



JUPITER AVIONICS
CORPORATION

JA39-001

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



Installation Manual

Rev. A

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JA39-001 Low Impedance Headset Adapter - 5Ω Mic - 8Ω Phones

SECTION 1 - DESCRIPTION

1.1 System Overview

The JA39-001 Low Impedance Headset Adapter - 5 Ohm Mic - 8 Ohm Phones allows a low impedance headset to be used with a civilian aviation audio controller. The JA39-001 operates using the microphone bias supply of the audio controller and requires no other external power. The phones audio from the audio controller is impedance matched from 150 Ohms to 8 Ohms.

The JA39-001 is a simple plug and play solution that uses the microphone bias provided by the audio system to amplify the Low Impedance Mic Signal to an appropriate level, and matches the headset impedance via transformer.

1.2 Features Overview

The JA39-001 features one male and one female TJ-120 telephone jack and follows industry standard interconnect for aviation headsets.

The JA39-001 unit features an industry standard headset pin-out to allow plug and play operation.

The JA39-001 plugs in-line with the headset cord.

The JA39-001 uses a metal enclosure to shield the circuitry from Radio Frequency Interference.

1.3 Inputs and Outputs

Refer to the JA39-001 connector maps 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 OUPUT HI/LO	2	Audio signal
PHONES OUPUT HI/LO	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.



1.4 Specifications

1.4.1 Electrical Specifications

Power Input

Primary nominal voltage	12.0 Vdc (Mic Bias)
Primary nominal input impedance	450Ω ±10%
Maximum voltage	16.0 Vdc
Minimum voltage	10.0 Vdc
Input current at 12 Vdc	≤ 0.01 A

1.4.1.1 Audio Performance

Rated Input Level

Phones rated input level	7.75 Vrms ±10%
Microphone input level	250 uVrms ±10%

Rated Output Level

Phone rated output	0.890 Vrms±10%
Microphone rated output	250 mVrms±10%

Audio Frequency Response

Audio output audio frequency response	≤3dB from 300 to 6000 Hz
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Distortion Characteristics

Audio output distortion at rated power	≤10%
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Input Impedance

Microphone input Impedance	5 Ω ±10%
Phones input Impedance	150 Ω ±10%

Audio Noise Level without Signal

Noise level below the rated output	≥50 dB
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1.4.1.2 Audio Performance, Other

Microphone input designed for MIC type	dynamic
Phones output circuitry type	transformer

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 4 pole TP-120 plug J2 One 4 pole TJT-120 jack
Mounting	Insertion into TJ-120 jack
Installation Kit	Not Required.



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 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

The JA39-001 is designed to operate regardless of the input and output polarities of the attached audio controller and headset.

2.5.1 Microphone Operation

The JA39-001 amplifies the MIC INPUT audio and routes it to the MIC OUTPUT.

2.5.2 Phones Operation

The JA39-001 impedance matches the PHONES INPUT audio and routes it to the PHONES OUTPUT.

2.6 Installation Kit

The JA39-001 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 JA39-001 Low Impedance Headset Adapter are in this Appendix, as listed below.

A2 Installation Drawings

DOCUMENT	Rev
JA39-001 Connector Map	A
JA39-001 Interconnect	A
JA39-001 Mechanical Installation	D