

ULTRA LOW POWER NXP i.MX 8X SERIES

conga-SMX8-X

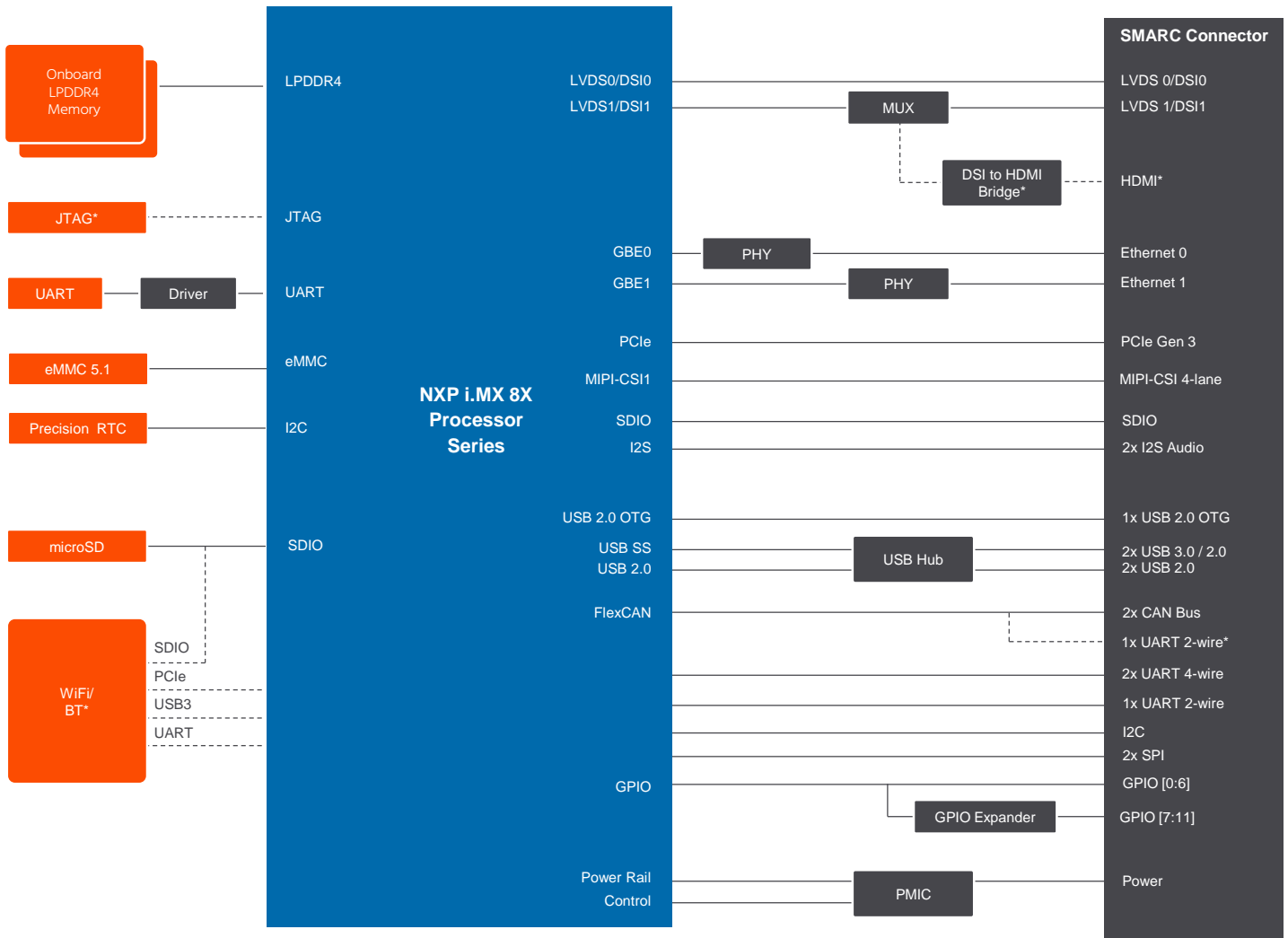


- NXP i.MX 8X processor series with ARM Cortex-A35 / M4F core complex
- Ultra low power architecture with 2-5W
- Highest reliability and improved virtualization
- Support for up to 2 independent HD displays
- Extended longevity up to 15 years
- Temperature range up to -40°C .. +85°C



Form factor	SMARC Specification 2.1			
CPU	NXP i.MX 8X ARM Processor Cores			
		ARM Cortex-A35	ARM Cortex-M4F	GPU
	i.MX 8QuadXPlus	4x	1x	1x GC7000Lite
	i.MX 8DualXPlus	2x	1x	1x GC7000Lite
DRAM	Up to 4 GByte onboard LPDDR4 memory 2400 MT/s			
Ethernet	Up to 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 SDIO 3.0 1x PCIe 3.0 I ² C Bus 1x SPI 1x QSPI up to 4x UART (2x with Handshake (1x shared with FlexCAN)) 2x FlexCAN GPIOs optional soldered M.2 1216 WiFi/BT			
Mass Storage	eMMC 5.1 up to 128 GByte			
Sound	Up to 2x I ² S optional processor with Tensilica [®] HiFi 4 DSP			
Graphics	Integrated in NXP i.MX 8X Series GT7000Lite multimedia GPU VPU up to 4K h.265 dec / 1080p h.264 enc/dec 3D Graphics with up to 4 high performance vec4 shaders and 16 execution units up to 2 independent displays OpenGL ES 3.1 Vulkan VX extensions OpenCL 1.2 EP OpenVG 1.1			
Video Interfaces	1x dual channel or 2x single channel LVDS 24 bit optional HDMI 1.3 through bridge (shared with second LVDS channel) 2x MIPI-DSI with 4-lanes shared with LVDS 1x MIPI-CSI 4-lanes			
Features	Watchdog Timer I ² C bus 400 kHz Cortex-A35 Console optional JTAG debug interface High Precision Real Time Clock			
Virtualization	Hardware Virtualization with Domain Separation Multiple Operating System Support			
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 boot loader			
Operating Systems	Linux Yocto Linux Android			
Power Consumption	Ultra low power Cortex-A35 typ. 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	82 x 50 mm (3,23" x 1,97")			

conga-SMX8-X | Block Diagram



* Assembly Option

conga-SMX8-X | Order Information

Article	PN	Description
conga-SMX8-X/QXP-4G eMMC16	051100	SMARC 2.0 module with ultra low power NXP i.MX 8QuadXPlus processor with 4x ARM Cortex-A35 and 1x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-X/DXP-2G eMMC16	051101	SMARC 2.0 module with ultra low power NXP i.MX 8DualXPlus processor with 2x ARM Cortex-A35 and 1x ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-X/QXP-2G eMMC16	051103	SMARC 2.0 module with ultra low power NXP i.MX 8QuadXPlus processor with 4x ARM Cortex-A35 and 1x ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-X/QXP-4G eMMC16 SPB228	051104	SMARC 2.0 module with ultra low power NXP i.MX 8QuadXPlus processor with 4x ARM Cortex-A35 and 1x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range. With onboard Wifi/BT module.
conga-SMX8-X/QXP-4G eMMC16 HDMI	051105	SMARC 2.0 module with ultra low power NXP i.MX 8QuadXPlus processor with 4x ARM Cortex-A35 and 1x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range. With onboard HDMI transmitter.
conga-SMX8-X/i-QXP-4G eMMC16	051110	SMARC 2.0 module ultra low power NXP i.MX 8QuadXPlus processor with 4x ARM Cortex-A35 and 1x ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8-X/i-DXP-2G eMMC16	051111	SMARC 2.0 module with ultra low power NXP i.MX 8DualXPlus processor with 2x ARM Cortex-A35 and 1x ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8-X/i-QXP-2G eMMC16	051113	SMARC 2.0 module with ultra low-power NXP i.MX 8QuadXPlus processor with 4x ARM Cortex-A35 and 1x ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8-X/i-CSP-B	051150	Passive cooling solution for SMARC module conga-SMX8-X with lidded NXP i.MX 8X ARM processor. All standoffs are with 2.7mm bore hole.
conga-SMX8-X/i-HSP-B	051151	Heat spreader solution for SMARC module conga-SMX8-X with lidded NXP i.MX 8X ARM processor. All standoffs are with 2.7mm bore hole.
SMARC/CSA-Adapter	051060	Active cooling solution adapter for SMARC modules used in combination with module heat spreader.
conga-SEVAL	007010	Evaluation carrier board for SMARC 2.0 modules.
conga-SMC1/SMARC-ARM	020750	3.5" carrier board for congatec SMARC 2.0 modules based on NXP i.MX ARM architecture.