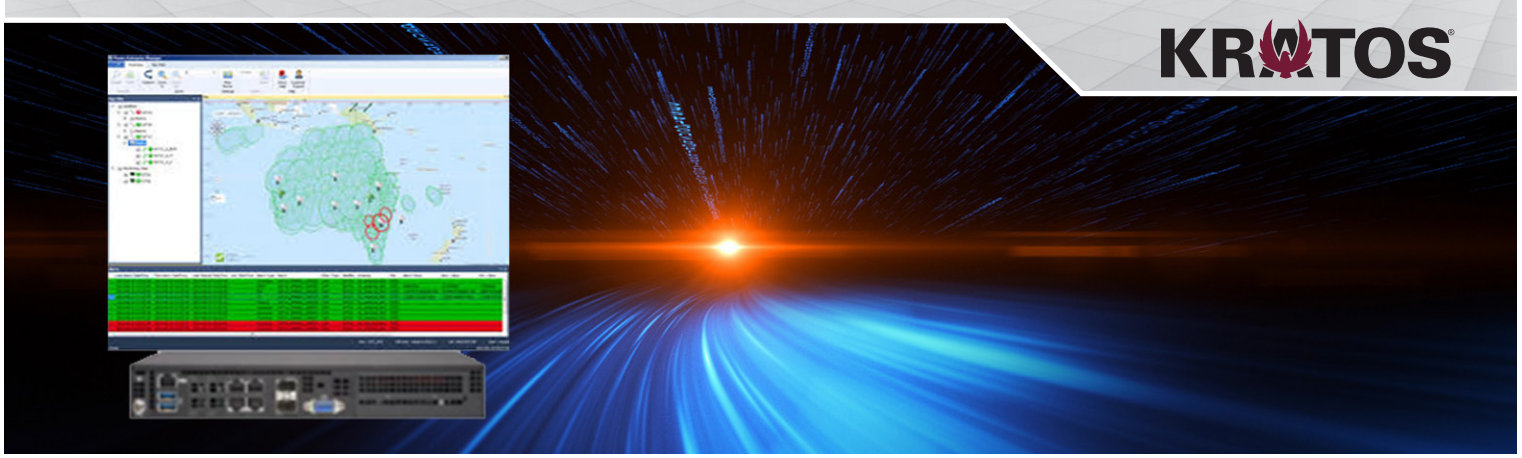
Unleash the Full Power of Carrier Monitoring at the Edge



The growth of High Throughput Satellites (HTS) have brought much greater bandwidth and an explosion in beam counts. The increase in smaller and mobile antennas and existing satellite congestion creates the potential for more interference.

This is driving the need to deploy more cost-effective sensors designed to monitor multiple smaller beams from a signal site at the edge of the network. This approach will enable the highest level of Quality of Service (QoS) to be delivered.

Small Form Factor Digitizers Powering the Monics Carrier Monitoring System

To address this growing challenge, Kratos has developed a line of digitizers that run-on commercial off the shelf servers (COTs) to unlock the full power of the Monics Carrier Monitoring and Interference Detection System. Monics is the industry-leading carrier monitoring system used by the majority of the world's largest satellite operators, service providers and telecommunications providers around the globe.

Monics helps operators effectively see what is happening with their communications payloads and protect bandwidth and Quality of Service (QoS). Monics is powered by digitizers at the edge including the Monics 400, a small form factor device providing 125 MHz of instantaneous bandwidth and the Monics 500 providing 500MHz of instantaneous bandwidth.

Key Features

- *Monitor signals and analyze for modulation type, symbol rate, measured Es/NO and interference*
- *Capable of monitoring 125 MHz Instantaneous Bandwidth in small form factor or 500 MHz for larger bandwidth*
- *Supports DIFI standard*
- *Supports a frequency range of 950 to 2450 MHz*
- *Provides storage capacity of 480 GB and up to 960 GB*

The digitizers provide comprehensive benefits including:

Fully Featured RF Analytics

- Provides standard frequency and power measurements, and carrier modulation analysis up to DVB-S2X 128 APSK
- Collect RF data analytics for assessing bandwidth efficiency and effectiveness
- Provide automated monitoring, alarming, trace forwarding and essential manual spectrum analysis capabilities

Cost-Effective Monitoring

- Reduce operating expenses by occupying less rack space with a small form factor
- Deliver cost-effective RF analysis for a broad base of feeder beams, user beams and distributed teleport operations

Phone: (719) 598-2801 • EMail: Space@KratosDefense.com • Web: www.KratosSpace.com

Maintain Quality of Service (QoS)

- Continue to run automated bandwidth monitoring even during a network outage to avoid the loss of any measurement data
- Upon network restoration, forwards measurement data automatically to the Monics Central Data Server (CDS)

Standard Frequency Domain Measurements	Kratos DSP Enabled Time Domain Measurements
Center Frequency	Modulation Type
Bandwidth	Symbol Rate
EIRP	Es/No
C/No	Data Rate
C/N	BER
Backoff	C/I
PEB (Lease Blocks)	Optional Carrier Standard Detection
(Co+No)/No	Optional FEC Detection

Kratos' COTS based digitizers provide advanced time domain measurements beyond a spectrum analyzer.

The DSP enabled measurement capabilities with Monics deliver sophisticated interference detection capabilities.

Digitizer Specifications

Monics Edge	MN400	MN500
Number RX Interfaces	1	1
Connector	1x SMA, 50Ω	1 x SMA, 50Ω
Frequency (MHz)	950 – 2450	950 – 2450
RX Input Range	-50 dBm to 0 dBm	-60 dBm to 0 dBm
RX LNB Power	13 VDC or 18 VDC	13 VDC or 18 VDC
LNB Configurable On/Off Tone	22KHz	22KHz
Instantaneous Bandwidth	1 Channel x 125 MHz IBW	1 Channel x 500MHz IBW
Timing, Frequency, GPS Interfaces	Single SMA connector configurable as: 1 PPS, 10 MHz, IRIG-DC or GPS Antenna	Single SMA connector configurable as: 1 PPS, 10 MHz, IRIG-DC or GPS Antenna
Data Interface	PCIe Gen 3 x 4 Lanes	PCIe Gen 3 x 4 Lanes
Digitizer Standard Support	DIFI/IEEE-ISTO Std 4900-2021 or VITA 49	DIFI/IEEE-ISTO Std 4900-2021 or VITA 49
Power in the System	180W	500W
Compute Specs		
Processor	10 C/ 20 vCPU 3rd Gen Intel Xeon D 1700	10 C/ 20 vCPU 3rd Gen Intel Xeon D 1700
RAM	256GB DDR5	256GB DDR5
Storage	480GB NVMe SSD	960GB NVMe SSD
Data Interfaces	2 x SFP28 25 GbE LAN 2 x RJ45 1 GbE LAN (Intel® I350-AM2) 2 x RJ45 1 GbE LAN (Intel® I210-IT) 1 x RJ45 1 GbE Dedicated IPMI LAN	2 x SFP28 25 GbE LAN 2 x RJ45 1 GbE LAN (Intel® I350-AM2) 2 x RJ45 1 GbE LAN (Intel® I210-IT) 1 x RJ45 1 GbE Dedicated IPMI LAN
Peripheral Interfaces	1 x VGA 2 x USB 2.0	1 x VGA 2 x USB 2.0
Mechanical and Environmental		
Storage Temperature	-40C to 70C (-40F to 158F)	-40C to 70C (-40F to 158F)
Operating Temperature	0C~40C (32F~104F)	0C~40C (32F~104F)
Operating Relative Humidity	8% to 90% (non-condensing)	8% to 90% (non-condensing)
Dimensions	Height: 1.69" x Width 10.43" x Depth 8.89"	Height: 1.7" x Width 17.2" x Depth 9.8"
Weight	7.5 lbs (3.4 kg)	10 lbs (4.54 kg)