



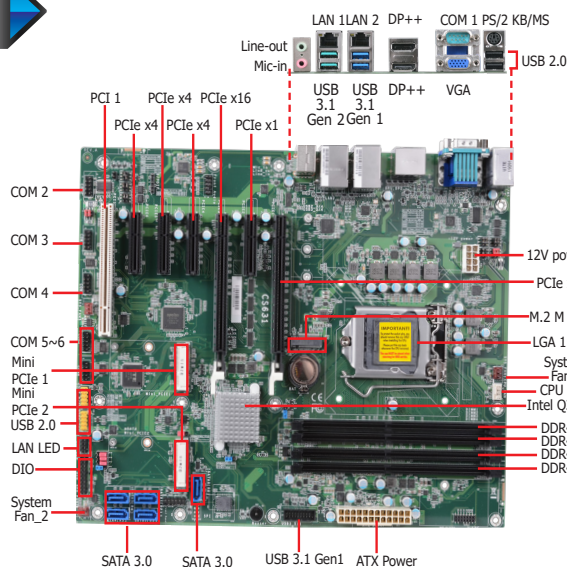
9th/8th Gen Intel® Core™ Processor ATX



CS631-Q370

Desktop

Q370



► Features

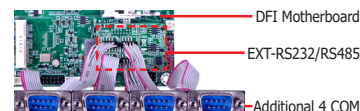
- **4 DDR4 DIMM up to 128GB**
- **3 independent displays:
VGA + DP++ + DP++**
- **DP++ resolution up to 4096x2160 @ 60Hz**
- **Multiple expansion:
2 PCIe x16 (1 x16 signal or 2 x8 signals), 3 PCIe x4, 1
PCIe x1, 1 PCI, 2 Full-sized Mini PCIe, 1 M.2 M key**
- **Rich I/O: 2 Intel GbE, 6 COM, 2 USB 3.1 Gen 2, 4 USB 3.1
Gen 1, 6 USB 2.0**



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

EXT-RS232
- 4 RS232

EXT-RS485
- 4 RS485

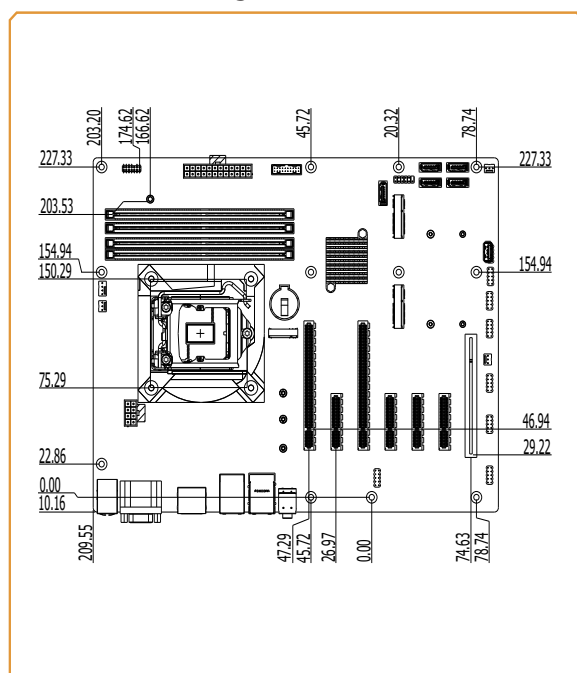


Additional 4 COM

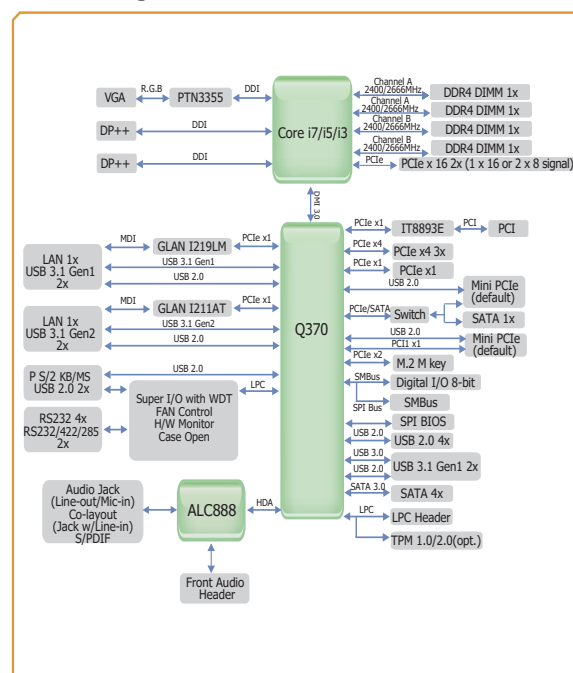
▶ Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB3.1 Gen 2	USB3.1 Gen 1	USB 2.0	Power	Thermal	Temp.
CS631-Q370CRM	770-CS6311-100G	4 DIMM	2	2	4	2	4	6	24-pin ATX	Active	0 to 60°C

► Mechanical Drawing



▶ Block Diagram





Specifications

SYSTEM	Processor	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™ i5-9500E (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™ i3-9100E (4 Cores, 6M Cache, 3.7 GHz); 65W Intel® Core™ i3-9100TE (4 Cores, 6M Cache, to 3.2 GHz); 35W	
	Chipset	Intel® Q370 Chipset			
	Memory	Four 288-pin DIMM up to 128GB		Dual Channel DDR4 2400/2666MHz	
	BIOS	AMI SPI 128Mbit			
GRAPHICS	Controller	Intel® HD Gen 9 Graphics			
	Feature	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			
	Display	1 x VGA 2 x DP++		VGA: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2160 @ 60Hz	
	Triple Displays	VGA + DP++ + DP++			
EXPANSION	Interface	2 x PCIe x16 (Gen 3) (1 x16 signal or 2 x8 signals) 3 x PCIe x4 (Gen 3) 1 x PCIe x1 (Gen 3) 1 x PCI 2 x Full-sized Mini PCIe (1* PCIe/SATA/USB2.0, 1* PCIe/USB2.0) 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x 2 NVMe)			
AUDIO	Audio Codec	Realtek ALC888			
ETHERNET	Controller	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT12.0 (10/100/1000Mbps) (only Core i7/i5 supports iAMT)			
REAR I/O	Ethernet	2 x GbE (RJ-45)			
	USB	2 x USB 3.1 Gen2 2 x USB 2.0		2 x USB 3.1 Gen1	
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)			
	PS/2	1 x PS/2 (mini-DIN-6)			
	Display	1 x VGA		2 x DP++	
	Audio	1 x Line-out, 1 x Mic-in, 1 x Line-in (opt., MOQ required)			
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)			
INTERNAL I/O	USB	2 x USB 3.1 Gen 1 (2.00mm pitch) 4 x USB 2.0 (2.54mm pitch) (1 x USB 2.0 colay vertical Type A) (opt., MOQ required)			
	Audio	1 x Front Audio Header		1 x S/PDIF	
	SATA	5 x SATA 3.0 (up to 6Gb/s, 1 SATA shared with mini PCIe (SATA), default at mini PCIe) RAID 0/1/5/10			
	DIO	1 x 8-bit DIO			
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)			
	SMBus	1 x SMBus			
	WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds		
SECURITY	TPM	Infineon TPM1.2/2.0 (opt., MOQ required)			
POWER	Type	ATX			
	Connector	8-pin ATX 12V power		24-pin ATX power	
	Consumption	TBD			
	RTC Battery	CR2032 Coin Cell			
OS SUPPORT		Windows 10 IoT Enterprise 64-bit Linux			
ENVIRONMENT	Temperature	Operating: 0 to 60°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery			
	Humidity	Operating: 5 to 90% RH		Storage: 5 to 90% RH	
	MTBF	525,834 hrs @ 25°C; 295,136 hrs @ 45°C; 183,772 hrs @ 60°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled			
MECHANICAL	Dimensions	ATX Form Factor		305mm (12") x 244mm (9.6")	
	Height	PCB: 1.6mm		Top Side: TBD Bottom Side: TBD	
CERTIFICATIONS		CE, FCC Class B, RoHS			

Packing List

• 1 CS631-Q370 motherboard	
• 1 COM port cables (Length: 300mm, 2 x COM ports)	A81-015026-023G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 I/O shield	A49-CS6310-000G
• 1 M.2 2242/2260/half mini PCIe standoff	A33-725019-090G
• 1 M.2 screw	A32-112016-041G
• 1 mini PCIe screw	A32-112016-041G

Optional Items

• USB 2.0 port cable (Length: 350mm)	A81-001066-016G
• USB 3.1 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
• 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: 69.3mm)	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

Assured Systems

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