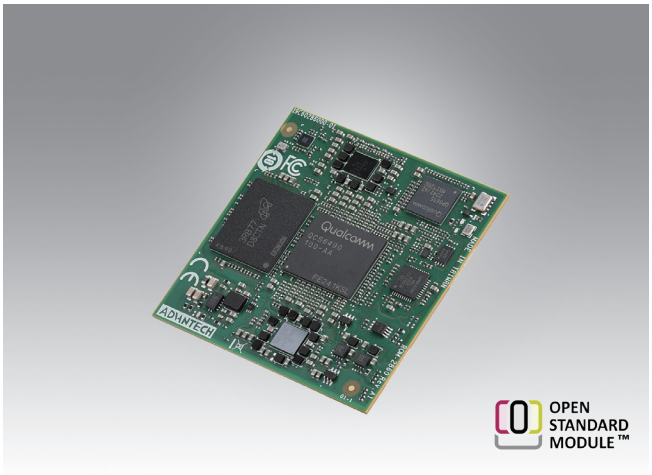
AOM-2721

Qualcomm QCS6490
OSM 1.1 Computer-on-Module



Features

- Qualcomm Arm® v8 Cortex® Gold plus up to 2.7 GHz
- 3x Arm v8 Cortex® Up to 2.4GHz
- Onboard LPDDR5 8GB, 8533MT/s memory
- 1x MIPI-DSI x4, 1x DP and 1x eDP1.4 for Displays
- 1x USB3.2 Gen1, 1x USB2.0, 3x PCIe Gen3.0 x1, 2x I2S, 2x 4wire UART, 3x SPI, 39x GPIO, 4x I2C, 2x MIPI-CSI x4
- 1x UFS, 1x eMMC and 1x 4-bit SDIO for storages
- Support Windows 11 and Ubuntu

Introduction

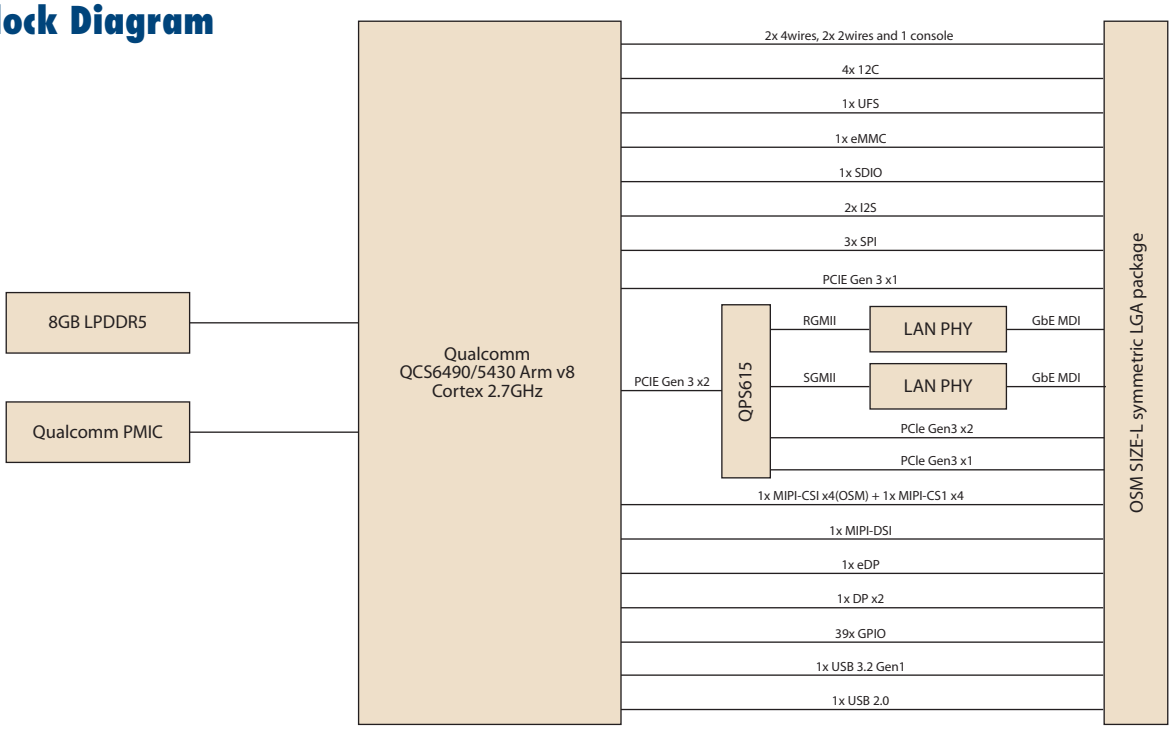
Advantech AOM-2721 OSM 1.1 Computer-on-Module is powered by Qualcomm QCS6490/5430 SoC which includes up to Arm v8 Cortex® in combination with Andreo GPU 643 and Andreo VPU 633 graphics engine. It provides PCIe, USB 3.2, Giga Ethernet, MIPI-CSI, I2C, SPI, GPIO, PWM and eDP, DP, MIPI-DSI display for embedded applications.

AOM-2721 is paired with Advantech 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 Windows 11 and Ubuntu, test utilities, hardware design utilities and reference drivers.

Specifications

Form Factor		OSM 1.1	
Processor System	CPU	QCS6490 Gold plus 2.7GHz + Gold 3 cores 2.4GHz	QCS5430 2x A78 2.1 GHz + 4x A55 1.8GHz
Memory	Technology	LPDDR5 8533MT/s	LPDDR5 3200 MT/s
	Capacity	On-board 8GB	
	Flash	-	
Graphics	LVDS/MIPI DSI	1x 4LAN MIPI-DSI: 1920x1080 @ 60Hz (Share eDP port)	1x 4LAN MIPI-DSI: 1920x1080 30Hz (Share eDP port)
	HDMI	-	
	eDP	1x eDP1.4: 1920x1080 @ 60Hz (Share MIPI-DSI port)	1x eDP1.4: 1920x1080 30Hz (Share MIPI-DSI port)
	DP	1x DP 2lane: 1920x1080 @ 60Hz	
	Graphics Engine	Andreo VPU 633 4K30 encode/Decode Andreo GPU 642L, OpenGL ES3.2/OpenCL 2.0	
Ethernet	Chipset	1x RGMII and 1x SGMII	
	Speed	10/100/1000 Mbps	
RTC	RTC	1	
Security		Qualcomm® Trusted Execution Environment (TEE) v5.3	
I/O	PCIe	1 x PCIe Gen 3 x2(QPS615), 1 x PCIe Gen 3 x1(QPS615), 1 x PCIe Gen3 x1	
	USB	1x USB 3.2 Gen1 1x USB2.0	
	Audio	2x I²S	
	SPDIF	-	
	SDIO	1x 4-bit for SDIO, 1x 8-bit for eMMC	
	Serial Port	2x 4-wire UART, 2x 2-wire and 1 console	
	SPI	3	
	CAN	-	
	GPIO	39	
	I²C	4	
	Camera Input	1x 4-Lane MIPI-CSI and 1x 4-Lane MIPI-CSI (Via vender reserved pins of OSM)	
	PWM	-	
Power	Power Supply Voltage	5V	
	Power Consumption	7.58 Watts	
Environment	Operating Temperature	-20 ~ 70 °C with 0.7 m/s air flow	
	Operating Humidity	95% @ 40° C (non-condensing)	
Mechanical	Dimensions (W x D)	45 x 45 mm	
Operation System		Windows On Arm 11 IoT Enterprise, Yocto and Ubuntu	
Certifications		CE/FCC Class B	

Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	UART	LAN	USB	Display	SD	I2S	I2C	SPI	Size	Power input	Operating Temperature
AOM-2721WO-RHA1E	QCS6490	8GB	-	5	2	1 USB3.2 1 USB2.0	1x MIPI-DSI 1x eDP, 1x DP	1	2	4	3	45 x 45 mm	5V	-20 ~ 70 °C
AOM-2721W8-5430A1	QCS5430	8GB	-	5	2	1 USB3.2 1 USB2.0	1x MIPI-DSI/ eDP, 1x DP	1	2	4	3	45 x 45 mm	5V	-20 ~ 70 °C

Development Board

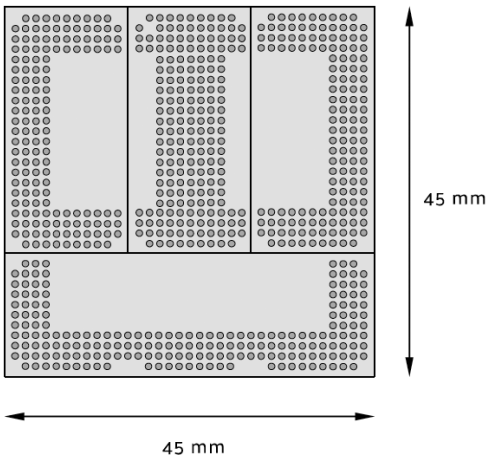
Part No.	Description
ROM-ED92	OSM Carrier Board

Optional Accessories

Part No.	Description
1700021565-01	Debug port cable of ROM-ED92
1970005968T001	H.S R2 Qualcomm QCS6490 11(SYS)W 59.6x45x18mm SC
96LCM-G070WV40L-A0	AUO 7" LCD, 400nits, 800x480
1700021883-01	LVDS cable of AUO 7" of ROM-ED92
1700021882-01	Back light cable of AUO 7" of ROM-ED92
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
AIW-170BQ-001	Qualcomm WiFi6E,BT5.3 M.2 2230 E key
TBD	Quectel_RM520N 5G Sub-6 GHz M.2 module

Dimensions

Unit: mm



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

Embedded Linux Support and Design-in Services

Hardware Certified Ubuntu and Yocto with Eco Partner Services

Linux is the most popular embedded OS for transportation, outdoor services, factory automation, and mission critical applications. Its open source and kernel reliability features ease security updates, and make it particularly adaptable to new AI and Edge computing technology. Advantech has cooperated with Canonical and other software partners to provide hardware certified Ubuntu image and Yocto BSP as Linux offerings. The Advantech, Embedded Linux, and Android Alliance (ELAA) delivers local software services and consultation.

Features

Certified OS and BSP

- Platform compatibility tests
- Preloaded functional driver and software stacks

Licensed Services

- License authorized Canonical delivers 10-years of bug fixes and security updates
- In-house bundled service

Numerous AI and Edge Resources

- Containerized technology for service provision and deployment
- AI resources from Caffe, TensorFlow, and mxnet

Local Partner Alliance

- Embedded Linux and Android Alliance (ELAA)

WISE-DeviceOn

Massive IoT Device Management Utility

IoT deployment and management typically involves numerous disparate devices installed on multiple sites. These devices require effective monitoring, managing, and tracking. Advantech's easy-to-use WISE-DeviceOn interface enables users to remotely monitor device health, troubleshoot problems, and send software/firmware updates over-the-air (OTA). In sum, DeviceOn empowers quick real-time responsiveness to emerging problems.

Features

Comprehensive Management	Remote Access	Efficient Operations
• Devices status • Peripherals/firmware • Open for extension	• Real-time monitoring • Remote controls • Troubleshooting	• Zero-touch on-boarding • OTA updates • Batch control

Product Highlights

SOM-6883
High-performance 11th Gen Intel® COMe Type 6 Module

MIO-5375
Compact 11th Gen Intel® Outdoor Focused 3.5" SBC

EPC-B5587
10th Gen Intel® Xeon® based Edge server

EPC-R3220
Arm based IoT Edge Gateway