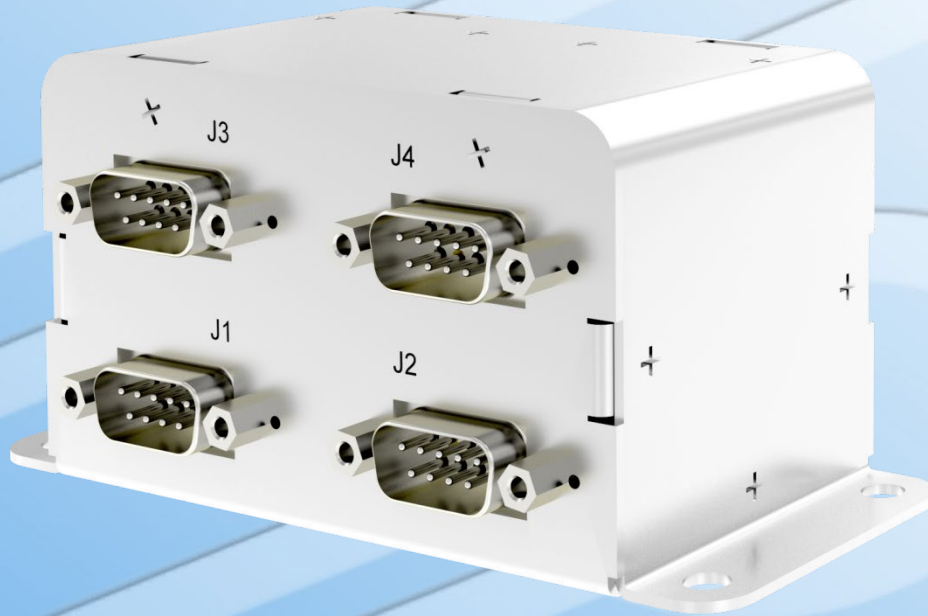




JUPITER AVIONICS
C O R P O R A T I O N

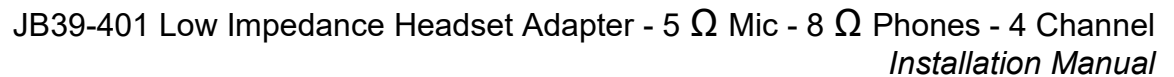
JB39-401 Low Impedance Headset Adapter 5 Ohm Mic - 8 Ohm Phones - 4 Channel



Installation 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**



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www.jupiteravionics.com



Prepared:	Checked:	Approved:
MPB	 JAC 05-18-23 DB	 JAC 05-18-23 KDV



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JB39-401 Low Impedance Headset Adapter - 5 Ω Mic - 8 Ω Phones - 4 Channel

SECTION 1 - DESCRIPTION

1.1 System Overview

The JB39-401 Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones – 4 Channel allows four low impedance headsets to be used with a civilian aviation audio controller. The JB39-401 operates using the microphone bias supply of the audio controller and requires no other external power. The phones audio from the audio controller passes through the JB39-401 to provide connector compatibility with other models in the JB39 family.

1.2 Features Overview

The JB39-401 is a compact bulkhead mount product in a metal enclosure to shield the circuitry from Radio Frequency Interference.

1.3 Inputs and Outputs

Refer to the JB39-401 [connector maps](#) for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
USER 1 MIC INPUT HI/LO	2	Low impedance audio signal
USER 2 MIC INPUT HI/LO	2	Low impedance audio signal
USER 3 MIC INPUT HI/LO	2	Low impedance audio signal
USER 4 MIC INPUT HI/LO	2	Low impedance audio signal
USER 1 PHONES INPUT HI/LO	2	Phones audio input
USER 2 PHONES INPUT HI/LO	2	Phones audio input
USER 3 PHONES INPUT HI/LO	2	Phones audio input
USER 4 PHONES INPUT HI/LO	2	Phones audio input

1.3.2 Outputs

Name	Qty	Type
USER 1 MIC OUTPUT HI/LO	2	High impedance mic audio output
USER 2 MIC OUTPUT HI/LO	2	High impedance mic audio output
USER 3 MIC OUTPUT HI/LO	2	High impedance mic audio output
USER 4 MIC OUTPUT HI/LO	2	High impedance mic audio output
USER 1 PHONES OUTPUT HI/LO	2	Phones audio output
USER 2 PHONES OUTPUT HI/LO	2	Phones audio output
USER 3 PHONES OUTPUT HI/LO	2	Phones audio output
USER 4 PHONES OUTPUT HI/LO	2	Phones audio output



1.3.3 Audio Performance

Rated Input Level

USER Phones input level	7.75 Vrms \pm 10%
USER Microphone input level	250 uVrms \pm 10%

Rated Output Level

USER Phones rated output	1.6 Vrms \pm 10%
USER Microphone rated output	250 mVrms \pm 10%

Audio Frequency Response

USER Phones audio frequency response	\leq 3 dB from 300 to 6000 Hz
USER Microphone audio frequency response	\leq 3 dB from 300 to 6000 Hz

Distortion Characteristics

Audio output distortion at rated power	\leq 10%
Audio output distortion at 10% of rated power	\leq 3%

Input Impedance

Phones input impedance	150 Ω \pm 10%
Microphone input impedance	10 Ω \pm 10%

Output Impedance

Phones output impedance	8 Ω \pm 20%
Microphone output impedance	150 Ω \pm 10%

Output Load Impedance

Phones Output load impedance	8 Ω \pm 10%
Microphone Output load impedance	150 Ω \pm 10%

Audio Noise Level without Signal

Noise level below the rated output by	\geq 50 dB
---------------------------------------	--------------

1.3.4 Audio Performance, Other

Microphone input circuitry type	single ended
Phone input circuitry type	differential



1.4 Specifications

1.4.1 Electrical Specifications

Power nominal voltage (Mic Bias)	12.0 Vdc
Maximum bias voltage	16.0 Vdc
Minimum bias voltage	10.0 Vdc
Input current at 12 Vdc	12 mA max

1.4.2 Mechanical Specifications

Height	2.13 in [54.1 mm] max
Depth (not including connectors)	2.02 in [51.3 mm] max
Width	4.52 in [114.8 mm] max
Weight	0.58 lb. [0.26 kg] max
Installation Kit weight	0.10 lb [0.044 kg] max.
Material	5052-H32 aluminum
Finish	brushed with conversion coating
Connectors:	J1 One 9 pin D-sub male, jack posts J2 One 9 pin D-sub male, jack posts J3 One 9 pin D-sub male, jack posts J4 One 9 pin D-sub male, jack posts
Mounting	4 x 10-32 fasteners
Bonding	$\leq 2.5 \text{ m}\Omega$
Installation Kit	INST-JB394x



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 JB39-401 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 Certificate of Conformance is included. Complete the on-line warranty card from the Jupiter Avionics Corporation (JAC) website – www.jupiteravionics.com/warrantyregistration.

2.3.1 Warranty

All JB39 products manufactured by JAC are warranted to be free of defects in workmanship or performance for 2 years from the date of purchase from 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.

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



WARNING: Loud noise can cause hearing damage. Set audio system headset volumes to minimum before conducting tests, and slowly increase the volume to a comfortable listening level.

2.4.1 Installation Limitations

The JB39 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. For shielded wire applications, use Tefzel MIL-C-27500 shielded wire with tag ring or equivalent (for shield terminations) to make the most compact and easily terminated interconnect. Follow the Connector Map in Appendix A of this manual.

Allow 3" from the end of the shielded wiring to the shield termination to allow the connector hood to be easily installed. Refer to the Interconnect drawing in Appendix A of this manual for shield termination details. Note that this unit has a 'clamshell' hood that is installed after the wiring is complete.

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 24 AWG, except power and ground lines, which 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 JB39-401 can be mounted in any attitude and location with sufficient clearance for the connector body. 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:

- a) Check all pins for shorts to ground or adjacent pins.

2.4.4.2 Configuration

The JB39 has no configuration options.

2.4.4.3 Power on Checks.

Power up the aircraft's systems and confirm operation of all functions of the JB39.

- a) Begin with a low impedance headset attached. Confirm correct operation for both Mic and phones output. Do not proceed until the headsets are functioning correctly.
- b) Unusual buzzes, hums or other background audio are symptomatic of multiple grounds, or noisy external systems such as blowers or pumps sharing wiring with the audio system.

2.5 System Operation

2.5.1 Microphone Operation

For each user, the JB39-401 amplifies the USER MIC INPUT audio and routes it to the same user's USER MIC OUTPUT.

The JB39-401 accepts a MIC BIAS, dc current as an input to the USER MIC OUTPUT.

2.5.2 Phones Operation

The JB39-401 routes the USER PHONES INPUT audio directly to the USER PHONES OUTPUT.

2.6 Installation Kit

The kit required to install this unit is not included with the unit. The installation kit (Part # INST-JB394x) consists of the following:

<u>Quantity</u>	<u>Description</u>	<u>JAC Part #</u>
4	D-Sub 9-pin crimp socket housing	CON-3460-0009
4	D-Sub 9-pin crimp socket hoods	CON-5300-0109
36	20 to 24 AWG D-Subminiature - Crimp Socket	CON-3320-2024M
4	0.375" Inside Diameter - Tag Ring	CON-5500-0375
4	3/4" Inside Diameter - Black, Heat Shrink Tube	WIR-HTSK-0750



2.7 **Installation Drawings**

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



Installation Manual

Appendix A - Installation Drawings

A1 Introduction

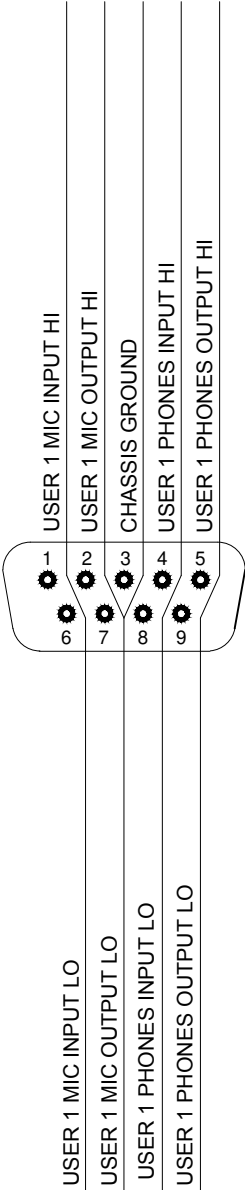
The drawings necessary for installation and troubleshooting of the JB39-401 Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones – 4 Channel are in this Appendix, as listed below.

A2 Installation Drawings


DOCUMENT	Rev
JB39-401 Connector Map	A
JB39-401 Interconnect	A
JB39-401 Mechanical Installation	A
JB39-401 Equipment Block Diagram	A

USER 1 CONNECTOR

P1
9 PIN FEMALE DMIN
MATING CONNECTOR

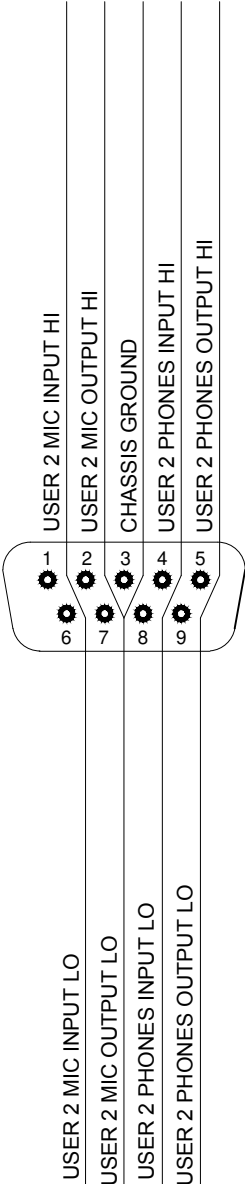


VIEW IS FROM REAR OF MATING CONNECTOR


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CHECKED				
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		DOC NO. JB39-401 Connector Map Rev A.pdf		

USER 2 CONNECTOR

P2
9 PIN FEMALE DMIN
MATING CONNECTOR

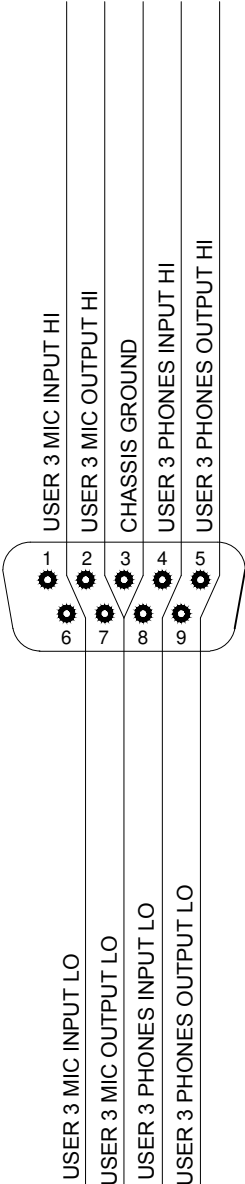


VIEW IS FROM REAR OF MATING CONNECTOR


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		DOC NO. JB39-401 Connector Map Rev A.pdf		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.				

USER 3 CONNECTOR

P3
9 PIN FEMALE DMIN
MATING CONNECTOR

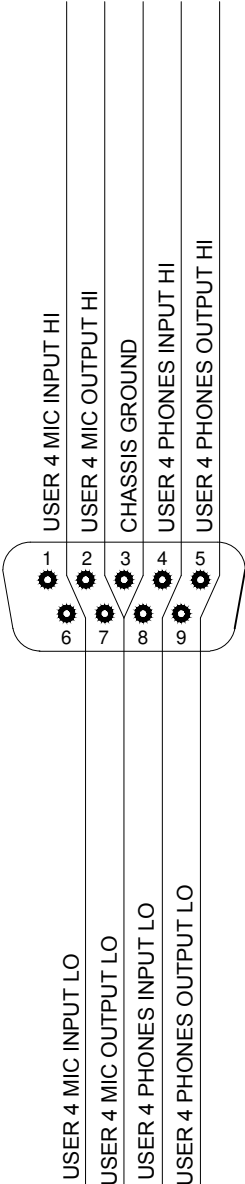


VIEW IS FROM REAR OF MATING CONNECTOR


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		DOC NO. JB39-401 Connector Map Rev A.pdf		

USER 4 CONNECTOR

P4
9 PIN FEMALE DMIN
MATING CONNECTOR






VIEW IS FROM REAR OF MATING CONNECTOR

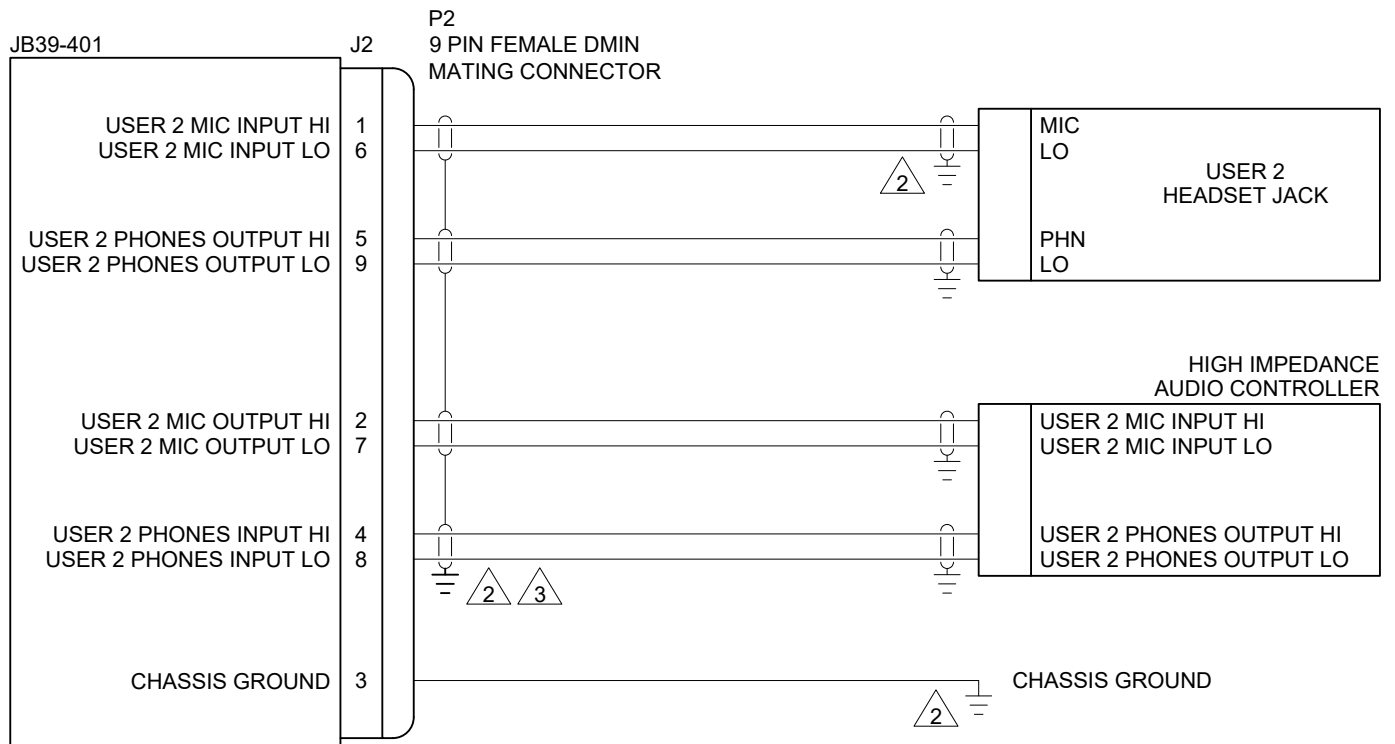
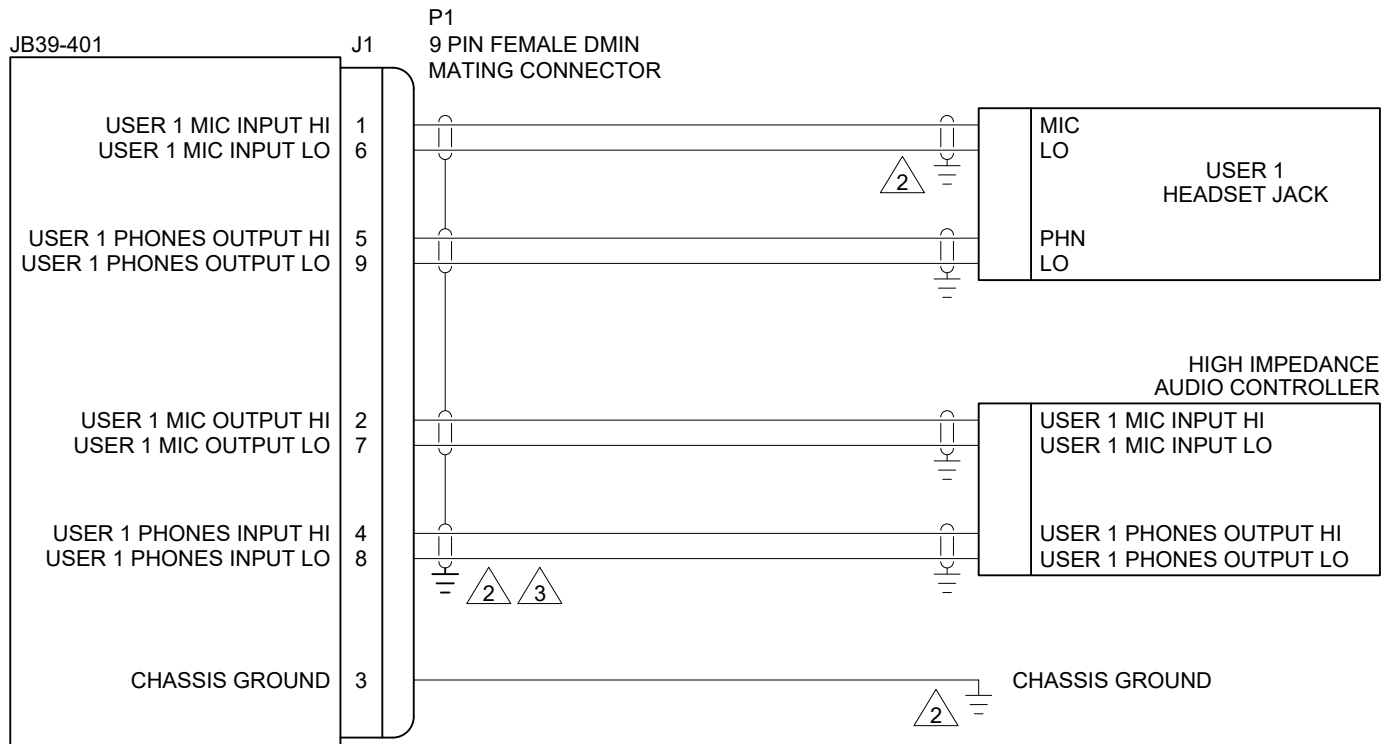
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		DOC NO. JB39-401 Connector Map Rev A.pdf		




JB39-401 INTERCONNECT WIRING NOTES

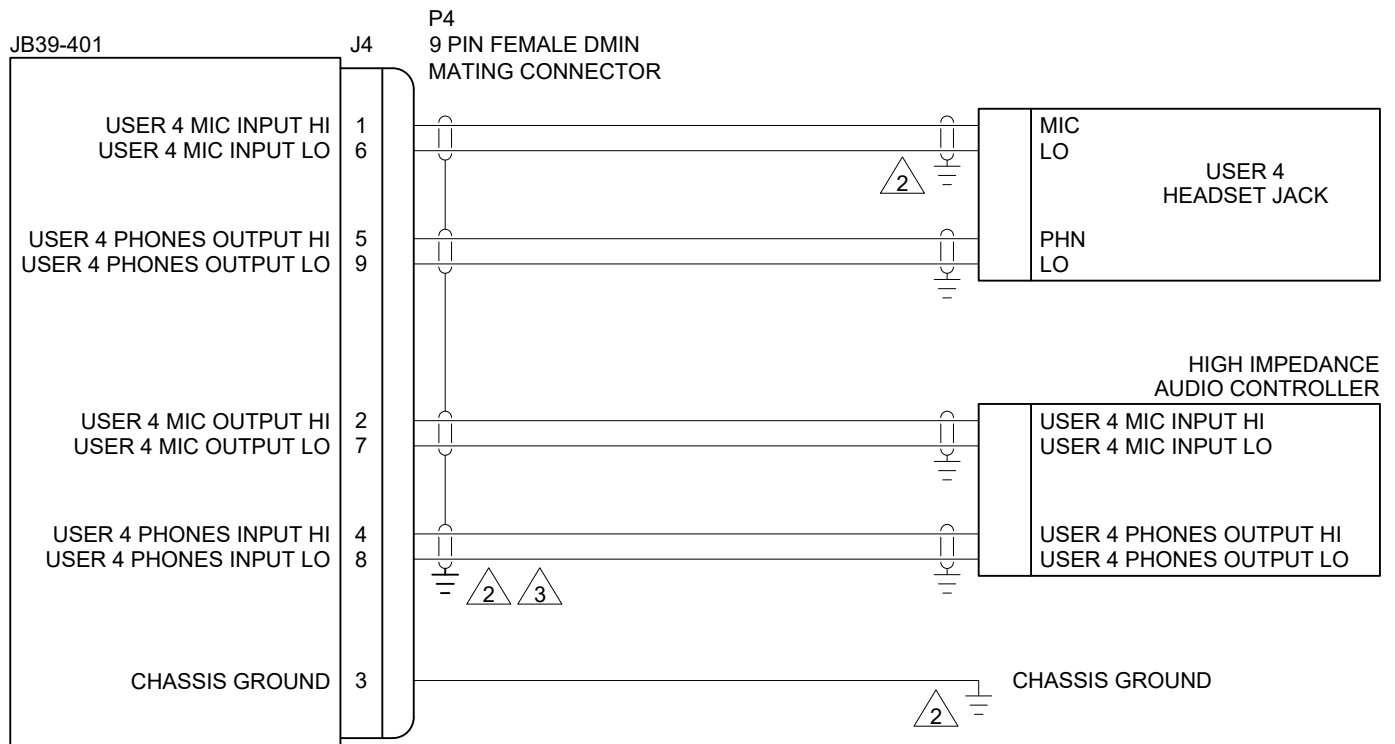
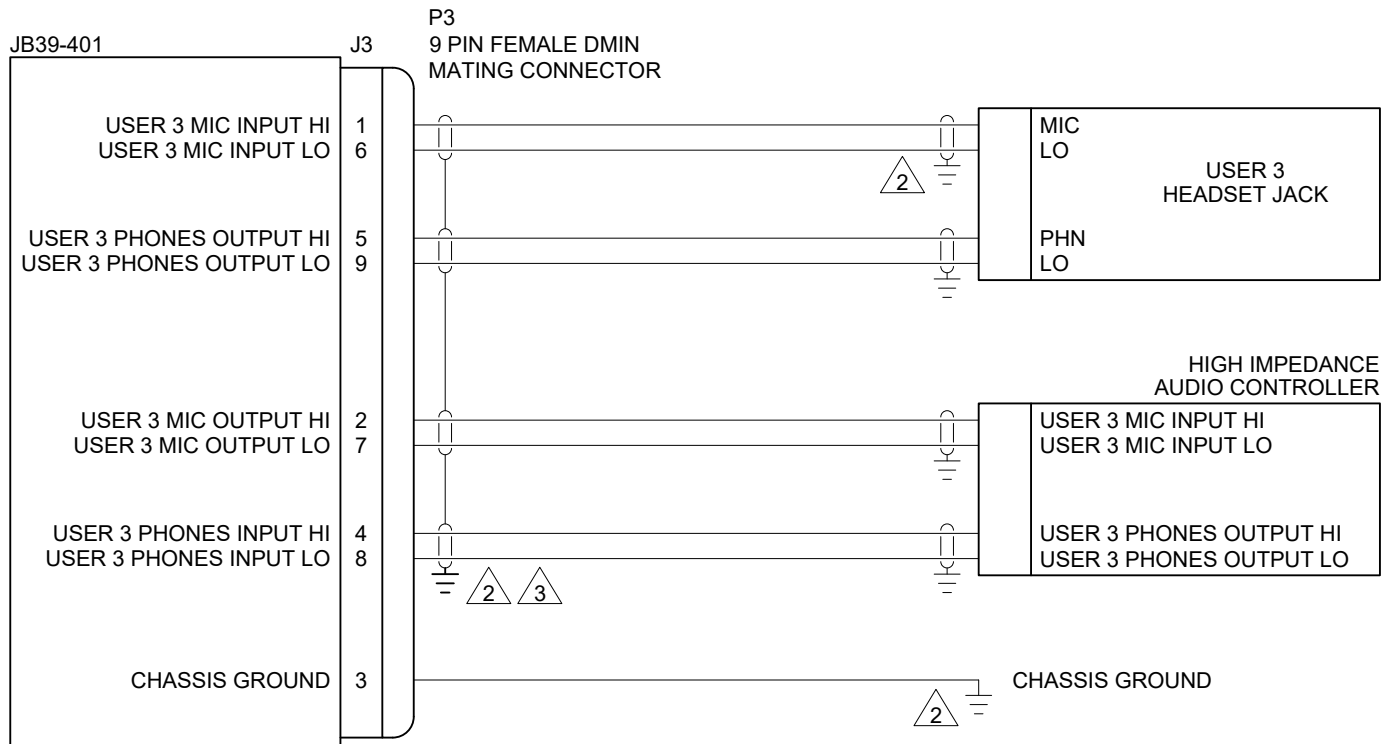
NOTES




1. ALL WIRE SIZE SHOULD BE 24 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 (1 M).
3. CABLE SHIELDS AT CONNECTOR PINS SHOULD BE TERMINATED TO AIRFRAME GROUND USING A TAG RING P/N:MS27741-5 OR EQUIVALENT.

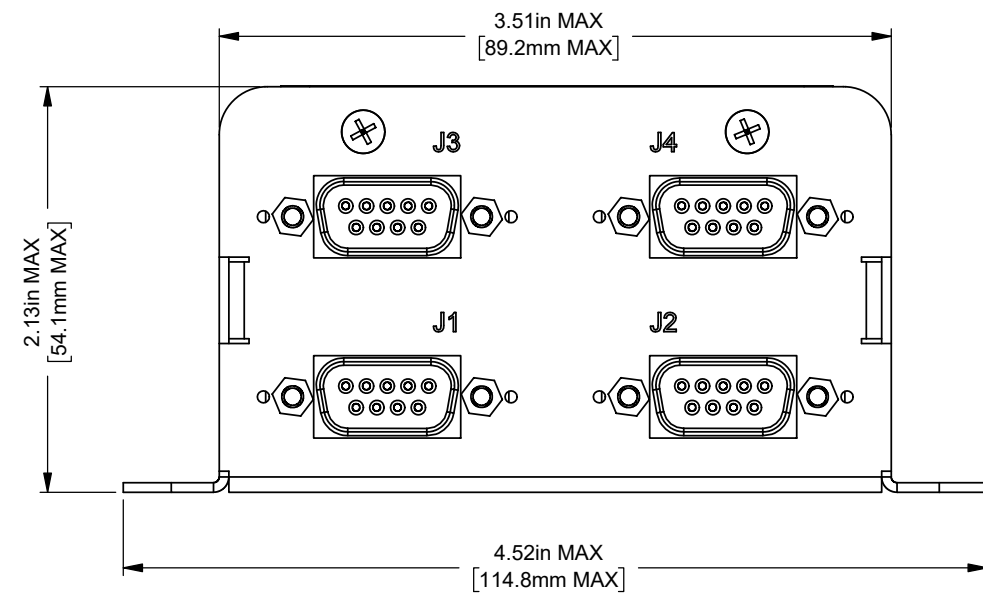
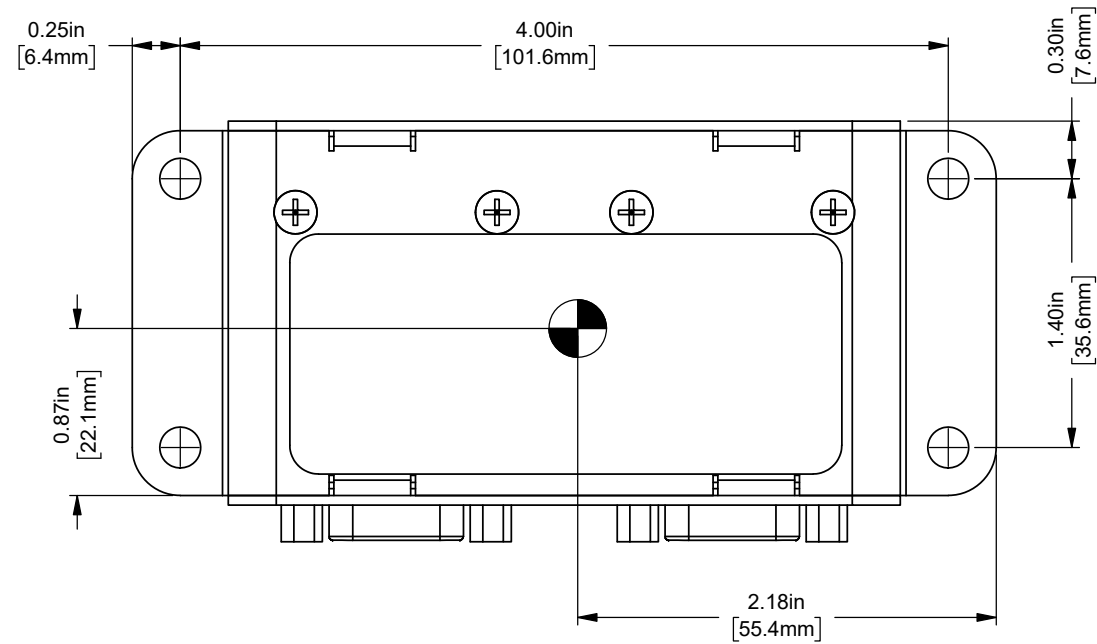
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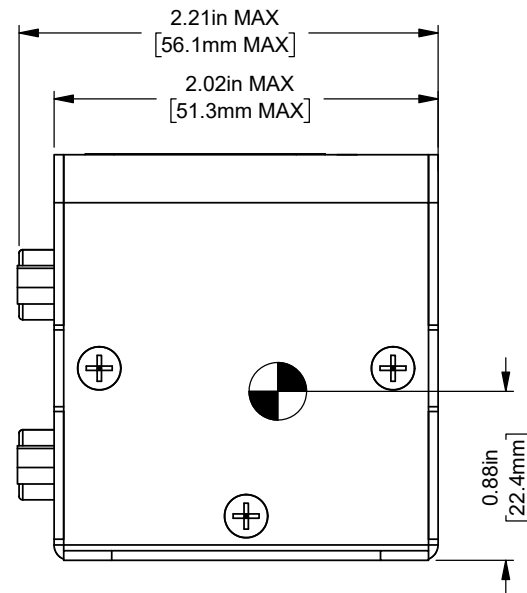
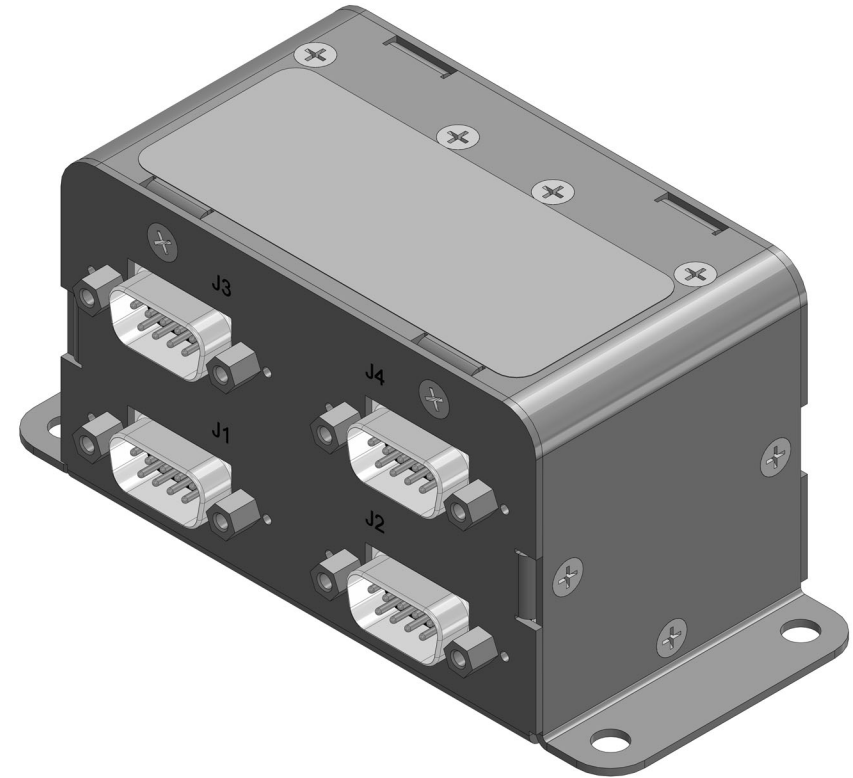
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
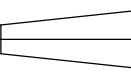



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		DOC NO. JB39-401 Interconnect Rev A.dwg		



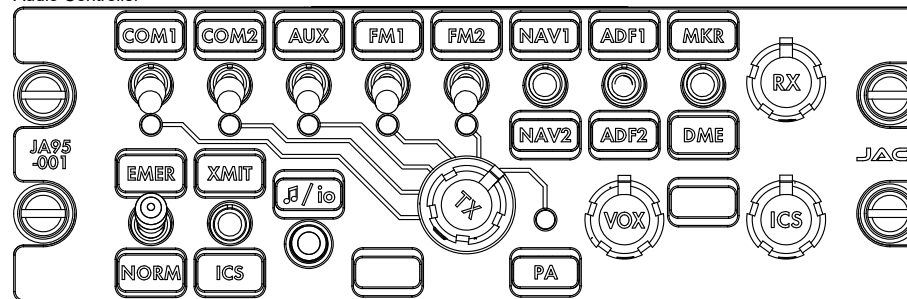
 CENTER OF GRAVITY
±0.03in [0.8mm]
WEIGHT: 0.58 lbs [0.26 kg] MAX..



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	
	
MATERIAL: N/A	FINISH: N/A

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APPROVED	JAC 05-18-23 KDV	TITLE Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones - 4 Channel		
		NCAGE CODE L00N3	PART NO. JB39-401	SHEET 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP. DRAWING NOT TO SCALE		DOC. NO. JB39-401 Mechanical Installation Rev A.SLDDRW		

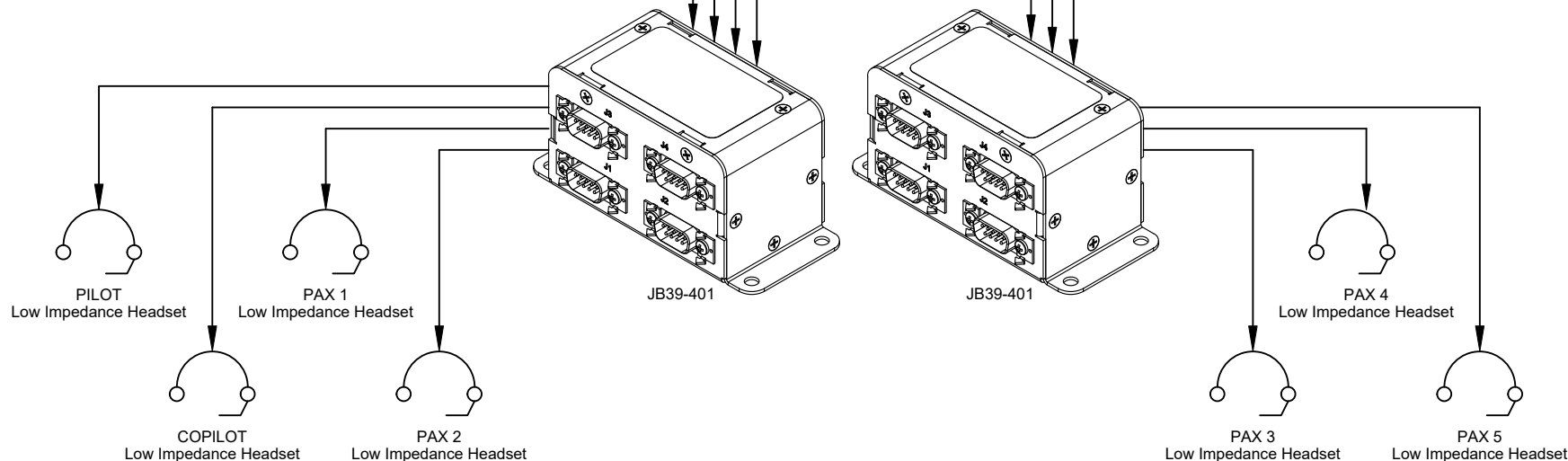
JA95-xxx
Audio Controller




PILOT PHONE,
& MICROPHONE

COPILLOT PHONE,
& MICROPHONE

PASSENGER
PHONES, & MICROPHONE



PREPARED	TAT			
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