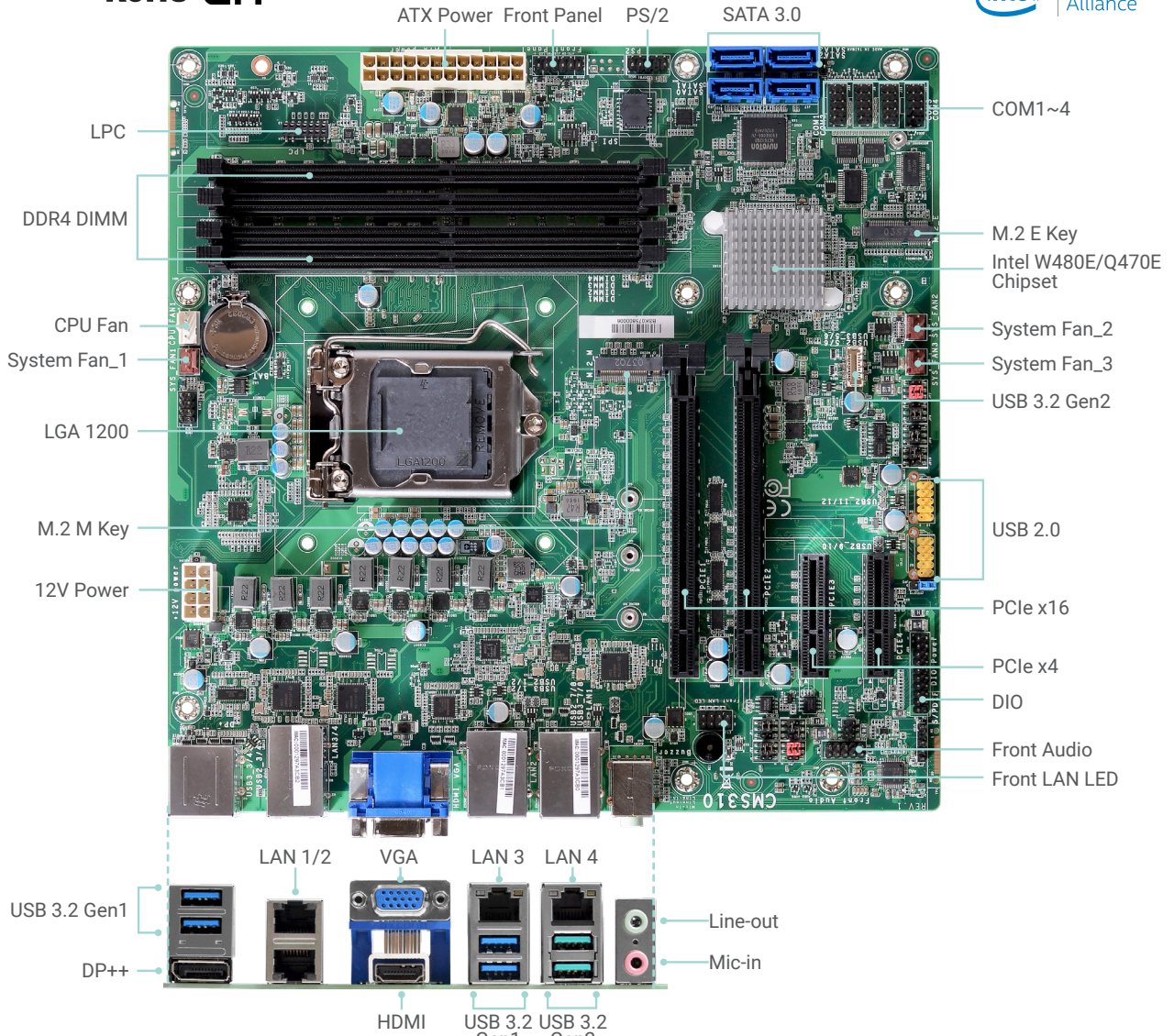


CMS310-W480E CMS310-Q470E

Desktop

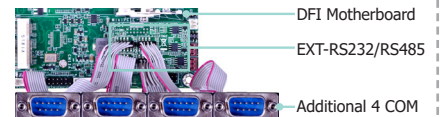
10th Gen Intel® Core™
microATX



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

EXT-RS232
- 4 RS232

EXT-RS485
- 4 RS485



KEY FEATURES



DDR4

4 DDR4 DIMM up to
128GB



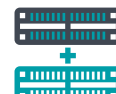
4K High Resolution

Supports 4K/ 2K reso-
lution



Triple Displays

VGA, DP++, HDMI 1.4b



Multiple Expansion

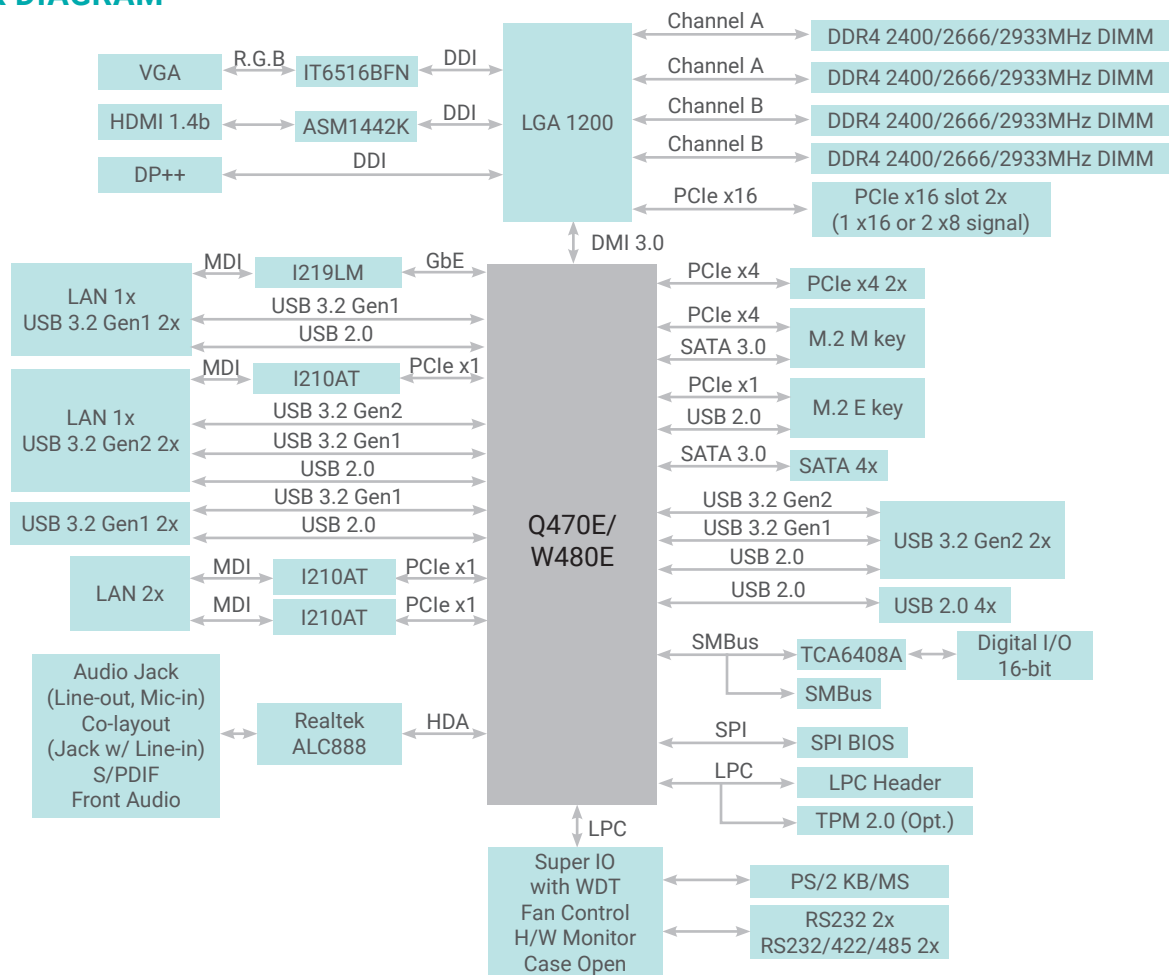
2 PCIe x16 (1 x16 or 2
x8 signal), 2 PCIe x4,
1 M.2 E Key, 1 M.2 M
Key, 4 SATA 3.0



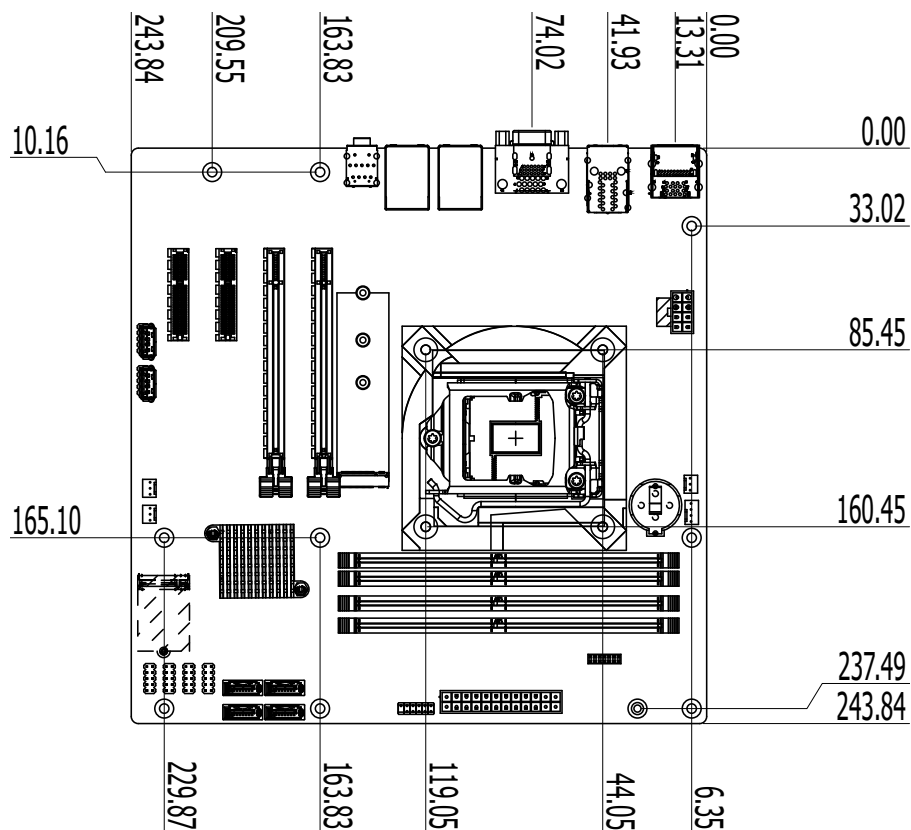
Rich I/O

up to 4 Intel GbE,
4 USB 3.2 Gen 2, 4 USB
3.2 Gen 1, 4 USB 2.0,
4 COM

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

Model Name		CMS310-W480E	CMS310-Q470E
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); 65W 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 Chipset	Intel® Q470E Chipset
	Memory	Four 288-pin DIMM up to 128GB (ECC/Non-ECC) Dual Channel DDR4 2400/2666/2933 MHz	Four 288-pin DIMM up to 128GB (Non-ECC) Dual Channel DDR4 2400/2666/2933 MHz
	BIOS	Insyde SPI 128Mbit	Insyde SPI 128Mbit
GRAPHICS	Controller	Intel® HD Gen 9 Graphics	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	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	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	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)	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	Realtek ALC888
ETHERNET	Controller	1 x Intel® i219LM PCIe (10/100/1000Mbps) (only Xeon, Core i9/i7/i5 support iAMT) 1 x Intel® i210AT PCIe (10/100/1000Mbps) 2 x Intel® i210AT PCIe (10/100/1000Mbps) (opt. by request, MOQ required)	1 x Intel® i219LM PCIe (10/100/1000Mbps) (only Xeon, Core i9/i7/i5 support iAMT) 1 x Intel® i210AT PCIe (10/100/1000Mbps) 2 x Intel® i210AT PCIe (10/100/1000Mbps) (opt. by request, MOQ required)
REAR I/O	Ethernet	2 x GbE (RJ-45) or 4 x GbE (RJ-45)	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	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	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)	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) 2 x RS-232	2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 2 x RS-232
	USB	2 x USB 3.2 Gen 2 4 x USB 2.0 (2.54mm pitch) (colay vertical Type A, MOQ required)	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	1 x S/PDIF 1 x Front Audio Header
	SATA	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10
	PS/2	1 x PS/2 (2.54mm pitch)	1 x PS/2 (2.54mm pitch)
	DIO	1 x 16-bit DIO	1 x 16-bit DIO
	LPC	1 x LPC	1 x LPC
	SMBus	1 x SMBus	1 x SMBus

SPECIFICATION

Model Name		CMS310-W480E	CMS310-Q470E
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 sec/min	System Reset, Programmable via Software from 1 to 255 sec/min
SECURITY	TPM	Infineon TPM 2.0 (opt., MOQ required)	Infineon TPM 2.0 (opt., MOQ required)
POWER	Type	ATX	ATX
	Connector	8-pin ATX 12V power 24-pin ATX power	8-pin ATX 12V power 24-pin ATX power
	Consumption	Typical: i9-10900K: 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)	Typical: i9-10900K: 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	CR2032 Coin Cell
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit Windows 11 GAC	Windows 10 IoT Enterprise 64-bit Windows 11 GAC
	Linux	Linux	Linux
ENVIRONMENT	Temperature	Operating: -5 to 65°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery	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	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	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
MECHANISM	Dimensions	microATX Form Factor 244mm (9.6") x 244mm (9.6")	microATX Form Factor 244mm (9.6") x 244mm (9.6")
	Height	PCB: 1.6mm Top Side: 31.47mm Bottom Side: 4.4mm	PCB: 1.6mm Top Side: 31.47mm Bottom Side: 4.4mm
STANDARDS AND CERTIFICATIONS	Certifications	CE, FCC, RoHS, UKCA, UL	CE, FCC, RoHS, UKCA, UL

ORDERING INFORMATION

Model Name	P/N	Memory	GbE	COM	USB 3.2 Gen2	USB 3.2 Gen1	USB 2.0	TPM 2.0	Power	Thermal	Temp.
CMS310-W480ENRM	770-CMS3103-000G	4 DIMM	4	4	4	4	4	-	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C
CMS310-Q470ENRM	770-CMS3103-100G		4					-			
CMS310-W480ENRM	770-CMS3103-200G		2					-			
CMS310-Q470ENRM	770-CMS3103-300G		2					-			
CMS310-W480ENRM	770-CMS3103-400G		4					1			
CMS310-Q470ENRM	770-CMS3103-500G		4					1			
CMS310-W480ENRM	770-CMS3103-600G		2					1			
CMS310-Q470ENRM	770-CMS3103-700G		2					1			

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
· Serial ATA data cable (Length: 500mm, W/LOCK, 90D)	A81-002128-017G
· Thermal solution (For 35W, Height: 37.3mm)	A71-101107-000G
· Thermal solution (For 65W, Height: 74.47mm)	A71-101158-000G
· Thermal solution (For 95W, Height: 76.6mm)	A71-101143-000G
· 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
· USB 3.2 TYPE E TO USB 3.2 20P 90D cable	A81-001149-017G