

SMARC 2.1 based on NXP i.MX 8M MINI



conga-SMX8-Mini



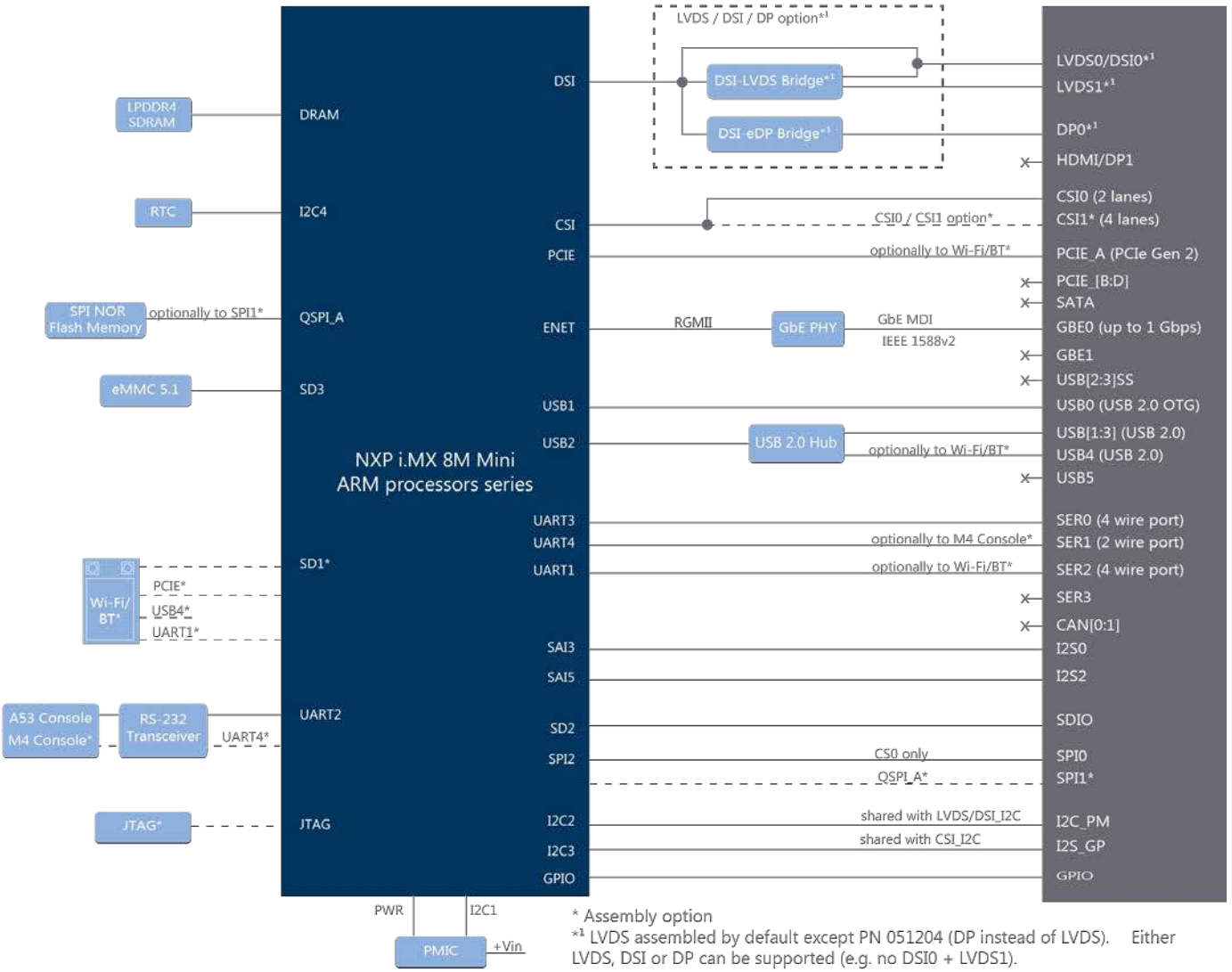
- SMARC 2.1 Module based on NXP i.MX 8M Mini
- Scalable ARM Performance with up to 4x 1.8GHz Cortex-A53 and 1x Cortex-M4F
- Highly improved power efficiency and performance by 14LPC FinFET process technology
- 3D Graphics with Full HD resolution, MIPI CSI-2
- Extended longevity up to 15 years

Form Factor

SMARC Specification 2.1 | 82x50 mm²

CPU	NXP i.MX 8M Mini ARM Processor Cores		
	Commercial	ARM Cortex-A53	ARM Cortex-M4F
	i.MX 8M Mini Quad	4 x 1.8GHz	1x 400MHz
	i.MX 8M Mini Dual	2 x 1.8GHz	1x 400MHz
	i.MX 8M Mini Solo	1 x 1.8GHz	1x 400MHz
	Industrial		GPU
	i.MX 8M Mini Quad	4 x 1.6GHz	1x GC NanoUltra 3D Graphics
	i.MX 8M Mini Dual	2 x 1.6GHz	1x GC NanoUltra 3D Graphics
	i.MX 8M Mini Solo	1 x 1.6GHz	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 I ² C 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 I ² S		
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 I ² C 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")		

conga-SMX8-Mini | Block diagram





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.