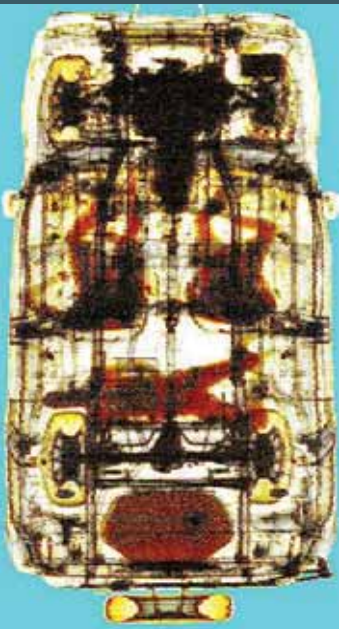


CarSCANTM



CarSCAN rapidly inspects cars and light trucks for explosives, contraband and stowaways at vehicle checkpoints. Passengers remain safely inside the vehicle, allowing a thorough inspection with the highest throughput.

Key Features

- Drive-through vehicle scanner
- *K-Edge Switched Energy*TM highlights organic masses in color
- Compact; easy to set-up and re-locate
- Ultra-low-dose; safely scans occupied vehicles
- Remote operation at any distance

CarSCANTM



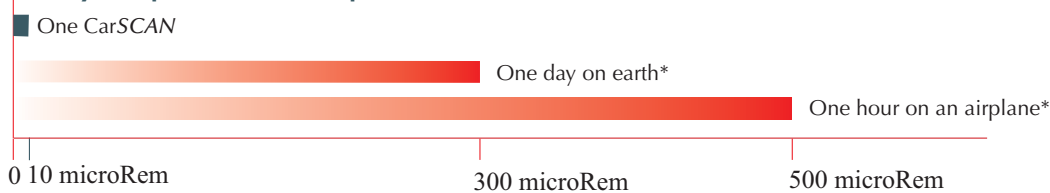
CarSCAN significantly increases detection capabilities at military checkpoints, national infrastructure, and other high-security locations. Concealed items are quickly identified in vehicles traveling at normal checkpoint speeds, reducing wait times at border crossings and other high-volume inspection sites.

CarSCAN uses a proprietary dual-energy transmission X-ray technology called *K-Edge Switched Energy*TM. This technique requires only a single view penetrating through the entire vehicle to greatly minimize blind spots. Organic objects are highlighted in easily understandable color-coded images that practically eliminate clutter. Advanced algorithms measure the dimension and weight of concealed organic masses providing additional useful information to the operator. A conventional black and white image is also displayed to locate metal objects such as weapons. CarSCAN makes it easy for the screener to make a rapid and accurate determination of a vehicle's contents.

Ultra-low Dose

The X-ray level used in CarSCAN is extremely low, about 1/10,000th of a typical medical X-ray. Each scan exposes the vehicle's occupants to about 5 microRem of radiation. For comparison, naturally occurring radioactive materials in the air and soil expose all persons to 300 microRem per day. Airline passengers receive about 500 microRem each hour during flight, due to the increased elevation. CarSCAN complies with ANSI/HPS N43-17, the primary standard in the U.S. for general purpose security screening of humans using X-rays.

X-ray Exposure Comparison



Physical Specifications

Maximum Vehicle Speed	10mph / 16kmh
Outside Dimensions	129"(W) x 125.3" (H) x 144.2" (L) 3264mm (W) x 3183mm (H) x 3664mm (L)
Tunnel Inside Dimensions	114" (W) x 98.5" (H) 2895mm (W) x 2504mm (H)
Maximum Vehicle Size	114" (W) x 96" (H) 2895mm (W) x 2438mm (H) 96"(W) x 96" (H) (at wheel base) 2438mm (W) x 2438mm (H) (at wheel base)
Weight	System weight 1591kg (3500 lbs) Shipping weight 2068kg (4550 lbs)

Electrical and Environmental Specifications

Power	110/220 Volts, 15/8 Amps , Single Phase
Dust and Moisture	Components within 24" of ground rated IP67 Remainder of system rated IP65
Operating Temperature	-40C to 55C (-40F to 130F)
Relative Humidity	Operates in 0% to 100% Relative Humidity

Safety

Radiation	5 µRem per scan typical / ANSI N43.17 compliant
Electrical	UL 61010-1 compliant

Specifications subject to change without notice. Patent pending.

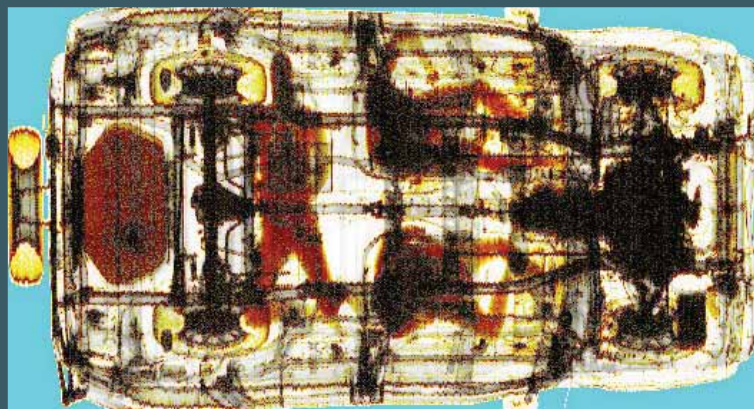
*Source: <http://www.epa.gov/radiation/understand/calculate.html>

To see a video of CarSCAN in operation, please go to www.spectrumsdi.com/carscan.html

Detection Capability

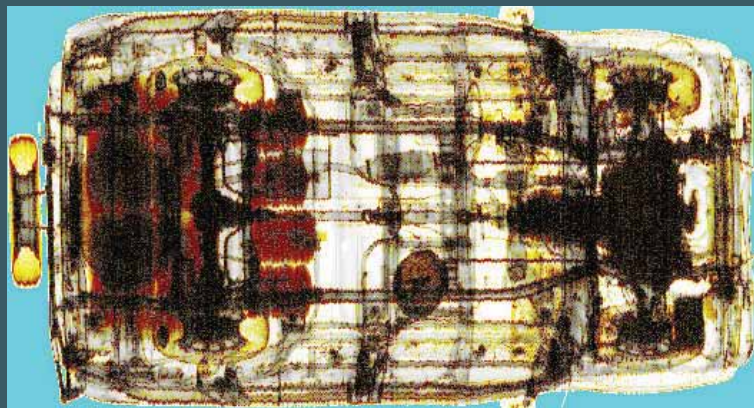
Hidden Persons

Three people and the gas tank are clearly identified in this image. CarSCAN reveals nearly all hidden persons in cars and light trucks.



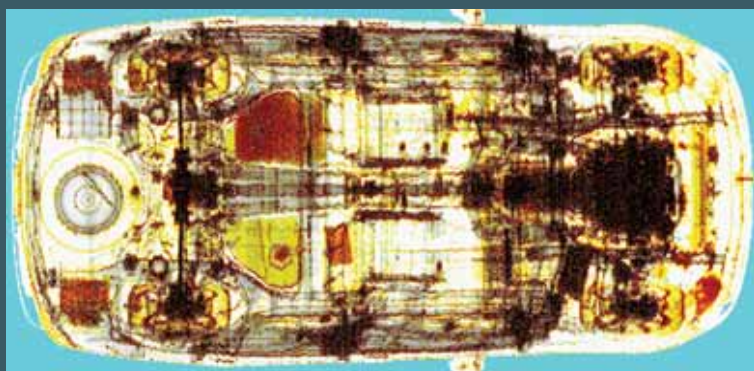
Car Bombs

A simulated 500 pound car bomb can be seen in this image. A car bomb capable of significant destruction will be nearly impossible to conceal in a vehicle inspected by CarSCAN.



Drugs/Currency

Smaller organic objects, such as drugs and currency, are visible in this image. Color-coding indicates the thickness of each object. CarSCAN shows objects weighing as little as 10 lbs.



K-Edge Switched Energy™

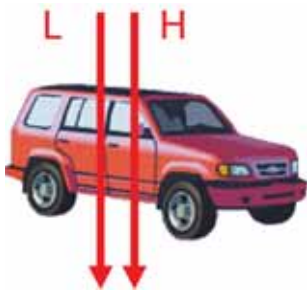
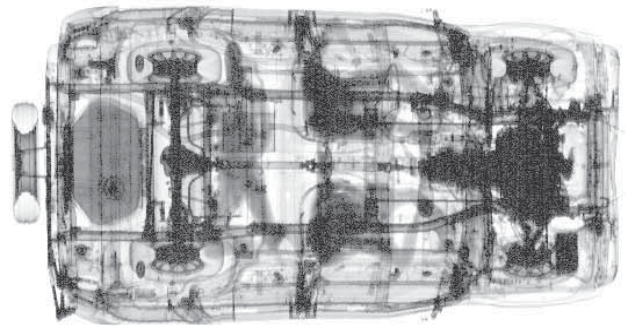
CarSCAN operates with a patent-pending technique called *K-Edge Switched Energy*™. Conventional X-ray systems use a single-energy beam with no ability to distinguish metal from organic objects. The resulting black and white image shows shapes, but no information on the material's composition. In comparison, *K-Edge Switched Energy* simultaneously screens the vehicle at two different energies, allowing metal and organic objects to be electronically separated by advanced computer processing. Organic threats such as explosives, stowaways, and drugs are displayed in shades of yellow and red, allowing the operator to quickly understand the vehicle's contents.



Conventional X-ray

Only a single energy X-ray

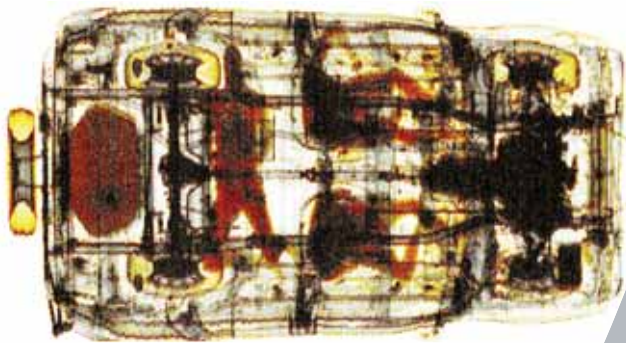
- ❌ Black and white image
- ❌ Metal and organic look alike
- ❌ Not possible to determine mass



K-Edge Switched Energy

Two different X-ray energies

- ✓ Color-coded image
- ✓ Organic is separated from metal
- ✓ Measurement of size and mass



CarSCAN's overall operation is similar to an airport baggage scanner. However, the technical challenge of scanning vehicles is far more difficult, needing to penetrate through a thick steel frame while only using a minuscule level of X-rays. Spectrum San Diego developed the *K-Edge Switched Energy* technology to overcome this problem. Proprietary X-ray filters are rapidly alternated in the scanning beam to provide narrowly focused energy bands. One of these filters has a special characteristic, known in physics as a *high K-edge energy*. This key property allows CarSCAN to operate within a narrow window of X-ray energy that simultaneously provides good penetration and extremely low X-ray dose.

This precise energy control makes CarSCAN an accurate measurement device, far more sophisticated than scanners that simply produce an image. Software tools allow the operator to identify the exact size and weight of suspicious objects, in addition to their shape and location in the vehicle.

Applications & Customers

CarSCAN is compact and easy to assemble. Its small footprint allows the CarSCAN archway to be installed into an existing lane of traffic. Minimal manpower and time are required for installation and operational training. Since only a few hours are necessary to set up and dismantle the system, short duration needs and unanticipated security requirements can easily be accommodated. No trenching or build-out of the installation area is necessary. CarSCAN's versatility makes it ideal for permanent installation at military checkpoints, borders and critical infrastructure sites, as well as accommodating short term or short notice vehicle inspection needs.

Defense and Force Protection



Borders



Ports and Ferries



Critical National Infrastructure





Spectrum San Diego, Inc. is a high tech security innovator, specializing in ultra-low-dose X-ray screening systems. Founded in 1998, the company's technologies focus on the rapid detection of weapons, drugs, stowaways and explosives, including Vehicle-Borne Improvised Explosive Devices (VBIED). Spectrum San Diego pioneered the use of ultra-low-dose X-ray technology, providing revolutionary security solutions to the government, law enforcement and military. Spectrum San Diego has also played a crucial role in the protection and safety of the public post 9/11, through its CastScope™ screening system, now used in airports across the United States by the Transportation Security Administration (TSA). The company's solutions address real world problems, delivering advanced screening and detection capabilities with unparalleled operational efficiency. Products include CarSCAN™, SentryScope™ and CastScope™. The company's technologies can be found at high security facilities and locations worldwide. For more information, please visit www.spectrumsdi.com.

SentryScope™



CastScope™



CarSCAN™



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