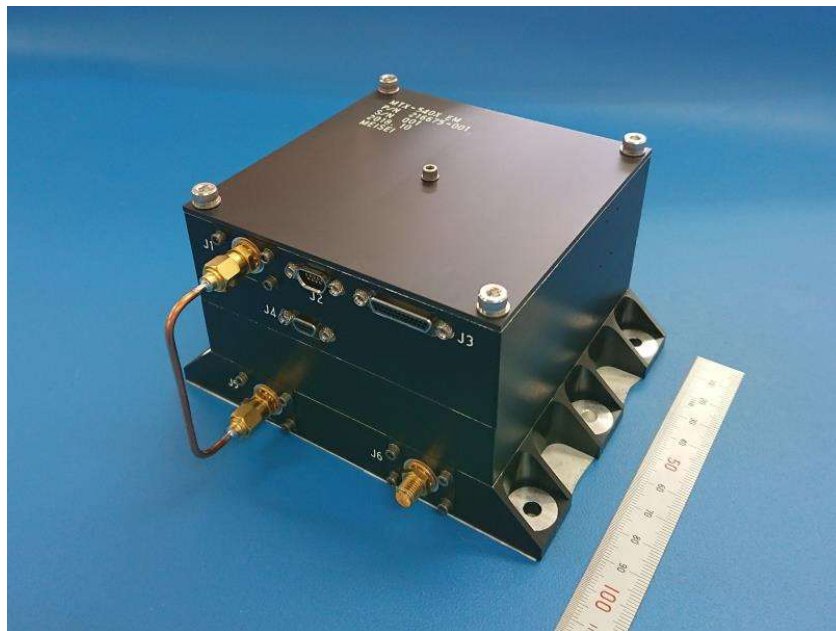


High-Speed X Band Transmitter MTX-540X



Outline

MTX-540X is a high-speed X band transmitter for the micro satellites. 64APSK technology achieves the world's highest class frequency efficiency for the earth observation downlink. MTX-540X enables your satellites to maximum 522 Mbps downlink.

Features

- 64APSK: the highest frequency efficiency for earth observation downlink
- High-speed 522 Mbps downlink in less than 150 MHz frequency bandwidth
- Adaptive coding and modulation (69 Mbps to 522 Mbps)
- Low power consumption (22 watts) & Low mass (about 1.3 kg)
- Compatible with generic ground receiver (Zodiac Cortex HDR 4G)
- ITAR free
- Made in JAPAN

MEISEI ELECTRIC is provider of components and small satellite systems. Since 1955, MEISEI developed more than 3,000 instruments for rockets, satellites, space probes, and space station in collaboration with JAXA, ESA, and NASA.

SPECIFICATIONS

Electrical characteristics

Frequency	8,025 MHz to 8,400 MHz
Symbol rate	100 Msymbol/s (typ.)
Standards	CCSDS 131.2 or DVB-S2 ^{*1} /S2X ^{*2}
Modulation	QPSK, 8PSK, 16APSK, 32APSK, and 64APSK
Error correction	Turbo coding (SCCC) or LDPC ^{*1,2}
Data rate	69 Mbps to 522 Mbps
RF power	+33 dBm (QPSK to 32APSK) +30 dBm (64APSK)
Bandwidth	< 150 MHz
Filter	Compliant with ITU regulations
TTC interface	RS-422 level, UART
DC power supply	+18 V to +34 V, 22 W (typ.)

Physical characteristics

Dimensions	100 x 100 x 73 mm
Mass	< 1,300 g

Data input interface

Standard	Parallel LVDS (CCSDS 130.12-G-1)
Clock input	Up to 100 MHz
Data input	8 bits + Data_valid
Data rate	Up to 800 Mbps
Flow control	Data_request from transmitter

Environment

Operational temperature	-40°C to +50°C
Vibration	GSFC-STD-7000A, Table 2.4-3
Shock	GSFC-STD-7000A, Figure 2.4-1
Radiation tolerance	> 10 krad
Design lifetime	5 years in LEO

*1 MTX-OPT-DVBS2

*2 MTX-OPT-DVBS2X

Ordering Information

MTX-540X-FM	Flight model
MTX-540X-EM	Engineering model
MTX-OPT-DATASOURCE	Option: Test data source unit and software (USB 3.0 to Parallel LVDS)
MTX-OPT-SR50M	Option: 50 Msymbol/s mode, (BW < 75 MHz, up to 269 Mbps)
MTX-OPT-DVBS2	Option: DVB-S2 mode, up to 32APSK
MTX-OPT-DVBS2X	Option: DVB-S2X mode, up to 64APSK
MTX-OPT-BPF	Option: External band pass filter for SFCG recommendation (deep space)
MTX-OPT-PANT4	Option: Patch antenna (Gain = 13.5 dBi, Size = 70 x 70 x 10 mm, Mass = 80 g)



Caution

- For safe and correct usage, please read the "Operation Manual" prior to the use of the products.
- Specifications and designs are subject to change without notice.
- Specifications and designs are based on the standard model. Please contact us regarding further customization to suit your project's needs.
- This products may be subject to the application of the Foreign Exchange and Foreign Trade Act and other related laws and regulations in Japan. Customer agrees to comply with such regulations and acknowledges that it is their responsibility to obtain any required licenses to export, re-export, or import this products.
- We shall not be liable for any damages arising out of or in connection with the use of specifications herein, including liability for lost profit, business interruption, or any other damages whatsoever.
- The color of the product photography on catalog might be different from that of actual product because of printing.

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