

Previous model number: 5115

# B5521-420

## Baggage and Air Freight Homeland Security Portal Monitor

### Introduction

The ANTECH B5521-420 Baggage and Air Freight Homeland Security Portal Monitor is designed to detect radioactive materials in baggage and air freight containers. It has both gamma-ray and neutron detection capability. The gamma-ray measurements are performed by sensitive shielded and collimated plastic scintillator detectors that use low noise photo multiplier tubes with state of the art digital electronics. The neutron measurements are performed by polyethylene moderated, high pressure  $^3\text{He}$  detectors that identify the presence of plutonium by passive neutron counting. They are connected to high-speed charge collection electronics and operate in totals counting mode.

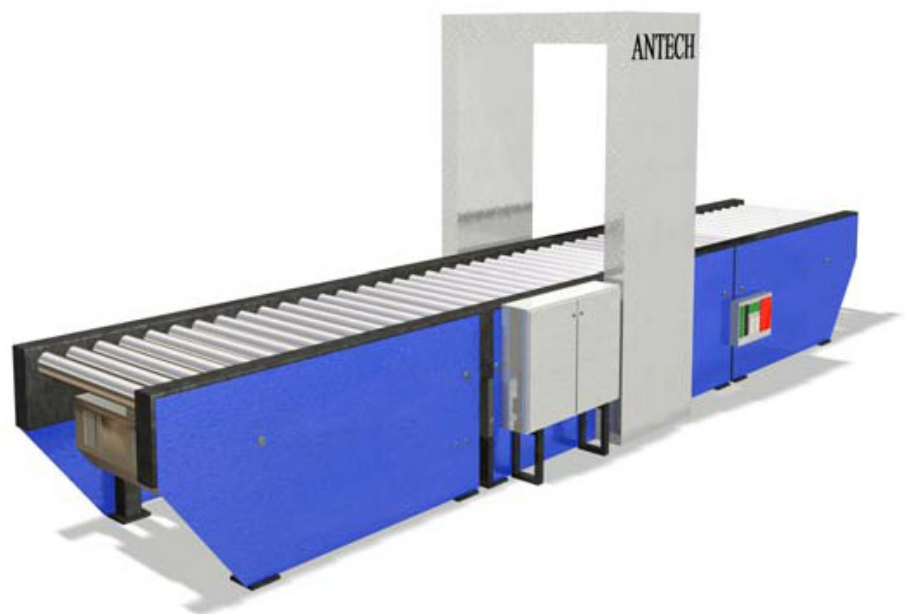
The technology behind the ANTECH B5521-420 is derived from work performed at the Los Alamos National Laboratory (LANL) in the United States and implemented in the late 1980s by Jomar Systems. Since the transfer of this technology to ANTECH, extensive improvements have been made and ANTECH portal monitoring technology represents the current state of the art for homeland security monitoring. ANTECH continues to work with technology developers at LANL who are engaged in a process of continual development with a view to optimising the performance of portal monitors for Homeland Security and defence related applications.

The operation of the B5521-420 is automated by an onboard microprocessor controller that performs system diagnostic testing, input monitoring and background discrimination. The controller employs algorithms based on the Sequential Probability Ratio Test (SPRT), developed originally by Fehlau and others at LANL. The B5521-420 contains all the necessary electronics, including controller, power supplies, amplification, single channel analyser and high voltage bias supplies to constitute a robust stand alone instrument.

The B5521-420 is available in the standard configuration that surrounds a conveyor, as illustrated above. It is compliant with the requirements of ASTM C1112-93 and consistent with the requirements of ASTM C1169-92.

### Features

- RS-232/Ethernet interface for controller set-up or remote monitoring
- User selectable alarm provided as visual, audio or electronic signal
- Digital detector electronics including low noise photomultiplier
- Archiving of detection and background statistics
- Operation in continuous pass through or hold and measure mode



## Benefits

- Reliable operation with very low rate of false alarms
- Uses digital electronics with reduced electrical noise
- Unattended automatic operation with optional operator screen
- Applicable to indoor or harsh outdoor operation

## Specification

<b>Typical outer width of configuration surrounding a conveyor, as illustrated above</b>	1480 mm (58.27 in)
<b>Internal dimensions of configuration surrounding a conveyor, as illustrated above (H x W x D)</b>	1600 mm x 1080 mm x 680 mm (62.99 in x 42.52 in x 26.77 in)
<b>Scintillation panels</b>	4
<b>Detection level</b>	< 0.5 $\mu$ Ci (18.5 kBq) of $^{137}\text{Cs}$ (typical) 0.1 g total Pu (military grade) approx. 2.5 g highly enriched U