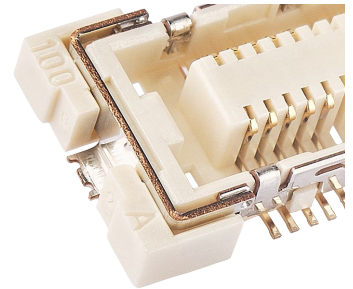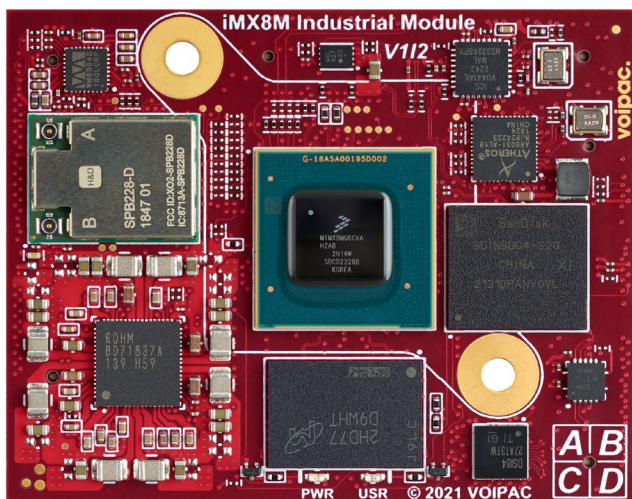# iMX8M Industrial Module

With a size of less than 2/3 of a credit card surface area, the new iMX8M Industrial Module is targeting skilled development teams building passive-cooled and high-performance industrial solutions.

This module has **3 pieces of robust, shielded and industrial-grade 100-pin connectors with a wide operating temperature range** providing remarkable peripheral availability. Its 2 convenient mounting holes with a wide diameter and clearance are **matching highly efficient standard-pitch heatsinks with mounting tabs and springs**, which are essential for a reliable embedded system designed for harsh environments.

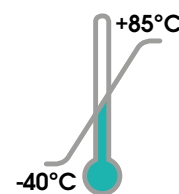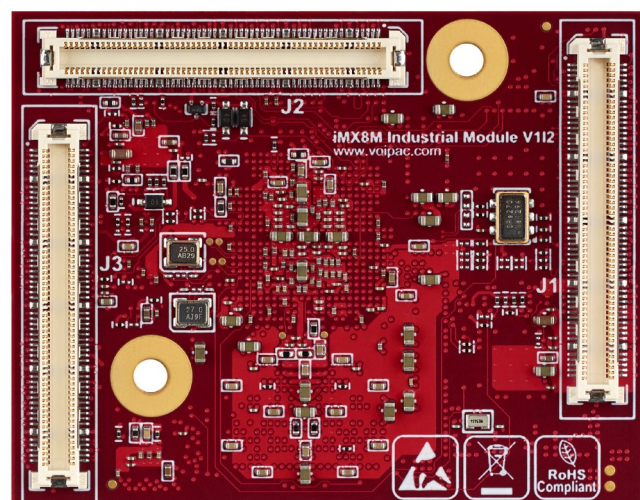The baseboard mating connector is shielded all the way around.

The highly integrated iMX8M Industrial Computer On Module (COM) / System On Module (SOM) was designed to last. To ensure this, the COM / SOM design was compressed into HDI micro-via Level III, **12-layer, 1.6mm thick PCB that is the key to the module's rigidity, outperforming the DDR2 – DDR4 SO DIMM-socket-based solutions which use 1.0mm thin PCB** in order to fit into the SO DIMM connector and have limited number of available pins with bare golden-plated pads. The used board to board (B2B) connectors provide the iMX8M Industrial Module with reduced vibration sensibility, and the 3mm Computer On Module – Development Baseboard stacking height guarantees optimal heat dissipation, which further improves the COM's durability.

With 300 pins available on low-density and wide mating length **connectors delivering outstanding high-speed signal integrity and providing robust power supply via multiple pins**, the module is capable of revealing the full performance potential of the NXP quad core 1.5GHz i.MX 8M ARM® Cortex®-A53 processor with 266MHz Cortex-M4F real-time co-processor.

HARDWARE SPECIFICATION

CPU	NXP i.MX 8M ARM® Cortex®-A53 Dual/QuadLite/Quad, up to 1.5GHz Cortex-M4F real-time co-processor, 266MHz
eMMC Flash	up to 64GB
LPDDR4-3733 SDRAM	up to 4GB, 1.866GHz
WiFi	on module, 802.11 a/b/g/n/ac 2.4 and 5GHz
Bluetooth	on module, Bluetooth 5 Classic and BLE
Analog stereo audio	soldered on module
PCI Express clock generator	soldered on module
Ethernet	10/100/1000Mbps
I2C EEPROM	1Mbit
LED	User, Power
I/O voltage	3.3V
Input power	5V (DC)
Temperature range	Commercial 0°C to +70°C
	Extended -20°C to +70°C
	Industrial -40°C to +85°C
Mounting holes	2x with 3.1mm diameter, 7.8mm clearance
Dimensions	60 x 47 x 6.33mm
100-pin connector	3x with wide mating lenght, shielded
Compliance	Lead free, REACH / RoHS compliant

EMC

+85°C
-40°C

VIBRATION RESISTANT

voipac.

This scalable COM provides all of today's must-have peripherals of a standard embedded system like the industry-leading i.MX 8M CPU, with **up to 4GB LP-DDR4 RAM**, up to 64GB eMMC NAND Flash, PCI Express, USB3 together with several HD video options, and dual channel LVDS. Moreover, it **includes the essential high-speed and design-demanding interfaces soldered right on the COM, such as the 1Gb Ethernet PHY, Analog Stereo Audio codec, Dual channel LVDS bridge, PCI Express clock generator, I2C Serial EEPROM, and dual-band WiFi and Bluetooth module**, to significantly reduce new product time-to-market.

47 mm

60 mm

The Computer On Module is suitable for conformal coating, and is **available in 3 standard webshop configurations that can be further customized to better match customers' specific performance and operating temperature range requirements**, helping to build competitive and cost-effective products.

With Yocto Linux OS including driver support for all the COM's peripherals preinstalled on its eMMC Flash, **PDF schematic of the iMX8M Industrial Module**, complete Altium Designer project documentation of the peripheral rich **iMX Development Baseboard including Schematic, BOM and PCB files**, and documented EMC, vibration, and climate chamber measurements, this development kit is a perfect solution for designers or system integrators looking for an acceleration of time-to-market of a portable and battery-powered embedded device.
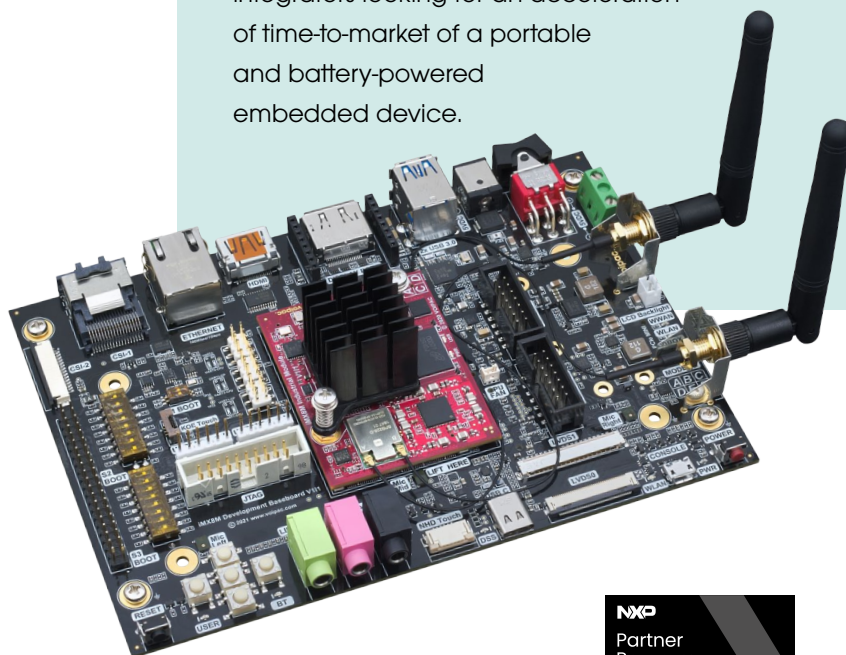
KEY FEATURES

HDMI 2.0/DisplayPort 1.2 (up to 4096x2160 at 60Hz)
2x LVDS (up to 1920x1080 at 60Hz)
2x video input MIPI-CSI2 (up to 1920x1080 at 60Hz)
OpenGL® ES 3.1, OpenGL® 3.0, Vulkan®, Open CL™ 1.2
2x PCI Express 2.0 with additional clock generator
2x USB 3.0 OTG, USB-C
1000Mbit RGMII interface
WiFi 5 on module (802.11 a/b/g/n/ac 2.4 and 5GHz)
Bluetooth on module (Bluetooth 5 Classic and BLE)
eMMC 5.0 Flash (8-bit), SD (4-bit)
UART, I2C, SPI, SAI, SPDIF, GPIO and PWM
System signals: Reset IN/OUT, ON/OFF, 2x Boot mode, Power OK, User button
JTAG

SUPPORTED SOFTWARE

Yocto 3.1 Dunfell / Linux version 5.4 (preinstalled)
Debian Bullseye 11.8 (porting in progress)
Android 12 (porting in progress)

NXP
Partner
Program

voipac.

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