

MBU4121

Industrial Motherboard Series



MBU4121

PRODUCT HIGHLIGHTS

- ▶ Intel 6th/7th Gen Intel® Core™ with Intel® H110
- ▶ 2 DDR4 SODIMM up to 32Gb
- ▶ Multiple expansion: 1 PCIe x16 (Gen 3), 1 x Mini-PCIe
- ▶ 4 display ports: VGA + LVDS + DVI-I + DP++
- ▶ Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.0, 4 USB 2.0
- ▶ 15-Year CPU Life Cycle Support Until Q3' 30 (Based on Intel IOTG Roadmap)



TECHNICAL INFORMATION

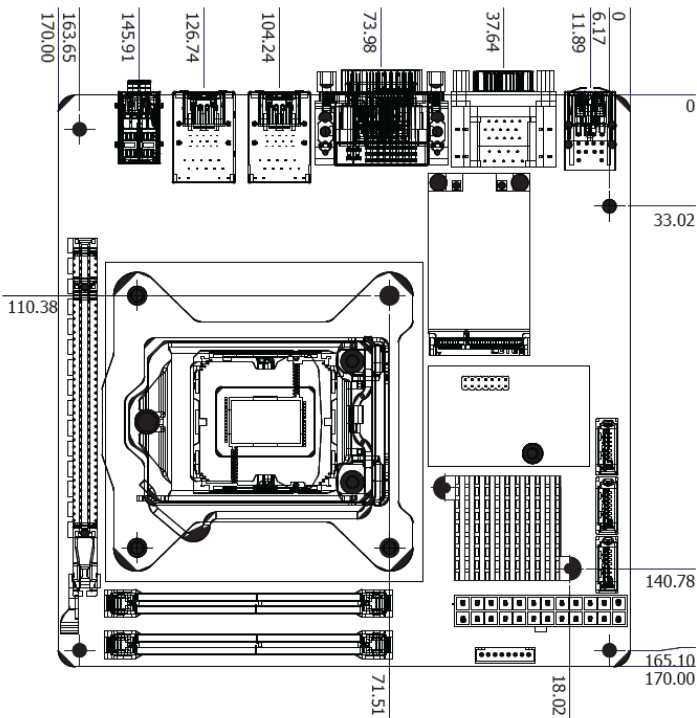
SYSTEM	PROCESSOR	7th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-7700 Processor, Quad Core, 8M Cache, 3.6GHz (4.2GHz), 65W Intel® Core™ i5-7500 Processor, Quad Core, 6M Cache, 3.4GHz (3.8GHz), 65W Intel® Core™ i3-7101E Processor, Dual Core, 3M Cache, 3.9GHz, 65W 6th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-6700, Quad Core, 8M Cache, 3.4GHz (4.0GHz), 65W Intel® Core™ i7-6700TE, Quad Core, 8M Cache, 2.4GHz (3.4GHz), 35W Intel® Core™ i5-6500, Quad Core, 6M Cache, 3.2GHz (3.6GHz), 65W Intel® Core™ i5-6500TE, Quad Core, 6M Cache, 2.3GHz (3.3GHz), 35W Intel® Core™ i3-6100, Dual Core, 3M Cache, 3.7GHz, 47W Intel® Core™ i3-6100TE, Dual Core, 4M Cache, 2.7GHz, 35W Intel® Pentium® G4400, Dual Core, 3M Cache, 3.3GHz, 47W Intel® Pentium® G4400TE, Dual Core, 3M Cache, 2.4GHz, 35W Intel® Celeron® Processor G3900, Dual Core, 2M Cache, 2.8GHz, 65W Intel® Celeron® Processor G3900TE, Dual Core, 2M Cache, 2.6GHz, 35W
	CHIPSET	Intel® H110 Chipset
	MEMORY	Two 260-pin SODIMM up to 32GB Dual Channel DDR4 1866/2133MHz
	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 LVDS 1 x DVI-I (DVI-D signal) 1 x DP++ VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel, resolution up to 1920x1200 @ 60Hz DVI-I: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz
	DUAL DISPLAYS	VGA + LVDS VGA + DP++ LVDS + DVI-I (DVI-D signal) LVDS + DP++
EXPANSION	INTERFACE	1 x PCIe x16 (Gen 3) 1 x Full size Mini-PCIe
AUDIO	AUDIO CODEC	Realtek ALC888S-VD2-GR
ETHERNET	CONTROLLER	1 x Intel® I211AT PCIe (10/100/1000Mbps) 1 x Intel® I219V PCIe (10/100/1000Mbps)

► TECHNICAL INFORMATION (CONTINUED)

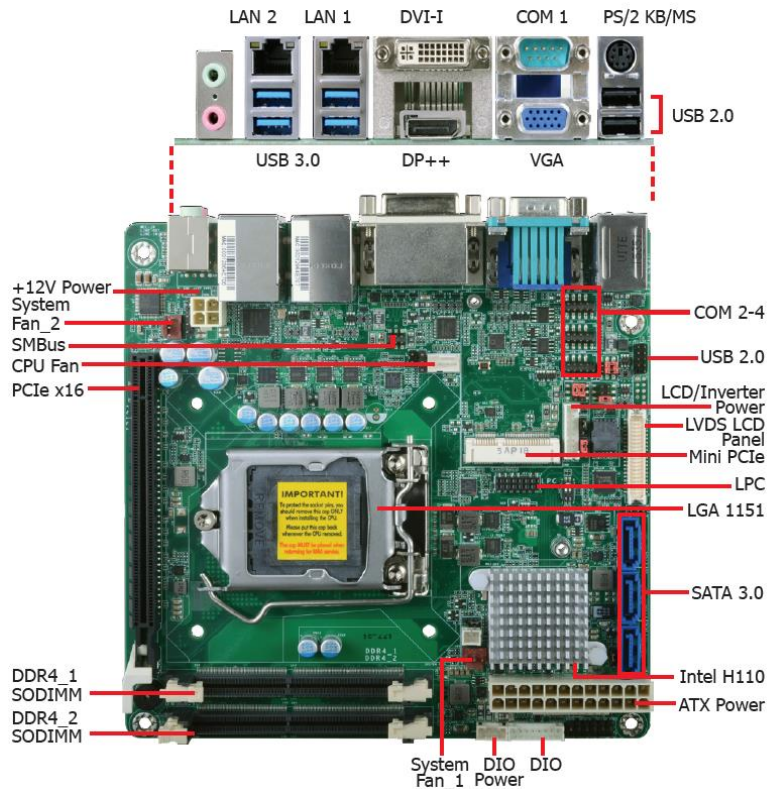
REAR I/O	ETHERNET	2 x GbE (RJ-45)
	SERIAL	1 x RS-232 (DB-9)
	USB	4 x USB 3.0 2 x USB 2.0
	PS/2	1 x PS/2 (mini-DIN-6)
	DISPLAY	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++
	AUDIO	1 x Line-out, 1 x Mic-in, 1 x Line-in (as opt., MOQ required)
INTERNAL I/O	SERIAL	1 x RS-232/422/485 (RS-232 w/power) (2.00mm pitch) 2 x RS-232 (2.00mm pitch)
	USB	2 x USB 2.0 (2.00mm pitch)
	AUDIO	1 x S/PDIF
	SATA	3 x SATA 3.0
	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	N/A
	TYPE	ATX
	CONNECTOR	4-pin ATX 12V power 24-pin ATX power
	CONSUMPTION	Typical: i7 65W: 12V @ 1.32A (15.89Watt) Max.: i7 65W: 12V @ 7.73A (92.76Watt)
OS SUPPORT	RTC BATTERY	CR2032 Coin Cell
		Windows 7 (/WES7) 32/64-bit Windows 8.1 (64-bit) Windows 10 Pro 64-bit Windows 10 IoT Enterprise 64-bit Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Linux Note: 7th Gen Intel Core processors only support Win 10.
ENVIRONMENT	TEMPERATURE	Operating: 0 to 60°C Storage: -40 to 85°C
	HUMIDITY	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	434,223 hrs @ 25°C; 251,029 hrs @ 45°C ; 157,975 hrs @ 60°C Calculation model: Telcordia Issue 2, Method I Case 3 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: 20mm Bottom Side: 3mm
CERTIFICATIONS		CE, FCC, RoHS, UL

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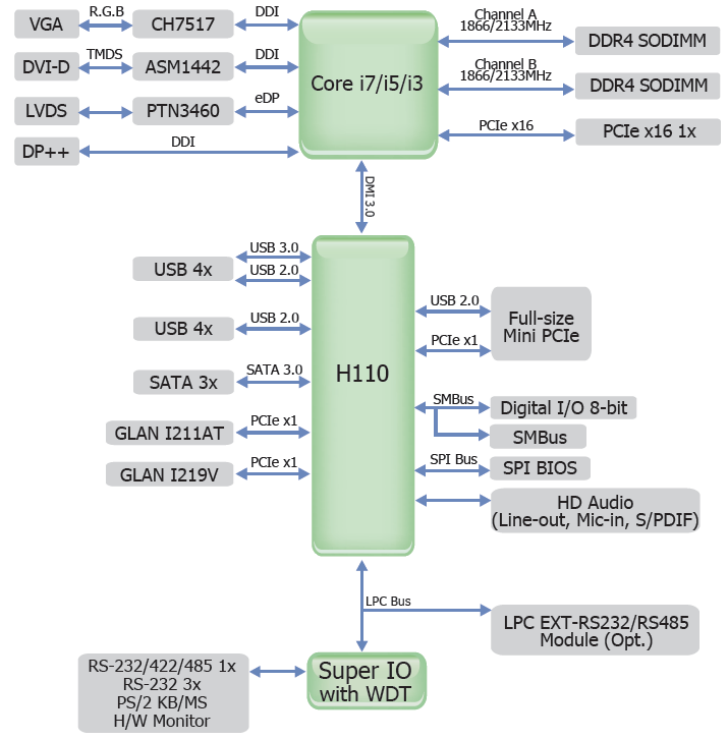
MECHANICAL DRAWING



MOTHERBOARD LAYOUT



BLOCK DIAGRAM



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