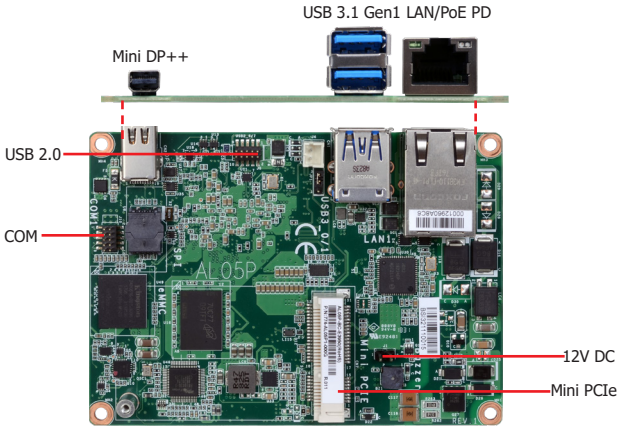
Intel Atom® Processor E3900 Series
2.5" Pico-ITX

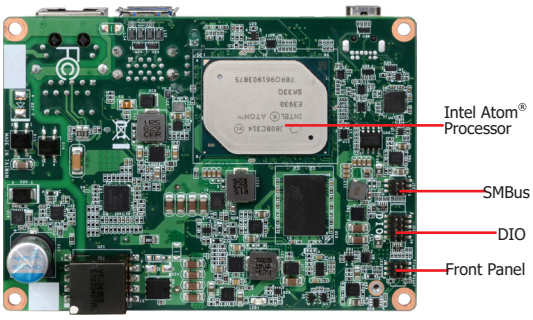
Intel IoT Solutions Alliance

AL05P

Atom



Top View



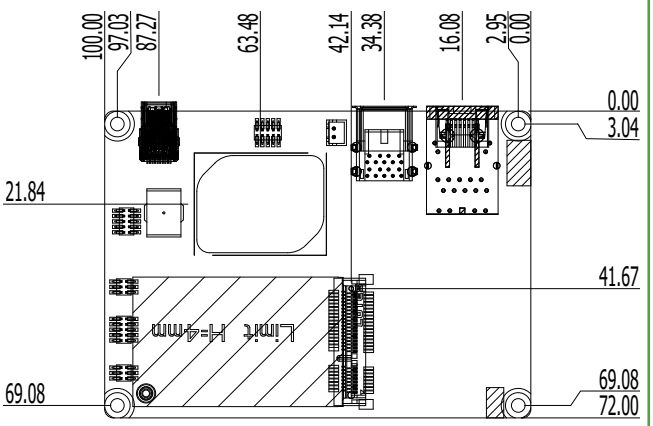
Bottom View

Features

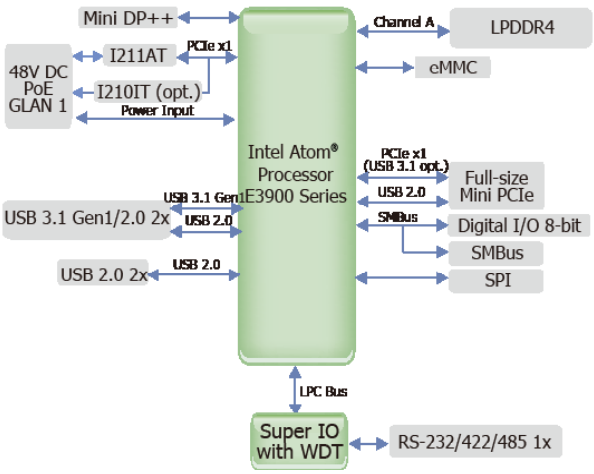
- Small form factor 2.5" Pico-ITX for space-limited applications
- PoE single board solution support PoE PD 48VDC
- PoE PD IEEE 802.3AF with isolation protection +0.5KV
- Support LPDDR4 memory down up to 4GB
- Expansion and Storage: 1 Mini PCIe, 1 SMBus, 1 eMMC
- Rich I/O: 1 LAN, 1 COM, 2 USB 3.1 Gen1, 2 USB 2.0



Mechanical Drawing



Block Diagram



Specifications

SYSTEM	**Processor**	Intel Atom® Processor E3900 Series, BGA 1296 Intel Atom® x5-E3940 Processor, Quad Core, 2M Cache, 1.6GHz (1.8GHz), 9.5W Intel Atom® x5-E3930 Processor, Dual Core, 2M Cache, 1.3GHz (1.8GHz), 6.5W Intel® Pentium® Processor N4200, Quad Core, 2M Cache, 1.1GHz (2.5GHz), 6W Intel® Celeron® Processor N3350, Dual Core, 2M Cache, 1.1GHz (2.4GHz), 6W
	Memory	SDRAM Memory Down up to 4GB Single Channel DDR4 2400MHz
	BIOS	Insyde SPI 128Mbit (supports UEFI boot only)
GRAPHICS	**Controller**	Intel® HD Graphics
	Feature	OpenGL 4.2, Direct X 11.1, OpenCL 1.2, OGL ES 3.0 HW Decode: H.264, MPEG2, VC1, VP8, H.265, MPEG4 HW Encode: H.264, MPEG2, MPEG4
	Display	1 x Mini DP++ Mini DP++: resolution up to 4096x2160 @ 60Hz
EXPANSION	**Interface**	1 x Full-size Mini PCIe (PCIe/USB 2.0, optional USB 3.1 Gen1/USB 2.0)
Storage	**Storage**	1 x 16GB/32GB/64GB eMMC
ETHERNET	**Controller**	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I210IT PCIe (10/100/1000Mbps) (available upon request)
REAR I/O	**Ethernet**	1 x GbE (RJ-45)
	USB	2 x USB 3.1 Gen1
	Display	1 x Mini DP++
INTERNAL I/O	**Serial**	1 x RS-232/422/485 (1.27mm pitch)
	USB	2 x USB 2.0 (1.27mm pitch)
	DIO	1 x 8-bit DIO
	SMBus	1 x SMBus
WATCHDOG TIMER	**Output & Interval**	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	**TPM**	fTPM 2.0
POWER	**Type**	48VDC PoE
	Connector	PoE LAN
	RTC Battery	CR2032 Coin Cell
	Consumption	TBD
OS SUPPORT (UEFI Only)	**Microsoft/Linux**	Windows 10 IoT Enterprise (64-bit) Linux
ENVIRONMENT	**Temperature**	Operating: 0 to 60°C, -20 to 70°C Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	TBD
MECHANICAL	**Dimensions**	2.5" Pico-ITX Form Factor 100mm (3.94") x 72mm (2.83")
	Height	PCB: 1.6mm Top Side: 15mm, Bottom Side: 8mm

Ordering Information

Model Name	P/N	Processor	Memory	eMMC	Display	GbE	RS-232/422/485	USB 3.1 Gen1	USB 2.0	Power	Thermal	Temp.
AL05P-BC-23E30	770-AL05P1-000G	X5-E3930	2GB	32GB	1	1	1	2	2	PoE PD 48V	Fanless	0 to 60°C
AL05P-BC-23E40	770-AL05P1-100G	X5-E3940	2GB	32GB	1	1	1	2	2	PoE PD 48V	Fanless	0 to 60°C
AL05P-BC-23N50	770-AL05P1-200G	N3350	2GB	32GB	1	1	1	2	2	PoE PD 48V	Fanless	0 to 60°C
AL05P-EC-23E30	770-AL05P1-400G	X5-E3930	2GB	32GB	1	1	1	2	2	PoE PD 48V	Fanless	-20 to 70°C
AL05P-EC-23E40	770-AL05P1-500G	X5-E3940	2GB	32GB	1	1	1	2	2	PoE PD 48V	Fanless	-20 to 70°C

Note: N4200 is supported upon request with MOQ requirement.

Packing List

• 1 AL05P board	
• 1 Heat spreader (Height: 15mm)	E Series CPU: A71-808315-000G N Series CPU: A71-808315-010G

Optional Items

• USB port cable (Length: 200mm)	A81-001061-016G
• 1 COM port cable (Length: 300mm)	A81-015038-016G
• Heat sink for E series CPU 0 to 60°C (Height: 28mm)	E Series CPU: A71-008116-000G N Series CPU: A71-008116-010G

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