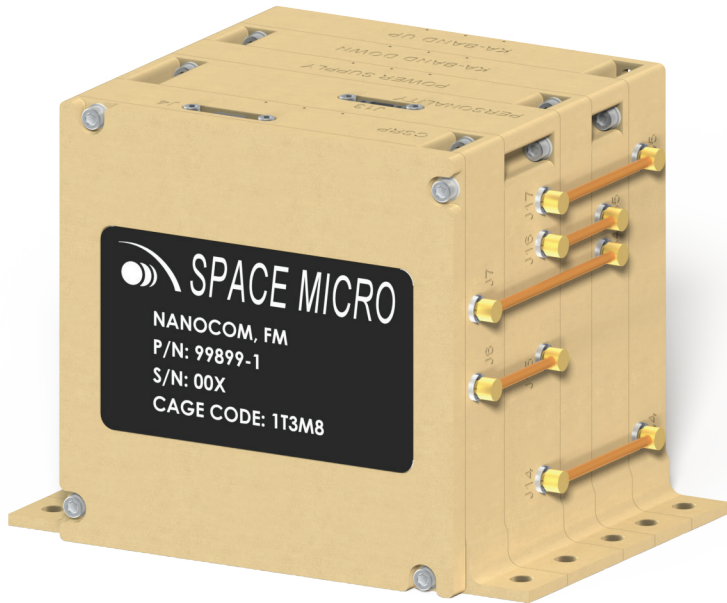


Nanocom, a miniaturized (1U), quick-to-field, cost-effective SDR, was designed to perform in extreme environmental conditions. Nanocom is programmable on orbit and contains the latest-generation Xilinx Zynq System on a Chip (SoC) whose large availability of programmable logic resources support sophisticated, cognitive anti-jamming algorithms. Its modular design allows for ease of configuration to support different data rates, frequencies, bandwidths and interfaces.



APPLICATIONS

- Telemetry, Tracking & Command Transceiver
- Mission Data Transmitter
- Crosslink Transceiver
- RF Receiver with onboard signal processing
- Signal Intelligence Receiver
- Satellite Orbits: LEO, MEO, GEO
- Suitable for Satellite Constellations

KEY FEATURES

- FPGA Reconfigurable Resources
- Low SWAP
- Radiation Tolerant; 100 krads option
- Dual GigEthernet interfaces

SPECIFICATIONS: TRANSMITTER

	STANDARD	AVAILABLE OPTIONS
FREQUENCY	Ka-Band 20 - 21 GHz (programmable)	UHF, S, C 500 MHz - 4 GHz X-Band 7.9 - 8.4 GHz
RF OUTPUT POWER	-12 to 0 dBm	Optional PAs Available
MODULATION FORMATS	BPSK, QPSK, OQPSK	8-PSK
CHANNEL BANDWIDTH	50 MHz	Up to 1000 MHz
DATA RATE	Up to 300 Mbps	Higher Data Rates Available
FEC	RS (255,239) Convo (1/2) LDPC (7/8) Turbo	
FREQUENCY ACCURACY	±1 ppm Nominal, ±2 ppm Maximum	
PHASE NOISE NON-COHERENT MODE	3° RMS Maximum	
SPURIOUS AND HARMONICS	≤ -60 dBc	

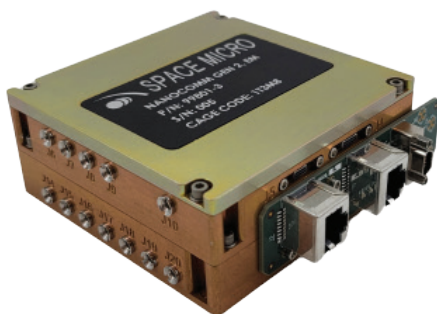
SPECIFICATIONS: RECEIVER

	STANDARD	AVAILABLE OPTIONS
FREQUENCY	Ka-Band 30 - 31 GHz (programmable)	UHF, S, C 500 MHz - 4 GHz X-Band 7.145 - 7.750 / 7.9 - 8.4 GHz
DATA RATE	Up to 27 Mbps	
DYNAMIC RANGE	-125 dBm to -50 dBm	
NOISE FIGURE	≤ 5 dB	

SPECIFICATIONS: OTHER

INTERFACE	RS-422 (clock) RS-422 (command) GigE (data)	SpaceWire (data) RS-422 (data)
ENCRYPTION	AES-256	Inquire for Other Encryption Options

Nanocom
Software Development
Units



ENVIRONMENT

Temperature Range
Vibration
Suitability

-10°C to +50°C
GSFC-STD-7000 (NASA GEVS) Acceptance Levels
LEO, MEO and GEO

SWAP

Dimensions

10 cm x 9 cm x 10 cm (without mounting feet)
12.7 cm X 9 cm X 10 cm (with mounting feet)

Mass

1.5 kg

Power Consumption

35 W (Tx and Rx combined; dependent on data rates and modulations)

Input Voltage

7.2 - 10.8V or 28V