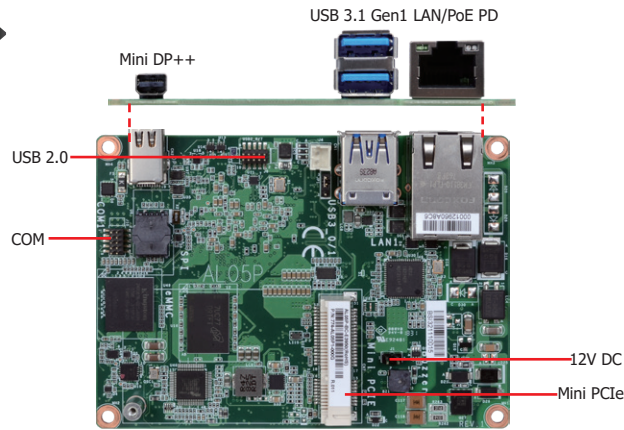
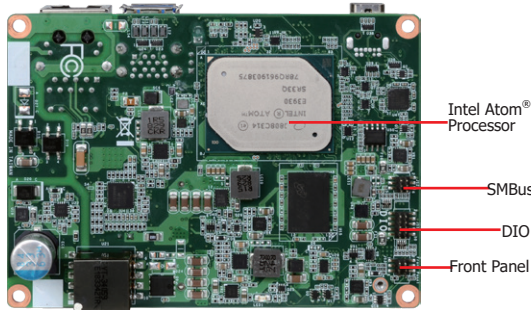


AL05P

Atom



Top View



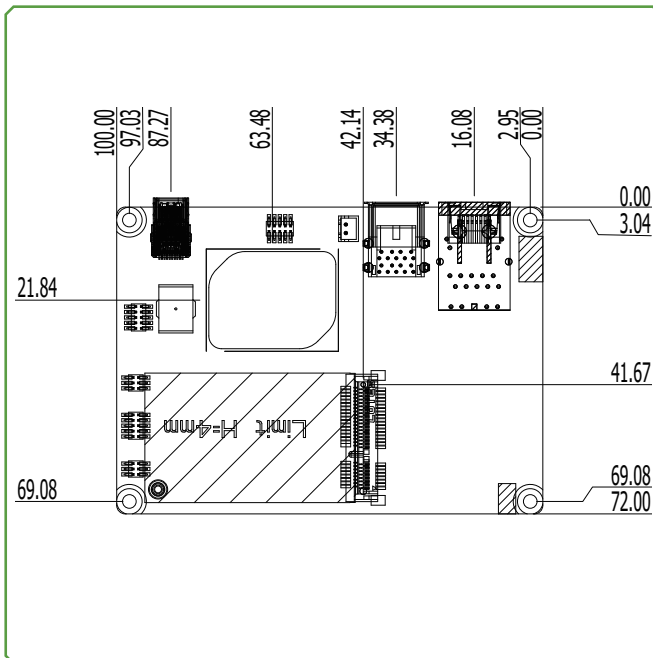
Bottom View

Features

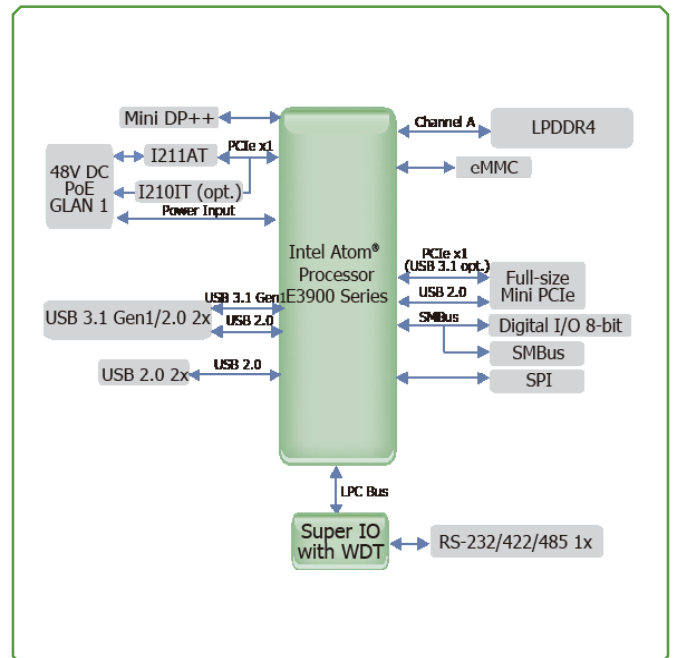
- Small form factor 2.5" Pico-ITX for space-limited applications
- PoE single board solution support PoE PD 48VDC
- PoE PD IEEE 802.3AF with isolation protection +0.5KV
- Support LPDDR4 memory down up to 4GB
- Expansion and Storage: 1 Mini PCIe, 1 SMBus, 1 eMMC
- Rich I/O: 1 LAN, 1 COM, 2 USB 3.1 Gen1, 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	Typical: E3950:12V @ 0.33A (3.96Watt) Max.: E3950:12V @ 1.76A (21.12Watt)	
	OS SUPPORT (UEFI Only)	Microsoft/Linux	Windows 10 IoT Enterprise (64-bit)
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
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 / Wide temp., Height: 27mm)	A71-008116-000G
• Heat sink for N series CPU (0 to 60°C, Height: 28.1mm)	A71-008116-010G