WaveSense

A New Altitude of Signal Monitoring

Monitoring pilot / broadcast channels, donor antenna line and repeater's RF health can all be achieved by carefully observing RF signals at certain points.
Signal strength is the main indicator of network availability and radio equipment activities. Hence, monitoring the essential signals of a wireless network (such as downlink and pilot signals) at selected locations allows tracking any severe changes in coverage, equipment failure or overriding interferers.

Spectrum monitoring nodes have been the only choice when it comes to wireless signals observation, however such systems used to imply high performance and rich functionality that might be an overkill in many simple tasks.

Consultix Wavsenese was engineered to bring simplicity to basic RF monitoring with a solution that is devised to be economical, simply deployable and easy-to-operate.
Just place the Wavesense node at any location, give it Ethernet access and you are up and running; seeing what's going on remotely.
The basic version of the product "WaveSense-1" supports sub-1GHz bands whether serving 700/800/900 cellular networks, LMR, PMR or public safety networks.

Through a web-based console window, users can select and login to any site and view its RF timeline. And as a distributed concept (roadmap feature), the system will be supported by Consultix SpectraQual central server that can be either installed at any user premises or accessed as a cloud service for minimal user CapEx. Either way, SpectraQual provides users with a simple method to observe multiple locations from a central monitor.

The monitoring node is designed to be compact, rugged, lightweight and with ultra-low power consumption.
Additionally for the ultimate versatility, the following capabilities are featured in the device:
• Versatile power supply options; AC (110/220) and DC (5 VDC or 24/48 VDC)
• Compact form factor with rugged IP 65 enclosure for indoor/outdoor deployment
• Ethernet, WIFI or cellular backhaul connectivity.

Parameter	Value
RX band	300 to 980 MHz (other custom bands available)
Measured parameter	Channel power
Channel Bandwidth (Resolution)	50 KHz
Frequency step	1KHz
Number of monitored channels	Up to 10
RF Power range	-5 dBm to -90 dBm
Level Accuracy*	± 3 dB
Selectivity ± 100 KHz	45 dB
Blocking ± 1MHz	65 dB
Sampling Speed	50 ms per point
TimeLine resolution**	1 Second
Reporting interval (Update rate)	≥1 minute (user settings)
GUI (Graphical User Interface)	Web-based console, SNMP or SpectraQual server (Roadmap function)
Backhaul connectivity	Ethernet (Optional WIFI or Cellular)
Optional Interfaces	SNMP (V2C)
RF connectivity	Wired or wireless
Power Supply	5 VDC; connector 5.5 × 2.1 mm, incl. AC/DC adapter 100-240 VAC. Optional 24/48 VDC
Power Consumption	<20 Watts
RF Port	N-type female
Enclosure	Metal casing with IP65 sealing
Mounting	Benchtop or Wall Mount (Using screws)
Operating Temp.	14 to 122 °F (-10 to 50 °C)
Weight	3.3 lbs (1.5 Kg)
Size	6.5" X 6" X 2.8" (165 X 150 X 70 mm)

***Calibrated to unmodulated signal**

**** The maximum peak of all samples across 1 second window is represented as 1 point every 1s on the timeline**

Ordering Information	
Remote Receiver Node; 300 to 980 MHz, Web access, Ethernet Interface, AC/DC powered.	WaveSense-1
SNMP interface for WaveSense node	WVSNS-SNMP
Omnidirectional Whip Antenna; 698MHz ~ 960MHz & 1.71GHz ~ 2.69GHz, 2 W, Gain (2.02dBi, 4.65dBi), SMA male connector (SMA to N-type adapter included).	RX-34-CA0
RF cable; 3ft (90 cm), 11 GHz max. frequency, N male to N male.	MTM-427-C09
External Directional Coupler for inline connection of WaveSense node. 350 to 2700 MHz, 20 dB coupling, 200 Watts, typ. 0.2 dB insertion loss, N-female. Contact us for other variations	Neuron-GW-DIR327-20
External Directional Coupler for inline connection of WaveSense node. 138 to 960 MHz, 20 dB coupling, 200 Watts, typ. 0.4 dB insertion loss, N-female. Contact us for other variations	Neuron-GW-DIR196-20

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