



DSBOX-AGXMAX Rev 1.0

USER MANUAL

UM-DSBXAGXMAX-01
Revision 1.0
17/07/2025

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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

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Limited Product Warranty

Forecr provides a 1-year Warranty for the DSBOX-AGXMAX. This warranty period is valid from the original purchase date of the DSBOX-AGXMAX. In order to maintain warranty, the DSBOX-AGXMAX must not be altered or modified in any way. Changes or modifications to the DSBOX-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 DSBOX-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	17.07.2024	Preliminary Release

1. Introduction

Introducing the DSBOX-AGXMAX, the industrial carrier board that is built to maximize your productivity and connectivity. Powered by the high-performance AGX Orin SoM, which can deliver up to 275 TOPS of AI performance, this board offers top-of-the-line 10G connectivity, as well as Dual Gigabit Ethernet, USB 3.2, HDMI, CAN, Serial Ports and optional GMSL2 (up to 8-CH) camera support.

The AGX Orin SoM processor 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 DSBOX-AGXMAX will deliver the power and versatility you need to get the job done.

With its easy-to-use design and extensive connectivity options, the DSBOX-AGXMAX offers an unparalleled level of convenience and flexibility. And with its robust construction and long-lasting reliability, you can be confident that this carrier board will continue to meet your needs for years to come.

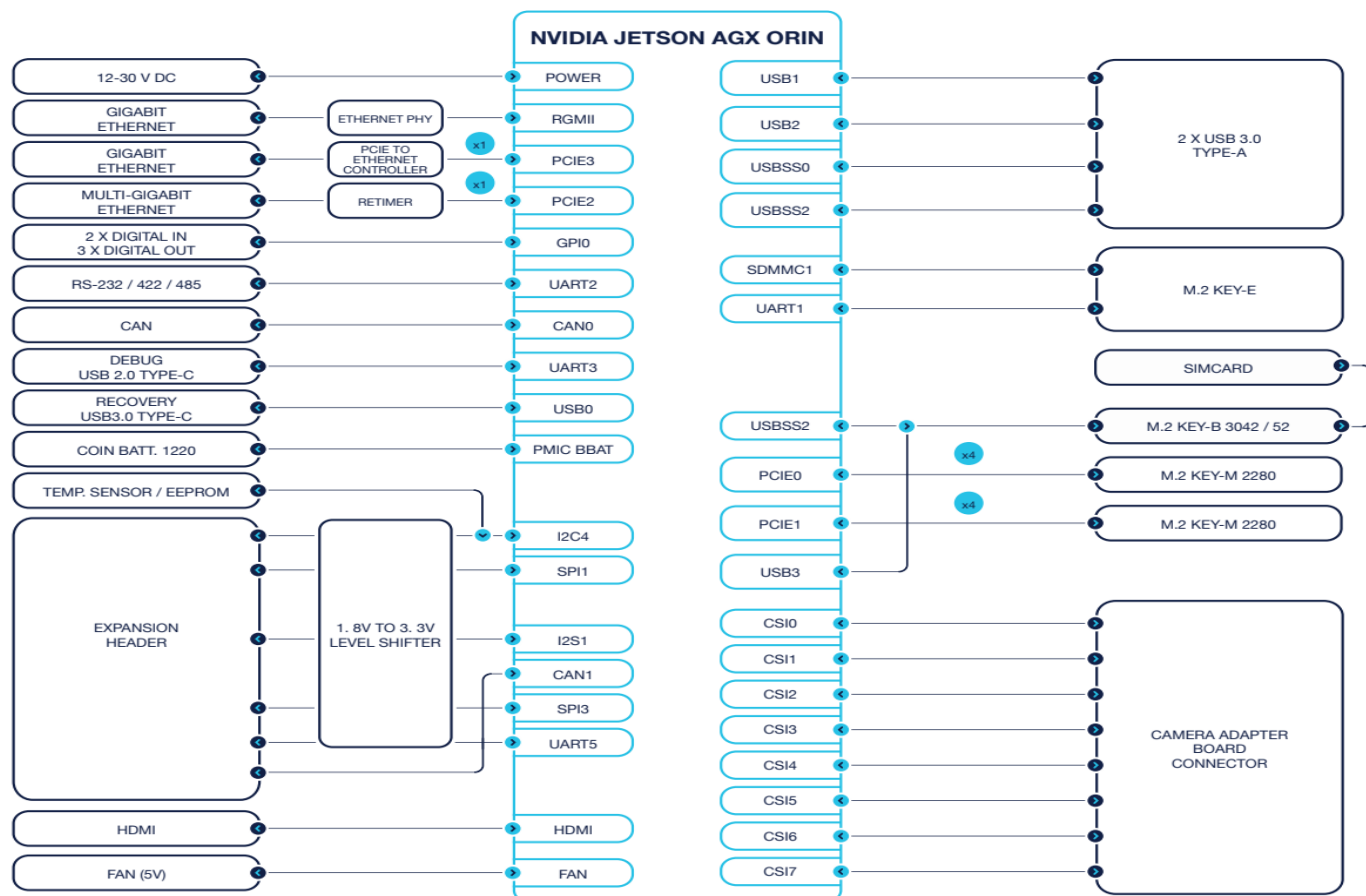
Latest revision of this user manual, datasheet, and 3D model can be downloaded from [Forecr](#) Web Page.

2. Product Specification

2.1 Technical Specification

Supported Modules	NVIDIA Jetson AGX Orin 32GB NVIDIA Jetson AGX Orin 64GB
Memory	32 GB 256-bit LPDDR5x 64 GB 256-bit LPDDR5x
Graphics Interfaces	1x HDMI 2.0(max resolution 3840x2160)
Interfaces	2x Gigabit Ethernet 1x 10G (SFP+Based) 2x USB 3.1 Type-A 1x CAN Bus 1x RS232/422/485 (software configurable) 2x USB-C (Debug/Recovery)
Wireless Communication	WiFi/Bluetooth/LTE/5G Connectivity by extension sockets
Power Supply	12-30 VDC
Extension Sockets	1x M.2 Key-B, 1x M.2 Key-E, 1x SIM, 1x Camera Connector (for optional GMSL2 connections to 8-CH)
Mass Storage	64 GB eMMC 5.1 Flash 2x M.2 Key-M SSD Slot
Ambient Conditions	-25°C ... +85°C
Form Factor / Dimensions	225 mm x 135 mm, 3000gr
Operating Systems	Ubuntu Linux 20.04 Ubuntu Linux 22.04
JetPack Support	JetPack 5.x JetPack 6.x

2.2 Block Diagram



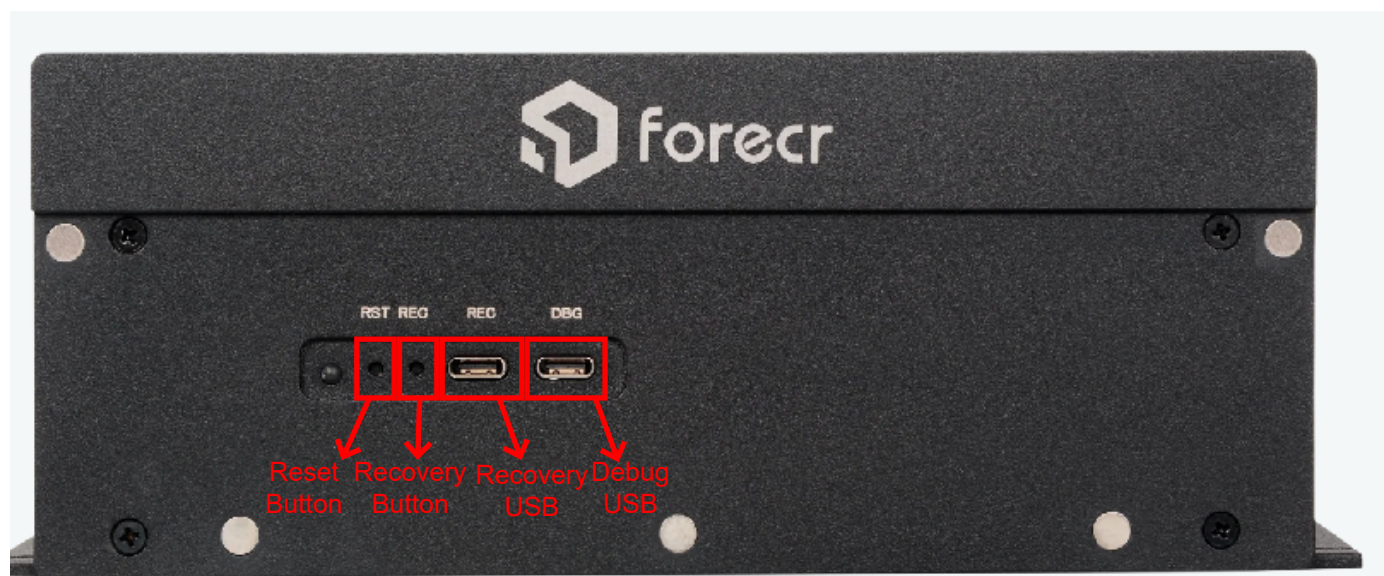
2.3 Box Visuals



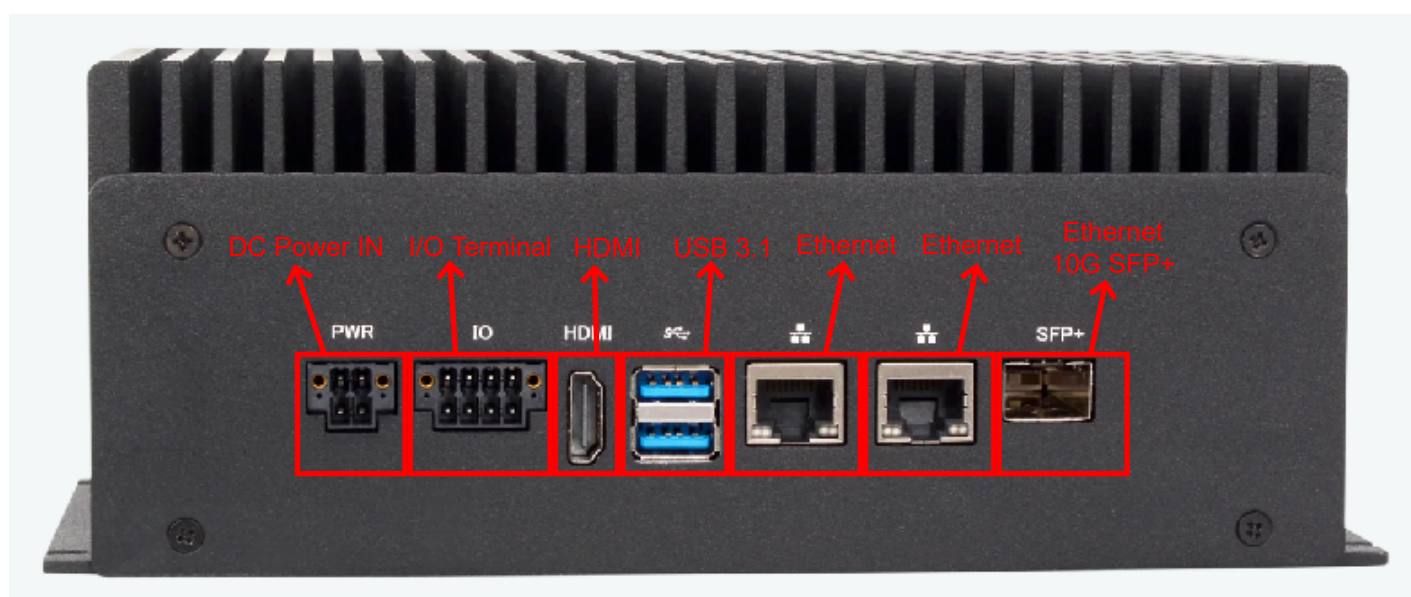
3. Hardware Information

3.1 Connector and Button Location

3.1.1 Front Connectors Layout



3.1.2 Rear Connectors Layout

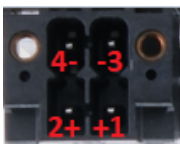


3.2 List of Connectors and Buttons

Connectors
DSBOX-AGXMAX Power Connector
DSBOX-AGXMAX I/O Terminal Connectors
DSBOX-AGXMAX HDMI Connector
DSBOX-AGXMAX USB 3.1 Type-A Connector
DSBOX-AGXMAX 10G Ethernet Slot
DSBOX-AGXMAX 10/100/1000 Ethernet Connectors
DSBOX-AGXMAX Recovery Mode USB Type-C Connector
DSBOX-AGXMAX Debug Mode Type-C USB Connector
Buttons
DSBOX-AGXMAX Recovery Pushbutton
DSBOX-AGXMAX Reset Pushbutton

3.3 The Definition of Each Connector

3.3.1 Power Connector

	Function	Description			
	Mating Connector	1708595			
	Minimum Input Voltage	+12V			
	Maximum Input Voltage	+30V			
	Pinout	Pin	Description	Pin	Description
		1	Positive	3	Negative
		2	Positive	4	Negative

3.3.2 I/O Terminal Connectors

8 Pin Connector (Serial Communication) 	Function	Description		
	8 Pin Connector's Mating Connector	"1790315" (DFMC 1,5/ 4-STF-3,5) from Phoenix Contact		
	Pinout	8 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	CAN0_H	I/O
		6	GND	Power
		7	CAN0_L	I/O
		8	GND	Power

3.3.3 HDMI Connector

	<table><tr><th>Description</th></tr><tr><td>The NVIDIA® Jetson Orin modules will output video via the DS-BOX-AGXMAX vertical HDMI connector that is HDMI 2.0 capable.</td></tr></table>	Description	The NVIDIA® Jetson Orin modules will output video via the DS-BOX-AGXMAX vertical HDMI connector that is HDMI 2.0 capable.
Description			
The NVIDIA® Jetson Orin modules will output video via the DS-BOX-AGXMAX vertical HDMI connector that is HDMI 2.0 capable.			

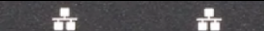
3.3.4 USB 3.1 Type-A Connector

	<table><tr><th>Description</th></tr><tr><td>The DSBOX-AGXMAX incorporates 2 USB 3.1 Type-A connectors with a 1.5A current limit per connector.</td></tr></table>	Description	The DSBOX-AGXMAX incorporates 2 USB 3.1 Type-A connectors with a 1.5A current limit per connector.
Description			
The DSBOX-AGXMAX incorporates 2 USB 3.1 Type-A connectors with a 1.5A current limit per connector.			

3.3.5 10G Ethernet Slot

 A close-up photograph of a Small Form-factor Pluggable Plus (SFP+) module. The module is dark-colored with a gold-plated connector at the bottom. The text "SFP+" is printed in white on the top left of the module's face.	<table><tr><th data-bbox="537 875 1326 900">Description</th></tr><tr><td data-bbox="537 900 1326 1120"> The DSBOX-AGXMAX implements a Multi-Gigabit Ethernet slot for 10Gb SFP+ supported transceivers. </td></tr></table>	Description	The DSBOX-AGXMAX implements a Multi-Gigabit Ethernet slot for 10Gb SFP+ supported transceivers.
Description			
The DSBOX-AGXMAX implements a Multi-Gigabit Ethernet slot for 10Gb SFP+ supported transceivers.			

3.3.6 10/100/1000 Ethernet Connectors

	<table><tr><th data-bbox="525 1258 1326 1265">Description</th></tr><tr><td data-bbox="525 1265 1326 1288">The DSBOX-AGXMAX implements 2 port RJ-45 Ethernet connectors for network communication.</td></tr></table>	Description	The DSBOX-AGXMAX implements 2 port RJ-45 Ethernet connectors for network communication.
Description			
The DSBOX-AGXMAX implements 2 port RJ-45 Ethernet connectors for network communication.			

3.3.7 Recovery Mode Type-C USB Connector

	<table><tr><th>Description</th></tr><tr><td>The DSBOX-AGXMAX implements a USB Type-C connector to allow to install or upgrade the operating system.</td></tr></table>	Description	The DSBOX-AGXMAX implements a USB Type-C connector to allow to install or upgrade the operating system.
Description			
The DSBOX-AGXMAX implements a USB Type-C connector to allow to install or upgrade the operating system.			

3.3.8 Debug Mode Type-C USB Connector

	<table><tr><th>Description</th></tr><tr><td>The DSBOX-AGXMAX implements a Type-C USB connector to access the module by using serial connection.</td></tr></table>	Description	The DSBOX-AGXMAX implements a Type-C USB connector to access the module by using serial connection.
Description			
The DSBOX-AGXMAX implements a Type-C USB connector to access the module by using serial connection.			

3.4 The Definition of Buttons

3.4.1 Recovery Pushbutton

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

4. Software Information

4.1 Installation

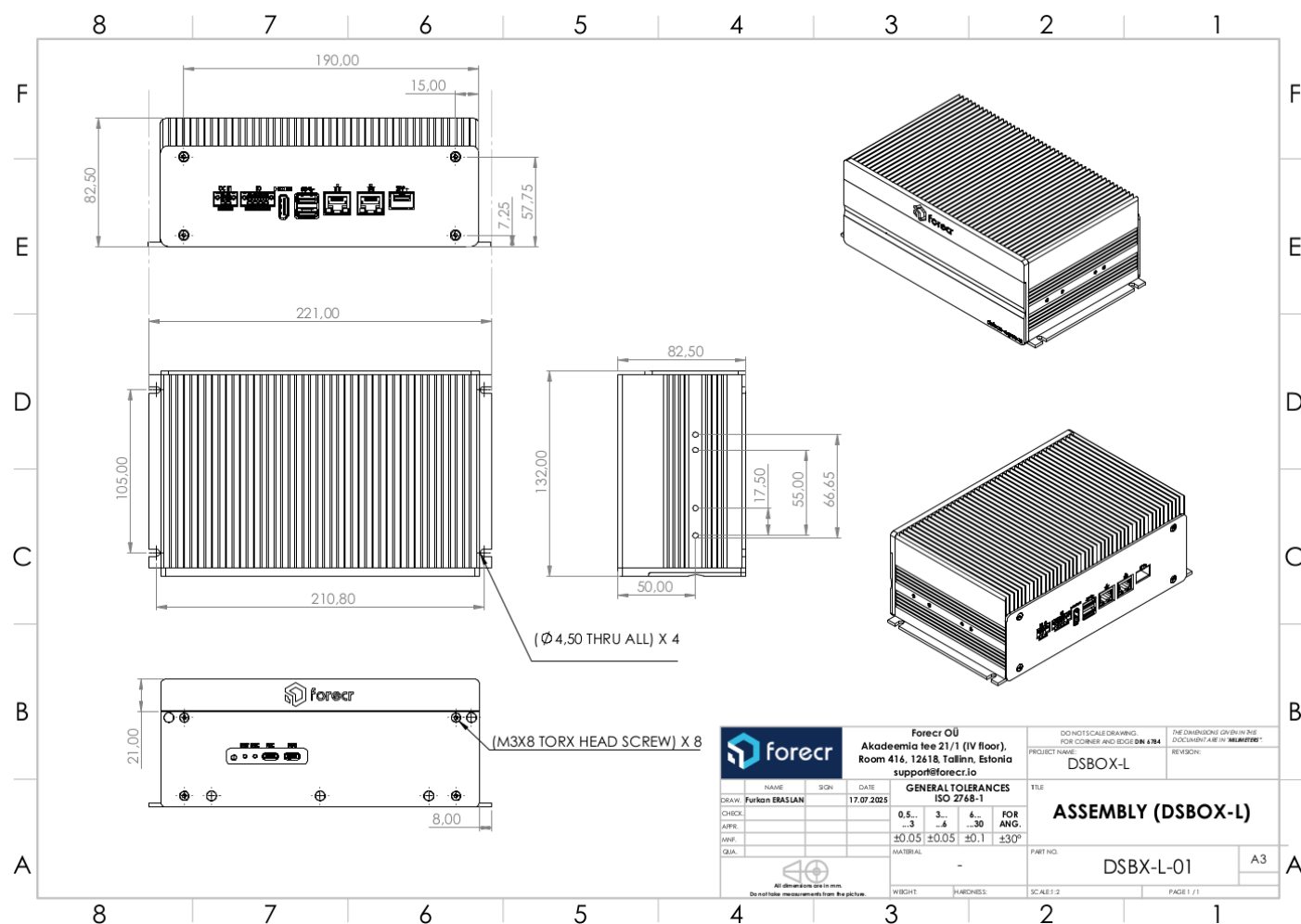
JetPack-5.x Installation can be found here: <https://www.forecr.io/blogs/installation/jetpack-5-x-installation-for-ds-board-agxmax>

JetPack-6.x Installation can be found here: <https://www.forecr.io/blogs/installation/jetpack-6-x-installation-for-ds-board-agxmax>

5. 3D Model & Mechanical Information

Full 3D models of DSBOX AGXMAX can be found here:

https://github.com/forecr/forecr_3d_models/tree/master/DSBOX-AGXMAX



6. Power Consumption

6.1 AGX Orin 32GB

Power Supply: 24V-5A

All CPU and GPU cores are %100 loaded.

	Power Up Sequence	Idle	Standby (Suspend mode)	15W (4 core)	30W (8 core)	40W (8 core)	MAXN (8 core)
Current (A)	1	0,6	0,16	0,85	1,30	1,78	2,19
Power (W)	24	14,4	3,84	20,4	31,2	42,72	52,56

6.2 AGX Orin 64GB

Power Supply: 24V-5A

All CPU and GPU cores are %100 loaded.

	Power Up Sequence	Idle	Standby (Suspend mode)	15W (4 core)	30W (8 core)	50W (12 core)	MAXN (12 core)
Current (A)	1,5	0,6	0,21	0,87	1,33	1,89	3,27
Power (W)	36	14,4	5,04	20,88	31,92	45,36	78,48

6.3 AGX Orin Industrial

Power Supply: 24V-5A

All CPU and GPU cores are %100 loaded.

	Power Up Sequence	Idle	Standby (Suspend mode)	15W (4 core)	35W (8 core)	60W (12 core)	MAXN (12 core)
Current (A)	1,42	0,52	0,16	0,93	1,42	2,1	3,26
Power (W)	34,08	12,48	3,84	22,32	34,08	50,4	78,24

7. MTBF Prediction

Prediction method	Mil Hdbk 217F2, parts count
Environment	GF - Ground Fixed, $T_A=40^{\circ}\text{C}$, $T_J=60^{\circ}\text{C}$
Date	19-Feb-2024
Total Failure Rate	9.636116 (FPMH)
MTBF	103776 (Hours) 11.85 (Years)

8. Accessories

	Part Number	Description	Quantity
	1790315	IO Connector	1

	Part Number	Description	Quantity
	1708595	Power Connector	1

9. Ordering Information

