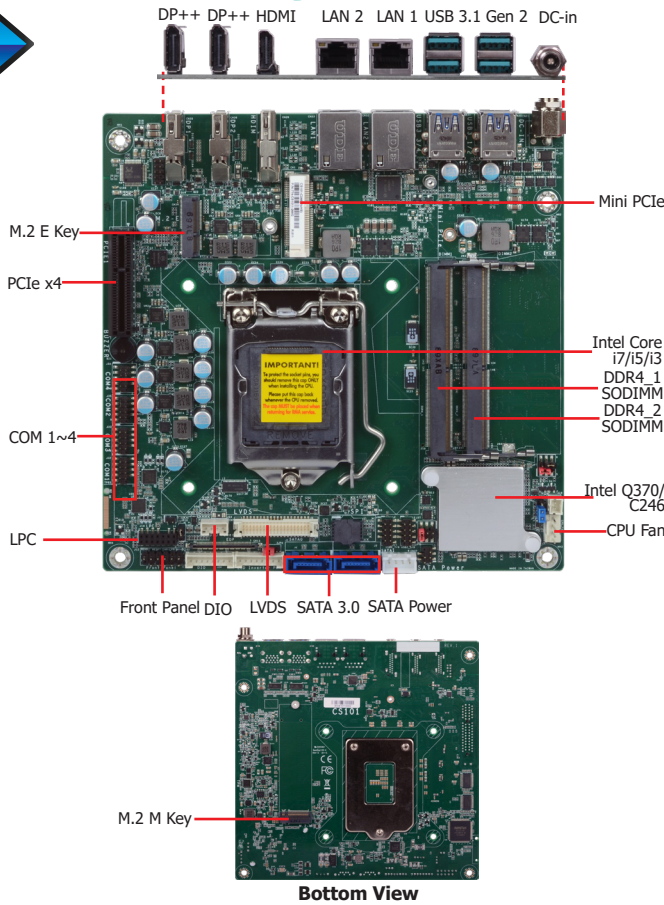




CS101-Q370/C246 Desktop

Features

**Q370
C246**



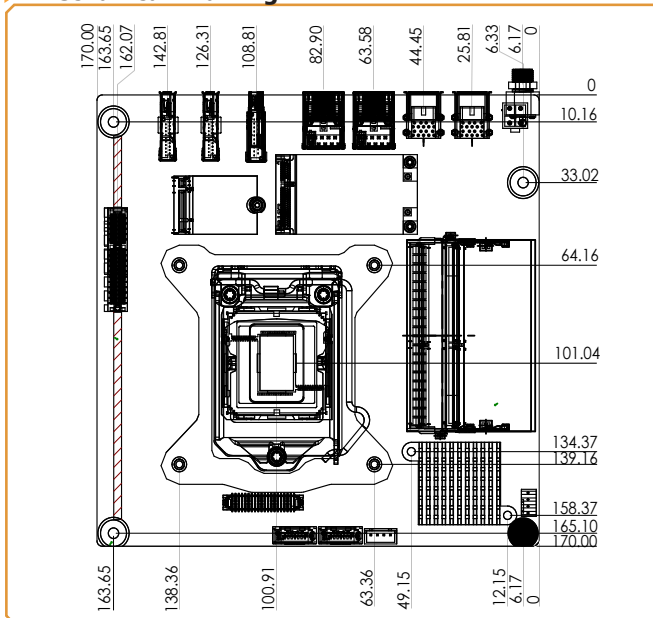
- **2 DDR4 2666MHz SODIMM up to 32GB**
- **Three independent displays:** DP++ +DP++ +HDMI, DP++ +DP++ +LVDS/eDP, DP++ +HDMI+LVDS/eDP
- **DP++ resolution supports up to 4096x2304 @ 60Hz**
- **Multiple Expansions:** 1 PCIe x4 Gen 3, 1 Full-size Mini PCIe, 1 M.2 2280 M Key, 1 M.2 2230 E Key
- **Storage: 2 SATA 3.0**
- **Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.1 Gen 2, 4 USB 2.0**



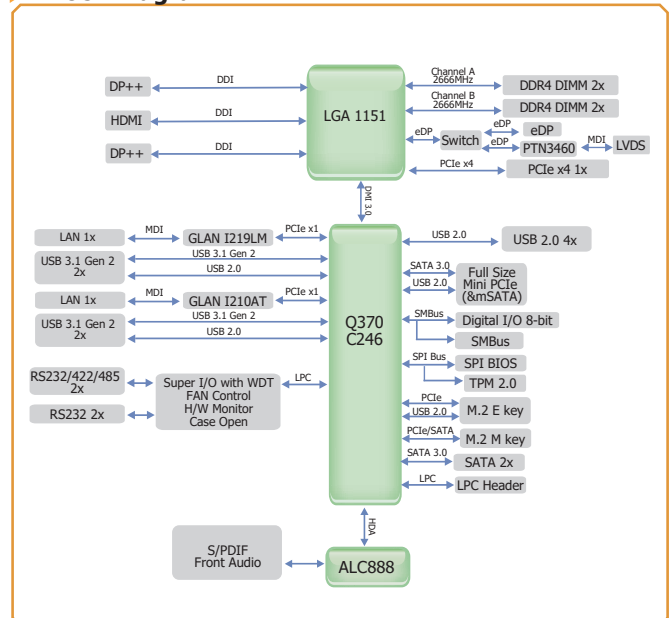
Ordering Information

Model Name	P/N	Description
CS101-Q370	770-CS1012-100G	CS101-Q370, DDR4 SODIMM, 2 DP++, 1 HDMI, 2 LAN, 4 COM, 8 USB, TPM, 0 to 60°C
CS101-C246	770-CS1012-200G	CS101-C246, DDR4 SODIMM, 2 DP++, 1 HDMI, 2 LAN, 4 COM, 8 USB, TPM, 0 to 60°C
CS101-Q370	770-CS1012-400G	CS101-Q370, DDR4 SODIMM, 2 DP++, 1 HDMI, 2 LAN, 4 COM, 8 USB, W/O TPM, 0 to 60°C
CS101-C246	770-CS1012-500G	CS101-C246, DDR4 SODIMM, 2 DP++, 1 HDMI, 2 LAN, 4 COM, 8 USB, W/O TPM, 0 to 60°C
CS101-Q370	770-CS1012-600G	CS101-Q370, DDR4 SODIMM, 2 DP++, 1 HDMI, 2 LAN, 4 COM, 8 USB, TPM, 4P vertical PWR, 0 to 60°C

Mechanical Drawing



Block Diagram



Specifications

SYSTEM	Processor	9th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core i7-9700K Processor (Core 8; Max speed 3.6 GHz; TDP 95W) Intel® Core i7-9700TE Processor (Core 8; Max speed 3.8 GHz; TDP 35W) Intel® Core i5-9500E Processor (Core 6; Max speed 4.2 GHz; TDP 65W) Intel® Core i5-9500TE Processor (Core 6; Max speed 3.6 GHz; TDP 35W) Intel® Core i3-9100E Processor (Core 4; Max speed 3.7 GHz; TDP 65W) (support ECC memory) Intel® Core i3-9100TE Processor (Core 4; Max speed 3.2 GHz; TDP 35W) (support ECC memory) 8th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-8700 Processor (Core 6; Max speed 4.6 GHz; TDP 65W) Intel® Core™ i7-8700T Processor (Core 6; Max speed 4.0 GHz; TDP 35W) Intel® Core™ i5-8500 Processor (Core 6; Max speed 4.1 GHz; TDP 65W) Intel® Core™ i5-8500T Processor (Core 6; Max speed 3.5 GHz; TDP 35W) Intel® Core™ i3-8100 Processor (Core 4; Max speed 3.6 GHz; TDP 65W) (support ECC memory) Intel® Core™ i3-8100T Processor (Core 4; Max speed 3.1 GHz; TDP 35W) (support ECC memory) Intel® Pentium G5400 Processor (Core 2; Max speed 3.7 GHz; TDP 58W) (support ECC memory) Intel® Celeron G4900 Processor (Core 2; Max speed 3.1 GHz; TDP 54W) (support ECC memory)	
	Memory	Two 260-pin SODIMM up to 32GB	Dual Channel DDR4 2400/2666MHz (support ECC memory by C246)
	Chipset	Intel® Q370/C246 Chipset	
	BIOS	AMI SPI 128Mbit	
	GRAPHICS	Controller	Intel® UHD Graphics 630 (Pentium G5400 and Celeron G4900 support UHD Graphics 610)
	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: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9	
	Display	1 x LVDS/eDP (available upon request) 1 x HDMI 2 x DP++	LVDS: resolution up to 1920x1200 @ 60Hz eDP: resolution up to 4096x2304 @ 60Hz HDMI: resolution up to 4096x2160 @ 30Hz DP1.2: resolution up to 4096x2304 @ 60Hz
	Triple Displays	DP++ +DP++ +HDMI, DP++ +DP++ +LVDS/eDP, DP++ +HDMI+LVDS/eDP	
EXPANSION	Interface	1 x PCIe x4 (Gen 3) 1 x Full-size Mini PCIe (co-lay with mSATA) 1 x M.2 2280 M Key (PCIe x4/SATA) (support NVMe and Intel® Optane memory) 1 x M.2 2230 E Key (USB/PCIe)	
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR	
ETHERNET	Controller	1 x Intel® I219LM PHY with iAMT12 and vPro (10/100/1000Mbps) (Core i7/i5 supports iAMT) 1 x Intel® I210AT PCIe (10/100/1000Mbps)	
REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	4 x USB 3.1 Gen2	
	Display	1 x HDMI	2 x DP++
INTERNAL I/O	Serial	2 x RS-232/422/485 (2.0mm pitch)	2 x RS-232 (RS-232 w/ power) (2.0mm pitch)
	Display	1 x LVDS	1 x eDP (available upon request)
	Audio	1 x Front Audio (2.0mm pitch)	
	USB	4 x USB 2.0 (2.0mm pitch)	
	SATA	2 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power	RAID 0/1/5
	DIO	1 x 8-bit DIO	1 x DIO Power
	LPC	1 x LPC	
	SMBus	1 x SMBus	
	WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	dTPM 2.0	
POWER	Type	Single 12V +/-5% DC	
	Connector	DC-in Jack	Straight Type Connector (4-pin) (available upon request)
	RTC Battery	CR2032 Coin Cell	
	Consumption	Idle: i7-9700K 95W: 12V @ 0.96A (11.52W) Max: i7-9700K 95W: 12V @ 13.4A (160.8W)	
OS SUPPORT	Microsoft/Linux	Windows 10 IoT Enterprise 64-bit	Linux
ENVIRONMENT	Temperature	Operating: 0 to 60°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	CS101-Q370: 590,510 hrs @ 25°C; 349,867 hrs @ 45°C; 225,814 hrs @ 60°C CS101-C246: 590,510 hrs @ 25°C; 349,867 hrs @ 45°C; 225,814 hrs @ 60°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
	MECHANICAL	Dimensions	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm Top Side: 20mm, Bottom Side: 3mm	
CERTIFICATION	CE, FCC, RoHS, UL, UKCA		

Packing List

• 1 CS101 motherboard	
• 1 Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• 1 COM port cable (Length: 250mm, 1 COM port)	A81-015011-001G

Optional Items

• USB port cable (Length: 200mm)	A81-001032-016G
• COM port cable (Length: 250mm, 1 COM port)	A81-015011-001G
• Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• Serial ATA power cable	A81-002044-016G
• I/O shield	A49-CS1010-000G
• I/O shield (Thin type)	A49-CS1010-010G
• Thermal solution (For 35W, Height: 37.3mm)	A71-103004-000G
• Thermal solution (For 65W, Height: 74.47mm)	A71-101158-000G