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

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NXP Gold Partner

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 2.1.1 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)
Vision	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)
	CAN	2x CAN (debug connector)
	UART	1x UART (debug connector, TTL) 2x UART (Molex connectors, RS-232) 1x UART (M.2 connector)
	SPI	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
	Networking	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-959-0816-00158-2-K2	Nitrogen95 SMARC **BETA** Evaluation Kit: 7 in Display / SMARC Carrier Board / i.MX 95 / 2GB / 16GB eMMC / NX611 1MHF / Accessories
EZSMI-959-0816-00158-2-KC	Nitrogen95 SMARC **BETA** Evaluation Kit with **CAMERA**: 7 in Display / SMARC Carrier Board / i.MX 95 / 2GB / 16GB eMMC / NX611 1MHF / Arducam's xISP -IMX678 / Accessories

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