

AOM-2721 Development Kit

Qualcomm QCS6490 OSM 1.1 Windows On Arm Development Kit

Preliminary



Qualcomm Windows 11



Features

- Qualcomm 8 Kryo cores up to 2.7GHz
- Onboard LPDDR5 8GB, 8533MT/s memory
- Onboard 128GB UFS and 128GB eMMC
- 1x 2ch. LVDS, 1x DP and 1x HDMI for displays
- 2x USB3.2 Gen1, 2x USB2.0, 2x PCIe Gen3.0 x1, 2x 4wire UART, 1x SPI, 16x GPIO, 1x I2C, 2x MIPI-CSI x4
- 1x Micro SD and 1x Nano SIM
- Support Windows 11 IoT Enterprise

Introduction

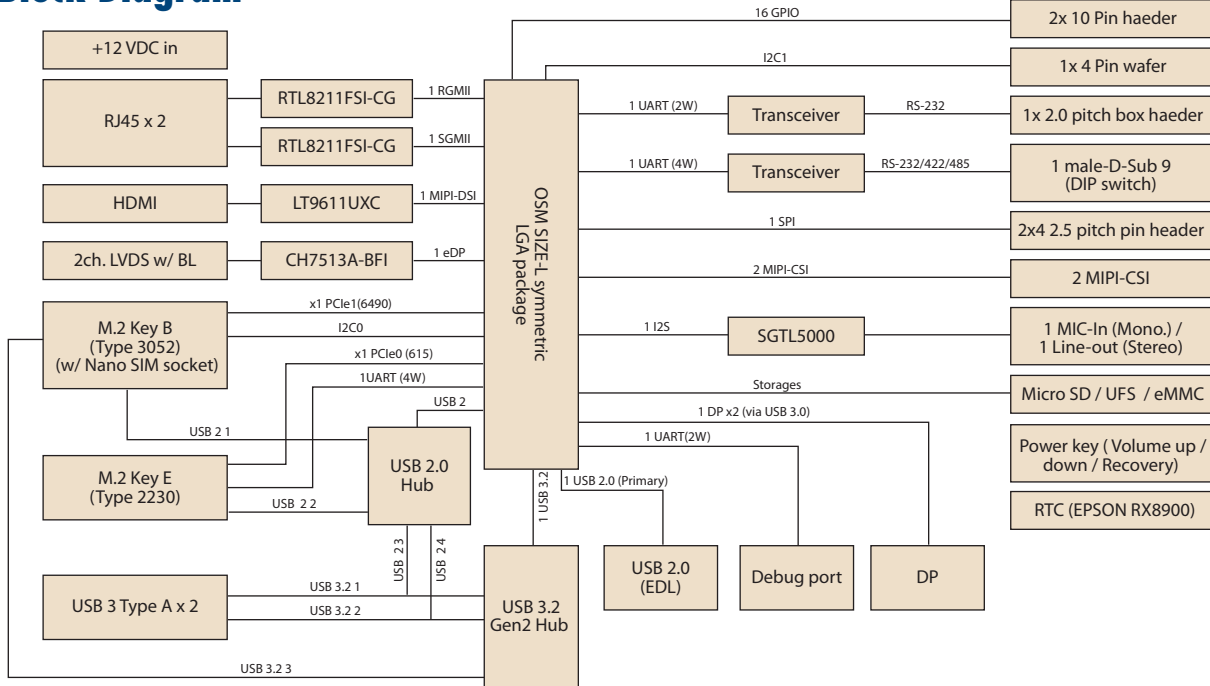
Advantech AOM-DK2721 is powered by Qualcomm QCS6490 SoC which includes up to Kryo 8 cores up to 2.7GHz in combination with Andreno GPU 643 and Andreno VPU 633 graphics engine. It provides PCIe, USB 3.2, Giga Ethernet, MIPI-CSI, I2C, SPI, GPIO, and HDMI, DP, 2ch. LVDS display for embedded applications.

ROM-2860 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, test utilities, hardware design utilities and reference drivers.

Specifications

Form Factor		OSM 1.1
Processor System	CPU	QCS6490 Kryo 8 Cores up to 2.7GHz
Memory	Technology	LPDDR5 8533MT/s
	Capacity	On-board 8GB
	Flash	On-board 128GB UFS and 128GB eMMC
Graphics	LVDS/MIPI DSI	1x 2ch. LVDS: 1920x1080 @ 60Hz (Share HDMI port)
	HDMI	1x HDMI 1920x1080 @ 60Hz (Share 2.ch LVDS port)
	eDP	-
	DP	1x DP 2lane: 1920x1080 @ 60Hz
	Graphics Engine	Andreno VPU 633 4K30 encode/Decode Andreno GPU 643, OpenGL ES3.2/OpenCL 2.0
Ethernet	Chipset	2x RTL8211FSI-CG
	Speed	10/100/1000 Mbps
RTC	RTC	1
Security		Qualcomm® Trusted Execution Environment (TEE) v5.3
I/O	PCIe	2x PCIe Gen 3.0 x1 to M.2 Key B and M.2 Key E
	SATA	-
	USB	2x USB 3.2 Gen1 2x USB2.0
	Audio	1x Mic.-in and 1x Line-out
	SPDIF	-
	SDIO	1x Micro SD
	Serial Port	2x 4-wire UART, 2x 2-wire and 1 console
	SPI	1
	CAN	-
	GPIO	16
	I2C	1
	Camera Input	2x 4-Lane MIPI-CSI and
	Expansions	1x M2. Key B Type 3042/52 slot
		1x M2. Key E Type 2230 slot
Power	Power Supply Voltage	12V
	Power Consumption	11.8 Watts (ROM-2860 + ROM-ED92)
Environment	Operating Temperature	-20 ~ 70 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	165 x 115 x 25 mm
Operation System		Windows 11 IoT Enterprise
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

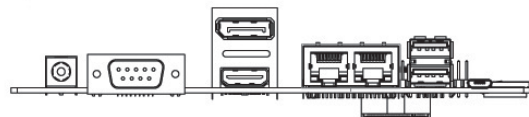
Part No.	CPU	Memory	Flash Memory	UART	LAN	USB	Display	SD	SIM	I2C	SPI	Size	Power input	Operating Temperature
AOM-DK2721-FAA1E	QCS6490	8GB	128GB	5	2	2 USB3.2 2 USB2.0	1x 2ch. LVDS 1x HDMI, 1x DP	1	1	2	1	165 x 115 mm	12V	-20 ~ 70 °C

Packing List

Part No.	Description
AOM-2721WO-RHA1E	OSM w/ Qualcomm QCS6490
ROM-ED92	OSM Carrier Board
1700021565-01	Debug port cable of ROM-ED92
ROM-EG51	Audio Codec Board
1970005968T001	H.S R2 QC QCS6490 11(SYS)W 59.6x45x18mm SC
1700026878-01	Microphone cable
1700031429-01	Line out
1700023619-01	M cable USB-A 4P(M)/micro USB-B 5P(M) 10
968QW1124ELOX0	Windows On Arm image of AOM-2721
96PSA-A36W12R1-3	ADAPTER 100-240V 36W 12V 3A
1700008921	Power Cord 3P PSE 183cm

Dimensions

Unit: mm

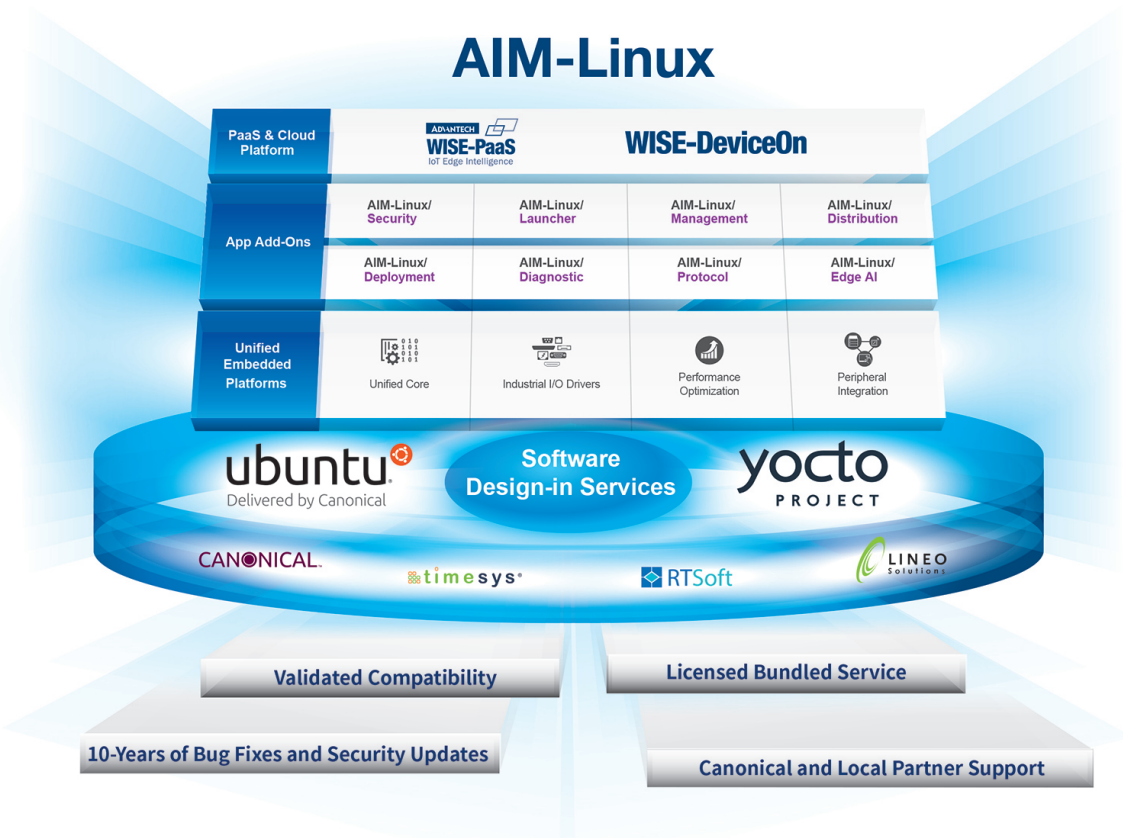


*Please contact us for suggesting suitable cellular module for your region.

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	Licensed Services	Numerous AI and Edge Resources	Local Partner Alliance
<ul style="list-style-type: none">Platform compatibility testsPreloaded functional driver and software stacks	<ul style="list-style-type: none">License authorized Canonical delivers 10-years of bug fixes and security updatesIn-house bundled service	<ul style="list-style-type: none">Containerized technology for service provision and deploymentAI resources from Caffe, TensorFlow, and mxnet	<ul style="list-style-type: none">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

- Devices status
- Peripherals/firmware
- Open for extension

Remote Access

- Real-time monitoring
- Remote controls
- Troubleshooting

Efficient Operations

- 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