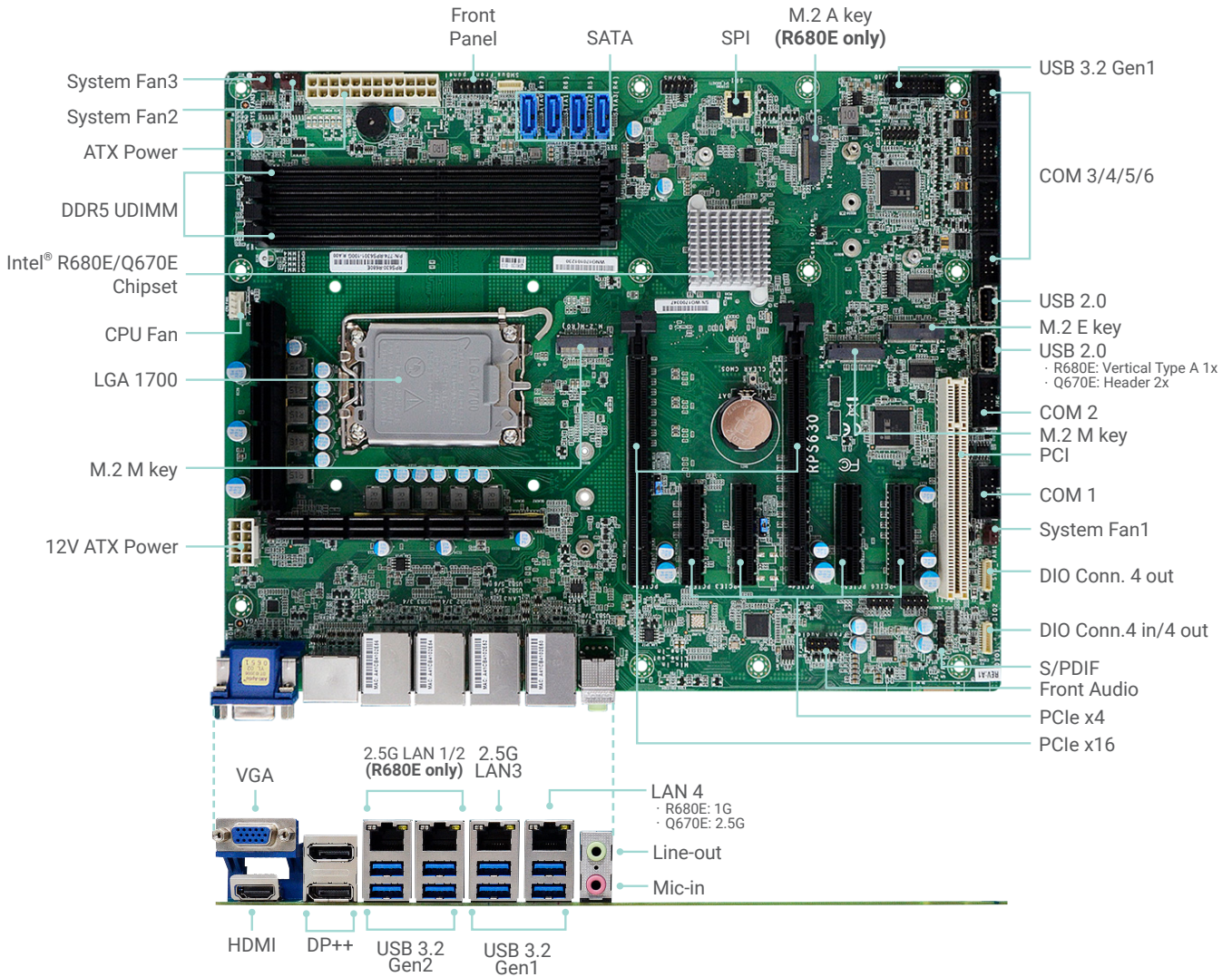


RPS630-R680E RPS630-Q670E

BTL-S/14th/13th/12th Gen Intel® Core™

Desktop

ATX



Top View
(RPS630-R680E)

KEY FEATURES



DDR5

4 DDR5 UDIMM up to 192GB



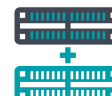
4K High Resolution

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 A Key(OOB), 1 M.2 E Key

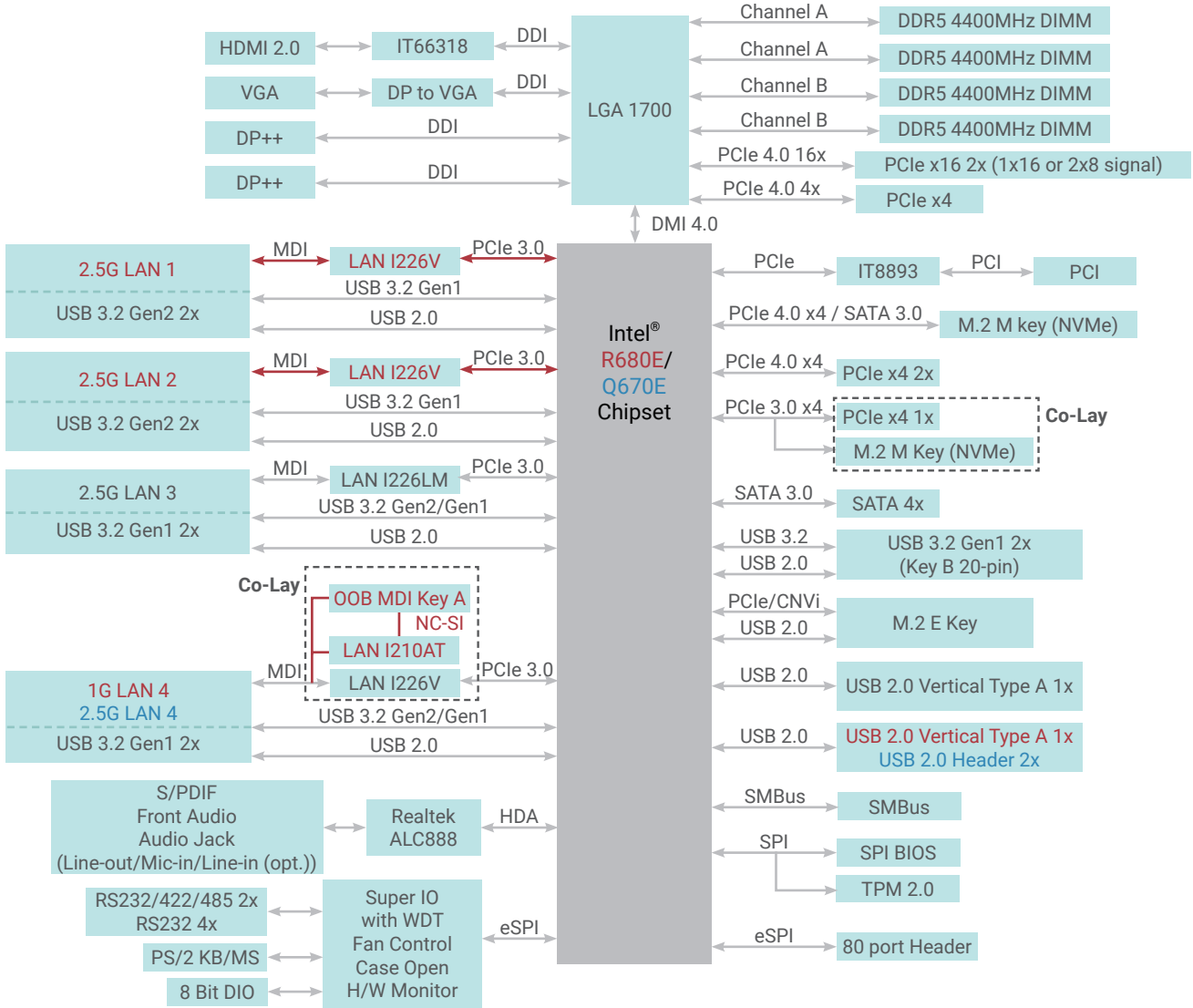


Rich I/O

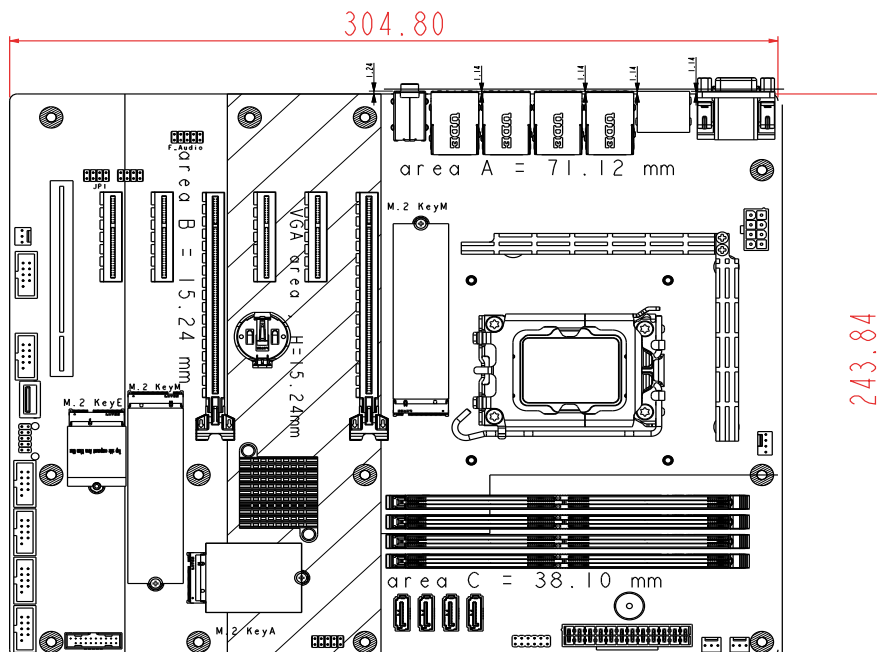
4 Intel 2.5GbE, 6 COM, 4 USB 3.2 Gen2, 6 USB 3.2 Gen1, 3 USB 2.0

BLOCK DIAGRAM

● R680E Only
● Q670E Only



MECHANICAL DRAWING



SPECIFICATION

| Model Name | | RPS630-R680E | RPS630-Q670E |
|------------|---------------|--|--|
| SYSTEM | Processor | <p>Intel® Bartlett Lake-S Hybrid LGA 1700 Socket Processors</p> <p>Intel® Core™ 7 251E (24 Cores, 36M Cache, up to 5.6 GHz); 65W</p> <p>Intel® Core™ 7 251TE (24 Cores, 36M Cache, up to 5.4 GHz); 45W</p> <p>Intel® Core™ 5 221E (14 Cores, 24M Cache, up to 5.2 GHz); 65W</p> <p>Intel® Core™ 5 221TE (14 Cores, 24M Cache, up to 5.0 GHz); 45W</p> <p>Intel® Core™ 5 211E (10 Cores, 20M Cache, up to 4.9 GHz); 65W</p> <p>Intel® Core™ 5 211TE (10 Cores, 20M Cache, up to 4.8 GHz); 45W</p> <p>Intel® Core™ 3 201E (4 Cores, 12M Cache, up to 4.8 GHz); 60W</p> <p>Intel® Core™ 3 201TE (4 Cores, 12M Cache, up to 4.6 GHz); 45W</p> <p>Intel® 300 (2 Cores, 6M Cache, up to 3.9 GHz); 45W</p> <p>Intel® 300T (2 Cores, 6M Cache, up to 3.4 GHz); 35W</p> <p>14th Generation Intel® LGA 1700 Socket Processors, TDP support up to 125W</p> <p>Intel® Core™ i9-14901E (8 Cores, 36M Cache, up to 5.6 GHz); 65W</p> <p>Intel® Core™ i5-14401E (6 Cores, 24M Cache, up to 4.7 GHz); 65W</p> <p>Intel® Core™ i9-14900 (24 Cores, 36M Cache, up to 5.8 GHz); 65W</p> <p>Intel® Core™ i9-14900T (24 Cores, 36M Cache, up to 5.5 GHz); 35W</p> <p>Intel® Core™ i7-14700 (20 Cores, 33M Cache, up to 5.4 GHz); 65W</p> <p>Intel® Core™ i7-14700T (20 Cores, 33M Cache, up to 5.2 GHz); 35W</p> <p>Intel® Core™ i5-14500 (14 Cores, 24M Cache, up to 5 GHz); 65W</p> <p>Intel® Core™ i5-14500T (14 Cores, 24M Cache, up to 4.8 GHz); 35W</p> <p>Intel® Core™ i5-14400 (10 Cores, 20M Cache, up to 4.7 GHz); 65W</p> <p>Intel® Core™ i5-14400T (10 Cores, 20M Cache, up to 4.5 GHz); 35W</p> <p>Intel® Core™ i3-14100 (4 Cores, 12M Cache, up to 4.7 GHz); 60W</p> <p>Intel® Core™ i3-14100T (4 Cores, 12M Cache, up to 4.4 GHz); 35W</p> <p>Intel® 300 (2 Cores, 6M Cache, up to 3.9 GHz); 46W</p> <p>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</p> <p>Intel® Core™ i9-13900E (24 Cores, 36M Cache, up to 5.2 GHz); 65W</p> <p>Intel® Core™ i9-13900TE (24 Cores, 36M Cache, up to 5.0 GHz); 35W</p> <p>Intel® Core™ i7-13700E (16 Cores, 30M Cache, up to 5.1 GHz); 65W</p> <p>Intel® Core™ i7-13700TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W</p> <p>Intel® Core™ i7-13700T (16 Cores, 30M Cache, up to 4.9 GHz); 35W</p> <p>Intel® Core™ i5-13500E (14 Cores, 24M Cache, up to 4.6 GHz); 65W</p> <p>Intel® Core™ i5-13500TE (14 Cores, 24M Cache, up to 4.5 GHz); 35W</p> <p>Intel® Core™ i5-13500T (14 Cores, 24M Cache, up to 4.6 GHz); 35W</p> <p>Intel® Core™ i5-13400E (10 Cores, 20M Cache, up to 4.6 GHz); 65W</p> <p>Intel® Core™ i3-13100E (4 Cores, 12M Cache, up to 4.4 GHz); 65W</p> <p>Intel® Core™ i3-13100TE (4 Cores, 12M Cache, up to 4.1 GHz); 35W</p> <p>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</p> <p>Intel® Core™ i9-12900E (16 Cores, 30M Cache, up to 5.0 GHz); 65W</p> <p>Intel® Core™ i9-12900TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W</p> <p>Intel® Core™ i7-12700E (12 Cores, 25M Cache, up to 4.8 GHz); 65W</p> <p>Intel® Core™ i7-12700TE (12 Cores, 25M Cache, up to 4.6 GHz); 35W</p> <p>Intel® Core™ i5-12500E (6 Cores, 18M Cache, up to 4.5 GHz); 65W</p> <p>Intel® Core™ i5-12500TE (6 Cores, 18M Cache, up to 4.3 GHz); 35W</p> <p>Intel® Core™ i3-12100E (4 Cores, 12M Cache, up to 4.2 GHz); 60W</p> <p>Intel® Core™ i3-12100TE (4 Cores, 12M Cache, up to 4.0 GHz); 35W</p> <p>Intel® Pentium® G7400E (2 Cores, 6M Cache, 3.6 GHz); 46W</p> <p>Intel® Pentium® G7400TE (2 Cores, 6M Cache, 3.0 GHz); 35W</p> <p>Intel® Celeron® G6900E (2 Cores, 4M Cache, 3.0 GHz); 46W</p> <p>Intel® Celeron® G6900TE (2 Cores, 4M Cache, 2.4 GHz); 35W</p> | |
| | Chipset | Intel® R680E Chipset | Intel® Q670E Chipset |
| | Memory | <p>Four 288-pin UDIMM up to 192GB (ECC/Non-ECC)</p> <p>Dual Channel DDR5 up to 4400 MHz</p> <p>*Speed support list follow User's Manual</p> | <p>Four 288-pin UDIMM up to 192GB (Non-ECC)</p> <p>Dual Channel DDR5 up to 4400 MHz</p> <p>*Speed support list follow User's Manual</p> |
| | BIOS | AMI SPI 256Mbit | AMI SPI 256Mbit |
| | GRAPHICS | Controller | Intel® UHD Graphics 700 series |
| | Feature | <p>OpenGL 4.5, DirectX 12, OpenCL 2.1</p> <p>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9</p> <p>HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9</p> | <p>OpenGL 4.5, DirectX 12, OpenCL 2.1</p> <p>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9</p> <p>HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9</p> |
| | Display | <p>1 x VGA</p> <p>2 x DP++</p> <p>1 x HDMI 2.0a</p> <p>VGA: resolution up to 1920x1200 @ 60Hz</p> <p>DP++: resolution up to 4096x2304 @ 60Hz</p> <p>HDMI: resolution up to 4096x2160 @ 24Hz</p> | <p>1 x VGA</p> <p>2 x DP++</p> <p>1 x HDMI 2.0a</p> <p>VGA: resolution up to 1920x1200 @ 60Hz</p> <p>DP++: resolution up to 4096x2304 @ 60Hz</p> <p>HDMI: resolution up to 4096x2160 @ 24Hz</p> |
| | Quad Displays | VGA + 2 DP++ + HDMI | VGA + 2 DP++ + HDMI |

SPECIFICATION

| Model Name | | RPS630-R680E | RPS630-Q670E |
|----------------|-------------------|--|--|
| EXPANSION | Interface | 2 x PCIe x16 (Gen 4, 16 or 8+8) - Support PCIe1/PCIe4 : single at x16(PCIe1) - Support PCIe1/PCIe4 : dual at x8(PCIe1)/x8(PCIe4) - Support PCIe1 : Riser card x16 or x8/x8 selected by BOM change 3 x PCIe x4 (Gen 4, open edge) 1 x PCIe x4 (Gen 3, open edge, opt. share M.2-M2, function selected by BIOS.) 1 x PCI | 2 x PCIe x16 (Gen 4, 16 or 8+8) - Support PCIe1/PCIe4 : single at x16(PCIe1) - Support PCIe1/PCIe4 : dual at x8(PCIe1)/x8(PCIe4) - Support PCIe1 : Riser card x16 or x8/x8 selected by BOM change 3 x PCIe x4 (Gen 4, open edge) 1 x PCIe x4 (Gen 3, open edge, opt. share M.2-M2, function selected by BIOS.) 1 x PCI |
| | M.2 | 1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi/Wifi 6E) 1 x M.2 A key for M2-OOB 1 x M.2 2242/2260/2280 M key (PCIe x4 Gen4 NVMe, SATA) 1 x M.2 2242/2260/2280 M key (default, PCIe x4 Gen3 NVMe share PCIe#6, function selected by BIOS.) | 1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi/Wifi 6E) 1 x M.2 2242/2260/2280 M key (PCIe x4 Gen4 NVMe, SATA) 1 x M.2 2242/2260/2280 M key (default, PCIe x4 Gen3 NVMe share PCIe#6, function selected by BIOS.) |
| AUDIO | Audio Codec | Realtek ALC888S | Realtek ALC888S |
| ETHERNET | Controller | 1 x Intel® I226-LM (Core i9/i7/i5 support iAMT) 1 x Intel® I210-AT (co-lay I226-V) 2 x Intel® I226-V | 1 x Intel® I226-LM (Core i9/i7/i5 support iAMT) 1 x Intel® I226-V |
| REAR I/O | Ethernet | 3 x 2.5GbE (RJ-45) 1 x 1GbE (RJ-45, opt. 2.5GbE) | 2 x 2.5GbE (RJ-45) |
| | USB | 4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1 | 4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1 |
| | Display | 1 x VGA 2 x DP++ 1 x HDMI | 1 x VGA 2 x DP++ 1 x HDMI |
| | Audio | 1 x Line-out 1 x Mic-in 1 x Line-in (opt.) | 1 x Line-out 1 x Mic-in 1 x Line-in (opt.) |
| INTERNAL I/O | Serial | 2 x RS-232/422/485 4 x RS-232 | 2 x RS-232/422/485 4 x RS-232 |
| | USB | 2 x USB 3.2 Gen1 2 x USB 2.0 Vertical Type A | 2 x USB 3.2 Gen1 1 x USB 2.0 Vertical Type A 2 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required) |
| | Audio | 1 x Front Audio 1 x S/PDIF | 1 x Front Audio 1 x S/PDIF |
| | SATA | 4 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 |
| | PS/2 | 1 x PS/2 (2.54mm pitch) | 1 x PS/2 (2.54mm pitch) |
| | DIO | 4-IN / 8-OUT DIO | 4-IN / 8-OUT DIO |
| | eSPI | 1 x eSPI | 1 x eSPI |
| | SMBus | 1 x SMBus | 1 x SMBus |
| 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 TPM2.0 | Nuvoton TPM2.0 |
| POWER | Type | ATX | ATX |
| | Connector | 8-pin ATX 12V power 24-pin ATX power | 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) | 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 | CR2032 Coin Cell |
| OS SUPPORT | Microsoft | Windows 10 IoT Enterprise 64-bit Windows 11 LTSC | Windows 10 IoT Enterprise 64-bit Windows 11 LTSC |
| | Linux | Linux | Linux |
| ENVIRONMENT | Temperature | Operating: -5 to 65°C Storage: -20 to 70°C with RTC Battery; -40 to 85°C without RTC Battery | Operating: -5 to 65°C Storage: -20 to 70°C with RTC Battery; -40 to 85°C without RTC Battery |
| | Humidity | Operating: 5 to 95% RH Storage: 5 to 95% RH | Operating: 5 to 95% RH Storage: 5 to 95% RH |
| | MTBF | 225,192 hrs @ 25°C; 146,216 hrs @ 40°C; 83,182 hrs @ 60°C; 63,337 hrs @ 70°C Calculation Model: Telcordia Issue 2 Environment: GB, GC - Ground Benign, Controlled | 208,538 hrs @ 25°C; 135,107 hrs @ 40°C; 76,715 hrs @ 60°C; 58,368 hrs @ 70°C Calculation Model: Telcordia Issue 2 Environment: GB, GC - Ground Benign, Controlled |
| MECHANISM | Dimensions | ATX Form Factor 305mm (12") x 244mm (9.6") | ATX Form Factor 305mm (12") x 244mm (9.6") |
| | Height | PCB: 1.6mm Top Side: 33.3mm Bottom Side: 4mm | PCB: 1.6mm Top Side: 33.3mm Bottom Side: 4mm |
| CERTIFICATIONS | Certifications | CE, FCC Class B, RoHS, UKCA, KC, UL | CE, FCC Class B, RoHS, UKCA, KC, UL |

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 | Temp. |
|--------------|------------------|---------|--------|------|----------------|--------------|--------------|---------|---------|--------------------------|------------|
| RPS630-Q670E | 770-RPS6301-000G | 4 UDIMM | 2 | 0 | 2 | 4 | 6 | 3 | dTPM | 24-pin ATX/8-pin ATX 12V | -5 to 65°C |
| RPS630-R680E | 770-RPS6301-100G | | 3 | 1 | | | | 2 | | | |

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 |
| · 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 |
| · 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 |