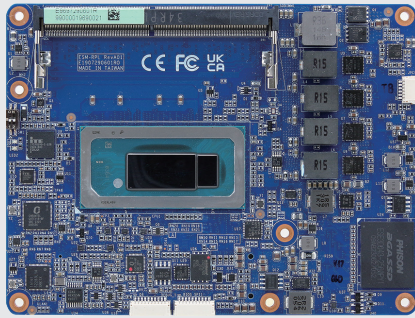


ESM-RPL

COM Express Rev. 3.1 Intel® 13th Generation Core™
Embedded Mobile Processor Type6 COMe Basic Module



Features

- COM Express Rev. 3.1 Intel® 13th Generation Core™ Embedded Mobile Processor Type6 COMe Basic Module
- 2 x 262-Pin DDR5 4800MT/s SO-DIMM Up to 64GB
- 1 x Intel® I226LM/IT
- Intel® HD Audio Integrated on CPU
- On board Storage NVMe SSD (Optional)
- Onboard nuvoTon_NPCT754AADYX TPM 2.0 (Optional)
- COMe Type 6 Basic Size: 4.92" x 3.74" (125 x 95 mm)
- DC in +9V ~ +19V



Specifications

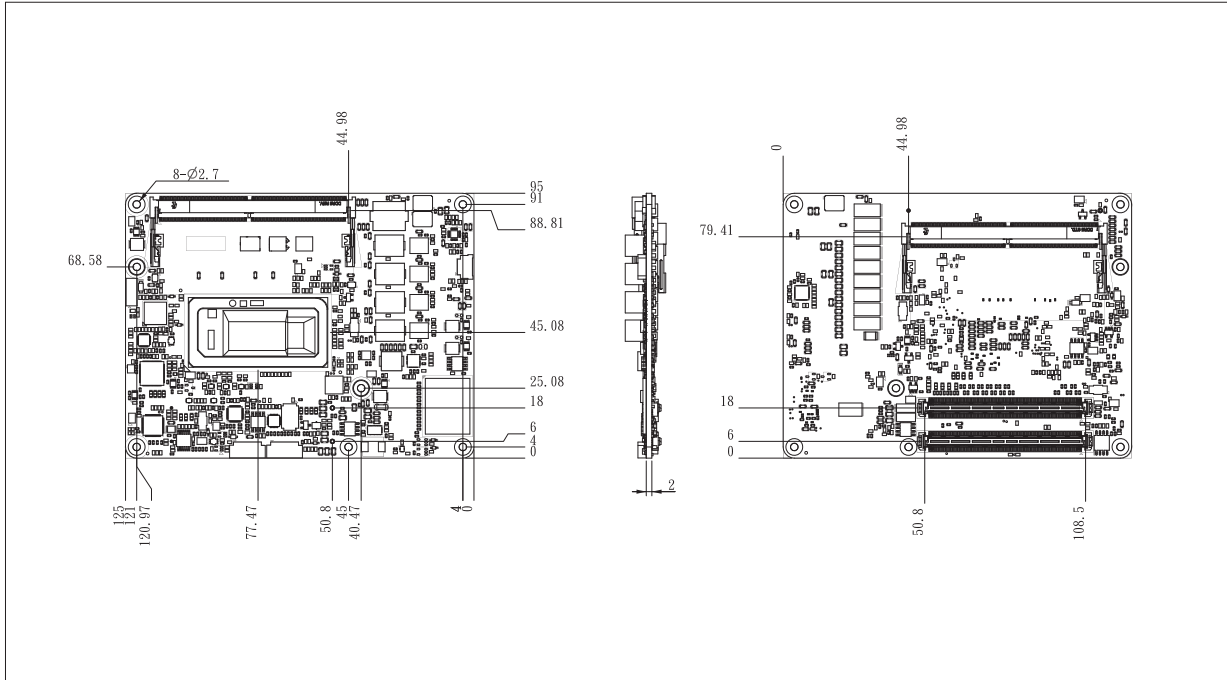
System Information	
Processor	13th Gen. Intel® H-Series Embedded Industrial (45 W) P-Series Embedded Industrial (28 W)
System Memory	2 x 262-Pin DDR5 4800MT/s SO-DIMM Up to 64GB
I/O Chipset	EC iTE IT5782
Watchdog Timer	H/W Reset, 1Sec. ~ 65535Sec. and 1Sec./Step
BIOS	AMI uEFI BIOS, 256 Mbit SPI Flash ROM
H/W Status Monitor	Monitoring System Temperature Voltage and FAN Status with Auto Throttling Control
TPM	Onboard nuvoTon_NPCT754AADYX TPM 2.0 (Optional)
Expansion	
Expansion	1 x PCIe x8 (Gen4), (Selected SKU, H series) 2 x PCIe x4 (Gen4) Default: 5 x PCIe x1 (Gen3), 2 x SATA (2 Lanes Shares with SATA)
Storage	
Storage	On board Storage NVMe SSD (Optional)
Display	
Graphic Chipset	Intel® Iris® Xe Graphics on i7/i5 Processor Intel® UHD Graphics on i3/Celeron® Processor Intel® Gfx Up to 96 EU
Spec. & Resolution	3 x DDI, VGA, eDP/LVDS (BOM Optional) VGA Supported by Build Option Via DP-to-VGA IC, Max. Resolution 1920x1200@60Hz LVDS Single/Dual Channel 18/24-bit LVDS from eDP-to-LVDS IC, Max. Resolution 1920x1200@60Hz in Dual Mode or eDP Build Option in Place of LVDS, 4 lanes, eDP 1.4b (by BOM) USB4 Max. 2 x USB4 in Place of DDI 1/2, Supports DP 1.4a by DP Alternative Mode DDI3 for Avalue EX-EX26 Carrier HDMI 2.1 or DP 1.4a Select by BIOS, Support Feature Depend on Carrier Board.
Multiple Display	Four Display Support, Up to 4K (3DDI+eDP)
LVDS	CH7511B (eDP to LVDS)
DDI	3 x DDI, VGA, eDP/LVDS (BOM Optional) HDMI/DP (Default) VGA Supported by Build Option Via DP-to-VGA IC (In Place of DDI 3)

Audio	
Audio Interface	Intel® HD Audio Integrated on CPU
Ethernet	
LAN Chipset	1 x Intel® I226LM/IT
Ethernet Interface	10/100/1000/2500 Base-Tx GbE Compatible
Software Support	
OS	Windows 10 Enterprise 2021 LTSC Ubuntu 22.04 (Kernel 5.15) above
Certification	
Certification Information	CE, FCC Class, RoHS Compliant
I/O	
USB	2 x USB 4 by TCP Ports (Optional by BIOS) 4 x USB3.2 Gen2 8 x USB2.0
COM Port	2 x UART (RX/TX Only)
SATA	2 x SATA III
DIO	1 x 8-bit GPIO
MIO	1 x SMBus 1 x LPC (Via ESPI-to-LPC Bridge IC) 1 x I ² C (User) 1 x GP_SPI (TBC) 1 x SPI
Mechanical & Environmental	
Operating Temp.	Standard 0°C ~ 60°C (32°F ~ 140°F) Extend: -40°C ~ 70°C (-40°F ~ 158°F)
Storage Temp.	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44lbs (0.2Kg)
Power Requirement	+9V ~ +19V
Power Mode	AT/ATX
Dimension (L x W)	3.74" x 4.92" (125 x 95 mm)

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Mechanical Drawing



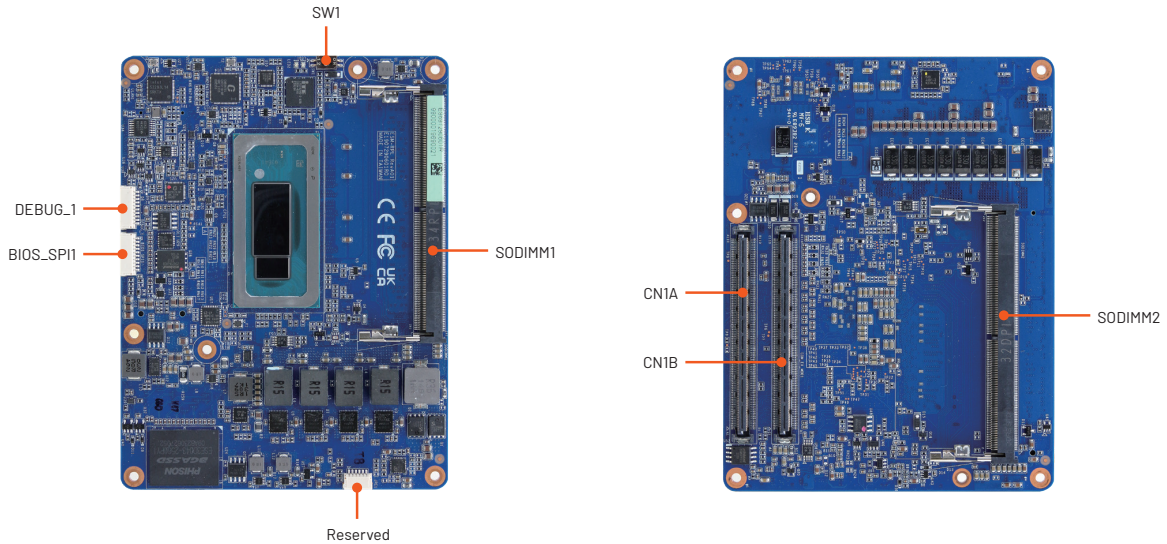
Ordering Information

P/N	CPU	PCH	LVDS/eDP	TPM	Memory	Storage	Operating Temp.	Thermal Solution
ESM-RPL-S70-A1R	Intel® Core™ i7-1370PE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	0°C – 60°C (32°F – 140°F)	ACC-ESMRPL-CL-2R W/FAN H=56mm
ESM-RPL-S40-A1R	Intel® Core™ i5-1340PE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	0°C – 60°C (32°F – 140°F)	ACC-ESMRPL-CL-2R W/FAN H=56mm
ESM-RPL-S20-A1R	Intel® Core™ i3-1320PE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	0°C – 60°C (32°F – 140°F)	ACC-ESMRPL-CL-2R W/FAN H=56mm
ESM-RPL-S80-A1R	Intel® Core™ i7-13800HE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	0°C – 60°C (32°F – 140°F)	ACC-ESMRPL-CL-1R W/FAN H=68.5mm
ESM-RPL-S60-A1R	Intel® Core™ i5-13600HE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	0°C – 60°C (32°F – 140°F)	ACC-ESMRPL-CL-1R W/FAN H=68.5mm
ESM-RPL-S30-A1R	Intel® Core™ i3-13300HE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	0°C – 60°C (32°F – 140°F)	ACC-ESMRPL-CL-1R W/FAN H=68.5mm
ESM-RPL-W70-A1R	Intel® Core™ i7-1370PRE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	-40°C – 70°C (-40°F – 158°F)	ACC-ESMRPL-CL-3R W/FAN H=72mm
ESM-RPL-W40-A1R	Intel® Core™ i5-1340PRE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	-40°C – 70°C (-40°F – 158°F)	ACC-ESMRPL-CL-3R W/FAN H=72mm
ESM-RPL-W20-A1R	Intel® Core™ i3-1320PRE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	-40°C – 70°C (-40°F – 158°F)	ACC-ESMRPL-CL-3R W/FAN H=72mm
ESM-RPL-W80-A1R	Intel® Core™ i7-13800HRE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	-40°C – 70°C (-40°F – 158°F)	ACC-ESMRPL-CL-3R W/FAN H=72mm
ESM-RPL-W60-A1R	Intel® Core™ i5-13600HRE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	-40°C – 70°C (-40°F – 158°F)	ACC-ESMRPL-CL-3R W/FAN H=72mm
ESM-RPL-W30-A1R	Intel® Core™ i3-13300HRE Processor	NA	LVDS	Onboard TPM 2.0 (optional)	2	On board Storage NVMe SSD (Optional)	-40°C – 70°C (-40°F – 158°F)	ACC-ESMRPL-CL-3R W/FAN H=72mm

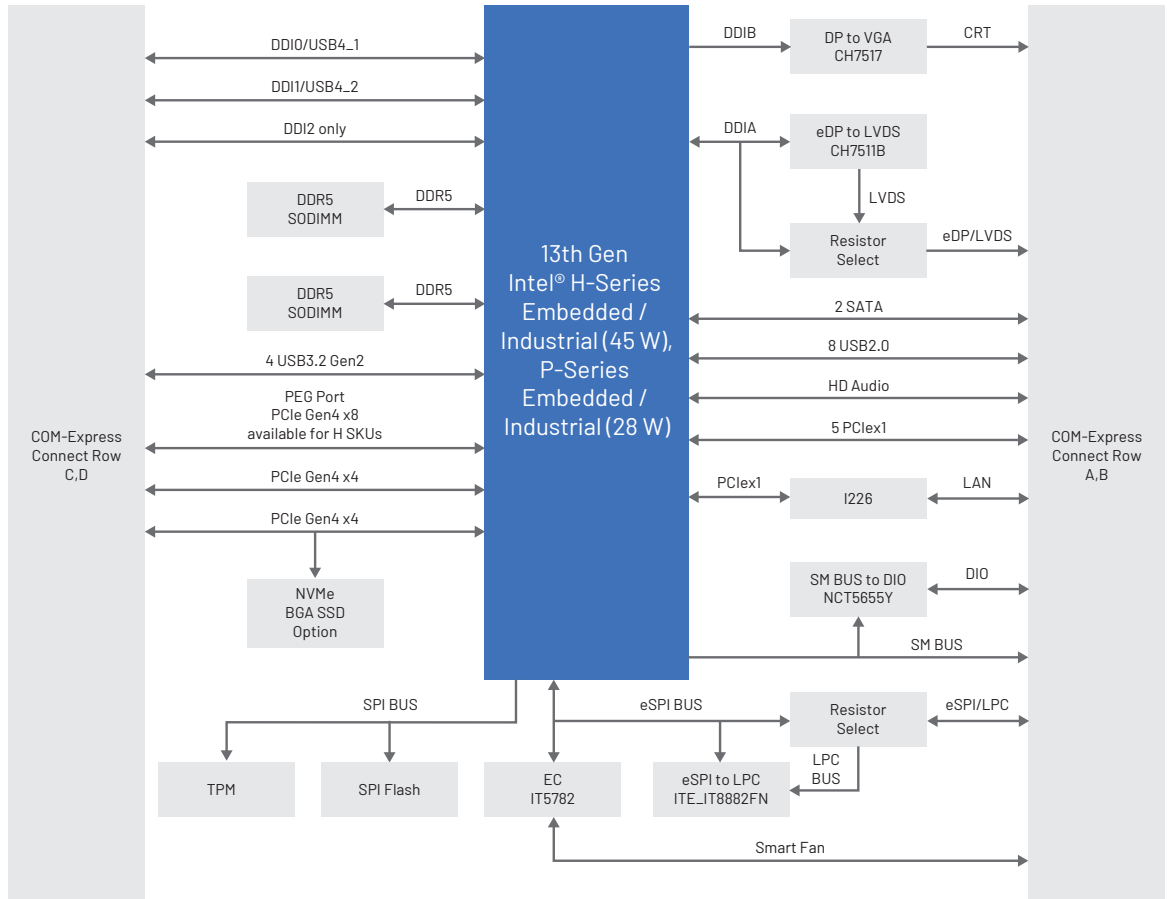
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I/O Overview



Block Diagram



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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