



JUPITER AVIONICS
C O R P O R A T I O N

UJAC2-001

Panel Mount USB-C Charger



Installation and Operating Manual

Rev A

Jupiter Avionics Corporation
1959 Kirschner Road
Kelowna BC
Canada V1Y 4N7
Tel: +1 778 478 2232
Toll-Free: 1 855 478 2232
www.jupiteravionics.com



Copyright 2021 Jupiter Avionics Corp.

All rights reserved

Jupiter Avionics Corporation (JAC) permits a single copy of this manual to be printed or downloaded for the express use of an installing agency. Any such electronic or printed copy of this manual must contain the complete text of this copyright notice. Any unauthorized commercial distribution of this manual is strictly prohibited. Except as described above, no part of this manual may be reproduced, copied, transmitted, disseminated, downloaded, or stored in any storage medium for any purpose without the express prior written consent of JAC.

IMPORTANT:

Information in this document is subject to change without notice.
To confirm the current revision status of this manual, visit the JAC website:
www.jupiteravionics.com

[illegible]

Prepared:	Checked:	Approved:
DGB	 JAC 02-10-21 SDB	 JAC 02-10-21 KDV



Table of Contents

SECTION 1 - DESCRIPTION	1
1.1 System Overview	1
1.2 Features Overview	1
1.3 Inputs and Outputs	1
1.3.1 Inputs	1
1.3.2 Outputs	1
1.3.3 Bi-directional	1
1.4 Specifications	2
1.4.1 Electrical Specifications	2
1.4.2 Mechanical Specifications	2
SECTION 2 – INSTALLATION	3
2.1 Introduction	3
2.2 Continued Airworthiness	3
2.3 Unpacking and Inspecting Equipment	3
2.3.1 Warranty	3
2.4 Installation Procedures	3
2.4.1 Installation Limitations	3
2.4.2 Cabling and Wiring	3
2.4.3 Mechanical Installation	4
2.4.4 Post Installation Checks	4
2.5 Installation Kit	4
2.5.1 Recommended Crimp Tools	4
2.6 Installation Drawings	4
SECTION 3 – OPERATION	5
3.1 Introduction	5
3.2 Front Panel Connector	5
3.2.1 USB Power Output +5Vdc / 2.1A	5
3.3 Compatibility	5
Appendix A - Installation Drawings	A1
A1 Introduction	A1
A2 Installation Drawings	A1
Appendix B - Installation Documents	B1
B1 Airworthiness Approval	B2
B2 Instructions for Continued Airworthiness	B2

UJAC2-001 Panel Mount USB-C Charger

SECTION 1 - DESCRIPTION

1.1 System Overview

The UJAC2-001 Panel Mount USB-C Charger allows the aircraft power to charge USB devices.

The UJAC2-001 provides a USB PD Type C receptacle with an auto-adjustable supply which can deliver 5 Vdc @ 3 A, 9 Vdc @ 3 A, 12 Vdc @ 3 A, 15 Vdc @ 3 A, or 20 Vdc @ 2.25 A.

The UJAC2-001 can be mounted in any orientation.

1.2 Features Overview

The UJAC2-001 faceplate has a baked-on flat black urethane finish to resist scratches and nicks during use.

The UJAC2-001 provides a single USB PD Type C receptacle with up to 45 Watts of output power.

The UJAC2-001 provides a flexible urethane cover to protect the USB port when not in use.

The UJAC2-001 supports USB Power Delivery (PD) revision 2.0.

1.3 Inputs and Outputs

Refer to the UJAC2-001 [connector map](#) for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
POWER INPUT	1	Power supply
CC1 INPUT	1	CC1 input
CC2 INPUT	1	CC2 input

1.3.2 Outputs

Name	Qty	Type
V BUS	4	Power output

1.3.3 Grounds/Spares

Name	Qty	Type
POWER GROUND	1	Power ground
CHASSIS GROUND	1	Chassis ground
GROUND RETURN	4	Ground return
SPARE x	6	Spares (Main connector)
SPARE x	14	Spares (USB connector)



1.4 Specifications

1.4.1 Electrical Specifications

Power Input

Primary nominal voltage	28 Vdc
Maximum voltage	32.2 Vdc
Minimum voltage	20.5 Vdc
Input current at 28 Vdc	2.5 A max

USB Power Output

Output rated current	2.25 A for +20 V output 3.00 A for all other voltages
Output rated voltages	+5 Vdc $\pm 5\%$ +9 Vdc $\pm 5\%$ +12 Vdc $\pm 5\%$ +15 Vdc $\pm 5\%$ +20 Vdc $\pm 5\%$

1.4.2 Mechanical Specifications

Faceplate diameter	1.86 in [47.2 mm] max
Diameter behind panel	1.83 in [46.5 mm] max
Faceplate thickness	0.22 in [5.6 mm] max
Depth behind panel (not including connectors)	1.41 in [35.8 mm] max
Weight	0.27 lb [0.12 kg] max
Material	6061 aluminum
Faceplate and chassis finish	Flat Black Urethane Paint
Connectors (2):	J1 One 9-pin D-Sub male V5 locking J2 One USB Type C Female
Mounting	Two 4-40 Countersunk screws
Bonding	$\leq 2.5 \text{ m}\Omega$
Installation Kit part number	INST-UJAC

UJAC2-001 Panel Mount USB-C Charger

SECTION 2 – INSTALLATION

2.1 Introduction

This section contains unpacking and inspection procedures, installation information, and post-installation checks.

2.2 Continued Airworthiness

Maintenance of the UJAC2-001 is on condition only. Scheduled inspection and/or periodic maintenance of this unit is not required.

2.3 Unpacking and Inspecting Equipment

Unpack the equipment carefully. Check for shipping damage and report any problems to the relevant carrier. Confirm that the Authorized Release Certificate or Certificate of Conformance is included. Complete the on-line warranty card from the Jupiter Avionics Corporation (JAC) website - www.jupiteravionics.com/warranty

2.3.1 Warranty

This product manufactured by JAC is warranted to be free of defects in workmanship or performance for 2 years from the date of installation by an approved JAC dealer or agency. This warranty covers the cost of all materials and labour to repair or replace the unit, but does not include the cost of transporting the defective unit to and from JAC or its designated warranty repair centre, or of removing and replacing the defective unit in the aircraft. This warranty does not cover failures due to abuse, misuse, accident, or unauthorized alteration or repairs.

THIS WARRANTY IS VOID IF THE PRODUCT IS NOT INSTALLED BY AN AUTHORIZED JAC DEALER. If the on-line warranty card is not completed, the product will be warranted from the date of manufacture.

Contact JAC for return authorization, and for any questions regarding this warranty and how it applies to your unit(s). JAC is the final arbiter concerning warranty issues.

2.4 Installation Procedures



CAUTION: The power input circuitry of the unit may be damaged if the installation does not conform to the wiring instructions in this manual.

2.4.1 Installation Limitations

Those installing the UJAC2-001, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions meet standards. The UJAC2-001 may be installed only by following the applicable airworthiness requirements.

2.4.2 Cabling and Wiring

All wire shall be selected in accordance with the original aircraft manufacturer's maintenance instructions, or AC43.13-1B Change 1, Paragraphs 11-76 through 11-78. Unshielded wire types shall qualify to MIL-W-22759 as specified in AC43.13-1B Change 1, Paragraphs 11-85, 11-86, and listed in Table 11-11. Follow the Connector Map in Appendix A of this manual.



Maintain wire segregation and route wiring in accordance with the original aircraft manufacturer's maintenance instructions.

Unless otherwise noted, all wiring shall be a minimum of 22 AWG. Refer to the Interconnect drawing for additional specifications. Check that the ground connection is clean and well secured, and that it shares no path with any electrically noisy aircraft accessories such as blowers, turn-and-bank instruments, or similar loads.

2.4.3 Mechanical Installation

The UJAC2-001 can be mounted in any attitude and location with adequate space for the front panel and sufficient clearance for the connector and wiring harness. It requires no direct cooling.

2.4.4 Post Installation Checks

2.4.4.1 Voltage/Resistance checks.

Do not attach this unit until the following conditions are met:

- Check P1 pin **1** for +27.5 Vdc
- Check P1 pins **6** and **7** for continuity to ground (less than 0.5 Ω).
- Check all pins for shorts to ground or adjacent pins.

2.4.4.2 Power on Checks.

Power up the aircraft's systems and confirm normal operation of all functions of the UJAC2-001. Refer to Section 3 (Operation) for specific operational details.

When all performance checks are satisfied, complete the necessary regulatory documentation before releasing the aircraft for service. Refer to [Appendix B](#).

2.5 Installation Kit

The kit required to install this unit is not included with the unit.

The installation kit (Part # INST-UJAC) consists of the following:

<u>Quantity</u>	<u>Description</u>	<u>JAC Part #</u>
1	D-Sub 9-pin connector, hood and 9 crimp pins	CON-3420-0009

2.5.1 Recommended Crimp Tools

Standard D-Sub Crimp Tool Chart			
Tool Type	Hand crimping tool	Positioner	Insertion/extractor tool
POSITRONIC	9507-0-0-0	9502-5-0-0	4711-2-0-0
DANIELS	AFM 8	K13-1	91067-2
MIL-SPEC	M22520/2-01	M22520/2-08	M81969/1-02

2.6 Installation Drawings

The drawings and documents required for Installation can be found in [Appendix A](#) of this manual.

UJAC2-001 Panel Mount USB-C Charger

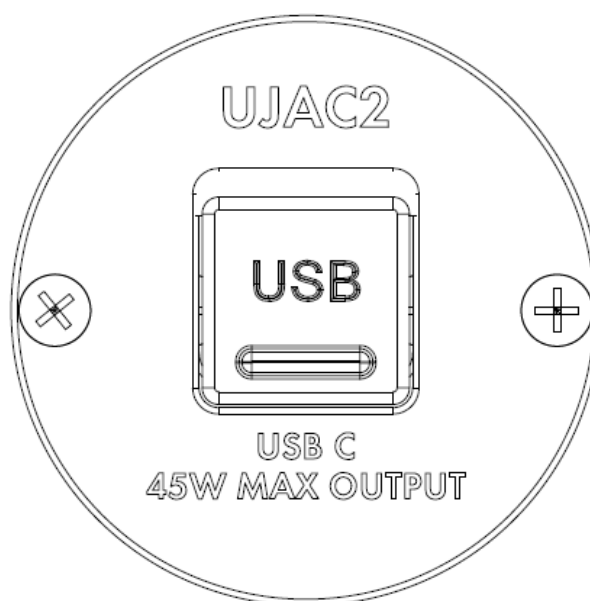
SECTION 3 – OPERATION

3.1 Introduction

This section contains the operating instructions for the UJAC2-001.

3.2 Front Panel Connector

The UJAC2-001 has one front panel USB-C Power output connector.



3.2.1 USB-C Power Output

The UJAC2-001 Panel Mount USB-C Charger has a USB PD Type C receptacle with an auto-adjustable supply which can deliver 5 Vdc @ 3 A, 9 Vdc @ 3 A, 12 Vdc @ 3 A, 15 Vdc @ 3 A or 20 Vdc @ 2.25 A for charging cell phones and similar devices.

The USB connector has a black urethane dust cover.



Note: This port is not designed to be used for data transfer

3.3 Compatibility



CAUTION: Attempting to connect an incompatible plug or device could damage the UJAC2-001, the attached device, or both. If in doubt, check with your installing agency.



Installation and Operating Manual

Appendix A - Installation Drawings

A1 Introduction

The drawings necessary for installation and troubleshooting of the UJAC2-001 are in this Appendix, as listed below.

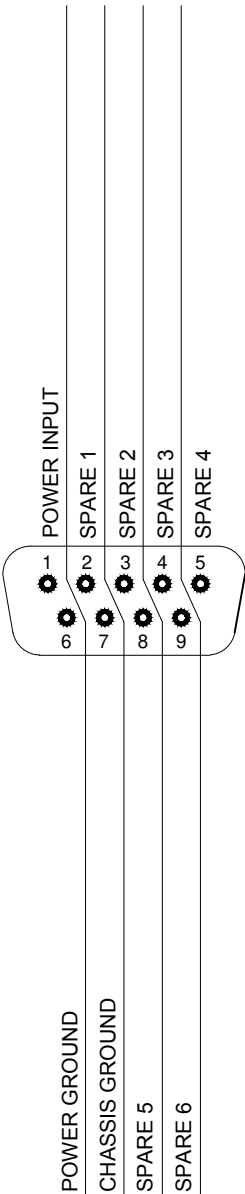
A2 Installation Drawings

DOCUMENT	Rev
UJAC2-001 Connector Map	A
UJAC2-001 Interconnect	A
UJAC2-001 Mechanical Installation	B



MAIN CONNECTOR

P1
9 PIN FEMALE DMIN
MATING CONNECTOR



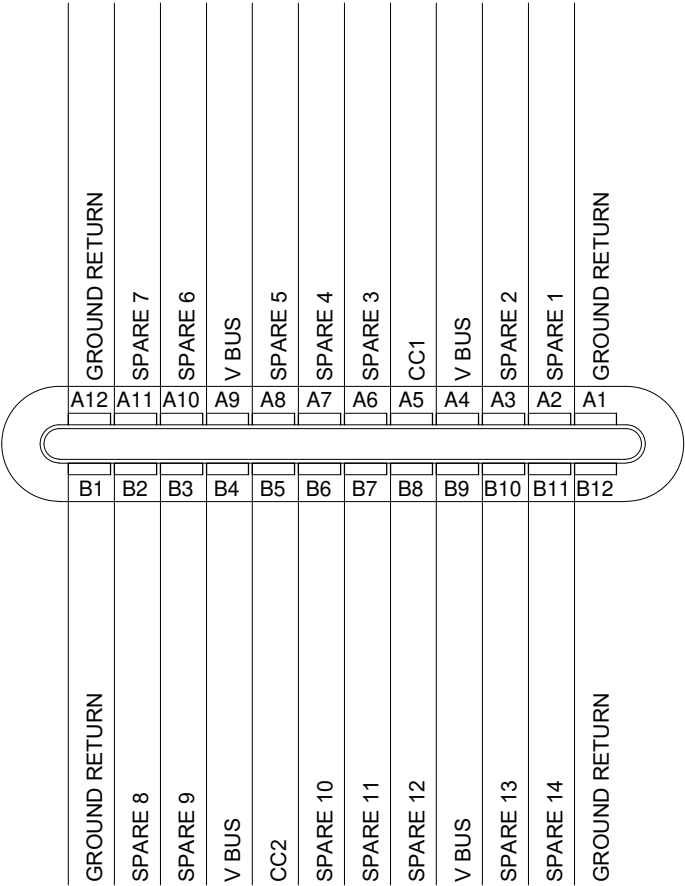
VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	KV	JUPITER AVIONICS CORPORATION		
CHECKED		TITLE PANEL MOUNT USB-C CHARGER P1 - Main Connector		
APPROVED		NCAGE CODE L00N3	PART NO. UJAC2-001	SHEET 1/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. UJAC2-001 Connector Map Rev A		

USB CONNECTOR

USB Connector

P2
USB TYPE C MALE
MATING CONNECTOR



View is from front of mating connector

PREPARED	KV	JUPITER AVIONICS CORPORATION		
CHECKED				
APPROVED		TITLE		
		PANEL MOUNT USB-C CHARGER		
		P2 - USB-C Connector		
		NCAGE CODE L00N3	PART NO. UJAC2-001	SHEET 2/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. UJAC2-001 Connector Map Rev A		

UJAC2-001 INTERCONNECT WIRING NOTES

NOTES

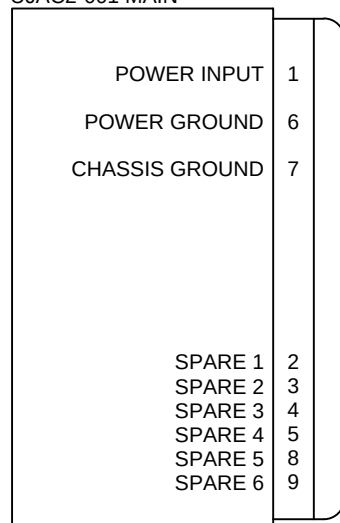
1. ALL WIRE SIZE SHOULD BE 22 AWG MIN UNLESS OTHERWISE SPECIFIED. UNSHIELDED WIRE SHOULD BE SELECTED PER FAA AC43.13-1B CHANGE 1 PARA 11-76 TO 11-78. WIRE TYPES SHOULD BE IN ACCORDANCE WITH MIL-W-22759 AS DESCRIBED IN FAA AC43.13-1B CHANGE 1 PARA 11-85 AND 11-86 AND LISTED IN TABLE 11-11 OR 11-12. ALL SHIELDED CABLE SHOULD BE IN ACCORDANCE WITH MIL-DTL-27500 (REVISION H OR LATER).

2 CONNECTION TO AIRFRAME GROUND SHOULD BE MADE WITH 22 AWG WIRE. LENGTH NOT TO EXCEED 3 FT (0.91 M).

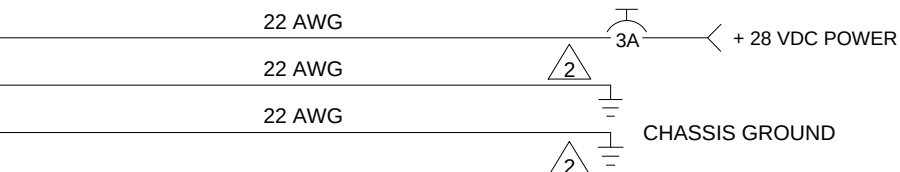
3 CABLE LENGTH NOT TO EXCEED 6 FT (1.82 M).

PREPARED	TAT	 JUPITER AVIONICS CORPORATION		
CHECKED	JAC 02-08-21 SDB			
APPROVED	JAC 02-08-21 KDV	NCAGE CODE L00N3	PART NO. UJAC2-001	SHEET 1/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. UJAC2-001 Interconnect Rev A.dwg		

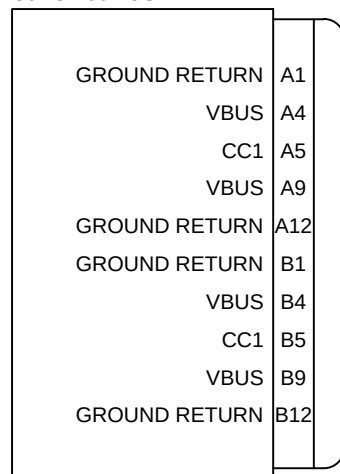
J1
UJAC2-001 MAIN



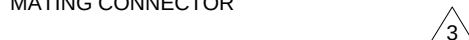
P1
9 PIN FEMALE DMIN
MATING CONNECTOR



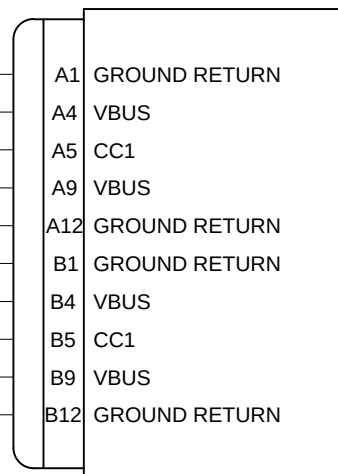
J2
UJAC2-001 USB



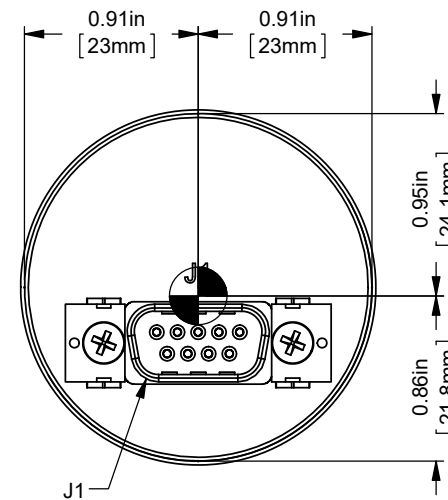
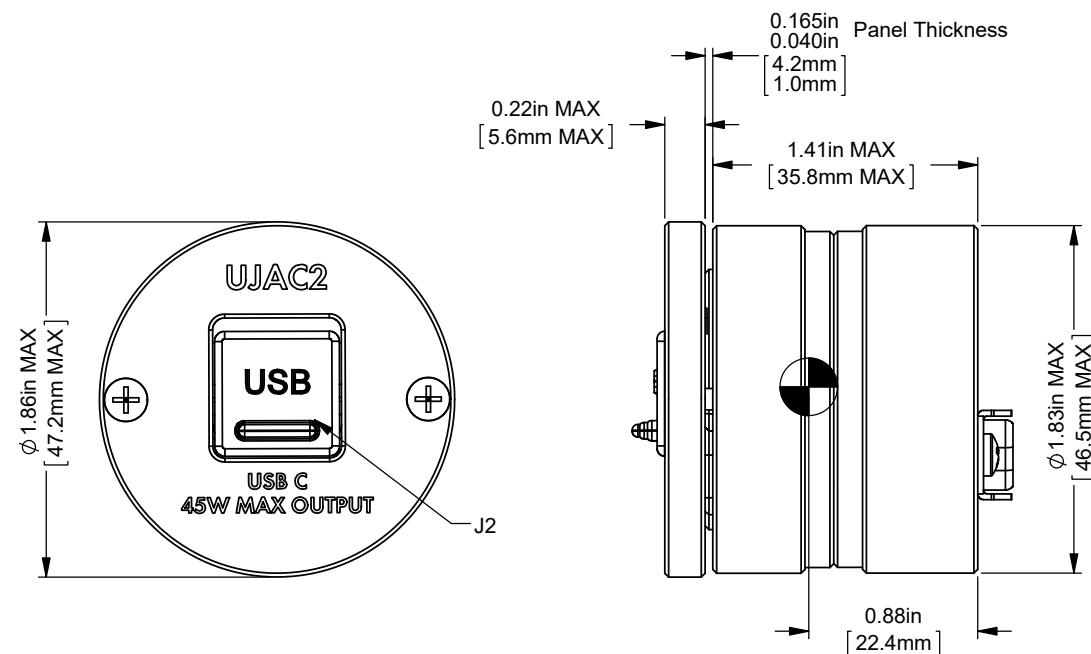
P2
USB TYPE C MALE
MATING CONNECTOR



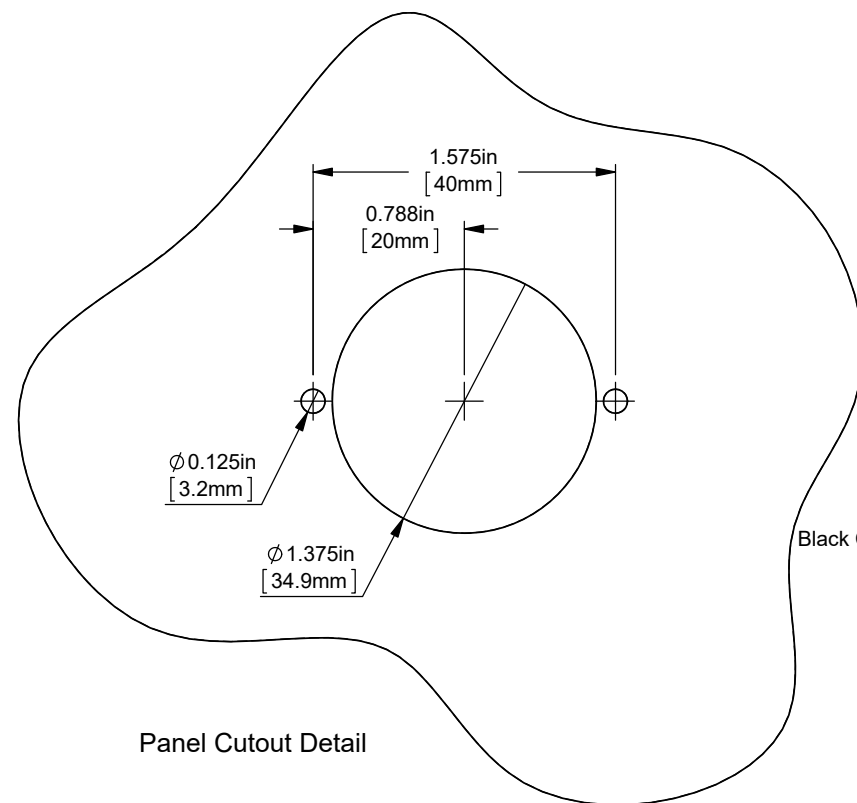
CHARGEABLE USB DEVICE



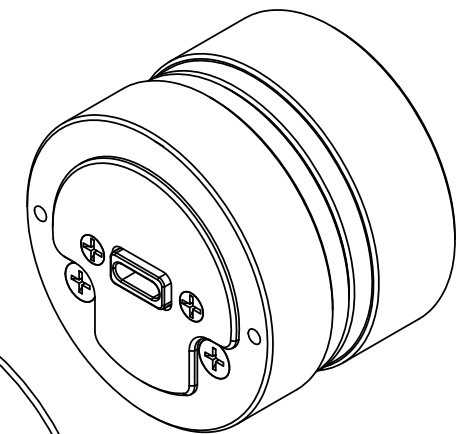
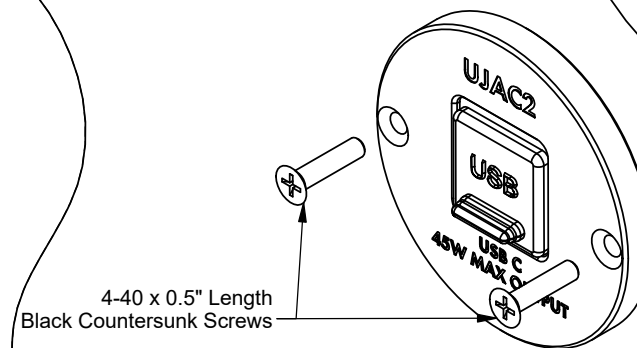
PREPARED	TAT	 JUPITER AVIONICS CORPORATION		
CHECKED				
APPROVED		TITLE Panel Mount USB Charger		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. UJAC2-001	SHEET 2/2
		DOC NO. UJAC2-001 Interconnect Rev A.dwg		



 **CENTER OF GRAVITY**
±0.03in [0.8mm]
WEIGHT: 0.27 lbs [0.12 kg] MAX.



Panel Cutout Detail



Assembly

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES ANGLES ARE IN DEGREES TOLERANCES: 1 DEC PLACE: ± 0.1 2 DEC PLACE: ± 0.01 3 DEC PLACE: ± 0.005 ANGLES: ± 0.5 DEG	PREPARED	TAT	 JUPITER AVIONICS CORPORATION		
	CHECKED				
	APPROVED		TITLE Panel Mount USB-C Charger		
			NCAGE CODE L00N3	PART NO. UJAC2-001	SHEET 1/1
MATERIAL: N/A	CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC. NO. UJAC2-001 Mechanical Installation Rev B.SLDDRW		
FINISH: N/A	DRAWING NOT TO SCALE				



Installation and Operating Manual

Appendix B - Installation Documents





B1 Airworthiness Approval

Airworthiness approval of the UJAC2-001 may require completion of a TCCA Major Modification Report per CAR STD (AWM) 571 Appendix L, or a FAA Form 337. The sample wording for a description of the work is provided to assist the Installing Agency in preparing Instructions for Continued Airworthiness (ICA) when replacing an existing audio panel with a Jupiter Avionics UJAC2-001 Panel Mount USB-C Charger. This sample may be modified appropriately for new installations. It is the installer's responsibility to determine the applicability of the method used. Installations performed outside Canada must follow the applicable aviation authority's regulations.

Sample Wording:

Removed the existing [model] panel mount charger and replaced with a Jupiter Avionics UJAC2-001 Panel Mount USB-C Charger in [aircraft location].

See Section 1 of the UJAC2-001 Installation & Operating Manual.

Installed in accordance with the UJAC2-001 Installation & Operating Manual, Revision [], and AC 43.13-2, Chapters 2, and 3.

The UJAC2-001 interfaces with existing aircraft systems per the Installation & Operating Manual instructions.

The UJAC2-001 Installation & Operating Manual provides detailed installation instructions and wiring diagrams (Section 2, and Appendices A and B).

Power is supplied to the UJAC2-001 through a []-Amp circuit breaker.

Aircraft equipment list, weights and balance amended. Compass compensation checked and found to conform to applicable regulations.

B2 Instructions for Continued Airworthiness

Maintenance of the UJAC2-001 Panel Mount USB-C Charger is "on condition" only. Refer to the UJAC2-001 Maintenance Manual. Periodic maintenance of the UJAC2-001 is not required.

The following sample Instructions for Continued Airworthiness (ICA) provides assistance in preparing ICA for the Jupiter Avionics UJAC2-001 unit installation as part of a Type Certificate (TC) or Supplemental Type Certificate (STC) project to comply with CAR STD (AWM) 523/527/525/529.1529 or FAR 23/25/27/29.1529 "Instructions for Continued Airworthiness".

Items that may vary by aircraft make and model are shown in brackets ("[]") and should be filled in as appropriate. Some of the checklist items do not apply, in which case they should be marked "N/A" (Not Applicable).

Instructions for Continued Airworthiness, Jupiter Avionics UJAC2-001 Panel Mount USB-C Charger in an [Aircraft Make and Model]

1. Introduction

[Aircraft that has been altered: Registration number, Make, Model and Serial Number]

Content, Scope, Purpose and Arrangement: This document identifies the Instructions for Continued Airworthiness for a Jupiter Avionics UJAC2-001 installed in an [aircraft make and model].

Applicability: Applies to a Jupiter Avionics UJAC2-001 installed in an [aircraft make and model].

Definitions/Abbreviations: None, N/A.

Precautions: None, N/A.

Units of Measurement: None, N/A.

Referenced Publications: UJAC2-001 Installation & Operating Manual
UJAC2-001 Maintenance Manual
STC/TC # [applicable STC/TC number for the specific aircraft installation]

Distribution: This document should be a permanent aircraft record.



2. Description of the System/Alteration

Jupiter Avionics UJAC2-001 Panel Mount USB-C Charger with interface to external transceivers and [include other equipment/systems as appropriate]. Refer to Appendix A of this manual for interconnect information. Refer to aircraft manufacturer approved interconnect for actual installation.

3. Control, Operation Information

Refer to section 3 of this manual.

4. Servicing Information

N/A

5. Maintenance Instructions

Maintenance of the UJAC2-001 is 'on condition' only. Periodic maintenance is not required. Refer to the UJAC2-001 Maintenance Manual.

6. Troubleshooting Information

Refer to the UJAC2-001 Maintenance Manual.

7. Removal and Replacement Information

Refer to Section 2 of this manual - the UJAC2-001 Installation & Operating Manual. If the unit is removed and reinstalled, a functional check of the equipment should be conducted.

8. Diagrams

Refer to Appendix A of this manual - the UJAC2-001 Installation & Operating Manual - for installation drawings and interconnect examples.

9. Special Inspection Requirements

N/A

10. Application of Protective Treatments

N/A

11. Data: Relative to Structural Fasteners

UJAC2-001 and appropriate mounting hardware installation, removal and replacement should be in accordance with applicable provisions of AC 43.13-1B and AC 43.13-2A.

12. Special Tools

N/A

13. This Section is for Commuter Category Aircraft Only

A. **Electrical loads:** Refer to Section 1 of the UJAC2-001 Installation & Operating Manual.

B. **Methods of balancing flight controls:** N/A.

C. **Identification of primary and secondary structures:** N/A.

D. **Special repair methods applicable to the airplane:** N/A.

14. Overhaul Period

No additional overhaul time limitations.

15. Airworthiness Limitation Section

N/A

