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

SMARC module

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 Cortex-A35 @ 1.2GHz	1x Cortex-M4F @ 264MHz	1x GC7000Lite
	i.MX 8DualXPlus	2x Cortex-A35 @ 1.2GHz	1x Cortex-M4F @ 264MHz	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^2C 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^2S | 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 | Vulcan VX extensions | OpenCL 1.2 EP | OpenVG 1.1			
Video Interfaces	1x dual channel or 2x single channel LVDS 24 bit | 2x MIPI-DSI with 4-lanes shared with LVDS | 1x MIPI-CSI 4-lanes			
Features	Watchdog Timer | I^2C 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 condensing		
Size	82 x 50 mm (3,23" x 1,97")			

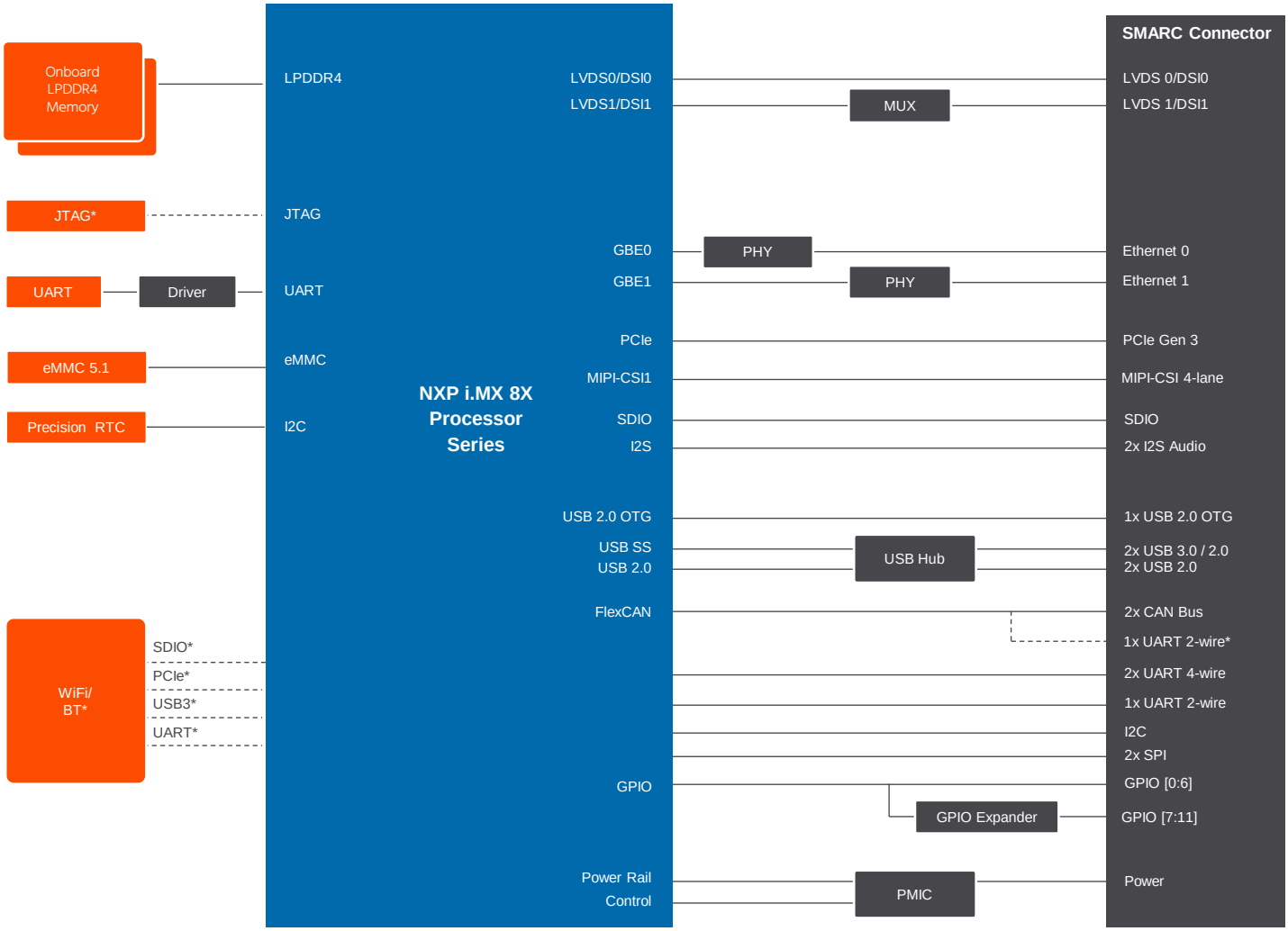
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NXP GOLD PARTNER

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/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.

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