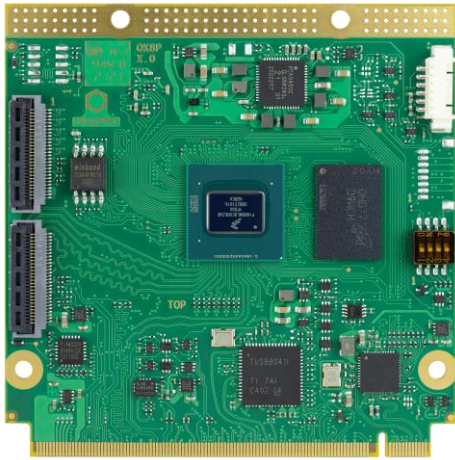


NXP i.MX 8M Plus for Industry 4.0 & AI

conga-QMX8-Plus

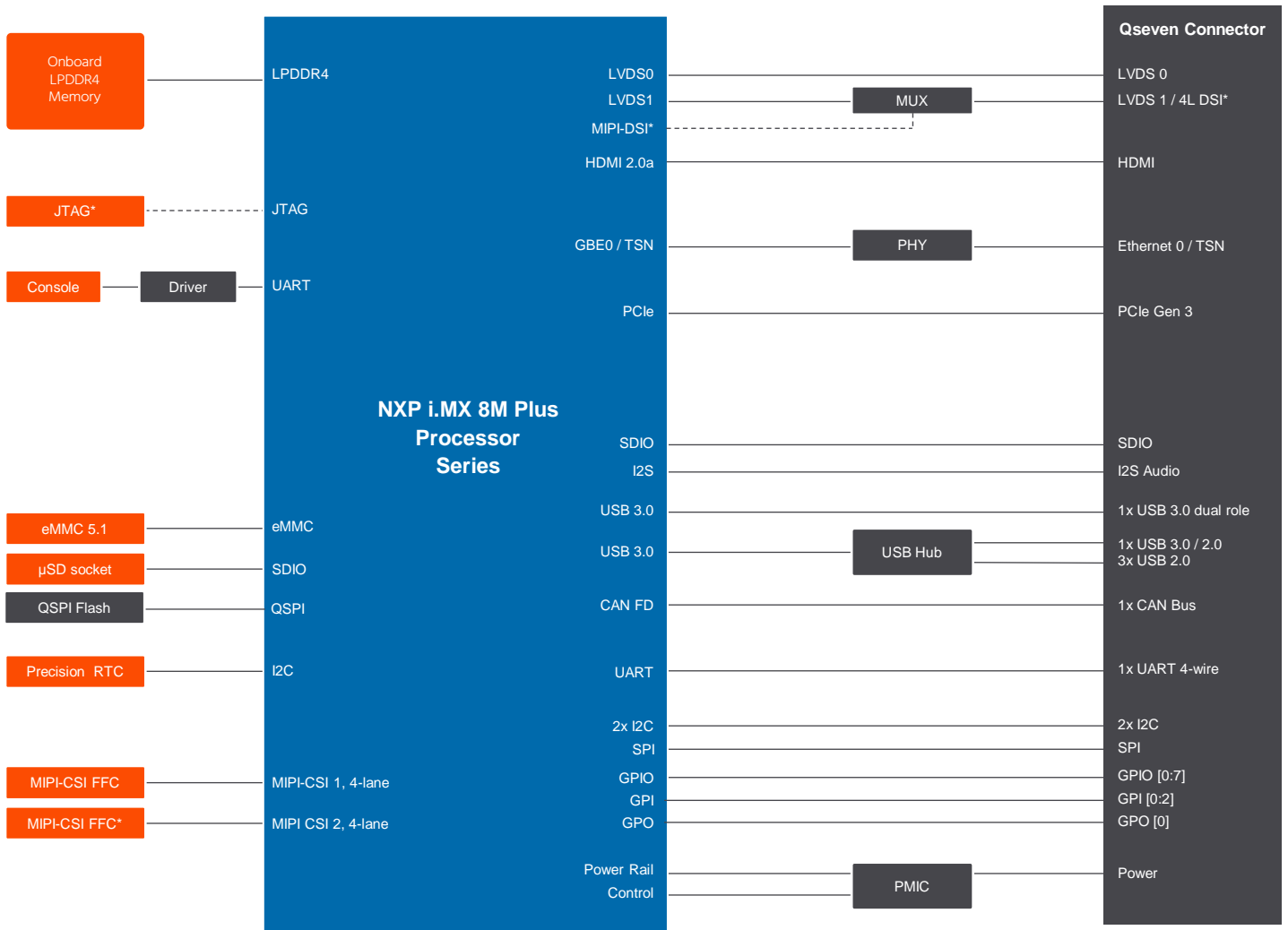


- NXP i.MX 8M Plus 14nm processor series with ARM 4-Core Cortex-A53 / M7 + NPU
- Enhanced AI, Machine Learning and Vision capabilities featuring NPU and integrated camera ISP's
- Ultra low power architecture with 2-5W
- Extended longevity up to 15 years
- Temperature range up to -40°C .. +85°C



| | | | | | |
|----------------------------------|--|--|--|--|------------------------------------|
| Form factor | Qseven Specification 2.1 | | | | |
| CPU SoC | NXP i.MX 8M Plus Processor Cores | | | | |
| | | ARM Cortex-A53 | ARM Cortex-M7 | NPU | GPU |
| | i.MX 8M Plus Quad (consumer) i.MX 8M Plus Quad (industrial) | 4x @ 1.8 GHz 64bit 4x @ 1.6 GHz 64bit | 1x @ 800MHz 1x @ 800MHz | 1x up to 2.3 TOPS 1x up to 2.3 TOPS | GC7000UL/GC520L GC7000UL/GC520L |
| DRAM | Up to 6 GByte onboard LPDDR4 memory 4000 MT/s inline ECC | | | | |
| AI & Machine Learning | Neural Processing Unit (NPU) with up to 2.3 TOPS NXP eIQ Machine Learning SW tools and libraries | | | | |
| Ethernet | 1x Gbit Ethernet with IEEE 1588 and TSN Support | | | | |
| I/O Interfaces | 1x dual-role USB 3.0 3x USB 2.0 1x USB 3.0 1x SDIO 3.0 1x onboard µSD card socket 1x PCIe 3.0 2x I ² C 1x SPI 1x UART with Handshake 1x CAN FD 12x GPIOs | | | | |
| Mass Storage | eMMC 5.1 up to 128 GByte SPI NOR Flash up to 32 MByte | | | | |
| Sound | 1x I ² S HiFi 4 DSP | | | | |
| Graphics | Integrated in SoC GC7000UL 3D graphics with 2 high performance vec4 shaders GC520L 2D graphics VPU up to 1080p60 H.265/H.264 decoding and encoding OpenGL ES 3.1 Vulkan OpenCL 1.2 FP OpenVG 1.1 2 independent displays | | | | |
| Video Interfaces | 1x dual channel 24-bit LVDS 1x HDMI 2.0a 1x MIPI-DSI 4-lane shared with second LVDS channel (optional) 2x MIPI-CSI 4-lane onboard connectors 2x integrated Image Signal Processor (ISP) for cameras with up to 12 MP resolution | | | | |
| Features | Watchdog Timer Cortex-A53 Console optional JTAG debug interface High Precision Real Time Clock | | | | |
| Security | Cryptographic Acceleration and Assurance Module (CAAM) Resource Domain Controller ARM®TrustZone® High Assurance Boot support Encryption Engine AES-128/192/256, 3DES, ARC4, RSA4096, TRNG SHA-1, SHA-2, SHA-256, MD-5 RSA-1024, 2048, 3072, 4096 and secure key storage side channel attack resistance | | | | |
| Boot Loader | U-Boot boot loader | | | | |
| Operating Systems | Linux, Yocto Project Android | | | | |
| Power Consumption | Typical application 2-5W @ 5V | | | | |
| Temperature Range | Operating Temperature Range: | | 0 to +60°C commercial grade -40 to +85°C industrial grade | | |
| | Storage Temperature Range: | | -40 to +85°C | | |
| Humidity | Operating: 10 - 90% r. H. non cond. | | Storage: 5 - 95% r. H. non cond. | | |
| Size | 70mm x 70 mm | | | | |

conga-QMX8-Plus | Block Diagram



* Assembly Option

conga-QMX8-Plus | Order Information

| Article | PN | Description |
|---|----------|---|
| conga-QMX8-Plus/i-QC-NPU-4G eMMC16 | 016620 | Qseven module with low-power 14nm NXP i.MX 8M Plus Quad processor. Features 4x ARM® Cortex®-A53 @ 1.6GHz +1x ARM® Cortex®-M7 + NPU, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial grade temperature range from -40°C to 85°C. |
| conga-QMX8-Plus/i-QC-NPU-2G eMMC16 | 016621 | Qseven module with low-power 14nm NXP i.MX 8M Plus Quad processor. Features 4x ARM® Cortex®-A53 @ 1.6GHz +1x ARM® Cortex®-M7 + NPU, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial grade temperature range from -40°C to 85°C. |
| QMX8-Plus/HSP-T | 016650 | Standard heatspreader for Qseven module conga-QMX8-Plus with NXP i.MX 8M Plus ARM processor. All standoffs are 2.5mm thread. |
| QMX8-Plus/HSP-B | 016651 | Standard heatspreader for Qseven module conga-QMX8-Plus with NXP i.MX 8M Plus ARM processor. All standoffs are with 2.7mm bore hole. |
| conga-QEVAL/Qseven 2.0 ARM | 007005 | Evaluation carrier board for Qseven ARM modules. |
| conga-HDMI add-on card | 500025 | conga-HDMI add-on card is used for evaluation of the HDMI graphics interface of Qseven modules in combination with the congatec evaluation carrier board conga-QEVAL. |
| RS232 adapter cable for conga-ARM modules | 48000023 | RS232 adapter cable for congatec ARM modules console debug application. |
| Basler dart camera daA3840-30mc | 44500041 | Basler dart BCON for MIPI camera module daA3840-30mc, 8Mpx, 30fps, 4 CSI2-Lanes, S-Mount. |
| FFC Basler dart BCON for MIPI, 200mm | 10000399 | FFC 28 pin cable for Basler BCON dart cameras, 0,5mm pitch. compatible with 28 pin Hirose ZIF connector (PN: FH41-28S-0.5SH(05)) |
| Evetar Lens M118B0418IR F1.8 f4mm 1/1.8" - Lens | 10000429 | Evetar Lens M118B0418IR F1.8 f4mm 1/1.8" - Lens for Basler dart camera module daA3840-30mc |