

# RPP051

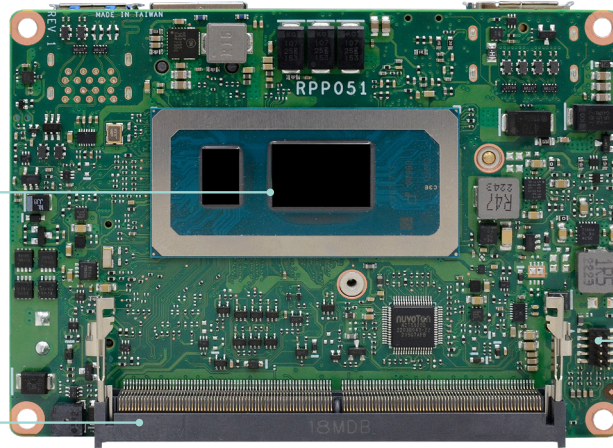
ULT



13th Gen Intel® Core™ Processor  
2.5" Pico-ITX



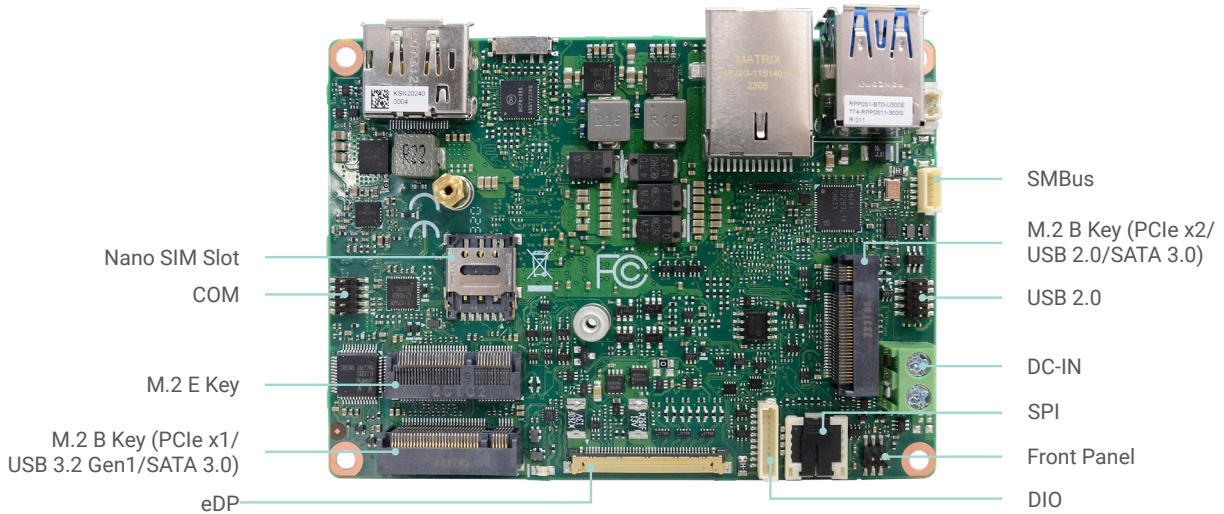
13th Gen Intel® Core™ Processor



Front Audio

DDR5 SO-DIMM

Bottom View



SMBus

M.2 B Key (PCIe x2/  
USB 2.0/SATA 3.0)

USB 2.0

DC-IN

SPI

Front Panel

DIO

Nano SIM Slot  
COM

M.2 E Key

M.2 B Key (PCIe x1/  
USB 3.2 Gen1/SATA 3.0)

eDP

Top View

## KEY FEATURES



### DDR5

1 DDR5 4800MHz SODIMM up to 32GB



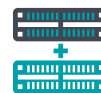
### 4K High Resolution

Supports 4K/2K resolution



### Dual Independent Displays

DP++ + eDP



### Multiple Expansion

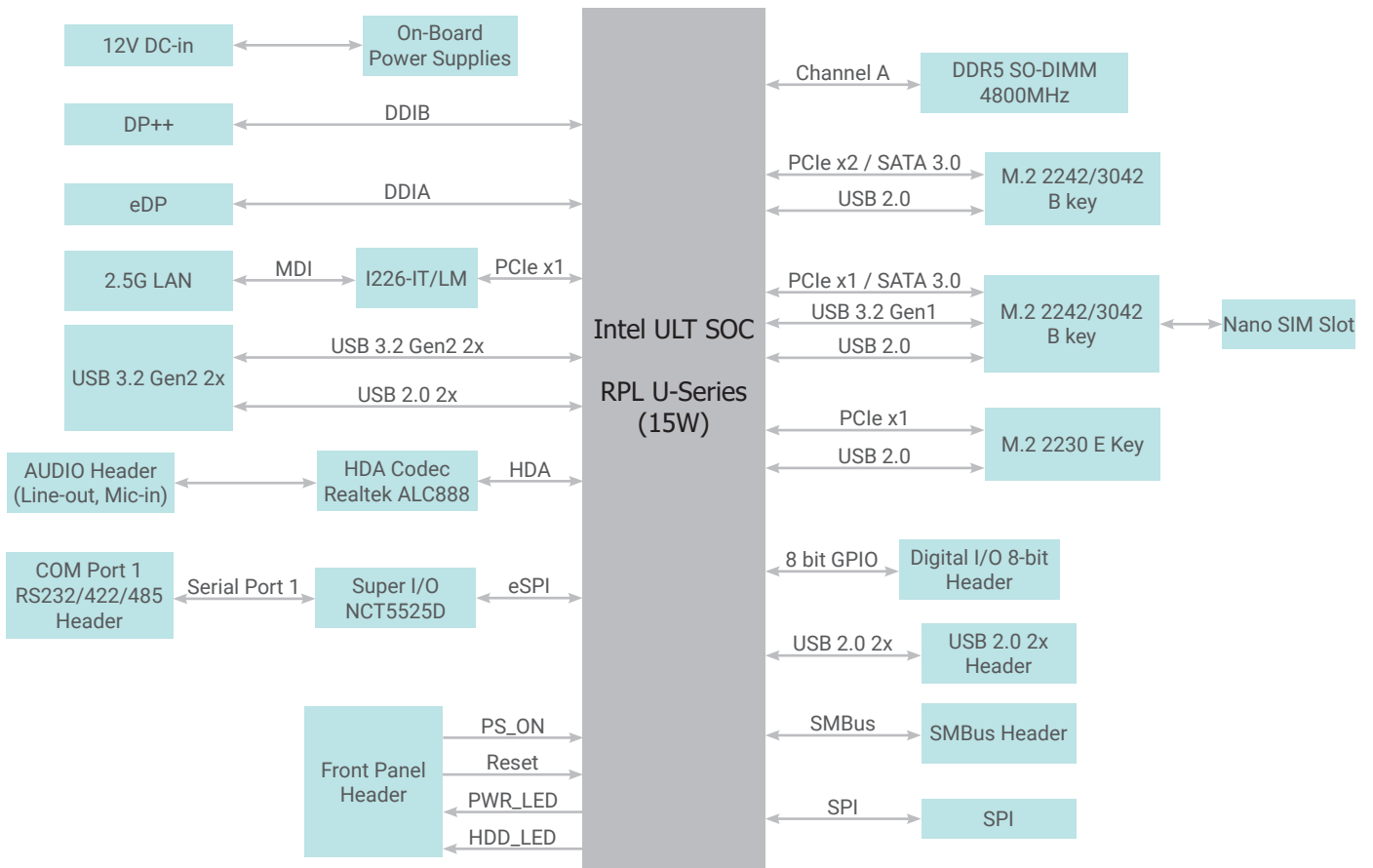
1 M.2 E key,  
2 M.2 B key



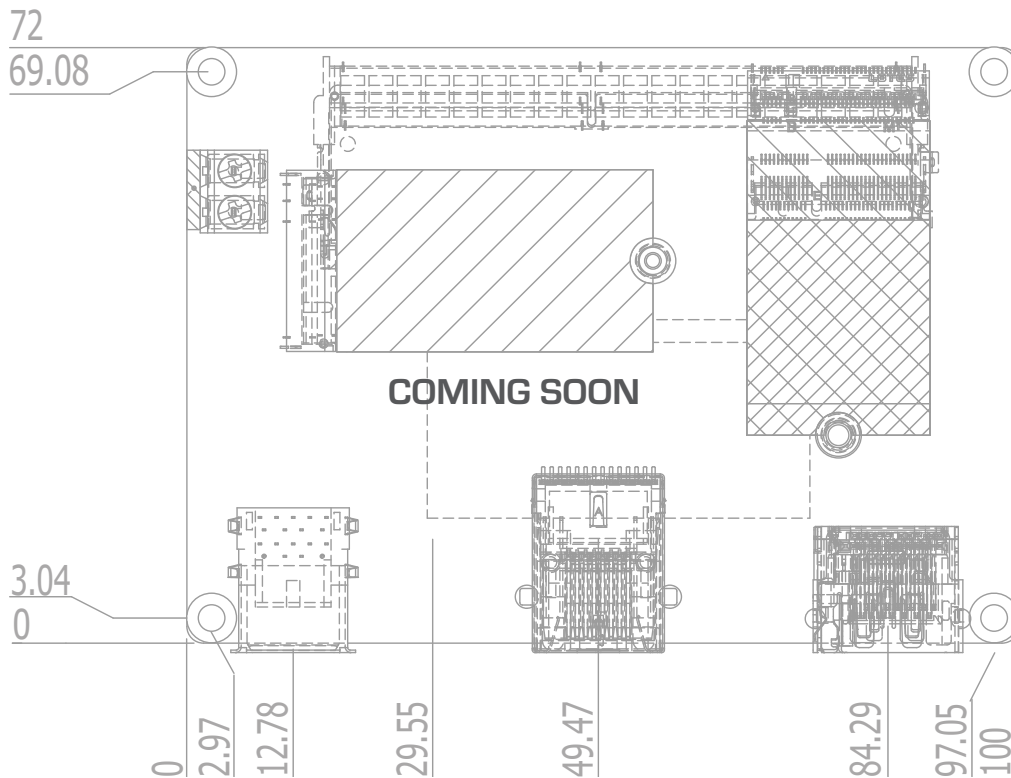
### Rich I/O

1 Intel 2.5G LAN,  
1 COM, 2 USB 3.1 Gen 2,  
2 USB 2.0

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

System	Processor	13th Generation Intel® Core™ Processors Intel® Core™ i7-1365UE Processor, 10C/12T, 1.7GHz/4.9GHz, 15W Intel® Core™ i5-1345UE Processor, 10C/12T, 1.4GHz/4.6GHz, 15W Intel® Core™ i3-1315UE Processor, 6C/8T, 1.2GHz/4.5GHz, 15W Intel® Processor U300E, 5C/6T, 1.1GHz/4.3 GHz, 15W	
	Memory	One 262-pin SODIMM up to 32GB	Single Channel DDR5 up to 4800MHz
	BIOS	AMI SPI 256Mbit	
Graphics	Controller	Intel® UHD Graphics	
	Feature	DirectX12, 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 DP++ 1 x eDP	DP++: resolution up to 4096x2304 @ 60Hz eDP: resolution up to 4096x2160 @120Hz
	Dual Displays	DP++ + eDP	
Expansion	Interface	1 x M.2 E key 2230 (PCIe x1/USB 2.0) 1 x M.2 B key 3042/2242 for storage (PCIe x2/USB 2.0/SATA 3.0) 1 x M.2 B key 3042/2242 for 5G/LTE module (PCIe x1/USB 3.2 Gen1/SATA 3.0), with one Nano SIM slot	
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR	
Ethernet	Controller	1 x Intel® I226IT/LM (only Core i7/i5 supports iAMT)	
Rear I/O	Ethernet	1 x 2.5GbE (RJ-45)	
	USB	2 x USB 3.2 Gen 2	
	Display	1 x DP++ 1 x eDP	
Internal I/O	Serial	1 x RS-232/422/485 (1.27mm pitch)	
	USB	2 x USB 2.0 (1.27mm pitch)	
	Display	1 x eDP Connector	
	Audio	1 x Line-out/Mic-in (1.27mm pitch)	
	DIO	1 x 8-bit DIO (1.00mm pitch)	
	SMBus	1 x SMBus (1.00mm pitch)	
Watchdog Timer	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
Security	TPM	fTPM2.0	
Power	Type	Single 12V +/-10% DC	
	Connector	2-pin Terminal Block	
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	
OS Support (UEFI Only)	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	1365UE: 621,170 hrs @ 25°C; 428,483 hrs @ 45°C ; 268,117 hrs @ 65°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
Mechanism	Dimensions	2.5" Pico-ITX Form Factor	100mm (3.94") x 72mm (2.83")
	Height	PCB: 1.6 mm	
		Top Side: TBD Bottom Side: TBD	
Standards and Certifications	Certifications	CE, FCC Class B, RoHS	

## ORDERING INFORMATION

Model Name	P/N	Processor	Memory	Display	GbE	RS-232/ 422/485	USB 3.2 Gen2	USB 2.0	Power	Thermal	Temp.
RPP051-BTD-1365UE	770-RPP0511-000G	i7-1365UE	1 DDR5 SO-DIMM	DP++ + eDP	1	1	2	2	12VDC	Fanless	-5 to 65°C
RPP051-BTD-1345UE	770-RPP0511-100G	i5-1345UE	1 DDR5 SO-DIMM	DP++ + eDP	1	1	2	2	12VDC	Fanless	-5 to 65°C
RPP051-BTD-1315UE	770-RPP0511-200G	i3-1315UE	1 DDR5 SO-DIMM	DP++ + eDP	1	1	2	2	12VDC	Fanless	-5 to 65°C
RPP051-BTD-U300E	770-RPP0511-300G	U300E	1 DDR5 SO-DIMM	DP++ + eDP	1	1	2	2	12VDC	Fanless	-5 to 65°C

## PACKING LIST

• 1 RPP051 board	
• Heat sink for -5 to 65°C (Height: 37.8mm)	A71-008153-040G

\*Note: Thermal solution will change to heat spreader as the product goes to mass production.

## OPTIONAL ITEMS

• Power adapter (60W, 12V, DC Jack)	671-106012-000G
• 2 pole terminal to DC Jack cable	A81-004013-000G
• USB 2.0 cable (Length: 200mm, 2 ports)	A81-001084-016G
• COM cable (Length: 300mm, 1 port)	A81-015050-016G
• DIO cable (Length: 200mm)	A81-009715-018G
• SMBus cable (Length: 200mm)	A81-009716-018G
• Audio cable (Length: 160mm)	A81-022037-016G
• Front Panel cable (Length: 200mm)	A81-020047-016G
• Heat spreader (Height: 11mm)	A71-808358-000G