



SpectralNet Wideband Carrier Grade Digitizer for Assuring QoS and SLAs

With High Throughput Satellites (HTS), 5G networks and higher frequency bands, the increasing bandwidth drives the need for wideband RF digitizers that support the next generation of signals, networks and satellite links.

Applications

SpectralNet supports a range of wideband applications from virtual ground station operations, RF over IP transport, to RF monitoring and analytics.

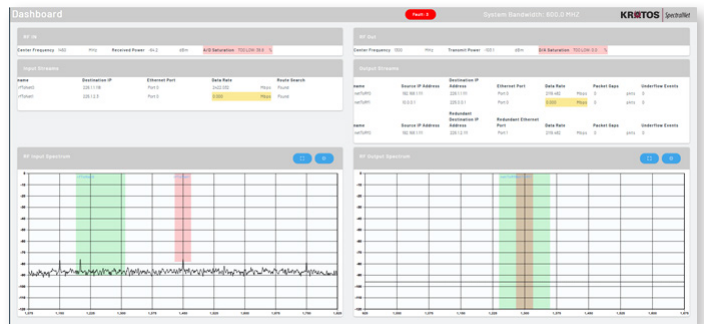
Virtual Ground Station Operations – On-Ramp to the Cloud

As ground station operations evolve and move toward more digital and virtual infrastructures, SpectralNet serves as the on-ramp. The wideband digitizer converts RF signals from the antenna into network-ready IP packets using the VITA 49 standard. The digital stream can then be transported reliably and accurately for signal processing in virtualized and cloud-based environments to take advantage of cost and scale efficiencies.

SpectralNet serves as the digitizer for Kratos' OpenSpace platform, the first fully digital, virtualized, software-defined and orchestrated platform in the satellite industry. The OpenSpace Platform dynamically supports multi-satellite, multi-orbit, multi-payload and multi-band operations.



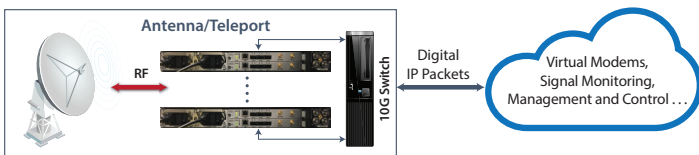
a high quality of service, while also reducing costs by eliminating expensive RF signal processing equipment at every ground station.



SpectralNet displays the RF input and output of the digitized stream.

SpectralNet supports the transport of RF over IP by enabling redundancy as well as new backup and disaster recovery scenarios to meet stringent SLA requirements.

- N+1 Failover – Assure Redundancy and Resilience**
 In case of a hardware failure, SpectralNet automates critical system redundancy and resilience by providing N+1 failover capabilities. If the primary SpectralNet digitizer stops operating, the system automatically fails over to a hot standby redundant SpectralNet digitizer.
- Site Diversity – Assure QoS and SLAs**
 When RF signal loss occurs due to rain fade, equipment outage, interference, or maintenance issues, SpectralNet enables operators to cost effectively switch between two geographically diverse sites seamlessly in real-time, independent of distance and delay to support site diversity.



SpectralNet digitizes the RF into IP for processing in the OpenSpace virtualized ground station.

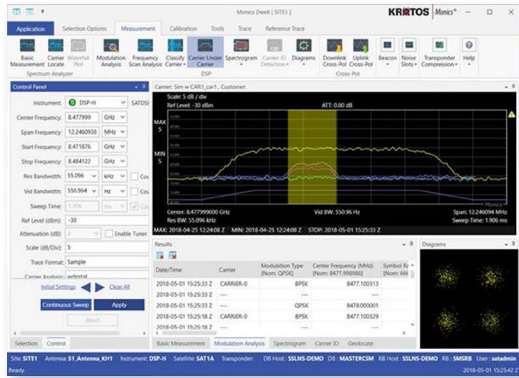
RF over IP Transport – Transport High-Bandwidth RF over any Distance and any IP Network

SpectralNet digitizes RF signals and transports the IP packets reliably over any distance and network. This enables operators to transport signals efficiently, assure

Carrier Monitoring – Monitor and Protect Signal Quality

SpectralNet provides the latest in digital signal processing by unlocking the full potential of the industry leading Monics® Carrier Monitoring and Interference Detection

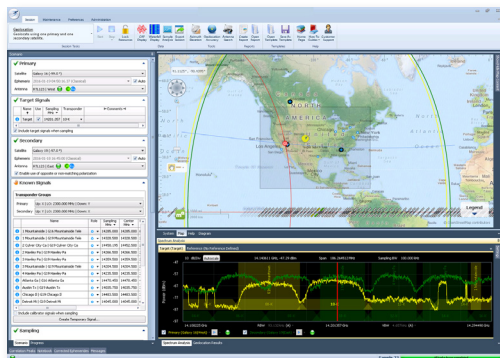
System. With 300 MHz of instantaneous bandwidth, an operator can monitor a carrier and determine the modulation type, symbol rate, measured Es/No and analyze any interfering signals lurking underneath. This enables Monics to improve visibility into RF operations, monitor signal quality and help assure SLAs.



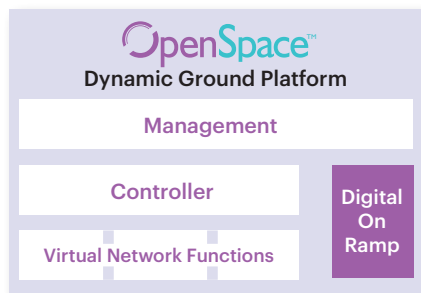
SpectralNet enables DSP measurement capabilities with Monics to deliver sophisticated interference detection capabilities.

Signal Geolocation – Locate RF Interference Faster and More Accurately

SpectralNet supports the digital signal processing for satID, an accurate, fast, all-in-one solution for locating and identifying sources of interference, including VSAT/TDMA terminals. With satID operators are able to locate RF Interference faster and more accurately. SpectralNet supports the recording of geolocation scenarios to accelerate troubleshooting, maximize productivity and optimize QoS for customers.



satID offers the capability to geolocate within 5 km of the interfering signal.



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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Technical Specifications

RF Interfaces	Network Interfaces
Frequency <ul style="list-style-type: none"> • 900 MHz to 2450 MHz 	Signal <ul style="list-style-type: none"> • 10 gigabit QFSP + ethernet port (qty. 3) • UDP • VITA-49
Instantaneous Bandwidth <ul style="list-style-type: none"> • Up to 500 MHz per card • Up to 2 cards per chassis 	Control Status <ul style="list-style-type: none"> • RJ-45 1 Gbps ethernet port • TCP-IP
Sub Band Channels <ul style="list-style-type: none"> • 2 independent RFIN data streams • 2 independent RFOUT data streams 	Transport Delay <ul style="list-style-type: none"> • Deterministic latency is selectable up to 750 msec with an accuracy of ± 10 msec
Input/Output Levels <ul style="list-style-type: none"> • -60 to 0 dBm input range • -40 to +10 dBm output range 	Control Status <ul style="list-style-type: none"> • REST API, GEMS • Web-based GUI
Sampling <ul style="list-style-type: none"> • 4 through 12 bits per sample • 2 x 750 Msps 	Common Dimensions <ul style="list-style-type: none"> • 1U rack-mountable - 19 inch • Depth 12 inches • Weight: 11 lbs.
Time and Frequency References <ul style="list-style-type: none"> • IRIG-DC • 1 PPS • 10 MHz input • Internal GPS module 	Power (typical) <ul style="list-style-type: none"> • 110/220 VAC, 200 watts • 50/60 Hz
Redundancy <ul style="list-style-type: none"> • Redundant fans and power supplies 	Environmental <ul style="list-style-type: none"> • Operating temp: 0° to 40°C (32° to 104°F) • Operating relative humidity: 0% to 90% non condensing
Options <ul style="list-style-type: none"> • N+1 failover • SNWB site diversity 	Regulatory Certification <ul style="list-style-type: none"> • CE • RoHS compliant