µKaTx-300™ Ka-BAND TRANSMITTER

OVERVIEW

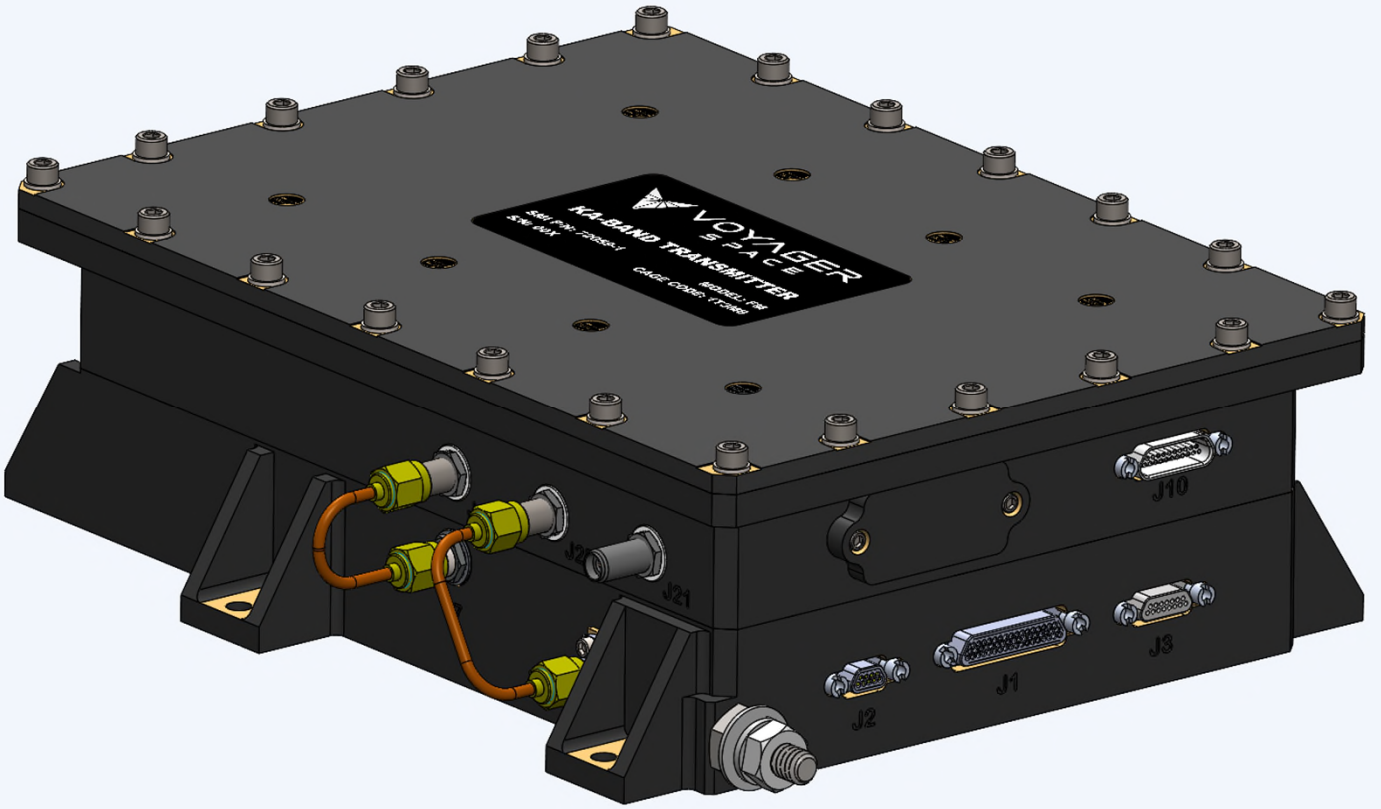
µKaTx-300™ Ka-Band Transmitter is a flight-proven Ka-Band transmitter providing high data rate capability up to 4 Gbps with 32QAM. The high-reliability µKaTx-300 has been in continuous operation on NASA TESS for over five years and is frequency agile and on-orbit configurable. An optional 5 W Ka-Band Power Amplifier is available.

KEY FEATURES

- TRL9 Radiation Tolerant Design
- Ruggedized for Launch and Deployment
- Configurable On-Orbit
  - RF Frequency
  - RF Output Power
  - Data Rate
  - Modulation
  - Forward Error Correction

APPLICATIONS

- Mission Data Transmitter
- Long-term Space Missions
- Satellite Orbits: LEO, MEO, GEO, Cislunar



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SPECIFICATIONS

TRANSMITTER	KA-BAND
Frequency	25.5 - 27 GHz
RF Output Power	-10 to +5 dBm
Signal Bandwidth	850 MHz
Modulation	QPSK, OQPSK; Options: 8APSK, 16APSK, 32QAM
Data Rate	10 - 800 Mbps, > 4 Gbps capable
FEC	RS (255,223) I=5, Convo (1/2) k=7, LDPC (7/8)
RRC (alpha)	0.35
Frequency Accuracy	≤ ±20 ppm EOL
Spurious And Harmonics	≤ -60 dBc, NTIA Spectral Mask Compliant
EVM	≤ 10% RMS
RF Output connector	2.92 mm
Outline Dimensions	8.25” x 6” x 2.75”
Mass	≤ 2.5 kg
Mission Life	1 to 7 years
Radiation	> 25 krads, LET > 62 MeV parts level
Parts Level options	NASA levels 1,2,3, Commercial Space
Input Voltage	18 - 40 VDC isolated
Power Consumption	≤ 30 W
EMI/EMC	MIL-STD-461
Data / Ctrl Interfaces	RS-422, LVDS (16-bit parallel)
Temperature Range	-24°C to +65°C (operating); -40°C to +85°C (unpowered)
Vibration	GSFC-STD-7000 (NASA GEVS) Qual Levels
Encryption	Capable of AES-256-GCM (authenticated encryption)