



# PDT-50 X-Band Transmitter Suite

The PDT-50 series X-Band Transmitter Suite is a high performance payload data transmitter designed to provide high bandwidth and high speed data downlink of up to 50Mbps. The unique 8-patch antenna design offers high mission flexibility and robustness in data transmission. With complete ground coverage, any of the 8 antennas can be used as a downlink to the ground stations.

The PDT-50 Transmitter Suite consists of 8 selectable patch antennas with individual Solid-State Power Amplifier (SSPA) modules, as well as 2 RF transmission chains for increased redundancy and communication coverage.

## Key Features

- Light weight, low cost and high performance payload data transmission
- Increased flexibility and reliability with selectable patch antennas
- Near realtime communications with high speed data downlink of up to 50Mbps
- Increased reliability with adoption of redundancy antenna design
- Proven design with heritage from X-SAT



PDT-50  
X-Band Transmitter Suite

## Technical Specifications

### ANTENNA

<b>Antenna Type</b>	Patch Antenna
<b>Antenna Selection</b>	4 patch antenna per transmission chain SP4T switch to select SSPA Orientated 45° from each other
<b>Beam Width</b>	±22.5° (H) x 90° (E)
<b>Polarisation</b>	Circular Polarised
<b>Mass</b>	0.1 kg / patch
<b>Volume</b>	56 x 56 x 5.6 mm <sup>3</sup>

### GENERAL

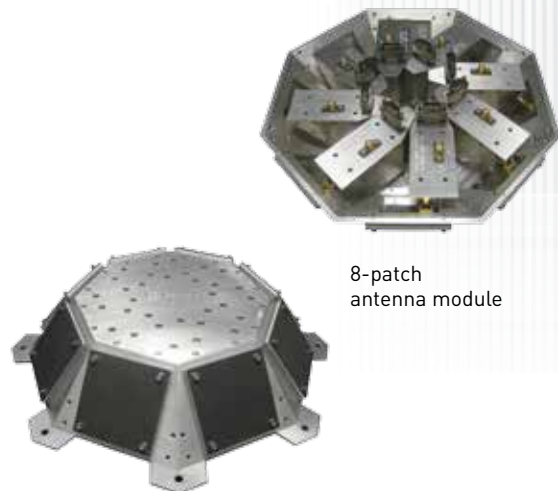
<b>Radiation Tolerance</b>	10 kRad
<b>Operating Temperature</b>	-20°C to +70°C

### TRANSMITTER

<b>Transmit Frequency</b>	8025 MHz – 8400 MHz
<b>Transmit Modulation</b>	QPSK
<b>Transmit Bandwidth</b>	50 MHz
<b>Data Rate</b>	50 Mbps Up to 4 selectable input channel
<b>Transmit Power</b>	38.5 dBm, before antenna input
<b>Volume</b>	Transmitter: 201 x 183 x 30 mm <sup>3</sup> SSPA Power: 123 x 97 x 24 mm <sup>3</sup> SSPA Switch: 135 x 84 x 22 mm <sup>3</sup> SSPA RF module: 82 x 33 x 42 mm <sup>3</sup>
<b>Mass</b>	Transmitter: 2.75 kg / chain SSPA Power: 0.36 kg / chain SSPA Switch: 0.25 kg / chain SSPA Module: 0.30 kg / chain
<b>Power Consumption (DC)</b>	56 W 28 V un-regulated power supply
<b>CAN Network Interface</b>	Tele-command and telemetry interface for configuration of the X-Band transmitter CAN network interface for short packet transmission, 500 Kbps



X-Band Transmitter, Solid-State Power Amplifier (SSPA) Switch



8-patch antenna module

Note: All specifications are subject to change without notice.  
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