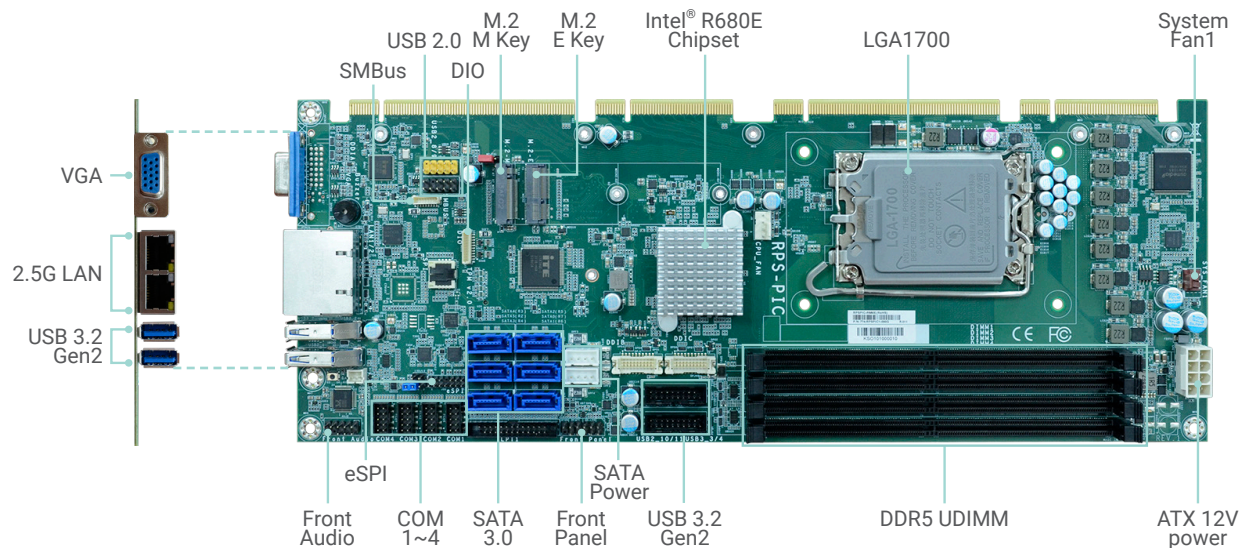


RPSPIC-R680E RPSPIC-H610E

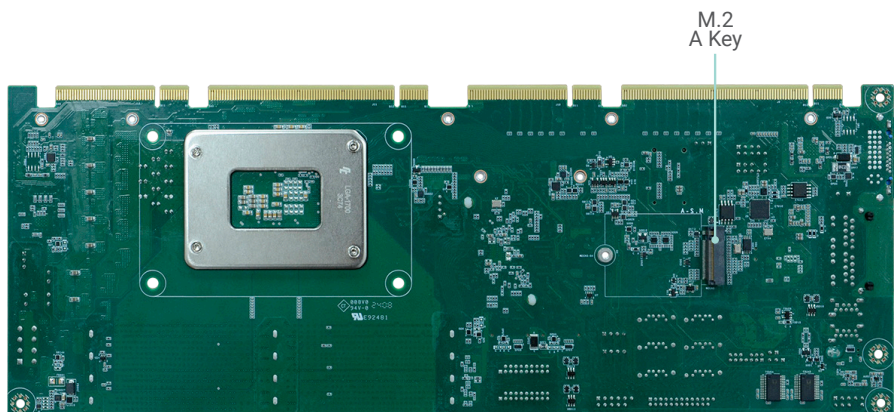
14th/13th/12th Gen Intel® Core™
Full Size PICMG 1.3



RPSPIC-R680E



Top View



Bottom View

KEY FEATURES



DDR5

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



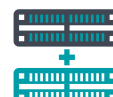
2K Resolution

Supports up to 2K resolution



Triple Displays

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



Multiple Expansion

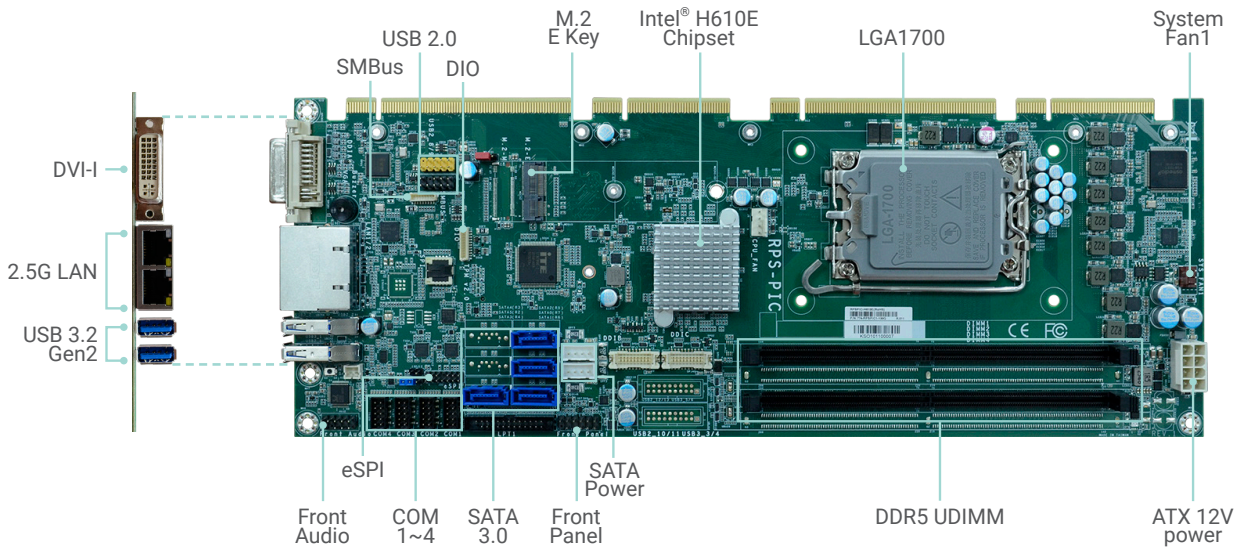
1 M.2 E Key (USB/PCIe/
CNVi), 1 M.2 M Key (PCIe),
1 M.2 A Key for M2A-OOB



Rich I/O

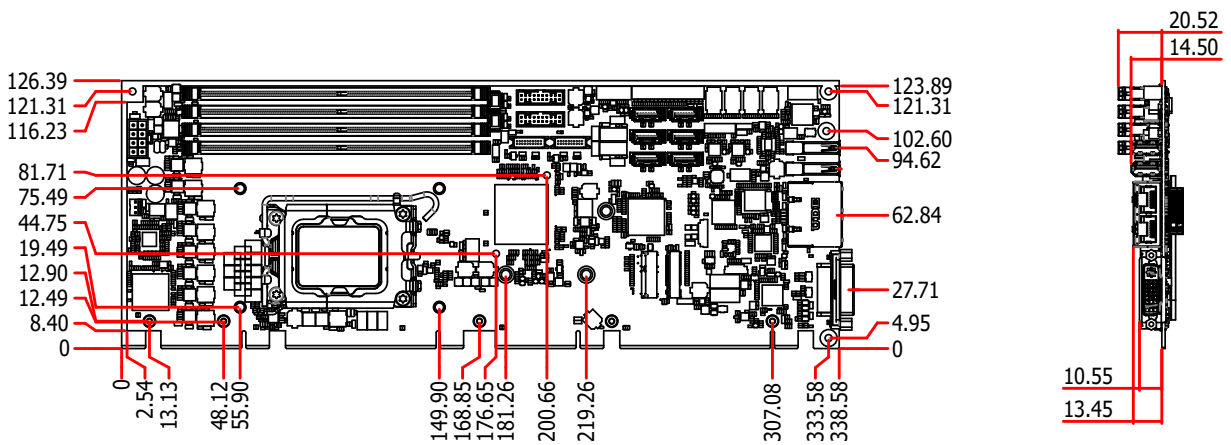
2 Intel 2.5GbE, 4 COM,
6 USB 3.2 Gen2,
2 USB 2.0, 6 SATA 3.0

RPSPIC-H610E

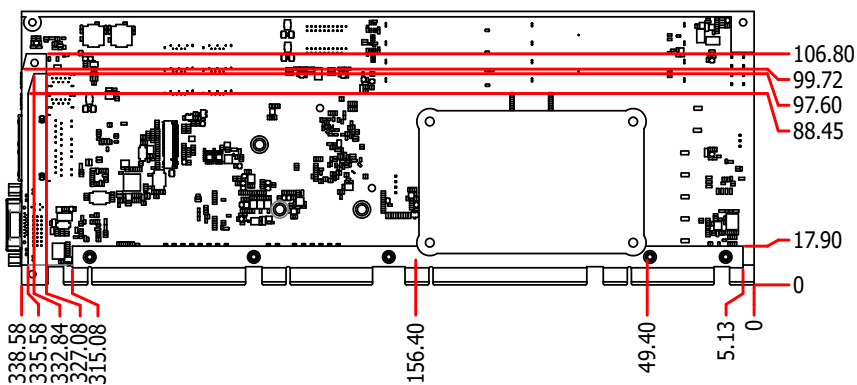


Top View

MECHANICAL DRAWING



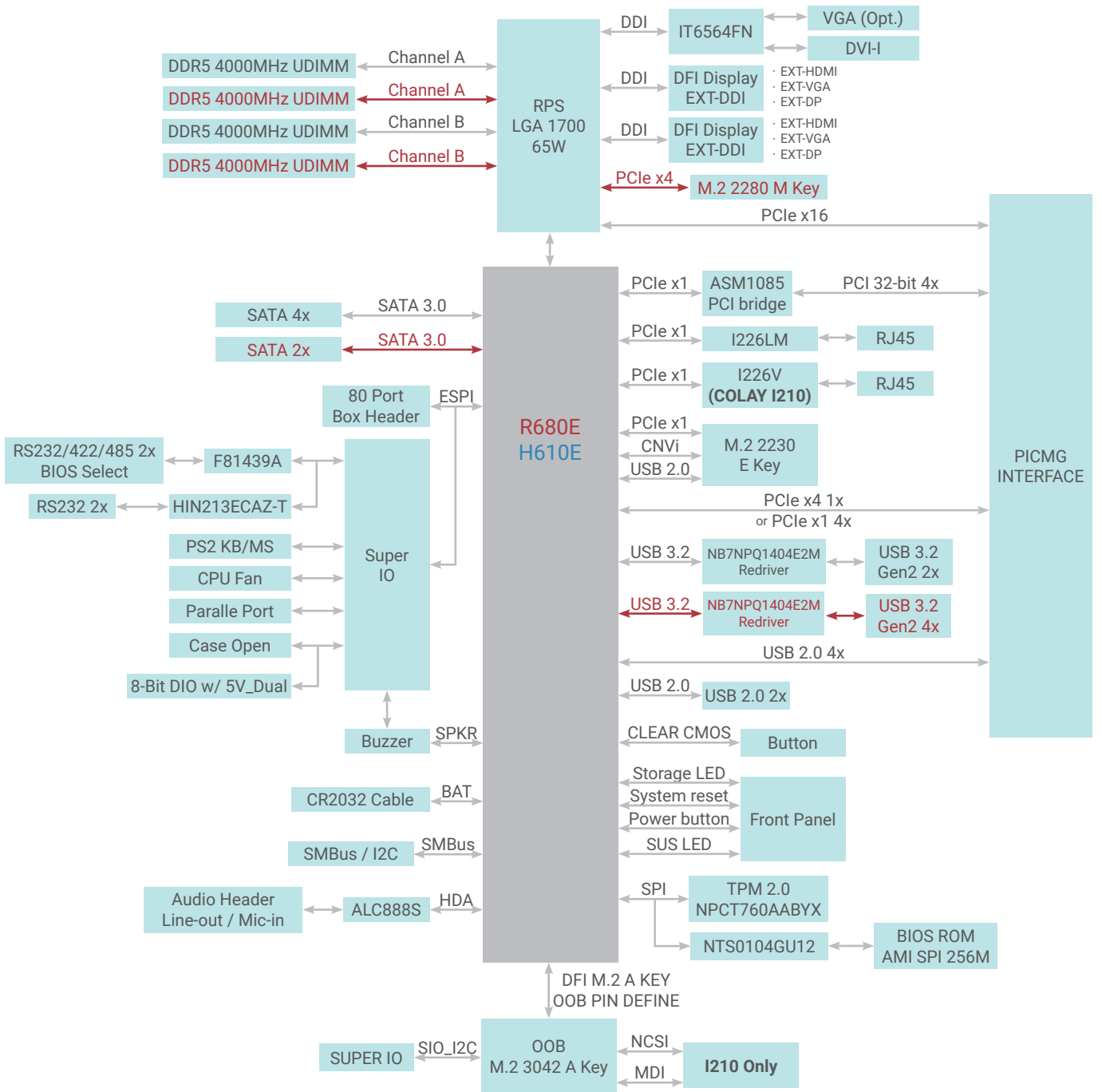
Top View



Bottom View

BLOCK DIAGRAM

● R680E Only
● H610E Only



SPECIFICATION

| Model Name | | RPSPIC-R680E | RPSPIC-H610E |
|------------|------------|--|---|
| SYSTEM | Processor | <p>14th Generation Intel® LGA 1700 Socket Processors, TDP support up to 65W</p> <p>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® Core™ i300 (2 Cores, 6M Cache, 3.9 GHz); 46W Intel® Core™ i300T (2 Cores, 6M Cache, 3.4 GHz); 35W</p> <p>13th Generation Intel® LGA 1700 Socket Processors, TDP support up to 65W</p> <p>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</p> <p>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> | |
| | Chipset | Intel® R680E Chipset | Intel® H610E Chipset |
| | Memory | 4 288-pin UDIMM up to 128GB (ECC/Non-ECC) Dual Channel DDR5 4000 MHz | 2 288-pin UDIMM up to 96GB (Non-ECC) Dual Channel DDR5 4000 MHz |
| | BIOS | AMI SPI 256Mbit | AMI SPI 256Mbit |
| | Controller | Intel® UHD Graphics 700 series | Intel® UHD Graphics 700 series |
| GRAPHICS | Feature | <p>3D graphics HW acceleration: DX12, Open GL 4.6, Vulkan 1.2</p> <p>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</p> <p>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</p> | <p>3D graphics HW acceleration: DX12, Open GL 4.6, Vulkan 1.2</p> <p>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</p> <p>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</p> |

SPECIFICATION

| Model Name | | RPSPIC-R680E | RPSPIC-H610E |
|------------------------------|-------------------|--|--|
| GRAPHICS | Display | 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 | 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 |
| | Triple Displays | DVI-I(colay VGA) + DFI display extension port(DP/HDMI/VGA available) | DVI-I(colay VGA) + DFI display extension port(DP/HDMI/VGA available) |
| EXPANSION | Interface | 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 | 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 | Realtek ALC888S |
| ETHERNET | Controller | 1 x Intel® I226-LM (Core i9/i7/i5 support iAMT) 1 x Intel® I226-V (colay i210AT) | 1 x Intel® I226-V 1 x Intel® I226-V (colay i210AT) |
| REAR I/O | Ethernet | 2 x 2.5GbE (RJ-45) | 2 x 2.5GbE (RJ-45) |
| | USB | 2 x USB 3.2 Gen2 | 2 x USB 3.2 Gen2 |
| | Display | 1 x DVI-I (colay VGA) | 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 | 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 | 4 x USB 3.2 Gen 2 BOX 2 x USB 2.0 (2x5 2.0mm pitch header) | 2 x USB 2.0 (2x5 2.0mm pitch header) |
| | Display | 2 x DFI display extension port (DP/HDMI/VGA available) | 2 x DFI display extension port (DP/HDMI/VGA available) |
| | Audio | 1 x Front Audio Header (1 x Line-out, 1 x Mic-in) | 1 x Front Audio Header (1 x Line-out, 1 x Mic-in) |
| | SATA | 6 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10 | 4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10 |
| | DIO | 1 x 8-bit DIO BOX | 1 x 8-bit DIO BOX |
| | SMBus | 1 x SMBus | 1 x SMBus |
| | PS/2 | 1 x PS/2 (2.54mm pitch) | 1 x PS/2 (2.54mm pitch) |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | System Reset, Programmable via Software from 1 to 255 Seconds |
| SECURITY | TPM | Nuvoton TPM 2.0 | Nuvoton TPM 2.0 |
| POWER | Type | ATX | ATX |
| | Connector | 8-pin ATX 12V power Expansion Goldfinger | 8-pin ATX 12V power Expansion Goldfinger |
| | Consumption | TBD | TBD |
| | RTC Battery | CR2032 Coin Cell | CR2032 Coin Cell |
| OS SUPPORT | Microsoft | Windows 10 IoT Enterprise 64-bit Windows 11 Enterprise | Windows 10 IoT Enterprise 64-bit Windows 11 Enterprise |
| | Linux | Linux | Linux |
| ENVIRONMENT | Temperature | Operating: -5 to 65°C Storage: -40 to 85°C | Operating: -5 to 65°C Storage: -40 to 85°C |
| | Humidity | Operating: 5 to 95% RH Storage: 5 to 95% RH | Operating: 5 to 95% RH Storage: 5 to 95% RH |
| | MTBF | TBD | TBD |
| MECHANISM | Dimensions | Full Size PICMG 1.3 338mm (13.3") x 126.39mm (4.98") | Full Size PICMG 1.3 338mm (13.3") x 126.39mm (4.98") |
| | Height | PCB: TBD Top Side: TBD Bottom Side: TBD | PCB: TBD Top Side: TBD Bottom Side: TBD |
| STANDARDS AND CERTIFICATIONS | Certification | CE, FCC Class B, RoHS | 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 Expansion Goldfinger | -5 to 65°C |
| RPSPIC-H610E | 770-RPSPIC1-100G | H610E | 4 | 2 Non ECC | 2 | | | 4 | | | |

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 |