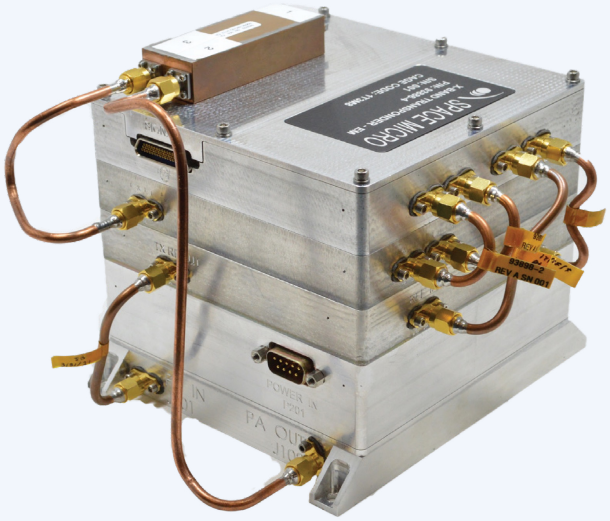
µXBT™ X-BAND TRANSPONDER



Based on Space Micro's legacy µSTDN-100™ Transponder flown on NASA's IRIS and LADEE scientific missions, the µXBT™ X-Band Transponder is designed and rigorously tested to provide high-performance under the extreme environmental conditions of space. The µXBT is a low SWaP, radiation-hardened radio with a downlink data-rate of up to 6 Mbps, and it includes a 12W Solid State Power Amplifier (SSPA).

APPLICATIONS

- Telemetry, Tracking & Command Transponder
- Mission Data Transmitter
- Ranging
- Suitable for Satellite Constellations, Lunar Missions

KEY FEATURES

- Up to 5 Mbps X-Band Transponder
- Up to 12 W Power Amplifier
- Radiation Hardened
- CCSDS DSN Compliant

SPECIFICATIONS: TRANSMITTER

FREQUENCY	8.3 GHz to 8.5 GHz
RF OUTPUT POWER	3 / 6 / 12 W
MODULATION FORMATS	BPSK, QPSK OQPSK, 8PSK (Options)
CHANNEL BANDWIDTH	10 MHz
DATA RATE	Up to 6 Mbps
FEC	CCSDS Reed-Solomon (255, 239) CCSDS LDPC 7/8 CCSDS Turbo
FREQUENCY ACCURACY	±4 ppm
PHASE NOISE NON-COHERENT MODE	3° RMS Maximum
SPURIOUS AND HARMONICS	-60 to -50 dBc

µXBT™ X-BAND TRANSPONDER

SPECIFICATIONS: RECEIVER

FREQUENCY	7.25 GHz - 7.75 GHz
DATA RATE	2 to 12 kbps
DYNAMIC RANGE	-125 dBm to -50 dBm

SPECIFICATIONS: OTHER

INTERFACES	Uplink Command / Data: RS-422 Downlink Telemetry: RS-422 Control and Status: RS-422 / UART
CONNECTORS	SMA
ENCRYPTION	AES-256 FIPS 140-2 Supports Industry Standard External Encryption Units
ENVIRONMENT **Temperature Range** **Vibration** **Parts Level Options** **Suitability**	 -20°C to +50°C Operational GEVS Acceptance Levels Commercial Space, NASA Levels 1, 2, 3 LEO, MEO, GEO
SWAP **Dimensions** **Mass** **Power Consumption** **Input Voltage**	153 mm x 127 mm x 116 mm 3 kg 13 W (On without PA) 80 W (On with PA 3W Output) 110 W (On with PA 12W Output) 28 V DC