



SPACEMANIC

Eddie

The computer

SM-OBC-MSP430

Cubesat On-board computer module suitable for nano-satellite C&DH, TT&C, mass storage and ADSC

FEATURES

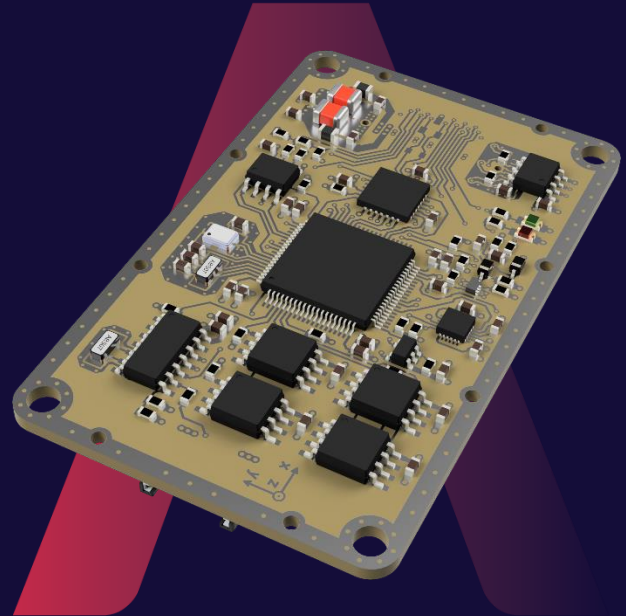
- Plug&Play design
- Compatible with Spacemanic cubesat standard
- Compatible with cubesat components from other vendors
- Robust design
- High reliability & rad tolerant data storage
- External on-board watchdog
- On-board gyro/acc/mag sensors
- On-board temperature sensors

PRODUCT PROPERTIES

- Operating temperature: -40°C to +85°C
- Dimensions: 67x42x7 mm
- Power Supply: 3.3V, 5V, 3.3V isolated
- Mass: 25g
- Power consumption: ± 100 mW average
- Spacemanic motherboard (PC/104 form factor)

SOFTWARE

- FreeRTOS based operating system
- Cubesat Space Protocol / AX.25 / KISS
- Compatible with variety of commercial Real-Time Operating Systems
- Example source code included



FUNCTIONAL CHARACTERISTICS

- Mixed-signal, FRAM memory, ultra-low power 16bit RISC based MCU
- 32.768kHz ultra low power mode, up to 16MHz standard mode
- Internal & external watchdog for added reliability
- 256Kb internal FRAM code memory
- Up to 16Mbit external FRAM for data storage

INTERFACES

- 1 x I2C & 1 x isolated I2C
- 1 x RS485
- 1 x UART
- 1 x CAN
- 1 x SPI
- 3 x PWM
- 8 x IO (4 x ADC: 12-bit, 3.3V range)
- PPS input
- System clock output
- External reset input
- JTAG on separated connector
- Debug LEDs

TESTING & HERITAGE

- Flight Heritage Hardware
- Successful vibration & heated vacuum tests
- Radiation tests (TID @20krad, SEE @ 60MeV)