## escOBC – Satellites On-Board Computer

**escOBC** is a powerful universal On-Board-Computer for new space satellite platforms and compatible with cubesat platforms. The product dimensions are matched with the PC104 form factor.

The powerful System on Chip combining multi-core processor and programmable logic array allows efficient, real-time execution of complex algorithms to process raw data on-board, thus reducing space to ground communications bandwidth needs. Multiple power saving modes may be activated when high computational power is not required to decrease power consumption.

Independent system monitoring is ensured by integrated supervisor subsystem based on radiation tolerant microprocessor. Latch-up protection is assured by constant current monitoring and several mitigation techniques.

### Key features

- Four 64-bit Linux capable user cores + one monitoring core
- Programmable logic array for functionality extension
- Independent radiation-tolerant supervisor
- Warm/cold redundancy support
- Expected life-time 3-5 years on LEO
- On-board current, voltage and temperature monitoring

### Technical Specifications

| General | |
|---|---|
| Processor | 5x RISC-V 64-bit |
| Processor clock | up to 625 MHz |
| Logical blocks | 254 k |
| DRAM | 512 MB (ECC) |
| NVM (program) | 128 MB (redundant) |
| NVM (configuration) | 16 MB (redundant) |
| Mass storage | 2 GB SLC NAND |
| Power supply | 5 V ±5% |
| Power consumption | up to 10 W |
| Operating temperature range | -30 °C to +60 °C |
| Non-operating temperature range | -40 °C to +85 °C |
| Radiation (TID) | 30 kRad (Si) for rad-tolerant version |

| Interfaces | |
|---|---|
| CAN | 2x |
| RS422/RS-485 | 2x |
| UART 3.3 V | 1x |
| SPI 3.3 V | 1x |
| PPS (RS-422) | 1x |
| GPIO 3.3 V logic | 8x |
| JTAG for SoC | 1x |
| Ethernet | none/1x/2x (optional) |

| Size and Weight | |
|---|---|
| Length | 96 mm |
| Width | 91 mm |
| Height | 24 mm |
| Mass | 250 g |

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