

# ULTRA LOW POWER NXP i.MX8-X SERIES

## conga-SMX8X

### PRELIMINARY



- NXP i.MX8-X ARM Cortex-A35 and Cortex-M4F
- Ultra Low Power 2-5W
- Industrial grade, improved Reliability and Virtualization
- 3D Graphics up to two independent HD displays
- MIPI CSI-2 camera interface
- Extended longevity up to 15 years
- Temperature range up to -40°C .. +85°C

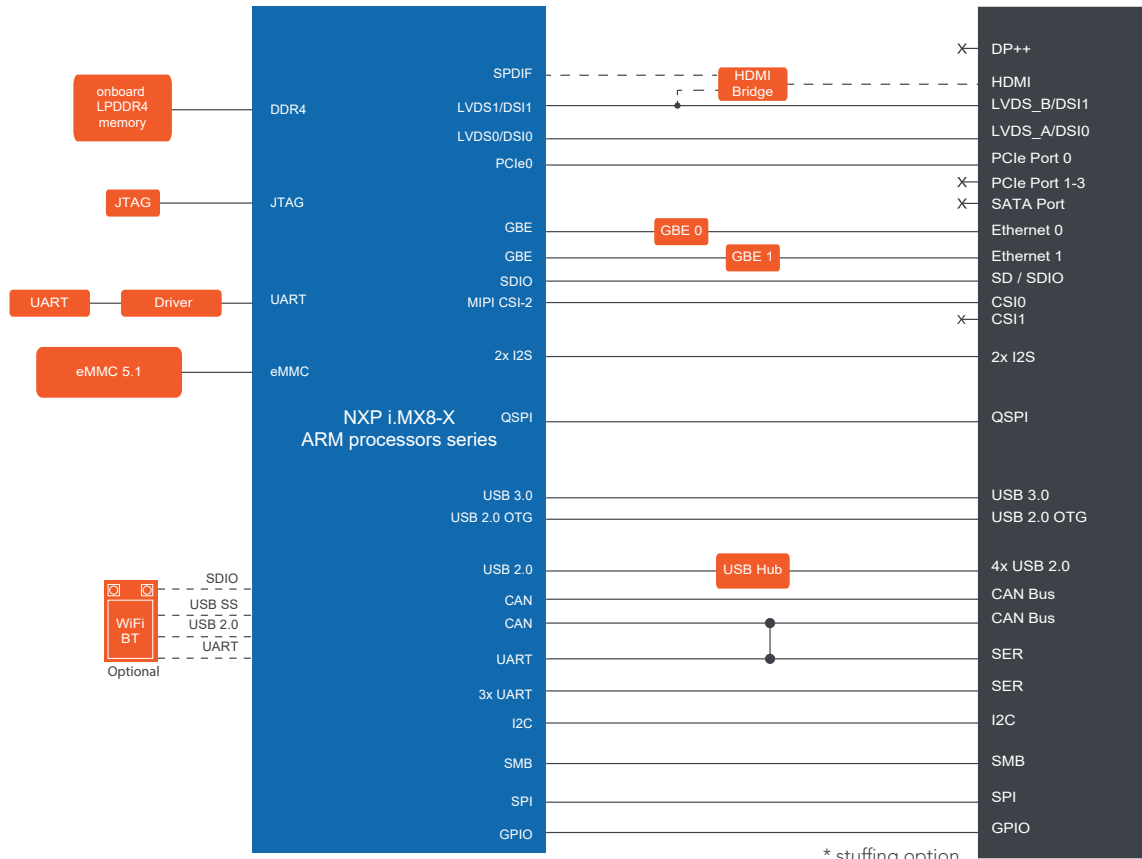


Formfactor	SMARC Specification 2.0   82x50 mm <sup>2</sup>			
CPU	NXP i.MX8-X ARM Processor Cores			
		ARM Cortex-A35	ARM Cortex-M4F	GPU
	i.MX8 QuadXPlus	4x	1x	1x GC7000Lite
	i.MX8 DualXPlus	2x	1x	1x GC7000Lite
	i.MX8 DualX	2x	1x	1x GC7000UltraLite
DRAM	Up to 4 GByte onboard LPDDR4 memory   2400 MT/s			
Ethernet	Up to 2x Gbit Ethernet			
I/O Interfaces	5x USB 2.0 (shared with 1x USB OTG client)   up to 1x USB 3.0   1x SDIO 3.0   1x PCIe 3.0   I <sup>2</sup> C Bus   1x SPI   1x ESPI up to 4x UART (2x with Handshake (1x shared with FlexCAN))   2x FlexCAN   GPIOs   optional M.2 1216 WiFi module (soldered down)			
Mass Storage	eMMC 5.1 up to 64 GByte			
Sound	2x I <sup>2</sup> S   1x Tensilica® HiFi 4 DSP			
Graphics	Integrated in NXP i.MX8-X Series single 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   opt. 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 <sup>2</sup> C bus 400 kHz   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   Android			
Power Consumption	Ultra Low Power Cortex A-35   Typ. application 2-5W @ 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-SMX8X | Block diagram

conga-SMX8-X

SMARC 2.0



# conga-SMX8X | Order Information

Article	PN	
conga-SMX8-X/QXP-4G eMMC16	051100	SMARC 2.0 module with ultra low power NXP i.MX8 QuadXPlus 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.MX8 DualXPlus 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/DX-2G eMMC16	051102	SMARC 2.0 module with ultra low power NXP i.MX8 DualX 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.MX8 QuadXPlus 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/i-QXP-4G eMMC16	051110	SMARC 2.0 module ultra low power NXP i.MX8 QuadXPlus 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.MX8 DualXPlus 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-DX-2G eMMC16	051112	SMARC 2.0 module with ultra low power NXP i.MX8 DualX 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.MX8-X QuadXPlus processor with 4x ARM Cortex-A35 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 2.0 module conga-SMX8 with lidded NXP i.MX8 ARM processor. All standoffs are M2.5mm thread.
conga-SMX8/i-HSP-B	051051	Heat spreader solution for SMARC 2.0 module conga-SMX8 with lidded NXP i.MX8 ARM processor. All standoffs are with 2.7mm bore hole.

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