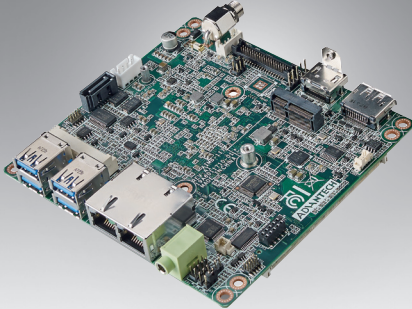


# AIMB-U117

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

**NEW**



WISE-PaaS/RMM   

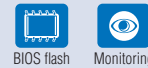
### Features

- 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:



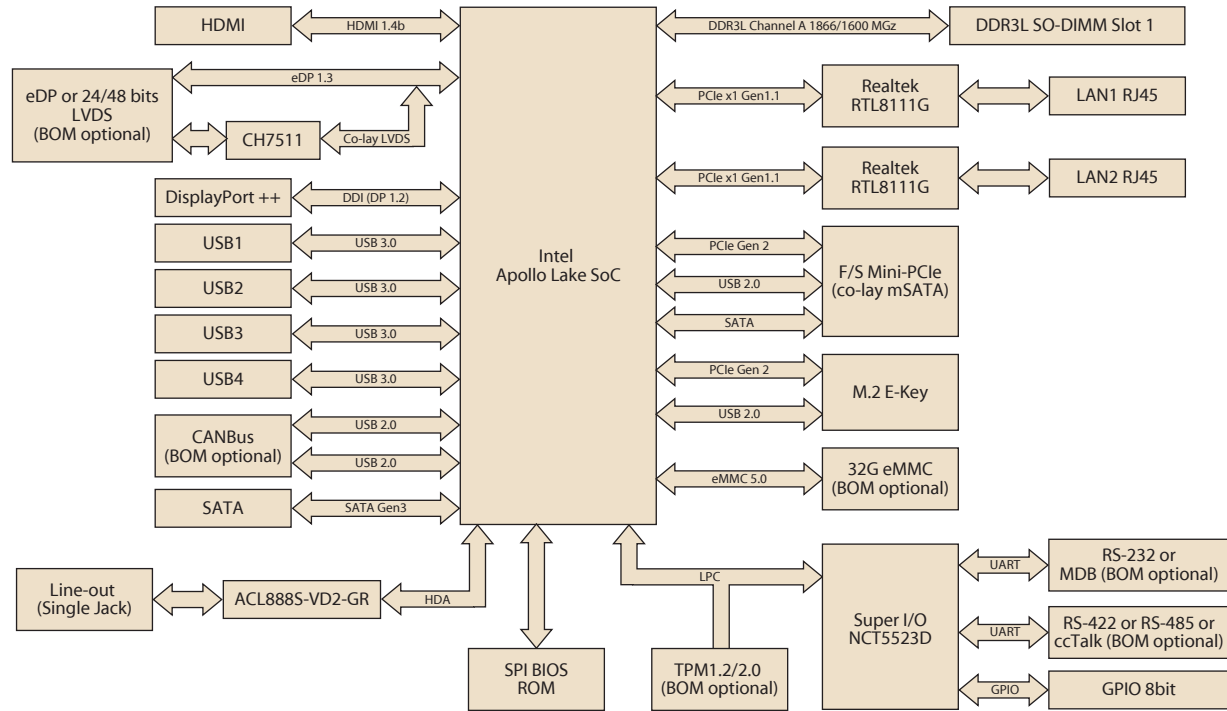
#### Utilities:



### 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)			
Ethernet	Displayport	1, Supports DP++ 1.2, max resolution up to 4096 x 2160 @ 60Hz			
	Interface	10/100/1000 Mbps			
	Controller	LAN1: Realtek 8111G; LAN2: Realtek 8111G			
SATA	Connector	RJ-45 x 2			
	Max Data Transfer Rate	600 MB/s (SATA 3.0)			
Rear I/O	Channel	1			
	HDMI	1			
	Displayport	1			
	Ethernet	2			
	USB	4 x USB3.0			
	Audio	1 (Line-out, convert to Mic-in or Line-in)			
Internal Connector	DC jack	1 (2.5mm)			
	LVDS & Inverter	1/1			
	Serial	1, RS-232 or MDB (BOM optional)			
	SATA	1, RS-422 or RS-485 or ccTalk (BOM optional)			
	GPIO	1, (SATA 3.0) SATA PWR connector			
Watchdog Timer	GPIO	8-bit			
	Output	System reset			
Power	Interval	Programmable 1 ~ 255 sec/min			
	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	
Physical Characteristics	N SKU	-20 ~ 70 °C (-4 ~ 158 °F) with air flow 0.7m/s	-40 ~ 85 °C (-40 ~ 185 °F)	CPU Heatsink	
	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	MiniPCle	M.2	RS232/ MDB	RS422/485/ ccTalk	TPM 1.2/2.0	CANBus	Audio	Operating Temp.	Thermal Solution
AIMB-U117D-S6A1E	E3950	1	1	1/(1)	1	2	1	(1)	4	1 (F/S)	1	1/(1) or (1)	1/(1) or (1)	(1)/(1)	(1)	1	0 ~ 60 °C	CPU Cooler
AIMB-U117NZ-S6A1E	E3930	1	1	1/(1)	1	2	1	(1)	4	1 (F/S)	1	1/(1) or (1)	1/(1) or (1)	(1)/(1)	(1)	1	-20 ~ 70 °C	CPU Heatsink
AIMB-U117NZ-FLA1E	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	MiniPCle 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
1960091367T001	Heatspreader
1960067561T001	Semi-Heatsink
1960090365T001	Heatsink

## I/O View

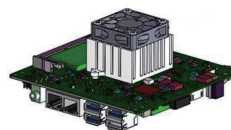


## Embedded OS/API

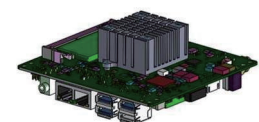
OS/API	Part No.	Description
Win 10	20706WX9ES0021	img W10 19EL EPC-U2117 64b 1809 ENU

## Thermal Solution

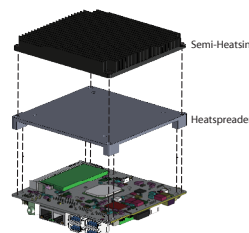
### CPU Cooler



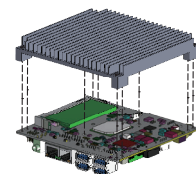
### CPU Heatsink (N SKU only)



### Heatspreader + Semi-Heatsink

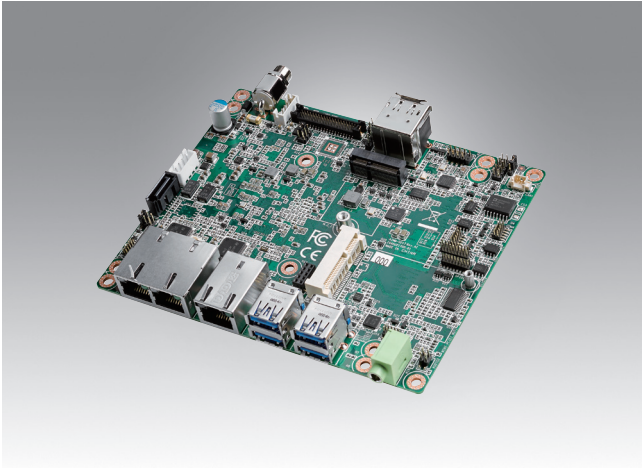


### Heatsink



# AIMB-U217

## Intel® Atom™ E3950/E3940 QC 1.6 GHz UTX Industrial Motherboard with HDMI/eDP (LVDS)/DP++, 4 COMs and 3 LANs



Windows 10



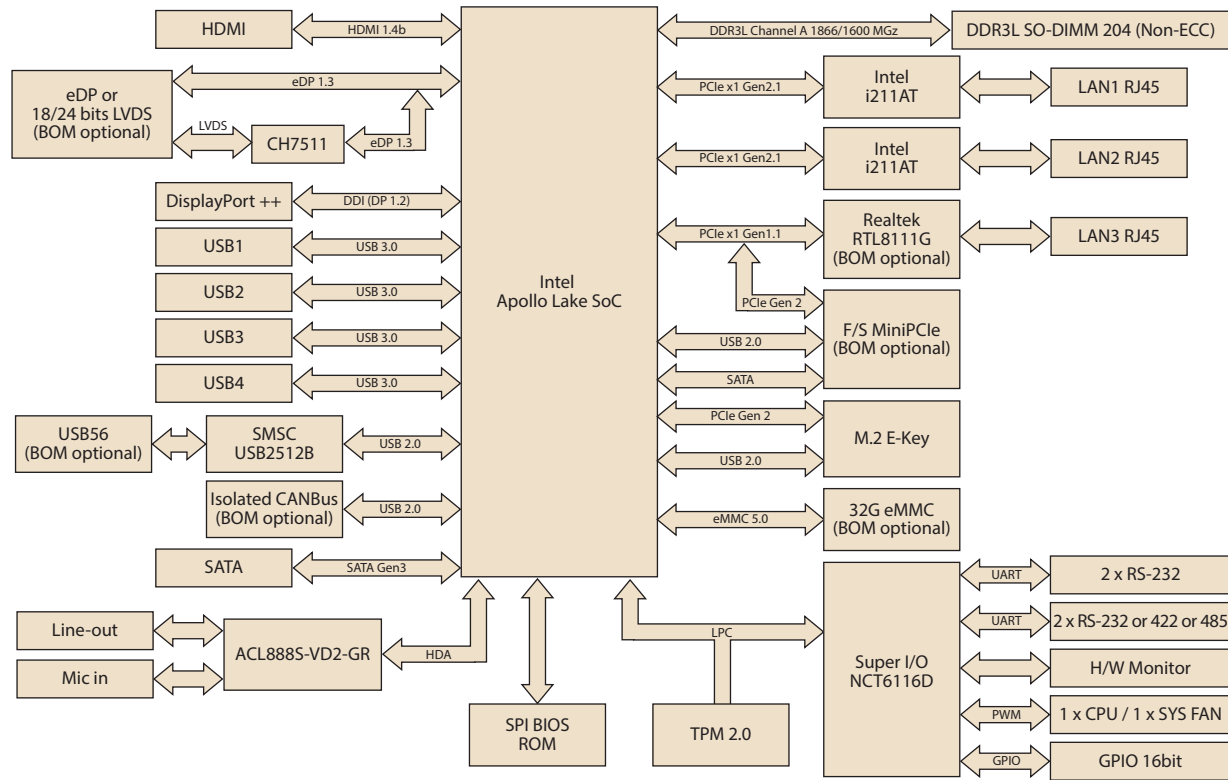
### Features

- Supports Intel® Atom™ Qual core E3950/E3940 up to 2.0 / Up to 1.8 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, 4 COMs (2 RS-232, 2 RS-232 or 422 or 485), 4 USB 3.0, 3 LANs
- Supports CANBus
- Supports eMMC 32GB on board
- Supports wide DC in 12V to 24V
- Supports wide temperature -20 ~ 70 °C (-4 ~ 158 °F)

### Specifications

Processor System	CPU (14nm)	Intel Atom E3950/ E3940
	Max. Speed	Up to 2.0 / Up to 1.8 (Qual Core)
	L2 Cache	2 MB
	BIOS	AMI 128Mb SPI
Expansion Slot	Mini-PCIE	F/S Sharing PCIe with LAN3, NO PCIe signal when LAN3 is installed
	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	LAN1/2: Intel i211AT LAN3: Realtek 8111G (BOM optional, Co-lay with Mini-PCIE)
	Connector	3, RJ45 (LAN3 is BOM optional)
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)
	Channel	1
Rear I/O	HDMI	1
	Displayport	1
	Ethernet	3 (LAN3 is BOM optional)
	USB	4 x USB3.0
	Audio	1 (Line-out)
	DC jack	1 (2.5mm)
Internal Connector	eDP or LVDS (BOM option) & Inverter	1/1
	Serial	2, RS-232 2, RS-232 or RS-422 or RS-485 (BOM optional)
	SATA	1, (SATA 3.0) SATA PWR connector
	USB	2, USB2.0 connector
	16-bit GPIO	1
	Watchdog Timer	Output
Interval		Programmable 1 ~ 255 sec/min
Power	Single voltage 1	12V ~ 24V DC input; 1 x External DC jack
	Typical Power Consumption	TBC
Environment		Operating Non-Operating
		-20 ~ 70 °C (-4 ~ 158 °F) -40 ~ 85 °C (-40 ~ 185 °F)
Physical Characteristics	Dimensions	112 x 137 mm (4.4" x 5.4")

## Block Diagram



## Ordering Information

P/N	CPU	SODIMM	HDMI 1.4b	eDP/LVDS	DP++ 1.2	GbE LAN 1/2/3	32G eMMC	SATA	Isolated CANBUS	RS232	RS232/422/485	USB3.0	USB2.0	M.2	F/S MiniPCIe	TPM 2.0
AIMB-U217DZ-FLA1E	E3950	1	1	1/(1)	1	1/1/1, 3 (WGI211AT*2 + Realtek)	1	1	1	2	(2)/ 1/1	4	2	1	1	1
AIMB-U217DZ-S6A1E	E3950	1	1	1/(1)	1	1/1/(1), 2 (WGI211AT*2, LAN1&2)	(1)	1	(1)	2	(2)/ 1/1	4	2	1	(1)	(1)
AIMB-U217EZ-S6A1E	E3940	1	1	1/(1)	1	1/1/(1), 2 (WGI211AT*2, LAN1&2)	(1)	1	(1)	2	(2)/ 1/1	4	2	1	(1)	(1)

\*() BOM Options

## Packing List

Description	Quantity
SATA HDD cable	1
SATA power cable	1
Serial port cable	4
Startup manual	1
CPU Cooler	1 (On board)

## Optional Accessories

Part Number	Description
1960090365T001	Heat Sink (eMMC should NOT serve as OS boot device if fan-less heat sink is installed.)
1700029091-01	CANBus cable

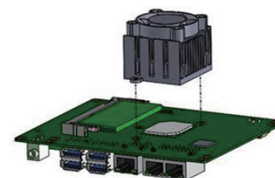
## Embedded OS/API

OS/API	Part No.	Description
Win 10	20706WX9HS0027	Windows 10 IoT Enterprise 2019 LTSC 64-bit

## I/O View



### CPU Cooler (Default)



### Heat Sink (Optional Accessory)

