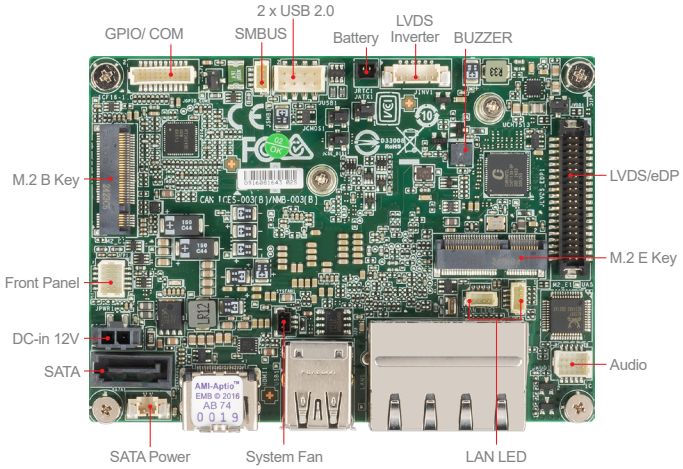
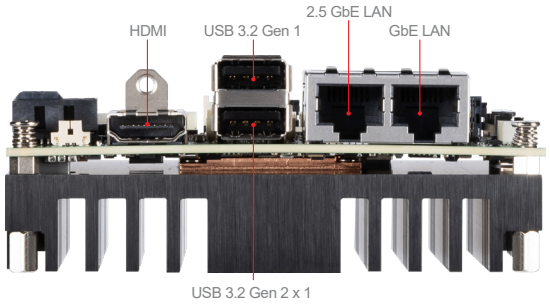
MS-CF16

Pico-ITX SBC with Intel® Alder Lake-N/Amston Lake for Fanless, Low-Power, High-Performance, Wide Temperature & Harsh environment Solution

NEW





Features

- Intel® Alder Lake-N/ Amston Lake Series SoC
- LPDDR5 4800 MHz onboard memory up to 16GB
- Dual independent displays: HDMI, LVDS/eDP
- 1 2.5 GbE/1 GbE LAN with RJ-45
- 2 USB 3.2 (Bottom layer USB 3.2 Gen 2 x 1, Top layer USB 3.2 Gen 1), 2 USB 2.0, 1 COM (RS-232/422/485), GPIO, Audio
- 1 M.2 B Key, 1 M.2 E Key Slot
- SATA 3.0 for storage
- Wide operating temperature : -40~70°C
- DC-IN 12V

Ordering Information

Part Number	Description
916-CF16-002	MS-CF16\606-CF16-090\806-CF16-015 13 INTEL ADL-N N97, LPDDR5 4GB,1*HDMI,1*LVDS/eDP,1*M.2 E key,1*M.2 B key,1*2.5GbE LAN,1*GbE LAN,1*SATA 3.0,1*USB 3.2 Gen 2,1*USB 3.2 Gen 1,2*USB2.0,GPIO,1*COM,TPM2.0,DC-in 12V,Non-WT, Single 12-PACK For Channel
916-CF16-003	MS-CF16\606-CF16-100\806-CF16-016 13 INTEL ADL-N N97, LPDDR5 8GB,1*HDMI,1*LVDS/eDP,1*M.2 E key,1*M.2 B key,1*2.5GbE LAN,1*GbE LAN,1*SATA 3.0,1*USB 3.2 Gen 2,1*USB 3.2 Gen 1,2*USB2.0,GPIO,1*COM,TPM2.0,DC-in 12V,Non-WT, Single 12-PACK For Channel
916-CF16-004	MS-CF16\606-CF16-110\806-CF16-017 13 INTEL ADL-N N97, LPDDR5 16GB,1*HDMI,1*LVDS/eDP,1*M.2 E key,1*M.2 B key,1*2.5GbE LAN,1*GbE LAN,1*SATA 3.0,1*USB 3.2 Gen 2,1*USB 3.2 Gen 1,2*USB2.0,GPIO,1*COM,TPM2.0,DC-in 12V,Non-WT, Single 12-PACK For Channel
916-CF16-005	MS-CF16\606-CF16-120\806-CF16-018 13 INTEL ADL X7425E, LPDDR5 8GB,1*HDMI,1*LVDS/eDP,1*M.2 E key,1*M.2 B key,1*2.5GbE LAN,1*GbE LAN,1*SATA 3.0,1*USB 3.2 Gen 2,1*USB 3.2 Gen 1,2*USB2.0,GPIO,1*COM,TPM2.0,DC-in 12V,Non-WT, Single 12-PACK For Channel
916-CF16-006	MS-CF16\606-CF16-130\806-CF16-019 13 INTEL ASL X7433RE, LPDDR5 8GB,1*HDMI,1*LVDS/eDP,1*M.2 E key,1*M.2 B key,1*2.5GbE LAN,1*GbE LAN,1*SATA 3.0,1*USB 3.2 Gen 2,1*USB 3.2 Gen 1,2*USB2.0,GPIO,1*COM,TPM2.0,DC-in 12V,WT, Single 12-PACK For Channel
916-CF16-007	MS-CF16\606-CF16-140\806-CF16-020 13 INTEL ASL X7433RE, LPDDR5 16GB,1*HDMI,1*LVDS/eDP,1*M.2 E key,1*M.2 B key,1*2.5GbE LAN,1*GbE LAN,1*SATA 3.0,1*USB 3.2 Gen 2,1*USB 3.2 Gen 1,2*USB2.0,GPIO,1*COM,TPM2.0,DC-in 12V,WT, Single 12-PACK For Channel

Specifications

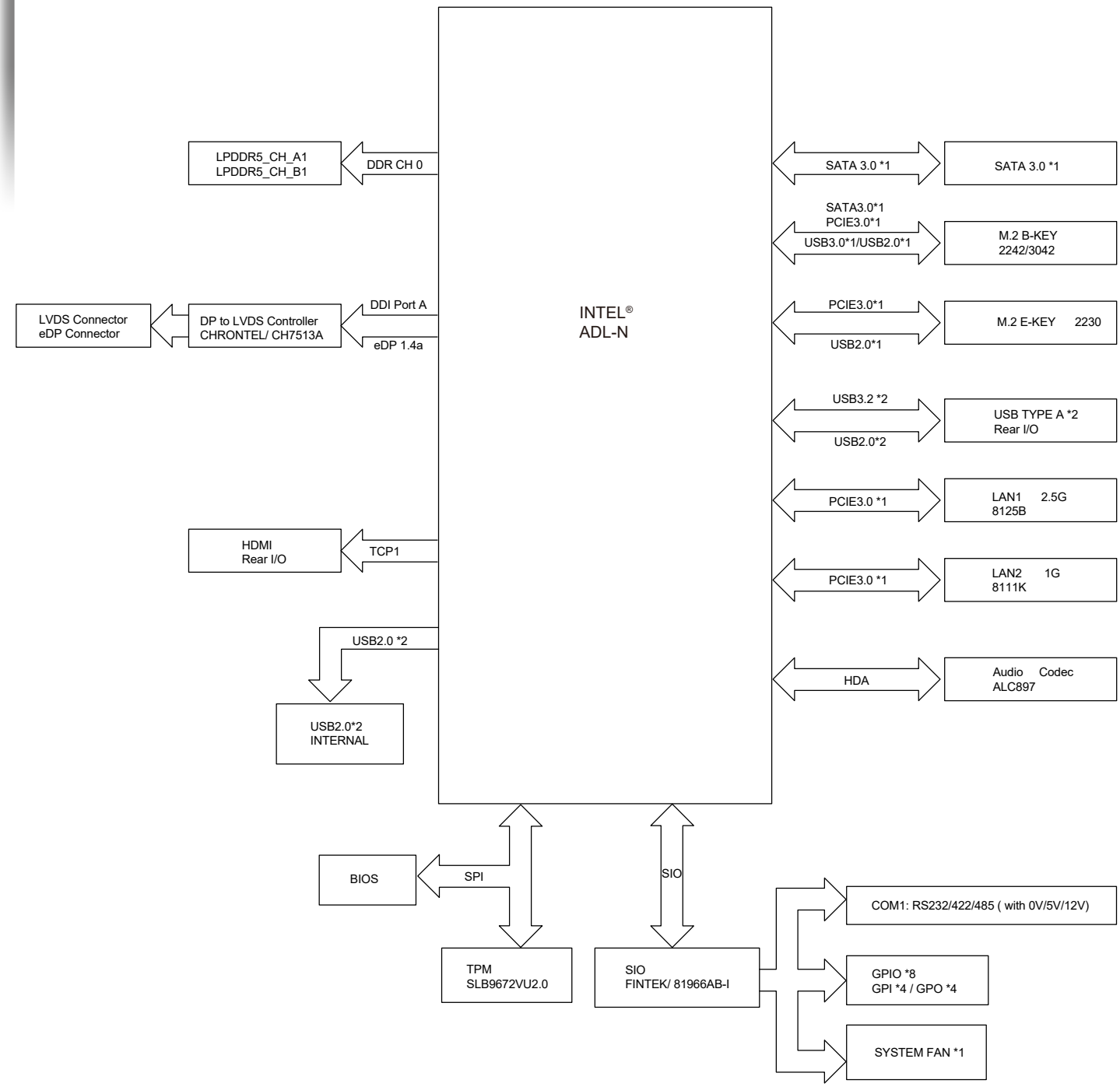
		Alder Lake -N SKUs	Amston Lake SKU
Processor	CPU	Intel® IOTG Alder Lake-N Processor N97, QC, 12W Intel® IOTG Alder Lake-N Atom x7425E, QC, 12W	Intel® IOTG Amston Lake Atom, X7433RE, QC, 9W
	Frequency	N97, 2.0GHz, up to 3.6 GHz x7425E, 1.5GHz, up to 3.4 GHz	X7433RE, 1.5GHz, up to 3.4 GHz
	L2 Cache	6MB	
	CPU Type	BGA	
	Chipset	Integrated in SoC	
	BIOS	AMI	
Memory	Technology	Single-channel LPDDR5 4800 MHz	
	Max. Capacity	Up to 16GB	
	Socket	Onboard	
Display	Controller	Intel® HD Graphics	
	Graphic Memory	Depends on CPU	
	LVDS	Dual Channel 18/24-bit (Connector shared with eDP)	
	eDP	1 (Connector shared with LVDS)	
	HDMI	1	
	Multiple Display	2 independent displays	
	Display Interface	LVDS up to 1920 x 1200 @60Hz eDP up to 1920 x 1080 @60Hz HDMI up to 3840 x 2160 @30Hz	
Ethernet	Controller	1 x Realtek® RTL8125BG-CG 2.5GbE LAN 1 x Realtek® RTL8111K-CG 1GbE LAN	
Audio	Controller	Realtek® ALC897 High Definition Audio Codec	
Super I/O	Controller	Fintek F81966AB-I	
H/W Monitor	Watchdog Timer	256-level Watchdog Timer	
TPM	Controller	Infineon® SLB 9672VU2.0	
I/O Interface	USB	2 x USB 2.0 ports (internal) 2 x USB 3.2 ports (rear) (Bottom layer USB 3.2 Gen 2 x 1, Top layer USB 3.2 Gen 1)	
	Serial	1 x COM port (internal) COM: RS-232/422/485, 0V/5V/12V	
	GPIO	8-bits (4 x GPI; 4 x GPO), 5V	
	M.2	1 x E key 2230 (PCIe x1 + USB 2.0) 1 x B key 2242/3042 (PCIe x1/SATA 3.0 + USB 3.2 Gen 2 + USB 2.0)	
Storage	SATA	1 x SATA 3.0	
Power Supply	DC	DC-in 12V	
	ATX	N/A	
Environment	Operating Temperature	-10 ~ 60°C Note: 1. Thermal w/ Airflow:0.7m/s 2. The standard thermal solution only supports TDP up to 12W.	-40 ~ 70°C Note: 1. Thermal w/ Airflow:0.7m/s 2. The standard thermal solution only supports TDP up to 9W. 3. -40 ~ 85°C by request
	Operating Humidity	10 ~ 90%, non-condensing	
	Storage Temperature	-20 ~ 80°C	-40 ~ 85°C
	Storage Humidity	10 ~ 90%, non-condensing	
Form Factor	Dimensions	101 x 73 mm (Pico-ITX)	
	Weight	0.30 kg	
Certification	EMC	CE, FCC Class B, BSMI, VCCI, RCM, UKCA, IC	
Software Platform	OS Support	Windows 10 IoT Enterprise 21H2 LTSC (64-bit) Windows 11 IoT Enterprise 24H2 LTSC (64-bit) Linux (Support by request)	

Packing List

Part Number	Description	Quantity
K14-3018013-V03	COM PORT Cable, 150mm	1
K1B-3008067-V03	USB Cable, 150mm	1
K1D-3010008-V03	SATA Cable with Power, 150mm	1
K1G-3002069-V03	DC Power Cable, 150mm	1
K10-3004466-V03	LAN LED Cable, 150mm	2

Optional Item

Part Number	Description
E31-0807850-K08	Heatspreader

MSI reserves the right to change the specifications without prior notices.

Block Diagram