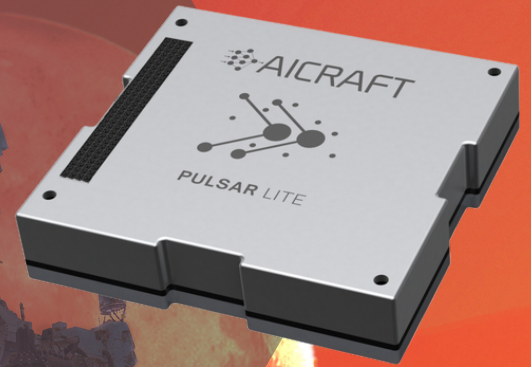


# SPACE EDGE COMPUTING MODULE



## PULSAR LITE

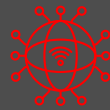
Pulsar Lite is the perfect artificial intelligence (AI) data processing unit for small platforms such as rovers, copters, 1U, 2U and 3U satellites. It is lightweight and consumes up to 2W for an effective 20 TOPS peak AI performance.

It relies on flight-heritage NASA and ESA-qualified dual-core ARM Cortex processor with built-in self-tests for system protection to transient errors.

All memories (caches, SRAM and DDR4) are protected by ECC schemes and a special 16Mb memory bank with a fast EDAC algorithm provides rad-hard level protection of critical data.

This smart module features an integrated floating-point unit (FPU) that is useful for any double-precision arithmetic and enables inferencing of larger neural networks for greater autonomy in space exploration and survivability.

## Product applications



IoT



Station  
Keeping



Federated  
Learning



Data  
Compression



Space Domain  
Awareness



Rover  
Exploration



Autonomous  
Navigation



Proximity  
Operations



More info  
[www.aircraft.com.au](http://www.aircraft.com.au)

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



## Key benefits

- 20 TOPS under 2W on dedicated AI cores
- Configurable EDAC scheme up to rad-hard level protection to SEEs
- Innovative AI-driven circuitry for power-saving and extended device lifespan
- 6 unique computing levels for optimal energy utilisation
- Reliable and consistent with unlimited on-orbit reconfiguration
- Built from parts that are flight-proven, radiation tolerant and compliant to ECSS/NTSS.

## Technical specifications

### Computing performance

Processor	Dual-core ARM Cortex, 32-bit operations
ML co-processor	20 TOPS effective peak performance
RAM	512 MB DDR4 SDRAM with ECC (up to 2 GB)
Storage	64 GB SLC NAND with ECC (up to 512 GB) 16 Mb rad-hard-equivalent memory with EDAC

### Interfaces

PC104	4x UART, 4x I2C, 4x SPI
CAN2.0	2x 1 Mbps
Ethernet	10/100/1000 Mbps (optional)
USB 2.0	480 Mbps (optional)

### Software

Operating system	Linux
ML compiler	All common frameworks

### 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 voltages	3.3VDC and 5VDC (via PC104)
Power consumption	< 2W
Mass	150g
Dimensions (L x W x H)	95mm x 90mm x 21mm
Operating temperature	-40°C to +105°C
Storage temperature	-55°C to +125°C