AOM-2521

NXP i.MX 95 Cortex®-A55
OSM 1.2 Computer-on-Module

Preliminary

OPEN STANDARD MODULE ™

Features

- NXP Arm® Cortex®-A55 i.MX95 Six Cores up to 2.0 GHz
- 1 x Arm Cortex-M7 core & 1 x Cortex-M33 core
- Onboard LPDDR5 8 GB, 6400MT/s memory
- Neural network accelerator built-in
- 1 x 4 lane MIPI-DSI, 2 x single channel LVDS or 1 x dual channel LVDS
- 1 x USB 3.2, 2 x USB 2.0, 5 x UART, 5 x I²C, 7 x GPIO, 3 x PWM, 2 x CAN-FD
- Compact size form factor - OSM Size L (45 x 45 mm)
- Support Ycoto Linux

CE FCC RoHS COMPLIANT 2002/95/EC

Introduction

AOM-2521 OSM 1.2 Computer-on-Module is powered by NXP i.MX 95 SoC which includes Cortex-A55 Hex-core in combination with one Cortex- M7 & Cortex- M33 real time processor, and an added Neural Network accelerator and 2D/3D graphics engine. It provides USB2.0, Gigabit Ethernet, MIPI-CSI, I2C, SPI, GPIO, CAN-FD and MIPI DSI display for embedded applications.

AOM-2521 is paired with OSM carrier board for faster end product peripheral integration and time-to-market. The reference schematics and layout checklists documentations for carrier board development will be provided along with the open-sourced Linux BSP, test utilities, hardware design utilities and reference drivers.
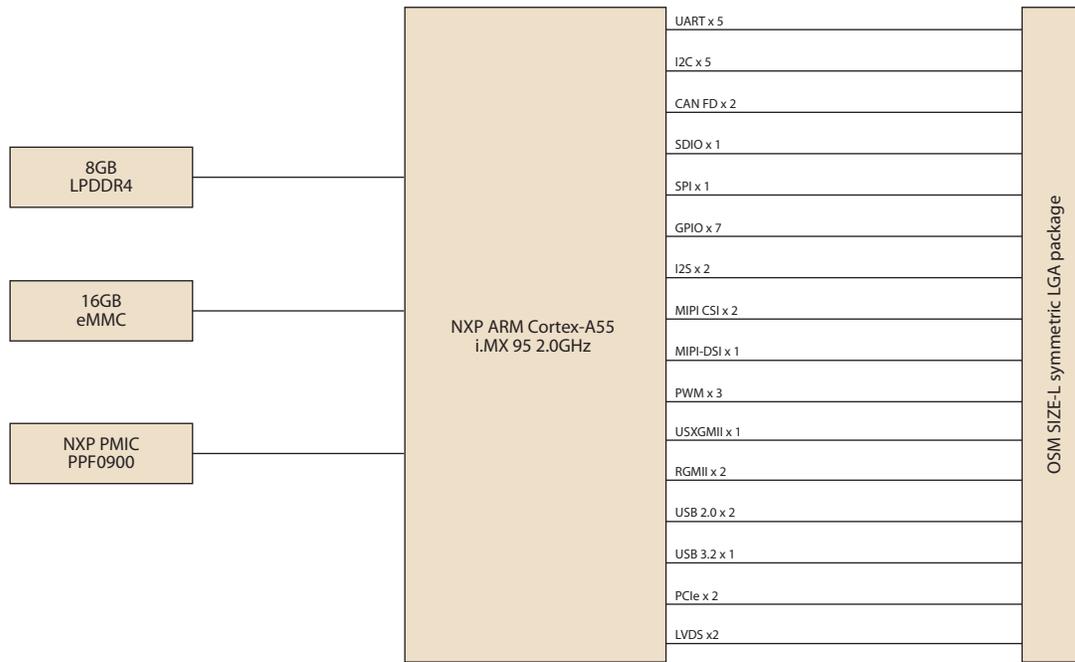
Specifications

Form Factor		OSM 1.2
Processor System	CPU	NXP i.MX95 Cortex-A55 Six core (up to 2.0GHz)
	MCU	1 x Arm Cortex-M7 core & 1 x Cortex-M33 core
Memory	Technology	LPDDR5 6400MT/s
	Capacity	On-board 8GB LPDDR5
	Flash	16 GB eMMC NAND Flash for O.S. and 8 MB QSPI NOR Flash for board information
Graphics	LVDS/MIPI DSI	1 x 4 lane MIPI-DSI 1 x Dual channel LVDS
	HDMI	- (DSI to HDMI integrated on carrier board)
	Parallel RGB	-
	VGA	-
	Graphics Engine	2D/3D Graphic Acceleration supporting 1G Pixel/s, OpenVG 1.1, Open GL ES3.1, Vulkan, and Open CL 1.2 FP.
Ethernet	Chipset	1 x NXP i.MX95 integrated USXGMII, 2 x NXP i.MX95 integrated RGMII
	Speed	1 x 10 GbE, 2 x 10/100/1000 Mbps
RTC	RTC	External RTC
Security		NXP i.MX 95 integrated Trust Zone
I/O	PCIe	2 x PCIe 3.0
	SATA	-
	USB	1 x USB 3.2, 2 x USB 2.0
	Audio	1 x I²S
	SPDIF	-
	SDIO	1
	Serial Port	2 x 4-wire UART; 3 x 2-wire UART for debug console
	SPI	1
	CAN-FD	2
	GPIO	7
	QSPI	N/A
	I²C	5 (1 dedicated for MIPI CSI, 1 dedicated for LVDS)
	Camera Input	2 x 4-lane MIPI CSI (1 share with MIPI DSI by option)
	PWM	3
	Touch	-
Power	Power Supply Voltage	5V
	Power Consumption	TBD
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	95% @ 40° C (non-condensing)
Mechanical	Dimensions (W x D)	45 x 45 mm
Operation System		Yocto Linux
Certifications		CE/FCC Class B

RISC Computing Platforms

Last updated: 3-Feb-2026

Block Diagram


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8GB
LPDDR4

16GB
eMMC

NXP PMIC
PPF0900

NXP ARM Cortex-A55
i.MX 95 2.0GHz

UART x 5
I2C x 5
CAN FD x 2
SDIO x 1
SPI x 1
GPIO x 7
I2S x 2
MIPI CSI x 2
MIPI-DSI x 1
PWM x 3
USXGMII x 1
RGMII x 2
USB 2.0 x 2
USB 3.2 x 1
PCIe x 2
LVDS x2

OSM SIZE-L symmetric LGA package
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Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB	Size	Power input	Operating Temperature
AOM-2521B6-9590NA1	i.MX 95 Hex Core	8GB	16GB	5	3	3	45 x 45 mm	5V	-40 ~ 85 °C

Development Board

Part No.	Description
AOM-DK2521-O1A1	AOM-2521 evaluation kit

Optional Accessories

Part No.	Description
1700021565-01	Debug port cable
1700023619-01	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
96PSA-A36W12W7-5	ADAPTER 100-240V 36W 12V 3A
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Cord 3P Europe (WS-010+WS-083) 183cm
1700019146	Power Cord CCC 3P 10A 250V 183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
SQF-ISDM1-16G-21C	SQF SD Card I-SD UHS-I MLC 16G (0~70°C)
SQF-ISDM1-16G-21E	SQF I-SD UHS-I MLC 16G (-40~85°C)

Dimensions

Unit: mm

45

45