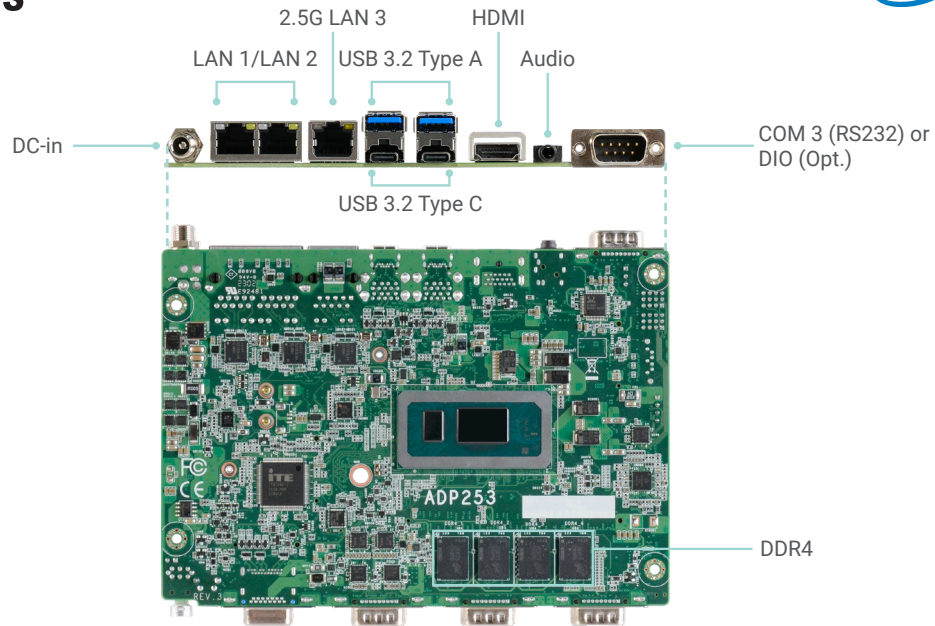


# ADP253

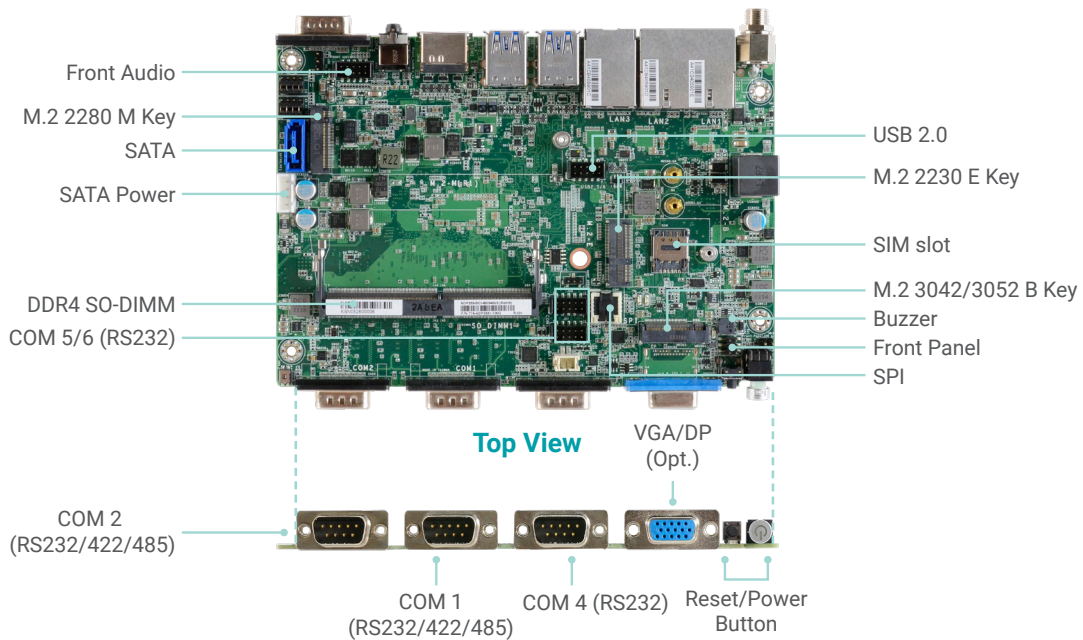
ULT



12th Gen Intel® Core™  
4" SBC



Bottom View



Top View

## KEY FEATURES



### DDR4

On board memory and 1 DDR4 SO-DIMM



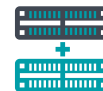
### 4K High Resolution

Supports 4K/ 2K resolution



### Multiple Displays

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



### Multiple Expansion

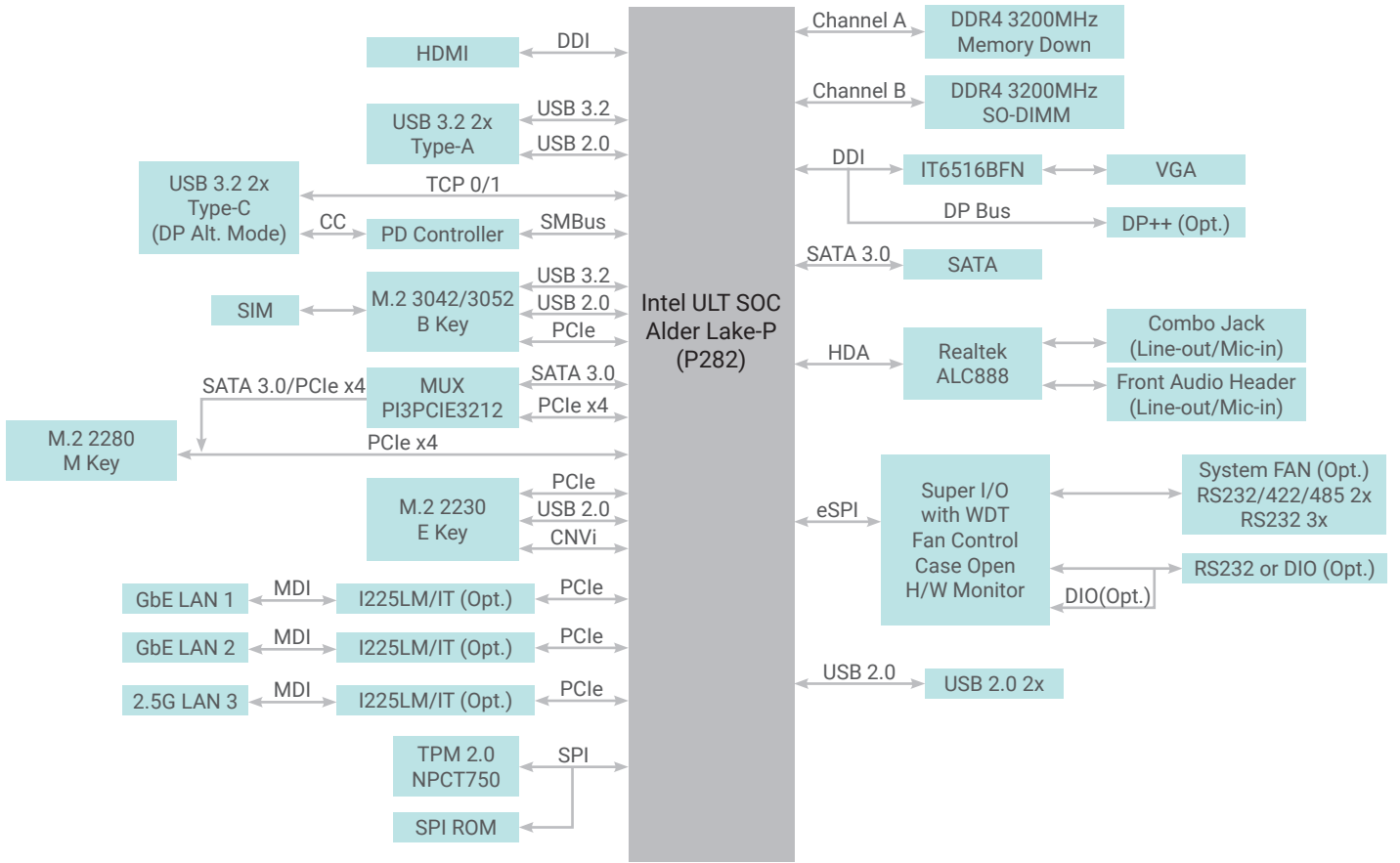
1 M.2 M Key, 1 M.2 B Key, 1 M.2 E Key



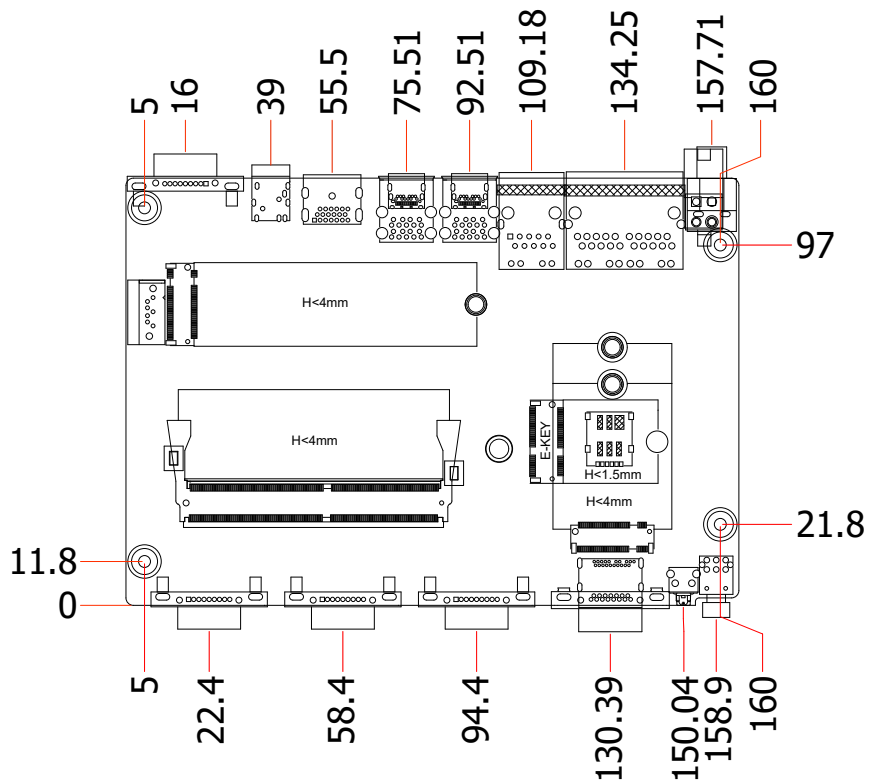
### Rich I/O

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 (PClex4/SATA) 1 x M.2 B Key 3042/3052 (USB3.0/USB2.0/PClex1), 1 x SIM slot for 4G/5G 1 x M.2 E Key 2230 (CNVi/PClex1/USB2.0)	
AUDIO	Audio Codec	Realtek ALC888S	
ETHERNET	Controller	1 x Intel® I225LM/IT (10/100/1000/2500Mbps) 2 x Intel® I225LM/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	TBD	
	RTC Battery	CR2032 Coin Cell, link mother board with cable	
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit	
	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	TBD	
MECHANISM	Dimensions	4" SBC Form Factor	165mm (6.49") x 115mm (4.53")
	Height	PCB: 1.6mm Top Side: 16.34mm, Bottom Side: 3mm	

## 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-ECI-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-ECI-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-ECI-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-ECI-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)	A71-008349-010G
• 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)	TBD