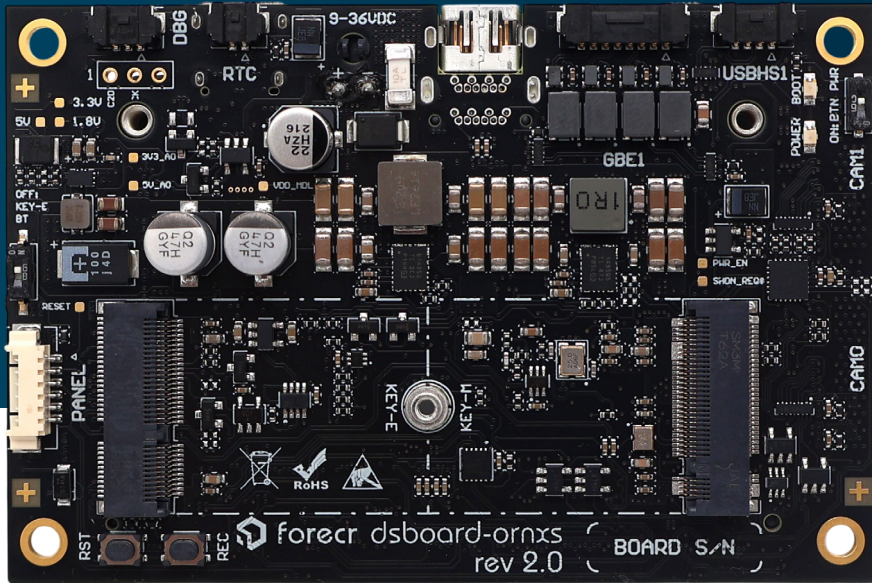




DSBOARD ORNXS

USER MANUAL

UM-DSBDORNXS-02
Document Revision: 1.0
29/09/2026

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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 (4th floor), 12618, Tallinn, Estonia
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Trademark Acknowledgment

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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	29.09.2026	Preliminary Release

1. Introduction

The DSBOARD-ORNXS is a high-performance industrial carrier board engineered to deliver exceptional processing power and versatile connectivity in a compact form factor. Powered by the NVIDIA® Jetson Orin™ Nano and Orin™ NX SoMs, this device provides robust computational capabilities designed for demanding edge AI workloads. Featuring integrated Wi-Fi and Bluetooth connectivity, the platform enables seamless wireless communication and efficient data integration across industrial networks.

Equipped with LPDDR5 memory options ranging from 4 GB to 16 GB, the board ensures high-bandwidth multitasking and efficient data handling. Its graphical interfaces, including a Mini DisplayPort 1.4 (DP++) supporting resolutions up to 3840x2160, deliver high-definition visual output. Furthermore, by offering versatile expansion slots such as M.2 Key-E and a 5V fan connector, the device provides the flexibility required to customize and scale the system according to specific application demands.

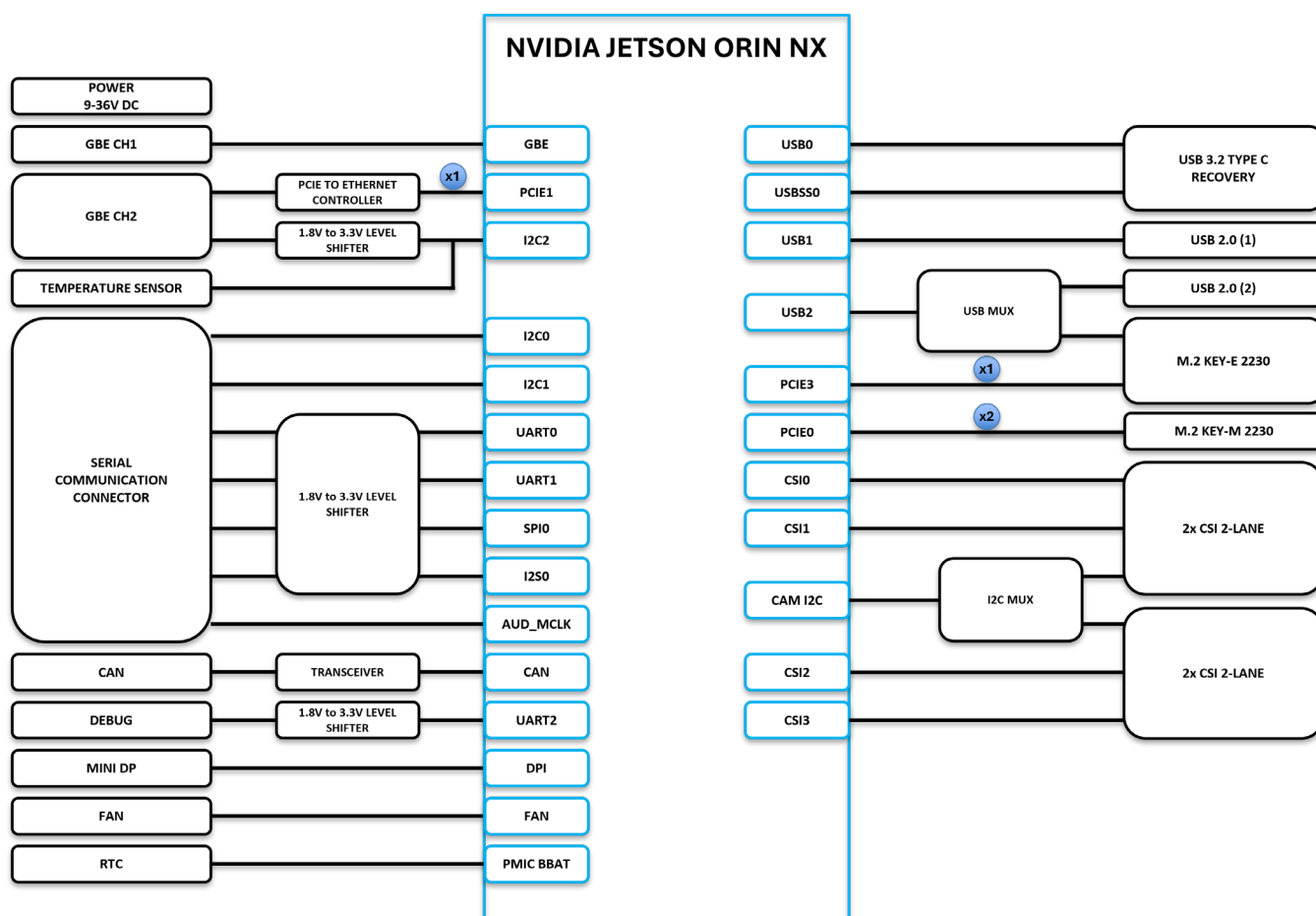
The latest revision of this user manual, datasheet, and 3D model can be downloaded from the [Forecr](#) website.

2. Product Specification

2.1 Technical Specification

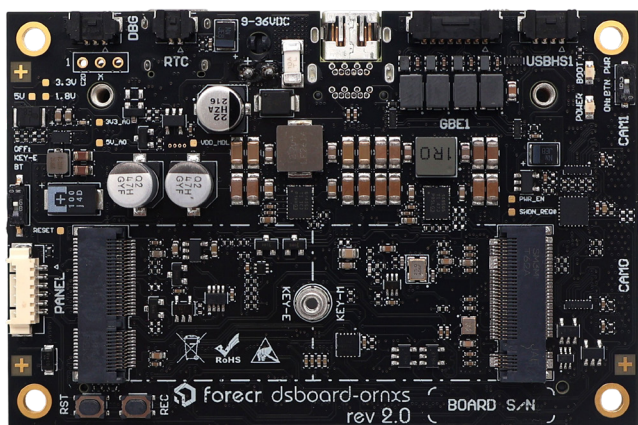
Supported Modules	NVIDIA Jetson Orin Nano 4GB / 8GB NVIDIA Jetson Orin NX 8GB / 16GB
Memory	4 GB 64-bit LPDDR5 / 8 GB 128 bit LPDDR5 8 GB 256-bit LPDDR5 / 16 GB 128 bit LPDDR5
Graphics Interfaces	1x Mini DisplayPort 1.4 (DP++) (max resolution 3840 x 2160)
Interfaces	2x Gigabit Ethernet 2x USB 2.0 1x CAN-FD 2x CSI 4-Lane or 4x CSI 2-Lane 1x USB 3.2 Type-C (Recovery) 1x UART (Debug - 3.3V) 1x RTC
Other Features	Temperature Sensor
Wireless Communication	WiFi/Bluetooth Connectivity by extension sockets
Power Supply	9-36 VDC
Extension Sockets	1x M.2 Key-E (PCIe x1, USB 2.0) 1x 5V FAN 1x Serial Communication Connector (1x SPI, 1x I2S, 2x I2C, 2x UART)
Mass Storage	1x M.2 Key-M 2230 (PCIe x2 Gen4)
Ambient Conditions	-25°C ... +85°C
Form Factor / Dimensions	61 mm x 91 mm, 43gr
Operating Systems	Ubuntu Linux 20.04 / 22.04 / 24.04
JetPack Support	JetPack 5.x / 6.x / 7.2+

2.2 Block Diagram

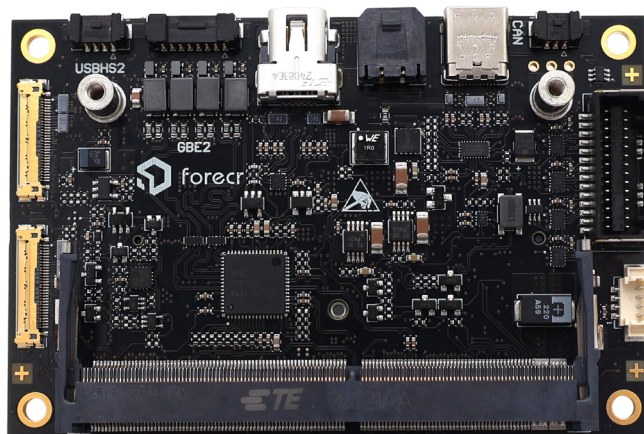


2.3 Board Visuals

Front Side



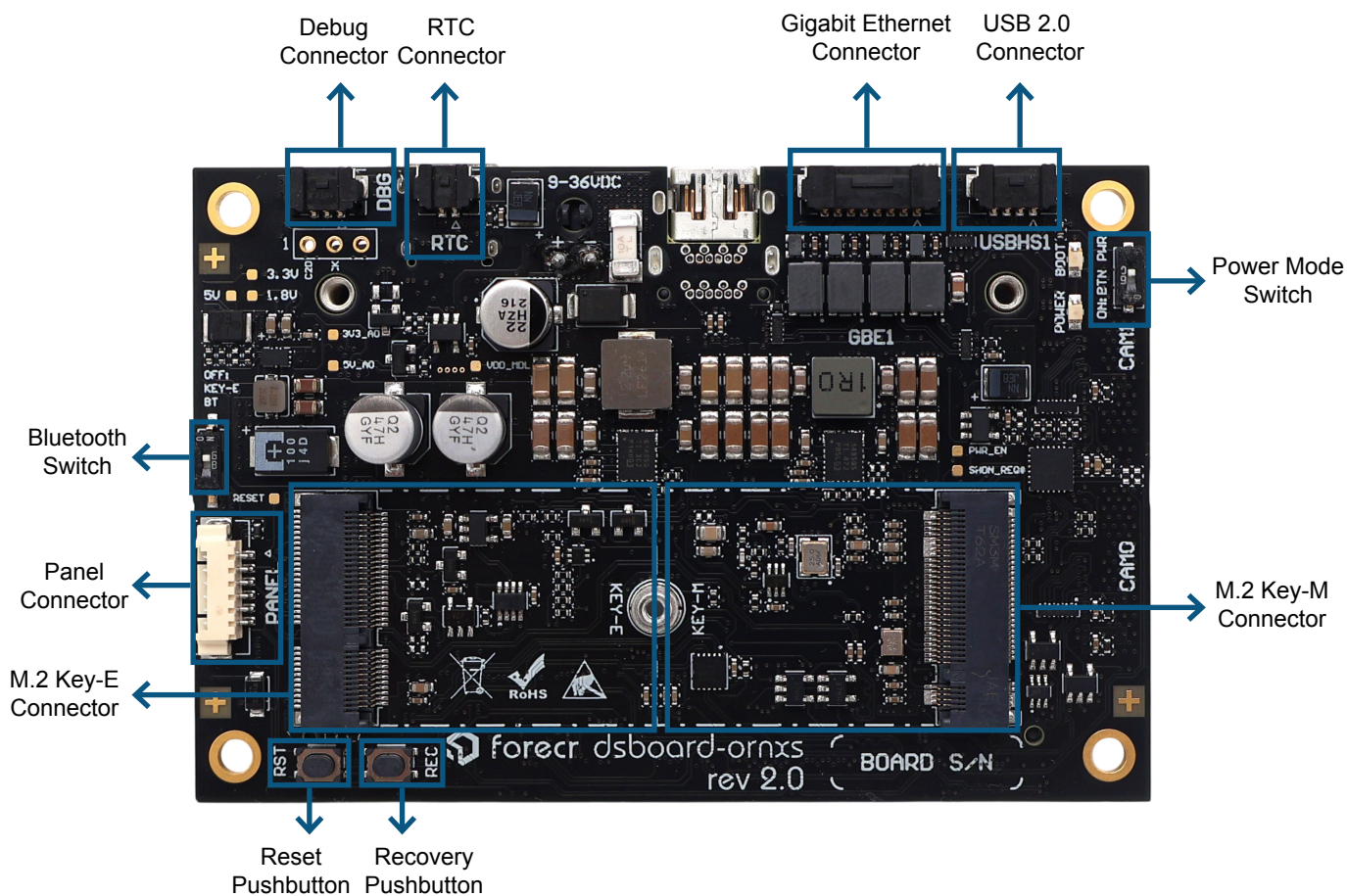
Rear Side



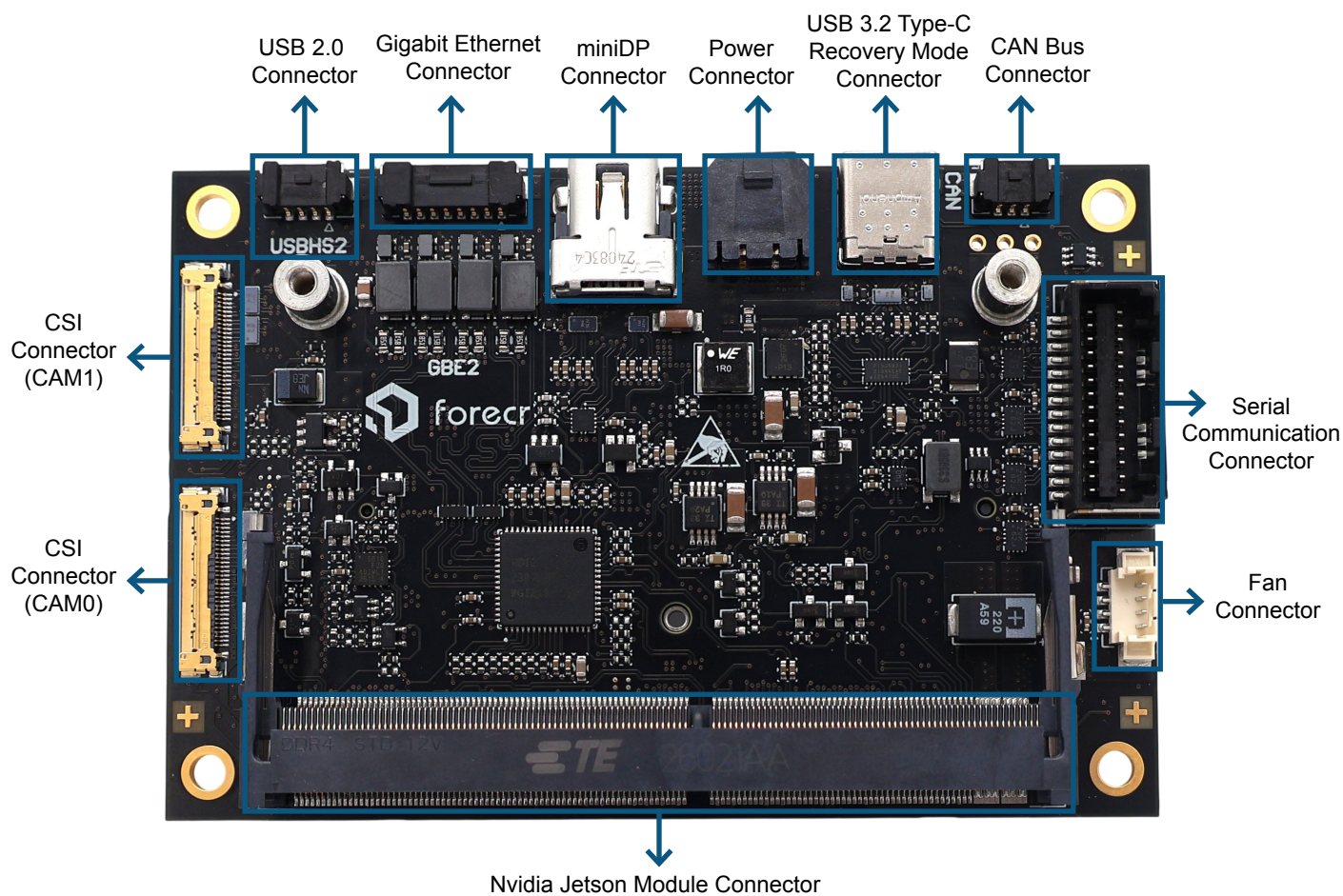
3. Hardware Information

3.1 Connector, Button, and Switch Location

3.1.1 Front Side



3.1.2 Rear Side



3.2 List of Connectors, Buttons, and Switches

Connectors
DSBOARD-ORNXS Power Connector
DSBOARD-ORNXS RTC Connector
DSBOARD-ORNXS Gigabit Ethernet Connectors
DSBOARD-ORNXS Debug Connector
DSBOARD-ORNXS M.2 Key-M Connector
DSBOARD-ORNXS M.2 Key-E Connector
DSBOARD-ORNXS CSI Connectors
DSBOARD-ORNXS Fan Connector
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DSBOARD-ORNXS USB 2.0 Connectors
DSBOARD-ORNXS miniDP Connector
DSBOARD-ORNXS USB 3.2 Type-C Recovery Mode Connector
DSBOARD-ORNXS CAN Bus Connector
Buttons and Switches
DSBOARD-ORNXS Reset Pushbutton
DSBOARD-ORNXS Recovery Pushbutton
DSBOARD-ORNXS Bluetooth Switch
DSBOARD-ORNXS Power Mode Switch

3.3 Definition of Each Connector

3.3.1 Power Connector

	Function		Description
	Connector Model		0436500200
	Mating Connector		0436450200
	Minimum Input Voltage		+9V
	Maximum Input Voltage		+36V
	Pinout	Pin	Description
		1	Negative
		2	Positive

3.3.2 RTC Connector

	Function		Description
	Connector Model		5055670281
	Mating Connector		5055650201
	Pinout	Pin	Description
		1	VRTC (1.85V to 5.5V)
		2	GND

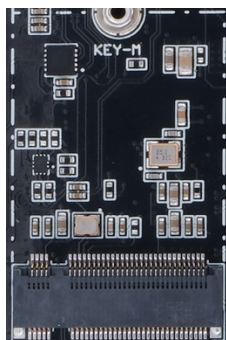
3.3.3 Gigabit Ethernet Connectors

	Function		Description
	Connector Model		5055670881
	Mating Connector		5055650801
	Pinout	Pin	Description
		1	DATA3-
		2	DATA3+
		3	DATA2-
		4	DATA2+
		5	DATA1-
		6	DATA1+
		7	DATA0-
		8	DATA0+

3.3.4 Debug Connector

	Function		Description
	Connector Model		5055670381
	Mating Connector		5055650301
	Pinout	Pin	Description
		1	GND
		2	UART2_RX (3.3V)
		3	UART2_TX (3.3V)
	Note: The GBE2 connector provides a Gigabit Ethernet interface powered by an Intel I210 controller with Precision Time Protocol (PTP) support.		

3.3.5 M.2 Key-M Connector



Description

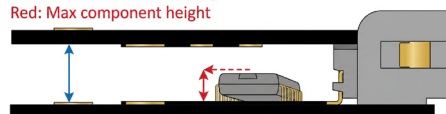
Pinout	Pin	Description	Pin	Description	Pin	Description
	1	DGND	24	NC	47	PCIE0.TX0_N
	2	VDD_3V3	25	NC	48	NC
	3	DGND	26	NC	49	PCIE0.TX0_P
	4	VDD_3V3	27	DGND	50	PCIE0.RST_N
	5	NC	28	NC	51	DGND
	6	NC	29	PCIE0.RX1_N	52	PCIE0.CLKREQ_N
	7	NC	30	NC	53	PCIE0.CLK_N
	8	NC	31	PCIE0.RX1_P	54	PCI.WAKE_N
	9	DGND	32	NC	55	PCIE0.CLK_P
	10	NC	33	DGND	56	NC
	11	NC	34	NC	57	DGND
	12	VDD_3V3	35	PCIE0.TX1_N	58	NC
	13	NC	36	NC	67	NC
	14	VDD_3V3	37	PCIE0.TX1_P	68	32KHZ_CLK
	15	DGND	38	NC	69	NC
	16	VDD_3V3	39	DGND	70	VDD_3V3
	17	NC	40	NC	71	DGND
	18	VDD_3V3	41	PCIE0.RX0_N	72	VDD_3V3
	19	NC	42	NC	73	DGND
	20	NC	43	PCIE0.RX0_P	74	VDD_3V3
	21	DGND	44	NC	75	DGND
	22	NC	45	DGND		
	23	NC	46	NC		

Board to board spacing=2.45 mm

Max component height=1.2 mm

Blue: Board-to-Board spacing

Red: Max component height

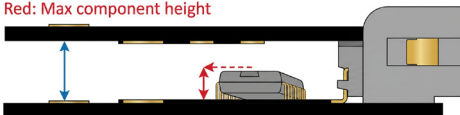


3.3.6 M.2 Key-E Connector

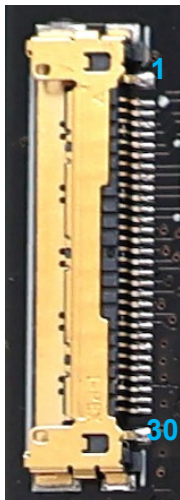
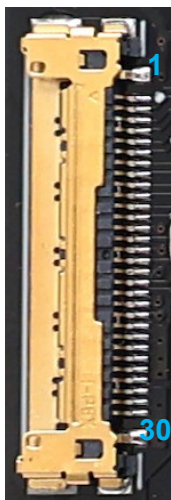
Description				
Pinout	Pin	Description	Pin	Description
	1	DGND	44	NC
	2	VDD_3V3	45	DGND
	3	USB2_KEYE.AP_P	46	NC
	4	VDD_3V3	47	PCIE3.CLK_P
	5	USB2_KEYE.AP_N	48	NC
	6	NC	49	PCIE3.CLK_N
	7	DGND	50	M2E_SUSCLK_32KHZ
	8	NC	51	DGND
	9	NC	52	PCIE3.RST_N
	10	NC	53	PCIE3.CLKREQ_N
	11	NC	54	M2E_WDISABLE2_N
	12	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	NC	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	PCIE3.TX0_P	70	NC
	36	NC	71	NC
	37	PCIE3.TX0_N	72	VDD_3V3
	38	NC	73	NC
	39	DGND	74	VDD_3V3
	40	NC	75	DGND
	41	PCIE3.RX0_P	MNT1	DGND
	42	NC	MNT2	DGND
	43	PCIE3.RX0_N		

Board to board spacing=2.45 mm
Max component height=1.45 mm

Blue: Board-to-Board spacing
Red: Max component height



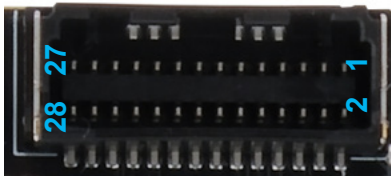
3.3.7 CSI Connectors

CAM0	CAM1	Function	Description																																																																																																																																
		Connector Model	20525-030E-02																																																																																																																																
		Mating Cable Assembly	81423-100B-02-D																																																																																																																																
		Pinout	<table><tr><th colspan="2">CAM0 Pinout</th><th colspan="2">CAM1 Pinout</th></tr><tr><th>Pin</th><th>Description</th><th>Pin</th><th>Description</th></tr><tr><td>1</td><td>CSI0_CONN_D0_P</td><td>1</td><td>CSI2_CONN_D0_P</td></tr><tr><td>2</td><td>CSI0_CONN_D0_N</td><td>2</td><td>CSI2_CONN_D0_N</td></tr><tr><td>3</td><td>CSI0_CONN_D1_N</td><td>3</td><td>CSI2_CONN_D1_N</td></tr><tr><td>4</td><td>CSI0_CONN_D1_P</td><td>4</td><td>CSI2_CONN_D1_P</td></tr><tr><td>5</td><td>CSI0_CONN_CLK_P</td><td>5</td><td>CSI2_CONN_CLK_P</td></tr><tr><td>6</td><td>CSI0_CONN_CLK_N</td><td>6</td><td>CSI2_CONN_CLK_N</td></tr><tr><td>7</td><td>CSI1_CONN_D0_P</td><td>7</td><td>CSI3_CONN_D0_P</td></tr><tr><td>8</td><td>CSI1_CONN_D0_N</td><td>8</td><td>CSI3_CONN_D0_N</td></tr><tr><td>9</td><td>CSI1_CONN_D1_P</td><td>9</td><td>CSI3_CONN_D1_P</td></tr><tr><td>10</td><td>CSI1_CONN_D1_N</td><td>10</td><td>CSI3_CONN_D1_N</td></tr><tr><td>11</td><td>CSI1_CONN_CLK_P</td><td>11</td><td>CSI3_CONN_CLK_P</td></tr><tr><td>12</td><td>CSI1_CONN_CLK_N</td><td>12</td><td>CSI3_CONN_CLK_N</td></tr><tr><td>13</td><td>CAM1_I2C.SCL</td><td>13</td><td>CAM3_I2C.SCL</td></tr><tr><td>14</td><td>CAM1_I2C.SDA</td><td>14</td><td>CAM3_I2C.SDA</td></tr><tr><td>15</td><td>CAM0_I2C.SCL</td><td>15</td><td>CAM2_I2C.SCL</td></tr><tr><td>16</td><td>CAM0_I2C.SDA</td><td>16</td><td>CAM2_I2C.SDA</td></tr><tr><td>17</td><td>CAM_SYNC</td><td>17</td><td>CAM_SYNC</td></tr><tr><td>18</td><td>CAM1_PWDN_3V3</td><td>18</td><td>CAM3_PWDN_3V3</td></tr><tr><td>19</td><td>CAM0_MCLK</td><td>19</td><td>CAM2_MCLK</td></tr><tr><td>20</td><td>CAM1_MCLK</td><td>20</td><td>CAM3_MCLK</td></tr><tr><td>21</td><td>CAM0_PWDN_3V3</td><td>21</td><td>CAM2_PWDN_3V3</td></tr><tr><td>22</td><td>VDD_3V3</td><td>22</td><td>VDD_3V3</td></tr><tr><td>23</td><td>VDD_3V3</td><td>23</td><td>VDD_3V3</td></tr><tr><td>24</td><td>VDD_3V3</td><td>24</td><td>VDD_3V3</td></tr><tr><td>25</td><td>GND</td><td>25</td><td>GND</td></tr><tr><td>26</td><td>GND</td><td>26</td><td>GND</td></tr><tr><td>27</td><td>GND</td><td>27</td><td>GND</td></tr><tr><td>28</td><td>VDD_5V</td><td>28</td><td>VDD_5V</td></tr><tr><td>29</td><td>VDD_5V</td><td>29</td><td>VDD_5V</td></tr><tr><td>30</td><td>VDD_5V</td><td>30</td><td>VDD_5V</td></tr></table>	CAM0 Pinout		CAM1 Pinout		Pin	Description	Pin	Description	1	CSI0_CONN_D0_P	1	CSI2_CONN_D0_P	2	CSI0_CONN_D0_N	2	CSI2_CONN_D0_N	3	CSI0_CONN_D1_N	3	CSI2_CONN_D1_N	4	CSI0_CONN_D1_P	4	CSI2_CONN_D1_P	5	CSI0_CONN_CLK_P	5	CSI2_CONN_CLK_P	6	CSI0_CONN_CLK_N	6	CSI2_CONN_CLK_N	7	CSI1_CONN_D0_P	7	CSI3_CONN_D0_P	8	CSI1_CONN_D0_N	8	CSI3_CONN_D0_N	9	CSI1_CONN_D1_P	9	CSI3_CONN_D1_P	10	CSI1_CONN_D1_N	10	CSI3_CONN_D1_N	11	CSI1_CONN_CLK_P	11	CSI3_CONN_CLK_P	12	CSI1_CONN_CLK_N	12	CSI3_CONN_CLK_N	13	CAM1_I2C.SCL	13	CAM3_I2C.SCL	14	CAM1_I2C.SDA	14	CAM3_I2C.SDA	15	CAM0_I2C.SCL	15	CAM2_I2C.SCL	16	CAM0_I2C.SDA	16	CAM2_I2C.SDA	17	CAM_SYNC	17	CAM_SYNC	18	CAM1_PWDN_3V3	18	CAM3_PWDN_3V3	19	CAM0_MCLK	19	CAM2_MCLK	20	CAM1_MCLK	20	CAM3_MCLK	21	CAM0_PWDN_3V3	21	CAM2_PWDN_3V3	22	VDD_3V3	22	VDD_3V3	23	VDD_3V3	23	VDD_3V3	24	VDD_3V3	24	VDD_3V3	25	GND	25	GND	26	GND	26	GND	27	GND	27	GND	28	VDD_5V	28	VDD_5V	29	VDD_5V	29	VDD_5V	30	VDD_5V	30	VDD_5V
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		18	CAM1_PWDN_3V3	18	CAM3_PWDN_3V3																																																																																																																														
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		22	VDD_3V3	22	VDD_3V3																																																																																																																														
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		24	VDD_3V3	24	VDD_3V3																																																																																																																														
		25	GND	25	GND																																																																																																																														
26	GND	26	GND																																																																																																																																
27	GND	27	GND																																																																																																																																
28	VDD_5V	28	VDD_5V																																																																																																																																
29	VDD_5V	29	VDD_5V																																																																																																																																
30	VDD_5V	30	VDD_5V																																																																																																																																

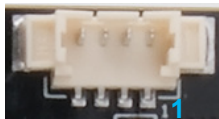
3.3.8 Panel Connector

	Function		Description			
	Connector Model		0532610671			
	Mating Connector		0510210600			
	Pinout	Pin	Description	Pin	Description	
		1	PWR_BTN (5V)	4	GND	
		2	GND	5	RECOVERY (1.8V)	
		3	RESET (1.8V)	6	GND	

3.3.9 Serial Communication Connector

	Function		Description		
	Connector Model		505433-2881		
	Mating connector		5054322801		
	Pinout	Pin	Description	I/O Type	
		1	UART0_CTS (3.3V)	INPUT	
		2	UART0_RTS (3.3V)	OUTPUT	
		3	UART0_RX (3.3V)	INPUT	
		4	UART0_TX (3.3V)	OUTPUT	
		5	UART1_TX (3.3V)	OUTPUT	
		6	UART1_RX (3.3V)	INPUT	
		7	GND	GROUND	
		8	GND	GROUND	
		9	I2C0_SCL (3.3V)	BI-DIR	
		10	I2C1_SCL (3.3V)	BI-DIR	
		11	I2C0_SDA (3.3V)	BI-DIR	
		12	I2C1_SDA (3.3V)	BI-DIR	
		13	SPI0_CS1 (3.3V)	OUTPUT	
		14	SPI0_MISO (3.3V)	INPUT	
		15	SPI0_MOSI (3.3V)	OUTPUT	
		16	SPI0_CS0 (3.3V)	OUTPUT	
		17	SPI0_SCK (3.3V)	OUTPUT	
		18	AUD_MCLK (3.3V)	OUTPUT	
		19	I2S0_DOUT (3.3V)	OUTPUT	
		20	I2S0_FS (3.3V)	OUTPUT	
		21	I2S0_DIN (3.3V)	INPUT	
		22	I2S0_SCLK (3.3V)	OUTPUT	
		23	GND	GROUND	
		24	GND	GROUND	
		25	GND	GROUND	
		26	VDD_1V8 (50mA max)	POWER	
		27	VDD_3V3 (1A max, 0.5A nominal)	POWER	
		28	VDD_5V (1A max, 0.5A nominal)	POWER	

3.3.10 Fan Connector

	Function		Description
	Connector Model		53398-0471
	Mating Connector		0510210400
	Pinout	Pin	Description
		1	GND
		2	VDD_5V
		3	TACH (5V)
		4	PWM (5V)

3.3.11 USB 2.0 Connectors

 	Function		Description
	Connector Model		5055670481
	Mating Connector		5055650401
	Pinout	Pin	Description
		1	VBUS (0.5A)
		2	D-
		3	D+
		4	GND

3.3.12 miniDP Connector

	The miniDP connector is used for display output.
---	--

3.3.13 USB 3.2 Type-C Recovery Mode Connector

	The USB 3.2 Type-C connector is used for software installation in recovery mode and device usage in regular use case.
---	---

3.3.14 CAN Bus Connector

	Function		Description
	Connector Model		5055670381
	Mating Connector		5055650301
	Pinout	Pin	Description
		1	CAN_LO
		2	CAN_HI
		3	GND

3.4 Definition of Each Button and Switch

3.4.1 Reset Pushbutton

	The reset pushbutton is used to reset the Jetson module.
---	---

3.4.2 Recovery Pushbutton

	The recovery pushbutton should be pressed with the reset pushbutton at the same time. After releasing the reset pushbutton, the recovery pushbutton should be held down for a minimum of 250 ms.
---	---

3.4.3 Bluetooth Switch

	This switch is used to set one USB2.0 to either M.2 Key-E connector for Bluetooth functionality (OFF position) or USBHS2 port (ON position).
---	---

3.4.4 Power Mode Switch

	The DSBOARD-ORNXS features a power mode switch to select between Auto Power-On and Power Button operational modes: ON: Enables Power Button Mode (System powers on via the PWR_BTN signal on panel connector.). OFF: Enables Auto Power-On Mode (system boots automatically when main power is applied).
---	---

4. Software Information

4.1 Installation

The JetPack-5.x installation guide can be found [here](#).

The JetPack-6.x installation guide can be found [here](#).

The JetPack-7.2+ installation guide can be found [here](#).

5. Connectivity

5.1 General Purpose Input/Output (GPIO)

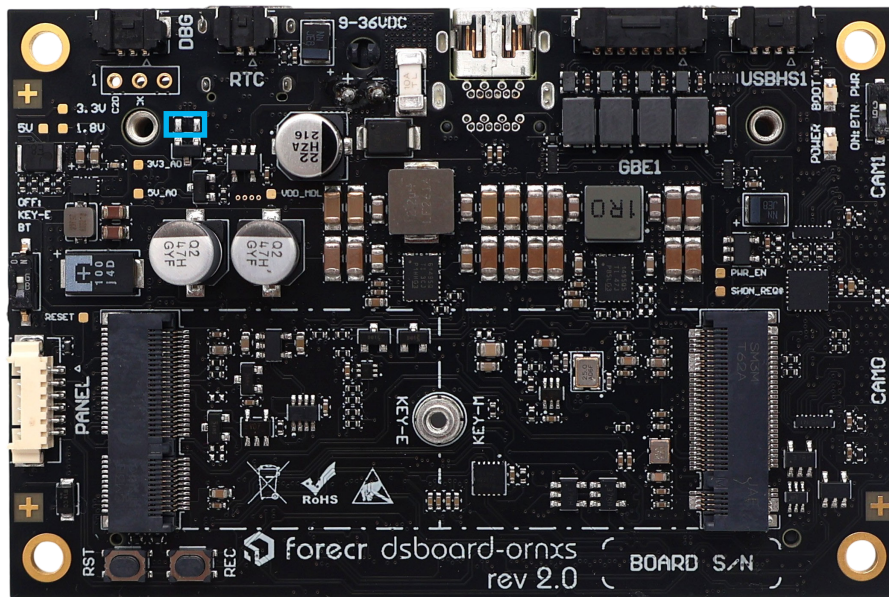
MODULE PIN NUMBER	I/O NAME	MODULE PIN NAME	TYPE	DESCRIPTION
116	CAM0_MCLK	CAM0_MCLK	OUTPUT	Camera 0 reference clock (1.8V Level)
114	CAM0_PWDN	CAM0_PWDN	OUTPUT	Camera 0 powerdown (3.3V Level)
122	CAM1_MCLK	CAM1_MCLK	OUTPUT	Camera 1 reference clock (1.8V Level)
120	CAM1_PWDN	CAM1_PWDN	OUTPUT	Camera 1 powerdown (3.3V Level)
118	CAM2_MCLK	GPIO01	OUTPUT	Camera 2 reference clock (1.8V Level)
127	CAM2_PWDN	GPIO04	OUTPUT	Camera 2 powerdown (3.3V Level)
216	CAM3_MCLK	GPIO11 (CLK)	OUTPUT	Camera 3 reference clock (1.8V Level)
126	CAM3_PWDN	GPIO03	OUTPUT	Camera 3 powerdown (3.3V Level)
206	CAM_SYNC	GPIO07(PWM)	OUTPUT	Camera frame synchronization signal for multi-camera timing alignment. (1.8V Level)
87	USB_VBUS_EN0	GPIO00	OUTPUT	Connect to enable and overcurrent pins of load switch.
128	#USB0_VBUS_DET	GPIO05	INPUT	Connect to VBUS pin of USB connector receiving USB0_+/- interface through level shifter.
228	M2E_WDISABLE1	GPIO13(PWM)	OUTPUT	WiFi/BT module full powerdown control for the WiFi/BT radio. Drive low to disable WiFi/BT. Drive high for normal operation.
218	M2E_WDISABLE2	GPIO12(PWM)	OUTPUT	Reset for Bluetooth. Active low by default.
210	M2E_SUS-CLK_32KHZ	CLK_32K_OUT	OUTPUT	32.768 kHz clock module input.
211	AUD_MCLK	GPIO09 (AUD_MCLK)	OUTPUT	Audio codec reference clock signal.
208	FAN_TACH	GPIO08(FAN_TACH)	INPUT	Fan Tachometer signal
230	FAN_PWM	GPIO14(PWM)	OUTPUT	Fan Pulse Width Modulation signal.
179	PCIE.WAKE_N	PCIE_WAKE	INPUT	Wake signal shared by all PCIe interfaces.

5.2 I/O Connector

5.2.1 CANBus Interface

There is a single CAN Bus interface on the DSBOARD-ORNXS. TCAN3414 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-ORNXS side.

CANBus Termination Resistor



5.3 On-Board I2C Devices List

5.3.1 I2C0 Bus

- Power Monitor (on Jetson SOM) — 0x40 (40h)

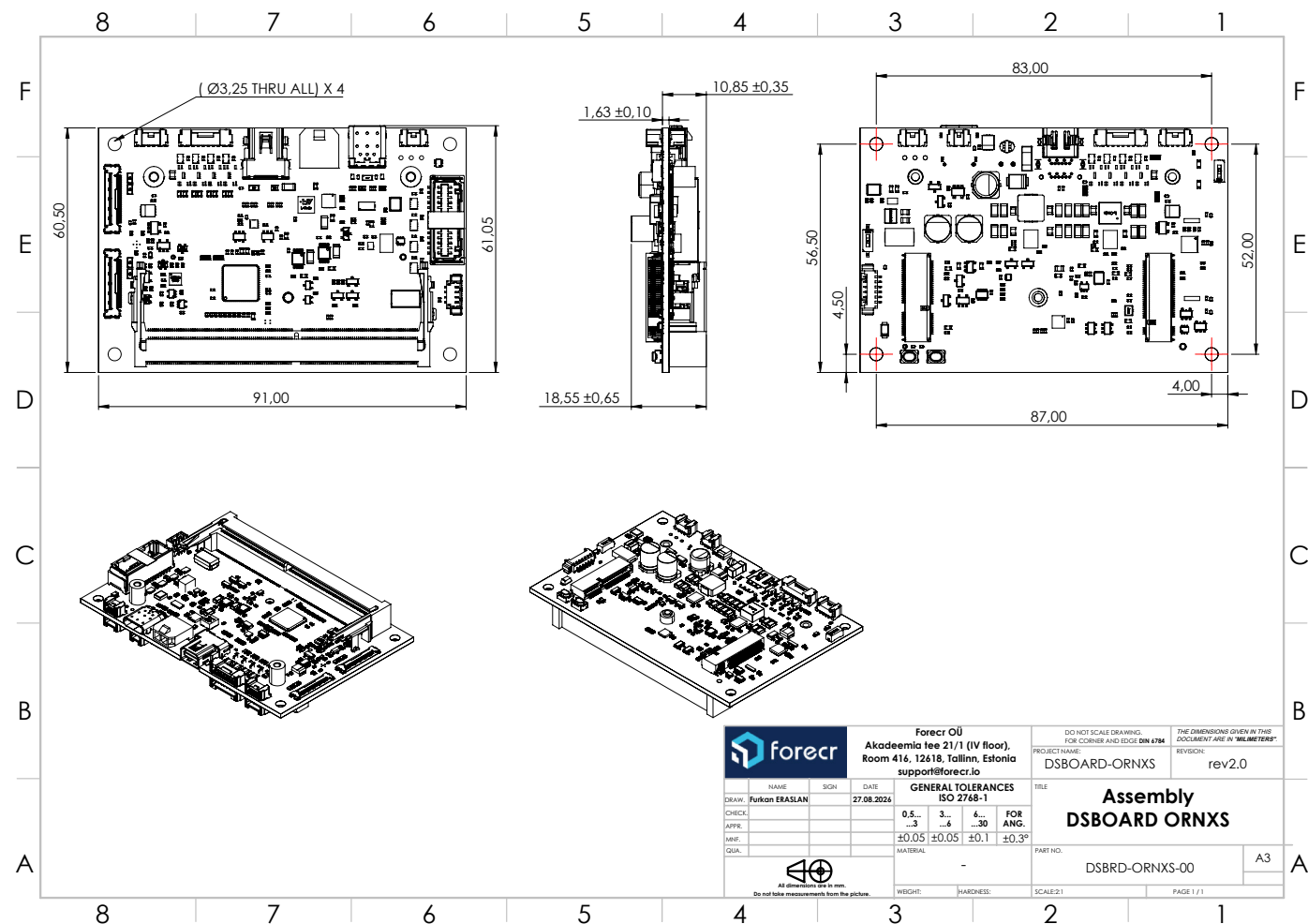
5.3.2 I2C2 Bus

- Temperature Sensor (P/N: TMP102AIDRLR) — 0x49 (49h)
- EEPROM (on Jetson SOM) — 0x50 (50h)

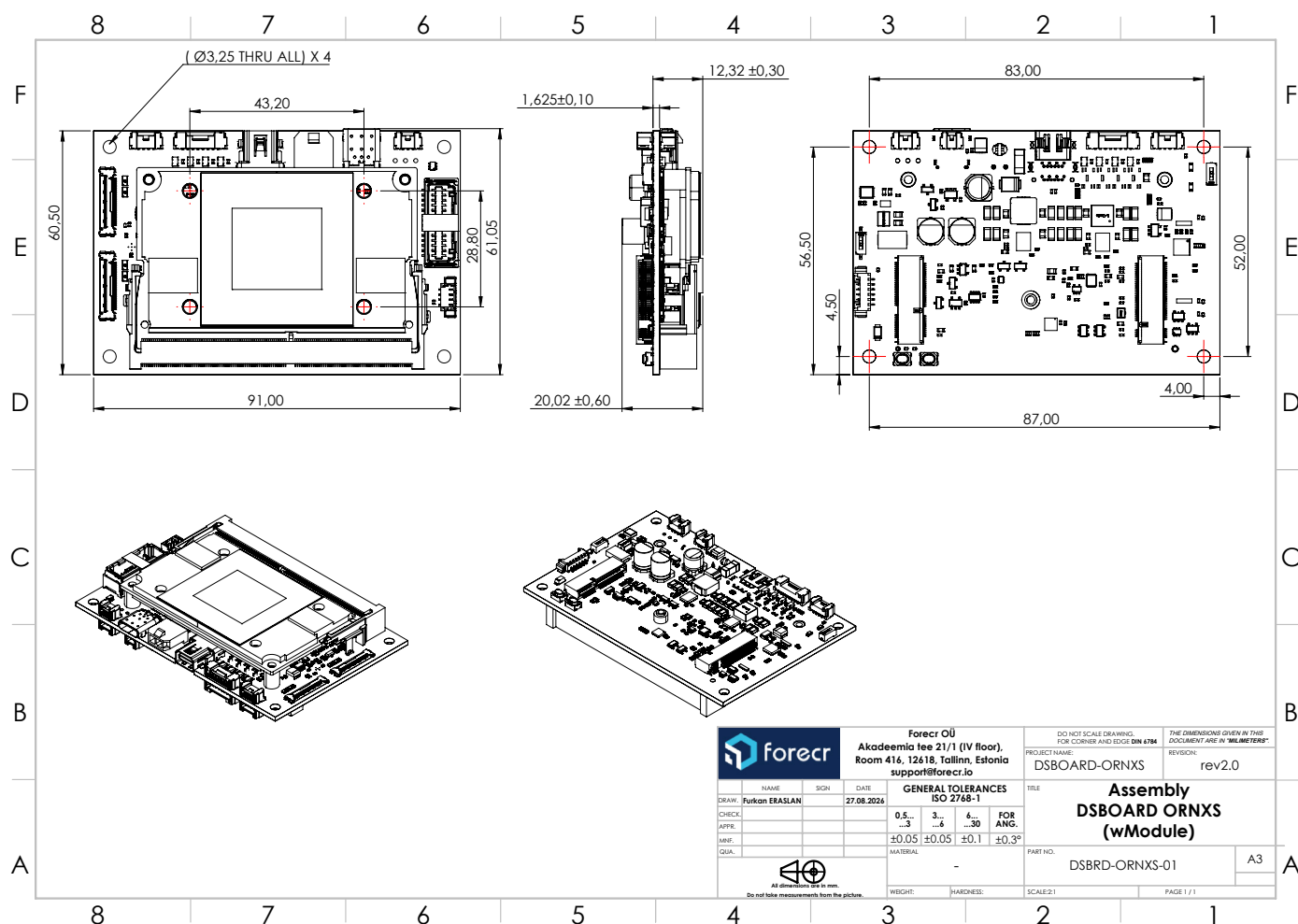
6. 3D Model & Mechanical Information

The full 3D models of DSBOARD-ORNXS can be found [here](#).

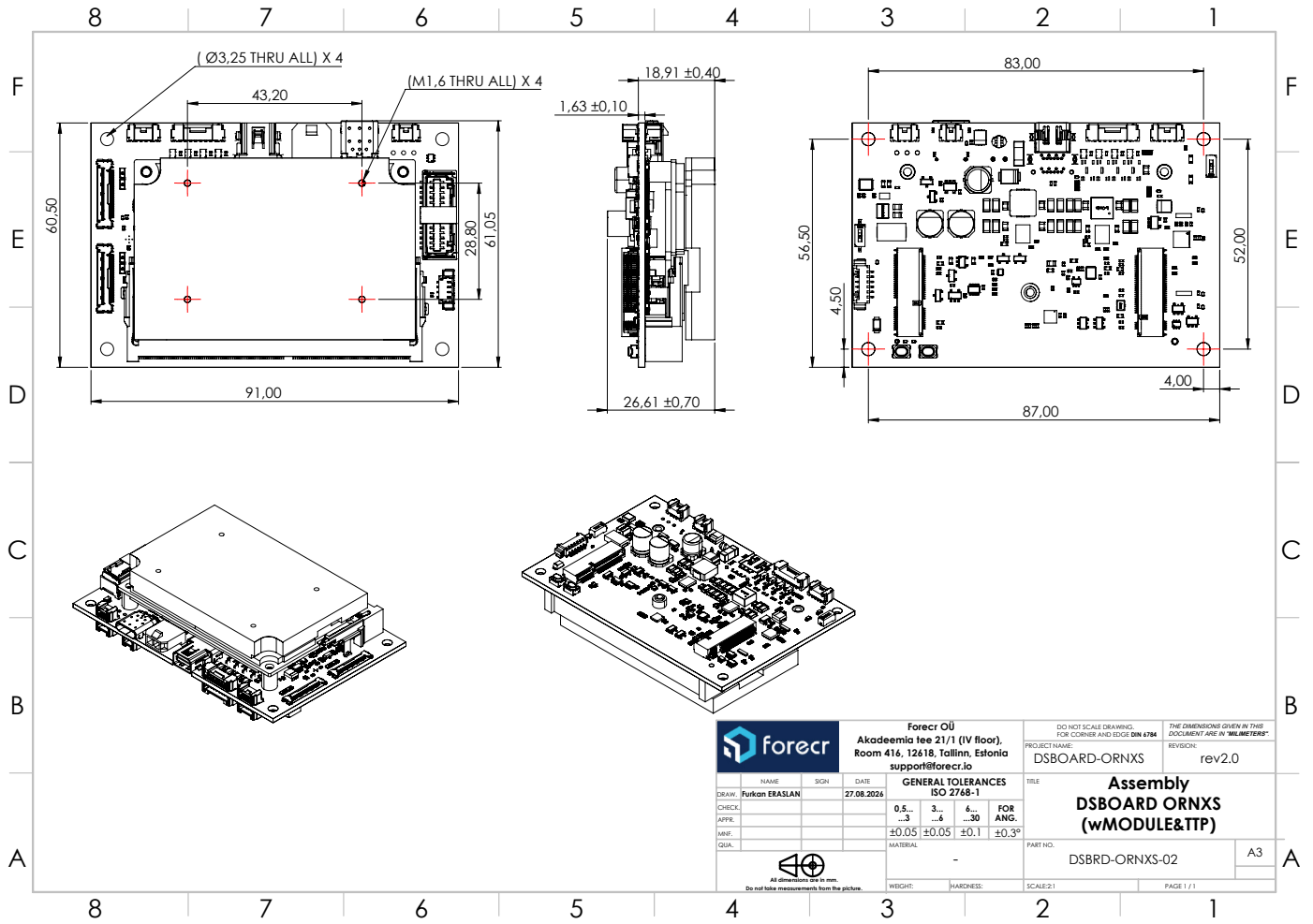
DSBOARD-ORNXS Stand Alone



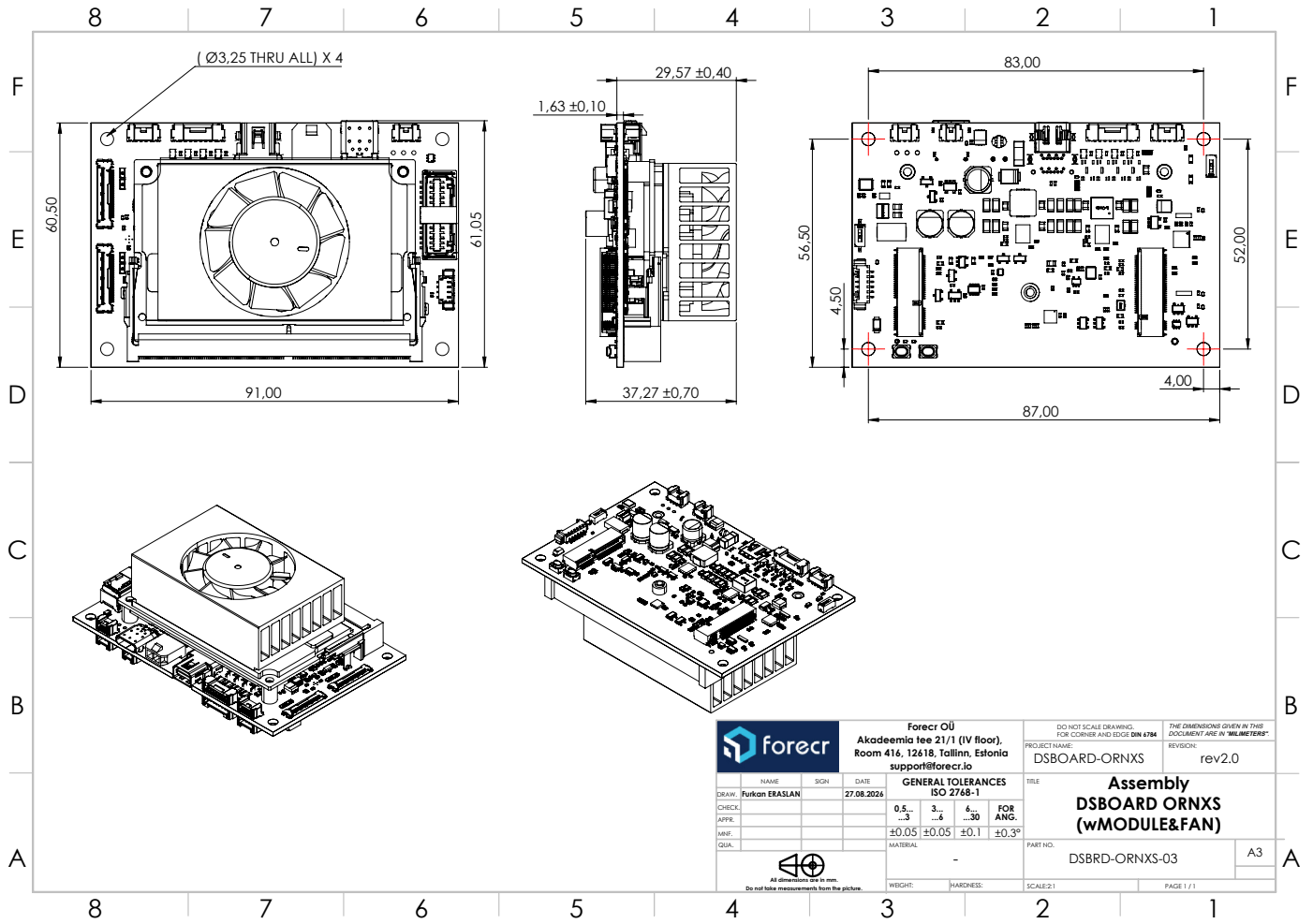
DSBOARD-ORNXS with Jetson Orin Nano/NX Module



DSBOARD-ORNXS with Jetson Orin Nano/NX Module and TTP Integration Details



DSBOARD-ORNXS with Jetson Orin Nano/NX Module and Thermal Integration Details



7. Power Consumption

7.1 Orin NX 16GB

Power Supply: 12V-5A

All CPU and GPU cores are %100 loaded.

	Power Up Sequence	Idle	Standby (Suspend mode)	10W (4 core)	15W (4 core)	25W (8 core)	40W (8 core)	MAXN (8 core)
Current (A)	1.4	0.824	0.86	1.4	1.49	1.64	2.78	3.2
Power (W)	16.8	9.88	10.32	16.8	17.88	19.68	33.36	38.4

7.2 Orin NX 8GB

Power Supply: 12V-5A

All CPU and GPU cores are %100 loaded.

	Power Up Sequence	Idle	Standby (Suspend mode)	10W (4 core)	15W (4 core)	20W (8 core)	40W (8 core)	MAXN (8 core)
Current (A)	1.64	0.84	0.102	1.38	1.47	1.52	2.72	2.82
Power (W)	19.68	10.08	1.224	16.56	17.64	18.24	32.64	33.84

7.3 Orin Nano 4GB

Power Supply: 12V-5A

All CPU and GPU cores are %100 loaded.

	Power Up Sequence	Idle	Standby (Suspend mode)	10W (6 core)	25W (6 core)	MAXN (6 core)
Current (A)	1.1	0.817	0.78	1.44	1.92	1.95
Power (W)	13.2	9.804	9.36	17.28	23.04	23.4

8. MTBF Prediction

Methodology	Telcordia SR-332 (Parts Count) *Preliminary
Operating Environment	Ground Benign (GB), Controlled
Ambient Temperature	25 °C
Board Failure Rate	0.336 failures / 10 ⁶ hours
MTBF	2,974,597 hours , 339.57 years

Methodology	Telcordia SR-332 (Parts Count) *Preliminary
Operating Environment	Ground Fixed (GF), Uncontrolled
Ambient Temperature	40 °C
Board Failure Rate	1.293 failures / 10 ⁶ hours
MTBF	773,395 hours , 88.29 years

9. Accessories

The following accessories are optional.

DSBOARD-ORNXS CABLE SET			
#	Cable	Description	Quantity
1		RTC Cable 2-position 30 cm	1
2		Power Cable 2-position 30 cm	1

3		CAN Bus Cable 3-position 30 cm	1
4		Debug Cable 3-position 30 cm	1
5		Panel Cable 6-position 30 cm	1
6		I/O Cable 28-position 30 cm	1
7		USB 2.0 Cable 4-position 15 cm	2
8		Gigabit Ethernet Cable 8-position 55 cm	2

10. Add-On Boards

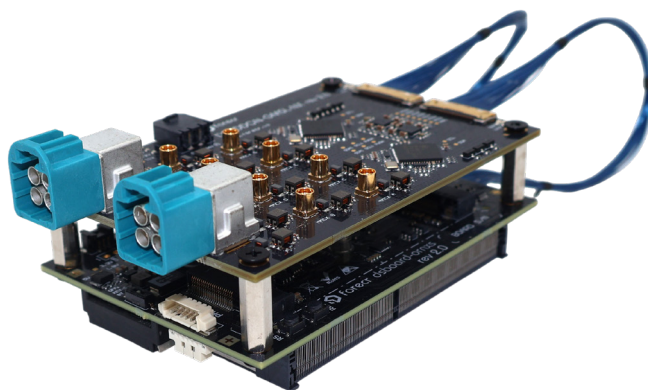
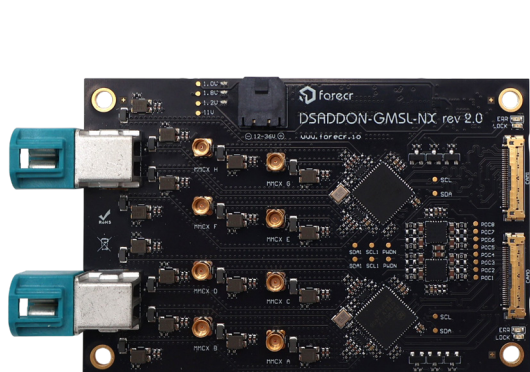
10.1 GMSL-NX Add-On Board

8-Channel GMSL2 Support: Features dual MAX96712 quad-channel deserializers, enabling up to 8× GMSL2 camera inputs.

Lane Configuration: Implements 2-Lane MIPI configuration.

Smart Power over Coax (PoC): Supplies up to 11V @ 600mA per channel with integrated I²C-controlled current limiters for per-channel power monitoring and complete channel shutdown.

Wide Input Range: Requires external power. Must be supplied with 12-36V DC.



11. Ordering Information

