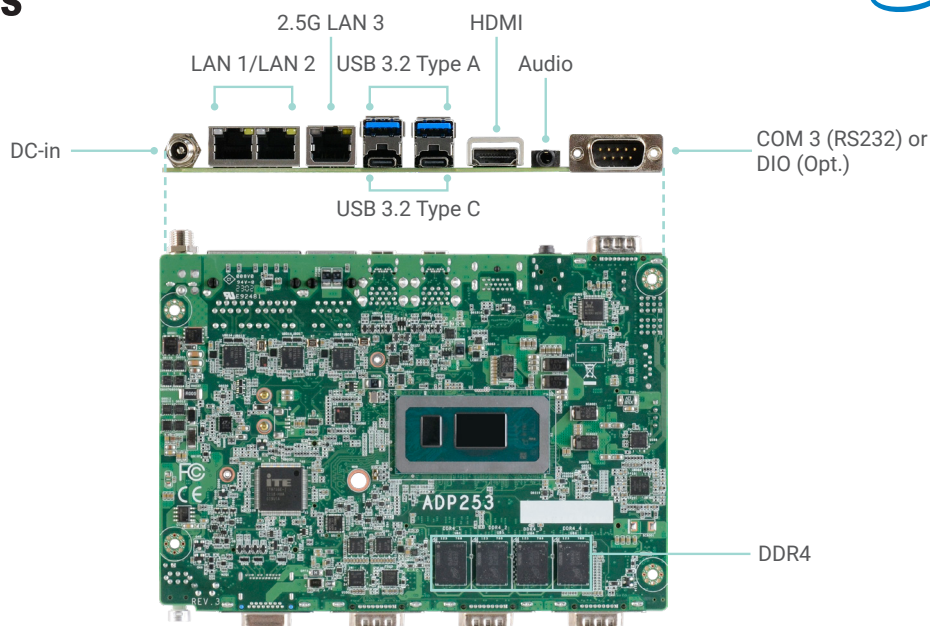


ADP253

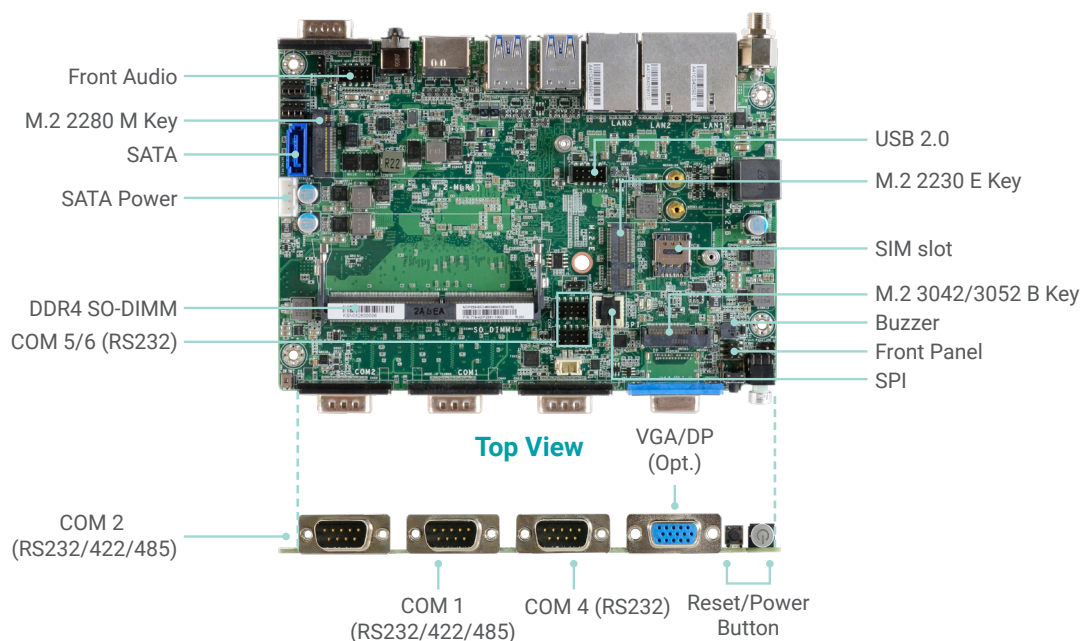
ULT



12th Gen Intel® Core™
4" SBC



Bottom View



Top View

KEY FEATURES



DDR4

On board memory and
1 DDR4 SO-DIMM



4K High Resolution

Supports 4K/ 2K resolution



Multiple Displays

1 HDMI, 1 VGA/DP,
2 Type-C DP Alt. Mode



Multiple Expansion

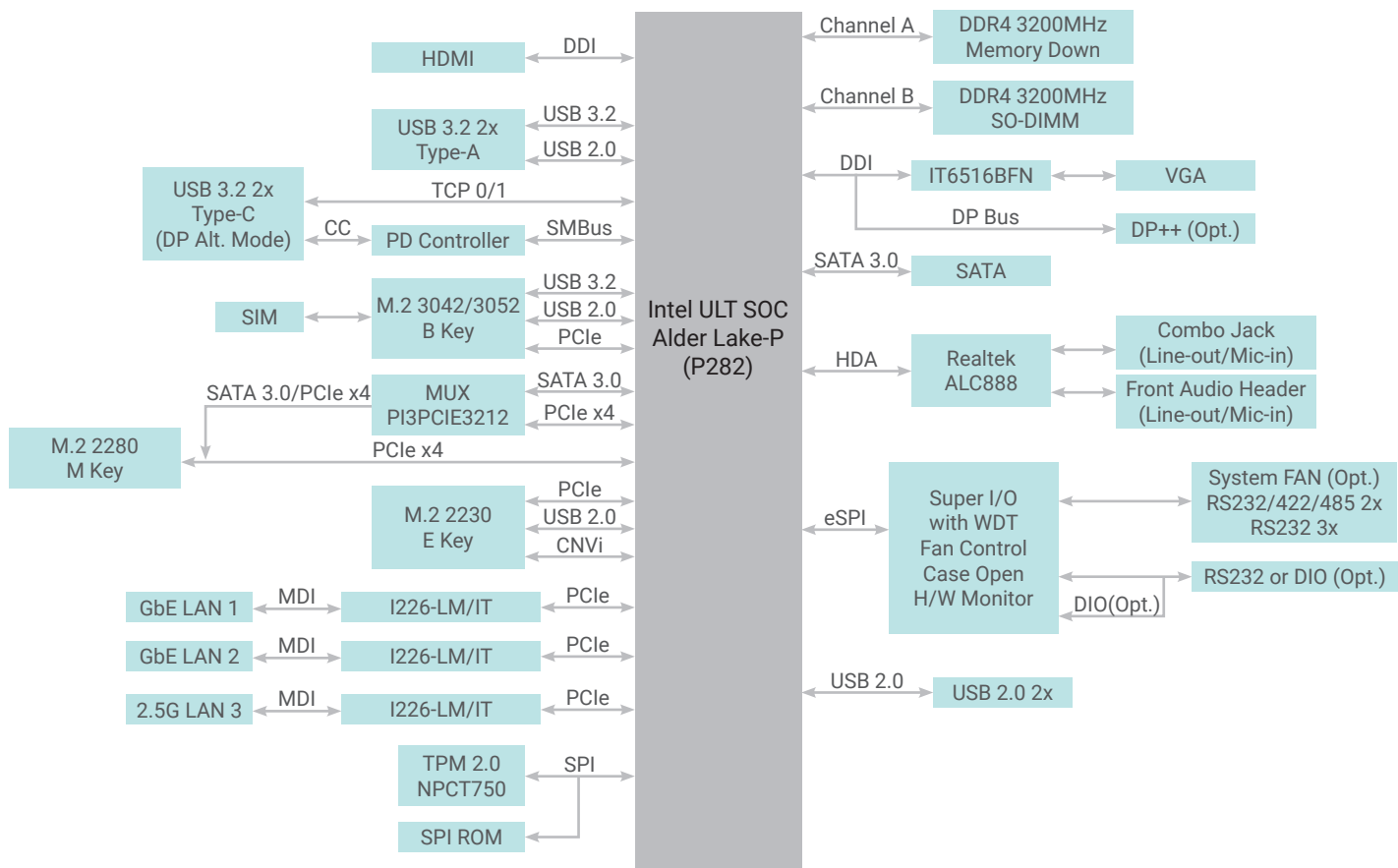
1 M.2 M Key,
1 M.2 B Key,
1 M.2 E Key



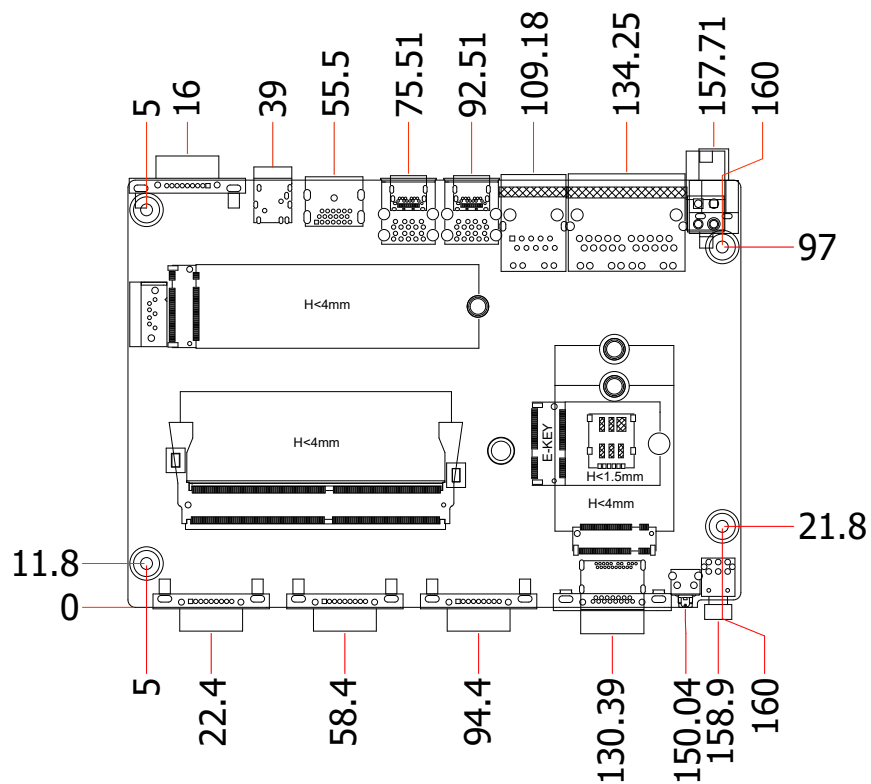
Rich I/O

1 Intel 2.5GbE, 2 Intel GbE, 6 COM, 4 USB 3.2, 2 USB 2.0, 1 SATA 3.0

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

SYSTEM	Processor	12th Gen Intel® Core™ Processors, BGA 1744 (Alder Lake-P, 15W) Intel® Core™ i7-1265UE Processor, 10C12T, 12M Cache, 1.7GHz (4.7GHz) Intel® Core™ i5-1245UE Processor, 10C12T, 12M Cache, 1.5GHz (4.4GHz) Intel® Core™ i3-1215UE Processor, 6C8T, 10M Cache, 1.2GHz (4.4GHz) Intel® Celeron® 7305E Processor, 5C5T, 8M Cache, 1.0GHz	
	Memory	8GB On-board memory & one SO-DIMM DDR4 up to 32GB Dual Channel DDR4 3200MHz	
	BIOS	AMI SPI 256Mbit (Supports UEFI boot only)	
GRAPHICS	Controller	Intel® Iris® Xe Graphics Intel® UHD Graphics	
	Feature	DirectX 12, Open GL 4.6, Vulkan 1.2 HW Decode: AV1, AVC/H.264, MJPEG, HEVC/H.265, VP9, SCC HW Encode: MJPEG, AVC/H.264, HEVC/H.265, VP9, SCC	
	Display	1 x HDMI 1 x VGA/DP (Opt.) 2 x Type-C DP Alt. Mode	HDMI: Resolution up to 4096x2160 @60Hz VGA: Resolution up to 1920x1200 @60Hz DP: Resolution up to 4096x2304 @60Hz
	Multiple Displays	HDMI + VGA/DP (Opt.) + Type-C DP Alt. Mode + Type-C DP Alt. Mode	
EXPANSION	Interface	1 x M.2 M Key 2280 (PCIe4/SATA) 1 x M.2 B Key 3042/3052 (USB3.0/USB2.0/PCIe1), 1 x SIM slot for 4G/5G 1 x M.2 E Key 2230 (CNVi/PCIe1/USB2.0)	
AUDIO	Audio Codec	Realtek ALC888S	
ETHERNET	Controller	1 x Intel® I226-LM/IT (10/100/1000/2500Mbps) 2 x Intel® I226-LM/IT (10/100/1000Mbps) (Only Core i7/i5 supports iAMT)	
REAR I/O	Ethernet	1 x 2.5GHz (RJ-45) + 2 x GbE (RJ-45)	
	Serial	COM 3: 1 x RS232 (also supports an optional 8-bit DIO)	
	USB	4 x USB 3.2 Default: 2 x Type C + 2 x Type A connector Option: 4 x Type A connector	
	Audio	1 x Audio Combo Phone Jack (Line-out/Mic-in)	
	Display	1 x HDMI 2 x Type-C DP Alt. Mode	
FRONT I/O	Serial	COM 1 / COM 2: 2 x RS-232/422/485 COM 4: 1 x RS-232	
	Display	1 x VGA/DP (Opt.)	
	Button	1 x Power Button 1 x Reset Button	
INTERNAL I/O	Serial	COM 5 / COM 6: 2 x RS-232 (2.0mm pitch, box header)	
	USB	2 x USB 2.0 (2.0mm pitch, box header)	
	Audio	1 x Front Audio (Line-out/Mic-in, 2.0mm pitch, box header)	
	SATA	1 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power (5V/12V)	
	Others	1 x Front Panel 1 x System Fan Connector (Opt.)	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	Discrete TPM 2.0	
POWER	Type	9~36 VDC input	
	Connector	One power jack with lock. (Default) Co-lay 2x2 pin power connector straight type and right angle type	
	Consumption	Typical: 1265UE, 12V @ 2A (24Watt) Max.: 1265UE, 12V @ 2.8A (33.6Watt) (Peak: 12.9V @ 7.06A)	
	RTC Battery	CR2032 Coin Cell, link mother board with cable	
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit Windows 11	
	Linux	Linux	
ENVIRONMENT	Temperature	Operating: -5 to 65°C / -30 to 80°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	1365UE: 491,541 hrs @ 25°C; 328,488 hrs @ 45°C; 227,921 hrs @ 60°C; 175,097 hrs @ 70°C ; 133,220 hrs @ 80°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
MECHANISM	Dimensions	4" SBC Form Factor	165mm (6.49") x 115mm (4.53")
	Height	PCB: 1.6mm Top Side: 16.34mm, Bottom Side: 3mm	
CERTIFICATIONS	Certifications	CE, FCC, RoHS, UKCA	

ORDERING INFORMATION

Model Name	P/N	Processor	Memory	Display	2.5 GbE	1 GbE	RS232	RS422/485	USB 3.2	USB 2.0	Power	Thermal	Temp.
ADP253-BCI-80I765UE	770-ADP2531-000G	I7-1265UE	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-5~65°C
ADP253-BCI-80I545UE	770-ADP2531-100G	I5-1245UE	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-5~65°C
ADP253-BCI-80I315UE	770-ADP2531-200G	I3-1215UE	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-5~65°C
ADP253-BCI-80CR05E	770-ADP2531-300G	Celeron-7305E	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-5~65°C
ADP253-ETI-80I765UE	770-ADP2531-400G	I7-1265UE	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-30~80°C
ADP253-ETI-80I545UE	770-ADP2531-500G	I5-1245UE	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-30~80°C
ADP253-ETI-80I315UE	770-ADP2531-600G	I3-1215UE	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-30~80°C
ADP253-ETI-80CR05E	770-ADP2531-700G	Celeron-7305E	8GB	HDMI + VGA + 2 x Type C DP Alt. Mode	1	2	6	2	4	2	9~36 VDC	Fanless	-30~80°C

PACKING LIST

• 1 ADP253 board	
• 1 Heat sink (Height: 37mm)	A71-008349-020G
• 1 Serial ATA data with power cable	A81-002008-000G

OPTIONAL ITEMS

• Power adapter (120W, 19V)	671-112009-100G
• Power adapter (60W, 12V)	671-106012-000G
• USB 2.0 cable (Length: 200mm, 2 USB ports)	A81-001163-018G
• COM cable (Length: 250mm, 1 COM port)	A81-015115-018G
• Front panel cable (Length: 250mm)	A81-009307-001G
• Audio cable (Length: 160mm)	A81-022007-016G
• Heat spreader (Height: 11mm)	A71-808353-000G