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Datasheet

ADVANTECH

AIMB-290

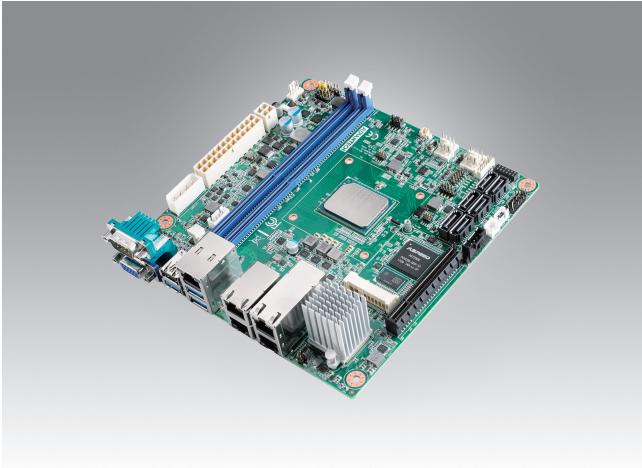
Industrial Mini-ITX Motherboard with Intel® Atom C3000



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AIMB-290

**Intel ATOM C3000 processor with
DDR4 ECC/non-ECC memory, VGA,
Dual GbE, Dual 10GbE, PCIe x8, eMMC
ATX or DC Input**



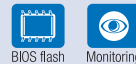
Features

- Support IPMI 2.0, TPM 2.0
- Intel ATOM C3000 processor up to 16 core
- eMMC on board
- Two 288-pin DDR4 ECC/non-ECC DIMM up to 64GB/32GB DDR4 2400/2133 MHz DRAM
- Dual 10GbE and Dual GbE LANs
- EMMC 5.1, 6xSATAIII, 1xmSATA
- Support DC 12V 4-pin or ATX 24-pin connector

Software APIs:



Utilities:

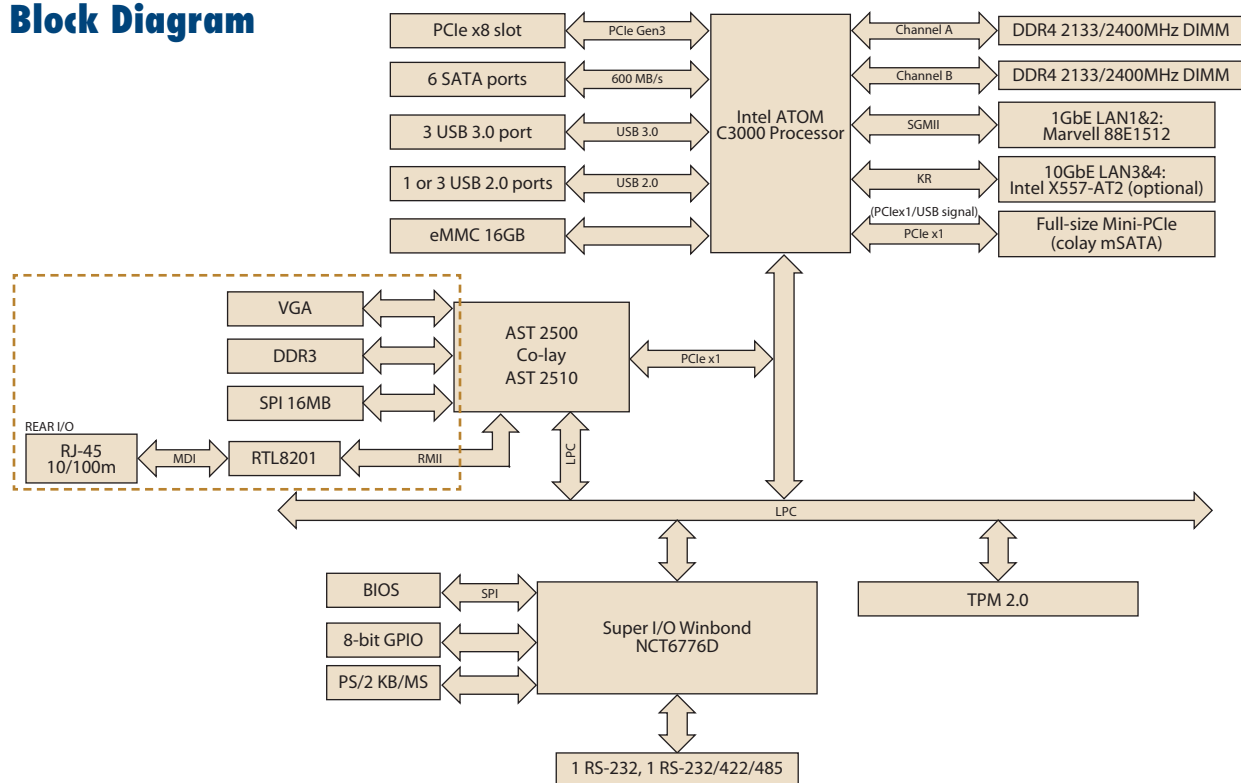


Specifications

Processor System	CPU	C3958	C3758	C3558
	Core Number	16c	8c	4c
	Max Speed	2.0GHz	2.2 GHz	2.2GHz
	L2 Cache	16MB	16 MB	8MB
	TDP	31W	25 W	16W
	BIOS	AMI EFI 128Mbit SPI		
Expansion Slot	Mini-PCIe	1 F/S miniPCIe slot support mSATA		
	PCIe x8 (Gen3)	8 GB/s per direction, 1 slot (by sku)		
Memory	Technology	Dual Channel, DDR4 1600/1866/2133/2400MHz ECC/Non-ECC with 288-pin U-DIMM/R-DIMM		
	Max. Capacity	Max. 32GB, 16GB/per DIMM for DDR4 non-ECC/ECC 2400MHz with U-DIMM Max. 64GB, 32GB/per DIMM for DDR4 ECC 2400MHz with R-DIMM		
	Socket	2 x 288pin DDR4 DIMM socket		
Graphics	Controller	ASPEED AST2500/2510 BMC controller (by sku)		
	VGA	Yes, supports max. resolution 1920 x 1200 @ 60 Hz		
Ethernet	Interface	2x 1GbE, 2x 10GbE, 1x 100/1000Mbps for IPMI		
	Controller	LAN 1/2: Marvell 88E1512 with RJ45 for 1GbE LAN 3/4: Intel X557-AT2 with RJ45 for 10GbE (by sku or T-PN) LAN 5: Realtek RTL8201 with RJ45 for IPMI (by sku or T-PN)		
	Connector	5 x RJ-45 (by sku or T-PN)		
eMMC	Capacity	16GB		
Security and Monitor control	TPM	TPM 2.0 (by sku)		
	IPMI	IPMI 2.0 (by sku)		
	PMBUS	PMBUS 1.2 (monitor the PSU status, the PSU must support PMBUS) (by sku)		
SATA	Max Data Transfer Rate	600 MB/s (SATA 3.0)		
	Channel	6 (SATA III)		
Rear I/O	VGA	1		
	Ethernet	5 (optional)		
	USB	4 (3 x USB3.0, 1 x USB2.0)		
	Serial	1 (RS-232)		
Internal I/O	USB	0 or 2 (USB2.0) (by sku)		
	Serial	1 (RS-232/422/485 autoflow control)		
	SATA	6 (SATA III)		
	Mini-PCIe	1 (F/S Mini-PCIe colay mSATA)		
	GPIO	8bit		
Watchdog Timer	KB/MS	1		
	Output	System reset		
Power Requirements	Interval	Programmable 1 ~ 255 sec/min		
	Input power	ATX 24-pin or 12V 4-pin *		
Environment	Power Consumption	Intel C3958 + 32GB RAM + 64GB SSD: 35W		
	Temperature	Operating 0 ~ 60° C (32 ~ 140° F) (Use AIMB-290 STD cooler and System Fan for 10GbE IC)		Non-Operating -40 ~ 85° C (-40 ~ 185° F)
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")		

* Please use either EATXPWR1 or ATX12V1. Do not use both connectors at the same time.

Block Diagram



Ordering Information

P/N	CPU	eMMC	VGA	GbE LAN	10GbE	GbE Lan for IPMI	COM	SATA	USB3.0/2.0	MiniPCle	TPM	PCIEx8	IPMI
AIMB-290G4-S1A1E	C3958	16GB	1	2	2	1	2	6	3/1	1 F/S	1	1	Yes
AIMB-290G4-S2A1E	C3758	16GB	1	2	2	1	2	6	3/1	1 F/S	1	1	Yes
AIMB-290G2-S3A1E	C3558	16GB	1	2	0	0	2	6	3/3	1 F/S	1	0	NA

*) BOM options available on MP version.

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	4
1700027538-01	SATA power cable	1
1700100250	Serial port cable (1 port, 25cm)	1
1960084693T000	I/O port bracket	1
2006029000	Startup manual	1
2026029000	China RoHS letter	1
1960054541N031	CPU cooler	1

Optional Accessories

Part Number	Description
1703100121	USB 2.0 cable with two ports, 12 cm
1703100261	USB 2.0 cable with two ports, 26 cm
1703060191	KB/MS cable 1*6P-2.0/M-DIN 6P(F)*2, 19cm
AIMB-RF10F-01A1E	Riser, PCIe16 to PCIe16
AIMB-RF20F-02A1E	Riser, PCIe16 to 2 PCIe16

Optional Chassis

Part Number	Description
AIMB-B2000-15ZE	Mini-ITX chassis with 150W power

Note :

- (1) To prevent interference, when you integrate AIMB MB into AIMB-B2000 series, please confirm the Part Number of CPU cooler with Chassis Datasheet again.
- (2) The temperature of 10GbE Lan IC is high due to its outstanding performance. When you assemble the enclosure with AIMB-290, please make sure the implemented system FAN can bring out the heat of 10GbE Lan IC in the chassis.

Embedded OS/API

OS/API	Description
Windows Server	Windows Server 2016
Linux Server	Red Hat Enterprise Linux Server (x64)

Rear I/O



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