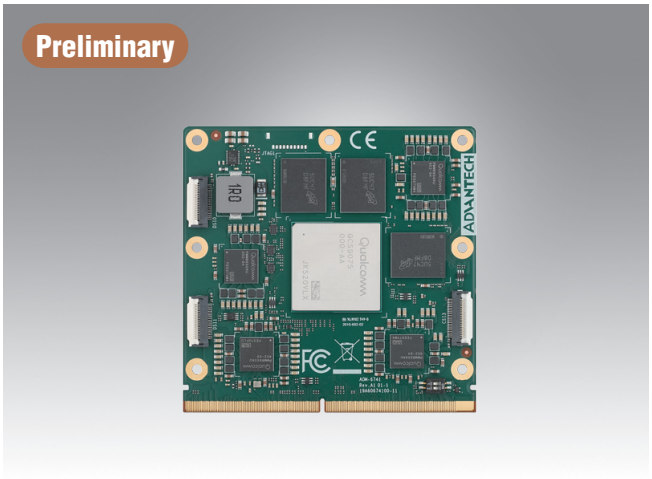
AOM-6741

Qualcomm IQ9 Series AI On Module 1.0 with SMARC Form Factor and MXM 3.0 Connector



Features

- Qualcomm Kryo™ Gen6 8 cores up to 3.2 GHz
- Qualcomm Adreno 663 GPU
- Qualcomm 2 Hexagon Tensor Processors up to 100 INT8 TOPS
- Onboard LPDDR5 8400 MT/s up to 36G
- 4x DP and 2x MIPI-DSI for Displays
- 4x MIPI-CSI with Qualcomm® Spectra™ ISP
- 2x USB3.2 Gen2, 3x USB2.0, 1x PCIe Gen3.0 x4, 1x PCIe Gen3.0 x 2, 2x 2.5G Ethernet
- Onboard 128GB UFS 3.1 Gear4
- Supports Ubuntu 24.04
- 12V DC input via MXM 3.0 (not SMARC-standard 5V)

Introduction

The AOM-6741 is powered by the Qualcomm® IQ-9075 SoC with octa-core Kryo Gen6 CPU, Adreno™ 663 GPU, 5th-gen VPU, and up to 100 TOPS AI performance. It supports up to 36 GB LPDDR5 (ECC), onboard UFS 3.1, PCIe Gen3 (1 x4 + 1 x2), 2 x USB 3.2 Gen2, 3 x USB 2.0, 2 x 2.5GbE, 4 x 4-lane MIPI-CSI, 4 x DP, 2 x MIPI-DSI, and other embedded I/O. Three MIPI-CSI ports and both MIPI-DSI ports are on on-module FPC connectors.

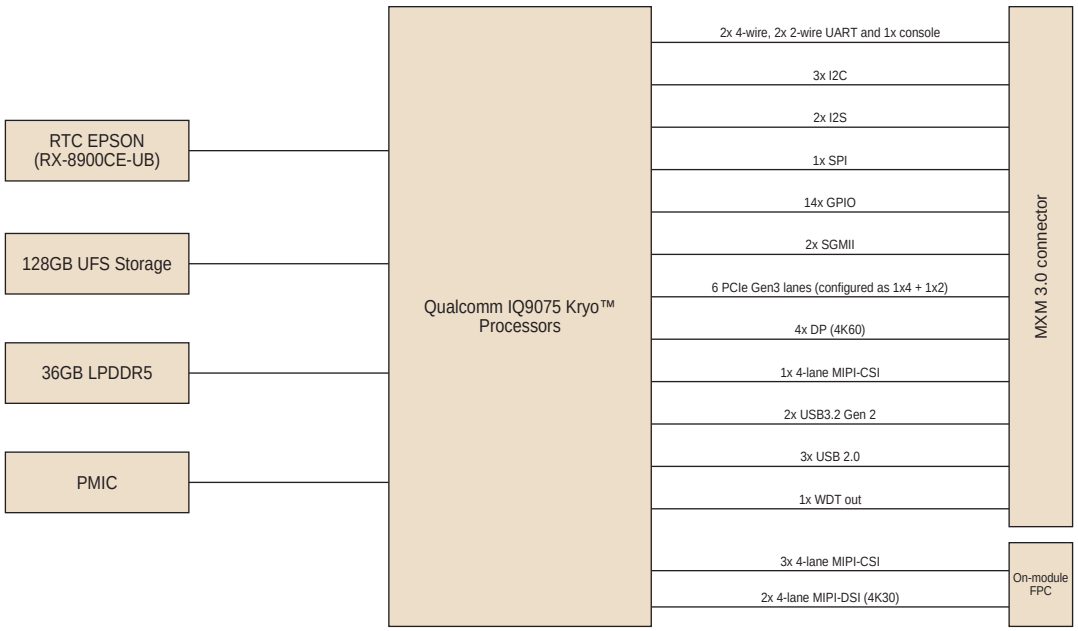
Important Notice: AOM-6741 uses the SMARC 82 x 80 mm form factor and MXM 3.0 connector but is not a standard SMARC module. Its input voltage is 12V nominal (11.4–12.6V), not the 3.0–5.25V defined by SMARC 2.2, and several pin assignments differ. Do not use AOM-6741 on a standard SMARC carrier board, and do not install standard SMARC modules on a carrier board designed for AOM-6741; hardware damage may result. Carrier-board designs must follow the AOM-6741 SMARC Carrier Design Guide.

Specifications

Form Factor		AOM 1.0, SMARC form-factor based
Processor System	CPU	Qualcomm IQ9075 Kryo™ 8 cores. up to 3.2 GHz
Memory	Technology	LPDDR5 up to 8400MT/s
	Capacity	On-board up to 36GB
	Flash	128GB UFS Storage
Graphics	LVDS/MIPI DSI	2x 4-lane MIPI-DSI (4K30), via on-module FPC
	HDMI	-
	eDP	-
	DP	4 x DP (4K60)
	Graphics Engine	Adreno 663 GPU Adreno 5th Gen. VPU 8K@60 fps
Ethernet	Chipset	Integrated SGMII
	Speed	2x 2.5 Gigabit Ethernet Controller
RTC	RTC	1
Security		Qualcomm® Trusted Execution Environment (TEE) v5.3
I/O	PCIe	1 x PCIe 3.0 x4, 1 x PCIe 3.0 x2
	SATA	-
	USB	2 x USB 3.2 Gen2 3 x USB2.0
	Audio	2 x I2S
	SPDIF	-
	SDIO	-
	Serial Port	2x 4-wire UART, 2x 2-wire UART
	SPI	1
	CAN	-
	GPIO	14
	I^2C	3
	Camera Input	4x 4-lane MIPI-CSI (1 via MXM 3.0, 3 via on-module FPC)
	PWM	-
	Touch	-
	Keypad	-
Power	Power Supply Voltage	12V DC (11.4–12.6V) via MXM 3.0 VDD_IN pins
	Power Consumption	TBD
Environment	Operating Temperature	-25~70 °C(Unthrottled)
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	82 x 80 mm
Operation System		Ubuntu 24.04
Certifications		CE/FCC Class B

All product specifications are subject to change without notice.

Block Diagram



Ordering Information

Part No.	CPU	Memory	Storage	Display	Camera	LAN	USB	Size	Operating Temperature
AOM-6741W8-9075NA1	IQ-9075	36GB	128GB	4 x DP (4K60) 2 x 4 lane MIPI DSI (4K30)*	4x MIPI-CSI*	2x 2.5G	2 USB3.2 3 USB2.0	82 x 80 mm	-25~70 °C (Unthrottled)

* 1x MIPI-CSI via MXM 3.0; 3x MIPI-CSI and 2x MIPI-DSI via on-module FPC connectors.

Development Board

Part No.	Description
AOM-DB6500	AOM Carrier Board

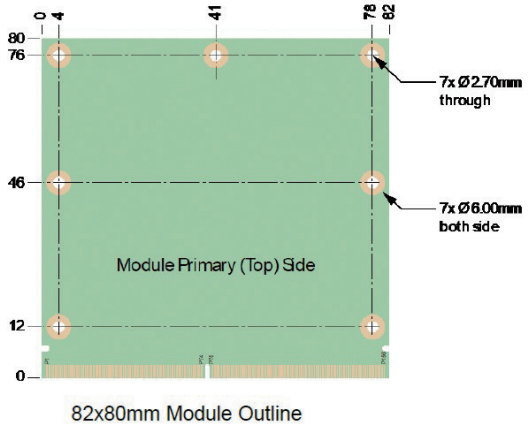
Optional Accessories

Part No.	Description
1700021565-01	Debug port cable
1700019474	D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c
TBD	Heatsink with a fan
TBD	Semi Heat Sink
TBD	Screw for Heat Spreader and Semi Heat Sink
96PSA-A150W19P4-4	ADP A/D 100-240V 150W 19V C14 TERMINAL BLOCK 4P
1700000237	Power Cord PSE 3P 12A 125V 183cm (US)
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

Note: Power adapter and power cords are for use with the AOM-DB6500 carrier board. AOM-6741 module input is 12V DC.

Dimensions

Unit: mm



82x80mm Module Outline

Note: AOM-6741 is not a standard SMARC module. VDD_IN is 12V nominal (11.4–12.6V), not the 3.0–5.25V of SMARC 2.2, and several pin assignments differ. Do not use AOM-6741 on a standard SMARC carrier board, and do not install standard SMARC modules on a carrier board designed for AOM-6741; hardware damage may result. Carrier-board design must follow the AOM-6741 SMARC Carrier Design Guide.