TeamSENTINELnano GEN2

TeamSENTINELnano is designed to meet the demanding needs of signals analysts that are operationally constrained by power, space and size requirements. Each system can be configured with a single 22.5 MHz bandwidth V/UHF receiver[8], tunable from 20~6000 MHz and is TNG/JICD 4.2-node complaint. Sensor recording capacity is 16-hours at 22.5 MHz bandwidth.

Espy's teamSENTINELnano runs on a supercharged Dell 7740 Precision laptop configured with high-capacity SSD RF storage drives. The Nano is Espy's first system to support both the teamSENTINEL server and teamSOIGNE client software running on the same hardware platform. This highly integrated sensor is delivered in a single hand-portable transit case which can be stowed in the overhead compartment of most commercial airliners. Embedded in the lid of the transit case is a removable ultra-wideband fractal omni antenna (150-6000 MHz), allowing system operational in under 10 minutes. Additional teamSOIGNE clients are supported.

Figure 17: TeamSENTINELnano and carry-on transit case

Table 15: TeamSENTINELnano Specifications

Feature	teamSENTINELnano Specifications
Server Type	Dell Precision M7740 Laptop
Hard Drive Configuration	4 x M.2 SSD
Hard Drive Capacity	2 TB
RAID Protection	Software RAID 0
Random Access Memory (RAM)	128 GB
Processors	Intel Core i7 Quad Extreme
Recording Capacity	16 Hours
Graphics Processor	NVIDIA Quadro

[8] Options to support for other VITA-49 digital IQ streaming tuners will be provided upon request.

Feature	teamSENTINELnano Specifications
Flat Panel (built-in)	17.3” (3840 x 2160 pixels)
Temperature Operational Limits	From 0º C to 50º C
MAX RF input	0 dBm
Typical Noise Figure	14 dB
Typical Image/IF Rejection	80 dB
V/UHF Frequency Tuner Coverage	20-6000 MHz
Channel Bandwidth Options	22.5
Channel Sample Rate Options	25 MSPS
System Tuning Resolution	1 MHz
Software DDR Tuning Resolution	<1Hz
Software DDR Sample Rates	Variable from 2ksps up to 25 Msps in 1ksps increments
Software DDR Bandwidths	Variable from 2kHz up to 22.5 MHz in 1Hz increments
Geolocation	TDOA/FDOA (with GPS-disciplined reference)
GPS Input / Connector	Built-in High-Performance GPS Time/Frequency/NTP unit (SMA connections available for external 1PPS and 10 MHz)
1PPS Reference	
10 MHz Reference	
Sub-Channels per Tuner	N/A
Maximum Acquisition Bandwidth	22.5 MHz
Rack Units	N/A
Input Voltage	90 VAC to 250 VAC autosensing
Power Requirements	Up to ~300 Watts
Weight	Up to ~35 Lbs (15 kg)
Transit Case Dimensions	21.2” x 16” x 8.75”

The teamSENTINELnano GEN 2 RF tuning and bandwidth limits are defined by the digital tuner. The following table summarizes the Nano’s current capabilities. All solutions can be configured to support TNG geolocation.

Figure 18: TeamSENTINELnano Gen2 Laptop and RF Conditioner Module

Table 16: TeamSENTINELnano Capabilities Matrix

Sensor Type	Freq Range (MHz)	Channel BW (MHz)	TNG (T/FDOA) Support	No. Receivers	Sensor BW (MHz)	Integrated Omni Antenna	Integrated Client
teamSENTINELnano GEN2	20~6000	22.5	Yes (Built-in GPS)	1	22.5	Fractal 150~6000 MHz	Included