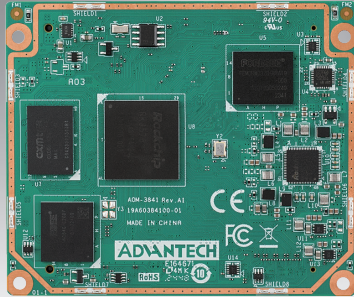


AOM-3841

Rockchip RK3576 Cortex-A72 and A53 AI-on-Module RTXe

NEW



Features

- Rockchip RK3576 Arm Quad Cortex-A72 2.2GHz and Quad Cortex-A53 2.0 GHz
- Onboard 4/8 GB LPDDR4 memory and eMMC / UFS
- Supports HDMI, DP and 1 x 4 lane MIPI-DSI
- 2 x GMAC, Type C, 1 x PCIe 2.1/SATA 3.1, 1 x PCIe 2.1/SATA 3.1/USB3.2 Gen1, SDIO, 3 x MIPI-CSI, 3 x UART
- Supports Linux Debian12 and Android15



Introduction

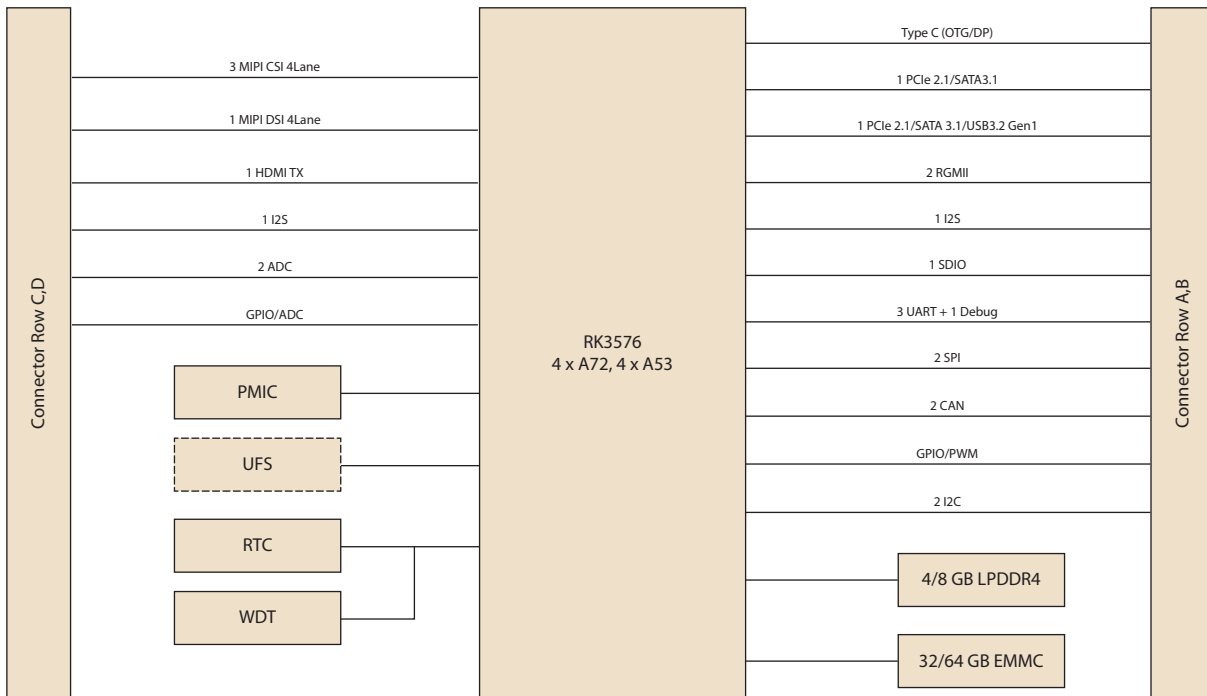
The Advantech AOM-3841 RTXe AI-on-Module is powered by a Rockchip RK3576 SoC which includes Quad Arm Cortex-A72 and Quad Cortex-A53 processors, 6Tops NPU and a high-performance Arm Mali-G52 MC3 3D graphics engine. It also provides a rich display interface supported with HDMI, DP, MIPI DSI to meet different display requirements. AOM-3841 offers various high-speed interfaces, including 1 x PCIe 2.1/SATA 3.1, 1 x PCIe 2.1/SATA 3.1/USB3.2 Gen1, 2 x GMAC, and 3 x 4 Lane MIPI-CSI. These interfaces can meet a variety of high-rate transmission applications, Wi-Fi 6, and wireless 5G connectivity targeted at big data and other industrial applications.

The AOM-3841 is paired with the Advantech AOM-DB3500 RTXe development board for faster end-product peripheral integration and time-to-market. The reference schematics and layout checklist documentation 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		RTXe
Processor System	CPU	Rockchip RK3576 Arm Quad Cortex-A72 2.2 GHz and Quad Cortex-A53 2.0 GHz
	MCU	1 x Cortex-M0
	NPU	Up to 6.0 Tops. Support: TensorFlow, Caffe, Tflite, Pytorch, Onnx NN, Android NN, etc.
Memory	Technology	LPDDR4
	Capacity	Onboard 4/8 GB LPDDR4
	Flash	32/64 GB eMMC(default) or UFS
Graphics	HDMI	1 x HDMI 2.0
	DP	1 x DP1.4(USB3.0 OTG/DP1.4 Alt of TYPEC)
	MIPI-DSI	1 x MIPI-DSI
	Graphics Engine	Arm Mali-G52 C3 GPU, high-performance OpenGL ES 1.1, 2.0 and 3.2, OpenCL 2.0, Vulkan 1.1, etc.
Ethernet	Chipset	-
	GMAC	2 x RGMII, 10/100/1000 Mbps
RTC	RTC	Yes
WatchDog		HW watchdog by MCU, 0~65535s
I/O	PCIe/SATA/USB	1 x PCIe 2.1/SATA 3.1
		1 x PCIe 2.1/SATA 3.1/USB3.2 Gen1
		1 x USB3.0 OTG (USB3.0 OTG/DP1.4 Alt of TYPEC)
	Audio	2 x I ² S
	SPDIF	-
	SDIO	1
	Serial Port	1 x 2-wire UART for debug 1 x 2-wire UART 2 x 4-wire UART
	SPI	2
	CAN	2
	GPIO	1 x GPIO/PWM
	I ² C	2
Camera Input	3 x MIPI CSI (4 lane)	
ADC	2	
Power	Power Supply Voltage	4.75 V ~ 5.25 V DC source
	Power Consumption	4.92W @ 5V (Max)
		0.76W @ 5V (Idle) 0.08W @ 5V (Sleep)
Environment	Operating Temperature	0°C ~ 70°C/-40 ~ 85°C
	Operating Humidity	40°C @ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	77 mm x 65 mm
Operating System		Linux Debian12 and Android15
Certifications		CE/FCC Class B

Block Diagram



Ordering Information

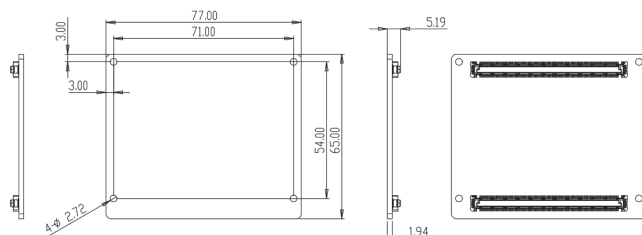
Part No.	CPU	Memory	Flash Memory	UART	GMAC	PCIe 2.1/SATA 3.1/USB3.2 Gen1	Display	SD	I ² C	SPI	Operating Temperature
AOM-3841C8-3576AA1	RK3576	4 GB	32 GB	1 x Debug 3 x UART (1 x 2-wire, 2 x 4-wire)	2	1 x PCIe 2.1/SATA3.1 1 x PCIe 2.1/SATA 3.1/USB3.2 Gen1	1 x HDMI 1 x DP 1 x MIPI DSI	1	2	2	0°C ~ 70°C
AOM-3841W8-3576BA1	RK3576J	4GB	64GB	1 x Debug 3 x UART (1 x 2-wire, 2 x 4-wire)	2	1 x PCIe 2.1/SATA3.1 1 x PCIe 2.1/SATA 3.1/USB3.2 Gen1	1 x HDMI 1 x DP 1 x MIPI DSI	1	2	2	-40~85°C

*DDR and eMMC of other capacity is available through project-based support. Please contact us for details.

Development Board

Part No.	Description
AOM-DB3500-SWNB1	Development board for AOM-3841

Dimensions



Optional Accessories

Part No.	Description
1970006141N001	Heat spreader
1970006140T001	Heat sink for 0~70°C
1970006106T001	Heat sink for -40~85°C
96PSA-A60W24T2-3	Adapter 100-240V 60W 24V
1702002605	Power cord 3P EU 10A 250V 183cm
1702031801	Power cord 3P UK 10A 250V 183cm
1702002600	Power cord 3P UL 10A 125V 180cm
1700000237	Power cord 3P PSE 183 cm
1700009652	Power cord CCC 3P 10A 250V 183cm
AIW-162BS-GI1	WiFi/BT Broadcom AP6275P, PCIe+UART M.2 Key-E
1751000651-01	Dipole Ant. WiFi 6E SMA/M-R BLK
1751000649-01	Cable Ant. SMA/F MHF4L/113
968DD00342	5G Module, RM520NGLAA M.2 Key-B PCIe
1751000625-01	Cable Ant. SMA/F MHF4L/113 BLK
1750009372-01	Ant.SMA/M 90/180 5G BLK 167mm

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