

1Mbps S-band Transceiver for Satellite



Upper section : USB transceiver unit
Lower section : QPSK transmission unit

Outline

It will be installed on the small satellite and perform the command reception from the ground, and the telemetry transmission to the ground using 2GHz wave band.

Features

- **Flight proven**
- Lower cost using COTS parts
- The 2-way Doppler measurement function controls the transmission frequency depending on the reception frequency of the command signal from the ground.
- 1Mbps high speed communication (QPSK)
- Control for switch of USB/QPSK transmission and switch of coherent (2-Way Doppler) /incoherent mode is available
- Monitoring the status of the transceiver (transmission and reception status, internal temperature and the setting status of each mode)
- In case only USB is required, it will be realized by the sole operation of the upper unit.
- Tolerant of the severe environment of small satellite
- ITAR free
- RoHS nonconformity
- Made in Japan

* This product was developed in the support of JAXA.

* Note that, with due to the rights of other relevant parties and/or depending on usage, application and/or delivery place, the products may not be sold, commercially distributed, leased or included in a part of product or system which intends to receive benefits through the inclusion of the product.

SPECIFICATIONS

| | Items | Performance |
|-------------------------------|-----------------------------|--|
| Receiving performance | Reception frequency | 2 GHz band |
| | Modulation | PCM(NRZ-L)-PSK-PM |
| | Receiving sensitivity | < -100 dBm |
| | Sub carrier frequency | 16 kHz |
| | Command bit rate | 4 kbps |
| USB transmission performance | Transmission frequency | 2 GHz band |
| | Modulation | PCM(Biφ-L)-PM |
| | Transmission output | +10 dBm(Typ.) |
| | Telemetry bit rate | 16 kbps |
| QPSK transmission performance | Transmission frequency | 2 GHz band |
| | Modulation | QPSK |
| | Transmission output | +27 dBm(Typ.) |
| | Telemetry bit rate | 1 Mbps |
| Other performance | Power supply voltage | +17 to 35 VDC |
| | Power consumption | < 2.8 W (standby) |
| | | < 3.8 W (USB transmission) |
| | | < 15 W (QPSK transmission) |
| | Operating temperature range | -10 to +50°C |
| | Dimensions | 198 x 120 x 38.8 mm (flange and screw not included) |
| | Mass | < 1.65 kg |
| | Lead time | About 12 months after receiving orders. |
| Flight heritage | SDS-4 SOCRATES | |

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.
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