



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

JB39-001

**Low Impedance Headset Adapter
5 Ohm Mic - 8 Ohm Phones - Remote Mount**



Installation Manual

Rev. A

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Prepared:	Checked:	Approved:
MPB/CPM		



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JB39-001 Low Impedance Headset Adapter - 5Ω Mic - 8Ω Phones - Remote Mount

SECTION 1 - DESCRIPTION

1.1 System Overview

The JB39-001 Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones allows a low impedance headset to be used with a high impedance audio controller. The JB39-001 operates using the microphone bias supply of the audio controller. The phones audio from the audio controller is impedance matched from 150 Ohms to 8 Ohms.

1.2 Features Overview

The JB39-001 is a compact bulkhead mount product in a metal enclosure.

1.3 Inputs and Outputs

Refer to the JB39-001 [connector map](#) for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
MIC INPUT HI/LO	2	Audio signal
PHONES INPUT HI/LO	2	Audio signal

1.3.2 Outputs

Name	Qty	Type
MIC OUTPUT HI/LO	2	Audio signal and mic bias power input
PHONES OUTPUT HI/LO	2	Audio signal

1.3.3 Audio Performance

Rated Input Level

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

Rated Output Level

Phones rated output	0.89 Vrms \pm 10%
Mic rated output	250 mVrms \pm 10%

Audio Frequency Response

Phones audio frequency response	\leq 3 dB from 300 to 6000 Hz
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	5 Ω \pm 10%



Output Impedance

Phones Output impedance	$\leq 12 \Omega$
Microphone Output impedance	$150 \Omega \pm 10\%$

Output Load Impedance

Phones Output load impedance	$8 \Omega \pm 10\%$
Microphone Output load impedance	$150 \Omega \pm 30\%$

Input to Output Crosstalk and Bleed-through Level

Input to Output crosstalk	$\leq 55 \text{ dB}$
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Audio Noise Level without Signal

Noise level below the rated output by	$\geq 50 \text{ dB}$
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1.3.4 Audio Performance, Other

Microphone input circuitry type	single ended
Phone input circuitry type	single ended
Microphone input designed for MIC type	dynamic
Phones output circuitry type	transformer

1.4 **Specifications**

1.4.1 Electrical Specifications

Primary nominal voltage (Mic Bias)	12.0 Vdc through 470 Ω current limiting resistor.
Maximum voltage	16.0 Vdc
Minimum voltage	10.0 Vdc
Input current at 12 Vdc	$\leq 0.01 \text{ A}$

1.4.2 Mechanical Specifications

Height	1.12 in [28.4 mm] max
Depth (not including connectors)	2.52 in [64.0 mm] max
Width	1.52 in [38.6 mm] max
Weight	0.15 lb. [0.07 kg] max
Material	50-52 aluminum
Finish	brushed with conversion coating
Connectors:	J1 One 9 pin D-sub male
Mounting	2 x 6-32 fasteners
Bonding	$\leq 2.5 \text{ m}\Omega$
Installation Kit	INST-JB39

JB39-001 Low Impedance Headset Adapter - 5Ω Mic - 8Ω Phones - Remote Mount**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 JB39-001 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 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 1 year 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

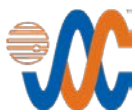
The JB39 may be installed only by following the applicable airworthiness requirements.

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 JB39-001 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

The JB39-001 amplifies the MIC INPUT audio and routes it to the MIC OUTPUT.

2.5.2 Phones Operation

The JB39-001 impedance matches the PHONES INPUT audio and routes it to the PHONES OUTPUT.

2.6 Installation Kit

The kit required to install this unit is not included with the unit. The installation kit (Part # INST-JB39) consists of the following:

<u>Quantity</u>	<u>Description</u>	<u>JAC Part #</u>
1	D-Sub 9-pin crimp socket connector	CON-3420-0009
1	0.375" Inside Diameter - Tag Ring	CON-5500-0375
1	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

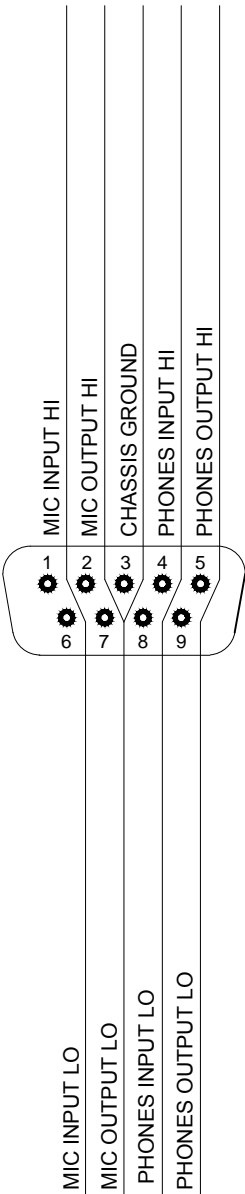
A1 Introduction

The drawings necessary for installation and troubleshooting of the JB39-001 Low Impedance Headset Adapter are in this Appendix, as listed below.



A2 Installation Drawings

DOCUMENT	Rev
JB39-001 Connector Map	A
JB39-001 Interconnect	A
JB39-001 Mechanical Installation	B
JB39-001 Equipment Block Diagram	A

J1
9 PIN FEMALE DMIN
MATING CONNECTOR






VIEW IS FROM REAR OF MATING CONNECTOR

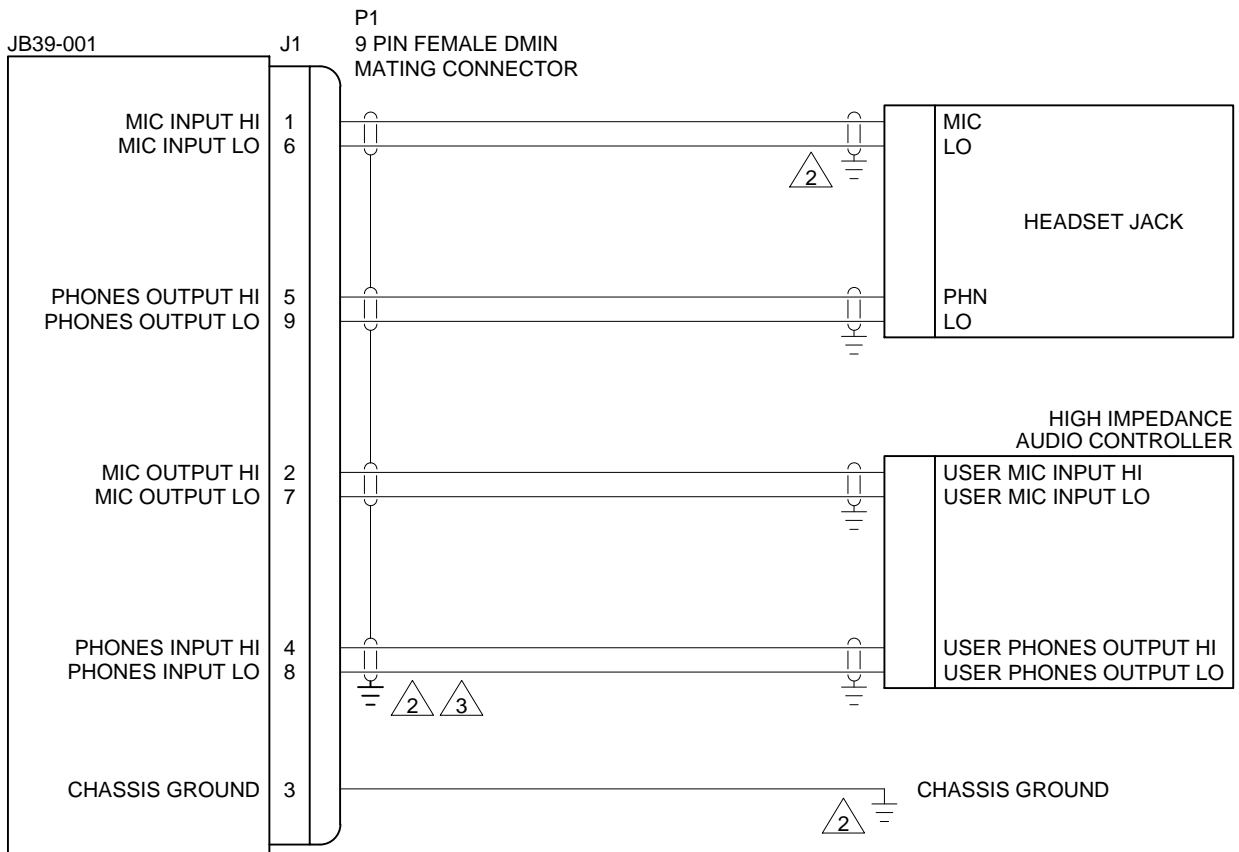
PREPARED	KV	 JUPITER AVIONICS CORPORATION		
CHECKED				
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		NCAGE CODE L00N3	PART NO. JB39-001	SHEET 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JB39-001 Connector Map Rev A.pdf		




JB39-001 INTERCONNECT WIRING NOTES

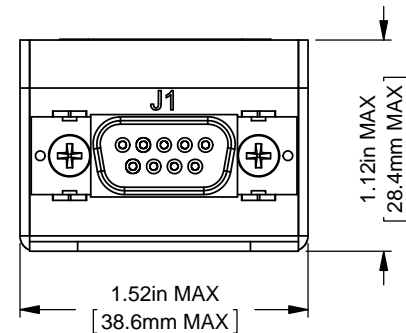
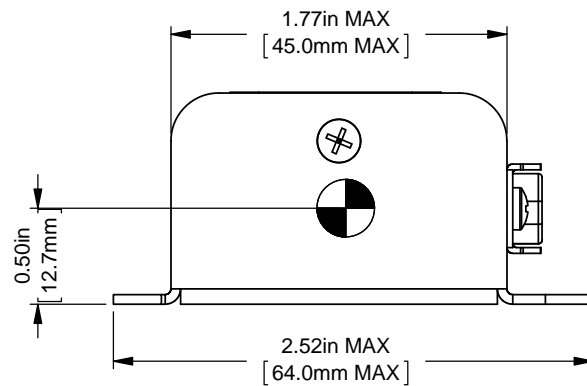
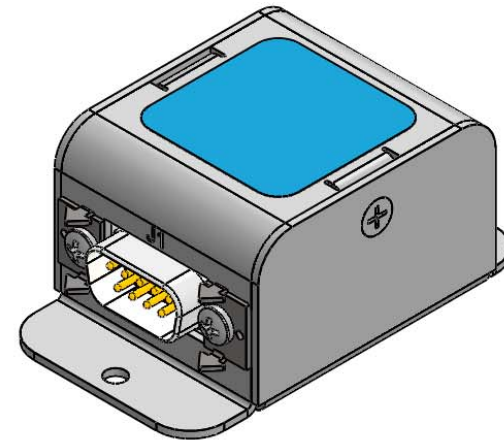
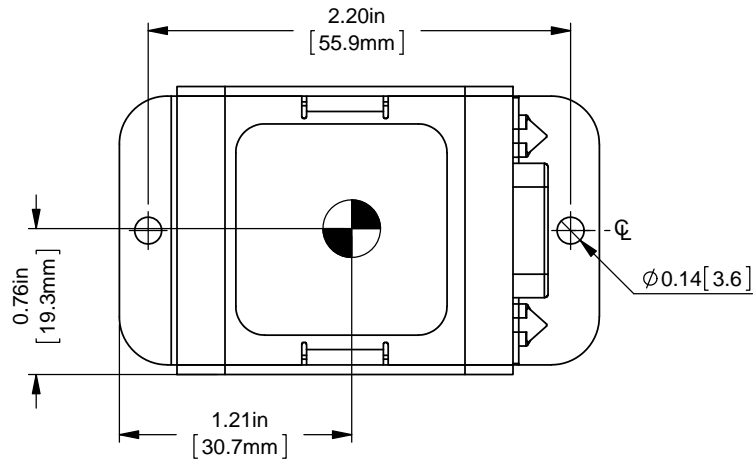
NOTES


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 JB39-001 CONNECTOR PINS SHOULD BE TERMINATED TO AIRFRAME GROUND USING A TAG RING P/N:MS27741-5 OR EQUIVALENT.

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APPROVED		TITLE Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones - Remote Mount		
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		DOC NO. JB39-001 Interconnect Rev A.dwg		



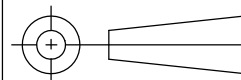
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CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. JB39-001	SHEET 2/2
		DOC NO. JB39-001 Interconnect Rev A.dwg		



 CENTER OF GRAVITY
±0.03in [0.8mm]

WEIGHT: 0.15 lbs [0.07 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

PREPARED

TAT

CHECKED

JAC
02-15-18
SRM

APPROVED

JAC
02-16-18
KDV

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TITLE

Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm
Phones - Remote Mount

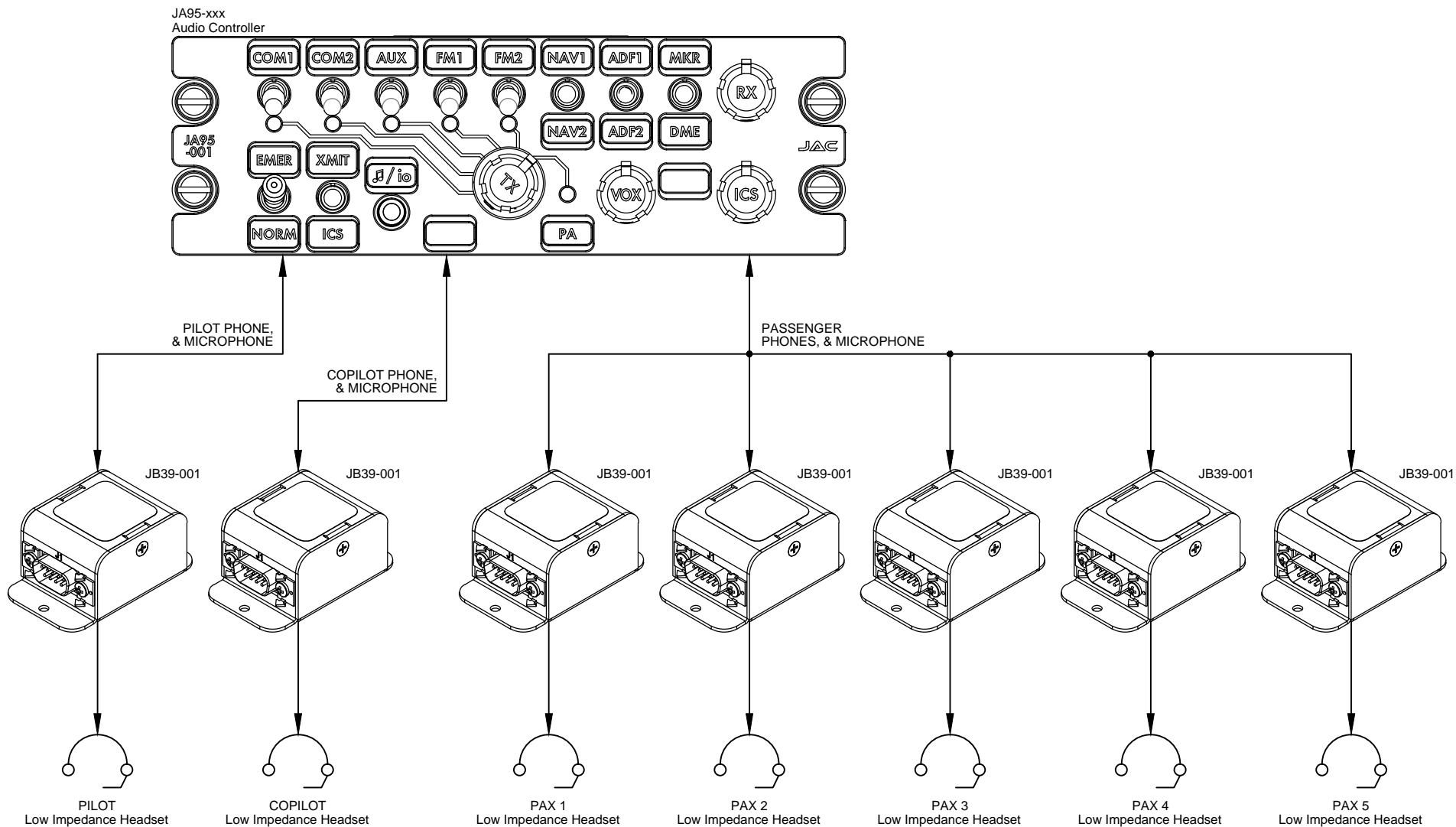
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PART NO.
JB39-001

SHEET
1/1

DOC. NO.

JB39-001 Mechanical Installation Rev B.SLDDRW



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CHECKED	JAC 05-09-17 SRM			
APPROVED	JAC 06-09-17 KDV	TITLE Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones - Remote Mount - Equipment Block Diagram		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. JB39-001	SHEET 1/1
		DOC NO. JB39-001 Equipment Block Diagram Rev A.dwg		