

# Nitrogen93 SMARC Evaluation Kit with 7-Inch Touchscreen Display, Sona NX611 Wi-Fi 6 and Bluetooth 5.4, SMARC Carrier Board, Antenna, and Accessory Cables



## What's in the kit?



**Nitrogen93 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**

Our new Nitrogen93 SMARC Evaluation Kit includes our NXP i.MX 93 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 Nitrogen93 SMARC Evaluation Kit is designed to allow commercial, industrial, and medical device design teams a platform for easy evaluation of the Nitrogen93 SMARC. After evaluation of the Nitrogen93 SMARC, our in-house USA based assembly allows your team to choose the best RAM, storage, and connectivity options for your product. The Nitrogen93 SMARC Evaluation Kit comes with our industry-leading software and integration support to accelerate your product development team.

- **Powerful Heterogenous Multiprocessing:** Up to 1.7 GHz dual-core Cortex-A55 MPU and 250 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. Nitrogen93 SMARC supports displays with resolutions up to 1920x1200p60 using MIPI-DSI, 1366x768p60 or 1280x800p60 using LVDS, and has a PXP 2D graphics accelerator
- **Advanced Vision Pipeline:** Supports a 2Kp60 camera via a MIPI-CSI
- **Dedicated AI Accelerator:** High-performance edge AI via an integrated Arm Ethos™-U65 microNPU, delivering up to .7 TOPS.
- **High Speed Interfaces:** 2x USB 2.0 (480 Mbps) and 2x Gb Ethernet (1 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-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, CAN, I2C, SPI, UART, and more. Use in development and as reference designs for your carrier board design.

**Made in the USA**

## Specifications

Category	Feature	Specification
<b>Processors</b>	Applications Processor	2x Cortex®-A55 cores @ up to 1.7 GHz
	Real-Time Microcontroller	1x Cortex®-M33 core @ 250 MHz
	AI/DSP	NXP eIQ® Neutron Neutron N3-1024S NPU
<b>Memory</b>	RAM	2GB LPDDR4
	Storage	16GB eMMC
<b>Graphics and Video</b>	Display	7-inch 1280x800 resolution touchscreen 1x 4-lane LVDS (display connector)
	Camera	1x 2-lane MIPI-CSI (camera connector)
<b>Interfaces</b>	USB	2x USB 2.0 (USB-A)
	CAN	2x CAN (debug connector)
	UART	1x UART (debug connector, TTL)
		2x UART (molex connectors, RS-232)
		1x UART (M.2 connector)
	SPI	2x SPI (debug connectors)
		1x SPI (M.2 connector)
	I2C	2x I2C (debug connectors)
		1x I2C (M.2 connector)
	GPIO	2x GPIO via SMARC Specification (debug connectors) ( <b>Note:</b> 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 Gbit Ethernet
<b>Physical</b>	Dimensions	482.6 mm x 311.2 mm x 108 mm
	Weight	1.69kg
<b>Wireless</b>	Sona Wi-Fi and Bluetooth Modules	Sona NX611 with 1 MHF4L
<b>Supply Voltage</b>		5V
<b>Environmental</b>	Temperature Range	0°C to +70°C (Commercial)
	Lead Free	Lead-free and RoHS-compliant

## Ordering Information

Part	Description
EZSMI-935-0216-00158-2-K2	Nitrogen93 SMARC Evaluation Kit: 7 in Display / SMARC Carrier Board / i.MX 93 / 2GB / 16GB eMMC / NX611 1MHF / Accessories

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