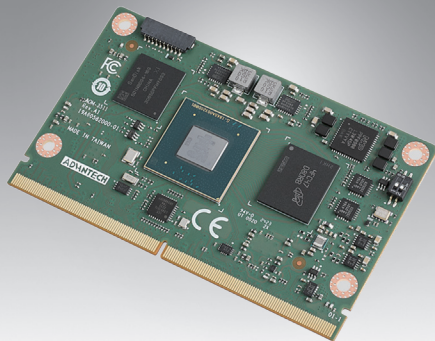


AOM-5521

NXP i.MX95 Cortex®-A55 AI-on-Module Nano

NEW



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
- 1 x 10 Gigabit Ethernet, 2 x Gigabit LAN
- 1 x 4 lane MIPI-DSI, 1 x Dual channel LVDS
- 1 x USB3.2 Gen1By1, 4 x USB2.0, 1 x USB 2.0 OTG, 4 x UART, 5 x I2C, 14 x GPIO, 2 x PCIe3.0, 2 x CAN-FD
- Neural network accelerator built-in
- Supports Yocto Linux



Introduction

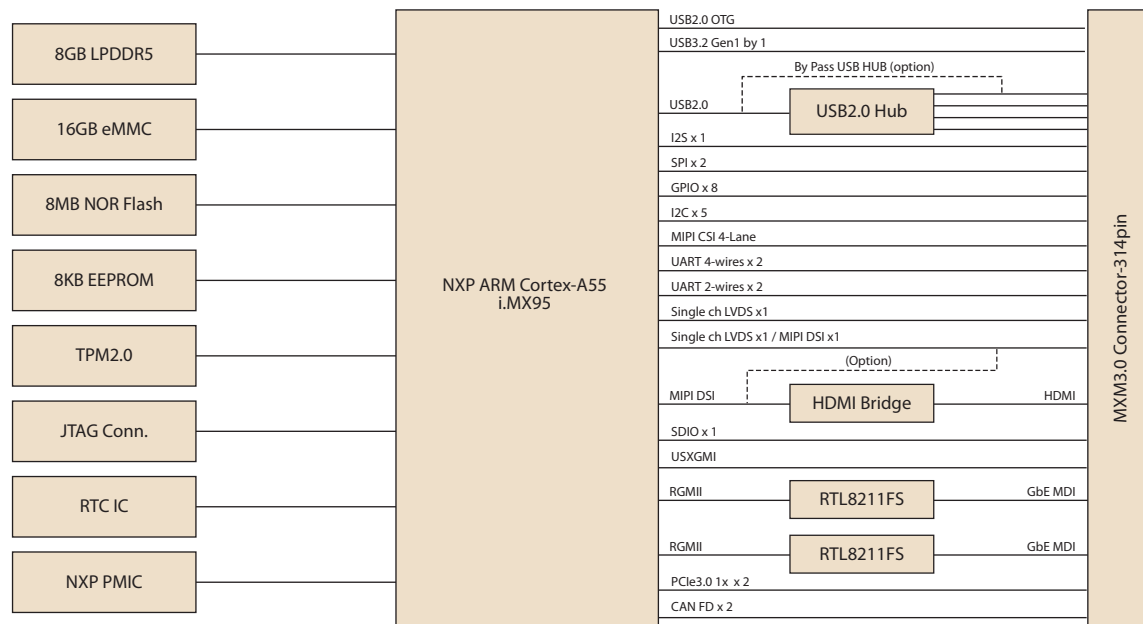
The AOM-5521 stands as a state-of-the-art AI-on-Module, incorporating the robust NXP i.MX95 System-on-Chip (SOC). This SOC features an impressive configuration, with up to six Arm Cortex-A55 cores, accompanied by a dedicated Cortex-M7 and M33 real-time processor, and an added Neural Network accelerator. The AOM-5521 provides extensive connectivity options, including USB 2.0, USB 3.2 Gen1By1, 10 Gigabit Ethernet, MIPI-CSI, PCI Express, as well as both a dual-channel LVDS and a 4-lane MIPI-DSI Display interface. These remarkable features position the AOM-5521 as an exceptional choice for a wide variety of embedded applications.

AOM-5521 is paired with SOM-DB2510 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		AOM Nano / SMARC 2.2
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
NPU	NPU	Neural Network accelerator
Graphics	LVDS/MIPI DSI	1 x 4 lane MIPI-DSI (Optional) 1 x Dual channel LVDS
	HDMI	1 x HDMI (Optional)
	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.
	H/W Video Codec	Decoder: H.265, H.264, 4Kp30 Encoder: H.265, H.264, 4Kp30
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	Yes
Debug port		JTAG
WatchDog Timer		Yes (1-6553s, power on/off 4s)
Security		TPM 2.0
I/O	PCIe	2 x PCIe 3.0
	SATA	-
	USB	1 USB3.2 Gen1By1
		4 USB 2.0
		1 USB 2.0 OTG
	Audio	2 x I²S
	SPDIF	-
	SDIO	1
	Serial Port	2 x 4-wire UART and 2 x 2-wire UART
	SPI	2
	CAN	2 x CAN-FD
	GPIO	14
	I²C	5
	Camera Input	1 x 4-lane MIPI CSI
	System Bus	-
Power	Power Supply Voltage	Fixed 5V DC source
	Power Consumption	TBD
Environment	Operating Temperature	0 ~ 60 °C/ -40 ~ 85 °C
	Operating Humidity	95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 50 mm
Operation System		Yocto Linux
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	10 GbE	GbE	USB3.2 Gen1By1	USB 2.0	Display	I2S	I2C	SPI	Operating Temperature
AOM-5521B6-9590NA1	i.MX95 Hexa-cores	8GB	16GB	4	1	2	1	5	1 x MIPI DSI (Opt.)	2	5	3	-40 ~ 85 °C
AOM-5521C6-9590NA1	i.MX95 Hexa-cores	8GB	16GB	4	1	2	1	5	1 x Dual ch LVDS	2	5	3	0 ~ 60 °C

* DRAM and eMMC of other capacity are available through project-based support. Please contact sales for details.

Development Board

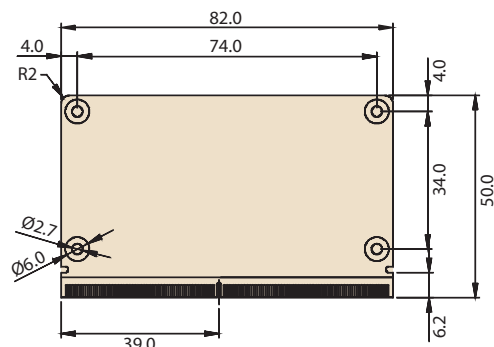
Part No.	Description
SOM-DB2510-R0A1	Carrier Board

Optional Accessories

Part No.	Description
1701200220	Debug port cable
1700019474	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
TBD	Heat Spreader
TBD	Semi Heat Sink (0 ~ 60 °C)
TBD	Semi Heat Sink (-40 ~ 85 °C)
96PSA-A36W12R1-3	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)
EWM-W163M201E	802.11 a/b/g/n/ac, QCA6174A, 2T2R, w/BT4.1, M.2 2230
1750008717-01	Dipole Ant. D.B 2.4/5G WIFI 3dBi SMA/M-R BLK
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm
EWM-C117FL06E*	LTE 4G, 3G WCDMA/DC-HSPA+, 2G module, MPC1-L280H
1750008303-01	Antenna AN0727-64SP6BSM
1750006009	Antenna Cable SMA (F) to MHF 1.32 25cm

Dimensions

Unit: mm



*Please contact us for suggesting suitable cellular module for your region.