



KEY FEATURES

- FPGA Reconfigurable Resources
- Minimize SWAP
- LEO or GEO
- Radiation Hardened/Tolerant
- Parts Program: Commercial Space, Level I, II, III
- Suitable for Satellite Constellations
- Deployable Cubesat Antenna Option

TRANSMITTER FEATURES

	Mid Rate	High Rate
Output Power	0.5 W to 2 W	
Power Consumption	25 W Maximum	30 W Maximum
Frequency Range	19 GHz to 21 GHz	
Channel Bandwidth	50 MHz	1000 MHz
Spurious and Harmonics	< 60 dBc	
Phase Noise Non-Coherent Mode	3° RMS Maximum	
Frequency Accuracy	±5 ppm Nominal, ±10 ppm Maximum	
FEC Coding	Reed-Solomon, Convolutional	
Modulation*	QPSK, OQPSK	QPSK, OQPSK, 8PSK (16APSK, 32APSK Options)
Bitrates	0.5 Mbps to 50 Mbps	100 Mbps (Minimum) 1000 Mbps (Nominal)
Flash Memory Storage	4 GB — 64 GB	
Interface	GiGe for Data and Control, SGMII, LVDS User Definable	
Data Protocol	UDP, TCP/IP	
Transfer Frame Protocol at Data Layer	CCSDS 732.0-B-3, AOS Space Data Link Protocol	
Encapsulation Service	CCSDS 133.1-B-2, Encapsulation Service	
IP Encapsulation Protocol	CCSDS 702.1-B-1, IP Over CCSDS SPACE LINKS	

*Adaptive Modulation QPSK, 8PSK, 16 APSK, 32 APSK, and encoding per DVB-S2 is an option.

RECEIVER FEATURES

Dynamic Range	-125 dBm to -50 dBm
Input Power	0 dBm (Maximum)
Frequency Range	29 GHz to 31 GHz (Programmable)
Bandwidth	50 MHz (Maximum)
Tracking Frequency Range	±700 kHz
VSWR	1.5:1
Power Consumption (Receiver Only)	5 W (Maximum)
Demodulation	QPSK, OQPSK
Symbol Rate	500 ksymbols/sec to 50 Msymbols/sec

TRANSCEIVER POWER

Input Voltage	7.2V — 10.8V
Power Consumption	35 W Maximum

PHYSICAL CHARACTERISTICS

Dimensions	10 cm x 10 cm x 8 cm [1U Cubesat Form Factor]
Mass	1.0 kg
Radiation Tolerance (TID)	20 krads (Si); Higher TID Level Optional
Single Event Upsets (SEU)	37 MeV-cm ² /mg
Single Event Latchup (SEL)	40 MeV-cm ² /mg Includes Patented CPU Watchdog
Environmental Conditions	
Operating Temperature	-30°C to + 60°C
Storage Temperature	-50°C to + 85°C
Vacuum Environment	10E-5 Torr
Electromagnetic Compliance (EMC)	MIL-STD-461E, MIL-STD-1541A

ANTENNA

Nanocom SDR may be bundled with deployable Cubesat Antenna