

AS&E

SMARTCHECK™
PERSONNEL SCREENING SYSTEM FOR
DETECTING THREATS AND CONTRABAND

ZB

Z° BACKSCATTER
TECHNOLOGY

**S M A R T
C H E C K**



THE AS&E ADVANTAGE: Z® BACKSCATTER

TECHNOLOGY

THE TECHNOLOGY OF CHOICE WITH UNPARALLELED DETECTION ABILITIES

HOW Z BACKSCATTER DETECTS THREATS OTHER SYSTEMS MISS SmartCheck employs AS&E’s patented Z Backscatter technology, which works by detecting and highlighting the scattered X-rays emitted by “low Z” materials (materials made from elements that contain low atomic numbers, such as carbon, hydrogen, oxygen, and nitrogen). Such materials are found in explosives, plastic weapons, and drugs and cannot be detected by using standard personnel screening systems. SmartCheck’s high-quality images show these items as bright and well-defined objects, making it easy to locate and identify hidden materials — and to determine which of them are security threats.

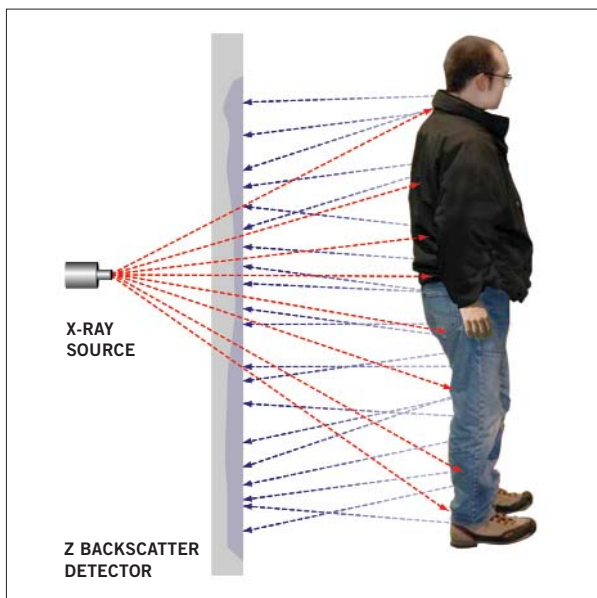
RADIATION LEVEL COMPARISONS	
SmartCheck scan: less than 0.1 μ Sv	Daily environmental radiation: 10 μ Sv
2.4 hours in Denver, CO: 1.0 μ Sv	Dental X-Ray: 10 μ Sv
One hour on an airplane: 3 μ Sv	Chest X-Ray: 100 μ Sv
One hour in an airplane at altitude is equivalent to 30 SmartCheck scans.	

SmartCheck also recognizes the lack of scattering that occurs when “high Z” materials are placed against the body. These materials, such as metal weapons and bomb-detonating wires, absorb X-rays and are displayed as dark objects in the image. Thus the system is able to display all metallic and non-metallic threats and contraband anywhere on a person’s body.

PRIVACY FILTER SmartCheck addresses privacy concerns with an optional privacy filter. The filter, using a software algorithm, produces an image that presents only an outline of the scanned individual. It outlines any potential threats on the body, while at the same time ensuring that the person’s privacy is maintained.



AS&E HOLDS MORE THAN 20 PATENTS ON Z BACKSCATTER TECHNOLOGY.



THE SMARTCHECK SYSTEM IS EASY TO OPERATE. The self-contained operator console is easy to use and displays high-quality images that are easy to interpret. System software also includes multiple image enhancement features.

SMARTCHECK UTILIZES Z BACKSCATTER TECHNOLOGY. Z Backscatter images capture data from X-ray photons that are scattered from the object undergoing inspection.

PERSONNEL SCREENING THAT'S SAFE, FAST, AND

COMPREHENSIVE



SMARTCHECK IS THE MOST EFFECTIVE WAY TO DETECT THREATS AND CONTRABAND

SMARTCHECK REVEALS:

- PLASTIC EXPLOSIVES
- COMPOSITE WEAPONS
- PLASTIC AND METAL GUNS
- DRUGS AND OTHER CONTRABAND
- CERAMIC AND METAL KNIVES
- BOX CUTTERS
- PRECIOUS METALS
- RECORDING DEVICES

DETECTS WEAPONS AND EXPLOSIVES SmartCheck is the quickest and most effective way to safely screen for threats and contraband hidden under a person's clothing. Unlike other personnel screening systems, SmartCheck simultaneously detects both metallic and non-metallic objects, such as composite weapons, guns and knives, plastic explosives, drugs, and other hidden threats and contraband. SmartCheck eliminates the need for intrusive and time-consuming pat-down and strip searches because its easily interpreted Z Backscatter image allows the operator to identify the shape and size of a potential threat on a person and to locate precisely where the potential threat lies.

ENSURES PRIVACY An optional privacy filter ensures the privacy of the person being scanned while quickly and effectively displaying threats. For increased privacy, the image analysis console can be located remotely, out of sight of those being scanned. In addition, SmartCheck can be configured so that images cannot be stored, exported, or transmitted.

VERSATILE SmartCheck's footprint fits through a standard doorway. It is relocatable, making it ideal for use in airports, by Customs officials, and at high-threat facilities, such as prisons, military bases, and government and commercial facilities. It is easy to use and, depending on the operating mode, requires only one or two operators.

SAFE SmartCheck complies with all applicable U.S. personnel scanning regulations. It is safe for operators and all individuals, including frequent travelers.

SMARTCHECK IS A SAFE, EFFECTIVE ALTERNATIVE TO INTRUSIVE PAT-DOWN AND STRIP SEARCHES. Photo-like Z Backscatter images give the operator a clear display of threats and contraband hidden under a person's clothing.

AS&E'S PRIVACY FILTER USES A SOFTWARE ALGORITHM TO ADDRESS PRIVACY CONCERNS. The filtered image presents only an outline of the scanned individual and quickly and reliably outlines any potential threats on the body — all while ensuring the person's privacy.

SCANNED INDIVIDUAL



UNFILTERED IMAGE

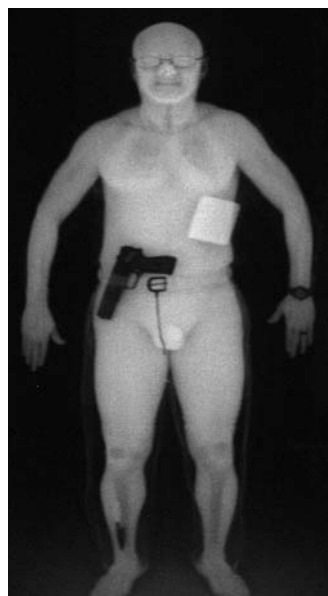
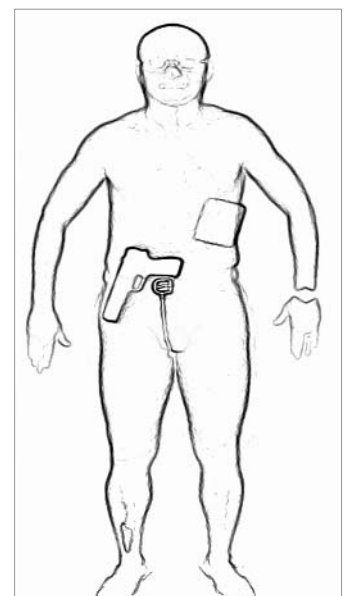


IMAGE WITH PRIVACY FILTER





ENSURING THE HIGHEST LEVELS OF

SYSTEM SAFETY

FREQUENTLY ASKED QUESTIONS ABOUT RADIATION SAFETY AND Z BACKSCATTER X-RAYS

DOES SMARTCHECK MEET RADIATION SAFETY STANDARDS? The system is safe for all individuals, including frequent travelers, pregnant women and children. The effective dose from the SmartCheck system is less than 10 microrem (0.1 microsieverts) per scan and SmartCheck meets all the requirements of the American National Standards Institute (ANSI) standard (N43.17) for “Radiation Safety for Personnel Security Screening Systems Using X-rays.”

WHAT DOES THE MEASUREMENT OF 10 MICROREM MEAN IN LAYMAN'S TERMS? Microrem and microsieverts are measurements of radiation. People are constantly exposed to some level of radiation from natural sources. One SmartCheck scan (10 microrem) is equivalent to the radiation a person receives from flying in an airplane at 30,000 feet for about two minutes.

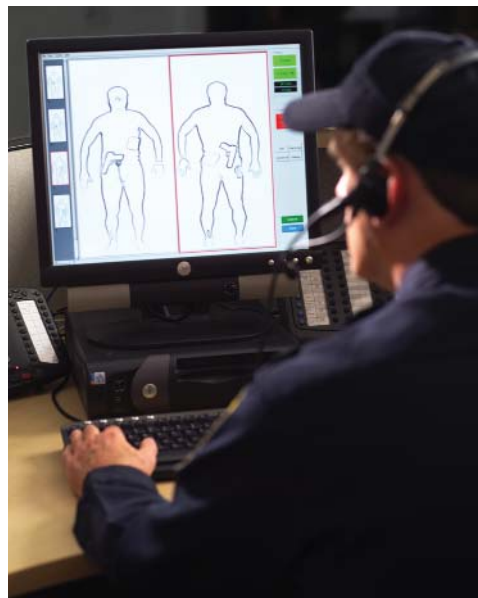
IS SMARTCHECK SAFE FOR EVERYDAY USE? Yes, the National Council on Radiation Protection and Measurements recommends that the dose from any one source of man-made radiation does not exceed 25 millirem (0.25 millisieverts) per year. At less than 10 microrem (0.1 microsieverts) per scan, even 2,500 SmartCheck scans in one year would not exceed this recommended limit.

IS SMARTCHECK SAFE FOR OPERATORS? SmartCheck is as safe to use as an airport luggage scanner. No special technical or medical personnel are needed to operate or monitor the system. SmartCheck system operators receive an exposure of less than 0.25 millirem (0.0025 millisieverts) in any one hour, as measured at 30 cm from the surface of the system, excluding the beam emission side.

IS SMARTCHECK SAFETY INTERLOCKED? Yes, any malfunction that could cause an unexpected increase in radiation exposure is fully interlocked to prevent X-ray generation.

ZB

THE RADIATION DOSE FROM ONE SMARTCHECK SCAN IS EQUIVALENT TO THE RADIATION A PERSON RECEIVES DURING ABOUT TWO MINUTES OF AIRPLANE FLIGHT AT 30,000 FEET.



IN STANDARD OPERATING MODE (LEFT), the system is operated by one person.

REMOTE IMAGE ANALYSIS (RIGHT) A remote console can be placed in a separate room to seclude the image analyst from the person being scanned, offering a higher level of privacy. In this mode, the image analyst alerts the system operator if a threat is detected.



SMARTCHECK TRAINING: We provide our clients with unsurpassed safety and operator training, as well as image analysis training to become certified as a Threat Detection Specialist (TDS).

SMARTCHECK SERVICE AND SUPPORT: AS&E's highly skilled Field Service Engineers (FSE) provide support services on-site worldwide. AS&E has also assembled a world-class in-house support staff to service your X-ray detection systems. Service is available 24 hours a day, 365 days a year, by telephone at 978.262.8700 or email at service@as-e.com.

FOR MORE INFORMATION about the SmartCheck screening system and other X-ray inspection products, please contact AS&E Sales at 978.262.8700 or sales@as-e.com. Find AS&E on the Web at www.as-e.com.



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WHEN YOU CAN'T AFFORD TO COMPROMISE.

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