

TRX-U Satellite UHF Transceiver

The SpaceQuest TRX-U is a compact single board transceiver for satellite communications in the UHF Band. Similar to the TRX-V, the TRX-U is an ideal satellite TT&C Radio or Narrow Band Communication Payload for CubeSat and SmallSat missions.

Key Features

- Space Qualified (2 Units On Orbit)
- Compact Single Board Design
- Up to 26 Programmable Channels
- Built in Voltage Regulation
- Up to 5 Watts RF Output
- CubeSat Compatible



General Specifications

Frequency:	370 MHz to 470 MHz
Transmit Power:	1 – 5 Watts RF Output
Transmit Data Rate:	Customer Defined Between 2.4 and 19.2 Kbps
Receive Data Rate:	Customer Defined Between 2.4 and 19.2 Kbps
Channels:	1 to 26 Channels, Custom Programmed in 300 Hz Steps
Modulation:	FSK, GFSK

TRX-U

Electrical and RF Specifications

Input Voltage:	7.0 to 9.0 Volts
Power Consumption:	RX: 250 mW TX: 8 W for 2 W RF Out with 7.0 V Input
Clock and Data Output:	3.3 Volt LVCMOS
Power and Data Connector:	15 Pin Micro-D Socket
RF Connector:	MCX Socket
Sensitivity:	-120 dBm @ 2400 bps, zero errors -111 dBm @ 19.2 Kbps, zero errors
Front-end Noise Figure:	< 2 dB with built in LNA and Filter
RX Dynamic Range:	120 dB (-120 dBm to -20 dBm reception)
Carrier Stability:	2.5 ppm from -20°C to +60°C
RF Impedance:	50 Ohms Nominal (Input and Output)
Max VSWR:	5:1 at All Phase Angles
Automatic Control:	Built in AGC and AFC for Gain and Doppler Control
Digital RSSI:	-110 dBm to -50 dBm

Mechanical and Environmental

Mass:	140 grams
Size:	83 mm x 57 mm x 16 mm (3.27" x 2.25" x 0.63")
Operating Temperature:	-20°C to +60°C
Storage Temperature:	-30°C to +80°C
Vibration:	15G RMS (20 – 2000 Hz)