

RADIATION SCANNER FOR CARGO CONTAINERS & TRUCKS

Model ~ RAD-10, -11 CANSCAN

FEATURES:

- FAST SCAN
- NO MOVING PARTS
- 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
- EXTREMELY WELL SHOCK MOUNTED
- IP67



PROBLEM:

Large numbers of loaded shipping containers pass through & are stored at seaports around the world. We need to know which Materials. Entering & doing a manual search of large numbers of containers is not feasible for many reasons.

SOLUTION:

The **RAD-10, 11 CANSCAN** give highly detailed, FAST RESPONSE, interior information from an external scan.

DESCRIPTION:

(20) Gamma detectors arranged in an 8 ft x 40 ft array, gives IMMEDIATE DATA on possible radioactive content of the entire container volume.

(2) METHODS OF USE:

- 1) **Detector Wall:** 8 ft H x 40 ft L array, Container is placed parallel & within 3 feet of the detector wall.
Proximity sensors start the measurement
Counting continues until:
 - 1) Container is removed
 - 2) Operator stops count
 - 3) Count alarm is tripped
 - 4) A combination of the above



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METHODS OF USE: (continued)

2) **Crane Mounted:** Mounting of detector array is on a crane or a spreader.

Views container from above

This mounting has both advantages & disadvantages.

Proximity sensors start the measurement

- Counting continues until:
- 1) Container is removed
 - 2) Operator stops count
 - 3) Count alarm is tripped
 - 4) A combination of the above

Advantages:

- The entire container is scanned
- No additional handling
- The detector array is well shock mounted
- Contraband cargo is spotted early
- Suspicious container can be quickly separated from the rest
- Reliably detects CFR49-C Hazard Class 7 (Radioactive Material)

Disadvantages:

- Quick Scan costs more than TA's 'OFF-LINE' RAD – 20 CANSCAN
- Installation may require Port approval

NOTE: Patent Pending

SPECIFICATIONS:

Sensitive Length: 40 ft L x 8 ft H

Overall Dimensions: **RAD-10 CANSCAN Detector Wall:** 8 ft H x 2 ft W x 40 ft L

RAD-11 CANSCAN Crane Mount: 2 ft H x 1 ft W x 8 ft L (2 Each)

	RAD TYPE	SCINTILLATORS	RAD-10 CANSCAN	RAD-11 CANSCAN
Detectors:	Gamma:	(20) ea 3" dia x 1" NaI(Tl) Scintillator	YES	YES
	Neutron:	(2) ea. 3" Neutron Scintillator	YES	YES
	Neutron Generator:	N/A	N/A	YES



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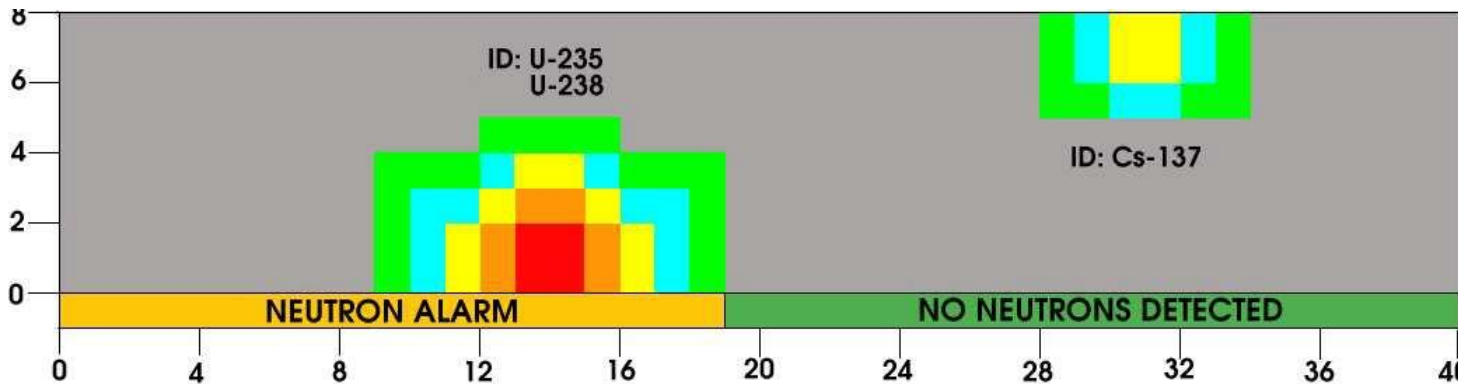
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SPECIFICATIONS continued:

- Neutron Generator:** In the **RAD-11 CANSCAN** a Neutron Generator gives enhanced sensitivity to fissile materials.
- Shielding:** Shielding & Collimation is provided, but may be deleted for a special light-weight version: **RAD-10LW**.
- Electronics:** Each detector has pre-amp and HV.
- Isotope Identification:** A Multi-Channel Analyzer applies Background Subtraction and uses a 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 4 x 20 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 Hard Drive and automatically backed-up to CD.

Image of Container Interior Created By RAD-CANSCAN



RAD-10,11 CANSCAN

4 x 20 Grid Showing 2 Hot Spots & identifying the isotopes in this shipping container.



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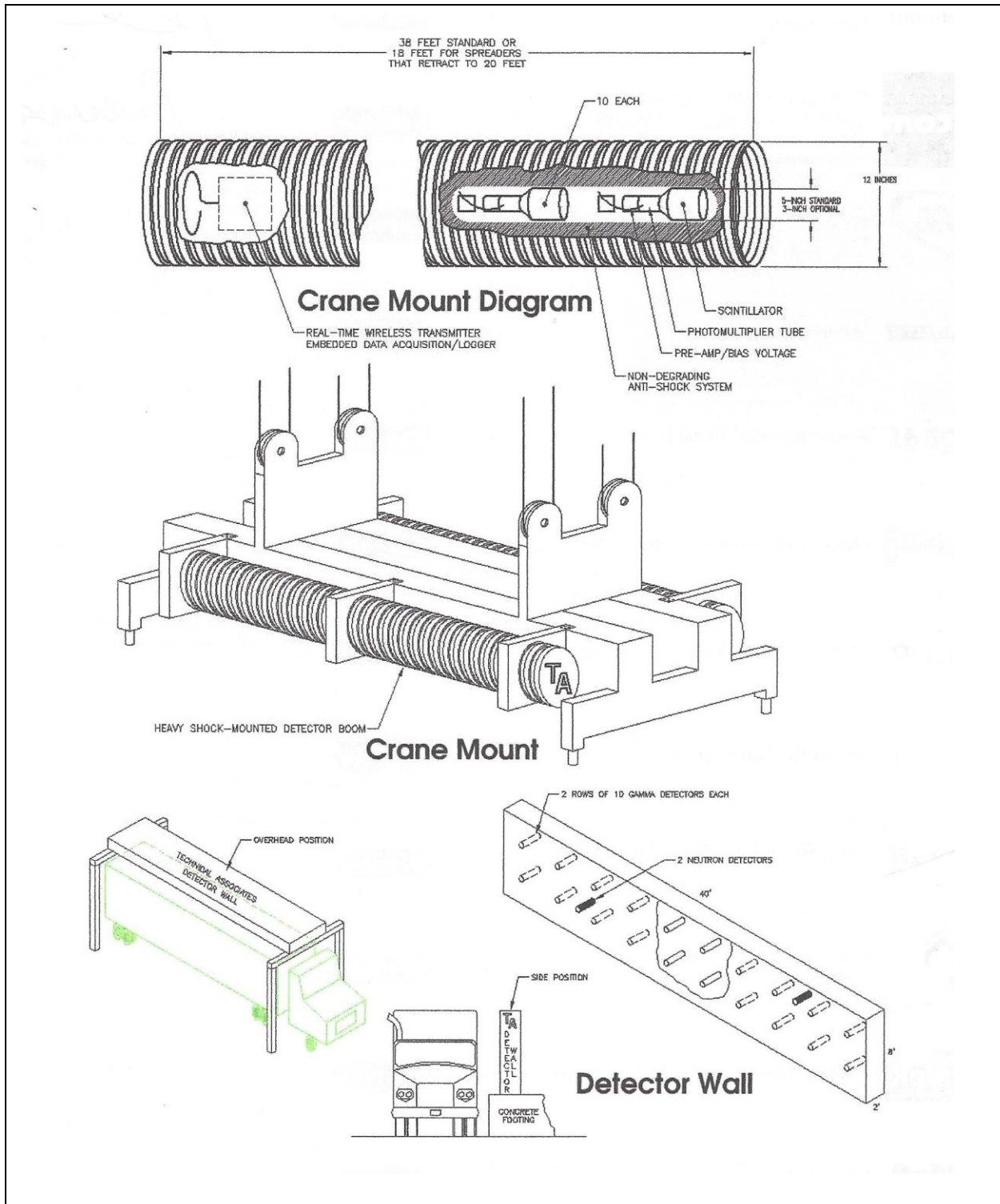
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The Quantum Family of Software

Technical Associates has been a manufacturer of accurate, easy to use Radiation Detection Devices Since 1946. TA provides a 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 & flexibility are the watchwords for these packages presenting the latest 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 de-convolution analysis.

QuantumNaID has both qualitative and quantitative analysis for NaI detectors only.

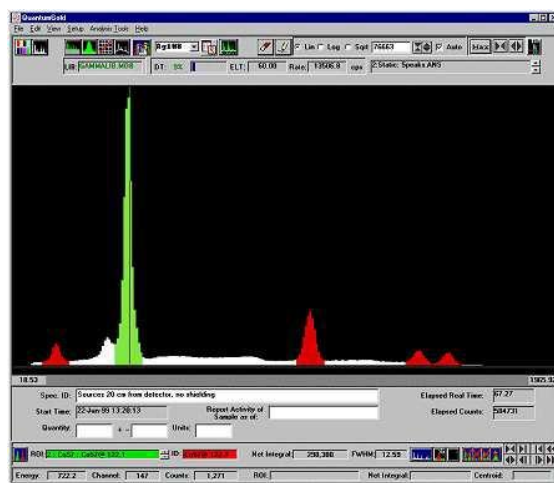
QuantumNaI does not include de-convolution analysis.

QuantumMCA is the basic MCA analytical package & 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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