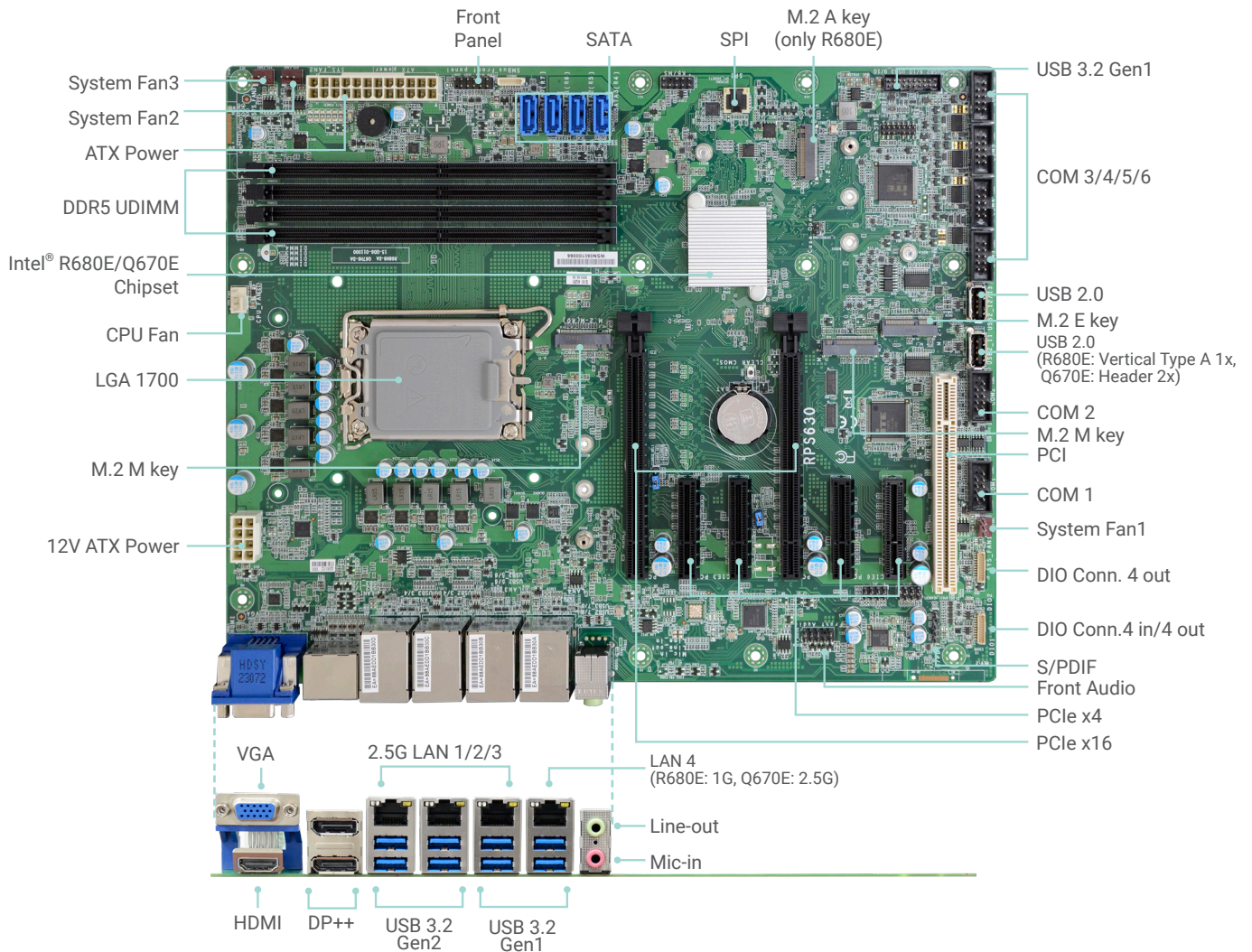


RPS630-R680E/Q670E

14th/13th/12th Gen Intel® Core™
Desktop
ATX



Top View

KEY FEATURES



DDR5

4 DDR5 UDIMM up to 192GB



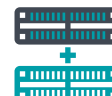
4K High Resolution

Supports 4K resolution



Quad Displays

VGA, 2 DP++, HDMI



Multiple Expansion

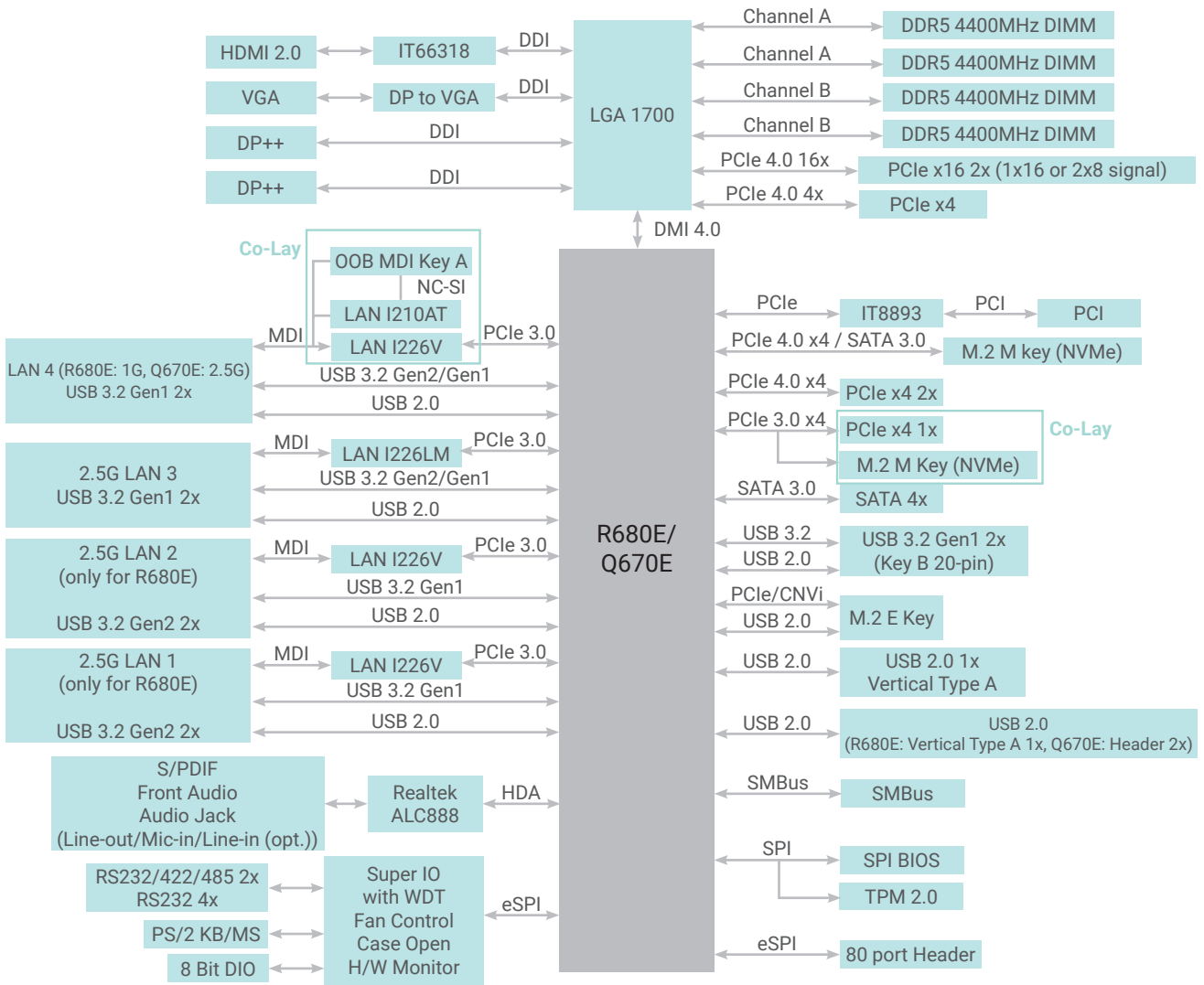
2 PCIe x16, 4 PCIe x4, 1 PCI, 2 M.2 M key, 1 M.2 E Key, 1 M.2 A Key(OOB)



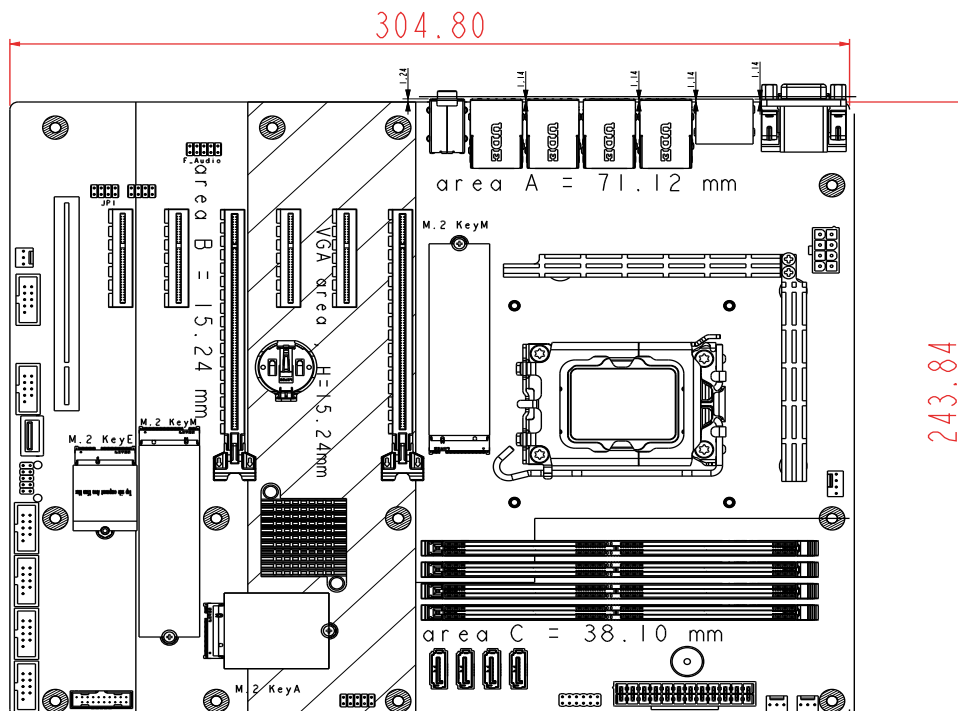
Rich I/O

4 Intel 2.5GbE, 6 COM, 4 USB 3.2 Gen2, 6 USB 3.2 Gen1, 3 USB 2.0

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

| | | | |
|-----------|---------------|--|--|
| SYSTEM | Processor | <p>14th Generation Intel® LGA 1700 Socket Processors, TDP support up to 125W Intel® Core™ i9-14900 (24 Cores, 36M Cache, up to 2.0 GHz); 65W Intel® Core™ i9-14900T (24 Cores, 36M Cache, up to 1.1 GHz); 35W Intel® Core™ i7-14700 (20 Cores, 33M Cache, up to 2.1 GHz); 65W Intel® Core™ i7-14700T (20 Cores, 33M Cache, up to 1.3 GHz); 35W Intel® Core™ i5-14500 (14 Cores, 24M Cache, up to 2.6 GHz); 65W Intel® Core™ i5-14500T (14 Cores, 24M Cache, up to 1.7 GHz); 35W Intel® Core™ i3-14100 (4 Cores, 12M Cache, up to 3.5 GHz); 60W Intel® Core™ i3-14100T (4 Cores, 12M Cache, up to 2.7 GHz); 35W Intel® 300T (2 Cores, 6M Cache, up to 3.4 GHz); 35W</p> <p>13th Generation Intel® LGA 1700 Socket Processors, TDP support up to 125W 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™ 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™ i7-13700T (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™ i5-13500T (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™ 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™ i3-13100T (4 Cores, 12M Cache, up to 4.2 GHz); 35W</p> <p>12th Generation Intel® LGA 1700 Socket Processors, TDP support up to 125W 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™ i7-12700E (12 Cores, 25M Cache, up to 4.8 GHz); 65W Intel® Core™ i7-12700TE (12 Cores, 25M Cache, up to 4.6 GHz); 35W 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™ 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® Pentium® G7400E (2 Cores, 6M Cache, 3.6 GHz); 46W Intel® Pentium® G7400TE (2 Cores, 6M Cache, 3.0 GHz); 35W Intel® Celeron® G6900E (2 Cores, 4M Cache, 3.0 GHz); 46W Intel® Celeron® G6900TE (2 Cores, 4M Cache, 2.4 GHz); 35W</p> | |
| | Chipset | Intel® R680E/Q670E Chipset | |
| | Memory | Four 288-pin UDIMM up to 192GB (ECC/Non-ECC) Dual Channel DDR5 up to 4400 MHz *only R680E support ECC memory *Speed support list follow User's Manual | |
| | BIOS | AMI SPI 256Mbit | |
| | Controller | Intel® HD Gen 9 Graphics | |
| GRAPHICS | Feature | OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9 | |
| | Display | 1 x VGA | VGA: resolution up to 1920x1200 @ 60Hz |
| | | 2 x DP++ | DP++: resolution up to 4096x2304 @60Hz |
| | | 1 x HDMI 2.0a | HDMI: resolution up to 4096x2160 @ 24Hz |
| | Quad Displays | VGA + 2 x DP++ + HDMI | |
| EXPANSION | Interface | 2 x PCIe x16 (Gen 4, 16 or 8+8) | |
| | | 3 x PCIe x4 (Gen 4) | |
| | | 1 x PCIe x4 (Gen 3, co-lay M.2-M2, function selected by BIOS.) | |
| | | 1 x PCI | |
| | | 1 x M.2 E key 1 x M.2 A key for M2-00B (only R680E) 1 x M.2 M key (PCIe x4 Gen4 NVMe, SATA) 1 x M.2 M key (opt. co-lay PCIe x4 Gen3 slot #6, function selected by BIOS.) | |
| AUDIO | Audio Codec | Realtek ALC888S | |
| ETHERNET | Controller | 1 x Intel® I226-LM (Core i9/i7/i5 support iAMT) | |
| | | Q670E: 1 x Intel® I226-V (co-lay I210-AT) | R680E: 2 x Intel® I226-V 1 x Intel® I210-AT (co-lay I226-V) |
| REAR I/O | Ethernet | Q670E: 1 x 2.5GbE (RJ-45) 1 x 2.5GbE (RJ-45, opt. 1GbE) | R680E: 3 x 2.5GbE (RJ-45) 1 x 1GbE (RJ-45, opt. 2.5GbE) |
| | | USB | 4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1 |
| | Display | 1 x VGA 2 x DP++ 1 x HDMI | |
| | Audio | 1 x Line-out 1 x Mic-in 1 x Line-in (opt.) | |

SPECIFICATION

| | | | |
|----------------|-------------------|---|----------------------------|
| INTERNAL I/O | Serial | 2 x RS-232/422/485 4 x RS-232 | |
| | USB | 2 x USB 3.2 Gen1 1 x USB 2.0 Type A USB 2.0 (R680E: Vertical Type A 1x, Q670E: Header 2x) | |
| | Audio | 1 x Front Audio 1 x S/PDIF | |
| | SATA | 4 x SATA 3.0 (up to 6Gb/s) | RAID 0/1/5/10 |
| | PS/2 | 1 x PS/2 (2.54mm pitch) | |
| | DIO | 4-IN / 8-OUT DIO | |
| | eSPI | 1 x eSPI | |
| | SMBus | 1 x SMBus | |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | |
| SECURITY | TPM | Nuvoton TPM2.0 | |
| POWER | Type | ATX | |
| | Connector | 8-pin ATX 12V power 24-pin ATX power | |
| | Consumption | Typical: i9-14900K: 3.3V @ 0.69A (2.28W); 5V @ 0.95A (4.75W); 12V @ 1.26A (15.12W) Max.: i9-14900K: 3.3V @ 1.2A (3.96W); 5V @ 3.6A (18W); 12V @ 29.02A (348.24W) | |
| | 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: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery | |
| | Humidity | Operating: 5 to 95% RH Storage: 5 to 95% RH | |
| | MTBF | TBD | |
| MECHANISM | Dimensions | ATX Form Factor | 305mm (12") x 244mm (9.6") |
| | Height | PCB: 1.6mm | |
| | | Top Side: 33.3mm Bottom Side: 4mm | |
| CERTIFICATIONS | Certifications | CE, FCC Class B, RoHS, UKCA, KC | |

ORDERING INFORMATION

| Model Name | P/N | Memory | 2.5GbE | 1GbE | RS-232/422/485 | USB 3.2 Gen2 | USB 3.2 Gen1 | USB 2.0 | TPM 2.0 | Power | Thermal | Temp. |
|--------------|------------------|---------|--------|------|----------------|--------------|--------------|---------|---------|--------------------------|---------|------------|
| RPS630-Q670E | 770-RPS6301-000G | 4 UDIMM | 2 | 0 | 2 | 4 | 6 | 3 | dTPM | 24-pin ATX/8-pin ATX 12V | Active | -5 to 65°C |
| RPS630-R680E | 770-RPS6301-100G | 4 UDIMM | 3 | 1 | 2 | 4 | 6 | 2 | dTPM | 24-pin ATX/8-pin ATX 12V | Active | -5 to 65°C |

PACKING LIST

| | |
|--|-----------------|
| 1 RPS630 motherboard | |
| 1 COM port cables (Length: 300mm, 2 x COM ports) | |
| 1 Serial ATA data cable (Length: 500mm) | |
| 1 I/O shield | A49-RPS310-000G |
| 1 M.2 screw/standoff | |

OPTIONAL ITEMS

| | |
|--|-----------------|
| USB 2.0 port cable (Length: 350/398mm) | A81-001066-016G |
| USB 3.2 Gen1 port cable (Length: 320mm) | A81-001052-023G |
| USB 3.2 Gen2 port cable (Length: 300mm) | A81-001075-017G |
| COM port cable (Length: 300mm, 2 x COM ports) | A81-015026-023G |
| Serial ATA data cable (Length: 500mm, W/LOCK) | 332-553001-005G |
| Serial ATA data cable (Length: 500mm, W/LOCK, 90D) | A81-002128-017G |
| Thermal solution (For 35W, Height: 29.39mm) | A71-101136-000G |
| Thermal solution (For 65W, Height: 46mm) | A71-101137-000G |
| Thermal solution (For 95W/125W, Height: 110mm) | A71-101145-000G |
| DP to HDMI Dongle | 612-D2H13M-000G |
| M.2-COM4 (M.2 serial port module) | 770-M2COM1-000G |
| M.2-2LAN (M.2 LAN port module) | 770-M22LN2-000G |
| M.2-2PSE (M.2 PSE module) | 770-M22PS2-000G |