PLAN-S
SATELLITE & SPACE
TECHNOLOGIES

X-BAND TRANSMITTER

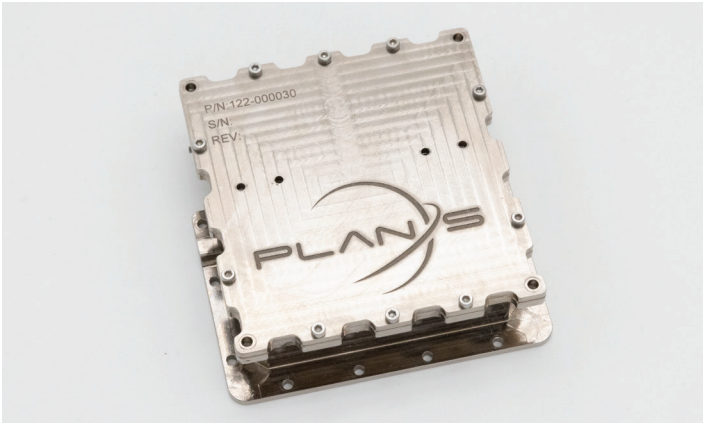
High-Speed LEO Downlink Engineered for Scalable Constellations

Designed for scalable LEO constellations, the X-Band Transmitter enables fast, reliable payload downlink in a compact, mission-ready form.

X-Band Transmitter is a high-speed, adaptable communication solution designed to ensure seamless high-volume data delivery from orbit to mission control centers.

KEY HIGHLIGHTS

- High-performance X-Band communication link specifically engineered for data-intensive LEO missions
- Fully optimized for 6U and larger SmallSat constellations requiring high-reliability downlinks
- Advanced RF signal generation utilizing DVB-S2 compliant coding to ensure maximum spectral efficiency
- Support for multiple high-order modulation schemes for robust and high-speed data delivery
- Dynamic link adaptation for real-time power and data rate optimization during ground passes
- Integrated FPGA-based digital processing allowing for flexible waveform and protocol updates
- Robust mechanical design focuses on superior thermal stability and seamless bus integration



MISSION BENEFITS

- **High-Speed Throughput:** Up to 425 Mb/s data rate using DVB-S2 compliant coding.
- **Adaptive RF Output:** In-flight configurable power up to 33 dBm with adaptive modulation.
- **Versatile Connectivity:** Ethernet, SERDES, LVDS, and CAN interface support.
- **Modular Architecture:** Separate Main and PA modules for flexible integration and thermal control.
- **Constellation Ready:** High-reliability design optimized for rapid, large-scale deployment.

TECHNICAL FEATURES

Frequency Range	8025 – 8400 MHz
Max Data Rate	425 Mb/s
RF Output Power	Up to 33 dBm (Configurable)
Schemes	QPSK, 8PSK, 16APSK, 32APSK
Data & Control	Ethernet, SERDES, LVDS, CAN
Supply Voltage	10.5V – 28V
Consumption	~32 W (Full Transmit Mode)
Dimensions (Main)	126 x 128 x 42.5 mm
Dimensions (PA)	82.5 x 90 x 25 mm
Operating Temp	-20°C to +50°C

HERITAGE / QUALIFICATION

- EMC tested
- Flight heritage demonstrated on 1 Satellite

STANDARDS & COMPLIANCE

- Environmental Verification
  Compliant with NASA GEVS (GSFC-STD-7000)
- DVB-S2 Compliant
- CCSDS Compliant