IntelliSENSE 200 - RF Power & Spectrum Monitoring Solution   70-3000 MHz

- All-in-one RF monitoring solution for LMR/Cellular/Aviation/Broadcast systems
- Future-proof wideband, high-precision, and channelized monitoring
- Remote RF diagnostics eliminating truck-roll
- Enabling preventative maintenance and reducing un-planned issues and outages
- All major wireless technologies & bands supported
- Spectrum monitoring for comprehensive site and interference monitoring (optional)
- Intuitive web-based graphical user interface
- Secure user access and management
- Flexible alarm setting

IntelliSENSE Control Unit Front View

The Sinclair IntelliSENSE offers a comprehensive remote RF monitoring solution to effectively deal with various challenges faced by network operators, carriers, aw enforcement, and regulatory entities. The solution is comprised of a control unit and a range of sensors. This future-proof solution brings RF monitoring and remote diagnostics into the next era to cut down unplanned network issues and outages. Its cutting-edge architecture makes the high speed and ultra-high precision monitoring a possibility. The wideband capability means one system is now capable of monitoring multiple RF systems at one site. It supports all mainstream modulation, technologies, and frequency bands, including LMR, P25, Tetra, Aviation, CBRS, LTE, 5G, and other wireless technologies. When deployed for LMR trunking systems, besides the antenna health monitoring, the channelized capability allows it to monitor all channel statuses. Configuration, diagnostics, and communication management are facilitated via a modern web-based GUI interface. The port-rich configuration allows it to monitor the real-time combiner health status for the full picture of the system. The LCD display on the front panel allows convenient visual confirmation of the RF status and the alarms.

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Product Specification Sheet   IntelliSENSE RF Monitoring Solution   Issue: 0   Dated: 3-7-2024
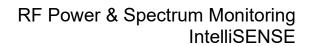
IntelliSENSE 2.0 Control Unit Rear View

At a Glance			
Antenna Monitoring	Channelized Monitoring - Individual Tx CH Frequency - Individual Tx CH Fwd/Ref Power - Individual Tx CH Return Loss/VSWR	√	*With one sensor at the antenna port*
Combiner Monitoring	Individual Tx CH Frequency	√	*With individual sensors at each combiner input port*
	Individual Tx CH Fwd/Ref Power	√	
	Individual Tx CH Return Loss/VSWR	√	
	Insertion Loss	√	
Alarms	Frequency Drift Alarm	√	
	Return Loss Alarm	√	
	Power Alarm	√	
	Insertion Loss Alarm	√	
	Alarm Setting	√	
User Management		Role-based access control	
SNMP		v2C, v3	
Spectrum Monitoring (spectrum analyzer)		Optional	*1
Wi-Fi Access		Optional/Roadmap	*2
Sat Com Link		Optional/Roadmap	*3

* Note:

1. Enabled by licenses. Antenna available separately.
2. 802.11 b/g/n.
3. For backhaul backup or for remote sites with backhaul issues.

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Electrical Specifications – Control Unit

Series		ITS 2.0 Series	Note
Frequency range		70-3000 MHz	*Wider frequency range available, call for details.*
Monitoring Bandwidth	Tx channel	0.005-56 MHz	
	Spectrum monitoring	0.2605-112 MHz	*Optional, see Ordering Information section for details*
Connectors (P1 - P16)		SMA-Female	
Input Power (P1 - P16)		≤ 20 dBm	
Impedance		50 Ω	
Dynamic Range		75 dB	
Power Accuracy		0.1 dBm	
Frequency Resolution		0.2 kHz	*Bandwidth dependent, 0.2 kHz on 50 kHz BW.*
Networking		1 x Ethernet 10/100 Base-T	
Monitoring Capacity		8 Channels VSWR	*Per each control unit. Cascadable for additional channels, 32 physical sensors max.*
Power Consumption (max)		2 Watts	*Main control unit*
Power		110/240 VAC, or 48 VDC	

Mechanical and Environmental Specifications - Control Unit

Width	483 mm (19 in)	
Depth	254 mm (10 in)	
Height	1 RU	
Weight	2.7 kg (6 lbs)	
Temperature Range	-20 to +60 °C (-4 to +140°F)	
Humidity Range	5 – 95%	

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SiNCLAIR
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IntelliSENSE RF Sensor

The ITS-PS series RF power sensors feature low insertion loss and stable performance across a wide bandwidth. Combined with the cutting-edge IntelliSENSE RF Power Monitoring control unit, they provide 24/7 high-accuracy monitoring, which gives customers peace of mind on the antenna/combiner subsystems and the site RF environment. Each ITS-PS sensor comes with a pair of cables for connection to the control unit.
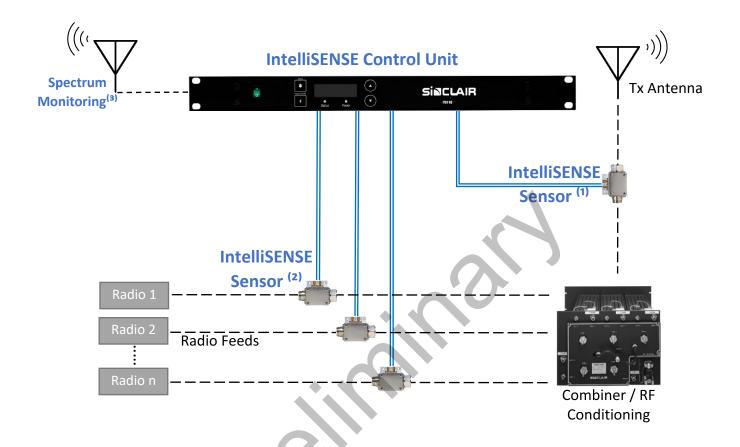

ITS-PS RF Power Sensor

Sensor Specifications			
Model Number	ITS-PS-2336-NMNF	ITS-PS-436-NMNF	Note
Frequency Range	100-512 MHz	740-960 MHz	*Other frequencies available upon request.*
Insertion Loss	≤ 0.2 dB	≤ 0.2 dB	*Thru-line*
Coupling Value	40 ± 1.5 dB	40 ± 1.5 dB	
Directivity	25 dB	25 dB	
Average Power (max)	500 W	500 W	
FWD/REF VSWR	1.4:1	1.25:1	
In/Out VSWR	1.25:1	1.25:1	
Impedance	50 Ω		
PIM	< -150 dBc		
Input Connector (thru line)	N-Male		
Output Connector (thru line)	N-Female		
Coupler Port Connectors	2 x SMA-Female		
Cable Length (nominal)	3.6 meters (12 ft)	3.6 meters (12 ft)	
Dimensions Height	70.4 mm (2.77 in)	59.9 mm (2.36 in)	
Width	40.4 mm (1.59 in)		*Excluding connectors*
Depth	36.1 mm (1.42 in)		
Temperature Range	-30 to +60 °C (-22 to +140°F)		
Weight	0.5 kg (1.1 lbs)		

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![Sinclair logo - Superior then, Superior now. A Norsat Company - Norsat International Inc.]

Application Diagram

Spectrum Monitoring[3]

IntelliSENSE Control Unit

SINCLAIR   ITS110

Tx Antenna

IntelliSENSE Sensor[1]

IntelliSENSE Sensor[2]

Radio 1

Radio 2   Radio Feeds

Radio n

Combiner / RF Conditioning

Preliminary

The IntelliSENSE is designed for flexible deployment and various monitoring needs. It readily supports multiple antenna monitoring simultaneously (one sensor deployed for each antenna[1]). When comprehensive monitoring is needed, more sensors can be then deployed [2]. Spectrum Monitoring [3]: optional feature.

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Ordering Information

ITS 2.0 Series		Part Number	Description
Hardware	Control Unit	ITS200-UAC	115/230 VAC
		ITS200-U48	±48 VDC
	Sensor	ITS-PS-2336-NMNF	100-512 MHz, w 3.6 m cable *
		ITS-PS-436-NMNF	740-960 MHz, w 3.6 m cable *
Software License	RF power monitoring license, per channel	SSL-ITS20-PS-2Y-1CH	2-year license
		SSL-ITS20-PS-3Y-1CH	3-year license
		SSL-ITS20-PS-5Y-1CH	5-year license
	Spectrum Monitoring license **	SSL-ITS20-SA-2Y	2-year license
		SSL-ITS20-SA-3Y	3-year license
		SSL-ITS20-SA-5Y	5-year license
	RF Channel Diagnostic license **	SSL-ITS20-DN-2Y-1CH	2-year license
		SSL-ITS20-DN-3Y-1CH	3-year license
		SSL-ITS20-DN-5Y-1CH	5-year license

Note:

* Other frequency bands available upon request.

** Optional

*** Cable not included

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