i.MX 8M NANO/MINI COMPUTING MODULES

High-Performance, Reliable, and Cost Efficient

Diamond Technologies Computing Modules offer a robust, yet cost-efficient solution for projects that get you to market faster and don't require extensive customization or regulatory compliance. Based on NXP's i.MX 8M Mini and i.MX 8M Nano processors, these Computing Modules deliver essential performance with a focus on low power consumption and reliability. Designed with proven and tested technology, Diamond Technology Computing Modules provide the essential processing power you need—without the extra features you don't.

PROCESSOR HIGHLIGHTS SOMS:

- **i.MX 8M Mini:** Offers up to four Arm® Cortex®-A53 cores running at 1.8 GHz, for enhanced speed and power efficiency.

- **i.MX 8M Nano:** Equipped with up to four Arm® Cortex®-A53 cores at 1.5 GHz and an Arm® Cortex®-M7 core at 750 MHz, suitable for general-purpose industrial and IoT applications.

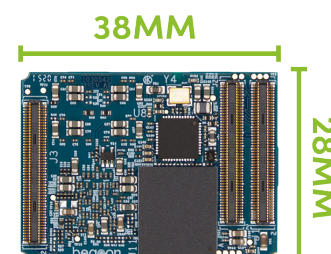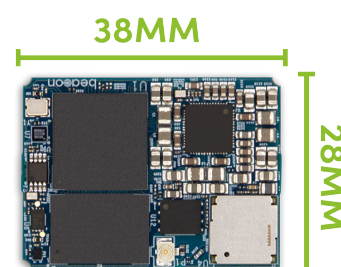### KEY BENEFITS OF DIAMOND TECHNOLOGY COMPUTING MODULES:

- **Compact Design**: Small form factors ideal for space-constrained applications.

- **Proven Technology:** Leveraging NXP's trusted i.MX 8M Mini and Nano 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.

STRAIGHTFORWARD MANUFACTURING & SUPPORT:

Diamond Technology Computing Modules provide standard configurations that keep costs down for straightforward integration. We understand that some projects may require additional support. That's why we offer enhanced services including active BOM management, dedicated product management, and direct access to application engineers that are available for customers. Speak with our sales team for specific volume and pricing information.
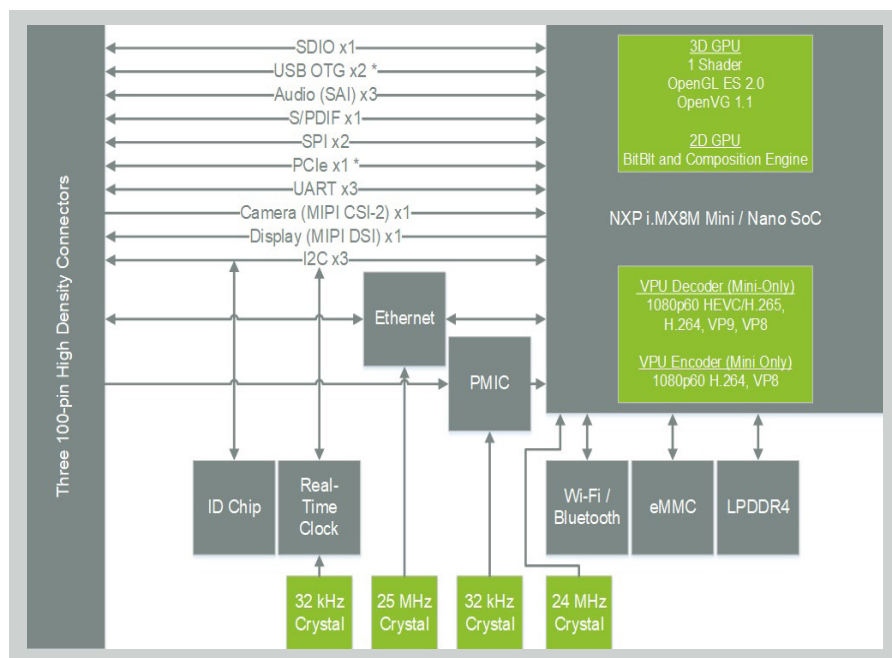
DEVELOPMENT KITS AVAILABLE:

To facilitate seamless integration and development, Diamond Technologies offers a full-featured, high-performance solution for evaluating and developing with the Diamond Technologies i.MX 8M Nano/Mini Computing Modules. The development kit includes everything you need to jumpstart your product development: i.MX 8M Nano or Mini Computing Module, audio and network jacks, cables, and all necessary software and BSP's.

38MM

28MM

38MM

28MM

Development Kit

I.MX 8M NANO / MINI COMPUTING MODULE BLOCK DIAGRAM

SDIO x1
USB OTG x2 *
Audio (SAI) x3
S/PDIF x1
SPI x2
PCIe x1 *
UART x3
Camera (MIPI CSI-2) x1
Display (MIPI DSI) x1
I2C x3

Three 100-pin High Density Connectors

3D GPU
1 Shader
OpenGL ES 2.0
OpenVG 1.1

2D GPU
BitBlt and Composition Engine

NXP i.MX8M Mini / Nano SoC

VPU Decoder (Mini-Only)
1080p60 HEVC/H.265,
H.264, VP9, VP8

VPU Encoder (Mini Only)
1080p60 H.264, VP8

Ethernet

PMIC

ID Chip

Real-Time Clock

Wi-Fi / Bluetooth

eMMC

LPDDR4

32 kHz Crystal

25 MHz Crystal

32 kHz Crystal

24 MHz Crystal

*i.MX 8M Nano SoM: Only one USB 2.0 OTG and PCIe not available.

I.MX 8M NANO / MINI ORDERING INFORMATION

SOM	DRAM	eMMC	WI-FI / BLUETOOTH	ETHERNET	TEMP (°C)
i.MX 8M Nano Quad	1GB	8GB	N	Y	0 to +70[1]
i.MX 8M Mini Quad	2GB	32GB	N	Y	0 to +70[1]
Contact us for any configuration option not listed above.					

View more information for the i.MX 8M Nano at: *www.diamondt.com/8MNano*

View more information for the i.MX 8M Mini at: *www.diamondt.com/8MMini*

NOTES:
1. Junction temperature of the processor must be kept under +95C and the LPDDR4 RAM and eMMC case temperatures must be kept below +85C.

I.MX 8M NANO / MINI DEVELOPMENT KITS ORDERING INFORMATION

DEVELOPMENT KIT	SOM CONFIGURATION
8M Mini Dev Kit	TBD
8M Nano Dev Kit	TBD
Contact us for any configuration option not listed above.	

PRODUCT FEATURES

Processor Options
- **Nano:** NXP i.MX 8M Nano processor with up to four Arm® Cortex®-A53 cores running up to 1.5 GHz, plus an Arm® Cortex®-M7 core running up to 750 MHz, GPU (GC7000UL)
- **Mini:** NXP i.MX 8M Mini processor with up to four Arm® Cortex®-A53 cores running up to 1.8 GHz, plus an Arm® Cortex®-M4 core running up to 400 MHz, GPU (GCNanoUltra + GC320), VPU

Embedded Memory
- **Nano:** Up to 4GB of 16-bit wide LPDDR4 memory
- **Mini:** Up to 8GB of 32-bit wide LPDDR4 memory
- eMMC, configurable

Network Connectivity
- Wi-Fi 5 (802.11a/b/g/n/ac)
- Bluetooth 4.2, BLE Support
- Ethernet 10/100/1000 MAC + PHY/(IEEE1588 Optional)

USB
- **Nano:** One USB 2.0 high-speed On-the-Go
- **Mini:** Two USB 2.0 high-speed On-the-Go

Display
- MIPI DSI (Up to 4 lanes)

Camera
- MIPI CSI-2 (Up to 4 lanes)

Audio
- **Nano:** Up to Two synchronous audio interfaces (SAI) with support for 1 TX & 5 RX lanes
- **Mini:** Up to Three SAI with support for 9 TX & 13 RX lanes
- S/PDIF input and output
- Up to 8 Channel Pulse Density Modulation (PDM) input

PCIe
- **Mini:** 1x PCIe Gen 2.0, 1-lane

Serial I/O
- Up to 3 UART Interfaces
- Up to 3 I2C interfaces
- Up to 2 SPI interfaces operating as either master or slave

GPIO
- Up to 87 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
- Dimensions: 28mm x 38mm
- Weight: 7.7 g

Compliance
- RoHS Compliant
- Reach Compliant