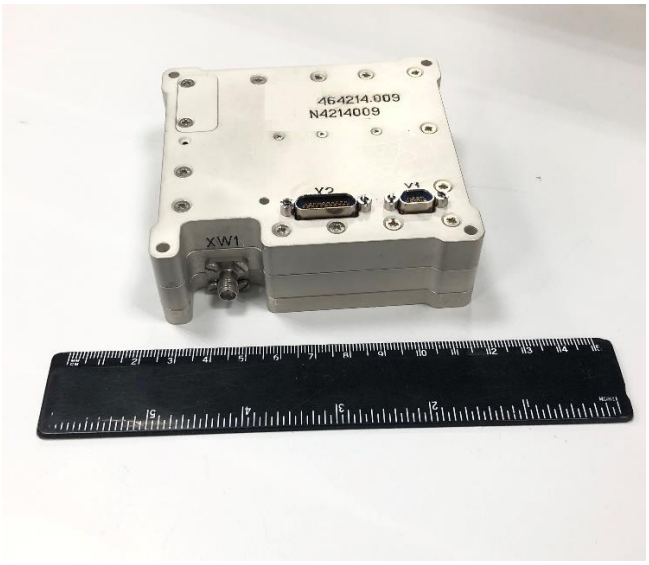
Cubesat X-band Transmitter (PRDC)

The Cubesat X-band Transmitter brings state-of-the-art flight-proven transmitter technology to the cubesats.



Applications

- Cubesats
- Small satellites

Features

- High throughput in the cubesat formfactor
- Flexible state-of-the-art modulation and error correction coding
- Adaptive coding and modulation to maximize throughput for various Es/No
- Customizable data and control interfaces

Specifications

Carrier frequency			8220 MHz (factory settable 8.1-8.5 GHz)
Throughput			**1+ Gbps**
Output power (max T, EOL)			2.5 W
Modulation			QPSK, 8PSK, 16APSK, 32APSK
Symbol rate			250 Msymb/s (customizable)
Error correction coding and framing			DVB-S2
Spectral mask			SFCG-21-2R4; baseband SRRC 0.35
Frequency stability, including temperature and aging			±10 ppm
Power consumption			22 W
Power supply			12 V (11 - 16 V) non-isolated
Weight	380g	Size	87x93x30 mm
Operating temperature			-20 °C to +50 °C
Survival temperature			-50 °C to +65 °C
MTTF	250k hours	Design life	3 years
Radiation at the component level			>10 krad (average enclosure shielding 1.0 g/cm^2)
SEL tolerance			most parts >40 MeV·cm^2/mg, overcurrent protection
Data interface			Customizable LVDS (clock input/output, data, enable) Ethernet 1000Base-T
Control and telemetry interface			RS-422 or CMOS UART / CAN-2B
Connectors			Micro-D (MIL-DTL-83513) female (9-pin power, 21-pin data/control) SMA female 50 Ω RF output

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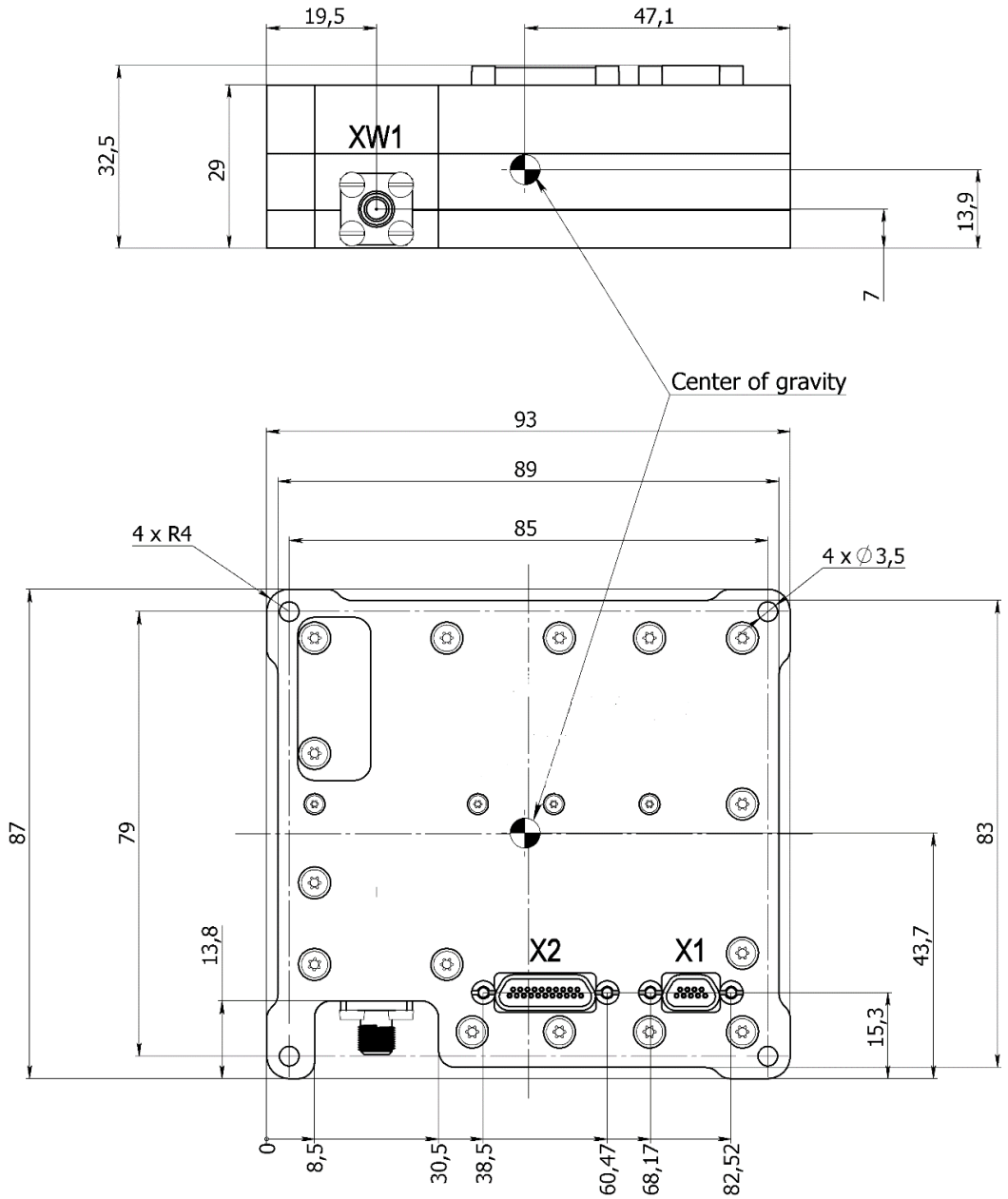
Mechanical Outline Drawing



Heritage

Flight proven in at least three missions.

High-speed X-band transmitters designed by the team successfully work on the following spacecraft: ISS – 11 years, Egyptsat – 5 years and on the other satellites.