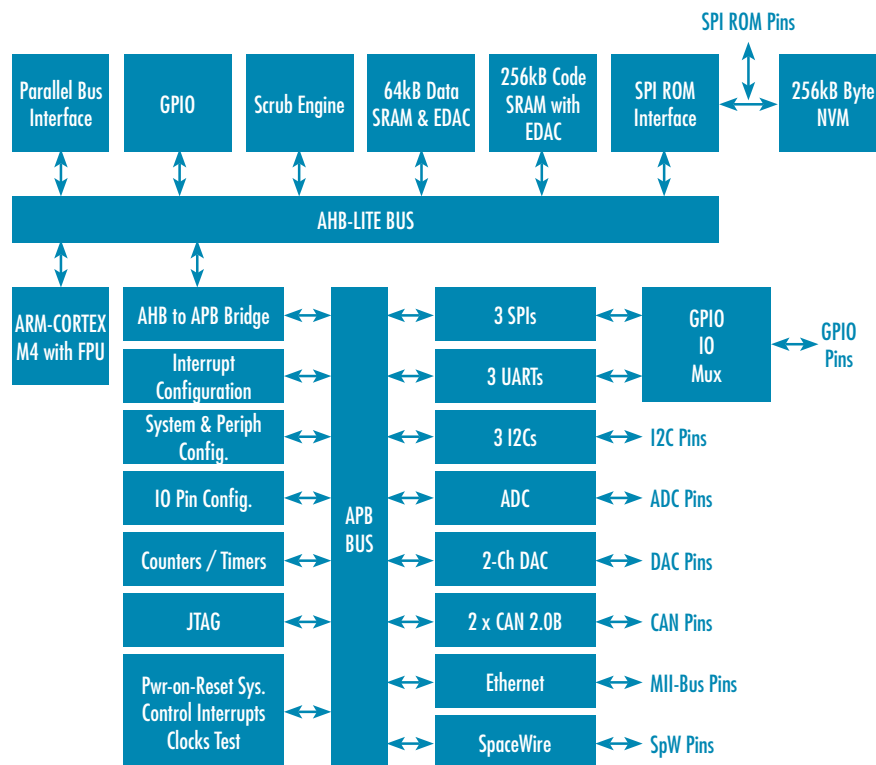


Radiation Hardened ARM® Cortex®-M4 MCU with FPU VA416x0



32-Bit ARM® Cortex®-M4 Microcontroller manufactured with HARDSIL® technology offering superior radiation performance and latch-up immunity.



RADIATION HARDENED PERFORMANCE

- Total Ionizing Dose (TID) > 300K rad (Si)
- Soft Error Rate (SER) with EDAC enabled: < 1e-15 errors / bit-day
- Latchup immunity > LET = 110 MeV-cm² / mg (T = 125C)

SUPPORT

- PEB1 development board
- Keil™ MDK-ARM microcontroller software kit

MEMORY CONFIGURATION OPTIONS

- Internal NVM
- External SPI NVM
- External parallel NVM

KEY FEATURES

- Manufactured with HARDSIL® technology
- 32-bit ARM® Cortex®-M4 processor
 - Single Precision Floating Point Unit (FPU)
 - SWI based debug interface
- Operating voltages
 - Supply 3.3 +/- 0.33V
 - Includes on-chip LDO regulator with standby mode
- Clock rate 100MHz
- Memory
 - 64 kB on-chip data and 256 kB on-chip program memory SRAM
 - EDAC & Memory scrubbing
 - 256 kB NVM
- Peripherals
 - 104 Configurable GPIO pins
 - 3 UART interfaces
 - 3 I2C interfaces
 - 3 SPI interfaces
 - 2 CAN 2.0B
 - Ethernet 10/100 MAC
 - Full-duplex SpaceWire interface
 - DMA controller (4-Channel)
 - 8-Ch Analog-to-digital converter (12-bit, 600ksps)
 - 2-Ch Digital-to-Analog converter (12-bit)
 - Temperature sensor
- Timer System
 - 24 configurable 32-bit counters / timers
 - Input capture, Output compares
 - PWMs, Pulse Counters, Watchdog timer
- Package
 - 176 QFP (20mm x 20mm)

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Microcontroller Options

Part Number	Package	Non-volatile memory	Qualification
VA41630-CQ176F0PAA	Ceramic 176-pin QFP	256 KB on-chip	VORAGO Hi-Rel Qual*
VA41630-CQ176FKQAA	Ceramic 176-pin QFP	256 KB on-chip	MIL-PRF-38534 Class K
VA41630-PQ176F0PAA	Plastic 176-pin QFP	256 KB on-chip	VORAGO Hi-Rel Qual*
VA41620-CQ176F0PAA	Ceramic 176-pin QFP	External NVM (Parallel interface or SPI)	VORAGO Hi-Rel Qual*
VA41620-PQ176F0PAA	Plastic 176-pin QFP	External NVM (Parallel interface or SPI)	VORAGO Hi-Rel Qual*
VA41620- D000000PAA	Die	External NVM (Parallel interface or SPI)	VORAGO Hi-Rel Qual*

* Based upon MIL-STD-883, AEC-Q100, JEDEC specifications. Radiation tested.

Development Board Ordering Information

Description	Part Number	Features
Development Board	PEB1	Supported by Keil™ MDK-ARM Microcontroller Software Kit Board Support Package (BSP) includes example software for peripherals Segger J-Link OB Access to all MCU pins Ethernet and CAN PHY included

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

VORAGO Technologies:

[VA41620-CQ176F0QAA](#) [VA41630-CQ176F0PAA](#) [VA41630-CQ176FKQAA](#) [VA41630-PQ176F0PAA](#) [VA41620-PQ176F0EAA](#) [VA41620-CQ176F0EAA](#) [VA41620-D000000PBA](#) [VA41620-PQ176F0PBA](#) [VA41630-CQ176F0EBA](#)
[VA41630-CQ176FKQBA](#) [VA41630-PQ176F0PBA](#)