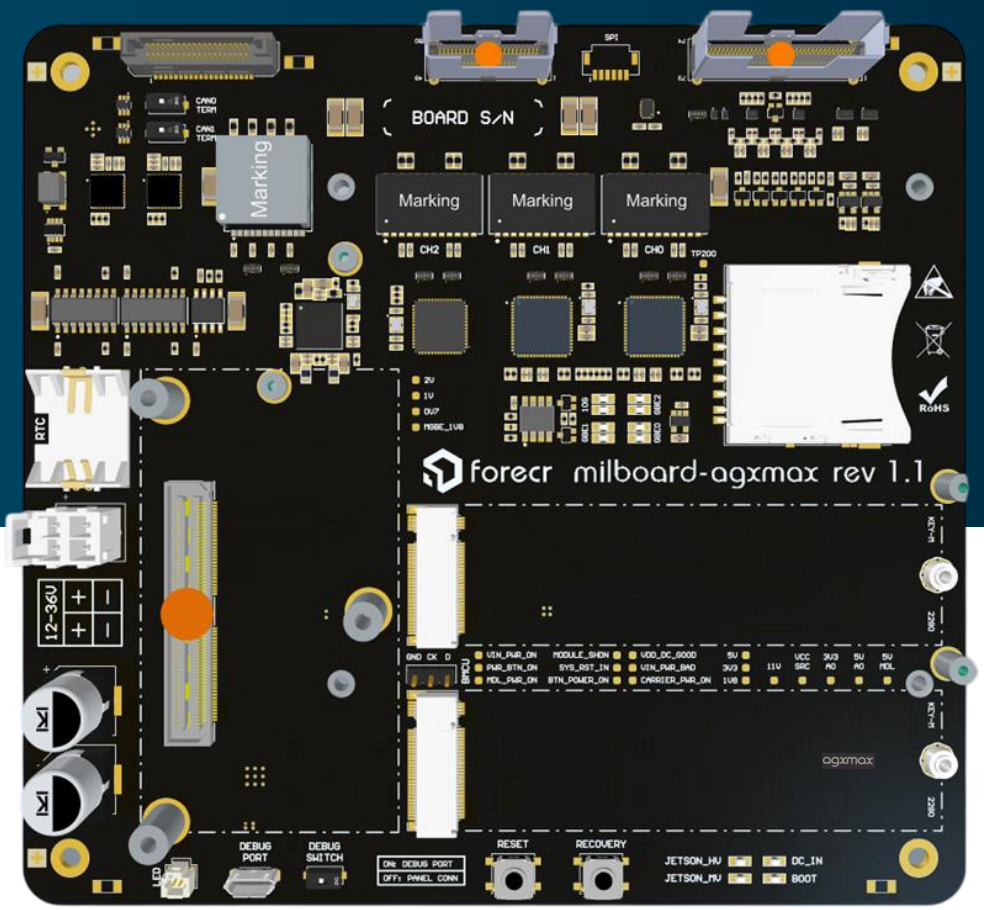

MILBOARD-AGXMAX

USER MANUAL

UM-MBRDAGXMAX-01
Revision 1.0
24/11/2025

NVIDIA Elite Partner

Forecr
https://www.forecr.io
support@forecr.io

Table of Contents

Preface

Disclaimer

Forecr emphasizes that the information contained in this user manual is continuously updated in line with the technical modifications and enhancements made by Forecr to its MILBOARD-AGXMAX. Therefore, this manual only represents the technical status of Forecr MILBOARD-AGXMAX at the time of publishing.

Forecr shall not be held responsible for any damages that may occur directly or indirectly as a result of any technical or typographical errors or omissions found in this document or for any discrepancies between the product and the user's manual.

Customer Support

In case you encounter any challenges after reading the user manual and/or using the MILBOARD-AGXMAX, please reach out to the Forecr reseller from which you purchased the MILBOARD-AGXMAX.

See the contact information section below for more information on how to contact us directly.

Contact Information

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Limited Product Warranty

Forecr provides a 1-year Warranty for the MILBOARD-AGXMAX. This warranty period is valid from the original purchase date of the MILBOARD-AGXMAX. In order to maintain warranty, the MILBOARD-AGXMAX must not be altered or modified in any way. Changes or modifications to the MILBOARD-AGXMAX that are not explicitly approved by Forecr and described in this user manual or received from Forecr Support as a special handling instruction, will void your warranty. To receive warranty service, the MILBOARD-AGXMAX must be delivered to Forecr within the warranty period together with the original invoice or proof of purchase.

Revision History

Revision No	Revision Date	Revision Description
rev 1.0	24.11.2025	Preliminary Release

1. Introduction

Introducing our latest military grade ruggedized computer, powered by the cutting-edge AGX Orin SoM technology. This compact and powerful device is designed to withstand the toughest environments, making it the perfect solution for military, industrial, and other demanding applications.

With 3x Gigabit Ethernet ports,1x 10G Ethernet port, 2x USB3.2, HDMI, 2x CAN, 4x RS-232/422 and 4x configurable BNC connectors, this ruggedized computer offers unparalleled connectivity options.

Our ruggedized computer is built to last, with a ruggedized chassis that can withstand extreme temperatures, shocks, and vibrations. You can rely on this device to operate reliably in the most challenging environments. Whether you're in the military, working in industrial settings, or need a reliable computing solution for outdoor applications, our ruggedized computer is the ideal choice. With its powerful performance, rugged design, and extensive connectivity options, this device is sure to exceed your expectations.

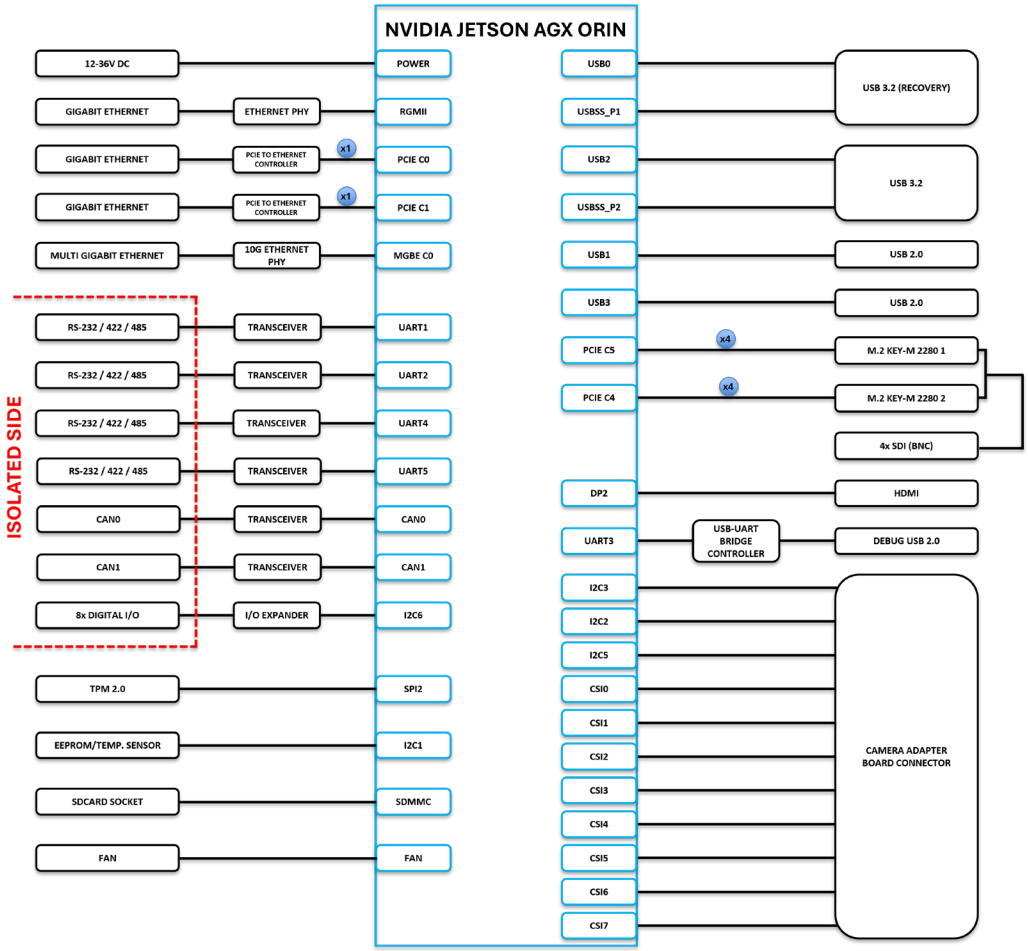
Latest revision of this user manual, datasheet, and 3D model can be downloaded from Forecr Web Page.

2. Product Specification

2.1 Technical Specification

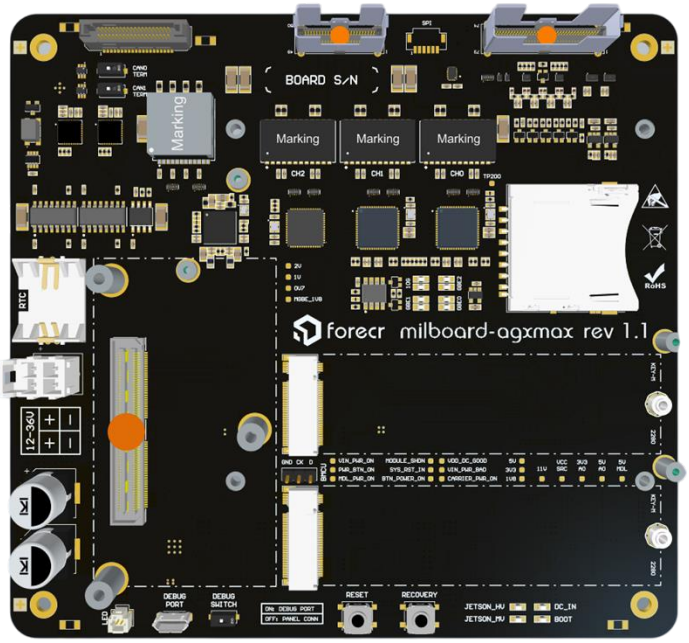
Supported Modules	NVIDIA Jetson AGX Orin 32GB NVIDIA Jetson AGX Orin 64GB NVIDIA Jetson AGX Orin Industrial
Memory	32 GB 256-bit LPDDR5x 64 GB 256-bit LPDDR5x
Graphics Interfaces	1x HDMI 2.0
Interfaces	3x Gigabit Ethernet 1x 10G Ethernet 2x USB 3.2 2x USB 2.0 1x USB 2.0 (Serial Console) 2x CAN Bus 4x RS232/422 8x Digital IO 4x BNC (Configurable)
Wireless Communication	None
Power Supply	12-36 VDC (28 VDC Nominal)
Extension Sockets	None
Mass Storage	64 GB eMMC 5.1 Flash 2x M.2 Key-M SSD Slot (occupied) SD Card
Ambient Conditions	-25°C ... +70°C (-40°C for Industrial Module)
Form Factor / Dimensions	30cm x 24cm x 10cm, 5292gr
Operating Systems	Ubuntu Linux 20.04 Ubuntu Linux 22.04
JetPack Support	JetPack 5.x JetPack 6.x

2.2 Block Diagram

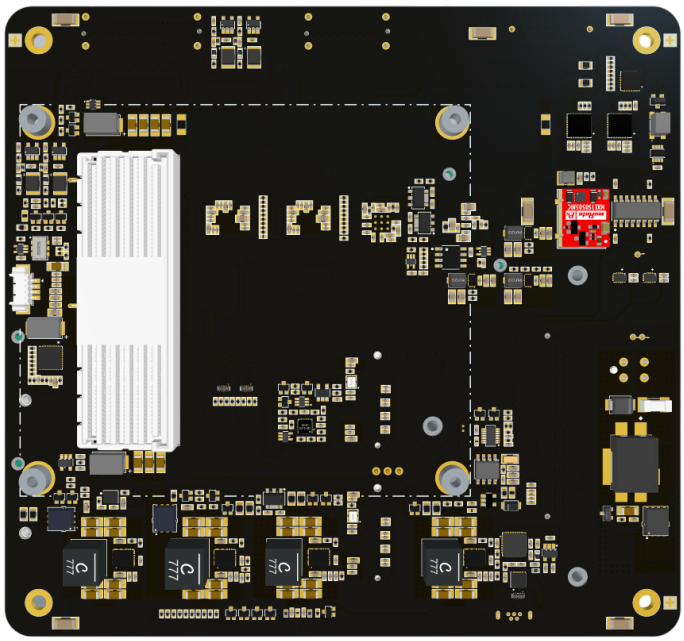


2.3 MILBOX-AGXMAX Visuals

Top Side



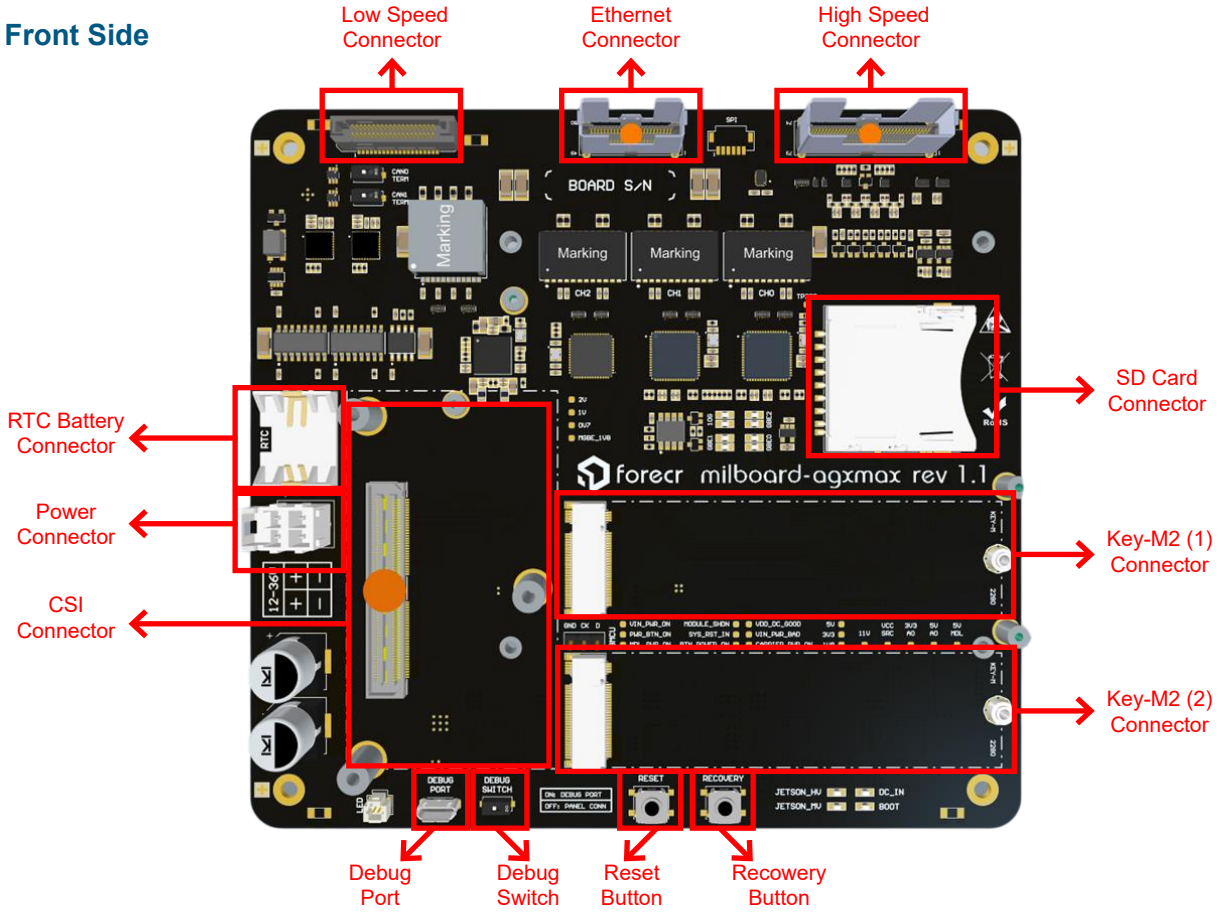
Bottom Side



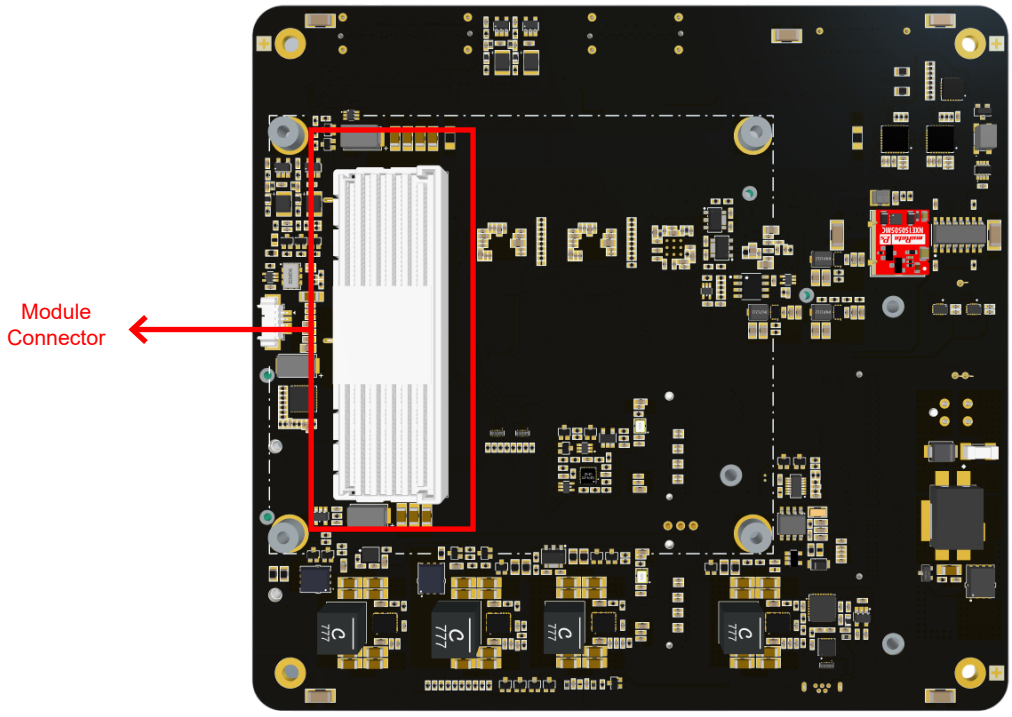
3.Hardware Information

3.1 Connector Location

3.1.1 Front Side



3.1.2 Rear Side

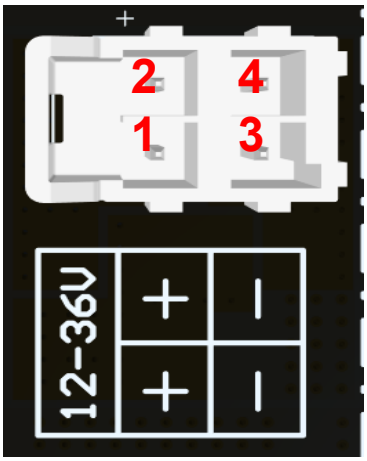


3.2 List of Connector

Connectors
MILBOARD-AGXMAX Power Connector
MILBOARD-AGXMAX Low-Speed Connector
MILBOARD-AGXMAX High-Speed Connector
MILBOARD-AGXMAX Ethernet Connector
MILBOARD-AGXMAX Camera Connector
MILBOARD-AGXMAX M.2 Key-M1 Connector
MILBOARD-AGXMAX M.2 Key-M2 Connector
MILBOARD-AGXMAX Fan Connector
MILBOARD-AGXMAX Led Connector
MILBOARD-AGXMAX Debug Connector

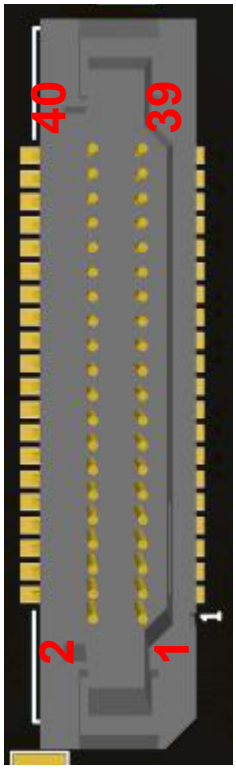
3.3 The Definition of Each Connector

3.3.1 Power Connector



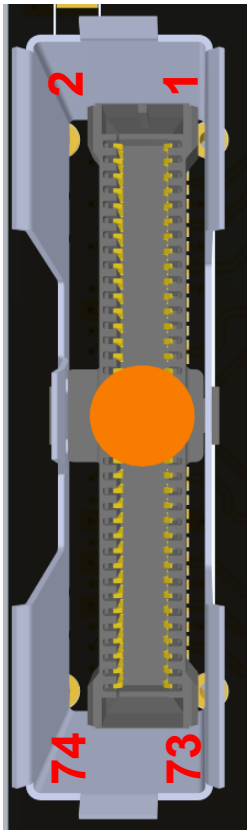
Function	Description	
Connector Type	1722981104	
Mating Connector	1722583104	
Voltage Range	12-36 VDC (28 VDC Nominal)	
X1-Pinout	**Pin**	**Description**
	1	VDD_DC_IN
	2	VDD_DC_IN
	3	GND
	4	GND

3.3.2 Low-Speed Connector



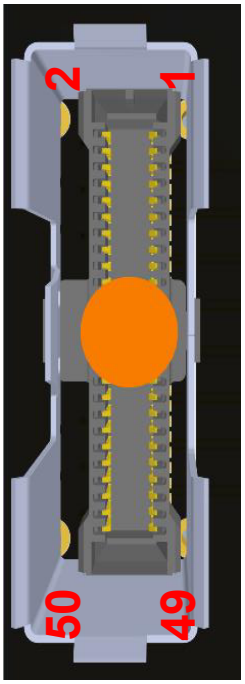
Function	Description			
Connector Type	TEM-120-02-03.0-G-D-L1			
Mating Connector	ARC6-XX.X-LU-LU-3-1			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	DIGITAL_IO_CH4	21	RS422_CH3.TX_P
	2	DIGITAL_IO_CH3	22	RS422_CH2.TX_P
	3	DIGITAL_IO_CH5	23	RS422_CH3.TX_N
	4	DIGITAL_IO_CH2	24	RS422_CH2.TX_N
	5	DIGITAL_IO_CH6	25	RS422_CH3.RX_N
	6	DIGITAL_IO_CH1	26	RS422_CH2.RX_N
	7	DIGITAL_IO_CH7	27	RS422_CH3.RX_P
	8	DIGITAL_IO_CH0	28	RS422_CH2.RX_P
	9	GND_ISO	29	GND_ISO
	10	GND_ISO	30	GND_ISO
	11	RS422_CH0.TX_P	31	CAN0_CONN.C0_P
	12	RS422_CH1.TX_P	32	CAN1_CONN.C1_N
	13	RS422_CH0.TX_N	33	CAN0_CONN.C0_N
	14	RS422_CH1.TX_N	34	CAN1_CONN.C1_P
	15	RS422_CH0.RX_N	35	GND_ISO
	16	RS422_CH1.RX_N	36	GND_ISO
	17	RS422_CH0.RX_P	37	I2C6_3V3_ISO.SDA
	18	RS422_CH1.RX_P	38	VDD_3V3_ISO
	19	GND_ISO	39	I2C6_3V3_ISO.SCL
	20	GND_ISO	40	GND_ISO

3.3.3 High-Speed Connector



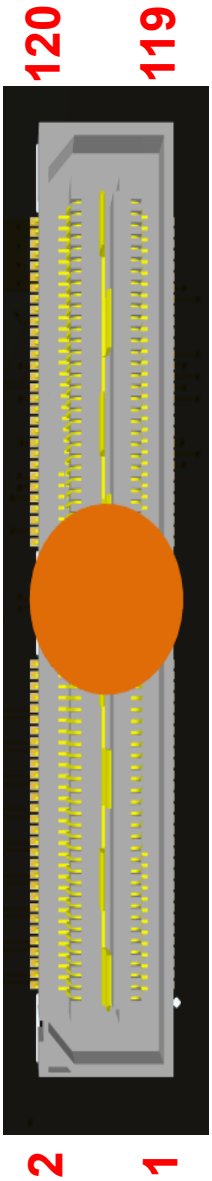
Function	Description			
Connector Type	ARF6-24-S-D-A-K-TR			
Mating Connector	ARC6-24-XX.X-LU-LU-3-1			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	DGND	38	DGND
	2	DGND	39	HDMI_CON.TXD1_P
	3	USBSS_P2_CONN.RX_P	40	VDD_5V_HDMI_CON
	4	USBSS_P1_CONN.RX_P	41	HDMI_CON.TXD1_N
	5	USBSS_P2_CONN.RX_N	42	VBUS_DEBUG
	6	USBSS_P1_CONN.RX_N	43	DGND
	7	DGND	44	DGND
	8	DGND	45	HDMI_CON.TXD0_P
	9	USBSS_P2_CONN.D_P	46	R\E\S\E\T_CON
	10	USBSS_P1_CONN.D_P	47	HDMI_CON.TXD0_N
	11	USBSS_P2_CONN.D_N	48	R\E\C\O\V\E\R\Y_CON
	12	USBSS_P1_CONN.D_N	49	DGND
	13	DGND	50	DGND
	14	DGND	51	VDD_3V3
	15	USBSS_P2_CONN.TX_P	52	VDD_5V
	16	USBSS_P1_CONN.TX_P	53	VDD_3V3
	17	USBSS_P2_CONN.TX_N	54	VDD_5V
	18	USBSS_P1_CONN.TX_N	55	DGND
	19	DGND	56	DGND
	20	DGND	57	USBHS_P1_CONN.D_P
	21	USBSS_P1_VBUS	58	USBHS_P1_VBUS
	22	USBSS_P2_VBUS	59	USBHS_P1_CONN.D_N
	23	USBSS_P1_VBUS	60	USBHS_P1_VBUS
	24	USBSS_P2_VBUS	61	DGND
	25	DGND	62	DGND
	26	DGND	63	USBHS_P2_CONN.D_P
	27	HDMI_CON.TXD2_P	64	USBHS_P2_VBUS
	28	HDMI_CON.HPD	65	USBHS_P2_CONN.D_N
	29	HDMI_CON.TXD2_N	66	USBHS_P2_VBUS
	30	HDMI_CON.CEC	67	DGND
	31	DGND	68	DGND
	32	DGND	69	DBG_USB_PANEL.D_P
	33	HDMI_CON.TXC_P	70	I2C4_3V3.SCL
	34	HDMI_CON.SDA	71	DBG_USB_PANEL.D_N
	35	HDMI_CON.TXC_N	72	I2C4_3V3.SDA
	36	HDMI_CON.SCL	73	DGND
	37	DGND	74	DGND

3.3.4 Ethernet Connector



Function	Description			
Connector Type	ARF6-16-S-D-A-K-TR			
Mating Connector	ARC6-16-XX.X-LU-LU-3-1			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	CGND	26	CGND
	2	CGND	27	ENET2_CONN.D3_N
	3	ENET1_CONN.D3_N	28	ENET_10G.D3_N
	4	ENET0_CONN.D3_N	29	ENET2_CONN.D3_P
	5	ENET1_CONN.D3_P	30	ENET_10G.D3_P
	6	ENET0_CONN.D3_P	31	CGND
	7	CGND	32	CGND
	8	CGND	33	ENET2_CONN.D2_N
	9	ENET1_CONN.D2_N	34	ENET_10G.D2_P
	10	ENET0_CONN.D2_N	35	ENET2_CONN.D2_P
	11	ENET1_CONN.D2_P	36	ENET_10G.D2_N
	12	ENET0_CONN.D2_P	37	CGND
	13	CGND	38	CGND
	14	CGND	39	ENET2_CONN.D1_N
	15	ENET1_CONN.D1_N	40	ENET_10G.D1_N
	16	ENET0_CONN.D1_N	41	ENET2_CONN.D1_P
	17	ENET1_CONN.D1_P	42	ENET_10G.D1_P
	18	ENET0_CONN.D1_P	43	CGND
	19	CGND	44	CGND
	20	CGND	45	ENET2_CONN.D0_N
	21	ENET1_CONN.D0_N	46	ENET_10G.D0_P
	22	ENET0_CONN.D0_N	47	ENET2_CONN.D0_P
	23	ENET1_CONN.D0_P	48	ENET_10G.D0_N
	24	ENET0_CONN.D0_P	49	CGND
	25	CGND	50	CGND

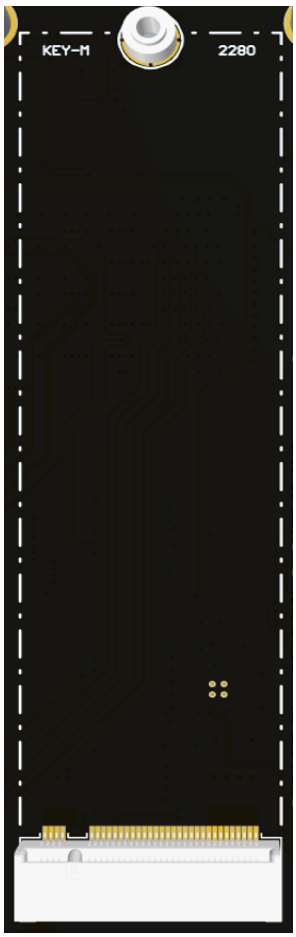
3.3.5 Camera Connector



Function	Description			
Connector Type	ARF6-16-S-D-A-K-TR			
Mating Connector	ARC6-16-XX.X-LU-LU-3-1			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	CGND	61	CSI5.D0_N
	2	CGND	62	CSI7.D0_N
	3	ENET1_CONN.D3_N	63	DGND
	4	ENET0_CONN.D3_N	64	DGND
	5	ENET1_CONN.D3_P	65	NC
	6	ENET0_CONN.D3_P	66	NC
	7	CGND	67	NC
	8	CGND	68	NC
	9	ENET1_CONN.D2_N	69	DGND
	10	ENET0_CONN.D2_N	70	DGND
	11	ENET1_CONN.D2_P	71	CSI5.D1_P
	12	ENET0_CONN.D2_P	72	CSI7.D1_P
	13	CGND	73	CSI5.D1_N
	14	CGND	74	CSI7.D1_N
	15	ENET1_CONN.D1_N	75	CAM_I2C.SCL
	16	ENET0_CONN.D1_N	76	NC
	17	ENET1_CONN.D1_P	77	CAM_I2C.SDA
	18	ENET0_CONN.D1_P	78	NC
	19	CGND	79	DGND
	20	CGND	80	DGND
	21	ENET1_CONN.D0_N	81	NC
	22	ENET0_CONN.D0_N	82	NC
	23	ENET1_CONN.D0_P	83	NC
	24	ENET0_CONN.D0_P	84	NC
	25	CGND	85	NC
	26	CSI3.CLK_P	86	NC
	27	CSI2.CLK_N	87	I2C2.SCL
	28	CSI3.CLK_N	88	CAM1.MCLK
	29	DGND	89	I2C2.SDA
	30	DGND	90	CAM1_PWDN
	31	CSI2.D1_P	91	CAM0.MCLK
	32	CSI3.D1_P	92	CAM1_RST
	33	CSI2.D1_N	93	CAM0_PWDN
	34	CSI3.D1_N	94	CAM2.MCLK
	35	DGND	95	CAM0_RST
	36	DGND	96	NC
	37	CSI4.D0_P	97	NC
	38	CSI6.D0_P	98	NC
	39	CSI4.D0_N	99	DGND
	40	CSI6.D0_N	100	DGND

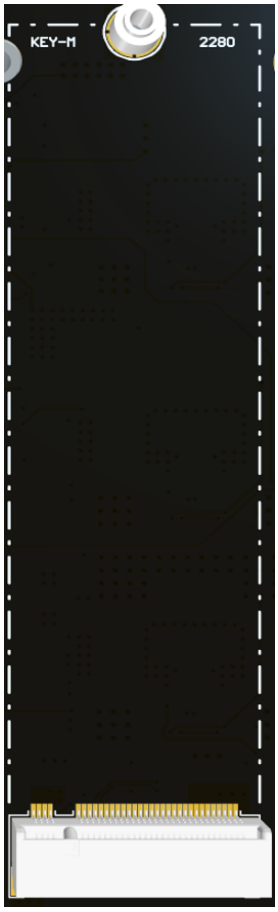
		41	DGND	101	NC
		42	DGND	102	VDD_1V8
		43	CSI4.CLK_P	103	CAM_INT3
		44	CSI6.CLK_P	104	CAM_INT4
		45	CSI4.CLK_N	105	I2C5.SCL
		46	CSI6.CLK_N	106	CAM_INT2
		47	DGND	107	I2C5.SDA
		48	DGND	108	VDD_3V3
		49	CSI4.D1_P	109	NC
		50	CSI6.D1_P	110	VDD_3V3
		51	CSI4.D1_N	111	NC
		52	CSI6.D1_N	112	NC
		53	DGND	113	NC
		54	DGND	114	NC
		55	NC	115	DGND
		56	NC	116	DGND
		57	NC	117	CAM_INT1
		58	NC	118	VDD_3V3
		59	CSI5.D0_P	119	CAM_VDD_SYS_EN
		60	CSI7.D0_P	120	VDD_3V3

3.3.6 M.2 Key-M1 Connector



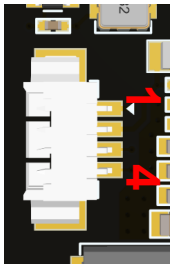
Function	Description			
Mating Connector	SM3ZS67U410AMR1000			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	DGND	35	PCIE_C5.TX1_N
	2	VDD_3V3	36	NC
	3	DGND	37	PCIE_C5.TX1_P
	4	VDD_3V3	38	NC
	5	PCIE_C5.RX3_N	39	DGND
	6	NC	40	NC
	7	PCIE_C5.RX3_P	41	PCIE_C5.RX0_N
	8	NC	42	NC
	9	DGND	43	PCIE_C5.RX0_P
	10	NC	44	NC
	11	PCIE_C5.TX3_N	45	DGND
	12	VDD_3V3	46	NC
	13	PCIE_C5.TX3_P	47	PCIE_C5.TX0_N
	14	VDD_3V3	48	NC
	15	DGND	49	PCIE_C5.TX0_P
	16	VDD_3V3	50	PCIE_C5_RST_N
	17	PCIE_C5.RX2_N	51	DGND
	18	VDD_3V3	52	PCIE_C5_CLKREQ_N
	19	PCIE_C5.RX2_P	53	PCIE_C5.CLK_N
	20	NC	54	PCIE_WAKE_N
	21	DGND	55	PCIE_C5.CLK_P
	22	NC	56	NC
	23	PCIE_C5.TX2_N	57	DGND
	24	NC	58	NC
	25	PCIE_C5.TX2_P	67	NC
	26	NC	68	SUSCLK(32KHz)
	27	DGND	69	NC
	28	NC	70	VDD_3V3
	29	PCIE_C5.RX1_N	71	DGND
	30	NC	72	VDD_3V3
	31	PCIE_C5.RX1_P	73	DGND
	32	NC	74	VDD_3V3
	33	DGND	75	DGND
	34	NC		

3.3.7 M.2 Key-M2 Connector



Function	Description			
Mating Connector	SM3ZS67U410AMR1000			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	DGND	35	PCIE_C4.TX1_N
	2	VDD_3V3	36	NC
	3	DGND	37	PCIE_C4.TX1_P
	4	VDD_3V3	38	NC
	5	PCIE_C4.RX3_N	39	DGND
	6	NC	40	NC
	7	PCIE_C4.RX3_P	41	PCIE_C4.RX0_N
	8	NC	42	NC
	9	DGND	43	PCIE_C4.RX0_P
	10	NC	44	NC
	11	PCIE_C4.TX3_N	45	DGND
	12	VDD_3V3	46	NC
	13	PCIE_C4.TX3_P	47	PCIE_C4.TX0_N
	14	VDD_3V3	48	NC
	15	DGND	49	PCIE_C4.TX0_P
	16	VDD_3V3	50	PCIE_C4_RST_N
	17	PCIE_C4.RX2_N	51	DGND
	18	VDD_3V3	52	PCIE_C4_CLKREQ_N
	19	PCIE_C4.RX2_P	53	PCIE_C4.CLK_N
	20	NC	54	PCIE_WAKE_N
	21	DGND	55	PCIE_C4.CLK_P
	22	NC	56	NC
	23	PCIE_C4.TX2_N	57	DGND
	24	NC	58	NC
	25	PCIE_C4.TX2_P	67	NC
	26	NC	68	SUSCLK(32KHz)
	27	DGND	69	NC
	28	NC	70	VDD_3V3
	29	PCIE_C4.RX1_N	71	DGND
	30	NC	72	VDD_3V3
	31	PCIE_C4.RX1_P	73	DGND
	32	NC	74	VDD_3V3
	33	DGND	75	DGND
	34	NC		

3.3.8 Fan Connector



Function	Description	
Mating Connector	0510210400 from Molex Picoblade series	
Pinout	**Pin**	**Description**
	1	GND
	2	VDD_FAN
	3	TACH
	4	PWM

3.3.9 Led Connector

Description
The MILBOARD-AGXMAX implements a TIM-02-F-SV-L-P connector LED connection

3.3.10 Debug Mode Micro USB Connector

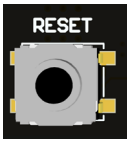
Description
The MILBOARD-AGXMAX implements a Micro USB connector to access the module by using serial connection.

3.4 The Definition of Buttons

3.4.1 Recovery Pushbutton

Description
The MILBOARD-AGXMAX implements a recovery pushbutton. Recovery button should be pressed with reset button at the same time. After released reset button, recovery button should be pressed a little bit more (min. 250 ms).

3.4.2 Reset Pushbutton



Description
The MILBOARD-AGXMAX implements a reset button to reset the Jetson SoM.

4. Software Information

4.1 Installation

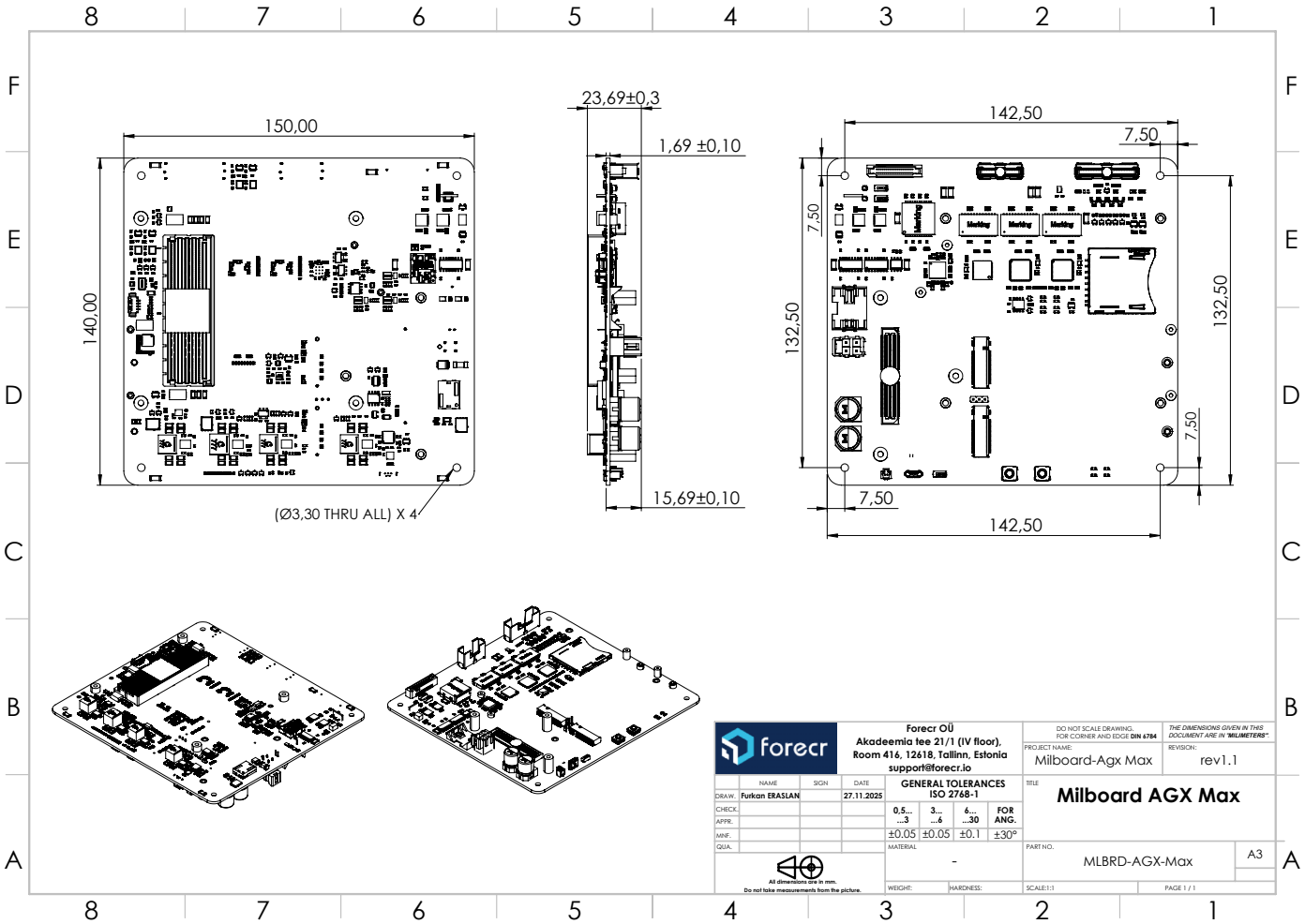
This section will be completed soon. It will be published on our website once completed. Please check our Forecr Web Page regularly.

5. Mechanical Drawing

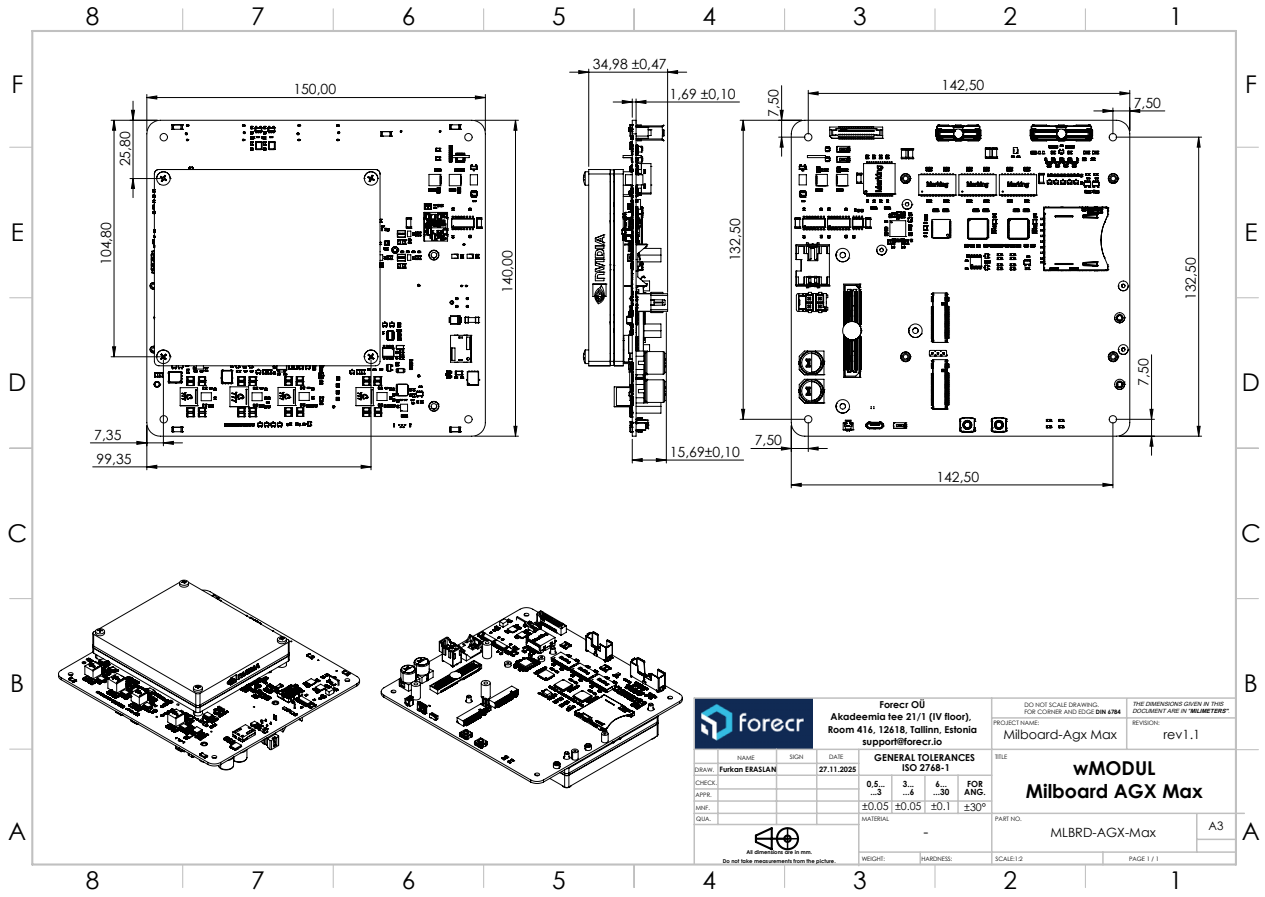
5. 3D Model & Mechanical Information

Full 3D models of all DSBOARD-AGX Carrier Board can be found here:
https://github.com/forecr/forecr_3d_models/tree/master/MILBOARD-AGXMAX

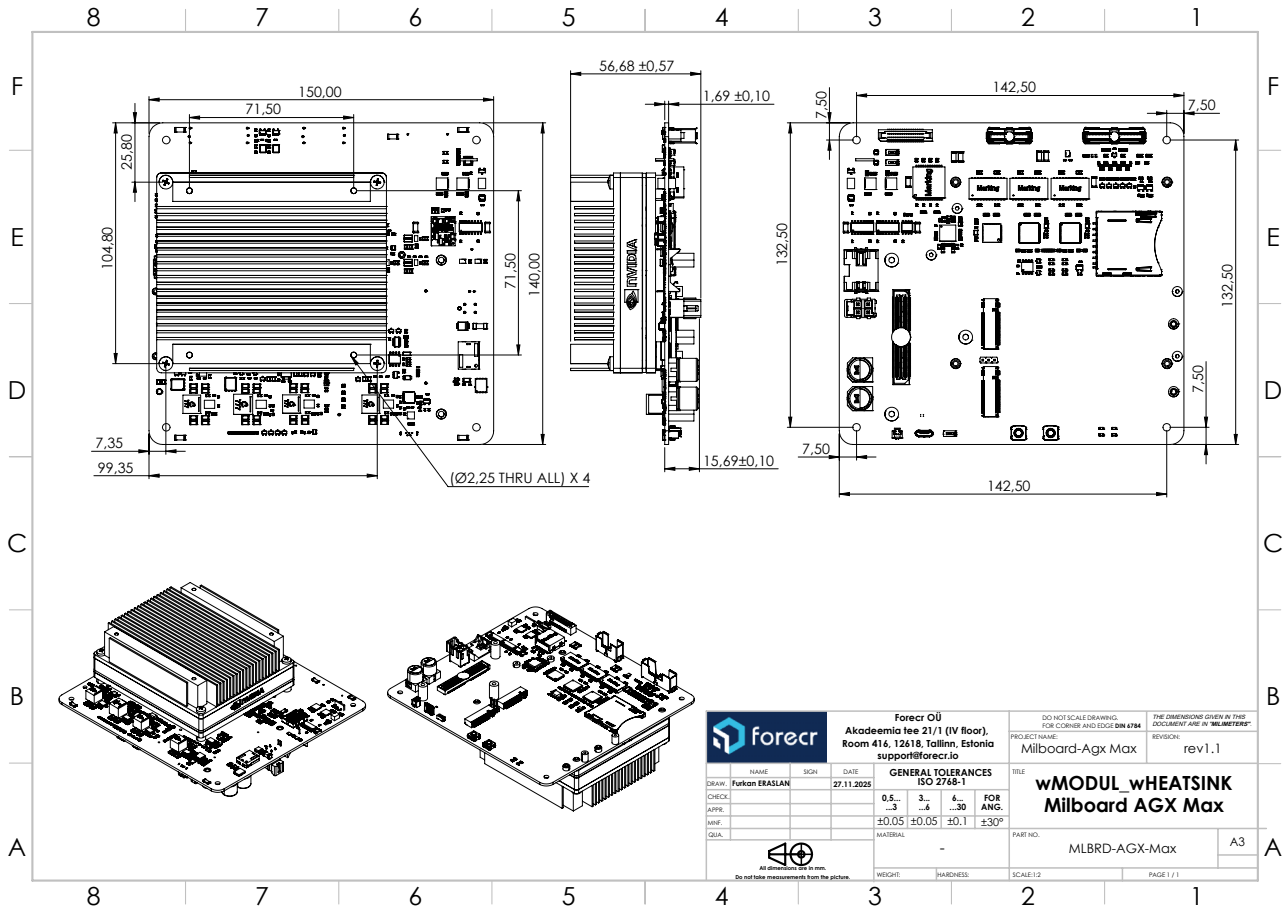
MILBOARD-AGXMAX Stand Alone



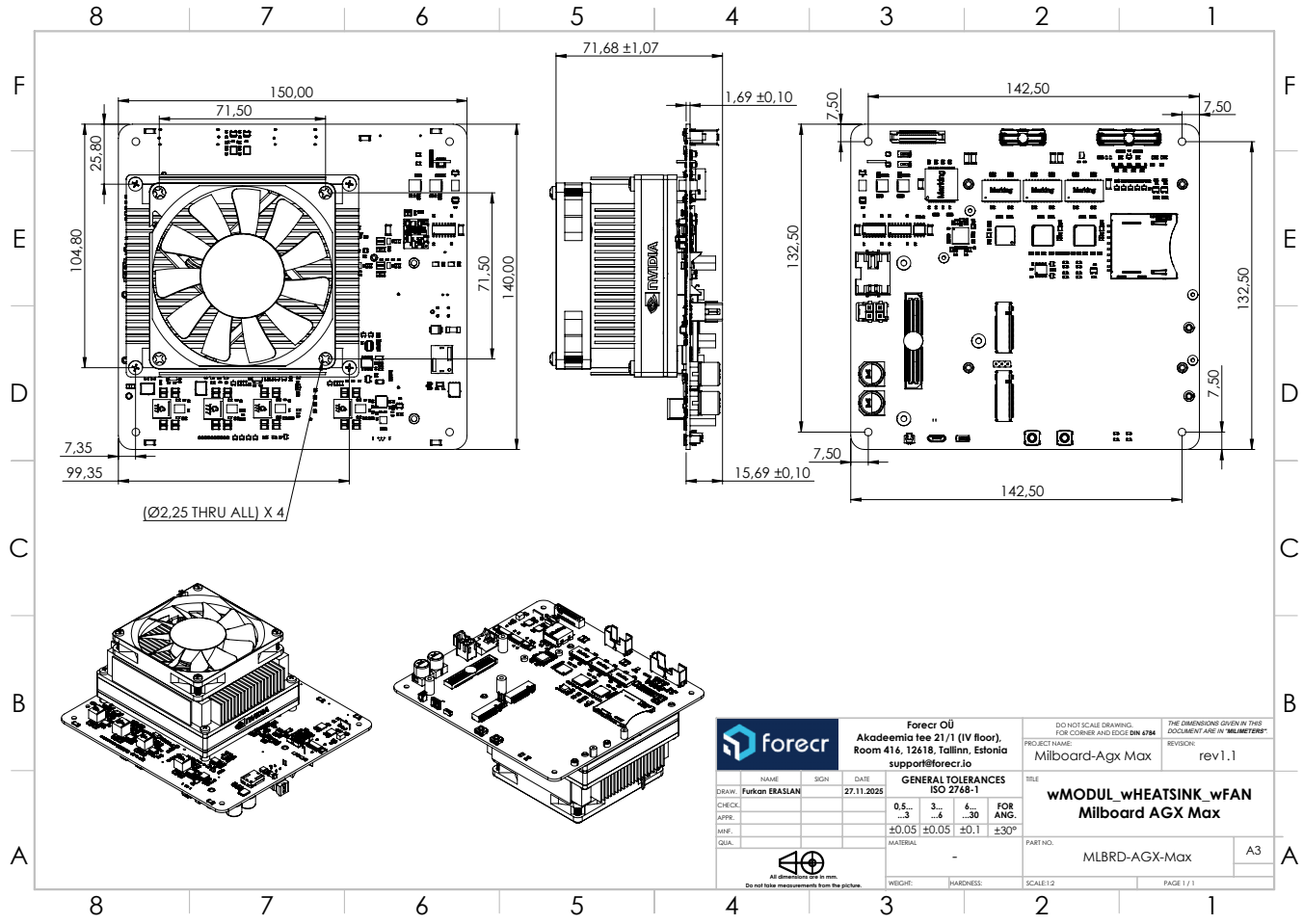
MILBOARD-AGXMAX with Jetson AGX Orin Module



MILBOARD-AGXMAX with Jetson AGX Orin Module and Heatsink Integration Details



MILBOARD-AGXMAX with Jetson AGX Orin Module, Heatsink and Thermal Integration Details



6. Power Consumption

This section will be completed soon. It will be published on our website once completed. Please check our Forecr Web Page regularly.

8. MTBF Prediction

This section will be completed soon. It will be published on our website once completed. Please check our Forecr Web Page regularly.