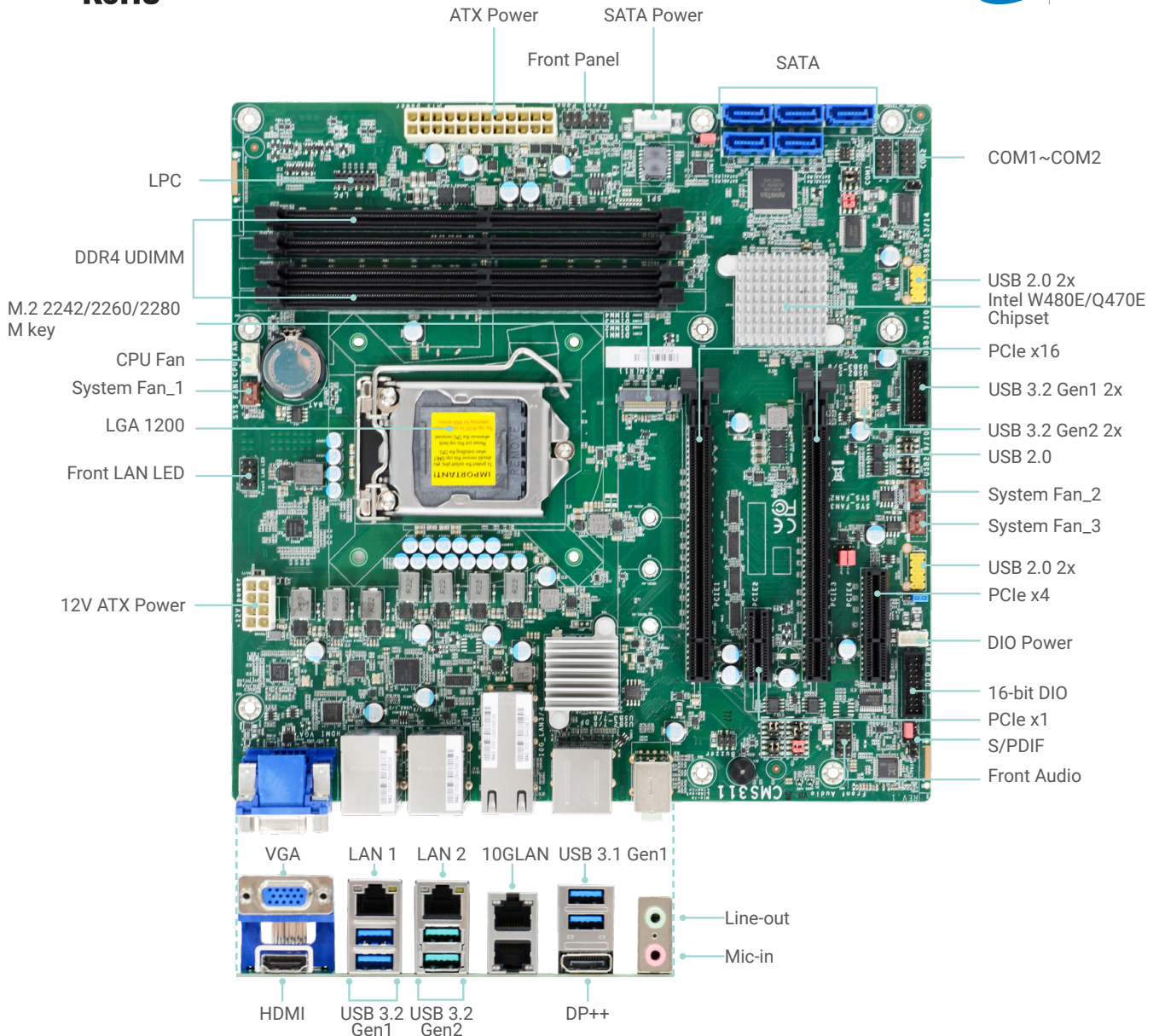


# CMS311-W480E/Q470E

10th Gen Intel® Core™ Desktop  
microATX



Top View

\*The photo above refers to CMS330-Q470E.

## KEY FEATURES



### DDR4

4 DDR4 UDIMM up to 128GB



### 4K High Resolution

Supports 4K/ 2K resolution



### Triple Displays

VGA, DP++, HDMI 1.4b



### Multiple Expansion

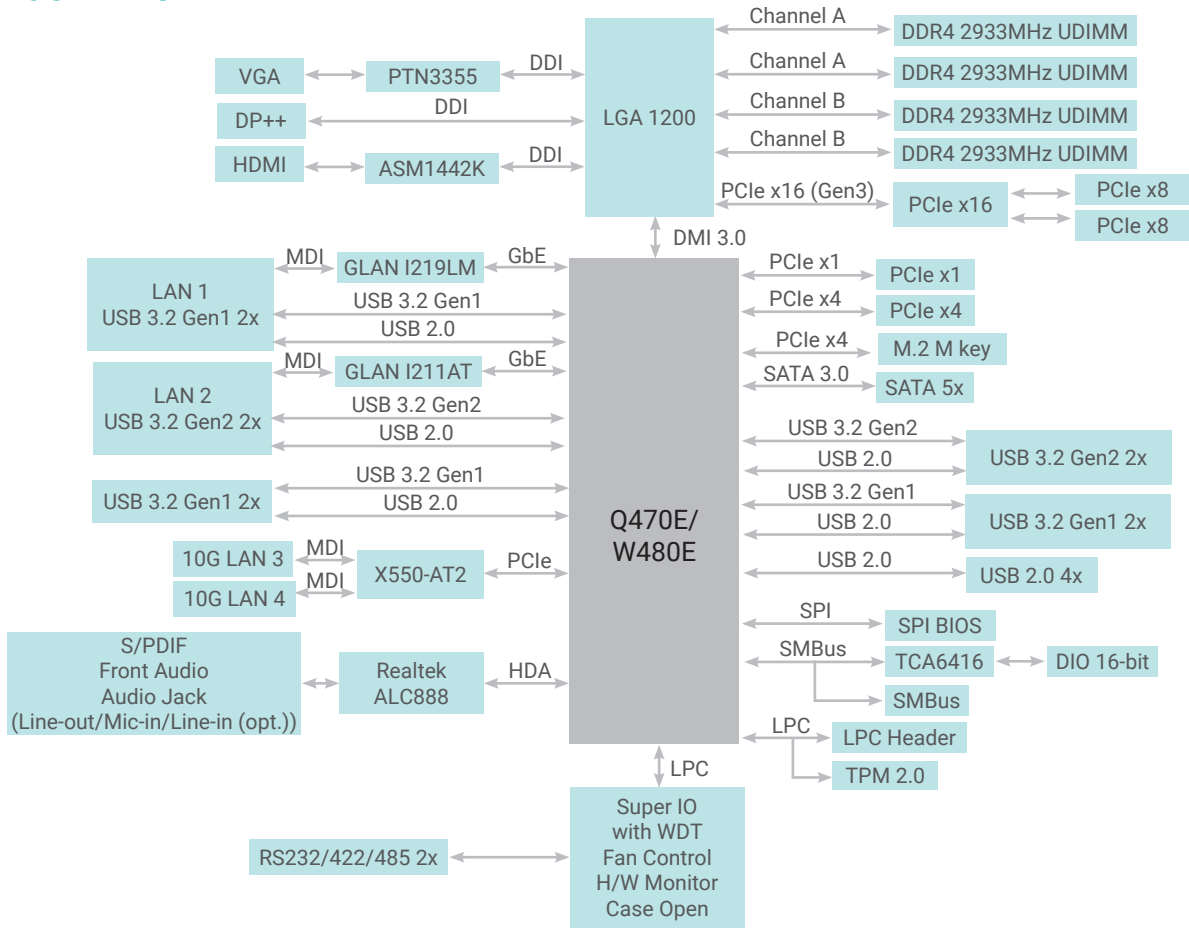
2 PCIe x16 (1 x16 or 2 x8 signal), 1 PCIe x4, 1 PCIe x1, 1 M.2 M key, 5 SATA 3.0



### Rich I/O

up to 4 Intel GbE, 4 USB 3.2 Gen 2, 6 USB 3.2 Gen 1, 4 USB 2.0, 2 COM

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

<b>System</b>	<b>Processor</b>	10th Gen 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)	
	<b>Chipset</b>	Intel® W480E/Q470E Chipset	
	<b>Memory</b>	Four 288-pin UDIMM up to 128GB Dual Channel DDR4 2400/2666/2933 MHz (ECC support: W480E only)	
	<b>BIOS</b>	AMI SPI 256Mbit	
	<b>Graphics</b>	<b>Controller</b>	Intel® HD Gen 9 Graphics
	<b>Feature</b>	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	
	<b>Display</b>	1 x VGA	VGA: resolution up to 1920x1200 @ 60Hz
		1 x DP++	DP++: resolution up to 4096x2160 @ 60Hz
		1 x HDMI 1.4b	HDMI: resolution up to 4096x2160 @ 24Hz
	<b>Triple Displays</b>	VGA + DP++ + HDMI	
<b>Expansion</b>	<b>Interface</b>	2 x PCIe x16 (Gen 3) (1 x16 signals or 2 x8 signals) 1 x PCIe x4 (Gen 3) 1 x PCIe x1 (Gen3) 1 x M.2 2242/2260/2280 M key (PCIe x4 NVMe with intel RST/Intel Optane Memory support)	
	<b>Audio Codec</b>	Realtek ALC888	
	<b>Ethernet</b>	1 x Intel® i219LM PCIe (10/100/1000Mbps) (only Xeon, Core i9/i7/i5 support iAMT) 1 x Intel® i211AT PCIe (10/100/1000Mbps), Co-lay i210AT 1 x Intel® x550-AT2 (2 x 10GbE)	
	<b>Rear I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45) 2 x 10GbE (RJ-45)
	<b>USB</b>	2 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1	
	<b>Display</b>	1 x VGA 1 x DP++ 1 x HDMI 1.4b	
	<b>Audio</b>	1 x Line-out 1 x Mic-in	1 x Line-in (opt. by request, MOQ required)
<b>Internal I/O</b>	<b>Serial</b>	2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)	
	<b>USB</b>	2 x USB 3.2 Gen 2 2 x USB 3.2 Gen 1 4 x USB 2.0 (2.54mm pitch) (colay vertical Type A, MOQ required)	
	<b>Audio</b>	1 x Front Audio Header 1 x S/PDIF	
	<b>SATA</b>	5 x SATA 3.0 (up to 6Gb/s)	RAID 0/1/5/10
	<b>DIO</b>	1 x 16-bit DIO	
	<b>LPC</b>	1 x LPC	
	<b>SMBus</b>	1 x SMBus	
	<b>Watchdog Timer</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds
<b>Security</b>	<b>TPM</b>	Infineon TPM2.0 (opt., 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>	<b>Microsoft</b>	Windows 10 IoT Enterprise 64-bit	
	<b>Linux</b>	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 95% RH Storage: 5 to 95% RH
	<b>MTBF</b>	TBD
<b>Mechanism</b>	<b>Dimensions</b>	microATX Form Factor 244mm (9.6") x 244mm (9.6")
	<b>Height</b>	PCB: 1.6mm Top Side: TBD Bottom Side: TBD
	<b>Standards and Certifications</b>	CE, FCC Class B, RoHS

## ORDERING INFORMATION

Model Name	P/N	Memory	1GbE	10GbE	RS-232 /422/485	USB 3.1 Gen2	USB 3.1 Gen1	USB 2.0	Power	Thermal	Temp.
CMS311-W480ENRM	770-CMS3111-000G	4 UDIMM	2	2	2	4	6	4	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS311-Q470ENRM	770-CMS3111-100G	4 UDIMM	2	2	2	4	6	4	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS311-W480ENRM	770-CMS3111-200G	4 UDIMM	4	0	2	4	6	4	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS311-Q470ENRM	770-CMS3111-300G	4 UDIMM	4	0	2	4	6	4	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C

## PACKING LIST

1 CMS311-W480E/Q470E motherboard	
1 COM port cable (Length: 300mm, 2 x COM ports)	A81-015026-023G
1 Serial ATA data cable (Length: 500mm)	332-553001-005G
1 I/O shield	TBD

## 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/125W, Height: 69.3mm)	761-103001-000G
DP to HDMI Dongle	612-D2H13M-000G
EXT-RS232 (4 ports RS-232 LPC module)	770-EXTRS1-000G
EXT-RS485 (4 ports RS-485 LPC module)	770-EXTRS1-100G
M.2-COM4 (M.2 serial port module)	770-M2COM1-000G
M.2-2LAN (M.2 LAN port module)	770-M22LN1-000G
M.2-2PSE (M.2 PSE module)	770-M22PS1-000G