SMARC 2.1 based on NXP i.MX 8M MINI

conga-SMX8-Mini



- SMARC 2.1 Module based on NXP i.MX 8M Mini
- Scalable ARM Performance with up to 4x 1.8GHz Cortex-A53 and 1x Cortex-M4F
- Highly improved power efficiency and performance by 14LPC FinFET process technology
- 3D Graphics with Full HD resolution, MIPI CSI-2
- Extended longevity up to 15 years

SMARC module

Form factor	SMARC Specification 2.1 | 82x50 mm²
CPU	**NXP i.MX 8M Mini ARM Processor Cores**

Commercial	**ARM Cortex-A53**	**ARM Cortec-M4F**	**GPU**
i.MX 8M Mini Quad	4 x 1.8GHz	1x 400MHz	1x GC NanoUltra 3D Graphics
i.MX 8M Mini Dual	2 x 1.8GHz	1x 400MHz	1x GC NanoUltra 3D Graphics
i.MX 8M Mini Solo	1 x 1.8GHz	1x 400MHz	1x GC NanoUltra 3D Graphics
Industrial			
i.MX 8M Mini Quad	4 x 1.6GHz	1x 400MHz	1x GC NanoUltra 3D Graphics
i.MX 8M Mini Dual	2 x 1.6GHz	1x 400MHz	1x GC NanoUltra 3D Graphics
i.MX 8M Mini Solo	1 x 1.6GHz	1x 400MHz	1x GC NanoUltra 3D Graphics

DRAM	Up to 4 GByte onboard LPDDR4 memory | 3000 MT/s
Ethernet	1x Gigabit Ethernet with IEEE 1588v2 support
I/O Interfaces	Up to 5x USB 2.0 (shared with 1x USB OTG client)| 1x PCIe 2.0 | 1x SDIO 3.0 | 2x I²C Bus | 1x SPI | up to 3x UART (2x with handshake) | GPIOs | 1x MIPI-CSI2 (2-lanes) or (4-lanes) | optional M.2 1216 WiFi/BT module
Storage	eMMC 5.1 up to 128 GByte
Sound	2x I²S
Graphics	Integrated in NXP i.MX 8M Mini Series GC NanoUltra 3D GPU | one display | VPU with up to 1080p video decoding (H.265, H.264, VP8/9) | up to 1080p video encoding (H.264, VP8) | 3D Graphics GPU with one shader core | up to 6.4GFlops | GC320 2D Graphics GPU | OpenGL ES 2.0 | OpenVG 1.1
Display Interfaces	1x dual channel 24bit LVDS through bridge (default) or MIPI-DSI 4-lanes or DisplayPort through bridge
Embedded Features	Watchdog Timer | I²C bus | Cortex-A53 console | optional JTAG debug interface | high precision Real Time Clock
Security	High Assurance Boot support | TrustZone | AES-256, RSA-4096, SHA-256, 3DES, DES, ARC4, MD-5 | eFuse Key Storage | Secure Real Time Clock (RTC) | True Random Number Generator (RNG) | 32 KB Secure RAM | SJTAG
Boot Loader	U-Boot boot loader
Operating Systems	Linux | Yocto | Android
Power Consumption	See user's guide for full details

Temperature		
Industrial Variants:	Operating Temperature: -40 to +85°C	Storage Temperature: -40 to +85°C
Commercial Variants:	Operating Temperature: 0 to +60°C	Storage Temperature: -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")	

NXP GOLD PARTNER

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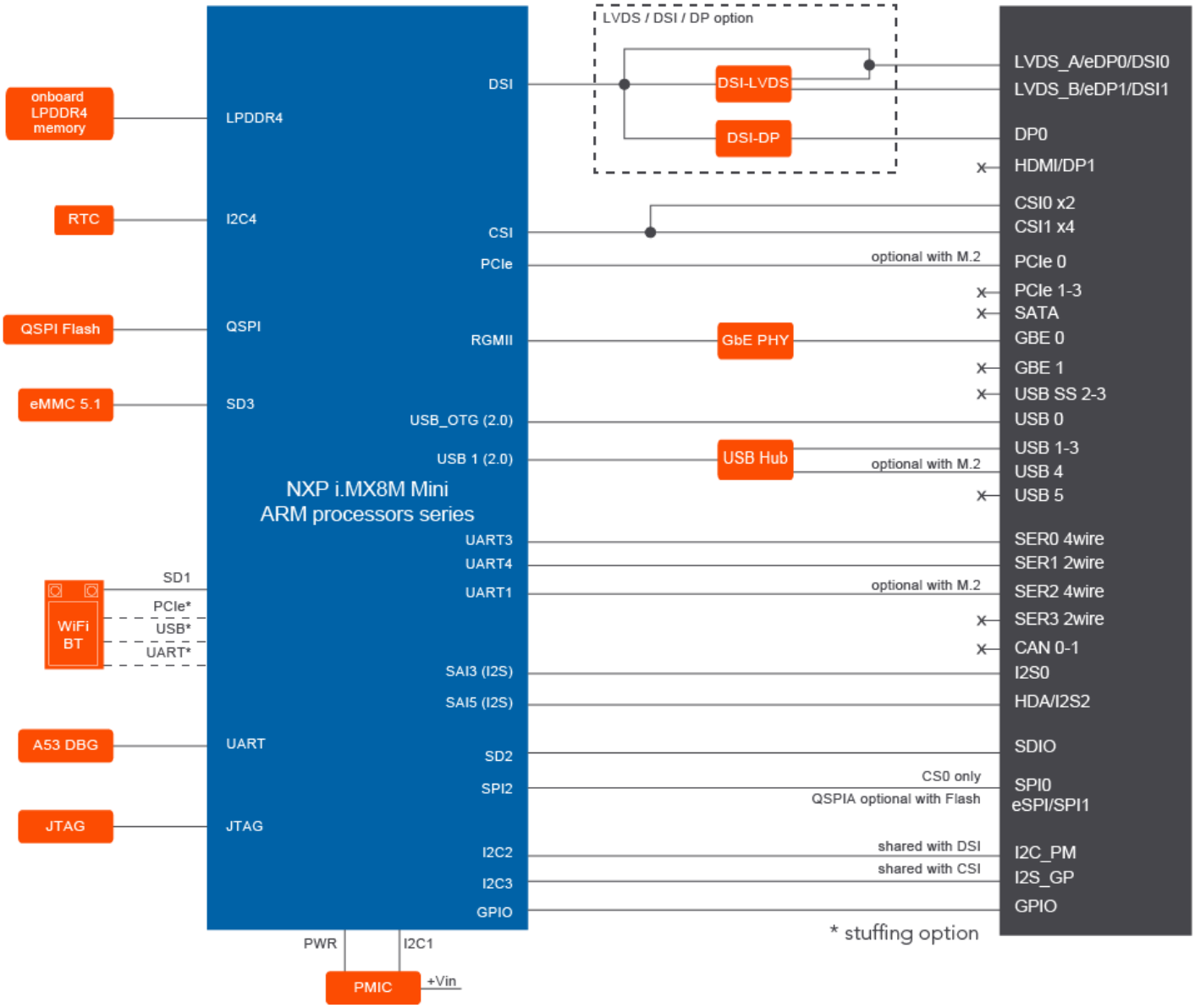
conga-SMX8-Mini | Block diagram



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conga-SMX8-Mini | Order Information

Article	PN	Description
conga-SMX8-Mini/QC-4G eMMC16	051200	SMARC 2.1 module with NXP i.MX 8M Mini Quad 14LPC FinFET processor with 4x 1.8GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-Mini/DC-2G eMMC16	051201	SMARC 2.1 module with NXP i.MX 8M Mini Dual 14LPC FinFET processor with 2x 1.8GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-Mini/SC-1G eMMC16	051202	SMARC 2.1 module with NXP i.MX 8M Mini Single 14LPC FinFET processor with 1x 1.8GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 1GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-Mini/QC-2G eMMC16	051203	SMARC 2.1 module with NXP i.MX 8M Mini Quad 14LPC FinFET processor with 4x 1.8GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Commercial temperature range.
conga-SMX8-Mini/QC-4G eMMC16 DP	051204	SMARC 2.1 module with NXP i.MX 8M Mini Quad 14LPC FinFET processor with 4x 1.8GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Features DisplayPort interface. Commercial temperature range.
conga-SMX8-Mini/i-QC-4G eMMC16	051220	SMARC 2.1 module with NXP i.MX 8M Mini Quad 14LPC FinFET processor with 4x 1.6GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 4GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8-Mini/i-DC-2G eMMC16	051221	SMARC 2.1 module with NXP i.MX 8M Mini Dual 14LPC FinFET processor with 2x 1.6GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8-Mini/i-SC-1G eMMC16	051222	SMARC 2.1 module with NXP i.MX 8M Mini Single 14LPC FinFET processor with 1x 1.6GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 1GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SMX8-Mini/i-QC-2G eMMC16	051223	SMARC 2.1 module with NXP i.MX 8M Mini Quad 14LPC FinFET processor with 4x 1.6GHz ARM Cortex-A53 and 1x 400MHz ARM Cortex-M4F, 2GB onboard LPDDR4 memory and 16GB onboard eMMC. Industrial temperature range.
conga-SEVAL	007010	Evaluation carrier board for SMARC 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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