

HIGH Performance NXP i.MX 8 Series

conga-SMX8

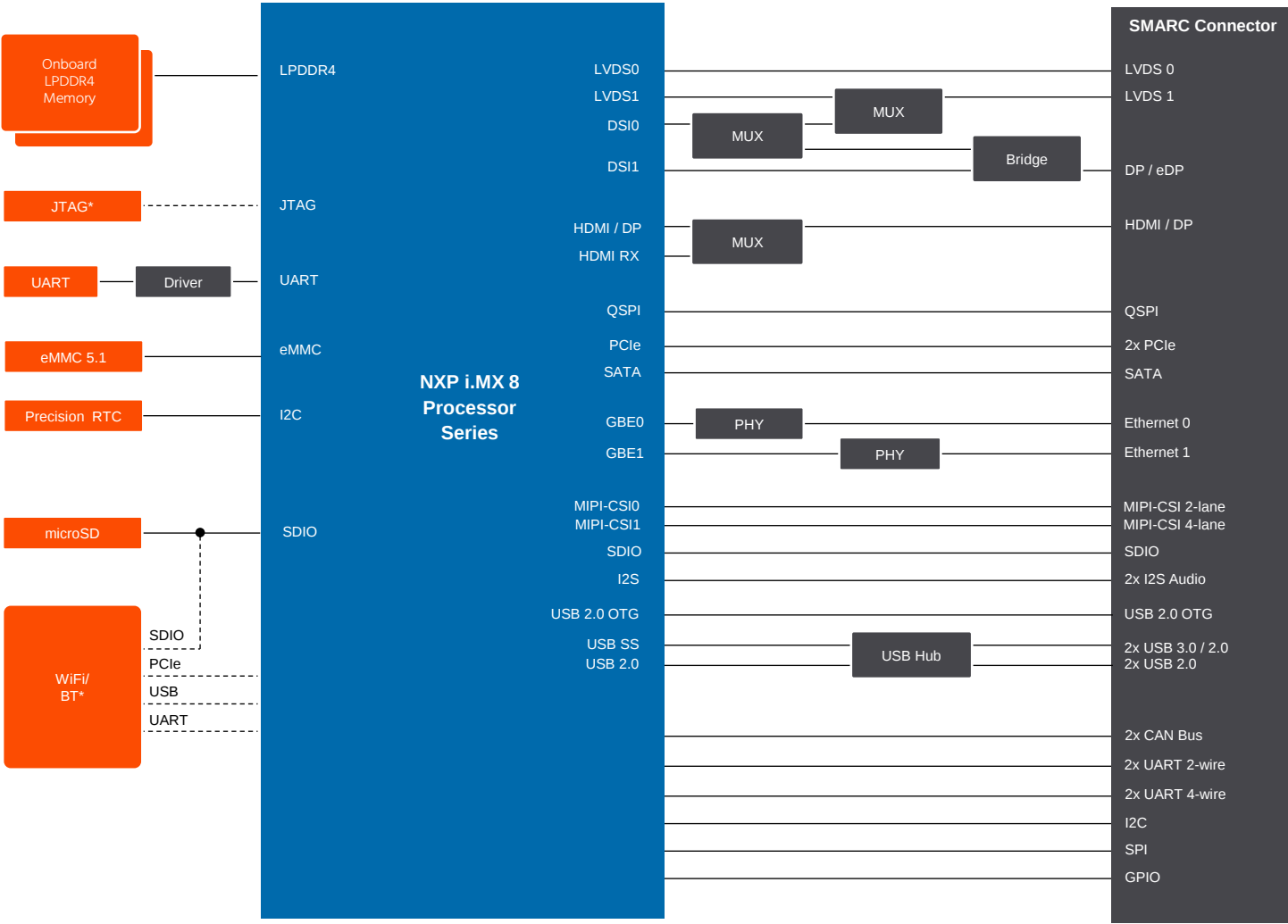


- NXP i.MX 8 processor series with ARM Cortex-A72 / A53 / M4F core complex
- Advanced Performance and Virtualization
- Graphics up to 4k display resolution
- Vision extensions and dual MIPI camera support
- Extended longevity up to 15 years
- Temperature range up to -40°C ...+85°C



Form Factor	SMARC Specification 2.1				
CPU	NXP i.MX 8 ARM Processors				
		ARM Cortex-A72	ARM Cortex-A53	ARM Cortex-M4F	GPU
	i.MX 8QuadMax	2x	4x	2x	2x GC7000 XSVX
	i.MX 8QuadPlus	1x	4x	2x	2x GC7000 XSVX
DRAM	Up to 8 GByte onboard LPDDR4 memory 3200 MT/s				
Ethernet	2x Gbit Ethernet with IEEE 1588 support				
I/O Interfaces	Up to 5x USB 2.0 (1x shared with USB OTG client) up to 2x USB 3.0 1x SATA 6 Gb/s 1x SDIO 3.0 up to 2x PCIe 3.0 I ² C Bus SPI QSPI 4x UART (2x with Handshake) 2x CAN FD GPIOs optional soldered M.2 1216 WiFi/BT				
Mass Storage	eMMC 5.1 up to 128 Gbyte onboard microSD 3.0 card socket				
Sound	2x I ² S optional processors with HiFi 4 DSP for advanced echo cancellation and speech recognition				
Graphics	Integrated NXP i.MX 8 Series dual core GC7000 XSVX multimedia GPU VPU up to h.264 decode (4Kp30) and H.264 encode (1080p30) 3D Graphics with up to 16 Vec4 shaders and 64 EUs Split-GPU architecture up to 3 independent displays OpenGL ES 3.2 Vulkan OpenVX 1.1 OpenCL 1.2 EP OpenVG 1.1				
Video Interfaces	1x HDMI 2.0a with HDCP 2.2 (optional eDP 1.4 or DP 1.3) 1x DP 1.3 (through MIPI-DSI bridge) 1x dual channel LVDS 24 bit optional 1x MIPI-DSI with 4-lanes (shared with LVDS ch1) 1x MIPI-CSI 4-lane and 1x MIPI-CSI 2-lane				
Features	Watchdog Timer I ² C bus 400 kHz Cortex-A35 Console optional JTAG debug interface High Precision Real Time Clock				
Virtualization	Multiple Domain Hardware Virtualization Multiple Operating System support System MMU Resource partitioning and split GPU				
Security	High Assurance Boot support SHE Inline Encryption Engine (AES-128) TRNG, AES-128, AES-256, 3DES, ARC4, RSA4096, SHA-1, SHA-2, SHA-256, MD-5 RSA-1024, 2048, 3072, 4096 and secure key storage				
Boot Loader	U-Boot				
Operating Systems	Linux Yocto Linux Android				
Power Consumption	Typ. application 5-15W @ 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 condensing		Storage: 5 - 95% r. H. non condensing		
Size	82 x 50 mm (3,23" x 1,97")				

conga-SMX8 | Block Diagram



* Assembly Option

conga-SMX8 | Order Information

Article	PN	Description
conga-SMX8/QCM-4GB eMMC16	051000	SMARC 2.1 module with high performance NXP i.MX 8Quad 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 2.1 module with high performance NXP i.MX 8Quad 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/QCP-2GB eMMC16	051003	SMARC 2.1 module with high performance NXP i.MX 8QuadPlus processor with 1x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8/i-QCM-4GB eMMC16	051020	SMARC 2.1 module with high performance NXP i.MX 8Quad Max processor with 2x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8/i-QCP-4GB eMMC16	051021	SMARC 2.1 module with high performance NXP i.MX 8Quad Plus processor with 1x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8/i-QCP-2GB eMMC16	051023	SMARC 2.1 module with high performance NXP i.MX 8QuadPlus processor with 1x ARM Cortex-A72, 4x ARM Cortex-A53 and 2x ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8/i-CSP-B	051050	Passive cooling solution for SMARC 2.1 module conga-SMX8 with lidded NXP i.MX 8 ARM processor. All standoffs are with M2.5mm thread.
conga-SMX8/i-HSP-B	051051	Heat spreader solution for SMARC 2.1 module conga-SMX8 with lidded NXP i.MX 8 ARM processor. All standoffs are with 2.7mm bore hole.
SMARC/CSA-Adapter	051060	Active cooling solution adapter for SMARC 2.1 modules used in combination with module heat spreader.
conga-SEVAL	007010	Evaluation carrier board for SMARC 2.1 modules.
conga-SMC1/SMARC-ARM	020750	3.5" carrier board for congatec SMARC 2.1 modules based on NXP i.MX ARM architecture.

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