

# SpectralNet™ Narrowband RF Anywhere . . . Over Any IP Network



The location of antennas and analog signal processing equipment at ground networks can constrain the ability to transport RF signals effectively. SpectralNet serves as a carrier grade digitizer that increases the flexibility of ground system architectures and enables the effective transport of RF signals over ubiquitous IP networks.

SpectralNet brings analog RF data to the IP network world, unleashing the power of virtualization and centralization of ground architectures for satellite and range ground systems, teleports, UAV and missile ranges, and ISR data processing.

With the narrowband model, SpectralNet digitizes up to 54 MHz of RF spectrum from the antenna in real-time, converts the RF signals into network-ready IP packets using the VITA 49 standard and transports the data in an assured manner over private and public IP networks.

## Advantages of SpectralNet

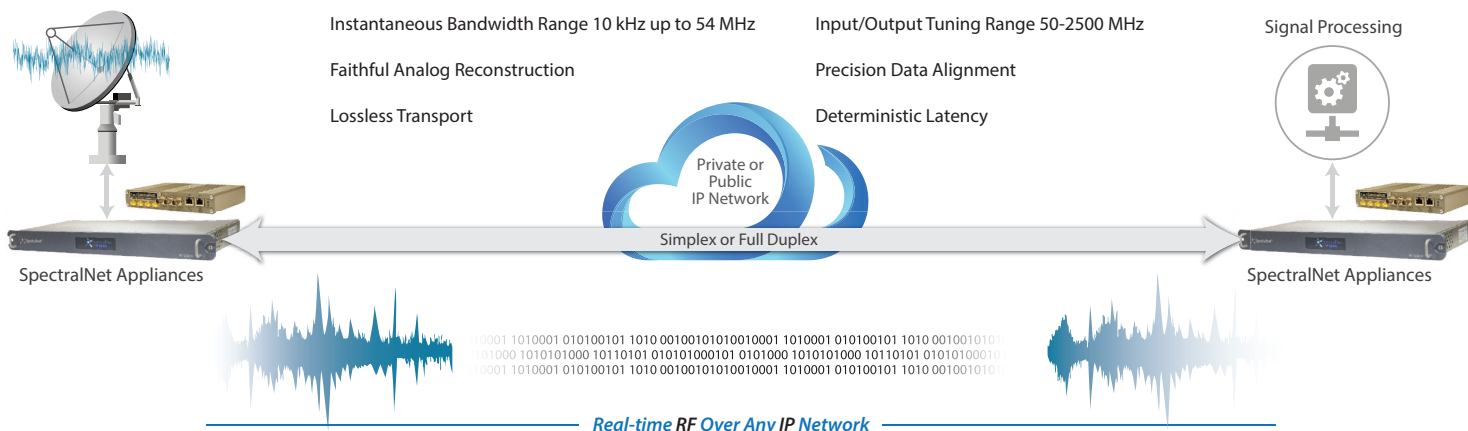
- Transmit digitized data over a standard WAN without any distance limitations
- Maximize network performance for distributed transport with multi-cast capabilities
- Optimize operations with a reduced infrastructure footprint and less expertise needed for antenna sites

SpectralNet supports mission critical applications from highly reliable RF over IP transport to enabling virtualized ground network architectures.

## Key Features

- Digitization of up to 54 MHz of instantaneous RF spectrum
- Lossless transport over public or private IP networks
- Faithful reconstruction of digitized RF back to analog
- Industry-standard VITA-49 data format
- Slim 1U rack mount form factor and a small enclosure model
- 1 Gigabit Ethernet compatible
- Simple to operate web-based GUI
- 1:1 Failover for redundancy (option)
- Site Diversity for rain fade and disaster recovery (option)

## SpectralNet™ Capabilities and Features



## Assure RF over IP Transport Redundancy, Resilience and QoS

- Transport any signal reliably over an any IP network
- Enable transmission of IP streams over impaired IP network links
- Automate critical system redundancy and resilience with a 1:1 Failover option
- Assure operations even during weather or equipment failure with Site Diversity capabilities

## Enable the Digital On-Ramp to the Virtual Ground Station

- Transform the ground network from analog to digital
- Provide reliable IP transport using standards-based VITA-49 protocol
- Scale cost effectively by processing signals in the cloud and/or virtual environments
- Minimize space and power requirements across the ground network

### Technical Specifications

RF INTERFACES	
<b>CHANNELS</b> <ul style="list-style-type: none"> <li>• Simplex</li> <li>• Duplex</li> </ul>	<b>DATA INTEGRITY</b> <ul style="list-style-type: none"> <li>• Packet Forward Error Correction (PFEC)</li> </ul>
<b>FREQUENCY</b> <ul style="list-style-type: none"> <li>• 50 to 2500 MHz range</li> </ul>	<b>FRONT PANEL CONTROL STATUS</b> <ul style="list-style-type: none"> <li>• LCD with Touchscreen (1U model only)</li> </ul>
<b>INSTANTANEOUS BANDWIDTH</b> <ul style="list-style-type: none"> <li>• Up to 54 MHz</li> </ul>	<b>COMMON DIMENSIONS</b> <ul style="list-style-type: none"> <li>• SpectralNet 1U Model <ul style="list-style-type: none"> <li>- 1U Rack-Mountable - 19 inch</li> <li>- Depth 7 inches</li> <li>- Weight: 5 lbs</li> </ul> </li> <li>• SpectralNet Small Enclosure Model <ul style="list-style-type: none"> <li>- Width: 7.75 inches</li> <li>- Height: 1.49 inches</li> <li>- Depth: 5.29 inches (without external connectors)</li> <li>- Weight: 2 lbs.</li> </ul> </li> </ul>
<b>SUB BAND CHANNELS</b> <ul style="list-style-type: none"> <li>• Bandwidth selectable from 10 kHz to 54 MHz with 1 kHz step</li> </ul>	<b>POWER (TYPICAL)</b> <ul style="list-style-type: none"> <li>• 110/220 VAC, 20 Watts</li> <li>• 50/60 Hz</li> </ul>
<b>INPUT/OUTPUT LEVELS</b> <ul style="list-style-type: none"> <li>• -60 to 0 dBm Input Range</li> <li>• -40 to -5 dBm Output Range</li> </ul>	<b>MEAN TIME BETWEEN FAILURE</b> <ul style="list-style-type: none"> <li>• 148,920 hrs (17 yrs)</li> </ul>
<b>SAMPLING</b> <ul style="list-style-type: none"> <li>• 4 through 12 Bits Per Sample</li> <li>• 44.4 Msps Max Rate</li> </ul>	<b>ENVIRONMENTAL</b> <ul style="list-style-type: none"> <li>• Operating Temp: 0° To 50°C (32° To 122°F)</li> <li>• Operating Relative Humidity: 0% To 90%</li> </ul>
<b>TIME &amp; FREQUENCY REFERENCES</b> <ul style="list-style-type: none"> <li>• IRIG-B</li> <li>• 1 PPS</li> <li>• 10 MHz</li> <li>• Referenceless operation is supported for some use case</li> </ul>	<b>REGULATORY CERTIFICATION</b> <ul style="list-style-type: none"> <li>• CE</li> <li>• RoHS Compliant</li> </ul>
<b>NETWORK INTERFACES</b> <b>SIGNAL</b> <ul style="list-style-type: none"> <li>• RJ-45 Gigabit Ethernet Port</li> <li>• UDP Unicast or Multicast</li> <li>• VITA-49</li> </ul>	<b>OPTIONS</b> <ul style="list-style-type: none"> <li>• 1 to1 Failover</li> <li>• Site Diversity</li> </ul>
<b>CONTROL/STATUS</b> <ul style="list-style-type: none"> <li>• RJ-45 Gigabit Ethernet Port</li> <li>• TCP-IP, SNMP</li> <li>• GUI, GEMS</li> </ul>	<b>TRANSPORT DELAY</b> <ul style="list-style-type: none"> <li>• Deterministic Latency is selectable up to 750 msec with an accuracy of ±8 nsec</li> </ul>