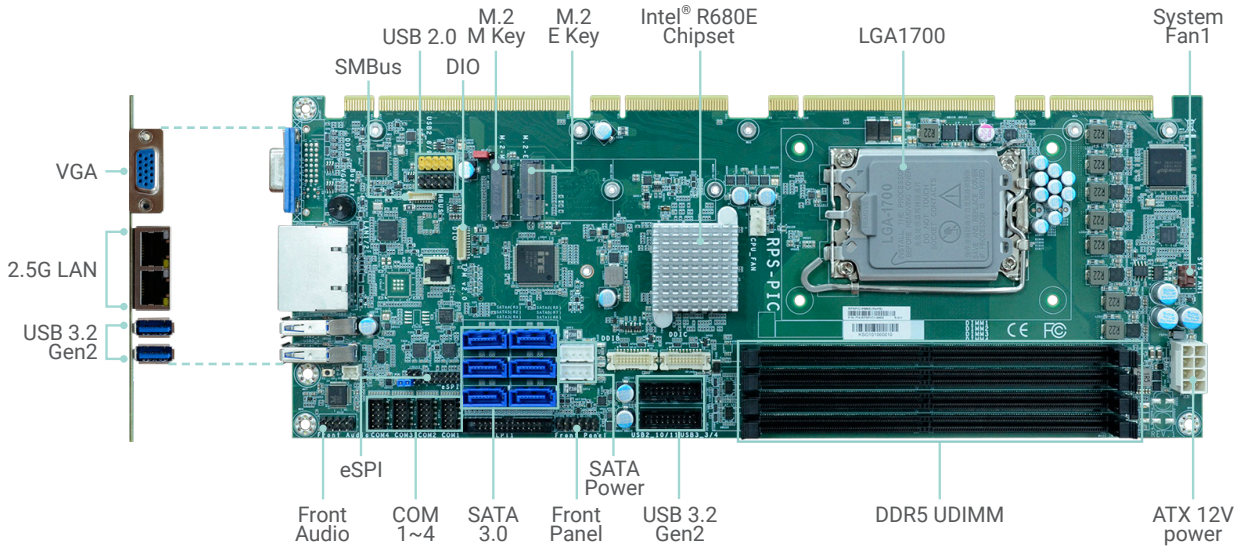


# RPSPIC

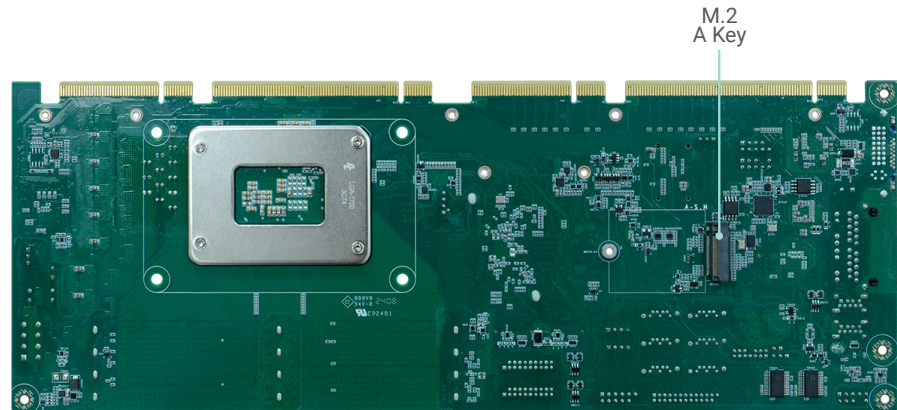
14th/13th/12th Gen Intel® Core™  
Full Size PICMG 1.3



Products with  
Intel® R680E Chipset



Top View



Bottom View

## KEY FEATURES



### DDR5

2/4 DDR5 UDIMM up to 96G/192GB



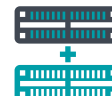
### 2K Resolution

Supports up to 2K resolution



### Triple Displays

DVI-I (colony VGA),  
2 DFI display module



### Multiple Expansion

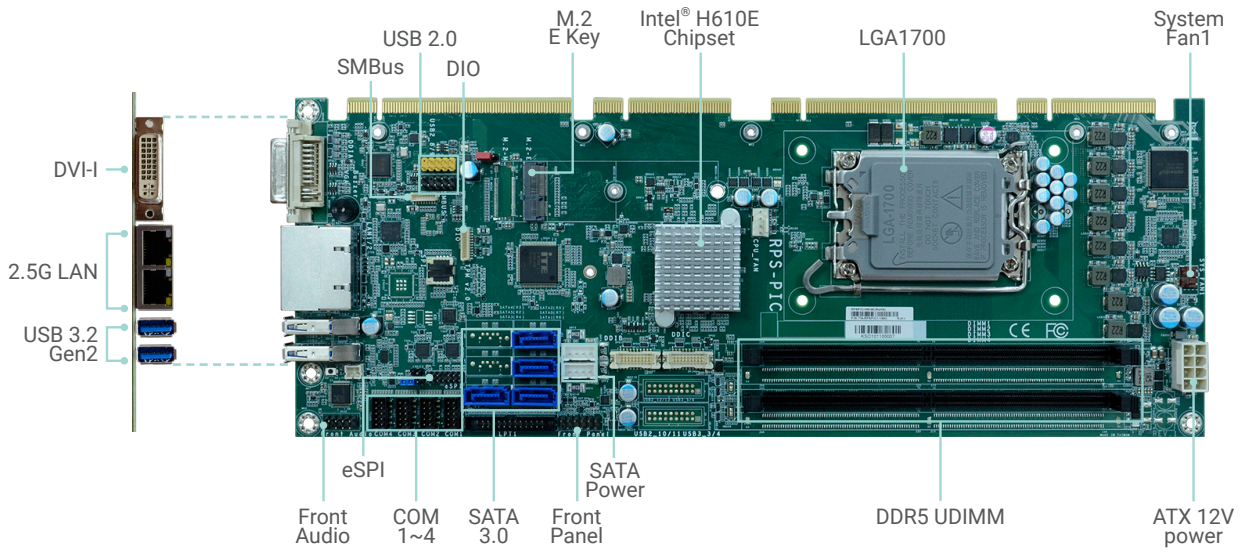
1 M.2 E Key (USB/PCIe/  
CNVi), 1 M.2 M Key (PCIe),  
1 M.2 A Key for M2A-OOB



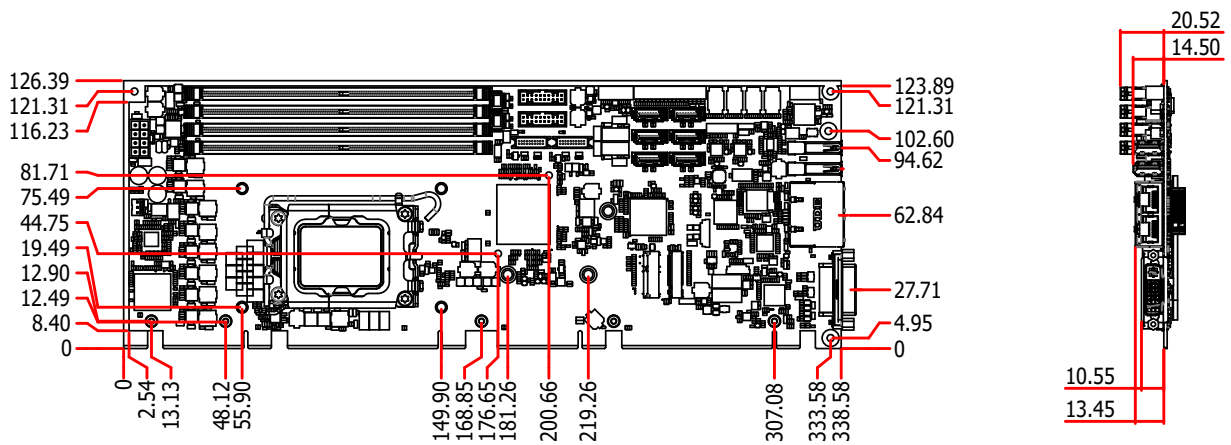
### Rich I/O

2 Intel 2.5GbE, 4 COM,  
6 USB 3.2 Gen2,  
2 USB 2.0, 6 SATA 3.0

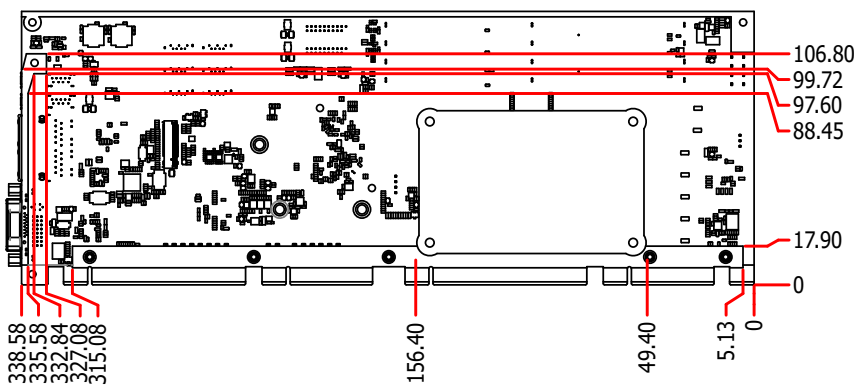
Products with  
Intel® H610E Chipset



## MECHANICAL DRAWING



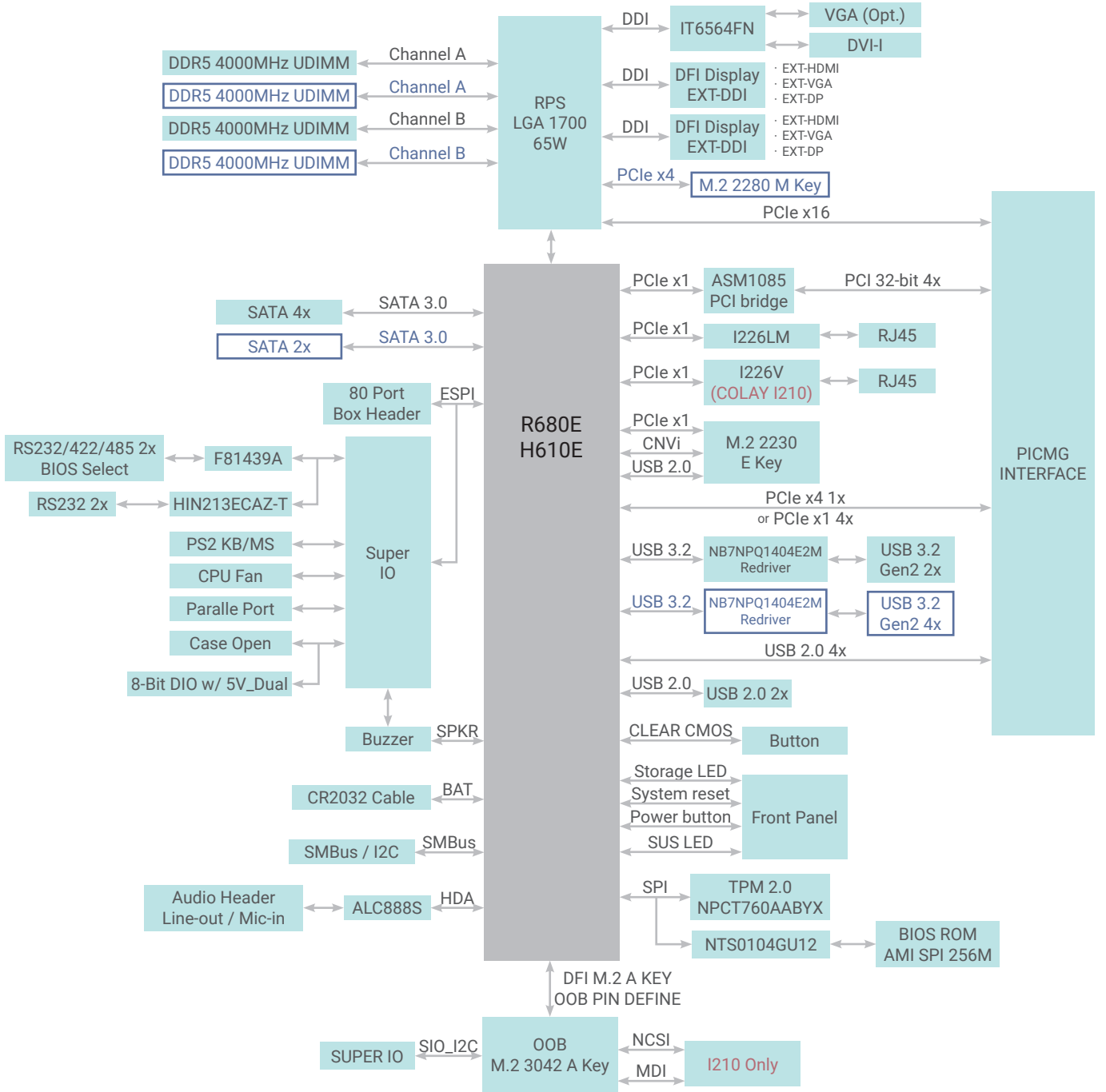
Top View



Bottom View

# BLOCK DIAGRAM

R680E Only



## SPECIFICATION

<b>SYSTEM</b>	<b>Processor</b>	<p>14th Generation Intel® LGA 1700 Socket Processors, TDP support up to 65W            Intel® Core™ i9-14900 (24 Cores, 36M Cache, up to 5.8 GHz); 65W            Intel® Core™ i9-14900T (24 Cores, 36M Cache, up to 5.5 GHz); 35W            Intel® Core™ i7-14700 (20 Cores, 33M Cache, up to 5.4 GHz); 65W            Intel® Core™ i7-14700T (20 Cores, 33M Cache, up to 5.2 GHz); 35W            Intel® Core™ i5-14500 (14 Cores, 24M Cache, up to 5.0 GHz); 65W            Intel® Core™ i5-14500T (14 Cores, 24M Cache, up to 4.8 GHz); 35W            Intel® Core™ i5-14400 (10 Cores, 20M Cache, up to 4.7 GHz); 65W            Intel® Core™ i5-14400T (10 Cores, 20M Cache, up to 4.5 GHz); 35W            Intel® Core™ i3-14100 (4 Cores, 12M Cache, up to 4.7 GHz); 60W            Intel® Core™ i3-14100T (4 Cores, 12M Cache, up to 4.4 GHz); 35W            Intel® 300 (2 Cores, 6M Cache, 3.9 GHz); 46W            Intel® 300T (2 Cores, 6M Cache, 3.4 GHz); 35W</p> <p>13th Generation Intel® LGA 1700 Socket Processors, TDP support up to 65W            Intel® Core™ i9-13900E (24 Cores, 36M Cache, up to 5.2 GHz); 65W            Intel® Core™ i9-13900TE (24 Cores, 36M Cache, up to 5.0 GHz); 35W            Intel® Core™ i9-13900 (24 Cores, 36M Cache, up to 5.6 GHz); 65W            Intel® Core™ i7-13700E (16 Cores, 30M Cache, up to 5.1 GHz); 65W            Intel® Core™ i7-13700TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W            Intel® Core™ i7-13700 (16 Cores, 30M Cache, up to 5.2 GHz); 65W            Intel® Core™ i7-13700T (16 Cores, 30M Cache, up to 4.9 GHz); 35W            Intel® Core™ i5-13500E (14 Cores, 24M Cache, up to 4.6 GHz); 65W            Intel® Core™ i5-13500TE (14 Cores, 24M Cache, up to 4.5 GHz); 35W            Intel® Core™ i5-13500 (14 Cores, 24M Cache, up to 4.8 GHz); 65W            Intel® Core™ i5-13500T (14 Cores, 24M Cache, up to 4.6 GHz); 35W            Intel® Core™ i5-13400E (10 Cores, 20M Cache, up to 4.6 GHz); 65W            Intel® Core™ i5-13400 (10 Cores, 20M Cache, up to 4.6 GHz); 65W            Intel® Core™ i3-13100E (4 Cores, 12M Cache, up to 4.4 GHz); 65W            Intel® Core™ i3-13100TE (4 Cores, 12M Cache, up to 4.1 GHz); 35W            Intel® Core™ i3-13100 (4 Cores, 12M Cache, up to 4.5 GHz); 65W            Intel® Core™ i3-13100T (4 Cores, 12M Cache, up to 4.2 GHz); 35W            Intel® G7400E (2 Cores, 6M Cache, 3.6 GHz); 46W            Intel® G7400TE (2 Cores, 6M Cache, 3.0 GHz); 35W            Intel® G6900E (2 Cores, 4M Cache, 3.0 GHz); 46W            Intel® G6900TE (2 Cores, 4M Cache, 2.4 GHz); 35W</p> <p>12th Generation Intel® LGA 1700 Socket Processors, TDP support up to 65W            Intel® Core™ i9-12900E (16 Cores, 30M Cache, up to 5.0 GHz); 65W            Intel® Core™ i9-12900TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W            Intel® Core™ i9-12900 (16 Cores, 30M Cache, up to 5.0 GHz); 65W            Intel® Core™ i7-12700E (12 Cores, 25M Cache, up to 4.8 GHz); 65W            Intel® Core™ i7-12700TE (12 Cores, 25M Cache, up to 4.7 GHz); 35W            Intel® Core™ i7-12700 (12 Cores, 25M Cache, up to 4.8 GHz); 65W            Intel® Core™ i5-12500E (6 Cores, 18M Cache, up to 4.5 GHz); 65W            Intel® Core™ i5-12500TE (6 Cores, 18M Cache, up to 4.3 GHz); 35W            Intel® Core™ i5-12500 (6 Cores, 18M Cache, up to 4.6 GHz); 65W            Intel® Core™ i5-12400 (6 Cores, 18M Cache, up to 4.4 GHz); 65W            Intel® Core™ i3-12100E (4 Cores, 12M Cache, up to 4.2 GHz); 60W            Intel® Core™ i3-12100TE (4 Cores, 12M Cache, up to 4.0 GHz); 35W            Intel® Core™ i3-12100 (4 Cores, 12M Cache, up to 4.3 GHz); 60W            Intel® G7400E (2 Cores, 6M Cache, 3.6 GHz); 46W            Intel® G7400TE (2 Cores, 6M Cache, 3.0 GHz); 35W            Intel® G6900E (2 Cores, 4M Cache, 3.0 GHz); 46W            Intel® G6900TE (2 Cores, 4M Cache, 2.4 GHz); 35W</p>	
	<b>Chipset</b>	Intel® R680E/H610E Chipset	
	<b>Memory</b>	2/4 288-pin UDIMM up to 96G/128GB (ECC/Non-ECC) Dual Channel DDR5 4000 MHz (ECC support: R680E only)	
	<b>BIOS</b>	AMI SPI 256Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® UHD Graphics	
	<b>Feature</b>	3D graphics HW acceleration:DX12, Open GL 4.6, Vulkan 1.2	
		HW Video Decode: 8K60 12b 4:2:0 HEVC/VP9/SCC 8K30 10b 4:2:0 AV1 5K60 10b 4:4:4 HEVC/VP9/SCC 4K60 8b 4:2:0 AVC	HW Video Encode: 8K30 or 5K60 8b/10b 4:2:0 HEVC/VP9/SCC 4K60 10b 4:4:4 HEVC/VP9/SCC 4K60 8b 4:2:0 AVC
	<b>Display</b>	1 x DVI-I (colay VGA) 2 x DFI display extension port (DP/HDMI/VGA available)	DVI-I /VGA: resolution up to 1920x1200 @ 60Hz HDMI /VGA: resolution up to 1920x1080 @ 60Hz DP: resolution up to 1920x1200 @ 60Hz
	<b>Triple Displays</b>	DVI-I (colay VGA) +DFI display extension port (DP/HDMI/VGA available)	

## SPECIFICATION

EXPANSION	Interface	<b>[R680E]</b> 1 x M.2 2230 E Key (USB 2.0x1/CNVix1/PCIe3.0 x1) 1 x M.2 2280 M Key (PCIe 4.0x4) 1 x M.2 3042 A Key for M2A-OOB	
		<b>[H610E]</b> 1 x M.2 2230 E Key (USB 2.0x1/CNVix1/PCIe3.0 x1) 1 x M.2 3042 A Key for M2A-OOB	
AUDIO	Audio Codec	Realtek ALC888S	
ETHERNET	Controller	<b>[R680E]</b> 1 x Intel® I226-LM (Core i9/i7/i5 support iAMT) 1 x Intel® I226-V (colay i210AT)	
		<b>[H610E]</b> 1 x Intel® I226-V 1 x Intel® I226-V (colay i210AT)	
REAR I/O	Ethernet	2 x 2.5GbE (RJ-45)	
	USB	2 x USB 3.2 Gen2	
	Display	1 x DVI-I (colay VGA)	
INTERNAL I/O	Serial	2 x RS232/422/485 w/o Power (2.0 pitch BOX) by BIOS select 2 x RS232 w/o Power, 2.0 pitch BOX	
	USB	<b>[R680E]</b> 4 x USB 3.2 Gen 2 BOX, 2 x USB 2.0 (2x5 2.0mm pitch header)	
		<b>[H610E]</b> 2 x USB 2.0 (2x5 2.0mm pitch header)	
	Display	2 x DFI display extension port (DP/HDMI/VGA available)	
	Audio	1 x Front Audio Header (1 x Line-out, 1 x Mic-in)	
	SATA	<b>[R680E]</b> 6 x SATA 3.0 (up to 6Gb/s) <b>[H610E]</b> 4 x SATA 3.0 (up to 6Gb/s)	RAID 0/1/5/10
	DIO	1 x 8-bit DIO BOX	
	SMBus	1 x SMBus	
PS/2	1 x PS/2 (2.54mm pitch)		
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	Nuvoton TPM 2.0	
POWER	Type	ATX	
	Connector	8-pin ATX 12V power Expansion Goldfinger	
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit Windows 11 Enterprise	
	Linux	Linux	
ENVIRONMENT	Temperature	Operating: -5 to 65°C	
		Storage: -40 to 85°C	
	Humidity	Operating: 5 to 95% RH Storage: 5 to 95% RH	
MTBF	TBD		
MECHANISM	Dimensions	Full Size PICMG 1.3	338mm (13.3") x 126.39mm (4.98")
	Height	PCB: TBD Top Side: TBD Bottom Side: TBD	
STANDARDS AND CERTIFICATIONS	Certifications	CE, FCC Class B, RoHS	

## ORDERING INFORMATION

Model Name	P/N	PCH	2.5 GbE	DDR5	USB 3.2 Gen2	USB 2.0	COM	SATA	TPM	Power	Temp.
RPSPIC-R680E	770-RPSPIC1-000G	R680E	2	4 ECC/Non ECC	6	2	4	6	dTPM	8-pin ATX 12V power	-5 to 65°C
RPSPIC-H610E	770-RPSPIC1-100G	H610E	4	2 Non ECC	2	2	4	4	dTPM	Expansion Goldfinger	-5 to 65°C

## PACKING LIST

• 1 RPSPIC-R680E/H610E board	
• 1 Dual USB2.0 port cable (with bracket)	A81-001066-016G
• 2 COM port cable (with bracket)	TBD
• 2 Serial ATA data cable	332-553001-005G
• 1 I/O shield	TBD