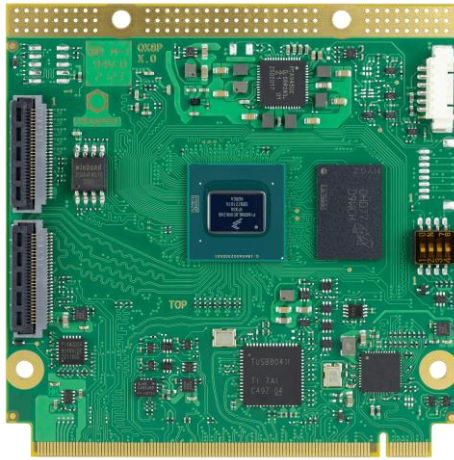


# NXP i.MX 8M Plus for Industry 4.0 & AI

## conga-QMX8-Plus

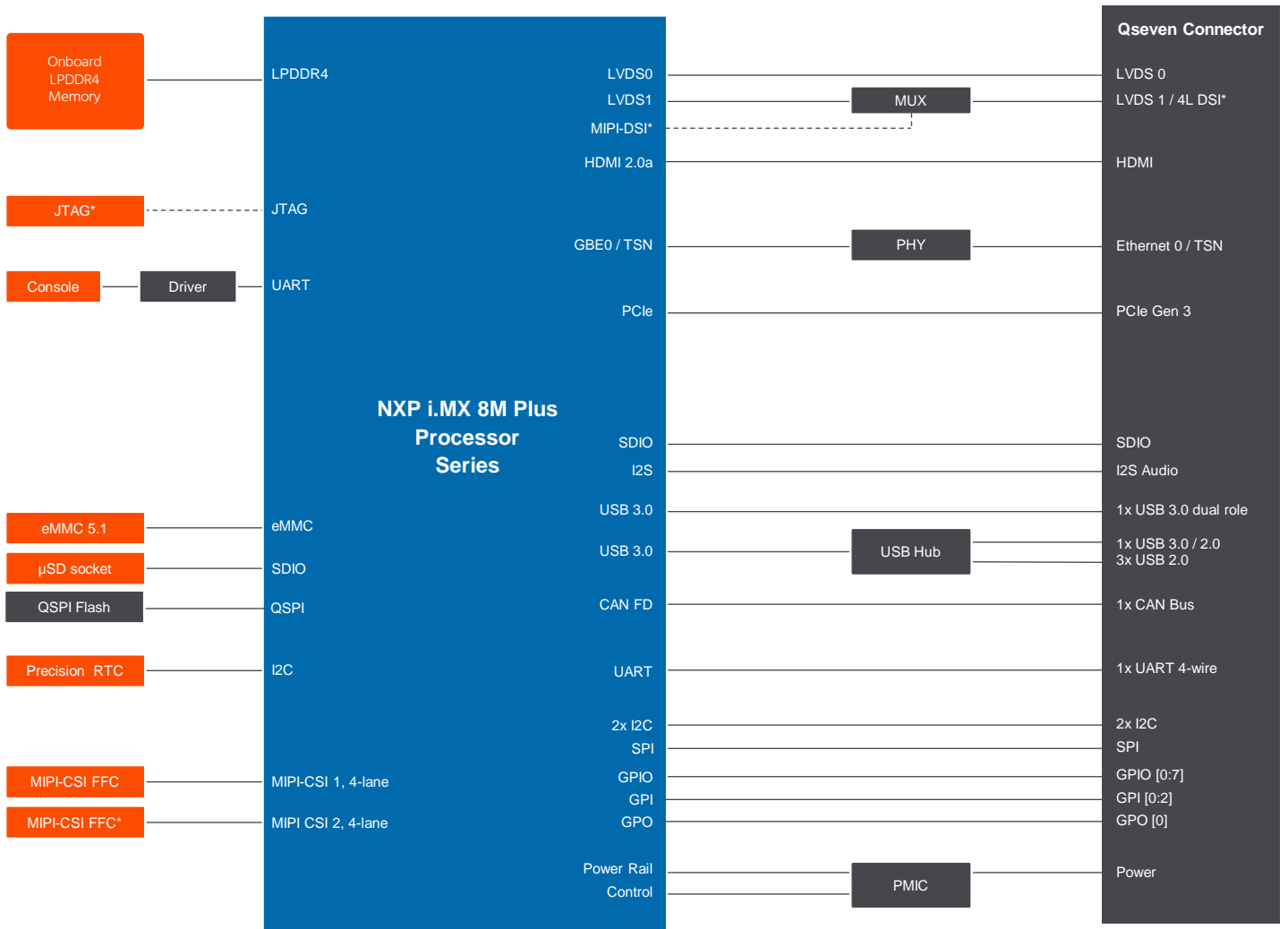


- NXP i.MX 8M Plus 14nm processor series with ARM 4-Core Cortex-A53 / M7 + NPU
- Enhanced AI, Machine Learning and Vision capabilities featuring NPU and integrated camera ISP's
- Ultra low power architecture with 2-5W
- Extended longevity up to 15 years
- Temperature range up to -40°C .. +85°C



<b>Form factor</b>	Qseven Specification 2.1				
<b>CPU SoC</b>	<b>NXP i.MX 8M Plus Processor Cores</b>				
		<b>ARM Cortex-A53</b>	<b>ARM Cortex-M7</b>	<b>NPU</b>	<b>GPU</b>
	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
<b>DRAM</b>	Up to 6 GByte onboard LPDDR4 memory   4000 MT/s   inline ECC				
<b>AI &amp; Machine Learning</b>	Neural Processing Unit (NPU) with up to 2.3 TOPS   NXP eIQ Machine Learning SW tools and libraries				
<b>Ethernet</b>	1x Gbit Ethernet with IEEE 1588 and TSN Support				
<b>I/O Interfaces</b>	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 <sup>2</sup> C   1x SPI 1x UART with Handshake   1x CAN FD   12x GPIOs				
<b>Mass Storage</b>	eMMC 5.1 up to 128 GByte   SPI NOR Flash up to 32 MByte				
<b>Sound</b>	1x I <sup>2</sup> S   HiFi 4 DSP				
<b>Graphics</b>	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				
<b>Video Interfaces</b>	1x dual channel 24-bit LVDS   1x HDMI 2.0a   1x MIPI-DSI 4-lane shared with second LVDS channel (optional) Up to 2x MIPI-CSI 4-lane onboard connectors   2x integrated Image Signal Processors (ISP) for cameras with up to 12 MP resolution				
<b>Features</b>	Watchdog Timer   Cortex-A53 Console   optional JTAG debug interface   High Precision Real Time Clock				
<b>Security</b>	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				
<b>Boot Loader</b>	U-Boot boot loader				
<b>Operating Systems</b>	Linux, Yocto Project   Android				
<b>Power Consumption</b>	Typical application 2-5W @ 5V				
<b>Temperature Range</b>	Operating Temperature Range:		0 to +60°C commercial grade -40 to +85°C industrial grade		
	Storage Temperature Range:		-40 to +85°C		
<b>Humidity</b>	Operating: 10 - 90% r. H. non cond.		Storage: 5 - 95% r. H. non cond.		
<b>Size</b>	70mm x 70 mm				

# conga-QMX8-Plus | Block Diagram



\* Assembly Option

# conga-QMX8-Plus | Order Information

Article	PN	Description
conga-QMX8-Plus/QC-4G eMMC16	016600	Qseven module with low-power 14nm NXP i.MX 8M Plus Quad processor. Features 4x ARM® Cortex®-A53 @ 1.8GHz +1x ARM® Cortex®-M7 + NPU, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range from 0°C to 60°C.
conga-QMX8-Plus/QC-2G eMMC16	016601	Qseven module with low-power 14nm NXP i.MX 8M Plus Quad processor. Features 4x ARM® Cortex®-A53 @ 1.8GHz +1x ARM® Cortex®-M7 + NPU, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range from 0°C to 60°C.
conga-QMX8-Plus/i-QC-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-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