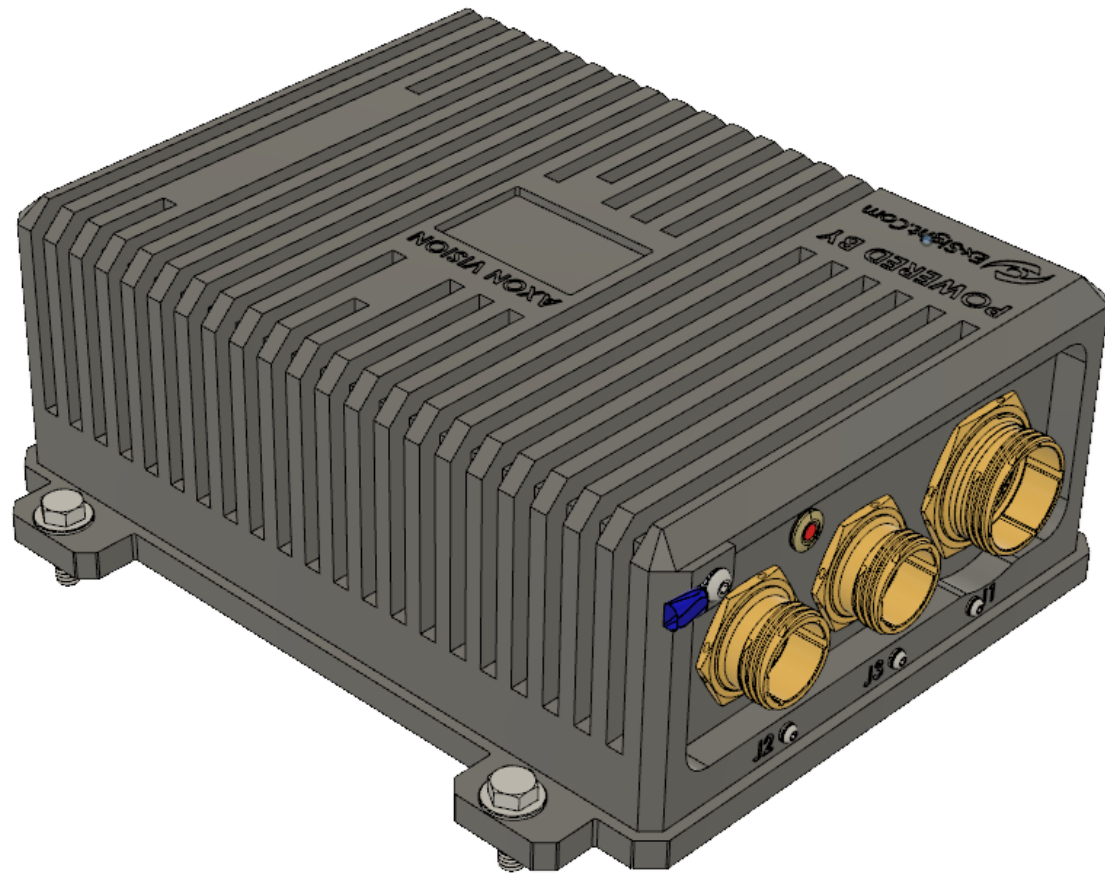


# AI GRAPHIC PROCESSING UNIT



## miniAIxGPU



**miniAIxGPU** is a rugged video processor computer based on NVIDIA ORIN 64.

It can be used for a variety of applications, such as Robotics, Video Processing, AI, Edge computing and Mission management.

### System Highlights

Designed for Extended Temp. (-40°C to +85°C )  
NVIDIA ORIN 64GB with Internal SSD Storage

HDMI Out

HD-SDI Video Grabber \* 3 ch

PAL Video Grabber \* 3 ch

5\*Port Industrial Gigabit Ethernet Switch

Embedded GPIO 1\*CNBUS, 1\*RS422, ISOLATED

3\*DO, 2\*DI

Designed to MILSTD 1275/704

9-40VDC Power Supply with EMI Filter

Optional 4\* Shock Absorbers

# AI GRAPHIC PROCESSING UNIT



# miniAIxGPU

## NVIDIA ORIN 64GB WITH INTERNAL 256GB SSD STORAGE

POWERFUL AI COMPUTER ,UP TO 275 TOPS , 2048-CORE NVIDIA AMPERE GPU WITH 64 TENSOR CORES , 12-CORE ARM® CORTEX®-A78AE V8.2 64-BIT CPU 3MB L2 + 6MB L3 , DL ACCELERATOR 2X NVDLA V2 , VISION ACCELERATOR 1 X PVA V2 , 64GB 256-BIT LPDDR5 204.8 GB/S , STORAGE 64GB EMMC 5.1 , UP TO 6 CAMERAS (16 VIA VIRTUAL CHANNELS\*)

## CARRIER BOARD

HDMI 2.0 (MAX RESOLUTION 3840X2160), GIGABIT ETHERNET, CAMERA CONNECTOR (TOTAL 16-LANE), CAN BUS, DIGITAL INPUTS, 3X DIGITAL OUTPUTS, 2X TYPE-C , M.2 TYPE-M KEY PCIE GEN4 X4 (FOR HIGH SPEED STORAGE), M.2 KEY-B, MICROSD, FAN CONNECTOR, 2-PIN HEADER FOR RTC BATTERY, SERIAL COMMUNICATION CONNECTOR(1X UART, 1X I2C, 1X SPI) , HIGH SPEED EXPANSION CONNECTOR(1XMGBE, 1X PCIE X4, 1XI2S, 1X I2C)

## HD-SDI VIDEO GRABBER

3 SDI INPUT UP TO 1080P60, INTEGRATES ADAPTIVE CABLE EQUALIZER , 3 PAL/NTSC/RS170 ANALOG INPUT.

## EMBEDDED GPIO

1\*CNBUS, 1\*RS422, ISOLATED 3\*DO, 2\*DI

## CONNECTION INTERFACE

MIL-D38999/24WH35PN, 2 X MIL-D38999/24WE6AN

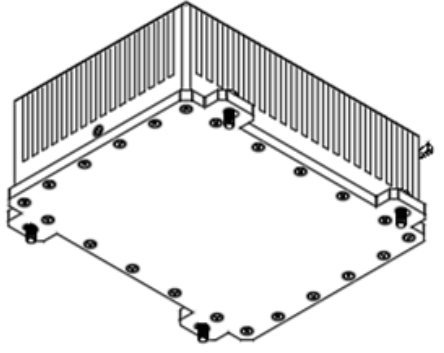
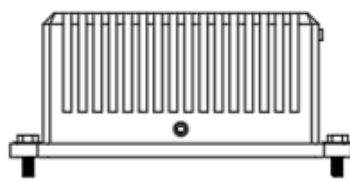
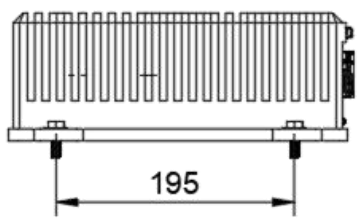
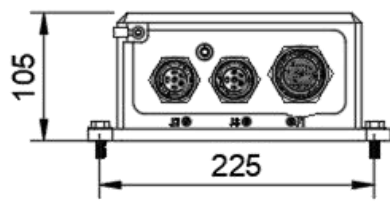
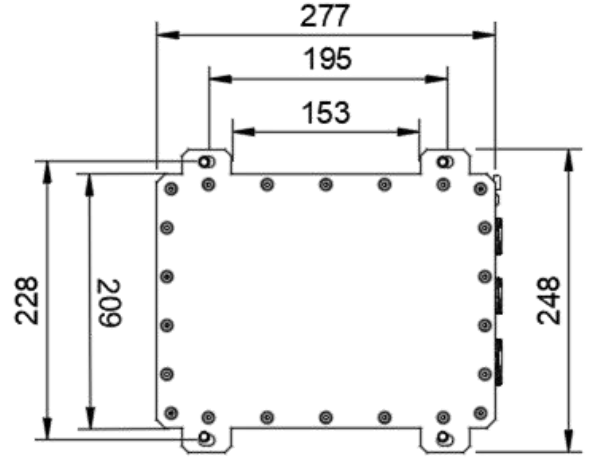
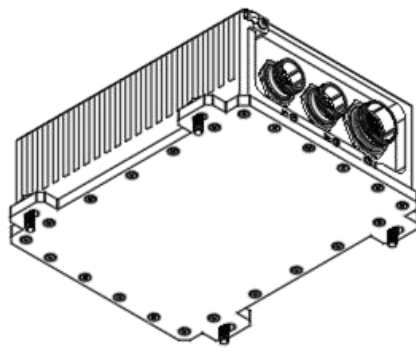
## POWER SUPPLY UNIT & EMI FILTER

9-40VDC-DC POWER SUPPLY WITH EMI FRI FILTER

## ENVIRONMENTAL

DESIGNED TO EXTENDED TEMP. PLATFORM (-40°C TO +85°C ), IP-67 SEALED ALUMINUM CHASSIS, MILSTD 1275/704 PSU, STAINLESS STEEL SCREWS (N316), GROUND PIN CONNECTOR, LED INDICATOR , OPTIONAL SHOCK ABSORBERS

## DIMENSIONS (mm)



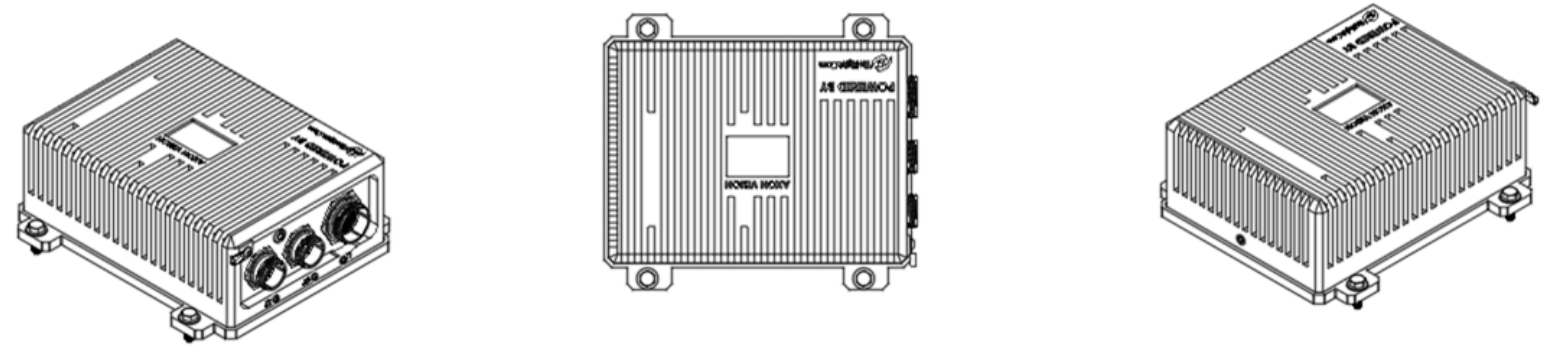
# PIN LAYOUT



# miniAIxGPU

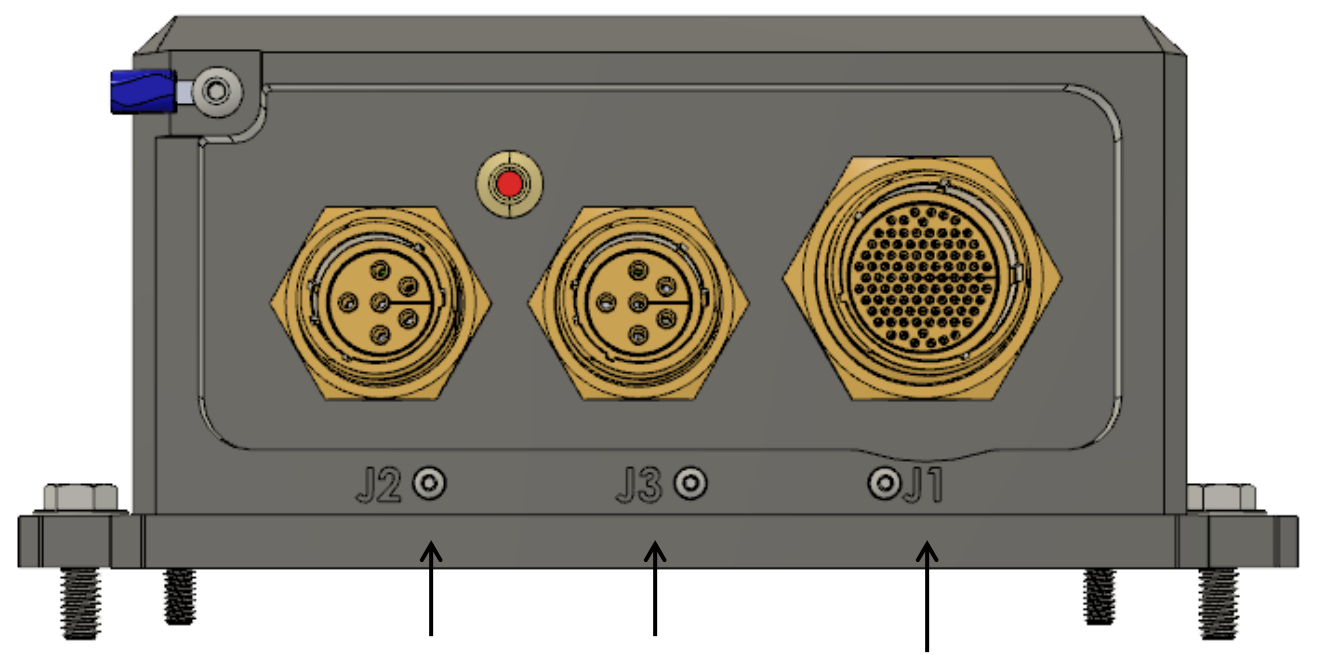
## J2 Connector D38999/24WE6PN (mating: D38999/26WE6SN)

PIN#	Signal Name	Type
A1	Video_INPUT_1	SDI/PAL IN1
A2	Video_INPUT_1_RTN (Shield)	
B1	Video_INPUT_2	SDI/PAL IN2
B2	Video_INPUT_2_RTN (Shield)	
C1	Video_INPUT_3	SDI/PAL IN3
C2	Video_INPUT_3_RTN (Shield)	
D1	Video_INPUT_4	SDI/PAL IN4
D2	Video_INPUT_4_RTN (Shield)	
E1	Video_INPUT_5	SDI/PAL IN5
E2	Video_INPUT_5_RTN (Shield)	
F1	Video_INPUT_6	SDI/PAL IN6
F2	Video_INPUT_6_RTN (Shield)	



## J3 Connector D38999/24WE6PN - Future use (mating: D38999/26WE6SN)

PIN#	Signal Name	Type
A1	N.C	N.C
A2	N.C	N.C
B1	IO10 ISOLATED GROUND	IO10 ISOLATED GROUND
B2	N.C	N.C
C1	IO9 DO 0	Digital Output 1
C2	N.C	N.C
D1	IO11 DO 1	Digital Output 2
D2	N.C	N.C
E1	IO13 DO 2	Digital Output 3
E2	N.C	N.C
F1	N.C	N.C
F2	N.C	N.C



J2/J3 Video Connector  
D38999/24WE6AN

J1 Main Connector  
D38999/24WH35PN



# PIN LAYOUT



# miniAIxGPU

## J1 Connector D38999/24WH35AN (mating: D38999/26WH35SN)

PIN#	Signal Name	Type	
77	24VDC_IN	24VDC 7A	
78	24VDC_IN		
79	24VDC_IN		
86	24VDC_IN		
87	24VDC_IN		
88	24VDC_IN		
94	24VDC_IN		
95	24VDC_IN		
56	GND_IN	(-24VDC) GND Power INPUT	
57	GND_IN		
58	GND_IN		
59	GND_IN		
67	GND_IN		
68	GND_IN		
69	GND_IN		
70	GND_IN		
15	I2C_0_BOOSTER_SDA_1V8	I2C	
7	I2C_0_BOOSTER_SCL_1V8		
39	HDMI_OUT_DO_N	HDMI	
50	HDMI_OUT_DO_P		
81	HDMI_OUT_D1_N		
80	HDMI_OUT_D1_P		
61	HDMI_OUT_D2_N		
71	HDMI_OUT_D2_P		
49	HDMI_OUT_CLK_N		
60	HDMI_OUT_CLK_P		
6	HDMI_OUT_SDA_DDC		
13	HDMI_OUT_SCL_DDC		
4	HDMI_OUT_HOT_PLUG_DETECT		
33	N.C		N.C
24	N.C		N.C
40	N.C		N.C
99	N.C	N.C	
98	N.C	N.C	
96	N.C	N.C	
97	N.C	N.C	
89	N.C	N.C	
66	N.C	N.C	
76	N.C	N.C	
91	N.C	N.C	
83	N.C	N.C	

PIN#	Signal Name	Type
72	IO1 RS422-B	IO1 RS422-B
84	IO2 RS422-Y	IO2 RS422-Y
92	IO3 RS422-A	IO3 RS422-A
93	IO4 RS422-Z	IO4 RS422-Z
85	N.C	N.C
82	N.C	N.C
64	N.C	N.C
74	N.C	N.C
73	N.C	N.C
63	IO10 ISOLATED GROUND	IO10 ISOLATED GROUND
62	N.C	N.C
45	IO12 DI 1	Digital Input 2
55	N.C	N.C
75	IO14 DI 0	Digital Input 1
65	RESET BUTTON	REC BUTTON
54	RESET BUTTON GND	REC BUTTON GND
34	N.C	N.C
44	N.C	N.C
43	N.C	N.C
53	N.C	N.C
51	N.C	N.C
47	ETH_1_G_MX2_P (RJ-45-PIN#4)	Ethernet
37	ETH_1_G_MX2_N (RJ-45-PIN#5)	
36	ETH_1_G_MX1_P (RJ-45-PIN#3)	
25	ETH_1_G_MX1_N (RJ-45-PIN#6)	
46	ETH_1_G_MX0_P (RJ-45-PIN#1)	
35	ETH_1_G_MX0_N (RJ-45-PIN#2)	
16	ETH_1_G_MX3_P (RJ-45-PIN#7)	
26	ETH_1_G_MX3_N (RJ-45-PIN#8)	

PIN#	Signal Name	Type
14	CAN_BUS_0_H	CAN_BUS_CHO
23	CAN_BUS_0_L	
12	GND	USB_CHO
32	GND	
22	USB2_P_0	
21	USB2_N_0	USB_CH1
42	GND	
41	USB2_P_1	
52	USB2_N_1	N.C
31	N.C	N.C
20	N.C	N.C
30	N.C	N.C
8	N.C	N.C
10	N.C	N.C
19	N.C	N.C
17	N.C	N.C
9	N.C	N.C
18	N.C	N.C
1	(-5V) GND	5VDC Out
5	5V_OUT serves USB2 PIN#1 & HDMI EDID	
2	(-12V) GND	12VDC Out
3	12V_OUT	
100	N.C	N.C
11	N.C	N.C
27	N.C	N.C
28	N.C	N.C
29	N.C	N.C
38	N.C	N.C
90	N.C	N.C
48	GND_EARTH	GND_Earth