NXP i.MX 95 – The Secure, Intelligent Edge

conga-SMX95

- SMARC Module based on NXP i.MX 95 processor series | up to 6-core ARM Cortex-A55
- NXP eIQ® Neutron NPU for high-speed data processing, Machine Learning and Vision
- Advanced Security with EdgeLock™ and Cryptographic Engine
- Ultra low power architecture with 3-8W
- Temperature range up to -40°C .. +85°C

SMARC module

Form factor	SMARC Specification 2.2				
CPU SoC	**NXP i.MX 95 Processor Cores**				
	ARM Cortex-A55 6-core @ 1.8 GHz (ind.) 6-core @ 1.8 GHz (com.)	**ARM Cortex-M7** 1-core @ 1GHz	**ARM Cortex-M33** 1-core @ 1 GHz	**eIQ® Neutron NPU** up to 2 TOPS	**ARM Mali™ GPU** G310 up to 128 GFLOPS (FP16) + 2D
DRAM	Up to 16 GByte onboard LPDDR5 memory | up to 6400 MT/s | inline ECC				
Ethernet	2x Gbit Ethernet with support for TSN | IEEE 1588				
I/O Interfaces	1x dual-role USB 2.0 | 2x USB 2.0 | 2x USB 3.0 | 1x SDIO 3.0 | 2x PCIe 3.0 1-lane | 2x I^2C | 1x SPI | 1x QSPI | up to 3x UART (2x with Handshake) | up to 2x CAN FD | 14x GPIO | optional soldered M.2 1216 WiFi 6/BT 5.3				
Mass Storage	eMMC 5.1 up to 256 GByte				
Sound	Up to 2x I^2S | HiFi 4 DSP				
Graphics	Integrated in SoC | Arm® Mali™ 3D GPU G310 | 2D GPU supporting blend graphics overlays | OpenGL® ES 3.2 | Vulkan® 1.2 | OpenCL 3.0				
Video Interfaces	1x dual channel 24-bit LVDS | 1x HDMI 2.0a through MIPI-DSI to HDMI bridge (shared with MIPI-DSI) | optional MIPI-DSI capable of supporting 4kp30 or 3840p60 shared with HDMI and 2nd LVDS channel | optional Display Port 1.4 1080p60 through MIPI-DSI to DisplayPort Bridge shared with MIPI-DSI | up to 2x MIPI-CSI 4-lanes (one shared with MIPI-CSI) | 2x integrated Image Signal Processor (ISP) for cameras with up to 12 MP resolution (on selected processor SKUs)				
Features	Watchdog Timer | Cortex-M7 and Cortex-M33 console | optional JTAG debug interface | high-precision Real Time Clock				
AI & Machine Learning	NXP eIQ® Neutron Neural Processing Unit (NPU) with up to 2 TOPS | NXP eIQ® ML Software Development Environment				
Security	NXP EdgeLock® 2GO key management services | Cryptographic Acceleration and Assurance Module | Resource Domain Controller | ARM® TrustZone® | High Assurance Boot support | SHE, Encryption Engine AES-128, AES-256, 3DES, RC4, RSA4096, TRNG, SHA-1, SHA-2, SHA-256, MD-5 | RSA-1024, 2048, 3072, 4096 and secure key storage | side channel attack resistance				
Boot Loader	U-Boot boot loader				
Operating Systems	Linux, Yocto Project | Android				
Power Consumption	Low power Cortex-A55 / Cortex-M33 / Cortex-M7 | typ. application 3-8W @ 5V				
Temperature Range	Operating:	commercial variants: industrial variants:	0 to +60°C -40°C to +85°C		
	Storage:	commercial variants: industrial variants:	-20°C to +80°C -40°C to +85°C		
Humidity	Operating: Storage:	10% to 85% r. H. non cond. 5% to 85% r. H. non cond.			
Size	82 x 50 mm (3,23" x 1,97")				

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NXP Gold Partner

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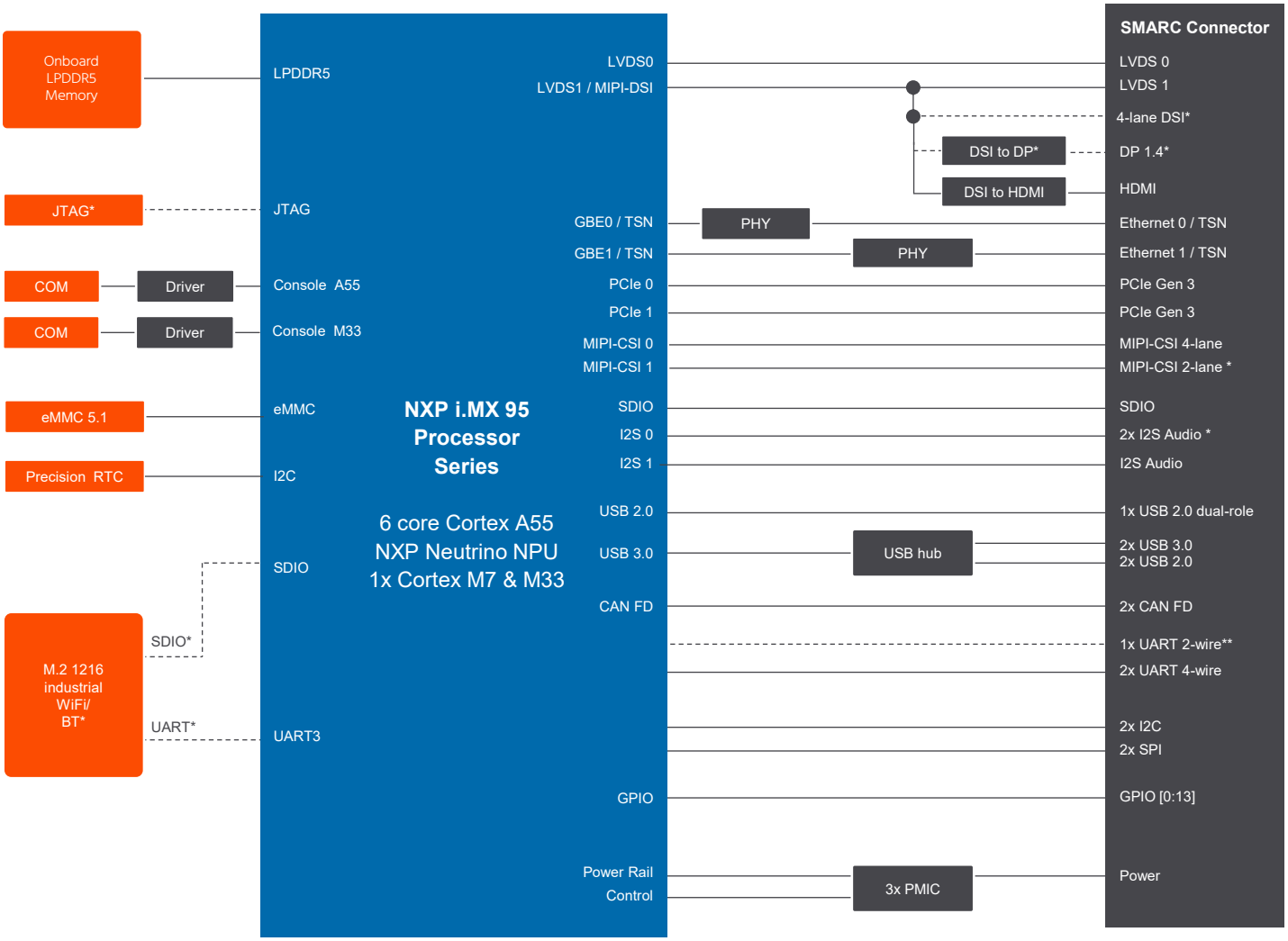
conga-SMX95 | Block Diagram



* Assembly Option / Multiplexing
** Shared with Console

conga-SMX95 | Order Information

Article	PN	Description
conga-SMX95/MX959-6C-8G eMMC64	051600	SMARC Module with NXP i.MX 9596 6-core processor. Features 6x ARM Cortex-A55 @ 2 GHz, ARM Cortex-M7, ARM Cortex-M33, eIQ Neutron NPU, 8GB onboard LPDDR5 memory and 64GB onboard eMMC. Commercial grade temperature range from 0°C to 60°C.
conga-SMX95/MX959-6C-4G eMMC64	051601	SMARC Module with NXP i.MX 9596 6-core processor. Features 6x ARM Cortex-A55 @ 1.8 GHz, ARM Cortex-M7, ARM Cortex-M33, eIQ Neutron NPU, 4GB onboard LPDDR5 memory and 64GB onboard eMMC. Commercial grade temperature range from 0°C to 60°C.
conga-SMX95/i-MX959-6C-8G eMMC64	051610	SMARC Module with NXP i.MX 9596 6-core processor. Features 6x ARM Cortex-A55 @ 1.8 GHz, ARM Cortex-M7, ARM Cortex-M7, eIQ Neutron NPU, 8GB onboard LPDDR5 memory and 64GB onboard eMMC. Industrial grade temperature range from -40°C to 85°C.
conga-SMX95/i-MX959-6C-4G eMMC64	051611	SMARC Module with NXP i.MX 9596 6-core processor. Features 6x ARM Cortex-A55 @ 1.8 GHz, ARM Cortex-M7, ARM Cortex-M33, eIQ Neutron NPU, 4GB onboard LPDDR5 memory and 64GB onboard eMMC. Industrial grade temperature range from -40°C to 85°C.
conga-SMX95/i-MX959-6C-8G eMMC64 DP	051612	SMARC Module with NXP i.MX 9596 6-core processor. Features 6x ARM Cortex-A55 @ 1.8 GHz, ARM Cortex-M7, ARM Cortex-M7, eIQ Neutron NPU, 8GB onboard LPDDR5 memory and 64GB onboard eMMC. Industrial grade temperature range from -40°C to 85°C. With DSI to DisplayPort bridge.
conga-SMX95/i-MX959-6C-8G eMMC64 NX611	051620	SMARC Module with NXP i.MX 9596 6-core processor. Features 6x ARM Cortex-A55 @ 1.8 GHz, ARM Cortex-M7, ARM Cortex-M33, eIQ Neutron NPU, 8GB onboard LPDDR5 memory and 64GB onboard eMMC. Industrial grade temperature range from -40°C to 85°C. With Wifi6 module based on NXP NX611.
conga-SMX95/CSP-B	051652	Passive cooling solution for SMARC module conga-SMX95 based on non-lidded NXP i.MX 95 ARM processor. All standoffs are with 2.7mm bore hole.
conga-SMX95/HSP-B	051653	Heat spreader solution for SMARC module conga-SMX95 based on non-lidded NXP i.MX 95 ARM processor. All standoffs are with 2.7mm bore hole.
SMARC/CSA Adapter	050060	Active heatsink cooling adapter for SMARC modules used in combination with module heat spreader.
conga-SEVAL	007010	Evaluation carrier board for SMARC modules.
conga-SMC1/SMARC-ARM	020750	3.5" carrier board for congatec SMARC modules based on NXP i.MX ARM architecture.