



Features:

- 2 DDR4 SODIMM up to 32GB
- Three display ports support two independent displays: LVDS + DVI-I + HDMI*/DP (DP available upon request)
- DP resolution up to 4096x2304 @ 60Hz Dual Channel LVDS resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 1 PCIe x4, 1 Mini PCIe, 1 mSATA
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.0, 4 USB 2.0
- LPC EXT-RS232/485 module extends additional 4 COM ports



DDR4



2 Displays



Thin Mini-ITX



USB 3.0



15~36V DC-in



air gap ±15kv
COM ESD Protection

Product available until Q3 2022

SYSTEM	Processor	6th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-6700 Processor, Quad Core, 8M Cache, 3.4GHz (4.0GHz), 65W Intel® Core™ i7-6700TE Processor, Quad Core, 8M Cache, 2.4GHz (3.4GHz), 35W Intel® Core™ i5-6500 Processor, Quad Core, 6M Cache, 3.2GHz (3.6GHz), 65W Intel® Core™ i5-6500TE Processor, Quad Core, 6M Cache, 2.3GHz (3.3GHz), 35W Intel® Core™ i3-6100 Processor, Dual Core, 3M Cache, 3.7GHz, 47W Intel® Core™ i3-6100TE Processor, Dual Core, 4M Cache, 2.7GHz, 35W Intel® Pentium® Processor G4400, Dual Core, 3M Cache, 3.3GHz, 47W Intel® Pentium® Processor 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/H.264, JPEG, HEVC/H265, VP8, VP9	
	Display	1 x LVDS 1 x DVI-I (DVI-D signal) 1 x HDMI/DP (DP available upon request)	LVDS: dual channel, resolution up to 1920x1200 @ 60Hz DVI-I: resolution up to 1920x1200 @ 60Hz DMI: resolution up to 2560x1600 @ 60Hz or 4096x2160 @ 24Hz DP: resolution up to 4096x2304 @ 60Hz
	Dual Displays	LVDS + DVI-I (DVI-D signal) LVDS + HDMI LVDS + DP (DP available upon request)	DVI-I (DVI-D signal) + HDMI DVI-I (DVI-D signal) + DP (DP available upon request)

EXPANSION	Interface	1 x PCIe x4 (Gen 2) 1 x Full-size mSATA (USB/SATA)	1 x Half-size Mini PCIe (USB/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)	
-----------------	-------------------	--	--

REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	4 x USB 3.0	
	Display	1 x DVI-I (DVI-D signal)	1 x HDMI/DP (DP available upon request)

INTERNAL I/O	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.00mm pitch) 3 x RS-232 (2.00mm pitch)	
	USB	4 x USB 2.0 (2.00mm pitch)	
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power	
	Audio	1 x Audio (Line-out/Mic-in) 1 x S/PDIF	
	SATA	2 x SATA 3.0 (up to 6Gb/s)	
	DIO	1 x 8-bit DIO	
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module) (available upon request)	
	SMBus	1 x SMBus	

WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
-----------------------	------------------------------	---	--

POWER	Type	Single 12V +/-10% DC (MBU4122) Wide Range 15~36V MBU4123)	
	Connector	DC-in Jack Right Angle Connector (4-pin) (available upon request) Vertical Type Connector (4-pin) (available upon request)	
	Consumption	TBD	
	RTC Battery	CR2032 Coin Cell	

OS SUPPORT	Microsoft/Linux	Windows 7 (WEST) 32/64-bit Windows 8.1 (64-bit) Windows 10 IoT Enterprise 64-bit	Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Ubuntu 15.10 (Intel graphic driver available)
-------------------	------------------------	--	---

ENVIRONMENT	Temperature	Operating: 0 to 60°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	MBU4122 434,189 hrs @ 25°C 253,023 hrs @ 45°C 160,261 hrs @ 60°C	MBU4123 422,413 hrs @ 25°C 245,506 hrs @ 45°C 155,547 hrs @ 60°C Calculation model: Telcordia Issue 2, Method I Case 3 Environment: GB, GC – Ground Benign, Controlled

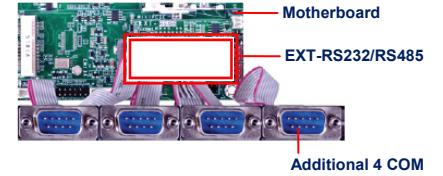
MECHANICAL	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm	Top Side: 20mm, Bottom Side: 7mm

CERTIFICATIONS	CE, FCC Class B, RoHS		
-----------------------	-----------------------	--	--

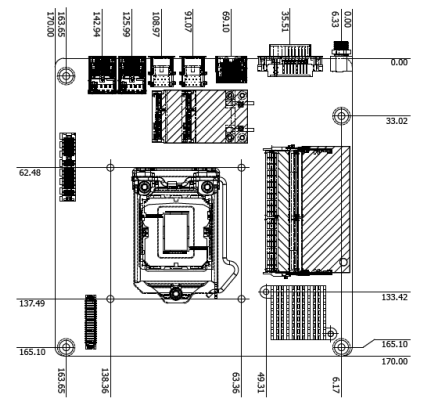
Rear I/O



2 Extension modules for additional 4 COM Ports (Via the LPC connector)



Mechanical Drawing



Block Diagram

