EAC-7000 USER Manual

NVIDIA® Jetson Thor™ Edge AI Computing System
16 GMSL2, 4 PoE+ LAN with 2 10GigE PoE+, -25°C to 70°C Operation

Vecow

1.1.0 Edition 20260515

Record of Revision

Version	Date	Page	Description	Remark
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Declaration of Conformity

FCC

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE

The products described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

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Order Information

Part Number	Description
EAC-7000F-T5000	EAC-7000F-T5000 : NVIDIA Jetson Thor T5000, with On-board 128GB RAM, 2 2.5GigE LAN, 4 USB 3.1, 2 COM, 4 CAN, 16 GPIO, 4 M.2, 2 SIM
EAC-7100F-T5000	EAC-7100F-T5000 : NVIDIA Jetson Thor T5000, with On-board 128GB RAM, 2 2.5GigE LAN, 4 USB 3.1, 2 COM, 4 CAN, 16 GPIO, 4 M.2, 2 SIM, 8 GMSL port
EAC-7200F-T5000	EAC-7200F-T5000 : NVIDIA Jetson Thor T5000, with On-board 128GB RAM, 2 2.5GigE LAN, 2 10GigE LAN, 4 USB 3.1, 2 COM, 4 CAN, 16 GPIO, 4 M.2, 2 SIM, 16 GMSL port
EAC-7300F-T5000	EAC-7300F-T5000 : NVIDIA Jetson Thor T5000, with On-board 128GB RAM, 2 2.5GigE LAN, 4 1GigE PoE^{+} LAN, 4 USB 3.1, 2 COM, 4 CAN, 16 GPIO, 4 M.2, 2 SIM
EAC-7400F-T5000	EAC-7400F-T5000 : NVIDIA Jetson Thor T5000, with On-board 128GB RAM, 2 2.5GigE LAN, 4 10GigE LAN(with 2 PoE^{+}), 4 USB 3.1, 2 COM, 4 CAN, 16 GPIO, 4 M.2, 2 SIM
EAC-7000-T4000	EAC-7000-T4000 : NVIDIA Jetson Thor T4000, with On-board 64GB RAM, 2 2.5GigE LAN, 4 USB 3.1, 2 COM, 16 GPIO, 4 M.2, 2 SIM
EAC-7100-T4000	EAC-7100-T4000 : NVIDIA Jetson Thor T4000, with On-board 64GB RAM, 2 2.5GigE LAN, 4 USB 3.1, 2 COM, 16 GPIO, 4 M.2, 2 SIM, 8 GMSL port
EAC-7200-T4000	EAC-7200-T4000 : NVIDIA Jetson Thor T4000, with On-board 64GB RAM, 2 2.5GigE LAN, 2 10GigE LAN, 4 USB 3.1, 2 COM, 16 GPIO, 4 M.2, 2 SIM, 16 GMSL port
EAC-7300-T4000	EAC-7300-T4000 : NVIDIA Jetson Thor T4000, with On-board 64GB RAM, 2 2.5GigE LAN, 4 1GigE PoE^{+} LAN, 4 USB 3.1, 2 COM, 16 GPIO, 4 M.2, 2 SIM

Optional Accessories

Part Number	Description
PWA-180WB1	180W,24V, 80V AC to 264V AC Power adapter 0°C~+40°C, 3-pin Terminal Block
PWA-280WB-WT	280W, 24V, 85V AC to 264V AC Power Adaptor with 3-pin Terminal Block WideTemperature -30°C to +70°C
PWA-360WB-WT	360W, 24V, 85V AC to 264V AC, WT -30°C~+70°C with 3-pin Terminal Block
VESA Mount	VESA Mounting Kit
GMSL Camera Kit	GMSL Camera with Fakra-Z connector
M.2 Storage Module	M.2 Key M PCIe Storage Module
5G Module	5G Module with Antenna
4G Module	4G Module with Antenna
GPS Module	GPS Module with Antenna
WiFi & Bluetooth Module	WiFi & Bluetooth Module with Antenna

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1

GENERAL INTRODUCTION

1.1 Overview

The Vecow EAC-7000 Series is an ultra-performance, Arm-based, fanless Edge AI computing system accelerated by the advanced NVIDIA® Jetson Thor™. At the heart of the EAC-7000 series is the NVIDIA Jetson T5000™/Jetson T4000™, which features up to 14-core Arm® Neoverse™ V3AE CPU and a 2,650-core NVIDIA Blackwell GPU with 5th-gen 96 Tensor Cores. This next-generation architecture delivers up to 2,070 FP4 TFLOPS of AI compute and 128GB of memory, offering breakthrough performance and energy efficiency.

Designed for next-gen robotics and intelligent systems, the EAC-7000 supports NVIDIA Isaac™ Perceptor and HoloScan Sensor Bridge for real-time processing and perception—ideal for humanoid robots, autonomous agriculture, and industrial automation. It is purpose-built for Physical AI applications, supporting the latest generative AI models including LLMs (Large Language Models), VLMs (Vision-Language Models), and edge-native agentic AI workflows such as Video Search and Summarization (VSS)—enabling seamless cloud-to-edge deployment across robotics, smart spaces, and autonomous systems.

The series features five scalable models with support for up to 16 GMSL1/2 automotive cameras, multi-Gigabit LAN, PoE+, isolated CAN-FD, and dual SIM connectivity. With wide 9V–50V input, -20°C to 70°C operating temperature, Allxon remote management, and support for JetPack 7.0 SDK and above, the EAC-7000 Series is ready for scalable, production-grade AI deployment—anywhere, anytime.

1.2 Features

- NVIDIA® Jetson T5000™, up to 2,070 FP4 TFLOPS
- NVIDIA® Jetson T4000™, up to 1,200 FP4 TFLOPS
- NVIDIA Isaac™ Perceptor Software Stack for AI Robot Development on NVIDIA Isaac™ ROS
- NVIDIA Holoscan Sensor Bridge for low-latency various cameras and sensors data processing
- Up to 16 GMSL 1/2 automotive cameras with Fakra-Z connectors
- Up to 4 10GigE, 2 2.5GigE, 4 GigE LAN with 4 PoE+
- 4 Isolated CAN-FD, 2 COM RS232/422/485, 4 USB 3.1, 16-bit Isolated DIO (8 DI, 8 DO)
- Multiple 5G/4G/LTE/WiFi/BT/GPRS/UMTS connections
- Device remote management by Allxon (Optional)

1.3 Product Specification

1.3.1 Specifications of EAC-7000

System	
Processor	NVIDIA® Jetson AGX Thor™ System-On-Module • 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz • 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores
Memory	NVIDIA Jetson T5000 : 128 GB256-bit LPDDR5X DRAM NVIDIA Jetson T4000 : 64 GB 256-bit LPDDR5X DRAM
Software Support	• Linux Ubuntu • NVIDIA JetPack SDK
Graphics	
Interface	2 HDMI, Up to 7680 x 4320 @30Hz
Video Encode	• H.265 : 6x 4Kp60,12x 4Kp30, 24x 1080p60, 50x 1080p30 • H.264 : 48x 1080p30, 6x 4Kp60
Video Decode	• H.265 : 4x 8Kp30, 10x 4Kp60, 22x 4Kp30, 46x 1080p60, 92x 1080p30 • H.264 : 82x 1080p30, 4x 4Kp60
Ethernet	
LAN 1 to LAN 2	10/100/1000/2500 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
I/O Interface	
USB	• 4 USB Type-A 3.1 • 1 USB Type-C console debug port • 1 USB Type-C OS flash/OTG port
Serial	2 COM RS-232/422/485
CAN Bus	4 Isolated CAN Bus support CAN FD (for T5000 SKU only)
DIO	16 Isolated DIO (8 DI, 8 DO)
Button	• 1 Power Button • 1 Force Recovery Button • 1 Reset Button
SIM	2 Nano SIM Card Socket
LED	Power, HDD, Suspend
Antenna	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS

Expansion	
M.2	• 1 M.2 Key B Socket (3042/3052, USB 3.0, USB 2.0, with dual SIM) • 1 M.2 Key B Socket (2280, PCIe x2) • 1 M.2 Key E Socket (2230, PCIe/USB2)
Storage	
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Power	
Power Input	DC 9V to 50V
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Remote Switch Terminal Block
Mechanical	
Dimensions	260 mm x 215 mm x 88 mm (10.24” x 8.46” x 3.46”)
Weight	3.8 kg (8.39 lb)
Mounting	• Wallmount • VESA Mount (Optional)
Environment	
Operating Temperature	**77W TDP Mode Fanless :** -20°C to 45°C (-4°F to 113°F) **77W TDP Mode Fan :** -20°C to 70°C (-4°F to 158°F) **70/120W TDP Mode Fan :** -20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% at 70°C
Shock	Operating, MIL-STD-810H
Vibration	Operating, MIL-STD-810H
Safety	EN62368-1
EMC	CE, FCC, EN50155, EN50121-3-2

1.3.2 Specifications of EAC-7100

System	
Processor	NVIDIA® Jetson AGX Thor™ System-On-Module • 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz • 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores
Memory	NVIDIA Jetson T5000 : 128 GB256-bit LPDDR5X DRAM NVIDIA Jetson T4000 : 64 GB 256-bit LPDDR5X DRAM
Software Support	• Linux Ubuntu • NVIDIA JetPack SDK
Graphics	
Interface	2 HDMI, Up to 7680 x 4320 @30Hz
Video Encode	• H.265 : 6x 4Kp60,12x 4Kp30, 24x 1080p60, 50x 1080p30 • H.264 : 48x 1080p30, 6x 4Kp60
Video Decode	• H.265 : 4x 8Kp30, 10x 4Kp60, 22x 4Kp30, 46x 1080p60, 92x 1080p30 • H.264 : 82x 1080p30, 4x 4Kp60
Ethernet	
LAN 1 to LAN 2	10/100/1000/2500 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
Camera	
GMSL	8 Fakra-Z connectors for GMSL 1/2 automotive cameras
I/O Interface	
USB	• 4 USB Type-A 3.1 • 1 USB Type-C console debug port • 1 USB Type-C OS flash/OTG port
Serial	2 COM RS-232/422/485
CAN Bus	4 Isolated CAN Bus support CAN FD (for T5000 SKU only)
DIO	16 Isolated DIO (8 DI, 8 DO)
Button	• 1 Power Button • 1 Force Recovery Button • 1 Reset Button
SIM	2 Nano SIM Card Socket
LED	Power, HDD, Suspend
Antenna	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS

Expansion	
M.2	• 1 M.2 Key B Socket (3042/3052, USB 3.0, USB 2.0, with dual SIM) • 1 M.2 Key B Socket (2280, PCIe x2) • 1 M.2 Key E Socket (2230, PCIe/USB2)
Storage	
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Power	
Power Input	DC 9V to 50V
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Remote Switch Terminal Block
Mechanical	
Dimensions	260 mm x 215 mm x 88 mm (10.24” x 8.46” x 3.46”)
Weight	3.8 kg (8.39 lb)
Mounting	• Wallmount • VESA Mount (Optional)
Environment	
Operating Temperature	**77W TDP Mode Fanless :** -20°C to 45°C (-4°F to 113°F) **77W TDP Mode Fan :** -20°C to 70°C (-4°F to 158°F) **70/120W TDP Mode Fan :** -20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% at 70°C
Shock	Operating, MIL-STD-810H
Vibration	Operating, MIL-STD-810H
Safety	EN62368-1
EMC	CE, FCC, EN50155, EN50121-3-2

1.3.3 Specifications of EAC-7200

System	
Processor	NVIDIA® Jetson AGX Thor™ System-On-Module • 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz • 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores
Memory	NVIDIA Jetson T5000 : 128 GB256-bit LPDDR5X DRAM NVIDIA Jetson T4000 : 64 GB 256-bit LPDDR5X DRAM
Software Support	• Linux Ubuntu • NVIDIA JetPack SDK
Graphics	
Interface	2 HDMI, Up to 7680 x 4320 @30Hz
Video Encode	• H.265 : 6x 4Kp60,12x 4Kp30, 24x 1080p60, 50x 1080p30 • H.264 : 48x 1080p30, 6x 4Kp60
Video Decode	• H.265 : 4x 8Kp30, 10x 4Kp60, 22x 4Kp30, 46x 1080p60, 92x 1080p30 • H.264 : 82x 1080p30, 4x 4Kp60
Ethernet	
LAN 1 to LAN 2	10/100/1000/2500 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
LAN 3 to LAN 4	10/100/1000/10000 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
Camera	
GMSL	4 x4 mini Fakra connectors (16 Fakra-Z connectors) for GMSL 1/2 automotive cameras
I/O Interface	
USB	• 4 USB Type-A 3.1 • 1 USB Type-C console debug port • 1 USB Type-C OS flash/OTG port
Serial	2 COM RS-232/422/485
CAN Bus	4 Isolated CAN Bus support CAN FD (for T5000 SKU only)
DIO	16 Isolated DIO (8 DI, 8 DO)
Button	• 1 Power Button • 1 Force Recovery Button • 1 Reset Button
SIM	2 Nano SIM Card Socket
LED	Power, HDD, Suspend
Antenna	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS

Expansion	
M.2	• 1 M.2 Key B Socket (3042/3052, USB 3.0, USB 2.0, with dual SIM) • 1 M.2 Key B Socket (2280, PCIe x2) • 1 M.2 Key E Socket (2230, PCIe/USB2)
Storage	
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Power	
Power Input	DC 9V to 50V
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Remote Switch Terminal Block
Mechanical	
Dimensions	260 mm x 215 mm x 88 mm (10.24” x 8.46” x 3.46”)
Weight	3.8 kg (8.39 lb)
Mounting	• Wallmount • VESA Mount (Optional)
Environment	
Operating Temperature	**77W TDP Mode Fanless :** -20°C to 45°C (-4°F to 113°F) **77W TDP Mode Fan :** -20°C to 70°C (-4°F to 158°F) **70/120W TDP Mode Fan :** -20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% at 70°C
Shock	Operating, MIL-STD-810H
Vibration	Operating, MIL-STD-810H
Safety	EN62368-1
EMC	CE, FCC, EN50155, EN50121-3-2

1.3.4 Specifications of EAC-7300

System	
Processor	NVIDIA® Jetson AGX Thor™ System-On-Module • 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz • 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores
Memory	NVIDIA Jetson T5000 : 128 GB256-bit LPDDR5X DRAM NVIDIA Jetson T4000 : 64 GB 256-bit LPDDR5X DRAM
Software Support	• Linux Ubuntu • NVIDIA JetPack SDK
Graphics	
Interface	2 HDMI, Up to 7680 x 4320 @30Hz
Video Encode	• H.265 : 6x 4Kp60,12x 4Kp30, 24x 1080p60, 50x 1080p30 • H.264 : 48x 1080p30, 6x 4Kp60
Video Decode	• H.265 : 4x 8Kp30, 10x 4Kp60, 22x 4Kp30, 46x 1080p60, 92x 1080p30 • H.264 : 82x 1080p30, 4x 4Kp60
Ethernet	
LAN 1 to LAN 2	10/100/1000/2500 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
PoE	
LAN 3 to LAN 6	IEEE 802.3at (25.5W/48V) total 60W GigE PoE+ LAN, RJ45 Connector (Optional X-coded M12 Connector)
I/O Interface	
USB	• 4 USB Type-A 3.1 • 1 USB Type-C console debug port • 1 USB Type-C OS flash/OTG port
Serial	2 COM RS-232/422/485
CAN Bus	4 Isolated CAN Bus support CAN FD (for T5000 SKU only)
DIO	16 Isolated DIO (8 DI, 8 DO)
Button	• 1 Power Button • 1 Force Recovery Button • 1 Reset Button
SIM	2 Nano SIM Card Socket
LED	Power, HDD, Suspend
Antenna	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS

Expansion	
M.2	• 1 M.2 Key B Socket (3042/3052, USB 3.0, USB 2.0, with dual SIM) • 1 M.2 Key B Socket (2280, PCIe x2) • 1 M.2 Key E Socket (2230, PCIe/USB2)
Storage	
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Power	
Power Input	DC 9V to 50V
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Remote Switch Terminal Block
Mechanical	
Dimensions	260 mm x 215 mm x 88 mm (10.24” x 8.46” x 3.46”)
Weight	3.8 kg (8.39 lb)
Mounting	• Wallmount • VESA Mount (Optional)
Environment	
Operating Temperature	**77W TDP Mode Fanless :** -20°C to 45°C (-4°F to 113°F) **77W TDP Mode Fan :** -20°C to 70°C (-4°F to 158°F) **70/120W TDP Mode Fan :** -20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% at 70°C
Shock	Operating, MIL-STD-810H
Vibration	Operating, MIL-STD-810H
Safety	EN62368-1
EMC	CE, FCC, EN50155, EN50121-3-2

1.3.5 Specifications of EAC-7400

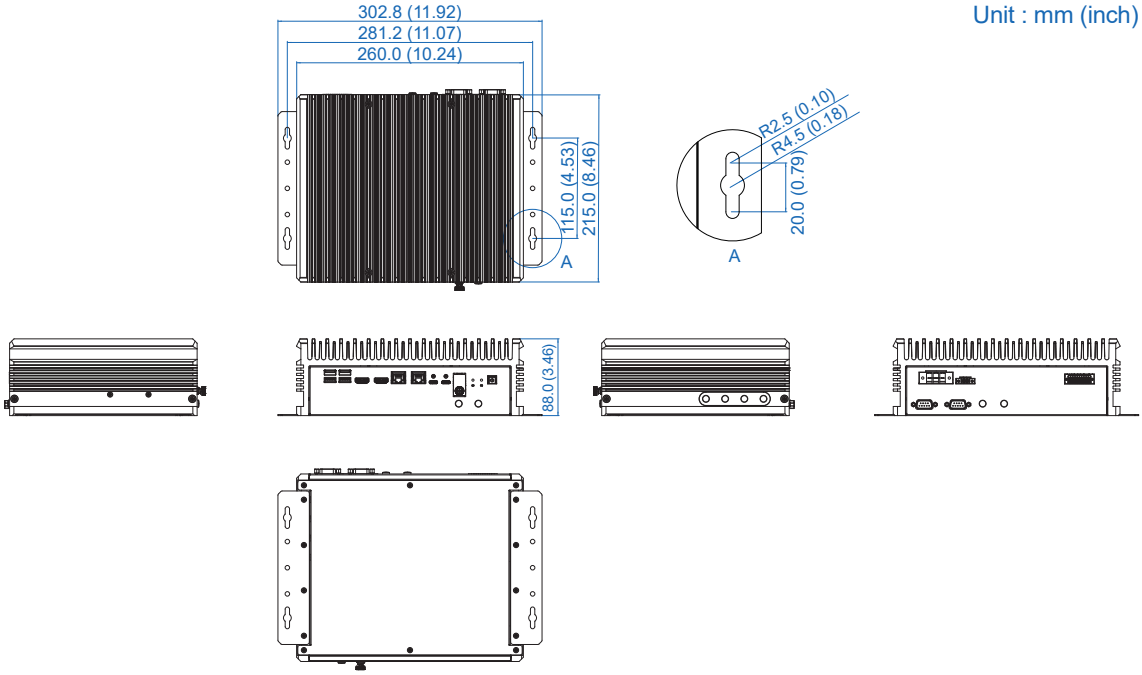
System	
Processor	NVIDIA® Jetson AGX Thor™ System-On-Module • 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz • 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores
Memory	NVIDIA Jetson T5000 : 128 GB256-bit LPDDR5X DRAM
Software Support	• Linux Ubuntu • NVIDIA JetPack SDK
Graphics	
Interface	2 HDMI, Up to 7680 x 4320 @30Hz
Video Encode	• H.265 : 6x 4Kp60,12x 4Kp30, 24x 1080p60, 50x 1080p30 • H.264 : 48x 1080p30, 6x 4Kp60
Video Decode	• H.265 : 4x 8Kp30, 10x 4Kp60, 22x 4Kp30, 46x 1080p60, 92x 1080p30 • H.264 : 82x 1080p30, 4x 4Kp60
Ethernet	
LAN 1 to LAN 2	10/100/1000/2500 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
LAN 3 to LAN 4	10/100/1000/10000 Base-T Ethernet GigE LAN, RJ45 Connector (Optional X-coded M12 Connector)
PoE	
LAN 5 to LAN 6	IEEE 802.3at (25.5W/48V) total 60W 10GigE PoE+ LAN, RJ45 Connector (Optional X-coded M12 Connector)
I/O Interface	
USB	• 4 USB Type-A 3.1 • 1 USB Type-C console debug port • 1 USB Type-C OS flash/OTG port
Serial	2 COM RS-232/422/485
CAN Bus	4 Isolated CAN Bus support CAN FD (for T5000 SKU only)
DIO	16 Isolated DIO (8 DI, 8 DO)
Button	• 1 Power Button • 1 Force Recovery Button • 1 Reset Button
SIM	2 Nano SIM Card Socket
LED	Power, HDD, Suspend
Antenna	6 Antenna for 5G/WiFi/4G/LTE/GPRS/UMTS

Expansion	
M.2	• 1 M.2 Key B Socket (3042/3052, USB 3.0, USB 2.0, with dual SIM) • 1 M.2 Key B Socket (2280, PCIe x2) • 1 M.2 Key E Socket (2230, PCIe/USB2)
Storage	
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Power	
Power Input	DC 9V to 50V
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Remote Switch Terminal Block
Mechanical	
Dimensions	260 mm x 215 mm x 88 mm (10.24” x 8.46” x 3.46”)
Weight	3.8 kg (8.39 lb)
Mounting	• Wallmount • VESA Mount (Optional)
Environment	
Operating Temperature	**77W TDP Mode Fanless :** -20°C to 45°C (-4°F to 113°F) **77W TDP Mode Fan :** -20°C to 70°C (-4°F to 158°F) **70/120W TDP Mode Fan :** -20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% at 70°C
Shock	Operating, MIL-STD-810H
Vibration	Operating, MIL-STD-810H
Safety	EN62368-1
EMC	CE, FCC, EN50155, EN50121-3-2

1.4 Mechanical Dimension

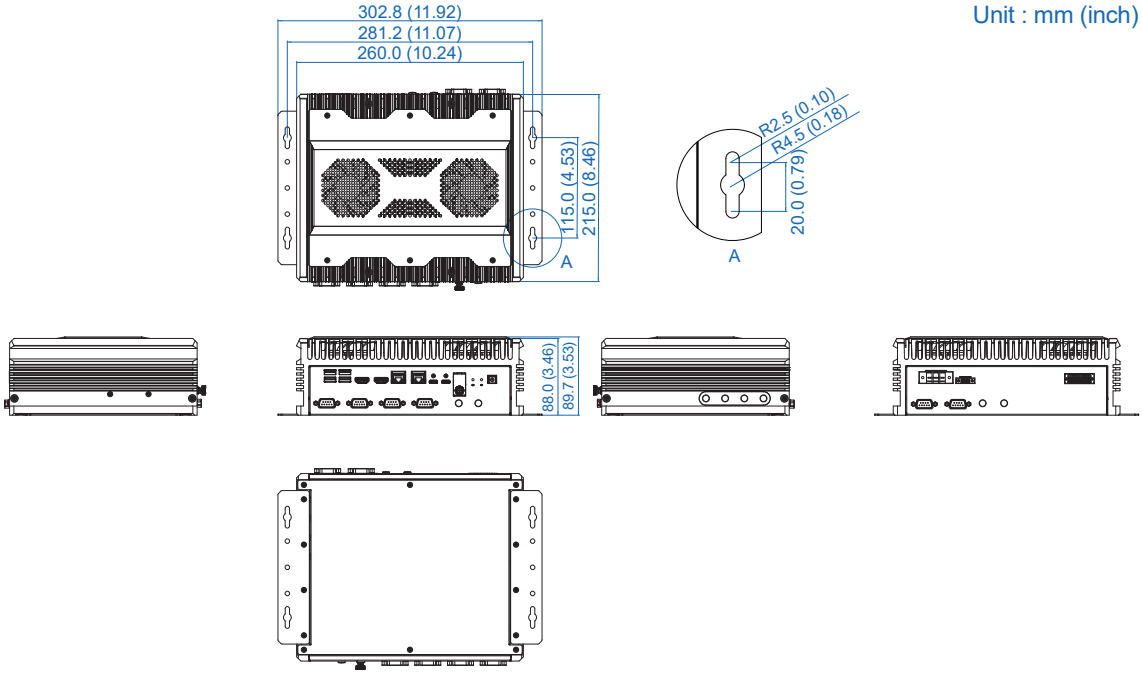
1.4.1 Dimensions of EAC-7000

Unit : mm (inch)



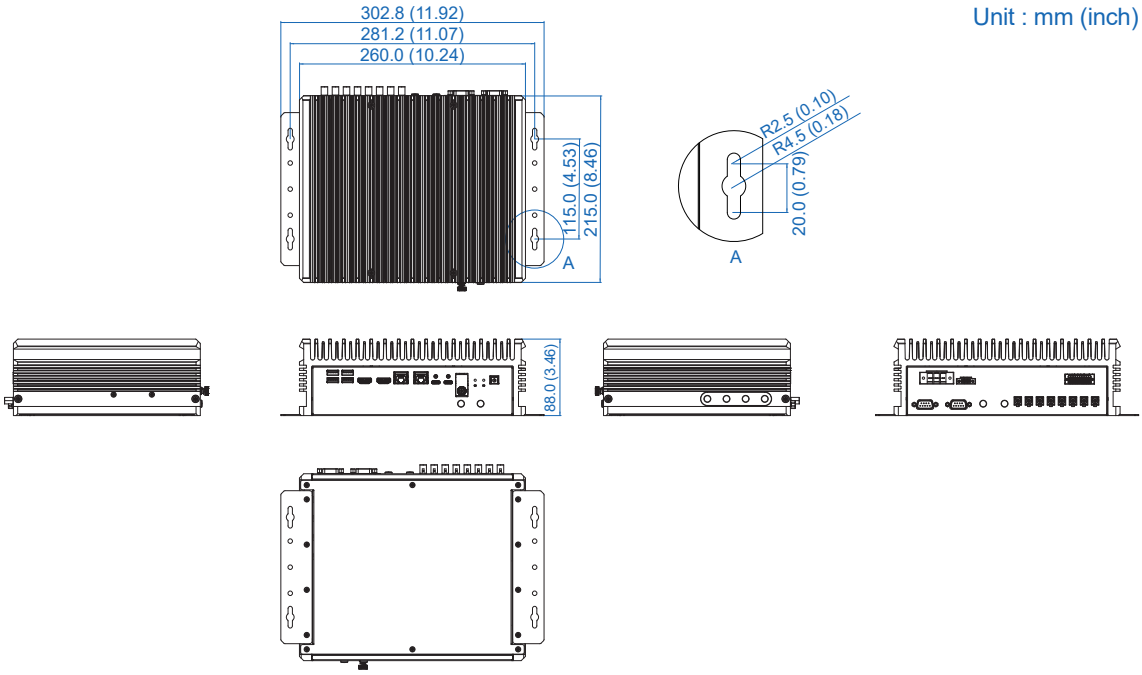
1.4.2 Dimensions of EAC-7000F

Unit : mm (inch)



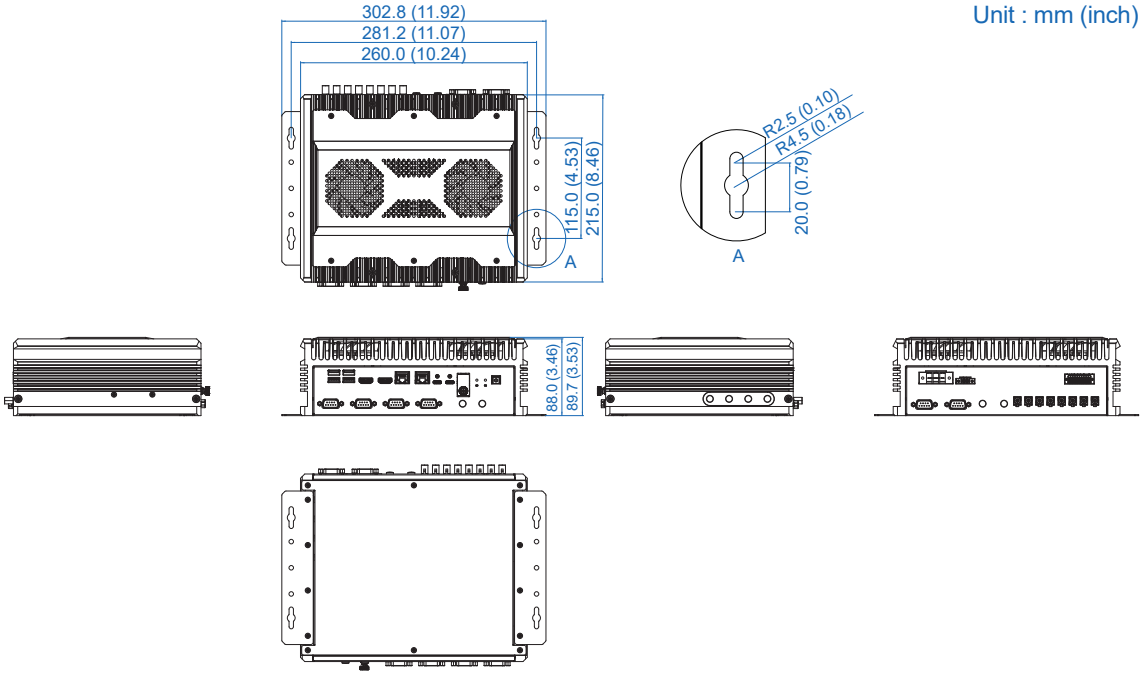
1.4.3 Dimensions of EAC-7100

Unit : mm (inch)



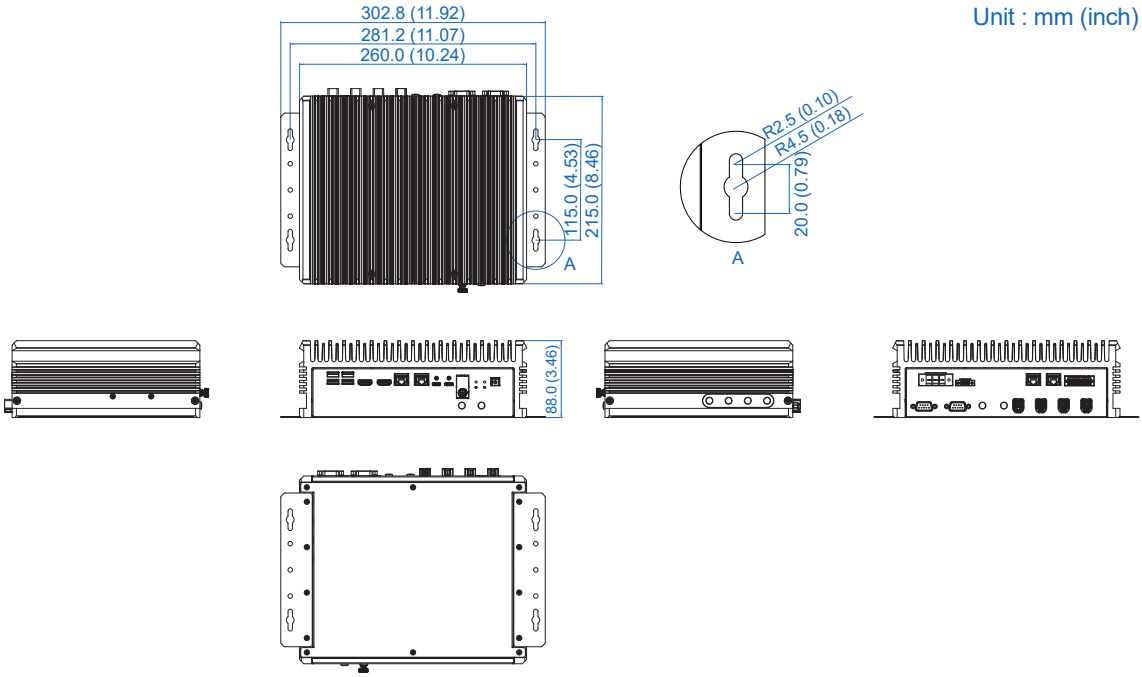
1.4.4 Dimensions of EAC-7100F

Unit : mm (inch)



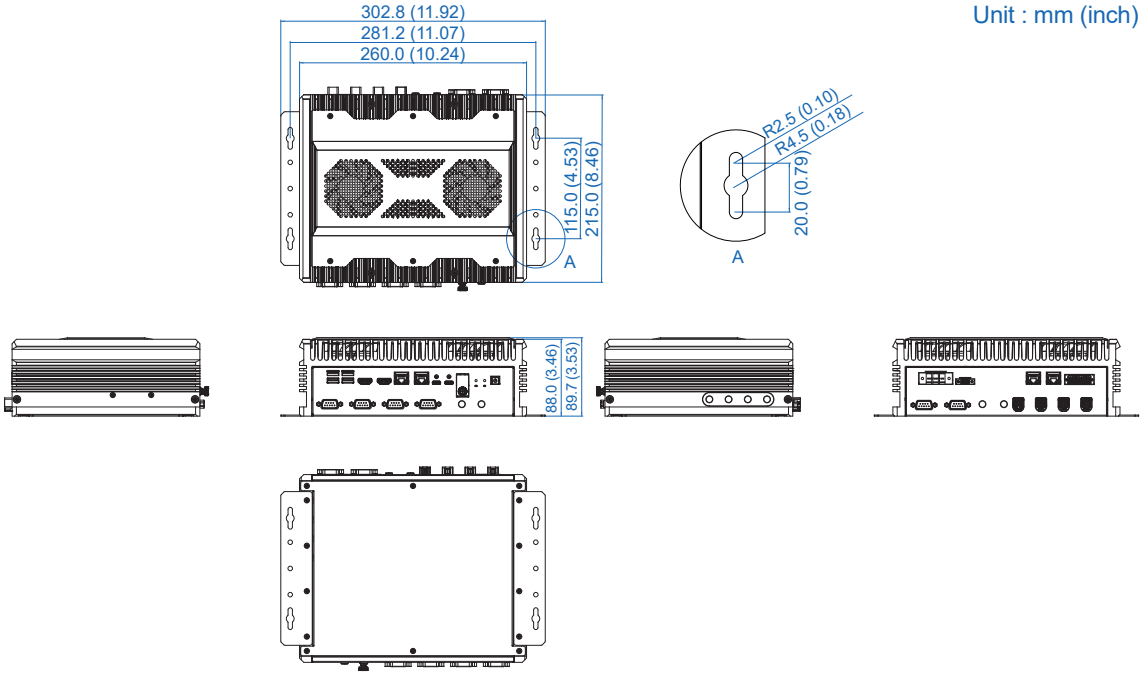
1.4.5 Dimensions of EAC-7200

Unit : mm (inch)



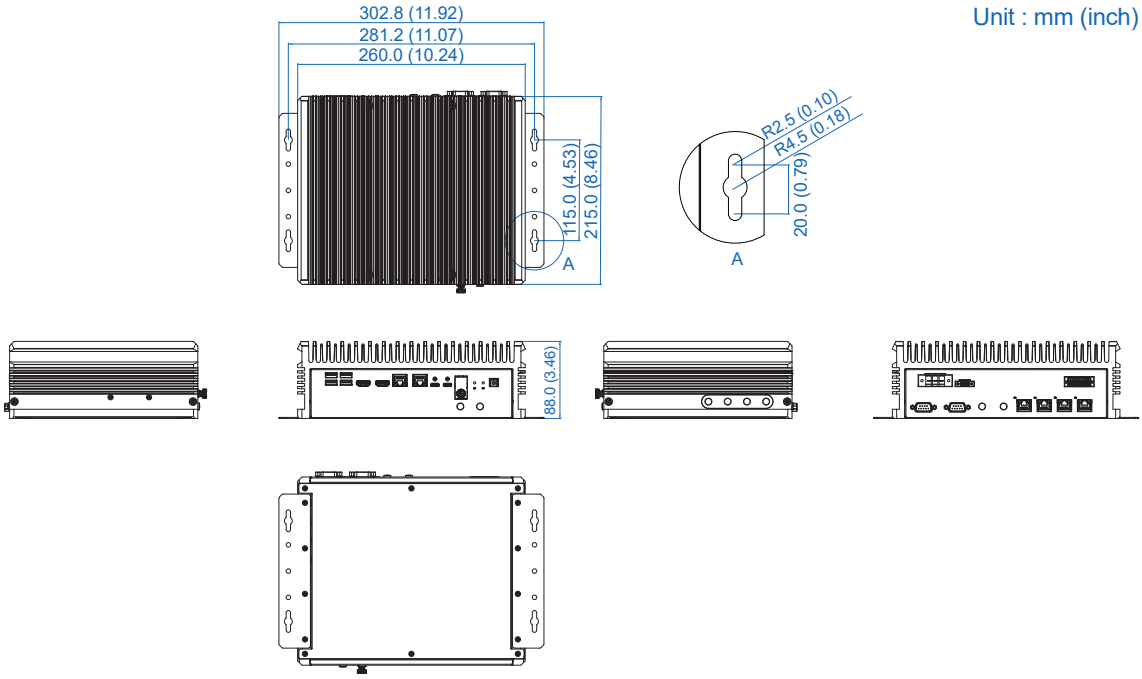
1.4.6 Dimensions of EAC-7200F

Unit : mm (inch)



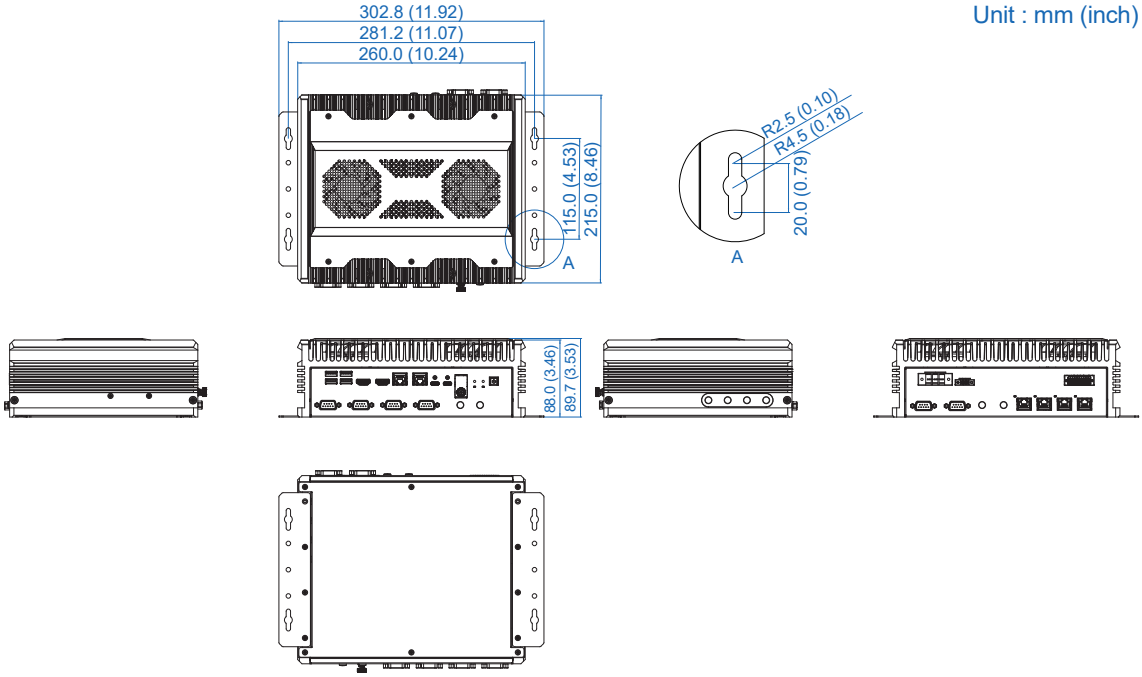
1.4.7 Dimensions of EAC-7300

Unit : mm (inch)



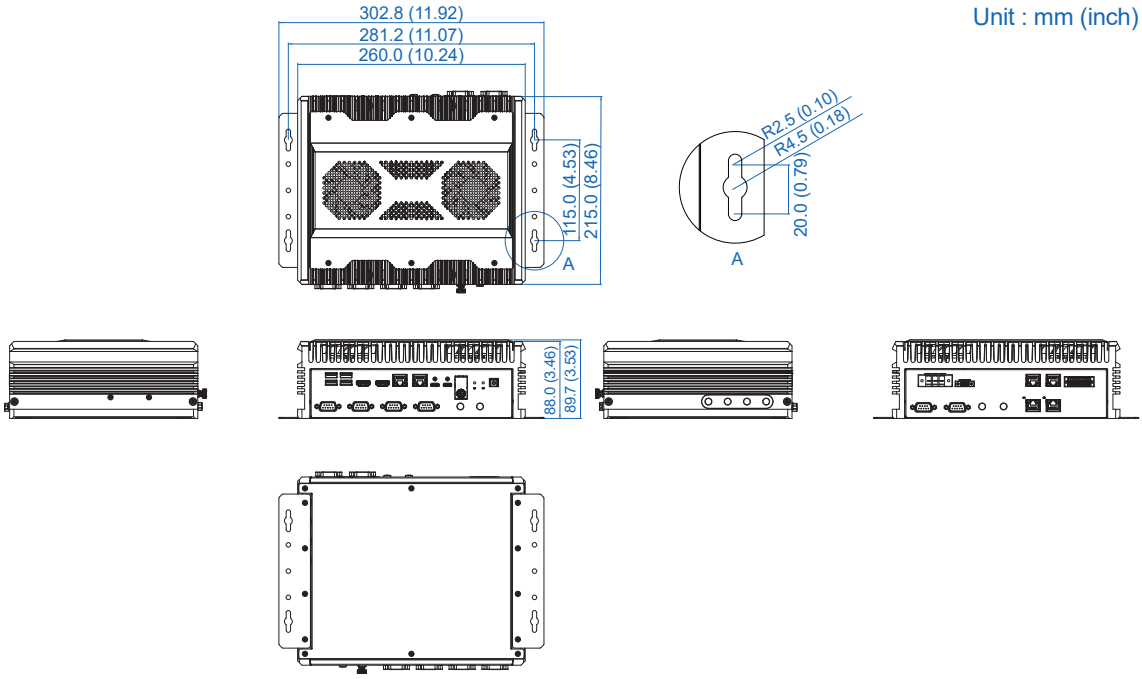
1.4.8 Dimensions of EAC-7300F

Unit : mm (inch)



1.4.9 Dimensions of EAC-7400F

Unit : mm (inch)



2

GETTING TO KNOW YOUR EAC-7000

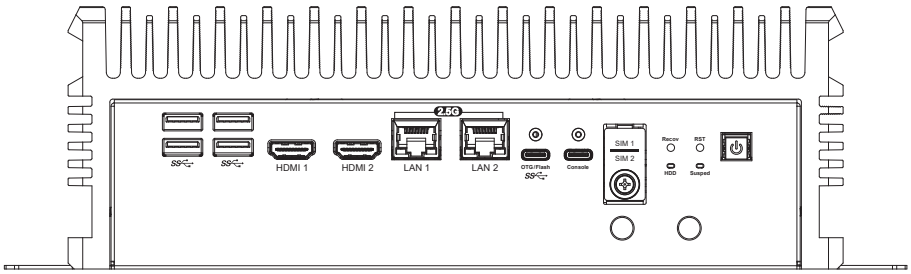
2.1 Packing List

Item	Description	Qty
1	EAC-7000 Series Edge AI Computing System (According to the configuration of your order, EAC-7000/EAC-7100/ EAC-7200/EAC-7300/EAC-7400 series may contain M.2 modules. Please verify these items if necessary.)	1

Item	Description	Outlook	Usage	P/N	Qty
1	Terminal block 3-pin (3.5mm)		IGN	51-2211R03-S1A	1
2	Terminal block 3-pin(7.62mm)		DC-IN	51-2611R03-S1N	1
3	Terminal block 20-pin(2.54mm)		Isolated DIO	51-2112R20-S1D	1
4	PHILLPIS M3x4L, Ni+Ny		M.2 socket	53-2426204-80B	2
5	Flat #6-32x6L, Ni+Ny		Fasten wall mount bracket to EAC-7000	53-2467806-30B	8
6	Wall mount EAC-7000		Wall mount bracket	62-03P2114-0BA	2
7	Mini Fakra Cable		EAC-7200 SKU only	61-F3000JP-C02	4
8	M2x2L Ni		M.2 module card	53-M004600-000	2
9	27.8mm footpad		system	53-4029942-303	4

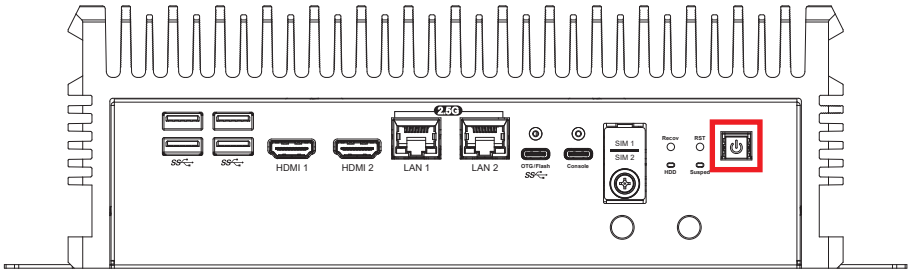
2.2 Front Panel I/O & Functions

2.2.1 Functions of EAC-7000/7100/7200/7300-T4000 series



In the Vecow EAC-7000 series, most I/O connectors are located on the front panel. Most general connections to computer devices, such as USB, LAN, DisplayPort, the force recovery button, the power button, the reset button, the SIM slot, and status indicators, are placed on the front panel.

2.2.1.1 Power Button



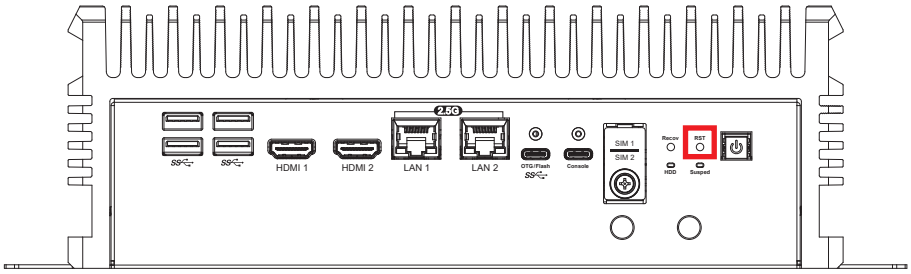
The Power Button is a non-latching switch with a dual-color LED indicator.

Press the power button to turn on the system. The blue LED lights up when the system is powered on.

To power off the system, perform a shutdown through the operating system or press the power button.

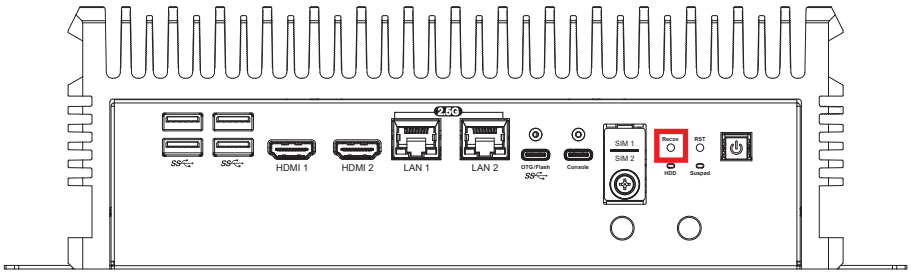
LED Color	Status
Solid Blue	System working
Solid Orange	System off or Standby

2.2.1.2 Reset Button



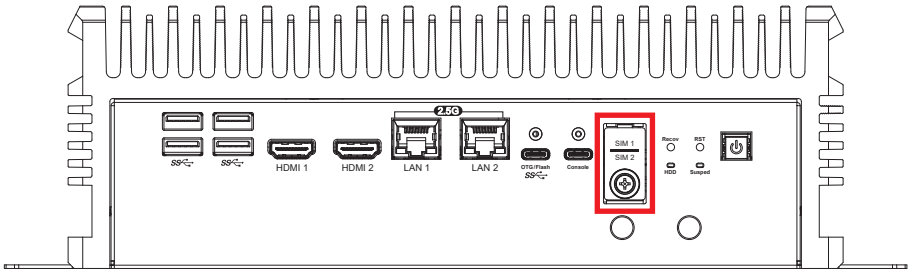
Used to force a full system reset.

2.2.1.3 Force_Recovery Button



Used to enter Force Recovery Mode. Hold down the Recovery button while powering on the system, or press and release the Reset button while holding the Recovery button.

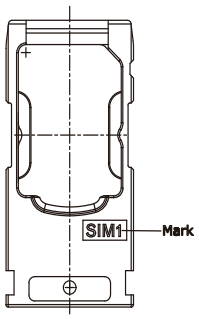
2.2.1.4 Two Nano SIM



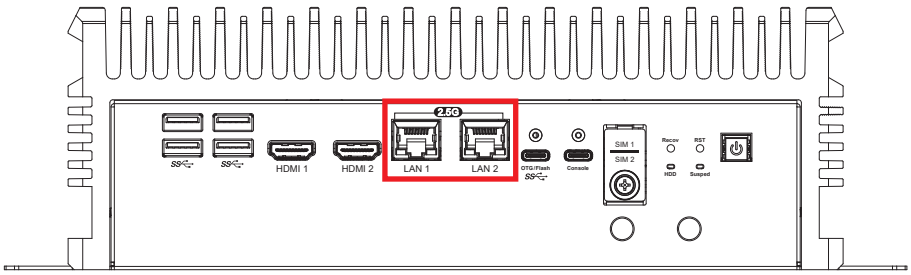
The external Nano SIM card provides wireless communication capability to the system through an M.2 Key B 4G/5G module.

The SIM tray marking SIM1 corresponds to the SIM1 interface and is connected to the M.2 Key B Slot 1.

The SIM tray marking SIM2 corresponds to the SIM2 interface and is connected to the M.2 Key B Slot 2.



2.2.1.5 Ethernet Port



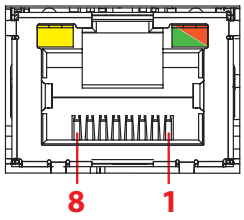
The front side of the EAC 7000 series features two 8 pin RJ 45 Ethernet jacks supporting 10/100/1000/2500 Mbps data rates. These ports comply with 1000BASE T and 2.5GBASE T standards over standard Cat 5/Cat 6 twisted pair cables.

LAN Chip	Function	Connector
I226_LAN1	RJ-45(10/100/1000/2500)	LAN1
I226_LAN2	RJ-45(10/100/1000/2500)	LAN2

Using suitable RJ-45 cable, you can connect the system to a computer, or to any other devices with Ethernet connection, for example, a hub or a switch. The pin-outs of LAN1 and LAN2 are listed as follows :

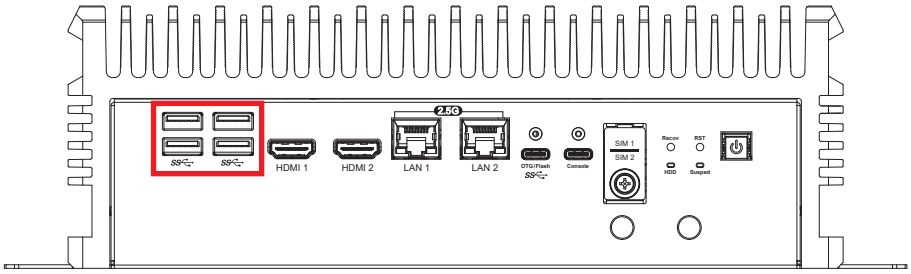
Pin No.	10/100Mbps	1000/2500Mbps
1	E_TX+	MDI0_P
2	E_TX-	MDI0_N
3	E_RX+	MDI1_P
4	------	MDI2_P
5	------	MDI2_N
6	E_RX-	MDI1_N
7	------	MDI3_P
8	------	MDI3_N

Each LAN port is supported by standard RJ-45 connector with LED indicators to present Active/ Link/ Speed status of the connection.



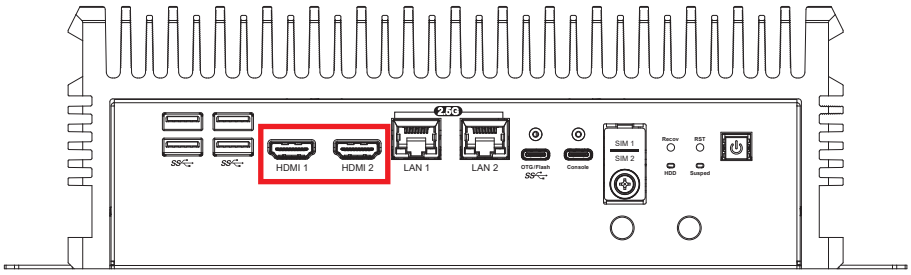
LED Location	LED Color	10 Mbps	100 Mbps	1000 Mbps	2500 Mbps
Right	Green/ Orange	Off	Off	Solid Orange	Solid Green
Left	Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow

2.2.1.6 USB 3.2 Gen2



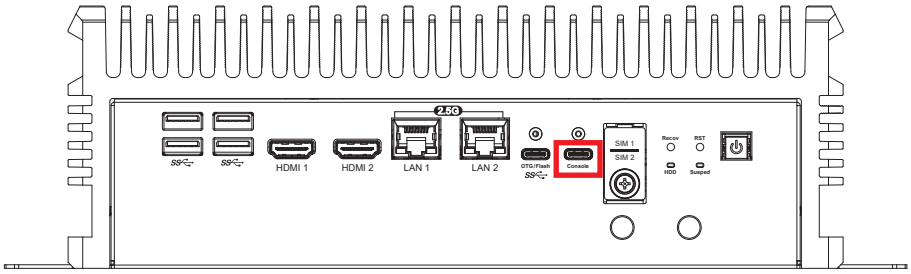
The front panel of the EAC 7000 series features four USB 3.2 Gen2 ports, each supporting data transfer rates of up to 10 Gbps. These ports are compliant with all legacy USB signaling modes — SuperSpeed (SS), High Speed (HS), Full Speed (FS), and Low Speed (LS).

2.2.1.7 Digital Display Port



There are two onboard HDMI Ports support HDMI V2.1 interface, connection supports up to Up to 7680 x 4320 @30Hz

2.2.1.8 Console Port

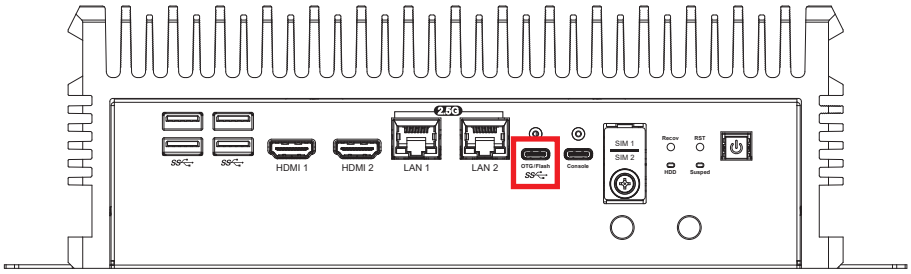


The system debug port is a USB Type C to UART interface that connects to the SOM serial console for debugging.

Console Port Pin Out of USB Type-c :

Pin No.	Function	Pin No.	Function
A1	GND	B1	GND
A2	NC	B2	NC
A3	NC	B3	NC
A4	+V5	B4	+V5
A5	CC1	B5	CC2
A6	MUSB_DP	B6	MUSB_DP
A7	MUSB_DM	B7	MUSB_DM
A8	NC	B8	NC
A9	+V5	B9	+V5
A10	NC	B10	NC
A11	NC	B11	NC
A12	GND	B12	GND

2.2.1.9 Flash Port

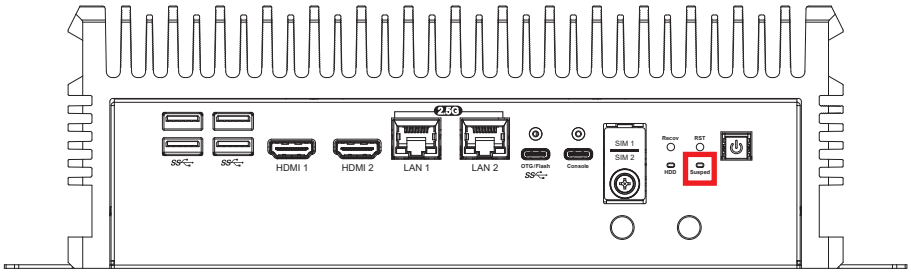


The USB Recovery mode provides an alternate boot device via USB Type C. In this mode, the system connects to a host computer and boots over USB. This mode is used when a new image needs to be flashed.

Flash Port Pin Out of USB Type-c :

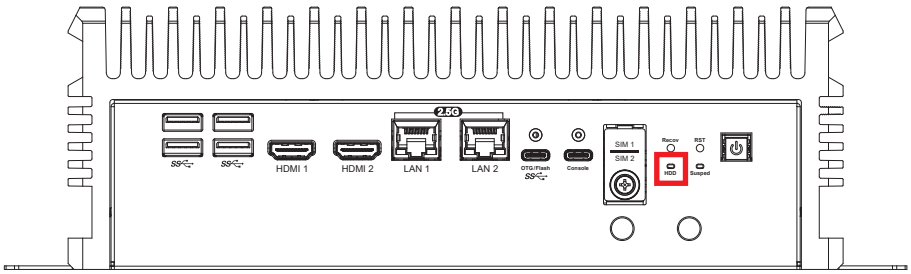
Pin No.	Function	Pin No.	Function
A1	GND	B1	GND
A2	USB_SSTX1_P	B2	USB_SSTX2_P
A3	USB_SSTX1_N	B3	USB_SSTX2_N
A4	+V5	B4	+V5
A5	CC1	B5	CC2
A6	USB1_DP	B6	USB2_DP
A7	USB1_DN	B7	USB2_DN
A8	NC	B8	NC
A9	+V5	B9	+V5
A10	USB_SSRX2_N	B10	USB_SSRX1_N
A11	USB_SSRX2_P	B11	USB_SSRX1_P
A12	GND	B12	GND

2.2.1.10 Suspend & Status LED Indicators



LED Color	Status
Green (Suspend LED)	System into suspend status

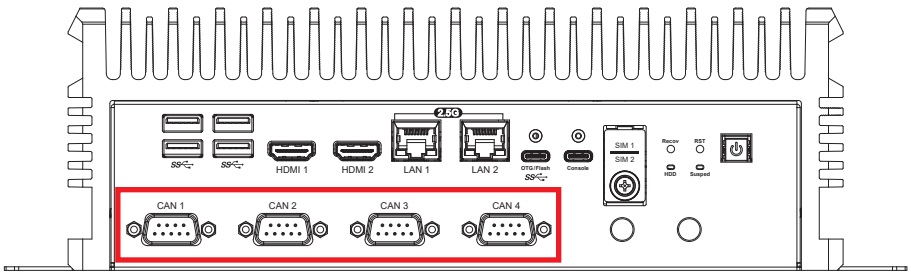
2.2.1.11 HDD & Status LED Indicators



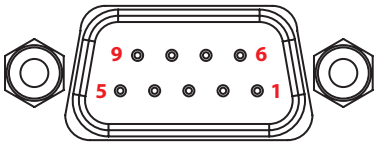
Orange-HDD LED : A SSD Storage LED. If the LED is on, it indicates that the system's storage is functional. If it is off, it indicates that the system's storage is not functional. If it is flashing, it indicates data access activities are in progress.

2.2.2 Functions of EAC-7000/7100/7200/7300/7400-T5000 series

2.2.2.1 Isolated CAN Ports



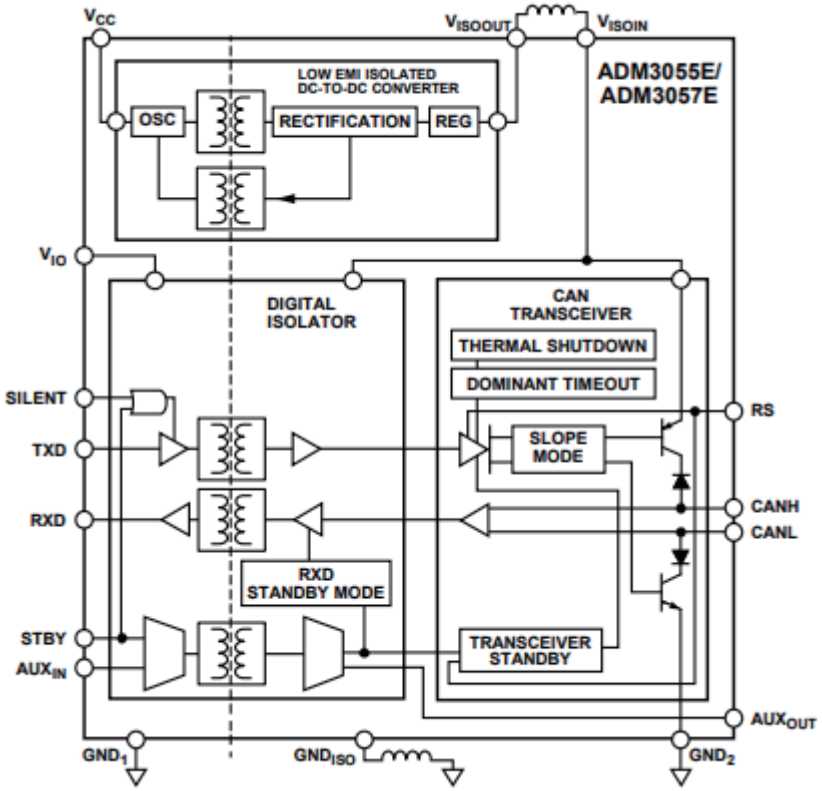
- 5 kVrms/3 kV rms signal and power isolated CAN transceivers.
- 5 Mbps and comply with the ISO 11898-2 : 2016 standard.
- Safety and regulatory approvals for 5 kV rms isolation voltage, 10 kV surge test, and 8.3 mm creepage and clearance ensure to meets application reinforced isolation requirements.



CAN1/CAN2/CAN3/CAN4 Bus Connector Pin Out :

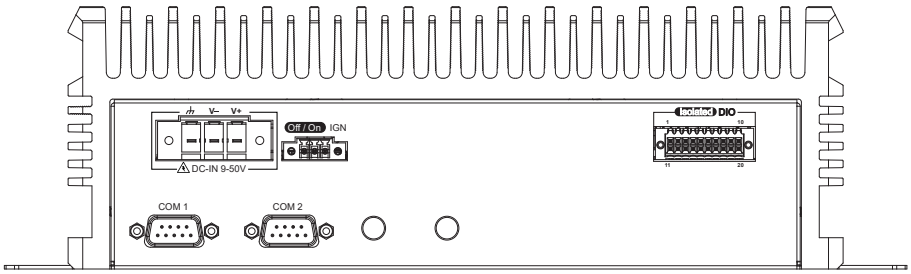
Pin No.	Function	Pin No.	Function	Pin No.	Function
1	CAN_H	4	NC	7	NC
2	CAN_L	5	NC	8	NC
3	GND	6	NC	9	NC

CAN Isolated block diagram :



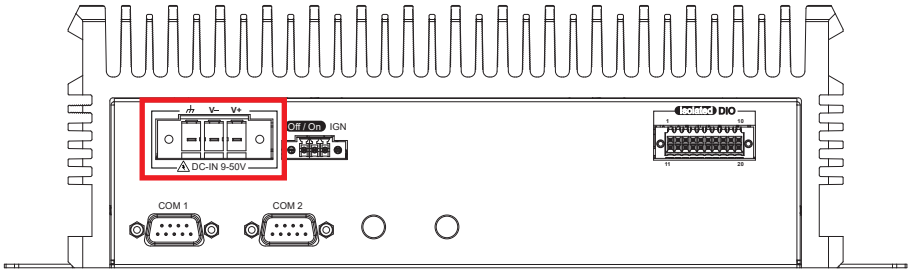
2.3 Rear Panel I/O & Functions

2.3.1 Functions of EAC-7000-T4000/T5000 series



In the Vecow EAC 7000 series, some I/O connectors are located on the rear panel. For example, the IGN, COM ports, power input, and DIO port indicators are placed on the rear panel.

2.3.1.1 Power Terminal Block

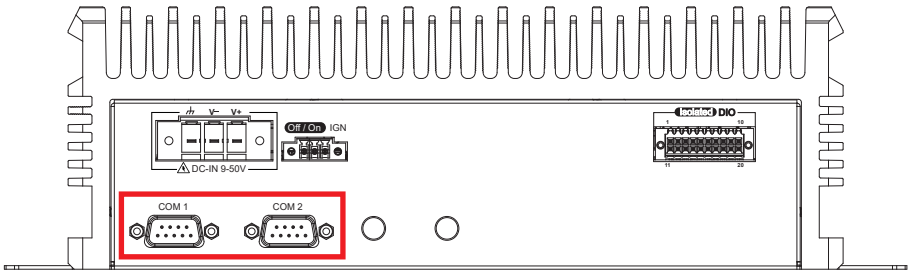


EAC-7000 series supports 9V to 50V DC wide range power input by terminal block in the rear side.

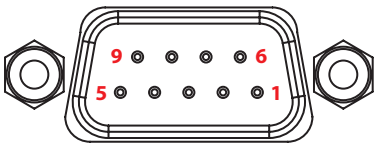
Power Terminal Block Pin Out :

Pin No.	Definition
1	Chassis Ground
2	V-
3	V+

2.3.1.2 COM Ports



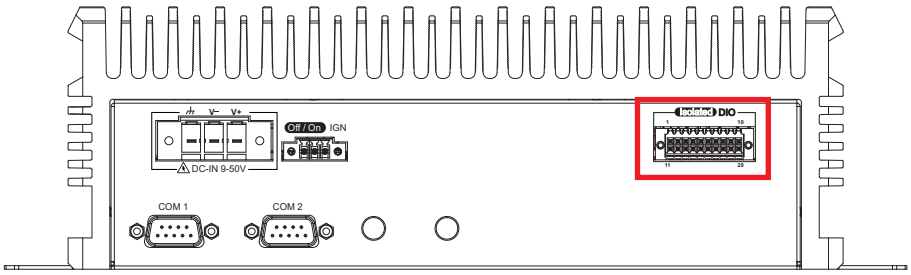
COM1 and COM2 can be configured for RS 232, RS 422, or RS 485 communication with automatic flow control. By default, COM1 and COM2 are set to RS 232. To change to RS 422 or RS 485, adjust the settings in software.



COM1/COM2 Bus Connector Pin Out :

Pin No.	RS-232	RS-422	RS-485
1	NC	TXD-	DATA-
2	RXD	TXD+	DATA+
3	TXD	RXD+	NC
4	NC	RXD-	NC
5	GND	GND	GND
6	NC	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	NC	NC	NC

2.3.1.3 Isolated DIO Port



There is a 16 bit (8 bit DI, 8 bit DO) connector on the rear side. The DI/DIO supports both NPN (sink) and PNP (source) modes. Each DI channel is equipped with a photo coupler for isolated protection, and each DO channel uses an isolator chip. The configuration for each DIO connector is set by a jumper. The DO safety related certifications are :

- 4242-VPK Basic Isolation per DIN V VDE V 0884-10 and DIN EN 61010-1
- 3-KVRMS Isolation for 1 minute per UL 1577
- CSA Component Acceptance Notice 5A, IEC 60950-1 and IEC 61010-1 End Equipment Standards
- GB4943.1-2011 CQC Certified

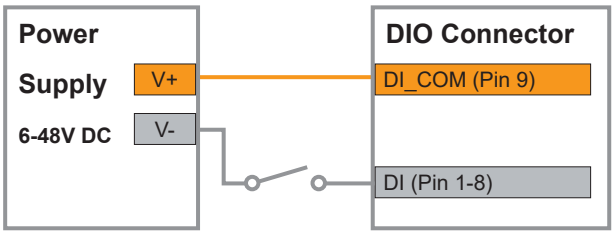
DIO Connectors pin out :

Pin No.	Function	Pin No.	Function
1	EXT_IN0	11	EXT_OUT0
2	EXT_IN1	12	EXT_OUT1
3	EXT_IN2	13	EXT_OUT2
4	EXT_IN3	14	EXT_OUT3
5	+VDI_COM	15	+VDIO_EXT
6	EXT_IN4	16	EXT_OUT4
7	EXT_IN5	17	EXT_OUT5
8	EXT_IN6	18	EXT_OUT6
9	EXT_IN7	19	EXT_OUT7
10	GND_ISO	20	GND_ISO

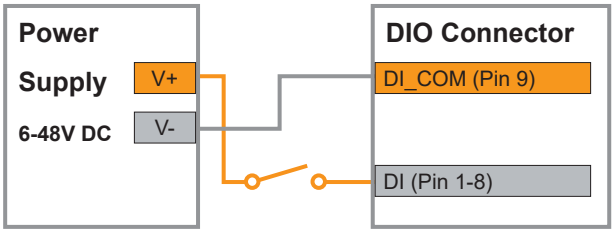
Notice : +VDIO_EXT is external 6-40VDC (NPN) or external 6-48VDC(PNP).

DI reference circuit :

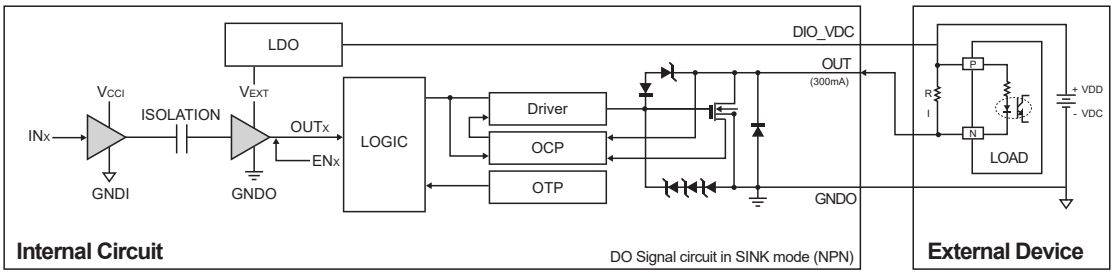
Sink Mode (NPN)



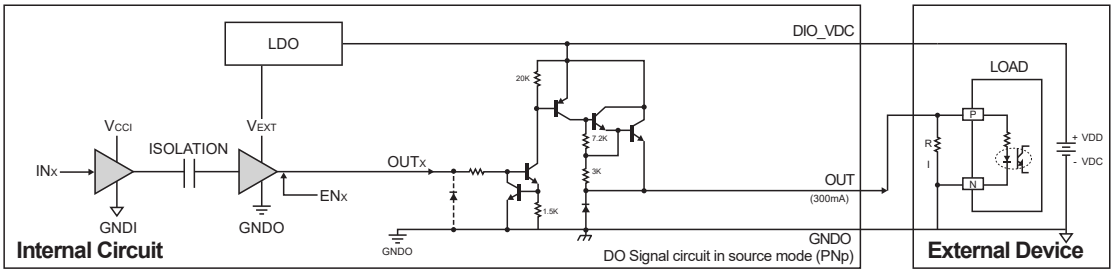
Source Mode (PNP)



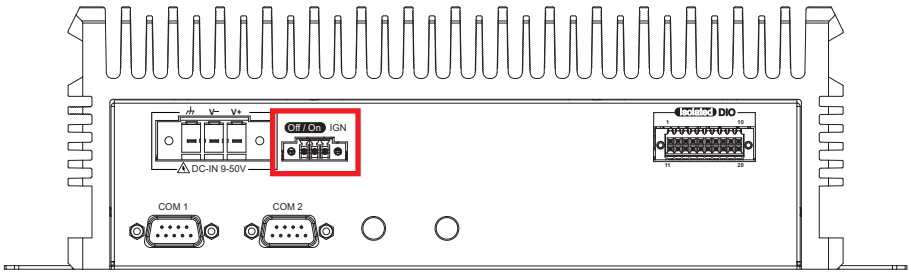
DO reference circuit :
Sink Mode (NPN, Default)



Source (PNP)



2.3.1.4 Remote Power On/Off Switch & Ignition

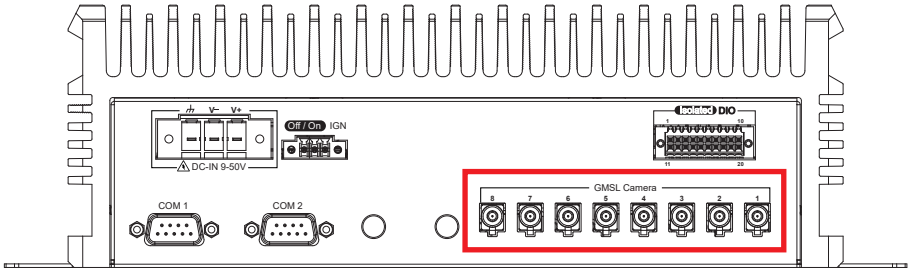


It is a 3-pin power-on or power-off switch through terminal block. You could turn on or off the system power by using this contact. This terminal block supports dual function of soft power-on/power-off (instant off or delay 4 second).

Connectors pin out :

Pin No.	Definition
1	Ignition(IGN)
2	SW+
3	SW-

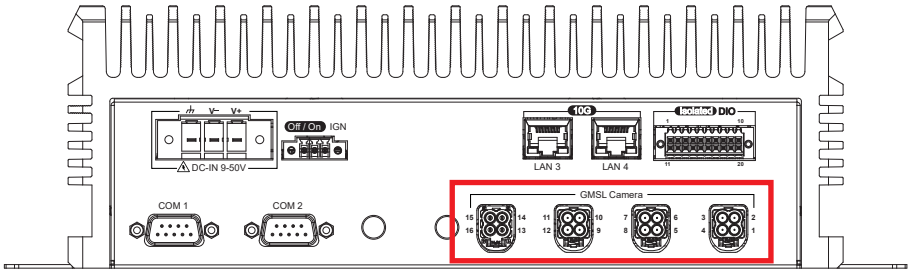
2.3.2 Functions of EAC-7100-T4000/T5000



There are eight FAKRA connectors on the rear side of the EAC-71000. Each camera connects to the EAC-71000 through a single coaxial cable. Using GMSL2 (Gigabit Multimedia Serial Link) connections, the cameras are linked to a four-port deserializer. The deserializer outputs MIPI CSI-2, providing up to 10G Gbps bandwidth per camera using C-PHY. The GMSL design supports frame synchronization by default at 30 Hz with a 50% duty cycle.

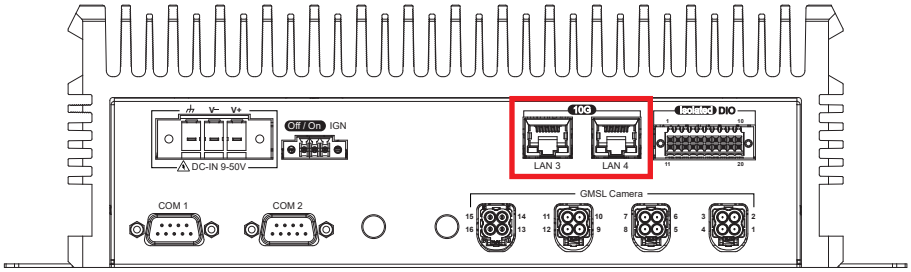
2.3.3 Functions of EAC-7200-T4000/T5000

2.3.3.1 GMSL Camera Ports



The system includes four mini-FAKRA connectors on the rear panel of the EAC-72000. Each connector supports up to four cameras, enabling connection of up to 16 cameras in total. Each camera is connected via a single coaxial cable. GMSL2 links interface the cameras with a four-port deserializer, which outputs MIPI CSI-2. Each mini-FAKRA provides up to 20 Gbps shared bandwidth. Frame synchronization is supported by default at 30 Hz with a 50% duty cycle.

2.3.3.2 10Gbps Ethernet Ports

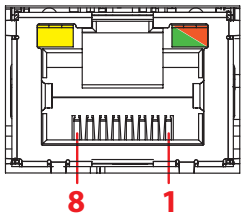


The system includes two 8 pin RJ 45 jacks on the rear side of the EAC 7200 series, supporting 10/100/1000/2.5G/5G/10G Mbps Ethernet connections. The system supports 1000BASE-T, 2.5GBASE-T, 5GBASE-T, and 10GBASE-T data transmission over standard Cat 5e/Cat 6/Cat 6a Ethernet cables. Using a suitable RJ-45 cable, the system can be connected to a computer or other Ethernet enabled devices, such as a hub or a switch.

Ethernet Ports pin out :

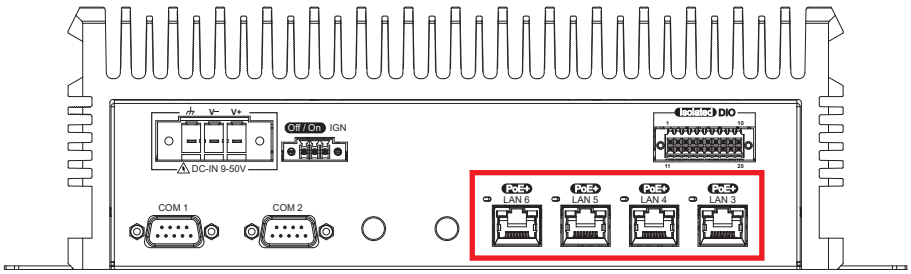
Pin No.	10/100Mbps	1000/2500/5000/10000Mbps
1	E_TX+	MDI0_P
2	E_TX-	MDI0_N
3	E_RX+	MDI1_P
4	------	MDI2_P
5	------	MDI2_N
6	E_RX-	MDI1_N
7	------	MDI3_P
8	------	MDI3_N

Each LAN port is supported by standard RJ-45 connector with LED indicators to present Active/ Link/ Speed status of the connection.



LED Location	LED Color	10 Mbps	100 Mbps	1000 Mbps	2500 Mbps	5000 Mbps	10000 Mbps
Right	Green/ Orange	Off	Off	Solid Orange	Twinkling Orange	Twinkling Green	Solid Green
Left	Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow

2.3.4 Functions of EAC-7300-T4000/T5000



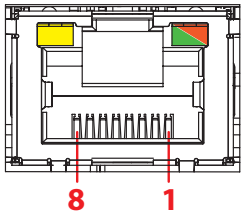
The system includes four RJ45 connectors on the rear side of the EAC-7300. The system supports IEEE 802.3at (PoE^{+}) Power over Ethernet (PoE), delivering up to 25.5 W at 48 V per port, with a total power budget of up to 60 W across all four ports, along with 1000BASE-T Gigabit data transmission over standard Ethernet Cat 5/Cat 6 cables. Each PoE port is powered by an Intel® I350 Gigabit Ethernet controller and is connected to the multi-core processor via an independent PCI Express interface to optimize network and data transmission performance. When a PoE port supplies power to a powered device (PD), the corresponding LED indicator will be illuminated.

PS. Suggest to use PoE function when power input is over 24V.

Ethernet Ports pin out :

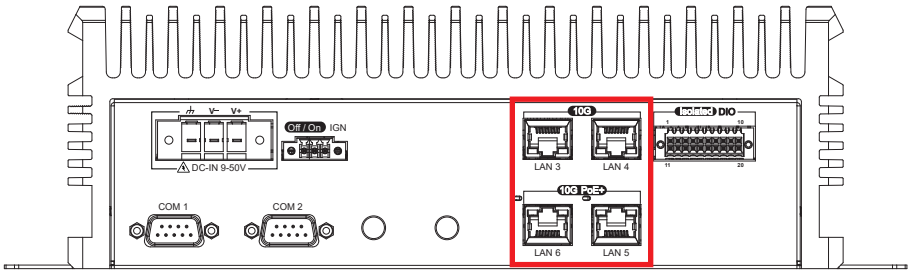
Pin No.	10/100Mbps	1000Mbps	PoE
1	E_TX+	MDI0_P	PoE+
2	E_TX-	MDI0_N	PoE+
3	E_RX+	MDI1_P	PoE-
4	------	MDI2_P	
5	------	MDI2_N	
6	E_RX-	MDI1_N	PoE-
7	------	MDI3_P	
8	------	MDI3_N	

Each LAN port is equipped with a standard RJ 45 connector with LED indicators to show the connection's Active/Link/Speed status. The LED indicator on the right bottom corner lights solid green when the cable is properly connected to a 100 Mbps Ethernet network, and solid orange when the cable is properly connected to a 1000 Mbps (Gigabit) Ethernet network. The left LED blinks during Ethernet data transmission or reception to indicate network activity.



LED Location	LED Color	10 Mbps	100 Mbps	1000 Mbps
Right	Green/ Orange	Off	Solid Green	Solid Orange
Left	Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow

2.3.5 Functions of EAC-7400-T5000

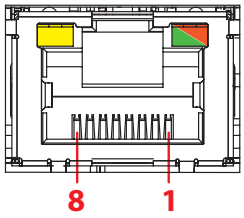


The system includes four 8 pin RJ 45 jacks on the rear side of the EAC 7400 series, supporting 10/100/1000/2.5G/5G/10G Mbps Ethernet connections. The system supports 1000BASE T, 2.5GBASE T, 5GBASE T, and 10GBASE T data transmission over standard Cat 5e, Cat 6, or Cat 6a Ethernet cables. Using a suitable RJ 45 cable, the system can be connected to a computer or other Ethernet enabled devices, such as a hub or a switch. LAN5 and LAN6 also support IEEE 802.3at (PoE^{+}) Power over Ethernet, delivering up to 25.5 W at 48 V per port.

Ethernet Ports pin out :

Pin No.	10/100Mbps	1000/2500/5000/10000Mbps	LAN5/LAN6_PoE
1	E_TX+	MDI0_P	PoE+
2	E_TX-	MDI0_N	PoE+
3	E_RX+	MDI1_P	PoE-
4	------	MDI2_P	
5	------	MDI2_N	
6	E_RX-	MDI1_N	PoE-
7	------	MDI3_P	
8	------	MDI3_N	

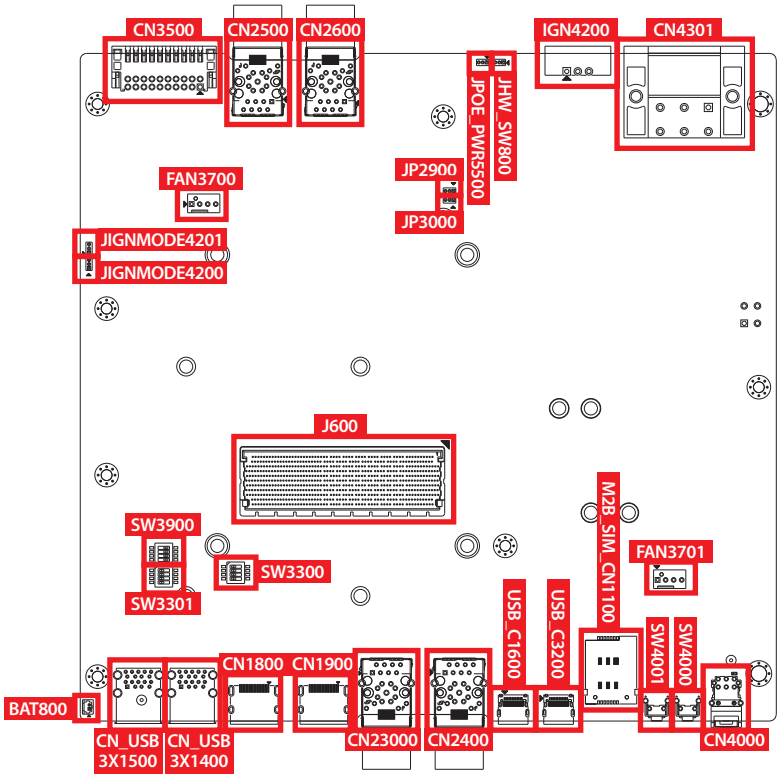
Each LAN port is supported by standard RJ-45 connector with LED indicators to present Active/ Link/ Speed status of the connection.



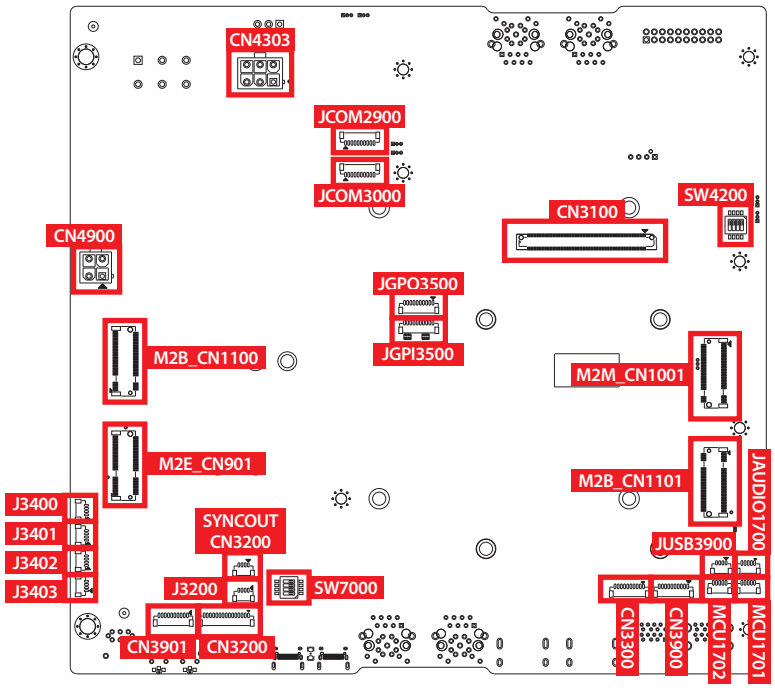
LED Location	LED Color	10 Mbps	100 Mbps	1000 Mbps	2500 Mbps	5000 Mbps	10000 Mbps
Right	Green/ Orange	Off	Off	Solid Orange	Twinkling Orange	Twinkling Green	Solid Green
Left	Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow	Twinkling Yellow

2.4 Main Board Connectors & Jumper Locations

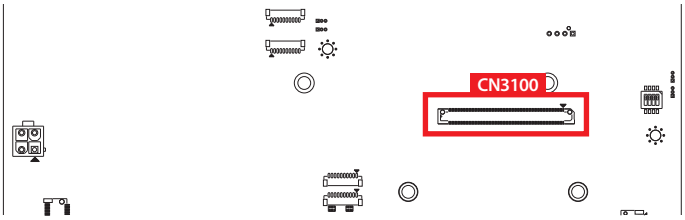
2.4.1 TOP View of MB



BOT View of MB

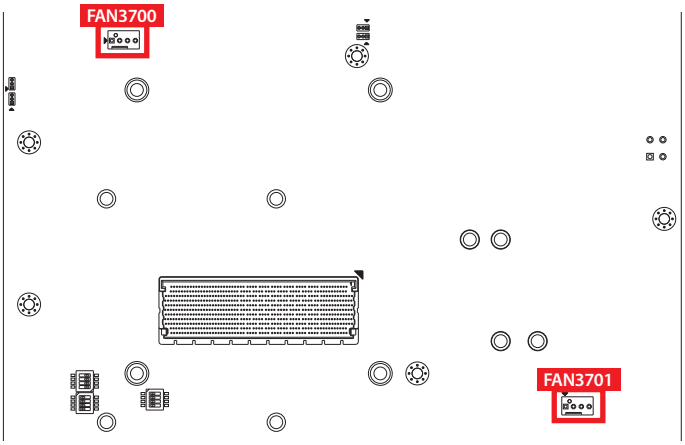


2.4.1.1 CN3100 : Board to Board Connector to Ethernet LAN and GMSL Camera Board

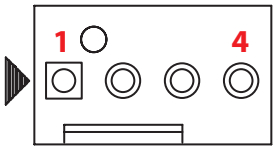


CN3100 connector only apply to EAC-7100/7200/7300/7400 board use.

2.4.1.2 FAN3700 , FAN3701 : Fan Connector

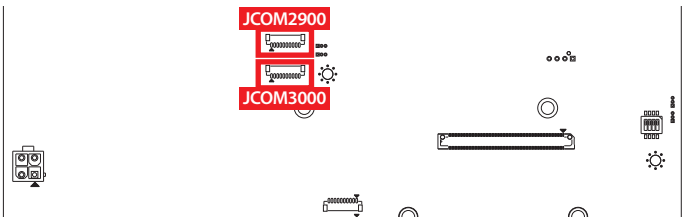


Fan power connector supports for additional thermal requirements. The pin assignments of both FAN3700 and FAN3701 is listed in the following table.



Pin No.	Signal Name	Pin No.	Signal Name
1	GND	2	+12V
3	Fan speed sensor	4	Fan PWM

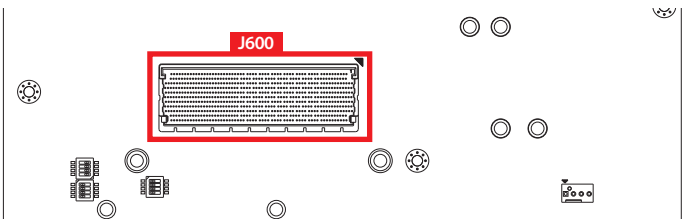
2.4.1.3 JCOM2900, JCOM3000 : COM Serial Port



Serial port can be configured as RS-232, RS-422, or RS-485 by auto flow control . The default setting is RS-232, it also can be configured as RS-422 or RS-485 by software setting.

Pin No.	RS-232	RS-422 (5-wire)	RS-485 (3-wire)
1	----------	----------	----------
2	GND	GND	GND
3	----------	----------	----------
4	----------	RXD-	----------
5	CTS	----------	----------
6	TXD	RXD+	----------
7	RTS	----------	----------
8	RXD	TXD+	DATA+
9	----------	----------	----------
10	----------	TXD-	DATA-

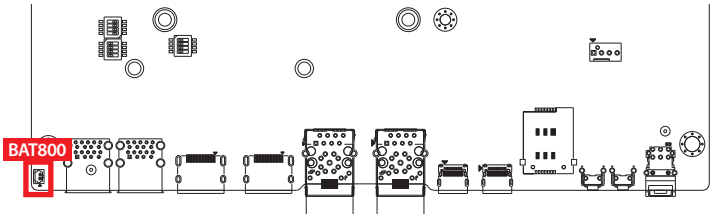
2.4.1.4 J600 : Jetson Thor SOM Socket



Connection to Jetson Thor SOM

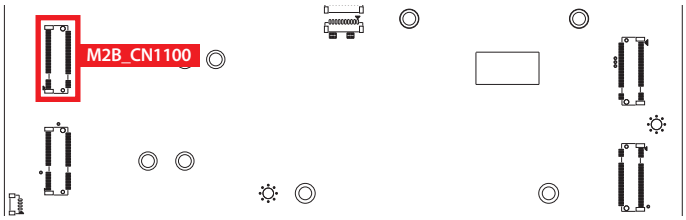
- 699-pin (11x65) board-board connector

2.4.1.5 BAT800 : RTC Battery Connector.



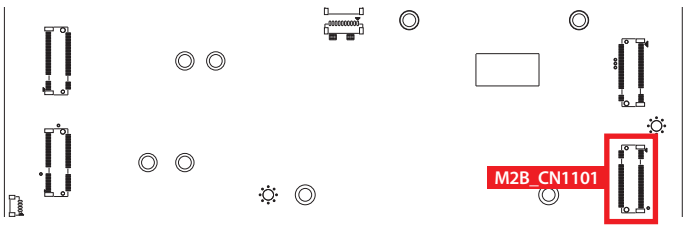
The system's real-time clock is powered by a lithium battery (Panasonic BR2032, 190 mAh). It is recommended that the lithium battery not be replaced by the user. If the battery requires replacement, please contact the Vecow RMA service team.

2.4.1.6 M2B_CN1100 : M.2 key B Slot for USB2.0, USB3.2 Gen2 support



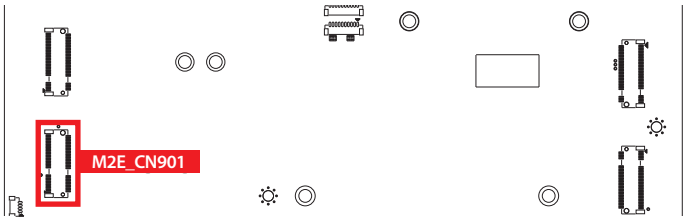
The M.2 Key B connector supports host interfaces such as USB 3.0, USB 2.0. It is typically used for wireless communication modules, including LTE and 5G. Supported module form factors include 3042 and 3052.

2.4.1.7 M2B_CN1101 : M.2 key B Slot for USB2.0, PCIe Gen5 support



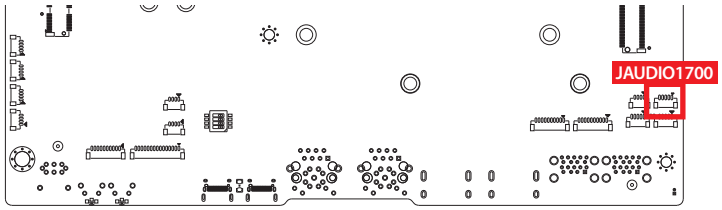
The M.2 Key B connector supports host interfaces such as PCIe Gen5 x 2, USB 2.0. It is typically used for wireless communication modules, including LTE and 5G. Supported module form factors include 2280.

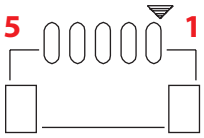
2.4.1.8 M2E_CN901 : M.2 key E Slot for USB 2.0, PCIe Gen5x1 support.



The M.2 Key E connector is designed for wireless connectivity modules, including Wi-Fi, Bluetooth, NFC, and GNSS. Supported module form factors include 2230.

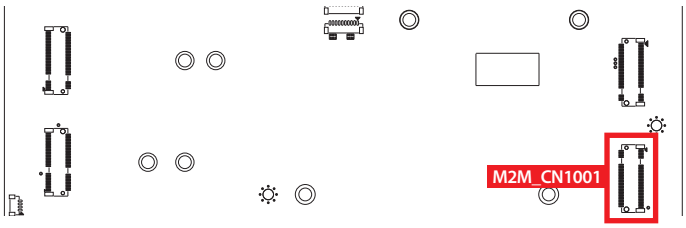
2.4.1.9 JAUDIO1700 : Headphone Out and Microphone In Connector.





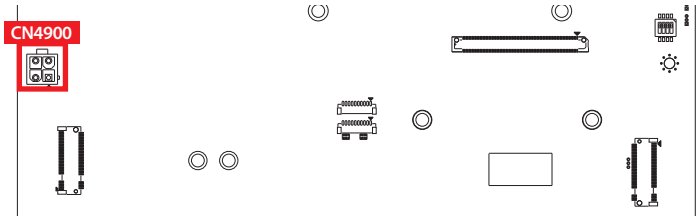
Pin No.	Definition	Pin No.	Definition
1	HPOUT_L	4	MIC_L
2	HPOUT_R	5	MIC_R
3	GND		

2.4.1.10 M2M_CN1001 : PCIe Gen5 x4 support

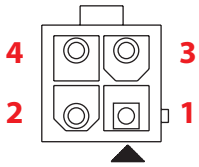


The M.2 Key M connector supports host interfaces such as PCIe Gen5 x4, and is typically used for high performance NVMe storage modules. Supported module form factors include 2280.

2.4.1.11 CN4900 : Power supply for EAC-7200 camera.

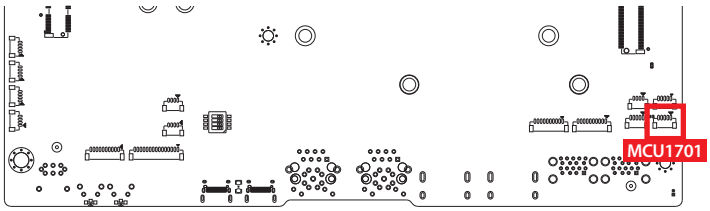


This connector is used to provide the power supply for the EAC 7200 camera.

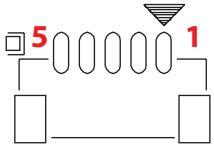


Pin No.	Definition
1	GND
2	GND
3	POWER
4	POWER

2.4.1.12 MCU1701 : MCU FW Download

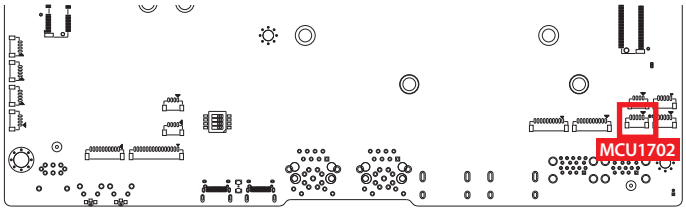


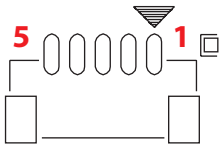
The system supports MCU firmware download or upgrade via the MCU1701 connector.



Pin No.	Definition
1	P3V3
2	M-SWDIO
3	M-SWCLK
4	MCU_NRST
5	GND

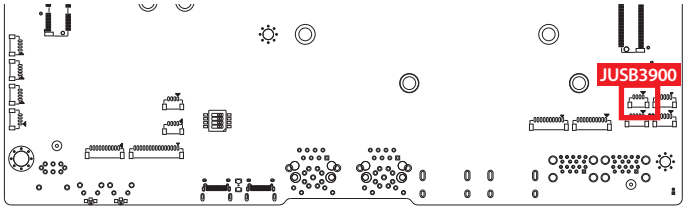
2.4.1.13 MCU1702 : MCU Debug



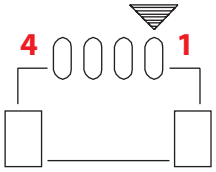


Pin No.	Definition
1	P3V3
2	MCU_USART_TX
3	MCU_USART_RX
4	NC
5	GND

2.4.1.14 JUSB3900 : USB2.0 (reserved)

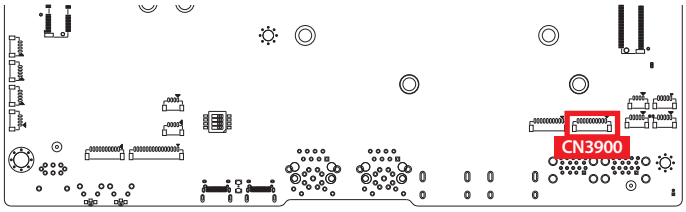


Reserving USB2.0 connector for user configuration.

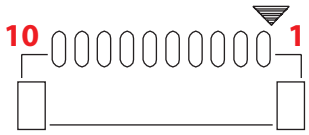


Pin No.	Definition
1	P5V
2	USB_N
3	USB_P
4	GND

2.4.1.15 CN3900 : I2C and SPI (reserved)

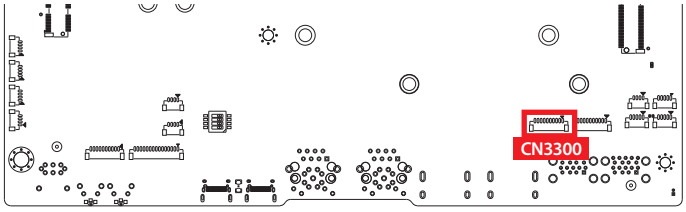


Reserving I2C and SPI connector for user configuration.

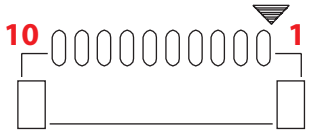


Pin No.	Definition	Pin No.	Definition
1	P5V	6	SPI_CLK
2	P3V3	7	SPI_MISO
3	I2C_SCL	8	SPI_MOSI
4	I2C_SDA	9	SPI_CS_N
5	GND	10	GND

2.4.1.16 CN3300 : UART (reserved)

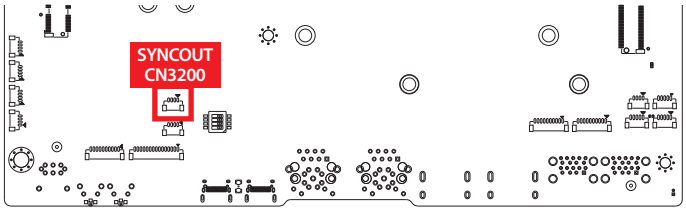


Reserving UART connector for user configuration.

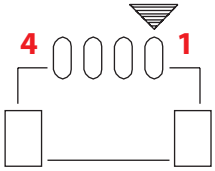


Pin No.	Definition	Pin No.	Definition
1	P5V	6	GND
2	UART_TX	7	NC
3	UART_RX	8	GND
4	UART_RTS	9	NC
5	UART_CTS	10	GND

2.4.1.17 SYNCOUT_CN3200 : GNSS SYNC IN via UART (reserved)

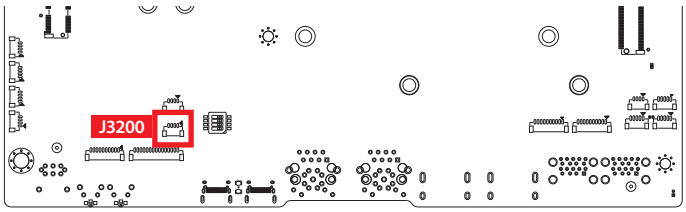


A GNSS SYNC IN connector is reserved through the UART interface for user configuration.

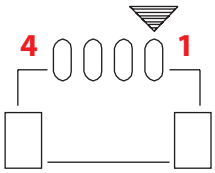


Pin No.	Definition
1	EXT_SYNC
2	SYNCIN_TX
3	SYNCIN_RX
4	GND

2.4.1.18 J3200 : Remote console via UART(reserved)

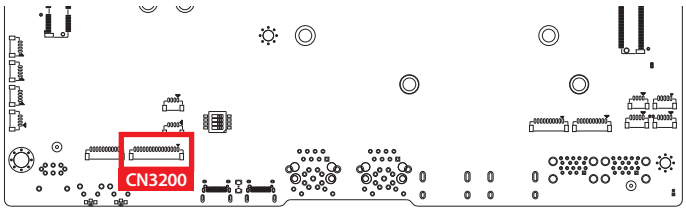


The control UART is connected to the OOB module port, allowing remote control of the system even when the system is booting.

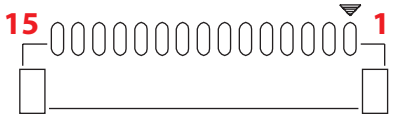


Pin No.	Definition
1	REMOTE_TX
2	REMOTE_RX
3	GND
4	GND

2.4.1.19 CN3200 : OOB Control (reserved)

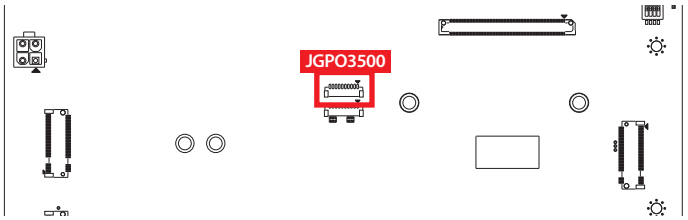


The system supports remote control (power on, reset, and monitoring) through the connected OOB module.

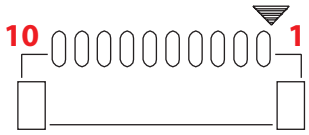


No.	Definition	No.	Definition	No.	Definition
1	P5V	6	GND	11	I2C_SDA
2	P5V	7	OOB_RX	12	GND
3	OOB_REST_N	8	OOB_TX	13	PSW_NU
4	GPIO57_OOB	9	GND	14	RST_SW
5	GPIO58_OOB	10	I2C_SCL	15	PWR_ONOFF_DET

2.4.1.20 JGPO3500 : GPO (reserved)

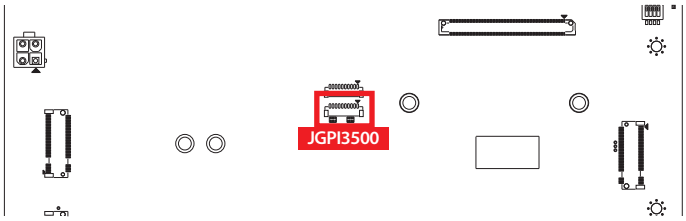


The internal 8-bit GPO connector is reserved for internal use.

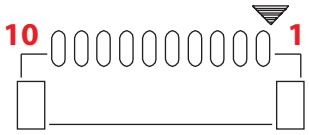


Pin No.	Definition	Pin No.	Definition
1	P3V3	6	GPO_4
2	GND	7	GPO_5
3	GPO_1	8	GPO_6
4	GPO_2	9	GPO_8
5	GPO_3	10	GPO_7

2.4.1.21 JGPI3500 : GPI (reserved)

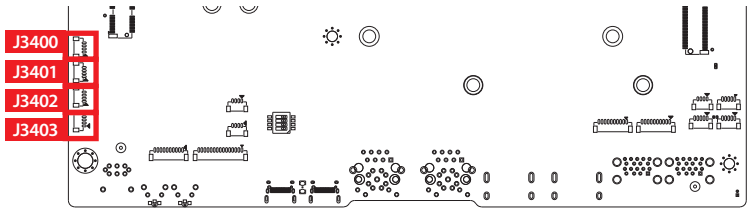


The internal 8-bit GPI connector is reserved for internal use.

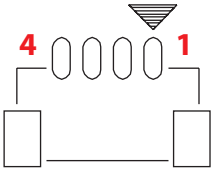


Pin No.	Definition	Pin No.	Definition
1	P3V3	6	GPI_4
2	GND	7	GPI_5
3	GPI_1	8	GPI_6
4	GPI_2	9	GPI_8
5	GPI_3	10	GPI_7

2.4.1.22 J3400/J3401/J3402/J3402 : CAN Bus header



Four CAN bus headers are provided on board for connection to the front panel.



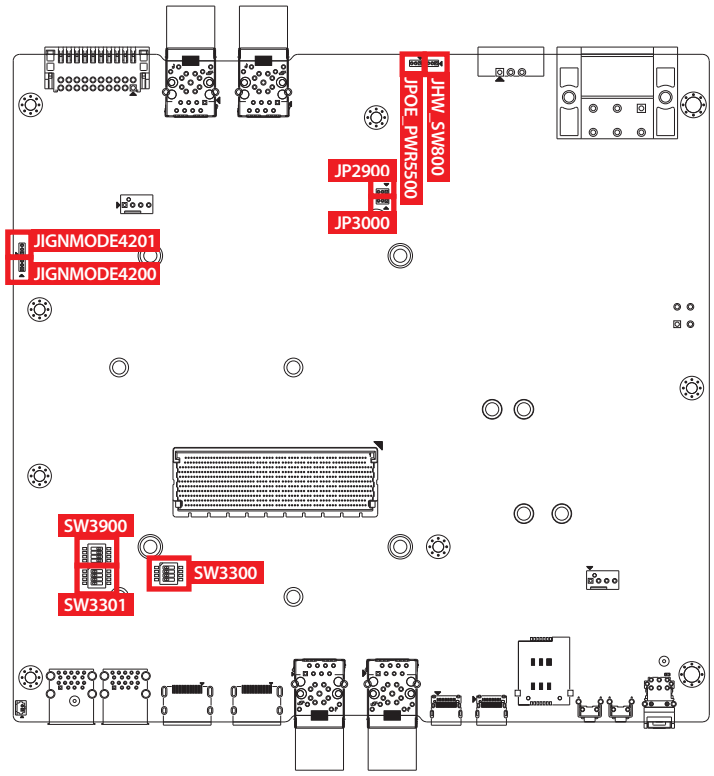
Pin No.	Definition
1	CAN_H
2	CAN_L
3	ISOGND
4	ISOGND

2.5 Main Board Jumper Settings

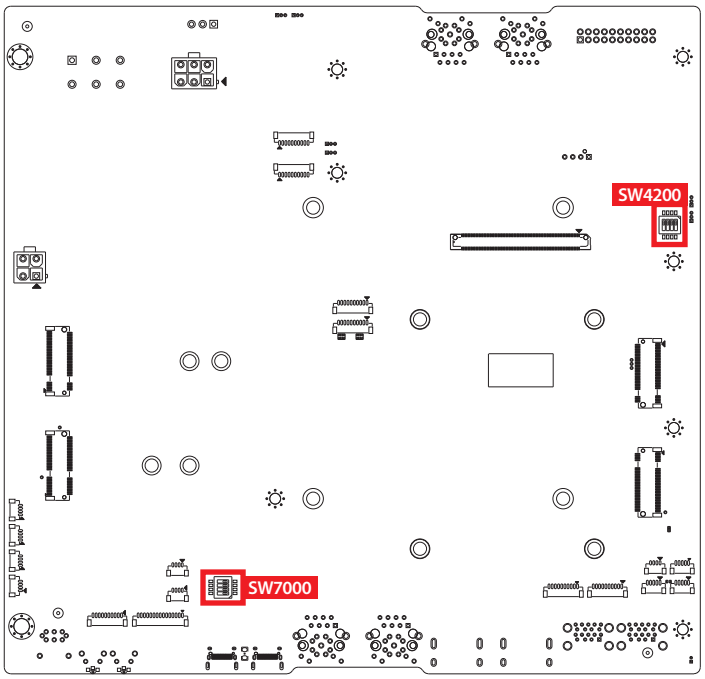
2.5.1 Board Top and Bottom View of EAC-7000 series Main Board with Jumper.

The figure below is the top and Bottom view of EAC-7000 series main board which is the main board. It shows the location of the jumpers.

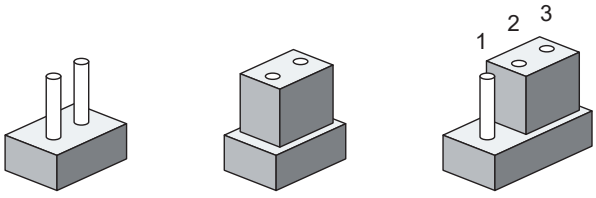
Top View



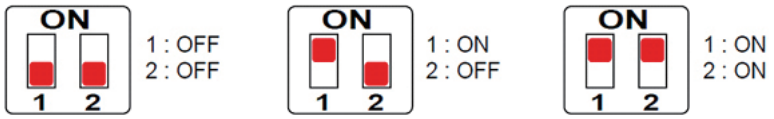
BOT View



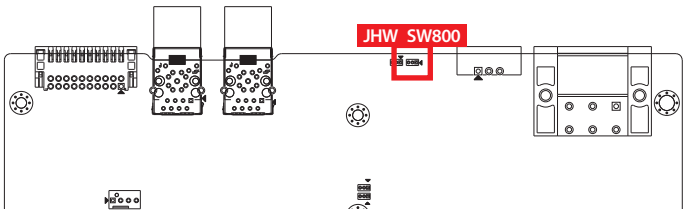
You may configure your card to match the needs of your application by setting jumpers. A jumper is a small conductive bridge used to close an electrical circuit. It consists of two metal pins and a small metal clip (often covered by plastic) that slides over the pins to connect them. To “close” a jumper, place the clip over both pins. To “open” a jumper, remove the clip. Some jumpers have three pins labeled 1, 2, and 3. In this case, you can connect either pins 1 and 2 or pins 2 and 3.

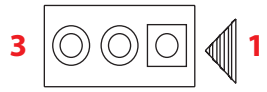


You may configure your card to match the needs of your application by DIP switch. As below show the DIP switch on and off.

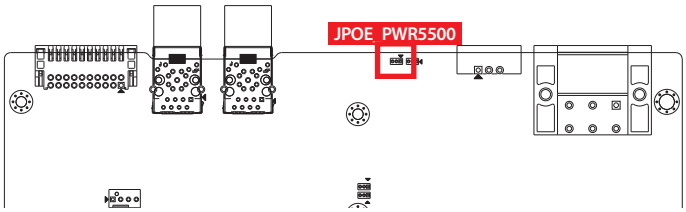


2.5.2 JHW_SW800 : Selection T4000 or T5000.

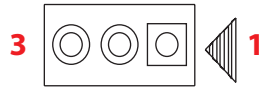


	Pin No.	Definition
	1-2	T5000(default)
	2-3	T4000

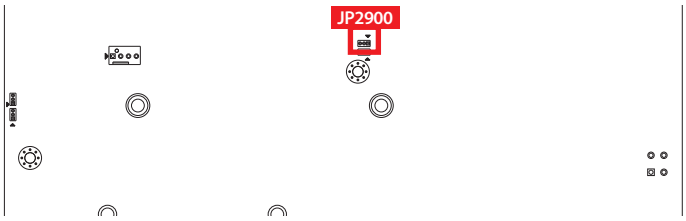
2.5.3 JPOE_PWR5500 : PoE Power On Select Mode



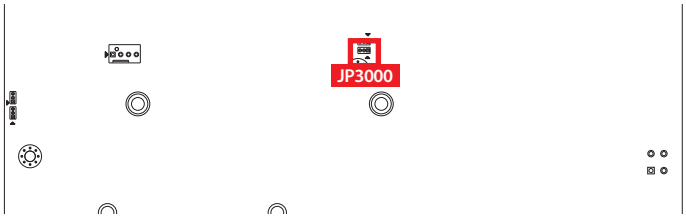
This connector is used to provide the power supply for the EAC 7200 camera.

	Pin No.	Definition
	1-2	POE Power On by P3V3_SB
	2-3	POE Power On on by P3V3 (Default)

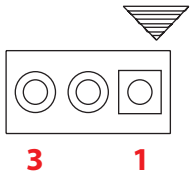
2.5.4 JP2900 : COM1 RS485 Terminal resistance ON



2.5.5 JP3000 : COM2 RS485 Mode Terminal resistance ON

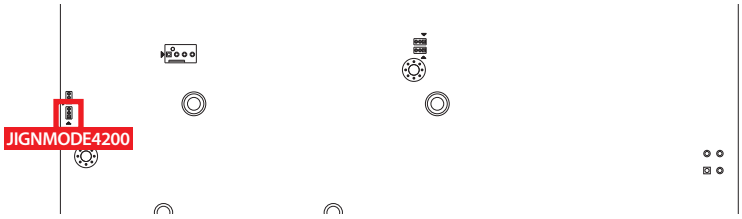


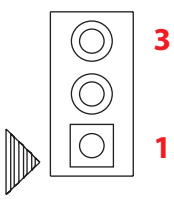
There are two pin headers, JP1 and JP2, for enabling or disabling the 120 Ω termination resistor for the COM RS 485 mode function.



Jumper	Setting	Function
JP2900 (COM1)	1-2	RS485 Mode Terminal resistance OFF (Default)
	2-3	RS485 Mode Terminal resistance ON
JP3000 (COM2)	1-2	RS485 Mode Terminal resistance OFF (Default)
	2-3	RS485 Mode Terminal resistance ON

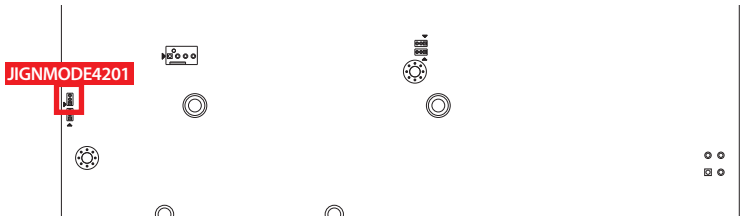
2.5.6 JIGNMODE4200 : Ignition Mode Select

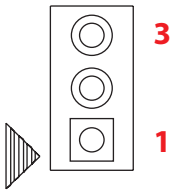




Pin No.	Definition
1-2	H/W MODE(Default)
2-3	S/W MODE

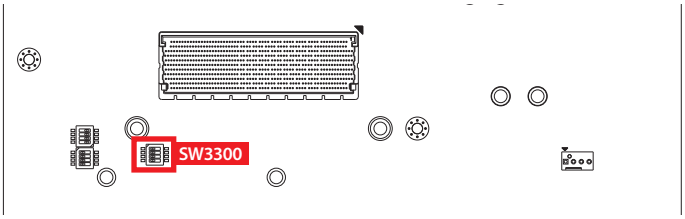
2.5.7 JIGNMODE4201 : Ignition Debug Mode Select



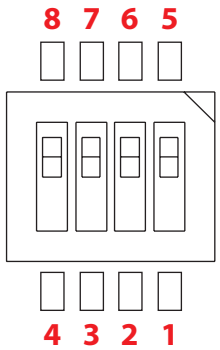


Pin No.	Definition
1-2	Debug Mode
2-3	Normal mode(Default)

2.5.8 SW3300 : Select the OOB Control, RSV_UART or COM port

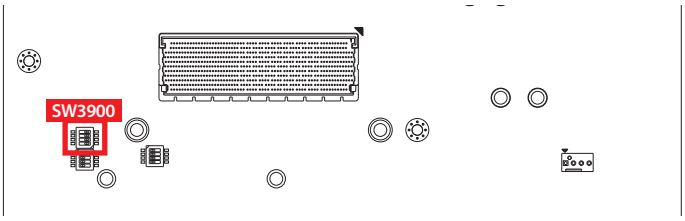


- OOB mode : The control UART is connected to the OOB module port, allowing remote control of the system even when the system is booting.
- RSV_UART : Reserved UART header for future use.
- COM port : RS 232/RS 422/RS 485 interface.

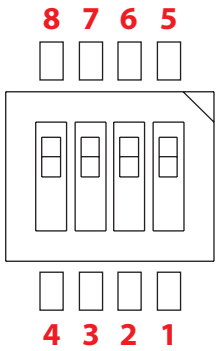


Pin No.	Definition	Status	
1	UART2_SEL	1 ON, 2 OFF	OOB Control
2	UART2_SEL	1 OFF, 2 ON	COM2 port
3	UART1_SEL	3 ON, 4 OFF	RSV_UART
4	UART1_SEL	3 OFF, 4 ON	COM1 port
5	GND		
6	+5V		
7	GND		
8	+5V		

2.5.9 SW3900 : Select the USB2.0 or Audio Function

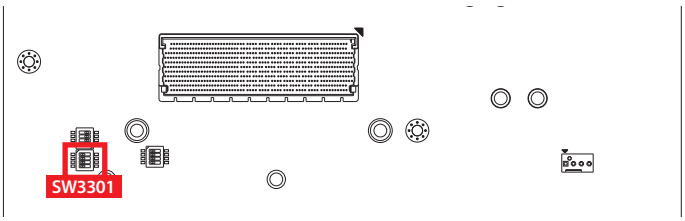


The system can support either USB 2.0 or the audio function, depending on the user's usage.

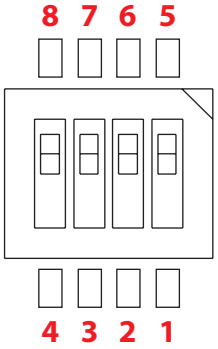


Pin No.	Definition	Status	
1	USB3_N	1 ON, 2 OFF 3 ON, 4 OFF	USB2.0
2	USB3_N	1 OFF, 2 ON 3 OFF, 4 ON	Audio Function
3	USB3_P		
4	USB3_P		
5	USB3_RS_N		
6	USB3_AU_N		
7	USB3_RS_P		
8	USB3_AU_P		

2.5.10 SW3301 : Select the SYNC or MCU download mode

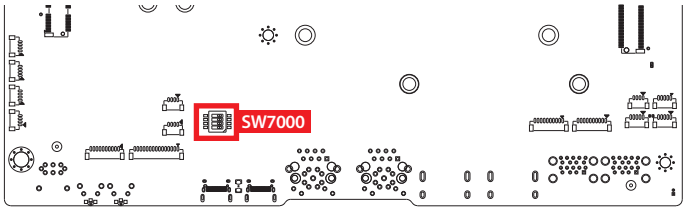


The UART interface supports either SYNC mode or MCU download mode, depending on the user configuration.

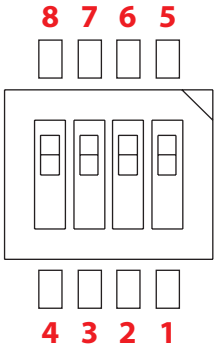


Pin No.	Definition	Status	
1	UART4_RX	1 ON, 2 OFF 3 ON, 4 OFF	MCU Download
2	UART4_RX	1 OFF, 2 ON 3 OFF, 4 ON	SYNC mode
3	UART4_TX		
4	UART4_TX		
5	MCU_USART_RX		
6	SYNCIN_RX		
7	MCU_USART_TX		
8	SYNCIN_TX		

2.5.11 SW7000 : Select the system console or remote console



The system supports monitoring system status through the UART interface. The system can be controlled through the onboard console port or the remote console, depending on the user configuration.

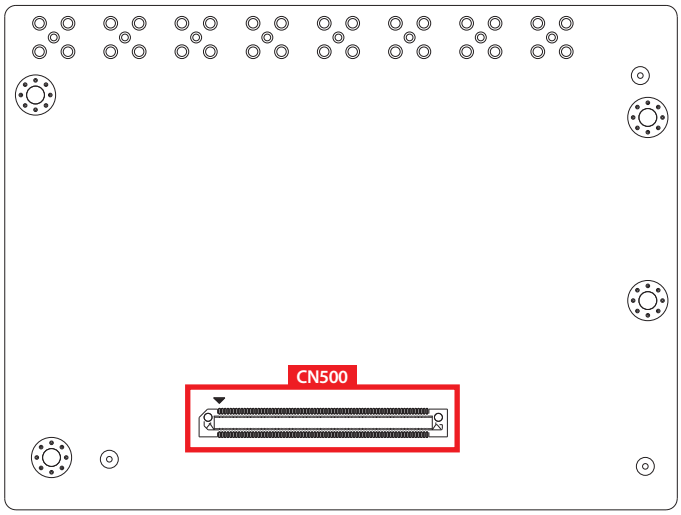


Pin No.	Definition	Status	
1	UART3_RX	1 ON, 2 OFF 3 ON, 4 OFF	Remote Control
2	UART3_RX	1 OFF, 2 ON 3 OFF, 4 ON	Debug port
3	UART3_TX		
4	UART3_TX		
5	REMOTE_RX		
6	MUSB_RX		
7	REMOTE_TX		
8	MUSB_TX		

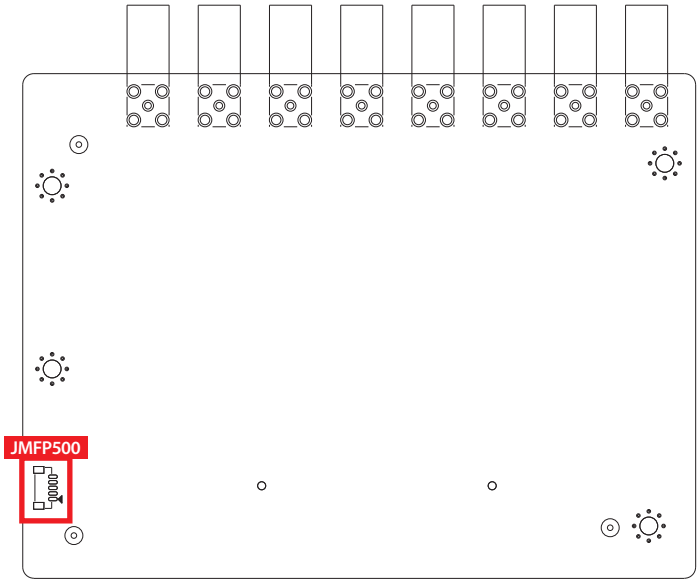
2.6 Expansion Board Connector & Jumper Locations

2.6.1 EAC-7100- Expansion Board

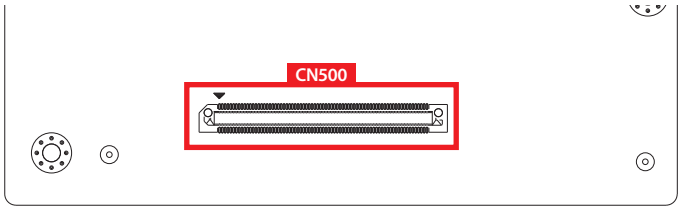
Top View



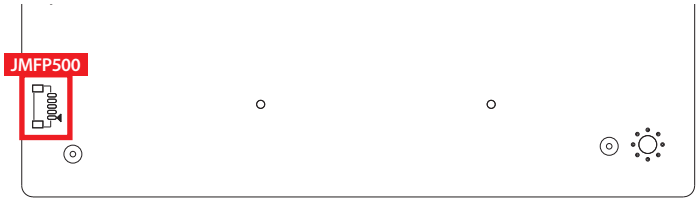
BOT View



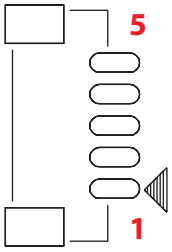
2.6.1.1 CN500 : Board to board connector used to connect to carrier board.



2.6.1.2 JMFP500 : External FSYNC input.



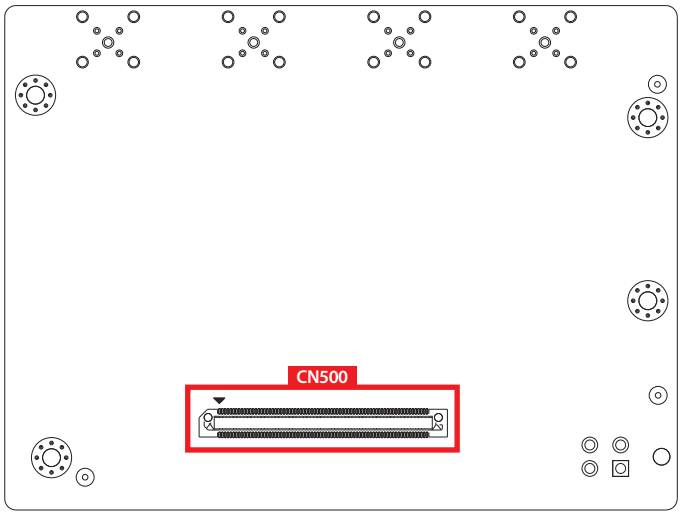
Provides an option to use an external FSYNC signal.



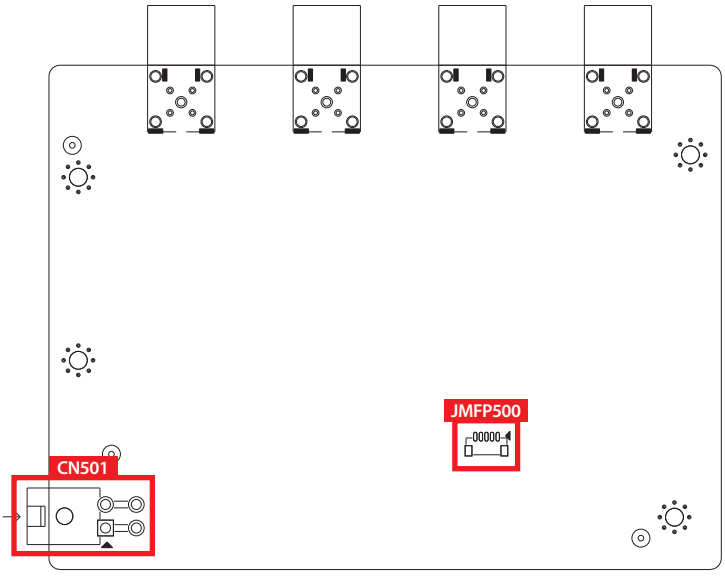
Pin No.	Definition
1	EX_FRSYNC
2	NC
3	NC
4	NC
5	GND

2.6.2 EAC-7200- Expansion Board

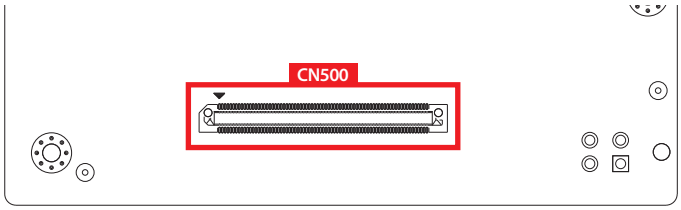
Top View



BOT View

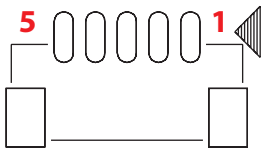


2.6.2.1 CN500 : Board to board connector used to connect to carrier board.



2.6.2.2 JMFP500 : External FSYNC input.

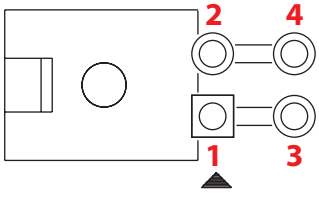
Provides an option to use an external FSYNC signal.



Pin No.	Definition
1	EX_FRSYNC
2	NC
3	NC
4	NC
5	GND

2.6.2.3 CN501 : Power supply for cameras

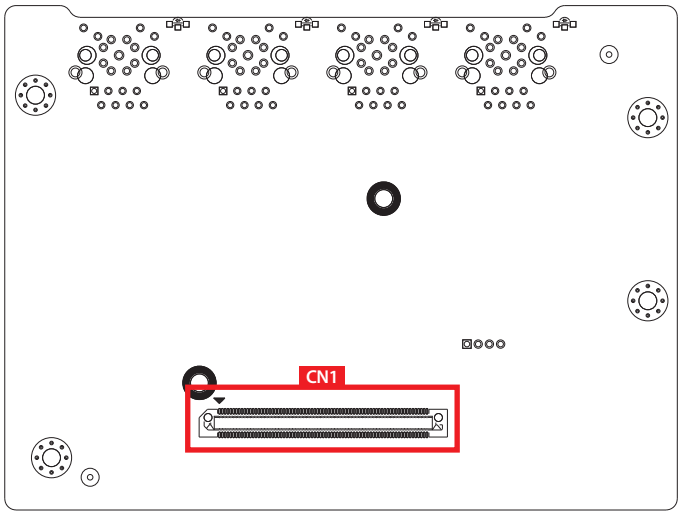
Provides an option to use an external FSYNC signal.



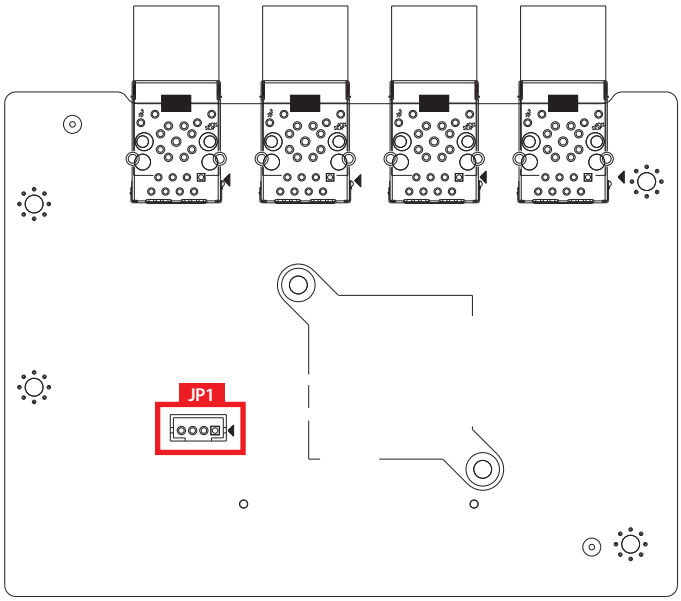
Pin No.	Definition
1	GND
2	GND
3	POWER
4	POWER

2.6.3 EAC-7300- Expansion Board

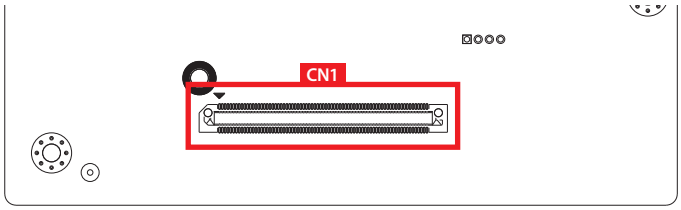
Top View



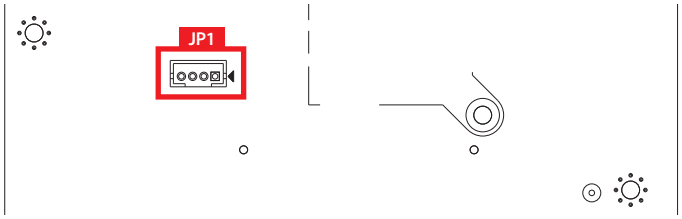
BOT View



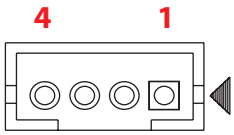
2.6.3.1 CN1 : Board to board connector used to connect to carrier board.



2.6.3.2 JP1 : I2C header(reserved)



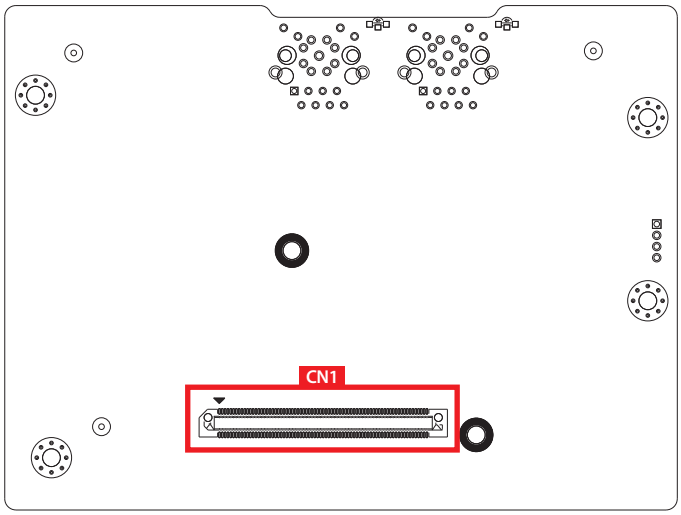
Used to communicate with PoE controller or update firmware



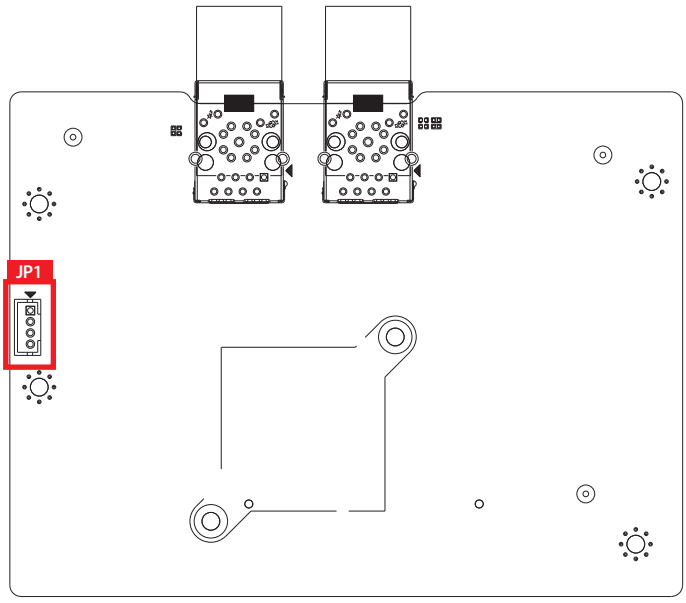
Pin No.	Definition
1	SCL/EE_CLK
2	SDAI/EE_DAT
3	SDAO
4	GND_D

2.6.4 EAC-7400- Expansion Board

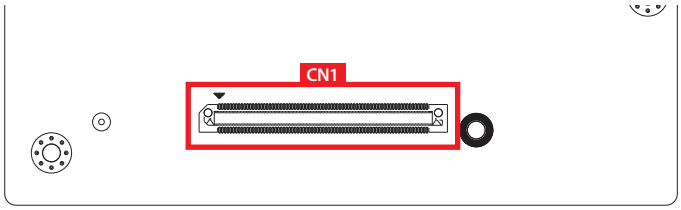
Top View



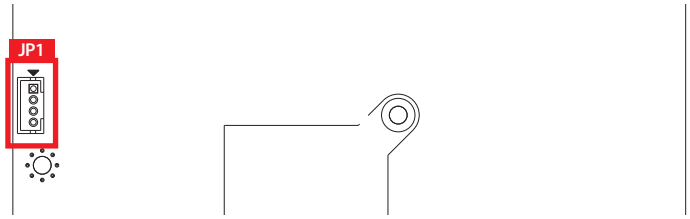
BOT View



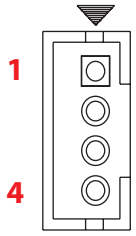
2.6.4.1 CN1 : Board to board connector used to connect to carrier board.



2.6.4.2 JP1 : I2C header(reserved)



Used to communicate with PoE controller or update firmware



Pin No.	Definition
1	SCL/EE_CLK
2	SDAI/EE_DAT
3	SDAO
4	GND_D

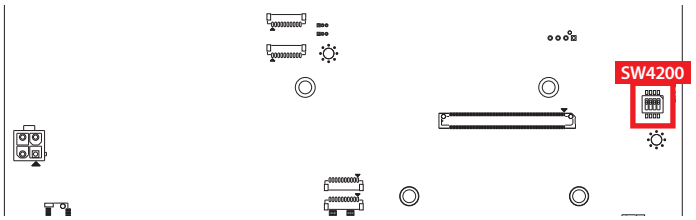
2.7 Ignition Control

The EAC-7000 series provides an ignition power control feature for in-vehicle applications. The built-in MCU monitors the ignition signal and automatically powers the system on or off based on predefined delay settings.

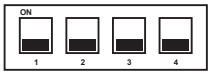
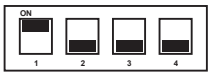
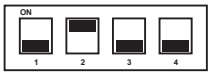
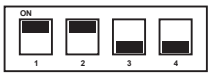
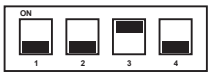
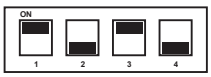
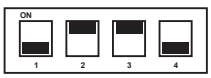
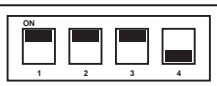
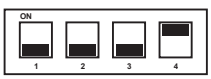
2.7.1 Adjust Ignition Control Modes

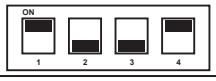
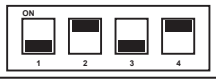
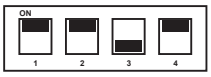
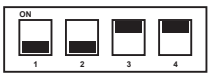
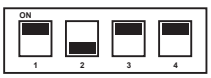
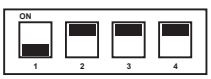
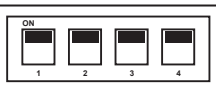
The EAC 7000 series supports 16 modes to configure system power on/off through the SW6 switch. The factory default (mode 0) is ATX power mode.

SW4200 : Ignition Control



See the table below for the mode descriptions :

Deep Switch Position	Power on delay	Power off delay	Switch Position
0	ATX mode (Default)		
1	No delay	10 seconds	
2	No delay	15 seconds	
3	No delay	20 seconds	
4	No delay	30 seconds	
5	No delay	60 seconds	
6	5 seconds	10 seconds	
7	5 seconds	30 seconds	
8	5 seconds	60 seconds	

9	5 seconds	90 seconds	
A	5 seconds	120 seconds	
B	10 seconds	10 seconds	
C	10 seconds	30 seconds	
D	10 seconds	60 seconds	
E	10 seconds	90 seconds	
F	AT Mode		

2.7.2 Ignition Control Wiring

Ignition control setting, you need to provide IGN signal via the 3-pin pluggable terminal block locates in the back panel. Please find below the general wiring configuration.

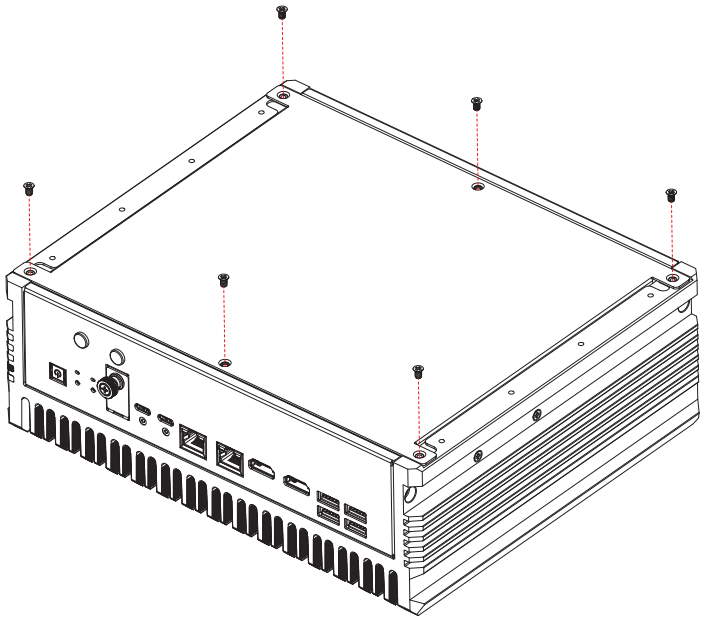
Pin No.	Definition
1	Ignition (IGN)
2	SW+
3	SW-

3

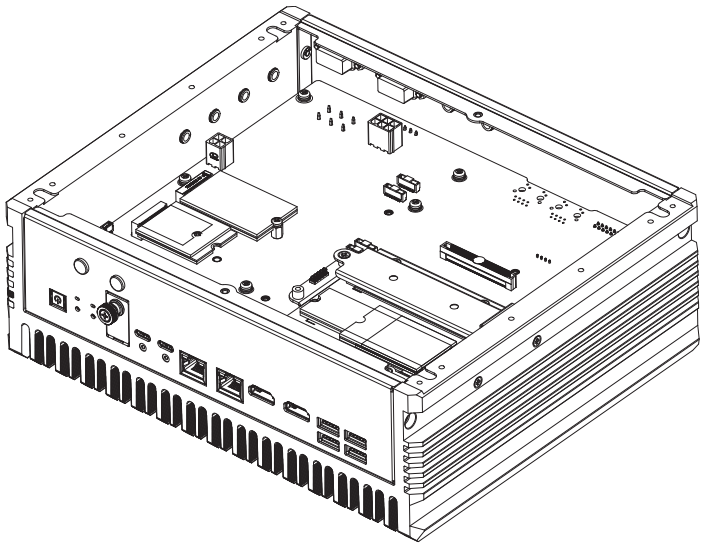
SYSTEM SETUP

3.1 How to Open Your EAC-7000 Series

Step 1 Remove six F-M3x5L screws.

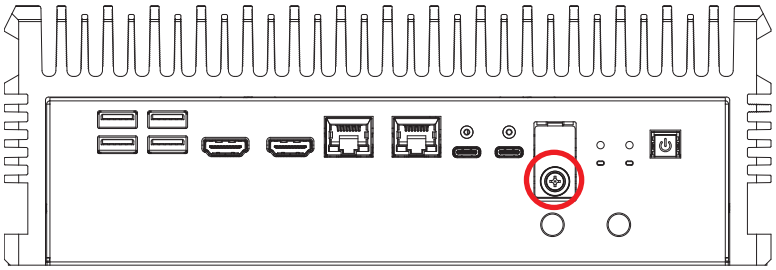


Step 2 Pick up bottom cover.

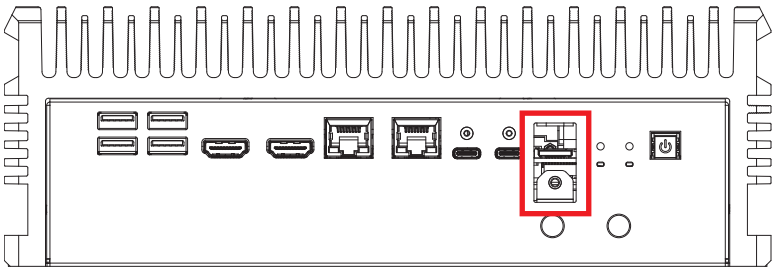


3.2 Installing Nano SIM Card

Step 1 Remove the Nano SIM card cover.

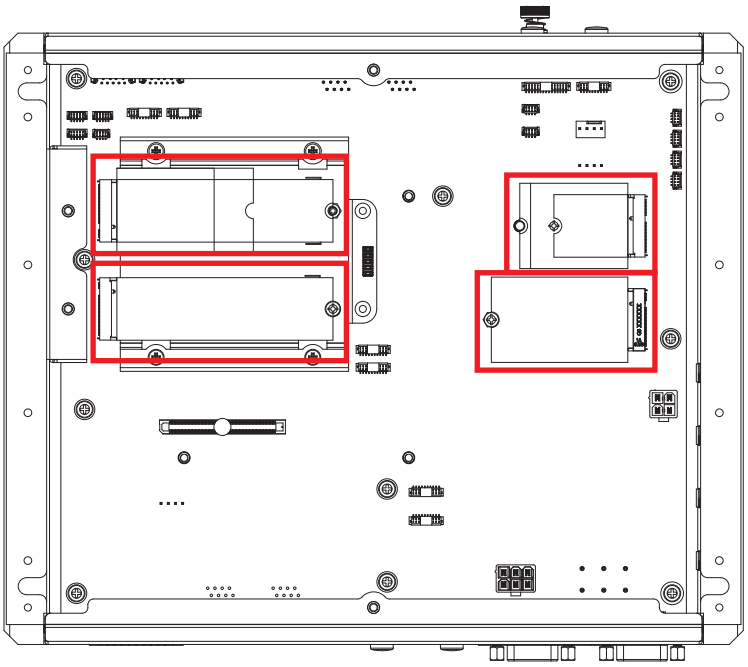


Step 2 Inserting SIM card, make sure the system power is not plugged.

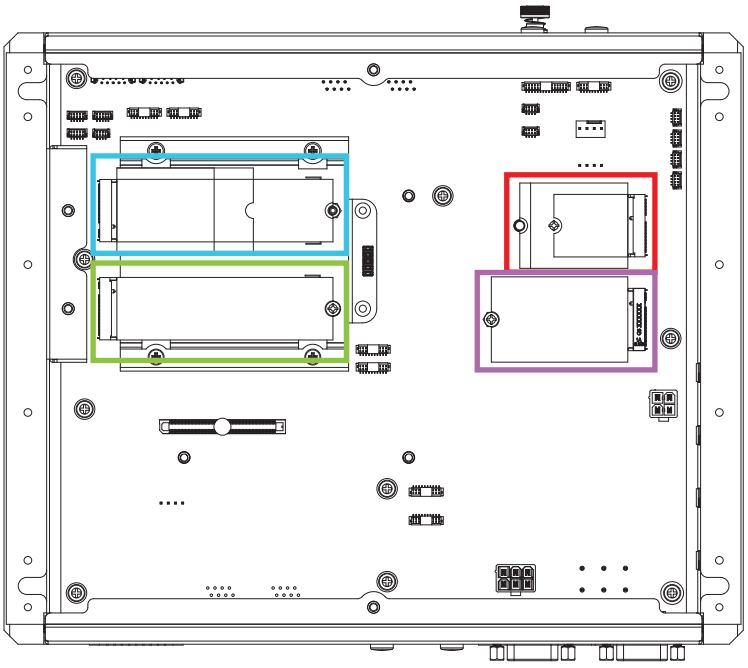


3.3 Installing M.2

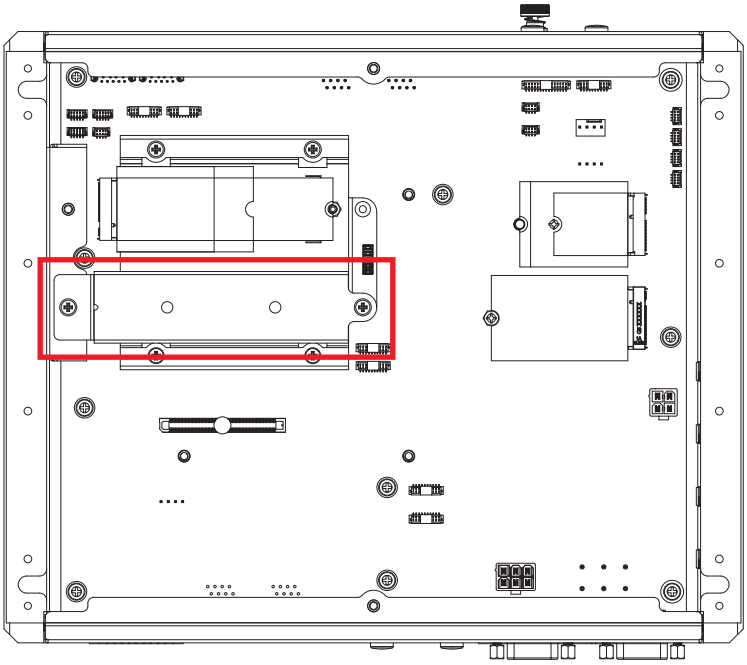
Step 1 The red box indicates the location of the M.2.



Step 2 Install M.2 (Key E 2230-3042/Key M 2280/Key B 2280-3042-3052/Key B 3042-3052) into slot and fasten three pan head M3x4L screw and one I-M2x2L screw.



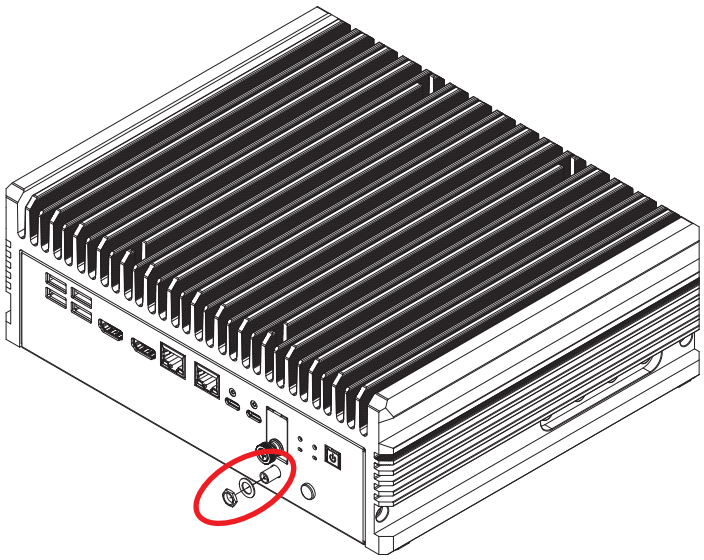
Step 3 Install M.2 Key M cover into slot and fasten two F-M3x4L screw.



3.4 Installing Antenna Cable

Step 1 Remove the rubber corks on the panel.

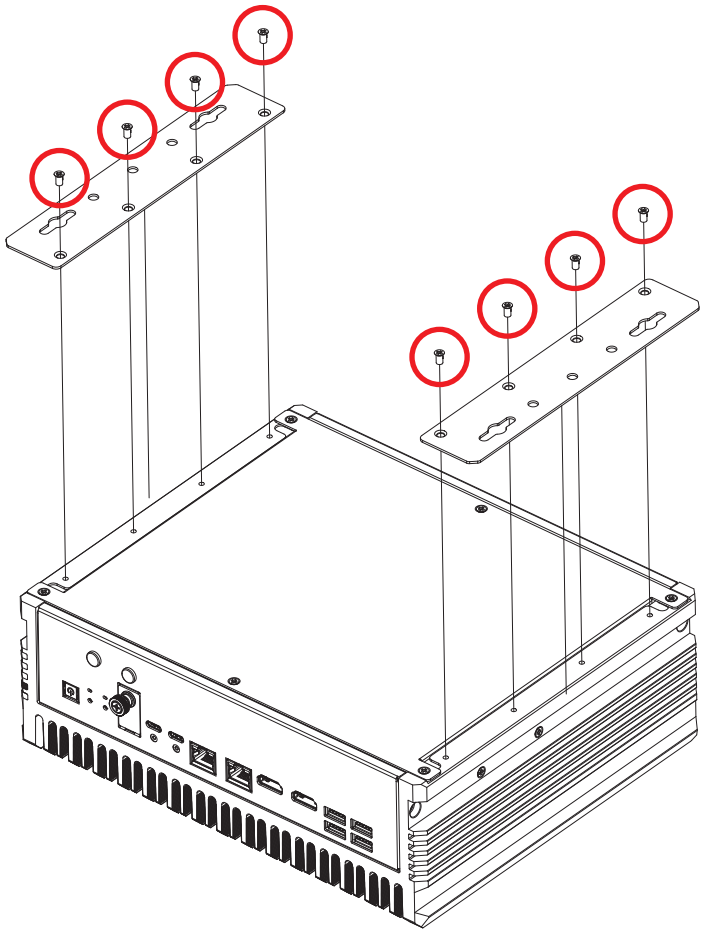
Step 2 Install the cable with nut and washer indicated.



3.5 Mounting Your EAC-7000 Series

3.5.1 Wall Mount

Install wall mount bracket then fasten eight F-#6-32x6L screws.



4

SOFTWARE SETUP

This section provides information regarding the peripherals and image flashing. Please note that this information may be outdated or incompatible with images of older versions. The documentation included with the image package contains version-matched information. If you encounter any issues, please reach out to support for help.

4.1 Peripheral Interface Guide

The directory “/opt/vecow/tools” contains the necessary instructions and scripts for utilizing the peripherals on the EAC-7000. A symbolic link, named EAC7k-Tools, is also provided in the home directory, pointing to the aforementioned location.

This subsection replicates the contents of that directory. As mentioned in the preamble, the instructions provided herein may be obsolete or non-functional.

4.1.1 Camera

Leopard Imaging Hawk and Owl Cameras :

To enable Leopard Imaging's Hawk and Owl cameras, use the “caminstall” script.

Configuration Options :

The script accepts arguments based on the number of GMSL ports available in your system.

- For systems with 8 GMSL ports, the available options are :
  4h4o : 4 Hawk and 4 Owl cameras
  8h : 8 Hawk cameras
  8o : 8 Owl cameras
- For systems with 16 GMSL ports, the available options are :
  4h8o : 4 Hawk and 8 Owl cameras
  8h : 8 Hawk cameras
  16o : 16 Owl cameras

Example Usage

To configure a system with 8 Hawks, run the following command :

```
$ sudo ./caminstall 8h
```

Connection Requirements :

- On system with 16 GSML ports, Hawk must be connected to port 1, 2, 5, 6, 9, 10, 13, or 14.
- All Hawk cameras must be connected to ports with lower numerical values than the ports used for Owl cameras.

4.1.2 CAN Buses

The EAC-7000 features four CAN buses which are accessible through the network interfaces can0, can1, can2, and can3 with the socket API. See [can.txt][1] for details. There are also many libraries written in various languages for CAN, for example, [python-can][2], [socketcan-rs][3], and [can-go][4].

[1] : https://www.kernel.org/doc/Documentation/networking/can.txt

[2] : https://python-can.readthedocs.io/en/stable/

[3] : https://docs.rs/socketcan/latest/socketcan/index.html

[4] : https://pkg.go.dev/go.einride.tech/can/pkg/socketcan

4.1.3 Serial port

The device nodes for the serial ports COM1 and COM2 are ttyAMA1 and ttyAMA2, respectively. These ports can be configured to use the RS-232, RS-422, or RS-485 standards by setting GPIO pins to values listed below.

COM1

Standard	PQ.04	PU.07
RS-232	1	0
RS-422	1	1
RS-485	0	1

COM2

Standard	PU.05	PU.04
RS-232	1	0
RS-422	1	1
RS-485	0	1

The maximum data rates for RS-232 and RS-485/422 modes are 1Mbps and 20Mbps, respectively.

4.1.4 Digital Input/Output Port

The DIO port can operate in NPN or PNP modes by configuring the GPIO pins PAL.01 and PT.06 as outlined below.

Mode	PAL.01	PT.06
NPN	1	0
PNP	0	1

The Hardware Version R01 mapping of DIO pins to GPIO pins is as follows.

DIO	GPIO	DIO	GPIO
EXT_IN0	PP.04	EXT_OUT0	n/a
EXT_IN1	PS.00	EXT_OUT1	n/a
EXT_IN2	PR.01	EXT_OUT2	n/a
EXT_IN3	n/a	EXT_OUT3	PU.01
EXT_IN4	PE.01	EXT_OUT4	PY.07
EXT_IN5	n/a	EXT_OUT5	n/a
EXT_IN6	n/a	EXT_OUT6	PZ.07
EXT_IN7	n/a	EXT_OUT7	PAL.00

The Hardware Version R11 mapping of DIO pins to GPIO pins is as follows.

DIO	GPIO	DIO	GPIO
EXT_IN0	PP.04	EXT_OUT0	PH.07
EXT_IN1	PS.00	EXT_OUT1	PC.01
EXT_IN2	PR.01	EXT_OUT2	PW.01
EXT_IN3	PV.07	EXT_OUT3	PU.01
EXT_IN4	PE.01	EXT_OUT4	PY.07
EXT_IN5	PH.06	EXT_OUT5	PV.06
EXT_IN6	PC.00	EXT_OUT6	PZ.07
EXT_IN7	PJ.00	EXT_OUT7	PAL.00

4.1.5 Software Ignition Control

To communicate with the MCU, use the i2c-12 bus at address 0x48. To use software to control the behavior of ignition, one should change the JIGNMODE4200 jumper configuration to short pins 2 and 3, and then change to mode IGN by setting the registers at 0x18 and 0x29.

Registers :

The following table lists the available registers related to ignition.

Address	Type	Description
0x00	R	Firmware major version
0x02	R	Firmware minor version
0x04	R	Configuration of JIGNMODE4200 jumper
0x10	R/W	LSB of delays for power on
0x11	R/W	MSB of delays for power on
0x14	R/W	LSB of delays for power off
0x15	R/W	MSB of delays for power off
0x18	R/W	Mode control; See below
0x1A	R	Firmware build version
0x1C	R/W	Force shutdown time
0x20	R/W	Lower bound of allowable voltage which must lie in [9, 49]
0x24	R/W	Upper bound of allowable voltage which must lie in [15, 50]
0x28	R/W	Guard against voltage falling outside the prescribed range
0x29	R/W	Mode control; See below
0x32	R	State of ignition

Mode control registers :

0x18	0x29	Mode
0	1	AT
0	0	ATX
1	0	IGN

Check “ign.py” for sample code.

Example :

```
python
from ign import Ign
ign = Ign()
print(ign.jignmode4200())      # print configuration of JIGNMODE4200 jumper
print(ign.mode())              # print power on mode
ign.set_mode("IGN")            # change to IGN mode
ign.set_power_on_delay(60)     # set a 1-minute delay for power on
ign.set_power_off_delay(30)    # set a 30-second delay for power off
```

4.1.6 Sensors

EAC-7000 is equipped with an IMU BMI088, a magnetometer BMM350, and a barometric pressure sensor BMP581. These sensors can be accessed via the i2c bus “/dev/i2c-2” at the addresses listed below.

Sensor	Address
BMI088 (ACCEL)	0x18
BMI088 (GYRO)	0x68
BMM350	0x14
BMP581	0x46

4.1.7 Patch

“patch_tool” is a TUI app used to apply patches or install packages. It will recursively search for patches in the current directory. Thus, to use this app, you need to first place the patches in the directory where you plan to run the tool.

Usage :

Since “patch_tool” modify the root filesystem, it must be run with root priviledges.

```
$ sudo ./patch_tool
```

After running the command, you will see a list of the patches that the tool found. Select the patches you want to apply, and then click Apply to install them. Finally, click Exit to close the app.

4.1.8 4G/5G

List of Supported Modules :

1. Quectel EM060K

To connect to cellular network, create a GSM connection.

Console :

```
$ sudo nmcli c a type gsm apn internet connection.interface-name cdc-wdm0
```

Replace “internet” with the [APN][1] provided by your ISP.

To test the connection.

Console :

```
$ ping -I wwan0 1.1.1.1
```

[1] : https://en.wikipedia.org/wiki/Access_Point_Name

2. Quectel RM520N

To connect to cellular network, use “quectel-CM”.

Console :

```
$ sudo quectel-CM -i rmnet_mhi0 -s internet
```

Replace “internet” with the [APN][1] provided by your ISP.

To see available options.

Console :

```
$ quectel-CM -h
```

To test the connection.

Console :

```
$ ping -I rmnet_mhi0.1 1.1.1.1
```

To connect to the network automatically on system startup, make appropriate modifications to the file “/opt/vecow/etc/rc.d/rm520.init”, and then make it executable.

Console :

```
$ sudo chmod +x /opt/vecow/etc/rc.d/rm520.init
```

[1] : https://en.wikipedia.org/wiki/Access_Point_Name

4.2 Flash image to Your EAC-7000

Before starting the flashing process, ensure that the EAC-7000 is powered off and disconnected from the power supply. You'll also need a host computer that meets the following minimum requirements :

Minimum Requirements

- Operating System : Ubuntu 22.04 or later
- Processor : Intel or AMD x86_64 architecture
- Memory : 8GB RAM
- Storage : 60GB available space

4.2.1 Prepare the host computer

Step 1: Open a terminal on the host computer and temporarily disable the automounting of new external storage devices. On most Debian-based Linux, use :

```
$ sudo systemctl stop udisks2.service
```

Step 2: Ensure that the “nfs-kernel-server” service running :

```
$ sudo service nfs-kernel-server start
```

4.2.2 Download the OS image file to the host computer

Step 1: Download the OS image package file. The file name will be similar to :

```
mfi_eac7000-7xxxxx-xx-p3834-xxg_ubtudsk.tzstf
```

Step 2: Verify the integrity of the downloaded package :

```
$ sha256sum -c ./mfi_eac7000-7xx<package-version>-xx-p3834-xxg_ubtudsk.tzst.sha256
```

Step 3: Extract the compressed image files using one of the following commands :

```
$ sudo tar --zstd -xvpf mfi_eac7000-7xx<package-version>-xx-p3834-xxg_ubtudsk.tzst
```

or

```
$ zstd -d mfi_eac7000-*.tzst -c | sudo tar -xvpf –
```

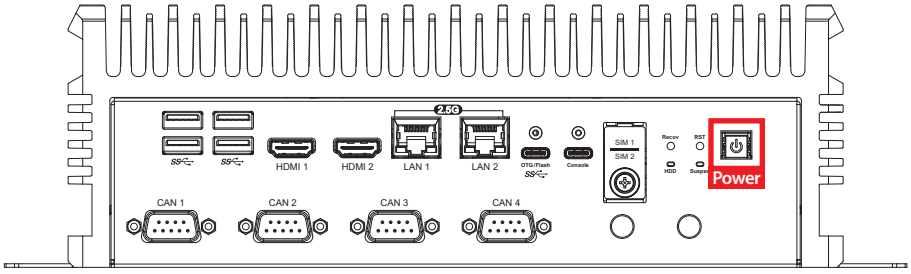
Step 4: Navigate into the extracted directory and install the required dependencies :

```
$ cd mfi_eac7000-7xxxxx-xx-p3834-xxg_ubtudsk
```

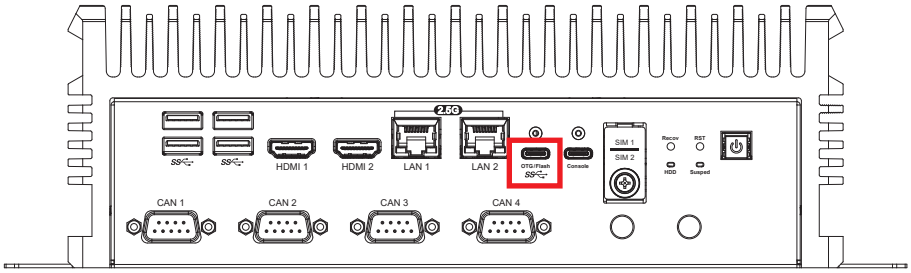
```
$ sudo ./l4t_flash_prerequisites.sh
```

4.2.3 Connect the EAC-7000 to the host computer

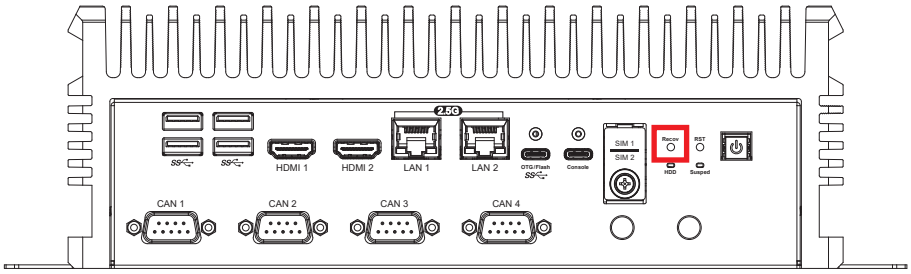
Step 1: Connect the power adapter to the EAC-7000. DO NOT press the front panel “Power” button yet. The power indicator should remain orange.



Step 2: Connect a Type-C USB cable to the “Flash” port on EAC-7000, and connect the other end to a USB port on the host computer. You can connect up to five EAC-7000 devices in recovery mode to a single host.



Step 3: Press and hold the “Recov” button.



Step 4: While continuing to HOLD the “Recov” button, CLICK the “Power” button once to turn on the platform, The power indictor should turn blue. After it lights up, continue holding the “Recov” button for at least two more seconds, then release it.

Step 5: Once in recovery mode, run the following command on the host computer to confirm detection :

```
$ lsusb
```

You should see output similar to

```
BUS XXX Device XXX: ID 0955:7026 Nvidia Corp. APX
```

4.2.4 Flash image to the EAC-7000

Step 1: Open a terminal on host PC, then access the package folder you extracted in step 4.2.2 Step 3.

Step 2: Run the flashing script :

```
$ sudo ./mfi_eacpltfs.flash --boot-dev nvme
```

The default login credentials for accessing the system are :

User Name : nvidia

Password : nv1234

A

APPENDIX A : Power Consumption

Testing Board	EAC-7000 Rev.A
RAM	Up to 128 GB 256-bit LPDDR5x
USB-1	USB Microsoft Wired Keyboard 600 USB Mouse HP G1K28AA USB Flash Kingston 3.0 32GB
USB-2	USB Flash Kingston 3.0 32GB
USB-3	USB Flash ADATA 3.0 8GB
USB-4	USB Flash Kingston 3.0 8GB
TYPE C USB	USB Flash Kingston 3.0 32GB
Storage	Transcend 1TB
LAN 1	2.5 Gbps
LAN 2	2.5 Gbps
LAN 3 (PoE)	1.0 Gbps
LAN 4 (PoE)	1.0 Gbps
LAN 5 (PoE)	1.0 Gbps
LAN 6 (PoE)	1.0 Gbps
PoE	CERio PoE Loader
Graphics Output	HDMI
DIO	DIO jig
CAN1	CAN 1-2 jig
CAN2	CAN 1-2 jig
CAN3	CAN 3-4 jig
CAN4	CAN 3-4 jig
COM1	COM jig
COM2	COM jig
Power Plan	128W/MAXN
Power Source	Chroma 62006P-100-25
Test Program	BurninTest_for_SE

A.1 NVIDIA® Jetson AGX Thor™ System-On-Module, 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz, 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores (128W)

Power on and boot to Ubuntu 24.04

CPU	Power Input	Linux Ubuntu 24.04			
		idle status CPU usage less 3%		Run 100% CPU usage	
		Max Current	Max Consumption	Max Current	Max Consumption
14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz	9V	3.508A	31.57W	NA	NA
	12V	2.584A	31.01W	21.543A	258.52W
	24V	1.345A	32.28W	10.174A	244.18W
	36V	0.934A	33.62W	6.371A	229.36W
	50V	0.703A	35.15W	4.938A	246.90W

A.2 NVIDIA® Jetson AGX Thor™ System-On-Module, 14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz, 2650-core NVIDIA Blackwell ™ GPU with 96 Tensor Cores (MAXN)

Power on and boot to Ubuntu 24.04

CPU	Power Input	Linux Ubuntu 24.04			
		idle status CPU usage less 3%		Run 100% CPU usage	
		Max Current	Max Consumption	Max Current	Max Consumption
14-core Arm® Neoverse™ V3AE v9.2-A 64-bit CPU, up to 2.6GHz	9V	3.473A	31.26W	NA	NA
	12V	2.525A	30.30W	22.256A	267.07W
	24V	1.303A	31.27W	10.443A	250.63W
	36V	0.932A	33.55W	6.926A	249.34W
	50V	0.743A	37.15W	5.031A	251.55W

B

APPENDIX B : Supported Expansion Module List

B.1 Supported 5G/4G/GPS List

Type	Model	Support Standard
M.2 KEY B	Quectel EM060K	LTE Cat 6 Worldwide LTE-A and UMTS/HSPA+ Coverage GPS/GLONASS/BDS/Galileo
M.2 KEY B	Quectel RM520N	5G sub-6GHz Worldwide 5G and LTE-A coverage GPS/GLONASS/BDS/Galileo/QZSS
M.2 KEY B	Telit LN920A6	LTE - cat 6 4G LTE-A GPS/GLONASS/Galileo/BeiDou
M.2 KEY B	Telit FN990A28	LTE/5G 5G sub-6 FDD and TDD for global deployment GPS/GLONASS /BeiDou/Galileo/QZSS
GPS module	Sparkfun ZED-F9R	GLONASS, Galileo, BeiDou
GPS module	Septentrio ANAVS	GLONASS, Beidou, Galileo, QZSS, Navic, SBAS

B.2 Supported Wi-Fi/Bluetooth List

Type	Model	Support Standard
M.2 KEY E	Intel AX210NGW	IEEE 802.11a, b, d, e, g, h, i, k, n, r, u, v, w, ac, ax BT5.3
M.2 KEY E	jjPlus JWW6051	IEEE 802.11 b/g/n/a/ac BT5.0

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For further support information, please visit www.vecow.com