Connect Tech Inc Rudi-NX Embedded System User Guide

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ESD Warning

Electronic components and circuits are sensitive to ElectroStatic Discharge (ESD). When handling any circuit board assemblies including Connect Tech COM Express carrier assemblies, it is recommended that ESD safety precautions be observed. ESD safe best practices include, but are not limited to:

- Leaving circuit boards in their antistatic packaging until they are ready to be installed.
- Using a grounded wrist strap when handling circuit boards, at a minimum you should touch a grounded metal object to dissipate any static charge that may be present on you.
- Only handling circuit boards in ESD safe areas, which may include ESD floor and table mats, wrist strap stations and ESD safe lab coats.
- Avoiding handling circuit boards in carpeted areas.
- Try to handle the board by the edges, avoiding contact with components.

Contents

REVISION HISTORY

Revision	Date	Changes
0.00	2021-08-12	Preliminary Release
0.01	2020-03-11	• Modified Block Diagram • Added Part Numbers for Ordering • Added Rudi-NX Bottom View to Show M.2 Positions
0.02	2020-04-29	• Updated SW1 To Enable/Disable CAN Termination • Updated GPIO • Added Mechanical Drawings
0.02	2020-05-05	• Updated Block Diagram
0.03	2020-07-21	• Updated Rudi-NX Thermal Details
0.04	2020-08-06	• Updated template • Updated Thermal Details
0.05	2020-11-26	• Updated Part Numbers/Ordering Information
0.06	2021-01-22	• Updated Current Consumption Table
0.07	2021-08-22	• Added Optional Mounting Bracket to Accessories

INTRODUCTION

Connect Tech's Rudi-NX brings a deployable NVIDIA Jetson Xavier NX to the market. The Rudi-NX's design includes a Locking Power Input (+9 to +36V), Dual Gigabit Ethernet, HDMI video, 4 x USB 3.0 Type A, 4 x GMSL 1/2 Cameras, USB 2.0 (w/ OTG functionality), M.2 (B-Key 3042, M-Key 2280, and E-Key 2230 functionality; bottom access panel), 40 Pin Locking GPIO connector, 6-Pin Locking Isolated Full-Duplex CAN, RTC battery, and a dual purpose Reset/Force Recovery pushbutton with Power LED.

Product Feature and Specifications

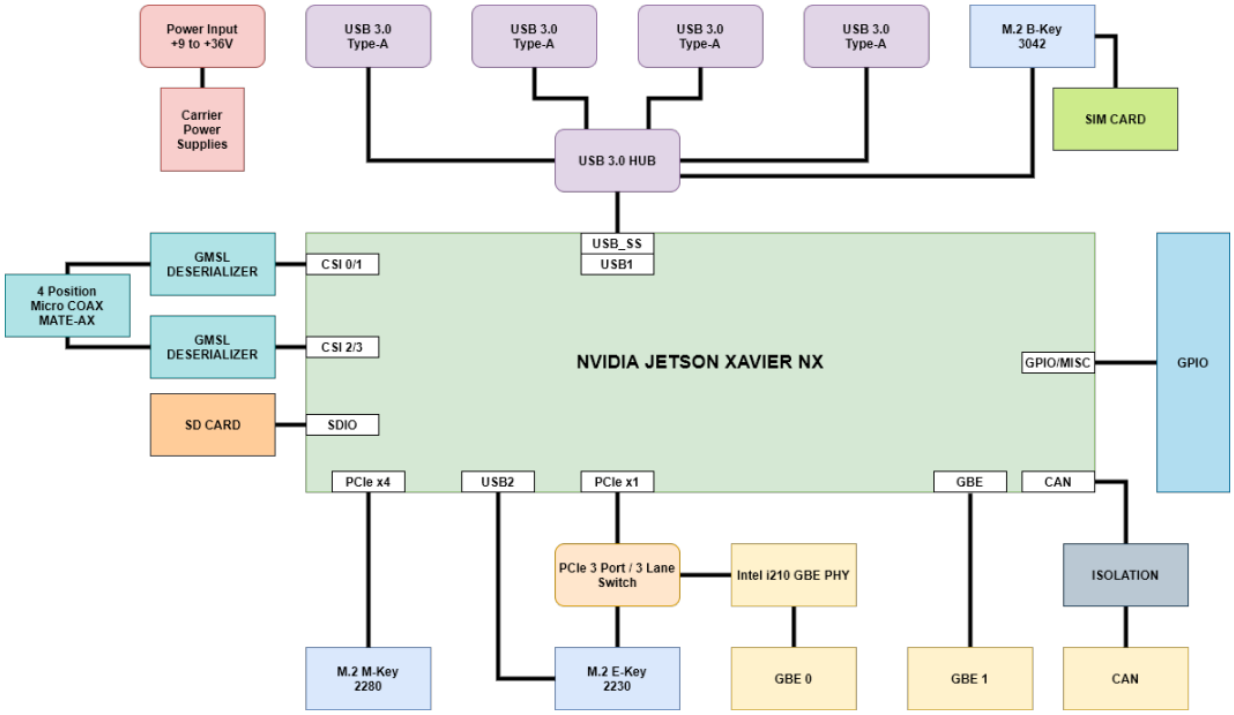
Feature	Rudi-NX
Module Compatibility	NVIDIA® Jetson Xavier NX™
Mechanical Dimensions	109mm x 135mm x 50mm
USB	4x USB 3.0 (Connector: USB Type-A) 1x USB 2.0 OTG (Micro-B) 1x USB 3.0 + 2.0 Port to M.2 B-Key 1x USB 2.0 to M.2 E-Key
GMSL Cameras	4x GMSL 1/2 Camera Inputs (Connector: Quad Micro COAX) Deserializers Em bedded On Carrier Board
Networking	2x 10/100/1000BASE-T Uplink (1 Port From PCIe PHY Controller)
Storage	1x NVMe (M.2 2280 M-KEY)1x SD Card Slot
Wireless Expansion	1x WiFi Module (M.2 2230 E-KEY)1x LTE Module (M.2 3042 B-KEY) w/ SIM Ca rd Connector
Misc. I/O	2x UART (1x Console, 1x 1.8V) 1x RS-485 2x I2C 2x SPI 2x PWM 4x GPIO 3x 5V 3x 3.3V 8x GND
CAN	1x Isolated CAN 2.0b
RTC Battery	CR2032 Battery Holder
Pushbutton	Dual Purpose Reset/Force Recovery Functionality
Status LED	Power Good LED
Power Input	+9V to +36V DC Power Input (Mini-Fit Jr. 4-Pin Locking)

Part Numbers / Ordering Information

Part Number	Description	Installed Modules
ESG602-01	Rudi-NX w/ GMSL	None
ESG602-02	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel
ESG602-03	Rudi-NX w/ GMSL	M.2 2280 NVMe – Samsung
ESG602-04	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 2280 NVMe – Samsung
ESG602-05	Rudi-NX w/ GMSL	M.2 3042 LTE-EMEA – Quectel
ESG602-06	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 3042 LTE-EMEA – Quectel
ESG602-07	Rudi-NX w/ GMSL	M.2 2280 NVMe – Samsung M.2 3042 LTE-EMEA – Quectel
ESG602-08	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 2280 NVMe – SamsungM.2 3042 LTE-EMEA – Quectel
ESG602-09	Rudi-NX w/ GMSL	M.2 3042 LTE-JP – Quectel
ESG602-10	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 3042 LTE-JP – Quectel
ESG602-11	Rudi-NX w/ GMSL	M.2 2280 NVMe – Samsung M.2 3042 LTE-JP – Quectel
ESG602-12	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 2280 NVMe – SamsungM.2 3042 LTE-JP – Quectel
ESG602-13	Rudi-NX w/ GMSL	M.2 3042 LTE-NA – Quectel
ESG602-14	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 3042 LTE-NA – Quectel
ESG602-15	Rudi-NX w/ GMSL	M.2 2280 NVMe – Samsung M.2 3042 LTE-NA – Quectel
ESG602-16	Rudi-NX w/ GMSL	M.2 2230 WiFi/BT – Intel M.2 2280 NVMe – SamsungM.2 3042 LTE-NA – Quectel

PRODUCT OVERVIEW

Block Diagram

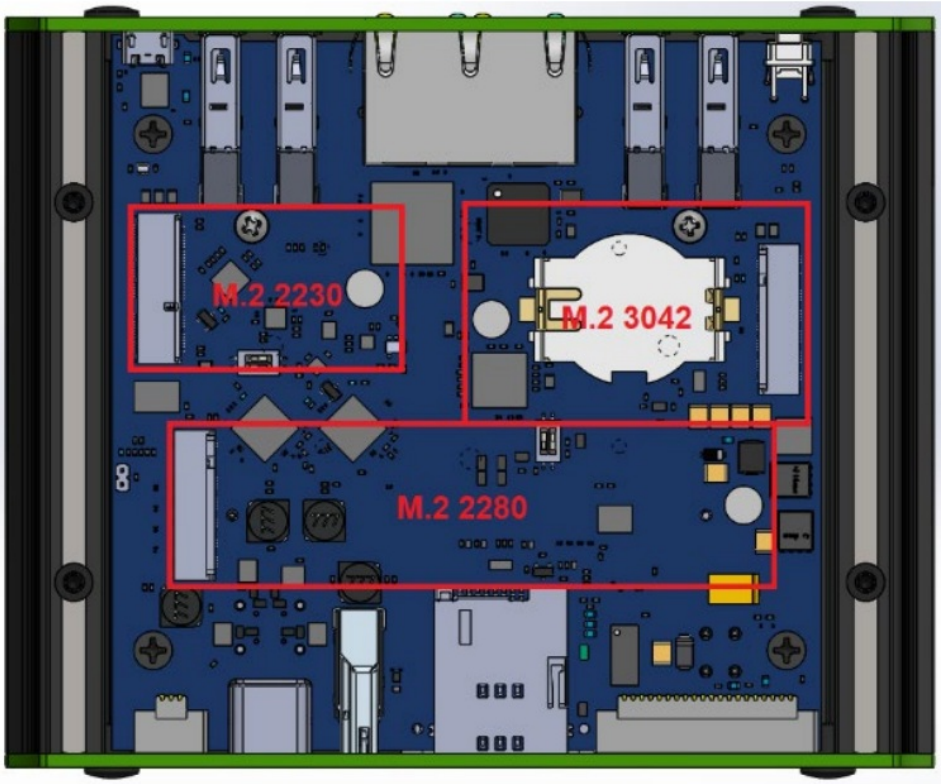


Connector Locations

FRONT VIEW

REAR VIEW

BOTTOM VIEW (COVER REMOVED)



Internal Connector Summary

Designator	Connector	Description
P1	0353180420	+9V to +36V Mini-Fit Jr. 4-Pin DC Power Input Connector
P2	10128796-001RLF	M.2 3042 B-Key 2G/3G/LTE Cellular Module Connector
P3	SM3ZS067U410AER1000	M.2 2230 E-Key WiFi/Bluetooth Module Connector
P4	10131758-001RLF	M.2 2280 M-Key NVMe SSD Connector
P5	2007435-3	HDMI Video Connector
P6	47589-0001	USB 2.0 Micro-AB OTG Connector
P7	JXD1-2015NL	Dual RJ-45 Gigabit Ethernet Connector
P8	2309413-1	NVIDIA Jetson Xavier NXModule Board-To-Board Connector
P9	10067847-001RLF	SD Card Connector
P10	0475530001	SIM Card Connector
P11A, B	48404-0003	USB3.0 Type-A Connector
P12A, B	48404-0003	USB3.0 Type-A Connector
P13	TFM-120-02-L-DH-TR	40 Pin GPIO Connector
P14	2304168-9	GMSL 1/2 Quad Camera Connector
P15	TFM-103-02-L-DH-TR	6 Pin Isolated CAN Connector
BAT1	BHSD-2032-SM	CR2032 RTC Battery Connector

External Connector Summary

Location	Connector	Mating Part or Connector
Front	PWR IN	+9V to +36V Mini-Fit Jr. 4-Pin DC Power Input Connector
Front	HDMI	HDMI Video Connector
Back	OTG	USB 2.0 Micro-AB OTG Connector
Back	GbE1, GbE2	Dual RJ-45 Gigabit Ethernet Connector
Front	SD CARD	SD Card Connector
Front	SIM CARD	SIM Card Connector
Back	USB 1, 2, 3, 4	USB3.0 Type-A Connector
Front	EXPANSION I/O	40 Pin GPIO Connector
Front	GMSL	GMSL 1/2 Quad Camera Connector
Front	CAN	6 Pin Isolated CAN Connector
Front	SYS	Reset / Force Recovery Pushbutton
Back	ANT 1, 2	Antenna

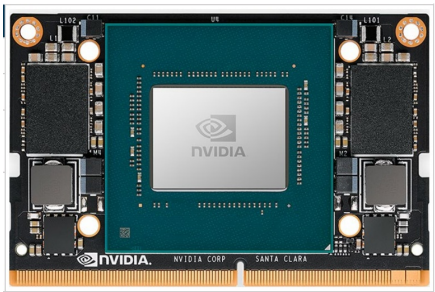
Switch Summary

Designator	Connector	Description
SW1-1 SW 1-2	1571983-1	Manufacturing Test Only (Internal) CAN Termination Enable/Disable
SW2	TL1260BQRBLK	Dual Function Reset/Recovery Pushbutton (External)
SW3	1571983-1	DIP Switch Selection For GMSL 1 or GMSL 2 (Internal)

DETAILED FEATURE DESCRIPTION

Rudi-NX NVIDIA Jetson Xavier NX Module Connector
The NVIDIA Jetson Xavier NX processor and chipset are implemented on the Jetson Xavier NX Module. This connects to the NVIDIA Jetson Xavier NX to the Rudi-NX via a TE Connectivity DDR4 SODIMM 260 Pin connector

Function	Description
Location	Internal to Rudi-NX
Type	Module
Pinout	Refer to NVIDIA Jetson Xavier NX Datasheet.
Features	Refer to NVIDIA Jetson Xavier NX Datasheet.

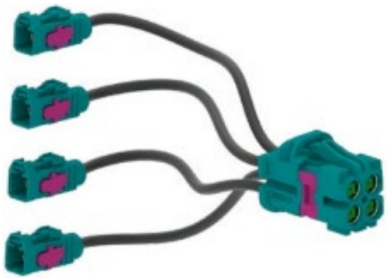
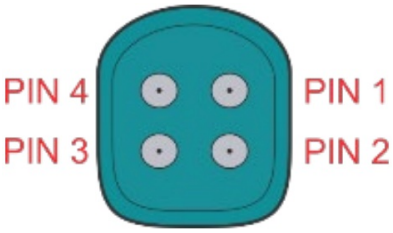


Note: A Thermal Transfer Plate is mounted to the NVIDIA Jetson Xavier NX module internally to the Rudi-NX. Heat will dissipate through to the top of the Rudi-NX chassis.

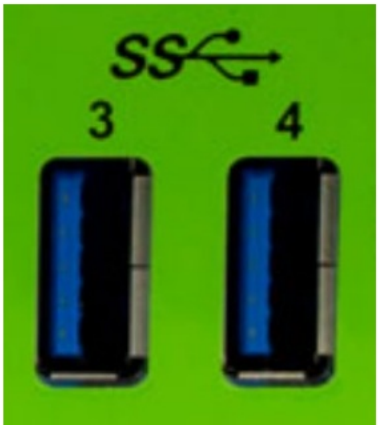
Rudi-NX HDMI Connector
The NVIDIA Jetson Xavier NX module will output video via the Rudi-NX vertical HDMI connector that is HDMI 2.0 capable.

Function	Description	
Location	Front	
Type	HDMI Vertical Connector	
Mating Connector	HDMI Type-A Cable	
Pinout	Refer to HDMI Standard	

Rudi-NX GMSL 1/2 Connector
The Rudi-NX allows GMSL 1 or GMSL 2 through the Quad MATE-AX connector. The GMSL to MIPI Deserializers are embedded on the carrier board which use 4-Lane MIPI video per 2 cameras.
Additionally, the Rudi-NX outputs +12V Power Over COAX (POC) with a 2A current capability (500mA per camera).

Function		Description	
Location		Front	
Type		GMSL 1/2 Camera Connector	
Mating Cable		Quad Fakra GMSL Cable4 Position MATE-AX to 4 x FAKRA Z-code 50 Ω RG174 Cable CTI P/N: CBG341	
Pin	**MIPI-Lanes**	**Description**	
1	CSI 2/3	GMSL 1/2 Camera Connector	
2	CSI 2/3	GMSL 1/2 Camera Connector	
3	CSI 0/1	GMSL 1/2 Camera Connector	
4	CSI 0/1	GMSL 1/2 Camera Connector	

Rudi-NX USB 3.0 Type-A Connector
The Rudi-NX incorporates 4 vertical USB 3.0 Type-A connectors with a 2A current limit per connector. All USB 3.0 Type-A ports are 5Gbps capable.

Function	Description	
Location	Rear	
Type	USB Type-A Connector	
Mating Connector	USB Type-A Cable	
Pinout	Refer to USB Standard	

Rudi-NX 10/100/1000 Dual Ethernet Connector
The Rudi-NX implements 2 x RJ-45 ethernet connectors for internet communication. Connector A is connected directly to the NVIDIA Jetson Xavier NX module. Connector B is connected through a PCIe Gigabit Ethernet PHY to a PCIe switch.

Function	Description	
Location	Rear	
Type	RJ-45 Connector	
Mating Connector	RJ-45 Ethernet Cable	
Pinout	Refer to Ethernet Standard	

Rudi-NX USB 2.0 OTG/Host Mode Connector
The Rudi-NX implements a USB2.0 Micro-AB connector to allow host mode access to the module or OTG flashing of the module

Function	Description	
Location	Rear	
Type	Micro-AB USB Connector	
Mating Connector	USB 2.0 Micro-B or Micro-AB Cable	
Pinout	Refer to USB Standard	

Note 1: A USB Micro-B cable is required for OTG Flashing.
Note 2: A USB Micro-A cable is required for Host Mode.

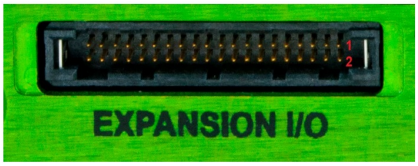
Rudi-NX SD Card Connector
The Rudi-NX implements a Full-Size SD Card connector.

Function	Description	
Location	Front	
Type	SD Card Connector	
Pinout	Refer to SD Card Standard	

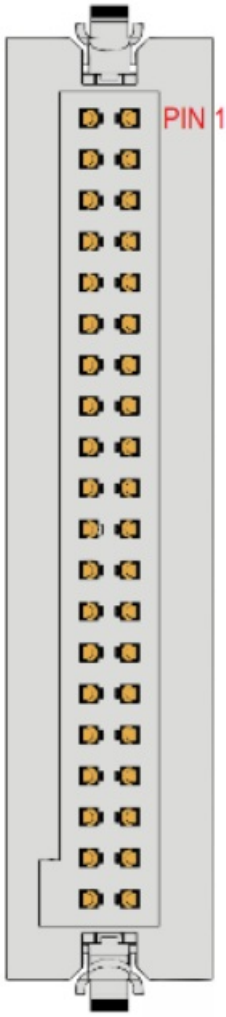
Rudi-NX GPIO Connector
The Rudi-NX implements a Samtec TFM-120-02-L-DH-TR Connector to allow for additional user control. 3 x Power (+5V, +3.3V), 9 x Ground, 4 x GPIO (GPIO09, GPIO10, GPIO11, GPIO12), 2 x PWM (GPIO13, GPIO14), 2 x I2C (I2C0, I2C1), 2 x SPI (SPI0, SPI1), 1 x UART (3.3V, Console), and RS485 interfaces.

Function	Description	
Location	Front	

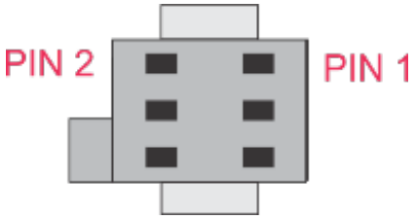
Type		GPIO Expansion Connector	
Carrier Connector		TFM-120-02-L-DH-TR	
Mating Cable		SFSD-20-28C-G-12.00-SR	
Pinout	**Colour**	**Description**	**I/O Type**
1	Brown	+5V	Power
2	Red	SPI0_MOSI (**3.3V Max.**)	O
3	Orange	SPI0_MISO (**3.3V Max.**)	I
4	Yellow	SPI0_SCK (**3.3V Max.**)	O
5	Green	SPI0_CS0# (**3.3V Max.**)	O
6	Violet	+3.3V	Power
7	Gray	GND	Power
8	White	SPI1_MOSI (**3.3V Max.**)	O
9	Black	SPI1_MISO (**3.3V Max.**)	I
10	Blue	SPI1_SCK (**3.3V Max.**)	O
11	Brown	SPI1_CS0# (**3.3V Max.**)	O
12	Red	GND	Power
13	Orange	UART2_TX (**3.3V Max.**,Console)	O
14	Yellow	UART2_RX (**3.3V Max.**,Console)	I
15	Green	GND	Power
16	Violet	I2C0_SCL (3.3V Max.)	I/O
17	Gray	I2C0_SDA (3.3V Max.)	I/O
18	White	GND	Power
19	Black	I2C2_SCL (3.3V Max.)	I/O
20	Blue	I2C2_SDA (3.3V Max.)	I/O



21	Brown	GND	Power
22	Red	GPIO09 (3.3VMax.)	O
23	Orange	GPIO10 (3.3VMax.)	O
24	Yellow	GPIO11 (3.3VMax.)	I
25	Green	GPIO12 (3.3VMax.)	I
26	Violet	GND	Power
27	Gray	GPIO13 (PWM1, 3.3 VMax.)	O
28	White	GPIO14 (PWM2, 3.3 VMax.)	O
29	Black	GND	Power
30	Blue	RXD+ (RS485)	I
31	Brown	RXD- (RS485)	I
32	Red	TXD+ (RS485)	O
33	Orange	TXD- (RS485)	O
34	Yellow	RTS (RS485)	O
35	Green	+5V	Power
36	Violet	UART1_TX (3.3V Max.)	O
37	Gray	UART1_RX (3.3V Max.)	I
38	White	+3.3V	Power
39	Black	GND	Power
40	Blue	GND	Power



Rudi-NX Isolated CAN Connector
The Rudi-NX implements a Samtec TFM-103-02-L-DH-TR Connector to allow for Isolated CAN with builtin 120Ω termination. 1 x Isolated Power (+5V), 1 x Isolated CANH, 1 x Isolated CANL, 3 x Isolated Ground.

Function		Description	
Location		Front	
Type		Isolated CAN Connector	
Carrier Connector		TFM-103-02-L-DH-TR	
Mating Cable		SFSD-03-28C-G-12.00-SR	
Pinout	**Colour**	**Description**	
1	Brown	GND	
2	Red	+5V Isolated	
3	Orange	GND	
4	Yellow	CANH	
5	Green	GND	
6	Violet	CANL	

Note: Built-in 120Ω termination can by removed with customer request. Please contact Connect Tech Inc. for further details.

Rudi-NX Reset & Force Recovery Pushbutton
The Rudi-NX implements a dual functionality pushbutton for both Reset and Recovery of the platform. To Reset the module, simply press and hold the pushbutton for a minimum of 250 milliseconds. To put the Jetson Xavier NX module into Force Recovery mode, press and hold the pushbutton for a minimum of 10 seconds.

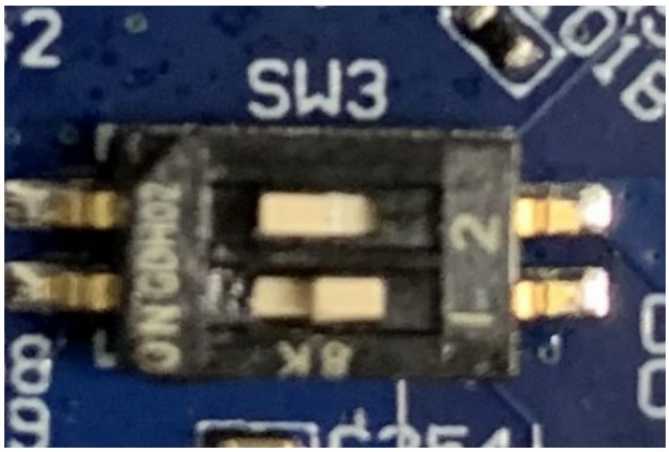
Function	Description	
Location	Rear	
Type	Pushbutton	
Reset Button Press	Minimum 250ms (typ.)	
Recovery Button Press	Minimum 10s (typ.)	

Rudi-NX Power Connector
The Rudi-NX implements a Mini-Fit Jr. 4-Pin Power Connector that accepts +9V to +36V DC power.

Function	Description	
Location	Front	
Type	Mini-Fit Jr. 4-Pin Connector	
Minimum Input Voltage	+9V DC	
Maximum Input Voltage	+36V DC	
CTI Mating Cable	CTI PN: CBG408	

Note: A Power Supply capable of 100W or more is required to operate the Rudi-NX with all peripherals running at their respective maximum rating.

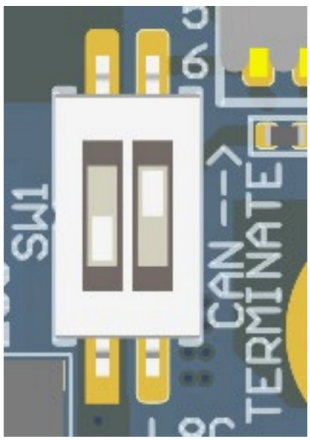
Rudi-NX GMSL 1/2 DIP Switch Selection
The Rudi-NX internally implements 2 position DIP Switch for the selection of GMSL 1 or GMSL 2.

Function	Description	
Location	Internal To Rudi-NX	
Type	DIP Switch	
SW3-1 – OFF SW 3-2 – OFF	GMSL1High Immunity Mode – ON	
SW3-1 – ON SW3 -2 – OFF	GMSL23 Gbps	
SW3-1 – OFF SW 3-2 – ON	GMSL26 Gbps	
SW3-1 – ON SW3 -2 – ON	GMSL1High Immunity Mode – OFF	

SW3
LEFT SIDE (ON)
SW3-2
SW3-1

RIGHT SIDE (OFF)
SW3-2
SW3-1

Rudi-NX CAN Termination Enable/Disable DIP Switch Selection
The Rudi-NX internally implements 2 position DIP Switch for Enabling or Disabling the CAN Termination Resistor of 120Ω.

Function	Description	
Location	Internal to Rudi-NX	
Type	DIP Switch	
SW1-1 – OFF SW1-2 – OFF	Manufacturing Test Only CAN Termination Disable	
SW1-1 – ON SW1-2 – ON	Manufacturing Test Only CAN Termination Enable	

Note: CAN Termination Disabled by default upon shipment to customer.
Please contact Connect Tech Inc. if you would like to set the Termination to be Enabled before shipment.

Rudi-NX Antenna Connectors
The Rudi-NX chassis implements 4x SMA Antenna Connectors (Optional) for the internal M.2 2230 E-Key (WiFi/Bluetooth) and M.2 3042 B-Key (Cellular).

Function	Description	
Location	Front and Rear	   
Type	SMA Connector	
Mating Connector	Antenna Connector	

TYPICAL INSTALLATION

1. Ensure all external system power supplies are off and disconnected.
2. Install the necessary cables for your application. At a minimum these would include:
   a) Power cable to the input power connector.
   b) Ethernet cable into its port (if applicable).
   c) HDMI video display cable (if applicable).
   d) Keyboard, Mouse, etc. via USB (if applicable).
   e) SD Card (if applicable).
   f) SIM Card (if applicable).
   g) GMSL Camera(s) (if applicable).
   h) GPIO 40-Pin Connector (if applicable).
   i) CAN 6-Pin Connector (if applicable).
   j) Antennas for WiFi/Bluetooth (if applicable).
   k) Antennas for Cellular (if applicable).
3. Connect the Power Cable of the +9V to +36V Power Supply into the Mini-Fit Jr. 4-Pin power connector.
4. Plug the AC cable into the Power Supply and into the wall socket.
   DO NOT power up your system by plugging in live power

THERMAL DETAILS

The Rudi-NX has an Operating Temperature Range of -20°C to +80°C.

However, it is important to note that the NVIDIA Jetson Xavier NX Module has its own properties separate to that of the Rudi-NX. The NVIDIA Jetson Xavier NX matches the Rudi-NX Operating Temperature Range of -20°C to +80°C.

Customer responsibility requires proper implementation of a thermal solution that maintains the RudiNX temperatures below the specified temperatures (shown in the tables below) under the maximum thermal load and system conditions for their use case.

NVIDIA Jetson Xavier NX

Parameter	Value	Units
Maximum Xavier SoC Operating Temperature	T.cpu = 90.5	°C
	T.gpu = 91.5	°C
	T.aux = 90.0	°C
Xavier SoC Shutdown Temperature	T.cpu = 96.0	°C
	T.gpu = 97.0	°C
	T.aux = 95.5	°C

Rudi-NX

Parameter	Value	Units
Maximum Operating Temperature @70CFM970 Evo Plus 1TB Installed, NVMe Cooling Block Installed	T.cpu = 90.5	°C
	T.gpu = 90.5	°C
	T.nvme = 80.0	°C
	T.amb = 60.0	°C

CURRENT CONSUMPTION DETAILS

Parameter	Value	Units	Temperature
NVIDIA Jetson Xavier NX Module, Passive Cooling, Idle, HDMI, Ethernet, Mouse, and Keyboard plugged in	7.5	W	25°C (typ.)
NVIDIA Jetson Xavier NX Module, Passive Cooling, 15W – 6 core mode, CPU stressed, GPU stressed, HDMI, Ethernet, Mouse, and Keyboard plugged in	22	W	25°C (typ.)

SOFTWARE / BSP DETAILS

All Connect Tech NVIDIA Jetson based products are built upon a modified Linux for Tegra (L4T) Device Tree that is specific to each CTI product.

WARNING: The hardware configurations of CTI's products differ from that of the NVIDIA supplied evaluation kit. Please review the product documentation and install ONLY the appropriate CTI L4T BSPs.
Failure to follow this process could result in non-functional hardware.

CABLES INCLUDED

Description	Part Number	Qty
Power Input Cable	CBG408	1
GPIO Cable	SFSD-20-28C-G-12.00-SR	1
CAN Cable	SFSD-03-28C-G-12.00-SR	1

ACCESSORIES

Description	Part Number
AC/DC Power Supply	MSG085
Quad FAKRA GMSL1/2 Cable	CBG341
Mounting Brackets	MSG067

APPROVED VENDORS CAMERAS

Manufacturer	Description	Part Number	Image Sensor
e-con Systems	GMSL1 Camera	NileCAM30	AR0330
Leopard Imaging	GMSL2 Camera	LI-IMX390-GMSL2- 060H	IMX390

MECHANICAL DETAILS

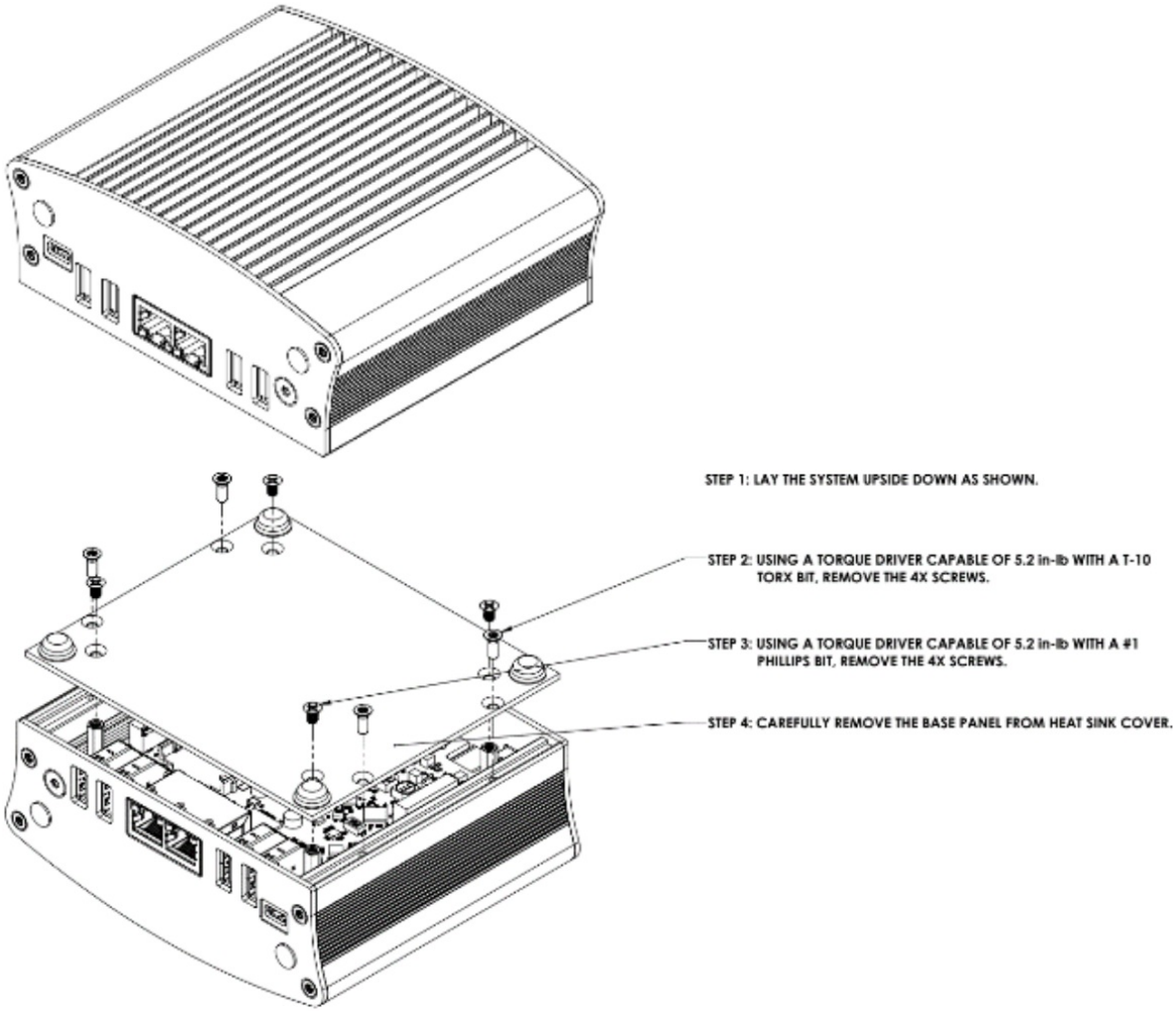
Rudi-NX Disassembly Procedure

INSTRUCTIONS FOR DISASSEMBLY

THE FOLLOWING PAGES SHOW THE DISASSEMBLY OF THE BASE PANEL TO GAIN ACCESS INTO THE SYSTEM TO ALLOW FOR PLUG-INS INTO M.2 SLOTS.

ALL OPERATIONS MUST BE COMPLETED IN A ESD CONTROLLED ENVIRONMENT. WRIST OR HEEL ESD STRAPS MUST BE WORN DURING ANY OPERATION OUTLINED

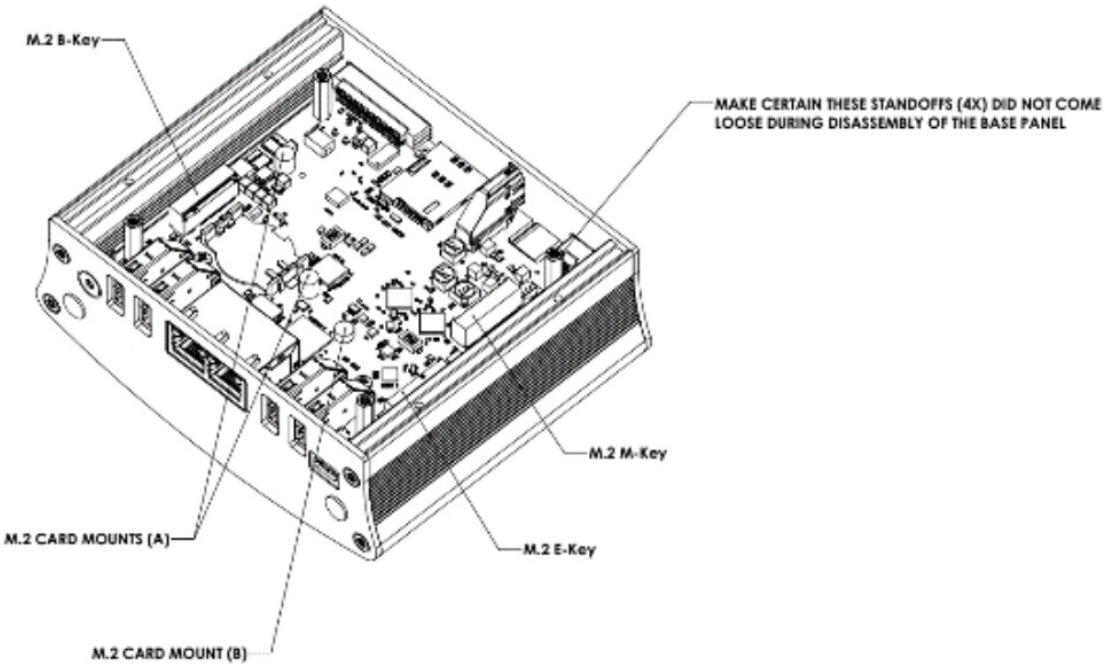
ALL FASTENERS TO BE REMOVED AND RE-ASSEMBLED USING PROPER TORQUE DRIVERS



NOTE THE SYSTEM MUST REMAIN IN THIS POSITION DURING ALL OPERATIONS.

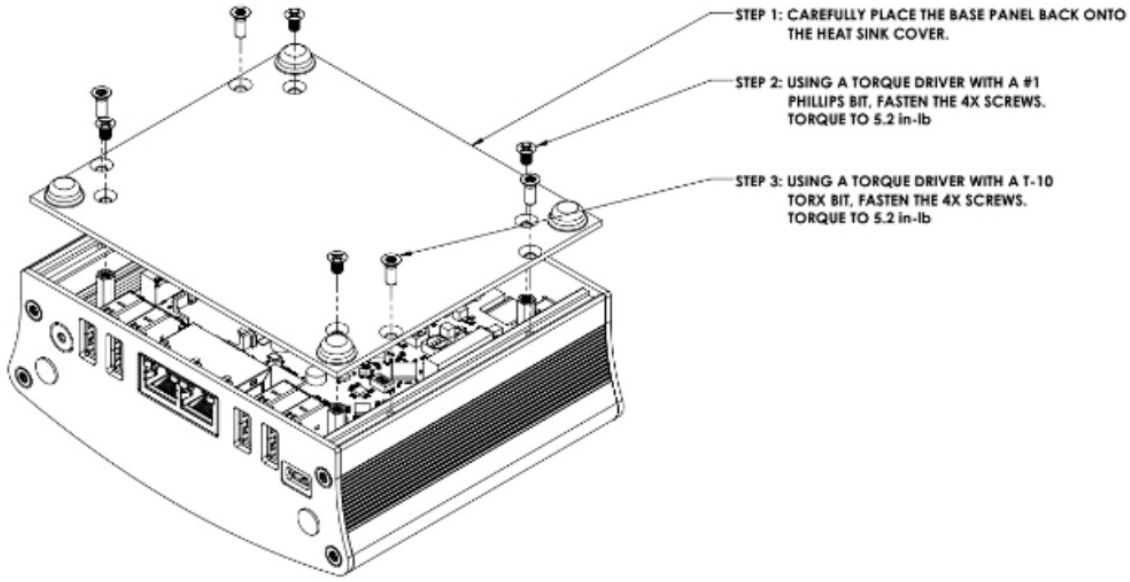
THE SYSTEM MUST REMAIN IN THIS POSITION SINCE THE PCB IS NOT FASTENED AND ONLY BEING HELD IN PLACE WITH THE CONNECTORS THAT ARE GOING THROUGH THE FRONT AND REAR PANELS.

DISASSEMBLY PROCEDURE

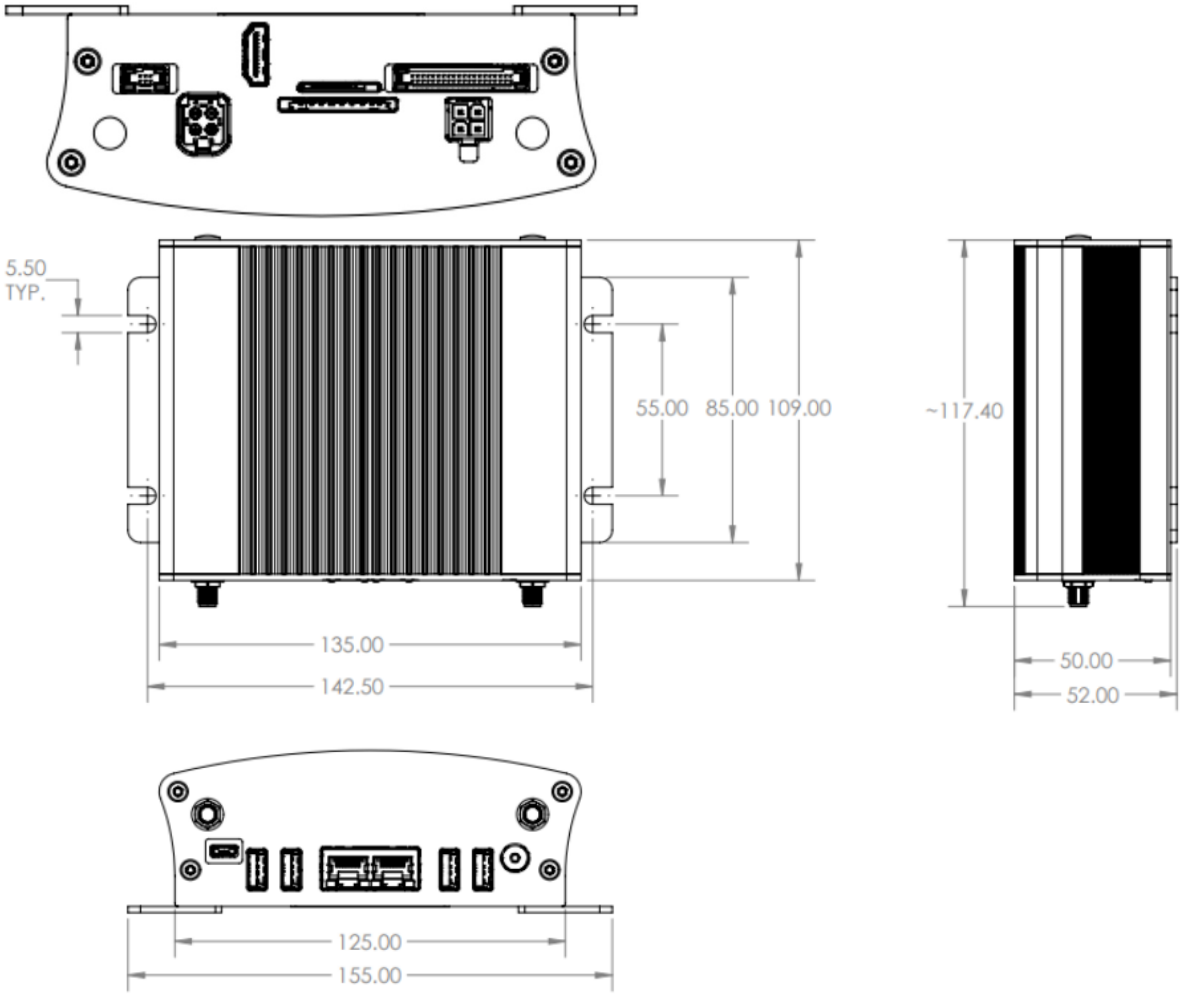


AFTER PLUGGING IN THE M.2 CARDS ARE MOUNTED ON THE STANDOFF MOUNTS A & B AS SHOWN.
IT IS RECOMMENDED TO USE THE FOLLOWING TO FASTEN M.2 CARDS ON MOUNT A:
M2.5X0.45, 8.0mm LONG, PHILLIPS PAN HEAD
M2.5 LOCK WASHER (IF NOT USED SUITABLE THREADLOCKER MUST BE USED)
IT IS RECOMMENDED TO USE THE FOLLOWING TO FASTEN M.2 CARD ON MOUNT B
M2.5X0.45. 6.0mm LONG, PHILLIPS PAN HEAD
M2.5 LOCK WASHER (IF NOT USED SUITABLE THREADLOCKER MUST BE USED)
FASTEN TO A TORQUE OF 3.1in-lb

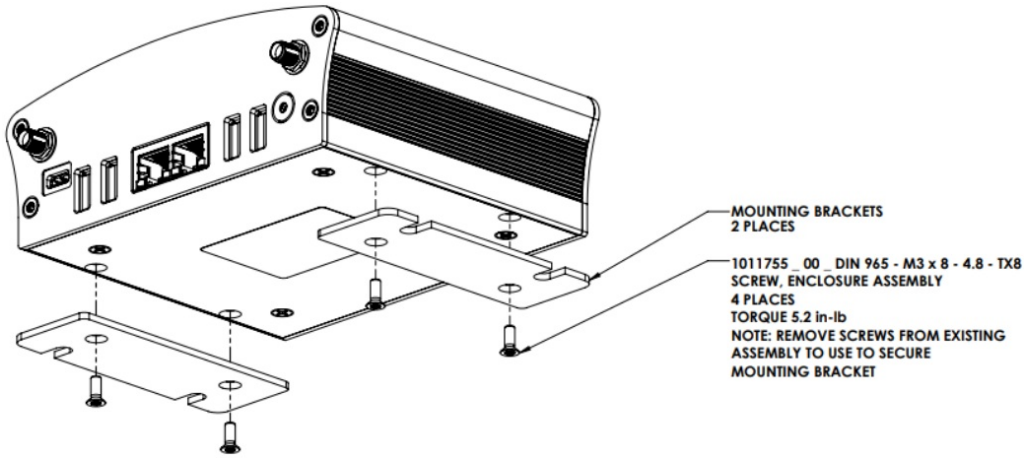
Rudi-NX Assembly Procedure



Rudi-NX Optional Mounting Brackets Plan View



Rudi-NX Optional Mounting Brackets Assembly Procedure



ASSEMBLY INSTRUCTIONS:

1. REMOVE THE RUBBER FEET FROM THE BOTTOM OF ASSEMBLY.
2. SECURE THE MOUNTING BRACKET ONE SIDE AT A TIME USING EXISTING SCREWS.
3. TORQUE THE FASTENERS TO 5.2 in-lb.

PREFACE

Disclaimer

The information contained within this user's guide, including but not limited to any product specification, is subject

to change without notice.

Connect Tech assumes no liability for any damages incurred directly or indirectly from any technical or typographical errors or omissions contained herein or for discrepancies between the product and the user's guide.

Customer Support Overview
If you experience difficulties after reading the manual and/or using the product, contact the Connect Tech reseller from which you purchased the product. In most cases the reseller can help you with product installation and difficulties.

In the event that the reseller is unable to resolve your problem, our highly qualified support staff can assist you. Our support section is available 24 hours a day, 7 days a week on our website at: **http://connecttech.com/support/resource-center**/. See the contact information section below for more information on how to contact us directly. Our technical support is always free.

Contact Information

Contact Information	
Mail/Courier	Connect Tech Inc. Technical Support 489 Clair Rd. W. Guelph, Ontario Canada N 1L 0H7
Contact Information	**sales@connecttech.com** **support@connecttech.com** **www.connecttech.com** **Toll Free:** 800-426-8979 (North America only) **Telephone:** +1-519-836-1291 **Facsimile:** 519-836-4878 (on-line 24 hours)
Support	Please go to the **Connect Tech Resource Center** for product manuals, installatio n guides, device drivers, BSPs and technical tips. Submit your **technical support** questions to our support engineers. Technical Su pport representatives are available Monday through Friday, from 8:30 a.m. to 5:00 p.m. Eastern Standard Time.

Limited Product Warranty

Connect Tech Inc. provides a one-year Warranty for this product. Should this product, in Connect Tech Inc.'s opinion, fail to be in good working order during the warranty period, Connect Tech Inc. will, at its option, repair or replace this product at no charge, provided that the product has not been subjected to abuse, misuse, accident, disaster or non-Connect Tech Inc. authorized modification or repair.

You may obtain warranty service by delivering this product to an authorized Connect Tech Inc. business partner or to Connect Tech Inc. along with proof of purchase. Product returned to Connect Tech Inc. must be pre-authorized by Connect Tech Inc. with an RMA (Return Material Authorization) number marked on the outside of the package and sent prepaid, insured and packaged for safe shipment. Connect Tech Inc. will return this product by prepaid ground shipment service.

The Connect Tech Inc. Limited Warranty is only valid over the serviceable life of the product. This is defined as the period during which all components are available. Should the product prove to be irreparable, Connect Tech Inc. reserves the right to substitute an equivalent product if available or to retract the Warranty if no replacement is available.

The above warranty is the only warranty authorized by Connect Tech Inc. Under no circumstances will Connect Tech Inc. be liable in any way for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use of, or inability to use, such product

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Trademark Acknowledgment

Documents / Resources

	Connect Tech Inc Rudi-NX Embedded System [pdf] User Guide Rudi-NX Embedded System, Rudi-NX, Embedded System, System

References

- Resource Center - Connect Tech Inc.
- Connect Tech Inc., Embedded Computing Experts
- User Manual