

RADIATION SCANNER FOR CARGO CONTAINERS & TRUCKS

Model # RAD-20, -21CANSKAN

COMPLETE SYSTEM: Does Not Interfere With Vital Loading and Unloading of Ships.
FEATURES:

- NON-INVASIVE - **EXTERNAL SCAN** GIVES DETAILED INTERNAL INFORMATION
- DETECTS - ALL RADIOACTIVE MATERIALS, SOURCES & CONTAMINATION
- MORE SENSITIVE and BETTER RESOLUTION THAN BIGGEST VEHICLE MONITORS.
- CREATES MAP OF INTERIOR.
- PIN-POINTS LOCATION OF RADIOACTIVE CONTRABAND
- ISOTOPE IDENTIFICATION OF 'HOT' SOURCES.
- REQUIRES ACCESS TO TOP OR ONLY ONE SIDE OF CONTAINER (**RAD-20CANSKAN**)

BACKGROUND: Large numbers of loaded shipping containers pass through and are stored at seaports around the world. We need to know which containers, if any, carry Radioactive Materials. Entering and doing a manual search of large numbers of containers is not feasible for many reasons. The **RAD-20,-21CANSKAN** give highly detailed interior information from an external scan. Unlike the highly successful X-ray and Gamma scanners, the **RAD-20CANSKAN** only requires access to the top or one side of each container, so it can even be used to scan stacked containers.

DESCRIPTION: The **RAD-20CANSKAN** has three main elements, an 8ft tall by 40 ft mobile scanning detector, the computer analysis console, and a mobile crane for detector placement. Alternatively the detector assembly is easy to mount on existing port vehicles, such as a forklift, crane, etc... **RAD-21CANSKAN** has a fourth element which is a neutron generator and requires a license to own and operate.

To use the **RAD-20CANSKAN**, the detector is brought to the container. In contrast, the **RAD-21CANSKAN** has the detector in a "tunnel" so the container must be brought to the detector.



Tunnel Scanner(21)



Crane Scanner(20)

Note: Patent Pending.

TA **TECHNICAL ASSOCIATES**
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\$Revision: 1.4 \$

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SPECIFICATIONS:

Sensitive Length: 8 ft (2.4 m) Linear Detector.

Overall Dimensions: **RAD-20CANSCAN:** 8 ft x 2 ft x 40ft or 8ft x 2 ft x 20ft.
RAD-21CANSCAN: 16ft W x 20ft H x 90ft L (Typical).

	RAD TYPE	SCINTILLATORS	RAD-20CANSCAN	RAD-21CANSCAN
Detectors:	Gamma:	30 ea 3" dia x 1" NaI(Tl)	YES	YES
	Neutron:	1 each 7" dia. Scintillator	—	YES
	Neutron Generator:	—	—	YES

Neutron Generator: In the **RAD-21CANSCAN** a Neutron Generator gives enhanced sensitivity to fissile materials.

Shielding: Shielding and Collimation is provided, but may be deleted for special light-weight version: **RAD-20LW**.

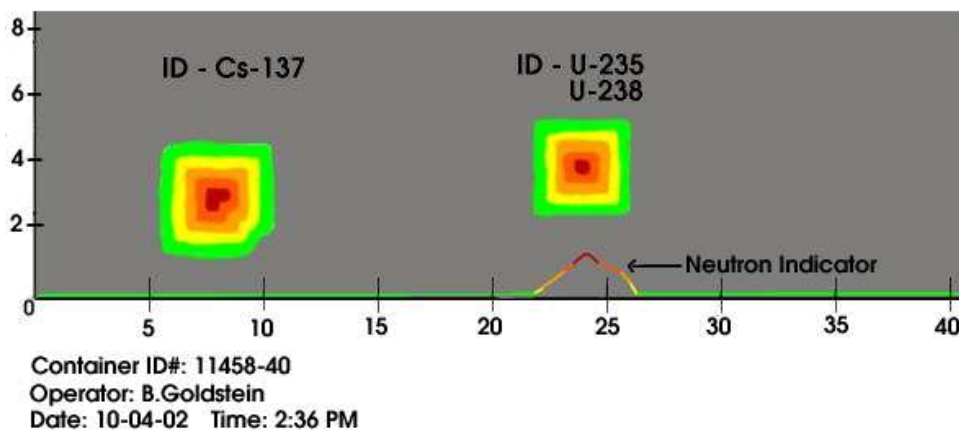
Electronics: Each detector has pre-amp and HV.

Isotope Identification: A Multi-Channel Analyzer applies Background Subtraction and uses Sophisticated algorithms to compare the output from the highest counting detector to the extensive pre-loaded Spectrum Library to achieve accurate Isotope Identification.

Location Mapping: The computer uses the detector data to overlay a virtual 30 x 150 grid onto the shipping container, with grid lines spaced every three inches The visual display shows where the radiation emitting sources are Located on this grid.

Data Storage: All data is archived to the 100 Gig Hard Drive and automatically backed-up to CD.

Image of Container Interior Created By RAD-CANSCAN



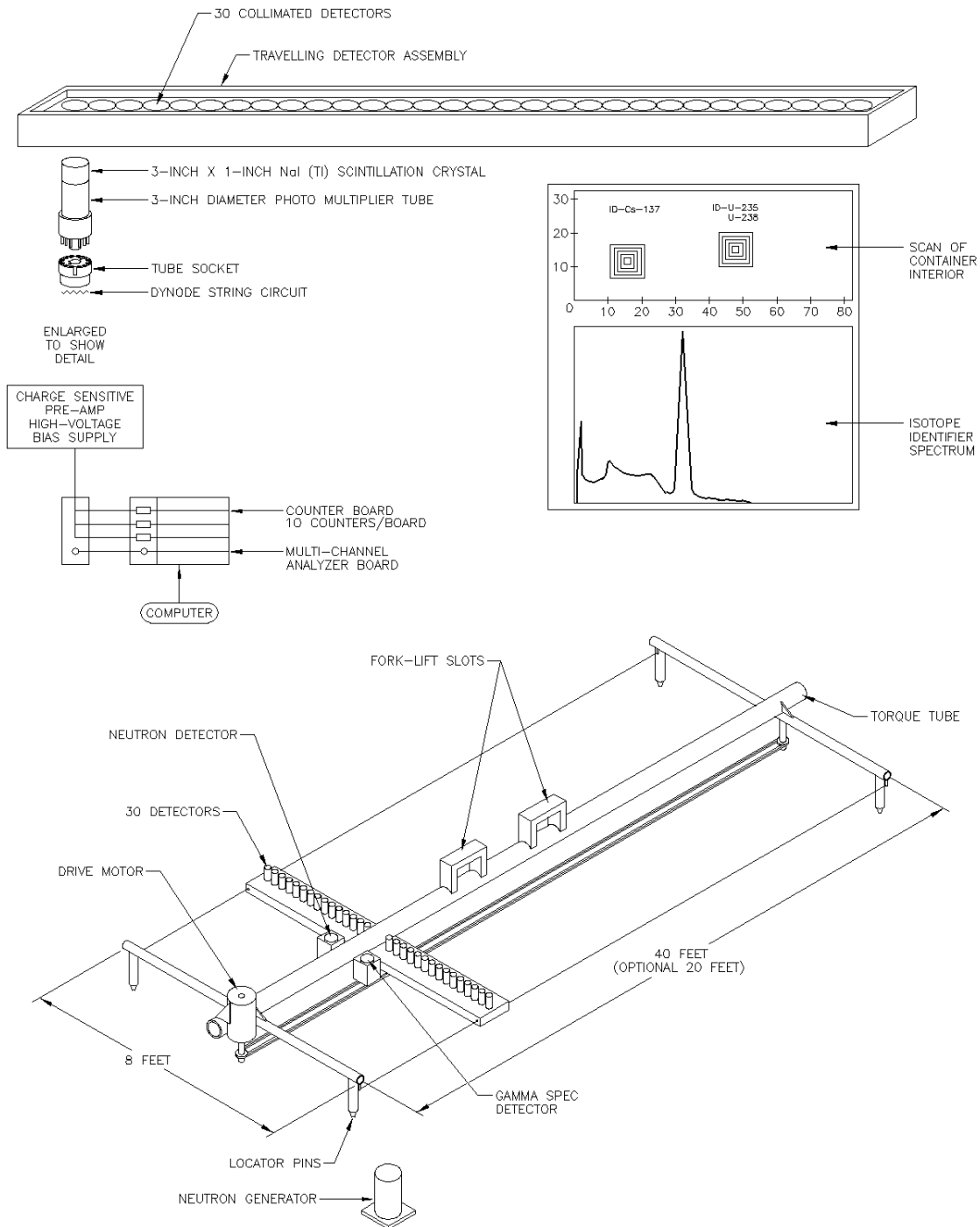
RAD-20,21CANSCAN: 30 x 150 Grid Showing 2 Hot Spots, and identifying the isotopes, in this shipping container.

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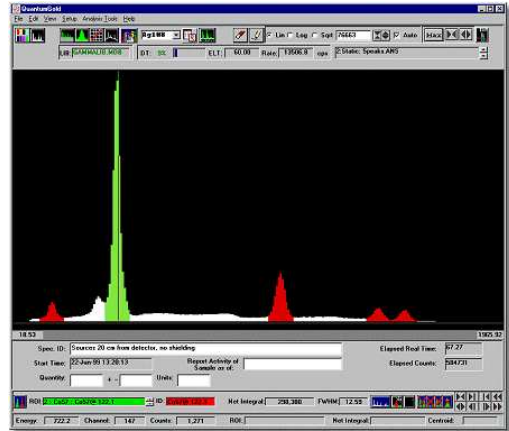
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The Quantum Family of Software

Technical Associates has been a manufacturer of accurate, easy to use Radiation Detection Devices Since 1946. Now TA can also provide complete gamma spectroscopy systems including analytical software. The Quantum Software packages have been designed to allow the spectroscopist to decide how an analysis is performed. Power and flexibility are the watchwords for these packages, which represent our latest advance in the fields of pulse-height analysis and gamma spectroscopy. QuantumMCA provides support for a broad range of hardware with tools for qualitative analysis. QuantumGold adds full function quantitative analysis for nuclear spectroscopy to the features of Quantum MCA. QuantumGeD includes both qualitative and full quantitative analysis features for germanium detectors only (i.e., no NaI(Tl) detectors and no QCC mode). QuantumGe is the same, but without deconvolution analysis. QuantumNaID has both qualitative and quantitative analysis for NaI detectors only. while QuantumNaI does not include deconvolution analysis. Each version is a full 32-bit Microsoft Windows® application, and will operate under Windows 95, 98, and NT version 4.0.



QuantumMCA is the basic MCA analytical package and is supplied with all TA multichannel analyzer instruments that require computer control. For sodium iodide-based gamma spectroscopy, TA offers the patented Quadratic Compression Conversion (QCC) (patent no. 5,608,222). It is implemented in the MCA2100R and MCA2100 gamma spectrometers. This signal processing technique gives spectra with consistent peak resolution throughout the entire range of detection. This makes spectrum analysis fast and easy.

The following are just a few of the features:

- Spectrum memory control for controlling the display of up to 8 spectra.
- Tool Setup for entering analysis parameters.
- Device configuration for establishing device communication.
- Setting and identifying ROIs.
- Analysis tools.
- Nuclide libraries.
- Quantitative analysis.
- QScript tool for automation.
- Analysis methods.
- Resolution and efficiency calibration.
- Quadratic Compression Conversion.

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