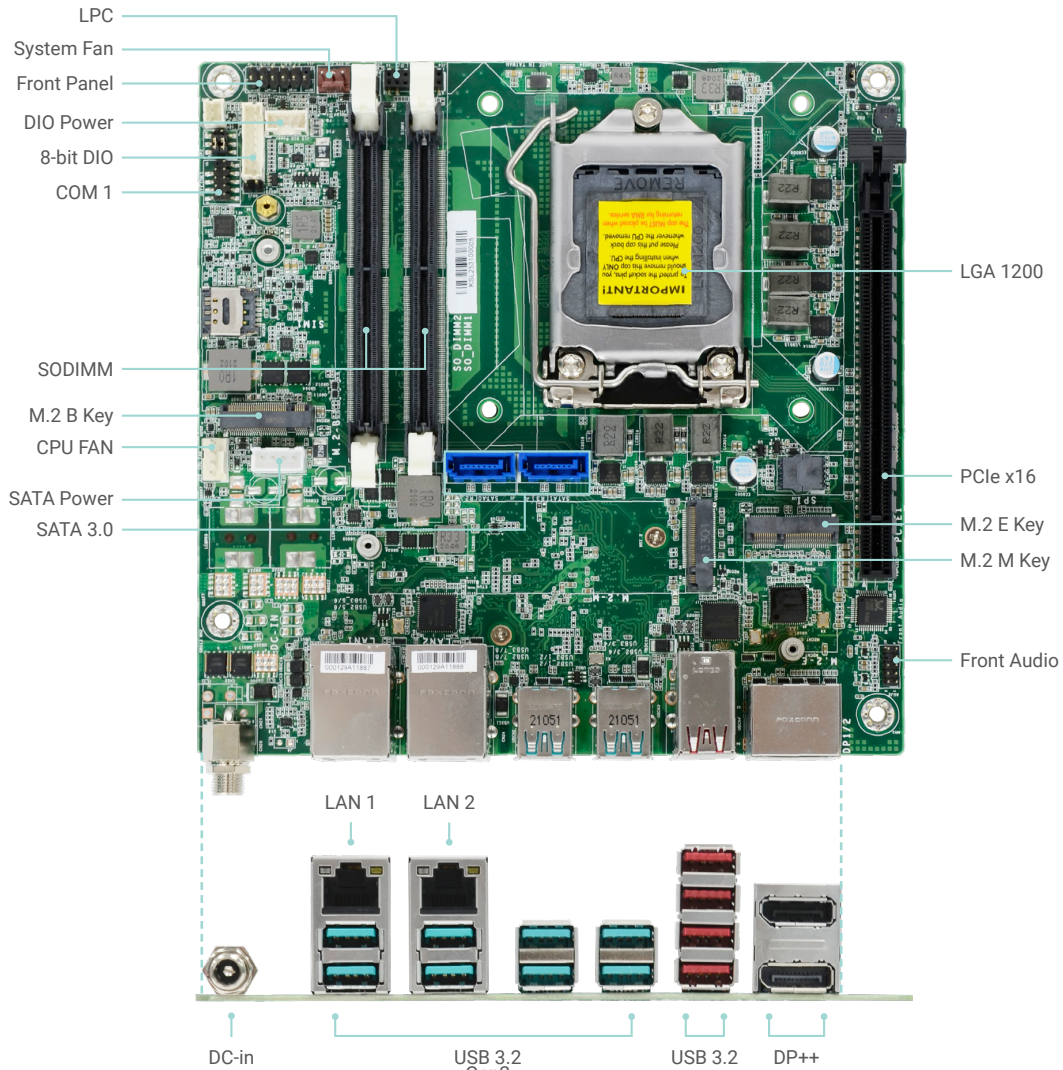


# CMS171/CMS173

10th Gen Intel® Core™  
**Desktop** Mini-ITX



Top View

## KEY FEATURES



### DDR4

2 DDR4 SODIMM up to 64GB



### 4K High Resolution

Supports 4K/ 2K resolution



### Dual Displays

2 DP++



### Multiple Expansion

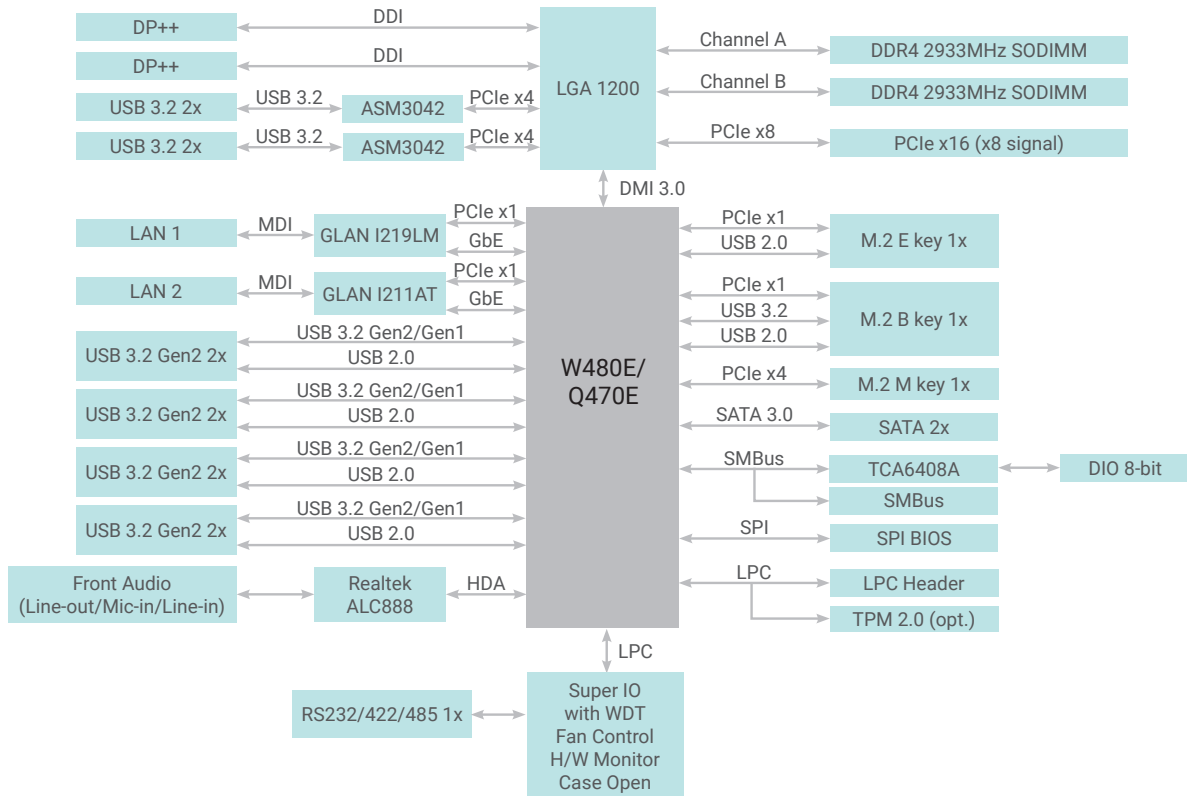
1 PCIe x16 (x8 signal),  
1 M.2 E Key, 1 M.2 M Key,  
1 M.2 B Key



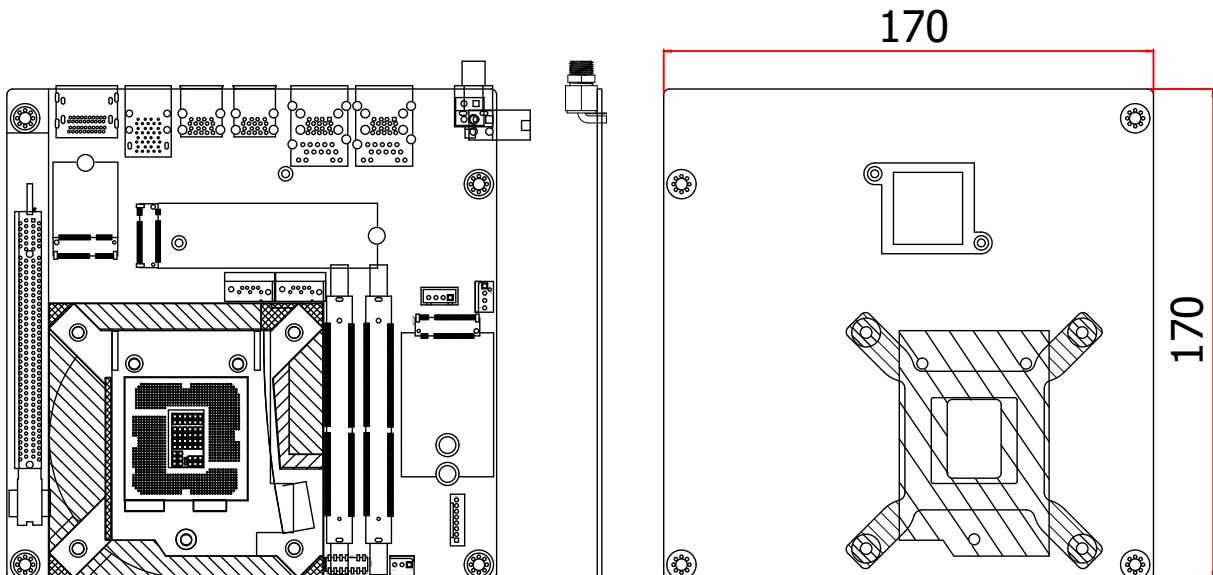
### Rich I/O

2 Intel GbE, 8 USB 3.2 Gen2, 4 USB 3.2, 2 COM, 2 SATA 3.0, 1 SATA Power

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

|                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |
|----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| SYSTEM         | Processor         | 10th Gen Intel® LGA 1200 Socket Processors, TDP support up to 65W<br>Intel® Xeon® W-1290TE (10 Cores, 20M Cache, up to 4.5 GHz); 35W (ECC support on W480E SKU only)<br>Intel® Xeon® W-1270TE (8 Cores, 16M Cache, up to 4.4 GHz); 35W (ECC support on W480E SKU only)<br>Intel® Xeon® W-1250TE (6 Cores, 12M Cache, up to 3.8 GHz); 35W (ECC support on W480E SKU only)<br>Intel® Core™ i9-10900E (10 Cores, 20M Cache, up to 4.7 GHz); 65W<br>Intel® Core™ i9-10900TE (10 Cores, 20M Cache, up to 4.5 GHz); 35W<br>Intel® Core™ i7-10700E (8 Cores, 16M Cache, up to 4.5 GHz); 65W<br>Intel® Core™ i7-10700TE (8 Cores, 16M Cache, up to 4.4 GHz); 35W<br>Intel® Core™ i5-10500E (6 Cores, 12M Cache, up to 4.2 GHz); 65W<br>Intel® Core™ i5-10500TE (6 Cores, 12M Cache, up to 3.7 GHz); 35W<br>Intel® Core™ i3-10100E (4 Cores, 6M Cache, 3.8 GHz); 65W (ECC support on W480E SKU only)<br>Intel® Core™ i3-10100TE (4 Cores, 6M Cache, to 3.6 GHz); 35W (ECC support on W480E SKU only)<br>Intel® Pentium® G6400E (2 Cores, 4M Cache, 3.8 GHz); 58W (Not support on W480E SKU)<br>Intel® Celeron® G5900E (2 Cores, 2M Cache, 3.2 GHz); 58W (Not support on W480E SKU)<br>Intel® Celeron® G5900TE (2 Cores, 2M Cache, 3.0 GHz); 35W (Not support on W480E SKU) |                                         |
|                | Chipset           | Intel® W480E/Q470E Chipset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
|                | Memory            | Two 260-pin SODIMM up to 64GB<br>Dual Channel DDR4 2933MHz (ECC supported by W480E only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                         |
|                | BIOS              | AMI SPI 256Mbit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |
| GRAPHICS       | Controller        | Intel® UHD Graphics 630 (only Pentium G5400/Celeron G4900 support 610 )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |
|                | Feature           | OpenGL 4.5, DirectX 12, OpenCL 2.1<br>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9<br>HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |
|                | Display           | 2 x DP++                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DP: resolution up to 4096 x 2106 @ 60Hz |
|                | Dual Displays     | 2 x DP++                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                         |
| EXPANSION      | Interface         | 1 x PCIe x16 (Gen 3) (x8 signal)<br>1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi support) for WiFi6<br>1 x M.2 2280 M key (PCIe x4 Gen3 NVMe/SATA/Intel Optane Memory support) for SSD<br>1 x M.2 3042/3052 B key (PCIe/USB3.0) for 4G LTE/5G with SIM holder                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |
|                | Audio Codec       | Realtek ALC888                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                         |
|                | Controller        | 1 x Intel® I219LM PHY with iAMT12 and vPro (10/100/1000Mbps) (Core i7/i5 supports iAMT)<br>1 x Intel® I211AT PCIe (10/100/1000Mbps)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |
|                | Ethernet          | 2 x GbE (RJ-45)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |
| REAR I/O       | Serial            | 1 x RS-232/422/485 (RS-232 w/ power) (DB-9)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |
|                | USB               | 8 x USB 3.2 Gen2<br>4 x USB 3.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |
|                | Display           | 2 x DP++                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                         |
|                | Internal I/O      | 1 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch)<br>1 x Front Audio Header<br>2 x SATA 3.0 (up to 6Gb/s)<br>1 x SATA Power<br>RAID 0/1<br>1 x 8-bit DIO<br>1 x LPC<br>1 x SMBus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                         |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |
| SECURITY       | TPM               | Infineon TPM1.2/2.0 (optional)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                         |
| POWER          | Type              | Single 12V +/-10% DC (CMS171)<br>Wide Range 15~36V (CMS173)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |
|                | Connector         | DC-in Jack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
|                | Consumption       | TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |
|                | RTC Battery       | CR2032 Coin Cell                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |
| OS SUPPORT     | Microsoft         | Windows 10 IoT Enterprise LTSC 2019 RS5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |
|                | Linux             | Ubuntu 20.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |
| ENVIRONMENT    | Temperature       | Operating: -5 to 65°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Storage: -40 to 85°C                    |
|                | Humidity          | Operating: 5 to 90% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Storage: 5 to 90% RH                    |
|                | MTBF              | TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |
| MECHANISM      | Dimensions        | Mini-ITX Form Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 170mm (6.7") x 170mm (6.7")             |
|                | Height            | PCB: 1.6mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
|                |                   | Top Side: TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Bottom Side: TBD                        |
| CERTIFICATION  | Certification     | CE, FCC, RoHS, UKCA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |

## PACKING LIST

|                                                                               |                 |
|-------------------------------------------------------------------------------|-----------------|
| 1 CMS171/CMS173 motherboard                                                   |                 |
| 1 Serial ATA data cable w/lock (Length: 500mm)                                | 332-553001-005G |
| 1 Serial ATA power Y cable<br>(Length: 300mm, 1 x SATA POWER 15P*2 TO 4P HSG) | A81-002044-016G |
| 1 COM port cable (Length: 250mm, 1 x COM port)                                | A81-015011-001G |

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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