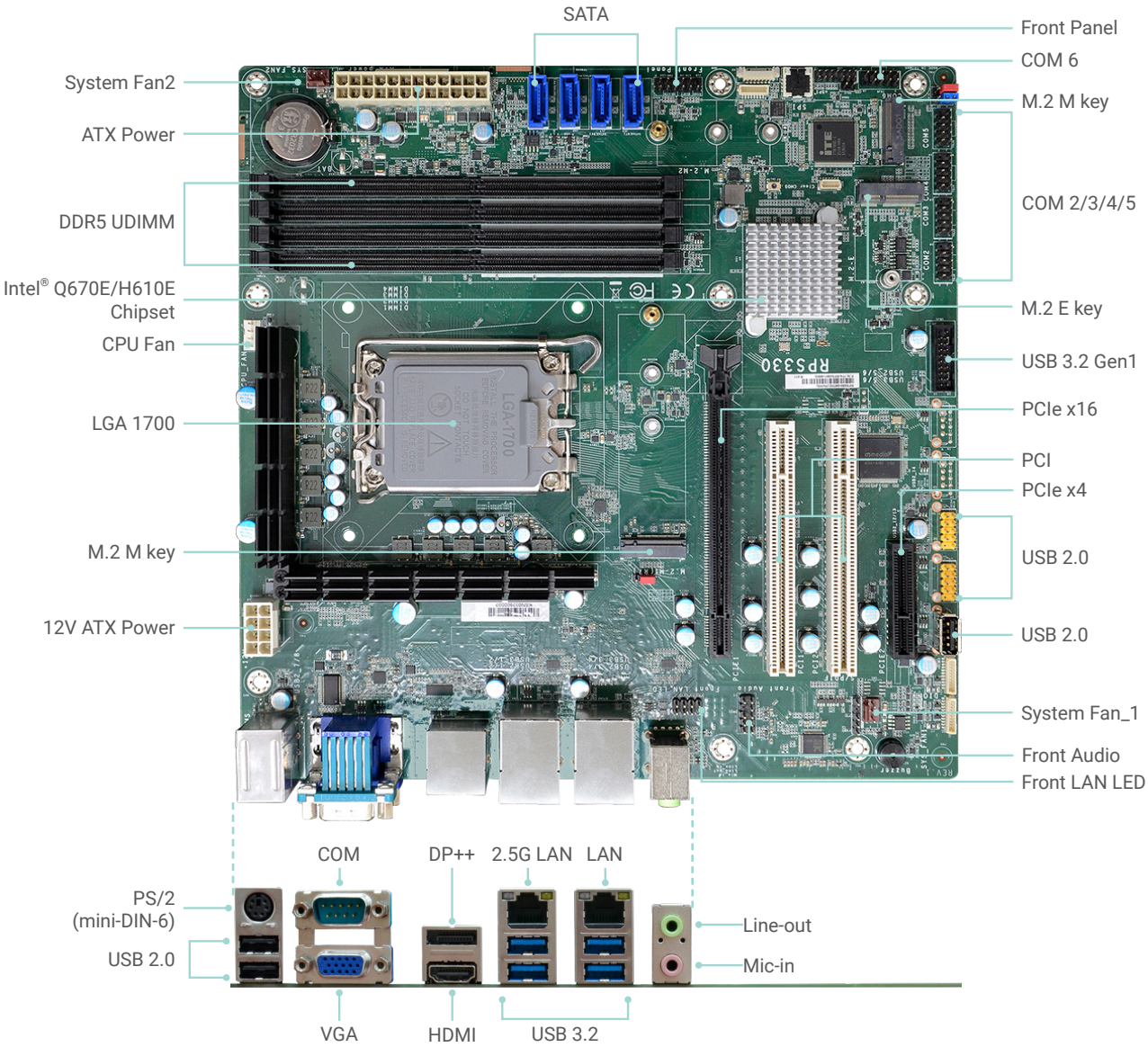
RPS330-Q670E
RPS330-H610E

Desktop

BTL-S/14th/13th/12th Gen Intel® Core™
microATX

IoT Solutions Alliance



Top View

KEY FEATURES

DDR5

4 DDR5 UDIMM up to 192GB

4K High Resolution

Supports 4K resolution

Triple Displays

VGA, DP++, HDMI

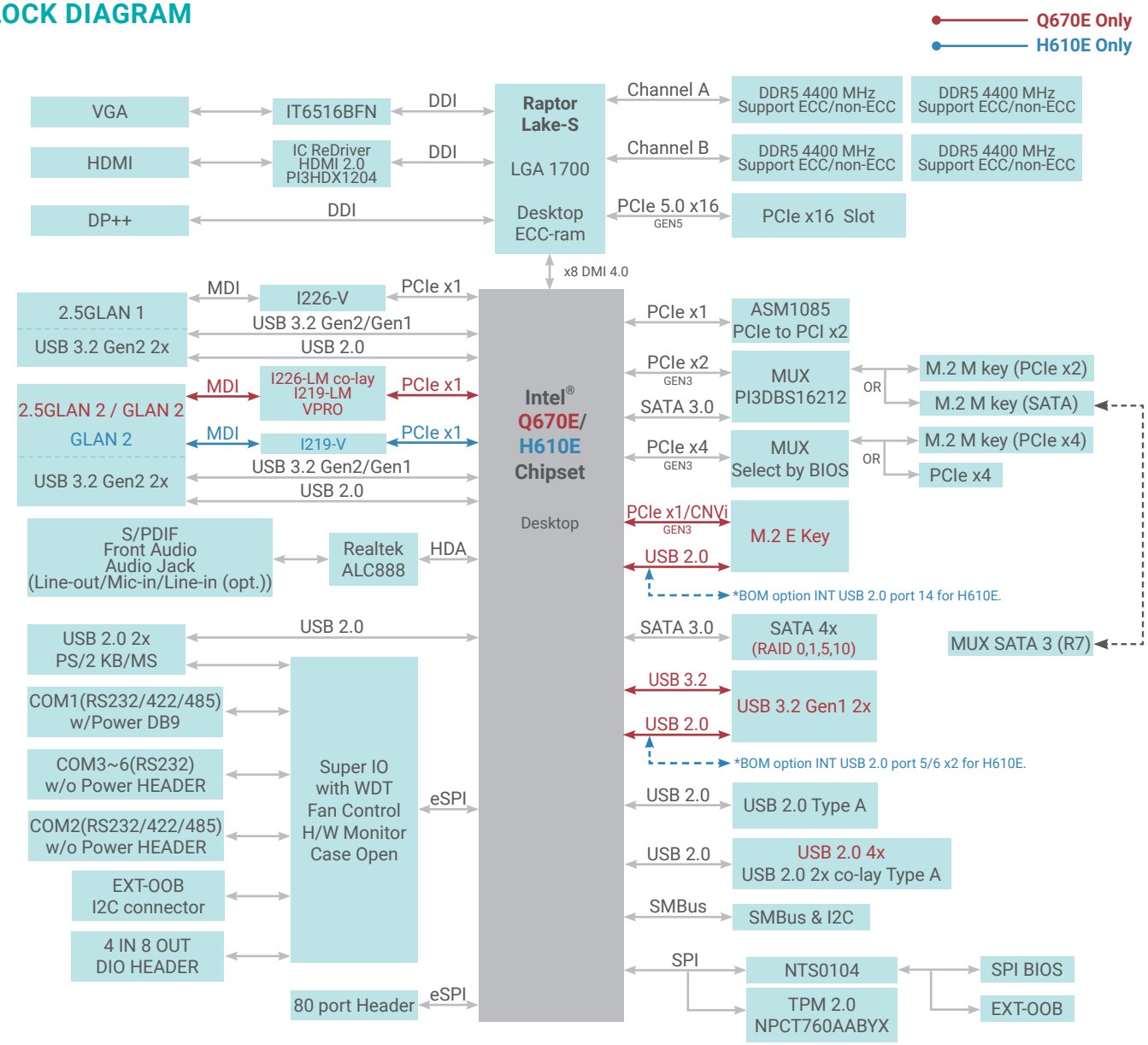
Multiple Expansion

1 PCIe x16, 1 PCIe x4,
2 PCI, 1 M.2 E key,
2 M.2 M key, 4 SATA 3.0

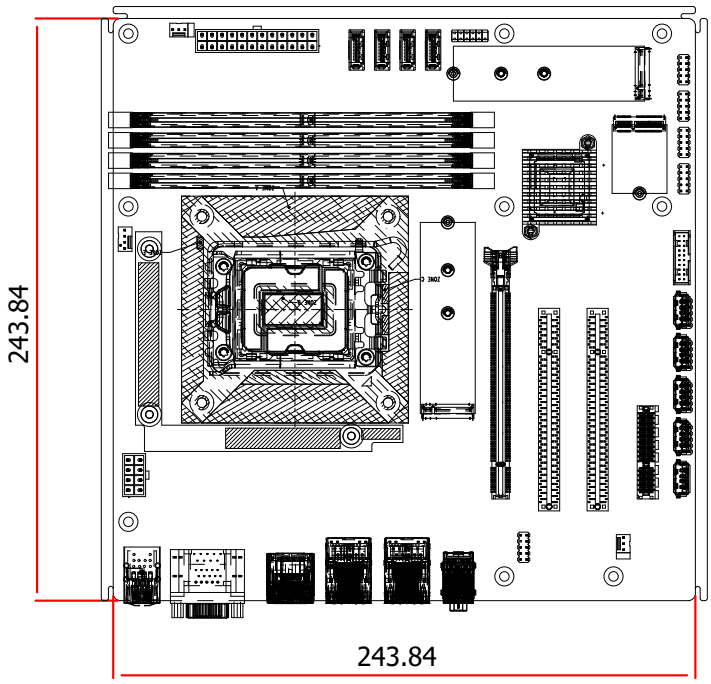
Rich I/O

1 Intel 2.5GbE, 1 Intel 1GbE, 6 COM,
USB 3.2 Gen 2 (Q670E 4x),
USB 3.2 Gen 1 (Q670E 2x, H610E 4x),
USB 2.0 (Q670E 7x, H610E 6x)

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

Model Name		RPS330-Q670E	RPS330-H610E
SYSTEM	Processor	Intel® Bartlett Lake-S Hybrid LGA 1700 Socket Processors Intel® Core™ 7 251E (24 Cores, 36M Cache, up to 5.6 GHz); 65W Intel® Core™ 7 251TE (24 Cores, 36M Cache, up to 5.4 GHz); 45W Intel® Core™ 5 221E (14 Cores, 24M Cache, up to 5.2 GHz); 65W Intel® Core™ 5 221TE (14 Cores, 24M Cache, up to 5.0 GHz); 45W Intel® Core™ 5 211E (10 Cores, 20M Cache, up to 4.9 GHz); 65W Intel® Core™ 5 211TE (10 Cores, 20M Cache, up to 4.8 GHz); 45W Intel® Core™ 3 201E (4 Cores, 12M Cache, up to 4.8 GHz); 60W Intel® Core™ 3 201TE (4 Cores, 12M Cache, up to 4.6 GHz); 45W Intel® 300 (2 Cores, 6M Cache, up to 3.9 GHz); 45W Intel® 300T (2 Cores, 6M Cache, up to 3.4 GHz); 35W 14th Generation Intel® LGA 1700 Socket Processors, TDP support up to 125W Intel® Core™ I9-14901E (8 Cores, 36M Cache, up to 5.6 GHz); 65W Intel® Core™ I5-14401E (6 Cores, 24M Cache, up to 4.7 GHz); 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 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, up to 3.9 GHz); 46W Intel® 300T (2 Cores, 6M Cache, up to 3.4 GHz); 35W 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 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	
	Chipset	Intel® Q670E Chipset	Intel® H610E Chipset
	Memory	Four 288-pin UDIMM up to 192GB (Non-ECC) Dual Channel DDR5 up to 4400 MHz *Speed support list follow User's Manual	Four 288-pin UDIMM up to 192GB (Non-ECC) Dual Channel DDR5 up to 4400 MHz *Speed support list follow User's Manual
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit
GRAPHICS	Controller	Intel® UHD Graphics 700 series	Intel® UHD Graphics 700 series
	Feature	OpenGL 4.5, DirectX 12, OpenCL 2.1 **HW Decode:** AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 **HW Decode:** MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9	OpenGL 4.5, DirectX 12, OpenCL 2.1 **HW Decode:** AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 **HW Decode:** MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9
	Display	1 x VGA 1 x DP++ 1 x HDMI 2.0a **VGA:** resolution up to 1920x1200 @ 60Hz **DP++:** resolution up to 4096x2304 @ 60Hz **HDMI:** resolution up to 4096x2160 @ 24Hz	1 x VGA 1 x DP++ 1 x HDMI 2.0a **VGA:** resolution up to 1920x1200 @ 60Hz **DP++:** resolution up to 4096x2304 @ 60Hz **HDMI:** resolution up to 4096x2160 @ 24Hz
	Triple Displays	VGA + DP++ + HDMI	VGA + DP++ + HDMI
EXPANSION	Interface	1 x PCIe x16 (Gen 5) 1 x PCIe x4 (Gen 3) (share M.2 M-key, function selected by BIOS.) 2 x PCI	1 x PCIe x16 (Gen 5) 1 x PCIe x4 (Gen 3) (share M.2 M-key, function selected by BIOS.) 2 x PCI

SPECIFICATION

Model Name		RPS330-Q670E	RPS330-H610E
EXPANSION	M.2	1 x M.2 2242/2260/2280 M key (PCIe x2 NVMe/SATA/Intel RST support) 1 x M.2 2242/2260/2280 M key (PCIe x4 NVMe/Intel RST support) (opt. share PCIE x4 slot, function selected by BIOS.) 1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi support) (Discrete Wifi 6E support)	1 x M.2 2242/2260/2280 M key (PCIe x2 NVMe/SATA/Intel RST support) 1 x M.2 2242/2260/2280 M key (PCIe x4 NVMe/Intel RST support) (opt. share PCIE x4 slot, function selected by BIOS.)
AUDIO	Audio Codec	Realtek ALC888	Realtek ALC888
ETHERNET	Controller	1 x Intel® I226-LM or I219-LM (Core i9/i7/i5 support iAMT) 1 x Intel® I226-V	1 x Intel® I219-V 1 x Intel® I226-V
REAR I/O	Ethernet	2 x 2.5GbE (RJ-45) or 1 x 2.5GbE + 1 x GbE (RJ-45)	1 x 2.5GbE + 1 x GbE (RJ-45)
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)
	USB	4 x USB 3.2 Gen 2 2 x USB 2.0	2 x USB 3.2 Gen 2 2 x USB 3.2 Gen1 2 x USB 2.0
REAR I/O	PS/2	1 x PS/2 (mini-DIN-6)	1 x PS/2 (mini-DIN-6)
	Display	1 x DP++ 1 x HDMI 2.0a 1 x VGA	1 x DP++ 1 x HDMI 2.0a 1 x VGA
	Audio	1 x Line-out 1 x Mic-in 1 x Line-in (opt. by request, MOQ required)	1 x Line-out 1 x Mic-in 1 x Line-in (opt. by request, MOQ required)
INTERNAL I/O	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)
	USB	2 x USB 3.2 Gen1 4 x USB 2.0 (2.54mm pitch) 1 x USB 2.0 vertical Type A	3 x USB 2.0 (2.54mm pitch) 1 x USB 2.0 vertical Type A
	Audio	1 x Front Audio Header 1 x S/PDIF	1 x Front Audio Header 1 x S/PDIF
	SATA	4 x SATA 3.0 (up to 6Gb/s) (one port share M.2 M-key (SATA)) (RAID 0/1/5/10)	4 x SATA 3.0 (up to 6Gb/s) (one port share M.2 M-key (SATA))
	DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO
	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 TPM 2.0	Nuvoton TPM 2.0
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 @ 0.5A (1.65W); 5V @ 1.6A (8W); 12V @ 5.3A (63.6W) **Max.:** i9-14900K: 3.3V @ 1.1A (3.63W); 5V @ 4.1A (20.5W); 12V @ 23A (276W)	**Typical:** i9-14900K: 3.3V @ 0.5A (1.65W); 5V @ 1.6A (8W); 12V @ 5.3A (63.6W) **Max.:** i9-14900K: 3.3V @ 1.1A (3.63W); 5V @ 4.1A (20.5W); 12V @ 23A (276W)
	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	486,088 hrs @ 25°C ; 276,007 hrs @ 45°C ; 173,159 hrs @ 60°C ; 125,815 hrs @ 70°C **Calculation Model:** Telcordia Issue 4 **Environment:** GB, GC - Ground Benign, Controlled	492,561 hrs @ 25°C ; 281,444 hrs @ 45°C ; 177,236 hrs @ 60°C ; 129,021 hrs @ 70°C **Calculation Model:** Telcordia Issue 4 **Environment:** GB, GC - Ground Benign, Controlled
MECHANISM	Dimensions	microATX Form Factor 244mm (9.6") x 244mm (9.6")	microATX Form Factor 244mm (9.6") x 244mm (9.6")
	Height	**PCB:** 1.6mm **Top Side:** 37.7mm **Bottom Side:** 3.25mm	**PCB:** 1.6mm **Top Side:** 37.7mm **Bottom Side:** 3.25mm
STANDARDS AND CERTIFICATIONS	Certifications	CE, FCC Class B, RoHS, UKCA	CE, FCC Class B, RoHS, UKCA

ORDERING INFORMATION

Model Name	P/N	Memory	2.5 GbE	GbE	COM	USB 3.2 Gen2	USB 3.2 Gen1	USB 2.0	TPM 2.0	Power	Temp.
RPS330-Q670E	770-RPS3301-000G	4 UDIMM	2	0	6	4	2	7	dTPM	24-pin ATX/ 8-pin ATX 12V	-5 to 65°C
RPS330-Q670E	770-RPS3301-200G	4 UDIMM	1	1		4		7			
RPS330-H610E	770-RPS3301-300G	2 UDIMM	1	1		2		6			

PACKING LIST

• 1 RPS330-Q670E/H610E motherboard	
• 1 COM port cable (Length: 300mm, 2 x COM ports)	A81-015026-023G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 I/O shield	A49-CMS631-000G

OPTIONAL ITEMS

• USB 2.0 port cable (Length: 350/398mm)	A81-001066-016G
• USB 3.2 Gen2 port cable (Length: 350mm)	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-M22LN1-000G
• M.2-2PSE (M.2 PSE module)	770-M22PS1-000G

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