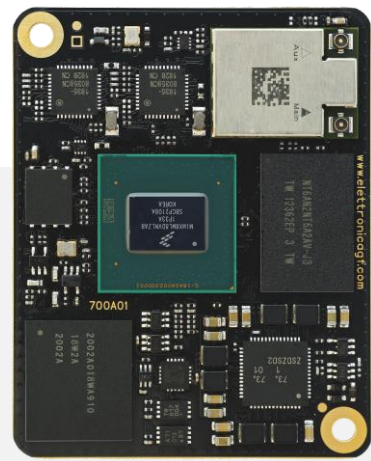


NXP i.MX 8M Plus - Arm® Cortex® CPU System on Module 3SM2008 Series



FEATURES

- High performance and highly integrated solution
- Supports all NXP i.MX 8M Plus processor versions
- Small dimensions only 39 x 49 mm
- High pin multiplexing flexibility thanks to 300 pin board-to-board connectors
- Ideal for multimedia and high performance applications
- Ideal for rugged products

CPU

- NXP i.MX 8M Plus Dual / QuadLite / Quad Arm® Cortex®-A53 core
- Standard or Lite CPU options
- Neural Processing Unit (NPU) option
 - 2.3 TOP/s Neural Network performance
- Supports Cortex®-A53 core frequency up to 1800 MHz
- Additional Cortex-M7 Core up to 800 MHz

DRAM MEMORY

- Up to 4GB LPDDR4 memory with 32 bit wide Bus

STORAGE / BOOT MEMORY

- From 4 to 64 GB eMMC Flash memory

MULTIMEDIA AND HUMAN INTERFACE¹²

- Video Processing Unit (VPU) (on standard CPU)
 - Video Encode
 - 1080p60 AVC / H.264
 - 1080p HEVC / H.265
 - Video Decode
 - 1080p60 HEVC / H.265 Main, Main 10
 - 1080p60 VP9 Profile 0,2
 - 1080p60 VP8
 - 1080p60 AVC / H.264 Baseline, Main, High
- GC7000UL Graphics Processing Unit (GPU)
 - 2 shaders
 - 166 million triangles/sec
 - 1.0 giga pixel / sec
 - 16 GFLOPs 32-bit
 - Supports OpenGL ES 1.1, 2.0, 3.0, OpenCL 1.2, Vulkan
- Camera interfaces:
 - 2 x MIPI-CSI Camera Interface (4-Lane) with HDR ISP
- Display interfaces:
 - MIPI-DSI Display Interface (4-Lane)
 - HDMI 2.0a Tx Display Interface
 - 2 x LVDS Display Interfaces
- Audio interfaces:
 - Up to 3 x SAI inputs / outputs
 - S/PDIF Audio input and output

I/O PERIPHERALS¹²

- 2 x USB 3.0 OTG
- Optional integrated WiFi 802.11a/b/g/n/ac and BT 5.0 Combo Module with Dual Band MIMO
- 1 x SDIO 3.0 Bus Interface
- 1 x PCIe 3.0 Bus
- 4 x UART Interfaces
- 2 x ECSPi Interfaces
- 3 x I2C Interfaces
- 4 x PWM outputs
- 1 x GPT timer
- 2 x Ethernet 1Gbps with on-board PHYs (optional)
- 2 x On-board CAN bus 2.0B / CAN FD Controller
- Integrated Secure Element / Cryptographic co-processor
- Integrated temperature sensor

SYSTEM

- 300 pin board-to-board connector
- Single +5 VDC ±5% power supply
- On board regulators for all integrated functions
- Power consumption depends on MPU clock frequency / state.

TEMPERATURE³

- 0 to 70°C for commercial version
- -40 to 85°C for industrial version

OPERATING SYSTEMS

- Linux (Cortex® - A53 core) + FREERTOS (Cortex® - M7)

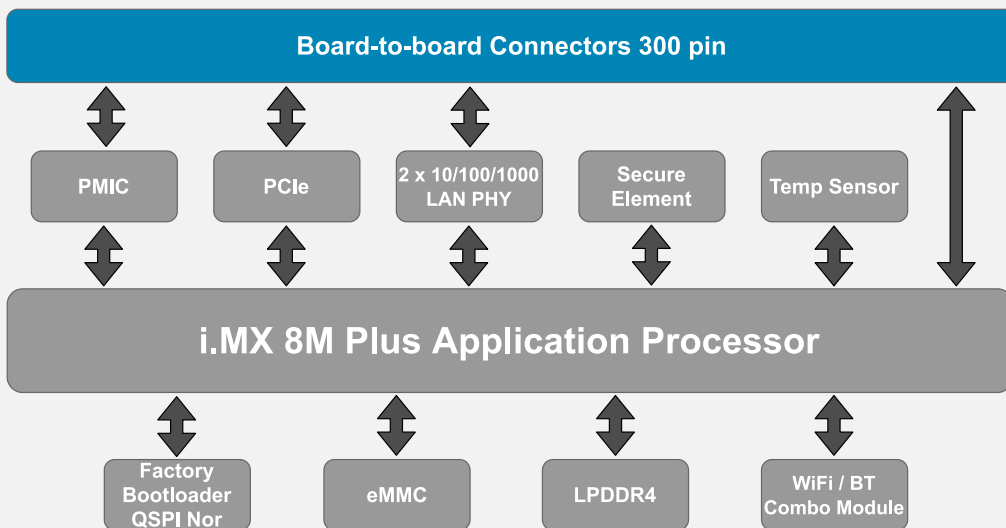


¹ Please note that not all the functions may be available simultaneously, due to pin mux limitation of CPU case. For more information, refer to NXP user's manual.

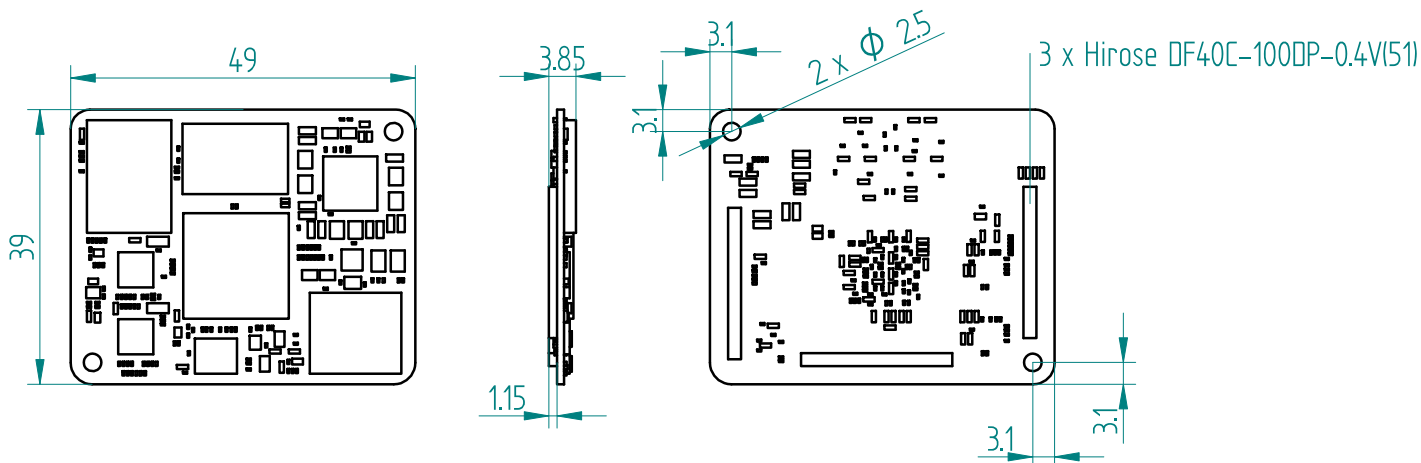
² Some functions require transceiver or additional circuitry on expansion board.

³ These temperatures are the ambient operating temperature ranges for the components used into SoM, with exception of iMX8M Mini processor, which is specified on junction operating temperature range, 0-95°C for commercial version and -40-105°C for industrial version. SoM ambient operating temperature depends on the application and on the cooling measures applied

BOARD DIAGRAM



DIMENSIONS (mm)



ORDERING INFORMATION OPTIONS

3SM2008

8 B 1 A 3 A 2

Processor

- i.MX 8M Plus Dual NPU 3
- i.MX 8M Plus QuadLite 4
- i.MX 8M Plus Quad 6
- i.MX 8M Plus Quad NPU 8

LPDDR4

- 512MB A
- 1GB B
- 2GB C
- 4GB D

eMMC

- eMMC 4GB 1
- eMMC 8GB 2
- eMMC 16GB 3
- eMMC 32GB 4
- eMMC 64GB 5

Secure Element

- No N
- SE050 A
- ATECC608A B

LAN

- No Ethernet 1
- Single 2
- Dual 3

WiFi / BT

- Not present N
- Present A

Temp. Grade

- 0°C / 70°C 1
- 40°C / 85°C 2

Not all code combinations are allowed, for more information on ordering codes please contact Elettronica GF sales department.



custom embedded devices

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Elettronica GF S.r.l. Via Ca' Bianca, 10 - 48018 - Faenza (RA) - Italy
 Tel. (+39) 0546 622245 Fax (+39) 0546 622301
 Web: www.elettronicagf.com Mail: sales@elettronicagf.it
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