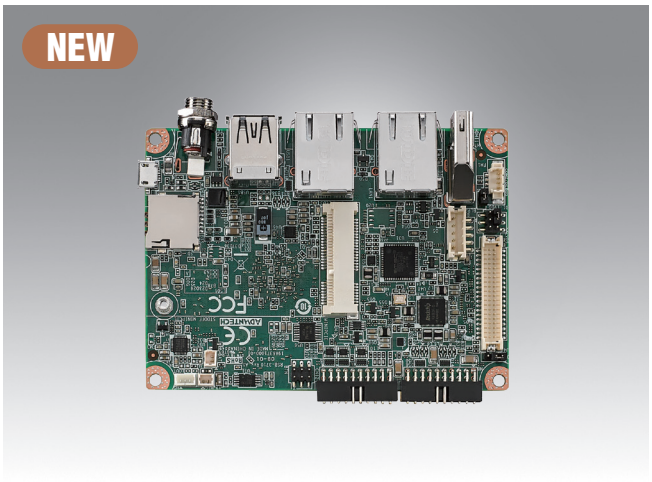
RSB-3710

Rockchip RK3399 Cortex-A72 2.5" SBC with UIO40-Express



Features

- Rockchip RK3399 ARM Dual Cortex-A72 and Quad Cortex-A53 1.8 GHz
- Onboard LPDDR4 2 GB
- 1 HDMI, 1 Dual Channel 24 bit LVDS/1eDP
- 1 2-wire RS-232, 1 USB3.0, 1 USB2.0, 1 Micro SD, 1 Mic. in / Line out
- 1 mini-PCIe for LTE/WiFi/BT
- Supports Debian9/10 and Android7.1/10.0
- Support I/O Expansions by UIO40-Express I/O boards, please refer to page #3 for more information

Introduction

RSB-3710 is a RISC 2.5" single board computer (SBC) powered by a high-performance Rockchip RK3399 ARM dual Cortex-A72 and quad Cortex-A53 high performance processor which supports 4K display from HDMI. It offers both rich display as HDMI/LVDS/eDP and rich IO as dual GbE/2serials/2USB/12GPIO. RSB-3710 also features Mini-PCIe, and SIM card slots for integrating Wi-Fi, Bluetooth, and 3G/4G modules. It is an ideal solution for healthcare, security, IOT gateway and Vending machine application.

Specifications

Form Factor		2.5" SBC with UIO40-Express for I/O Expansions
Processor System	CPU	Rockchip RK3399 ARM dual Cortex-A72 and quad Cortex-A53 1.8 GHz
Memory	Technology	LPDDR4 1333MHz
	Capacity	On-board 2 GB
	Flash	16GB of eMMC NAND Flash for OS and Advantech's boot loader
NPU	NPU	-
Graphics	HDMI	1 HDMI 2.0, upto 4kx2k at 60Hz
	LVDS	1 Dual Channel 18/24 Bit LVDS, Backlight power, 5/12V, Max. 1A
	eDP	1, max 2.7Gbps /Reused with LVDS but default as eDP
	Graphics Engine	OpenGL ES 1.1/2.0/3.1, 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	RTL8211FS
	Speed	2 10/100/1000 Mbps
WatchDog Timer	WatchDog Timer	Yes
I/O	USB	1 USB3.0+1 USB2.0, by TypeA
	Audio	1 Mic. in / Line out by pin header (option)
	CAN	-
	Serial Port	1 2 wires RS-232 by COM2 pin header* (default configured as debug console)
	Camera Input	-
	UIO40-Express	4 USB2.0, 2 UART, 1 I2C, 12 GPIOs
Indicator	LED	1 Power LED 1 Programmable LED
Expansion	Mini PCIe	1 Full Size Mini PCIe Slot (with PCIE/USB)
	M.2	-
	SD Socket	1 Micro SD Socket
	SIM Slot	1 Nano SIM Slot
Power	Power Supply Voltage	+12 V
	Power Type	Lockable DC-Jack (2pin type connector by BOM option)
	Power Consumption	11.5W
Environment	Operating Temperature	0 ~ 60 °C / -20 ~ 85 °C
	Operating Humidity	5%~95% Relative humidity, non-condensing
Mechanical	Dimensions	100 x 72 x 19 mm
	Weight	0.05kg
Operation System		Debian9/10 and Android7.1/10.0
Certifications		CE/FCC Class B

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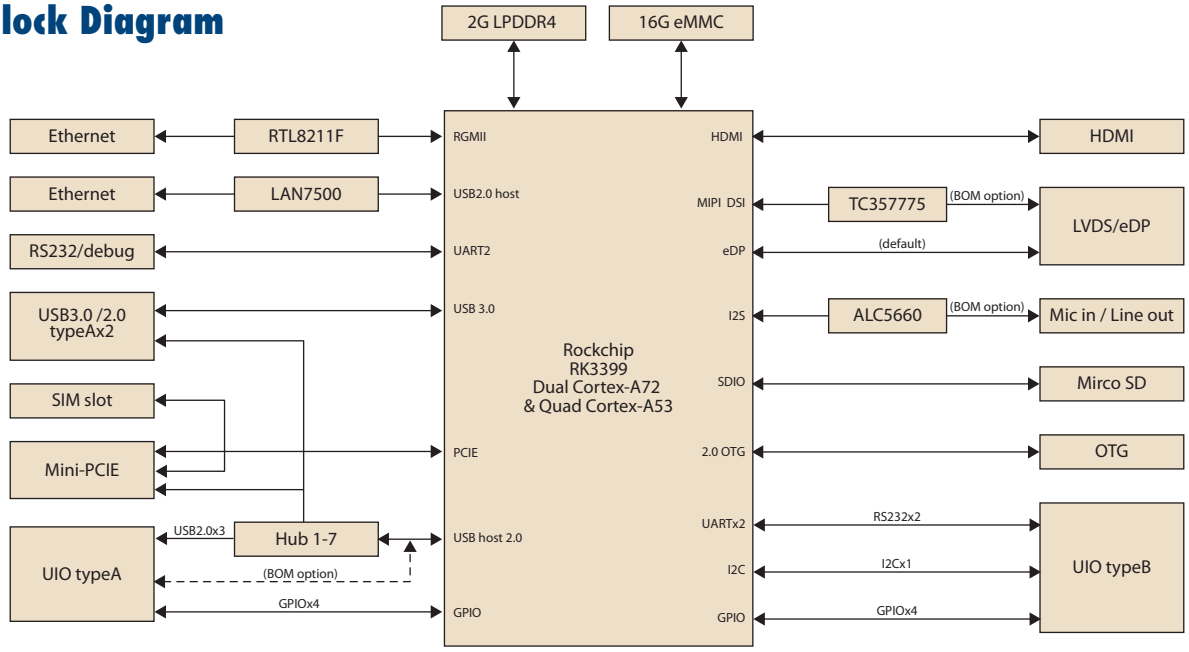
Block Diagram



Ordering Information

Part No.	CPU	Memory	Flash Memory	HDMI	eDP	LAN	USB Host	SD	CANbus	Operating Temperature
RSB-3710CO-XNA1E	RK3399	2 GB	16 GB	1	1	2	2	1	-	0 ~ 60 °C
RSB-3710WO-XNA1E	RK3399K	2 GB	16GB	1	1	2	2	1	-	-20 ~ 85 °C

Packing List

Part Number	Description
RSB-3710	RSB-3710 2.5" SBC with Heat Sink

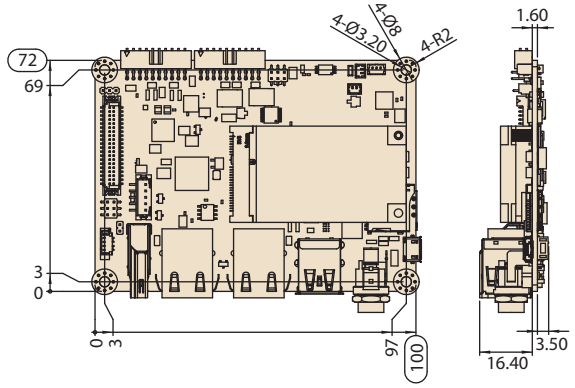
Optional Accessories

Part Number	Description
96PSA-A36W12R1-3	ADP A/D 100-240V 36W 12V C6 DC PLUG 90° 62368
1700030307-01	UIO40 extending cable of UIO SBC, 3COM&8GPIO
1700031429-01	Line out cable
1700026878-01	Mic. in cable
1702002605	Power Cord 3P EU 10A 250V 183cm
1700008921	Power Cord 3P PSE 183cm
1702031801	Power Cord 3P UK 10A 250V 183cm
1702002600	Power Cord UL 3P 10A 125V 183cm
1700009652	Power Cord CCC 3P 10A 250V 187cm
1700028481-01	Debug cable
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm
1750008671-01	Dipole Ant.SMA/M-R 2.4/5G 2.5/4dBi BLK 109mm
EWM-W188M201E	WiFi 802.11ac/abgn 2T2R and BT4.2
EWM-C117FL06E*	LTE 4G,3G WCDMA/DC-HSPA+, 2G module, MPCI-L280H
EXM-CMPF1-M2E01E	M.2(NGFF) to MiniPCIe KEY-E Adapter
968AD00479*	4G module LTE Cat 4 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 400N with 4WR touch, 800x480(G)
1700031071-01 LVDS	cable for IDK-1107WR

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

Dimensions

Unit: mm

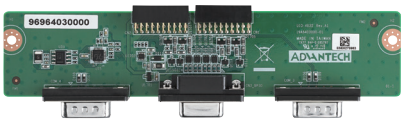


Front I/O on RSB-3710

Compatible I/O Expansion Boards

UIO-4030

1 x RS-485
1 x RS-232
1 x 4 DIs & 4 DOs



Specifications

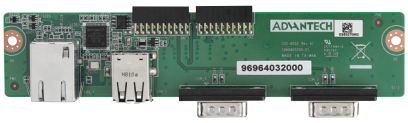
General	
USB	–
RS-232	1 x 2 wires RS-232
RS-485	1 x RS-485
GPIO	4 DIs, 4 DOs (2.5~24V)
CAN Bus	–
GbE	–
Dimension	146 x 31 x 22 mm
Environment	
Weight	180g
Operating Humidity	5 ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4030	UIO-4030, 1 RS232, 4 DIs, 4 DOs, 1 RS-485

UIO-4032

1 x GbE
2 x USB2.0
2 x RS-232



Specifications

General	
USB	2 x USB 2.0
RS-232	2 x 2 wires RS-232
RS-485	–
GPIO	–
CAN Bus	–
GbE	1 x GbE
Dimension	146 x 31 x 22 mm
Environment	
Weight	200g
Operating Humidity	5 ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4032	UIO-4032, 1 GbE, 2 USB, 2 RS-232

UIO-4034

1 x CAN bus
2 x RS-232

Specifications

General	
USB	–
RS-232	2 x 2 wires RS-232
RS-485	–
GPIO	–
CAN Bus	1 x CAN bus 2.0B, 1 Mbps
GbE	–
Dimension	146 x 31 x 22 mm
Environment	
Weight	180g
Operating Humidity	5 ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4034	UIO-4034, 1 CAN, 2 RS-232

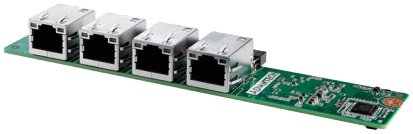
Compatible Main Boards

Part No.	Description
RSB-3430XD-PXA1E*	RSB-3430 NXP i.MX6 Series 2.5" UIO Main Board
RSB-3720XX-XCA1E*	RSB-3720 NXP i.MX8M Plus Series 2.5" UIO Main Board
RSB-3710XX-XXA1E*	RSB-3710 Rockchip RK3399 Series 2.5" UIO Main Board

*X indicates different configurations, please refer to each main board's datasheet for complete P/N to order.

UIO-4036

4 x GbE



Specifications

General	
USB	–
RS-232	–
RS-485	–
GPIO	–
CAN Bus	–
GbE	4 x GbE
Dimension	146 x 31 x 20 mm
Environment	
Weight	200g
Operating Humidity	5 ~ 95% relative humidity, non-condensing
Operating Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C and 60 °C @ 95% RH Non-Condensing

Ordering Information

P/N	Description
UIO-4036	UIO-4036, 4 GbE

Compatible Main Boards

Part No.	Description
RSB-3430XD-PXA1E*	RSB-3430 NXP i.MX6 Series 2.5" UIO Main Board
RSB-3720XX-XCA1E*	RSB-3720 NXP i.MX8M Plus Series 2.5" UIO Main Board
RSB-3710XX-XXA1E*	RSB-3710 Rockchip RK3399 Series 2.5" UIO Main Board

*X indicates different configurations, please refer to each main board's datasheet for complete P/N to order.

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