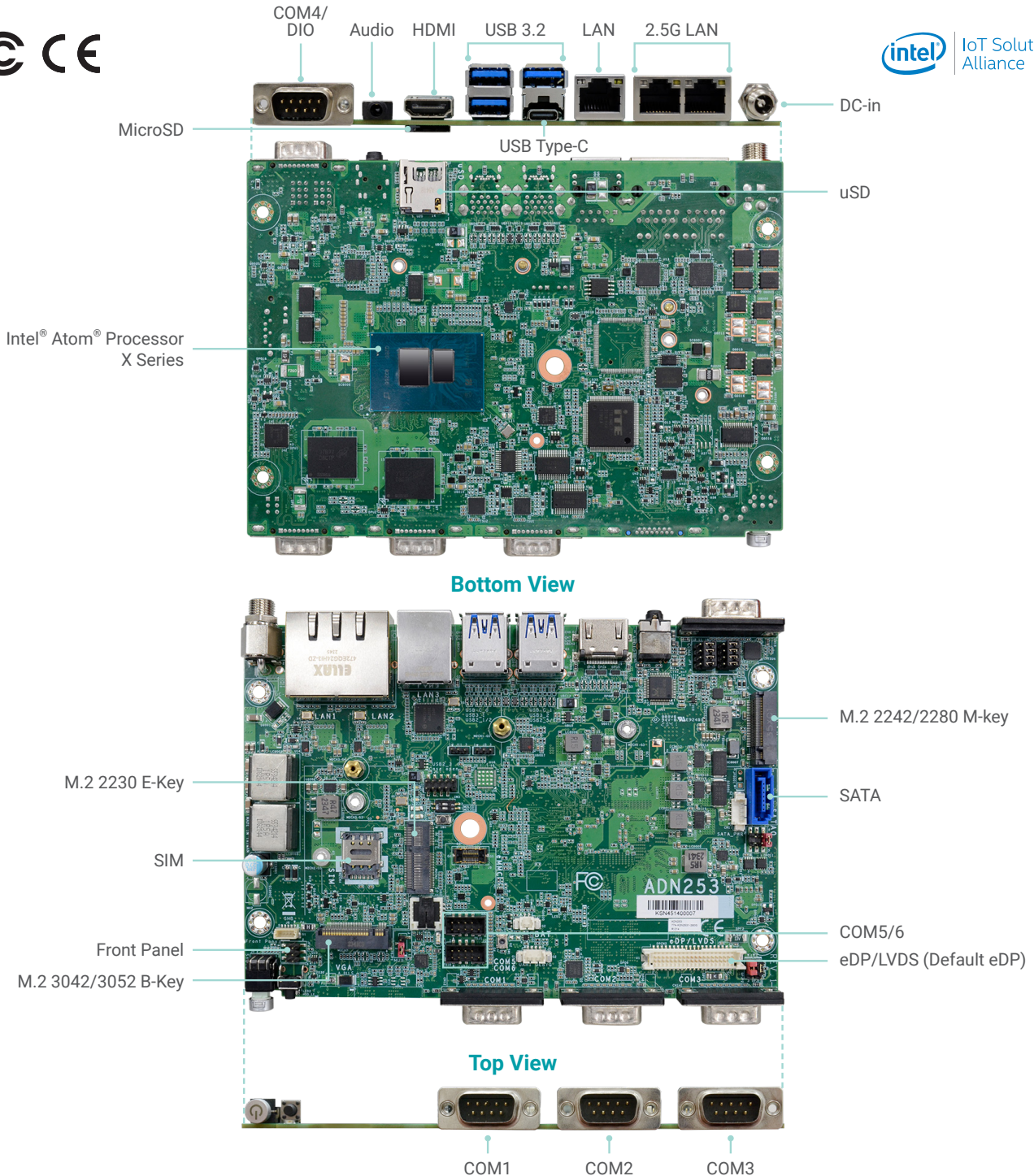


ADN253

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



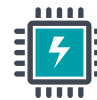
Rich I/O

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 & eMMC Support

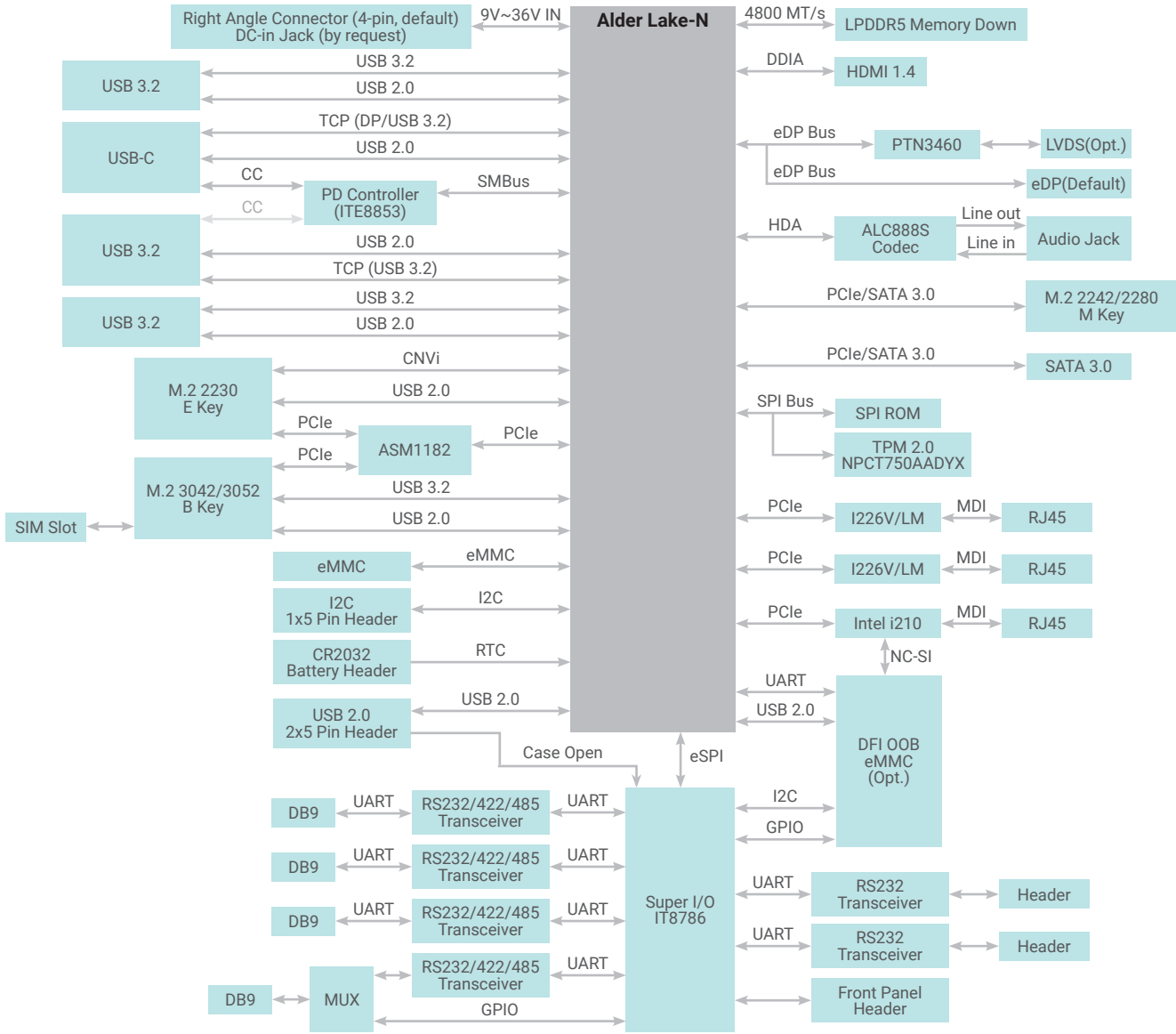
- LPDDR5 4800 MHz memory down
- eMMC module – Easy maintenance



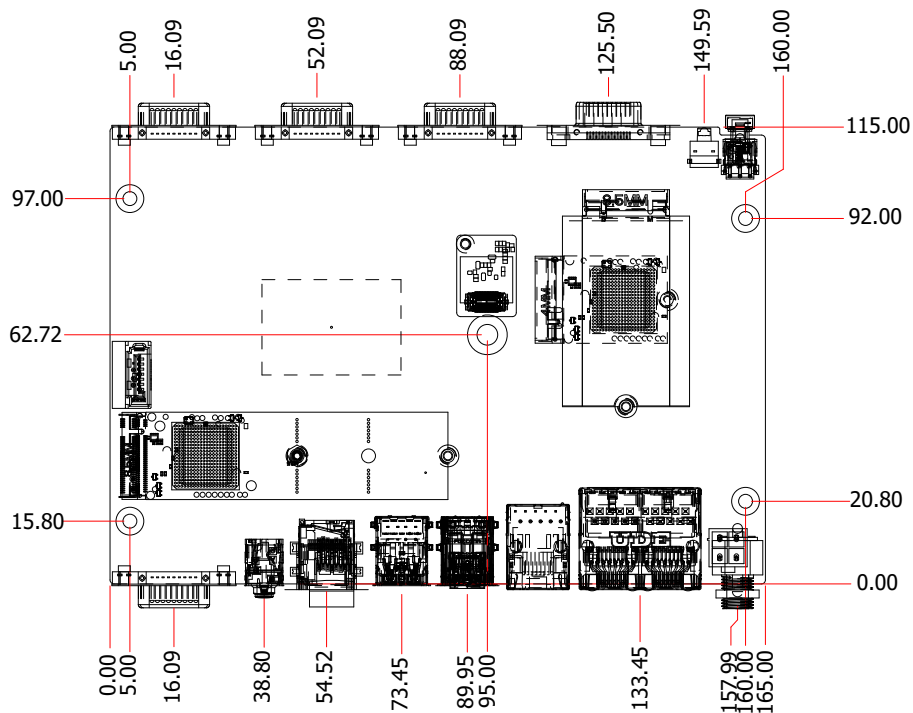
Up to Quad Display Support

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	
	eMMC	eMMC 32GB/64GB (Opt.)	
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	
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	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	TPM 2.0 (Available Upon Request)	
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: 0 to 80°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	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	0 to 80°C	<ul style="list-style-type: none"> • 3 USB-A + 1 USB-C • DFI OOB(Opt.) • 2 2.5GbE + 1 1GbE • 3 RS232/422/485 via DB9 • 1 RS232/422/485/DIO via DB9 • 2 RS232 via Pin header 	<ul style="list-style-type: none"> • 1 HDMI • 1 eDP(Def.)/LVDS • 1 DP 1.2 Alt. Mode via USB-C *One more display output via USB-C by Opt. 	<ul style="list-style-type: none"> • 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				

PACKING LIST

• 1 ADN253 board
• 1 SATA data with 4pin power cable
• 1 Heat Spreader