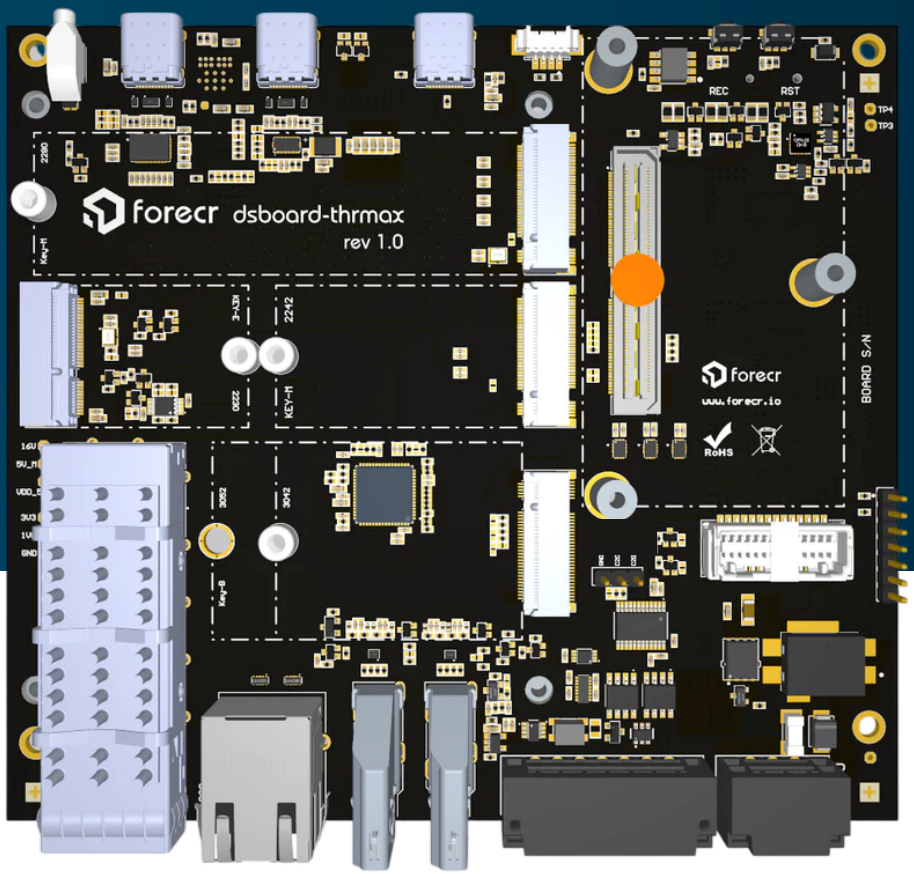

DSBOARD-THRMAX Rev 1.0

USER MANUAL

UM-DSBDTHRMAX-01

Revision 1.0

22/08/2025

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

NVIDIA Preferred Partner

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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 carrier board. Therefore, this manual only represents the technical status of Forecr carrier board 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 carrier board, please reach out to the Forecr reseller from which you purchased the carrier board.

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

Contact Information

E-mail Address	For information requests: info@forecr.io For support requests: support@forecr.io For wholesale inquiries: sales@forecr.io
Address	Forecr OÜ Akadeemia tee 21/1 (II floor), Room 219, 12618, Tallinn, Estonia
Telephone Number	Estonia +372 5332 2632
Website	https://www.forecr.io

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Symbols

ElectroStatic Discharge (ESD) Sensitive Device!

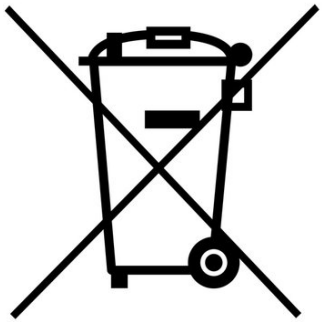
Electronic boards and their components are sensitive to static electricity. When handling any circuit board assemblies, it is recommended that ESD safety precautions be observed.

ESD safe best practices include, but are not limited to:

- Do not handle the carrier board out of its antistatic packaging while it is not used for operational purposes unless it is otherwise protected.
- Whenever possible, unpack or pack this product only at ESD safe work stations.
- Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools.
- Try to handle the board by the edges, avoiding contact with components.

HOT Surface!

Do not touch. Contact may cause burns. Allow to cool before servicing.



Waste Electrical and Electronic Equipment (WEEE)!

The carrier board should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.

Restriction of Hazardous Substances (RoHS)!

The carrier board complies with the regulations and restrictions established by the ROHS Directive and does not contain hazardous substances in concentrations that may be harmful to health or the environment.

Limited Product Warranty

Forecr provides a 1-year Warranty for the carrier board. This warranty period is valid from the original purchase date of the carrier board. In order to maintain warranty, the carrier board must not be altered or modified in any way. Changes or modifications to the board, 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 carrier board 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	22.08.2025	Preliminary Release

1. Introduction

Introducing the DSBOARD-THRMAX, FORECR's most advanced carrier board purpose-built for the ground breaking NVIDIA Jetson T5000 platform. With a powerful 128GB LPDDR5X memory interface, high-speed PCIe Gen5 storage, and a wide array of I/O options including dual HDMI 2.1, DP1.4a, USB 3.2, QSFP+, and robust serial connectivity, this compact 140x125mm board is engineered to support the most demanding edge AI applications.

The AGX THOR SoM delivers exceptional performance for industrial applications that require high-speed data transfer, real-time communication, and reliable performance. Whether you're working on machine vision, robotics, automation, or any other industrial project, the DSBOARD-THRMAX will deliver the power and versatility you need to get the job done.

Built for seamless deployment in mission-critical environments, the DSBOARD-THRMAX integrates industrial - grade features including an operating range of -25°C to +85°C, ruggedized digital I/Os, CAN bus, and real-time sensor interfaces such as IMU and temperature monitoring. Its flexible expansion ecosystem supports WiFi, Bluetooth, LTE/5G modules, and high-bandwidth camera connectivity, while NVIDIA JetPack 7.0 and Ubuntu Linux 24.04 ensure optimal software compatibility.

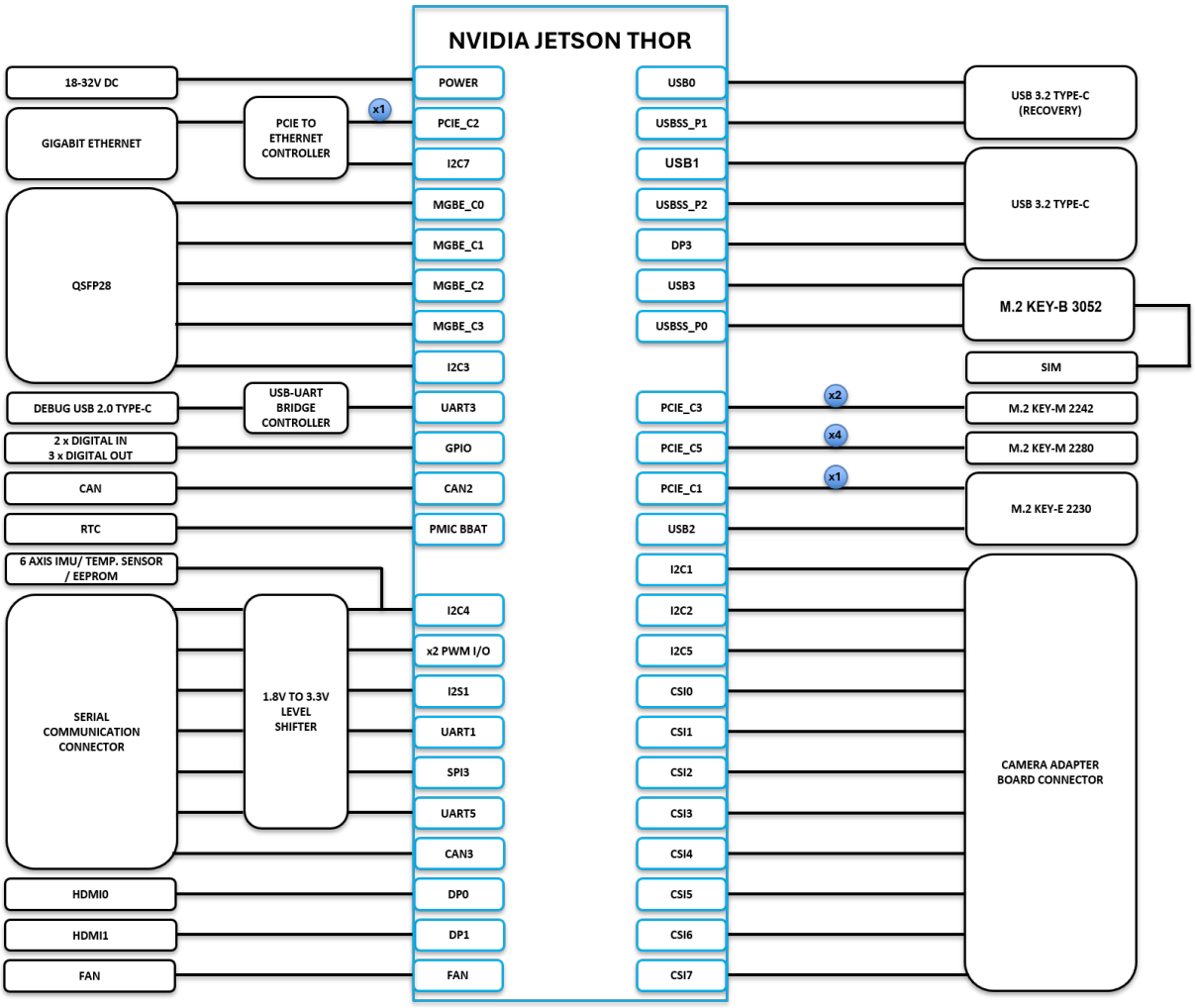
Latest revision of this user manual, datasheet, and 3D model can be downloaded from Forecr Web Page.

2. Product Specification

2.1 Technical Specification

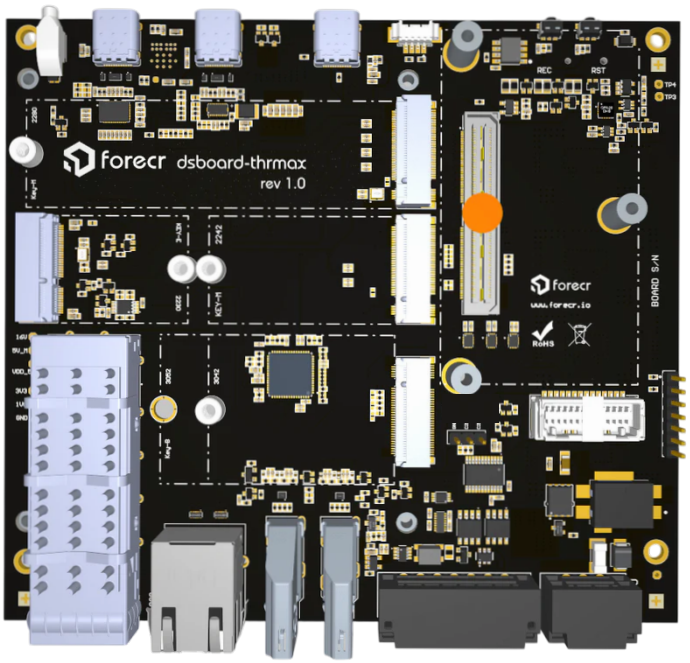
Supported Modules	NVIDIA Jetson T5000
Memory	128 GB 256-bit LPDDR5X 273 GB/s
Graphics Interfaces	2x HDMI 2.1, 1x DP1.4a
Interfaces	1x Gigabit Ethernet (RJ45) 2x USB3.2 Type-C (1x DP support) 1x Debug USB-C 1x QSFP28 (4x 25GbE) 1x RS-232/422/485 1x CAN Bus 2x Digital Input (12-24V compatible) 3x Digital Output (12-24V compatible) EEPROM, IMU, Temperature Sensor RTC (Coin Holder)
Wireless Communication	WiFi/Bluetooth/LTE/5G Connectivity by extension sockets
Power Supply	18-32V DC
Extension Sockets	1x M.2 Key-B 3042/3052 (USB3.0, USB2.0) 1x M.2 Key-E 2230 (PCIe x1, USB2.0) 1x Camera Expansion Connector (6x 2-Lane or 4x 4-Lane) 1x Expansion Header (I2C, I2S, SPI, UART, GPIO, CAN) FAN Connector (12V)
Mass Storage	1x M.2 Key-M 2280 (PCIe Gen5 x4) 1x M.2 Key-M 2242 (PCIe Gen5 x2)
Ambient Conditions	-25°C ... +85°C
Form Factor / Dimensions	140 mm x 125 mm
Operating Systems	Ubuntu Linux 24.04
JetPack Support	JetPack 7.x

2.2 Block Diagram

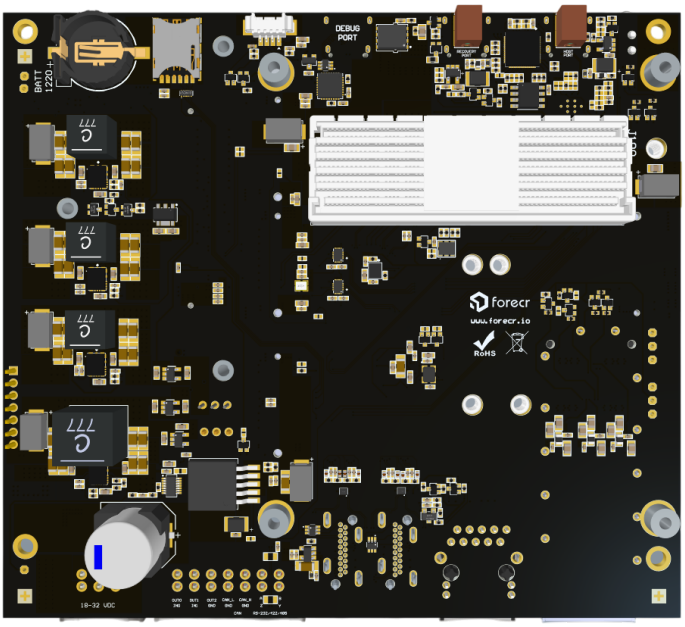


2.3 Board Visuals

Top Side



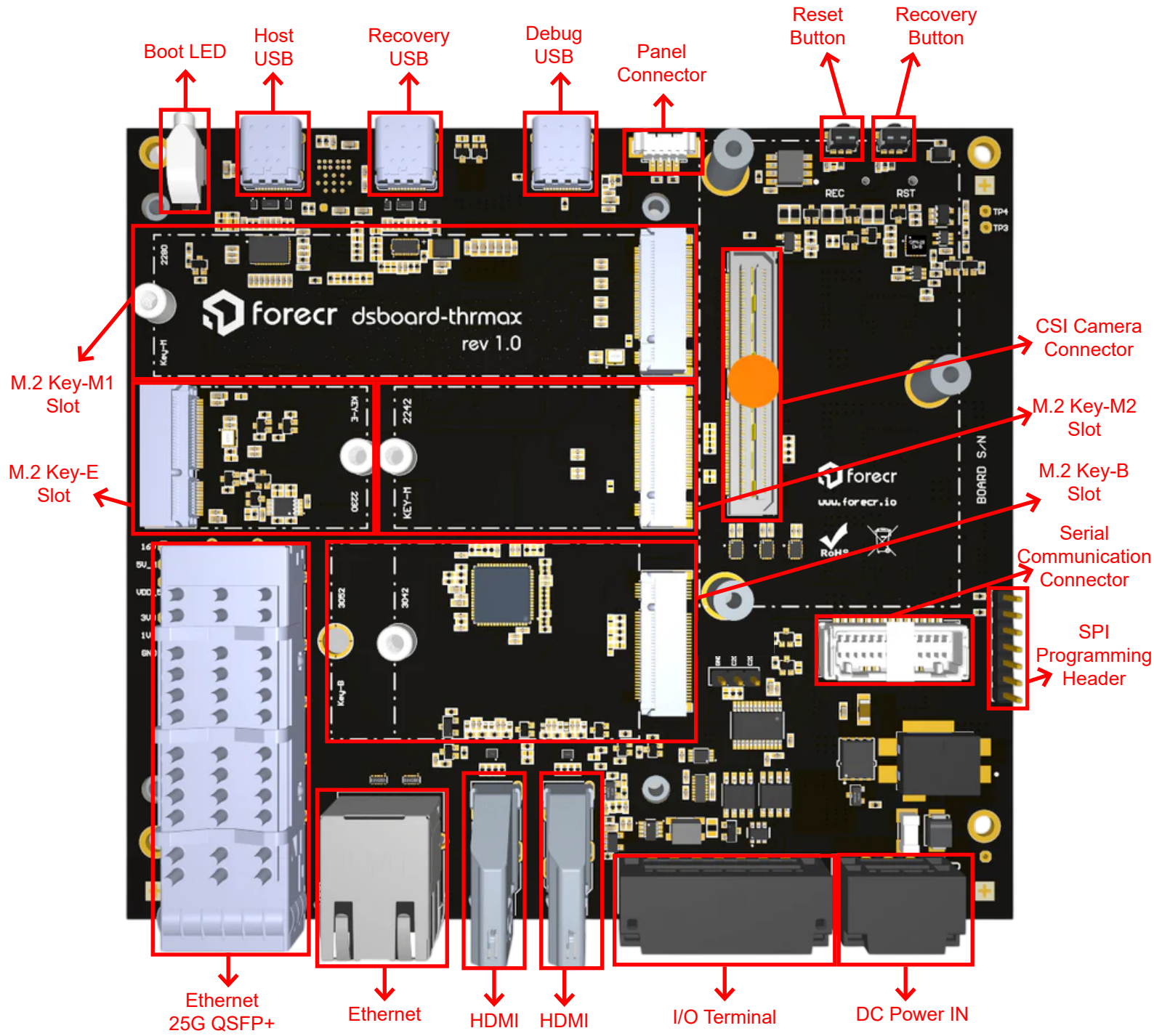
Bottom Side



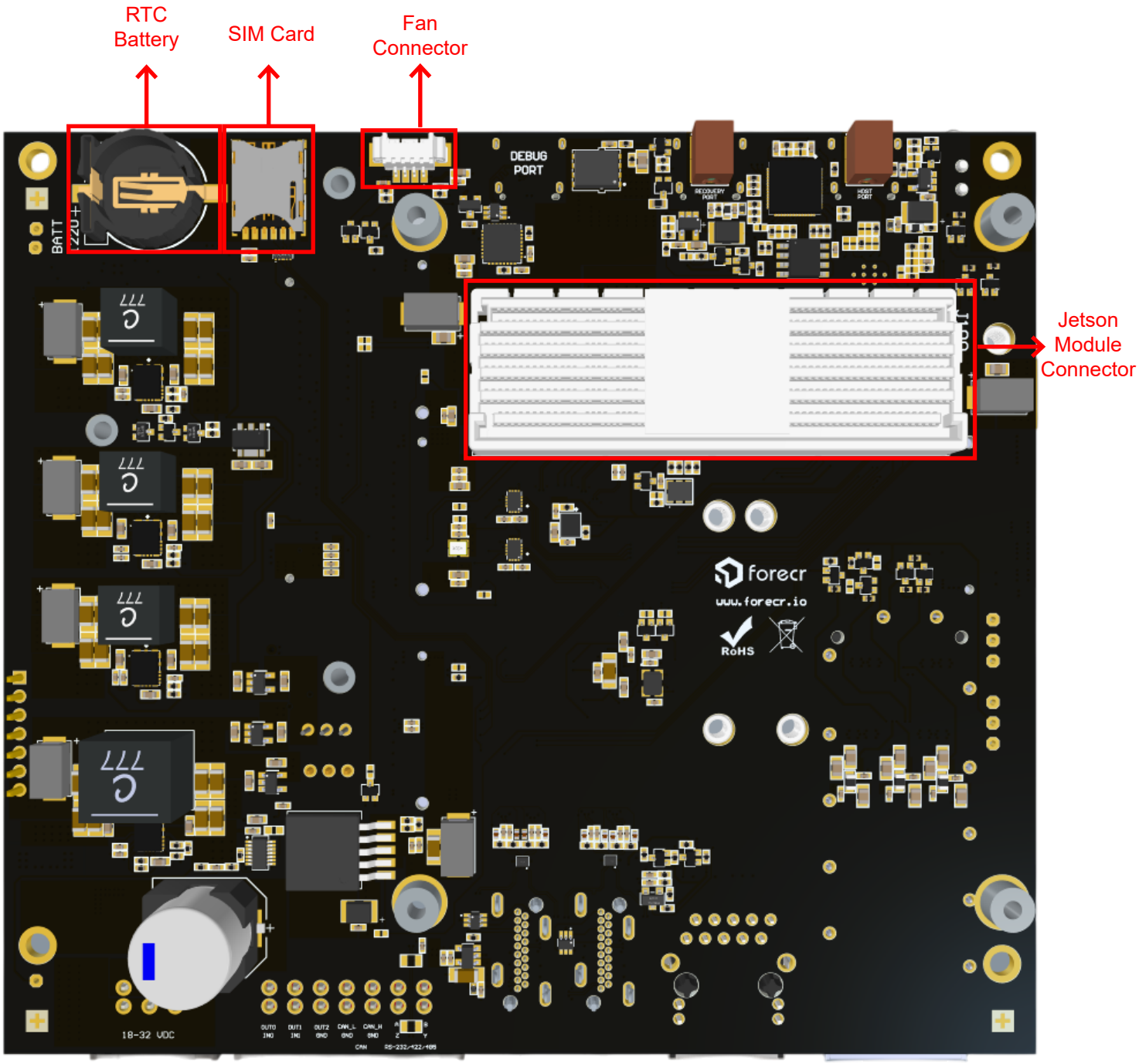
3. Hardware Information

3.1 Connector and Button Location

3.1.1 Top Side



3.1.2 Bottom Side

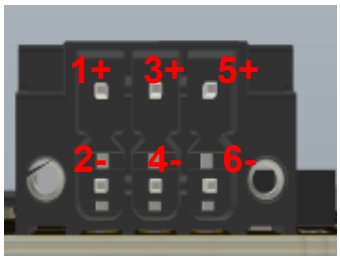


3.2 List of Connectors and Buttons

Connectors
DSBOARD-THRMAX Power Connector
DSBOARD-THRMAX M.2 Key-M1 Connector
DSBOARD-THRMAX M.2 Key-M2 Connector
DSBOARD-THRMAX M.2 Key-B Connector
DSBOARD-THRMAX M.2 Key-E Connector
DSBOARD-THRMAX CSI Camera Connector
DSBOARD-THRMAX I/O Terminal Connector
DSBOARD-THRMAX Serial Communication Connector
DSBOARD-THRMAX SIM Card Connector
DSBOARD-THRMAX Panel Connector
DSBOARD-THRMAX RTC Battery Connector
DSBOARD-THRMAX HDMI Connectors
DSBOARD-THRMAX 25G Ethernet Slot
DSBOARD-THRMAX 10/100/1000 Ethernet Connector
DSBOARD-THRMAX Fan Connector
DSBOARD-THRMAX Recovery Mode USB Type-C Connector
DSBOARD-THRMAX Debug Mode USB Type-C Connector
DSBOARD-THRMAX Host Mode USB Type-C Connector
DSBOARD-THRMAX SPI Programming Header
Buttons
DSBOARD-THRMAX Recovery Pushbutton
DSBOARD-THRMAX Reset Pushbutton

3.3 The Definition of Each Connector

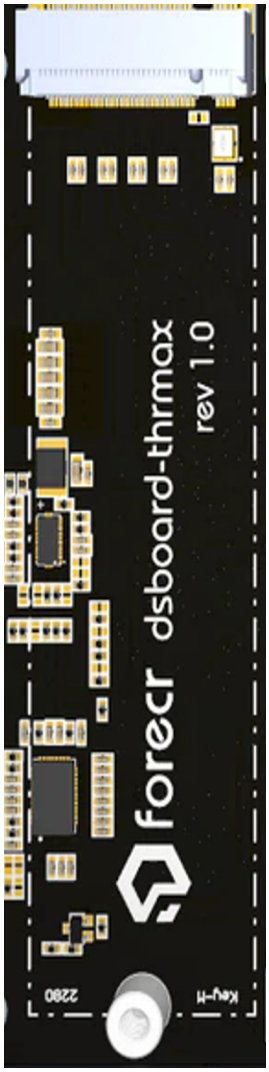
3.3.1 Power Connector



Function	Description			
Connector Type	1787027			
Mating Connector	1790302			
Minimum Input Voltage	+18V			
Maximum Input Voltage	+32V			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	Positive	4	Negative
	2	Negative	5	Positive
	3	Positive	6	Negative

3.3.2 M.2 Key-M 1 Connector

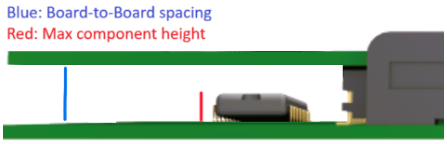
M.2 Key-M Connector



Description

Pinout	Pin	Description	Pin	Description	Pin	Description
	1	DGND	24	NC	47	PCIE_C5.TX0_N
	2	VDD_3V3	25	PCIE_C5.TX2_P	48	NC
	3	DGND	26	NC	49	PCIE_C5.TX0_P
	4	VDD_3V3	27	DGND	50	PCIE_C5_RST_N
	5	PCIE_C5.RX3_N	28	NC	51	DGND
	6	NC	29	PCIE_C5.RX1_N	52	PCIE_C5_ CLKREQ_N
	7	PCIE_C5.RX3_P	30	NC	53	PCIE_C5.CLK_N
	8	NC	31	PCIE_C5.RX1_P	54	PCIE_WAKE_N
	9	DGND	32	NC	55	PCIE_C5.CLK_P
	10	NC	33	DGND	56	NC
	11	PCIE_C5.TX3_N	34	NC	57	DGND
	12	VDD_3V3	35	PCIE_C5.TX1_N	58	NC
	13	PCIE_C5.TX3_P	36	NC	67	NC
	14	VDD_3V3	37	PCIE_C5.TX1_P	68	32KHZ_CLK
	15	DGND	38	NC	69	NC
	16	VDD_3V3	39	DGND	70	VDD_3V3
	17	PCIE_C5.RX2_N	40	I2C2.SCL	71	DGND
	18	VDD_3V3	41	PCIE_C5.RX0_N	72	VDD_3V3
	19	PCIE_C5.RX2_P	42	I2C2.SDA	73	DGND
	20	NC	43	PCIE_C5.RX0_P	74	VDD_3V3
	21	DGND	44	NC	75	DGND
	22	NC	45	DGND		
	23	PCIE_C5.TX2_N	46	NC		

Board to board spacing=4.15 mm
Max component height=1.2 mm



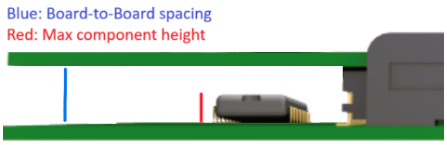
3.3.3 M.2 Key-M 2 Connector

M.2 Key-M 2 Connector

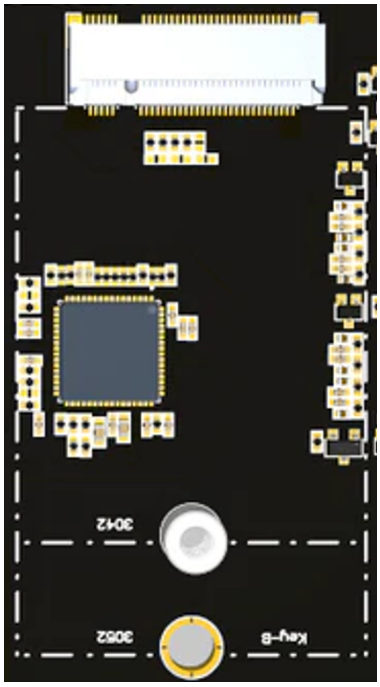
Description

Pinout	Pin	Description	Pin	Description	Pin	Description
	1	DGND	24	NC	47	PCIE_C3.TX0_N
	2	VDD_3V3	25	NC	48	NC
	3	DGND	26	NC	49	PCIE_C3.TX0_P
	4	VDD_3V3	27	DGND	50	PCIE_C3.RST_N
	5	NC	28	NC	51	DGND
	6	NC	29	PCIE_C3.RX1_N	52	PCIE_C3. CLKREQ_N
	7	NC	30	NC	53	PCIE_C3.CLK_N
	8	NC	31	PCIE_C3.RX1_P	54	PCIE_WAKE_N
	9	DGND	32	NC	55	PCIE_C3.CLK_P
	10	NC	33	DGND	56	NC
	11	NC	34	NC	57	DGND
	12	VDD_3V3	35	PCIE_C3.TX1_N	58	NC
	13	NC	36	NC	67	NC
	14	VDD_3V3	37	PCIE_C3.TX1_P	68	32KHZ_CLK
	15	DGND	38	NC	69	NC
	16	VDD_3V3	39	DGND	70	VDD_3V3
	17	NC	40	I2C2.SCL	71	DGND
	18	VDD_3V3	41	PCIE_C3.RX0_N	72	VDD_3V3
	19	NC	42	I2C2.SDA	73	DGND
	20	NC	43	PCIE_C3.RX0_P	74	VDD_3V3
	21	DGND	44	NC	75	DGND
	22	NC	45	DGND		
	23	NC	46	NC		

Board to board spacing=4.15 mm
Max component height=0.5 mm

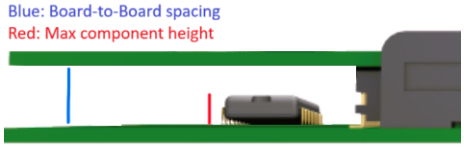


3.3.4 M.2 Key-B Connector

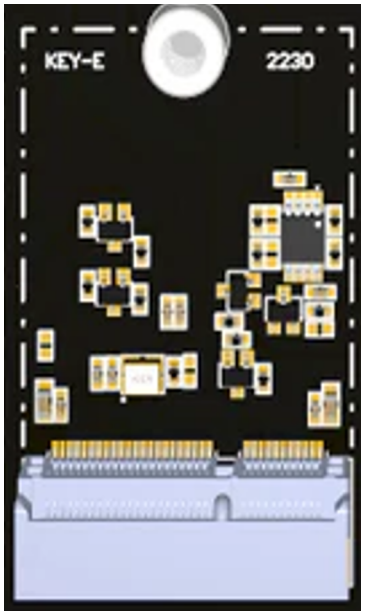


Description				
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	NC	43	NC
	2	VDD_3V8	44	NC
	3	DGND	45	DGND
	4	VDD_3V8	46	NC
	5	DGND	47	NC
	6	M2B_FULLCARD_PWOFF#	48	NC
	7	USB3.D_P	49	NC
	8	M2B_W_DISABLE1#	50	NC
	9	USB3.D_N	51	DGND
	10	NC	52	NC
	11	DGND	53	NC
	20	NC	54	NC
	21	NC	55	NC
	22	NC	56	NC
	23	NC	57	DGND
	24	NC	58	NC
	25	NC	59	NC
	26	M2B_W_DISABLE2#	60	NC
	27	DGND	61	NC
	28	NC	62	NC
	29	USBSS_P0_RX_N	63	NC
	30	M2_USIM_RST	64	NC
	31	USBSS_P0_RX_P	65	NC
	32	M2_USIM_CLK	66	NC
	33	DGND	67	M2B_RESET
	34	M2_USIM_DAT	68	NC
	35	USBSS_P0_TX_N	69	NC
	36	M2_USIM_VDD	70	VDD_3V8
	37	USBSS_P0_TX_P	71	DGND
	38	NC	72	VDD_3V8
	39	DGND	73	DGND
	40	NC	74	VDD_3V8
	41	NC	75	NC
	42	NC		

Board to board spacing=4.15 mm
Max component height=1 mm



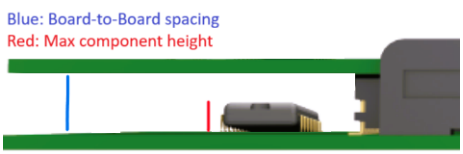
3.3.5 M.2 Key-E Connector



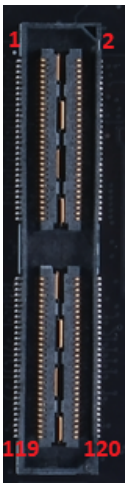
Description

Pinout	Pin	Description	Pin	Description
	1	DGND	44	NC
	2	VDD_3V3	45	DGND
	3	USB_2.D_P	46	NC
	4	VDD_3V3	47	PCIE_C1.CLK_P
	5	USB2.D_N	48	NC
	6	NC	49	PCIE_C1.CLK_P
	7	DGND	50	M2E_32KHZ
	8	NC	51	DGND
	9	NC	52	NC
	10	NC	53	PCIE_C1.CLKREQ_N
	11	NC	54	M2E_WDISABLE2_N
	12	NC	55	PCIE_WAKE_N
	13	NC	56	M2E_WDISABLE1_N
	14	NC	57	DGND
	15	NC	58	NC
	16	NC	59	NC
	17	NC	60	NC
	18	DGND	61	NC
	19	NC	62	NC
	20	M2E_BT_WAKE_N	63	DGND
	21	NC	64	NC
	22	NC	65	NC
	23	NC	66	NC
	32	NC	67	NC
	33	DGND	68	NC
	34	NC	69	DGND
	35	PCIE_C1.TX0_P	70	NC
	36	NC	71	NC
	37	PCIE_C1.TX0_P	72	VDD_3V3
	38	NC	73	NC
	39	DGND	74	VDD_3V3
	40	NC	75	DGND
	41	PCIE_C1.RX0_P		
	42	NC		
	43	PCIE_C1.RX0_N		

Board to board spacing=4.15 mm
Max component height=1.1 mm



3.3.6 CSI Camera Connector



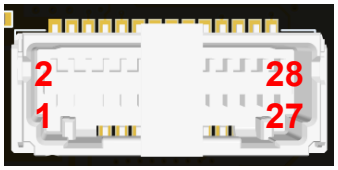
Function	Description							
Connector Type	QSH-060-01-L-D-A-K-TR							
Pinout	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**
	1	CSI0.D0_P	37	CSI4.D0_P	73	CSI5.D1_N	109	NC
	2	CSI1.D0_P	38	CSI6.D0_P	74	CSI7.D1_N	110	VDD_3V3
	3	CSI0.D0_N	39	CSI4.D0_N	75	CAM_I2C.SCL	111	NC
	4	CSI1.D0_N	40	CSI6.D0_N	76		112	NC
	5	GND	41	GND	77	CAM_I2C.SDA	113	NC
	6	GND	42	GND	78		114	NC
	7	CSI0.CLK_P	43	CSI4.CLK_P	79	GND	115	GND
	8	CSI1.CLK_P	44	CSI6.CLK_P	80	GND	116	GND
	9	CSI0.CLK_N	45	CSI4.CLK_N	81	NC	117	CAM_INT1
	10	CSI1.CLK_N	46	CSI6.CLK_N	82	NC	118	VDD_3V3
	11	GND	47	GND	83	NC	119	CAM_VDD_SYS_EN
	12	GND	48	GND	84	NC	120	VDD_3V3
	13	CSI0.D1_P	49	CSI4.D1_P	85	NC		
	14	CSI1.D1_P	50	CSI6.D1_P	86	NC		
	15	CSI0.D1_N	51	CSI4.D1_N	87	I2C2.SCL		
	16	CSI1.D1_N	52	CSI6.D1_N	88	CAM1.MCLK		
	17	GND	53	GND	89	I2C2.SDA		
	18	GND	54	GND	90	CAM1.PWDN		
	19	CSI2.D0_P	55	NC	91	CAM0.MCLK		
	20	CSI3.D0_P	56	NC	92	CAM1.RST		
	21	CSI2.D0_N	57	NC	93	CAM0_PWDN		
	22	CSI3.D0_N	58	NC	94	CAM2.MCLK		
	23	GND	59	CSI5.D0_P	95	CAM0.RST		
	24	GND	60	CSI7.D0_P	96	NC		
	25	CSI2.CLK_P	61	CSI5.D0_N	97	NC		
	26	CSI3.CLK_P	62	CSI7.D0_N	98	NC		
	27	CSI2.CLK_N	63	GND	99	GND		
	28	CSI3.CLK_N	64	GND	100	GND		
	29	GND	65	CSI5.CLK_P	101	NC		
	30	GND	66	CSI7.CLK_P	102	VDD_1V8		
	31	CSI2.D1_P	67	CSI5.CLK_N	103	CAM_INT3		
	32	CSI3.D1_P	68	CSI7.CLK_N	104	CAM_INT4		
	33	CSI2.D1_N	69	GND	105	I2C5.SCL		
	34	CSI3.D1_N	70	GND	106	CAM_INT2		
	35	GND	71	CSI5.D1_P	107	I2C5.SDA		
	36	GND	72	CSI7.D1_P	108	VDD_3V3		

3.3.7 I/O Terminal Connector

14 Pin Connector
(Serial Communication)

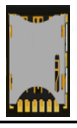
Function	Description		
Connector Type	1787069		
Mating connector	1790344		
Pinout	14 Pin Connector		
	Pin	**Description**	**I/O Type**
	1	RS422 B	I/O
	2	RS422 Y	I/O
	3	RS232 RX / RS422 A	I/O
	4	RS232 TX / RS422 Z	I/O
	5	CAN2_H	I/O
	6	DGND	Power
	7	CAN2_L	I/O
	8	DGND	Power
	9	DIGITAL_OUT2	I/O
	10	DGND	Power
	11	DIGITAL_OUT1	I/O
	12	DIGITAL_IN1	I/O
	13	DIGITAL_OUT0	I/O
	14	DIGITAL_IN0	I/O

3.3.8 Serial Communication Connector

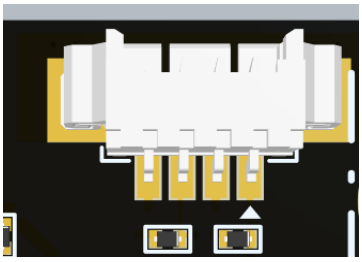


Function	Description			
Connector Type	505433-2881			
Mating connector	5054322801			
Pinout	**Pin**	**Description**	**Pin**	**Description**
	1	VDD_5V	15	SPI3_3V3_CS0
	2	VDD_3V3	16	SPI3_3V3_CLK
	3	VDD_1V8	17	SPI3_3V3_MISO
	4	GND	18	SPI3_3V3_MOSI
	5	GND	19	GND
	6	I2S1_3V3_CLK	20	GND
	7	I2S1_3V3_FS	21	PWM_GPIO27_3V3
	8	I2S1_3V3_SDOUT	22	SPI3_3V3.CSI
	9	I2S1_3V3_SDIN	23	PWM_GPIO36_3V3
	10	AUD_3V3_MCLK	24	NC
	11	CAN3_DOUT	25	UART5_3V3.TX
	12	I2C4_3V3_SDA	26	UART5_3V3.RX
	13	CAN3_DIN	27	UART1_3V3_TX
	14	I2C4_3V3_SCL	28	UART1_3V3_RX

3.3.9 SIM Card Connector

	Description
	The DSBOARD-THRMAX implements a nano SIM card connector together.

3.3.10 Panel Connector



Function	Description	
Connector Type	53261-0471	
Mating Connector	0510210400 from Molex	
Pinout	**Pin**	**Description**
	1	FORCE_RECOVERY
	2	GND
	3	SYS_RST_IN
	4	GND

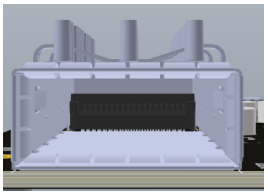
3.3.11 RTC Battery Connector

	Description
	The DSBOARD-THRMAX implements a RTC battery holder. The connector is suitable for CR1220 batteries.

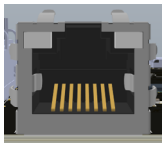
3.3.12 HDMI Connector

	Description
	The NVIDIA® Jetson Thor modules will output video via the DSBOARD-THRMAX vertical HDMI connectors that is HDMI 2.1 capable.

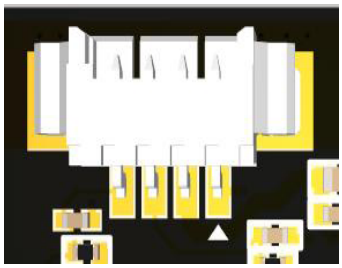
3.3.13 25G Ethernet Slot

	Description
	The DSBOARD-THRMAX implements a Multi-Gigabit Ethernet slot for 25G QSFP+ supported transceivers.

3.3.14 10/100/1000 Ethernet Connector

	Description
	The DSBOARD-THRMAX implements a port RJ-45 Ethernet connector for network communication.

3.3.15 Fan Connector



Function	Description	
Connector Type	53261-0471 from Molex	
Mating Connector	0510210400	
Pinout	**Pin**	**Description**
	1	GND
	2	VDD_FAN
	3	TACH
	4	PWM

3.3.16 Recovery Mode Type-C USB Connector

Description
The DSBOARD-THRMAX implements a USB Type-C connector to allow to install or upgrade the operating system.

3.3.17 Debug Mode Type-C USB Connector

Description
The DSBOARD-THRMAX implements a Type-C USB connector to access the module by using serial connection.

3.3.18 Host Connector

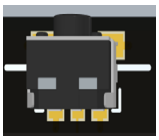
Description
The DSBOARD-THRMAX incorporates USB 3.2 Type-C connector with a DP support.

3.3.19 SPI Programming Header

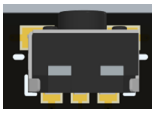
Description
The DSBOARD-THRMAX incorporates USB 3.2 Type-C PD controller SPI programming connector.

3.4 The Definition of Buttons

3.4.1 Recovery Pushbutton

	Description
	The DSBOARD-THRMAX 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 DSBOARD-THRMAX implements a reset button. It is recommended to use needle-like material.

4. Connectivity

4.1 General Purpose Input/Output (GPIO)

MODULE PIN NUMBER	I/O NAME	MODULE PIN NAME	TYPE	DESCRIPTION
E10	CAM_VDD_SYS_EN	GPIO12	OUTPUT	CAM power enable.
C4	CAM0_PWDN	GPIO47	OUTPUT	Camera 0 power down (3.3V Level)
F10	CAM1_PWDN	GPIO15	OUTPUT	Camera 1 power down (3.3V Level)
L5	CAM0_RST	UART4_TX	OUTPUT	Camera 0 reset.
F9	CAM1_RST	GPIO16	OUTPUT	Camera 1 reset.
J54	CAM0_MCLK	MCLK02	OUTPUT	Camera 0 reference clock (1.8V Level)
H53	CAM1_MCLK	MCLK03	OUTPUT	Camera 1 reference clock (1.8V Level)
H55	CAM2_MCLK	MCLK04	OUTPUT	Camera 2 reference clock (1.8V Level)
E61	CAM_INT1	SPI2_CLK	INPUT	Camera 1 interrupt.
D62	CAM_INT2	SPI2_MISO	INPUT	Camera 2 interrupt.
F60	CAM_INT3	SPI2_MOSI	INPUT	Camera 3 interrupt.
D60	CAM_INT4	SPI2_CS0_N	INPUT	Camera 4 interrupt.
G7	I2C_GP3_PEX_EN_N	GPIO13	OUTPUT	MGBE I2C level shifter enable signal.
C18	DP1_HPD	HPD1	INPUT	USB host hot plug detect signal.
L49	GPIO179_5V0_HDMI_EN	I2S7_LRCK	OUTPUT	HDMI2 enable signal.
L50	"GPIO35_5V0_HDMI_EN"	I2S7_SCLK	OUTPUT	HDMI1 enable signal.
B54	M2B_W_DISABLE1 #	GPIO45	OUTPUT	LTE/5G module airplane mode control. Drive low to enable airplane mode. Drive high for normal operation.
A54	M2B_W_DISABLE2 #	GPIO46	OUTPUT	GNSS disable control. Drive low to disable GNSS. Drive high for normal operation.
J55	M2B_RESET	I2C9_DAT	OUTPUT	LTE/5G module reset control input. Drive low to trigger reset. Drive high for normal operation.

B59	M2B_FULLCARD_PWROFF#	GPIO04	OUTPUT	LTE/5G module power on/off control. Drive low to power off the module. Drive high for normal operation.
A59	M2B_PWR_ON#	GPIO05	OUTPUT	LTE/5G module 3.8V power supply LDO enable control. Drive high to disable LDO. Drive low for normal operation.
C60	M2E_WDISABLE1_ N	I2S3_FS	OUTPUT	WiFi/BT module full powerdown control for the WiFi/BT radio. Drive low to disable WiFi/BT. Drive high for normal operation
C59	M2E_WDISABLE2_ N	I2S3_SCLK	OUTPUT	Reset for Bluetooth. Active low by default.
B58	M2E_BT_WAKE_N	GPIO21	INPUT	Wake up signal for Bluetooth radio.
B55	PWRLED_R	GPIO30/ IST_D ONE_N	OUTPUT	Drive high to turn on the Red LED.
C54	PWRLED_G	GPIO33/ XFI1_ MDIO	OUTPUT	Drive high to turn on the Green LED.
H60	PWRLED_B	GPIO31_ IST_R EQ_N	OUTPUT	Drive high to turn on the Blue LED.
E54	FAN_TACH	FAN_TACH	INPUT	Fan Tachometer signal
K62	FAN_PWM	FAN_PWM	OUTPUT	Fan Pulse Width Modulation signal.
F54	GPIO22_USB_VBUS_EN0	GPIO22	OUTPUT	Connect to enable and overcurrent pins of load switch.
G55	GPIO23_USB_VBUS_EN0	GPIO23	OUTPUT	Connect to enable and overcurrent pins of load switch.
B56	SERIAL.485/2\3\2\	SPI1_CS1_N	OUTPUT	Serial communication control for SP330EEY-L transceiver. Drive low to enable RS-232. Drive high to enable RS-485.
A47	SERIAL.HALF/FULL	I2C10_CLK	OUTPUT	Half duplex or full duplex control for RS-485 communication protocol. Drive low for full duplex communication. Drive high for half duplex communication.
D54	SERIAL.DE	GPIO03/ XFI2_ MDC	OUTPUT	Driver control for RS485 communication. Drive high for enable receiver.
J51	SERIAL_RE	GPIO24/ XFI2_ MDIO	OUTPUT	Receiver control for RS485 communication. Drive low for enable receiver.
B62	GPIO08_DATA_IN0	GPIO8	OUTPUT	Control signal for DIGITAL_IN1 in I/O
				Connector.
C61	GPIO09_DATA_IN1	GPIO9	OUTPUT	Control signal for DIGITAL_IN1 in I/O Connector.
K56	GPIO19_DATA_OUT0	GPIO19/ XFI_M DC	OUTPUT	Control signal for GPIO19_DATA_OUT0 in I/O CONNECTOR.
K49	GPIO25_DATA_OUT1	GPIO25/ XFI0_ MDIO	OUTPUT	Control signal for GPIO25_DATA_OUT1 I/O CONNECTOR.
H51	GPIO26_DATA_OUT2	GPIO26/ XFI0_ MDC	OUTPUT	Control signal for GPIO26_DATA_OUT2 in I/O CONNECTOR.
H52	PWM_ GPIO27	GPIO27	OUTPUT	Control signal for PWM_ GPIO36 in I/O CONNECTOR.
F56	PWM_ GPIO36	GPIO36	OUTPUT	Control signal for PWM_ GPIO36 in I/O CONNECTOR.
H17	"SOC_QSFP_PRSNT_N"	GPIO62	INPUT	QSFP present signal.
G18	SOC_QSFP_LP_N	GPIO57	OUTPUT	QSFP low power signal.
J53	SOC_QSFP_INT	I2C0_DAT	INPUT	QSFP interrupt signal.
J52	SOC_QSFP_RESET	I2C0_CLK	OUTPUT	QSFP reset signal.

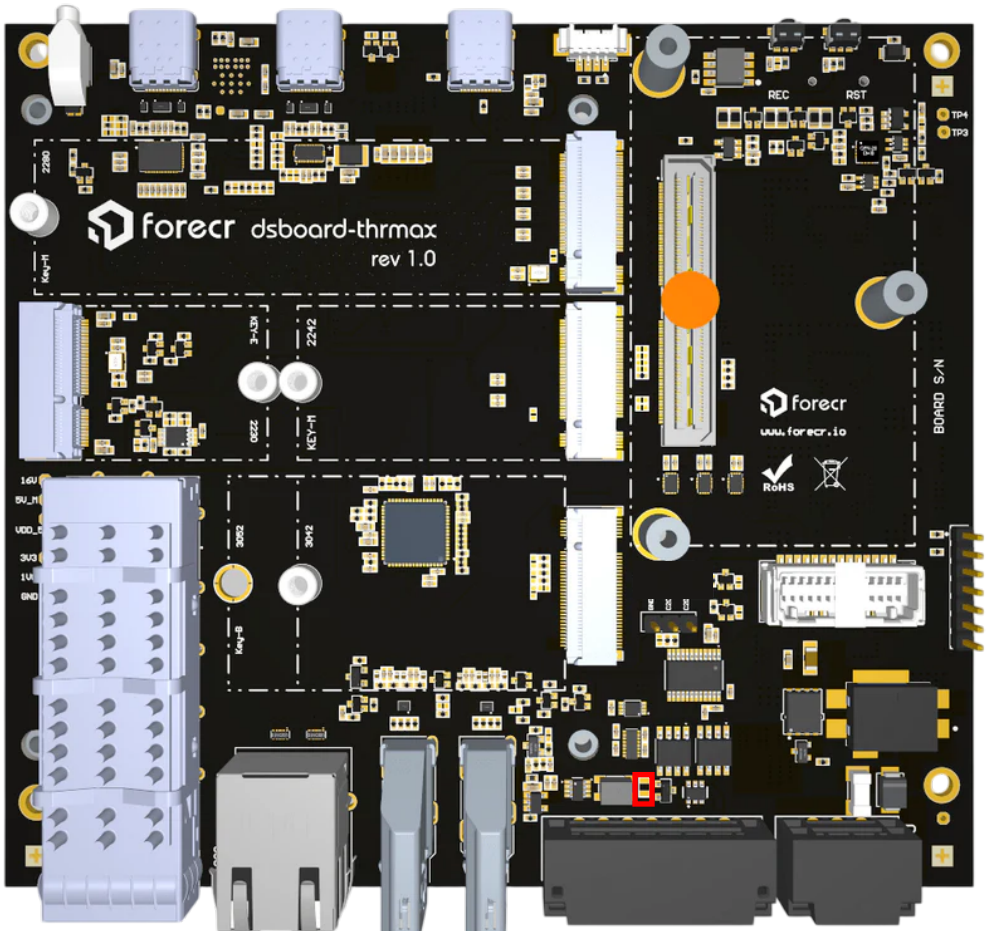
4.2 I/O Connector

On the 14 pin IO connector, there are 4 serial communication, 2 ground, 2 CANBus, 1 ground, 2 digital input and 3 digital output pins.

4.2.1 CANBus Interface

There is a single CAN Bus interface on the DSBOARD-THRMAX. TCAN332DCNR transceiver is used between native CAN pins of the Jetson and connector. There is a 0805 size 120R termination resistor between CAN_H and CAN_L pins on the board, which is not populated by default. A standard resistor with above specs can be fitted if termination resistor is needed on the DSBOARD-THRMAX.

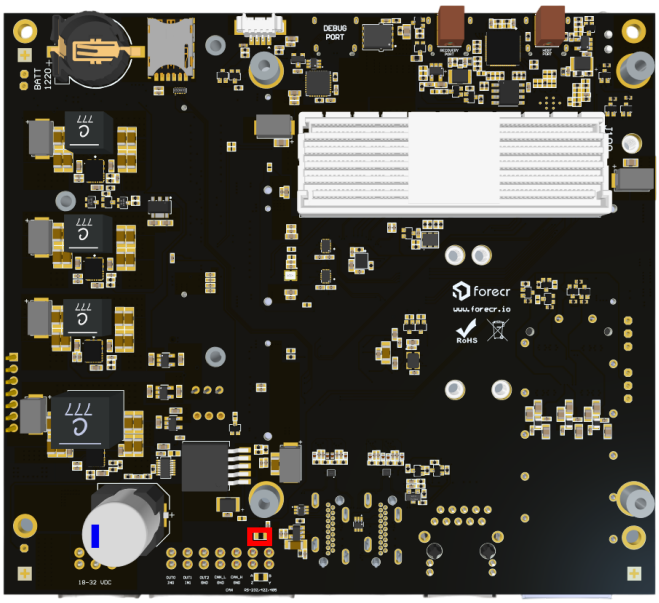
CANBus Termination Resistor



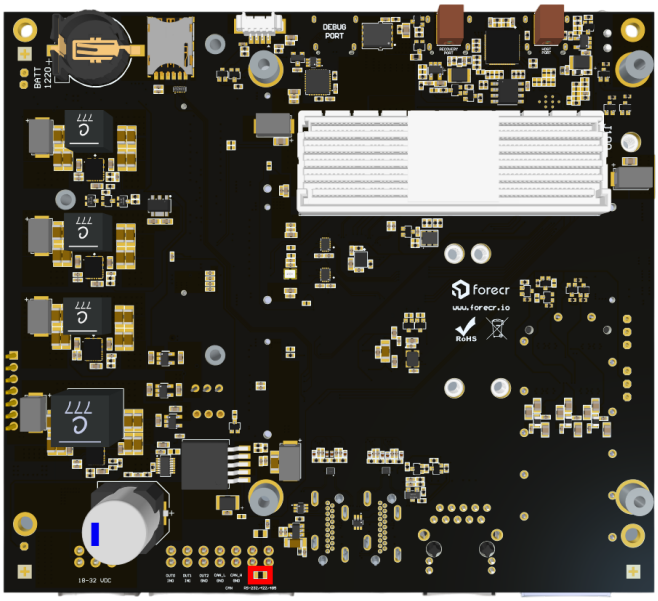
4.2.3 Serial Communication Interface

There are two 0805 size 120R termination resistors, one between transmit lanes and one between receive lanes. These are not populated by default. In case termination resistors are needed on the DSBOARD-THRMAX side, standard resistors with above specs can be fitted.

RS422 RX (A/B) Termination Resistor



RS422 TX (Z/Y) Termination Resistor



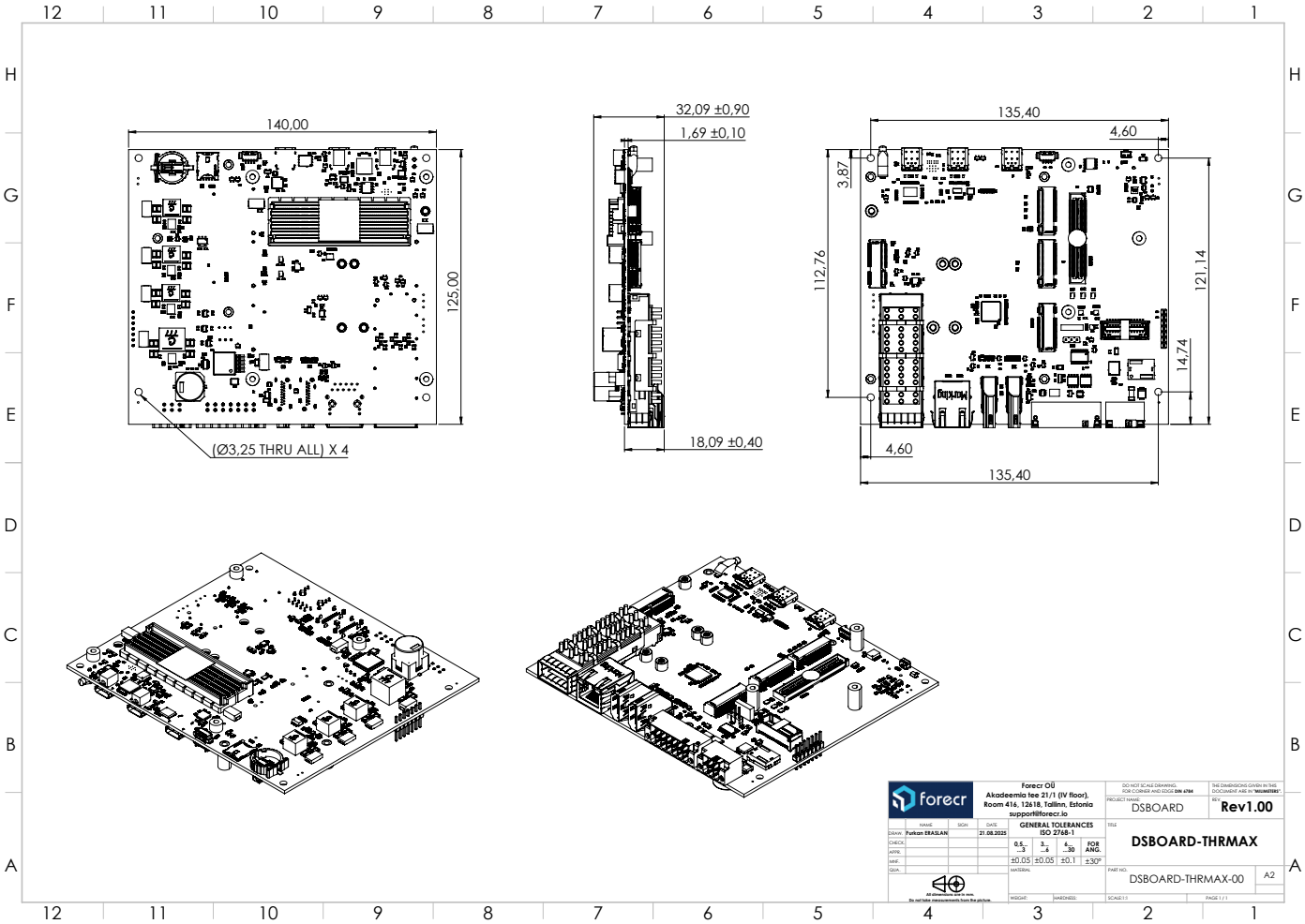
For RS422 communication protocol, SERIAL.485/232 GPIO from Jetson should be driven high. To use half-duplex mode, SERIAL.HALF/FULL GPIO should be driven high. To use full-duplex mode, SERIAL.HALF/FULL GPIO should be driven low. In half-duplex mode, SERIAL_RE and SERIAL_DE GPIOs must be used to switch between driver or receiver mode. To enable receiver mode, both SERIAL_RE and SERIAL_DE GPIOs should be driven low. To enable driver mode, both SERIAL_DE and SERIAL/RE GPIOs should be driven high.

For RS232 communication protocol SERIAL.485/232 GPIO should be driven low. SERIAL.HALF/FULL, SERIAL_DE and SERIAL_RE GPIOs are not used in this mode.

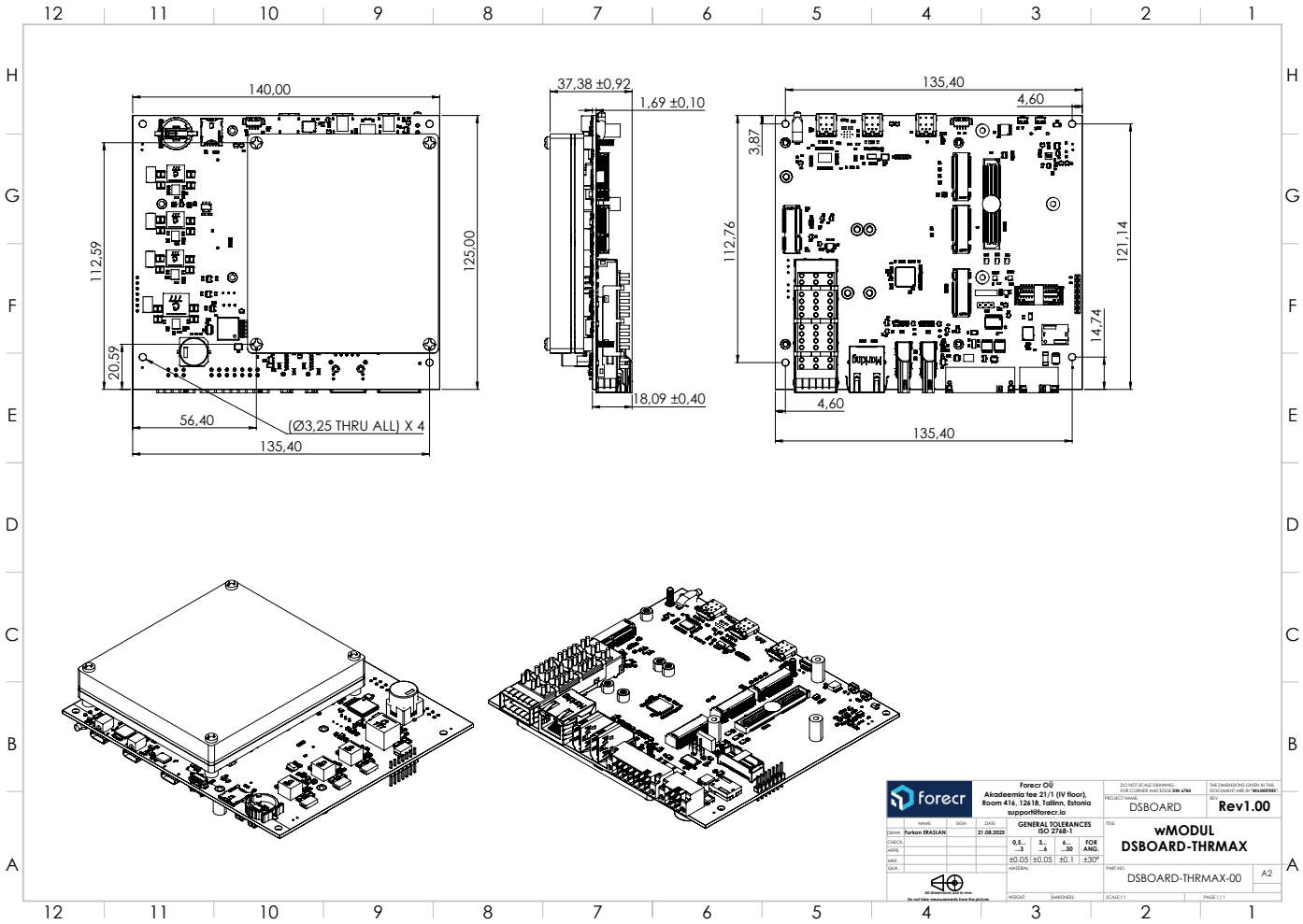
5. 3D Model & Mechanical Information

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

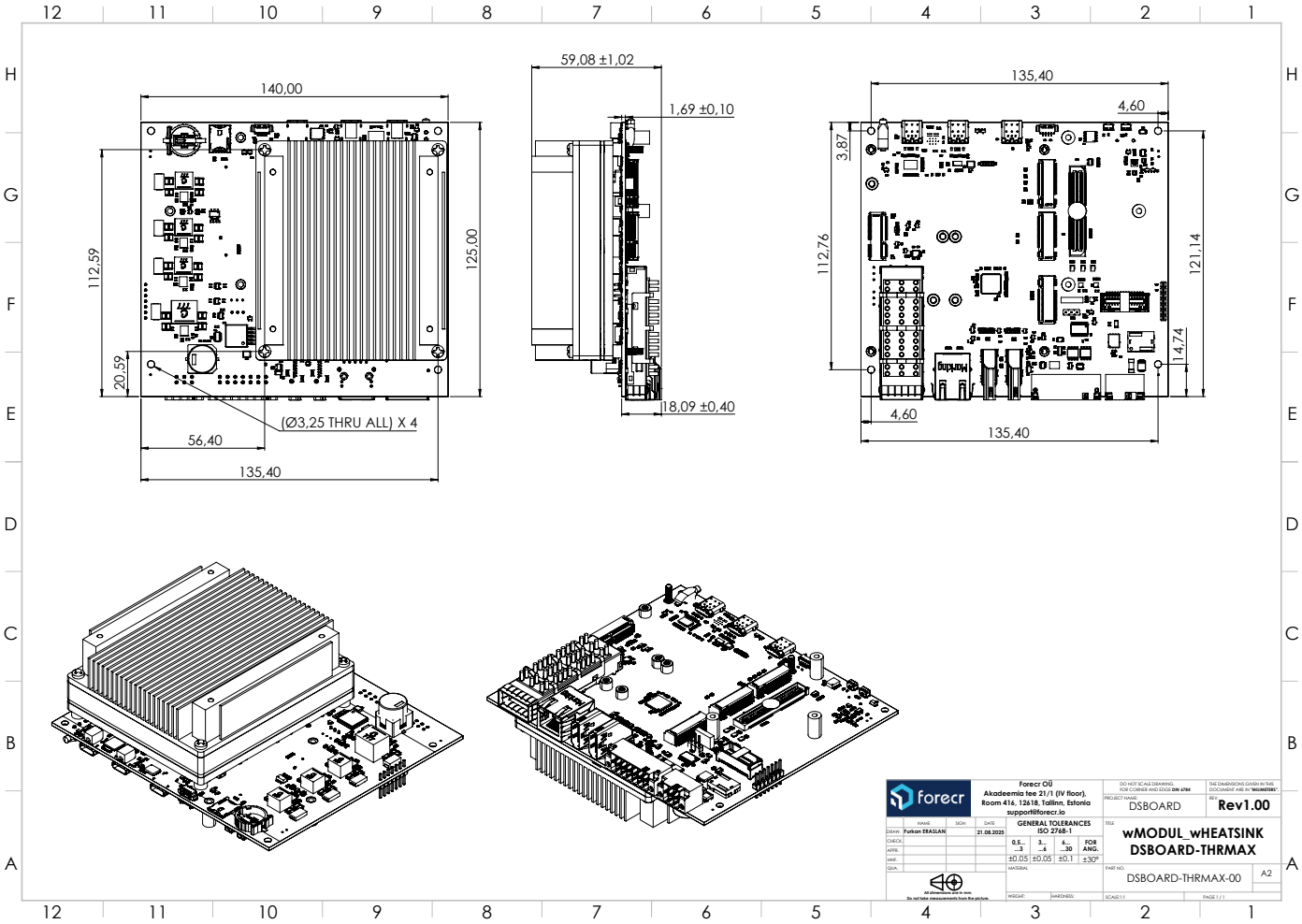
DSBOARD-THRMAX Stand Alone



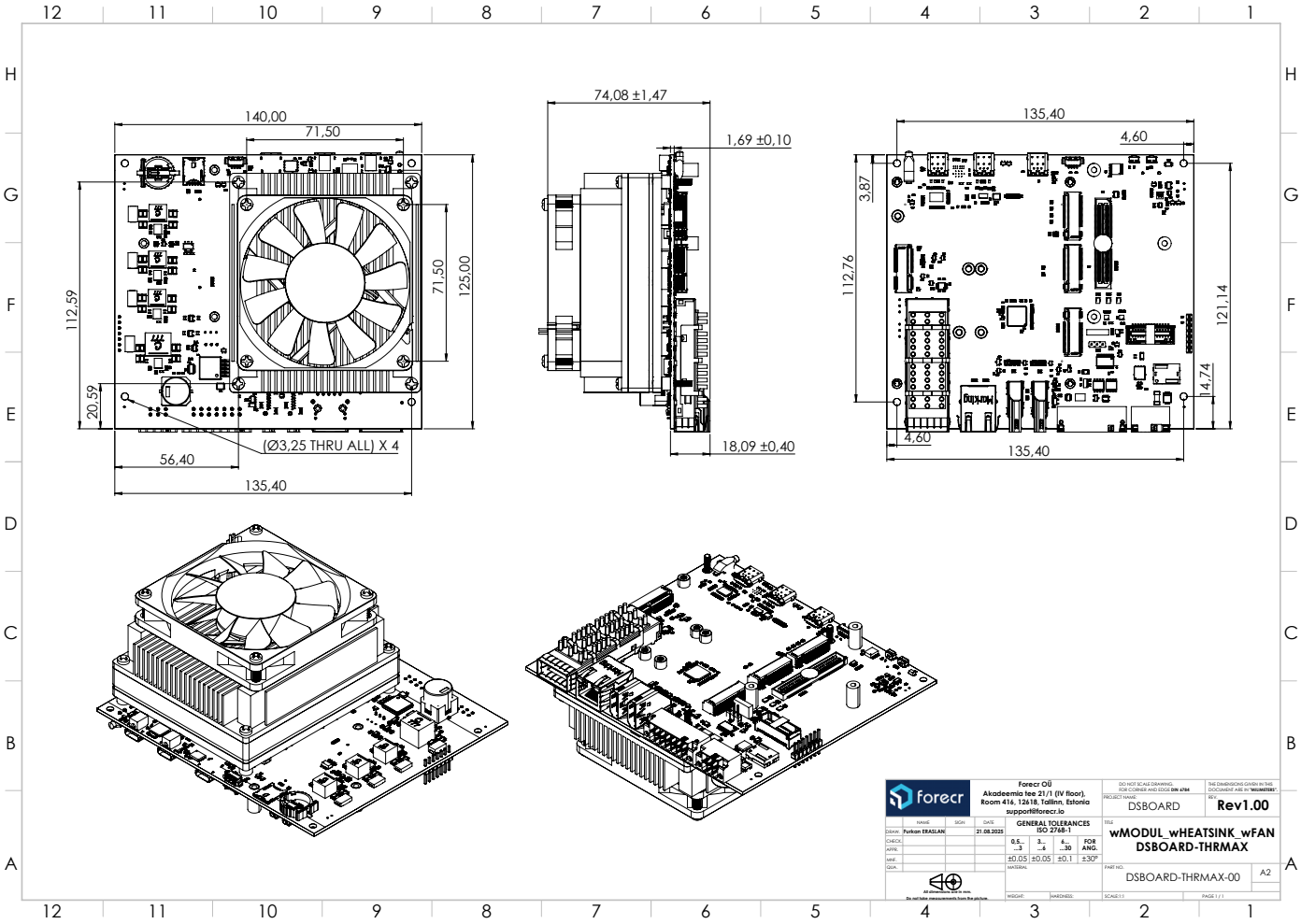
DSBOARD-THRMAX with Jetson Thor Module



DSBOARD-THRMAX with Jetson Thor Module and Heatsink Integration Details



DSBOARD-THRMAX with Jetson Thor 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.

7. MTBF Prediction

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8. Ordering Information