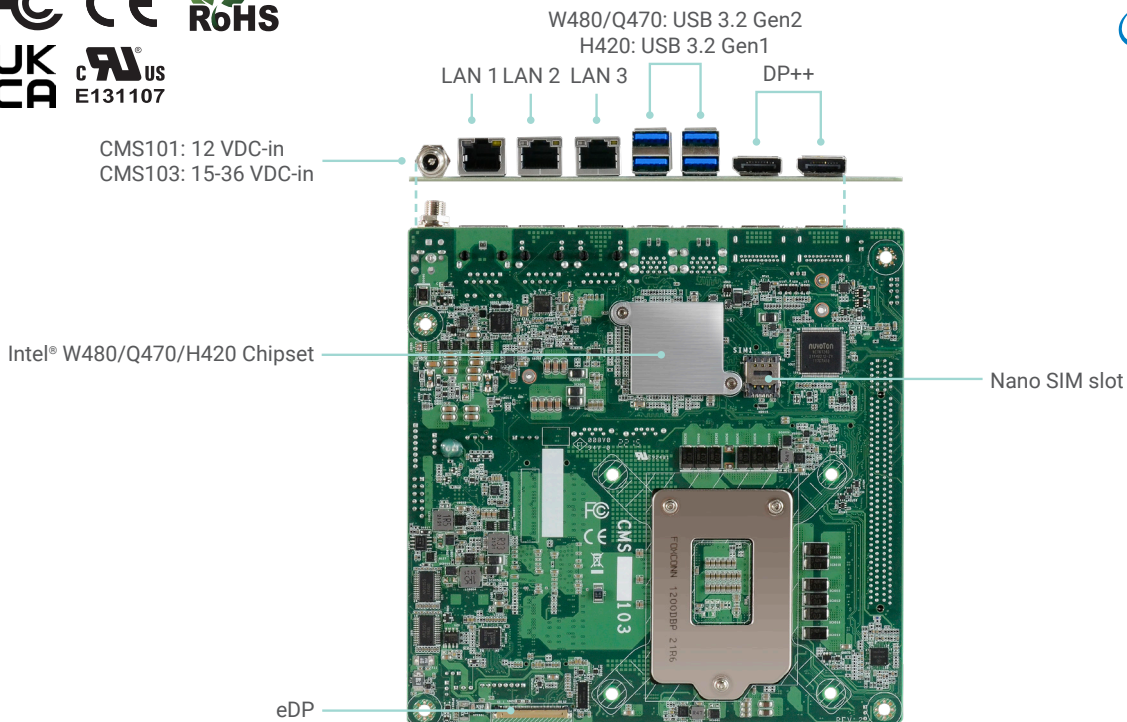


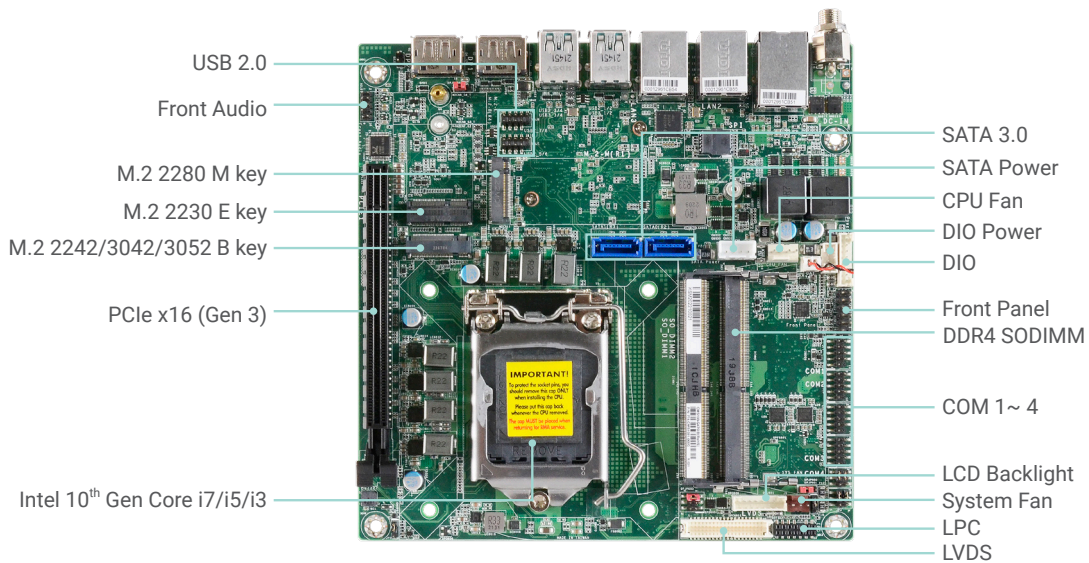
Desktop

# CMS101/CMS103

10th Gen Intel® Core™  
Thin Mini-ITX



Bottom View



Top View

## KEY FEATURES



### DDR4

2 DDR4 SODIMM up to 64GB



### 4K High Resolution

Supports 4K/ 2K resolution



### Triple Displays

2 DP++, 1 LVDS/eDP



### Multiple Expansion

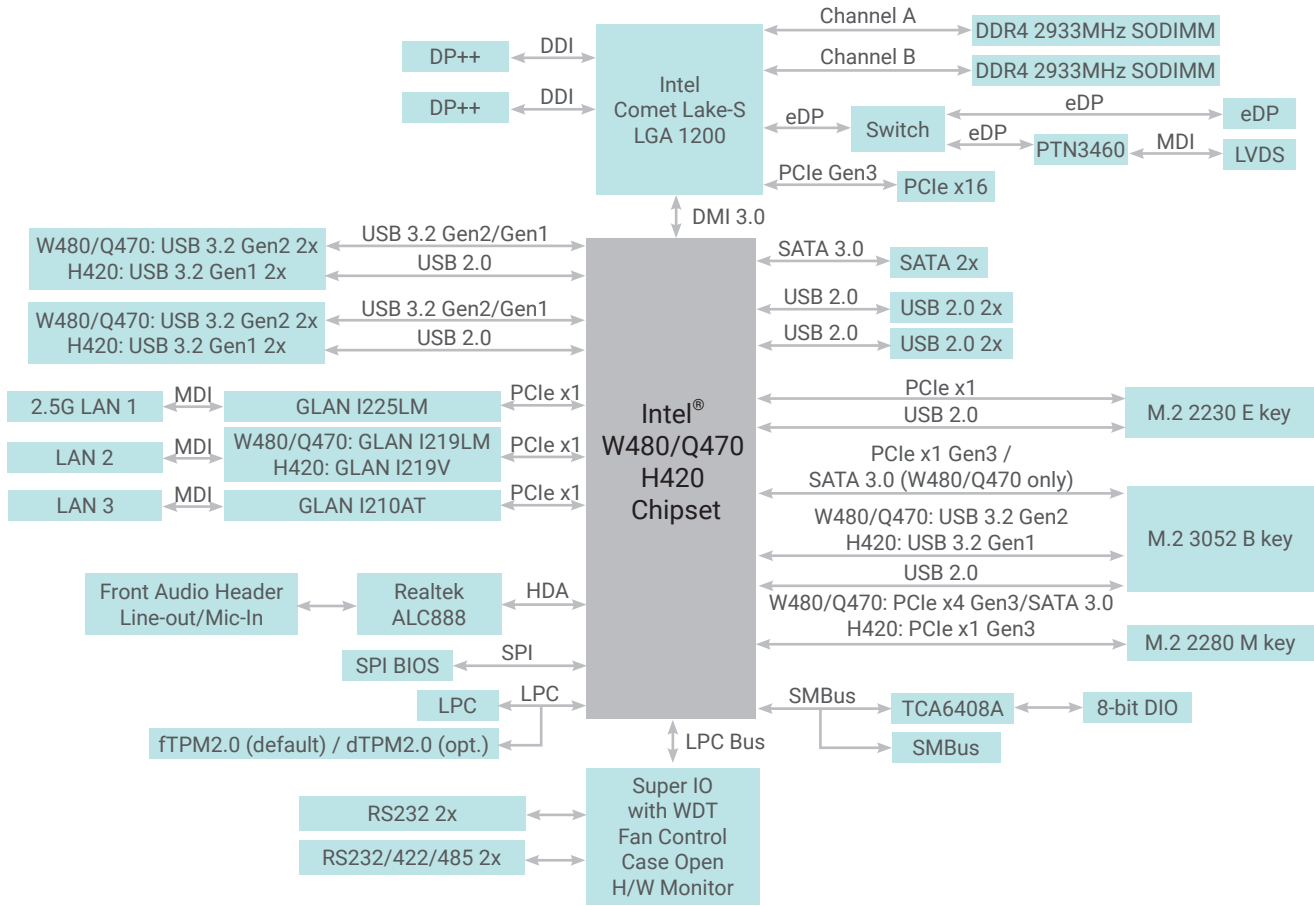
1 x PCIe x16,  
1 x M.2 2230 E Key,  
1 x M.2 2280 M Key,  
1 x M.2 2242/3042/  
3052 B Key



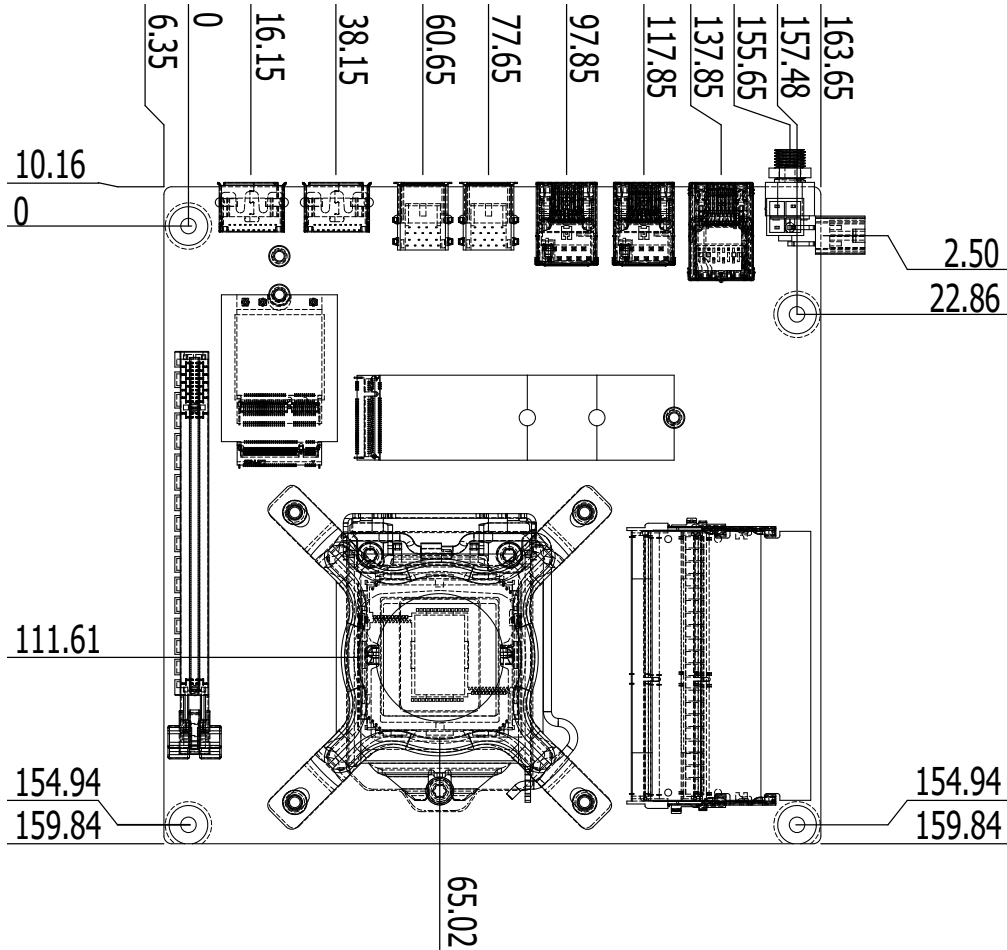
### Rich I/O

1 Intel 2.5GbE, 2 Intel GbE, 4 COM, 4 USB 2.0, W480/Q470: 4 USB 3.2 Gen2, H420: 4 USB 3.2 Gen1

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

<b>SYSTEM</b>	<b>Processor</b>	10th Gen Intel® Xeon/Core™/Pentium/Celeron Processors, LGA 1200 Socket Intel® Xeon W-1290TE Processor (Core 10; Max speed 4.5GHz; TDP 35W) (W480E only) Intel® Xeon W-1270TE Processor (Core 8; Max speed 4.4GHz; TDP 35W) (W480E only) Intel® Xeon W-1250TE Processor (Core 6; Max speed 3.8GHz; TDP 35W) (W480E only) Intel® Core i9-10900E Processor (Core 10; Max speed 4.7GHz; TDP 65W) Intel® Core i9-10900TE Processor (Core 10; Max speed 4.5GHz; TDP 35W) Intel® Core i7-10700E Processor (Core 8; Max speed 4.5GHz; TDP 65W) Intel® Core i7-10700TE Processor (Core 8; Max speed 4.4GHz; TDP 35W) Intel® Core i5-10500E Processor (Core 6; Max speed 4.2GHz; TDP 65W) Intel® Core i5-10500TE Processor (Core 6; Max speed 3.7GHz; TDP 35W) Intel® Core i3-10100E Processor (Core 4; Max speed 3.8GHz; TDP 65W) Intel® Core i3-10100TE Processor (Core 4; Max speed 3.6GHz; TDP 35W) Intel® Pentium G6400E Processor (Core 2; Max speed 3.8GHz; TDP 65W) Intel® Pentium G6400TE Processor (Core 2; Max speed 3.2GHz; TDP 35W) Intel® Celeron G5900E Processor (Core 2; Max speed 3.2GHz; TDP 65W) Intel® Celeron G5900TE Processor (Core 2; Max speed 3.0GHz; TDP 35W)	
	<b>Chipset</b>	Intel® W480/Q470/H420 Chipset	
	<b>Memory</b>	Two 260-pin SODIMM up to 64GB	Dual Channel DDR4 2933MHz
	<b>BIOS</b>	AMI SPI 256Mbit	
	<b>GRAPHICS</b>	<b>Controller</b>	Intel® UHD Graphics 630 (only Pentium G5400/Celeron G4900 support 610 )
	<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: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9	
	<b>Display</b>	2 x DP++ 1 x LVDS/eDP	DP++: Resolution up to 4096x2304 @60Hz LVDS: resolution up to 1920x1200 @ 60Hz eDP: resolution up to 4096x2160 @ 60Hz
	<b>Triple Displays</b>	DP+++ + DP++ + LVDS/eDP	
<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x16 (Gen 3) 1 x M.2 2230 E Key (USB/PCIe x1) 1 x M.2 2280 M Key (W480/Q470: PCIe x4 Gen3/SATA; H420: PCIe x1 Gen3) 1 x M.2 2242/3042/3052 B Key (W480/Q470: PCIe x1 Gen3/USB 3.2 Gen2/USB 2.0/SATA; H420: PCIe x1 Gen3/USB 3.2 Gen1/USB 2.0)	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC888/887	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I225LM PCIe(10/100/1000/2.5G speeds) 1 x Intel® I219LM PHY(10/100/1000 speeds), support vPro/AMT 1 x Intel® I210AT PCIe(10/100/1000 speeds)	
<b>REAR I/O</b>	<b>Ethernet</b>	1 x 2.5GbE (RJ-45) 2 x GbE (RJ-45)	
	<b>USB</b>	W480/Q470: 4 x USB 3.2 Gen2 (dual type-A connector) H420: 4 x USB 3.2 Gen1 (dual type-A connector)	
	<b>Display</b>	2 x DP++	
<b>INTERNAL I/O</b>	<b>Serial</b>	2 x RS-232/422/485 (2.0mm pitch) 2 x RS-232 (2.0mm pitch)	
	<b>USB</b>	4 x USB 2.0 (2.0mm pitch)	
	<b>Display</b>	1 x LVDS header 1 x eDP connector	
	<b>Audio</b>	1 x Front Audio (2.0mm pitch)	
	<b>SATA</b>	2 x SATA 3.0 (up to 6Gb/s) 1 x SATA Power	RAID 0/1/5/10 (w/ M.2 M/B Key + 2 SATA Conn., W480/Q470 only)
	<b>DIO</b>	1 x 8-bit DIO 1 x DIO Power	
	<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>	fTPM (default)	dTPM2.0 (opt.)
<b>POWER</b>	<b>Type</b>	Single 12V +/-10% DC (CMS101)	Wide Range 15~36V (CMS103)
	<b>Connector</b>	DC-in Jack Right Angle Connector (4-pin) (available upon request) Straight Type Connector (4-pin) (available upon request)	
	<b>Consumption</b>	Idle: i9-10900E 65W: 20V@ 0.82A (16.4W) Max: i9-10900E 65W: 20V@ 9.02A (180.4W)	
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>	<b>Microsoft</b>	Windows 10 IoT Enterprise 64-bit	
	<b>Linux</b>	Linux	

## SPECIFICATION

ENVIRONMENT	Temperature	Operating: -5 to 65°C Storage: -40 to 85°C	
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH	
	MTBF	CMS103-W480IB 554,497 hrs @ 25°C; 325,039 hrs @ 45°C; 208,771 hrs @ 60°C; Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
MECHANISM	Dimensions	Mini-ITX Form Factor , 170mm (6.7") x 170mm (6.7")	
	Height	PCB: 1.6mm	Top side: 16.3mm, Bottom side: 4.4mm
CERTIFICATION	Certification	CE, FCC, RoHS, UKCA, UL, CB	

## ORDERING INFORMATION

Model Name	P/N	Description
CMS101-Q470IB	770-CMS1011-000G	2 DDR4, Rear I/O (2 DP++, 1 2.5GbE LAN, 2 GbE LAN, 4 USB 3.2 Gen2), Internal I/O (M.2 M/B/E Key, 4 USB 2.0, W/O TPM), 12V DC-Jack, -5 to 65°C
CMS101-W480IB	770-CMS1011-100G	2 DDR4, Rear I/O (2 DP++, 1 2.5GbE LAN, 2 GbE LAN, 4 USB 3.2 Gen2), Internal I/O (M.2 M/B/E Key, 4 USB 2.0, W/O TPM), 12V DC-Jack, -5 to 65°C
CMS101-H420IB	770-CMS1011-200G	2 DDR4, Rear I/O (2 DP++, 1 2.5GbE LAN, 2 GbE LAN, 4 USB 3.2 Gen1), Internal I/O (M.2 M/B/E Key, 4 USB 2.0, W/O TPM), 12V DC-Jack, -5 to 65°C
CMS103-Q470IB	770-CMS1031-000G	2 DDR4, Rear I/O (2 DP++, 1 2.5GbE LAN, 2 GbE LAN, 4 USB 3.2 Gen2), Internal I/O (M.2 M/B/E Key, 4 USB 2.0, W/O TPM), 15~36V 4-pin ATX, -5 to 65°C
CMS103-W480IB	770-CMS1031-100G	2 DDR4, Rear I/O (2 DP++, 1 2.5GbE LAN, 2 GbE LAN, 4 USB 3.2 Gen2), Internal I/O (M.2 M/B/E Key, 4 USB 2.0, W/O TPM), 15~36V 4-pin ATX, -5 to 65°C
CMS103-H420IB	770-CMS1031-200G	2 DDR4, Rear I/O (2 DP++, 1 2.5GbE LAN, 2 GbE LAN, 4 USB 3.2 Gen1), Internal I/O (M.2 M/B/E Key, 4 USB 2.0, W/O TPM), 15~36V 4-pin ATX, -5 to 65°C

## PACKING LIST

1 CMS101/CMS103 motherboard	
1 Serial ATA data & power cable w/lock (Length: 300mm)	A81-002101-016G
1 COM port cable (Length: 250mm, 1 x COM port)	A81-015011-001G
1 I/O shield w/ icon	A49-CMS101-010G

## OPTIONAL ITEMS

COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
Serial ATA data & power cable w/lock (Length: 300mm)	A81-002101-016G
Thermal solution (For 35W, Height: 29.4mm)	A71-103004-000G
Thermal solution (For 65W, Height: 45mm)	A71-103005-000G
DT122 Chassis	761-DT1220-200G