JA95-R12 Audio Controller
Remote Mount - 12 Channel

Installation and Operating 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

IMPORTANT:

Information in this document is subject to change without notice.

To confirm the current revision status of this manual, visit the JAC website:

www.jupiteravionics.com

RECORD OF REVISIONS

Revision	Rev Date	Description	ECR
A	Mar 2018	Initial release, Serial number 1001 and higher.	4027

Prepared:	Checked:	Approved:
MPB	JAC 04-11-18 KDV	JAC 04-11-18 MQS

Table of Contents

SECTION 1 - DESCRIPTION

1.1 System Overview

The JA95-R12 Audio Controller sums up to 12 channels of warning source audio and distributes it to two audio outputs.

The JA95-R12 Audio Controller provides a passive emergency mode that directs the Audio 1 Input, Audio 6 Input and Audio 12 Input to Audio 1 Output.

The JA95-R12 is set up on a per-installation basis using a configuration cable and a PC running the product configuration tool to download system configuration settings via the configuration connector. To facilitate future customizations and certification, no software or complex electronic devices are used in the JA95-R12 design.

1.2 Features Overview

All audio input and output levels are adjustable and alert audio analogue waveforms can be loaded using the configuration tool ProCS (Product Configuration Software) to write configuration commands via the JA99-001 configuration cable to the configuration connector. The configuration commands set the level of non-volatile digital control potentiometers to control audio signal levels and to non-volatile expander latches which are connected to audio gates to control the audio signal routing. The audio analogue waveforms are stored in non-volatile voice record and playback devices. The alert audio feature is intended for use as a secondary alerting system where another device provides the primary annunciation.

The JA95-R12 supports up to 12 audio inputs.

The JA95-R12 allows three of the 12 audio inputs to be directed to the audio 1 output in Emergency Mode.

The JA95-R12 supports two Audio Outputs.

The JA95-R12 has a three channel Alert Generator.

The JA95-R12 has two modes of operation: Normal Mode and Emergency Mode.

1.3 Inputs and Outputs

Refer to the JA95-R12 connector maps for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
ALERT KEY	3	Active low discrete
MODE SELECT/CONFIG AUDIO	1	Data signal
AUDIO INPUT	12	Audio signal
POWER INPUT	1	+14 or +28 Vdc power supply

1.3.2 Outputs

Name	Qty	Type
AUDIO OUTPUT	2	Audio signal
CONFIG DATA FROM JA95	1	Data signal

1.4 Specifications

1.4.1 Electrical Specifications

Power Input

Primary nominal voltage	28 Vdc
Secondary nominal voltage	14 Vdc
Maximum voltage	32.2 Vdc
Minimum voltage	10.2 Vdc
Emergency voltage	9.0 Vdc
Input current at 28 Vdc	≤ 0.7 A
Input current at 14 Vdc	≤ 1.4 A

1.4.1.1 Audio Performance

Rated Input Level

AUDIO INPUT rated level	7.75 Vrms ±10%

Rated Output Level

Audio output rated power in normal mode	7.75 Vrms ±10%
Audio output rated power in emergency mode or with power input ≤6 Vdc	2.10 Vrms ±10%

Audio Frequency Response

Audio output audio frequency response	≤3dB from 300 to 6000 Hz
Alert audio output audio frequency response	≤3dB from 300 to 3000 Hz

Distortion Characteristics

Audio output distortion at rated power	≤10%
Audio output distortion at 10% of rated power	≤3%

Input Impedance

Audio input Impedance	1000 Ω ±10%

Output Impedance

Audio output Impedance	≤ 60 Ω

Output Load

Audio Output	600 Ω ±10%

Output Regulation

Output Regulation change in voltage level	≤3 dB
Output Regulation distortion	≤10%

Input to Input Crosstalk Level

Input to Input crosstalk	≤60 dB

Audio Noise Level without Signal

Noise level below the rated output	≥60 dB

1.4.1.2 Audio Performance, Other

AUDIO input circuitry type	differential

1.4.1.3 Discrete Signals

Active low control input, active signal level	≤ +3 Vdc
Active low control input, inactive signal level	≥ +10 Vdc
Active low control input signals, when active, shall source	0.1 to 10 mA
ALERT ENABLE signal active signal level	≥ +9 Vdc
ALERT ENABLE signal, when active, sinks	0.1 to 10 mAdc
ALERT ENABLE signal inactive signal level	≤ +3 Vdc

1.4.2 Mechanical Specifications

Height		1.97 in [50.0 mm] max
Depth		6.79 in [172.5 mm] max
Width		5.87 in [149.1 mm] max
Weight		1.68 lb [0.77 kg] max
Connectors (4):	J1	One 37-pin D-Sub male
	J2	One 50-pin D-Sub male
	J3	One 4 pole 3.5mm stereo jack
	J4	One 4-40, 0.5 in. max rear stud
Mounting		4 10-32 fasteners
Bonding		≤ 2.5 mΩ
Installation kit part number		INST-JA95

1.4.3 Environmental Specifications

The JA95-R12 Audio Controller - Remote Mount - 12 Channel has been tested to the environmental conditions listed in the Environmental Qualification Form in Appendix B of this manual.

1.4.4 Flammability of Materials

The JA95-R12 complies with the requirements of RTCA/DO-160G Sec 26.3.3 "Flammability", through equivalent flammability testing of materials and the Small Parts Exemption.

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 JA95-R12 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 Authorized Release Certificate or Certificate of Conformance is included. Complete the on-line warranty card from the Jupiter Avionics Corporation (JAC) website - www.jupiteravionics.com/warranty

2.3.1 Warranty

This product manufactured by JAC is warranted to be free of defects in workmanship or performance for 2 years from the date of installation by 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.

THIS WARRANTY IS VOID IF THE PRODUCT IS NOT INSTALLED BY AN AUTHORIZED JAC DEALER. 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 any attached headset volume to minimum before conducting tests, and slowly increase the volume to a comfortable listening level.**

CAUTION**:** The power input circuitry of the unit may be damaged if the installation does not conform to the wiring instructions in this manual.

2.4.1 Installation Limitations

The conditions and tests for CAN TSO approval of the JA95-R12 are minimum performance standards. Those installing the JA95-R12, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within TSO standards. The JA95-R12 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 JA95-R12 can be mounted in any attitude and location with adequate space and sufficient clearance for the connector and wiring harness. 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 P2 pin **17** for +28 Vdc relative to ground.
b) Check P2 pin **16** for +28 Vdc alert power relative to ground
c) Check P2 pin **34** for continuity to ground (less than 0.5 Ω).
d) Check all pins for shorts to ground or adjacent pins.

2.4.4.2 Configuration

Ensure that the JA95-R12 contains the correct configuration settings. This may be done at the factory, on the maintenance bench or in the aircraft before the power on checks are performed. Refer to section 2.5.1.

2.4.4.3 Power on Checks.

Power up the aircraft's systems and confirm normal operation of all functions of the JA95-R12. Refer to Section 3 (Operation) for specific operational details.

a) 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. If a transmitter fails to key or correctly modulate it is often the result of not connecting all required grounds to the radio or external audio system.

b) Check the Emergency operation.

c) Check that all configurations settings are correct.

When all performance checks are satisfied, complete the necessary regulatory documentation before releasing the aircraft for service. Refer to Appendix B.

2.5 Adjustments and Configuration using ProCS™

All the JA95-R12 internal adjustments are set from the Product Configuration Software ProCS™. Configuration data is sent to the JA95-R12 via the configuration connector, using the Configuration Cables and a computer running the ProCS™ software. For configuration requirements, see section 2.5.1.

For full information on the configuration process, and for installation of ProCS™ on your computer, refer to the ProCS™ manual on the Jupiter Avionics website - www.jupiteravionics.com/productsoftware.

2.5.1 Configuration Cabling Requirements

To configure the JA95-R12, it is necessary to load the Product Configuration Software ProCS™ onto a Windows-based computer as described in the ProCS™ manual.

The cables required to configure the JA95-R12 are not included with the unit.

Cabling option 1:

Quantity	Description	JAC Part #
1	USB A to RS232 9-Pin Cable	CAB-USB-0002
1	Configuration Cable	JA99-001

Cabling option 2:

Quantity	Description	JAC Part #
1	USB A Male to RS232 3.5mm Plug	CAB-USB-0006

2.5.2 ProCS™ Setup

The ProCS™ JA95-R12 menu item 'ProCS Setup' provides Setup drawings showing the cabling arrangement for connecting the JA95-R12 to a computer running the ProCS™.

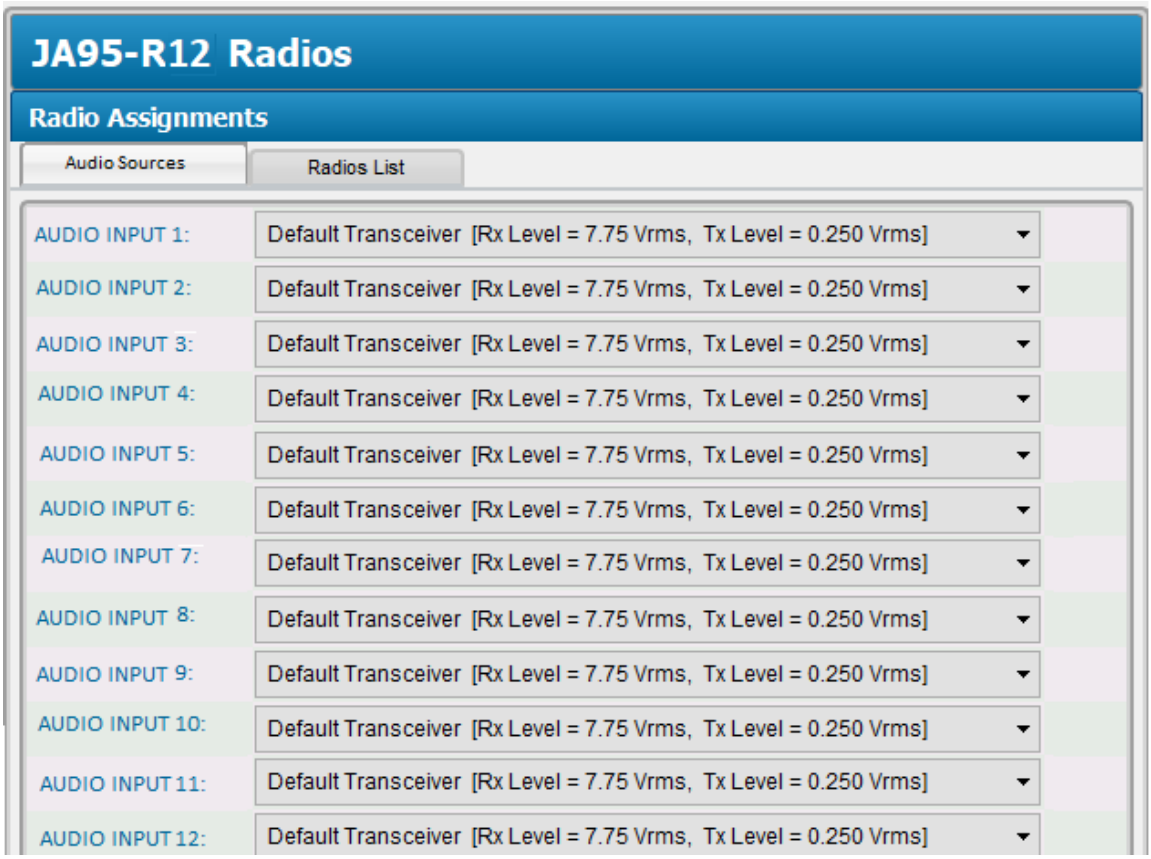
2.5.3 Configurable Settings

A standard unit is shipped from the factory with all internal adjustments configured to the default levels. At installation, it may be desirable to change some of these settings to suit the local operating environment.

Note: To properly configure the JA95-R12, power must be applied.

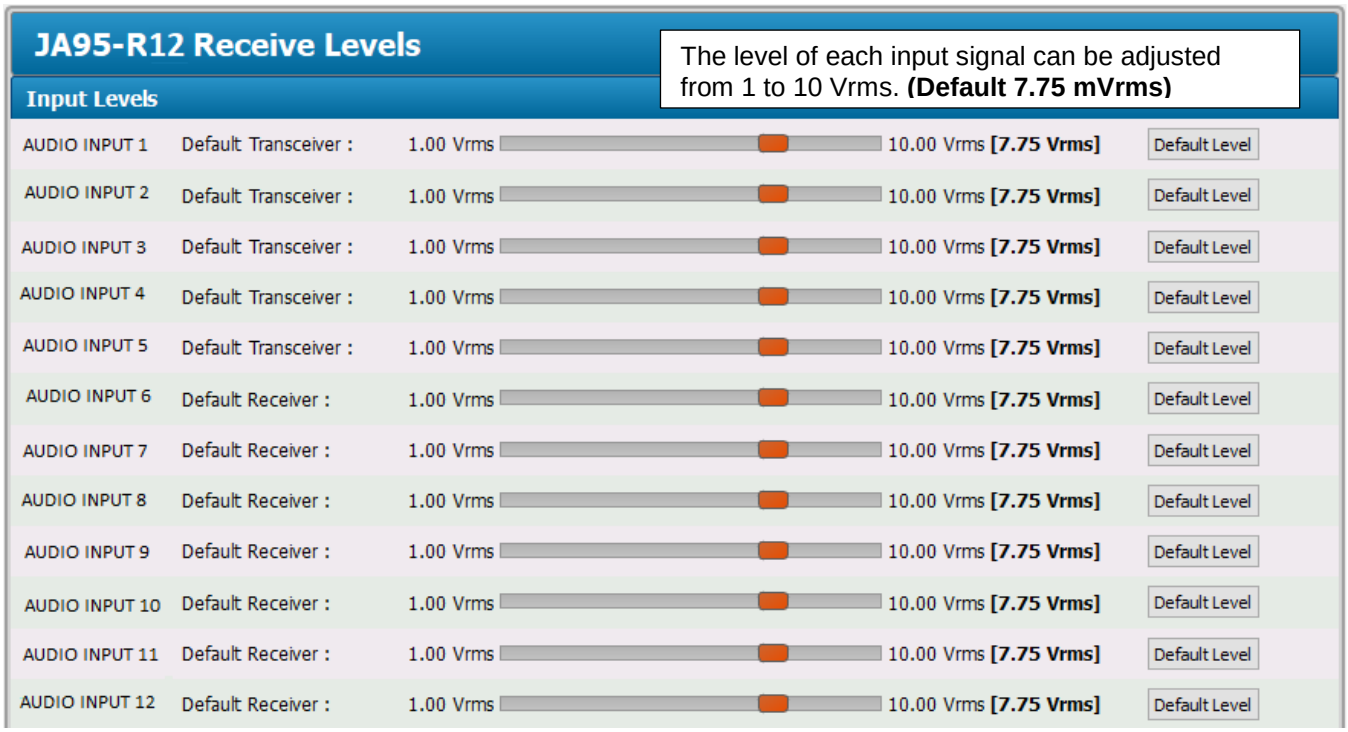
Within ProCS™, the configurable settings are grouped together into the following sections:

2.5.3.1 **Radios**



The Radios window is used to define the radios for the audio sources.

2.5.3.2 **Receive Levels**

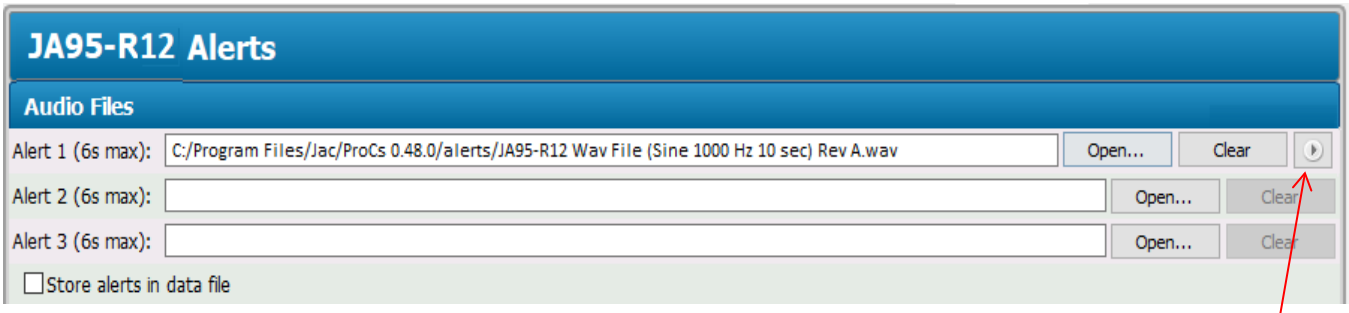


2.5.3.3 **Alerts**

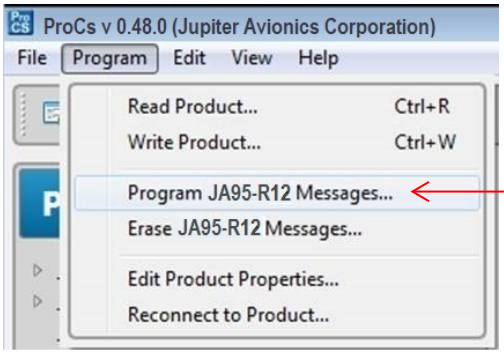
WARNING: **The internal audio alerts are intended only to supplement, NOT replace, airframe alerts such as 'low rotor RPM', 'engine out' or 'decision height alerting'. The alert audio feature is intended for use as a secondary alerting system where another device provides the primary annunciation.**

Audio Files

The JA95-R12 has standard audio signals for the alert, and the audio file window allows these signals to be customized with other recordings during the configuration process. The default Alert signals loaded into the unit at the factory are:
JA95-R12 Wav File (Sine 1000Hz 10 sec) Rev A.WAV
JA95-R12 Wav File (Sine 1000Hz 10 sec) Rev A.WAV
JA95-R12 Wav File (Sine 1000Hz 10 sec) Rev A.WAV



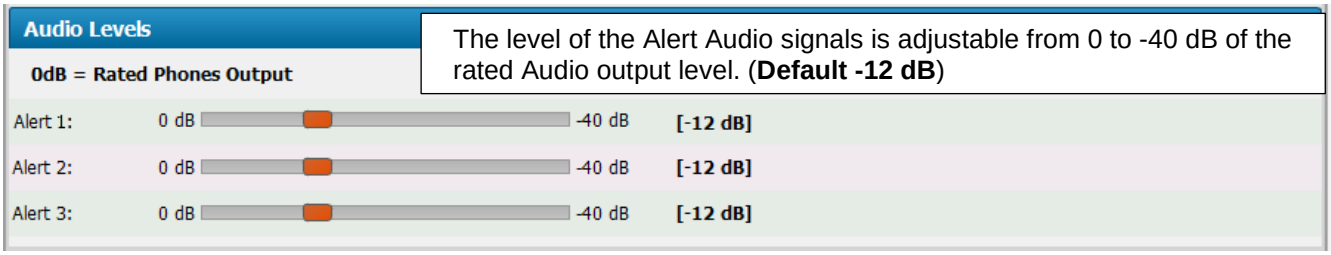
Saving new Audio Files



If a new audio file is selected, it may be played using the arrow to the right of the Message line.

It may be uploaded to the JA95-R12 using the 'Program' menu and selecting 'Program JA95-R12 Messages…'.

Note that this pane will have different content if a JA95-R12 is not connected.



The level of the Alert Audio signals is adjustable from 0 to -40 dB of the rated Audio output level. (**Default -12 dB**)

2.5.4 Other Configuration Features

In the JA95-R12 Product Information Window, the model number, serial number and check sum of the JA95-R12 audio panel can be viewed.

2.6 Installation Kit

The kit required to install this unit is not included with the unit.

The installation kit (Part # *INST-JA95*) consists of the following:

Quantity	Description	JAC Part #
2	TAG ring	CON-5500-0625
1	D-Sub 37-pin connector, hood and 37 crimp pins	CON-3420-0037
1	D-Sub 50-pin connector, hood and 50 crimp pins	CON-3420-0050
2	Heat Shrink Tubing	WIR-HTSK-1000

2.6.1 Recommended Crimp Tools

Standard D-Sub Crimp Tool Chart			
Tool Type	**Hand crimping tool**	**Positioner**	**Insertion/extractor tool**
POSITRONIC	9507-0-0-0	9502-5-0-0	4711-2-0-0
DANIELS	AFM 8	K13-1	91067-2
MIL-SPEC	M22520/2-01	M22520/2-08	M81969/1-02

2.7 Installation Drawings

The drawings and documents required for Installation can be found in Appendix A of this manual.

2.7.1 Generation of Custom Drawings

The connector maps and interconnects in Appendix A of this manual are generic drawings based on the standard version of the JA95-R12. However, if a unit has been configured using JAC's ProCS™ software to make changes, the software can be used to generate fully customized interconnects and connector maps for use by the installer.

SECTION 3 – OPERATION

3.1 Introduction

This section contains the operating instructions for the JA95-R12.

Note: The JA95-R12 has no integrated operator controls.

3.2 Normal Operation Mode

The JA95-R12 is in Normal mode when suitable electrical power is supplied to the unit.

3.3 Emergency Operation Mode

Emergency mode is entered automatically if power to the unit is lost.

When electrical power is not applied to the POWER INPUT, the JA95-R12 AUDIO 1 OUTPUT will be the sum of the AUDIO 1 INPUT, AUDIO 6 INPUT and AUDIO 12 INPUT,

Installation and Operating Manual

Appendix A - Installation Drawings

A1 Introduction

The drawings necessary for installation and troubleshooting of the JA95-R12 Audio Controller - Remote Mount - 12 Channel are in this Appendix, as listed below.

Note: A fully customized set of Connector Maps and Interconnects can be created using the ProCS software. Refer to the ProCS™ manual for further information.

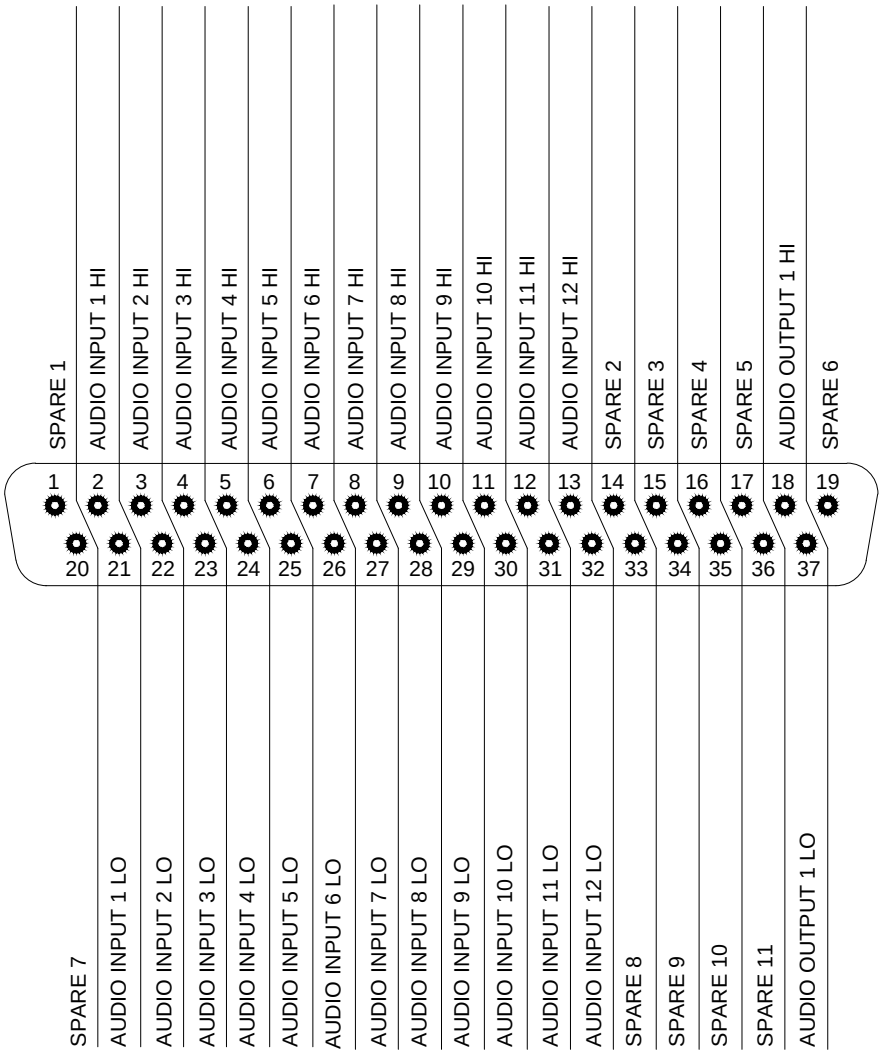
A2 Installation Drawings

DOCUMENT	Rev
JA95-R12 Connector Map	A
JA95-R12 Equipment Block Diagram	A
JA95-R12 Interconnect	A
JA95-R12 Mechanical Installation	A

INPUT CONNECTOR

P1

37 PIN FEMALE DMIN
MATING CONNECTOR



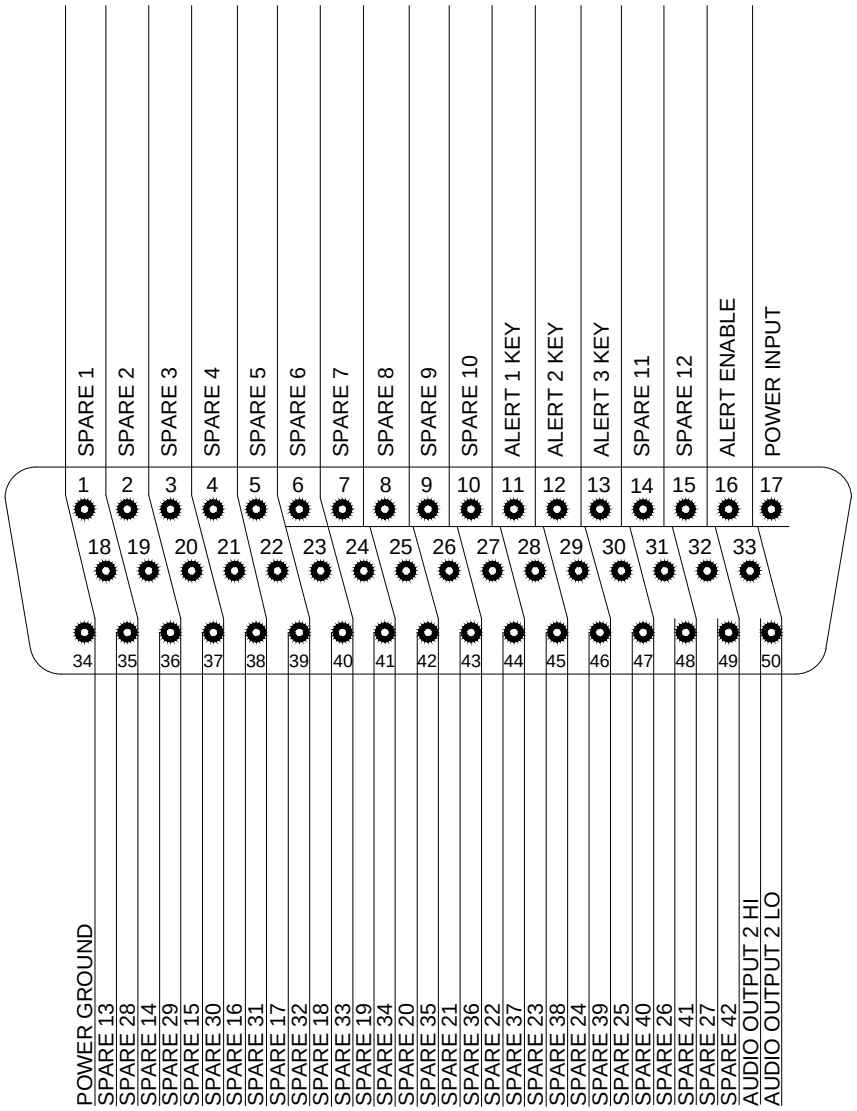
VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	TAT	JUPITER AVIONICS CORPORATION	
CHECKED	JAC 03-16-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel P1 Connector Map	
APPROVED	JAC 03-16-18 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R12 / SHEET: 1/3
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Connector Map Rev A.dwg	

ALERT AND POWER CONNECTOR

P2

50 PIN FEMALE DMIN
MATING CONNECTOR



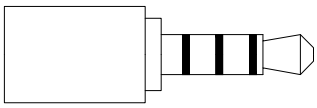
VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	TAT	JUPITER AVIONICS CORPORATION		
CHECKED	JAC 03-16-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel P2 Connector Map		
APPROVED	JAC 03-16-18 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R12	SHEET: 2/3
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Connector Map Rev A.dwg		

CONFIGURATION CONNECTOR

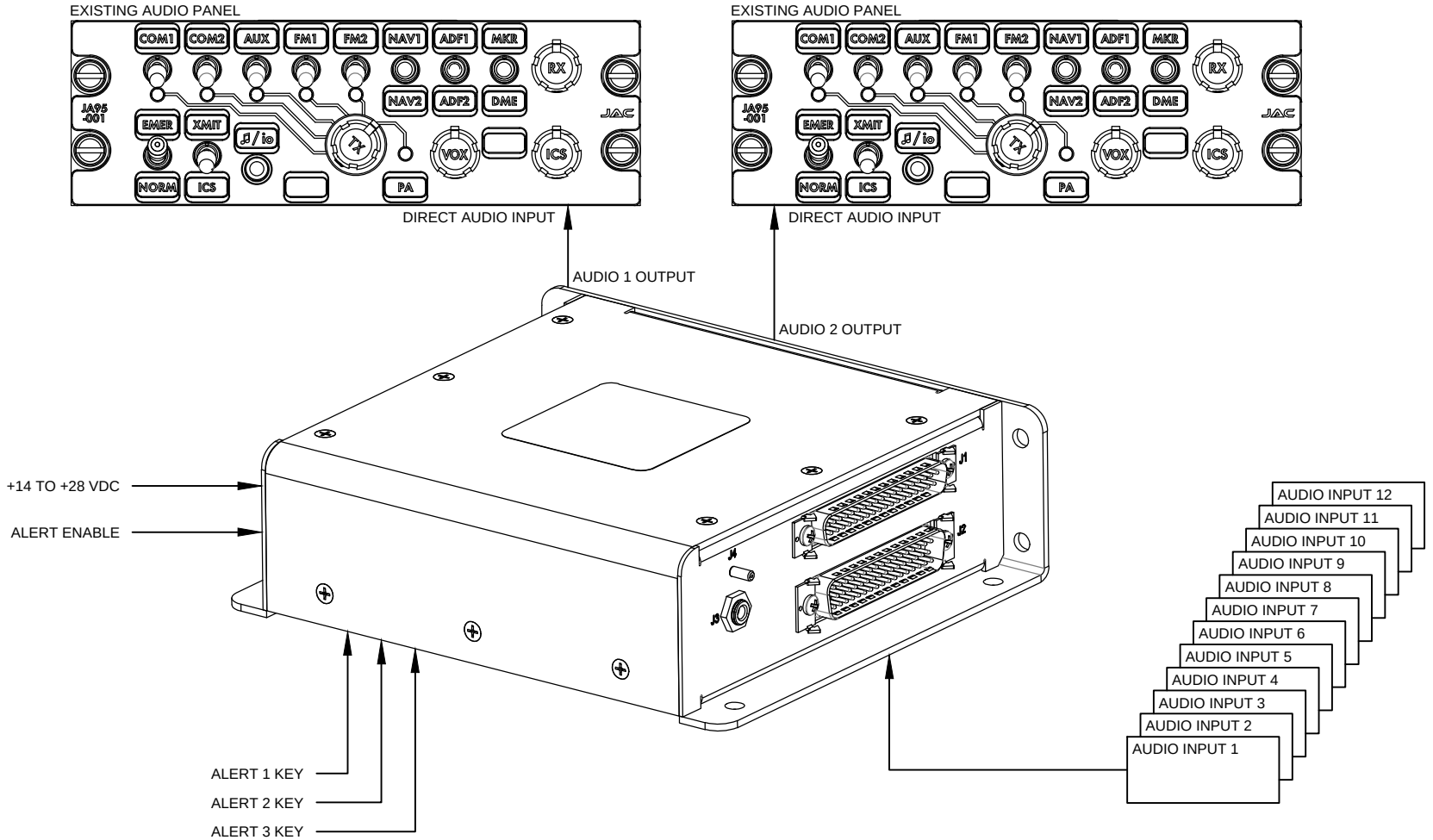
P3 ACCEPTS THE FOLLOWING PLUG FORMATS

JA99 CONFIGURATION CABLE
4 POLE MALE 3.5MM STEREO



MATING PLUG NAMES	JA95 SIGNAL NAMES
TIP: TX DATA	CONFIG DATA TO JA95
1ST RING: RX DATA	CONFIG DATA FROM JA95
2ND RING: GROUND	GROUND
3RD RING: CONFIG AUDIO	MODE SELECT / CONFIG AUDIO

PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 03-16-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel P3 Connector Map
APPROVED	JAC 03-16-18 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R12 / SHEET: 3/3
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Connector Map Rev A.dwg



PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 03-26-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Receivers Equipment Block Diagram
APPROVED	JAC 03-26-18 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R12 / SHEET: 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Equipment Block Diagram Rev A.dwg

JA95-R12 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 20 AWG WIRE. LENGTH NOT TO EXCEED 3 FT (0.9 M).

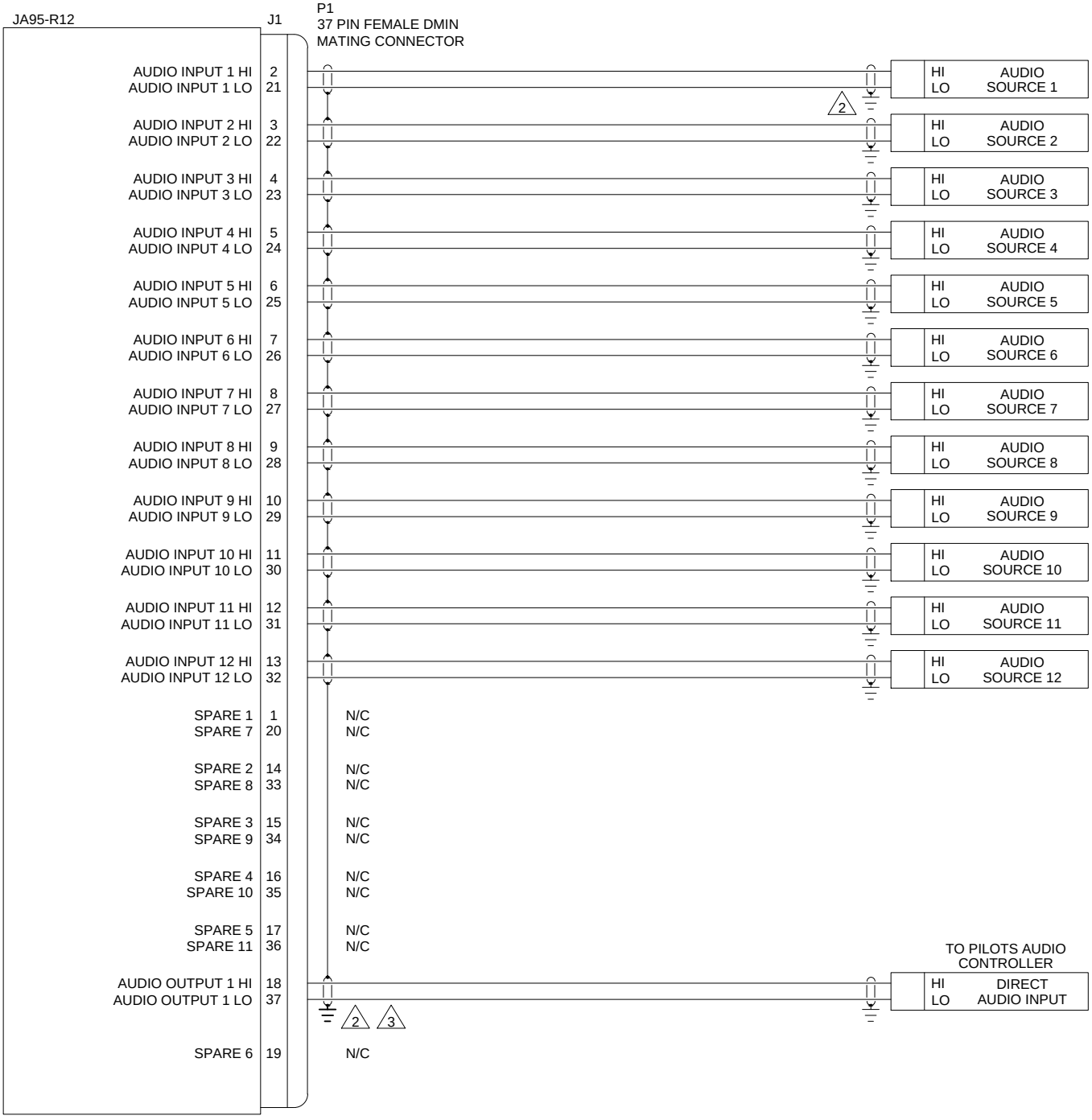
△3 CABLE SHIELDS AT THE JA95-R12 CONNECTOR PINS SHOULD BE TERMINATED TO AIRFRAME GROUND USING A TAG RING P/N: MS27741-5 OR EQUIVALENT.

CONNECTOR PIN LEGENDS

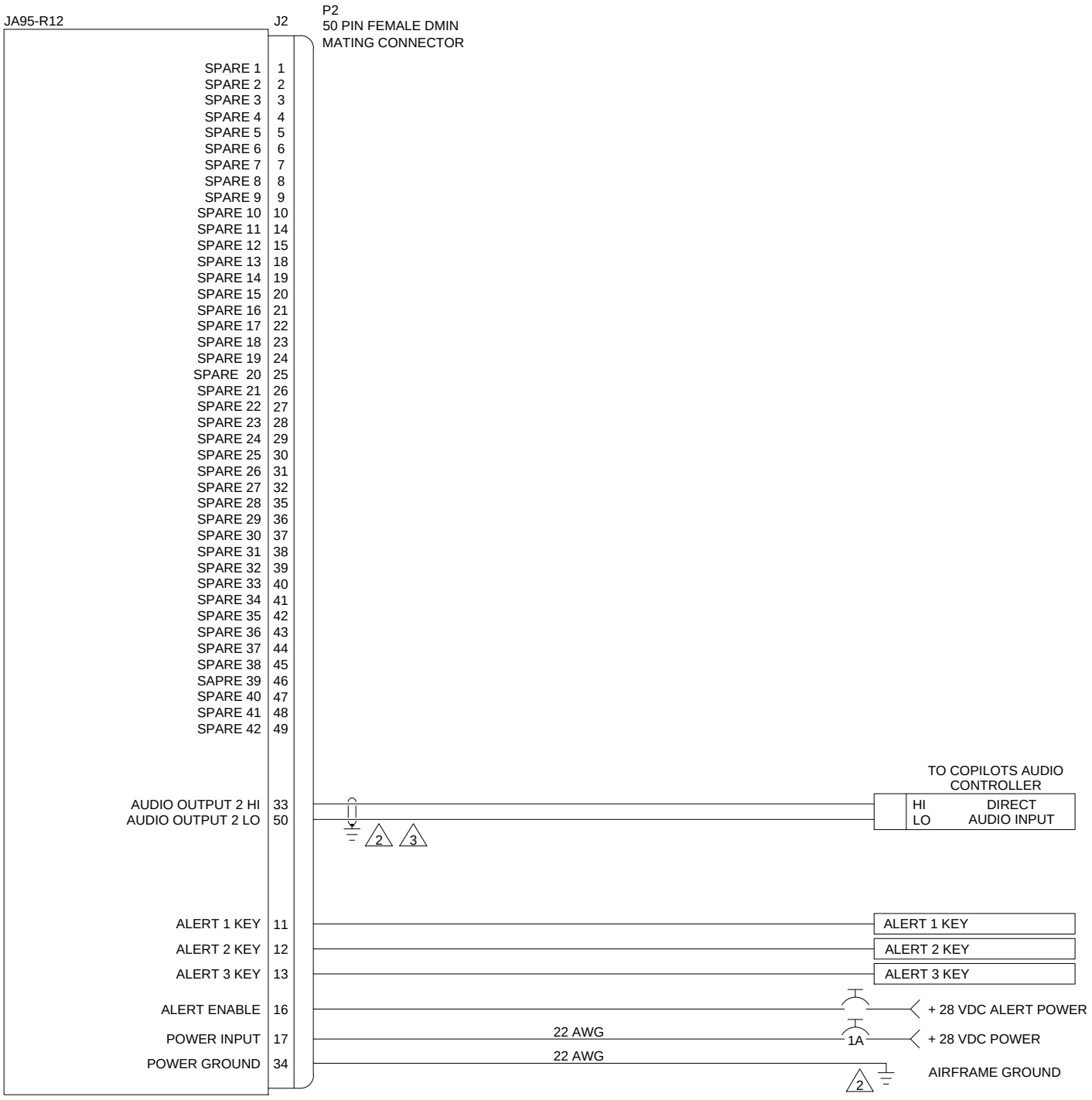
LEGEND

SPARE	INTERNAL CIRCUITS MAY EXIST AND MAY BE ACTIVATED FOR FUTURE USE. NO EXTERNAL WIRE CONNECTION.

PREPARED	TAT	JUPITER AVIONICS CORPORATION	
CHECKED	JAC 03-26-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel Interconnect Notes	
APPROVED	JAC 03-26-18 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R12 / SHEET: 1/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Interconnect Rev A.dwg	

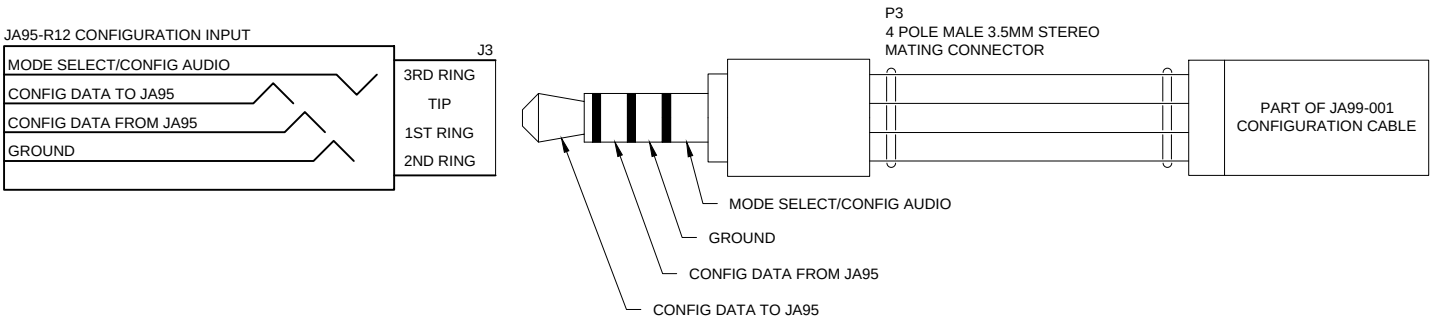


PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 03-26-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel J1 Interconnect
APPROVED	JAC 03-26-18 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R12 / SHEET: 2/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Interconnect Rev A.dwg

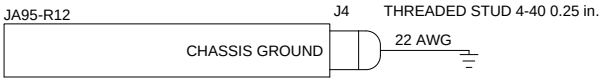


PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 03-26-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel J2 Interconnect
APPROVED	JAC 03-26-18 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R12 / SHEET: 3/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Interconnect Rev A.dwg

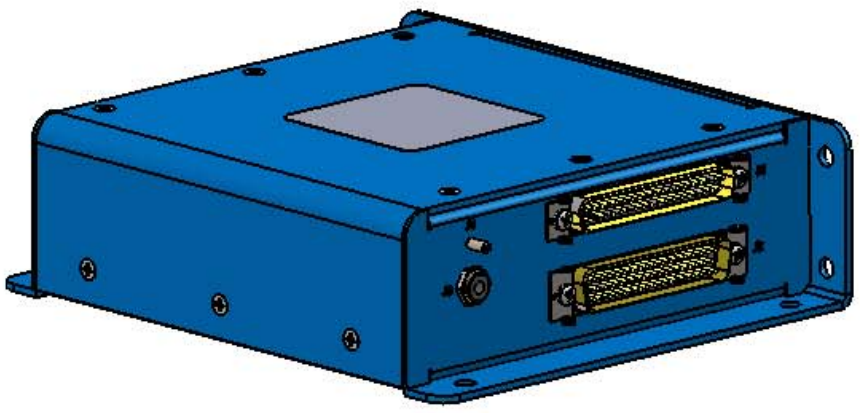
OPTION: PROGRAMMING FROM JA99-001

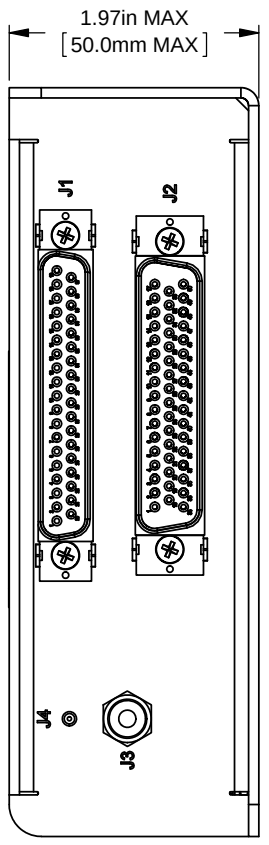


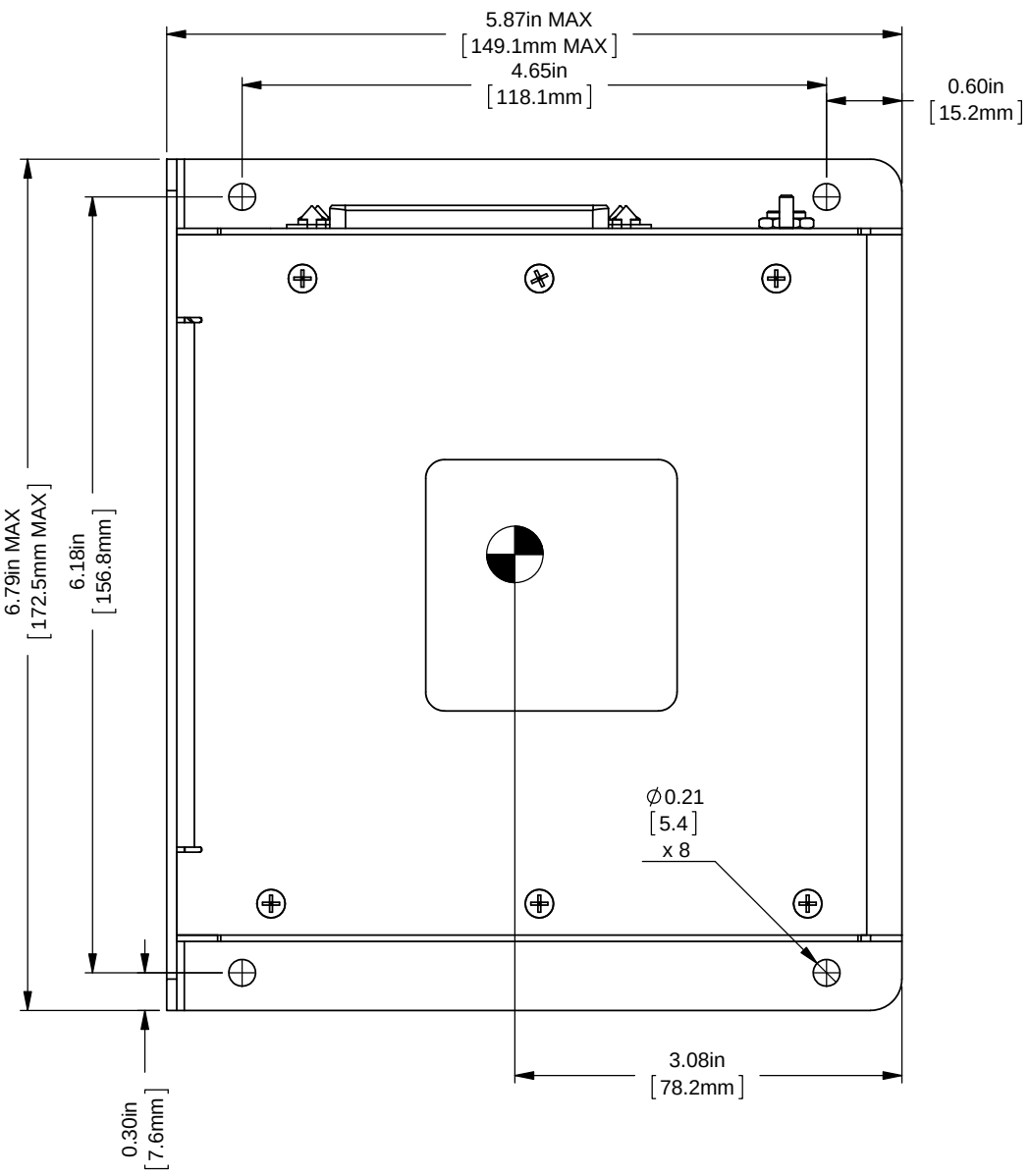
OPTION: CHASSIS GROUND

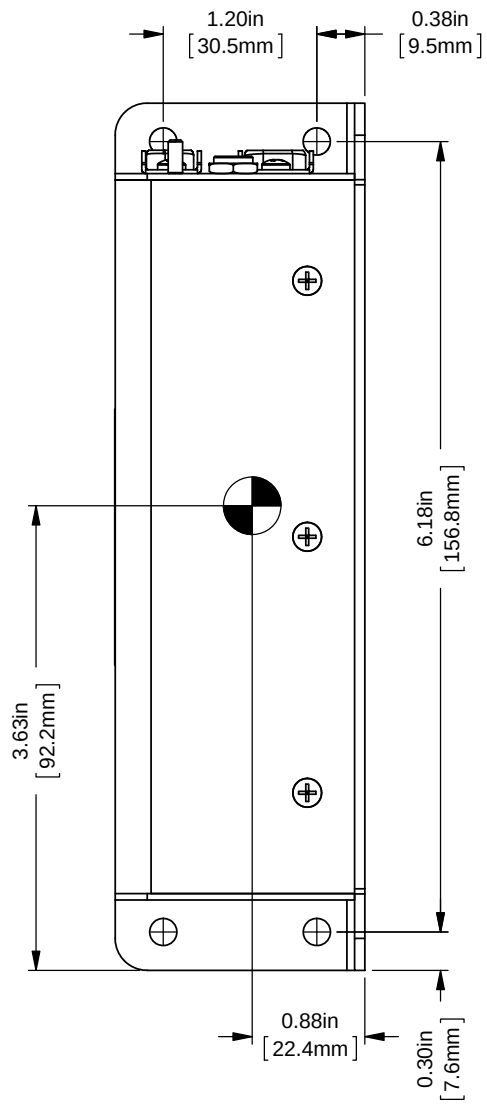


PREPARED	TAT	JUPITER AVIONICS CORPORATION		
CHECKED	JAC 03-26-18 SRM	TITLE: Audio Controller - Remote Mount - 12 Channel Interconnect Options		
APPROVED	JAC 03-26-18 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R12	SHEET: 4/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R12 Interconnect Rev A.dwg		









CENTER OF GRAVITY
±0.03in [0.8mm]

WEIGHT: 1.68 lbs [0.77 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
	CHECKED	JAC 03-16-18 SRM
	APPROVED	JAC 03-16-18 KDV
MATERIAL: N/A	CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.	
FINISH: N/A	DRAWING NOT TO SCALE	

JUPITER AVIONICS CORPORATION

TITLE: Audio Controller - Remote Mount - 12 Channel

NCAGE CODE	PART NO.	SHEET
L00N3	JA95-R12	1/1

DOC. NO.
JA95-R12 Mechanical Installation Rev A.SLDDRW

Installation and Operating Manual

Appendix B - Certification Documents

B1 Airworthiness Approval

Airworthiness approval of the JA95-R12 may require completion of a TCCA Major Modification Report per CAR STD (AWM) 571 Appendix L, or a FAA Form 337. The sample wording for a description of the work is provided to assist the Installing Agency in preparing Instructions for Continued Airworthiness (ICA) when replacing an existing audio panel with a Jupiter Avionics JA95-R12 Audio Controller - Remote Mount – 12 Channel. This sample may be modified appropriately for new installations. It is the installer's responsibility to determine the applicability of the method used. Installations performed outside Canada must follow the applicable aviation authority's regulations.

Sample Wording:

Removed the existing [model] audio panel and replaced with a Jupiter Avionics JA95-R12 Audio Controller - Remote Mount – 12 Channel in [aircraft location].

The JA95-R12 is approved to CAN-TSO-C139 . The JA95-R12 meets RTCA DO-160F environmental qualifications for this installation. See Section 1 of the JA95-R12 Installation Manual.

Installed in accordance with the JA95-R12 Installation Manual, Revision [ ], and AC 43.13-2, Chapters 2, and 3.

The JA95-R12 interfaces with existing aircraft systems per the Installation Manual instructions.

The JA95-R12 Installation Manual provides detailed installation instructions and wiring diagrams (Section 2, and Appendices A and B).

Power is supplied to the JA95-R12 through an existing [ ]-Amp circuit breaker that was previously used by the original audio panel. The net electrical load is unchanged.

Aircraft equipment list, weights and balance amended. Compass compensation checked and found to conform to applicable regulations.

B2 Instructions for Continued Airworthiness

Maintenance of the JA95-R12 Audio Controller - Remote Mount – 12 Channel is "on condition" only. Refer to the JA95-R12 Maintenance Manual. Periodic maintenance of the JA95-R12 is not required.

The following sample Instructions for Continued Airworthiness (ICA) provides assistance in preparing ICA for the Jupiter Avionics JA95-R12 unit installation as part of a Type Certificate (TC) or Supplemental Type Certificate (STC) project to comply with CAR STD (AWM) 523/527/525/529.1529 or FAR 23/25/27/29.1529 "Instructions for Continued Airworthiness".

Items that may vary by aircraft make and model are shown in brackets ("[ ]") and should be filled in as appropriate. Some of the checklist items do not apply, in which case they should be marked "N/A" (Not Applicable).

Instructions for Continued Airworthiness, Jupiter Avionics JA95-R12 Audio Controller - Remote Mount – 12 Channel in an [Aircraft Make and Model]

1. Introduction

[Aircraft that has been altered: Registration number, Make, Model and Serial Number]

Content, Scope, Purpose and Arrangement: This document identifies the Instructions for Continued Airworthiness for a Jupiter Avionics JA95-R12 installed in an [aircraft make and model].

Applicability: Applies to a Jupiter Avionics JA95-R12 installed in an [aircraft make and model].

Definitions/Abbreviations: None, N/A.

Precautions: None, N/A.

Units of Measurement: None, N/A.

Referenced Publications: JA95-R12 Installation and Operating Manual
JA95-R12 Maintenance Manual
STC/TC # [applicable STC/TC number for the specific aircraft installation]

Distribution: This document should be a permanent aircraft record.

2. Description of the System/Alteration

Jupiter Avionics JA95-R12 Audio Controller - Remote Mount – 12 Channel with interface to external audio sources and [include other equipment/systems as appropriate]. Refer to Appendix A of this manual for interconnect information. Refer to aircraft manufacturer approved interconnect for actual installation.

3. Control, Operation Information

Refer to section 3 of this manual.

4. Servicing Information

N/A

5. Maintenance Instructions

Maintenance of the JA95-R12 is 'on condition' only. Periodic maintenance is not required. Refer to the JA95-R12 Maintenance Manual.

6. Troubleshooting Information

Refer to the JA95-R12 Maintenance Manual.

7. Removal and Replacement Information

Refer to Section 2 of this manual - the JA95-R12 Installation and Operating Manual. If the unit is removed and reinstalled, a functional check of the equipment should be conducted.

8. Diagrams

Refer to Appendix A of this manual - the JA95-R12 Installation and Operating Manual - for installation drawings and interconnect examples.

9. Special Inspection Requirements

N/A

10. Application of Protective Treatments

N/A

11. Data: Relative to Structural Fasteners

JA95-R12 and appropriate mounting hardware installation, removal and replacement should be in accordance with applicable provisions of AC 43.13-1B and AC 43.13-2A.

12. Special Tools

N/A

13. This Section is for Commuter Category Aircraft Only

A. **Electrical loads**: Refer to Section 1 of the JA95-R12 Installation and Operating Manual.
B. **Methods of balancing flight controls**: N/A.
C. **Identification of primary and secondary structures**: N/A.
D. **Special repair methods applicable to the airplane**: N/A.

14. Overhaul Period

No additional overhaul time limitations.

15. Airworthiness Limitation Section

N/A

B3 Environmental Qualification Form

See next pages.

Prepared:	Checked:	Approved:
KDV	JAC 03-14-18 SRM	JAC 03-14-18 KDV

Nomenclature	Audio Controller - Remote Mount - 12 Channel		
Type/Model/ Part No.:	JA95-R12		
TSO No.:	CAN-TSO-C139; TSO-C139		
Manufacturer's Build Configuration:	*JA95-R12 Build Configuration Rev A*		
Manufacturer's Test Report:	*JA95-001 Test Report (Qualification - Final) Rev B* *JA95-R03 Test Report (Environmental - Vibration - 20160629) Rev A* *JA95-R03 Test Report (Environmental - Operational Shock & Crash Safety - 20160630) Rev A* *JA95-R12 CAN-TSO Design Change Assessment Rev A*		
Manufacturer's Specification and/or Other Applicable Specification:	*JA95-001 Declaration of Design and Performance Rev D* *JA95-R12 Derivative Declaration of Design and Performance Rev A*		
Manufacturer:	Jupiter Avionics Corporation		
Address:	1959 Kirschner Road, Kelowna, BC, Canada, V1Y 4N7		
Revision & Change No of DO-160:	Rev. F dated December 6, 2007	***Dates Tested:***	Sept 28 to Dec 27, 2012 Jun 29 to July 18, 2016

CONDITIONS	**SECTION**	**DESCRIPTION OF TESTS CONDUCTED**
Temperature and Altitude	4.0	*Equipment tested to Category (C4)(D1)(A1)*
Ground Survival Low Temperature	4.5.1	*Equipment tested to Category C4 (-55 °C)*
Short-Time Operating Low Temperature	4.5.1	*Equipment tested to Category C4 (-45 °C)*
Operating Low Temperature	4.5.2	*Equipment tested to Category C4 (-45 °C)*
Ground Survival High Temperature	4.5.3	*Equipment tested to Category C4 (+85 °C)*
Short-Time Operating High Temperature	4.5.3	*Equipment tested to Category C4 (+70 °C)*
Operating High Temperature	4.5.4	*Equipment tested to Category C4 (+70 °C)*
In-Flight Loss of Cooling	4.5.5	*Equipment identified as Category X, no test performed*
Altitude	4.6.1	*Equipment tested to Category D1 (50,000 ft)*
Decompression	4.6.2	*Equipment tested to Category A1 (8,000 to 50,000 ft)*
Overpressure	4.6.3	*Equipment tested to Category A1 (-15,000 ft)*
Temperature Variation	5.0	*Equipment tested to Category B (5 °C/min)*
Humidity	6.0	*Equipment tested to Category A (48 hours)*

CONDITIONS	SECTION	DESCRIPTION OF TESTS CONDUCTED
Operational Shock and Crash Safety Operational Shock Crash Safety (impulse) Crash Safety (sustained)	7.0	 *Equipment tested to Category B (6 g for 11 ms)* *Equipment tested to Category B (20 g for 11 ms)* *Equipment tested to Category B (20 g for 3 sec)*
Vibration Fixed Wing –Sine Fixed Wing – Random Helicopter – Random, unknown (See remark 4)	8.0	*Equipment tested to Categories:* *SM* *SB* *U2FF1*
Explosive Atmosphere	9.0	*Equipment identified as Category X, no test performed*
Waterproofness	10.0	*Equipment identified as Category X, no test performed*
Fluids Susceptibility	11.0	*Equipment identified as Category X, no test performed*
Sand and Dust	12.0	*Equipment identified as Category X, no test performed*
Fungus	13.0	*Equipment identified as Category X, no test performed*
Salt Fog Test	14.0	*Equipment identified as Category X, no test performed*
Magnetic Effect	15.0	*Equipment tested to Category Z (0 < D < 0.3 m)*
Power Input DC Equipment DC Current Ripple DC Inrush	16.0	*Equipment tested to Category:* *Z (+28 Vdc equipment),* *B (+14 Vdc and + 28 Vdc equipment)* *X, no test performed* *X, no test performed*
Voltage Spike	17.0	*Equipment tested to Category A (600Vp, 10 us)*
Audio Frequency Susceptibility	18.0	*Z (+28 Vdc equipment),* *B (+14 Vdc equipment)*
Induced Signal Susceptibility Magnetic Fields into Equipment Magnetic Fields into Cables Electric Fields into Cables Voltage Spikes into Cables	19.0	*Equipment tested to Category [ZC]* *20 A at 400Hz* *30 A-m at 400Hz* *1800V-m at 400Hz* *L=3.0m*

CONDITIONS	SECTION	DESCRIPTION OF TESTS CONDUCTED
Radio Frequency Susceptibility Radiated Conducted (See remark 3)	20.0	*Equipment tested to Category RR* *R (20 V/m CW&SW) and (150 V/m PM)* *R (30 mA)*
Radio Frequency Emission (See remark 3)	21.0	*Equipment tested to Category H*
Lightning Induced Transient Susceptibility Pin Injection Cable Bundle (See remark 3)	22.0	*Equipment tested to Category [A3J33]* *Waveform Set A, Test Level 3* *Waveform Set J, Test Levels 33*
Lightning Direct Effects	23.0	*Equipment identified as Category X, no test performed*
Icing	24.0	*Equipment identified as Category X, no test performed*
Electrostatic Discharge	25.0	*Equipment identified as Category X, no test performed*
Fire, Flammability	26.0	*Equipment identified as Category X, no test performed*
Other Tests	N/A	N/A

REMARKS

1. This product is a derivative of the JA95-001. Tests were performed on a JA95-001 and a JA95-R03. A similarity analysis between the two products is detailed in the Jupiter Avionics Corp. document: *JA95-R12 CAN-TSO Design Change Assessment Rev A*

2. Test information can be found in the Jupiter Avionics Corp. documents:
JA95-001 Test Report (Qualification - Final) Rev B
JA95-R03 Test Report (Environmental - Vibration - 20160629) Rev A
JA95-R03 Test Report (Environmental - Operational Shock & Crash Safety - 20160630) Rev A

3. Testing of Radio Frequency Susceptibility, Radio Frequency Emission and Lightning Induced Transient Susceptibility was conducted at CKC Laboratories in Bothell, WA, USA.
Reference Jupiter Avionics Corp. document: *JA95-001 Test Report (CKC Labs DO-160F Section 20, 21, 22 – 2012-11-26 to 30) Rev A*

4. During exposure to vibration test conditions the following critical resonances changed frequency greater than 2.5%:

Orientation	Initial Freq.	Final Freq.
Side Mount, Vertical	1054 Hz	1016 Hz