

## ***Sentinel 3: Speed, flexibility, certainty***

Sentinel 3 is the most advanced RF over fiber test and measurement system for:

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



### **FLEXIBILITY**

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 choice of channel inputs and optional simultaneous monitoring of two channels
- Tx1 and Tx8 offer 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

## 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
- 150dB/Hz instantaneous dynamic range
- Thermal compensation maintains gain accuracy over full operating temperature range.

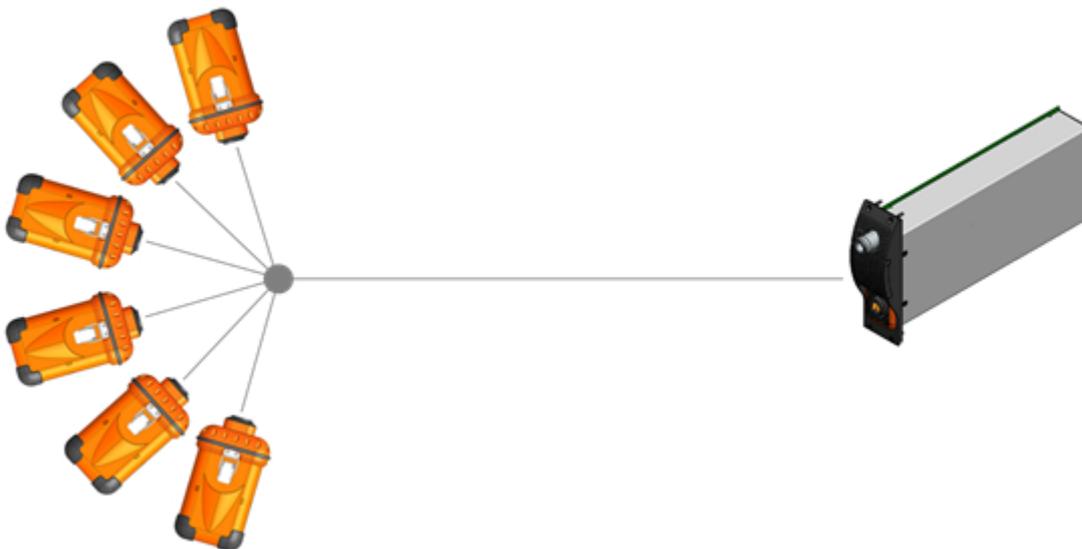
## ULTRA-COMPACT REMOTE TRANSMITTERS (SINGLE OR 8-INPUT)

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



## 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<sup>1</sup> sensors per receiver slot and up to 288<sup>2</sup> per receiver chassis.

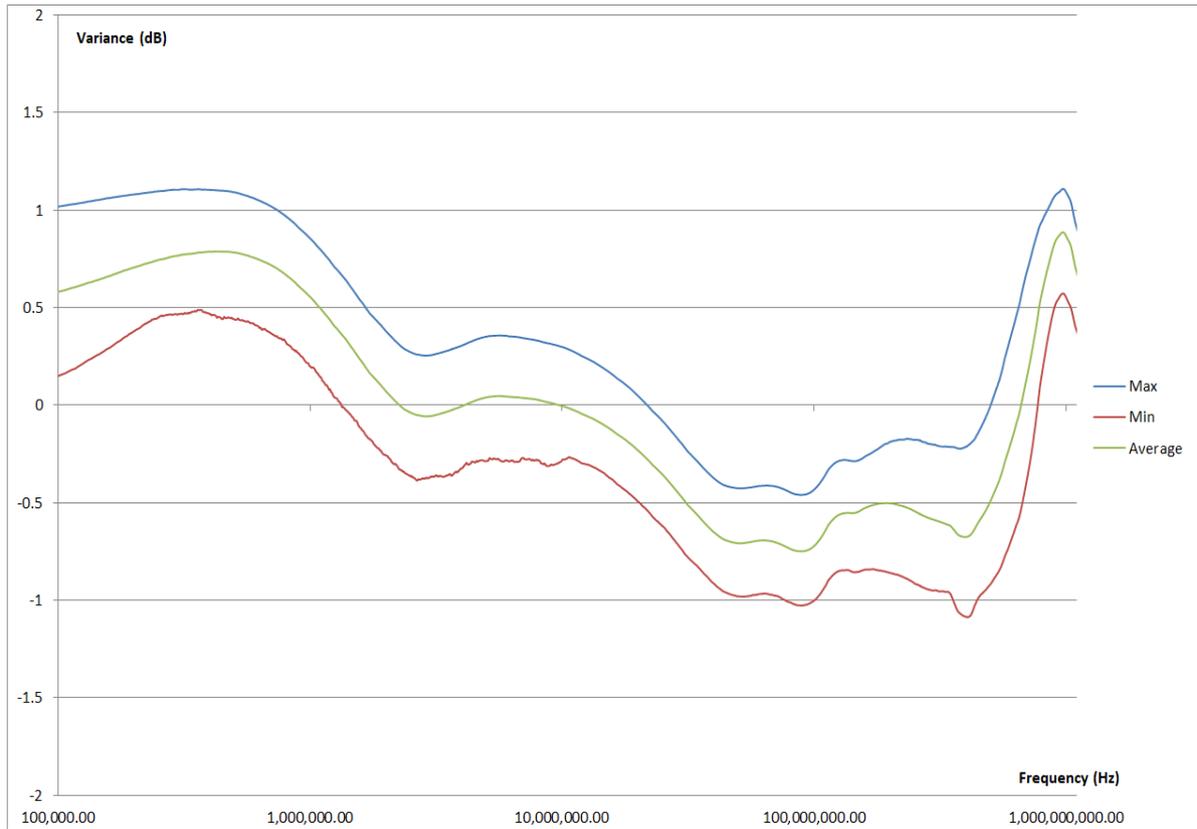
<sup>1</sup> 48 sensors = one Rx6 receiver module connected to six Tx8 remote transmitters using a multi-core cable

<sup>2</sup> 288 sensors = six Rx6 receiver module connected to six Tx8 remote transmitters using a multi-core cables

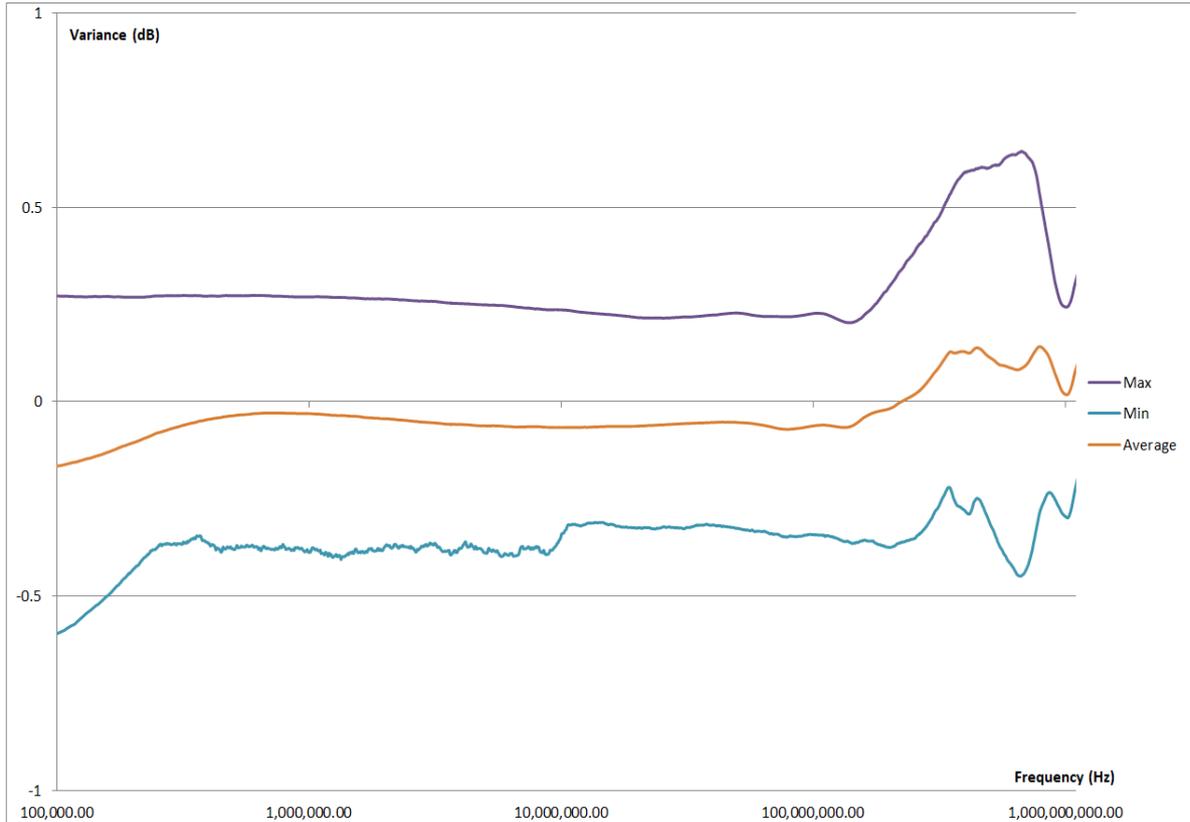
## Link Performance

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

**Gain Ripple across Frequency**



**Gain Step Accuracy across Frequency**



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

### Power Supply

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

### Connections

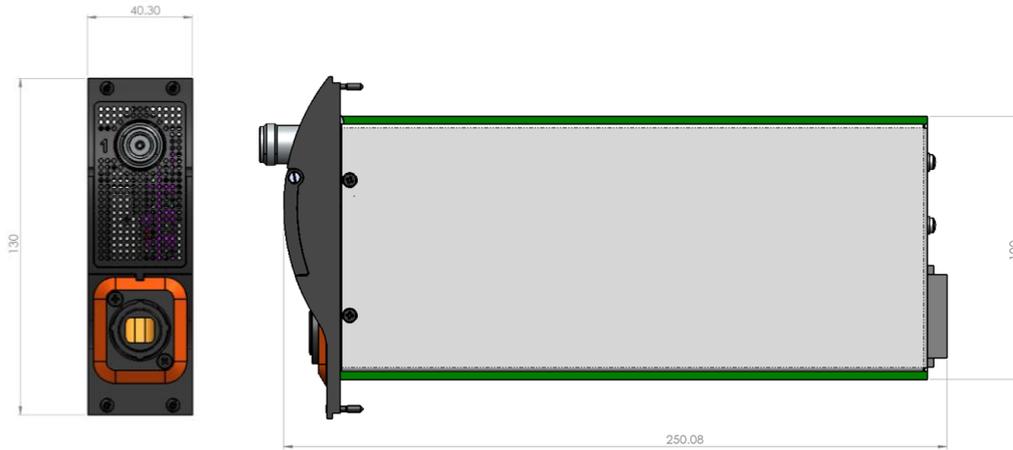
Electrical	SMA (Tx), N-type (Rx)
Optical	Standard duplex LC/APC and/or MTP/APC, IP65 cable connectors
Remote PC monitor and control	Ethernet

### Dimensions

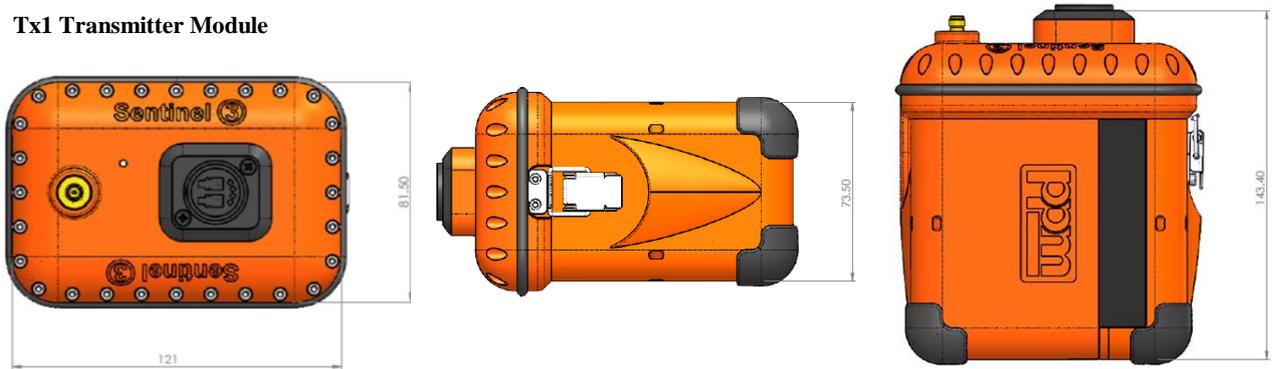
Rx modules (Rx1, Rx2, Rx6)	130mm (3U) high, 40.3 (4HP) wide, 251mm depth
Tx1 remote transmitter (single input)	121mm high x 81.5 / 73.5mm wide (front/rear) x 143mm depth
Tx8 remote transmitter (8-input)	126.5mm high x 81.5 / 73.5mm wide (front/rear) x 198mm depth

### Dimensions<sup>3</sup>

#### Rx1/Rx6 Module



#### Tx1 Transmitter Module

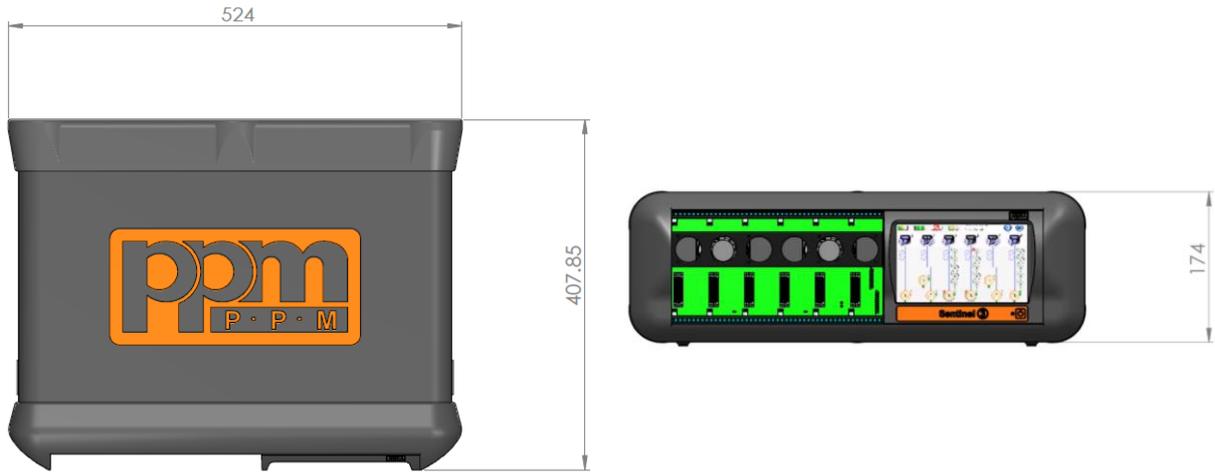


#### Tx8 Transmitter Module



<sup>3</sup> Drawings not to scale

**Desktop Chassis**



**19" inch Rack Chassis**

