

# Datasheet

## Advantech

### RSB-3810

**MediaTek Genio 1200 Cortex A78 & A55  
2.5" SBC with UIO40-Express**



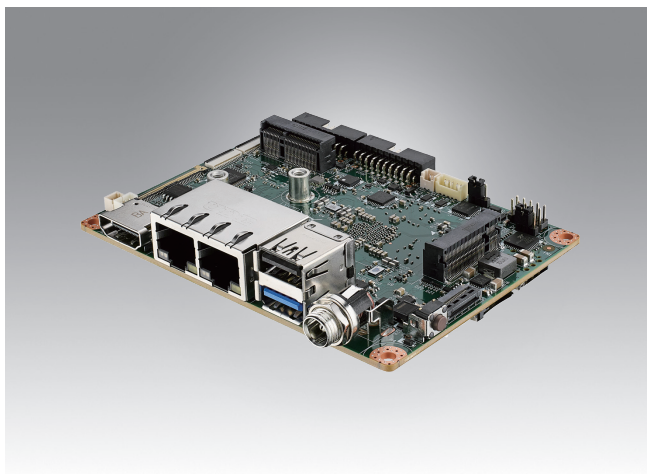
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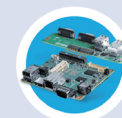
# RSB-3810

## MediaTek Genio 1200 Cortex A78 & A55 2.5" SBC with UIO40-Express



### Features

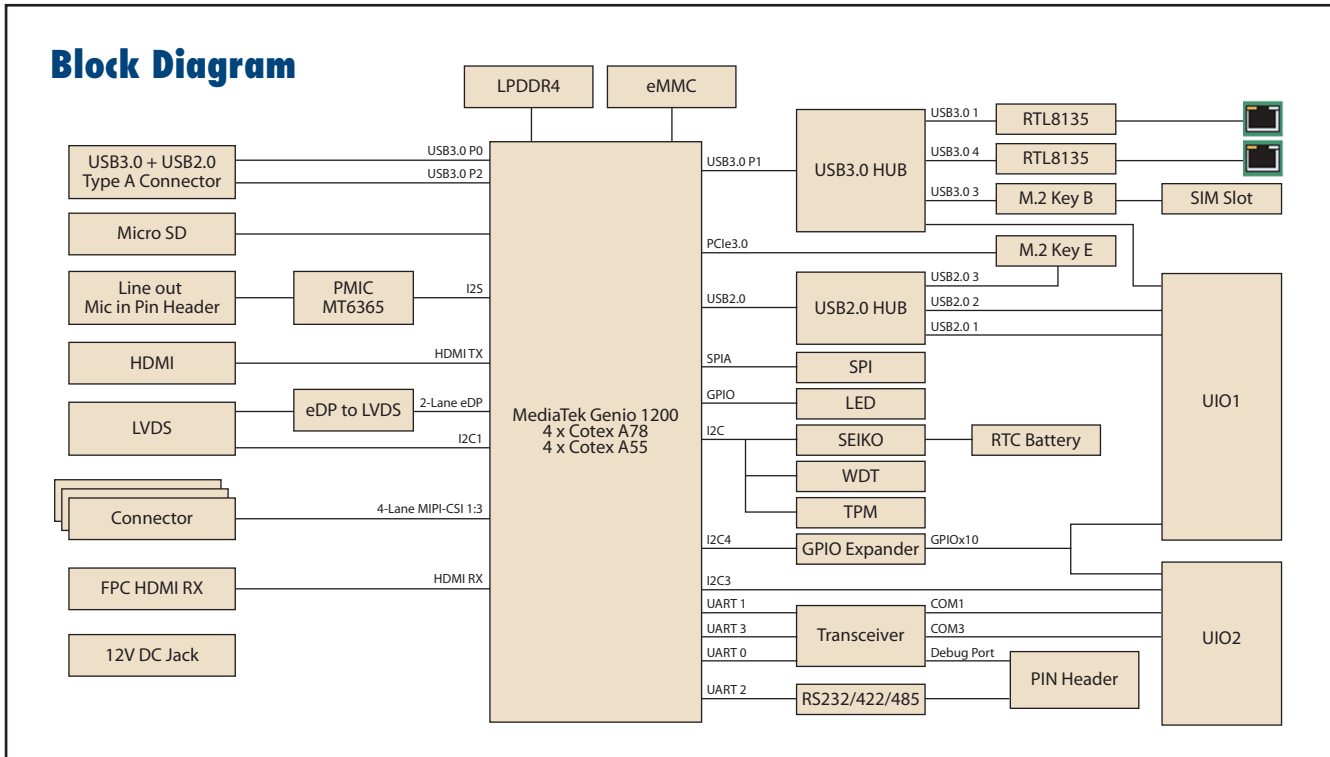
- MediaTek Genio 1200 4 cores A78 & 4 cores A55
- Onboard LPDDR4 8GB, 4000MT/s memory
- HDMI 4k60fps, 1 Dual Channel 24 bit LVDS
- 1 4-wire RS-232/422/485, 2 USB3.2 Gen1 By 1, 2 USB2.0, 1 Micro SD, 1 Mic. in / Line out
- 1 M.2 3052 Key B for 5G, 1 M.2 2230 Key E Slot For WiFi/BT
- Support Ubuntu and Android
- Support I/O Expansions by UIO40-Express I/O boards, please refer to page #3 for more information



### Specifications

Form Factor		2.5" Single Board Computer with UIO40-Express for I/O Expansions
Processor System	CPU	MediaTek Genio 1200
Memory	Technology	LPDDR4 4000MT/s
	Capacity	On-board 8GB
	Flash	32GB eMMC Flash for O.S. and 8 MB SPI NOR Flash for board information
NPU		4.8 TOPS Neural Network performance
Graphics	HDMI	1 HDMI 2.0, 4K60
	LVDS	1 dual channel LVDS
Ethernet	Chipset	RTL8153
	Speed	2 10/100/1000 Mbps
WatchDog Timer		1~6553s, default 60s, power on/off 1s
TPM		TPM 2.0 (ST33HTPH2E32AHB8)
RTC		Yes
I/O	USB	1 USB3.0 Host, 1 USB2.0 Host
	Audio	Mic-in, Line-Out Connectors
	Serial Port	1 4 wires RS-232/422/485 by pin header + COM debug console
	Camera Input	3 4-Lane MIPI-CSI2
	HDMI	1 FPC HDMI RX
	UIO40-Express	2 USB2.0, 1 USB3.0, 10 GPIO, 2 UART, 1 I2C
Expansion	M.2	1 M.2 2230 Key E Slot / 1 M.2 3052 Key B Slot
	SD Socket	1 Micro SD Socket
	SIM Slot	1 Nano SIM Slot
Power	Power Supply Voltage	12V DC-IN by lockable DC Jack (default) or 2pin type connector
	Power Consumption	10.68W
Environment	Operational Temperature	0 ~ 60 °C / -40 ~ 80 °C
	Operating Humidity	95% Relative Humidity, non-condensing
Mechanical	Dimensions (W x D x H)	100 x 72 x 19 mm
Operating System		Ubuntu and Android
Certifications		CE/FCC Class B

## Block Diagram



## Ordering Information

Part No.	CPU	Memory	Flash Memory	HDMI	LVDS	LAN	USB Host	SD	Operating Temperature	Operating System
RSB-3810C0-FCA1E	MediaTek Genio 1200	8 GB	32 GB	1	1	2	2	1	0 ~ 60 °C	Android
RSB-3810W0-FCA1E	MediaTek Genio 1200	8 GB	32 GB	1	1	2	2	1	-40 ~ 80 °C	Android
RSB-3810C0-FUA1E	MediaTek Genio 1200	8 GB	32 GB	1	1	2	2	1	0 ~ 60 °C	Ubuntu

## Packing List

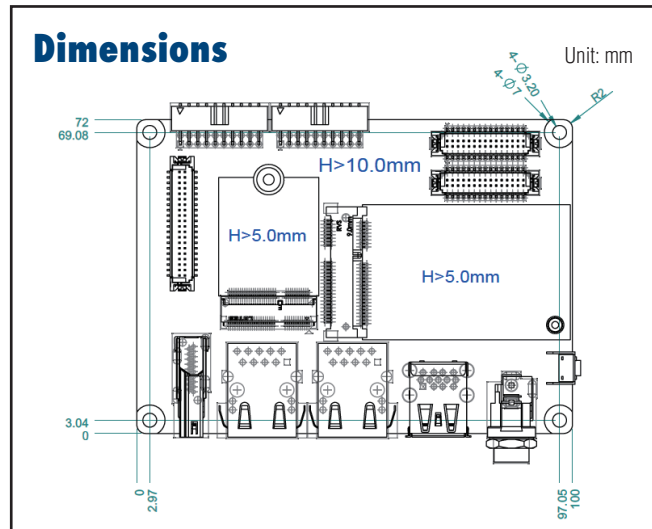
Part Number	Description
RSB-3810	RSB-3810 2.5" SBC with Heat Sink

## Optional Accessories

Part Number	Description
96PSA-A36W12W7-5	ADP A/D 100-240V 36W 12V C6 LOCK DC JACK 62368
1700001524	Power Cord 3P UL 10A 125V 180cm
170203183C	Power Cord 3P Europe (WS-010+WS-083) 183cm
170203180A	Power Cord 3P UK 2.5A/3A 250V 1.83M
1700008921	Power Cord 3P PSE 183cm
1700009652	Power Cord CCC 3P 10A 250V 187cm
1700030307-01	UIO40 extending cable of RSB-3430, 3COM&8GPIO
1700031429-01	Line out cable
1700026878-01	Mic. in cable
1700034345-01	Debug Cable 10P-2.0/D-SUB 9P(M) 25CM
1700019474	RS-232 Cable DB9 female to DB9 female
96LEDK-A215FH25NF3	21.5" LED Panel, 250N, 1920 x 1080
1700034353-01	LVDS Cable
TBD	LVDS BKLT Cable
EWM-W174M201E	IEEE802.11ax+BT 5.2 2T2R MT7921L M.2 2230
1750008717-01	Dipole Ant. D.B 2.4/5G WIFI 3dBi SMA/M-R BLK
1750007965-01	Antenna Cable R/P SMA (M) to MHF4, 300mm
TBD	AIW-3 series LTE CAT4 mini PCIe module for US
1750008303-01	Antenna AN0727-64SP6B5M
1750006009	Antenna Cable SMA (F) to MHF 1.32 25cm

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

## Dimensions



## Front I/O on RSB-3810

# UIO40-Express I/O Expansion Boards

## UIO-4030

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



CEFC

## UIO-4032

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



CEFC

## UIO-4034

1 x CAN bus  
2 x RS-232



CEFC

### 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

### 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

### 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

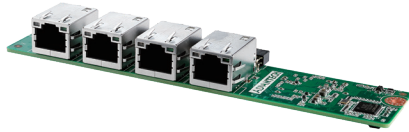
Part No.	Description
RSB-3430XD-PXA1E*	RSB-3430 NXP i.MX6 Series 2.5" UIO Main Board
RSB-3720XX-XCA1E*	RSB-3720 NXP i.MX8M Plus Series 2.5" UIO Main Board
RSB-3710XX-XXA1E*	RSB-3710 Rockchip RK3399 Series 2.5" UIO Main Board
RSB-3810XX-XXA1E*	RSB-3810 MediaTek Genio 1200 2.5" UIO Main Board

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

## UIO40-Express I/O Expansion Boards

### UIO-4036

4 x GbE



CEFC

### UIO-4038

4 x GbE (3 x LAN; 1 x WAN)



CEFC

### UIO-4040

NVMe SSD



CEFC

#### 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

#### Specifications

General	
USB	-
RS-232	-
RS-485	-
GPIO	-
CAN Bus	-
GbE	4 x GbE (3 x LAN; 1 x WAN)
Dimension	146 x 100 x 20mm
Environment	
Weight	300g
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-4038	UIO-4038, 3 x LAN 1 X WAN

#### Specifications

General	
USB	-
RS-232	-
RS-485	-
GPIO	-
CAN Bus	-
GbE	-
NVMe SSD	SQF-C8Bxx-xG-EDx
Dimension	146 x 31 x 20mm
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-4040-128G	UIO-4040, NVMe SSD storage 128GB
UIO-4040-256G	UIO-4040, NVMe SSD storage 256GB
UIO-4040-512G	UIO-4040, NVMe SSD storage 512GB
UIO-4040-1TB	UIO-4040, NVMe SSD storage 1TB
UIO-4040-2TB	UIO-4040, NVMe SSD storage 2TB

#### Optional Accessories

P/N	Description
TBD	Heat spreader, AL 68.5 x 16 x 11.63 mm
TBD	Heat spreader, AL 70 x 25.4 x 19.5 mm

### 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
RSB-3810XX-XXA1E*	RSB-3810 MediaTek Genio 1200 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

<p><b>Certified OS and BSP</b></p> <ul style="list-style-type: none"> <li>Platform compatibility tests</li> <li>Preloaded functional driver and software stacks</li> </ul>	<p><b>Licensed Services</b></p> <ul style="list-style-type: none"> <li>License authorized Canonical delivers 10-years of bug fixes and security updates</li> <li>In-house bundled service</li> </ul>	<p><b>Numerous AI and Edge Resources</b></p> <ul style="list-style-type: none"> <li>Containerized technology for service provision and deployment</li> <li>AI resources from Caffe, TensorFlow, and mxnet</li> </ul>	<p><b>Local Partner Alliance</b></p> <ul style="list-style-type: none"> <li>Embedded Linux and Android Alliance (ELAA)</li> </ul>
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# 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
<ul style="list-style-type: none"> <li>• Devices status</li> <li>• Peripherals/firmware</li> <li>• Open for extension</li> </ul>	<ul style="list-style-type: none"> <li>• Real-time monitoring</li> <li>• Remote controls</li> <li>• Troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li>• Zero-touch on-boarding</li> <li>• OTA updates</li> <li>• Batch control</li> </ul>

### Product Highlights

 <p><b>SOM-6883</b> High-performance 11<sup>th</sup> Gen Intel<sup>®</sup> COMe Type 6 Module</p>	 <p><b>MIO-5375</b> Compact 11<sup>th</sup> Gen Intel<sup>®</sup> Outdoor Focused 3.5" SBC</p>	 <p><b>EPC-B5587</b> 10<sup>th</sup> Gen Intel<sup>®</sup> Xeon<sup>®</sup> based Edge server</p>	 <p><b>EPC-R3220</b> Arm based IoT Edge Gateway</p>
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