MBU4212

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Mini-ITX Industrial 10th Generation Motherboard With Intel® W480E Chipset

- Intel 10th Gen Core™ with Intel® W480E
- 2 DDR4 ECC/Non-ECC SODIMM up to 64GB
- Multiple expansion: 1 PCIe x16, 1 M.2 M Key, 1 M.2 B Key, 1 M.2 E Key
- Quad Displays: DP++ + HDMI + DVI-I + LVDS/eDP, or DP++ + DP++ + DVI-I + LVDS/eDP
- Rich I/O: 2 Intel GbE, 2 COM, 6 USB 3.2 Gen 2, 4 USB 2.0
- 15-Year CPU Life Cycle Support until Q2 '34 (Based on Intel IOTG Roadmap)

ICL Industrial Computers
A brand of Kontron UK

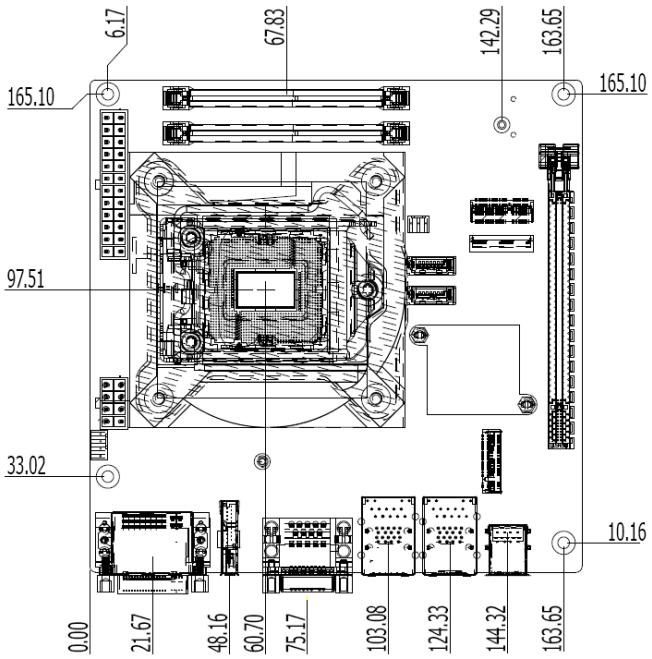
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SYSTEM	PROCESSORS	10th Generation Intel® LGA 1200 Socket Processors, TDP support up to 125W Intel® Xeon® W-1290E (10 Cores, 20M Cache, up to 4.8 GHz, ECC support); 95W Intel® Xeon® W-1290TE (10 Cores, 20M Cache, up to 4.5 GHz, ECC support); 35W Intel® Xeon® W-1270E (8 Cores, 16M Cache, up to 4.8 GHz, ECC support); 80W Intel® Xeon® W-1270TE (8 Cores, 16M Cache, up to 4.4 GHz, ECC support); 35W Intel® Xeon® W-1250E (6 Cores, 12M Cache, up to 4.7 GHz, ECC support); 80W Intel® Xeon® W-1250TE (6 Cores, 12M Cache, up to 3.8 GHz, ECC support); 35W 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, ECC support); 65W Intel® Core™ i3-10100TE (4 Cores, 6M Cache, to 3.6 GHz, ECC support); 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® W480E Chipset
	MEMORY	Two 260-pin SODIMM up to 64GB Dual Channel DDR4 2933MHz, ECC support
	BIOS	AMI SPI 256Mbit
GRAPHICS	CONTROLLER	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
	DISPLAY	1 x DP++: resolution up to 4096x2304 @ 60Hz 1 x HDMI 1.4b: resolution up to 4096x2160 @ 30Hz 1 x LVDS: resolution up to 1920x1200 @ 60Hz 1 x eDP: resolution up to 4096x2160 @ 60Hz 1 x DVI-I (DVI-D signal): resolution up to 1920x1200 @ 60Hz
	QUAD DISPLAYS	DP++ + DP++ + DVI-I + LVDS/eDP or DP++ + HDMI + DVI-I + LVDS/eDP
EXPANSION	INTERFACE	1 x PCIe x16 (Gen 3) 1 x M.2 2230 E Key (PCIe x1/USB 2.0) 1 x M.2 2280 M Key (PCIe x4 Gen3 or SATA, H420E supports PCIe x4 signal only) 1 x M.2 2242/3042 B Key (W480E/Q470E: PCIe x1 Gen3 or SATA, USB 3.2 Gen1/USB 2.0) 1 x Nano SIM slot
AUDIO	AUDIO CODEC	Realtek ALC888
ETHERNET	CONTROLLER	1 x Intel® I225LM PCIe(10/100/1000/2.5G speeds) 1 x Intel® I219LM PHY(10/100/1000 speeds), support vPro/AMT
REAR I/O	ETHERNET	1 x 2.5GbE (RJ-45) & 1 x GbE (RJ-45)
	SERIAL	2 x RS232/422/485 (DB-9)
	USB	6 x USB 3.2 Gen2 (dual type-A connector) (W480E/Q470E)
	PS/2	N/A
	DISPLAY	1 x DP++ 1 x HDMI 1.4b or 1 x DP++ 1 x DVI-I
	AUDIO	N/A
INTERNAL I/O	SERIAL	N/A
	USB	4 x USB 2.0 (2.0mm pitch)
	AUDIO	N/A
	SATA	2 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10 (w/ M.2 Key-M/B slot + 2 SATA Conn.) (W480E/Q470E only)
	DIO	1 x 8-bit DIO
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)
	SMBUS	1 x SMBus

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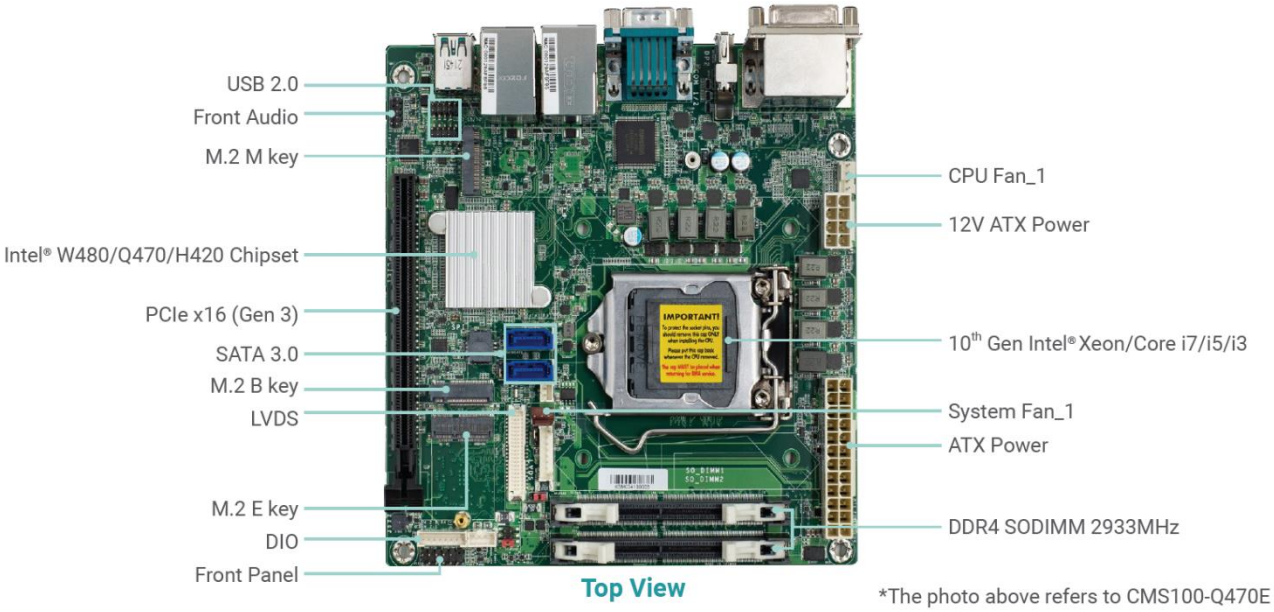
WATCHDOG TIMER	OUTPUT & INTERVAL	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	Infineon TPM2.0 (opt., MOQ required)
POWER	TYPE	ATX
	CONNECTOR	8-pin ATX 12V power; 24-pin ATX power
	CONSUMPTION	Idle: Intel Xeon W-1290E 95W: 12V @ 4.6A (55.2W) Max: Intel Xeon W-1290E 95W: 12V @ 11.6A (139.2W) Idle: Intel i9-10900K 125W: 12V @ 2A (24W) Max: Intel i9-10900K 125W: 12V @ 22A (264W)
	RTC, BATTERY	CR2032 Coin Cell
OS SUPPORT	MICROSOFT	Windows 10 IoT Enterprise 64-bit Windows 11 Pro 64-bit (Motherboard option with TPM/fTPM)
	LINUX	Linux
ENVIRONMENT	TEMPERATURE	Operating: -5 to 65°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery
	HUMIDITY	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	591,713 hrs @ 25°C; 357,627 hrs @ 45°C ; 234,022 hrs @ 60°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled
MECHANICAL	DIMENSIONS	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")
	HEIGHT	PCB: 1.6mm Top Side: TBD Bottom Side: TBD
CERTIFICATIONS		CE, FCC Class B, UKCA

Dimensions



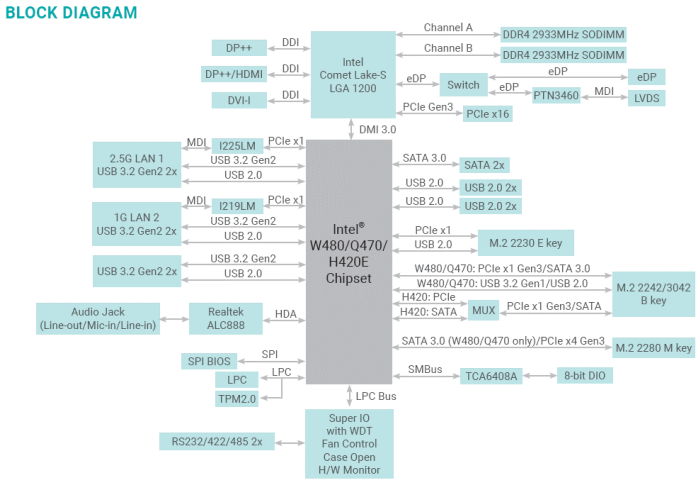
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Motherboard Layout



*The photo above refers to CMS100-Q470E

Block Diagram



Standard Services

Integrated Components

Revision Controlled

Fully Tested & Documented

Software Installed

Full Traceability

ISO Certified

OEM Customisation

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