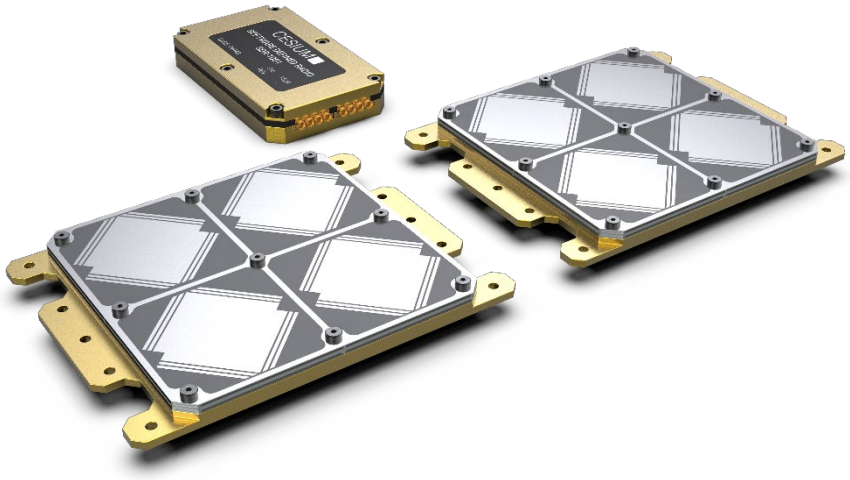
COMMPACK

Cross-link Communications Payload



The CommPack Cross-link Communications Payload uses building blocks from Cesium's modular device ecosystem to enable mobile ad-hoc networking in space. This swarm technology is paving the way for future small satellite missions to the Moon, Mars, and beyond.

The system consists of the SDR-1001 and two active S-band antenna arrays (TRM-4S01). The OTS Cesium General Purpose Modem loaded into the SDR-1001's FPGA provides robust BPSK/QPSK inter-satellite links between spacecraft in a swarm.

The CommPack was designed as an intersatellite link for NASA Ames, but may be reconfigured as required to support your concept of operations.

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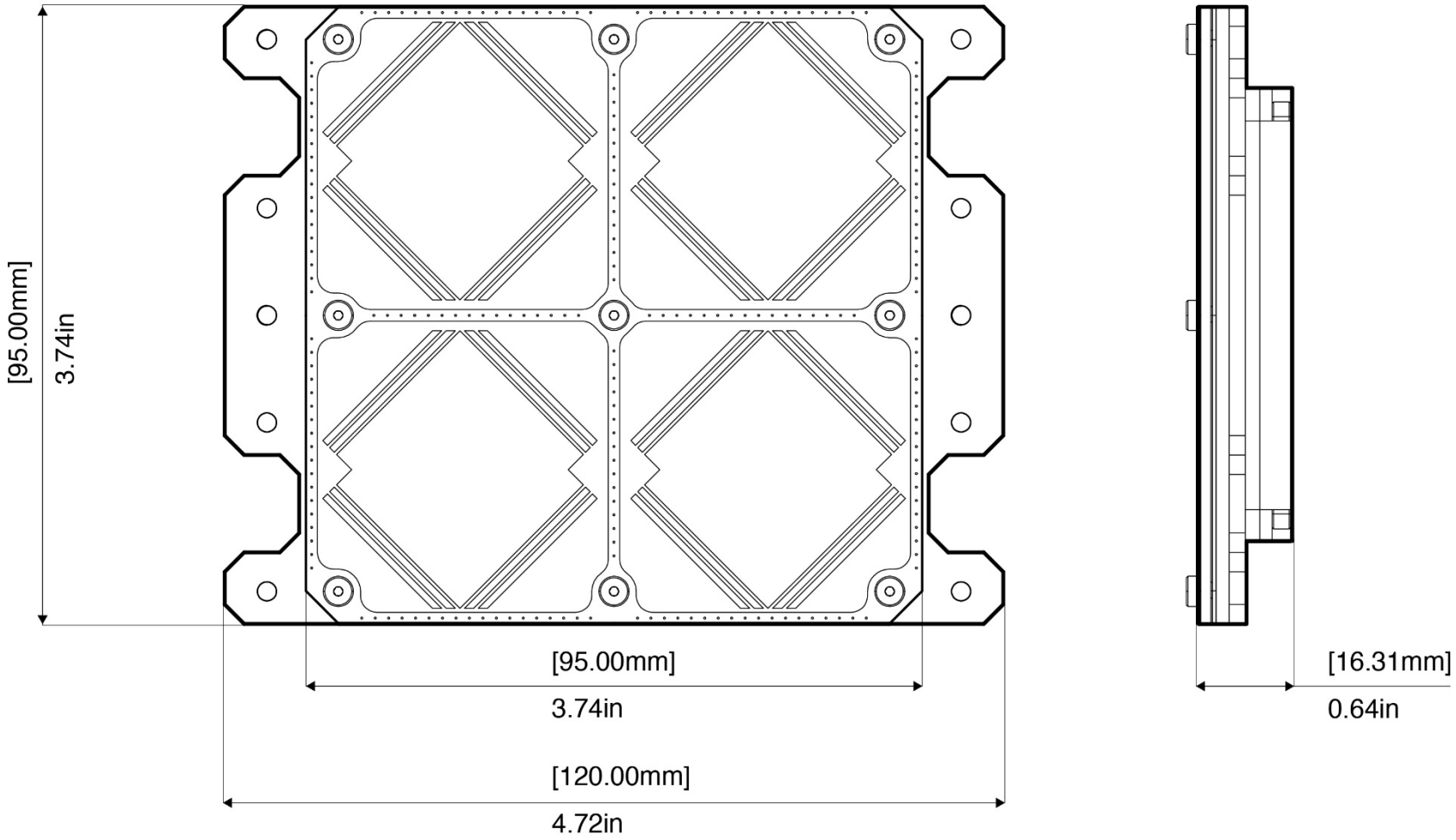
1. KEY FEATURES:

- Autonomous link/network establishment (no external synchronization required)
- TDD/TDMA (allows seamless scaling of swarm size)
- Carrier-sense feature (reduces probability of packet collision)
- Transmit-power and symbol-rate adaptation(saves DC power)
- Suitable for both military and commercial applications on LEO satellites and airborne platforms
- CommPack consists of one SDR-1001 Software-Defined Radio and two TRM-4S01 Active S-band antenna arrays

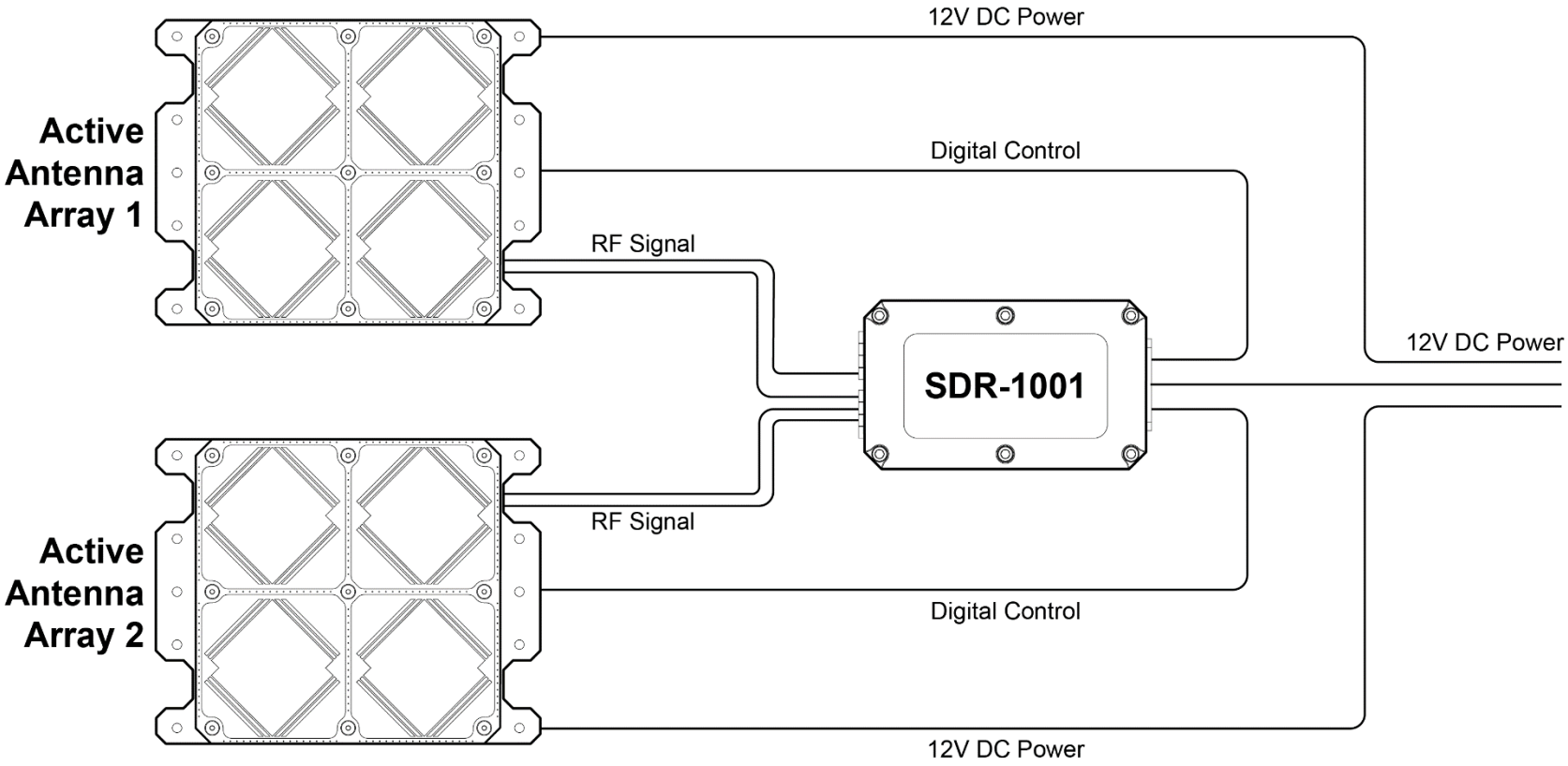
2. PRODUCT SPECIFICATIONS:

DC Input Voltage:	9 to 13 V
Realized Gain:	8 dBi
Noise Figure:	<2.6 dB
Polarization:	Circular
Axial Ratio:	<3 dB
Point-to-point Throughput:	0.1 to 50 Mbits/s
Baseplate Operating Temperature:	-24 to +61 °C

3. MECHANICAL VIEW OF TRM-4S01:



4. APPLICATION DIAGRAM:



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