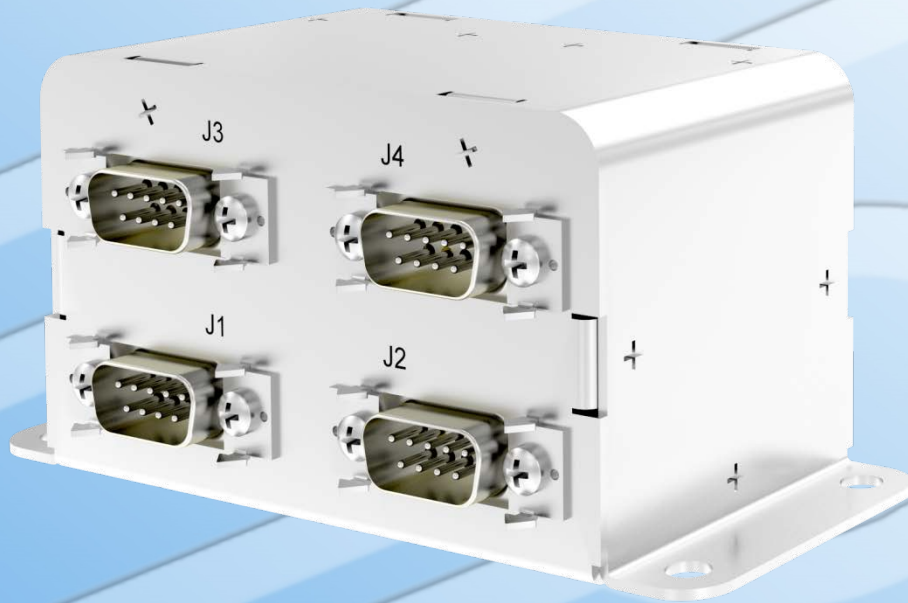




JUPITER AVIONICS
C O R P O R A T I O N

JB39-403

Dynamic Microphone Adapter - 4 Channel



Installation Manual

Rev. A

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JB39-403 Dynamic Microphone Adapter - 4 Channel

SECTION 1 - DESCRIPTION

1.1 System Overview

The JB39-403 Dynamic Microphone Adapter - 4 Channel allows four low impedance headsets to be used with a civilian aviation audio controller. The JB39-403 operates using the microphone bias supply of the audio controller and requires no other external power. The phones audio from the audio controller pass through the JB39-403 to provide connector compatibility with other models in the JB39 family.

1.2 Features Overview

The JB39-403 is a compact bulkhead mount product in a metal enclosure.

1.3 Inputs and Outputs

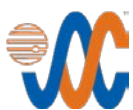
Refer to the JB39-403 [connector maps](#) for the mating connector designators and pin assignments for the input and output signals.

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 Functional Performance

Microphone Bias Levels

Microphone bias voltage	12.0 Vdc via a 470 Ω current limiting resistor
Microphone bias voltage max.	16 Vdc max
Microphone bias voltage min.	10 Vdc min
Microphone bias current	12 mA max

1.3.4 Audio Performance

Rated Input Level

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

Rated Output Level

USER Phones rated output	7.75 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	Not applicable
Microphone input impedance	10 Ω $\pm$ 10%

Output Impedance

Phones output impedance	$\leq$ 3 dB from 300 to 6000 Hz
Microphone output impedance	150 Ω $\pm$ 10%

Output Load Impedance

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

Input to Output Crosstalk and Bleed-through Level

Input to Output crosstalk	$\leq$ 55 dB
---------------------------	--------------

Audio Noise Level without Signal

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

1.3.5 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	0.40 lb. [0.18 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 V5 locking
	J2 One 9 pin D-sub male V5 locking
	J3 One 9 pin D-sub male V5 locking
	J4 One 9 pin D-sub male V5 locking
Mounting	4 x 10-32 fasteners
Bonding	$\leq 2.5 \text{ m}\Omega$
Installation Kit	INST-JB394x

JB39-403 Dynamic Microphone Adapter - 4 Channel

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 JB39-403 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

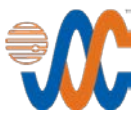
The JB39 may be installed only by following the applicable airworthiness requirements.

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 JB39-403 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 JB39-403 amplifies the USER MIC INPUT audio and routes it to the same user's USER MIC OUTPUT.

The JB39-403 accepts a MIC BIAS, dc current as an input to the USER MIC OUTPUT.

2.5.2 Phones Operation

The JB39-403 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 connector	CON-3420-0009
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

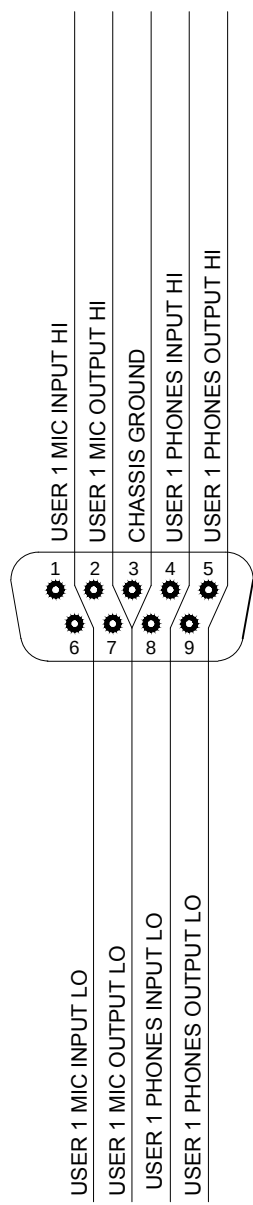
The drawings necessary for installation and troubleshooting of the JB39-403 Dynamic Microphone Adapter - 4 Channel are in this Appendix, as listed below.

A2 Installation Drawings

DOCUMENT	Rev
JB39-403 Connector Map	A
JB39-403 Interconnect	A
JB39-403 Mechanical Installation	A
JB39-403 Equipment Block Diagram	A

P1

9 PIN FEMALE DMIN
MATING CONNECTOR

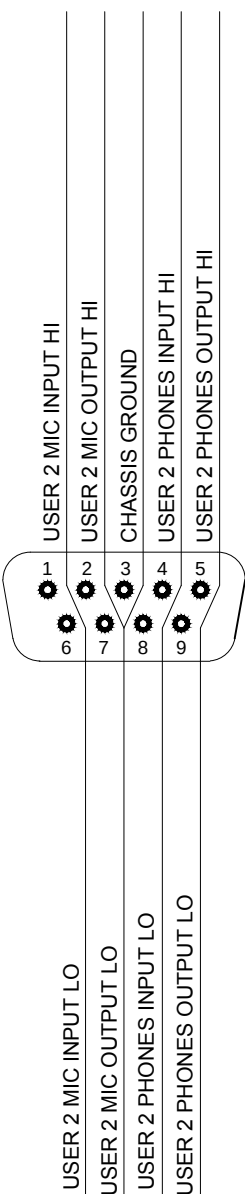


VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	KV	 JUPITER AVIONICS CORPORATION		
CHECKED				
APPROVED		TITLE Dynamic Microphone Adapter - 4 Channel P1 Connector Map		
		NCAGE CODE L00N3	PART NO. JB39-403	SHEET 1/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JB39-403 Connector Map Rev A.pdf		

P2

9 PIN FEMALE DMIN
MATING CONNECTOR

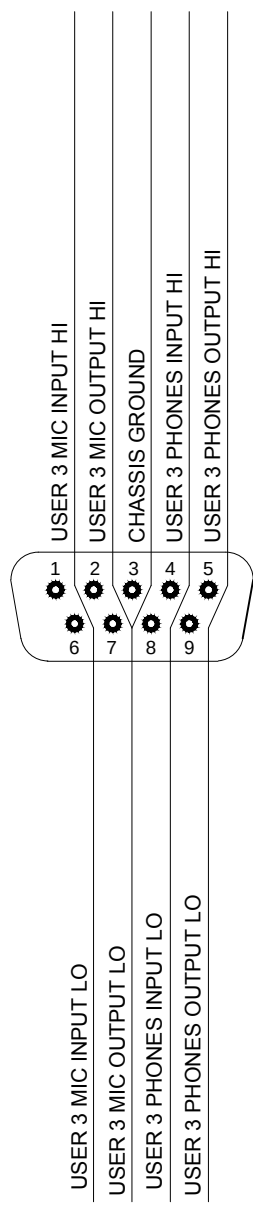


VIEW IS FROM REAR OF MATING CONNECTOR

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CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JB39-403 Connector Map Rev A.pdf		

P3

9 PIN FEMALE DMIN
MATING CONNECTOR

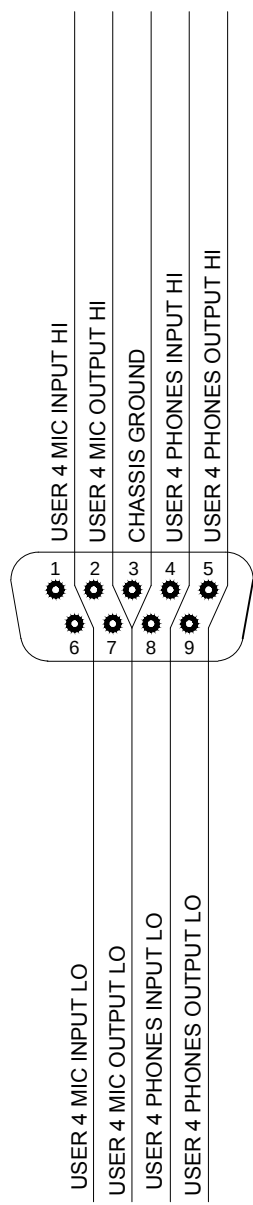


VIEW IS FROM REAR OF MATING CONNECTOR

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APPROVED		TITLE		
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		NCAGE CODE	PART NO.	SHEET
		L00N3	JB39-403	3/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JB39-403 Connector Map Rev A.pdf		

P4

9 PIN FEMALE DMIN
MATING CONNECTOR



VIEW IS FROM REAR OF MATING CONNECTOR

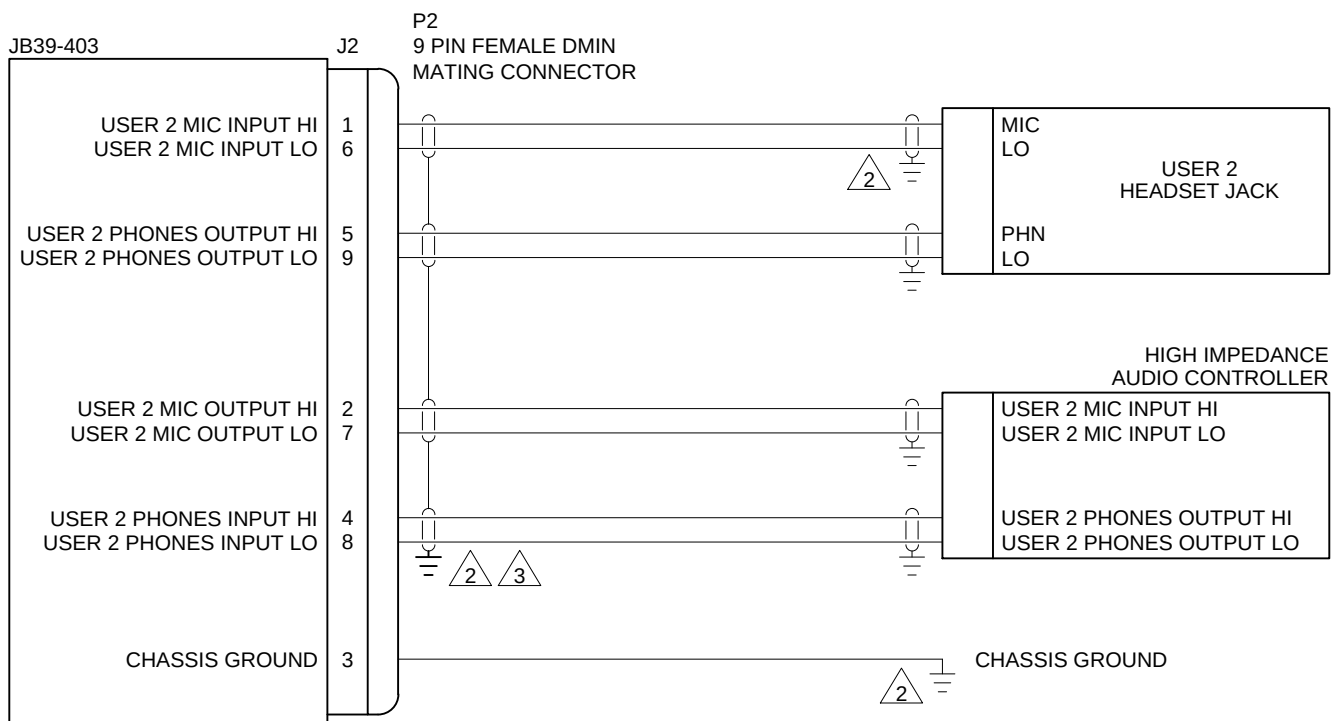
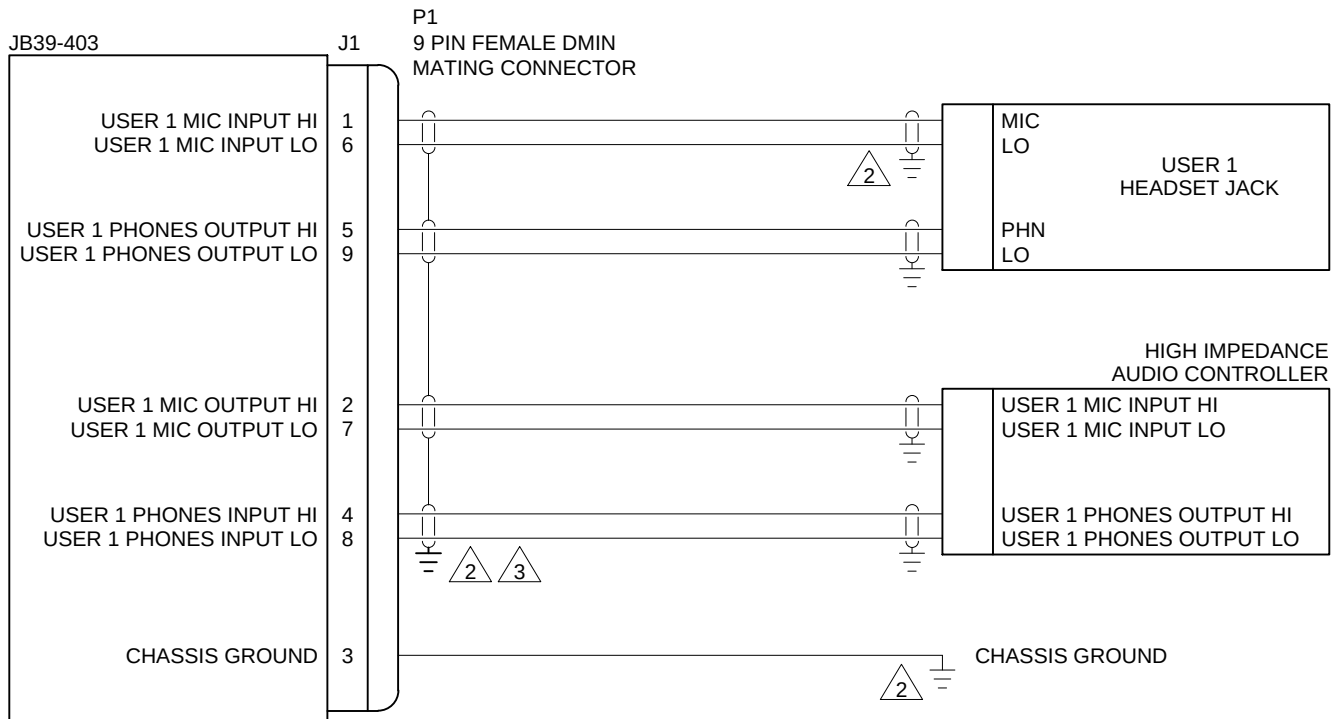
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APPROVED		TITLE		
		Dynamic Microphone Adapter - 4 Channel P4 Connector Map		
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CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JB39-403 Connector Map Rev A.pdf		

JB39-403 INTERCONNECT WIRING NOTES

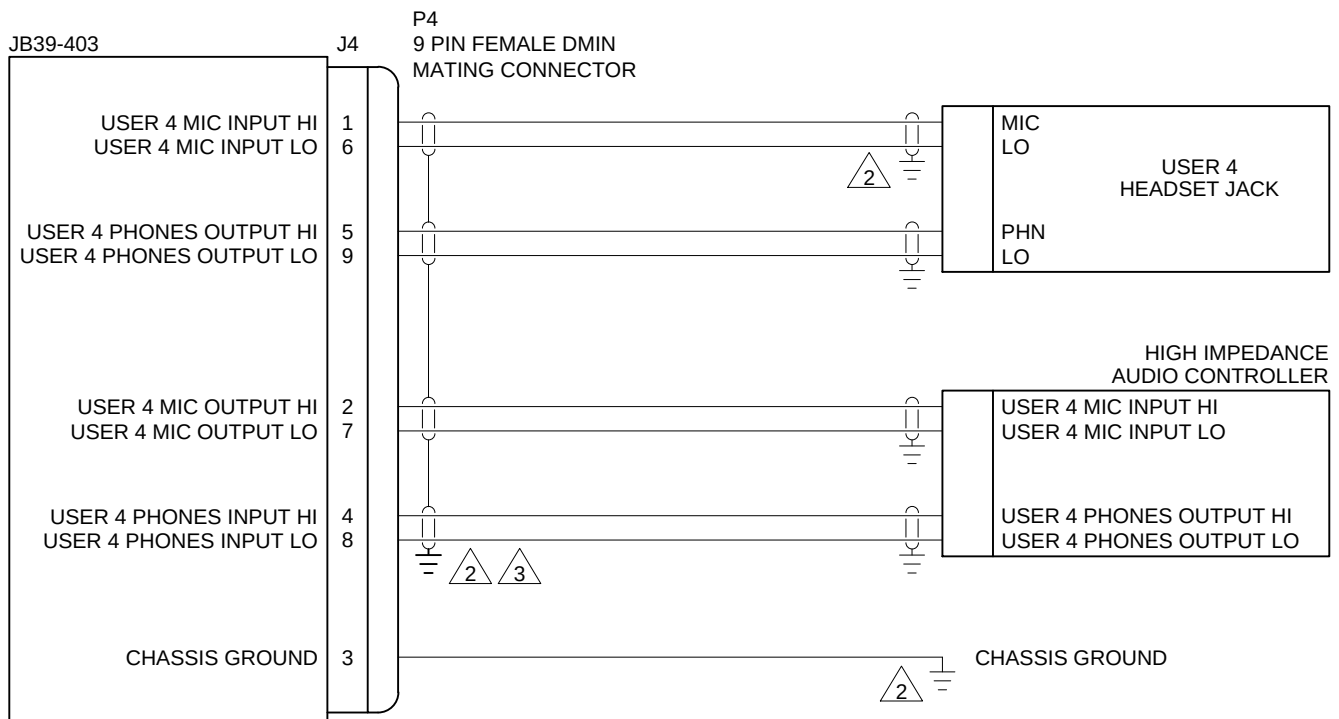
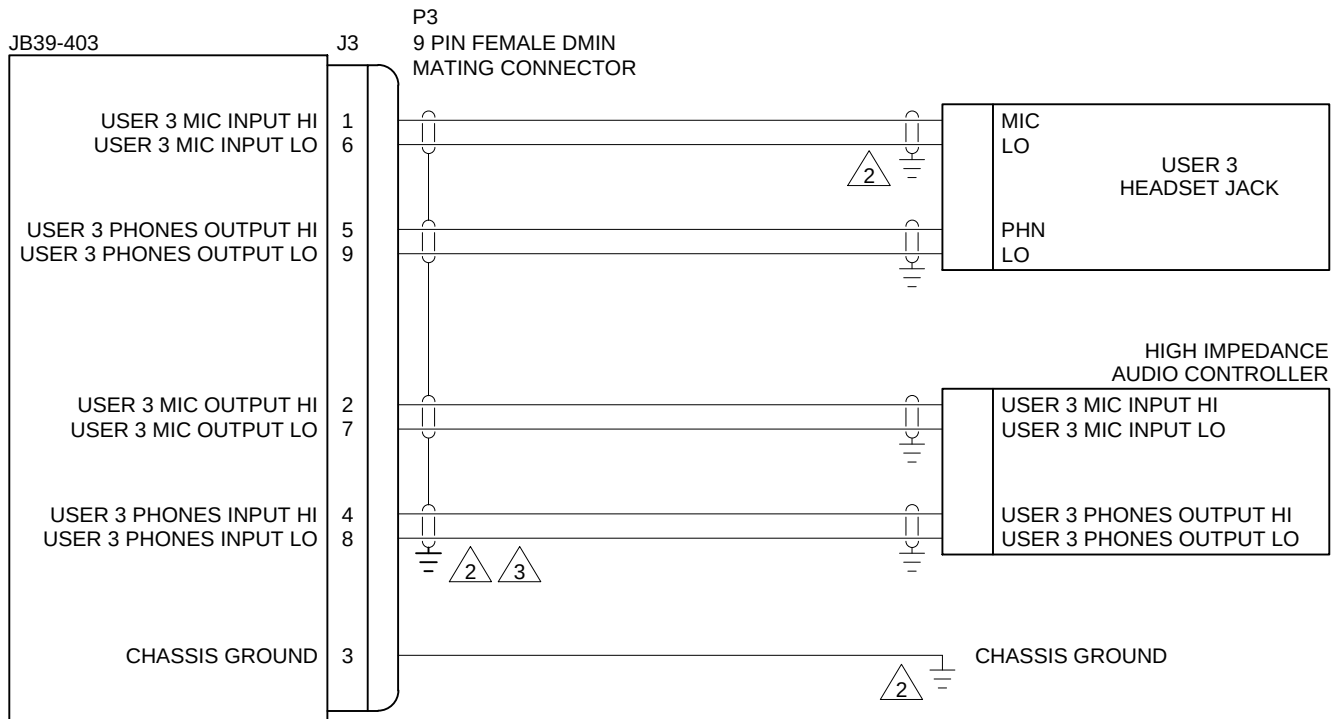
NOTES

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.

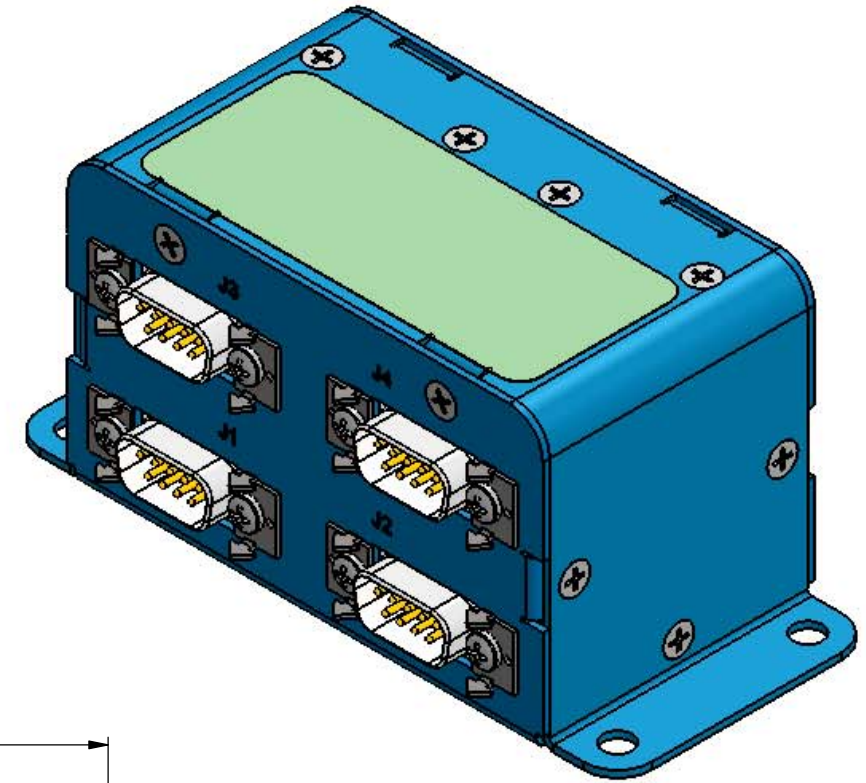
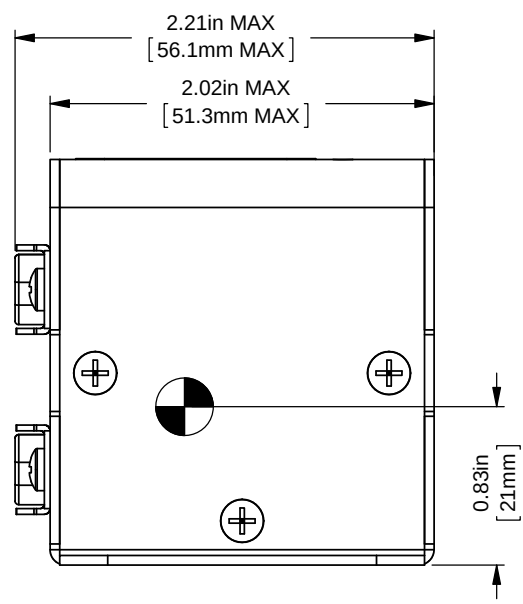
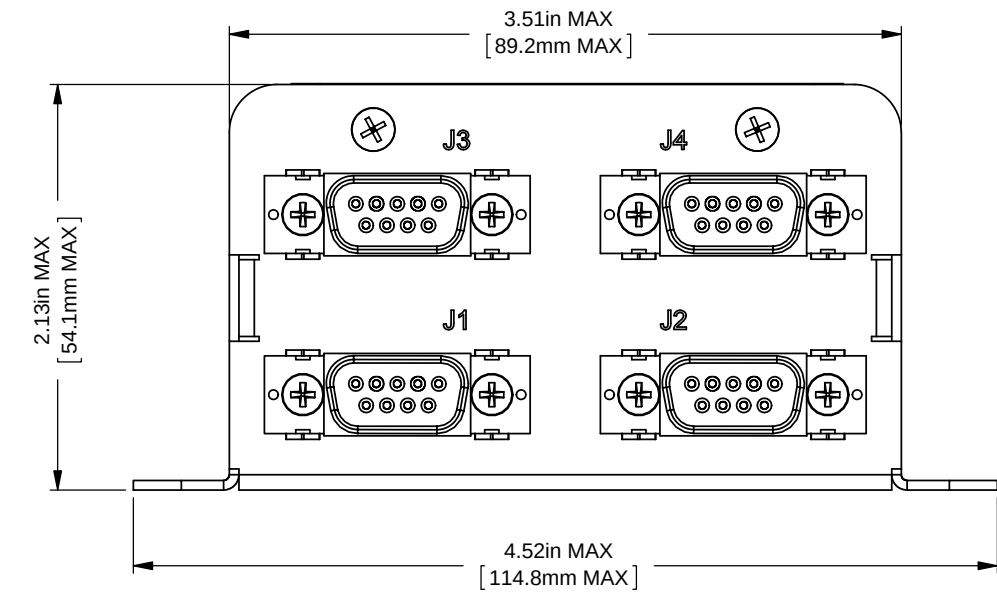
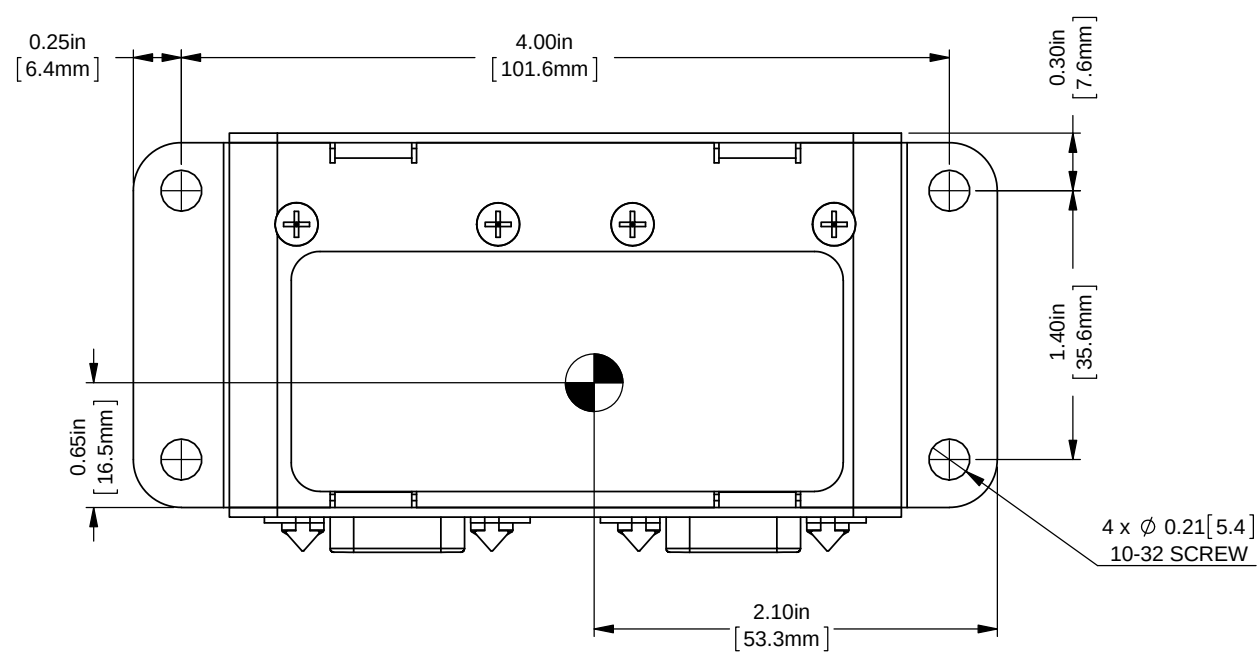
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		DOC NO. JB39-403 Interconnect Rev A.dwg		



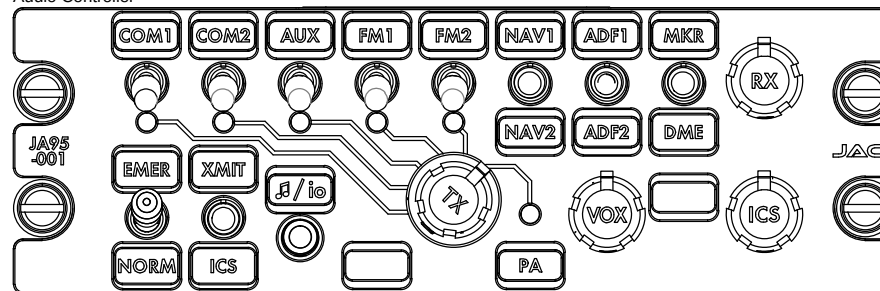
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CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. JB39-403	SHEET 3/3
		DOC NO. JB39-403 Interconnect Rev A.dwg		



 CENTER OF GRAVITY
±0.03in [0.8mm]
WEIGHT: 0.40 lbs [0.18 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	PREPARED	TAT	 JUPITER AVIONICS CORPORATION		
	CHECKED				
	APPROVED		TITLE Dynamic Microphone Adapter - 4 Channel		
			NCAGE CODE L00N3	PART NO. JB39-403	SHEET 1/1
MATERIAL: N/A	CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC. NO. JB39-403 Mechanical Installation Rev A.SLDDRW		
FINISH: N/A	DRAWING NOT TO SCALE				

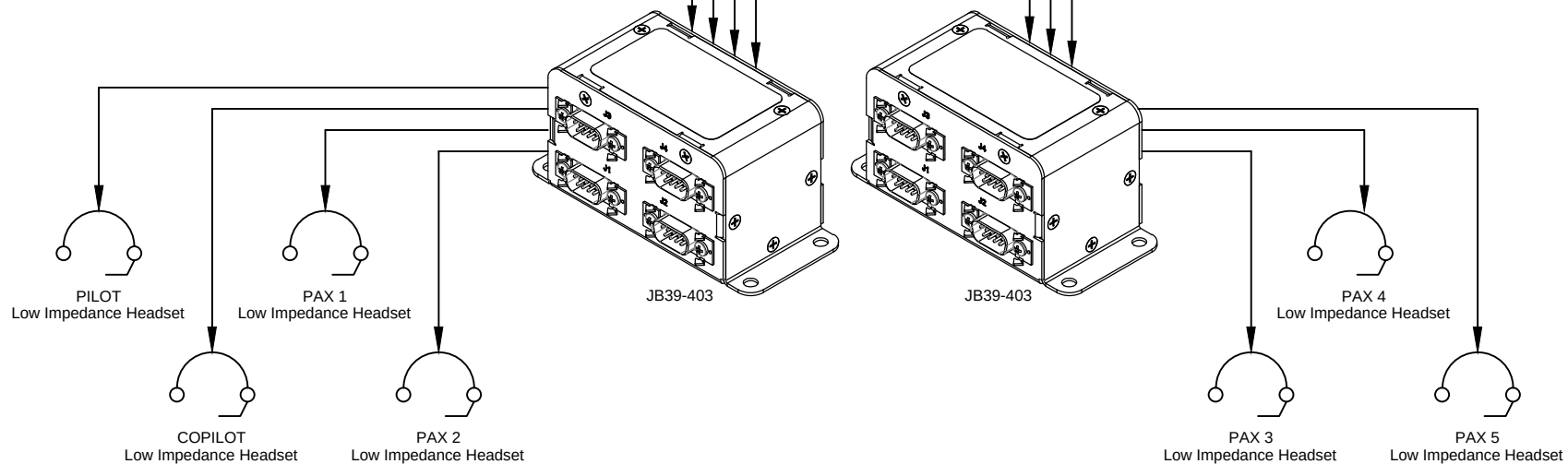
JA95-xxx
Audio Controller



PILOT PHONE,
& MICROPHONE

COPILLOT PHONE,
& MICROPHONE

PASSENGER
PHONES, & MICROPHONE



PREPARED	TAT			
CHECKED	JAC 07-05-18 SRM			
APPROVED	JAC 07-05-18 KDV	TITLE Dynamic Microphone Adapter - 4 Channel Equipment Block Diagram		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. JB39-403	SHEET 1/1
		DOC NO. JB39-403 Equipment Block Diagram Rev A.dwg		