

Nitrogen95 SMARC Evaluation Kit with 7-Inch Touchscreen Display, Sona NX611 Wi-Fi 6 and Bluetooth 5.4, SMARC Carrier Board, Antenna, Optional Camera, and Accessory Cables



MADE IN USA



What's in the kit?



Nitrogen95 SMARC



Sona NX611 Wi-Fi 6 and Bluetooth 5.4



7 inch Display with stand



SMARC Carrier Board



FlexPIFA Wi-Fi and Bluetooth Antenna



Accessory Cables



**(Optional Camera Variant):
Arducam xISP - 8.3MP 4K Camera**

Our new Nitrogen95 SMARC Evaluation Kit includes our NXP i.MX 95-based SMARC SOM which has an onboard NXP IW611-based Sona NX611 Wi-Fi 6 + Bluetooth 5.4 module, 7-inch touchscreen display with stand, SMARC Carrier Board, Wi-Fi and BT antenna, and accessory cables. The Nitrogen95 SMARC Evaluation Kit is designed to allow commercial, industrial, and medical device design teams a platform for easy evaluation of the Nitrogen95 SMARC. After evaluation of the Nitrogen95 SMARC, our in-house USA based assembly allows your team to choose the best RAM, storage, and connectivity options for your product. The Nitrogen95 SMARC Evaluation Kit comes with our industry-leading software and integration support to accelerate your product development team.

- **Powerful Heterogenous Multiprocessing:** Up to 1.8 GHz 6-core Cortex-A55 MPU, 800 MHz Cortex-M7 MCU, and 333 MHz Cortex-M33 MCU allow you to run Linux and an RTOS on dedicated, hardware-firewalled subsystems.
- **Graphics and Display:** Kit includes a 7-inch 1280x800 resolution touchscreen. Nitrogen95 SMARC supports displays with resolutions up to 4K and tablet-class 64 GLOPS GPU, and hardware-accelerated video decode up to 4K60p
- **Advanced Vision Pipeline:** Support multiple camera via dual MIPI-CSI with virtual channels, onboard image signal processor (500 MP/s), video encode up to 4K60P
- **Dedicated AI Accelerator:** High-performance edge AI via an integrated NXP eIQ® Neutron NPU, delivering up to 2 TOPS.
- **High Speed Interfaces:** Dual PCI-Express Gen3 (8.0 Gbps), USB 3.1 Gen1 (5 Gbps), USB 2.0 (480 Mbps), 2x Gb Ethernet (1 Gbps), and 10 Gb Ethernet (10 Gbps)
- **Industrial Interfaces:** UART, SPI, I2C, I2S, CAN-FD, GPIO, SDIO, and more
- **Software and Board Support Options:** Yocto Linux / Buildroot Linux / Android / QNX / Debian for Cortex-A55s, FreeRTOS for the Cortex-M7 and Cortex-M33
- **SMARC 2.2 Standard Form Factor:** 82mm x 50mm SMARC edge connector form factor includes **onboard ethernet PHYs**. One design supports multiple processor, memory, and wireless configurations. Allows a **hardware upgrade roadmap** to the latest processors and wireless options as future Ezurio SMARC SOMs are released.
- **Advanced Common Carrier/Development Board:** Display, camera, audio, Ethernet, USB, PCI-Express, CAN, I2C, SPI, UART, and more. Use in development and as reference designs for your carrier board design.

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Specifications

Category	Feature	Specification
Processors	Applications Processor	6x Cortex-A55 cores @ up to 1.8 GHz
	Real-Time Microcontroller	1x Cortex-M7 core @ up to 800 MHz
	System Management MCU	1x Cortex-M33 core @ up to 333 MHz
	GPU	Arm® Mali G310 v2 Up to 64 GFLOPS (fp32), OpenGL ES3.2, Vulkan 1.3, and OpenCL 3.0 API support
	Video Encoder/Decoder	Support for up to 4K @ 60 fps, HEVC (H.265) and H.264 codecs
	AI	NXP eIQ® Neutron N3-1024S NPU
Memory	RAM	2 GB LPDDR5
	Storage	16GB eMMC
Graphics and Video	Display Interfaces	7-inch 1280x800 resolution touchscreen 2x 4-lane LVDS (display connector)
	Camera	1x 4-lane MIPI-CSI (camera connector) Optional: Included Arducam xISP - 8.3MP 4K Camera with onboard ISP
Interfaces	USB	2x USB 3.0 (USB-A) 1x USB 2.0 (USB-A) 1x USB 2.0 (M.2 connector) 1x USB 2.0 TypeC (dual role)
		2x CAN (debug connector)
	UART	1x UART (debug connector, TTL) 2x UART (Molex connectors, RS-232) 1x UART (M.2 connector)
		1x SPI (debug connector, M.2 connector)
	I2C	3x I2C (debug connectors) 1x I2C (M.2 connector)
	GPIO	2x GPIO via SMARC Specification (debug connectors) (Note: SPI, UART, and I2C can be muxed to GPIO)
	Storage	1x microSD card slot
	RTC	1x RTC + battery
	Audio Interfaces	1x Headphones / 2x Speakers (2W) / 1x Mic via headphones connector / 1x Mic via Molex connector / 1x Line In via Molex connector
		2x Gigabit Ethernet
	Physical	Dimensions 482.6 mm x 311.2 mm x 108 mm
		Weight 1.69kg
	Wireless	Sona Wi-Fi and Bluetooth Modules Sona NX611 with 1 MHF4L
	Supply Voltage	5V
Environmental	Temperature Range	-40°C to +85°C (Industrial)
	Lead Free	Lead-free and RoHS-compliant

Ordering Information

Part	Description
EZSMI-955-0816-00158-2-K2	Nitrogen95 SMARC Evaluation Kit: 7 in Display / SMARC Carrier Board / i.MX 95 / 2GB / 16GB eMMC / NX611 1MHF / Accessories
EZSMI-955-0816-00158-2-KC	Nitrogen95 SMARC Evaluation Kit with CAMERA : 7 in Display / SMARC Carrier Board / i.MX 95 / 2GB / 16GB eMMC / NX611 1MHF / Arducam's xISP -IMX678 / Accessories
Nitrogen95 Beta Parts	
EZSMI-959-0816-00158-2-K2	Nitrogen95 SMARC Evaluation Kit: BETA / 7 in Display / SMARC Carrier Board / i.MX 959 / 8GB / 16GB eMMC / NX611 1MHF / Accessories
EZSMI-959-0816-00158-2-KC	Nitrogen95 SMARC Evaluation Kit: BETA / 7 in Display / 8.3MP CAMERA / SMARC Carrier Board / i.MX 959 / 8GB / 16GB eMMC / NX611 1MHF / Accessories

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