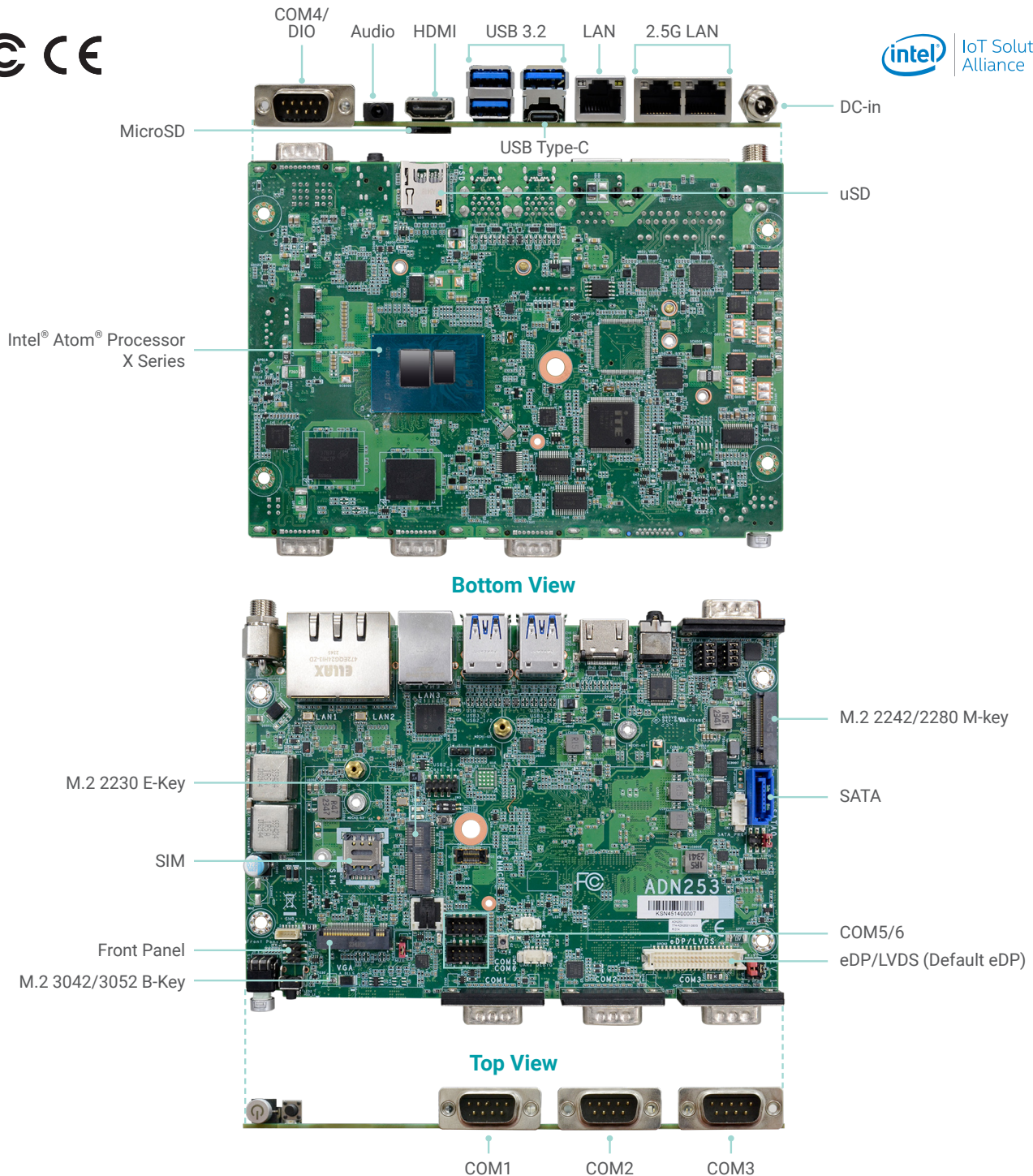


ADN253

Atom



Intel® Atom® Processor X Series
4" SBC



KEY FEATURES



On Board OOB built-in (Opt.)

Hardware status remote control&monitor, BIOS remote setup/update, OS remote recovery, Open-SSH/ UEFI Shell/ In-Band Windows support



Rich I/O

2 2.5GbE, 1 GbE, 4 USB 3.2, 3 COM, 1 COM/DIO, Internal: 2 USB 2.0, 2 COM



Intel TCC within the system

Supported by X series CPU and TSN standard up to 2.5GbE. (Opt.)



On Board DDR5 Support

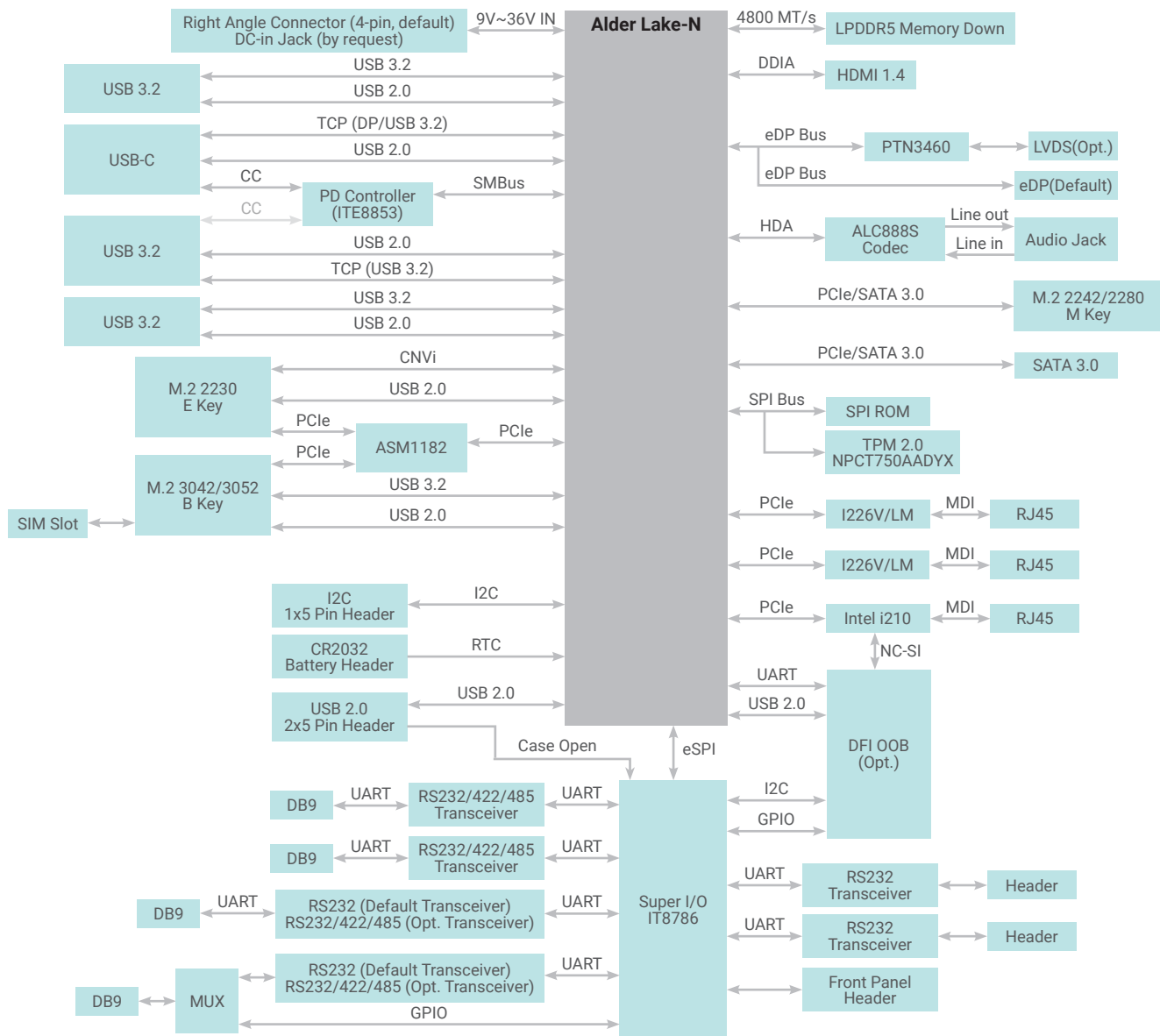
LPDDR5 4800 MHz memory down



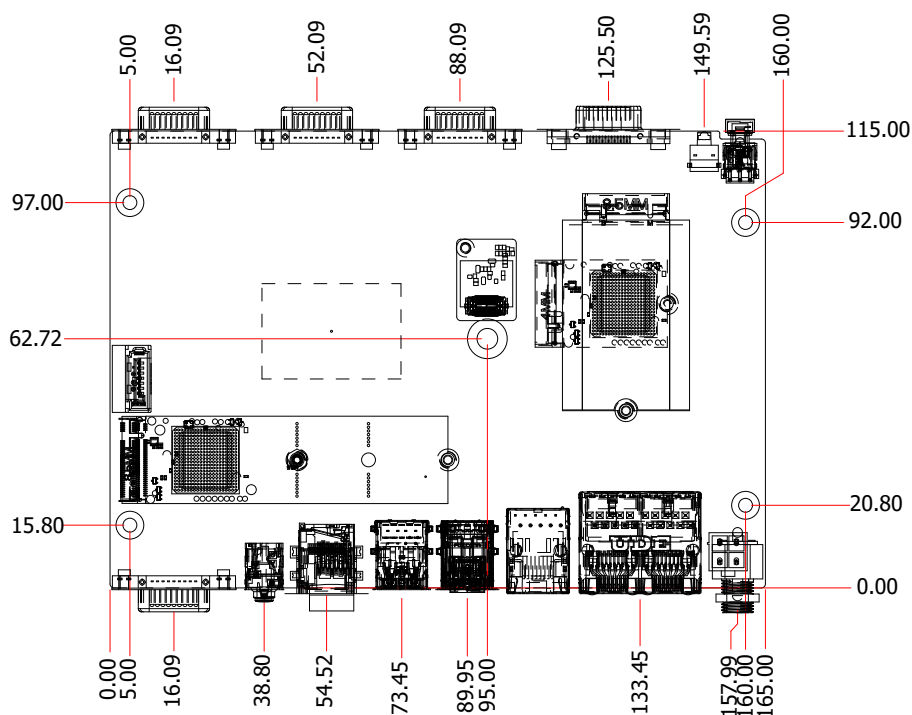
Up to Quad Display Support

Support via HDMI/USB-C/eDP, Quad display support by Dev

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

SYSTEM	Processor	Intel Alder Lake-N Series Intel PC Client Series Intel® Processor N50 2 Cores, 1.0GHz to 3.4 GHz Intel® Processor N97 4 Cores, 2.0GHz to 2.9 GHz Intel® Processor N200 4 Cores, 1.0GHz to 3.2 GHz Intel® Core™ i3-N305 8 Cores, 1.0GHz to 3.0 GHz Intel® Embedded Series Intel® Atom® X7211E 2 Cores, 1.0GHz to 2.9 GHz Intel® Atom® X7213E 2 Cores, 1.7GHz to 2.9 GHz Intel® Atom® X7425E 4 Cores, 1.5GHz to 2.7 GHz
	Memory	8GB/16GB LPDDR5 4800 Memory down
	BIOS	AMI SPI 256Mbit (supports UEFI boot only)
GRAPHICS	Controller	Intel® UHD Graphics
	Feature	Execution Units: Up to 32 EUs 3D API: Open GL 4.6, DirectX12, Vulkan 1.2 (Windows) Mesa 3D, OpenGL 4.6, Vulkan 1.2 (Linux) Precision: FP32, FP16, INT8 Compute: OpenCL 3.0
	Display	1 x eDP(Default)/LVDS 1 x HDMI 1.4 1 x USB-C Alt. Mode, one more USB-C(opt.)
STORAGE	Internal	1 x M.2 2242/2280 M key (SATA/PCIe) 1 x SATA III 1 x eMMC (up to 128GB,optional)
EXPANSION	Interface	1 x M.2 2242/2280 M key: PCIe1/SATA 1 x M.2 2230 E Key: USB2.0/PCIe 1 x M.2 3042/3052 B key: USB3.0/USB2.0/PCIe (PCIe x2 support by project)
AUDIO	Audio Codec	ALC888S
ETHERNET	Controller	2 x Intel Ethernet controller i226 2.5GbE (support TSN) 1 x Intel Ethernet controller i210 GbE
FRONT I/O	Serial	3 x RS232/422/485 DB9 connector
INTERNAL I/O	Serial	2 x RS232
	Display	1 x 40 pin LVDS/eDP (Default eDP)
	SATA	1 x SATA 3.0 1 x 5V SATA Power (support SATA HDD LED via front panel)
	Front Panel	1 x front panel
	SMBus	1 x SMBus
REAR I/O	Ethernet	2 x 2.5GbE RJ45 1 x GbE RJ45
	Serial	1 x COM/DIO port
	USB	3 x USB 3.2 type A 1 x USB-C 3.2
	Display	1 x HDMI
	Audio	1 x 3.5mm Line out/Mic In
	Storage	1 x MicroSD (only for OOB function update)
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	TPM 2.0 support
POWER	Type	Wide Range 9~36VDC
	Connector	DC Jack (or vertical type 4pin connector)
	RTC Battery	CR2032 Coin Cell
OS SUPPORT	Microsoft	Windows 11 IoT Enterprise
	Linux	Ubuntu 22.04
ENVIRONMENT	Temperature	Operating: -5 to 80°C with 0.2m/s air flow (i3-N305 conditional support)
	Humidity	Storage: 5 to 90% RH
MECHANISM	Dimensions	4" SBC Form Factor 165mm (6.5") x 115mm (4.53")
STANDARDS AND CERTIFICATIONS	Certifications	CE, FCC Class B (TBD in later stage)

ORDERING INFORMATION

Model Name	Part Number	CPU	Mry. Down	Operating Temp.	I/O	Display	Expansion
ADN253	770-ADN2531-000G	X7425E	16GB	-5 to 80°C	• 3 USB-A + 1 USB-C • DFI OOB(Opt.) • 2 2.5GbE + 1 1GbE • 2 RS232/422/485 • 1 RS232 • 1 RS232/DIO • 2 RS232 via Pin header	• 1 HDMI • 1 eDP(Def.)/LVDS • 1 DP 1.2 Alt. Mode via USB-C *One more display output via USB-C by Opt.	• M.2 M key: PCIe/SATA • M.2 B Key: USB3.0/USB2.0/PCIe • M.2 E Key: USB2.0/PCIe
	770-ADN2531-100G	X7211E	8GB				
	770-ADN2531-500G	N97	8GB				
	770-ADN2531-600G	I3-N305	16GB				

OPTIONAL ITEMS

Optional Items	Part Number	Description
Adapter	671-106012-000G	60W 12V inlet C14, locable DC Jack 5.5/2.5mm, cable length 1500mm
Power Cord	332-700010-201G	Power Cord US 3pin 1830mm Length
	A81-004003-000G	Power Cord EU 2pin 1830mm Length
	A81-000001-000G	Power Cord China 3pin 1830mm Length
	A81-000046-000G	Power Cord JP 3pin 1830mm length (with DFI PSE logo)
EMMC Module	774-EMMCBD1-000G	EMMC Board 64GB, -40°C ~ +80°C
	774-EMMCBD1-200G	EMMC Board 128GB, -40°C ~ +80°C

PACKING LIST

• 1 ADN253 board
• 1 SATA data with 4pin power cable
• 1 Heatsink