BLUE CANYON TECHNOLOGIES

Spacecraft Buses, Systems & Solutions

SOFTWARE DEFINED RADIOS

Flexible software defined radio (SDR) solutions are designed in-house for integration with BCT avionics. The radios combine tunable transmitter and receiver functionality into one compact design. The radios are perfect for small satellites looking for flexibility and high data rates – up to 100 Mbps.

They are compatible with Type-1 encryption modules such as the KI-55 and KI-103 and can support AES-256 GCM software encryption natively. Their form factor is compatible with various models to support CubeSats and Microsats. Qualified for LEO and GEO orbits.

BCT SDR products are designed for interoperability with industry standard ground networks such as KSAT, SSC, AFSCN, and NEN. Customization is available for most parameters in this document. Full product lines include, L-band, S-band, X-band, Ka-band.

FEATURES INCLUDE:

- Flexible software defined radio – uplink / downlink / crosslink applications
- High data rate (up to 100 Mbps)
- Flight proven full duplex radio integrated with BCT avionics
- Maximizes payload volume
- Supports configurations from 3U to ESPA

SOFTWARE DEFINED RADIOS

CUBESAT FORM FACTOR MODEL

DOWNLINK FREQUENCY	S-band (2.2- 2.5 GHz), X-band (8-8.5 GHz), Ka-band (21 – 33 GHz)
UPLINK FREQUENCY	L-band (1.76 – 1.84 GHz, S-band (2.0 – 2.11 GHz), Ka-band (21-33 GHz)
MAX BANDWIDTH	50 MHz (CubeSat) / 200 MHz (MicroSat)
POWER CONSUMPTION	1.8 W uplink (S/X)
RF OUTPUT POWER	Adjustable with maximum output of +35 dBm
DOWNLINK MODULATION SCHEMES	BPSK / OQPSK / QPSK / 8PSK / 16APSK
UPLINK MODULATION SCHEMES	BPSK
SUPPORTED STANDARDS	CCSDS-TC (uplink), CCSDS-TM (downlink), DVB-S2 (downlink)
OVERALL SIZE	3.2 (S/X) to 4.48 (Ka) W x 3.15 (S/X) to 4.35 (Ka) L x 0.63 (S) to 1.25 (Ka) H
ELECTRICAL INTERFACE	LVDS
FORWARD ERROR CORRECTION	CCSDS: CC7 Rate ½, DVB-S2: LDPC
OPERATING VOLTAGE	9-34V

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