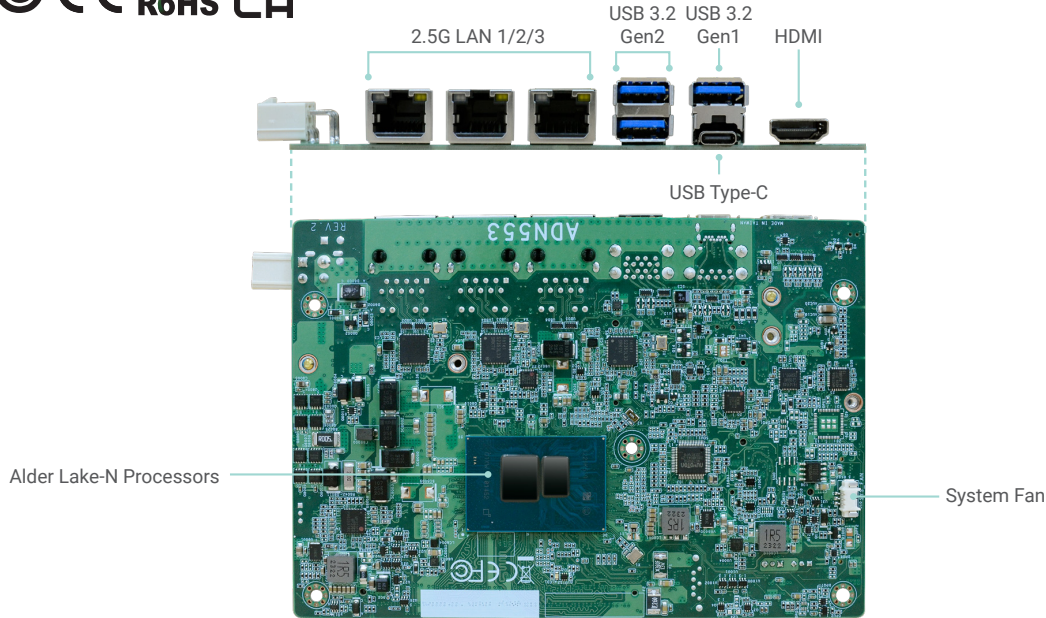


# ADN553

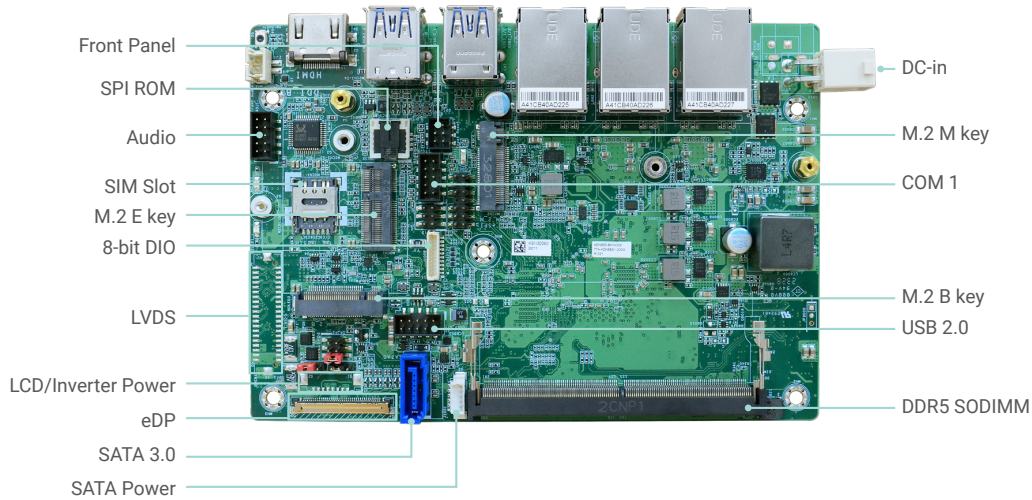
Atom



Intel® Atom® Alder Lake-N Processors  
3.5" SBC



Bottom View



Top View

## KEY FEATURES



### DDR5

1 DDR5 SO-DIMM



### 4K High Resolution

Supports 4K/ 2K resolution



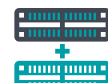
### Triple Display

1 HDMI, 1 Type-C DP Alt. Mode, 1 LVDS/eDP



### Rich I/O Connectivity

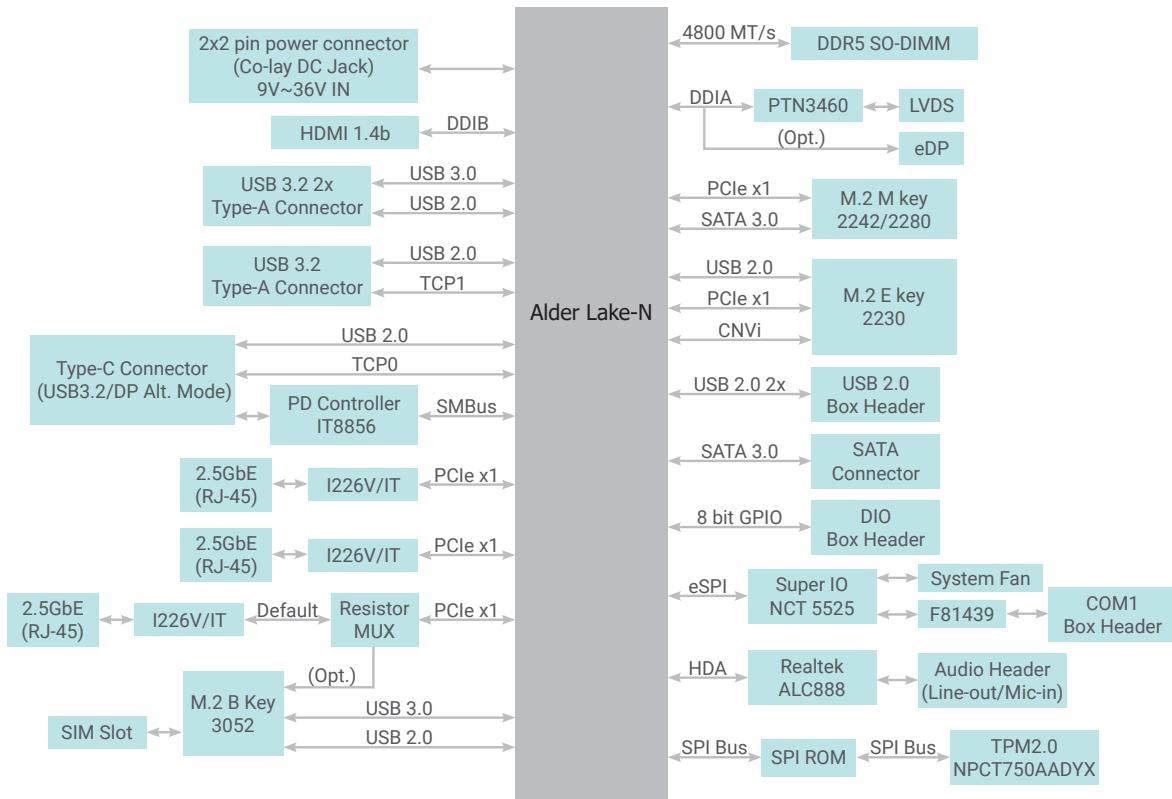
3 2.5GbE LAN, 4 USB 3.2, 2 USB 2.0, 1 SATA



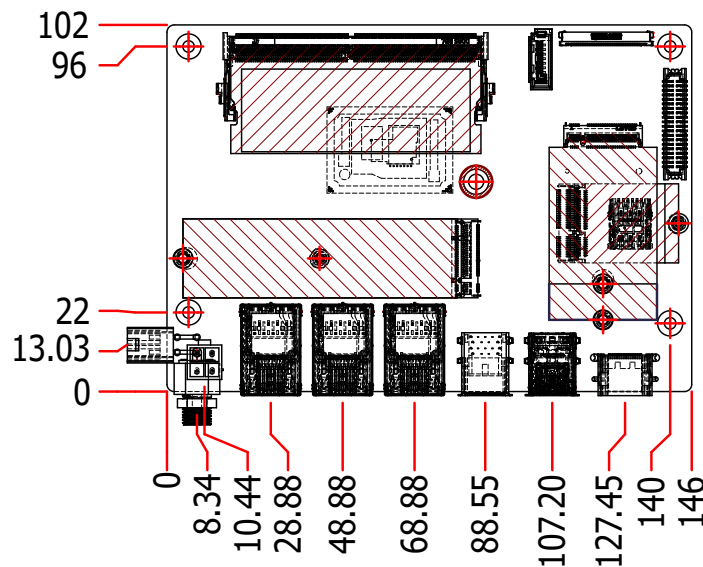
### Multiple Expansion

1 M.2 M Key, 1 M.2 B Key, 1 M.2 E Key

**BLOCK DIAGRAM**



**MECHANICAL DRAWING**



## SPECIFICATION

SYSTEM	Processor	Intel® Atom® Alder Lake-N Processors, TDP up to 15W <b>Embedded</b> Intel Atom® x7425E, 4 cores, 6M Cache, up to 3.40 GHz, 12W Intel Atom® x7213E, 2 cores, 6M Cache, up to 3.20 GHz, 10W Intel Atom® x7211E, 2 cores, 6M Cache, up to 3.20 GHz, 6W <b>PC Client</b> Intel® Core™ i3-N305, 8 cores, 6M Cache, up to 3.80 GHz, 15W Intel® Processor N200, 4 cores, 6M Cache, up to 3.70 GHz, 6W Intel® Processor N97, 4 cores, 6M Cache, up to 3.60 GHz, 12W Intel® Processor N50, 2 cores, 6M Cache, up to 3.40 GHz, 6W	
	Memory	One 262-pin SODIMM up to 16GB Single Channel DDR5 4800MHz	
	BIOS	AMI SPI 256Mbit	
	GRAPHICS	Controller	Intel® UHD Graphics
Feature		OpenGL 4.6, Direct X 12.1, OpenCL 3.0 HW Decode: HEVC, VP9, AV1, AVC HW Encode: HEVC, VP9, AVC	
Display		1 x HDMI 1 x Type-C DP Alt. Mode 1 x LVDS/eDP	HDMI: resolution up to 4096x2160@24Hz DP: resolution up to 3840x2160 @60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200@60Hz eDP: resolution up to 4096x2160 @60Hz
Triple Display		HDMI + Type-C DP Alt. Mode + LVDS/eDP	
EXPENSION	Interface	1 x M.2 M key 2280/2242 (PCIe Gen3 x1/SATA3.0) 1 x M.2 B key 3052/3042 (USB3.0/USB2.0, optional PCIe x1), 1 x SIM slot for 4G/5G 1 x M.2 E key 2230 (USB/PCIe x1, support CNVi)	
AUDIO	Audio Codec	Realtek ALC888S	
ETHERNET	Controller	3 x Intel® I226V/IT(10/100/1000/2500Mbps). LAN3 option with M.2 3052 PCIe x1.	
REAR I/O	Ethernet	3 x 2.5GbE (RJ-45)	
	USB	4 x USB 3.2	
	Display	1 x HDMI 1 x Type-C DP Alt. Mode 1 x LVDS/eDP	
INTERNAL I/O	Serial	1 x RS-232/422/485 (2.0mm pitch)	
	USB	2 x USB 2.0 (2.0mm pitch)	
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power	
	Audio	1 x Audio (Line-out/Mic-in)	
	SATA	1 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power	
	DIO	1 x 8-bit DIO	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	dTPM2.0	
POWER	Type	Wide Range 9~36V DC	
	Connector	Right Angle Connector (4-pin) DC-in Jack (available upon request) Vertical Type Connector (4-pin) (available upon request)	
	Consumption	Typical: i3-N305, 19V @ 0.45A (8.55W) Max: i3-N305, 19V @ 2.7A (51.3W)	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT	OS Support (UEFI Only)	Windows 10 IoT Enterprise (64-bit) Windows 11 Linux	
ENVIRONMENT	Temperature	Operating: -5 to 65°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	593,096 hrs @ 25°C; 398,330 hrs @ 45°C; 276,293 hrs @ 60°C Calculation Model: Telcordia Issue 4 Environment: GB, GC - Ground Benign, Controlled	
MECHANISM	Dimensions	3.5" SBC Form Factor	146mm (5.75") x 102mm (4.02")
	Height	PCB: 1.6mm	
		Top Side: 15.0mm Bottom Side: 4.0mm	
STANDARDS AND CERTIFICATIONS	Certifications	CE, FCC Class B, RoHS, UKCA	

## ORDERING INFORMATION

Model Name	P/N	Processor	Memory	Display	2.5 GbE	RS232/422/485	USB 3.2	USB 2.0	Power	Thermal	Temp.
ADN553-BN-x7425E	770-ADN5531-000G	Intel Atom® x7425E, 4C, 12W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + LVDS	3	1	4	2	9~36 VDC	Fanless	-5~65°C
ADN553-BN-x7211E	770-ADN5531-100G	Intel Atom® x7211E, 2C, 6W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + eDP	3	1	4	2	9~36 VDC	Fanless	-5~65°C
ADN553-BN-N305	770-ADN5531-200G	Intel® Core™ i3-N305, 8 cores, 15W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + eDP	3	1	4	2	9~36 VDC	Fanless	-5~65°C
ADN553-BN-N200	770-ADN5531-300G	Intel® Processor N200, 4 cores, 6W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + LVDS	3	1	4	2	9~36 VDC	Fanless	-5~65°C
ADN553-BN-N97	770-ADN5531-400G	Intel® Processor N97, 4C, 12W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + eDP	3	1	4	2	9~36 VDC	Fanless	-5~65°C
ADN553-BN-N50	770-ADN5531-500G	Intel® Processor N50, 2 cores, 6W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + eDP	3	1	4	2	9~36 VDC	Fanless	-5~65°C
ADN553-BN-x7213E	770-ADN5531-600G	Intel Atom® x7213E, 2C, 10W	1 DDR5 SODIMM	HDMI + Type-C DP Alt. Mode + LVDS	3	1	4	2	9~36 VDC	Fanless	-5~65°C

## PACKING LIST

• 1 ADN553 board	
• 1 COM port cable (Length: 250mm, 1x COM port)	A81-015115-018G
• 1 SATA DATA/Power cable (Length : 300mm)	A81-002144-018G
• 1 Heat sink (Height: 29 mm)	A71-008353-000G

## OPTIONAL ITEMS

• Power adapter (60W, 12V)	671-106012-000G
• USB 2.0 cable (Length: 200mm, 2 USB ports)	A81-001163-018G
• Front panel cable (Length: 250mm)	A81-009678-018G
• Audio cable (Length: 160mm)	A81-022007-016G
• Heat spreader (Height: 11mm)	A71-808356-000G
• 4-pin power to DC jack cable (Length: 100mm)	A81-004051-016G

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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