

Global Link

Global Link enables warfighters to use the ground equipment, frequencies and satellites that are available in the moment, allowing communications to quickly adapt to meet mission requirements.



Unique Features:

- Route any modem to any antenna
- Quickly add or change antennas and modems
- Combine multiple antennas to function as a single antenna
- Combine received signals from the same satellite on any connected antenna
- Enables multiple, simultaneous frequencies and connections over LEO, MEO and GEO satellites

Key Benefits

- Increased terminal processing with digital signal processing
- SWaP-C benefits realized from reduced bandwidth costs and the sustainment of fewer terminals
- Highly scalable
- Low latency and high throughput
- High availability
- Resiliency through redundant and diverse SATCOM paths
- Able to overcome rain fade

Technical Specifications

Global Link technology with four-channel combining or phase alignment, antenna to modem routing, true time delay, inter-antenna frequency offset compensation, equalization, with automatic gain control (AGC) across 500MHz of instantaneous bandwidth

GENERAL FEATURES

- Coherently combine or passthrough 1, 2, 3, or 4 independent L-Band receive paths
- Combining gain up to 2.9 dB for 2 CH, 4.4 dB for 3 CH, and 5.8 dB for 4 CH
- Transmit and receive frequency range 950-1750MHz
- Antenna to modem digital routing
- 500 MHz instantaneous bandwidth
- Delay estimation & correction between any set of input antenna channels
- Transmit and receive meets MIL-STD-188-164C amplitude over frequency band (flatness/equalization)
- Waveform agnostic signal processing
- Meet MIL-STD-188-164C input range of 0dBm to -55dBm
- Input / Output connections N-Type 50 Ohms
- SNMP v3 for external M&C integration
- Web-Based M&C GUI
- Frequency error detection and correction up to 200kHz per Rx path
- Xilinx Generation 1 RFSoc

MECHANICAL AND ENVIRONMENTAL

- Standard AP3I-2011-10 transit case
- Supports four independent antenna inputs/outputs
- Supports four independent modem inputs/outputs
- Air, Air-Flow-Through or Conduction Cooled



ADC AND DAC PERFORMANCE

- ADC
- Channels: 8
- Sample Rate: 4.0GSps
- Resolution: 12-bit
- DAC
- Channels: 8
- Sample Rate: 4.0GSps
- Resolution: 14-bit

FAIRWINDS TECHNOLOGIES SIGNAL PROCESSING IP TECHNOLOGY OVERVIEW

- RFDC - Customized controls for tuning, decimating, filtering, and monitoring the on-chip RF hardened data converters (ADCs & DACs)
- Sample Collector - Captures up to 2K samples of I/Q data at the decimated sample rate concurrently for all channels
- Delay Estimator - Measures coarse and fractional estimates of delays between sets of channels
- Equalizer - Provides path equalization, sub-band filtering and, coarse/fractional delay compensation
- Broadband Coherent Combiner - Provides AGC, digital phase/frequency offset estimation and, correction between any broadband pair of input channels as well as mean squared error estimation between coherently combined inputs
- Antenna to Modem Rx Routing - Ability to route any 1 of 4 antenna inputs to any single modem connection

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