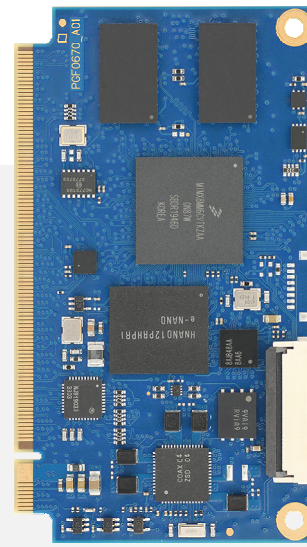


NXP i.MX 8M Mini - Arm® Cortex® CPU

System on Module 3SM1008M Series



FEATURES

- High performance / Low cost solution
- Scalable with all NXP i.MX 8M Mini processors
- Compatible with 3SM1008N series SoM based on NXP i.MX 8M Nano
- Small dimensions only 40x71mm
- 230 pin Card Edge connector
- General purpose applications
- Functional and Hardware compatible with 3SM1004 series SoM based on NXP i.MX6¹

CPU

- NXP i.MX 8M Mini Solo\Dual\Quad Arm® Cortex®-A53 core
- Standard or Lite CPU options
- Supports Arm® Cortex®-A53 core frequency up to 1800 MHz
- Additional Cortex-M4F Core up to 400 MHz

DRAM MEMORY

- From 1 to 4GB DDR4 memory with 32 bit wide Bus

STORAGE / BOOT MEMORY

- From 4 to 64 GB eMMC Flash memory

MULTIMEDIA AND HUMAN INTERFACE²³

- Video Processing Unit (VPU) (on standard CPU)
 - 1080p60 H.264, VP8 encoder
 - 1080p60 H265, VP9 decoder
 - 1080p60 H264, VP8 decoder
- Graphics Processing Unit (GPU)
 - GCNanoUltra 3D GPU with OpenGL®ES 2.0
 - GC320 2D GPU
- MIPI-CSI Camera Interface (4-Lane)
- MIPI-DSI Display Interface (4-Lane) (optional)
- On-board single \ dual LVDS Display Interface (optional)
- Digital microphone PDM input
- Up to 5 x SAI inputs / outputs
- S/PDIF Audio input and output

I/O PERIPHERALS²³

- 2 x USB 2.0 OTG
- 2 x SDIO 3.0 Bus Interfaces
- 1 x PCIe 2.0 Bus
- 4 x UART Interfaces with flow control
- 3 x ECSPi Interfaces
- 3 x I2C Interfaces
- 4 x PWM outputs
- 1 x GPT timer
- 1 x Ethernet 1Gbps with on-board PHY (optional)
- 1 x On-board CAN bus FD Controller (optional)
- 1 x 16 bit GPIO Expander (optional)
- More GPIOs available & SW configurable

SYSTEM

- 230 pin edge connector
- Single +3.3 VDC ±5% power supply
- On board regulators for all integrated functions
- Power consumption depends on MPU clock frequency / state.

TEMPERATURE⁴

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

OPERATING SYSTEMS

- Linux (Cortex® - A53 core) + FREERTOS (Cortex® - M4)



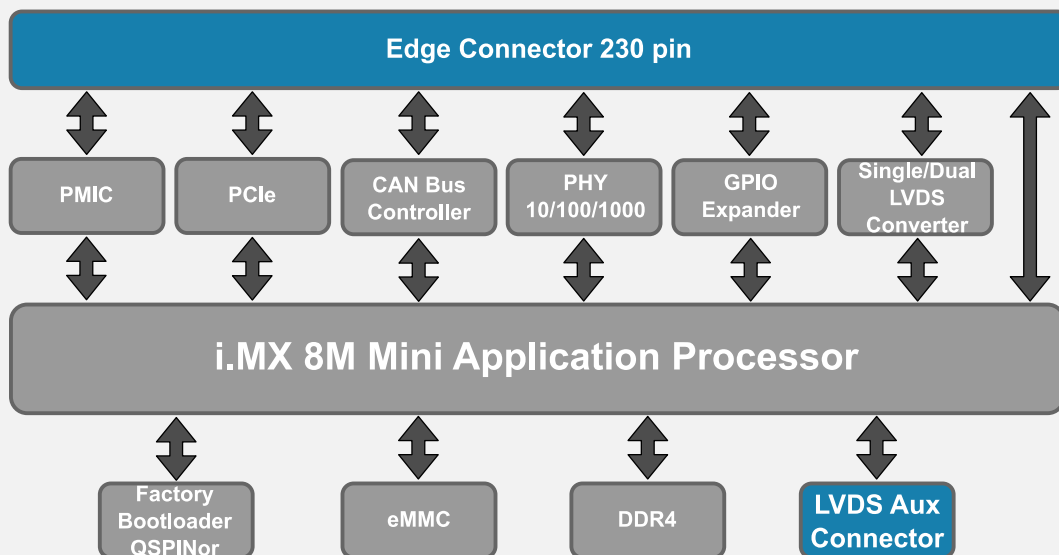
¹ There are some differences related to alternate functions or peripherals not available on both i.MX6 and i.MX 8M Mini processors. Check 3SM1004 and 3SM1008M user's manual for more detail on available peripherals and alternate functions.

² 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.

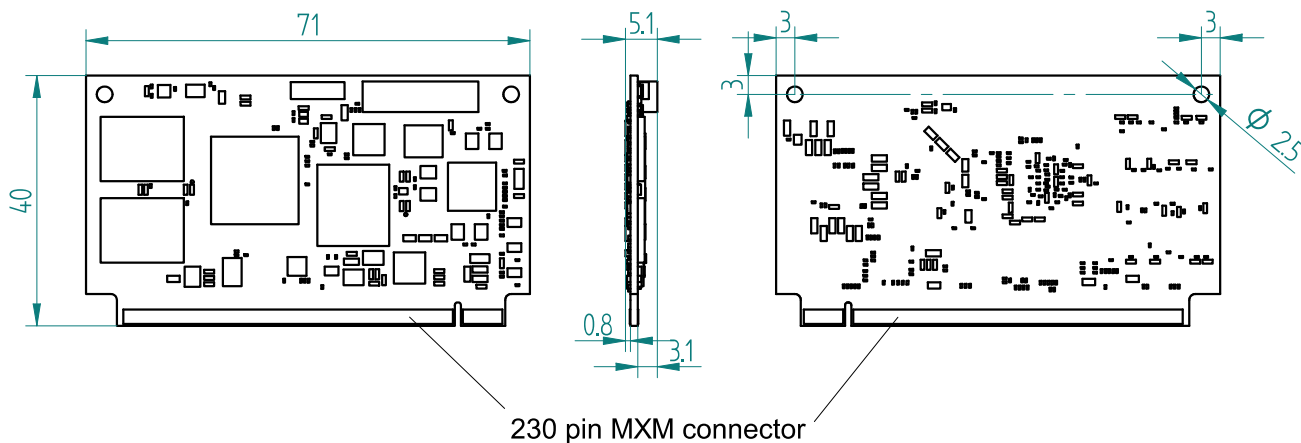
³ Some functions require transceiver or additional circuitry on expansion board.

⁴ 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

3SM1008M **6** **C** **2** **A** **3** **A** **1** **A**

Processor

- i.MX 8M Mini SoloLite 1
- i.MX 8M Mini Solo 2
- i.MX 8M Mini DualLite 3
- i.MX 8M Mini Dual 4
- i.MX 8M Mini QuadLite 5
- i.MX 8M Mini Quad 6

DDR4

- 1GB B
- 2GB C
- 4GB D

eMMC

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

CAN bus

- Not present N
- Present A

Display IF

- Mipi-DSI 1
- Single LVDS 2
- Dual LVDS 3

Ethernet

- Not present N
- Present A

I/O Expander

- Not present 0
- Present 1

Temp. Grade

- 0°C / 70°C A
- 40°C / 85°C B

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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