PICOSATS
SPACE TECHNOLOGIES SOLUTIONS

RADIOSAT

RADIOSAT is the innovative miniaturized transceiver designed for CubeSat and Small Satellites in LEO, with the support of the European Space Agency.
In its own small way, 1.5 U and 1 kg, a Ka-band radio is integrated with a DVB-S2 modem, overall characterized by low power consumption. The usage of this frequency band ensures data rates greater than 20 Mbps, in a less congested spectrum environment. Signals are processed by the modem, which provides Variable and Adaptive Coding and Modulation (VCM, ACM) capabilities. The radio allows the separate management of the receiver and the transmitter.

Key Features

Frequencies
- Uplink 27.5 - 30 GHz
- Downlink 17.8 - 20.2 GHz
- Signal bandwidth up to 56 MHz

DVB-S2 modem
- VCM / ACM hardware capable (ground segment dependent)
- High performance next-generation System-on-Chip

Performance
- Data rate up to 100Mbps
- Receiver and transmitter can be tuned independently
- RF received power at the antenna output > -114.8 dBm (@ 1 Mhz)
- RF transmitted power at the antenna input up to 1.5 W

Interfaces
- Antenna connector type K-2.92mm
- Space Qualified connectors
- DVB-S2 Baseband Frames (BBFRAMES) over LVDS
- Telemetry and Telecommands over CAN, I2C
- Debug and PC control over GbE or USB

Power supply
- Peak consumption < 35 W
- Input supply from 3 V to 18 V
- Up to 3 input rails with integrated prioritizer
- Energy efficient design features and dedicated MCU

Work environment
- Operating temperature range -20 °C to +70 °C
- Non-operating temperature range -30 °C to +90 °C
- Radiation tolerant, EMC shielded

Accommodation
- Mass < 1 kg
- Volume < 1.5 U

Applications
- LEO CubeSat space missions
- FSS telecommunications
- Satellite Communications-on-the-Move
- Unmanned remote control
- Internet of Space

Supported by:

esa
European Space Agency

V. 23rd July 2018. Specifications may change without notice.

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