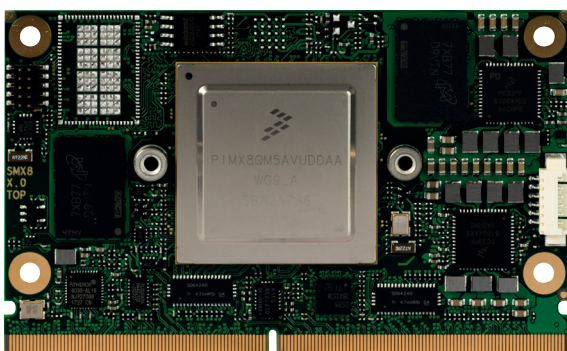


# HIGH PERFORMANCE NXP i.MX8 SERIES

## conga-SMX8

PRELIMINARY



- NXP i.MX8 ARM Cortex-A72, Cortex-A53 and Cortex-M4
- Advanced Graphics, Performance and Virtualization
- 3D Graphics up to 4K with HDMI 2.0a & LVDS
- Vision Extensions, MIPI CSI-2 dual camera interface
- Extended longevity up to 15 years
- Temperature range up to -40°C .. +85°C

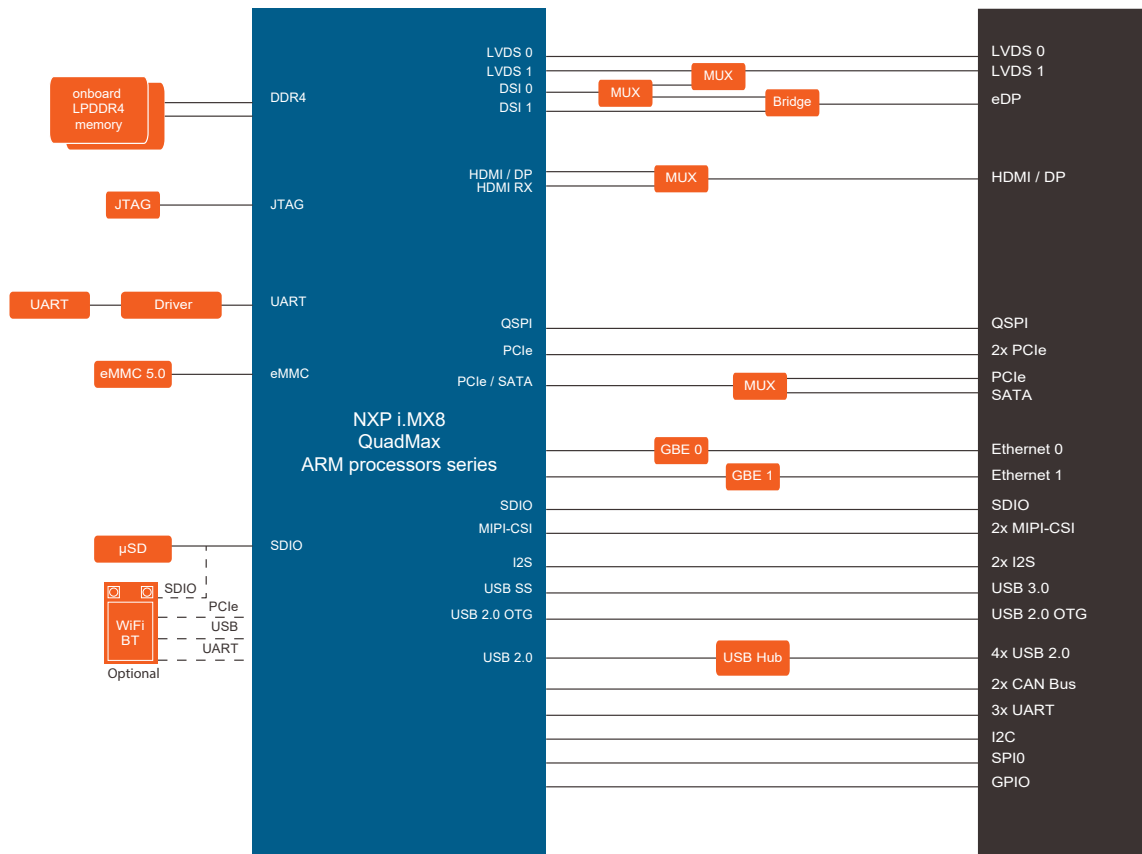


Formfactor	SMARC Specification 2.0   82x50 mm <sup>2</sup>			
CPU	NXP i.MX8 ARM Processor Cores			
		<b>ARM Cortex-A72</b>	<b>ARM Cortex-A53</b>	<b>ARM Cortex-M4F</b>
	i.MX8 QuadMax	2x	4x	2x
	i.MX8 QuadPlus	1x	4x	2x
	i.MX8 DualMax	2x	-	2x
			<b>GPU</b>	
				2x GC7000XSVX
				2x GC7000Lite/XSVX
				2x GC7000Lite/XSVX
DRAM	Up to 8 GByte onboard LPDDR4 memory   3200 MT/s			
Ethernet	2x 1 Gbit Ethernet			
I/O Interfaces	5x USB 2.0 (shared with 1x USB OTG client)   up to 1x USB 3.0   1x SATA III   1x SDIO 3.0   up to 3x PCIe 3.0 (one shared with SATA III), 2 root ports I <sup>2</sup> C Bus   SPI   QSPI   4x UART   2x FlexCAN   optional M.2 1216 WiFi module (soldered down)			
Mass Storage	eMMC 5.0 up to 64 GByte   Onboard MicroSD 3.0 card socket			
Sound	2x I <sup>2</sup> S			
Graphics	Integrated in NXP i.MX8 Series dual GT7000 multimedia GPU VPU (4K h.265 dec / HD h.264 enc)   2D Graphics (GPU2D) and 3D Graphics (GPU3D)   3D graphics with 4 high performance vec4 shaders   up to 16 execution units   2 independent displays   dual stream 1080p/720p decoder/encoder   OpenGL 3.1   Vulkan   VX extensions   OpenCL 2.0			
Video Interfaces	HDMI 2.0a with HDCP 2.2   1x dual channel LVDS 24 bit   eDP 1.4 output and DP 1.3 output (shared with HDMI) 1x MIPI-DSI with 4-lanes each shared with second LVDS channel   1x MIPI-CSI x4 and 1x MIPI-CSI x2			
Features	Watchdog Timer   I <sup>2</sup> C bus 400 kHz   JTAG debug interface   High Precision Real Time Clock			
Virtualization	Multiple Domains with Hardware Virtualization   Multiple Operating System Support   System MMU   Resource Partitioning and Split GPU			
Security	High Assurance Boot support   Inline Encryption Engine (AES-128) TNG, AES-128, AES-256, 3DES, ARC4, RSA4096, SHA-1, SHA-2, SHA-256, MD-5   RSA-1024, 2048, 3072, 4096			
Boot Loader	U-Boot boot loader			
Operating Systems	Linux   Yocto   Android			
Power Consumption	Typ. application tbd. @ 5V			
Temperature	Operating:	0 to +60°C commercial grade -40 to +85°C industrial grade		
	Storage:	-40 to +85°C		
Humidity	Operating:	10 to 90% r. H. non cond.		
	Storage:	5 to 95% r. H. non cond.		
Size	82 x 50 mm (3,23" x 1,97")			

# conga-SMX8 | Block diagram

conga-SMX8

SMARC 2.0



# conga-SMX8 | Order Information

Article	PN	
conga- SMX8/QCM-4GB eMMC16	051000	SMARC 2.0 module with high-performance NXP i.MX8 Quad Max processor with 2x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga- SMX8/QCP-4GB eMMC16	051001	SMARC 2.0 module with high-performance NXP i.MX8 Quad Plus processor with 1x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga- SMX8/DCM-4GB eMMC16	051002	SMARC 2.0 module with high-performance NXP i.MX8 Dual Max processor with 2x ARM Cortex-A72 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga- SMX8/i-QCM-4GB eMMC16	051020	SMARC 2.0 module with high-performance NXP i.MX8 Quad Max processor with 2x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Lidded package. Industrial temperature range.
conga- SMX8/i-QCP-4GB eMMC16	051021	SMARC 2.0 module with high-performance NXP i.MX8 Quad Plus processor with 1x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Lidded package. Industrial temperature range.
conga- SMX8/i-DCM-4GB eMMC16	051022	SMARC 2.0 module with high-performance NXP i.MX8 Dual Max processor with 2x ARM Cortex-A72 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Lidded package. Industrial temperature range.
conga-SMX8/i-CSP-B	051050	Passive cooling solution for SMARC 2.0 module conga-SMX8 with lidded NXP i.MX8 Quad Max ARM processor. All standoffs are with 2.7mm bore hole.
conga-SMX8/i-HSP-B	051051	Standard heatspreader for SMARC 2.0 module conga-SMX8 with lidded NXP i.MX8 Quad Max ARM processor. All standoffs are with 2.7mm bore hole.
SMARC/CSA-Adapter	051060	Active cooling solution adapter for SMARC 2.0 modules used in combination with module heatspreader.

Article	PN	
conga-SEVAL	007010	Evaluation carrier board for SMARC 2.0 modules.