

Ventura Tactical Systems **Vehicle X-Ray Scanner**

Airport + Homeland + Border




venturatacticalsystems.com

Applications

- Airports
- Correctional facilities
- Government buildings
- Permanent and temporary checkpoints
- Access points to high-risk urban areas
- VIP security
- Border crossings



The constant increase of terrorist activities calls for fast and reliable methods of screening vehicles. High-security facilities need high-tech equipment and efficient measures to address this new challenging environment. Our response is a safe and cost-effective scanner that achieves top imaging performance with an extremely low radiation dose for the vehicle occupants.

The Vehicle Scanner incorporates Ventura's proprietary technology that has received considerable international acclaim over the past years. Developed with a constant focus on high performance and unparalleled reliability, it can scan up to 400 vehicles per hour in search for contraband or threats such as weapons, improvised explosive devices or other forbidden items.

VEHICLE X-RAY SCANNER VTS-XRT-4300C

Ventura uses transmission imaging, a top-down oriented x-ray generator and optimized geometry in order to provide high-resolution images of vehicles driving through the scanning frame.



Ventura's automated traffic management system ensures maximum throughput and optimal image quality. The automatic barriers and intuitive signaling are controlled by Ventura's advanced computers.

Additional functionality may be added through an under-vehicle inspection system that provides a high-resolution image of the vehicle's underside. The operator may inspect the image individually in search for modifications made to the vehicle: for example, new welding points may suggest a double floor used to hide contraband, areas of the vehicle that are cleaner than the rest may also suggest those areas were used for hiding threats.

VEHICLE X-RAY SCANNER
VTS-XRT-4300C

System Component

1. Durable steel mechanical structure having an upside-down U Shape which contains the imaging system main component (the X-ray generator), lighting and signaling devices (including light projectors for night time), video surveillance cameras, license plate recognition camera, the communication system, automation equipments, safety system devices, electrical connections, software system and HVAC system.
2. Ventura proprietary ultra-thin high-resolution detector modules.
3. Traffic Management System which contains traffic barriers, traffic lights, radar speed sensor for the scanned vehicle, Video Messaging Screen (VMS).
4. Command and Control Center (CCC).



Advanced Integration

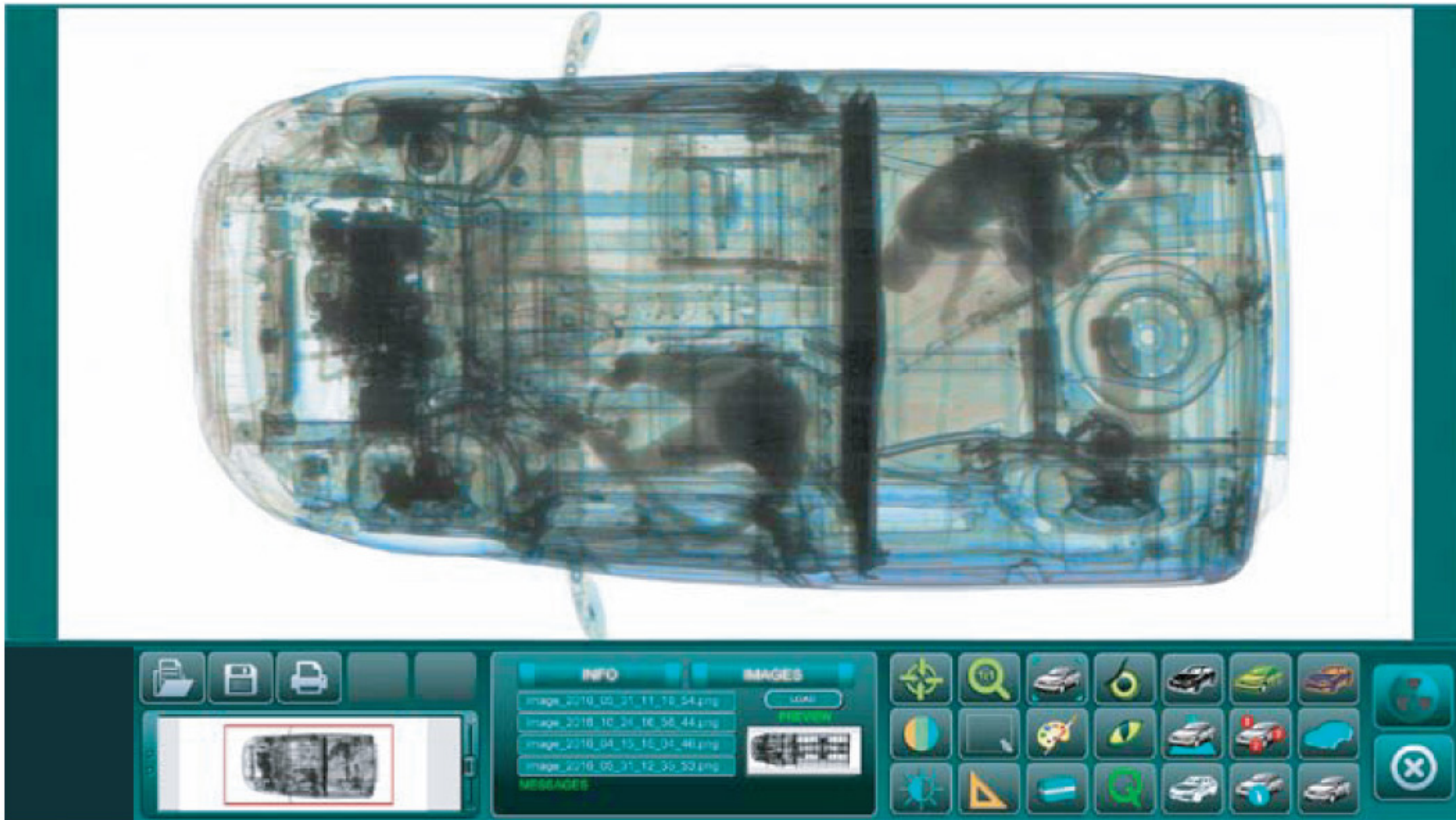
Effective supervision of scanning activities and prevention of corrupt practices has always been a serious concern for border control authorities. All Ventura Scanners can be remotely supervised in real time from a central management location with or without knowledge of the operators and can even be operated from the supervisor console.



In case of high-traffic situations, each scanner can be operated by up to five image analysts through its operator multiplexing features that ensures scanned images are always sent to the operator that has the longest available analysis time.

Further integration possibilities are available such as automatic interrogation of law enforcement database – this allows the operator to have real-time extensive information about the vehicle: owner, registration data and place, registered color etc.

Ventura's Vehicle Scanner identifies vehicle through automated license plate recognition (LPR). During the LPR process, the system takes a snapshot of the vehicle in infrared and visible light and stores the resulting picture along with the extracted license plate information. Based on the information provides by the system, the operator can check quickly if the presented information is in accordance with the reality and has an important tool that can help identify a potential threat like fake license plates or a stolen vehicle that gets often used for ill intentions.



Software

The control application software has three levels of security access (Operator; Administrator and Service) and actions to be performed are limited to the specific levels. The operator can start the control application software only by using an authorization password for authentication.

The software images' analyzing application displays the radiographed target's image in black and white, with options for filtering and magnifying, respectively the color image resulted through the discrimination filter's applying, on different type of materials: organic, inorganic, metal. The operator can apply the available different filters and processing algorithms in order to improve the penetration or image quality just by touching intuitive icons on the Graphic User Interface.

The application allows parallel visualization of the radiography and the underside image. This gives the operator the possibility to take easy decisions about the vehicle's status as cleared or suspect.

The dual-energy imaging provides organic / inorganic material discrimination for fast identification of threats such as explosives or other IED components. It also gives the operator an important tool to identify dangerous items such weapons or contraband.

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BASIC PARAMETERS

Scanning tunnel	104.5ft (w) × 105.75 (h) 3.190m (w) × 3.223m (h)
Portal dimensions	143ft (w) × 145 (h) 4.358m (w) × 4.425m (h)
Exclusion Area	approximately 33ft × 33ft 10m × 10m

IMAGING SPECIFICATIONS

X-ray Generator	300kV
X-ray Geam orientation	vertically downward
Steel Penetration	50mm
Wire Resolution	0.4mm (AWG 26)
Spatial Resolution	0.0787in (2mm)
Material Discrimination	Three material classes (organic/inorganic/metal)

OPERATIONAL DATA

Throughput	400 vehicles/h
Scanning Speed range	3mph to 13mph
Personal Required	1 operator for process control and image analysis. The operator is located outside of the Exclusion Area, inside the Command and Control Center (CCC).
Operator Workstation	two display, full-HD professional monitors (one monitor for image analysis and one for CCTV surveillance) one touch-screen monitor for the software control application multiple image analysis workstations (optional)
Operating Software	in-house developed ergonomic software interface low-fatigue design of the graphic user interface touchscreen operation (optional) automatic archiving of scan data in user defined database proprietary image processing filters high quality images of the vehicle and the held objects possibility to change scanning directions: YES (optional)
Additional Info	video camera and LPR camera for recording and saving the vehicle's type, model, plate no. and vehicle's entry time negative filtering technology. warning alarms for the non penetration areas



HEALTH AND SAFETY

Radiation safety	Compliant to IAEA, WHO and EU guidelines Compliant to ANSI N43.17
The dose at the limit of the Exclusion Area	less than 1 mSv/year, according to IAEA, GSR3.
The dose inside the CCC	less than 1 mSv/year, according to IAEA, GSR3
The dose for vehicle's occupants	less than 50 nSv / scan

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-20 to +55 °C; extreme temperature kits available Humidity: 0% to 100%
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