

# FSSM95AI (preliminary)

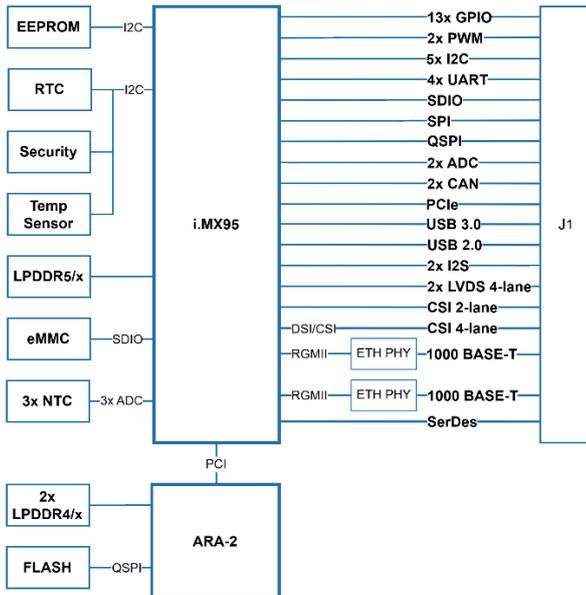
Computer-On-Module with NXP i.MX 95 & Ara-2



## Characteristics

- **NXP i.MX 95** Application Processor:  
6x Cortex®-A55 & Cortex®-M7 & Cortex®-M33, 2D/3D Arm Mali GPU, VPU, ISP, NPU (2 TOPS), Arm®TrustZone® architecture, EdgeLock® secure enclave, Energy Flex architecture
- **Functional Safety:** IEC61508 (SIL 2)
- **Security Element** (TPM 2.0 or SE050)
- **NXP Ara-2** Edge AI Processor:  
8x NNP (up to 40 eTOPS), 2x VPU, Secure Boot Processor
- High-performance HMI applications, machine vision and secure networked edge computing combined with on-board real-time AI computing and decision-making.

## Block Diagram

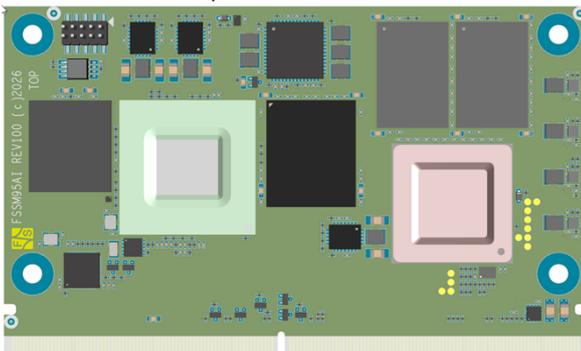


## Description

While the i.MX95 delivers impressive graphics abilities, high-performance connectivity, functional safety and advanced security, the Ara-2 is an accelerator for generative AI and Deep Learning applications, optimized for e.g.:

- Large Language Models (LLMs)
- Vision Language Action Models (VLAs)
- Agentic AI and system-level acceleration

This leads to a perfect synergy on the FSSM95AI. With the NXP's eIQ® SW development environment, one can easily deploy and optimize own AI models. Thanks to its extensive connectivity options, the module seamlessly integrates into industrial and medical environments. Robust security features such as **TrustZone**, **Secure Boot** and a **Secure Element** ensure maximum data protection.



## Operating Systems

F&S offers comprehensive software support for the operating system as well as various workshops\*.

- Linux Yocto and Debian
- QNX (under development)
- Zephyr for Cortex-M / Cortex-A
- Qt workshop
- **Secure Boot workshop**
- Asymmetric Multiprocessing workshop

## Starterkit

To facilitate the implementation of the module in the target application, F&S offers a Starterkit\*, including:

- SMARC FSSM95AI
- Baseboard
- Cable Kit
- 10" LVDS Touch-Display (1280 x 800) px
- Cooling Solution

## Order Notations

### FSSM95AI-V4I-LIN

standard, industrial:  
*t.b.d.*  
-25°C +85°C, Linux

In addition to the standard version(s) listed on our homepage, F&S also offers and supports customer-specific configurations\*\*\*.

### FSSM95AI-SKIT-LIN

Starterkit for FSSM95AI.

## Technical Data (Quickfacts)

Power Supply	5 V
Power Consumption	t.b.i. W (typ.)
Processors	NXP i.MX 95 & Ara-2
Memory	LPDDR5/x <b>up to 16 GB</b> i.MX95: eMMC <b>up to 128 GB</b> 64 Kb EEPROM Ara-2: 2x LPDDR4 <b>up to 16 GB</b> (overall) 32 Mbit Flash
SMARC Interfaces**	2x <b>Gbit LAN</b> , 1x SDIO (4 bit), 1x <b>PCIe</b> , 1x USB 3.0, 1x USB 2.0 OTG, 1x SerDes, 2x CAN-FD, 4x UART, 5x I2C, 2x SPI (1x QSPI), 2x I2S, 2x PWM, 13x GPIO, 2x ADC, JTAG
I/O voltage	1.8 V
Display	<b>LVDS</b> (2x 4-lane or 8-lane), <b>MIPI-DSI</b>
Camera	2x <b>MIPI-CSI</b> (2 & 4-lane)
RTC	PCF85263ATL
<b>Security Element</b>	<b>TPM 2.0</b> or <b>EdgeLock® SE050</b>
Temperature Range	-40°C ... +85°C
Size (L x B x H)	(82 x 50 x 5) mm

\* You can find detailed information on our website.

\*\* Other configurations possible

\*\*\* Please contact us for further information.

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