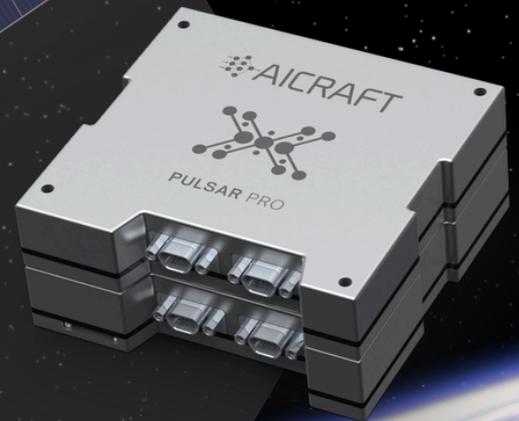


# SPACE EDGE COMPUTING MODULE



## PULSAR PRO

ITAR  
FREE

ON-THE-GO  
TRAINING

ULTRA  
FAST

This data processing device brings server computing capacity on orbit in extremely compact form factor.

Pulsar Pro turns raw data into tiny actionable representations which allows large-scale AI inferences ultra-quickly. These AI-ready instances can be pre-loaded in a library and augmented over time as new data is acquired, effectively training the AI engine on the go.

A massive 1200 TOPS peak AI performance will satisfy demands of transformers, convolutional neural networks and many other advanced machine learning models.

The module can be scaled up in performance to meet the computing demands of large satellites while having compact size, weight and low power consumption. The design can be made compliant to the SpaceVPX standard.

Pulsar Pro is ITAR-free. Engineering Model and Flight Model are supplied with:

1. Board support package
2. Machine learning compiler
3. Tailored application libraries.

Pulsar Pro electronic ground support equipment comes in two form factors:

- Pulsar Pro Engineering Model (0.5U)
- NEXON-1 server (1U) with additional interfaces for greater networking.



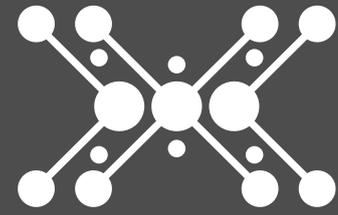
NEXON-1 edge AI server



More info  
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Email us  
[hello@aircraft.com.au](mailto:hello@aircraft.com.au)





## Key benefits

- AI-capable ultra-fast Big Data processing
- World-leading AI engine for training on the go
- Unlimited on-orbit reconfiguration
- Small SWaP.

## Technical specifications

### Computing performance

Processor	Multi-core ARMv8, 64-bit operations
ML co-processor	1200 TOPS peak performance
RAM	16 GB DDR4 SDRAM with ECC
Storage	256 GB SSD with ECC (up to 2 TB) 16Mb rad-hard-equivalent memory with EDAC

### Interfaces

ADC	18x LVDS (Default: 1.6 Gbps)
Serial	PPS, SPI, CAN 2.0B, I2C, RS-422 (Default: 115200 bps)
SpaceWire	200 Mbps (with AICRAFT's IP core)
Ethernet	1x 10 Gbps (Configurable to 100 Mbps, 1 Gbps, 2.5 Gbps, 5 Gbps)
USB 3.0	1x 5 Gbps (Compatible with USB 2.0)

### Software

Operating system	Linux (Option: RTOS)
ML compiler	Supports common frameworks (e.g., Keras, Pytorch, Darknet)

### Sensors

Vibrations	3-axis lateral and 3-axis longitudinal
Temperature	Device, processor, co-processor
Power monitors	Device (total power), processor, co-processor

### Other properties

Input voltage	12VDC – 60VDC
Power consumption	15W – 180W
Mass	800g
Dimensions (L x W x H)	95mm x 90mm x 50mm
Operating temperature	-20°C to +55°C