



## ASMD

Audio Surveillance Microphones &  
Deployment Kits

## Audio Surveillance Microphones & Deployment kits

Ref	Number	Description
1	6303-1	Fiber Optic Microphone 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 Amplifier
8	6303	Fiber Optic Microphone Kit
9	6301	Advanced Stereo Stethoscope System
10	6302	Tactical Stereo Audio Amplifier
11	6304	Tactical Audio Microphone Kit
12	6305	Tactical Stereo Accelerometer Kit
13	6804	Body Worn-Array Microphone
14	6803	Clarifying Array Microphone
15	6802	Directional Microphone Array System
16	6806	Steerable Array Microphone
17	2102	Keyhole Microphone Installation Kit
18	2103	General Purpose Microphone Installation Kit
19	2105	Complete Audio Deployment Kit
20	2106	Complete Vehicle Audio Deployment Kit

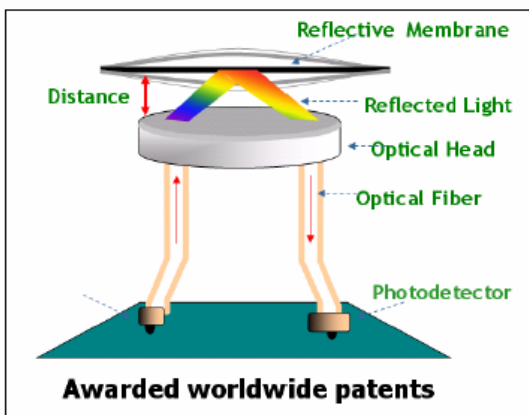
21	2131	Complete Covert Carpet and Floor Kit
22	2108	Concealment Fixing Screws
23	2121	Manual Covert Drilling Kit
24	2122	Automatic Covert Low Noise Drilling Kit

## FIBER OPTIC MICROPHONE KIT

TSE 6303

The TSE 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



TSE's ultra-sensitive TSE 6303 optical microphone captures a range of sound with excellent sound accuracy from normal conversation to soft whispering or the shuffling of papers. The TSE 6303 is based on TSE'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 TSE 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 TSE 6303 can capture sound from all directions, thereby maximizing voice representation. The TSE 6303's excellent frequency response provides true-to-source sound reproduction.

The TSE 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 TSE 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 TSE 6303 can continue to operate even in the harshest of environments, without any effect on its performance. These capabilities and characteristics have made the TSE 6303 the microphone of choice among law enforcement agencies.

## FIBER OPTIC MICROPHONE KIT

TSE 6303

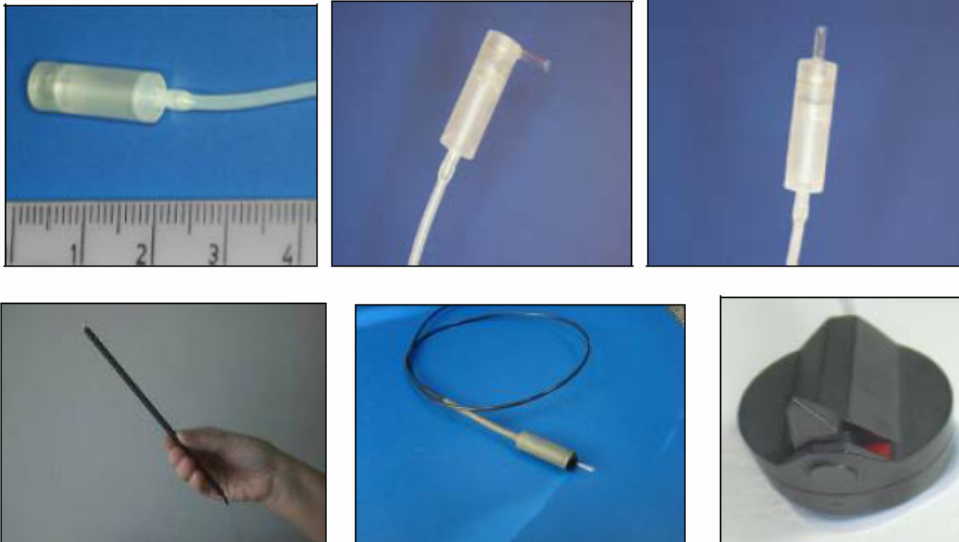
The TSE 6303 can be customized to your needs, with the following variables: fiber length, fiber type, fiber color, and the head type. TSE 6303 options include: Noise reduction software, extension cable, TSE 6303 Extra with built-in battery and volume control and recording device.

The SOM 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 $\Omega$ (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

\*Configuration Dependent



## FIBER OPTIC MICROPHONE KIT

TSE 6303

### DIFFERENT PRODUCTS

6303-MICROPHONE-10/20 M



6303-PROBE MICROPHONE



6303-MICROPHONE AMPLIFIER



6303-STETHOSCOPE MICROPHONE



6303-ANTI NIGHT VISION MICROPHONE



6303-EXTENSION CABLE



## ADVANCED STEREO STETHOSCOPE SYSTEM

TSE 6301

### THROUGH-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 TSE 6301 is a self-contained portable handheld stereo audio amplifier for covert intelligence gathering operations. Designed to extract high quality audio product 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-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

TSE 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  $\pm 15\text{dB}$ . 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 $\sigma^2$ 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 $\pm 15\text{dB}$ at 12 kHz
	Mid filter $\pm 15\text{dB}$ sweep able between 100Hz – 8kHz
	Lo shelving filter $\pm 15\text{dB}$ at 80Hz
	Lo cut at 75Hz $-18\text{dB}$
Gain:	Adjustable 0dB to $+60\text{dB}$





## TACTICAL STEREO AUDIO AMPLIFIER

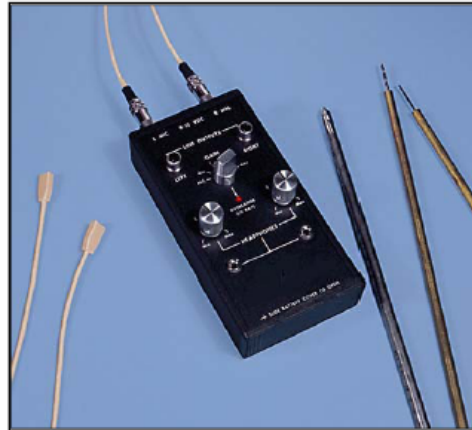
TSE 6302

The TSE 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 adjustment without pumping or distortion. Super high efficiency circuits assure 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, TSE 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 $\pm 2$ 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

TSE 6304

### TACTICAL AUDIO KIT

The TSE-6304 Tactical Audio 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 TSE 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 TSE 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 TSE 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.	
6304-SWS	Three mode silent wall scanner. Finds studs, metal, and live AC lines. Helps to safely place the microphones correctly.	

## TACTICAL AUDIO MICROPHONE KIT

TSE 6304

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

TSE 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 TSE 6305 *non-invasive* audio recovery kit 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

TSE 6804

The TSE 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

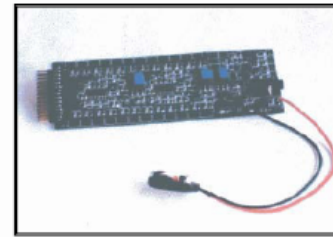
The unit works by creating a highly directional microphone pickup pattern from a collection of individual microphones. Each UNIT Processor Board takes up to 24 microphones to provide its directed mono audio output. A basic system is supplied with 12 microphones with the recommended minimum being 8 microphones. 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

## TSE 6803

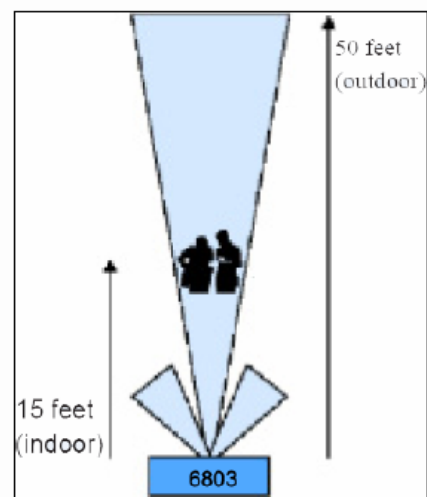
- Discrete, highly directional microphone system
- Ideal for remote indoor/outdoor audio collection
- Each board accepts 2 to 24 microphones
- Combines multiple boards for improved performance
- Works with headphones, recorders and transmitters
- Battery powered
- Simple to operate



The TSE 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 TSE 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.



## DIRECTIONAL MICROPHONE ARRAY SYSTEM

TSE 6802

Audio collection in large, open areas can often require pinpoint accuracy to isolate specific audio sources. Only TSE 6802 can deliver the technology to electronically steer multiple beams through a sound field collected by a fixed microphone array. Key features of the TSE 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 DSB connector interfaces (Tascam format) Supports 8 differential line level inputs per channel (16 channels total) 25k ohm input impedance per channel
Bandwidth	20 kHz Analog Conversions 24-bit stereo A/D and D/A Sigma-delta technology
Dynamic Range	20 dB

#### DIGITAL PROCESSING

Microprocessor	Four ADSP-21062 SAC processors for beam forming One ADSP-21062 SAC 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 8 flash memory for program and coefficient storage
Computer Interface	RS232 serial interface for system control

#### GENERAL

Enclosure	7W x 3.5 H x 12 D inches black aluminum Optional rack mount kit available
Power	90-264 VAC, 4763 Hz at 2.5 A (max)

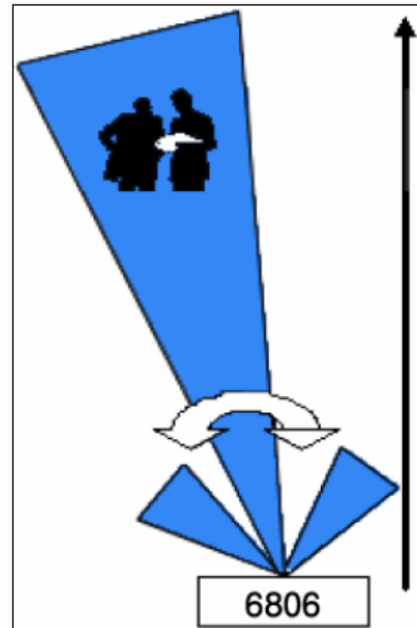
## STEERABLE ARRAY MICROPHONE

TSE 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.

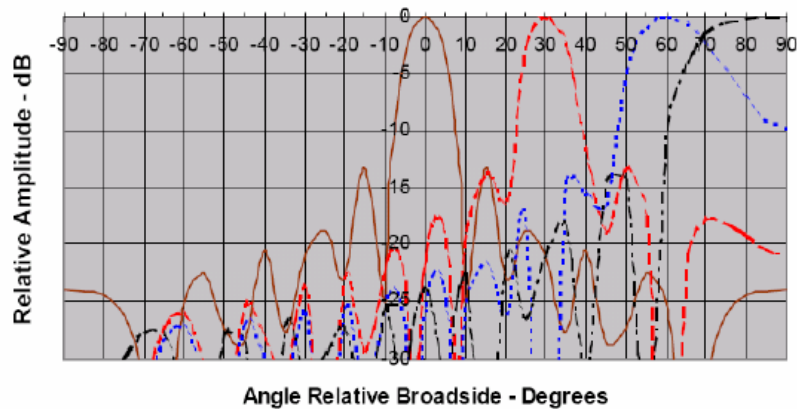


## STEERABLE ARRAY MICROPHONE

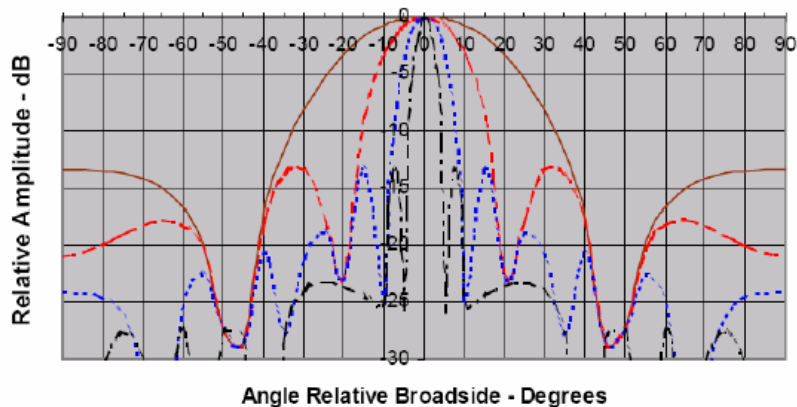
TSE 6806

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**



## 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 kit 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 this 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

## 2100 SERIES

### DRILLING EQUIPMENT

#### 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 laminate flooring during audio deployment operations.



## MANUAL COVERT DRILLING KIT

TSE 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

### OPTIONAL EXTRAS

- Audio Mic Kit
- Video Probe Kit

### THE KIT CONSISTS OF:

- 1 drill brace
- 1 push handle
- 2 adaptors
- 1 pinhole handle
- 1 pinhole stop
- 1 main bore stop
- 1 wall grip
- 2 300 mm long main bore extensions
- 2 300 mm long pinhole extensions
- 4 1.0 mm, 50 mm mount pinhole drills
- 10 1.5 mm pinhole drills, various sizes
- 3 main bore drills
- 4 extension drills main bore
- 3 200 mm lengths probe tube
- 1 one meter flexible tubing
- 1 glue
- 1 fixed bar rod 60 mm
- 1 drill tip
- 20 foam tips
- 6 mounted microphones
- 1 tech amp
- 1 making good kit
- 1 packing case



## AUTOMATIC COVERT LOW NOISE DRILLING KIT

TSE 2122

The TSE 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 & extraction system consists of:

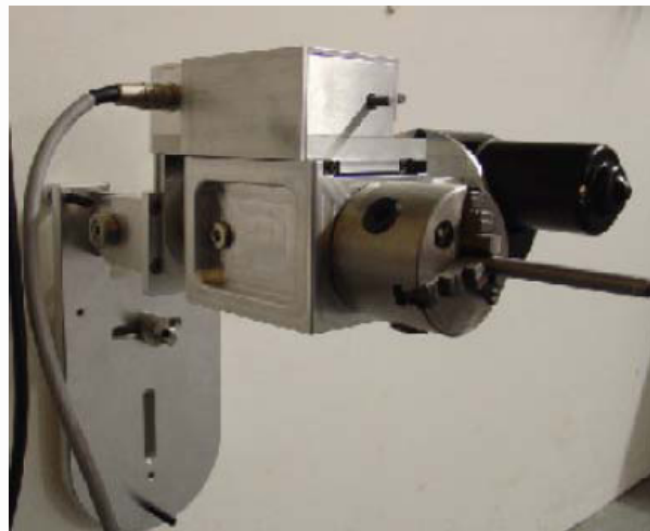
- 1 powered drilling head
- 1 wall bracket
- 1 drilling motor
- 1 control system
- 1 drill extractor
- 1 core cleaner
- 1 hand control
- 1 union
- 1 packing case
- 2 150 mm hollow rods
- 2 main bore drills (threaded shank)
- 2 300mm hollow rods
- 1 125mm threaded drill
- 3 diamond core drills
- 1 vacuum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

TSE 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



If you would like further Information about ELAMAN,  
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