

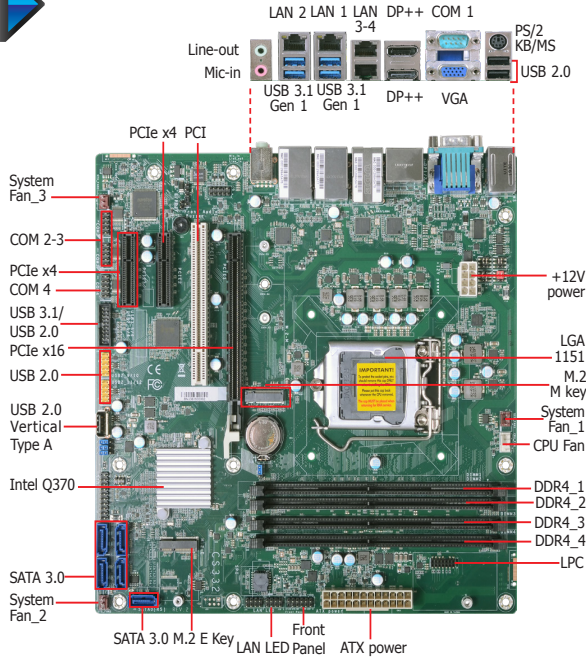


**9th/8th Gen Intel® Core™ Processor  
microATX**



**CS332-Q370**

Desktop

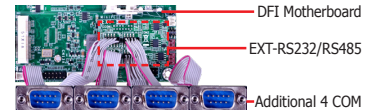
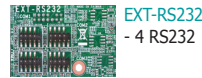


**Features**

- 4 DDR4 DIMM up to 128GB
- Dual display ports: VGA + DP++ + DP++ Supports triple independent displays
- DP++ resolution up to 4096x2160 @ 60Hz  
VGA resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 1 PCIe x16, 2 PCIe x4, 1 PCI, 1 M.2 M key (support Optane Memory), 1 x M.2 E key
- Rich I/O: Up to 4 GbE (2 default), 4 COM, 6 USB 3.1 Gen 1, 7 USB 2.0



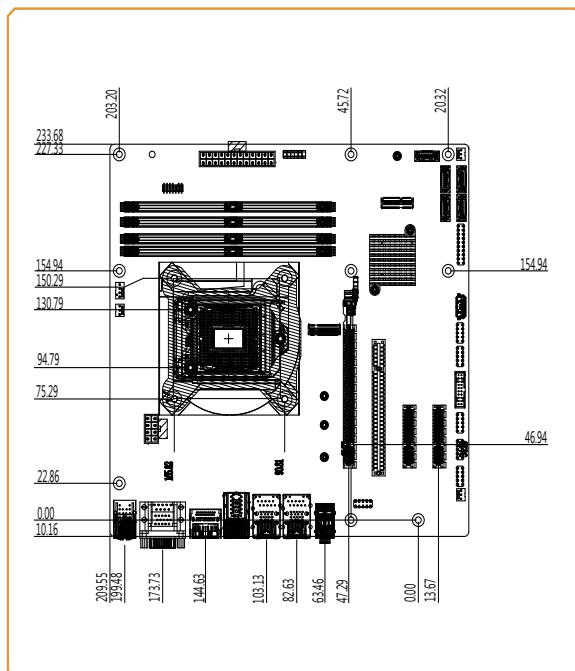
**2 Extension Modules for Additional 4 COM Ports (via the LPC connector)**



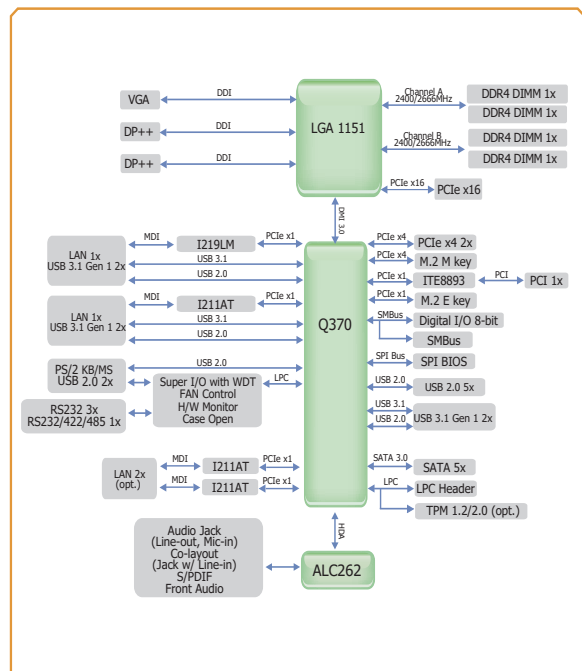
**Ordering Information**

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB 3.1 Gen 1	USB 2.0	Power	Thermal	Temp.
CS332-Q370	770-CS3321-100G	4 DIMM	2	1	3	6	7	ATX	Active	0 to 60°C
CS332-Q370	770-CS3321-200G	4 DIMM	4	1	3	6	7	ATX	Active	0 to 60°C

**Mechanical Drawing**



**Block Diagram**





**Specifications**

<b>SYSTEM</b>	<b>Processor</b>	8th Generation Intel® Core™ /Pentium®/Celeron® LGA 1151 Socket Processors: Intel® Core™ i7-8700K (6 Cores, 12M Cache, up to 4.7 GHz); 95W Intel® Core™ i7-8700 (6 Cores, 12M Cache, up to 4.6 GHz); 65W Intel® Core™ i7-8700T (6 Cores, 12M Cache, up to 4.0 GHz); 35W Intel® Core™ i5-8500 (6 Cores, 9M Cache, up to 4.1 GHz); 65W Intel® Core™ i5-8500T (6 Cores, 9M Cache, up to 3.5 GHz); 35W Intel® Core™ i3-8100 (4 Cores, 6M Cache, 3.6 GHz); 65W Intel® Core™ i3-8100T (4 Cores, 6M Cache, to 3.1 GHz); 35W Intel® Pentium® G5400 (2 Cores, 4M Cache, 3.7 GHz); 58W Intel® Pentium® G5400T (2 Cores, 4M Cache, 3.1 GHz); 35W Intel® Celeron® G4900 (2 Cores, 2M Cache, 3.1 GHz); 54W Intel® Celeron® G4900T (2 Cores, 2M Cache, 2.9 GHz); 35W	9th Generation Intel® Core™ LGA 1151 Socket Processors: Intel® Core™ i7-9700TE (8 Cores, 12M Cache, up to 3.8 GHz); 35W Intel® Core™ i5-9500TE (6 Cores, 9M Cache, up to 4.2 GHz); 65W Intel® Core™ i5-9500TE (6 Cores, 9M Cache, up to 3.6 GHz); 35W Intel® Core™ i3-9100TE (4 Cores, 6M Cache, 3.7 GHz); 65W Intel® Core™ i3-9100TE (4 Cores, 6M Cache, to 3.2 GHz); 35W
	<b>Chipset</b>	Intel® Q370 Chipset	
	<b>Memory</b>	Four 288-pin DIMM up to 128GB	Dual Channel DDR4 2400/2666 MHz (non ECC support)
	<b>BIOS</b>	AMI SPI 128Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Gen 9 Graphics	
	<b>Feature</b>	OpenGL 5.0, 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	
	<b>Display</b>	1 x VGA 2 x DP++	VGA: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2106 @ 60Hz
	<b>Triple Displays</b>	VGA + DP++ + DP++	
<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x16 (Gen 3) 2 x PCIe x4 (Gen 3) 1 x PCI 1 x M.2 2242/2280 M key (PCIe Gen3 x 4 NVMe/Intel Optane Memory Support) 1 x M.2 2230 E key (PCIe x1/USB2.0)	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC262-VC2	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® i219LM PCIe (10/100/1000Mbps) (only Core i7/i5 support iAMT) 1 x Intel® i211AT PCIe (10/100/1000Mbps) 2 x Intel® i211AT PCIe (10/100/1000Mbps) (opt. by request, MOQ required)	
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45), 4 x GbE (RJ-45) (opt. by request, MOQ required)	
	<b>USB</b>	4 x USB 3.1 Gen 1	2 x USB 2.0
	<b>Serial</b>	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	
	<b>PS/2</b>	1 x PS/2 (mini-DIN-6)	
	<b>Display</b>	1 x VGA	2 x DP++
	<b>Audio</b>	1 x Line-out 1 x Line-in (colay, opt. by request, MOQ required) 1 x Mic-in	
<b>INTERNAL I/O</b>	<b>Serial</b>	3 x RS-232	
	<b>USB</b>	2 x USB 3.1 Gen 1 4 x USB 2.0 (2.54mm pitch) ,1 x USB 2.0 vertical Type A	
	<b>Audio</b>	1 x S/PDIF, 1 x Front Audio Header	
	<b>SATA</b>	5 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10	
	<b>DIO</b>	1 x 8-bit DIO	
	<b>LPC</b>	1 x LPC (support LPC EXT-RS-232/485 module)	
	<b>SMBus</b>	1 x SMBus	
	<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 sec/min
<b>SECURITY</b>	<b>TPM</b>	Infineon TPM 1.2/2.0 (Available Upon Request, MOQ required)	
<b>POWER</b>	<b>Type</b>	ATX	
	<b>Connector</b>	8-pin ATX 12V power 24-pin ATX power	
	<b>Consumption</b>	TBD	
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>		Windows 10 IoT Enterprise 64-bit Linux	
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: -5 to 65°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery	
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	TBD	
<b>MECHANICAL</b>	<b>Dimensions</b>	microATX form factor	244mm (9.6") x 244mm (9.6")
	<b>Height</b>	PCB: TBD	Top Side: TBD, Bottom Side: TBD

**Packing List**

• 1 CS332-Q370 motherboard	
• 1 Serial ATA data cable (W/LOCK, Length: 500mm)	332-553001-005G
• 1 I/O shield for 2 LAN default (770-CS3321-100G)	A49-CS3320-010G
• 1 I/O shield for 4 LAN option (770-CS3321-200G)	A49-CS3320-000G
• 1 M.2 2242/2260/half mini PCIe standoff	A33-725019-090G
• 2 M.2 Screw	A32-112016-041G

**Optional Items**

• USB 2.0 port cable (Length: 350mm)	A81-001066-016G
• USB 3.1 Gen 1 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
• Thermal solution (For 35W, Height: 37.3mm)	A71-101107-000G
• Thermal solution (For 65W, Height: 72.8mm)	552-200049-000G
• Thermal solution (For 95W, Height: TBD)	761-103001-000G
• LPC EXT-RS232 module (4 x RS232 ports)	770-EXTRS1-000G
• LPC EXT-RS485 module (4 x RS485 ports)	770-EXTRS1-100G
• DP to HDMI dongle	612-D2H13M-000G
• Front Audio cable (Length: 300mm)	A81-022022-016G

## 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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