



EMX-WHLGP

Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor Thin Mini ITX Motherboard

- > Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor
- > Two 260-pin DDR4 2400 MHz SO-DIMM socket, supports up to 32GB Max (non ECC only)
- > 2 x HDMI + 1 x HDMI/Dual-channel LVDS (default LVDS)
- > 1 x Intel® I219LM Gigabit Ethernet PHY, 2 x Intel® I210IT PCI-e Gigabit Ethernet (Co-lay Intel® I211AT/I210AT)
- > Realtek ALC892 Audio Codec, TI TPA3113D2PWP Stereo Class-D 6W x 2 Audio Amplifier
- > 1 x M.2 Key A 2230 support WiFi module (1 x PCI-e x 1 & USB 2.0 Signal), 1 x M.2 Key B 3042/2242/2260/2280 support WWAN+GNSS or SSD with 1 x SIM card slot
- > 1 x SATA III, 1 x SATA Power, 4 x USB 2.0, 3 x USB 3.1, 1 x USB Type C(USB 3.1 Gen1)

+ Spec

System	
Processor	Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor
System Memory	Two 260-pin DDR4 2400 MHz SO-DIMM socket, supports up to 32GB Max (non ECC only)
I/O Chip	EC IT8528E-1
BIOS	AMI 256Mbit SPI BIOS
Watchdog Timer	H/W Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control
TPM	1 x onboard TPM2.0
Expansion	
Expansion	1 x M.2 Key B 3042/2242/2260/2280 (with 1 x PCI-e x 1 (default) or SATA by BIOS), USB 2.0 with 1 x SIM card slot, support WWAN+GNSS or SSD with 1 x SIM card slot, support WWAN+GNSS or SSD. 1 x M.2 Key A 2230 support WiFi module (1 x PCI-e x 1 & USB 2.0 Signal)
I/O	
USB	3 x USB 3.1, 1 x USB Type C (USB 3.1 Gen1, without DP signal) at I/O 4 x USB 2.0
SATA	1 x SATA Power 1 x SATA III
COM Port	4 x RS232 2 x RS232/422/485
DIO	1 x 16-bit GPIO
Display	
Chipset	Intel® Processor Graphics
Resolution	3 x HDMI 1.4b: 3840 x 2160 @ 30 Hz, 2560 x 1600 @ 30 Hz 2CH 18/24bits LVDS 1920 x 1080 (Chrontel. CH7511B eDP to LVDS Converter)
LVDS	2CH 18/24bits LVDS 1920 x 1080 Chrontel. CH7511B eDP to LVDS Converter
Multiple Display	Triple Display
Audio	
Chipset	Realtek ALC892 supports 2-CH
Audio Interface	Mic-in, Line-out
Audio Amplifier	TI TPA3113D2PWP Stereo Class-D 6W x 2
Ethernet	
Chipset	1 x Intel® I219LM Gigabit Ethernet PHY v 2 x Intel® I210IT PCI-e Gigabit Ethernet (Co-lay Intel® I211AT/I210AT)
Ethernet Interface	10/100/1000 Base-Tx GbE compatible
LAN Port	3 x RJ45
Mechanical & Environmental	
Power Requirement	+12V~24V
Power Type	AT/ATX
Operating Temperature	-20~ 60°C (-68 ~ 140°F), 60°C with 0.5 m/s air flow
Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
Dimension (L x W)	6.69" x 6.69" (170mm x 170mm)
Weight	0.88lbs (0.4Kgs)

+ Ordering

Onboard 8th Gen Intel® Whiskey Lake U Core™ SoC i7/i5/i3 & Celeron® BGA Processor Thin Mini ITX Motherboard

EMX-WHLGP-430-A1R (w/o heatsink)/ EMX-WHLGP-43A1-01R (w/heatsink, wide temp)

EMX-WHLGP-814-A1R (w/o heatsink)/ EMX-WHLGP-81A1-01R (w/heatsink, wide temp)

EMX-WHLGP-836-A1R (w/o heatsink)/ EMX-WHLGP-83A1-01R (w/heatsink, wide temp)

EMX-WHLGP-866-A1R (w/o heatsink)/ EMX-WHLGP-86A1-01R (w/heatsink, wide temp)

Note: EMX-WHLGP standard package does not include I/O shields due to LAN 2 & 3 port exceed standard Thin Mini ITX chassis. Customer need to make customized changes on chassis.