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Rodent 4: Robust remote antenna platform

Product Brief

The Rodent 4 antenna platform provides a convenient way to deploy signals intelligence (SIGINT) antennas over hundreds of metres, allowing personnel to remain at a safe distance from the targeted zone.

Wideband RF over fibre links are employed to transmit RF signals from the remote antenna platform back to receiving equipment. This receiving equipment can be mounted in a vehicle or can be dismounted. The Rodent 4 is typically deployed to the target zone using a remote controlled vehicle (RCV) but can also be hand carried.

Key Features

- Supports multiple antennas & frequency bands on a single platform
- Very wide RF bandwidth over fibre – allowing reception of all key communication bands
- Rodent 4 system deploys “live” – providing an RF feed at all times
- Exceptional spurious free dynamic range (SFDR) for small signal sensitivity
- Switchable amplification to enhance low level signals
- Automatic Gain Control (AGC)
- Extremely robust design – in-service proven over many years
- Thermal compensation provides excellent temperature performance stability
- Remote control capability for functionality & system monitoring
- Long mission life using standard LIPS batteries
- No change required in SOPs or CONOPS from existing in-theatre systems
- Reduced cost of ownership & integrated logistics support (ILS) infrastructure
- Designed to be deployed in a physically & electromagnetically hostile environment.

The use of RF over fibre, coupled with PPM’s proprietary direct modulation scheme, allows the signals of interest to be relayed with minimum signal distortion and loss. In addition, the optical transmission medium provides immunity to interference from other local RF sources.

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Technical Specification

Rodent 4 RF Performance

Model	**Rodent 4**	
No. Antenna input channels	2	
Input/output impedance	50Ω	
RF link frequency response	Ch1: Contact PPM*	Ch2: Contact PPM*
Noise figure	Ant A: 21dB*, Ant B: 10.6dB*	
Noise figure – max AGC / gain	6dB	
Input P1dB	Ant A: -7dBm, Ant B: -15dBm	
LNA Gain adjustment	20dB remotely switchable LNA	
Instantaneous dynamic range	155 dB in 1Hz bandwidth	
Spurious free dynamic range 2/3	>110dB	
Gain Flatness	+/-1.2dB: Contact PPM*	
Max instantaneous input	30dBm	

Other Specifications

Remote monitoring and control	Serial link RS232/422 (Ethernet option)
Battery level monitoring and LED	Yes (Remote and local monitoring via LIPS optical interface)
RF input power protection	Yes
Antenna selection LEDs (Tx/Rx)	Yes
Audible link fail and battery alarms	Yes
Thermoelectric cooling (Tx)	Yes
Operating Temperature	-20°C to +55°C
Storage	-30°C to +85°C
Operational availability	>8 hours on fully charged 552 Wh
Optical output power	EN60825-1 Class 1 laser radiation hazard
Cable lengths on standard reel	Contact PPM*
Antenna Platform RF Transmitter	HIRF electromagnetically shielded module
RF Receive module	HIRF electromagnetically shielded module
System weight	20kg (without antennas/battery)

Power Supply

Remote Antenna Platform (Tx)	180 or 552 Wh battery pack
Receiver module (within cable reel)	19-32V - via RF or Serial port connector

Electrical Connections

Receiver RF output connector	N-type
Receiver data connector	Amphenol TVP00RF11-35PN

* Contact PPM – Some details have been removed from this datasheet.

Rodent 4 Options

- Stacked RF antenna with multiple bands to improve performance and selectivity
- Gigabit Ethernet or serial data link between antenna platform and local station for optional equipment and diagnostics
- Increased RF bandwidth available
- Simultaneous dual RF channels for high speed scanning capability
- 24V DC power-tap for optional equipment on the antenna platform.