

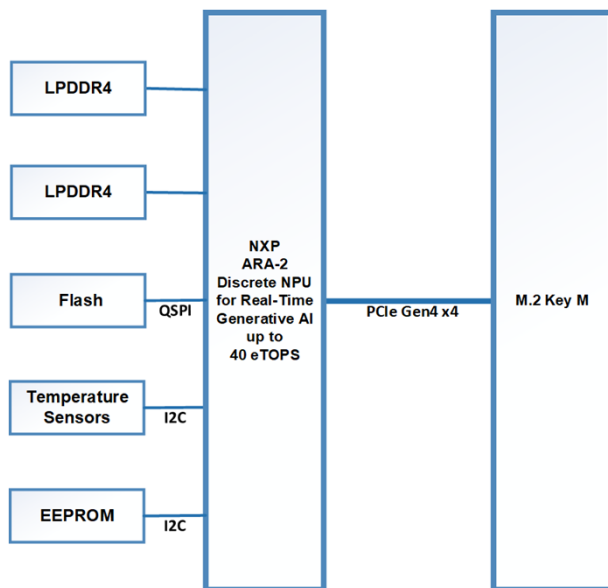
FS-M2-AI (preliminary)

M.2 AI Accelerator with NXP Ara240

Characteristics

- **NXP Ara240** Edge AI Processor:
8x NNP (up to 40 eTOPS), 2x VPU, Secure Boot & Root-of-Trust Processor
- **High-performance Edge AI acceleration:**
Real-time execution of Generative AI, LLMs, VLMs and transformer-based models
- **2x LPDDR4:**
Up to 16 GByte DRAM (64 bit) enabling large AI models and high-bandwidth data processing
- **M.2 Key M:**
2280 form factor, PCIe Gen4 with 1 to 4 lanes
- **Target applications:**
High-performance edge AI, machine vision, multimodal AI, and secure networked systems requiring real-time decision-making.

Block Diagram



Description

The FS-M2-AI is a high-performance M.2 AI accelerator designed to bring next-generation edge AI capabilities to embedded and industrial systems.

Based on the NXP Ara240 Edge AI processor (DNPU), the module delivers up to 40 eTOPS and is optimized for demanding workloads such as generative AI, large language models (LLMs), and multimodal inference.

As a scalable AI companion, it offloads compute-intensive workloads from the host processor, enabling low-latency and power-efficient real-time inference while maintaining a compact and standardized M.2 form factor.

In combination with F&S SMARC modules based on NXP i.MX 95 or i.MX8M Plus, the accelerator forms a powerful heterogeneous computing platform that combines high-performance application processing with dedicated AI acceleration. This enables advanced use cases such as machine vision, intelligent HMI, and secure edge computing with real-time decision-making.

Software Support

F&S provides comprehensive software support for rapid AI deployment and system integration.*

NXP eIQ® AI development environment for model deployment on NXP Ara240

- Support for TensorFlow, PyTorch and ONNX
- Tools for model optimization (quantization, compilation)
- Linux-based host integration
- Evaluation software, demos and benchmarking tools
- F&S engineering support and AI workshops*

Starter Kit

To facilitate module implementation in the target application, F&S offers a Starter Kit* including:

- M.2 AI Accelerator (FS-M2-AI-V11)
- SMARC module based on NXP i.MX 95 or i.MX8M Plus
- Baseboard
- Cable Kit
- Cooling Solution

Ordering Information

FS-M2-AI-V11

8GB LPDDR4
-25°C ... +85°C

FS-M2-AI-V21

2GB LPDDR4
-25°C ... +85°C

In addition to the standard versions listed on our website, F&S also offers and supports customer-specific configurations.***

FS-M2-AI-V11-SKIT

Starter Kit with SMARC 8M Plus.

Technical Data (Quick Facts)

Power Supply	3.3 V
Power Consumption	Typ. 6.5 W
Processors	NXP Ara240
Memory	2x LPDDR4 up to 16 GB (overall) 32 Mbit Flash
Interfaces	PCIe Gen3/Gen4 (up to 4 lanes)
I/O voltage	1.8 V
Form Factor	M.2 Key M 2280
Temperature Range	-40°C ... +85°C
Size (L x W x H)	(22 x 80 x 3) mm

* You can find detailed information on our website.

*** Please contact us for further information.

