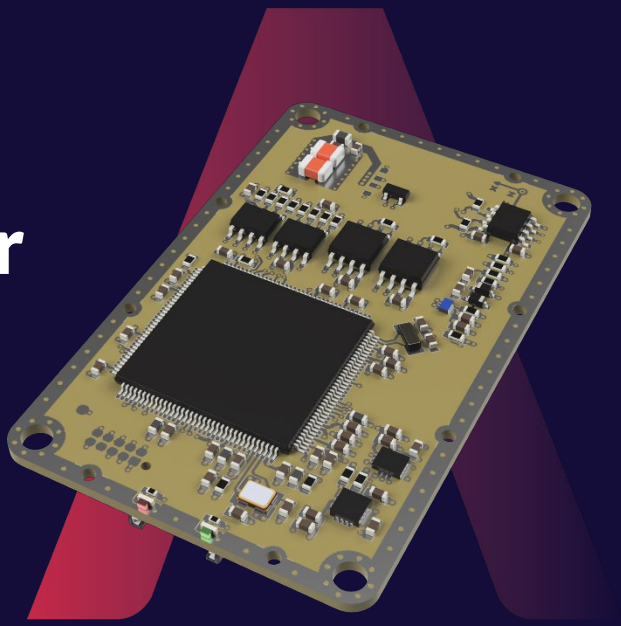
SPACEMANIC

Deep Thought Onboard Computer

OBC-SM-DT-SAMV71



Cubesat Onboard computer module suitable for nanosatellite C&DH, TT&C, mass storage and ADCS.

FEATURES

- Unique Plug&Play Design
- Compatible with CubeSat standard
- Compatible with CubeSat components from other vendors
- Radiation tolerant design
- 32bit Cortex-M7 core
- High reliability & rad. tolerant data storage
- External onboard watchdog
- Onboard gyro/mag/acc sensors
- Onboard temperature sensors
- Robust design with shielding case included

PRODUCT PROPERTIES

- Operating temperature: -40 °C to +85 °C
- Power Supply:
  - 3.3V
  - 3.3V for isolated I2C
- Dimensions: 67x42x7 mm
- Mass: 25g
- Power consumption: 100mW average

MICROCONTROLLER

- 32.768kHz ultra low power mode, up to 300MHz standard mode
- Internal & external watchdog for extended reliability

MEMORY & STORAGE

- 2048Kbytes Flash memory
- 384Kbytes Multi-port SRAM
- 128MB Flash storage
  1.5MB FRAM storage

INTERFACES

- 2 x I2C 1 x isolated I2C
- 1 x RS485
- 1 x UART
- 1 x CAN
- 1 x SPI
- 1 x Ethernet RMII
- 22 x IO:
  - 4xADC: 12-bit, 3.3V range
  - 6xPWM
- PPS input
- System clock output
- External reset input (1kHz square wave)
- 1 x USB
- QSPI (for external additional memory)
- JTAG on separated connector
- Debug LEDs

SOFTWARE

- Compatible with variety of commercial RTOS

TESTING & HERITAGE

- Flight Heritage Hardware
- Successful vibration & heated vacuum tests

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