



## EMX-EHLP

Intel® Atom® x6000E and Celeron® Processor Thin Mini ITX Motherboard

- > Intel® Atom® x6000E and Celeron® Series processors
- > 1 x 260-pin DDR4 3200MHz SO-DIMM socket, supports up to 32GB Max (Only Atom® x6000E Series Processors support IBCEC)
- > DP++, HDMI/DP, Dual channel 18/24-bits LVDS/co-lay eDP by switch IC
- > 4 x Intel® i226LM(IT) Gigabit Ethernet
- > Realtek ALC888S HD Audio Codec
- > TI TPA3113D2 Stereo Class-D 6W
- > 1 x M.2 Type B 3042/3052/2242/2260/2280 slots with SATAIII + USB 3.1 GEN2, USB 2.0, SIM Slot for SSD/LTE/IO Cards support WWAN+GNSS or SSD, 1 x M.2 Key E 2230 support WiFi module (1 x PCI-e x1 & USB 2.0 Signal)
- > 2 x SATA III, 2 x SATA Power, 4 x USB 2.0 by pin header, 2 x USB3.1 Gen2 and 2 x USB3.1 Gen1 at I/O
- > 4 x RS232, 2 x RS232/422/485, 16-bit GPIO
- > Support Line-out & Mic-in & Front audio pin-header
- > DC in +12V~24V (Minimum power input 11.6V)

### + Spec

#### -System Information-

<b>Processor</b>	Intel® Atom® x6000E and Celeron® Processor
<b>System Memory</b>	One 260-pin DDR4 3200MHz SO-DIMM socket, supports up to 32GB Max (Only Atom® x6000E Series Processors support IBCEC)
<b>I/O Chipset</b>	EC iTE IT5571
<b>BIOS Information</b>	AMI uEFI BIOS, 256Mbit SPI Flash ROM
<b>Watchdog Timer</b>	H/W Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
<b>H/W Status Monitor</b>	CPU temperature monitoring Voltages monitoring CPU fan speed control

#### Expansion

<b>Expansion</b>	1 x M.2 Type B slot for 3042/3052/2242/2260/2280 size with SATAIII + USB 3.1 GEN2, USB 2.0, SIM Slot for SSD/LTE/IO Cards support WWAN+GNSS and SSD *3042/2242 bridge bracket to 3052 *SATA 2 share with M.2 key B SATA * Only supports one SIM card * Does not support I2S and PCM functions 1 x M.2 Key E 2230 support WiFi module (1 x PCI-e x1 & USB 2.0 Signal) * Does not support PCM/I2S and UART functions
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#### I/O

<b>USB Port</b>	4 x USB 2.0 by pin header 2 x USB3.1 Gen2 and 2 x USB3.1 Gen1 at I/O
<b>COM Port</b>	4 x RS232, 2 x RS-232/RS422/485
<b>SATA</b>	2 x SATA Power 2 x SATA III
<b>DIO</b>	1 x 16-bit GPIO

#### Display

<b>Graphic Chipset</b>	Intel® UHD Graphics for 10th Gen Intel® Processors
<b>Spec. &amp; Resolution</b>	1 x DP++: 4096 x 2160@60 Hz (DP: 4096 x 2160@60Hz) 1 x HDMI 2.0b: 4096 x 2160@60 Hz LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7511B-BFI eDP to LVDS) 1 x eDP 4096 x 2160@60 Hz LVDS and eDP via switch IC, either one display is functional.
<b>LVDS</b>	2CH 18/24bits LVDS 1920 x 1080 Chrontel. CH7511B eDP to LVDS Converter

#### Audio

<b>Audio Codec</b>	Realtek ALC888S & ALC897 (Co-lay)
<b>Audio Interface</b>	Support Line-out & Mic-in & Front audio pin-header
<b>Audio Amplifier</b>	TI TPA3113D2 Stereo Class-D 6W

#### Ethernet

<b>LAN Chipset</b>	4 x Intel® i225/i226LM/IT(Default: i226LM/IT); (I225/i226IT for wide temp version) 2.5 Gigabit Ethernet (BOM optional for 1 x 2 RJ45 Thin Mini ITX Cost version design SKU)
<b>Ethernet Interface</b>	10/100/1000/2500 Base-Tx GbE compatible Gigabit Ethernet
<b>LAN Port</b>	4 x RJ-45

#### Mechanical & Environmental

<b>Operating Temperature</b>	0 ~ 60°C (32 ~ 140 °F) Intel® Pentium®/Celeron®/N/J Series CPU SKU -20~60°C (-8~140°F) Intel® Atom®x6000 Series CPU SKU w/HDD/SSD, ambient with 0.5 m/s Air flow
<b>Storage Temperature</b>	-40 ~ 75°C (-40 ~ 167°F)
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
<b>Weight</b>	0.88lbs (0.4Kgs)



<b>Power Requirement</b>	+12V~24V
<b>Power Mode</b>	AT/ATX
<b>Dimension (L x W)</b>	6.69" x 6.69" (170mm x 170mm)
<b>Software Support</b>	
<b>OS Information</b>	Win10 64bit, Linux
<b>Ordering Information</b>	
<b>Ordering Information</b>	EMX-EHLP-J6412-A1R EMX-EHLP-J6413-A1R EMX-EHLP-X13E-A1R EMX-EHLP-X25RE-A1R EMX-EHLP-J12-A1-1R (2LAN (i226V version)) Intel® Celeron®/Atom™ SoC BGA Processor Thin Mini ITX SBC Motherboard