RINCON RESEARCH
EMPLOYEE OWNED

PEGASUS

PEGASUS

RF MISSION-PROCESSING PLATFORM FOR SMALLSATS

Pegasus builds on the successful space flight approach for ASDR — radiation hardening of system-critical components combined with careful selection, monitoring, and recovery of the latest generation of processors and sensors.

Processor
- AMD Versal™ Adaptive SoC

Converter
- 4x4 multi-GSPS RF channels
- Customizable front end
- UHF through K-band options

Targeted Applications
- Wideband spectrum survey
- RF signal detection and classification
- Phased-array communications and processing
- Extended frequency band access
- Geolocation
- Synthetic-aperture radar (SAR)
- 5G appliance
- Wideband communications

Orbits
- Qualification plans to support missions in LEO and GEO

PRODUCT DESCRIPTION

Modular Design
- Customization is available to meet mission needs
- Processor and converter are integrated on a single card to minimize costs
- RF front end is a separate card to allow for mission-specific customization

Flat System Architecture
- Single thermal plane simplifies thermal interfacing requirements
- Flat interface simplifies integration

Flexible and Extendable Design
- Multiple high-speed interfaces are available
- Several common input/output (I/O) interfaces allow for integration with other satellite subsystems and between multiple Pegasus cards for coherent RF sampling

SYSTEM SPECIFICATIONS

- Expected power (dependent on configuration/application)
    - Typical: 50 W, Peak: 120 W
- GPIO, I2C, UART, RS-422, Ethernet, SpaceWire
- 16 high-speed serial interfaces for data transport
    - Supports PCIe, 10/40/100GbE, custom
- 256-MB single-event upset (SEU)-immune MRAM
- 16-GB ECC-protected DDR4
- SEU mitigated design
- Upset immune operating system/file system (OS/FS) storage
- Rincon-development environment and board support package
- +28 V power input
- Enclosure dimensions: 250 mm x 250 mm x 50 mm
- Weight: Expecting 10 kg

ADDITIONAL RINCON SERVICES

Customization
- Hardware modifications
- User-defined modules
- Mission app development
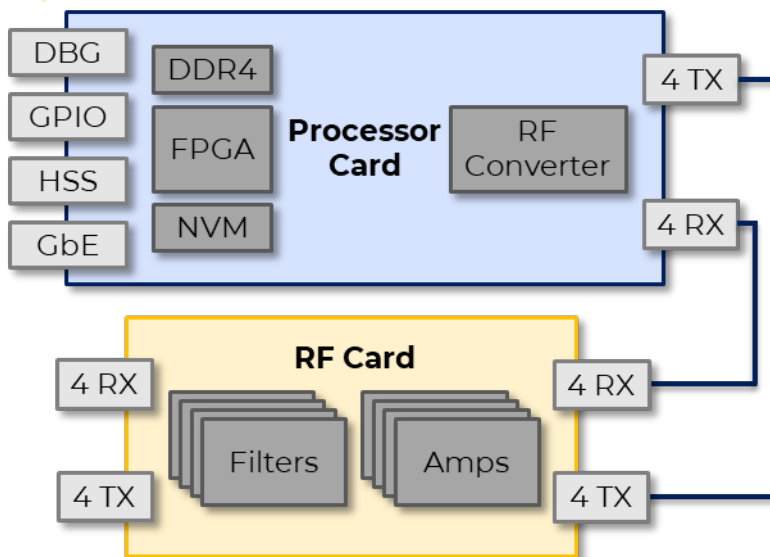- Additional screening/qualification

ORBIT OPTIONS

Contact us for options on additional orbits, screening, qualification, and customizations to meet your requirements.

STATUS

Prototype units available in late 2024

BLOCK DIAGRAM

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