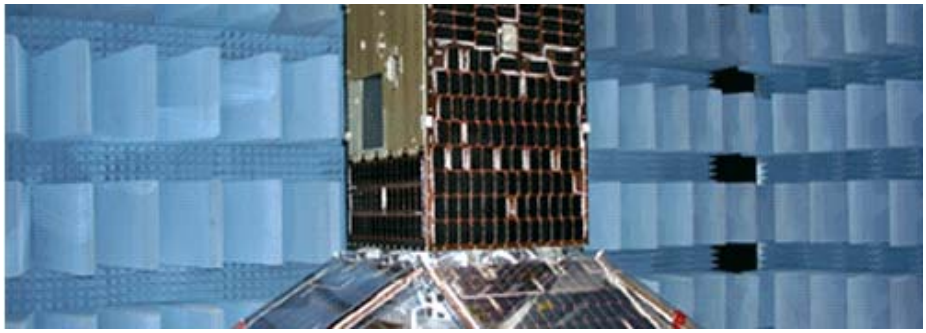
AEROASTRO

A leader in innovative microsatellite systems, components, and advanced communications technologies.



X-Band Transponder

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Three X-Band Transponders/HPAs have successfully flown on the NASA New Millennium Program's Space Technology 5 (ST5) Nanosatellite Constellation Trailblazer mission, launched in March 2006.

AeroAstro's X-Band Transponder serves the needs of the next generation of small busses by providing a reliable, high data-rate communications platform in a band with ample spectrum availability.

The X-Band Transponder is smaller in size, lower in mass, and lower in power consumption than other radios with comparable capabilities. This full-duplex coherent transponder can transmit at a data rate of up to 750 kbps and receive at up to 20 kbps.

The transponder design is based on modern low-voltage RF technology developed for the commercial digital wireless, DBS and VSAT markets.

Capabilities

- Full duplex coherent transponder (1.5 W RF output); available as a transceiver or separate TX & RX
- 4 W dc receive, 10 W dc transmit
- Up to 750 kbps TX, 20 kbps RX
- Passed DSN compatibility test

Characteristics

- 91.44 in^3(1490 cm^3) (XPNDR & HPA)
- 1.4 Kg (3.1 lbs) (XPNDR & HPA)
- Modulation/Demodulation: DSP (includes Doppler correction & telemetry decoder/encoder)

Product Specifications:

Frequencies: 8.40 to 8.50 GHz transmit, 7.145 to 7.235 GHz receive
Uplink Modulation Method: Bi-phase filtered BPSK
Downlink Modulation Method: BPSK, QPSK available on special order
Data Rates: 10 to 750 kbps transmit, 1 to 20 kbps receive
Other Specs: 1e-5 BER, 9.6 dB Eb/No (standard), 1.5 W transmit
Radiation Tolerance: 10 kRads(Si), options to 40 kRads at box level
Power Consumption: 10 W transmit, 4 W receive
Voltage: 6 to 8.5 VDC (customizable)
Dimensions: (transponder): 6" x 3" x 3" (15.2 cm × 7.6 cm × 7.6 cm)
Dimensions: (HPA): 6" x 2.6" x 2.4" (15.2 cm × 6.6 cm × 6.1cm)
Mass (transponder): 2.5 lbm (1.135 Kg)
Mass (HPA): 0.6 lbm (0.272 Kg)
Temperature: -20º to 40ºC operate, -40º to 50ºC survival
Diplexer: Insertion loss < 1.0 dB, 0.2 dB flatness, max VSWR 1.4:1
Low Noise Amplifier: GaAs FET, noise < 3 dB

Making Space For Everyone™

For more information please contact AeroAstro at 703.723.9800 or info@aeroastro.com.