

# RAC-1000

NVIDIA® Jetson AGX Orin™ Rugged AI Computing System



## Features

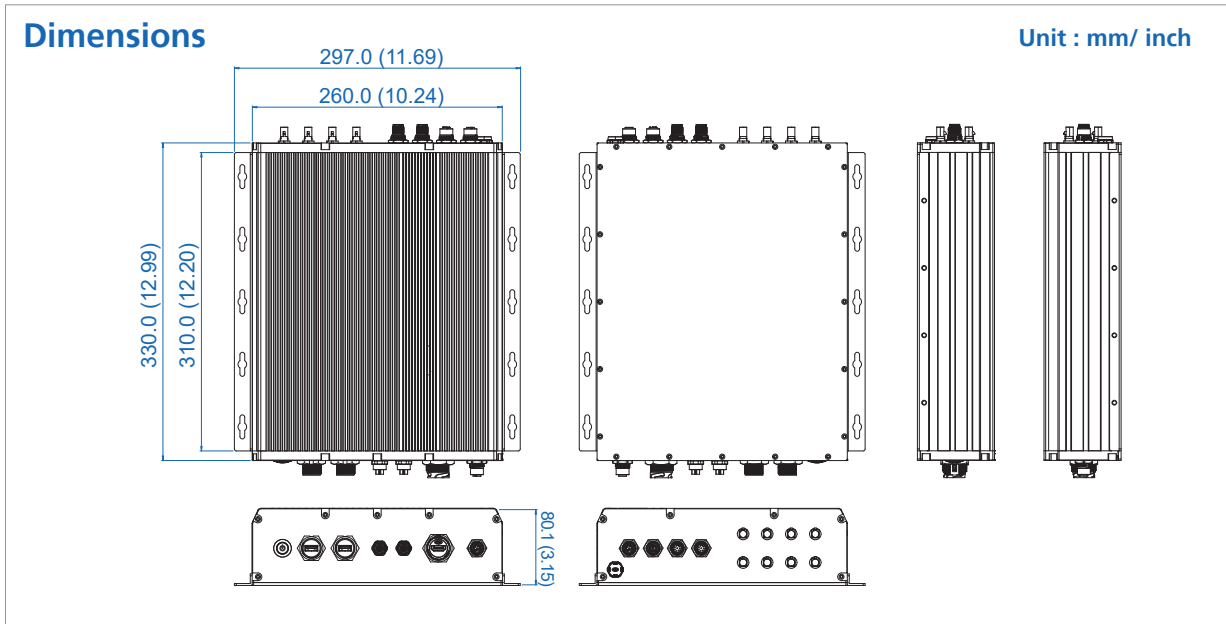
- Advanced NVIDIA® Jetson AGX Orin™ platform delivers up to 275 TOPS AI performance
- The latest NVIDIA Ampere™ architecture, featuring with 2048 NVIDIA® CUDA® cores and 64 Tensor cores
- Supports 8 GMSL 1/2 automotive cameras with Fakra-Z connectors
- IP67 Anti-dust and Waterproof Chassis design
- 1 PCIe Gen3 x8 expansion slot supports optional multiple 10GigE/PoE LAN/USB connections
- 1 M12 Isolated CAN-FD, 2 M12 COM RS-232/422/485
- 2 M12 GigE LAN, 2 USB 3.1, 1 Digital Display supports 4K60
- DC 9V to 50V wide range power input, Software Ignition Power Control



## Specifications

System	
<b>CPU</b>	<ul style="list-style-type: none"> <li>▪ R32 : 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU</li> <li>▪ R64 : 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU</li> </ul>
<b>GPU</b>	<ul style="list-style-type: none"> <li>▪ R32 : 1792-core NVIDIA Ampere™ architecture GPU with 56 Tensor Cores</li> <li>▪ R64 : 2048-core NVIDIA Ampere™ architecture GPU with 64 Tensor Cores</li> </ul>
<b>DL Accelerator</b>	2x NVDLA Engines
<b>Memory</b>	<ul style="list-style-type: none"> <li>▪ R32 : 1 32GB LPDDR5 DRAM</li> <li>▪ R64 : 1 64GB LPDDR5 DRAM</li> </ul>
<b>OS</b>	<ul style="list-style-type: none"> <li>▪ Linux</li> <li>▪ NVIDIA JetPack SDK</li> </ul>
I/O Interface	
<b>USB</b>	2 M12 USB 3.1
<b>Serial</b>	2 M12 COM RS-232/422/485
<b>LAN</b>	2 X-code M12 GigE LAN
<b>HDMI</b>	1 M12 HDMI 2.1
<b>CAN Bus</b>	1 M12 Isolated CAN Bus support CAN FD
<b>Flash</b>	1 M12 Micro USB OS flash port
<b>DC-IN</b>	1 4-pin K-code connector
<b>Button</b>	1 Power Button with LED
Expansion	
<b>PCIe</b>	1 PCIe x8 Slot
<b>M.2</b>	<ul style="list-style-type: none"> <li>▪ 1 M.2 Key B Socket (3042/3052)</li> <li>▪ 1 M.2 Key E Socket (2230)</li> </ul>
Graphics	
<b>Interface</b>	1 Digital Display, up to 4K60
<b>Video Encode</b>	<ul style="list-style-type: none"> <li>▪ HEVC: 2x 4K @60, 4x 4K @30, 8x 1080p @60, 16x 1080p @30</li> <li>▪ H.264: 1x 4K @60, 3 X4k @30, 7x 1080p @60, 14x 1080p @30</li> </ul>
<b>Video Decode</b>	<ul style="list-style-type: none"> <li>▪ HEVC: Up to 1x 8K @30, 3x 4K @60, 7x 4K @30, 11x 1080p @60, 22x 1080p @30</li> <li>▪ H.264: Up to 1x 4K @60, 3x 4K @30, 6x 1080p @60, 13x 1080p @30</li> </ul>

Camera	
<b>GMSL</b>	8 Fakra-Z connectors for GMSL 1/2 automotive cameras
Storage	
<b>M.2</b>	2 M.2 Key M socket (2280)
<b>eMMC</b>	1 eMMC 5.1, 64GB
Ethernet	
<b>LAN 1</b>	10/100/1000 Base-T Ethernet GigE LAN, X-coded M12 Connector
<b>LAN 2</b>	10/100/1000 Base-T Ethernet GigE LAN, X-coded M12 Connector
Power	
<b>Power Input</b>	DC 9V to 50V
<b>Power Interface</b>	4-pin K-Code M12 connector
<b>Ignition Control</b>	16-mode Software Ignition Control
Mechanical	
<b>Dimensions</b>	260 mm x 330 mm x 80 mm (10.23" x 13" x 3.14")
<b>Weight</b>	7 kg (15.43 lb)
<b>Mounting</b>	<ul style="list-style-type: none"> <li>▪ Wallmount</li> <li>▪ DIN Rail and VESA Mount (Optional)</li> </ul>
Environment	
<b>Operating Temperature</b>	<ul style="list-style-type: none"> <li>▪ <b>30W TDP Mode</b> : -25°C to 70°C (-13°F to 158°F)</li> <li>▪ <b>50W TDP Mode</b> : -25°C to 55°C (-13°F to 131°F)</li> </ul>
<b>Storage Temperature</b>	-40°C to 85°C (-40°F to 185°F)
<b>Humidity</b>	5% to 95% Humidity, non-condensing
<b>Relative Humidity</b>	95% @70°C
<b>Shock</b>	Operating, MIL-STD-810G, Method 516.7, Procedure I
<b>Vibration</b>	Operating, MIL-STD-810G, Method 514.6, Procedure I, Category 4
<b>EMC</b>	CE, FCC, EN50155, EN50121-3-2, IP67



## Order Information

Model Name	Platform	RAM	LAN	USB 3.1	Serial	Iso. CAN	Iso. DIO	PCIe Slot	GMSL	PoE*	M.2
RAC-1000-R32	Jetson AGX Orin	32GB	2	2	2	2	16	1	8	-	4
RAC-1000-R64		64GB									
RAC-1100-R32		32GB	6	2	2	2	16	1	-	4	4
RAC-1100-R64		64GB									

## Accessories

<b>PWA-160WB-WT</b>	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-180WB</b>	180W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
<b>PWA-280WB-WT</b>	280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-330WB</b>	330W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
<b>DIN-RAIL</b>	DIN Rail Kit
<b>GMSL Camera Kit</b>	GMSL Camera with Fakra-Z connector
<b>M.2 Storage Module</b>	M.2 Key M/Key B PCIe Storage Module

## 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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