: EUROPE (WEEK 2)					
Morning session	**Introduction** • Overview of week one **Planning** • Operations • Safety of Equipment • Covert Insertion • Operational Support • Data Storage	**Introduction** • Specialist Systems • Ultra Low Light Cameras • Long Range Lenses • Thermal Imaging • Night Vision • GSM Transmission • Video over IP	**Car Systems** • Installation into Vehicles	**Wired Installations** • Fitting Covert Cameras in Rooms • Tools Required • Problems Encountered • Wide Angle Lenses • Pinhole Lenses • Miniature Cameras	**Practical Exam** • Transmission Links • Covert Fits • Covert Transmission • Wired Systems • Long Range Lenses
Evening session	**Video Enhancement** • Techniques • Equipment Available • Demonstration	**Practical Exercise** • Using Specialist Systems Day & Night	**Car Systems** • Installation into Vehicles • Practical Testing	**Wired Installations** • Practical Exercise	**Course Overview**

Advanced Covert Antenna Course

Model 8503

Dear Friends,

The first point we are always told about regarding transmitter/receivers, be it audio/video surveillance/tracking and type of product related to communication, is antennas.

We have therefore, drafted a specialist course purely looking at antennas covering all the aspects of surveillance/communications/df/monitoring. We are convinced this course will enable you all to improve your operational skills and understand this specialist and most critical subject.

The course is for one week and can be held either in the UK or Germany.

ANTENNA SEMINAR PROPOSED AGENDA

The seminar is intended not to be a compilation of university level theoretical lessons, but rather confined strictly to a practical approach, including evaluation and custom specific solutions for some special purposes, wireless transmission and direction finding. The seminar/program incorporates many years of accumulated experience and know-how in the field of special and government radio frequency communications, surveillance and direction finding.

Lecturer: A. Wiesner, Ph.D. (Advanced Communications & Information Processing), member IEEE, AFCEA, Aerospace Society. Holding 27 patents; published 55 articles.

1. Fundamental Properties and Definitions
   - Isotropic radiator
   - Directivity
   - Gain
   - Effective radiated power
   - Polarization
   - Radiation pattern
   - Field strength, power density
   - Radiation mechanism
   - Effective area
   - Radiation resistance and antenna impedance
   - Transmit and receive antenna.
   - Reciprocity principle

2. Basic Antenna Configurations
   - Linear antennas: wire, rod and dipole antennas
   - Loop antennas
   - Stripline and patch antennas
   - Slot antennas
   - Dielectric rod antennas
   - Axial and normal mode helix antennas
   - Aperture antennas
   - Circular polarization antennas

3. Custom and Special Antennas
    - Dielectric coated antennas
    - Small aperture linear antennas
    - Small loop antennas
    - Ferrite coated antennas
    - Disguised and concealed antennas
    - Body-worn antennas
    - Active receive antennas
    - Broadband antennas for pulse and Spread Spectrum transmission
    - Quadrihelix antennas
    - SatCom antennas
    - Flat panel antennas
    - Multi-band antennas
    - Basic limitation and trade-offs
    - Practical design examples

4. Direction Finding (DF) Antennas
    - Basic DF methods
    - Covert tracking and cooperative Direction Finding
    - Specific DF antenna configurations
    - Disguised and concealed DF antennas
    - Small tracking transmitter antennas
    - Limitations and trade-offs
    - Practical design examples

5. Antenna Measurement and Simulation
    - Impedance matching and transmission lines
    - Smith Chart: approach and interpretation
    - Antenna geometry
    - Field strength calibration
    - 5.5   Radiation pattern evaluation
    - 5.6   NEC and associated computer simulation programs
    - 5.7   Practical limitations and application-by-application analysis

6. Discussion and exchange of ideas

Manual Neutralization IEDD Operations Approved Access Training courses

2700 series

ABOUT OUR TECHNICAL SERVICES

We provide specialist training, tools and equipment to the UK, US and European Law Enforcement, intelligence and security community.

All our courses are taught by highly experienced instructors with proven operational experience. Our courses focus on providing multiple, varied opportunities for students to gain hands-on experience of realistic operational scenarios, in order to validate new skills learnt. The training is conducted at a specialist training facility with access to additional target locations to maximize learning and training benefit.

ABOUT OUR COURSES

We offer a range of Manual Neutralization Improvised Explosive Device Disposal (IEDD) Operation courses to cater for all levels of Operators/Technicians.

We are also able to develop customized courses upon request and assist with rehearsals for technical operations.

Each of our courses is subject to a minimum attendance or course fee. We are happy for an observer to attend each course free of charge.

KEY FEATURES

- Expert instructors with over 80 years collective operational experience
- Progressively structured modules to build competence and confidence
- Comprehensive coverage of key operational skills
- Introduction to new techniques and technologies
- Technical planning processes
- Practical deployment and handling of specialist equipment
- Practical validation with realistic scenarios

MANUAL NEUTRALIZATION IEDD OPERATION COURSES – APPROVED ACCESS

2701 - MANUAL NEUTRALIZATION AWARENESS – 5 DAYS/MINIMUM 4 DELEGATES

Introduces the theoretical and basic skill set required to conduct basic manual neutralization. The course gives an awareness of the tools and equipment to conduct operations and methods of attack for dealing with devices where it is inappropriate to use energetic equipment.

The course is designed for Operators/Technicians who are looking at progressing into the manual neutralization arena, to gauge suitability and aptitude. It develops the thought processes and mindset of delegates to enable them to be aware of areas for future development.

2702 - THREAT ASSESSMENT – 5 DAYS/MINIMUM 4 DELEGATES

Develops the knowledge and understanding of terrorist tactics, techniques and procedures to enable the delegates to formulate an accurate threat assessment, based on knowledge freely gained or extracted from witnesses, ground appreciation and intelligence. This enables an operator/technician to formulate an appropriate render safe procedure.

The course is suitable for personnel who will be operating in a counter-IED environment, including operational mangers and technicians.

Manual Neutralization IEDD Operations
Approved Access Training courses   2700 series

2703 - BASIC IEDD – 10 DAYS/MINIMUM 4 DELEGATES

A two week intensive course designed to reinforce previous IEDD knowledge and to develop further principles, philosophies and techniques, based on the lessons learned from UK operations over the last 30 years. Elements will include force protection, questioning techniques, threat assessment, evaluation and appropriate responses to an IED threat.

The course is suitable for any operator/technician currently serving within an IEDD unit where exposure to a wider knowledge base and operational experience would be valuable to enhance the response capability of their own unit.

2704 - IEDD ELECTRONICS – 4 DAYS/MINIMUM 3 DELEGATES

An integral part of the Manual Neutralization Skill set. Operators/Technicians must know the fundamentals of electricity, discrete and semi-conductor components and their utilization within IEDs. This course gives sound theoretical knowledge combined with practical exercises in targeting, component selection and construction to form the basis of threat appreciation and manual diagnostic techniques.

The fees include provision of a toolkit for use during the course, which all delegates will take away with them at the end.

2705 - BASIC MANUAL NEUTRALIZATION IEDD – 15 DAYS/MINIMUM 4 DELEGATES

Introduces the equipment and practical skills required by Operators/Technicians to conduct Manual Neutralization IEDD operations in operational scenarios, where the use of remote controlled vehicles, or energetic weapons systems are considered inappropriate or impracticable. Examples include: IEDs posing an immediate grave danger to life; IEDs on hostages; IEDs containing extremely sensitive explosives or where it is unacceptable for the IED to function.

This course is suitable for Operators/Technicians who have a recognized IEDD qualification and are serving in an operational IEDD unit.

We expect delegates to bring with them a basic manual neutralization toolkit. However, we are able to issue delegates with a brand new toolkit, which they will use extensively during the course and take away with them on completion.

2706 - SUICIDE DEVICES – 5 DAYS/MINIMUM 4 DELEGATES

This course is designed to develop the knowledge and understanding of the suicide IED threat, building on the history and psychological profiling of suicide bombers, including their modus operandi and device selection. This knowledge can then be used in development of render safe procedures in different scenarios.

CME Training Courses   2800 series

ABOUT OUR TECHNICAL SERVICES

We provide specialist training, tools and equipment to the UK, US and European Law Enforcement and National Security Agencies.

All our courses are taught by highly experienced instructors and focus on providing many and varied opportunities for students to gain hands-on experience of realistic operational scenarios in order to validate new skills learnt. The training is conducted from a specialist training facility with access to additional target locations to maximize learning.

ABOUT OUR COURSES

We offer a range of Technical Operations, CME and specialist Lock/Safe courses. We are also able to develop customized courses upon request and assist with rehearsals for technical operations.

Each of our courses is subject to a minimum attendance or course fee. We always endeavor to co-ordinate course dates and to fill additional places from other Forces should your Force not be able to send the minimum number of delegates.

We issue a monthly update of our training course schedule for the forthcoming six months. Please let us know if you would like to receive this.

KEY FEATURES

- Expert instructors with over 40 years collective operational experience
- Progressively structured modules to build competence and confidence
- Introduction to new techniques and technologies
- Comprehensive coverage of key operational skills
- Technical planning processes
- Practical deployment and handling of specialist equipment

2801 - OPERATIONAL ALARM DEFEAT – 4 DAYS/MAXIMUM 6 DELEGATES

Introduces students to alarm system components and builds proficiency in their identification & defeat.
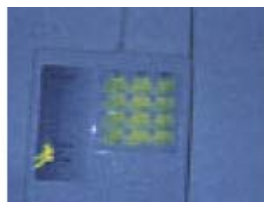
CME Training Courses   2800 series

2802 - CCTV & PIR DEFEAT – 4 DAYS/MAXIMUM 8 DELEGATES

A highly practical course allowing students to learn new CCTV systems and external security lighting defeat techniques, which are then validated using timed exercises deploying state-of-the-art equipment.

2803 - CONDUCT ON TARGET & COVERT SEARCH – 4 DAYS/MAXIMUM 6 DELEGATES

Teaches the fundamentals of on-target covert operations, developing the necessary individual tradecraft skills to mount successful operational tasks, in a wholly secure and covert manner.

2804 - ADVANCED CME IMPRESSIONING – 3 DAYS/MAXIMUM 8 DELEGATES

Teaches how to generate better marking, how to interpret marks and making position to allow quicker opening.

2805 - INTRODUCTION TO SAFE & VAULT OPERATIONS – 3 DAYS

For CME officers who are tasked with opening safes, including domestic, hotel and basic ranges found in the wider community.

2806 - ADVANCED SAFE & VAULT LEVER LOCKS – 3 DAYS

A more advanced course will allow officers to successfully decode up to 14 lever safe locks equipped with barrel & curtain.

2807 - OPTICAL TECHNIQUES – 4 DAYS

This is singularly the most important technique for all operations against lever locks. It allows their identification and subsequent attack using a range of optical scoping systems and cameras. This can often reduce time at the target door to as little as ten minutes.

2808 - ADVANCED OPTICAL DECODING – 2 DAYS

Focuses on scrape marks and gate decoding techniques.

2809 - GOVERNMENT STANDARD SAFES & CONTAINERS – 3 DAYS

Allows CME officers to gain further experience and confidence with safes and locks found in Government use.

2810 - COMBINATION LOCK MANIPULATION – 3 DAYS

The course demystifies this "black art" and, converts it into a simple and deployable set of techniques to allow any CME trained officer to mount a successful attack against 3-wheel conventional combination locks.

Technical Operations Training Courses   2900 series

ABOUT OUR TECHNICAL SERVICES

We provide specialist training, tool and equipment to the UK, US and European Law Enforcement, Intelligence and Security Community.

All our courses are taught by highly experienced instructors with proven operational experience. Our courses focus on providing multiple, varied opportunities for students to gain hands-on experience of realistic operational scenarios in order to validate new skills learnt. The training is conducted at a specialist training facility with access to additional target locations to maximize learning and training benefit.

ABOUT OUR COURSES

We offer a range of Technical Operations, CME and specialist Lock/Safe courses. We are also able to develop customized courses upon request and assist with rehearsals for technical operations.

Each of our courses is subject to a minimum attendance or course fee. We always endeavour to co-ordinate course dates to fill additional places from other Forces should your Force not be able to send the minimum number of delegates.

We issue a monthly update of our training course schedule for the forthcoming 6 months. Please let us know if you would like to receive this.

KEY FEATURES

- Expert instructors with over 40 years collective operational experience
- Progressively structured modules to build competence and confidence
- Introduction to new techniques and technologies
- Comprehensive coverage of key operational skills
- Technical planning processes
- Practical deployment and handling of specialist equipment

COURSES

2901 - COVERT TECHNICAL AUDIO DEPLOYMENTS – (4 DAYS/MAXIMUM 8 DELEGATES)

Teaches the necessary skills and techniques to plan, recce and successfully deploy technical audio surveillance equipment in a covert manner.

Technical Operations Training Courses   2900 series

2902 - COVERT CCTV DEPLOYMENTS – (4 DAYS/MAXIMUM 6 DELEGATES)

Covert deployment of intrusive internal CCTV systems is one of the most demanding of all covert technical operations. This course gives a thorough grounding in concealment options and equipment.

2903 - COVERT VEHICLE AUDIO DEPLOYMENTS – (4 DAYS/MAXIMUM 8 DELEGATES)

Designed to provide TSU officers with a clear understanding of the audio options available for use against target vehicles, including both quick and deep plant options & opportunities to attack vehicles using external techniques.

2904 - SIEGE OPERATIONS – (5 DAYS/MAXIMUM 8 DELEGATES)

This course provides students with a wide range of operational techniques for use in siege and kidnap situations, including technical options, such as audio & video Trojans, CCTV and acquisition of audio product.

2905 - CONDUCT ON TARGET & COVERT SEARCH – (4 DAYS/MAXIMUM 6 DELEGATES)

Teaches the fundamentals of on-target covert operations, developing the necessary individual tradecraft skills to mount successful operational tasks in a wholly secure and covert manner.

Technical Operations Training Courses   2900 series

2906 - CONDUCT ON TARGET – (1 OR 2 DAYS/MAXIMUM 6 DELEGATES)

A course recommended as an add-on at the beginning of the covert technical audio, carpets & floors and CCTV deployments courses.

2907 - IT EXPLOITATION – (4 DAYS/MAXIMUM 6 DELEGATES)

Will equip operational TSU officers with skills and knowledge to acquire electronic information quickly and efficiently in an evidentially sound manner from PCs, mobile phones and a range of different media types.

2908 - COVERT CARPETS & FLOORS – (2 DAYS/MAXIMUM 6 DELEGATES)

This course covers the skills required to lift and replace carpets, other fabric based floor coverings & laminate flooring, including making good & repairs. These techniques are essential during a number of covert deployments of technical equipment & covert search operations.

2909 - OPERATIONAL DRILLING – (4 DAYS/MAXIMUM 8 DELEGATES)

Introduces the equipment and practical skills required to mount successful drilling operations for accurate placement of audio equipment.

Technical Operations Training Courses 2900 series

2910 - ADVANCED OPERATIONAL DRILLING – (4 DAYS/MAXIMUM 6 DELEGATES)

Builds on the fundamentals of operational drilling operations, and teaches the skills required for drilling tasks outside the scope of manual drilling within a range of building materials, including reinforced concrete.

ABOUT US

More than 10 years of experience in communication and security requirements for law enforcement agencies convinced us of the need to establish ELAMAN GmbH in 2004, specializing in security requirements for government and law enforcement authorities worldwide.

ELAMAN GmbH, established in 2004, provides advanced integration systems, international consultancy and strategic technologies in Communications Systems, National Security, and Defense. The highly experienced international managers from different sectors focus to provide the solution to enable our customers to be more than adequately equipped to counter the threat of today and tomorrow.

ELAMAN is a German based company with its headquarters in Munich/Germany. Our aim is to provide comprehensive security products and solutions, technical consultancy and services as well as professional training for our customers in Europe, the Middle East, Far East and Africa.

- Technical Consulting
- Professional Audio & Video Surveillance Products
- VIP Protection & Specialists Detection
- Monitoring- and Tracking Systems, Spectrum Monitoring
- Counter (Anti-) Surveillance
- Specialist Training
- Intelligence Software

ELAMAN is a leader in International marketing and trading, specializing in defense technology, communications and security. Through strategic partnerships with many leading international companies, we provide Law Enforcement Agencies alike with unique technology solutions.

An essential element of our philosophy is the conviction that training and the understanding of products and technology are critical factors and major strengths in assuring successful security solutions.

Our vast experience and services for well known companies, such as Siemens, Alcatel, Ericsson, Rohde & Schwarz, Spectronic, and others, has enabled us to handle even the most challenging and complex requirements and offer solutions that meet the relevant needs of Lawful Enforcement Agencies in the Middle East, Africa and Asia.

Consequently, we have the expertise to offer solutions using state of the art technology and comprehensive functions for flawless operation, training and services.
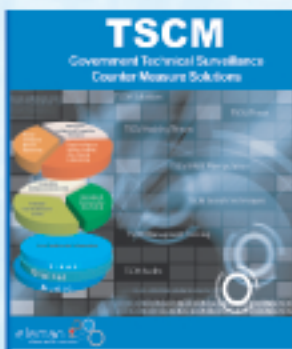
CONFIDENT RELATIONSHIP

Confidentiality is essential in the business of security. ELAMAN can guarantee this as a German company and can furthermore be your sole interface with the manufacturers of security products and services. ELAMAN's business approach is to treat our customers as full partners in a relationship which is beneficial to both parties.

This goal outwards to our customer will be represented by:

Holger Rumscheidt as Managing Director and **Eugen Fissl** as Consultant and Partner.

Overview of Elaman Catalogs

TSU
Technical Surveillance Unit
Equipment

TSV
Technical Surveillance Vans

TSC
Technical Surveillance Cars

Communication
Monitoring

TSCM
Government Technical Surveillance
Counter Measure Solutions

ISE
Internal Security Equipment

BORDER CONTROL SYSTEMS

ITC
Intell Training Courses

elaman
GERMAN SECURITY SOLUTIONS

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or would like to discuss a specific requirement or project, please contact us at:

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