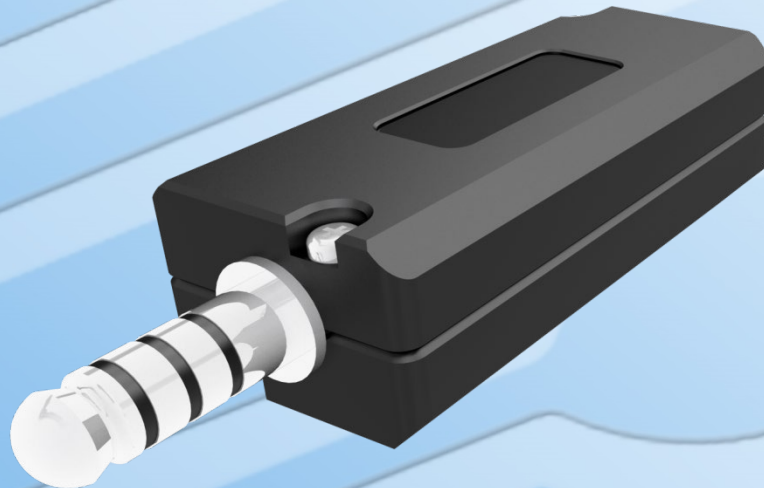




**JUPITER AVIONICS**  
C O R P O R A T I O N

**JA39-022**

**Headset Adapter  
230 Ohm Mic - 230 Ohm Phones**



**Installation Manual**

**Rev. A**

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Prepared:	Checked:	Approved:
MPB		



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## **JA39-022 Headset Adapter - 230 $\Omega$ Mic - 230 $\Omega$ Phones**

### **SECTION 1 - DESCRIPTION**

#### **1.1 System Overview**

The JA39-022 Headset Adapter - 230 Ohm Mic - 230 Ohm Phones allows a PELTOR™ headset to be used with a high impedance aviation audio controller. The JA39-022 operates using the microphone bias supply of the audio controller and requires no other external power. The phones audio from the audio controller is routed directly to the headset phones without impedance matching.

#### **1.2 Features Overview**

The JA39-022 unit features an industry standard aviation headset pin-out for the plug.

The JA39-022 unit features the PELTOR™ standard headset pin-out for the jack.

The JA39-022 plugs in-line with the headset cord.

The JA39-022 uses a metalized enclosure to shield the circuitry from Radio Frequency Interference.

#### **1.3 Inputs and Outputs**

Refer to the JA39-022 connector maps for the mating connector designators and pin assignments for the input and output signals.

##### **1.3.1 Inputs**

<b>Name</b>	<b>Qty</b>	<b>Type</b>
MIC INPUT $\pm$	2	Audio signal
PHONES INPUT	2	Audio signal

##### **1.3.2 Outputs**

<b>Name</b>	<b>Qty</b>	<b>Type</b>
MIC OUTPUT HI/LO	2	Audio signal
PHONES OUTPUT $\pm$	2	Audio signal

##### **1.3.3 Mic Bias Voltage Supply**

The Microphone Output accepts a DC MIC INPUT bias voltage supply from the Audio Controller.

##### **1.3.4 Input and Output Polarities**

The JA39-022 is designed to operate regardless of the input and output polarities of the attached audio controller and headset.



## **1.4 Specifications**

### **1.4.1 Electrical Specifications**

#### **Power Input**

Primary nominal bias voltage	12.0 Vdc
Maximum bias voltage	16.0 Vdc
Minimum bias voltage	10.0 Vdc
Input current at 12 Vdc	12 mA max

#### **1.4.1.1 Audio Performance**

##### **Rated Input Level**

Phones rated input level	3.4 Vrms $\pm 10\%$
Microphone input level	3.0 mVrms $\pm 10\%$

##### **Rated Output Level**

Phone rated output into 115 Ohms	3.4 Vrms $\pm 10\%$
Microphone rated output into 150 Ohms AC	250 mVrms $\pm 20\%$

##### **Audio Frequency Response**

Phone output audio frequency response	$\leq 3\text{dB}$ from 300 to 6000 Hz
Microphone output audio frequency response	$\leq 3\text{dB}$ from 300 to 6000 Hz

##### **Distortion Characteristics**

Phones output distortion at rated power	$\leq 10\%$ THD+N
Phones output distortion at 10% of rated power	$\leq 3\%$ THD+N

##### **Input Impedance**

Microphone input Impedance	900 $\Omega \pm 10\%$
Phones input Impedance	115 $\Omega \pm 10\%$

##### **Output Impedance**

Phones output Impedance	$\leq 115 \Omega$
Microphone output Impedance	150 $\Omega \pm 10\%$

##### **Output Load Impedance**

Phones output load Impedance	115 $\Omega \pm 10\%$
Microphone output Impedance	150 $\Omega \pm 10\%$

##### **Audio Noise Level without Signal**

Noise level below the rated output	$\geq 55 \text{ dB}$
------------------------------------	----------------------

#### **1.4.1.2 Audio Performance, Other**

Microphone input designed for MIC type	dynamic
Phones output circuitry type	Direct Coupled



#### 1.4.2 Mechanical Specifications

Height		3.14 in [79.8 mm] max
Depth		1.05 in [26.7 mm] max
Width		0.73 in [18.5 mm] max
Weight		0.11 lbs. [51.2 g] max
Connectors (2):	J1	One U-174/U plug
	J2	One U-92A/U jack
Mounting		Insertion into U-92A/U jack
Installation Kit		Not Required.



## JA39-022 Headset Adapter - 230 $\Omega$ Mic - 230 $\Omega$ Phones

### 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 JA39-022 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/warranty](http://www.jupiteravionics.com/warranty).

##### 2.3.1 Warranty

All JA39 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



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**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.

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##### 2.4.1 Installation Limitations

The JA39 may be installed only by following the applicable airworthiness requirements.

##### 2.4.2 Cabling and Wiring

The JA39 plugs directly into a standard aircraft audio system headset connector. All wires to said connector 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.

##### 2.4.3 Mechanical Installation

The JA39-022 can be mounted in any attitude and location sufficient clearance for the connector body and headset plug. It requires no direct cooling.



**CAUTION:** When plugged in to a headset audio connector, the JA39 could create excessive strain on the connector. Ensure that the JA39 is protected from impact, and that no tension is applied to any attached headset cord.

---

#### 2.4.4 In-Line PTT Cordsets

If in-line PTT cordsets (drop cords) are used, be aware that incorrectly configured or improperly shielded in-line PTT cordsets can lead to significant audio problems.

#### 2.4.5 Post Installation Checks

##### 2.4.5.1 Configuration

The JA39 has no configuration options.

##### 2.4.5.2 Power on Checks.

Power up the aircraft's systems and confirm operation of all functions of the JA39.

- a) Begin with a headset attached. Confirm correct operation for both Mic and phones output. Do not proceed until the headset is 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

The JA39-022 is designed to operate regardless of the input and output polarities of the attached audio controller and headset.

#### 2.5.1 Microphone Operation

The JA39-022 amplifies the MIC INPUT audio and routes it to the MIC OUTPUT.

#### 2.5.2 Phones Operation

The JA39-022 routes the PHONES INPUT audio to the PHONES OUTPUT.

### 2.6 Installation Kit

The JA39-022 does not require an installation kit.

### 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 JA39-022 Headset Adapter - 230  $\Omega$  Mic - 230  $\Omega$  Phones are in this Appendix, as listed below.

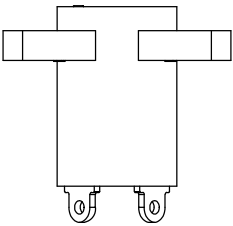
### **A2 Installation Drawings**

DOCUMENT	Rev
<a href="#">JA39-022 Connector Map</a>	<a href="#">A</a>
<a href="#">JA39-022 Interconnect</a>	<a href="#">A</a>
<a href="#">JA39-022 Mechanical Installation</a>	<a href="#">B</a>

Aircraft Connector



P1

TJ-120 or U-92 A/U  
MATING CONNECTOR



- PIN 1: MIC OUTPUT HI
- PIN 2: PHONES INPUT HI
- PIN 3: MIC OUTPUT LO
- PIN 4: PHONES INPUT LO

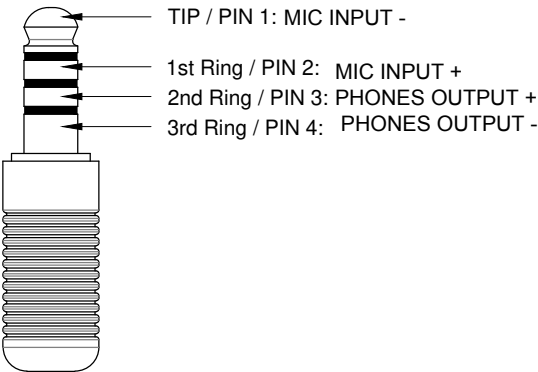
View of Aircraft mating connector

PREPARED	KV	 <b>JUPITER AVIONICS</b> CORPORATION		
CHECKED				
APPROVED		TITLE Headset Adapter - 230 Ohm Mic - 230 Ohm Phones P1 - Aircraft Connector		
		NCAGE CODE L00N3	PART NO. JA39-022	SHEET 1/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JA39-022 Connector Map Rev A		



Headset Connector

P2

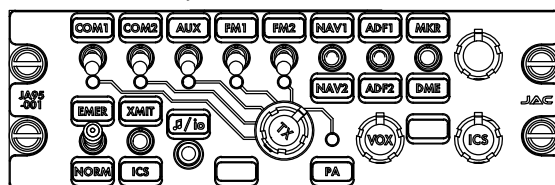
U174/U or U-93A/U  
MATING CONNECTOR



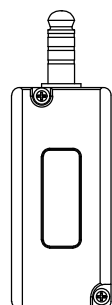
View of Headset mating connector

PREPARED	KV	 <b>JUPITER AVIONICS</b> CORPORATION		
CHECKED				
APPROVED		TITLE Headset Adapter - 230 Ohm Mic - 230 Ohm Phones P2 - Headset Jack Connector		
		NCAGE CODE L00N3	PART NO. JA39-022	SHEET 2/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JA39-022 Connector Map Rev A		

# Aircraft Intercom System

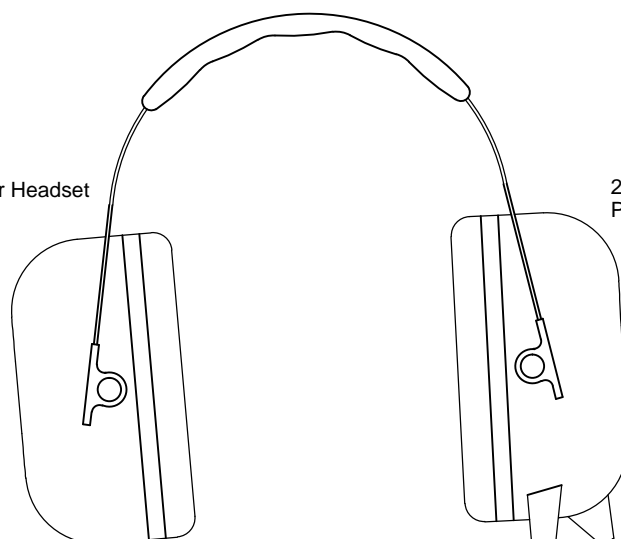


Aircraft Headset Jack



JA39-022  
Headset Adapter


Peltor Headset

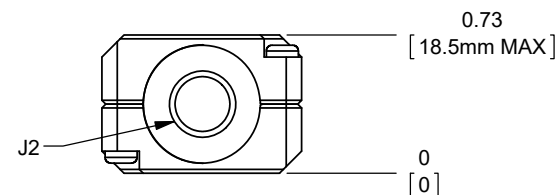
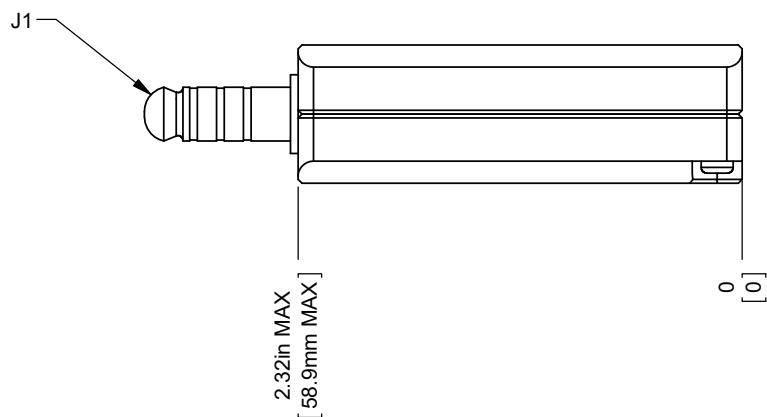
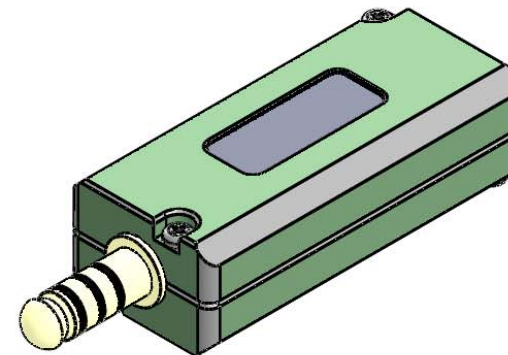
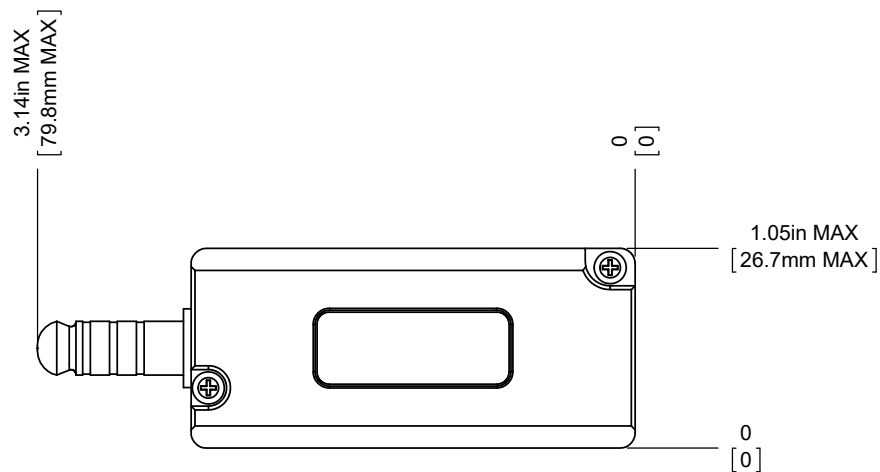


230 Ohm  
Phones

230 Ohm Mic

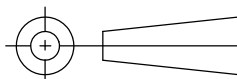


PREPARED	TAT	 <b>JUPITER AVIONICS</b> CORPORATION		
CHECKED	JAC 02-28-20 SDB			
APPROVED	JAC 02-28-20 KDV	<b>Headset Adapter</b> 230 Ohm Mic - 230 Ohm Phones		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. JA39-022	SHEET 1/3
		DOC NO. JA39-022 Interconnect Rev A.dwg		



WEIGHT: 0.11 lbs [51.2 g] MAX.

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
ANGLES ARE IN DEGREES  
TOLERANCES:  
1 DEC PLACE:  $\pm 0.1$   
2 DEC PLACE:  $\pm 0.01$   
3 DEC PLACE:  $\pm 0.005$   
ANGLES:  $\pm 0.5$  DEG



MATERIAL: N/A  
FINISH: N/A

PREPARED

CHECKED

APPROVED

TAT

JAC  
02-12-20  
SDB

JAC  
02-28-20  
KDV

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TO JUPITER AVIONICS CORP.  
DRAWING NOT TO SCALE



JUPITER AVIONICS  
CORPORATION

TITLE

Headset Adapter - 230 Ohm Mic - 230  
Ohm Phones

NCAGE CODE  
L00N3

PART NO.  
JA39-022

SHEET  
1/1

DOC. NO.  
JA39-022 Mechanical Installation Rev B.SLDDRW