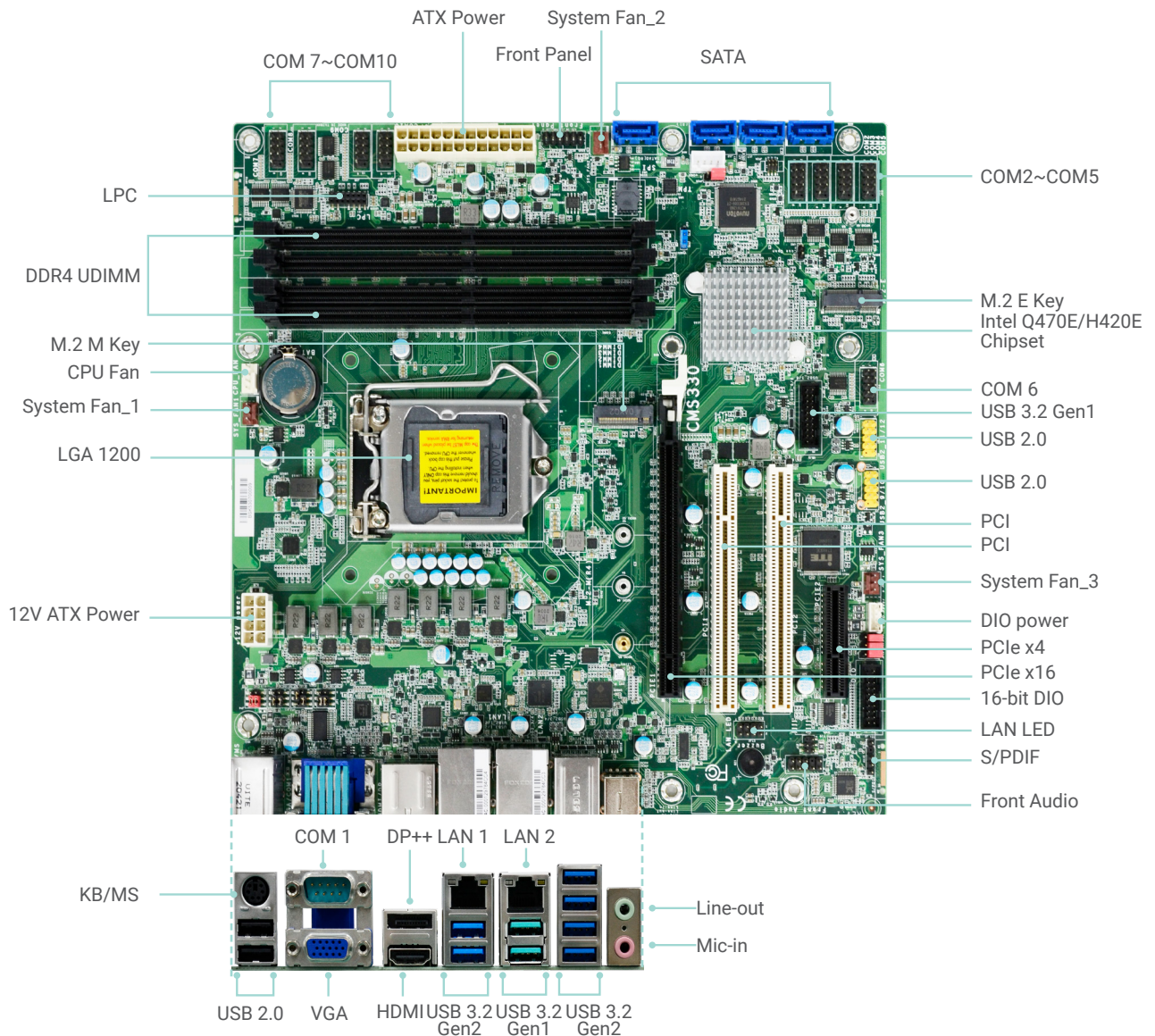


# CMS330-Q470E/H420E Desktop

10th Gen Intel® Core™  
microATX



Top View

\*The photo above refers to CMS330-W470E.

## KEY FEATURES



### DDR4

Q470E: 2 DDR4 UDIMM  
up to 128GB  
H420E: 2 DDR4 UDIMM  
up to 64GB



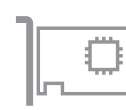
### 4K High Resolution

Supports 4K/ 2K resolution



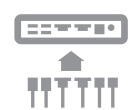
### Multiple Displays

Q470E: VGA + DP++ + HDMI  
H420E: VGA + DP++, VGA +  
HDMI, DP++ + HDMI



### Multiple Expansion

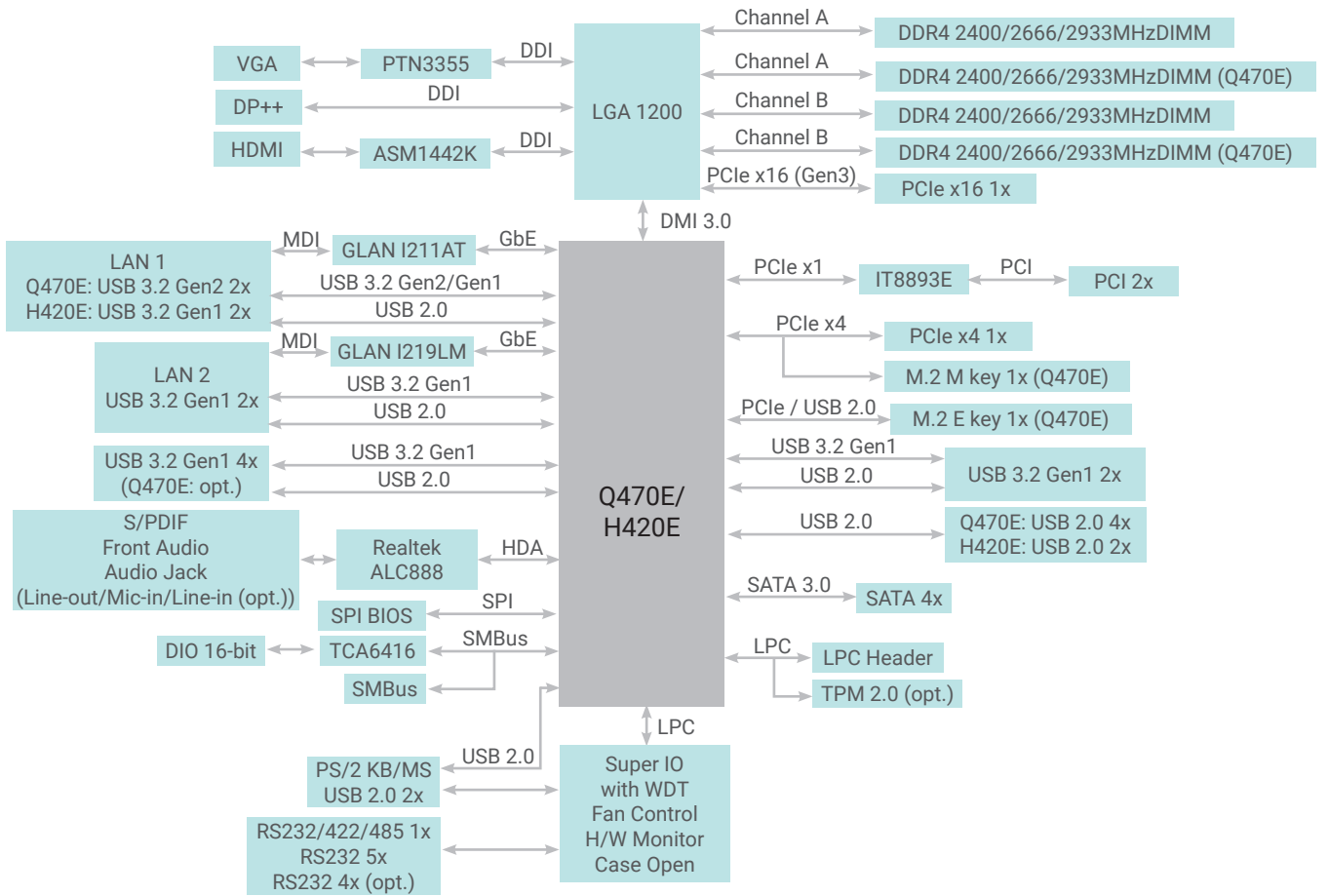
1 PCIe x16, 1 PCIe x4,  
2 PCI, M.2 M & E key  
(Q470E)



### Rich I/O

2 GbE, 6 COM, 4 SATA,  
Q470E: up to 16 USB  
H420E: up to 10 USB

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

<b>System</b>	<b>Processor</b>	10th Generation Intel® LGA 1200 Socket Processors, TDP support up to 125W 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 Intel® Core™ i3-10100TE (4 Cores, 6M Cache, to 3.6 GHz); 35W Intel® Pentium® G6400E (2 Cores, 4M Cache, 3.8 GHz); 58W Intel® Pentium® G6400TE (2 Cores, 4M Cache, 3.2 GHz); 35W Intel® Celeron® G5900E (2 Cores, 2M Cache, 3.2 GHz); 58W Intel® Celeron® G5900TE (2 Cores, 2M Cache, 3.0 GHz); 35W	
	<b>Chipset</b>	Intel® Q470E/H420E Chipset	
	<b>Memory</b>	Q470E: Four 288-pin Non-ECC UDIMM up to 128GB H420E: Two 288-pin Non-ECC UDIMM up to 64GB Dual Channel DDR4 2400/2666/2933MHz	
	<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 1 x DP++ 1 x HDMI 1.4b	VGA: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2160 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz
<b>Multiple Displays</b>		Q470E: VGA + DP++ + HDMI H420E: VGA + DP++ / VGA + HDMI / DP++ + HDMI	
<b>Expansion</b>		<b>Interface</b>	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 3) 2 x PCI Q470E: 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x4 NVMe/SATA/Intel® Optane Memory and intel RST support) 1 x M.2 2230 E key (USB 2.0/PCIe)
	<b>Audio Codec</b>	Realtek ALC888	
	<b>Ethernet Controller</b>	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PHY with iAMT12.0 (10/100/1000Mbps) (Q470E: Core i9/ i7/i5 supports iAMT)	
	<b>Rear I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)
<b>Serial</b>		1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	
<b>USB</b>		2 x USB 3.2 (Q470E: Gen2; H420E: Gen1) 2 x USB 3.2 Gen1 (Q470E: Up to 6 x USB 3.2 Gen1, MOQ required) 2 x USB 2.0	
<b>Display</b>		1 x VGA 1 x DP++ 1 x HDMI	
<b>PS/2</b>		1 x PS/2 (mini-DIN-6)	
<b>Audio</b>		1 x Line-out 1 x Mic-in	1 x Line-in (opt., MOQ required)
<b>Internal I/O</b>		<b>Serial</b>	5 x RS-232 (2.54mm pitch) (Up to 9 x RS-232, MOQ required)
	<b>USB</b>	2 x USB 3.2 Gen 1 Q470E: 4 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required) H420E: 2 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required)	
	<b>Audio</b>	1 x Front Audio Header 1 x S/PDIF	
	<b>SATA</b>	4 x SATA 3.0 (up to 6Gb/s, SATA 3) (Q470E: 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 Ubuntu 20.04
<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>	micro ATX Form Factor
		244mm (9.6") x 244mm (9.6")
	<b>Height</b>	PCB: 1.6mm Top Side: TBD Bottom Side: TBD
<b>Certifications</b>	<b>Certifications</b>	CE, FCC Class B

## ORDERING INFORMATION

Model Name	P/N	Memory	GbE	RS-232/422/485	USB 3.1 Gen2	USB 3.1 Gen1	USB 2.0	Power	Thermal	Temp.
CMS330-H420EC	770-CMS3301-000G	4 UDIMM	2	1	0	6	4	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C
CMS330-Q470ECRM	770-CMS3301-100G	4 UDIMM	2	1	2	8	6	24-pin ATX/8-pin ATX 12V	Active	-5 to 65°C

## PACKING LIST

1 CMS330 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-CMS330-100G

## OPTIONAL ITEMS

USB 2.0 port cable (Length: 350/398mm)	A81-001066-016G
USB 3.1 Gen1 port cable (Length: 320mm)	A81-001052-023G
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
I/O shield (opt. for 4 x USB 2.0)	A49-CMS330-000G
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