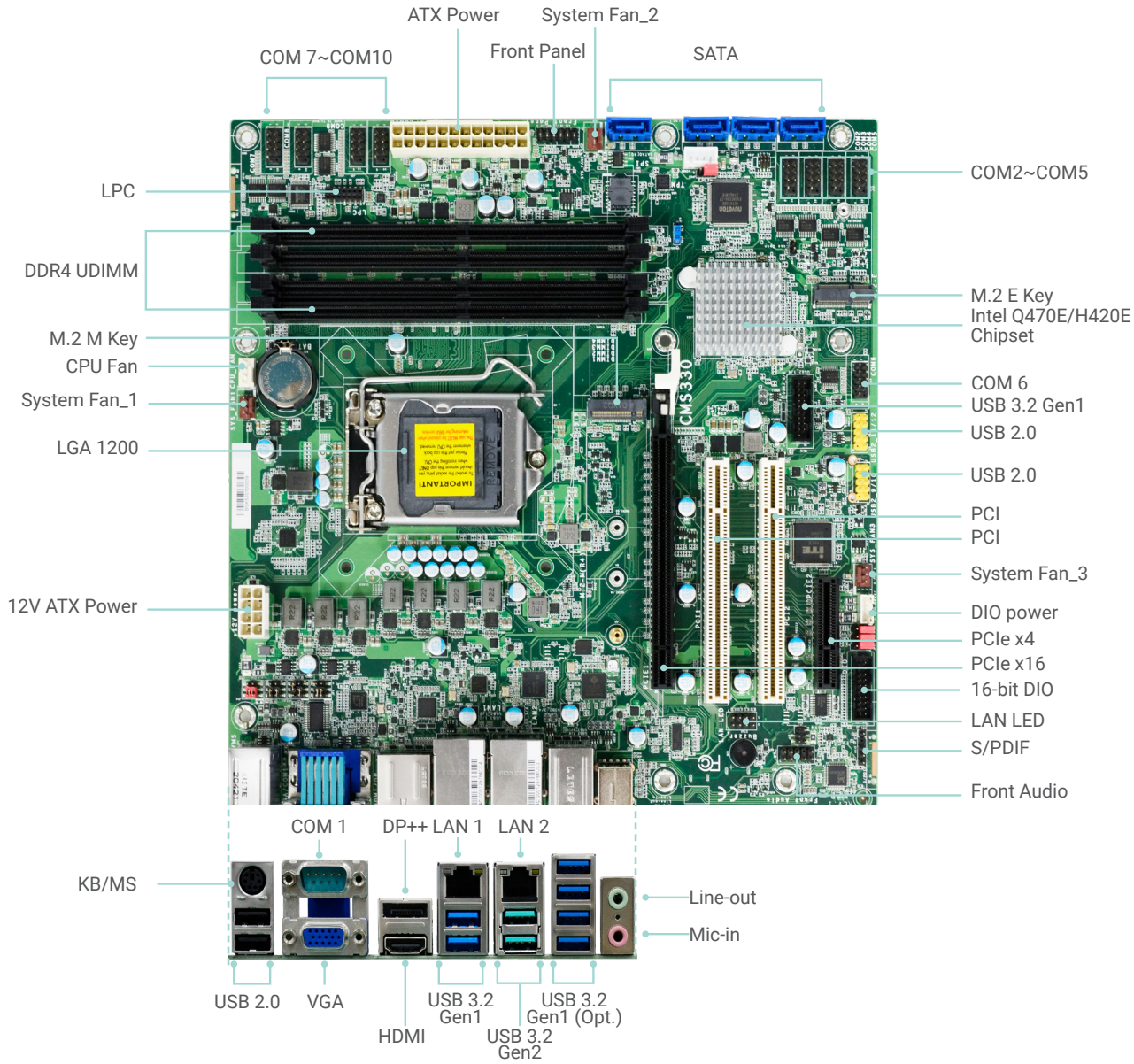
CMS330-Q470E
CMS330-H420E

Desktop

10th Gen Intel® Core™
microATX

IoT Solutions Alliance



Top View (CMS330-Q470E)

KEY FEATURES

DDR4

Q470E: 4 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

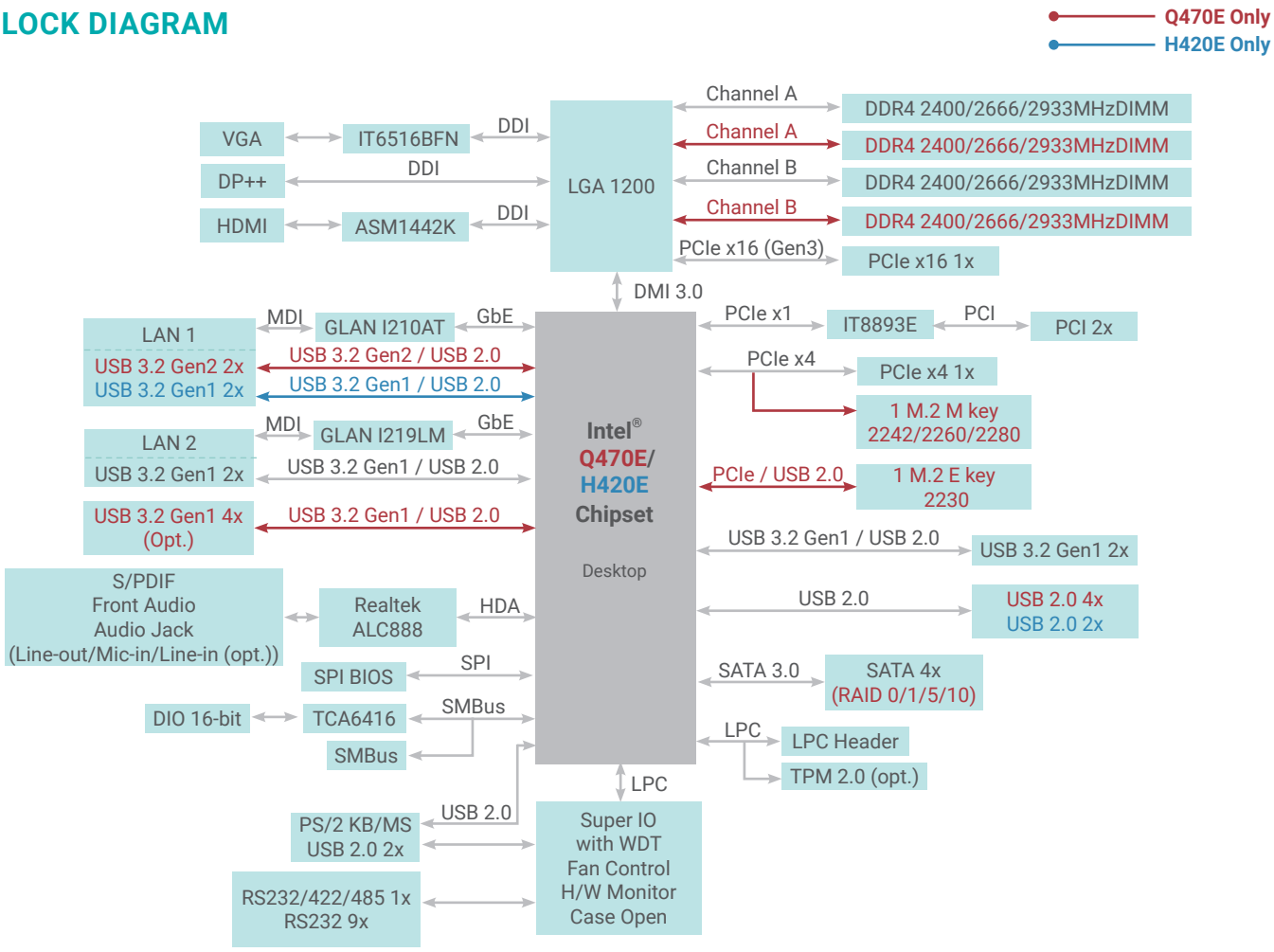
Multiple Expansion

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

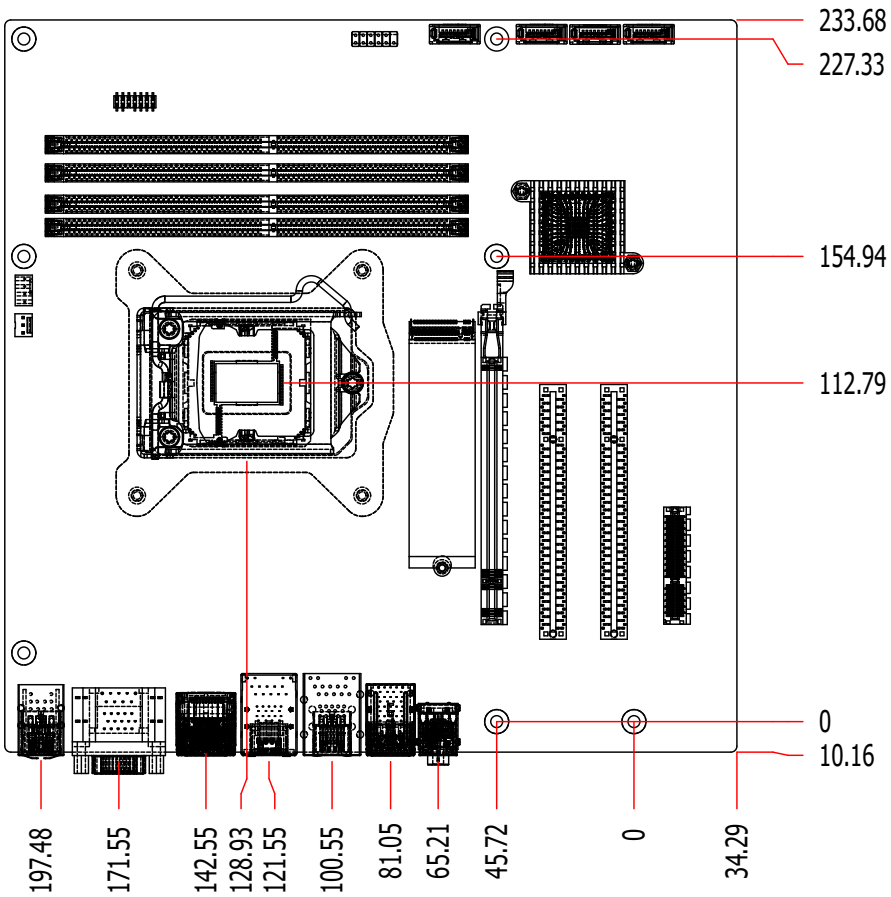
Rich I/O

2 GbE, 10 COM, 4 SATA,
· **Q470E:** up to 12 USB
· **H420E:** up to 10 USB

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

Model Name		CMS330-Q470E	CMS330-H420E
SYSTEM	Processor	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	
	Chipset	Intel® Q470E Chipset	Intel® H420E Chipset
	Memory	Four 288-pin Non-ECC UDIMM up to 128GB Dual Channel DDR4 2400/2666/2933MHz	Two 288-pin Non-ECC UDIMM up to 64GB Dual Channel DDR4 2400/2666/2933MHz
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit
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 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	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
	Multiple Displays	VGA + DP++ + HDMI	VGA + DP++ / VGA + HDMI / DP++ + HDMI
EXPANSION	Interface	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 3) 2 x PCI	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 3) 2 x PCI
	M.2	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)	N/A
AUDIO	Audio Codec	Realtek ALC888	Realtek ALC888
ETHERNET	Controller	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PHY with iAMT12.0 (10/100/1000Mbps) (Core i9/i7/i5 supports iAMT)	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PHY (10/100/1000Mbps)
REAR I/O	Ethernet	2 x GbE (RJ-45)	2 x GbE (RJ-45)
	Serial	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)
	USB	2 x USB 3.2 Gen2 2 x USB 3.2 Gen1 (Up to 6 x USB 3.2 Gen1, MOQ required) 2 x USB 2.0	4 x USB 3.2 Gen1 2 x USB 2.0
	Display	1 x VGA 1 x DP++ 1 x HDMI	1 x VGA 1 x DP++ 1 x HDMI
	PS/2	1 x PS/2 (mini-DIN-6)	1 x PS/2 (mini-DIN-6)
	Audio	1 x Line-out 1 x Mic-in 1 x Line-in (opt., MOQ required)	1 x Line-out 1 x Mic-in 1 x Line-in (opt., MOQ required)
INTERNAL I/O	Serial	9 x RS-232 (2.54mm pitch)	9 x RS-232 (2.54mm pitch)
	USB	2 x USB 3.2 Gen1 4 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required)	2 x USB 3.2 Gen1 2 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required)
	Audio	1 x Front Audio Header 1 x S/PDIF	1 x Front Audio Header 1 x S/PDIF
	SATA	4 x SATA 3.0 (up to 6Gb/s, SATA 3) (RAID 0/1/5/10)	4 x SATA 3.0 (up to 6Gb/s, SATA 3)
	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
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	Infineon TPM2.0 (opt., MOQ required)	Infineon TPM2.0 (opt., MOQ required)

SPECIFICATION

Model Name		CMS330-Q470E	CMS330-H420E
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 @ 0.36A (1.19W); 5V @ 1.02A (5.1W); 12V @ 3.8A (45.6W) **Max.:** i9-10900K:3.3V @ 0.38A (1.25W); 5V @ 1.82A (9.1W); 12V @ 15.64A (187.68W)	**Typical:** i9-10900K: 3.3V @ 0.36A (1.19W); 5V @ 1.02A (5.1W); 12V @ 3.8A (45.6W) **Max.:** i9-10900K:3.3V @ 0.38A (1.25W); 5V @ 1.82A (9.1W); 12V @ 15.64A (187.68W)
	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 Ubuntu 20.04	Linux Ubuntu 20.04
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 95% RH **Storage:** 5 to 95% RH	**Operating:** 5 to 95% RH **Storage:** 5 to 95% RH
	MTBF	504,615 hrs @ 25°C; 283,232 hrs @ 45°C ; 176,865 hrs @ 60°C ; 128,658 hrs @ 70°C **Calculation Model:** Telcordia Issue 4 **Environment:** GB, GC - Ground Benign, Controlled	534,071 hrs @ 25°C; 303,942 hrs @ 45°C ; 191,219 hrs @ 60°C ; 139,612 hrs @ 70°C **Calculation Model:** Telcordia Issue 4 **Environment:** GB, GC - Ground Benign, Controlled
MECHANISM	Dimensions	micro ATX Form Factor 244mm (9.6") x 244mm (9.6")	micro ATX Form Factor 244mm (9.6") x 244mm (9.6")
	Height	**PCB:** 1.6mm **Top Side:** 33mm **Bottom Side:** 3mm	**PCB:** 1.6mm **Top Side:** 33mm **Bottom Side:** 3mm
CERTIFICATIONS	Certifications	CE, FCC Class B, UKCA	CE, FCC Class B, UKCA

ORDERING INFORMATION

Model Name	P/N	Memory	GbE	COM	USB 3.2 Gen2	USB 3.2 Gen1	USB 2.0	TPM	Power	Temp.
CMS330-H420EC	770-CMS3302-000G	2 DDR4 UDIMM	2	10	0	6	4	N/A	24-pin ATX/ 8-pin ATX 12V	-5 to 65°C
CMS330-Q470ECRM	770-CMS3302-100G	4 DDR4 UDIMM			2	4	6	N/A		
CMS330-H420EC	770-CMS3302-200G	2 DDR4 UDIMM			0	6	4	TPM 2.0		
CMS330-Q470ECRM	770-CMS3302-300G	4 DDR4 UDIMM			2	4	6	TPM 2.0		

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)	A81-001196-023G
• 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
• I/O shield (opt. for 4 x USB 2.0)	A49-CMS330-000G
• 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

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