

# G4-110

## SATCOM Intercept System

The Generation 4 Digital Receiver and Digital Signal Processing (DSP) technology contained within the G4-110 System enables operators to.

- Intercept and decode signals transmitted in any of the INMARSAT Standards
- Seamlessly switch between standards instantaneously, transparent to the operator
- Make call selections manually or automatically, using an operator-defined target database
- Monitor and record multiple, simultaneous communications
- Filter the signals processed for display in the interface
- Access a real-time spectrum analysis tool
- Perform checks on the status of the receiver cards in the system

### Features and Benefits

- Intercepts voice, fax and data signals over all INMARSAT standards
- Processing for a minimum of 15 full-duplex calls or 30 simplex calls occupies only 2U (3.5") of rack space
- Supports tactical and global modes of operation
- Visible spot beams automatically determined
- A powerful, yet easy to learn and operate, user interface
- Analog IF input samples are available through type SMA female TEST connectors
- Multiple receiver chassis can be daisy-chained, for additional channel capacity, using the type SMA female LOOP connectors
- Customized configurations available (cost is factored on the additional equipment and capabilities being incorporated)



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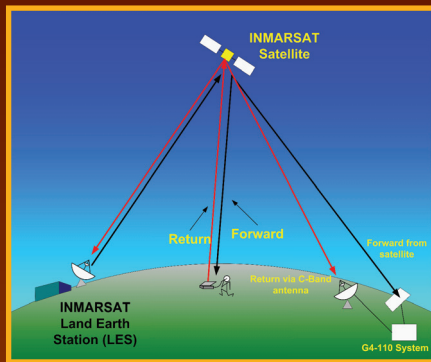
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### Applications

The G4-110 System has the ability to operate in either a "tactical" or "global" mode.

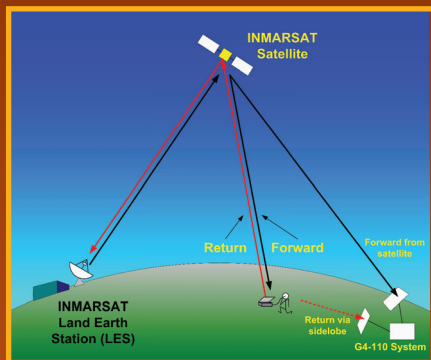
### Tactical Mode Operation

- A small, flat-panel antenna aimed at the satellite intercepts Forward path signals (signals sent to a terminal from the satellite)
- Return path signals (signals sent from a terminal to the satellite) are intercepted by a small, flat-panel antenna aimed at the local horizon, OR an omni-directional antenna. Return traffic seen is based on line-of-sight to the antenna and its orientation to target(s).



### Global Mode Operation

- A small, flat-panel antenna aimed at the satellite intercepts Forward path signals
- A large, parabolic, C-Band antenna, also pointed at the satellite, intercepts all the Return path signals for the Ocean Region



### Specifications

#### G4-110 Receiver Chassis

- 19" (W) x 3.5" (H) Rack-Mount Unit (2U)
- (10) Gen-4 Multi-Channel Digital Receiver/DSP Cards
  - Channels: 4 per card minimum, 8 in many modes
  - Channel Selection: 8 Independent DOTs
  - Interfaces: 100 base T Ethernet and 115,200 baud RS-232 serial port
  - Speed: 150 MHz (900 MFLOPS)
- IF Signal Filters
- IF Amplifiers
- Splitters for "TEST" and "LOOP" outputs
- High Speed, 3-Channel Analog-to-Digital Converter Card
- Ethernet Distribution Hardware
- Auto-sensing AC to DC Power Supply
- DC to DC Regulators

Computer – Running Windows 2000 or XP (either of the following)

- Laptop
- G4 Controller (Rack Mount Computer and Keyboard Video Mouse (KVM) unit)

#### (2) Low Noise Block (Down) Converters

- Low Band (1525-1559 MHz), Low Noise Block Converter, with a Local Oscillator (LO) Frequency of 1467 MHz
- High Band (1626.5-1660.5 MHz), Low Noise Block Converter, with a LO Frequency of 1571 MHz

#### (2) Antennas with Mounts

- Flat-Panel Antenna
- Flat-Panel OR Omni-Directional Antenna

Note: Operation in the global mode requires RF feeds from a dual circularly polarized C-Band Antenna that meets these minimum requirements:

- G/T: 30 dBK-1 – degraded operation may be possible with a lower G/T, but is not recommended
- Down Converter Bandwidth: 34 MHz min.
- Down Conversion LO: 3537 MHz  $\pm$  5 MHz
- LO Stability:  $\pm 1 \times 10^{-8}$
- AFC Pilot signal level: -20 to -40 dBm

Argon ST can specify, site, install, and test a suitable C-Band Dish, if desired.

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