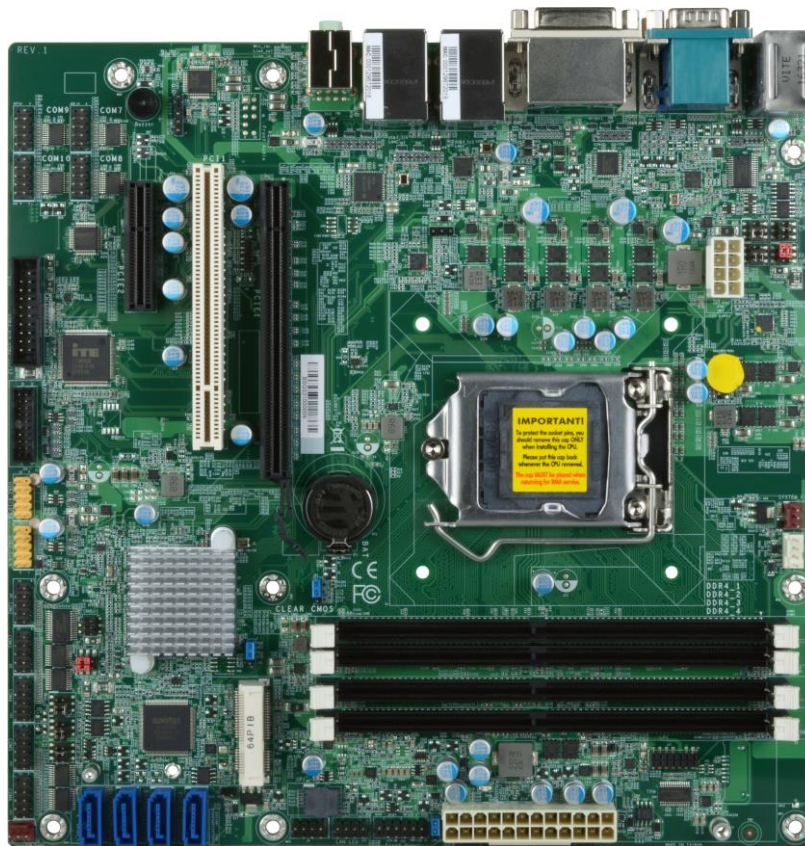


MBU4176

Industrial Motherboard Series



MBU4176

PRODUCT HIGHLIGHTS

- ▶ Intel 6th/7th Gen Intel® Core™ with Intel® Q170
- ▶ 4 DDR4 DIMM up to 64GB
- ▶ Multiple expansion: 1 PCIe x16, 1 PCIe x4, 1 PCI, 1 Mini PCIe
- ▶ 3 independent displays: VGA + DVI-D + DP++
- ▶ Rich I/O: 2 Intel GbE, 6 COM, 6 USB 3.0, 6 USB 2.0
- ▶ 15-Year CPU Life Cycle Support Until Q1' 32 (Based on Intel IOTG Roadmap)



TECHNICAL INFORMATION

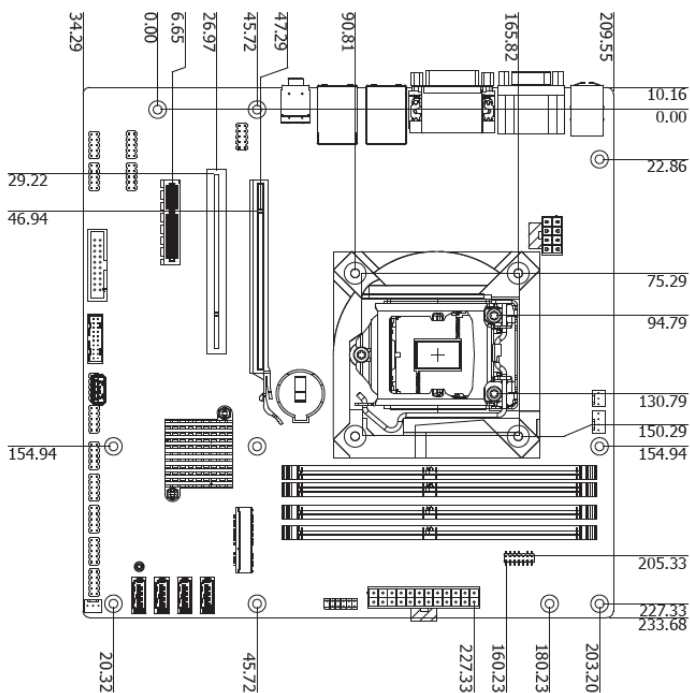
SYSTEM	PROCESSOR	6 th /7 th Generation Intel® Core™/Pentium®/Celeron® LGA 1151 Socket Processors with TDP up to 95W
	CHIPSET	Intel® Q170 Chipset
	MEMORY	Four 288-pin DIMM up to 64GB Dual Channel DDR4 2133/2400MHz
	BIOS	Insyde SPI 128Mbit
GRAPHICS	CONTROLLER	Intel® HD Gen 9 Graphics
	FEATURE	OpenGL 5.0, 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 4096x2304 @ 60Hz
	TRIPLE DISPLAYS	VGA + DVI-D + DP++
EXPANSION	INTERFACE	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 3) 1 x PCI 1 x Full size mPCIe (USB/PCIe/mSATA, PCIe by default) 1 x Half size mPCIe (opt., MOQ required)
AUDIO	AUDIO CODEC	Realtek ALC888S-VD2-GR
ETHERNET	CONTROLLER	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.0 (10/100/1000Mbps) (only Core i7/i5 supports iAMT)
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 3.0 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

► TECHNICAL INFORMATION (CONTINUED)

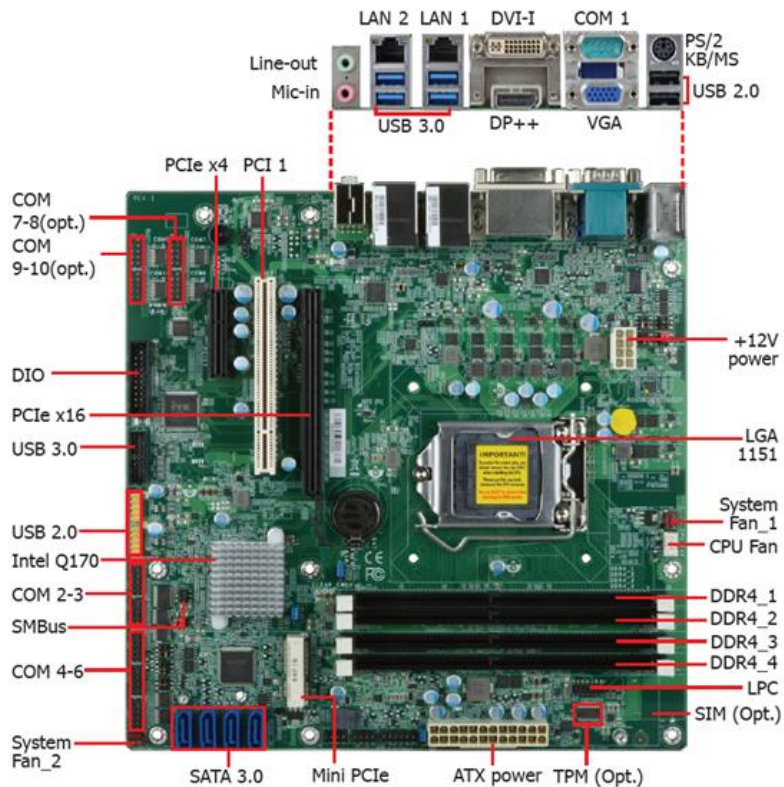
INTERNAL I/O	SERIAL	1 x RS-232/422/485 (RS-232 w/power) (2.54mm pitch) 4 x RS-232
	USB	4 x USB 3.0 (2.00mm pitch) 4 x USB 2.0 (2.54mm pitch)
	AUDIO	1 x S/PDIF
	SATA	4 x SATA 3.0 RAID 0/1/5/10
	DIO	1 x 8-bit DIO
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)
	SMBUS	1 x SMBus
	OUTPUT & INTERVAL	System Reset, Programmable via Software from 1 to 255 Seconds
	SECURITY TPM	Infineon TPM (opt., MOQ required)
	TYPE	ATX
	CONNECTOR	8-pin ATX 12V power 24-pin ATX power
	CONSUMPTION	Typical: i7-7700: 3.3V @ 0.5015A (1.65495Watt); 5V @ 0.4396A (2.198Watt); 12V @ 0.4339A (5.2068Watt) Max.: i7-7700: 3.3V @ 0.5015A (1.65495Watt); 5V @ 0.5802A (2.901Watt); 12V @ 9.1926A (110.311Watt)
	RTC BATTERY	CR2032 Coin Cell
OS SUPPORT		Windows 7 32/64-bit Windows 8.1 64-bit Windows 10 64-bit Linux Note: 7 th Gen CPU SKU only supports Windows 10 64-bit & Linux
ENVIRONMENT	TEMPERATURE	Operating: 0 to 60°C Storage: -40 to 85°C
	HUMIDITY	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	392,639 hrs @ 25°C; 227,309 hrs @ 45°C ; 144,160 hrs @ 60°C Calculation Model: Telcordia Issue 2 Environment: GB, GC - Ground Benign, Controlled
MECHANICAL	DIMENSIONS	microATX Form Factor 244mm (9.6") x 244mm (9.6")
	HEIGHT	PCB: 1.6mm Top Side: 38.5mm Bottom Side: 4.4mm
CERTIFICATIONS		CE, FCC, RoHS

MBU4176

MECHANICAL DRAWING



MOTHERBOARD LAYOUT



Company Address

Kontron UK Limited
Units 3, 4, 5, 9 & 10 New Bury Park
Marsh Lane, Easthampnett, UK
TEL: +44 (0) 1243 380780
uksales@kontron.com
www.industrial-computers.com

BLOCK DIAGRAM

