

EMX-RPLP

13th Gen Intel® Core™ SoC i7/i5/i3 & Celer Processor Mini ITX Motherboard

Onboard 13th Gen. Intel® Core™ SoC i7/i5/i3 & BGA Processor
 2 x 262-pin DDR5 4800MHz SO-DIMM support: 64GB (non ECC only)
 2 x DP++, 2 x DP, 1 x LVDS, 1 x eDP (Maximum quadruple independent displays)
 3 x Intel® I226LM 2.5 Gigabit Ethernet
 1 x Intel® I219LM Gigabit Ethernet PHY
 Realtek ALC888S
 TI TPA3113D2PWP Stereo Class-D 6W x 2 Audi
 1 x M.2 Type B 3042/3052 (with 1 x PCI-e x1 (default), USB2.0, USB 3.2 Gen2 with 1 x SIM card slot support WWAN+GNSS
 1 x M.2 Key E 2230 support Wi-Fi module and CNVi (1 x PCI-e x1 & USB 2.0 Signal)
 1 x M.2 Key B 2242 (SATA Signal, shared with SATA2) slot support SSD storage
 1 x M.2 Key M 2280 (PCI-e x4) slot for storage NVMe SSD
 H-series: 1 x PCI-e x8 Gen 4 slot (with Redriver mux (DS160PR421 3.2US x1 & DS160PR412 3.2US x1))
 P/U-series: 1 x PCI-e x4 Gen 4 slot (with Redriver mux (DS160PR421 3.2US x1 & DS160PR412 3.2US x1))
 GPIO 16bit
 Onboard NuvoTon NPCT754AADYX support TP Support Line-out & Mic-in & Front audio pin-header
 DC in +12V~24V

+ Spec

System Information

Processor

Onboard Raptor Lake-P 13th Intel® Core™ SoC i7/i5/i3/Celeron Processor (TDP: 15~45W)
 H-Series: 25~45W, P-Series: 20~28W, U-Series: 12~15W

System Memory

2 x 262-pin DDR5 4800 MHz SO-DIMM supports up to 64GB (non ECC only)

I/O Chipset

EC iTE IT5782VG
 MAX3243 for RS232, MAX13487 Transceiver & SP485 IC for RS422/485

BIOS Information

AMI uEFI BIOS, 256Mbit SPI Flash ROM

Watchdog Timer

H/W Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step

H/W Status Monitor

CPU temperature monitoring
 Voltages monitoring
 CPU fan speed control

TPM

Onboard NuvoTon NPCT754AABYX support TPM 2.0

Expansion

Expansion

- * 1 x M.2 Type B 3042/3052 (with 1 x PCI-e x1 (default), USB2.0, USB 3.2 Gen2 with 1 x SIM card slot support WWAN+GNSS)
- * 1 x M.2 Key E 2230 support Wi-Fi module and CNVi (1 x PCI-e x1 & USB 2.0 Signal)
- * 1 x M.2 Key B 2242 (SATA Signal, shared with SATA2) slot support SSD storage
- * 1 x M.2 Key M 2280 (PCI-e x4) slot for storage NVMe SSD
- * H-series: 1 x PCI-e x8 Gen 4 slot (with Redriver mux (DS160PR421 3.2US x1 & DS160PR412 3.2US x1))
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I/O

USB Port

2 x USB3.2 Gen2, 2 x USB 3.0 Gen2 at I/O
 4 x USB2.0 by pin header

COM Port

4 x RS232
 2 x RS422/485

SATA

1 x SATA Power
 2 x SATA III

DIO

1 x 16-bit GPIO

Display

Graphic Chipset

Intel® Iris® Xe Graphics (For Core i5 & i7)
 Intel® UHD Graphics for 12th Gen Intel® Processors (For Core i3 & Celeron)

Spec. & Resolution

DP1+DP3 (DP1.4): Max: 7680 x 4329@60 Hz
 DP2+DP4 (DP1.4): Max: 7680 x 4329@60 Hz
 Single DP port (2021/2 Lab test): 5120 x 2160 @60 Hz, check Max: 7680 x 4329@60 Hz
 Intel resolution as below:
 2 x DP++ : 1920 x 1080@60 Hz

	2 x DP: 4096 x 2304@60 Hz LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7511B eDP to LVDS) eDP 4096 x 2304@60 Hz *2 x DP++, LVDS, eDP Default (Thin Mini ITX), Optional: DP3 and DP4 for full height (Maximum: 6 for quadruple independent displays)
Multiple Display	2 x DP++/2 x DP/1 x LVDS/1 x eDP (Maximum: 6 for quadruple independent displays)
LVDS	2CH 18/24bits LVDS 1920 x 1080 Chrontel. CH7511B eDP to LVDS Converter
.Audio	
Audio Codec	Realtek ALC888S
Audio Interface	Support Line-out & Mic-in & Front audio pin-header
Audio Amplifier	2 x Stereo Class-D 6W Audio Amplifier
.Ethernet	
LAN Chipset	3 x Intel® i226LM 2.5 Gigabit Ethernet (LAN2~4) 1 x Intel® i219LM Gigabit Ethernet PHY *LAN3~4 for Full height
Ethernet Interface	10/100/1000 Base-Tx GbE compatible

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LAN Port	4 x RJ45
.Mechanical & Environmental	
Operating Temperature	0~60C (32~140°F) w/HDD/SSD, ambient with 0.5 m/s Air flow
Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.88lbs (0.4Kgs)
Power Requirement	+12V~24V
Power Mode	AT/ATX
Dimension (L x W)	6.69" x 6.69" (170mm x 170mm)
.Software Support	
OS Information	Win11 64bit, Win10 64bit Linux
.Ordering Information	
Ordering Information	EMX-RPLP-A1R Intel® 13th Gen. Core™ SoC i7/i5/i3 & Celeron®BGA Processor Mini ITX Motherboard

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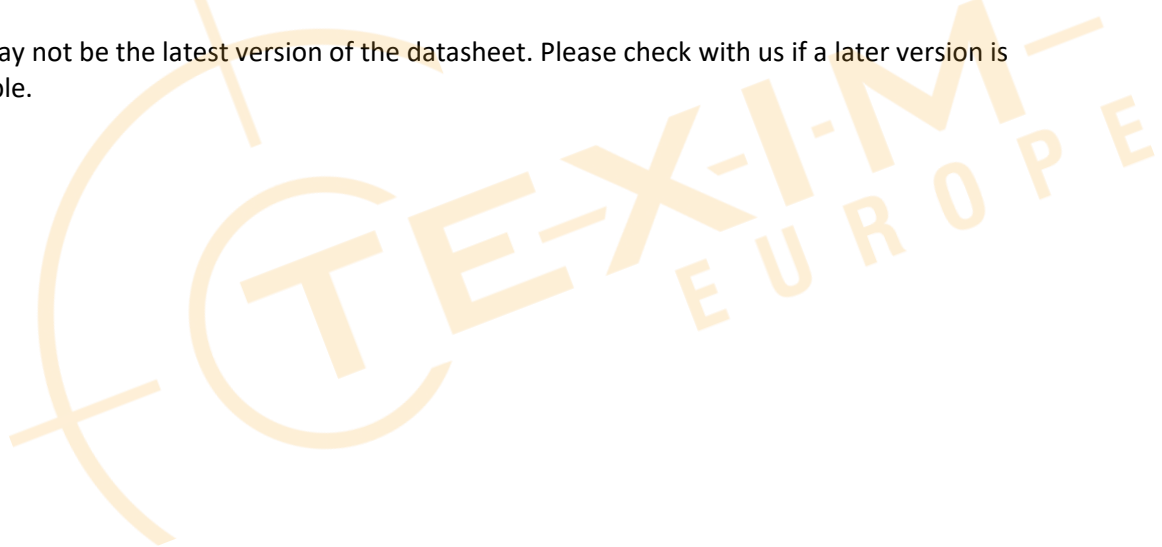
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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