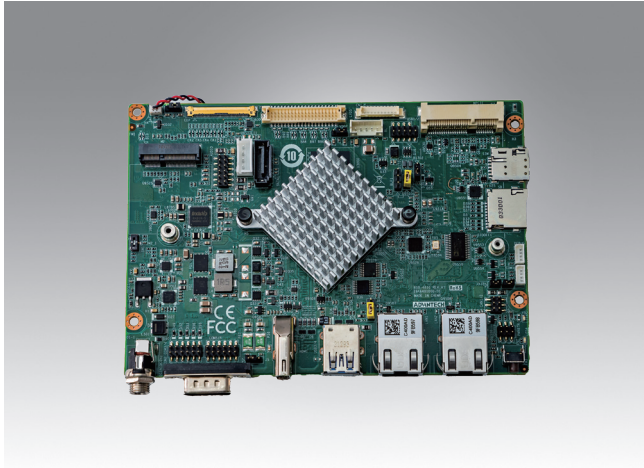


RSB-4810

Rockchip Arm Cortex-A55 RK3568 3.5" SBC



Features

- Rockchip RK3568 Arm Quad Cortex-A55, up to 2.0GHz
- Built-in NPU with processing performance of up to 1.0 TOPS
- Onboard 2/4GB LPDDR4 memory and 16/32GB eMMC
- Supports 1 x HDMI 2.0 4K, 1 x LVDS/MIPI-DSI, and 1 x eDP
- Supports 4K H.264/H.265 video decoder
- Provides 2 x GbE, 1 x SATA 3.0, 6 x UART, 2 x USB 3.0, 2 x USB 2.0, 1 x USB OTG, and 2 x CAN
- Provides a M.2 E Key with PCIe 3.0/USB 2.0/SDIO/UART signal for Wi-Fi 5/6 Modules, and a MINI-PCIe with PCIe 3.0/USB 2.0 signal for LTE/5G Modules
- Supports Linux Debian10 and Android12



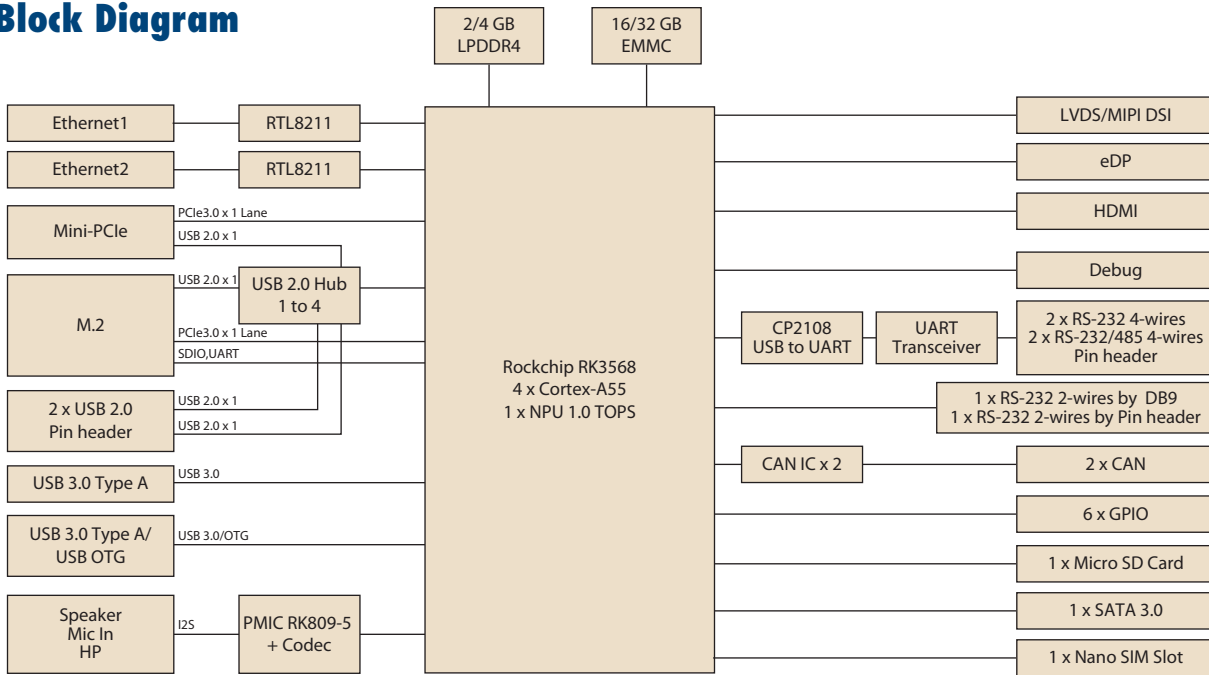
Introduction

Advantech's RSB-4810 is an Arm-based 3.5" single board computer (SBC) powered by Rockchip RK3568 SOC. It leverages 4 x Arm Cortex-A55 cores, a 1.0 TOPs NPU, and a Mali-G52 graphics engine. RSB-4810 provides USB 3.0, PCIe 3.0, SATA 3.0, 2 x Gigabit Ethernet ports, a single channel LVDS (shared with MIPI-DSI), 6 x UART, and 2 x CAN for embedded applications. RSB-4810 also features Mini-PCIe, M.2 E-Key, and SIM card slot for Wi-Fi 6, BT, 5G/LTE, and AI acceleration modules. These features make Advantech's RSB-4810 an ideal solution for entry level edge AI computing in AIoT applications.

Specifications

Form Factor		3.5" SBC	
Processor	CPU	Rockchip RK3568 Arm Quad Cortex-A55, up to 2.0GHz	
	Technology	LPDDR4 1333MHz	
Memory	NPU	Up to 1.0 Tops Supports INT8/INT16 hybrid operation	
	Capacity	On-board LPDDR4 2/4GB	
	Flash	16/32GB of eMMC NAND flash for OS and Advantech's boot loader	
Graphics	LVDS	1 x single channel LVDS(Default) or 1 x 4Lane MIPI-DSI	
	HDMI	1 x HDMI 2.0, up to 4096x2304@60fps	
	eDP	1, max 2.7Gbps	
	Graphics Engine	Mali-G52 support OpenGL ES 1.1/2.0/3.2, Vulkan 1.0/1.1, OpenCL 2.0	
	H/W Video Codec	Decoder: H.265 HEVC/MVC Main10/H.264 AVC/MVC Main10/VP9 Profile0/2 up to 4096x2304@60fps; VP8.VC1,MPEG-4/2/1, up to 1920x1088@60fps Encoder: H.264/AVC H.265/HEVC MP@level4.1, up to 1920x1080@100fps. Support YUV/RGB video source with rotation and mirror	
Ethernet	Chipset	RTL8211FSI	
	Speed	2 x 10/100/1000 Mbps	
WatchDog Timer		1-6553s, default 60s, power on/off 1s by MCU	
I/O	SATA	1 x SATA 3.0	
	SATA Power	1	
	USB		1 x USB 3.2 Gen 1 by 1 Type A
			1 x USB 3.2 Gen 1 by 1 Type A/OTG 2 x USB2.0 Pin header
	Audio		1 x Mic in, HP, and Speaker out via pin header
	SPDIF		-
	SDIO		-
	Serial Port		1 x RS-232 w/4wire via DB9;
			2 x RS-232/RS-485 by pin header;(SW config) 3 x RS-232 by pin header; 1 x Debug by pin header
	SPI		-
	CAN		2 x CAN2.0 B
	GPIO		6 x GPIO via pin header (3.3V TTL level)
	I ² C		1 x can be configured to GPIO via software
System Bus		-	
Touch		-	
MIPI CSI		-	
Button		1 x reset button and 1 x power button via a pin header	
Expansion	Mini PCIe		1 x Mini PCIe slot, w/USB 2.0 and 1 x PCIe 3.0
	SD Socket		1 x Micro SD slot
	SIM Slot		1 x SIM slot
	M.2 Socket		1 x M.2 2230 Key E slot, w/SIO*UART*PCIe 3.0 x, and 1 x USB 2.0
Power	Power Supply Voltage		12V±10%
	Power Type		DC-IN by lockable DC Jack (optional 2Pin type connector)
	Power Consumption		Boost 13W
Environment	Operating Temperature		0 ~ 60 °C/-40 ~ 85 °C (32 ~ 140 °F/-40 ~ 185 °F)
	Operating Humidity		5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)		146 x 102 mm (5.7 ~ 4.01 in)
Operation System			Linux Debian10 and Android12
Certifications			CE/FCC Class B

Block Diagram



Ordering Information

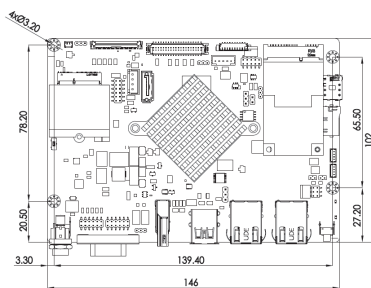
Part Number	CPU	Memory	Flash	HDMI	eDP	LVDS	LAN	Serial Port	SATA	USB	SD	CAN Bus	Operating Temperature
RSB-4810CQ-MNA1E	Rockchip RK3568	2GB	16GB	1	1	1	2	6	1	4	1	2	0 ~ 60 °C (32 ~ 140 °F)
RSB-4810WQ-MNA1E	Rockchip RK3568J	2GB	16GB	1	1	1	2	6	1	4	1	2	-40 ~ 85 °C (-40 ~ 185 °F)
RSB-4810CQ-NNA1E	Rockchip RK3568	4GB	32GB	1	1	1	2	6	1	4	1	2	0 ~ 60 °C (32 ~ 140 °F)

Packing List

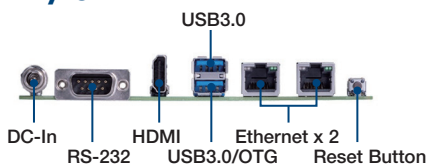
Part Number	Description
RSB-4810	RSB-4810 3.5" SBC with heatsink

Dimensions

Unit: mm



External I/O



Optional Accessories

Part Number	Description
96PSA-A36W12W7-5	ADP A/D 100-240V 36W 12V C6 LOCK DC JACK 62368
170203183C	Power Cord 3P EU 10A 250V 183 cm
170203180A	Power Cord 3P UK 10A 250V 183 cm
1700001524	Power Cord 3P UL 10A 125V 180cm
1700008921	Power Cord 3P PSE 183 cm
1700019146	Power Cord CCC 3P 10A 250V 183cm
1700026611-01	Debug & COM1 Cable D-SUB 9P(M)/1x4P-1.25 20cm
1700023588-01	M Cable USB-A 4P(M)/USB-A 4P(M) 120cm
1700031060-01	RS485 (COM3/4) Cable 2 x M cable D-SUB 9P(M)/ 2 x 6P
1700028482-01	RS232 (COM5/6) Cable 2 x M Cable D-SUB 9P(M) CABLE 2 x 6P
1700031093-01	Line out & Mic In cable 2 x 5P-2.0/2 x JACK
1700002172	Internal USB1/2 Cable 2 x 5P-2.0/2 x USB-A 4P(F)
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300 mm (11.8 in)
1750008717-01	WiFi Dual band 2.4G and 5G Antenna
EWM-W159M201E	802.11 ac/a/b/g/n, RTL 8822CE-CG, 2T2R, w/ BT5.0
AIW-344FQ-*01*	AIW-3 series LTE CAT4 mini PCI-e module
968AD00479*	4G module LTE Cat 4 for China
1750006264	Antenna cable SMA(F)/MHF 15 cm (5.9 in)
1750008303-01	Antenna AN0727-64SP6BSM
1700031071-01	LVDS cable for IDK-1107WR
1700031103-01	EDP cable 1*40P-0.5/1*30P-0.5 20cm
1700033286-01	CAN cable 2x3P-2.0/D-SUB 9P(M)x2 20cm
IDK-1107WR-40WVA1E	7" LED panel 400N with 4WR touch, 800x480(G)
XUTC-B156XTN07.1	AUO 15.6", 1366 x 768, 220nits, for UTC project

* Please contact us to get suitable cellular module for your region.