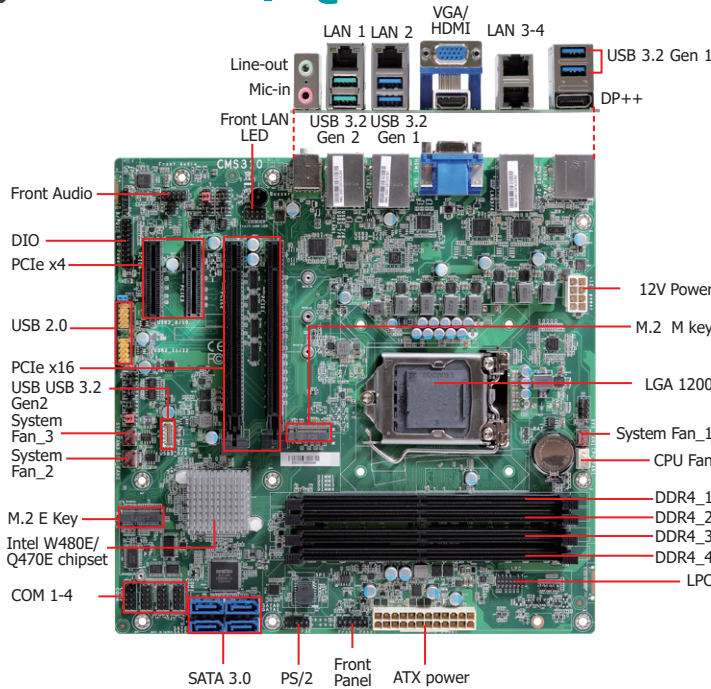




CMS310- W480E/Q470E

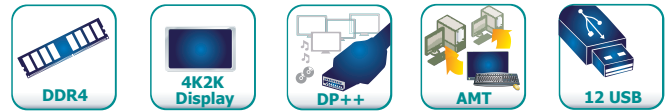
Desktop

W480E
Q470E

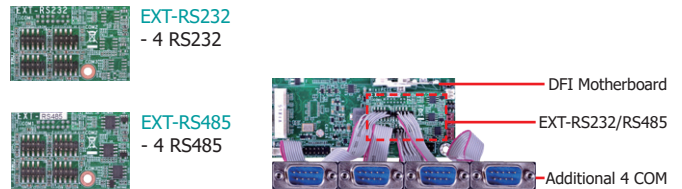


Features

- 4 DDR4 DIMM up to 128GB
- Three display ports: VGA, DP++, HDMI 1.4b Supports triple independent displays
- DP++ resolution up to 4096x2160 @ 60Hz
VGA resolution up to 1920x1200 @ 60Hz
HDMI 1.4b resolution up to 4096x2160 @ 24Hz
- Multiple expansion: 2 PCIe x16 (1 x16 or 2 x8 signal), 2 PCIe x4, 1 M.2 E key, 1 M.2 M key (support Optane Memory), 4 SATA 3.0
- Rich I/O: up to 4 Intel GbE, 4 COM, 4 USB 3.2 Gen 2, 4 USB 3.2 Gen 1, 4 USB 2.0



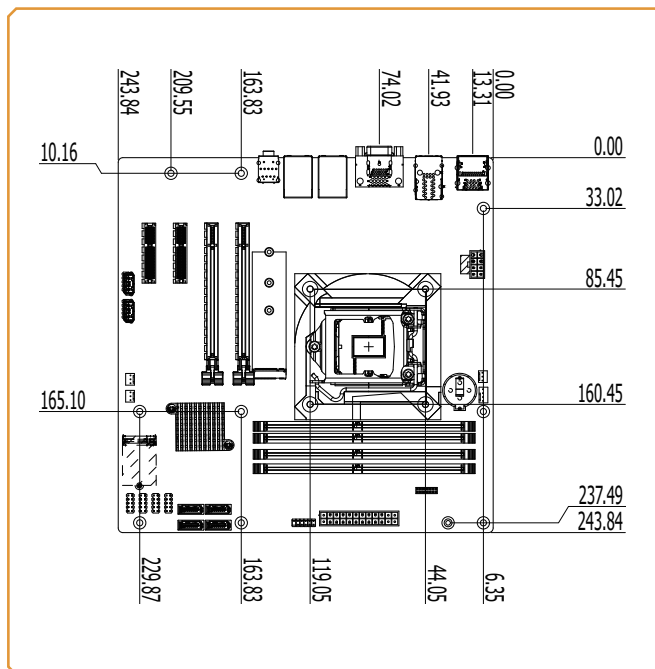
2 Extension Modules for Additional 4 COM Ports (via the LPC connector)



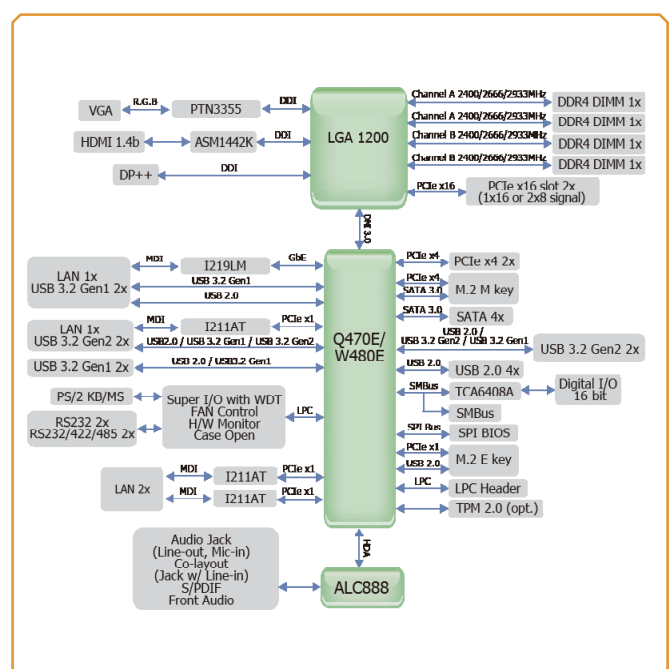
Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB 3.2 Gen 2	USB 3.2 Gen 1	USB TPM 2.0	Power	Thermal	Temp.	
CMS310-W480ENRM	770-CMS3101-000G	4 DIMM	4	2	2	4	4	4	-	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-Q470ENRM	770-CMS3101-100G	4 DIMM	4	2	2	4	4	4	-	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-W480ENRM	770-CMS3101-200G	4 DIMM	2	2	2	4	4	4	-	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-Q470ENRM	770-CMS3101-300G	4 DIMM	2	2	2	4	4	4	-	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-W480ENRM	770-CMS3101-400G	4 DIMM	4	2	2	4	4	4	1	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-Q470ENRM	770-CMS3101-500G	4 DIMM	4	2	2	4	4	4	1	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-W480ENRM	770-CMS3101-600G	4 DIMM	2	2	2	4	4	4	1	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS310-Q470ENRM	770-CMS3101-700G	4 DIMM	2	2	2	4	4	4	1	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C

Mechanical Drawing



Block Diagram



Specifications

SYSTEM	Processor	10th Generation Intel® LGA 1200 Socket Processors, TDP support up to 125W Intel® Xeon® W-1290E (10 Cores, 20M Cache, up to 4.8 GHz); 95W (ECC support on W480E SKU only) Intel® Xeon® W-1290TE (10 Cores, 20M Cache, up to 4.5 GHz); 35W (ECC support on W480E SKU only) Intel® Xeon® W-1270E (8 Cores, 16M Cache, up to 4.8 GHz); 80W (ECC support on W480E SKU only) Intel® Xeon® W-1270TE (8 Cores, 16M Cache, up to 4.4 GHz); 35W (ECC support on W480E SKU only) Intel® Xeon® W-1250E (6 Cores, 12M Cache, up to 4.7 GHz); 80W (ECC support on W480E SKU only) Intel® Xeon® W-1250TE (6 Cores, 12M Cache, up to 3.8 GHz); 35W (ECC support on W480E SKU only) Intel® Core™ i9-10900E (10 Cores, 20M Cache, up to 4.7 GHz); 65W Intel® Core™ i9-10900TE (10 Cores, 20M Cache, up to 4.5 GHz); 35W Intel® Core™ i7-10700E (8 Cores, 16M Cache, up to 4.5 GHz); 65W Intel® Core™ i7-10700TE (8 Cores, 16M Cache, up to 4.4 GHz); 35W Intel® Core™ i5-10500E (6 Cores, 12M Cache, up to 4.2 GHz); 65W Intel® Core™ i5-10500TE (6 Cores, 12M Cache, up to 3.7 GHz); 35W Intel® Core™ i3-10100E (4 Cores, 6M Cache, 3.8 GHz); 65W (ECC support on W480E SKU only) Intel® Core™ i3-10100TE (4 Cores, 6M Cache, to 3.6 GHz); 35W (ECC support on W480E SKU only) Intel® Pentium® G6400E (2 Cores, 4M Cache, 3.8 GHz); 58W (Not support on W480E SKU) Intel® Celeron® G5900E (2 Cores, 2M Cache, 3.2 GHz); 58W (Not support on W480E SKU) Intel® Celeron® G5900TE (2 Cores, 2M Cache, 3.0 GHz); 35W (Not support on W480E SKU)	
	Chipset	Intel® W480E/Q470E Chipset	
	Memory	Four 288-pin DIMM up to 128GB Dual Channel DDR4 2400/2666/2933 MHz (ECC support: W480E only)	
	BIOS	Insyde SPI 128Mbit	
	GRAPHICS	Controller	Intel® HD Gen 9 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 DP++ 1 x VGA 1 x HDMI 1.4b	DP++: resolution up to 4096x2106 @ 60Hz VGA: resolution up to 1920x1200 @ 60Hz HDMI resolution up to 4096x2160 @ 24Hz
	Triple Displays	VGA + DP++ + HDMI	
EXPANSION	Interface	2 x PCIe x16 (Gen 3) (1 x16 signals or 2 x8 signals) 2 x PCIe x4 (Gen 3) 1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi support) 1 x M.2 2242/2260/2280 M key (PCIe x4 Gen3 NVMe/SATA/Intel Optane Memory support)	
AUDIO	Audio Codec	Realtek ALC888	
ETHERNET	Controller	1 x Intel® i219LM PCIe (10/100/1000Mbps) (only Xeon, Core i9/i7/i5 support iAMT) 1 x Intel® i211AT PCIe (10/100/1000Mbps) 2 x Intel® i211AT PCIe (10/100/1000Mbps)	
REAR I/O	Ethernet	2 x GbE (RJ-45) or 4 x GbE (RJ-45)	
	USB	2 x USB 3.2 Gen 2	4 x USB 3.2 Gen 1
	Display	1 x DP++ 1 x VGA	1 x HDMI 1.4b
	Audio	1 x Line-out 1 x Mic-in	1 x Line-in (opt. by request, MOQ required)
INTERNAL I/O	Serial	2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)	
	USB	2 x USB 3.2 Gen 2 4 x USB 2.0 (2.54mm pitch) (colay vertical Type A, MOQ required)	
	Audio	1 x S/PDIF	1 x Front Audio Header
	SATA	4 x SATA 3.0 (up to 6Gb/s)	
	PS/2	1 x PS/2 (2.54mm pitch)	
	DIO	1 x 16-bit DIO	
	LPC	1 x LPC	
	SMBus	1 x SMBus	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 sec/min	
SECURITY	TPM	Infineon TPM 2.0 (opt., MOQ required)	
POWER	Type	ATX	
	Connector	8-pin ATX 12V power	24-pin ATX power
	Consumption	Typical: 9-10900K: 3.3V @ 0.41A (1.35W); 5V @ 0.76A (3.8W); 12V @ 0.34A (4.08W) Max.: i9-10900K:3.3V @ 0.46A (1.52W); 5V @ 1.61A (8.05W); 12V @ 13.97A (167.64W)	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT		Windows 10 IoT Enterprise 64-bit	Linux
ENVIRONMENT	Temperature	Operating: -5 to 65°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	487,616 hrs @ 25°C; 271,110 hrs @ 40°C ; 303,603 hrs @ 45°C ; 168,586 hrs @ 60°C Calculation Model: Telcordia Issue 4 Environment: GB, GC - Ground Benign, Controlled	
MECHANICAL	Dimensions	microATX form factor	
	Height	PCB: 1.6mm	244mm (9.6") x 244mm (9.6") Top Side: 31.47mm, Bottom Side: 4.4mm
CERTIFICATIONS		CE, FCC, RoHS	

Packing List

• 1 CMS310-W480E/Q470E motherboard	
• 1 COM port cable (W/Bracket, Length: 300mm, 2 x COM ports)	A81-015026-023G
• 1 Serial ATA data cable (W/LOCK, Length: 500mm)	332-553001-005G
• 1 I/O shield	4 LAN: A49-CMS310-000G 2 LAN: A49-CMS310-010G

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
• 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
• DP to HDMI Dongle	612-D2H13M-000G
• PS2 KB/MS Cable (Length: 400mm)	332-353016-009G
• EXT-RS232 (4 ports RS-232 LPC module)	770-EXTRS1-000G
• EXT-RS485 (4 ports RS-485 LPC module)	770-EXTRS1-100G