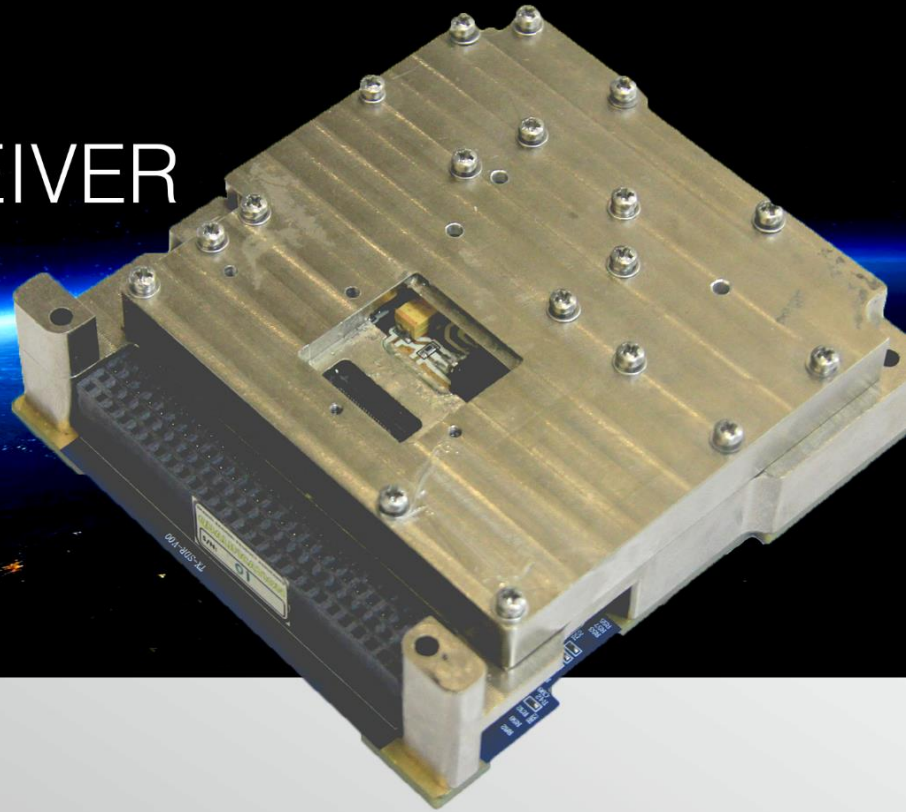


# HIGH DATA RATE X-BAND TRANSCEIVER



## Description

Due to the small size of CubeSats, one of the main challenges is low consuming equipment, especially for radios communication links. XTX answers to this demand using high data rate up to 50 MBPS and controlling the power consumption of power amplifier section.

A temperature compensation mechanism is used to stabilize RF power level over time and over temperature. Also, the power consumption is optimized for each power level. XTX is designed for Low Earth Orbit mission with two years lifetime.

XTX is designed and manufactured using high quality electronic components and it has been under mechanical and thermal stress tests according to ECSS on QM Unit.

## KEY HIGHLIGHT

- Qualified COTS in a detailed design
- CCSDS Recommendations Compliant
- CubeSat form factor / PC 104
- Low consumption & high-efficiency amplifier
- Link budget optimization, by in-flight configuration
- Observation & Scientific payloads, Experimentation



## FREQUENCIES

The transmitter and Receiver module is suitable for the Low-Earth-Orbit missions. This module has the ability to send data in the frequency band of 8-8.4 GHz and sending rate of 1-50Mbps



## POWER

The X-TRX 300 have a low power consumption and total power consumption of < 15 W

# TECHNICAL SPECIFICATION

## Functional and Performance Characteristics

Operating Life Time in Orbit	2 Years in LEO Missions	
Coding	Reed-Solomon/Convolutional or LDPC	
Useful data Rate	1.1 to 50 Mbps	
Frequency Range	8-8.4GHz	
Modulation	QPSK, OQPSK	
Framing	HDLC	
Control Command and Telemetry	I2C, CAN	
Antenna	SMP	
RF Output Power	>33 dBm adjustable from 27-33 with 1 dB step	
Data Interface	SPI	QSPI
Advanced Features	Low consumption high-efficiency amplifier	Data encryption CubeSat form factor / PC 104
RF Output Power Stability	0.2 dB	

## Environmental and Mechanical Characteristics

Storage Temperature Range	-40 °C to +80°C	
Operating Temperature Range	-30 °C to +65°C	
Mass	300 gr	
Dimensions	90 mm x 96 mm x 27 mm	
Random vibration	15 grms in 20 to 2000 Hz	

## Electrical Characteristics

Supply Voltage	5.5 to 4.5 v for Processing unit & 6 to 14 v for RF unit	
Power Consumption	<14 W	

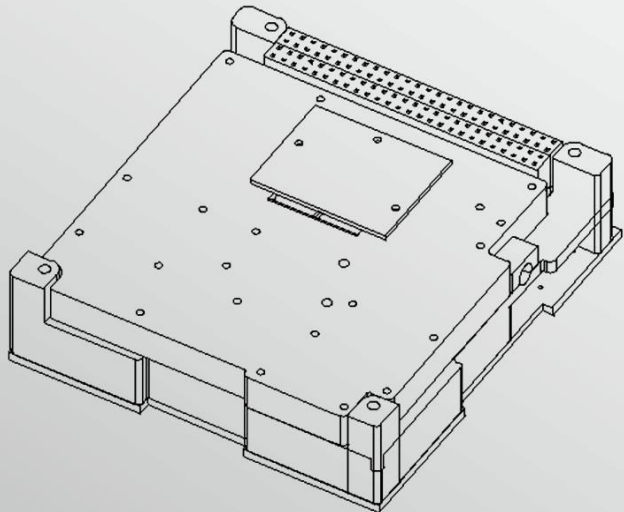
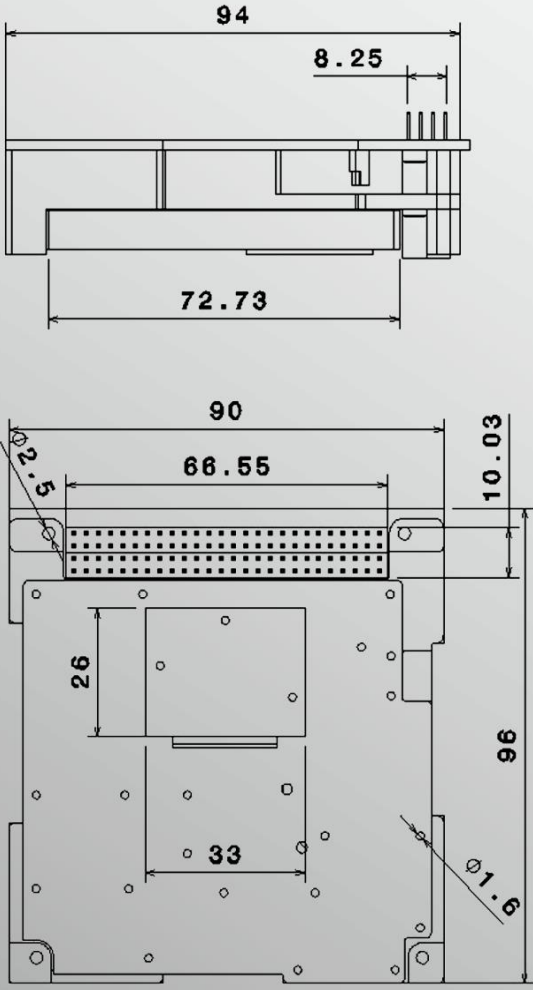
# TEST SPECIFICATION

## Qualification and Acceptance Testing (ECSS-E10-03A)

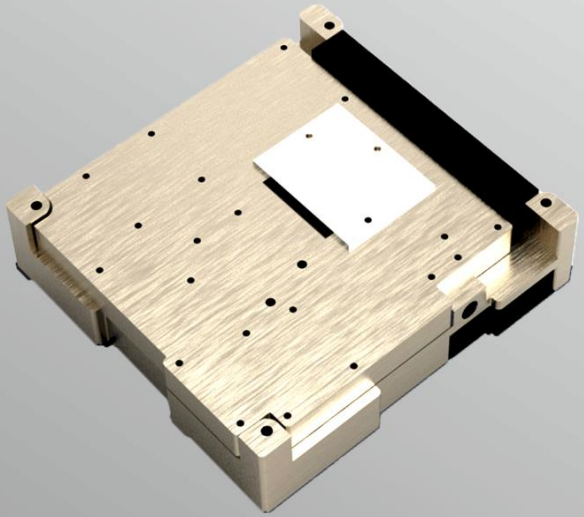
Test Name	QT	AT
Functional	✓	✓
Random Vibration	✓	✓
Sinusoidal Vibration	✓	
Mechanical Shock	✓	
Thermal Cycling	✓	✓
Thermal Vacuum	✓	✓



# DRAWING



# MODEL



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[info@easts-space](mailto:info@easts-space)