



## Mobile Cargo and Vehicle X-Ray Scanner

Model 7538

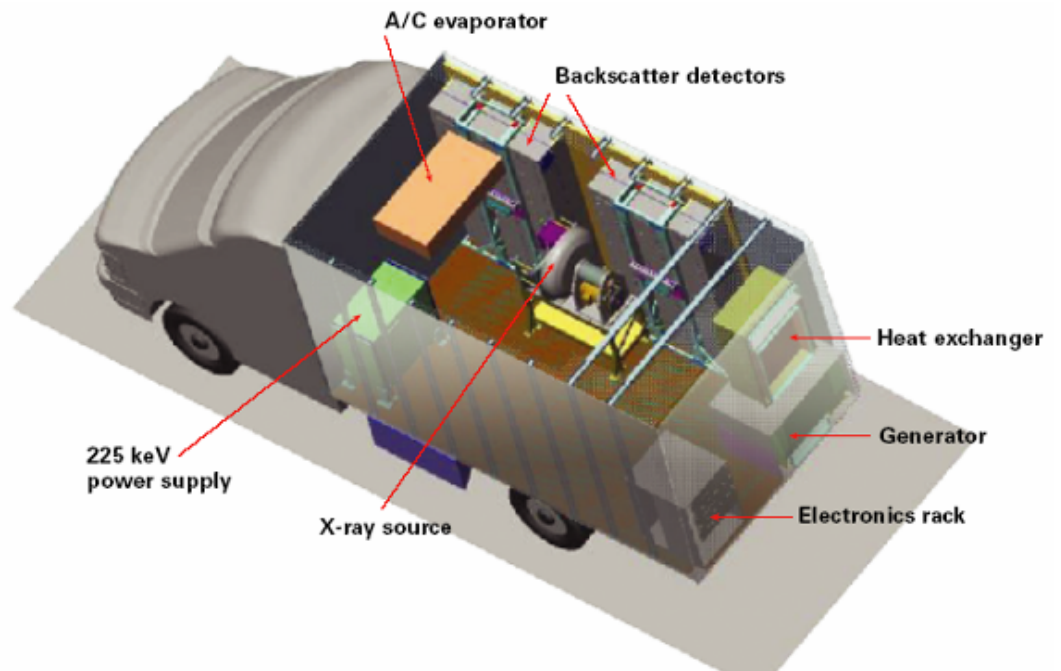
## MOBILE CARGO AND VEHICLE X-RAY SCANNER

The Mobile Scanner is a low-cost, extremely portable X-ray inspection system built into a delivery van. With one-sided “backscatter-only imaging” and the option for Radioactive Threat Detection (RTD), security officials can use the mobile scanner for screening vehicles, sea containers and other cargo for terrorist threats and other contraband – simply by driving alongside the subjects. The mobile scanner employs Gamma’s patented Backscatter technology, which produces photo-like images of the contents of a container or vehicle, highlighting organic materials, such as drugs or plastic explosives. The ZBV is an ideal security tool for urban policing and homeland defense applications.



### Product Highlights

- Backscatter-Only
- One or two person operation
- Simple operation, easy to use operator interface
- Photo-like image quality for screening
- Cost-effective (purchase, operation and maintenance)
- Safe for operators and subjects
- Option for Radioactive Threat Detection (RTD)



### Technical Overview

- Single-sided inspection, side set at factory
- Backscatter-only
- 225 KeV source
- Vehicle offerings:
  - USA—Daimler Chrysler Sprinter (Diesel)
  - International—Mercedes Sprinter (Diesel)
  - RTD Option
- 4 Scanning speeds
  - 0.5, 1.5, 5 & 10 km/hr.
  - 0.3, 1, 3 & 6 miles/hr.
- **Field of View:** Height of 3.6 m (12 ft.) at 1.5 m (5 ft.) from the mobile scanner, coverage to ground
- Image Display Features
- High-Intensity LCD monitor (sunlight readable)
- One-touch systems control (touch screen)
- Central operator console in the mobile scanner cab can be operated from driver or passenger seat

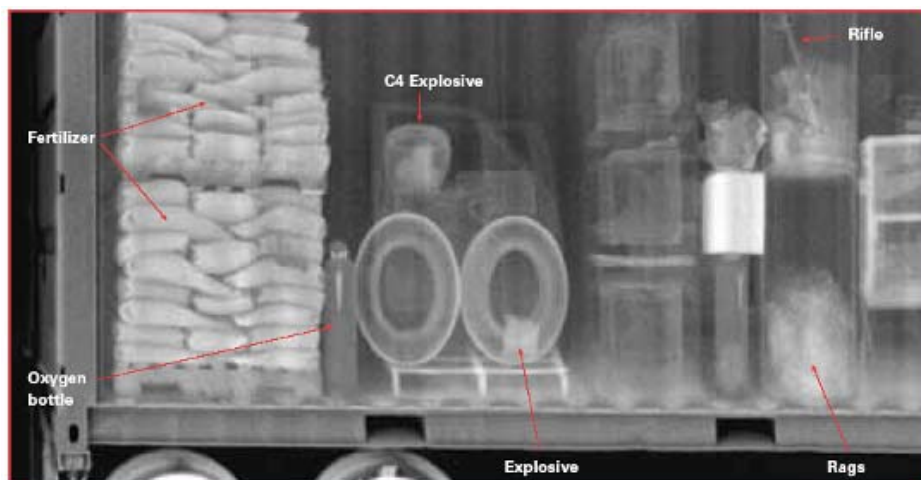
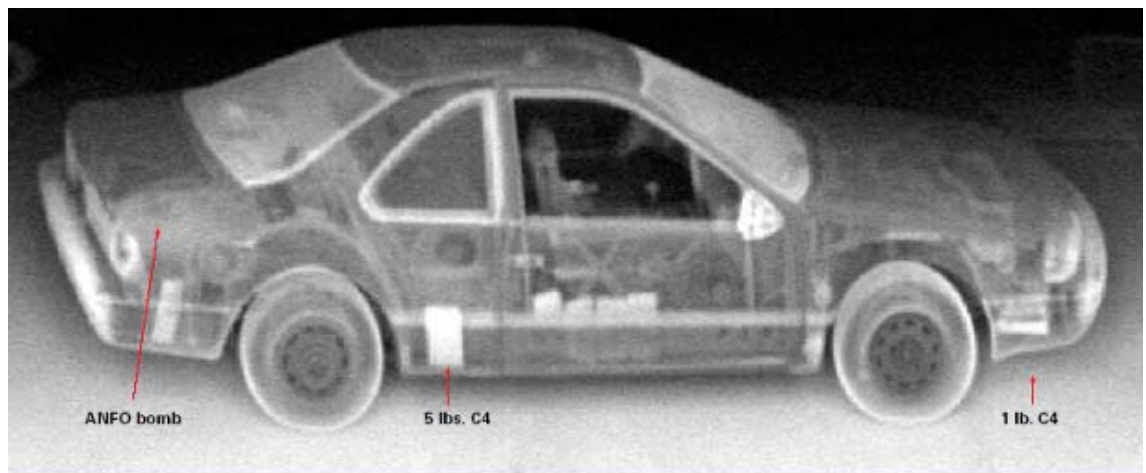
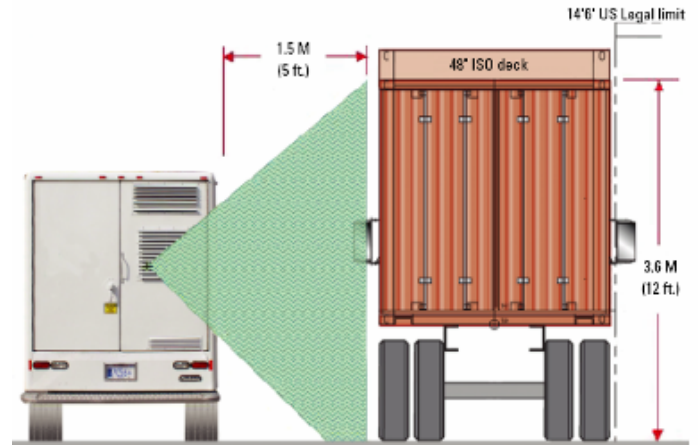


hoop module creates the "Flying Spot" X-ray. Backscatter detectors collect the reflected X-rays for image processing.



## APPLICATIONS

- Military Checkpoints/Embassies
- Federal Policing Agencies
- Local Law Enforcement
- Commercial Event or Location Management
- Cargo Hubs
- Border Crossings



ISO container with varied cargo, including bags of fertilizer, tires and simulated explosives scanned at 0.5 km/hr.

### System Description:

The Z<sup>®</sup> Backscatter Van<sup>™</sup> (ZBV) is a low-cost, extremely mobile X-ray inspection system built into a commercially available delivery van. With one-sided backscatter-only imaging and the option for Radioactive Threat Detection (RTD), security officials can use ZBV for screening vehicles, sea con-



tainers and other cargo for terrorist threats, trade fraud and other contraband – simply by driving alongside the subjects. The ZBV employs Gamma's patented Z<sup>®</sup> Backscatter technology, which produces photo-like images of the contents of a container or vehicle, highlighting organic materials, such as drugs and plastic explosives.

### Features

The ZBV produces images of the contents of trucks, containers and automobiles by combining a 225 keV X-ray source with a Flying Spot<sup>™</sup> generator and photon detectors. For drive-by, backscatter-only inspections, operators can select from four speeds for accurate imaging: 0.5, 1.5, 5 and 10 km/hour (0.3, 1.0, 3, 6 mph)

With the operator control console and LCD display unit mounted in the cab of the vehicle, the ZBV is designed for either one or two person operation, depending on the user's application

The system includes a generator that provides electrical power to the X-ray system and associated electronics. It is fed from the same fuel supply as the vehicle engine (diesel)

At time of order, the system can be specified to scan from either side of the vehicle

The ZBV provides full scan coverage of a high cube container on a truck and provides useful images of stacked ISO containers

The ZBV provides an image of the target contents up to 3.6 meters (12 feet) in height at a distance of 1.5 meters (5 feet) from the side of the ZBV or 4.3 meters (14 feet) in height at a distance of 1.8 meters (6 feet). The ZBV is also capable of providing useful images at distances up to 4.5 meters (15 feet)

The ZBV can reveal the contents of automobile trunks and bulk contraband concealed under the steel body of vehicles and within the steel walls of ISO containers

The ZBV presents an image of bulk organic material located behind 6 mm (0.25 inches) of steel when scanned from a distance of 1.5 meters (5 feet). The system will provide visible differentiation between organic and inorganic materials

Resolution is 7 mm (0.28 inches), normal to the side of the ZBV at a distance of 1.5 meters (5 feet)

Use of the ZBV complies with the Container Security Initiative's requirement for Non-Intrusive Inspection

### **Applications:**

Checkpoints/Border crossings/Force Protection  
Manifest verification/Cargo screening  
Urban surveillance

### **Technical specifications**

#### **Image Display System**

#### **Operator s Console**

Z<sup>®</sup> Backscatter Image is displayed on 15" LCD High-Intensity monitor (sunlight readable)

Operator selected scan speed setting

Windows XP Operating System.

Display and X-ray system controls are conveniently mounted allowing one or two person operation

#### **Detection Capability**

LCD display monitor clearly shows organic substances such as explosives, drugs, and plastics. The display will also reveal concealed cargo behind false walls (such as drugs) that does not match stated manifests.

#### **Detection Options**

**Density Expand:** Allows operator to control and continuously adjust the contrast of the displayed image, thus enhancing the differences in objects.

**Edge Enhancement:** Accentuates the edges of objects in the image, helping the operator to recognize objects faster and more readily.

**Reverse Video:** Allows the operator to display the normal, "positive" image or the reverse black and white "negative" image, thereby enhancing subtle density differences.

**Zoom:** 2x, 3x, 4x magnification with the ability to roam continuously through full field of view.

**Pan & Scroll:** Allows the operator to examine any part of the image at preset display magnifications.

#### **Additional Features**

**Export Image:** Provides capability to export "what-you-see is what-you-get" (WY-SIWYG) images into .TIF/JPEG formatted files.

**Database function:** Provides ability to create records relating to specific scans.

**Save and Restore:** Archival function to store or recall images from computer based storage media.



## System Options

Harsh Environment  
Radioactive Threat Detection (RTD)  
Portal/Stationary Scan Mode  
Remote Operator's Console (Requires Portal Mode)  
Shipping Tie Down D-rings  
Low Suspension on Domestic Chassis

## Operating Features

**Vehicle:** *International* — Mercedes Sprinter Model 416CDI 4 x 2 (diesel); *USA* — Daimler-Chrysler Sprinter (diesel). Fuel used to run generators for X-ray equipment will match fuel used in vehicle.

**4 Scanning Speeds:** 0.5, 1.5, 5 and 10 km/hr. (0.3, 1.0, 3, and 6 mph).

**Scan Field of View:** Height: 3.6 meters at 1.5 meters from side of vehicle.

## Health and Safety

**Dose to Cargo:** Less than 0.04 micro Sievert (0.004 mR) per scan, average speed 5 km/hr (3 mph) at 1.0 meter (3 feet) distance.

**Environmental/Operator Dose:** Less than 1 micro Sievert (0.1 mR) per hour.

## Environment

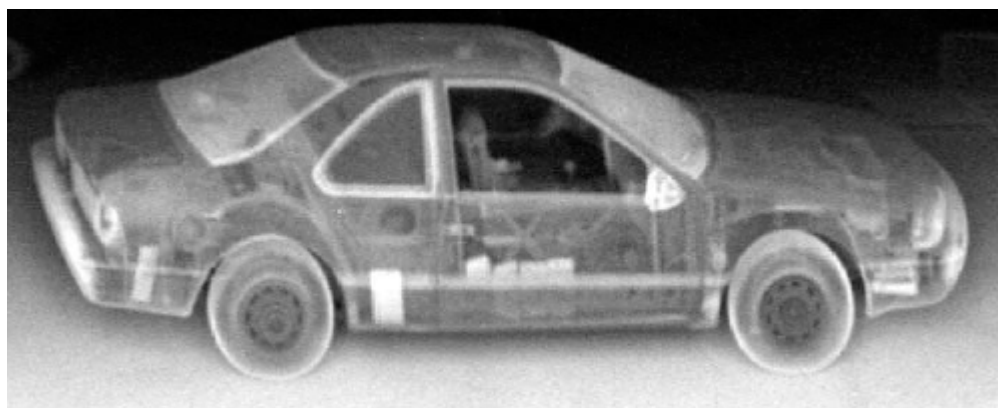
### Temperature

Ambient Operating: 0°C to 42°C (32°F to 108°F).

Storage: -20°C to 60°C (-4°F to 140°F).

### Humidity

10-95% relative humidity (non-condensing)





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