

Ruggedised open-standard Thin MiniITX, Extended temperature -40°C to 85°C



Extended
Temperature
+85°C
-40°C

CPU Full Speed



- Intel® Alder Lake-N N50(2C) / Atom x7425E (8C)/ i3-N305 (8C/8T)
- 1 x DDR5 SO-DIMM up to 16GB
- Triple display for LVDS , HDMI, and DisplayPort
- Support 1 x PCIe Gen3 x 1 slot, 1 x M.2 3042/3052 B-key (USB2.0, PCIe x 1), 1 x M.2 2230 E-key (PCIe x 1, USB2.0), 1 x M.2 2280 M-Key(SATAIII) , 1 x SATAIII
- 2 x Intel® i226-V 2.5Gigabit Ethernet
- 1x USB3.2 Gen2, 3x USB3.2 Gen1, 4 x USB2.0, 1 x USB2.0 Vertical Type A, 4 x COM and 1 x MiAPI (configurable digital I/O)
- 4 x COM (3 x RS232, 1 x RS232/422/485) ; 1 x MiAPI (Configurable DIDO)
- 8-24V Wide Voltage Power Input
- Extended Temp. ET : -20 to 70°C ; UT : -40 to 85°C

Specifications

System

CPU	Intel® Alder Lake-N : N50 (2C/6M Cache, up to 3.40 GHz , TDP 6W) Core i3-N305(8C/6M Cache, up to 3.80 GHz, TDP 15W) Atom x7425E(4C/6M Cache, up to 3.40 GHz, TDP 12W)
Memory type	DDR5 4800 MHz / 1 x 260-pin SO-DIMM / Max. 16GB (Non-ECC)
Chipset	Intel® SoC Integrated
Graphic	Intel® HD Graphics
TPM	Nuvoton NPCT750AABYX TPM2.0 (Optional)
I/O Chipset	Nuvoton NCT6126D(eSPI)
Watchdog	1-255 sec. or 1-255 min. software programmable and can be generate system res

Display

Display Port	Up to 4K (4096 x 2160) @30 Hz
HDMI	Up to 4K (4096 x 2160) @60 Hz
LVDS	Up to 1920 x 1200 @60 Hz

Audio

Codec	Realtek® ALC888
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Expansion Slot

Expansion Slot	- i3-N305 & x7425E: PCIe 3.0 x 1 slot /M.2 3042 / 3052 / 2242 / 2260 / 2280 B key (USB3.1 Gen 1, US support M.2 M Key NVMe SSD / M.2 2230 E key (PCIex1, USB2.0) *Support CNV - N50: PCIe 3.0 x 1 slot / M.2 3042 / 3052 / 2242 / 2260 / 2280 B key (USB2.0, SATAIII, /M.2 2230 E key (PCIex1, USB2.0)*Support CNVi.
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Ethernet

Chipset	2 x Intel® I226-V 2.5 Giga LAN
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Front IO

USB	- i3-N305 & x7425E : 1 x USB 3.2 Gen2, 3 x USB 3.2 Gen1 - N50 : 1 x USB 3.2 Gen2, 1 x USB 3.2 Gen1, 2 x USB 2.0
Display I/O	1 x HDMI 1.4, 1 x DisplayPort 1.4
LAN	2 x RJ45

INS8325A

DC IN 1 x DC-in Jack

Internal I/O header (No Edge I/O Needed)

SATA	1 x SATA power header / 1 x SATAIII (Multiplexed with M.2 M Key)
USB	- I3-N305 & 7425E : 4 x USB 2.0 / 1 x USB2.0 Vertical Type A - N50 : 2 x USB 2.0
Display I/O	1 x LVDS 1 x Backlight Connector
Audio I/O	1 x Speaker Header 1 x Front Audio Header (Mic-in / Line-out)
Serial Port	- i3-N305 & x7425E : 1 x RS232/RS422/485/3 x RS232 - N50 : 3 x RS232
Parallel Port	1 x MiAPI Header
Fan	1 x 4-pin CPU Fan Header
Power	1 x AT / ATX Mode Select Jumper / 1 x ATX 4-pin Power Connector
Others	1 x CMOS Jumper / 1 x Chassis Front Panel Header (2 x 5-pin) / 1 x Front Audio Header (Mic-in & Line-out) / 1 x Buzzer / 1 x Panel power select header (default 3.3V, option to 5V, 12

Mechanical and Environmental

Form Factor	Mini ITX
Power Type	DC-IN 8~24V/ ATX 4-pin Power Connector
Dimension	170 mmX 170mm
Operating Temperature	ET : -20°C ~ 70°C UT : -40°C ~ 85°C
Storage Temperature	-40°C ~ 85°C
Relative humidity	10% to 90%, non-condensing

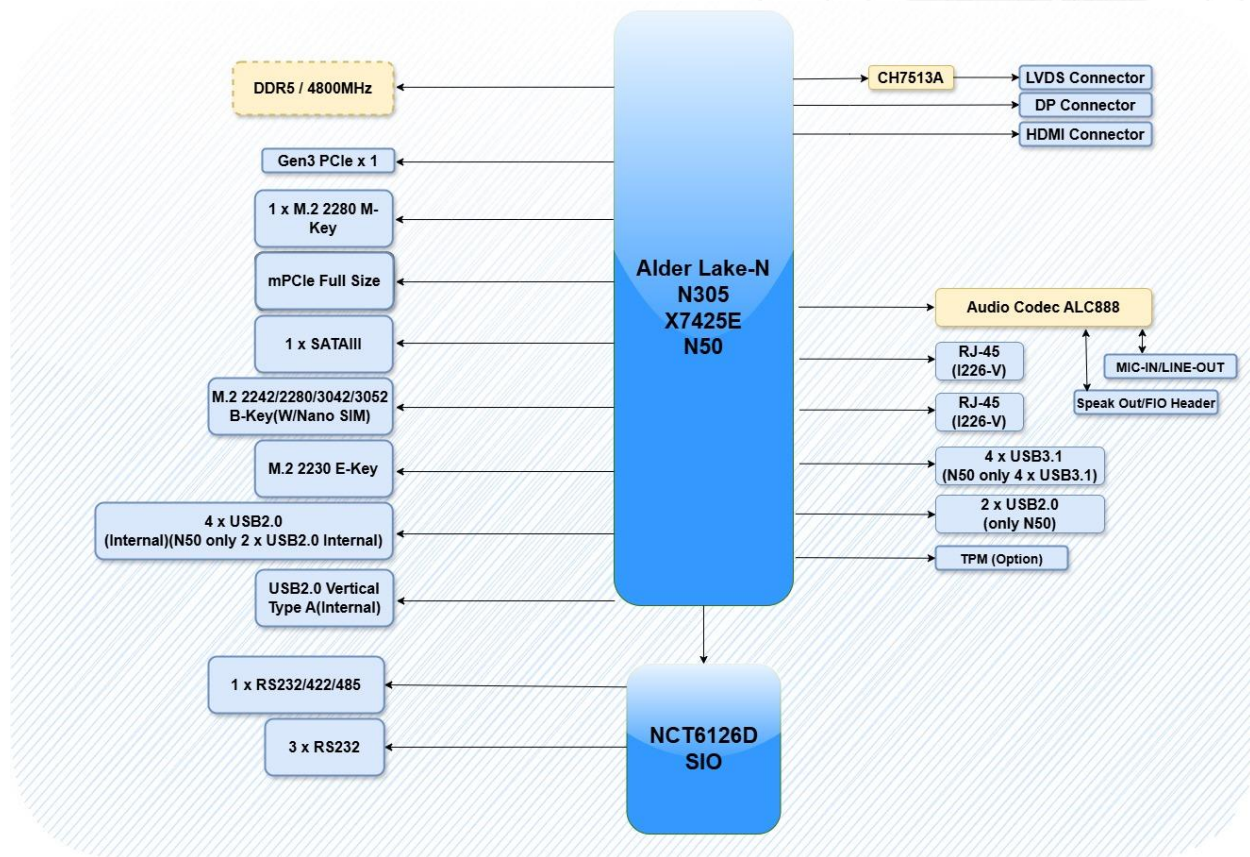
Standard Compliance

Standard Compliance	CE/FCC
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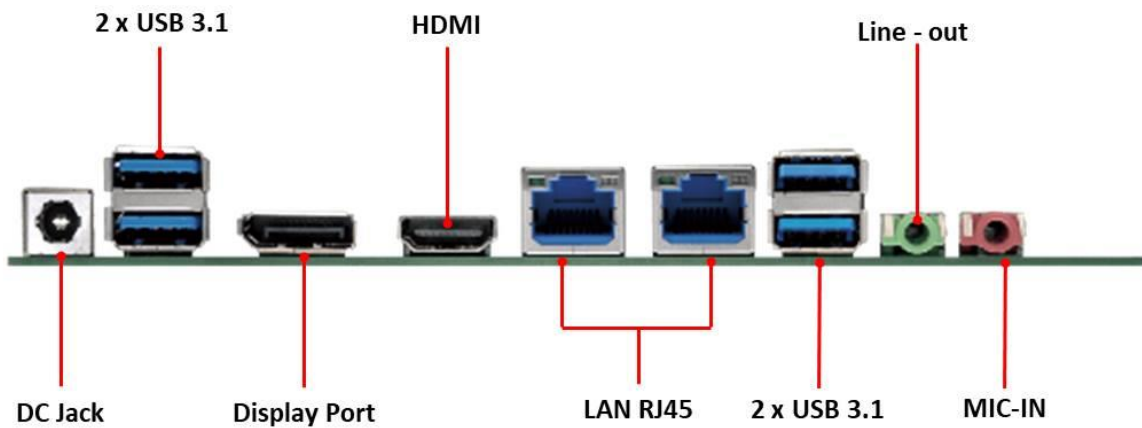
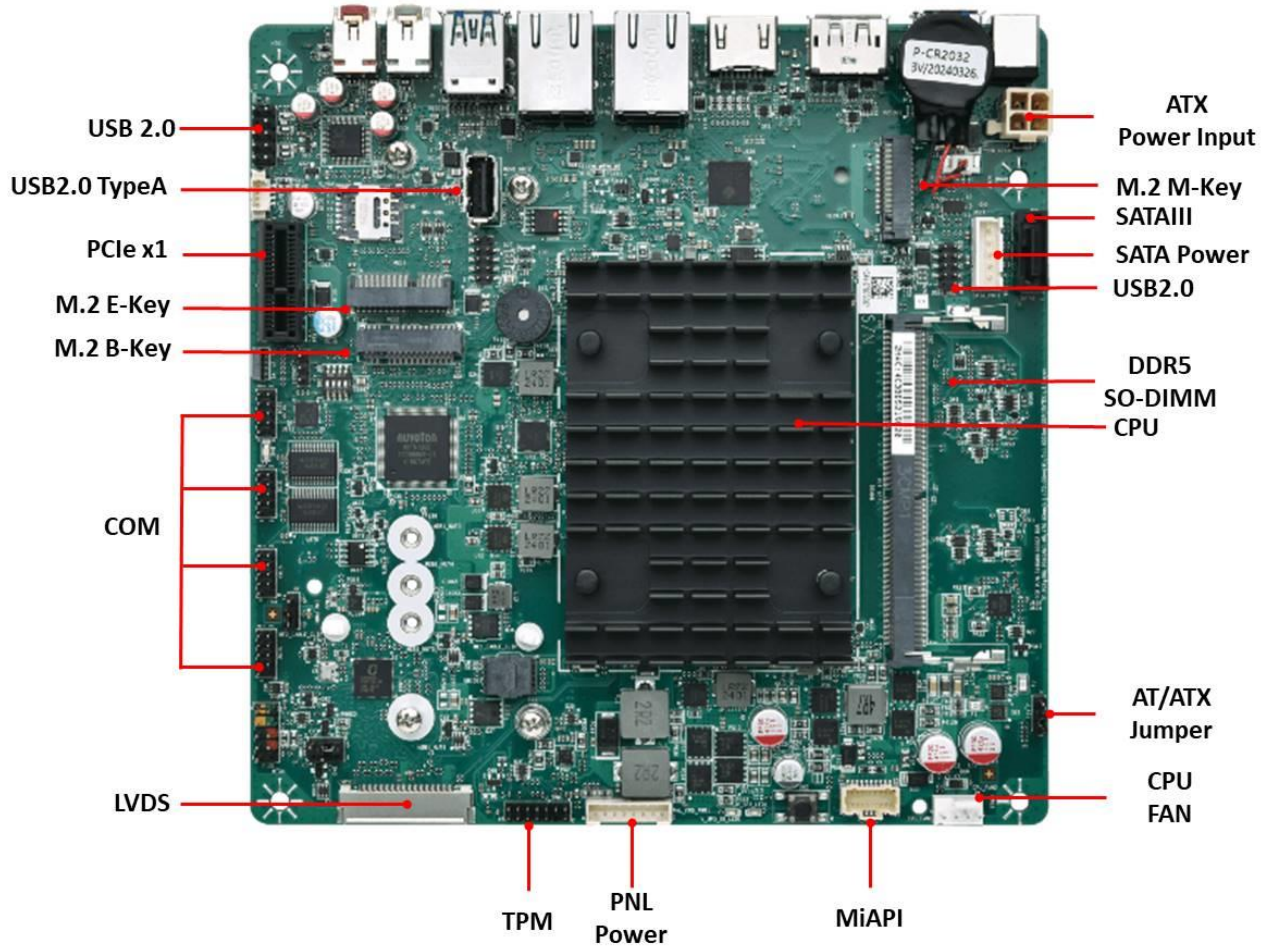
OS

OS Support	Windows®10/11 64-bit, Linux(Support by request)
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Block Diagram



Appearance



Ordering Information

Model	Description
INS8325A-01ET	Thin MiniITX MB withIntel® Alder Lake-N N50 Processor, 1 x DDR5 SO-DIMM up to 16GB, 1 x DP, 1 x HDMI, 2 x LAN , 4 x USB3.1, 1 x Mic-in & 1 x Line-out, Operation Temperature -20 ~ 70 °C , RoHS
INS8325A-01UT	Thin MiniITX MB withIntel® Alder Lake-N N50 Processor, 1 x DDR5 SO-DIMM up to 16GB, 1 x DP, 1 x HDMI, 2 x LAN , 4 x USB3.1, 1 x Mic-in & 1 x Line-out, Operation Temperature -40 ~ 85 °C , RoHS
INS8325A-02ET	Thin MiniITX MB withIntel® Alder Lake-N Core i3-N305 Processor, 1 x DDR5 SO-DIMM up to 16GB, 1 x DP, 1 x HDMI, 2 x LAN , 4 x USB3.1, 1 x Mic-in & 1 x Line-out, Operation Temperature -20 ~ 70 °C , RoHS
INS8325A-02UT	Thin MiniITX MB withIntel® Alder Lake-N Core i3-N305 Processor, 1 x DDR5 SO-DIMM up to 16GB, 1 x DP, 1 x HDMI, 2 x LAN , 4 x USB3.1, 1 x Mic-in & 1 x Line-out, Operation Temperature -40 ~ 85 °C , RoHS
INS8325A-03ET	Thin MiniITX MB withIntel® Alder Lake-N ATOM x7425E Processor, 1 x DDR5 SO-DIMM up to 16GB, 1 x DP, 1 x HDMI, 2 x LAN , 4 x USB3.1, 1 x Mic-in & 1 x Line-out, Operation Temperature -20 ~ 70 °C , RoHS
INS8325A-03UT	Thin MiniITX MB withIntel® Alder Lake-N ATOM x7425E Processor, 1 x DDR5 SO-DIMM up to 16GB, 1 x DP, 1 x HDMI, 2 x LAN , 4 x USB3.1, 1 x Mic-in & 1 x Line-out, Operation Temperature -40 ~ 85 °C , RoHS