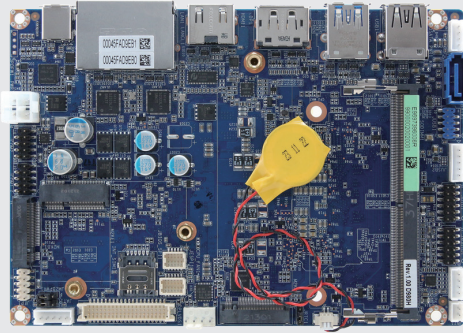


ECM-RPL

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



Features

- 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
- DC in +9V ~ +36V or USB Type C Adapter (20V) Note: DCIN & USB Type C Adapter Can Only Use Either One



HDMI



DP++



DDR5
SO-DIMM



USB 3.2



RS232/422/485

Specifications

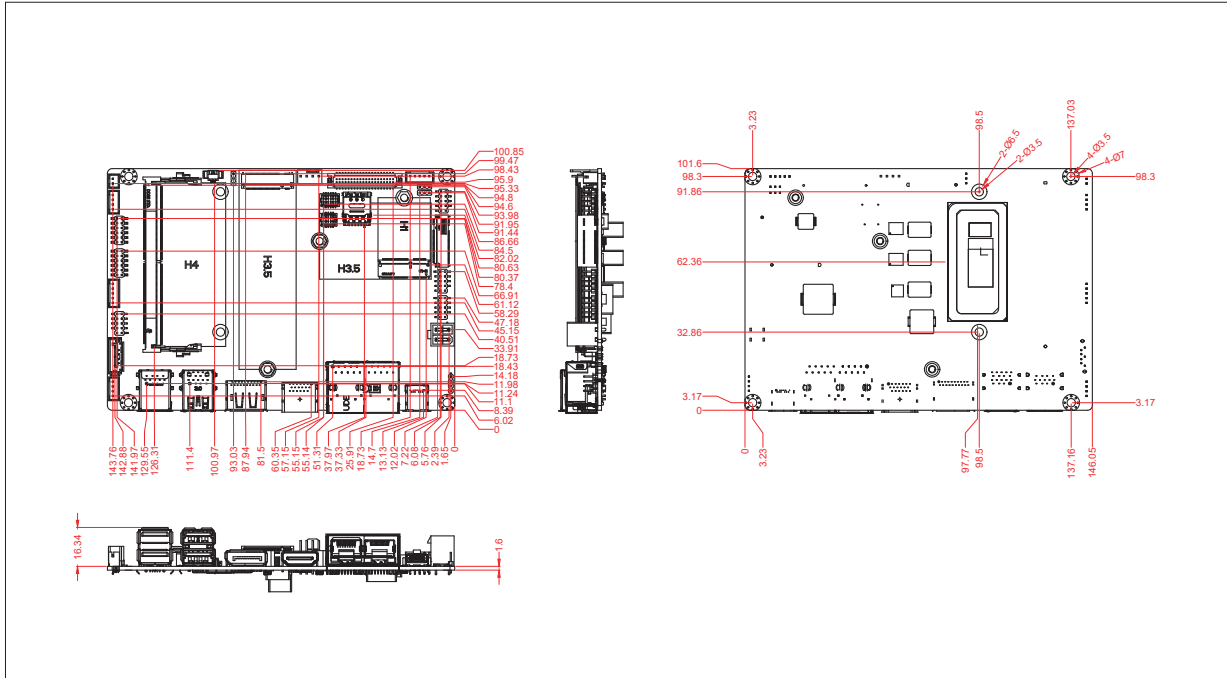
System Information	
Processor	13th Gen. Intel® Core™ i7/i5/i3/Pentium® BGA Processor, support Up to 15/28W Max
System Memory	1 x 262-pin DDR5 4800MHz SO-DIMM socket, supports up to 32GB Max. (non ECC only)
I/O Chipset	EC iTE IT5782VG
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
BIOS	AMI BIOS, 256Mbit SPI Flash ROM
H/W Status Monitor	CPU & system temperature monitoring Voltages monitoring
TPM	by BOM option: Onboard NuvoTon NPCT760AABYX/ NPCT754AADYX (for extend temperature) supports TPM 2.0
Board	3.5"
Expansion	
Expansion	1 x M.2 Type M 2280 (with 1 x PCIe Gen4 x4) 1 x M.2 Type B 3042/3052/2242 (with SATA and USB 2.0, USB 3.0, with 1 x SIM card slot, supports 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 Type E 2230 support CNVi and WiFi 6E module (1 x PCIe x1 & USB 2.0 Signal)
Storage	
Storage	1 x M.2 (Type M, 2280) 1 x M.2 (Type B, 3042/3052/2242) 1 x SATA III
Display	
Graphic Chipset	Intel® UHD Graphics or Iris® Xe Graphics CPU integrated
Spec. & Resolution	1 x DP 2.1: Max 7680 x 4320 @ 60Hz 1 x HDMI 2.0b 4096 x 2160 @ 30Hz 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
Multiple Display	Four Display
LVDS	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	
Audio Codec	Realtek ALC888S HD Audio Decoding Controller
Audio Interface	Line-in, Mic-in, Line-out
Audio Amplifier	2 x 2W 4Q Amplifier
Ethernet	
LAN Chipset	2 x Intel® I226LM for standard temperature/Intel® I226IT for extend temperature
Ethernet Interface	10/100/1000/2.5G Base-Tx GbE compatible
LAN Port	2 x RJ-45
Power Requirement	
Power Mode	AT/ATX (Default Setting: AT)
Software Support	
OS	Windows 11, Linux
Certification	
Certification Information	CE, FCC Class, RoHS Compliant
I/O	
USB	3 x USB 3.2 Gen2 4 x USB 2.0 1 x USB Type C support DP/USB 3.2 Gen 1, 5V x 3A
COM Port	2 x RS-232/422/485
SATA	1 x SATA III
DIO	1 x 8-bit GPIO
MIO	1 x eSPI 1 x SIM Card Slot
Mechanical & Environmental	
Operating Temp.	Standard Temperature CPU SKU: 0°C ~ 60°C (-4~140°F) with 0.5m/s Air Flow Extend Temperature CPU SKU: -40°C ~ 70°C (-40~158°F) with 0.5m/s Air Flow for Wide Temp CPU SKU
Storage Temp.	-40°C ~ 75°C (-40°F ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44lbs (0.2kg)
Power Requirement	DC in +9V ~ +36V or USB type C Adapter (20V) Note: DCIN & USB type C Adapter can only use either one.
Dimension (L x W)	5.7" x 4" (146mm x 101mm)

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3.5" Micro Module

Mechanical Drawing



Ordering Information

P/N	Processor	Chipset	LAN	USB	COM	PCIe Slot	Power Input	Temp.
ECM-RPL-300-A1R	Intel® Processor U300E	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-15S-A1R	Intel® Core™ i3-1315UE Processor	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-35S-A1R	Intel® Core™ i5-1335UE Processor	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-65S-A1R	Intel® Core™ i7-1365UE Processor	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-20S-A1R	Intel® Core™ i3-1320PE Processor	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-40S-A1R	Intel® Core™ i5-1340PE Processor	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-70S-A1R	Intel® Core™ i7-1370PE Processor	NA	2	8	2	0	+9-36V DC	0°C - 60°C (32°F - 140°F)
ECM-RPL-15W-A1R	Intel® Core™ i3-1315URE Processor	NA	2	8	2	0	+9-36V DC	-40°C-70°C (-40°F-158°F)
ECM-RPL-45W-A1R	Intel® Core™ i5-1345URE Processor	NA	2	8	2	0	+9-36V DC	-40°C-70°C (-40°F-158°F)
ECM-RPL-65W-A1R	Intel® Core™ i7-1365URE Processor	NA	2	8	2	0	+9-36V DC	-40°C-70°C (-40°F-158°F)
ECM-RPL-20W-A1R	Intel® Core™ i3-1320PRE Processor	NA	2	8	2	0	+9-36V DC	-40°C-70°C (-40°F-158°F)
ECM-RPL-50W-A1R	Intel® Core™ i5-1350PRE Processor	NA	2	8	2	0	+9-36V DC	-40°C-70°C (-40°F-158°F)
ECM-RPL-70W-A1R	Intel® Core™ i7-1370PRE Processor	NA	2	8	2	0	+9-36V DC	-40°C-70°C (-40°F-158°F)

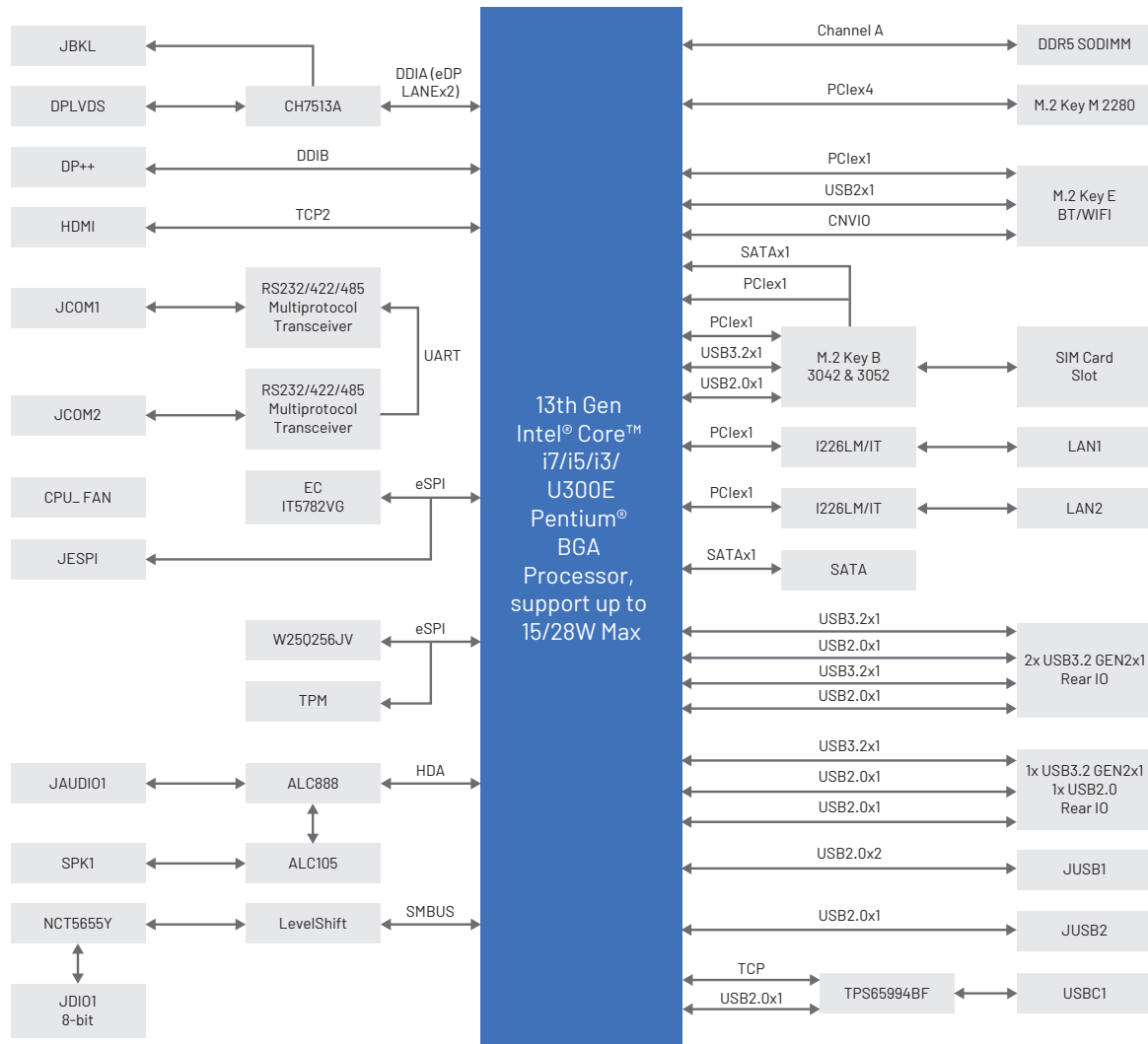
Packing List

Item	P/N	Quantity
Serial ATA cable (7-pin, standard)	-	1
Wire SATA power cable (15-pin, 4P/2.0mm)	-	1
Flat cable 9P (M) - PHD 10P/2.0mm)	-	1
CPU Heatsink/Cooler	-	1

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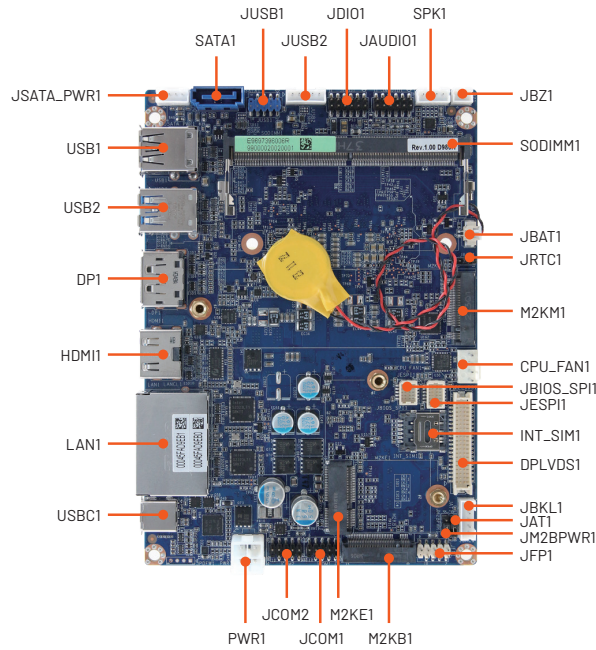
Block Diagram



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I/O Overview



Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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