



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

The need to collocate antennas and their RF signal processing equipment has limited ground networks from evolving to the latest high-efficiency architectures and technologies. SpectralNet digitizers remove that limitation with their ability to transport digitized RF as IP packets over any network to any location and recreate the RF signals if necessary.

OpenSpace SpectralNet is a carrier grade digitizer that brings analog RF data to the IP network world, unleashing the power of virtualization and centralization of ground architectures for satellite and ranging ground systems, teleports, UAV and missile ranges and ISR data processing.

SpectralNet narrowband models digitize up to 54 MHz of RF spectrum 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

- Digitized data transmission over a standard WAN without any distance limitations
- Network performance optimization for distributed transport with multi-cast capabilities
- Operational efficiency with a reduced infrastructure footprint and less expertise needed at antenna sites
- Enable transmission of IP streams over impaired IP network links
- Automate critical system redundancy and resilience with a 1:1 failover option
- Configurable time deterministic latency to account for network latency and jitter

SpectralNet digitizers are a key component of the satellite ground system's digital on ramp to the next-gen



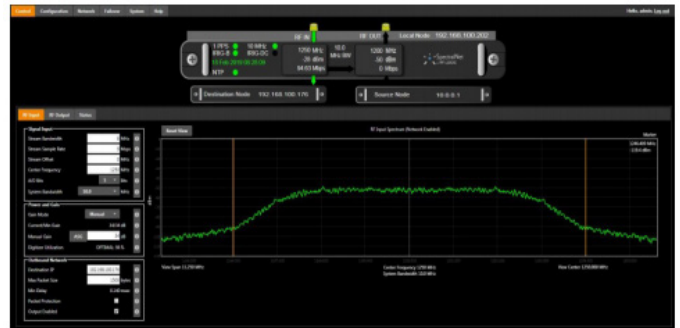
SpectralNet Narrowband Small Form Factor



SpectralNet Narrowband (front of unit)



SpectralNet Narrowband (back of unit)

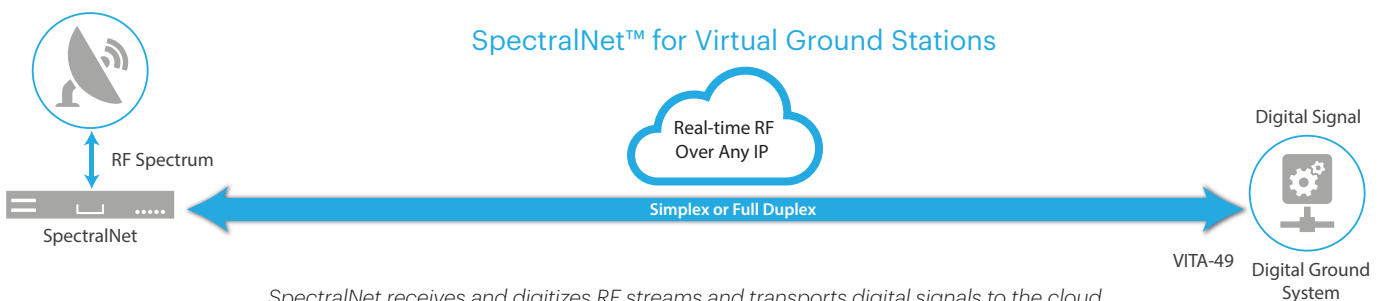


SpectralNet Narrowband displays the RF stream it has received for transport and/or the transmitted RF stream it has regenerated from the transport.

## 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

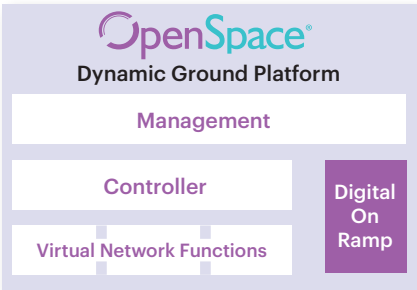
transformation in delivering data to the virtual ground station. Kratos' OpenSpace platform is the industry's only fully managed, virtual and software-defined satellite ground system. The platform includes Virtual Network Functions (VNF) for signal processing in the cloud or on premise. SpectralNet reliably delivers data to any destination – on premise, to the cloud, or to OpenSpace.



SpectralNet receives and digitizes RF streams and transports digital signals to the cloud.

## Technical Specifications

<b>Frequency</b> <ul style="list-style-type: none"> <li>• 50 MHz to 2500 MHz</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>
<b>Instantaneous Bandwidth</b> <ul style="list-style-type: none"> <li>• 1 channel</li> <li>• Up to 54 MHz</li> </ul>	<b>Common Dimensions</b> <ul style="list-style-type: none"> <li>• SpectralNet 1RU Model                             <ul style="list-style-type: none"> <li>- 1U rack-mountable - 19 in / 48.26 cm</li> <li>- Depth: 7 in / 17.78 cm</li> <li>- Weight: 5 lbs / 2.27 kg</li> </ul> </li> <li>• SpectralNet SFF model (small form factor)                             <ul style="list-style-type: none"> <li>- Width: 7.75 in / 19.68 cm</li> <li>- Height: 1.49 in / 3.78 cm</li> <li>- Depth: 5.29 in / 13.44 cm</li> <li>- Weight: 2 lbs / 0.91 kg</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>• 100/240 VAC, 20 Watts</li> <li>• 50/60 Hz</li> <li>• External power supply</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>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% non-condensing</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>Mean Time Between Failure</b> <ul style="list-style-type: none"> <li>• 148,920 hrs (17 yrs)</li> </ul>
<b>Time &amp; Frequency References</b> <ul style="list-style-type: none"> <li>• IRIG-B</li> <li>• IRIG-DC</li> <li>• 1 PPS</li> <li>• 10 MHz</li> <li>• Referenceless operation is supported in some cases</li> </ul>	<b>Data Integrity</b> <ul style="list-style-type: none"> <li>• Packet forward error correction (PFEC)</li> </ul>
<b>Data Transport</b> <ul style="list-style-type: none"> <li>• RJ-45 1 Gbps 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 to 1 failover</li> </ul>



OpenSpace SpectralNet serves as the digitizer for the OpenSpace platform, the industry's only fully virtual and software-defined satellite ground system. The OpenSpace platform includes Virtual Network Functions for signal processing in the cloud or on premise. The OpenSpace Controller administers how service chains are deployed and OpenSpace OpsCenter provides unified management across the entire satellite ground system.



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