



Sentinel³

RF over Fibre Intelligent EMC Test and Measurement System

Sentinel 3 is a fully shielded, high performance, RF over fibre intelligent EMC test and measurement system for:

- EMP test & EMC conformance
- HIRF aircraft clearance
- Simulated lightning testing
- Impulse / time domain / NEMP testing
- Low & high level swept frequency coupling measurements.

Key military test standards

The Sentinel 3 product supports standards testing for EMC, EMP, HIRF, NEMP etc., including key standards such as:

- MIL-STD-188-125
- MIL-STD-461G
- DEF STAN 59-188
- DEF STAN 59-411.

Sentinel 3 is designed to reduce setup time and maximise measurement certainty. A variety of connector options offer a balance of robustness and compact size. Multi-core cross-site cables and compact patch leads provide additional options for easier test setup. A wide, touch-screen controller supports connectivity via Ethernet and USB.

Choice of receivers and transmitters

- Rx1, Rx2 and Rx6 offer a choice of channel inputs and optional simultaneous monitoring of two channels
- Tx1 and Tx8 offer a choice of single or eight sensor inputs



High density, scalable system

- Each chassis accepts up to six receivers and a system controller
- Up to eight inputs per transmitter
- Up to six remote transmitters per receiver
- Up to six receivers per chassis

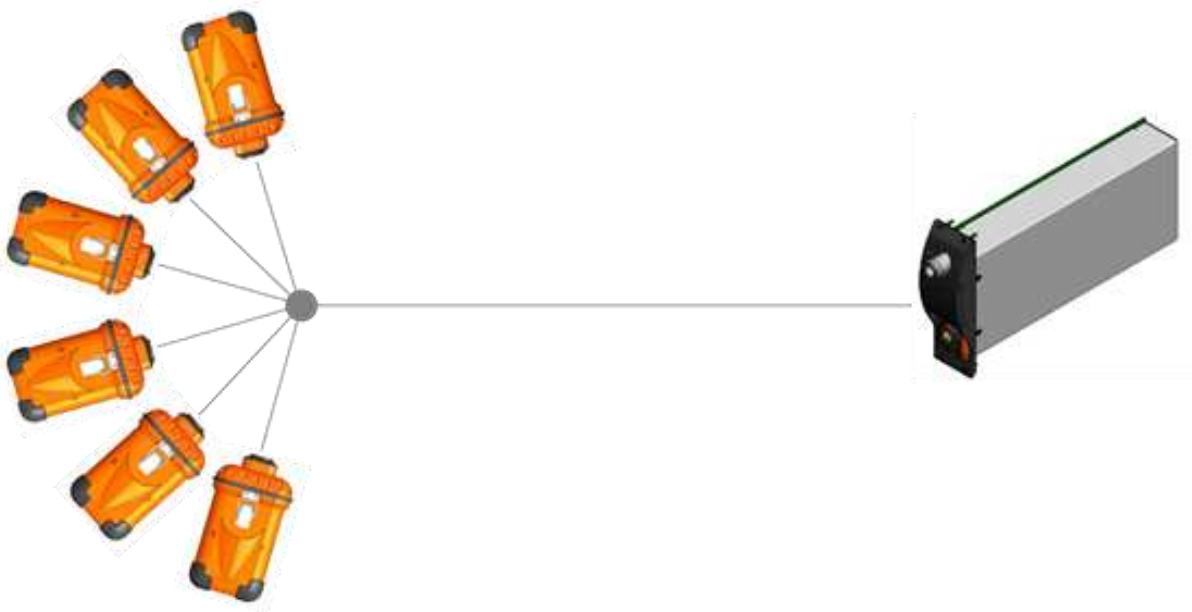
Due to our policy of continuing product development, these specifications are subject to change and improvement without notice.

Multi-core cross-site cables

Multiple receiver designs and cross-site cable options allow a variety of test configurations, including simultaneous monitoring of two channels or sequential monitoring of up to 48 sensors per receiver slot and up to 288 per receiver chassis.

World class performance

- Multiple modes: super low noise mode, high power mode and high impedance mode.
- Increased sensitivity means lower test field strength and reduced ERP.
- 150 dB/Hz instantaneous dynamic range.
- Thermal compensation maintains gain accuracy over full operating temperature range.



Ultra-compact remote transmitters (single or 8-input)

Double-screened to maximise shielding effectiveness, Sentinel 3 remote transmitter units incorporate power detection to allow easy identification of overdrive conditions. Transmitters can be remotely controlled to perform functions such as:

- Gain setting verification
- Link parameter modification
- Self-test / signal selection
- Enter or exit sleep mode
- Battery and alarm monitoring.

SPECIFICATIONS

Link Performance

No. input channels per module	Tx1 = 1, Tx8 = 8
Input/output impedance	50 Ω /1 M Ω
Frequency response (-3 dB)	50 Hz to 1.5 GHz
Rise time (max)	350 ps
Rx channel isolation (typ.)	90 dB
Tx channel isolation (typ.)	55 dB (Tx8)
Noise figure (100 MHz / 55 dB gain)	Tx1 = 4 dB, Tx8 = 6 dB (super low noise mode)
Gain adjustment (1 dB steps)	-63 dB to +55 dB (High impedance mode range -20 dB to + 30 dB)
Flatness (+40 dB gain)	75 Hz-1 GHz +/-1.25 dB
Max instantaneous input	200 Vpk <400 ns FWHM pulse
Output P1dB (max)	+20 dBm
Selectable integrator	0.1 μ S, 1 μ S, 10 μ S
Dynamic range (100 MHz / 0 dB gain)	150 dB in 1 Hz bandwidth
Shielding (electrical)	>80 dB (flat wave, E/H \approx 377 Ω)
Gain Step accuracy	\pm 0.75 dB
Input match	18 dB <1 GHz

Temperature Specification

Receiver operating	+0 °C to +45 °C
Transmitter operating	-20 °C to +55 °C
System Storage	-20 °C to +55 °C
Battery Storage	50% Charge, +10 °C to +30 °C (50 °C Abs Max)

Optical Specification

Laser wavelength	1310 nm laser (EN60825 Class 1 laser radiation hazard)
Cross-site cable lengths	50 m, 100 m, 200 m, >200 m contact PPM
Transmitter module housing	Double shielded module
Transmitter weight (incl. battery)	Tx1 <1750 g, Tx8 < 2250 g
Receiver module housing	8 hp plug-in
Receiver module weight	<500 g

Power Supply

Transmitter module	Shielded battery pack: Tx1/Tx8 = 5 hrs/10 hrs continuous operation, 1 wk / 2 wks in sleep mode
Receiver module	Power derived from chassis (supply 85-265 VAC)

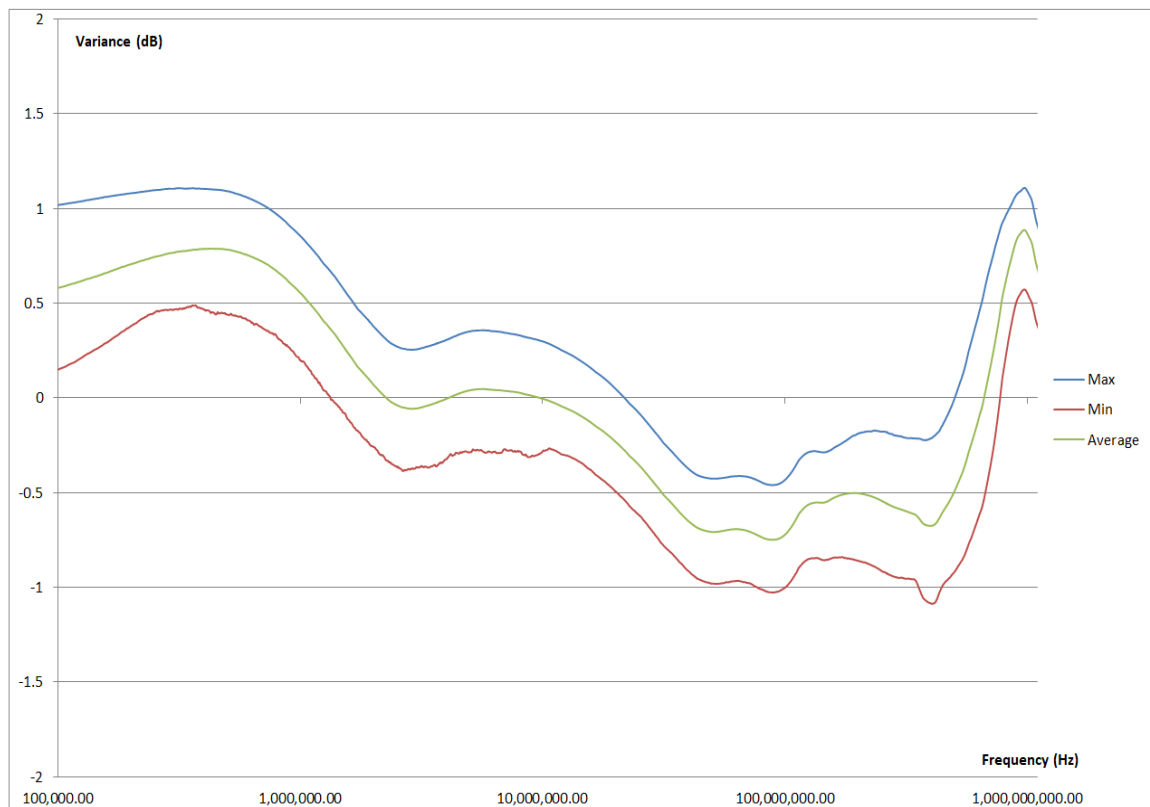
Connections

Electrical	SMA (Tx), N-type (Rx)
Optical	Standard duplex LC/APC and/or MTP/APC, IP65 cable connectors
Remote PC monitor and control	Ethernet

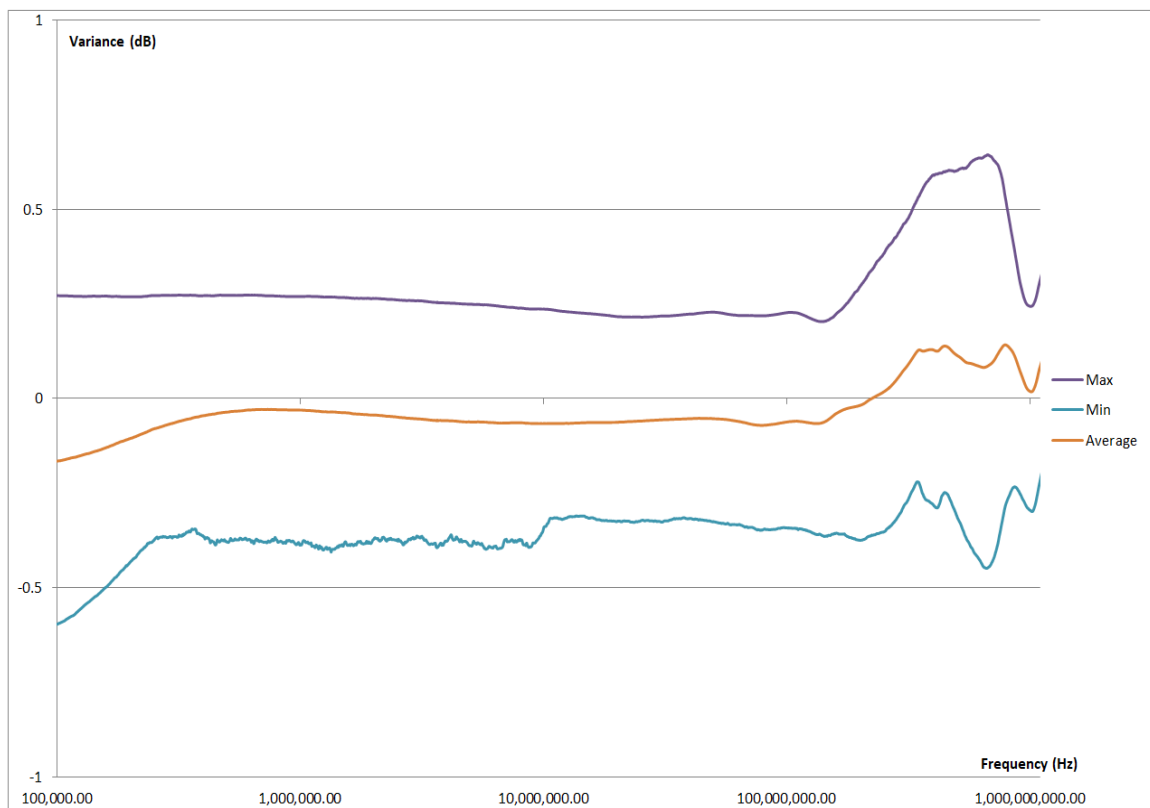
Dimensions

Rx modules (Rx1, Rx2, Rx6)	130 mm (3 U) high, 40.3 (4 HP) wide, 251 mm depth
Tx1 remote transmitter (single input)	121 mm high x 81.5 / 73.5 mm wide (front/rear) x 143 mm depth
Tx8 remote transmitter (8-input)	126.5 mm high x 81.5 / 73.5 mm wide (front/rear) x 198 mm depth

Link Ripple across Frequency

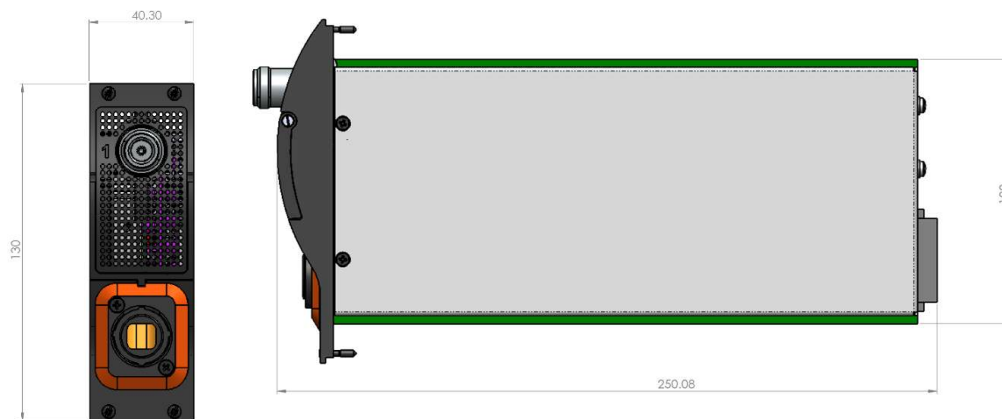


Gain Step Accuracy across Frequency

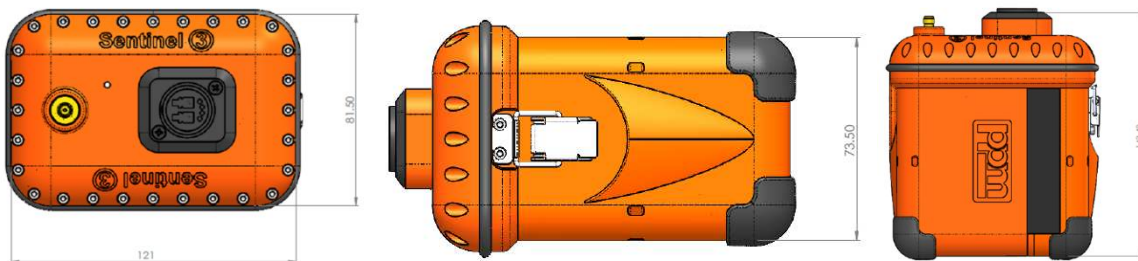


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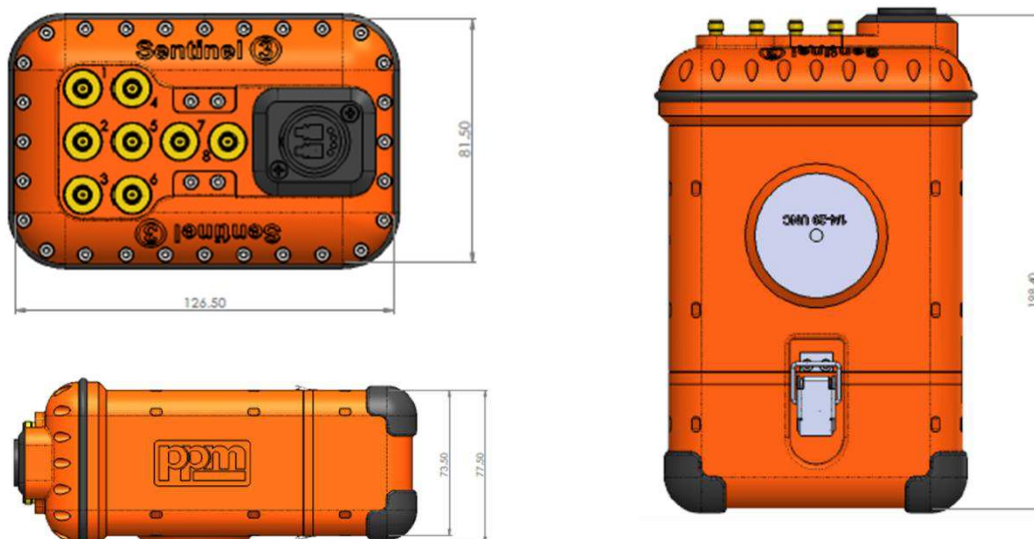
Rx1/Rx6 Module



Tx1 Transmitter Module



Tx8 Transmitter Module



Desktop Chassis



19" Rack Chassis

