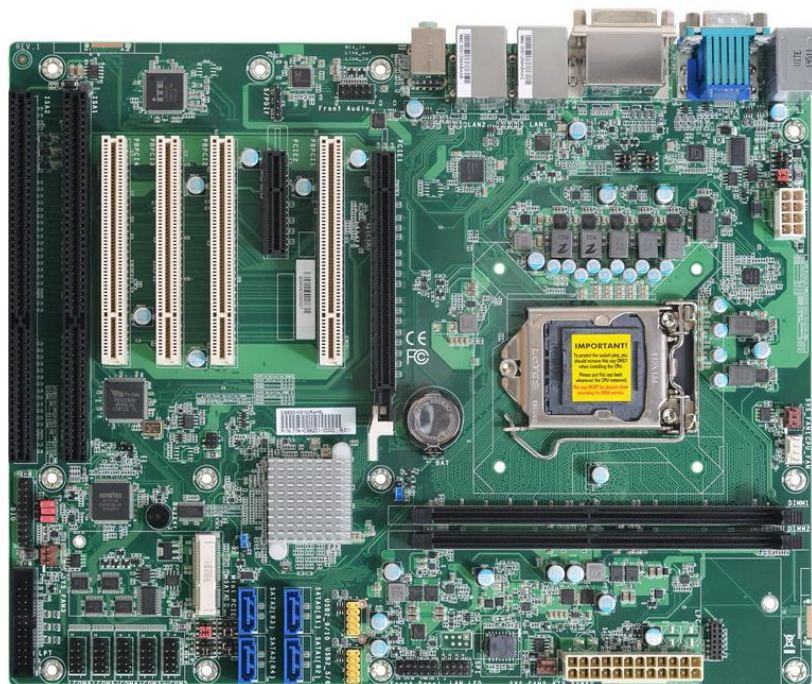


MBU4175

Industrial Motherboard Series



MBU4175

PRODUCT HIGHLIGHTS

- ▶ Intel 8th/9th Gen Intel® Core™ with Intel® H310
- ▶ 2 DDR4 DIMM up to 64Gb
- ▶ Multiple expansion: 1 PCIe x16 (Gen 3), 1 PCIe x4 (Gen 2), 4 PCI, 2 ISA
- ▶ 2 independent displays: VGA + DVI-D / VGA + DP++ / DP++ + DVI-D
- ▶ Rich I/O: 2 Intel GbE, 6 COM, 4 USB 3.1 Gen 1, 6 USB 2.0
- ▶ 15-Year CPU Life Cycle Support Until Q4' 33 (Based on Intel IOTG Roadmap)



TECHNICAL INFORMATION

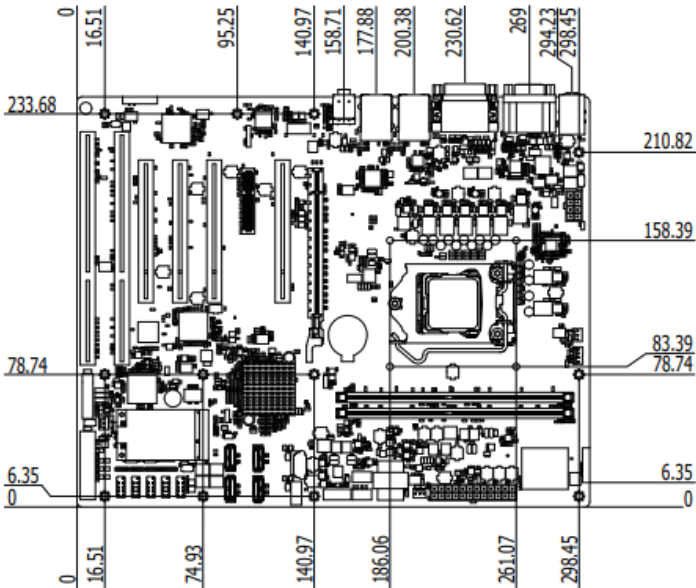
SYSTEM	PROCESSOR	8th Generation Intel® Core™ /Pentium®/Celeron® LGA 1151 Processors: Intel® Core™ i7-8700K (6 Cores, 12M Cache, up to 4.7 GHz); 95W Intel® Core™ i7-8700 (6 Cores, 12M Cache, up to 4.6 GHz); 65W Intel® Core™ i7-8700T (6 Cores, 12M Cache, up to 4.0 GHz); 35W Intel® Core™ i5-8500 (6 Cores, 9M Cache, up to 4.1 GHz); 65W Intel® Core™ i5-8500T (6 Cores, 9M Cache, up to 3.5 GHz); 35W Intel® Core™ i3-8100 (4 Cores, 6M Cache, 3.6 GHz); 65W Intel® Core™ i3-8100T (4 Cores, 6M Cache, to 3.1 GHz); 35W Intel® Pentium® G5400 (2 Cores, 4M Cache, 3.7 GHz); 58W Intel® Pentium® G5400T (2 Cores, 4M Cache, 3.1 GHz); 35W Intel® Celeron® G4900 (2 Cores, 2M Cache, 3.1 GHz); 54W Intel® Celeron® G4900T (2 Cores, 2M Cache, 2.9 GHz); 35W 9th Generation Intel® Core™ LGA 1151 Socket Processors: Intel® Core™ i9-9900K (8 Cores, 12M Cache, up to 3.8 GHz); 95W Intel® Core™ i7-9700K (8 Cores, 12M Cache, up to 3.8 GHz); 95W Intel® Core™ i7-9700E (8 Cores, 12M Cache, up to 3.8 GHz); 65W Intel® Core™ i7-9700TE (8 Cores, 12M Cache, up to 3.8 GHz); 65W Intel® Core™ i5-9500E (6 Cores, 9M Cache, up to 4.2 GHz); 65W Intel® Core™ i5-9500TE (6 Cores, 9M Cache, up to 4.2 GHz); 65W Intel® Core™ i3-9100E (4 Cores, 6M Cache, to 3.2 GHz); 65W Intel® Core™ i3-9100TE (4 Cores, 6M Cache, to 3.2 GHz); 65W
	CHIPSET	Intel® H310 Chipset
	MEMORY	Two 288-pin UDIMM up to 64GB Dual Channel DDR4 2400/2666MHz
	BIOS	AMI SPI 128Mbit
	GRAPHICS	Intel® HD Gen 9 Graphics
GRAPHICS	CONTROLLER	Intel® HD Gen 9 Graphics
	FEATURE	OpenGL 5.0, 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 DVI-I (DVI-D signal) 1 x DP++ VGA: resolution up to 1920x1200 @ 60Hz DVI-D: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2160 @ 60Hz
	DUAL DISPLAYS	VGA + DVI-D / VGA + DP++ / DP++ + DVI-D

► TECHNICAL INFORMATION (CONTINUED)

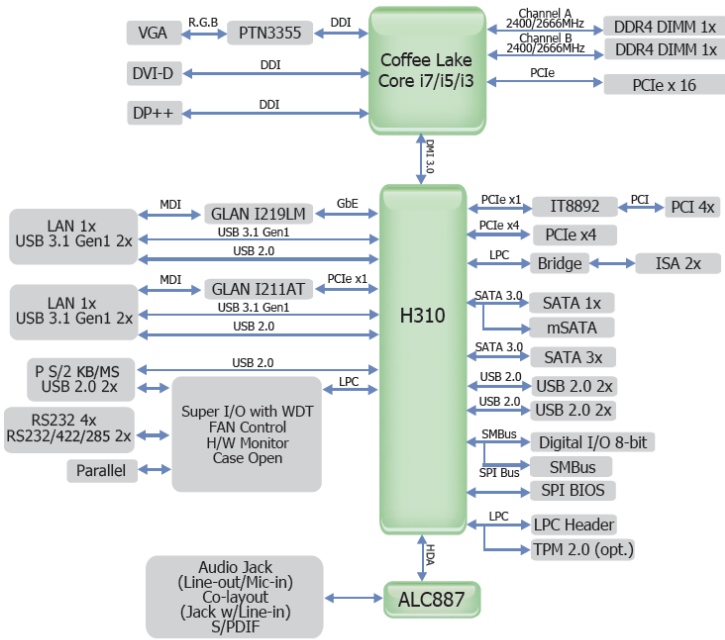
EXPANSION	INTERFACE	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 2) 4 x PCI 2 x ISA (Validation by proprietary software package)
AUDIO	AUDIO CODEC	Realtek ALC887
ETHERNET	CONTROLLER	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219V LAN Phy (10/100/1000Mbps)
REAR I/O	ETHERNET	2 x GbE (RJ-45)
	SERIAL	1 x RS-232/422/485 (RS-232 w/power (DB-9)
	USB	4 x USB 3.1 (Gen1) 2 x USB 2.0
	PS/2	1 x PS/2 (mini-DIN-6)
	DISPLAY	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++
	AUDIO	1 x Line-out, 1 x Mic-in, 1 x Line-in (Colay Line-In as opt., MOQ required)
INTERNAL I/O	SERIAL	1 x RS-232/422/485 9RS-232 w/power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)
	USB	4 x USB 2.0 (2.54mm pitch) (one header Colay USB 3.0 vertical Type A as opt. MOQ required)
	AUDIO	1 x S/PDIF 1 x Front Audio Header
	SATA	4 x SATA 3.0 1 x mSATA shared with SATA
	DIO	1 x 8-bit DIO
	LPC	1 x LPC
	SMBUS	1 x SMBus
	OUTPUT & INTERVAL	System Reset, Programmable via Software from 1 to 255 Seconds
	SECURITY TPM	TPM2.0 (opt., MOQ required)
	TYPE	ATX
	CONNECTOR	8-pin ATX 12V power 24-pin ATX power
	CONSUMPTION	Typical: i7-8700K: 3.3V @ 0.27A (0.89W); 5V @ 0.49A (2.45W); 12V @ 0.38A (4.56W) Max.: i7-8700K: 3.3V @ 0.33A (1.08W); 5V @ 1.2A (6W); 12V @ 9.69A (116.28W)
	RTC BATTERY	CR2032 Coin Cell
OS SUPPORT		Windows 10 Pro 64-bit (Without ISA support) Windows 10 IoT Enterprise 64-bit (Without ISA support) Manufacturer proprietary software package required (ISA validated). Please contact us for more information.)
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	551,561 hrs @ 25°C; 313,962 hrs @ 45°C ; 196,617 hrs @ 60°C Calculation Model: Telcordia Issue 4 Environment: GB, GC - Ground Benign, Controlled
MECHANICAL	DIMENSIONS	ATX Form Factor 305mm (12") x 244mm (9.6")
	HEIGHT	PCB: 1.6mm Top Side: TBD Bottom Side: TBD
CERTIFICATIONS		CE, FCC, RoHS

MBU4175

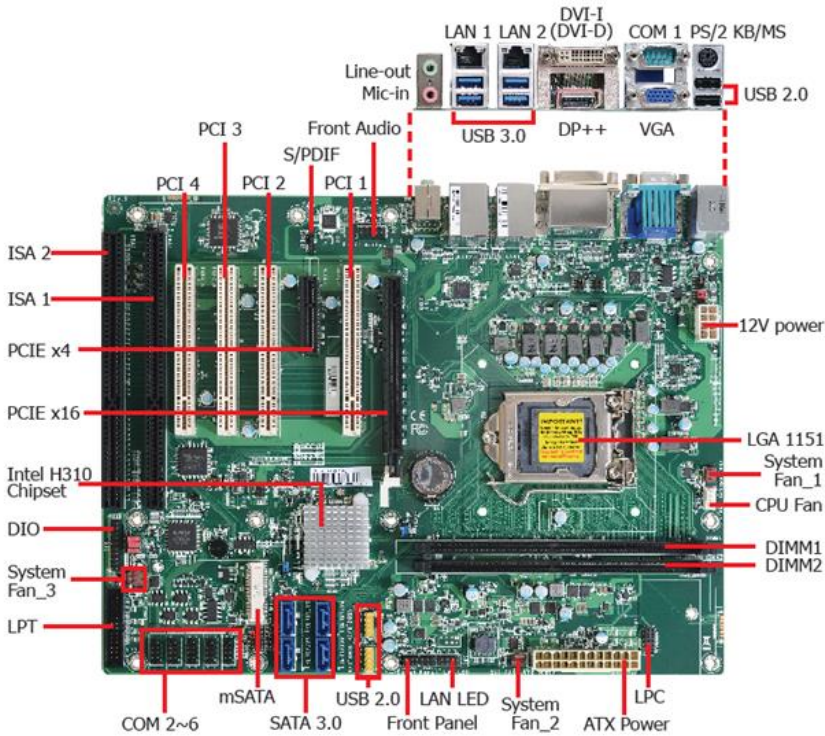
MECHANICAL DRAWING



BLOCK DIAGRAM



MOTHERBOARD LAYOUT



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