



**Features:**

- 4 DDR4 DIMM up to 64GB
- 3 display ports support two independent displays: VGA + DVI-I (DVI-D signal) + HDMI
- HDMI resolution up to 4096x2160 @ 24Hz
- Multiple expansion: 2 PCIe x16 (1 x16 or 2 x8 signal), 2 PCIe x4, 3 PCI, 1 LPC
- Rich I/O: 2 Intel GbE, 6 COM, 6 USB 3.0, 8 USB 2.0
- LPC EXT-RS232/485 module supports 4 COM ports



DDR3L



3 Displays



4K2K Display



USB 3.0



AMT



air gap ±15kV  
COM ESD Protection

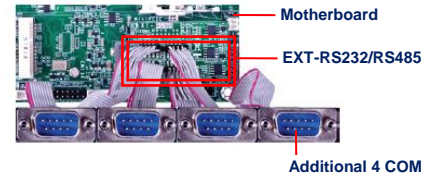
Product available until Q4 2022

<b>SYSTEM</b>	<b>Processor</b>	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, 4M Cache, 65W Intel® Core™ i3-6100TE Processor, Dual Core, 4M Cache, 2.7GHz, 35W Intel® Pentium® Processor G4400, Dual Core, 3M Cache, 3.3GHz, 65W Intel® Pentium® Processor G4400TE, Dual Core, 3M Cache, 2.9GHz, 35W Intel® Celeron® Processor G3900, Dual Core, 2M Cache, 2.8GHz, 65W Intel® Celeron® Processor G3900TE, Dual Core, 2M Cache, 2.6GHz, 35W	
	<b>Chipset</b>	Intel® Q170 Chipset	
	<b>Memory</b>	Four 288-pin DIMM up to 64GB	Dual Channel DDR4 1866/2133MHz
	<b>BIOS</b>	Insyde SPI 128Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Gen 9 Graphics	
	<b>Feature</b>	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/H.265, VP8, VP9	
	<b>Display</b>	1 x VGA 1 x DVI-I (DVI-D signal) 1 x HDMI	VGA: resolution up to 1920x1200 @ 60Hz DVI-I: resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz
	<b>Triple Displays</b>	VGA + DVI-I (DVI-D signal) + HDMI	
<b>EXPANSION</b>	<b>Interface</b>	2 x PCIe x16 (1 x16 or 2 x8 signal) (Gen 3) 2 x PCIe x4 (Gen 3) 3 x PCI	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC888S-VD2-GR	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT 11.0 (10/100/1000Mbps) (only Core i7/5 supports iAMT)	
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)	
	<b>USB</b>	4 x USB 3.0 2 x USB 2.0	
	<b>Serial</b>	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	
	<b>PS/2</b>	1 x PS/2 (mini-DIN-6)	
	<b>Display</b>	1 x VGA 1 x DVI-I (DVI-D signal) 1 x HDMI	
	<b>Audio</b>	1 x Line-in (available upon request) 1 x Line-out 1 x Mic-in	
<b>INTERNAL I/O</b>	<b>Serial</b>	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)	
	<b>USB</b>	2 x USB 3.0 (2.00mm pitch) 6 x USB 2.0 (2.54mm pitch) or 4 x USB 2.0 (2.54mm pitch) + 1 x Vertical USB 2.0 (type A) (available upon request)	
	<b>Audio</b>	1 x Audio (Line-out/Mic-in) 1 x S/PDIF	
	<b>SATA</b>	6 x SATA 3.0 (up to 6Gb/s)	RAID 0/1/5/10
	<b>DIO</b>	1 x 8-bit DIO	
	<b>LPC</b>	1 x LPC (supports LPC EXT-RS232/RS485 module)	
	<b>SMBus</b>	1 x SMBus	
<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds	
<b>SECURITY</b>	<b>TPM</b>	Available Upon Request	
<b>POWER</b>	<b>Type</b>	ATX	
	<b>Connector</b>	8-pin ATX 12V power	24-pin ATX power
	<b>Consumption</b>	Typical: i7 65W: 12V @ 2.45A (29.44Watt) Max.: i7 65W: 12V @ 6.02A (72.22Watt)	
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>		Windows 7 (WES7) 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)
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	368,564 hrs @ 25°C; 210,464hrs @ 45°C; 133,339 hrs @ 60°C Calculation Model: Telcordia Issue 2, Method Case 3 Environment: GB, GC – Ground Benign, Controlled	
<b>MECHANICAL</b>	<b>Dimensions</b>	ATX Form Factor	305mm (12") x 244mm (9.6")
	<b>Height</b>	PCB: 1.6mm	Top Side: 31.47 mm Bottom Side: 4.40 mm
<b>CERTIFICATIONS</b>		CE, FCC Class B, RoHS	

**Rear I/O**

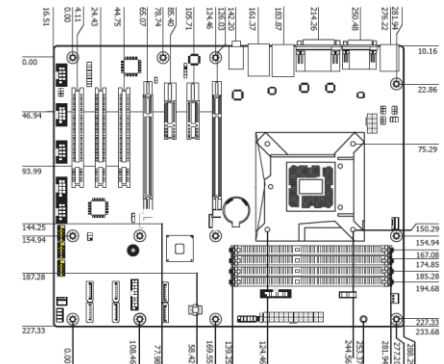


**2 Extension modules for additional 4 COM Ports (Via the LPC connector)**



Additional 4 COM

**Mechanical Drawing**



**Block Diagram**

