

DEC MP2-OSM EMBEDDED COMPUTING MODULE

Connected Performance for Intelligent Edge Designs

The DEC MP2-OSM computing module delivers advanced processing, robust connectivity options, and power-efficient operation in a compact form factor. Built using the STMicroelectronics' (STMicro) STM32MP2 processor, it combines multi-core performance with integrated AI acceleration to enable responsive, intelligent edge devices across a wide range of applications. With support for high-speed interfaces and integrated networking capabilities, The DEC MP2-OSM computing module provides a reliable foundation for connected embedded systems that require dependable data exchange and real-time responsiveness.

Engineered for industrial and embedded control applications, the DEC MP2-OSM computing module provides the right balance of performance and efficiency for modern edge designs. Its integrated neural processing unit supports on-device AI and machine learning, while extensive connectivity options such as Ethernet, USB, and wireless interfaces simplify embedded system integration. Hardware-based security features help safeguard sensitive data, and Diamond Technologies, Inc.'s commitment to long-term availability with proactive part obsolescence management ensures dependable operation throughout the product lifecycle.

KEY FEATURES AT A GLANCE

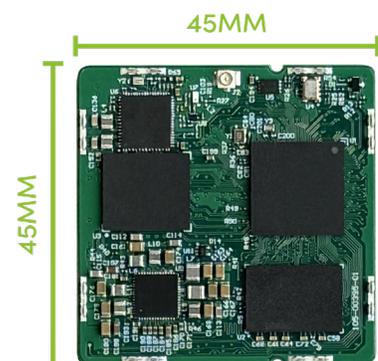
Designed to simplify integration and accelerate development, the DEC MP2-OSM computing module offers the following capabilities:

- Dual-core Arm® Cortex®-A35
- Integrated Arm® Cortex®-M33 co-processor
- On-chip NPU delivering up to 1.35 TOPS for AI/ML inference
- Multiple connectivity options: Ethernet, USB 2.0/3.0, SD/MMC, CAN-FD, and UART
- Optimized for low-power operation
- Industry standard OSM form factor

IDEAL APPLICATIONS

The DEC MP2-OSM computing module is well suited for use in products such as:

- Industrial automation and control – PLCs, motor drives, robotics controllers, and factory communication gateways
- Medical and life-science equipment – patient monitors, diagnostic analyzers, imaging peripherals, and connected instruments
- Commercial and building systems – HVAC controllers, access panels, and smart lighting or environmental sensors
- Smart energy and utilities – EV chargers, metering systems, and distributed energy controllers
- Transportation and mobility platforms – fleet tracking units, telematics modules, and vehicle control interfaces



KEY BENEFITS OF DIAMOND TECHNOLOGY COMPUTING MODULES:

- **Industry Standard Design:** The DEC MP2-OSM is designed with an OSM form factor, low Z-height, and solderable
- **Proven Technology:** Leveraging STMicro's trusted STM32MP2 processor series for dependable performance.
- **U.S.-Based Design and Support:** Designed, manufactured, and supported in the United States, ensuring high quality and prompt assistance.
- **Low Power Consumption:** Efficient operation for power-sensitive applications.

DEVELOPMENT KITS AVAILABLE:

To facilitate seamless integration and development, DTI offers a full-featured, high-performance solution for evaluating and developing with the DEC MP2-OSM computing modules. The development kit includes everything you need to jumpstart your product development.

DEC MP2-OSM COMPUTING MODULE ORDERING INFORMATION

COMPUTING MODULE	MODEL NUMBER	DRAM	eMMC	WI-FI / BT	ENET	TEMP (°C)
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DEC MP2-OSM TBD

Contact us for any configuration option not listed above.

PRODUCT FEATURES

Processor Options

- STMicro processor with one or two Arm® Cortex®-A35 cores running up to 1.5 GHz
- Arm® Cortex®-M33 core running up to 400 MHz
- A3D GPU VeriSilicon® - up to 900 MHz
- Optional NPU

Embedded Memory

- Up to 4GB of 32-bit wide LPDDR4
- eMMC 5.1, configurable

Network Connectivity

- Wi-Fi 6 (802.11ax) 1x1 Dual-Band
- Bluetooth/BLE 5.4
- CC3351 with single u.FL antenna
- 3x Gigabit Ethernet RGMII Interfaces

USB

- 1 USB 2.0
- 1 USB 2.0/3.0

Display

- MIPI DSI (4 lanes, up to 2.5Gbs/lane) 1536p @ 60fps
- LVDS (4-lane) 1536p @ 60fps

Camera

- MIPI CSI-2 (2-lane, 2.5Gbs/lane) 5Mp @ 30fps

Audio

- 4 synchronous audio interfaces (SAI)
- S/PDIF inputs

Serial I/O

- Up to 9 UART interfaces
- Up to 8 I2C interfaces
- Up to 8 SPI interfaces
- Up to 4 I3C interfaces
- Up to 3 CAN FD interfaces

GPIO

- Up to 64 multiplexed GPIOs supporting various peripherals such as PWMs, SDIO, UART, SPI, and I2C

RTC

- On-board ultra-low power real-time clock (RTC)

Debug

- JTAG support

Mechanical

- OSM-L form factor
- Dimensions: 45mm x 45mm
- Weight: 11.0 g

Compliance

- RoHS Compliant
- Reach Compliant

