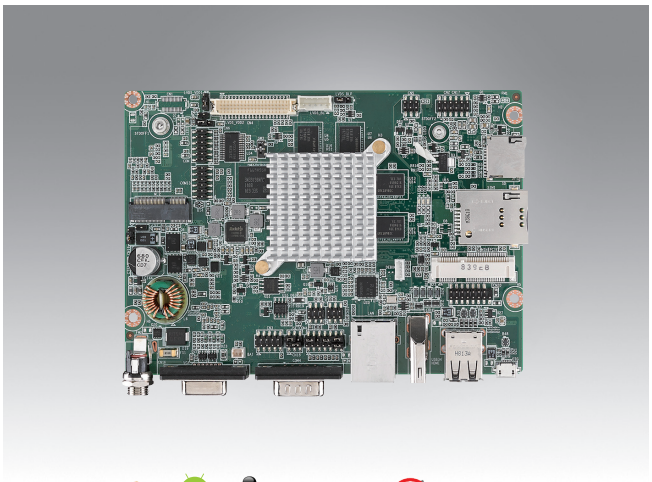
RSB-4680

Rockchip ARM Cortex-A17 RK3288 3.5" SBC



Features

- Rockchip ARM Cortex-A17 RK3288 Quad Core 1.6GHz
- Onboard 2GB DDR3L memory and 8GB eMMC
- HDMI 3840x2160 at 60Hz, VGA 1920x1200 at 60Hz, Dual Channel 18/24/30 bit LVDS
- Support 4K H.264/H.265 Video decoder
- 6 UART, 6 USB2.0, 1 GbE, 8 GPIO, 1 SPI
- M.2 for WIFI/BT support, mini-PCIe for 3G/4G support
- Support Linux and Android

Introduction

RSB-4680 is a RISC 3.5" single board computer (SBC) powered by a high-performance Rockchip ARM Cortex-A17 RK3288 processor which supports 4K display from HDMI. It offers rich interfaces such as 6 USB2.0, 6 UART, 1 VGA, 1 LVDS, 1 GbE and 8 GPIO. RSB-4680 also features Mini-PCIe, M.2, and SIM card slots for integrating Wi-Fi, Bluetooth, and 3G/4G modules. It is an ideal solution for Kiosk, POS, and Vending machine application.

Specifications

Form Factor		3.5" SBC
Processor	CPU	Rockchip ARM Cortex-A17 RK3288 Quad Core up to 1.6GHz
Memory	Technology	DDR3L 1333MHz
	Capacity	On-board DDR3L 2GB
	Flash	8GB of eMMC NAND Flash for OS and Advantech's boot loader 4MB of SPI NOR Flash
Graphics	LVDS	1 x 18/24/30-bit LVDS with 1920 x 1080 for dual channels at 60Hz
	HDMI	1 HDMI, up to 3840 x 2160 at 60 Hz
	VGA	1 VGA, up to 1920 x 1200 at 60Hz
	Graphics Engine	OpenGL ES 1.1/2.0/3.0, OpenCL 1.1, DirectX 11
	H/W Video Codec	Decoder: MPEG-1, MPEG-2, MPEG-4, H.263, H.264, AVS, VC-1, VP8, MVC, HEVC/H.265 decoder, 4k@60FPS Encoder: H.264 (BP@level4.0, MP, HP@level4.0), MVC and VP8
Ethernet	Chipset	TI DP83867
	Speed	1 x 10/100/1000 Mbps
WatchDog Timer		Yes
I/O	SATA	-
	SATA Power	-
	USB	1 x USB OTG, 2 x USB Type A, and 3 x USB pin headers
	Audio	1 x Line out, 1 x Mic-in, 1 x Speaker out via a pin header
	SPDIF	-
	SDIO	-
	Serial Port	1 x 4-wire RS-232/485, DB9 1 x 2-wire RS-232/Debug port, pin header selected by jumper 4 x 4-wire RS-232, pin header
	SPI	1
	CAN	-
	GPIO	8 x GPIO via pin header (3.3V TTL level)
	I²C	1
	System Bus	-
	Touch	-
	MIPI CSI	-
	Button	1 x Reset button, 1 x Power button via a pin header
Expansion	Mini PCIe	1 x Mini PCIe slot
	SD Socket	1 x Micro SD slot
	SIM Slot	1 x SIM slot
	M.2 Socket	1 x M.2 2230 Key E slot
Power	Power Supply Voltage	12 V
	Power Type	DC-in
	Power Consumption	-
Environment	Operating Temperature	0 ~ 60 °C/-20 ~ 85 °C
	Operating Humidity	5 ~ 95% relative humidity, non-condensing
Mechanical	Dimensions (W x D)	146 x 102 mm
Operation System		Linux and Android
Certifications		CE/FCC Class B

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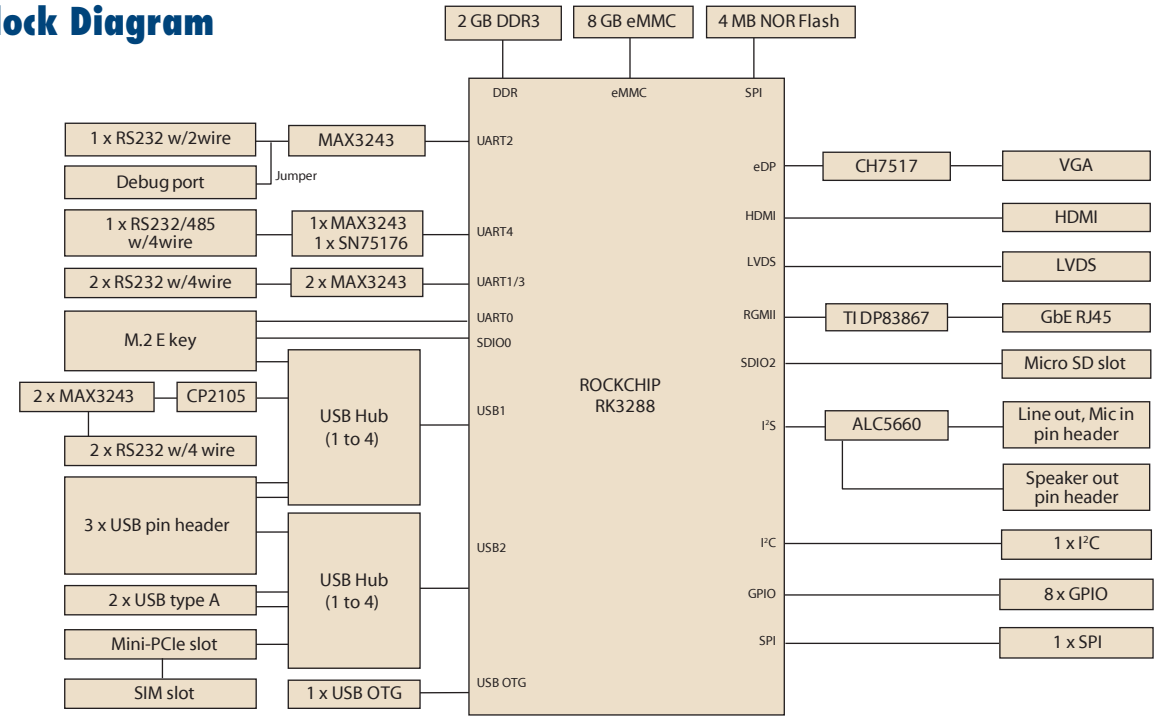
Block Diagram



Ordering Information

Part Number	CPU	Memory	Flash	HDMI	VGA	LVDS	LAN	Serial Port	SATA	USB	System Bus	SD	CAN Bus	Operating Temperature
RSB-4680CQ-XNA1E	Rockchip RK3288 Quad core, 1.6GHz	2 GB	8 GB	1	1	1	1	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port 4 x 4-wire RS-232	–	5 x USB Host 1 x USB OTG	–	1	–	0 ~ 60 °C
RSB-4680WQ-XNA1E	Rockchip RK3288K Quad core, 1.6GHz	2 GB	8 GB	1	1	1	1	1 x 4-wire RS-232/485 1 x 2-wire RS-232/Debug port 4 x 4-wire RS-232	–	5 x USB Host 1 x USB OTG	–	1	–	-20 ~ 85 °C

Packing List

Part Number	Description
RSB-4680	RSB-4680 3.5" SBC

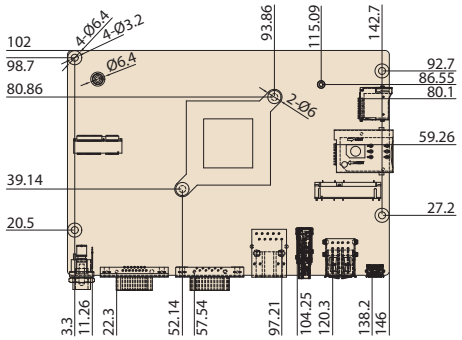
Optional Accessories

Part Number	Description
96PSA-A36W12W7-5	ADP A/D 100-240V 36W 12V C6 LOCK DC JACK
170203183C	Power Cord 3P EU 10A 250V 183cm
170203180A	Power Cord 3P UK 10A 250V 183cm
1700001524	Power Cord UL 3P 10A 125V 180cm
1700008921	Power Cord PSE 3P 12A 125V 183cm
1700019146	Power Cord CCC 3P 10A 250V 183cm
1700021565-01	Debug cable
EWM-W172H01E	802.11ac/a/b/g/n 2T2R WIFI BT 4.2 RTL8822BU-CG Half Mini PCIe Module
9656EWMG00E	Half-size miniPCIe to miniPCIe bracket set
1750005885	Antenna L=23cm MALFR8-3230A-00X00R
1750008717-01	Dipole Ant. D.B 2.4/5G WIFI 3dBi SMA/M-R BLK
EWM-C117FL06E*	LTE 4G,3G WCDMA/DC-HSPA+, 2G module, MPCI-L280H
968AD00081*	Qucetel EC20CEFA Mini-PCIe 4G module for China
1750006264	Antenna cable SMA(F)/MHF 15cm
1750008303-01	Antenna AN0727-64SP6BSM
SQF-MSDM1-8G-21C	SQF MICRO SD C10 MLC 8G (-25 ~ 85 °C)
IDK-1107WR-40WVA1E	7" LED PANEL 2.5A/3A 250V 1.83cm400N with 4WR touch, 800 x 480 (G)
1700028571-01	LVDS cable for IDK-1107WR
1700028572-01	LCD blacklight cable for IDK-1107WR

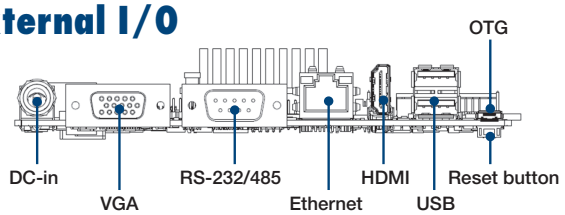
* Please contat us to get suitiable celluar module for your region.

Dimensions

Unit: mm



External I/O



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
• Platform compatibility tests • Preloaded functional driver and software stacks	• License authorized Canonical delivers 10-years of bug fixes and security updates • In-house bundled service	• Containerized technology for service provision and deployment • AI resources from Caffe, TensorFlow, and mxnet	• 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