



OUR GLOBAL
COMPETENCE
CENTRES

 APOLLO DISPLAY
TECHNOLOGIES



 DISTEC



 DISPLAY
TECHNOLOGY

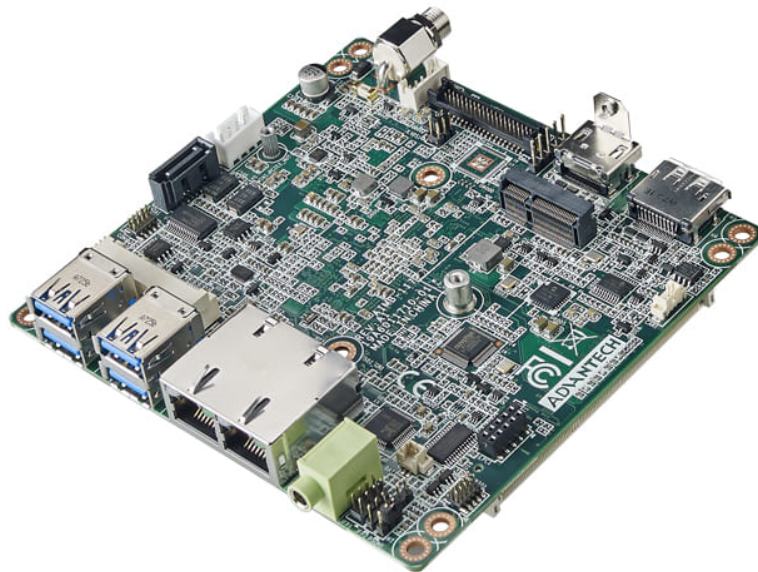


Datasheet

Advantech

AIMB-U117

UTX Motherboard with Intel® Apollo Lake Atom SoC,
HDMI/eDP, LVDS/DP++, 2 COMs and Dual LAN

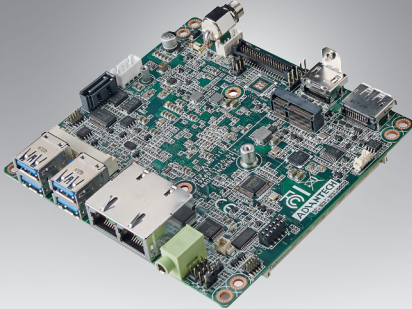


The information contained in this document has been carefully researched and is, to the best of our knowledge, accurate. However, we assume no liability for any product failures or damages, immediate or consequential, resulting from the use of the information provided herein. Our products are not intended for use in systems in which failures of product could result in personal injury. All trademarks mentioned herein are property of their respective owners. All specifications are subject to change without notice.

AIMB-U117

Intel® Atom™ E3950/E3930 DC 1.6/1.3 GHz UTX Industrial Motherboard with HDMI/eDP (LVDS)/DP++, 2 COMs and Dual LAN

NEW



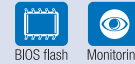
Features

- Supports Intel® Atom™ Quad/ Dual core E3950/E3930 1.6/ 1.3 GHz processor
- Single 204-pin SO-DIMM up to 8 GB DDR3L 1866 MHz SDRAM
- Supports HDMI/DP++, eDP (co-lay dual-channel 48-bit LVDS)
- Supports 1 Mini-PCIE expansion slot, M.2 E-Key slot, 2 COMs (RS-232, RS-422/485), 4 USB 3.0, and dual LAN
- Supports eMMC 32GB on board
- Supports wide DC in 12V to 24V
- Supports wide temperature with cooler/fanless solution

Software APIs:



Utilities:

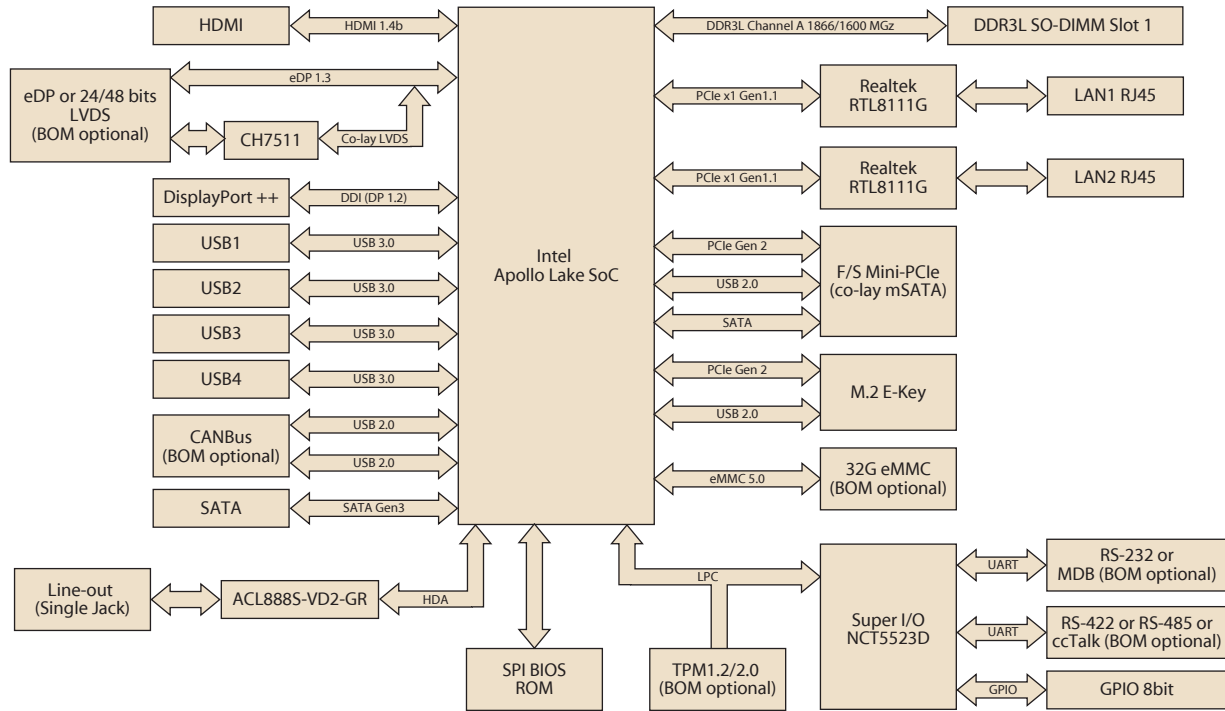


WISE-PaaS/RMM CE FCC RoHS

Specifications

Processor System	CPU (14nm)	Intel Atom E3950/ E3930		
	Max. Speed	1.6 GHz (Quad Core)/ 1.3 GHz (Dual Core)		
	L2 Cache	2 MB		
	BIOS	AMI 16 Mbit SPI		
Expansion Slot	Mini-PCle	F/S co-lay mSATA		
	M.2	E-Key		
Memory	Technology	Singl channel DDR3L 1866MHz SDRAM		
	Max. Capacity	8GB		
	Socket	1 x 204-pin SO-DIMM (Non-ECC)		
Graphics	Controller	Intel Gen 9 Graphics Engines and media encode/decode engine; Graphics Base Frequency: 500 MHz		
	HDMI	1, Supports HDMI1.4b up to 3840 x 2160 @ 30Hz		
	eDP	1, Supports eDP1.3, max resolution up to 3840 x 2160@60 Hz, Co-lay with LVDS		
	LVDS	1, Supports 24-bit dual channel and up to 1920 x 1200, Co-lay with eDP (BOM Optional)		
	Displayport	1, Supports DP++ 1.2, max resolution up to 4096 x 2160 @ 60Hz		
Ethernet	Interface	10/100/1000 Mbps		
	Controller	LAN1: Realtek 8111G; LAN2: Realtek 8111G		
	Connector	RJ-45 x 2		
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)		
	Channel	1		
Rear I/O	HDMI	1		
	Displayport	1		
	Ethernet	2		
	USB	4 x USB3.0		
	Audio	1 (Line-out, convert to Mic-in or Line-in)		
	DC jack	1 (2.5mm)		
Internal Connector	LVDS & Inverter	1/1		
	Serial	1, RS-232 or MDB (BOM optional)		
	SATA	1, RS-422 or RS-485 or ccTalk (BOM optional)		
	SATA	1, (SATA 3.0) SATA PWR connector		
	GPIO	8-bit		
Watchdog Timer	Output	System reset		
	Interval	Programmable 1 ~ 255 sec/min		
Power	Single voltage 1	12V ~ 24V DC input; 1 x External DC jack		
	Typical Power Consumption	12V, Windows Idle mode: 3.554W (Intel E3950 1.6GHz/ DDR3L 1866MHz 8GB) 24V, Windows Idle mode: 7.296W (Intel E3950 1.6GHz/ DDR3L 1866MHz 8GB)		
Environment		Operating Temperature	Non-Operating Temperature	Thermal Solution
	D SKU	0 ~ 60 °C (32 ~ 140 °F) with air flow 0.7m/s	-40 ~ 85 °C (-40 ~ 185 °F)	CPU Cooler
	D SKU	-20 ~ 70 °C (-4 ~ 158 °F) with air flow 0.7m/s	-40 ~ 85 °C (-40 ~ 185 °F)	Optional Heatsink/ Heatspreader + Semi-Heatsink
	N SKU	-20 ~ 70 °C (-4 ~ 158 °F) with air flow 0.7m/s	-40 ~ 85 °C (-40 ~ 185 °F)	CPU Heatsink
Physical Characteristics	Dimensions	112 x 117 mm (4.4" x 4.6")		

Block Diagram



Ordering Information

P/N	CPU	Memory Slot	HDMI	eDP/ LVDS	DP++	GbE LAN	SATAIII	32G eMMC	USB 3.0	MiniPCIe	M.2	RS232/ MDB	RS422/485/ ccTalk	TPM 1.2/2.0	CANBus	Audio	Operating Temp.	Thermal Solution
AIMB-U117D-S6A2E	E3950	1	1	1/(1)	1	2	1	(1)	4	1 (F/S)	1	1/(1)	1/(1) or (1)	(1)/(1)	(1)	1	0 ~ 60 °C	CPU Cooler
AIMB-U117NZ-S6A2E	E3930	1	1	1/(1)	1	2	1	(1)	4	1 (F/S)	1	1/(1)	1/(1) or (1)	(1)/(1)	(1)	1	-20 ~ 70 °C	CPU Heatsink
AIMB-U117NZ-FLA2E	E3930	1	1	(1)/1	1	2	1	1	4	1 (F/S)	1	1/(1)	1/(1) or (1)	(1)/1	1	1	-20 ~ 70 °C	CPU Heatsink

*() BOM options available on MP version.

Packing List

Part Number	Description	Quantity
1700008941	SATA HDD cable	1
1700018785	SATA power cable	1
1700022363-01	Serial port cable	2
2006U11701	Startup manual	1
1930001071	MiniPCIe screw	1
1930006770-01	M.2 screw	1
1960088371T001	CPU Cooler for D SKU (E3950)	1
1960088372T001	CPU Heatsink for N SKU (E3930)	1

Optional Accessories

Part Number	Description
1700029091-01	CANBus cable
1960090365T001	Motherboard Heat Sink

I/O View



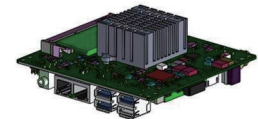
Embedded OS/API

OS/API	Part No.	Description
Win 10	20706WX9ES0021	img W10 19EL EPC-U2117 64b 1809 ENU

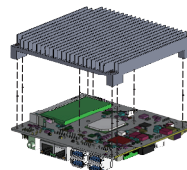
Thermal Solution

CPU Cooler (CPU E3950 SKU)

CPU Heat Sink (CPU E3930 SKU)



Motherboard Heat Sink (Optional)



Our company network supports you worldwide with offices in Germany, Austria, Switzerland, the UK and the USA. For more information please contact:

Headquarters

Germany



FORTEC Elektronik AG

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894450-0
E-Mail: info@fortecag.de
Internet: www.fortecag.de

Fortec Group Members

Austria



Distec GmbH Office Vienna

Nuschinggasse 12
1230 Wien

Phone: +43 1 8673492-0
E-Mail: info@distec.de
Internet: www.distec.de

Germany



Distec GmbH

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894363-0
E-Mail: info@distec.de
Internet: www.distec.de

Switzerland



ALTRAC AG

Bahnhofstraße 3
5436 Würenlos

Phone: +41 44 7446111
E-Mail: info@altrac.ch
Internet: www.altrac.ch

United Kingdom



Display Technology Ltd.

Osprey House, 1 Osprey Court
Hichingbrooke Business Park
Huntingdon, Cambridgeshire, PE29 6FN

Phone: +44 1480 411600
E-Mail: info@displaytechnology.co.uk
Internet: www.displaytechnology.co.uk

USA



Apollo Display Technologies, Corp.

87 Raynor Avenue,
Unit 1 Ronkonkoma,
NY 11779

Phone: +1 631 5804360
E-Mail: info@apolloDisplays.com
Internet: www.apolloDisplays.com