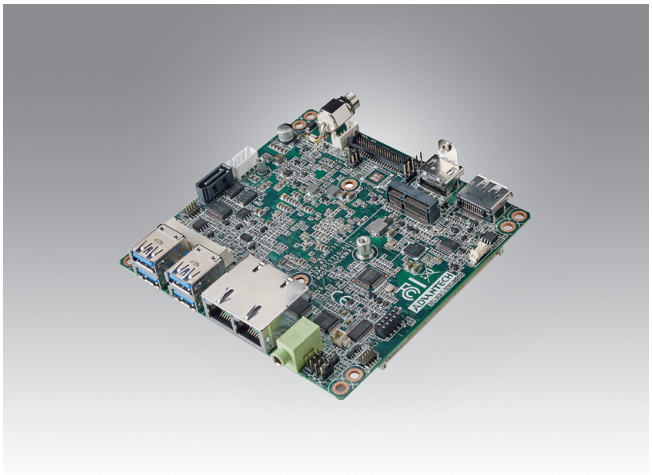
AIMB-U117

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



ubuntu® Windows 10 WISE-PaaS/RMM CE FCC RoHS

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: H/W Monitor, Brightness, GPIO, Watchdog

Utilities: BIOS flash, Monitoring

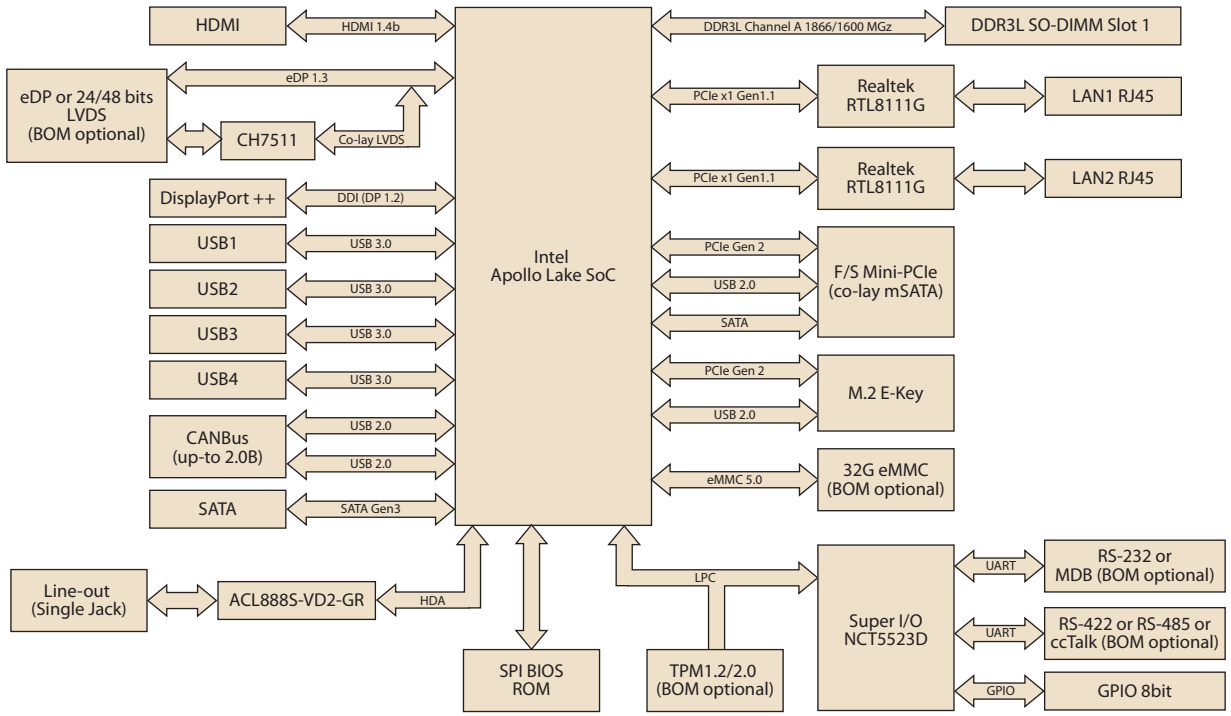
Specifications

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-PCIe	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) 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")		

All product specifications are subject to change without notice.

Last updated: 13-Jun-2022

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 (up-to 2.0B)	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.

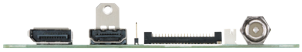
Packing List

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
96PSA-A60W12W7-3	60W 12V DC-in Adapter

I/O View



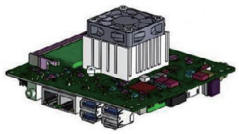


Embedded OS/API

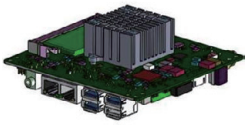
OS/API	Part No.	Description
Win 10	20706WX9ES0021	img W10 19EL EPC-U2117 64b 1809 ENU
Ubuntu 20.04	20706U20DS0006	Ubuntu V20.04 image of AIMB-U117

Thermal Solution

CPU Cooler (CPU E3950 SKU)



CPU Heat Sink (CPU E3930 SKU)



Motherboard Heat Sink (Optional)

