

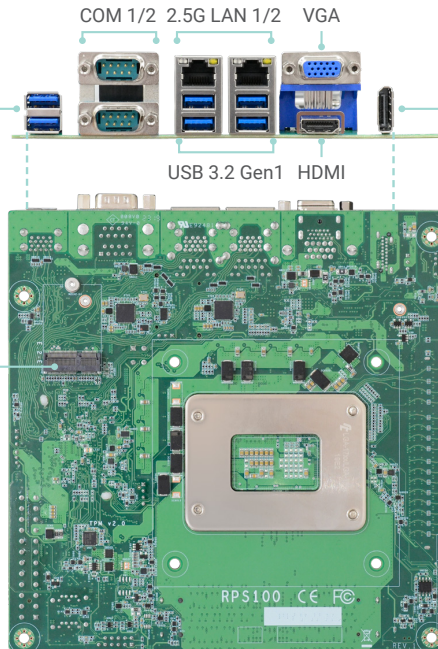
RPS100

Desktop

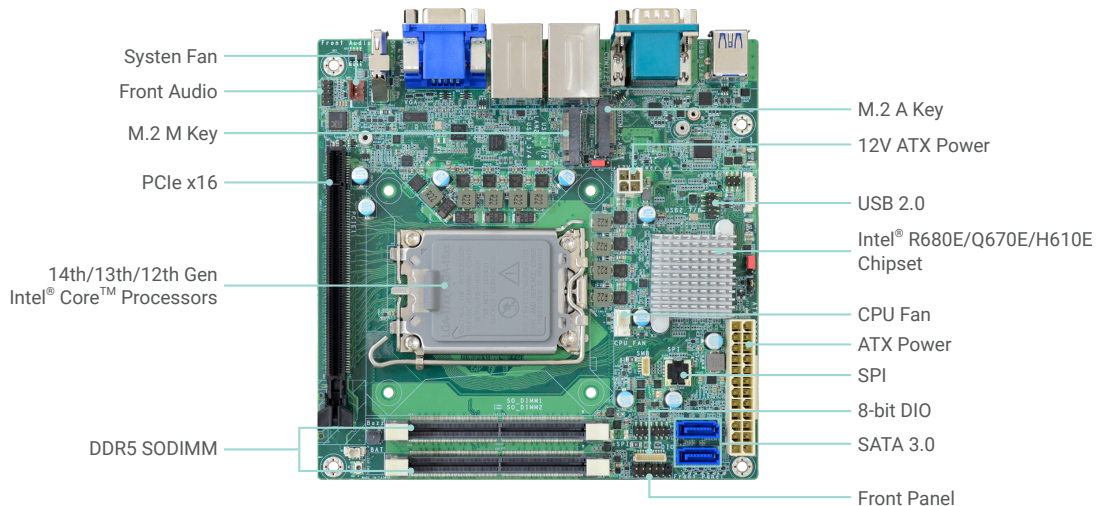
14th/13th/12th Gen Intel® Core™
Mini-ITX



R680E: USB 3.2 Gen2
Q670E: USB 3.2 Gen1
H610E: USB 2.0



Bottom View



Top View

KEY FEATURES



DDR5

2 DDR5 SODIMM up to 64GB



4K High Resolution

Supports 4K resolution



Quad Displays

1 DP++ +1 HDMI +1 VGA + M2A Display (eDP/LVDS/VGA/HDMI)



Multiple Expansion

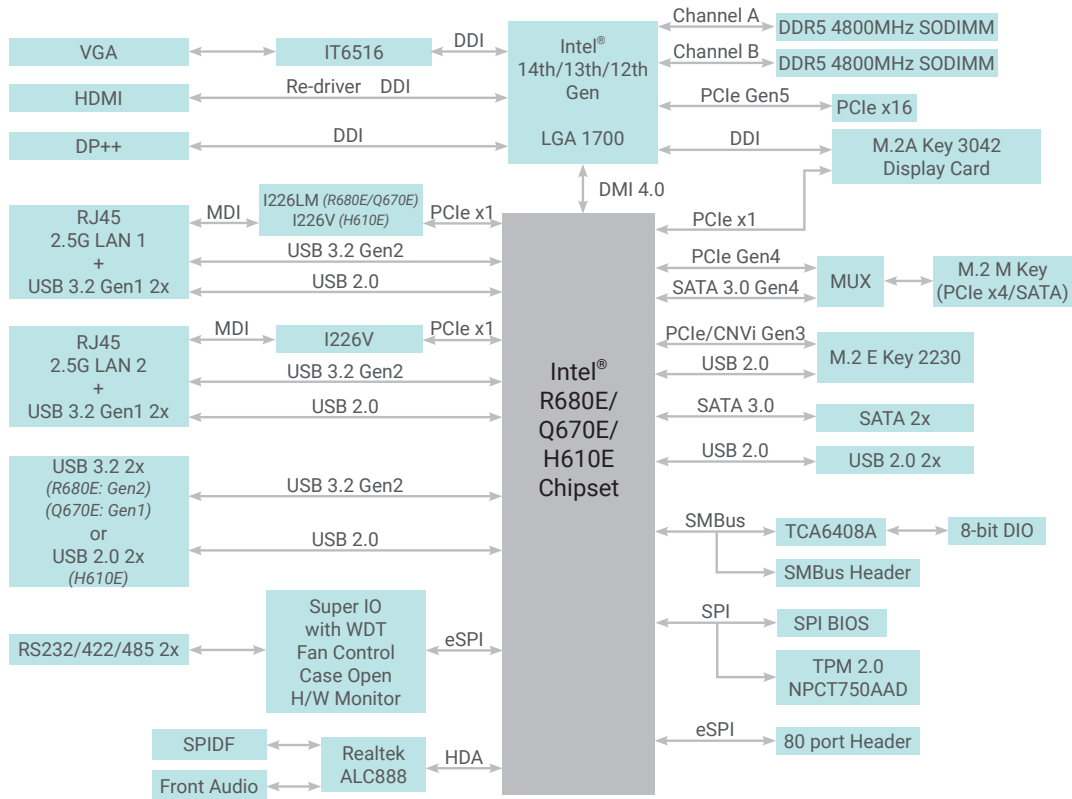
1 PCIe x16, 1 M.2 M key, 1 M.2 E Key, 1 M.2 A Key



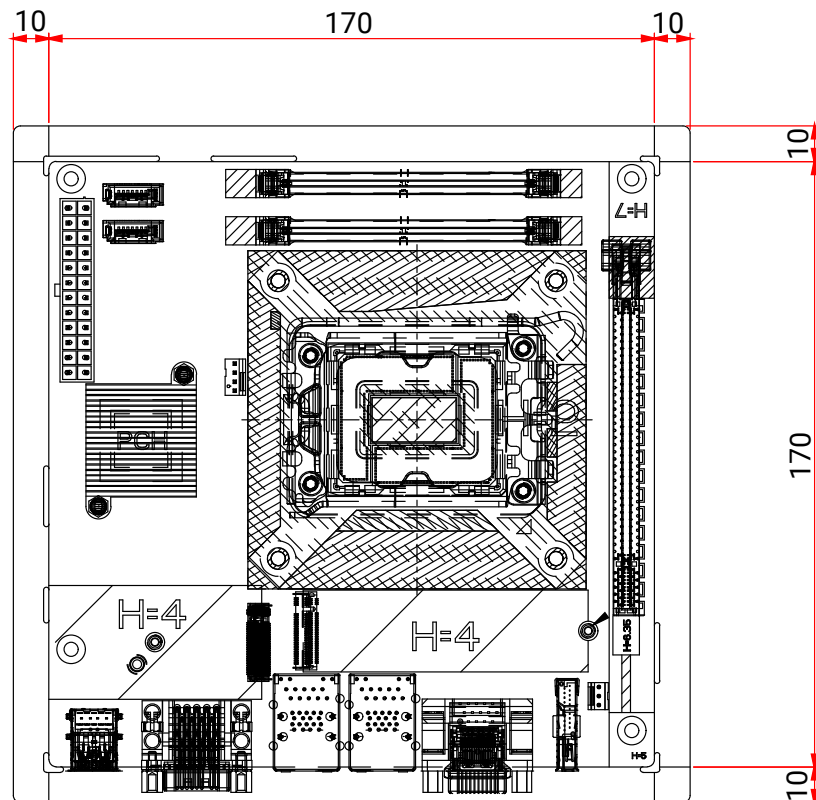
Rich I/O

2 Intel 2.5GbE, 2 COM, up to 2 USB 3.2 Gen2, 4 USB 3.2 Gen1, 2 USB2.0 headers

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

SYSTEM	Processor	14th Generation Intel® LGA 1700 Socket Processors, TDP support up to 65W 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™ 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 3.3 GHz); 60W 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 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™ 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® R680E/Q670E/H610E Chipset	
	Memory	2x 262-pin SODIMM up to 64GB Dual Channel DDR5 4800MHz ECC memory supported by R680 with i7 and i5	
	BIOS	AMI SPI 256Mbit	
	Controller	Intel® UHD Graphics 700 series	
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 HDMI 1 x DP++ 1 x VGA	HDMI: resolution up to 3840x2160 @ 24Hz DP++: resolution up to 3840x2160 @ 60Hz VGA: resolution up to 2048x1536 @ 60Hz
	Quad Displays	HDMI + DP++ + VGA + M2A-Display (optional)	
EXPANSION	Interface	1 x PCIe Gen 5 x16 (Bifurcation 1 x16, 2 x8) 1 x M.2 2230 E Key (PCIe Gen3x1 and USB2.0, support Intel® CNVi) 1 x M.2 3060 A Key support DFI M2A-display module (opt. MOQ required)	
		R680E/Q670E: 1 x M.2 2280 M Key (PCIe Gen 3x4 or SATA3)	
		H610E: 1 x M.2 2280 M Key (PCIe Gen 3x1 or SATA3)	
AUDIO	Audio Codec	Realtek ALC888S	
ETHERNET	Controller	R680E/Q670E: 1 x Intel® I226LM (10/100/1000/2500Mbps) 1 x Intel® I226V (10/100/1000/2500Mbps)	
		H610E: 2 x Intel® I226V (10/100/1000/2500Mbps)	
REAR I/O	Ethernet	2 x 2.5GHz RJ45	
	USB	R680E: 2 x USB 3.2 Gen2 4 x USB 3.2 Gen1 Q670E: 6 x USB 3.2 Gen1 H610E: 4 x USB 3.2 Gen1 2 x USB 2.0	
	Display	1 x DP++ 1 x HDMI 1 x VGA	
	Serial	2 x RS-232/422/485	
INTERNAL I/O	USB	2 x USB 2.0 (2.0mm pitch)	
	Display	1 x M.2 A key, support M2A-Display (eDP/LVDS/VGA/HDMI/DP) by optional	
	Audio	1 x Line-out/Mic-in	
	SATA	2 x SATA 3.0	
	DIO	1 x 8-bit DIO	
	SMBus	1 x SMBus	

SPECIFICATION

WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	dTPM (default) fTPM (option)	
POWER	Type	ATX	
	Connector	4-pin ATX 12V power 24-pin ATX power	
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT	Microsoft	Windows IoT Enterprise 10 LTSC Windows 11	
	Linux	Linux	
ENVIRONMENT	Temperature	Operating: -5°C ~ 65°C	
		Storage: -40°C ~ 85°C	
	Humidity	Operating: 5% ~ 90% RH	
		Storage: 5% ~ 90% RH	
MECHANISM	MTBF	TBD	
	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm Top Side: TBD	
CERTIFICATION	Certification	CE, FCC, RoHS	

ORDERING INFORMATION

Model Name	P/N	Description
RPS100-R680EDB	770-RPS1001-000G	RPS100-R680EDB, 2 DDR5, Rear I/O(DP++/HDMI/VGA, I, 2 LAN, 6 USB 3.2 Gen2, 2 COM), Internal I/O (M.2 M/E/A Key, 2 USB 2.0, w/TPM), ATX, -5°C ~ 65°C
RPS100-Q670EDB	770-RPS1001-100G	RPS100-Q670EDB, 2 DDR5, Rear I/O(DP++/HDMI/VGA, I, 2 LAN, 6 USB 3.2 Gen2, 2 COM), Internal I/O (M.2 M/E/A Key, 2 USB 2.0, w/TPM), ATX, -5°C ~ 65°C
RPS100-H610EDB	770-RPS1001-200G	RPS100-H610EDB, 2 DDR5, Rear I/O(DP++/HDMI/VGA, I, 2 LAN, 2 USB 3.2 Gen2, 2 USB3.2Gen1, 2 COM), Internal I/O (M.2 M/E/A Key, 4 USB 2.0, w/TPM), ATX, -5°C ~ 65°C

PACKING LIST

1 RPS100 motherboard
1 Serial ATA data cable (Length: 500mm)
1 I/O shield (P/N: TBD)
3 M.2 screw/standoff

OPTIONAL ITEMS

Thermal solution (For 65W, Height: 46mm)	A71-101137-000G
Thermal solution (For 35W, Height: 39mm)	A71-101136-000G

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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