



## ECM-RPL

13th Gen Intel® Core™ SoC  
i7/i5/i3/Pentium®/Celeron® BGA Processor 3.5"  
Micro Module

- > Bottom Layer Soldered Processor
- > One 262-pin DDR5 4800MHz SO-DIMM socket, supports up to 32GB Max. (non ECC only)
- > Four Display, 1 x DP++, 1 x HDMI, 1 x 2CH LVDS or eDP, 1 x USB Type C support DP
- > Expansion Slot, M.2 Key-B, M.2 Key-E, M.2 Key-M
- > Two Gigabit Ethernet, 2 x 2.5GbE
- > Extend Temperature -40°C ~ 80°C sku supported
- > DC-Input, +9~+36VDC

### + Spec

-System Information-	
<b>Processor</b>	Onboard Intel® 13th Gen Core™ i7/i5/i3/Pentium®/Celeron® BGA Processor, supports Up to 15/28W Max
<b>System Memory</b>	One 262-pin DDR5 4800MHz SO-DIMM socket, supports up to 32GB Max. (non ECC only)
<b>I/O Chipset</b>	IT5782VG
<b>BIOS Information</b>	AMI BIOS, 256Mbit SPI Flash ROM
<b>Watchdog Timer</b>	HW Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
<b>H/W Status Monitor</b>	CPU & system temperature monitoring Voltages monitoring
<b>TPM</b>	TPM 2.0 (Onboard NuvoTon NPCT754AADYX) (BOM optional)
Expansion	
<b>Expansion</b>	1 x M.2 Key M 2280 (with 1 x PCI-e Gen4 x4) 1 x M.2 Key B 3042/3052/2242 (with SATA and USB2.0, USB 3.0, with 1 x SIM card slot, support WWAN+GNSS or SSD) * Only supports one SIM card (co-lay 1 x 10pin FPC connector for uSIM card adapter) support 5G (3.3V & 3.8V) 1 x M.2 Key E 2230 support CNVi and WiFi 6E module (1 x PCI-e x1 & USB 2.0 Signal)
Storage	
<b>Storage</b>	1 x M.2 (Key-M, 2280) 1 x M.2 (Key-B, 3042/3052/2242) 1 x SATA III
I/O	
<b>USB Port</b>	3 x USB 3.2 Gen 2 3 x USB 2.0
<b>COM Port</b>	2 x RS-232/422/485
<b>SATA</b>	1 x SATA III
<b>DIO</b>	1 x 2 x 6 pin, pitch 2.00mm connector for GPIO: 8 bits & +3.3S Level
<b>Other</b>	2 x LAN
Display	
<b>Graphic Chipset</b>	Intel® UHD Graphics or Iris® Xe Graphics CPU integrated
<b>Spec. &amp; Resolution</b>	1 x DP 2.1 : Max 7680 x 4320@60 Hz 1 x HDMI 2.0b 4096x2160@60Hz 24bbp 1 x USB Type C support DP: 4096 x 2304@60Hz 36bbp ,5120 x 3200@60Hz 24bbp 1 x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) or 1 x eDP: 1920 x 1080@60Hz (2 Lanes), default LVDS Note: JLVD51 Support 1 x LVDS or 1 x eDP
<b>Multiple Display</b>	Four Display
<b>LVDS</b>	1 x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) or 1 x eDP: 1920 x 1080@60Hz (2 Lanes), default LVDS Note: JLVD51 Support 1 x LVDS or 1 x eDP
Audio	
<b>Audio Codec</b>	Realtek ALC888S
<b>Audio Interface</b>	Mic-In, Line-In, Line-Out
<b>Audio Amplifier</b>	3W Amplifier (TBC)
Certifications	
<b>Certification Information</b>	CE FCC Class B
Ethernet	
<b>LAN Chipset</b>	Intel® I226LM for standard temperature Intel® I226IT for extend temperature
<b>Ethernet Interface</b>	2 x Intel® I226LM/I226IT 2.5 Gigabit Ethernet (I226IT for Extend Temperature SKU)
<b>LAN Port</b>	2 x RJ-45
Mechanical & Environmental	
<b>Operating Temperature</b>	Intel® Standard Temperature CPU SKU: 0°C ~ 60°C (-4~140°F) with 0.5m/s air flow Intel® Extend Temperature CPU SKU: -40°C ~ 85°C(-40~185F) with 0.5m/s air flow for Wide Temp CPU SKU
<b>Storage Temperature</b>	-40°C ~ 75°C (-40°F ~ 167°F)



<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
<b>Weight</b>	0.44lbs (0.2kg)
<b>Power Requirement</b>	DC in +9V ~ +36V or USB type C Adapter (20V) Note: DCIN & USB type C Adapter can only use either one.
<b>Power Mode</b>	AT/ATX (Default Setting: AT)
<b>Dimension (L x W)</b>	5.7" x 4" (146mm x 101mm)
<b>Software Support</b>	
<b>OS Information</b>	Win 11 Linux
<b>Ordering Information</b>	
<b>Ordering Information</b>	TBC