JA95-R03 Audio Controller
Remote Mount - One Transceiver

Installation and Operating Manual

Rev C

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RECORD OF REVISIONS

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A	Jun 2016	Initial release, Serial number 1001 and higher	4027
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Table of Contents

SECTION 1 - DESCRIPTION 1
1.1 System Overview 1
1.2 Features Overview 1
1.3 Inputs and Outputs 2
1.3.1 Inputs 2
1.3.2 Outputs 2
1.3.3 Bi-directional Ports 2
1.4 Specifications 2
1.4.1 Electrical Specifications 2
1.4.2 Mechanical Specifications 4
1.4.3 Configuration Connector 4
1.4.4 Product Configuration Software Version 4
SECTION 2 – INSTALLATION 5
2.1 Introduction 5
2.2 Continued Airworthiness 5
2.3 Unpacking and Inspecting Equipment 5
2.3.1 Warranty 5
2.4 Installation Procedures 5
2.4.1 Installation Limitations 5
2.4.2 Cabling and Wiring 6
2.4.3 Mechanical Installation 6
2.4.4 In-Line PTT Cordsets 6
2.4.5 Post Installation Checks 6
2.5 Adjustments and Configuration using ProCS™ 7
2.5.1 Configuration Cabling Requirements 7
2.5.2 ProCS™ Setup 7
2.5.3 Configurable Settings 7
2.5.4 Other Configuration Features 12
2.6 Installation Kit 12
2.6.1 Recommended Crimp Tools 12
2.7 Installation Drawings 12
2.7.1 Generation of Custom Drawings 12
SECTION 3 – OPERATION 13
3.1 Introduction 13
3.2 Normal Operation Mode 13
3.2.1 Receiving 13
3.2.2 Transmitting (Transmit Operation) 13
3.2.3 ICS Operation 13
3.2.4 Music Operation 13
3.3 Emergency Operation Mode 14
Appendix A - Installation Drawings A1
A1 Introduction A1
A2 Installation Drawings A1
Appendix B - Certification Documents B1
B1 Airworthiness Approval B2
B2 Instructions for Continued Airworthiness B2
B3 Environmental Qualification Form B3

SECTION 1 - DESCRIPTION

1.1 System Overview

The JA95-R03 audio controller is a centralized management system that distributes and controls all transceiver, receiver and warning source audio in an aircraft. It enables the selected transmission of microphone audio to a transceiver and distributes all intercom audio.

The JA95-R03 audio controller can be used in a standalone configuration or a star configuration to prevent the loss of the entire system due to the failure of one controller. It provides a passive emergency mode that directs the primary user (PAX 1) to the COM1 transceiver, NAV1 receiver and Direct Audio receiver.

The JA95-R03 audio controller can expand one headset position to four headsets or can connect 7 headsets to an ICS TIE line.

The JA95-R03 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-R03 design.

1.2 Features Overview

The JA95-R03 has numerous adjustable input and output levels, several audio paths are selectable, and alert audio analogue waveforms can be loaded using the configuration tool ProCS (**Pro**duct **C**onfiguration **S**oftware) 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-R03 supports one transceiver.

The JA95-R03 supports up to one receiver.

The JA95-R03 has individual VOX gating.

The JA95-R03 supports one Direct Audio input to provide audio at a fixed level to the users.

The JA95-R03 allows transmit access for four cabin crew members (PAX1, PAX2, PAX3 and PAX4).

The JA95-R03 has a one channel Alert Generator.

The JA95-R03 has two modes of operation: Normal Mode and Emergency Mode.

The JA95-R03 Audio Controller provides intercom functions for up to seven users.

1.3 Inputs and Outputs

Refer to the JA95-R03 connector maps for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
ALERT ENABLE	1	Active high discrete
ALERT KEY	1	Active low discrete (Feature selected from ProCS)
CONFIG DATA TO JA95-R03	1	Data signal
DIRECT AUDIO HI/LO	1	Audio signal
MIC HI/LO	7	Audio signal
MODE SELECT	1	Multi format signal
MUSIC L/R HI/LO	2	Audio signal
PAX 1 to 4 ICS PTT	4	Active low discrete (Feature selected from ProCS)
PAX 1 to 4 TX PTT	4	Active low discrete (Feature selected from ProCS)
POWER INPUT	1	+14 or +28 Vdc power supply
RX HI/LO	1	Audio signal

1.3.2 Outputs

Name	Qty	Type
CONFIG DATA FROM JA95-R03	1	Data signal
PHN HI/LO	7	Audio signal Note: There are 6 outputs for driving 7 phones.
MIC HI/LO	1	Audio signal
PTT	1	Active low discrete

1.3.3 Bi-directional Ports

Name	Qty	Type
ICS TIE HI/LO	1	Audio 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

Receive audio rated input level	7.75 Vrms ±10%
Direct audio rated input level	7.75 Vrms ±10%
Music rated input level	400 mVrms ±10%
Microphone input level	250 mVrms ±10%
Intercom Tie Line type 1 input level	340 mVrms ±10%
Intercom Tie Line type 2 input level	1.20 Vrms ±10%

Rated Output Level

Phone rated output	7.75 Vrms ±10%
PAX1 Phone rated output, in emergency mode or with power input ≤6 Vdc	2.10 Vrms ±10%
Phone rated output power, with MUSIC input	3.88 Vrms ±10%
Microphone rated output	250 mVrms ±10%
Intercom Tie Line type 1 rated output	340 mVrms ±10%
Intercom Tie Line type 2 rated output	1.2 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

Microphone input Impedance	150 Ω ±10%
Direct Audio input Impedance	1000 Ω ±10%
Receive Audio input Impedance	1000 Ω ±10%
Music Audio input Impedance	1000 Ω ±10%
Intercom Tie Line Audio input Impedance	2000 Ω ±10%

Output Load

Phone load	600 Ω ±10%
Transceiver Microphone load	150 Ω ±10%
Intercom Tie Line type 1 rated load	2000 Ω ±10%
Intercom Tie Line type 2 rated load	2000 Ω ±10%
Intercom Tie Line type 1 maximum load	666 Ω max (3 loads)
Intercom Tie Line type 2 maximum load	285 Ω max (7 loads)

Input to output Crosstalk and Bleed-through Level

Input to Output crosstalk	≤55 dB

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

Microphone inputs designed for MIC type	amplified dynamic/electret
Microphone inputs bias voltage	12 Vdc ±10%
Microphone inputs circuitry type	single ended
MUSIC attenuation	38 dB Min
RECEIVE AUDIO input circuitry type	differential
PHN HI / LO output circuitry type	single ended
MIC output circuitry type	differential
ICS TIE HI / LO Circuitry Type	differential
PHN HI / LO output music fade in duration	2.5 ± 1.0 seconds
Transmit Timer duration	90 ± 30 seconds
ICS TIE audio detect threshold level from MIC audio input	7 to 9 mVrms
RX Audio detect threshold control range, relative to rated receive audio input	-36 to -12 dB

1.4.1.4 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
Active low control output, active output	≤ +2 Vdc
Active low control output, active, current sinks	≤ 1 Adc
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 in149.1 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 Configuration Connector

The JA95-R03 configuration connector communication standard for CONFIG DATA TO JA95 data input signal and CONFIG DATA FROM JA95 data output signal is RS-232.

1.4.4 Product Configuration Software Version

Configuration of the JA95-R03 requires the Product Configuration Software (ProCS) version v0.50.4 or later. Refer to the release notes from http://www.jupiteravionics.com/productsoftware.php or contact Jupiter Avionics to ensure the correct version is used.

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-R03 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 the 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 and FAA TSO approval of the JA95-R03 are minimum performance standards. Those installing the JA95-R03, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within TSO standards. The JA95-R03 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-R03 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 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 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 (Headset expansion option).
c) Check P2 pin **34** for continuity to ground (less than 0.5 Ω).
d) Check P2 pins **7, 8, 9** and **10** for continuity to ground (less than 0.5 Ω) when the relevant switch is closed.
e) Check all pins for shorts to ground or adjacent pins.

2.4.5.2 Configuration

Ensure that the JA95-R03 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.

2.4.5.3 Power on Checks.

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

a) Begin with only the PAX1 headset attached. Confirm correct ICS and radio operation for both receive and transmit. Check yoke or cyclic switch action. Check the radio selection and inputs. Do not proceed until the radios are functioning correctly.

b) If there is a music source in the system, turn it on and check for proper mute operation.

c) 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.

d) Check the ICS operation and Emergency operation.

e) Plug in the PAX2 headset. Check for correct ICS operation. Check yoke or cyclic switch functions.

f) Plug in any remaining headsets, and check for correct ICS operation. Note that an incorrect cordset (drop cord) or improper jack wiring may cause a wide range of problems, from loss of audio to a tone heard in the headset.

g) 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-R03 internal adjustments are set from the Product Configuration Software ProCS™. Configuration data is sent to the JA95-R03 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-R03, 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-R03 are not included with the unit.

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

2.5.2 ProCS™ Setup

The ProCS™ JA95-R03 menu item 'ProCS Setup' provides Setup drawings showing the cabling arrangement for connecting the JA95-R03 to a computer running the ProCS™.

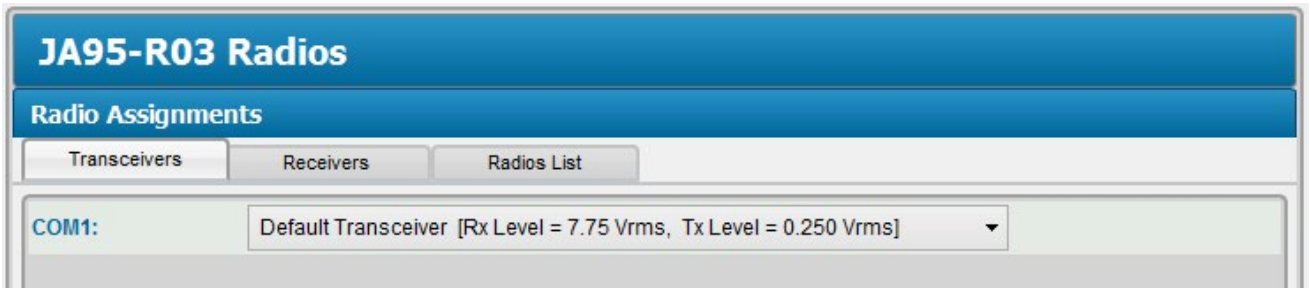
2.5.3 Configurable Settings

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-R03, power must be applied.

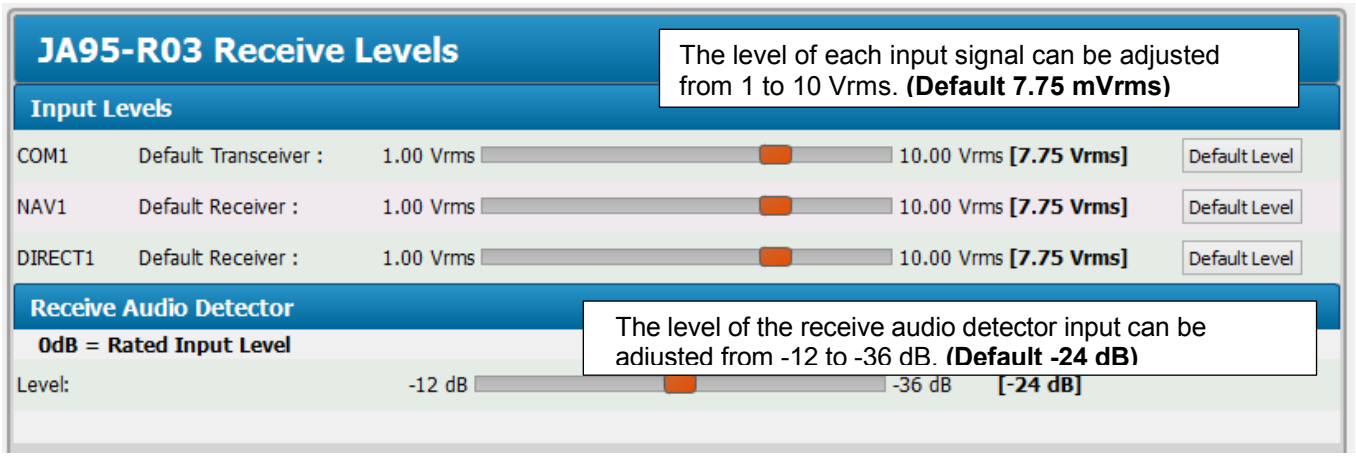
Within ProCS™, the configurable settings are grouped together into the following sections:

2.5.3.1 Radios

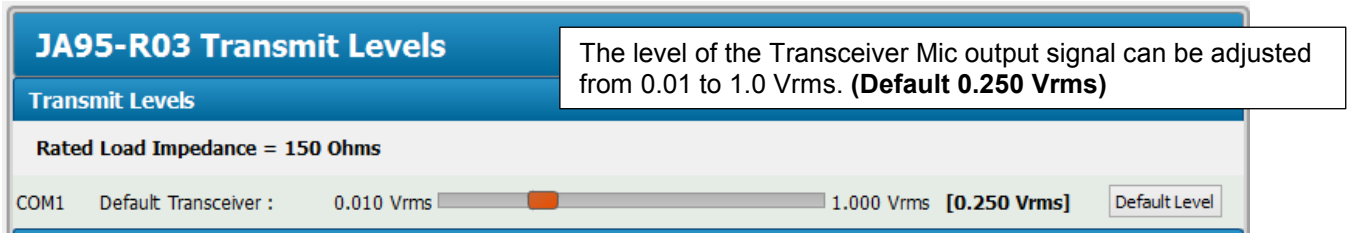


The Radios window is used to define the radios for the transceiver and receivers.

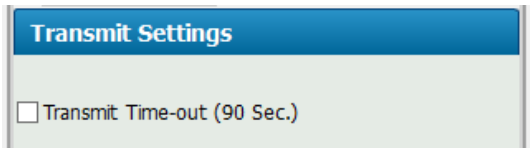
2.5.3.2 Receive Levels



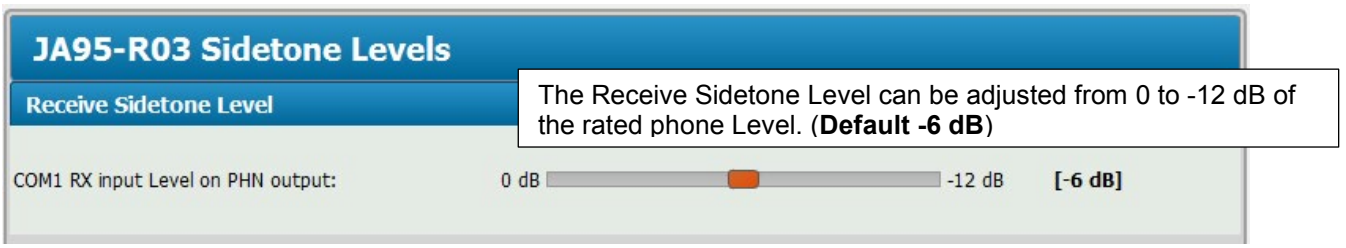
2.5.3.3 Transmit Levels



When the Transmit Timeout check box is checked the transmit time-out is enabled (**Default not checked**)



2.5.3.4 Sidetone Level



2.5.3.5 Connector Pin Configuration

The JA95-R03 can be configured for either ICS Expansion or Headset Expansion. When the mode of operation is selected, all the buttons in the column below will automatically be selected.

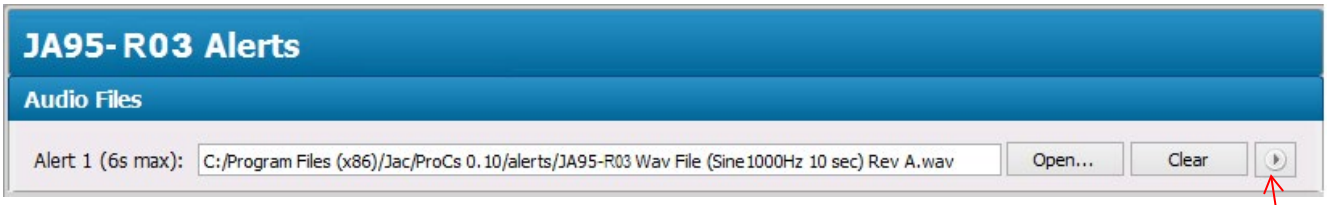
For ICS Expansion mode, refer to Interconnect sheets 2/3 of 6, and for Headset Expansion, see sheets 4/5 of 6.

2.5.3.6 Alerts

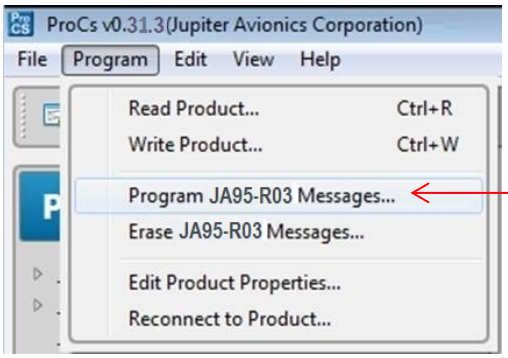
WARNING: **The internal audio alert is intended only to supplement, NOT replace, airframe alerts such as 'low rotor RPM', 'engine out' or 'decision height alerting'. The alert audio feature is intended for use as a secondary alerting system where another device provides the primary annunciation.**

Audio Files

The JA95-R03 has a standard audio signal for the alert, and the audio file window allows this signal to be customized with other recordings during the configuration process. The default Alert signal loaded into the unit at the factory is JA95-R03 Wav File (Sine 1000Hz 10 sec) Rev B.WAV



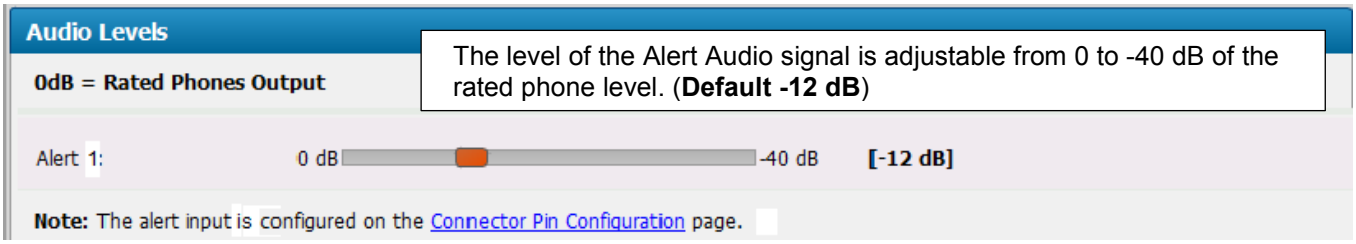
Saving new Audio Files



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

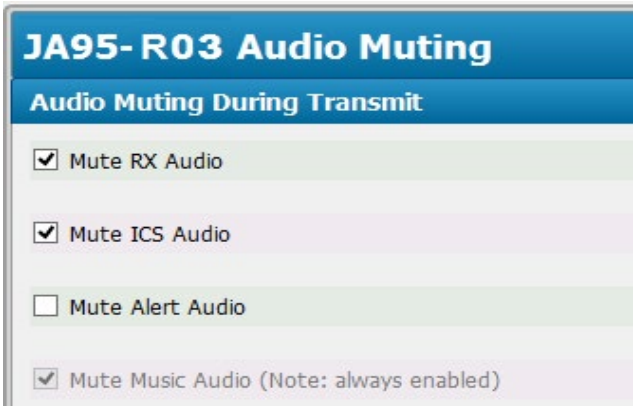
It may be uploaded to the JA95-R03 using the 'Program' menu and selecting 'Program JA95-R03 Messages…'.

Note that this pane will have different content if a JA95-R03 is not connected.



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

2.5.3.7 Audio Muting (During Transmit)

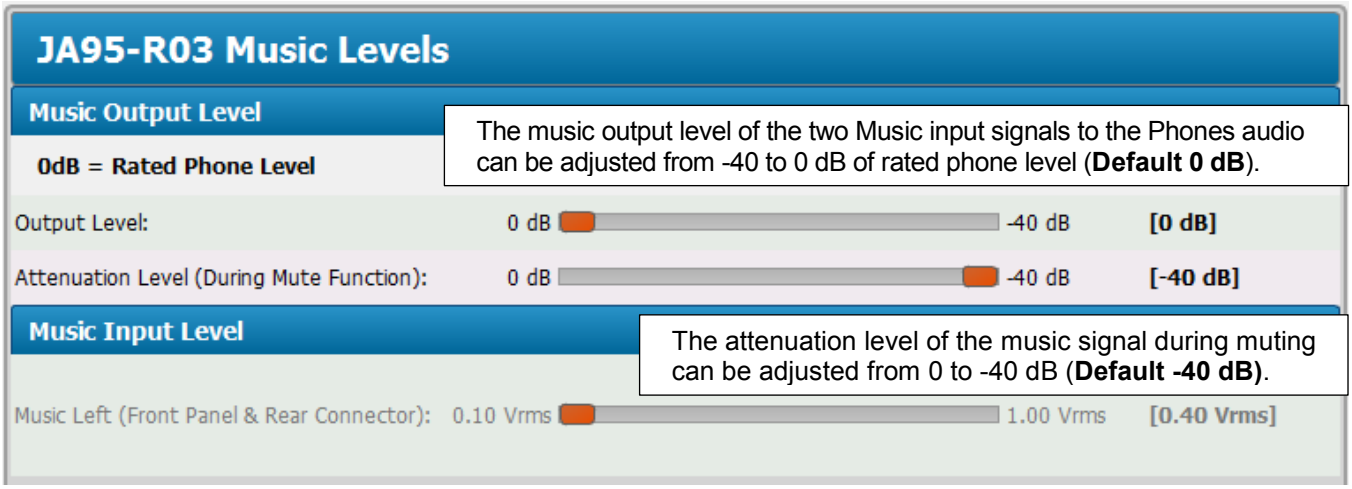


When the Mute RX Audio check box is checked the Receive Audio is muted during transmit (**Default checked**)

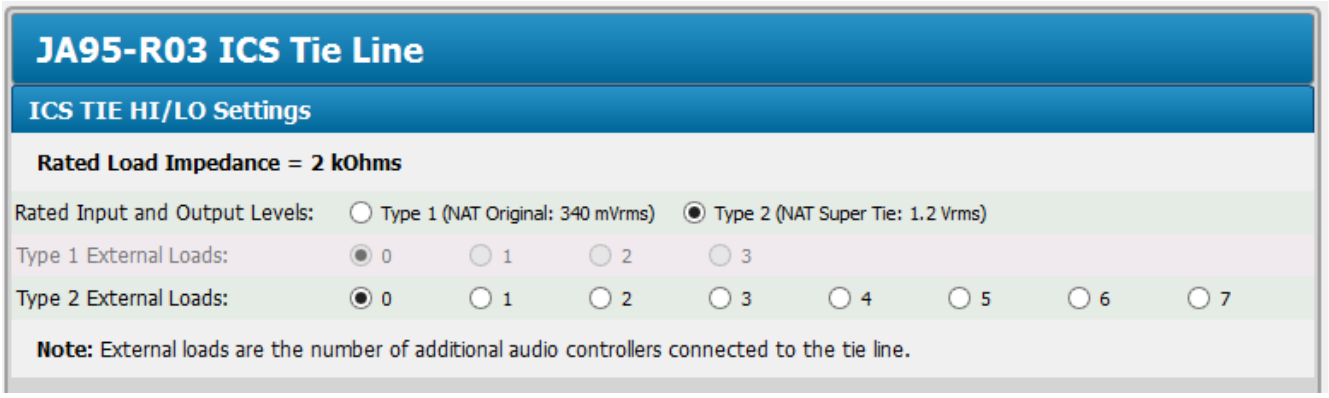
When the Mute ICS Audio check box is checked the ICS Audio is muted during transmit (**Default checked**)

When the Mute Alert Audio check box is checked the Alert Audio is muted during transmit (**Default not checked**)

2.5.3.8 Music Levels



2.5.3.9 ICS Tie Line

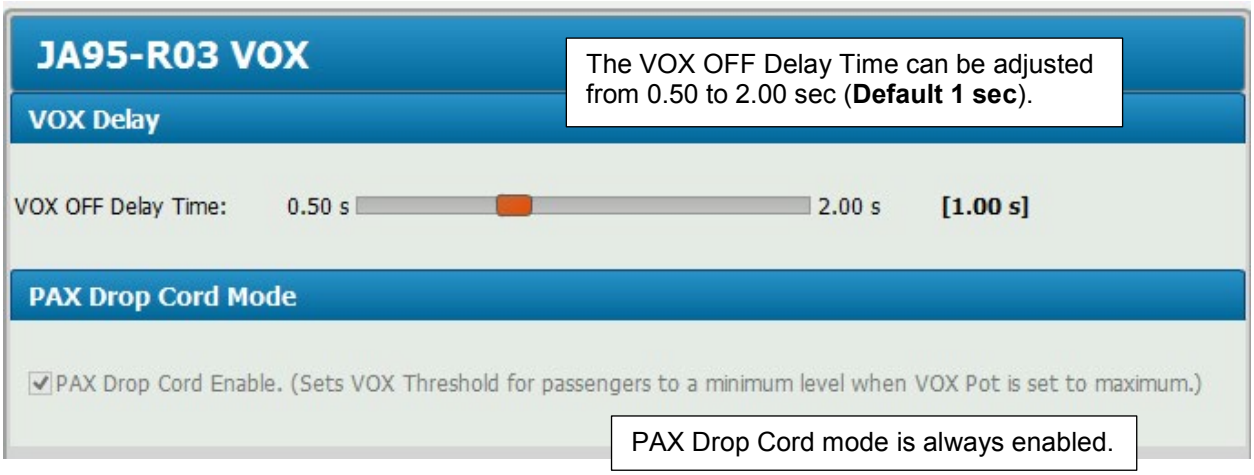


The rated input and output levels of the intercom tie line can be selected as Type 1 or Type 2 (**Default Type 2**).

The quantity of external loads for a type1 intercom tie line can be selected from 0 to 3 (**Default 0**).

The quantity of external loads for a type 2 intercom tie line can be selected from 0 to 7 (**Default 0**).

2.5.3.10 VOX



2.5.3.11 Connector Maps

When the Mode of Operation has been selected from the Connector Pin Configuration page (see section 2.5.3.5), only the appropriate connector maps and interconnects will be shown in this section. (See also section 2.7.1.)

2.5.4 Other Configuration Features

In the JA95-R03 Product Information Window, the model number, serial number and check sum of the JA95-R03 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-R03. 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-R03.

The JA95-R03 may be configured to operate either as Intercom Expansion equipment or Headset Expansion Equipment.

3.2 Normal Operation Mode

The JA95-R03 is in Normal mode when suitable electrical power is supplied to the unit.

3.2.1 Receiving

When operating as intercom expansion equipment and the JA95-R03 receives an incoming transmission on a transceiver or receiver, the incoming audio will be directed to the user's phones.

The audio level of any incoming transmission will depend upon the level selected during installation by the ProCS™. It will be muted if the unit is transmitting and muting of receive audio during transmit is enabled.

3.2.2 Transmitting (Transmit Operation)

When operating as intercom expansion equipment and the user's TX PTT is activated, the unit will transmit on the transceiver. All MIC and sidetone CAN TSO Minor Mod audio will be routed to the user's phones, and any music will be muted for the duration of the transmission.

3.2.3 ICS Operation

In Headset Expansion mode, ICS audio is the sum of all the MIC audio from users with ICS KEY active.

In ICS Expansion mode, ICS audio is the sum of all the MIC audio from users PAX5 to PAX7, and MIC audio from users PAX1 to PAX4 with ICS key active.

In ICS Expansion mode, the ICS audio also includes the audio input on the ICS TIE from other audio controllers.

In ICS Expansion mode, the ICS audio is muted during transmit if the Mute ICS Audio During Transmit option is selected in ProCS.

The ICS audio is output on the phones of each user.

The ICS audio level at the phones is configured by the ProCS application.

3.2.4 Music Operation

Music to the phones will be muted by incoming audio (ICS, Receive, Direct or Alert Audio) or if the unit is transmitting. When the incoming audio has ended, the music will gradually return to the previous level.

3.3 Emergency Operation Mode

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

When ICS Expansion mode is configured in emergency mode, the PAX1 phone and MIC signals are connected by mechanical relay contacts to the COM1 transceiver, the NAV1 receiver and the DIRECT AUDIO, and the PAX1 TX PTT is connected to the COM1 PTT.

When Headset Expansion mode is configured, in emergency mode only, PAX 1 is connected to the ICS as follows:

The PAX 1 PHONE is connected by mechanical relay contacts to the ICS EXPANSION PHONES INPUT and the NAV 1 RX INPUT and the DIRECT AUDIO input and;
the PAX 1 MIC is connected by mechanical relay contacts to the ICS EXPANSION MIC OUTPUT and;
the PAX 1 PTT is connected by mechanical relay contacts to the ICS EXPANSION PTT OUTPUT.

Installation and Operating Manual

Appendix A - Installation Drawings

A1 Introduction

The drawings necessary for installation and troubleshooting of the JA95-R03 Audio Controller - Remote Mount - One Transceiver 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.

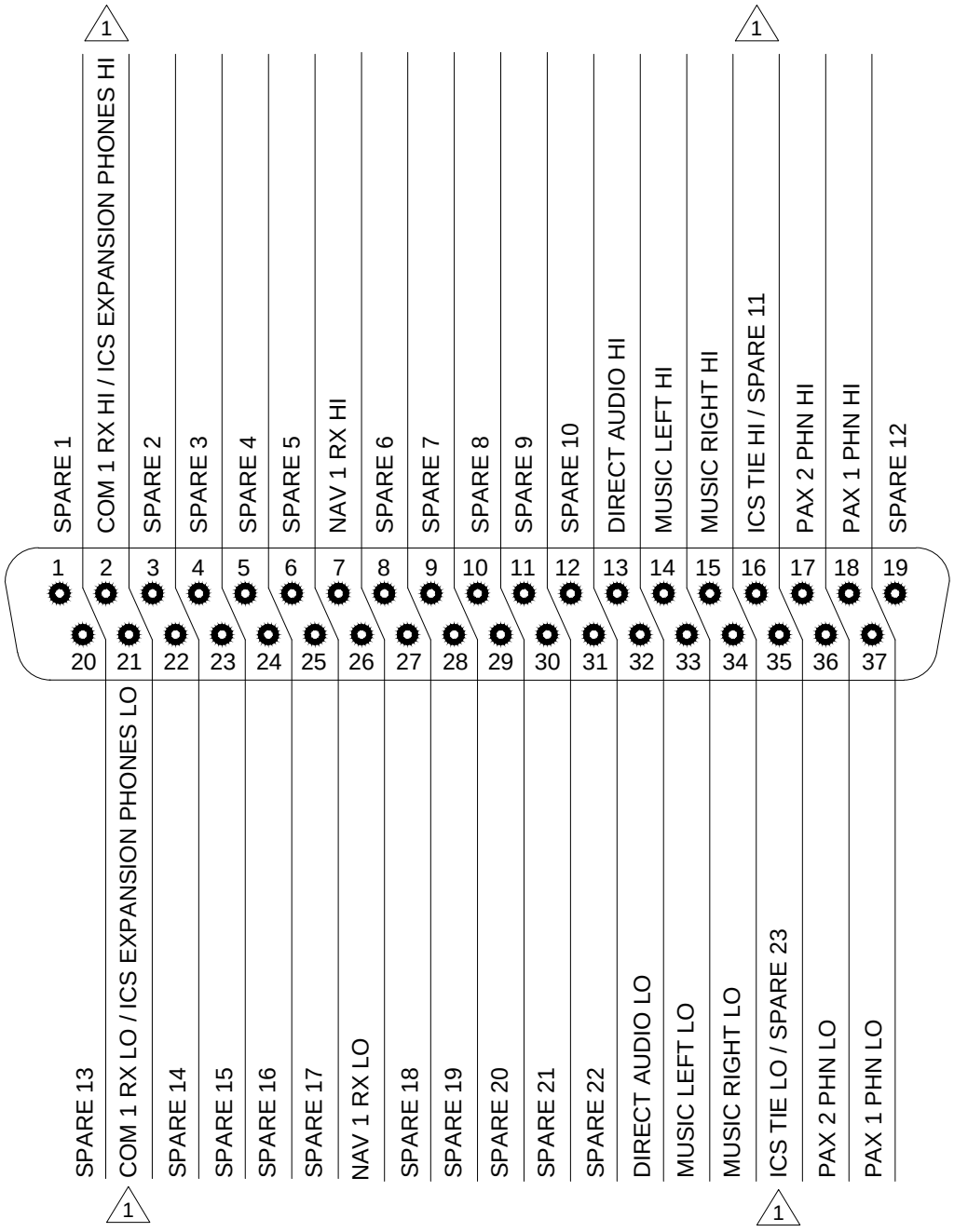
A2 Installation Drawings

DOCUMENT	Rev
JA95-R03 Connector Map	A
JA95-R03 Equipment Block Diagram (ICS Expansion)	A
JA95-R03 Equipment Block Diagram (Headset Expansion)	A
JA95-R03 Equipment Block Diagram (Standby ICS)	A
JA95-R03 Interconnect	A
JA95-R03 Mechanical Installation	B

RECEIVE CONNECTOR

P1

37 PIN FEMALE DMIN
MATING CONNECTOR



VIEW IS FROM REAR OF MATING CONNECTOR

NOTE:

1 CONFIGURABLE CONTACT

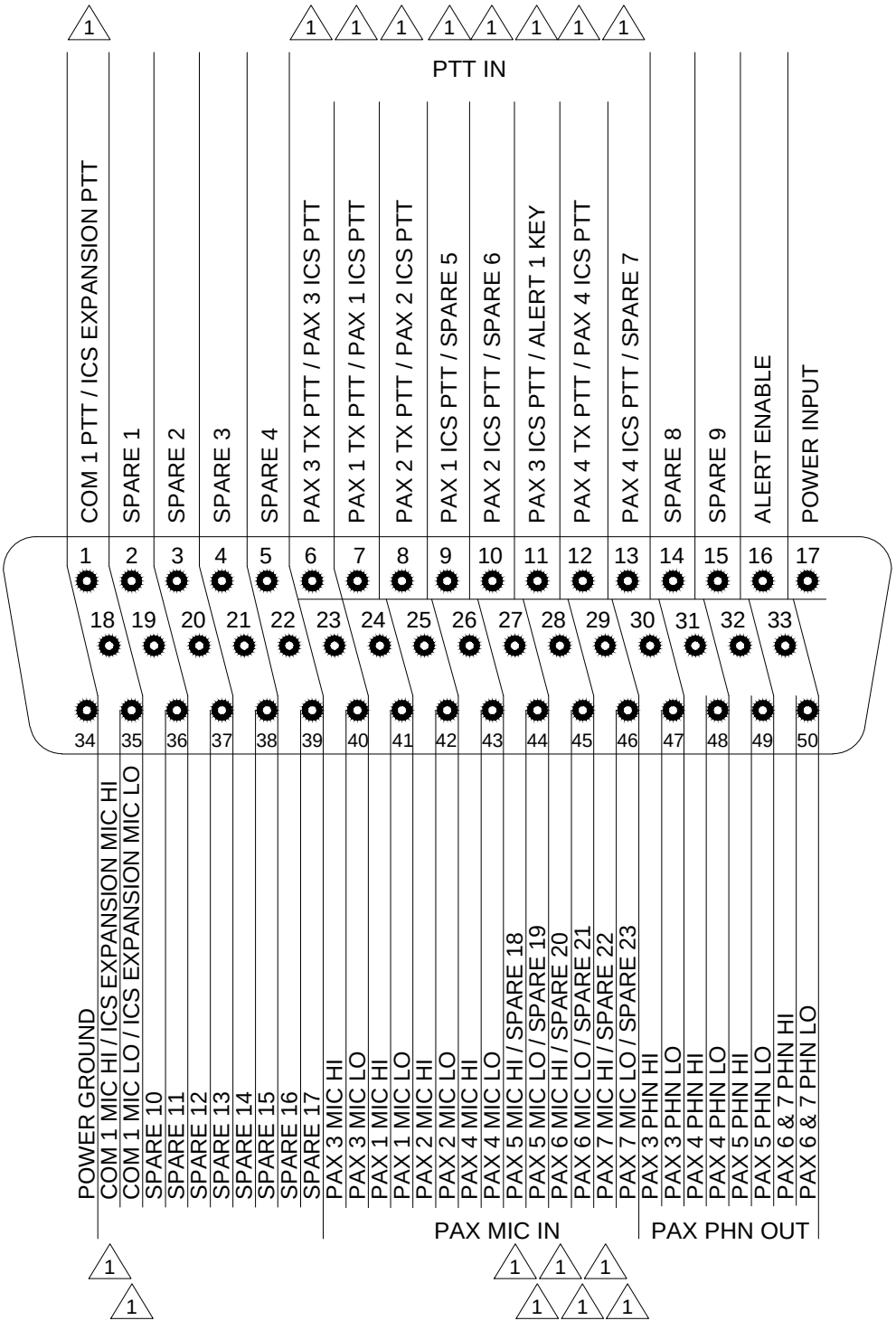
PREPARED	TAT	JUPITER AVIONICS CORPORATION	
CHECKED	JAC 06-07-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver P1 Connector Map	
APPROVED	JAC 06-08-16 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R03 / SHEET: 1/3
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Connector Map Rev A.dwg	

JUPITER AVIONICS TEMPLATE AUTOCAD PORTRAIT SIZEA REV B.DWT

TRANSMIT CONNECTOR

P2

50 PIN FEMALE DMIN
MATING CONNECTOR



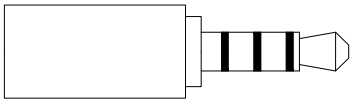
VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	TAT	JUPITER AVIONICS CORPORATION	
CHECKED	JAC 06-07-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver P2 Connector Map	
APPROVED	JAC 06-08-16 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R03 / SHEET: 2/3
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Connector Map Rev A.dwg	

CONFIGURATION CONNECTOR

P3 ACCEPTS THE FOLLOWING PLUG FORMATS

JA99 CONFIGURATION CABLE
4 POLE MALE 3.5MM STEREO

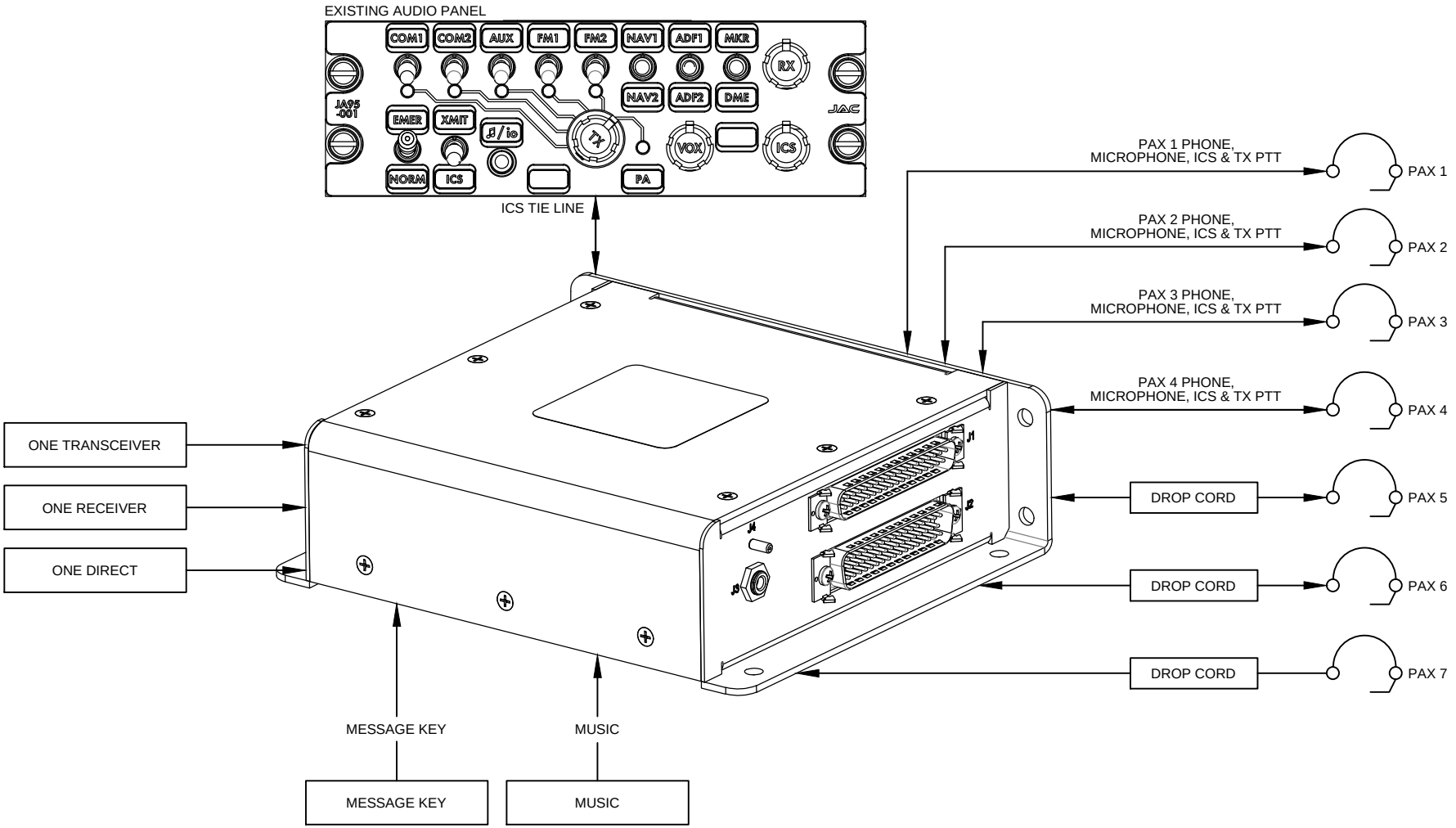


MATING PLUG NAMES	JA95 SIGNAL NAMES
TIP: TX DATA	CONFIG DATA TO JA95
1ST RING: RX DATA	CONFIG DATA FROM JA95
2ND RING: GROUND	GROUND
3RD RING: CONFIG AUDIO	MODE SELECT / CONFIG AUDIO

PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 06-07-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver P3 Connector Map
APPROVED	JAC 06-08-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 3/3
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Connector Map Rev A.dwg

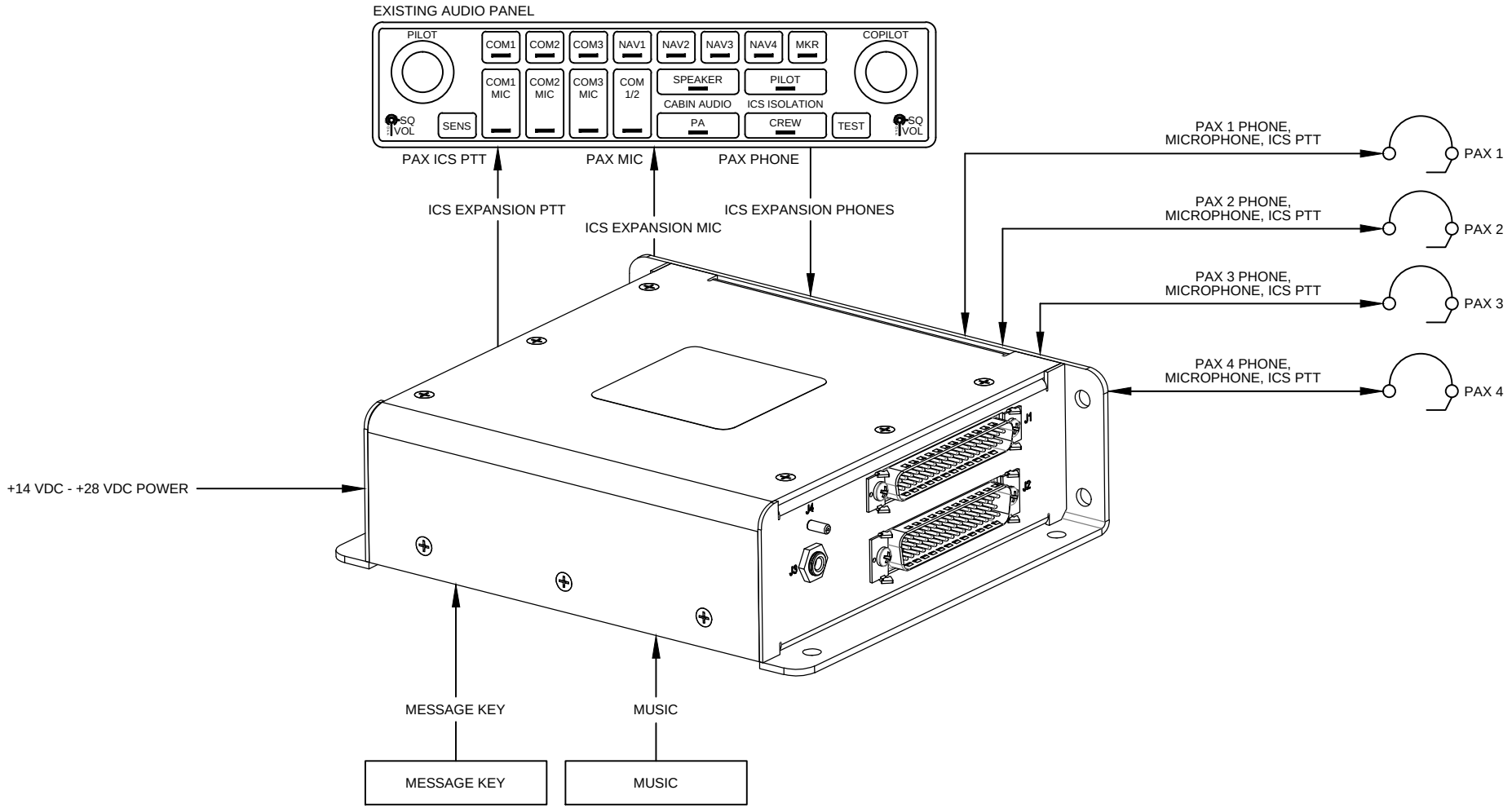
JUPITER AVIONICS TEMPLATE AUTOCAD PORTRAIT SIZEA REV B.DWT

ICS Expansion



PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver Equipment Block Diagram - ICS Expansion
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Equipment Block Diagram (ICS Expansion) Rev A.dwg

Headset Expansion



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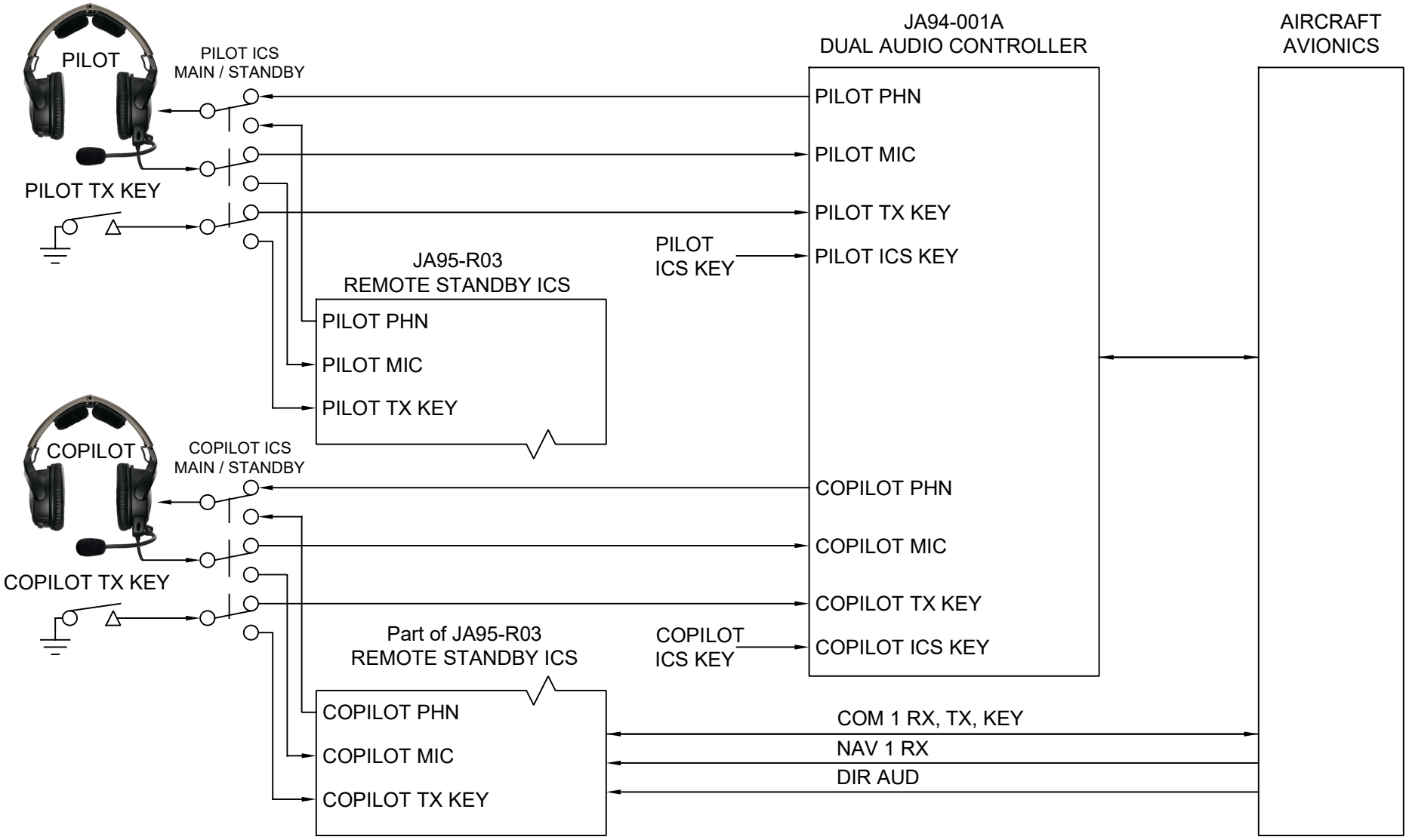
CHECKED	JAC 06-22-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver Equipment Block Diagram - Headset Expansion
APPROVED	JAC 06-22-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Equipment Block Diagram (Headset Expansion) Rev A.dwg



PREPARED	SRM
CHECKED	JAC 08-23-18 SRM
APPROVED	JAC 08-24-18 KDV
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.	

JUPITER AVIONICS CORPORATION

TITLE
Equipment Block Diagram
For a Remote Standby ICS

NCAGE CODE	PART NO.	SHEET
L00N3	JA95-R03	1/1

DOC NO.
JA95-R03 Equipment Block Diagram (Standby ICS) Rev A

JA95-R03 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 1 FT (0.3 M).

△3 CABLE SHIELDS AT THE JA95-R03 CONNECTOR PINS SHOULD BE TERMINATED TO AIRFRAME GROUND USING A TAG RING P/N: MS27741-5 OR EQUIVALENT.

△4 CONNECTOR PIN HAS MORE THAN ONE FUNCTION. SEE THE OPTIONS SECTION OF THIS DRAWING FOR ALTERNATE INTERCONNECT WIRING.

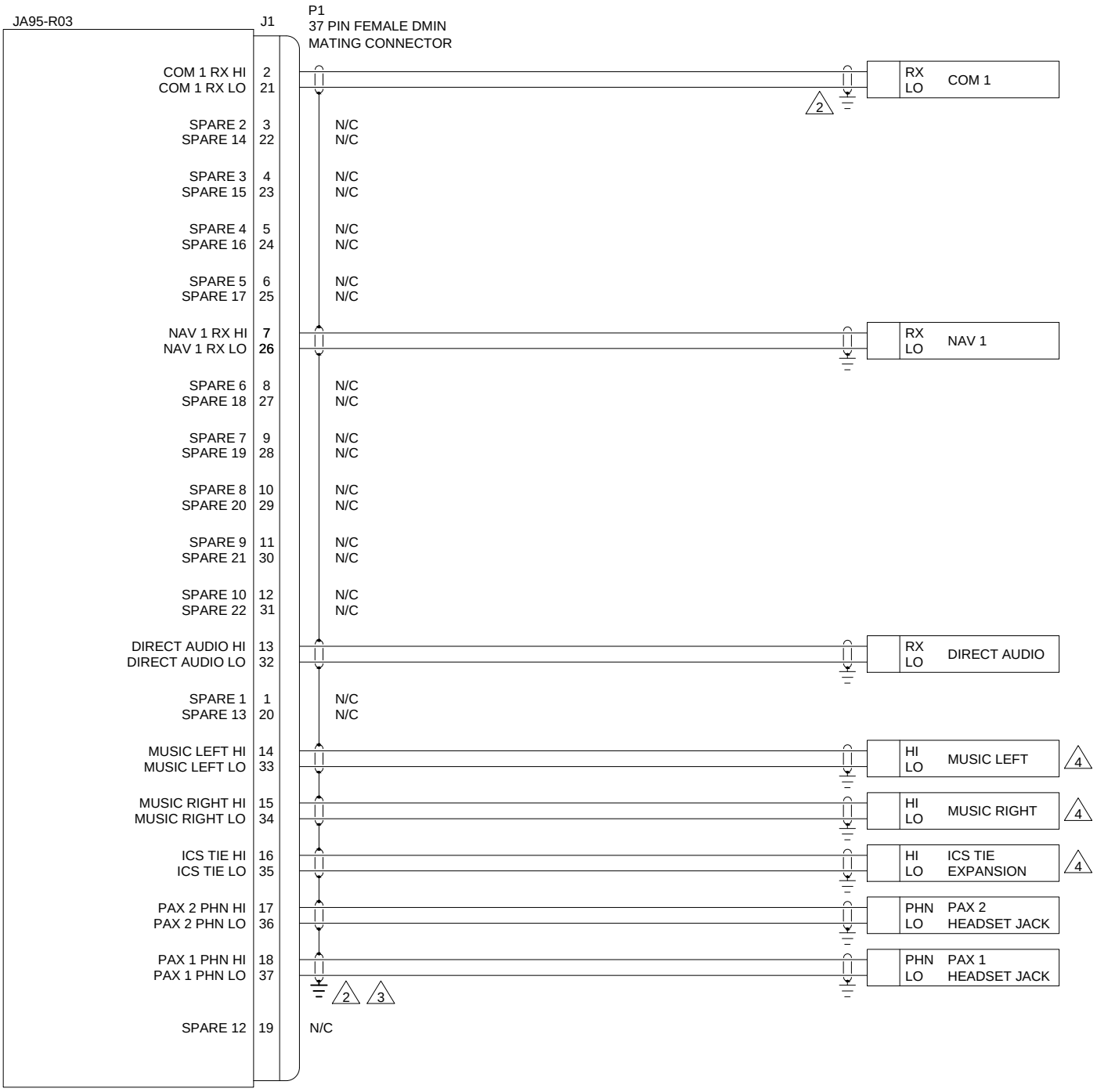
CONNECTOR PIN LEGENDS

LEGEND

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

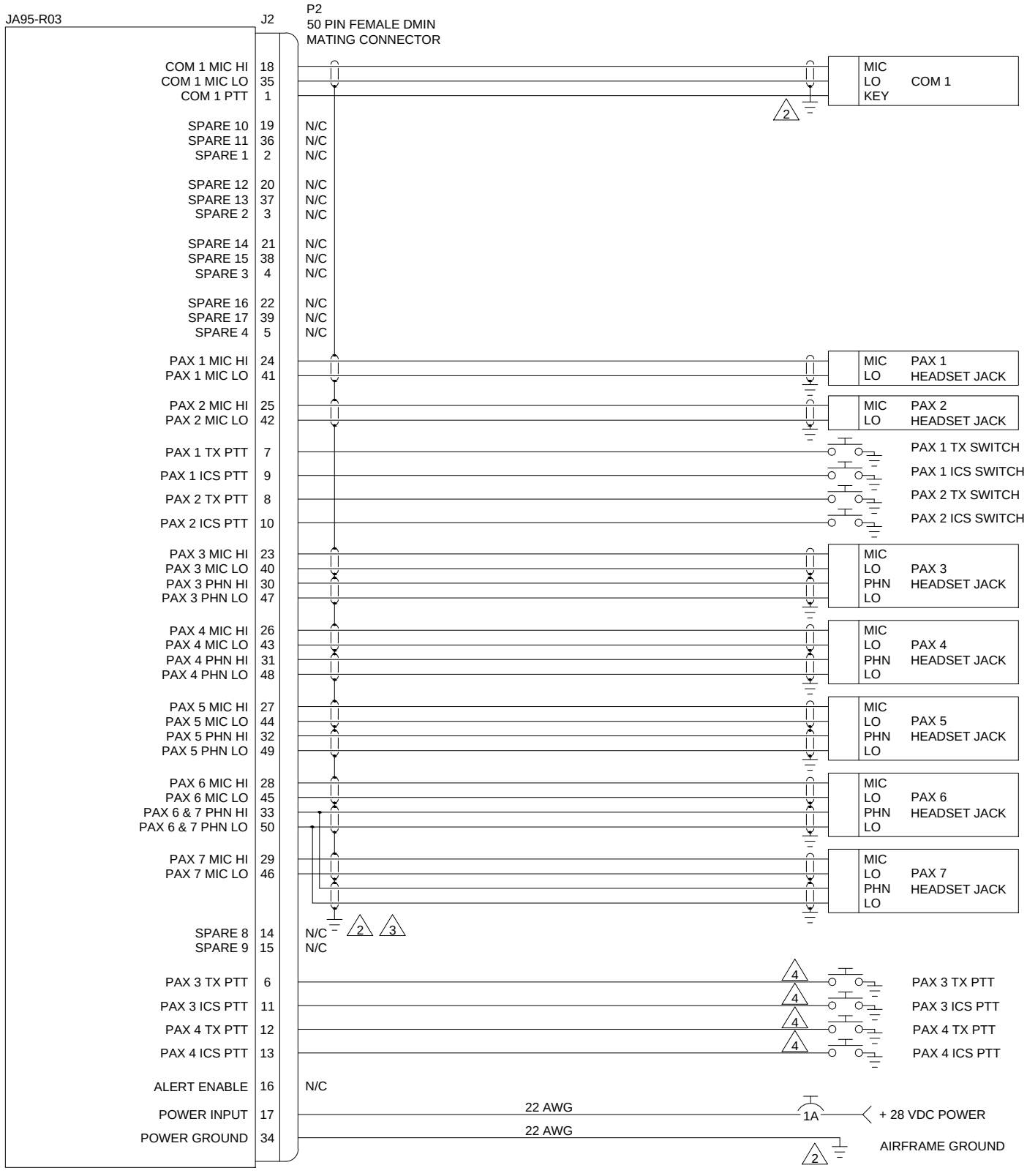
PREPARED	TAT	JUPITER AVIONICS CORPORATION	
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver Interconnect Notes	
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R03 / SHEET: 1/6
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Interconnect Rev A.dwg	

ICS TIE EXPANSION



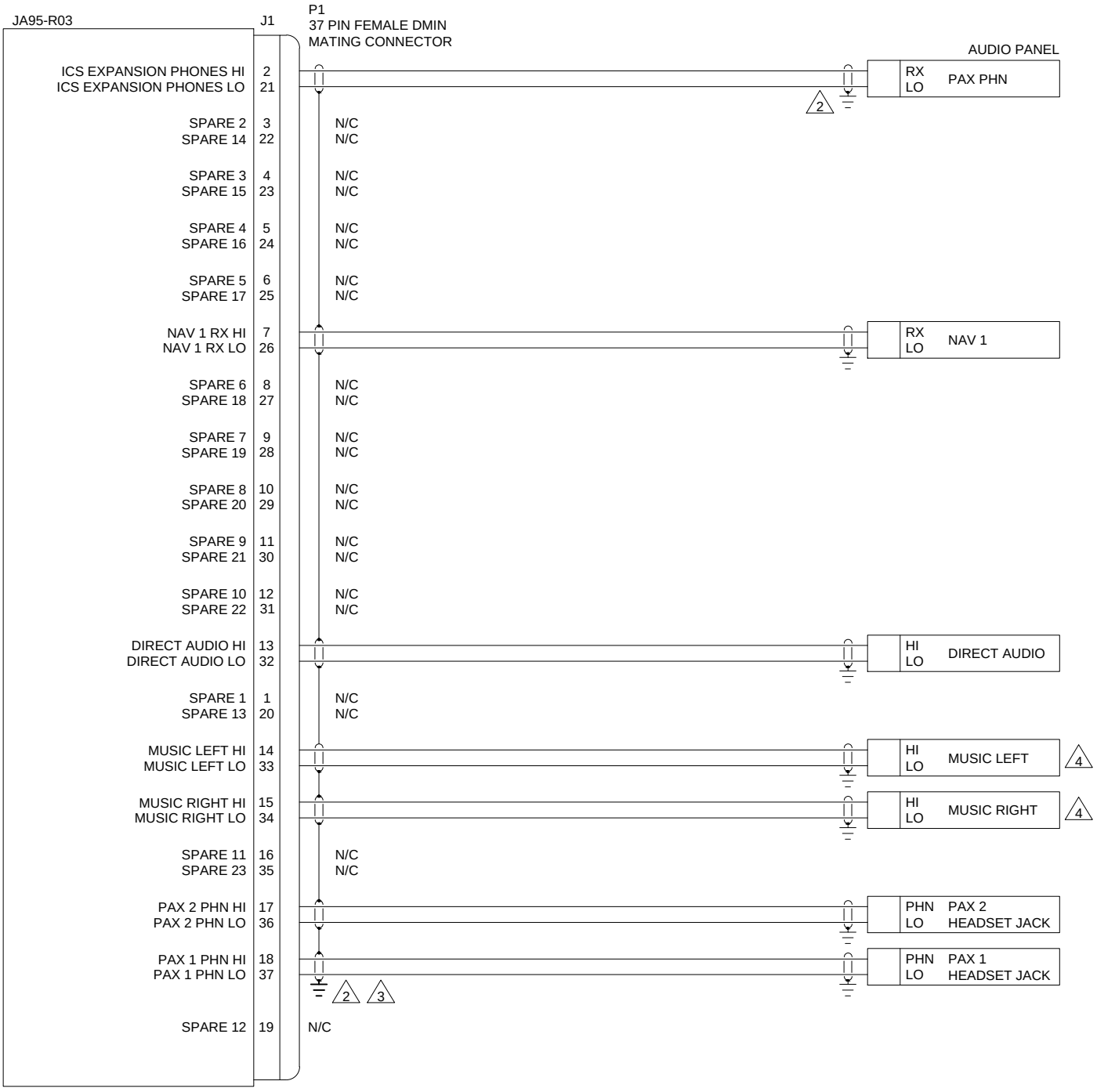
PREPARED	TAT	JUPITER AVIONICS CORPORATION		
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver J1 Interconnect - ICS Tie Expansion		
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3	PART NO.: JA95-R03	SHEET: 2/6
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Interconnect Rev A.dwg		

OPTION: ICS TIE EXPANSION



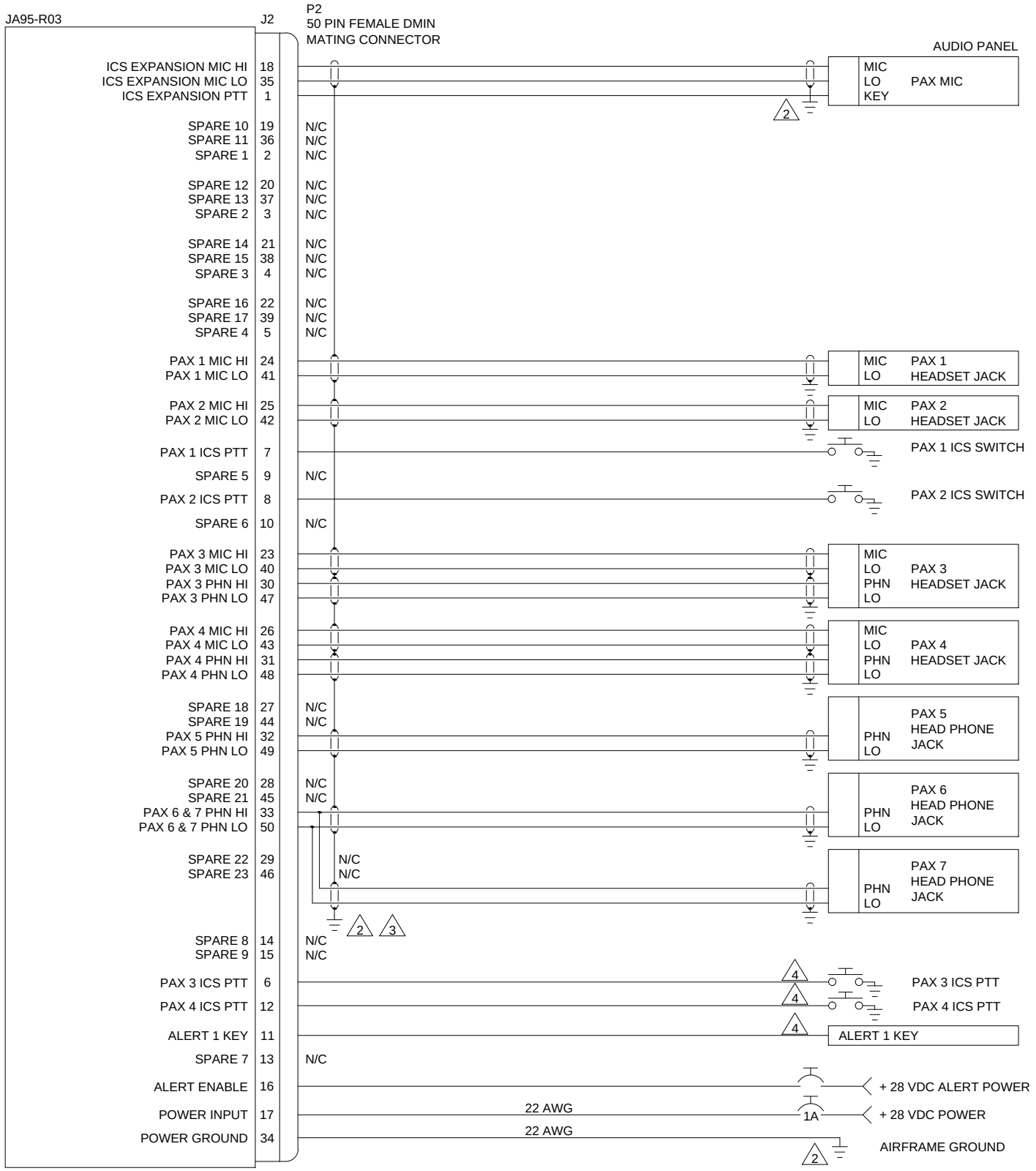
PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver J2 Interconnect - ICS Tie Expansion
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 3/6
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Interconnect Rev A.dwg

OPTION: HEADSET EXPANSION



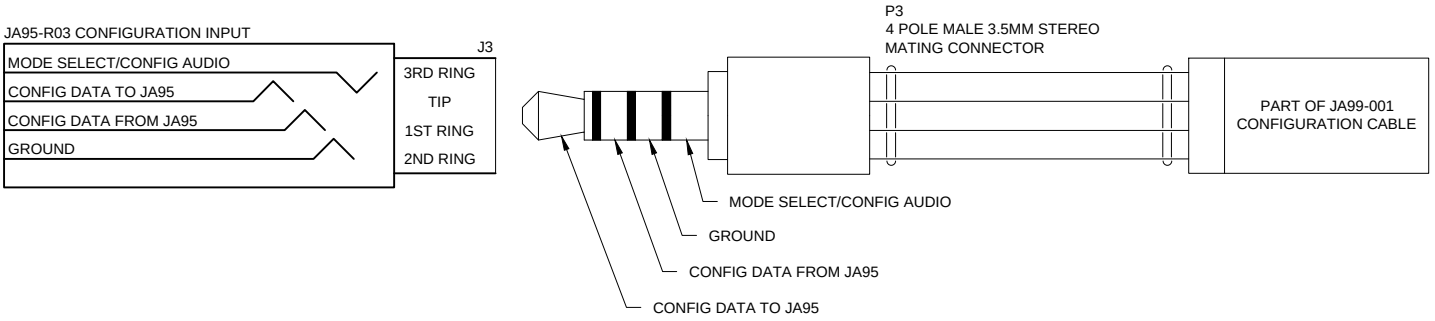
PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver J1 Interconnect - Headset Expansion
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 4/6
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Interconnect Rev A.dwg

OPTION: HEADSET EXPANSION

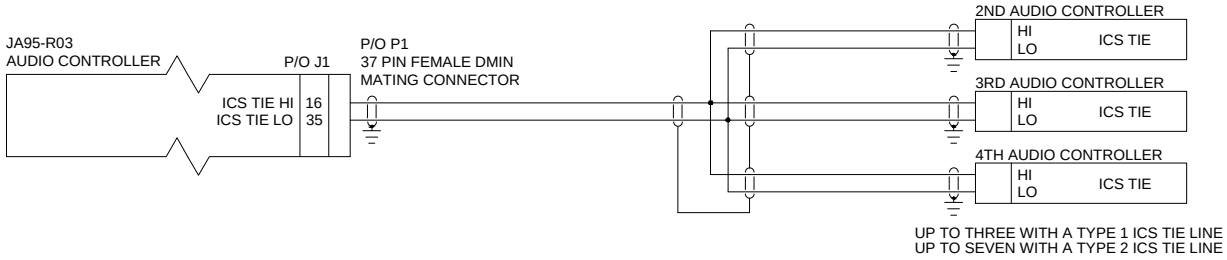


PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver J2 Interconnect - Headset Expansion
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 5/6
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 Interconnect Rev A.dwg

OPTION: CONFIGURATION FROM ProCS APPLICATION

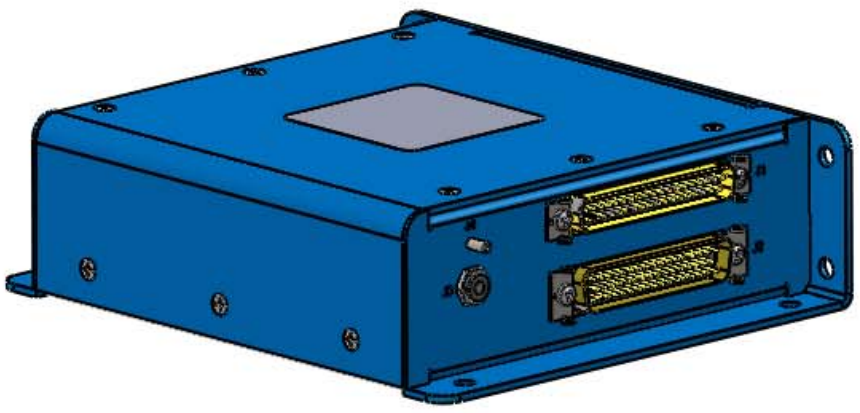


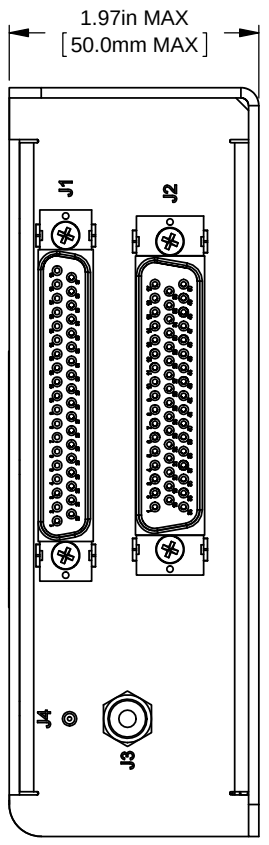
OPTION: MULTIPLE AUDIO CONTROLLER

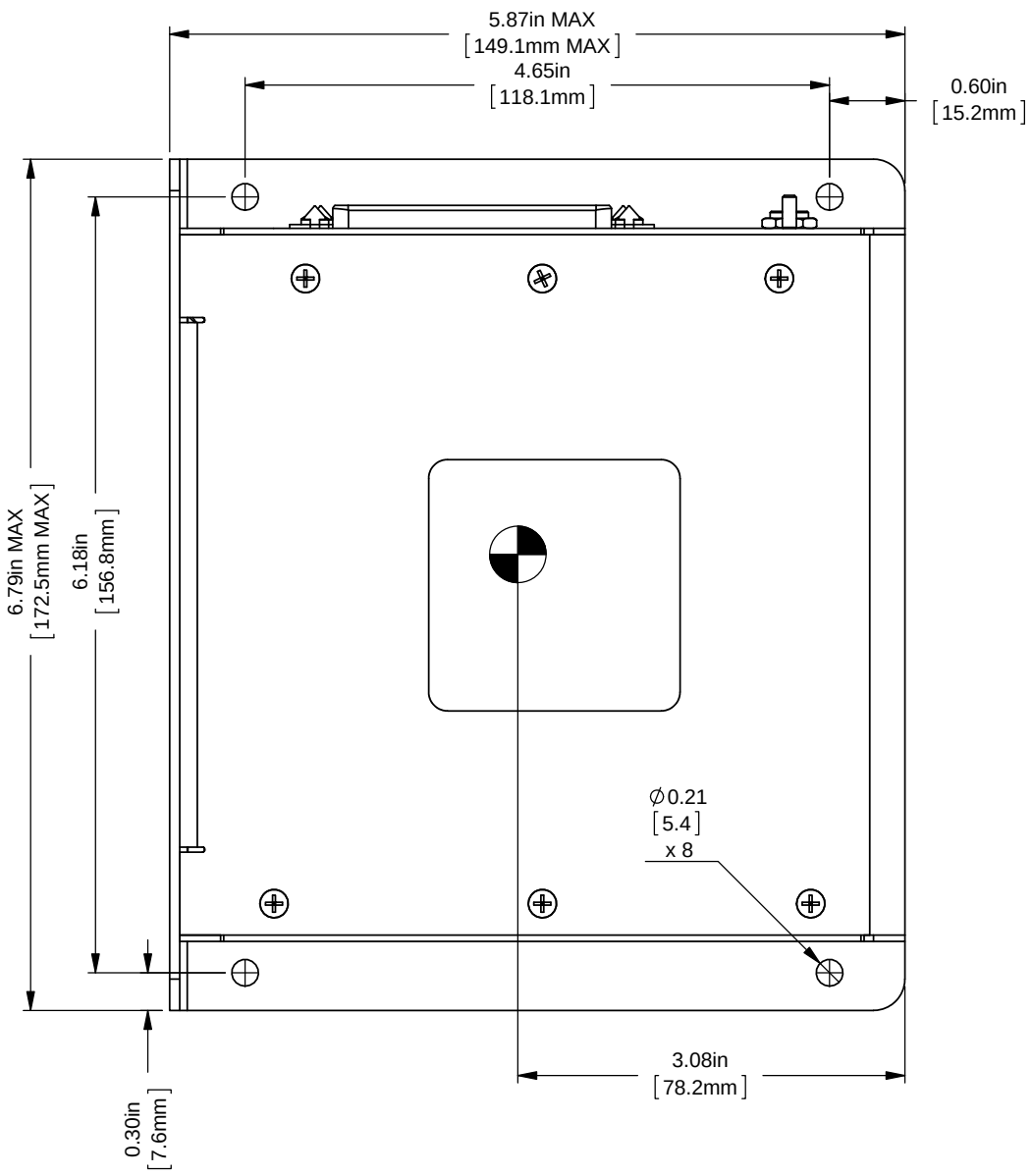


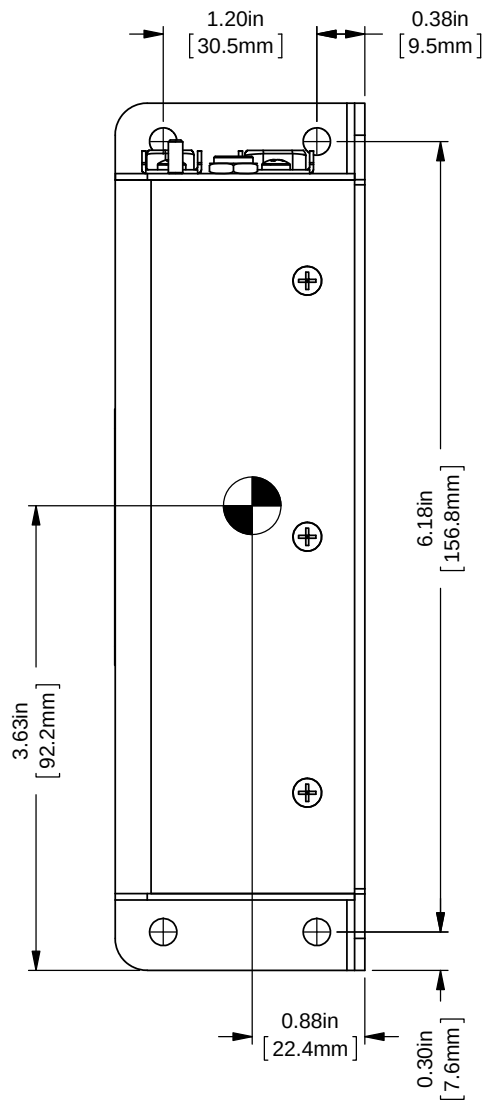
OPTION: CHASSIS GROUND

PREPARED	TAT	JUPITER AVIONICS CORPORATION
CHECKED	JAC 06-16-16 SRM	TITLE: Audio Controller - Remote Mount - One Transceiver Interconnect Options
APPROVED	JAC 06-16-16 KDV	NCAGE CODE: L00N3 / PART NO.: JA95-R03 / SHEET: 6/6
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO.: JA95-R03 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 04-05-18 AH
	APPROVED	JAC 04-05-18 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 - One Transceiver

NCAGE CODE	PART NO.	SHEET
L00N3	JA95-R03	1/1

DOC. NO.
JA95-R03 Mechanical Installation Rev B.SLDDRW

Installation and Operating Manual

Appendix B - Certification Documents

B1 Airworthiness Approval

Airworthiness approval of the JA95-R03 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-R03 Audio Controller - Remote Mount – One Transceiver. 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-R03 Audio Controller - Remote Mount – One Transceiver in [aircraft location].

The JA95-R03 is approved to CAN-TSO-C139. The JA95-R03 meets RTCA DO-160F environmental qualifications for this installation.

Installed in accordance with the JA95-R03 Installation Manual, Revision [ ], and AC 43.13-2, Chapters 2, and 3.

The JA95-R03 interfaces with existing aircraft systems per the Installation Manual instructions.

The JA95-R03 Installation Manual provides detailed installation instructions and wiring diagrams (Section 2, and Appendices A and B).

Power is supplied to the JA95-R03 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-R03 Audio Controller - Remote Mount – One Transceiver is "on condition" only. Refer to the JA95-R03 Maintenance Manual. Periodic maintenance of the JA95-R03 is not required.

The following sample Instructions for Continued Airworthiness (ICA) provides assistance in preparing ICA for the Jupiter Avionics JA95-R03 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-R03 Audio Controller - Remote Mount – One Transceiver 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-R03 installed in an [aircraft make and model].

Applicability: Applies to a Jupiter Avionics JA95-R03 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-R03 Installation and Operating Manual
JA95-R03 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-R03 Audio Controller - Remote Mount – One Transceiver with interface to external transceivers 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-R03 is 'on condition' only. Periodic maintenance is not required. Refer to the JA95-R03 Maintenance Manual.

6. Troubleshooting Information

Refer to the JA95-R03 Maintenance Manual.

7. Removal and Replacement Information

Refer to Section 2 of this manual - the JA95-R03 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-R03 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-R03 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-R03 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.