



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

J301A-N01

Audio Controller - NVG



Installation and Operating Manual

Rev A

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J301A-N01 Audio Controller - NVG

SECTION 1 - DESCRIPTION

1.1 System Overview

The J301A-N01 Audio Controller - NVG is a centralized management system that distributes and controls transceiver, receiver, and warning source audio for one user in an aircraft. It enables the selected transmission of microphone audio to a transceiver and connects to the intercom audio bus.

The J301A-N01 Audio Controller - NVG provides a passive emergency mode that directs the user to the COM 1 transceiver, NAV1 receiver and all Direct Audio.

The J301A-N01 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 front panel music / configuration connector.

1.2 Features Overview

The J301A-N01 has a 15 pin D-Min connector, which interfaces to the Direct audio and ICS Tie lines, a 50 pin D-Min connector which interfaces to the Radios, power and user headset connections, and a 25 pin D-Min connector which interfaces to music and extra transceivers. This layout follows industry standard interconnects for single-user single transmit selector Audio Controllers. The front (faceplate) subassembly contains the user interface.

Numerous input and output levels are adjustable, several audio paths are selectable using the configuration tool ProCS™ (Product Configuration Software) to write configuration commands via the JA99-001 configuration cable to the front panel music / configuration connector.

The J301A-N01 is NVIS Type I Class B compliant.

The J301A-N01 supports up to eight transceivers, each selectable from a rotary switch.

The J301A-N01 supports up to six receivers.

The J301A-N01 has intercom VOX operation.

The J301A-N01 supports four Direct Audio inputs to provide audio at a fixed level to the user.

The J301A-N01 has a CVR output.

A Music / Configuration connector is provided on the faceplate of the J301A-N01 for configuration of audio levels and routing. The connector can also be used as a music input and is compatible with most music players.

The J301A-N01 has two modes of operation: Normal Mode and Emergency Mode.



1.3 **Inputs and Outputs**

Refer to the J301A-N01 [connector maps](#) for the mating connector designators and pin assignments for the input and output signals.

1.3.1 **Inputs**

Name	Qty	Type
COM REMOTE TX SELECT	8	Audio signal (on expansion connector)
CONFIG DATA TO J301A	1	Data signal
CONFIG MODE SELECT	1	Multi format signal
DIRECT AUDIO 1-4 HI/LO	4	Audio signal
DYNAMIC MIC +/-	1	Audio signal
FRONT PANEL MUSIC R/L	2	Audio signal
HI LEVEL MIC HI/LO	2	Audio signal
LIGHTS	1	Analog control signal
MUSIC LEFT/RIGHT HI/LO	4	Audio signal
POWER INPUT	1	Power supply
RX HI	12	Audio signal
RX HI/LO	2	Audio signal (on expansion connector)
USER ICS PTT	1	Active low discrete
USER TX PTT	1	Active low discrete

1.3.2 **Outputs**

Name	Qty	Type
COM MIC HI	6	Audio signal
COM MIC HI	2	Audio signal (on expansion connector)
CONFIG DATA FROM J301A	1	Data signal
CVR HI/LO	2	Audio signal
COM KEY	6	Active low discrete
COM KEY	2	Active low discrete (on expansion connector)
RX COMPOSITE HI/LO	1	Audio signal
USER 600 OHM PHN	1	Audio signal
USER 8 OHM PHN HI/LO	1	Audio signal

1.3.3 **Bi-directional Ports**

Name	Qty	Type
INTERCOM AUDIO	1	Audio signal
JAC ICS TIE HI/LO	1	Audio signal
PVT INTERCOM AUDIO HI/LO	1	Audio signal

1.3.4 **Audio Loads**

Name	Qty	Type
150 OHM LOAD 1 and 2	2	Termination
INTERCOM LOAD	1	Termination
PVT INTERCOM LOAD	1	Termination
RX 600 OHM LOAD	4	Termination



1.3.5 Grounds

Name	Qty	Type
CHASSIS GROUND	1	Airframe ground connection
POWER GROUND	1	Power ground
RX COMMON	1	Audio signal ground

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
Input current at 9 Vdc	≤ 2.4 A

1.4.1.1 Audio Performance

Rated Input Level

Receive audio rated input level	4.5 Vrms ±10%
Direct audio rated input level	4.5 Vrms ±10%
Music rated input level	400 mVrms ±10%
HI level Microphone input level	250 mVrms ±10%
Dynamic Microphone input level	250 uVrms ±10%
JAC ICS Tie Line type 1 input level	340 mVrms ±10%
JAC ICS Tie Line type 2 input level	1.20 Vrms ±10%
Interphone input level	2.80 Vrms ±10%
PVT Interphone input level	2.80 Vrms ±10%

Rated Output Level

600 OHM PHONE rated output	12.3 Vrms±10%
8 OHM PHONE rated output	1.42 Vrms±10%
600 OHM PHONE rated output, in emergency mode or with power input ≤6 Vdc	2.10 Vrms±10%
600 OHM PHONE rated output power, with MUSIC input	6.14 Vrms±10%
600 OHM PHONE rated output power, in Emergency mode or with power input ≤ power off voltage	3.0 Vrms±10%
COM MIC rated output	250 mVrms±10%
CVR rated output	500 mVrms±10%
CVR rated output with input as MUSIC	250 mVrms±10%
CVR rated output with input as HI LEVEL MIC	1.00 Vrms±10%
CVR rated output, in emergency mode,	500 mVrms ±10%
RX Composite rated output	2.50 Vrms ±10%
JAC ICS Tie type 1 rated output	340 mVrms ±10%
JAC ICS Tie type 2 rated output	1.20 Vrms ±10%
INTERPHONE rated output	2.80 Vrms ±10%
PVT INTERPHONE rated output	2.80 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	$\leq 10\% \text{ THD} + \text{N}$
--	------------------------------------

Input Impedance

HI LEVEL MIC input Impedance	$150 \Omega \pm 10\%$
DYNAMIC MIC input Impedance	$5 \Omega \pm 40\%$
Direct Audio input Impedance	$10 \text{ k}\Omega \pm 10\%$
Receive Audio input Impedance	$10 \text{ k}\Omega \pm 10\%$
Music Audio input Impedance	$1000 \Omega \pm 10\%$
JAC ICS TIE	$2000 \Omega \pm 10\%$
INTERCOM Audio input Impedance	$19 \text{ k}\Omega \pm 10\%$
PVT INTERCOM Audio input Impedance	$19 \text{ k}\Omega \pm 10\%$

Output Load

600 OHM PHN load	$600 \Omega \pm 10\%$
8 OHM PHN load	$8 \Omega \pm 10\%$
COM MIC load	$150 \Omega \pm 10\%$
CVR load	$5000 \Omega \pm 10\%$
RX Composite Audio load	$600 \Omega \pm 10\%$
JAC ICS TIE type 1 rated load	$2000 \Omega \pm 10\%$
JAC ICS TIE type 2 rated load	$2000 \Omega \pm 10\%$
INTERCOM rated load	$600 \Omega \pm 10\%$
PVT INTERCOM rated load	$600 \Omega \pm 10\%$
JAC ICS TIE type 1 maximum load	$666 \Omega \pm 10\%$
JAC ICS TIE type 2 maximum load	$285 \Omega \pm 10\%$

Volume Controls

Receive Audio control variation	$32 \pm 3\text{dB}$
ICS Audio control variation	$42 \pm 3\text{dB}$

Input to Output Crosstalk and Bleed-through Level

Input to Output crosstalk	$\leq 55 \text{ dB}$
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Input to Input Crosstalk Level

Input to Input crosstalk	$\leq 60 \text{ dB}$
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Audio Noise Level without Signal

Noise level below the rated output	$\geq 60 \text{ dB}$
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1.4.1.2 Audio Performance, Other

CVR HI / LO output circuitry type (Normal)	differential
CVR HI / LO output circuitry type (Emergency)	single ended
HI LEVEL MIC inputs designed for MIC type amplified	dynamic /electret
DYNAMIC MIC inputs designed for MIC type	5 ohm dynamic
HI LEVEL MIC inputs circuitry	single ended
MUSIC LEFT / RIGHT HI / LO audio input circuitry type	differential
FRONT MUSIC LEFT / RIGHT audio input circuitry type:	single ended
MUSIC attenuation	38 dB max
RECEIVE AUDIO input circuitry type	differential
600 OHM PHN HI / LO output circuitry type	balanced
8 OHM PHN HI / LO output circuitry type	balanced
MIC output circuitry type	single ended
RX Composite Audio output circuitry type	differential
ICS TIE HI / LO Circuitry Type	differential



INTERCOM HI / LO Circuitry Type	single ended
PVT INTERCOM Circuitry Type	single ended
Fade-in duration for PHN Audio output music signal	2.5 ± 1.0 s
VOX Threshold control range	-30 to +12 dB
VOX Off Delay Time accuracy shall be	± 0.25 s
Receive 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	$\leq +3$ Vdc
Active low control input, inactive signal level	$\geq +10$ Vdc
Active low control input, current	0.1 to 10 mA
Active low control output, active output	$\leq +2$ Vdc
Active low control output, active, current	≤ 1 A

1.4.1.5 Lights Input

LIGHTS INPUT ranges	0 to 28, 0 to 14 and 0 to 5 Vdc
LIGHTS INPUT current	≤ 10 mA max.

1.4.2 Mechanical Specifications

Height	2.625 in [67.7 mm] max
Behind panel depth	3.42 in [86.9 mm] max
Faceplate width	5.75 in [146 mm] max
Behind panel width	4.92 in [125 mm] max
Weight	1.64 lb [0.74 kg] max
Material	brushed aluminum with conversion coating
Connectors (5):	
Main	J1 One 50-pin D-Sub male
Direct Audio	J2 One 15-pin D-Sub male
Expansion	J3 One 25-pin D-Sub male
Music/Configuration	J4 One 4 pole 3.5mm stereo jack
Chassis Ground	J5 One 4-40 stud
Mounting	4 Dzus fasteners
Bonding	≤ 2.5 m Ω
Installation kit part number	INST-J301A
Faceplate	white legends on black

1.4.3 Flammability of Materials

The J301A-N01 complies with the requirements of RTCA/DO-160G Sec 26.3.3 "Flammability", through equivalent flammability testing of materials and the Small Parts Exemption.

J301A-N01 Audio Controller - NVG

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 J301A-N01 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/warrantyregistration

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

Those installing the J301A, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions meet standards. The J301A 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 J301A-N01 can be mounted in any attitude and location with adequate space for the front panel 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 Legend Replacement

The J301A-N01 illuminated legends are field replaceable. For further information, refer to the [Legend Replacement](#) document in Appendix A of this manual.

2.4.6 Post Installation Checks

2.4.6.1 Voltage/Resistance checks.

Do not attach this unit until the following conditions are met:

- a) Check P1 pin **50** for lights buss voltage.
- b) Check P1 pin **12** for +28 Vdc power.
- c) Check P1 pin **11** for continuity to ground (less than 0.5 Ω).
- d) Check P2 pins **6** and **7** for continuity to ground (less than 0.5 Ω) when the relevant switch is closed.
- e) Check P3 pins **9** to **13** and **22** to **24** for continuity to ground (less than 0.5 Ω) when the relevant switch is closed.
- f) Check all pins for shorts to ground or adjacent pins.

2.4.6.2 Configuration

Ensure that the J301A 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](#).

2.4.6.3 Power on Checks.

Power up the aircraft's systems and confirm normal operation of all functions of the J301A. Refer to Section 3 (Operation) for specific operational details.

- a) Begin with only the user's 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) 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 J301A-N01 internal adjustments are set from the [Product Configuration Software ProCS™](#). Configuration data is sent to the J301A-N01 via the front panel connector (J10), 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 J301A-N01, 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 J301A-N01 are not included with the unit.

Quantity	Description	J301A-N01
1	USB A to RS232 9-Pin Cable	CAB-USB-0002
1	Configuration Cable	JA99-001

2.5.2 ProCS™ Setup



The ProCS™ J301A-N01 menu item 'ProCS Setup' provides Setup drawings showing the cabling arrangement for connecting the J301A-N01 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 J301A-N01, power must be applied, and the TX Select switch must be in the COM 1 to COM 8 or ICS position (not EMER).

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



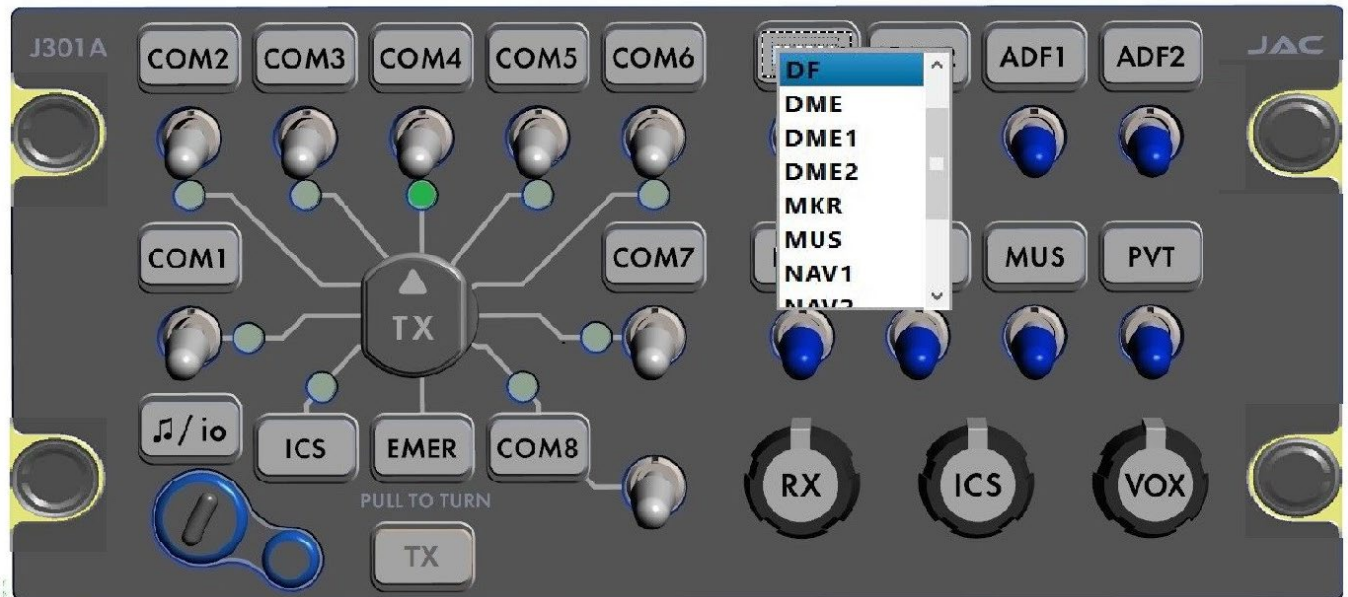
2.5.3.1 Front Panel Switches

J301A-N01 Front Panel Switches

The Front Panel Switches window is used to specify the text for each legend.

Legend Assignments

Click on legends to select new text.

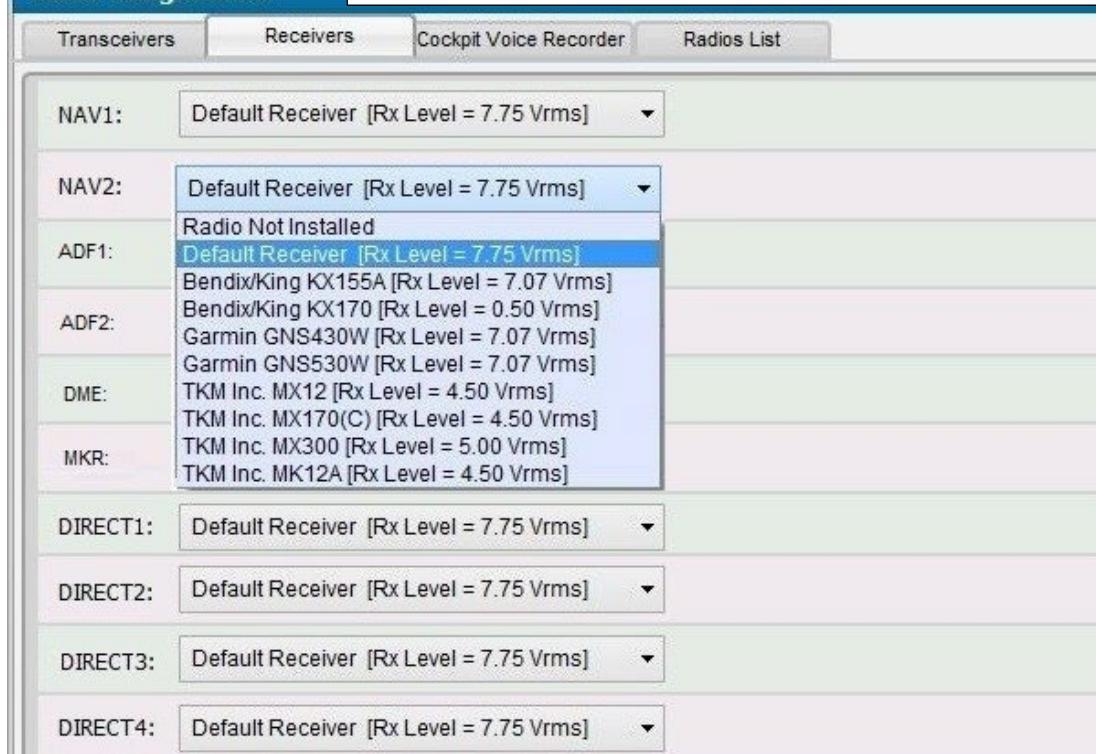


2.5.3.2 Radios

J301A-N01 Radios

Radio Assignments

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





2.5.3.3 Receive Levels

J301A-N01 Receive Levels

The receive and direct audio input level of each of the eighteen RX and DIRECT AUDIO inputs can be adjusted from 1 to 10 Vrms. **(Default 7.75 Vrms)**

COM1	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM2	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM3	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM4	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM5	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM6	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM7	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
COM8	Default Transceiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
NAV1	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
NAV2	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
ADF1	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
ADF2	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
DME	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
MKR	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
DIRECT1	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
DIRECT2	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
DIRECT3	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level
DIRECT4	Default Receiver :	1.00 Vrms		10.00 Vrms	[7.75 Vrms]	Default Level

Receive Audio Detector

0dB = Rated Input Level

Level: -12 dB

The Receive Audio Detector threshold can be adjusted from -36 to -12 dB of rated input level. **(Default -24 dB)**

RX COMP Output Level

Rated Load Impedance = 600 Ohms

Receive Composite: 0.25 Vrms

The level of the receive composite audio output (RX COMP OUT) can be adjusted from 0.25 to 2.5 Vrms. **(Default 1.0 Vrms)**

2.50 Vrms **[1.00 Vrms]**



2.5.3.4 Transmit Levels

J301A-N01 Transmit Levels

Transmit Levels

The level of each of the eight Transceiver MIC output signals can be adjusted from 0.01 to 1 Vrms.

Rated Load Impedance = 150 Ohms

COM1	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM2	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM3	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM4	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM5	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM6	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM7	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level
COM8	Default Transceiver :	0.010 Vrms	<input type="range"/>	1.000 Vrms	[0.250 Vrms]	Default Level

Transmit Settings

☐ Remote TX Select

When the Remote TX Select box is checked the ICS TX select position becomes the remote TX Select (REM). **(Default not checked)** (see [section 3.2 \(7\)](#))

☐ COM7 Duplex

When the COM7 Duplex box is checked the COM7 radio is set to duplex operation **(Default not checked)** (see [section 3.3.4](#))

2.5.3.5 Sidetone Levels

J301A-N01 Sidetone Levels

Receive Sidetone Level

The Receive Sidetone Level can be adjusted from 0 to -12 dB of the rated phone Level. **(Default -6 dB)**

COM1 thru COM8 RX Input Level on PHN output: -12 dB 0 dB **[-6 dB]**

COM8 Artificial Sidetone Level

The level of the COM8 Artificial Sidetone can be adjusted from 0 to -30 dB of the rated phone Level. **(Default -10 dB)**

COM8 MIC output signal level on PHN output: -30 dB 0 dB **[-10 dB]**

☐ COM8 Artificial Sidetone Enable



2.5.3.6 Connector Pin Configuration

Several of the connector pins can be configured to meet the requirements of specific installations. Refer to J301A-N01 [Interconnect sheet 4 of 4](#).

J301A-N01 Connector Pin Configuration

J1 Contacts Selection

Pin 16/26 ☒ 150 OHM LOAD 1 / 150 OHM LOAD 2 ☐ CVR 2 HI/LO OUTPUT

Pin 40/41 ☒ CVR 1 HI/LO OUTPUT (A301A-103 COMPATIBLE CVR) ☐ JUMPER 1 / JUMPER 2 (A301A-105 COMPATIBLE CVR)

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**)

J301A-N01 Audio Muting

Audio Muting During Transmit

☒ Mute RX Audio

☒ Mute ICS Audio

☒ Mute Music Audio (Note: always enabled)

2.5.3.8 CVR Level

The level of the Cockpit Voice Recorder audio may be adjusted from 0.01 to 1 Vrms. (**Default 500 mVrms**)

J301A-N01 CVR Level

User CVR Audio Output Levels

Rated Load Impedance = 5 kOhms

Receive Only Default CVR : 0.010 Vrms 1.000 Vrms [0.500 Vrms] Default Level

User Mic Only Default CVR : 0.020 Vrms 2.000 Vrms [1.000 Vrms]

Music Only Default CVR : 0.005 Vrms 0.500 Vrms [0.250 Vrms]

Note:

1. All Inputs at rated level.
2. Where applicable, rated level on phones output.



2.5.3.9 Music Levels

J301A-001 Music Levels

USER Music Output Level

0dB = Rated Phone Level

Output Level: -40 dB 0 dB [0 dB]

Attenuation Level (During Mute Function): -40 dB 0 dB [-40 dB]

Music Input Levels

Music Left (Front Panel & Rear Connector): 0.10 Vrms 1.00 Vrms Value

Music Right (Front Panel & Rear Connector): 0.10 Vrms 1.00 Vrms Value

The music output level of the four Music input signals to the Phones audio can be adjusted from -40 to 0 dB of rated phone level (**Default 0 dB**).

The attenuation level during muting of the music signal can be adjusted from 0 to -40 dB (**Default -40 dB**).

2.5.3.10 ICS Tie Line

J301A-N01 ICS Tie Line

JAC ICS TIE HI/LO Settings

Rated Load Impedance = 2 kOhms or 600 Ohms

Rated Input and Output Levels: ☐ Type 1 (NAT Original: 340 mVrms) ☒ Type 2 (NAT Super Tie: 1.2 Vrms) ☐ Andrea (2.75 Vrms)

Type 1 External Loads: ☒ 0 ☐ 1 ☐ 2 ☐ 3

Type 2 External Loads: ☒ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Note: External loads are the number of additional audio controllers connected to the tie line.

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

2.5.3.11 VOX

J301A-N01 VOX

VOX Delay

VOX OFF Delay Time: 0.50 s 2.00 s [1.00 s]

The VOX OFF Delay Time can be adjusted from 0.50 to 2.00 sec (**Default 1 sec**).

2.5.2.12 Lighting Voltage Selection

J301A-N01 Lighting Voltage

Lighting Voltage

Rated Input Level: ☐ +5 Vdc ☐ +14 Vdc ☒ +28 Vdc

The rated input level for the lighting voltage may be selected from

+5 Vdc, +14 Vdc or +28Vdc

(**Default +28 Vdc**).



2.5.2.13 Connector Maps

This section contains connector maps and interconnects that are automatically generated to show changes that affect the installation of the J301A-N01, such as switch labels and voltages. See [section 2.7.1](#).

2.5.4 Other Configuration Features

In the J301A-N01 Product Information Window, the model number, serial number and check sum of the J301A-N01 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-J301A) consists of the following:

Quantity	Description	JAC Part #
1	15 Socket Positions, Zinc Plated, D-Sub - Crimp Socket Housing	CON-3460-0115
1	50 Socket Positions, Zinc Plated, D-Sub - Crimp Socket Housing	CON-3460-0125
1	50 Socket Positions, Zinc Plated, D-Sub - Crimp Socket Housing	CON-3460-0150
1	15 Pin Clamshell, Hardware - Plastic D-Sub Hoods	CON-5300-0115
1	25 Pin Clamshell, Hardware - Plastic D-Sub Hoods	CON-5300-0125
1	50 Pin Clamshell, Hardware - Plastic D-Sub Hoods	CON-5300-0150
90	Machined 20 - 24 AWG, MIL spec, D-Sub - Crimp Socket	CON-3320-2024M
3	D-Sub 4-40, Hardware - Jack Screws	CON-5150-0440
2	0.375" Inside Diameter, Hardware - Tag Ring	CON-5500-0375
1	0.625" Inside Diameter, Hardware - Tag Ring	CON-5500-0625
1	1" Inside Diameter, Heat Shrink Tube	WIR-HTSK-1000
2	3/4" Inside Diameter - Black, Heat Shrink Tube	WIR-HTSK-0750

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 interconnects and connector maps in Appendix A of this manual are generic drawings based on the standard version of the J301A-N01. However, if a unit has been configured using JAC's ProCS™ software to change switch legends or lighting voltages, the software can be used to generate fully customized interconnects and connector maps for use by the installer.

J301A-N01 Audio Controller - NVG

SECTION 3 – OPERATION

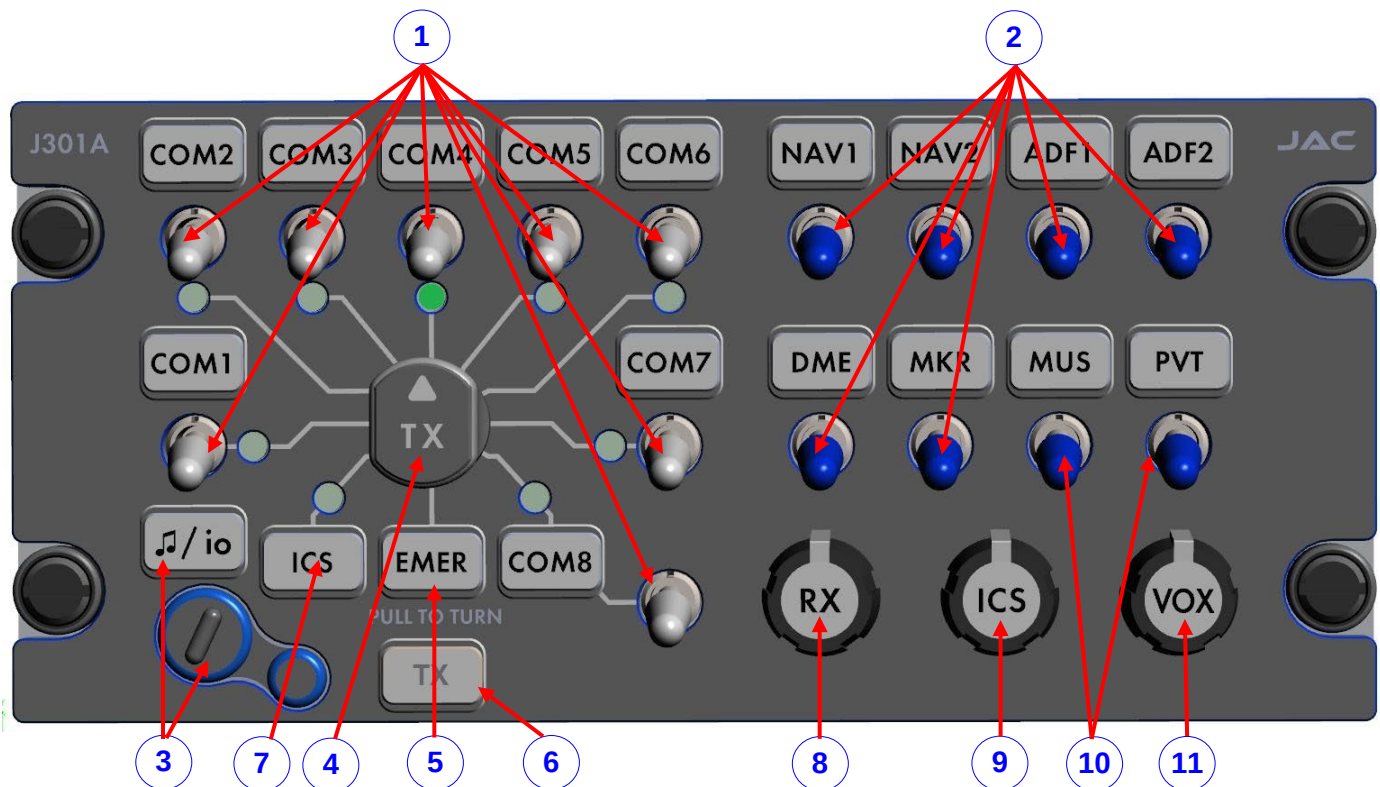
3.1 Introduction

This section contains the operating instructions for the J301A-N01.

3.2 Front Panel Controls



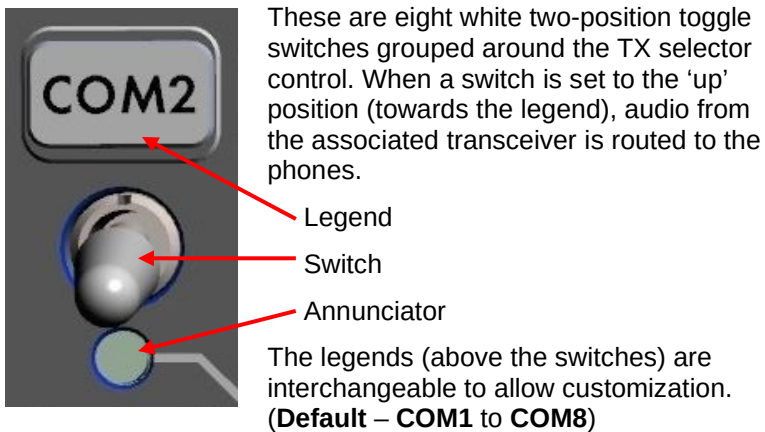
Note: The 19 legends and one deadfront annunciator are removable and may be replaced with custom ordered parts. The controls will be referred to by the default legend and annunciator names as shown below.



1. Transceiver switches, annunciators and associated legends
2. Receiver switches and associated legends
3. Music/configuration input connector and legend
4. Transmit selector
5. EMER legend
6. Transmit annunciator (deadfront)
7. ICS / RMT Control
8. Receive volume control
9. ICS volume control
10. Music and Private Intercom select switches
11. VOX threshold control



(1) Transceiver Switches Annunciators and Legends



Note: For information on the ICS and EMER switches, refer to (5) and (7) below.

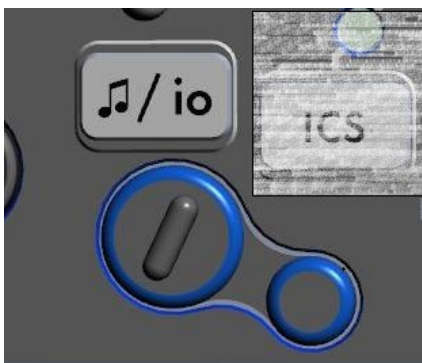
(2) Receiver Switches and Legends

These are six blue two-position toggle switches. When a switch is set to the 'up' position (towards the legend) audio from the selected receiver is routed to the phones.

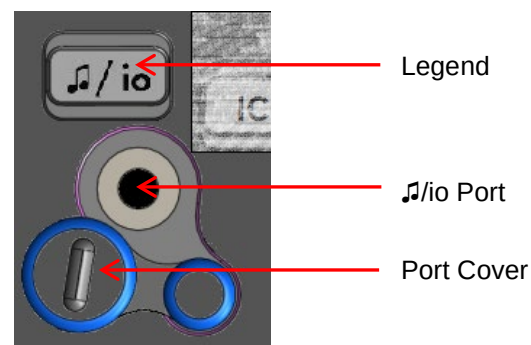
The legends are interchangeable to allow customization.
(Default – NAV1, NAV2, ADF1, ADF2, DME and MKR.)



(3) Music/Configuration Connector (🎵/io)



This is a music input that is compatible with most music players. It accepts a 3 pole 3.5mm stereo plug with a slim diameter connector housing.



The port (🎵/io) is protected by a urethane rubber cover, which can be lifted upwards or rotated round (as shown) to provide access to the port.

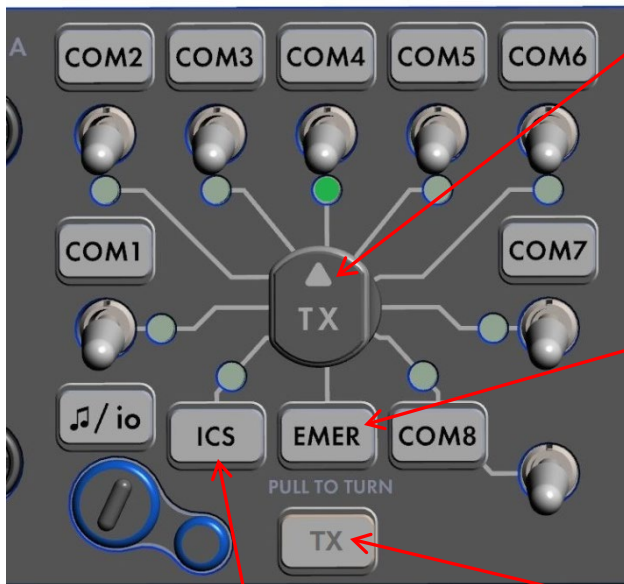
(This connector is also used during installation to change configuration settings.)



CAUTION: If an unapproved connector or cable is used, damage to the unit or to any attached device may occur. If in doubt, contact your installing agency.



(4) Transmit Selector



This is a rotary ten-position control that is used to select transmission via one of the eight transceivers, ICS/RMT or the EMER position. Each of the transmit selector positions is linked by a white line to the corresponding transmit select annunciator, transceiver switch and legend.

When a position is selected for transmit, the associated annunciator will illuminate green (COM4 in this example). See section (5) for the EMER (emergency) position.

(5) EMER Position

If the transmit selector is rotated to the EMER (Emergency) position, the user can select emergency mode. To prevent accidental selection of this mode, the transmit selector switch must be pulled as it is turned.

For full information on Emergency mode, refer to [section 3.4](#).

(6) Transmit Annunciator - TX

This is a deadfront annunciator that will illuminate when the J301A is transmitting. The default legend is 'TX', but it is interchangeable to allow customization.

(7) ICS or RMT Position

This transmit position can be configured via ProCS as **ICS** or **RMT** (remote transmit enable). (Default **ICS**.) See [section 2.5.3.4](#).

When configured as the **ICS** KEY function, when the TX selector is in the ICS position the TX PTT KEY routes the user's microphone to the intercom audio.

When configured as **RMT** and selected via the TX selector, the remote transmit select inputs are used to select the transceiver for transmit.

(8) Receive Volume Control



This is a rotary knob marked RX, that adjusts the phones volume of the receive audio from minimum (CCW) to maximum (CW). Individual radio volume controls should be set to a nominal level, and then adjusted for changing flight conditions using this control.

(9) ICS Volume Control



This is a rotary knob marked ICS, used to adjust the volume of the ICS audio. Rotating the control completely CW gives rated level, and completely CCW reduces the output to minimum level.

(10) Music and Private Intercom Select Switches (MUS and PVT)

The **MUS** (Music) select switch is a two-position blue toggle switch that turns the music on when set to the 'up' position (towards the legend).

The **PVT** (Private Intercom) switch is a blue two-position toggle switch that connects the user's headset to the Andrea PVT Intercom in the PVT (up) position and to the Andrea Intercom when in the down position. This switch functions when the J30A is configured to use the Andrea Intercom from ProCS.





(11) VOX Threshold Control



This is a rotary knob marked VOX that is used to select the VOX threshold of the unit. See below.

When rotated fully clockwise (CW), the threshold will be at maximum and VOX ICS operation is disabled and ICS PTT input is required for ICS operation.

When rotated fully counterclockwise (CCW), the threshold will be at minimum (almost live).

To adjust the unit for **VOX** (Voice activated) use, the VOX control should be set fully CCW and then slowly rotated CW to the point where no intercom audio can be heard. The VOX control should be adjusted for proper operation according to the ambient noise.

3.3 Normal Operation Mode



Note: Numbers in parentheses refer to the front panel controls shown in section 3.2.

The J301A-N01 is in Normal mode when the front panel TX select switch **(4)** is in position COM1 through COM8 or RMT/ICS and suitable electrical power is supplied to the unit.

3.3.1 Panel Lighting

The legends and annunciators will be illuminated (when appropriate) and dim through the aircraft lighting buss. The J301A-N01 is NVIS Type I Class B compliant.

3.3.2 Receiving

To listen to audio from a transceiver or receiver, place the appropriate white transceiver and receiver switches **(1)** in the up position or rotate the TX Select Switch **(4)** to point at the desired transceiver position.

To adjust the volume of the receiver and transceiver audio, rotate the front panel RX volume control **(8)**. It will be muted if the unit is transmitting and muting of receive audio during transmit is enabled.

3.3.3 Transmitting (Transmit Operation)

To transmit on a transceiver, rotate the Transmit Select Switch until it aligns with the line leading to the Transceiver Select switch legend (see **(1)**) - default legends COM1 to COM8, or ICS/RMT. The corresponding Transmit Select annunciator will illuminate.

Then activate the user's TX PTT, and the unit will route the user's microphone audio to the selected transceiver, and the deadfront Transmit Annunciator **(6)** will illuminate 'TX'. Sidetone audio will be routed to the user's phones, and music will be muted for the duration of the transmission.

3.3.4 VOX Operation

The VOX Threshold level is at minimum when the front panel control is fully CCW, and at maximum when fully CW.

The user's MIC audio is routed to the ICS when the MIC audio level exceeds the VOX threshold.

The user's MIC audio is disconnected from the ICS when the MIC audio level falls below the VOX threshold for 0.5 to 2 seconds.



3.3.5 ICS Operation

ICS audio is the sum of the user's MIC audio when the ICS KEY is active or with MIC audio level exceeding the VOX Threshold level, and the audio input on the JAC ICS TIE or Andrea Intercom from other Audio Controller - NVGs.

The ICS audio is output on the user's phones.

The ICS audio is muted during transmit.

The ICS audio level at the phones is controlled by the ICS volume control **(9)**.

3.3.6 COM7 PTT Operation



Note: If the COM7 transceiver has been configured as duplex, it can be used with a cellphone or sat-phone. Check your configuration with the installing agency.

If the unit has been configured for cellphone or sat-phone use and COM7 has been selected for transmit, momentarily activating the TX PTT will keep COM7 transmitting. A second momentary activation of the TX PTT, or moving the Transmit Selector away from COM7, will stop the COM7 from transmitting.

3.3.7 Music Operation

To listen to music, connect a music source to the front panel music connector, or turn on the music source connected to the J301A rear connector and place the J301A MUS switch in the up position. To adjust the volume of the music use the volume control on the music source device.

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.

3.3.8 COM8 Artificial Sidetone Operation

When the Transmit Selector is in the COM8 position and when the USER TX PTT is active, the COM8 Artificial Sidetone Audio, if enabled, is routed to the USER PHN at the COM8 Artificial Sidetone level.

3.3.9 Remote Transmit Select

When a Remote Transmit switch is installed in the aircraft, selection of the transceiver for transmit is controlled by this switch when the J301A TX Select Switch is in the RMT position.

3.3.10 PVT Intercom Operation

When the Andrea Intercom Audio is configured, the J301A user is connected to the Andrea Private Intercom when the J301A PVT switch is on. This allows the user to communicate with the other users selected to the Andrea Private Intercom.



3.4 Emergency Operation Mode

Emergency mode can be selected by pulling and rotating the TX Select switch on the front panel to the EMER position, or entered automatically if power to the unit is lost.

3.4.1 Auto Emergency Mode

If the unit is in emergency mode because power has been lost to the unit, the sum of the COM1 transceiver, NAV1 receive, and the four direct audio signals (DIRECT AUDIO 1, DIRECT AUDIO 2, DIRECT AUDIO 3, and DIRECT AUDIO 4) are routed to the user's phones and the CVR. The user's microphone and transmit key are connected to the COM1 transceiver. No other function in the J301A will operate when power is lost. All indicator LEDs, legends and annunciators will be dark.

3.4.2 Selected Emergency Mode

If the unit is in emergency mode because the TX Select switch is in the EMER position and sufficient power is applied to the J301A, the sum of the COM1 receive, NAV1 receive and the four direct audio signals (DIRECT AUDIO 1, DIRECT AUDIO 2, DIRECT AUDIO 3, and DIRECT AUDIO 4) are routed to the user's phones and the CVR. The user's microphone and transmit key are connected to the COM1 transceiver. The user is disconnected from the ICS. The LEDs, legends and annunciators will retain normal functionality.

Installation and Operating Manual

Appendix A - Installation Drawings

A1 Introduction

The drawings necessary for installation and troubleshooting of the J301A-N01 Audio Controller - NVG 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.

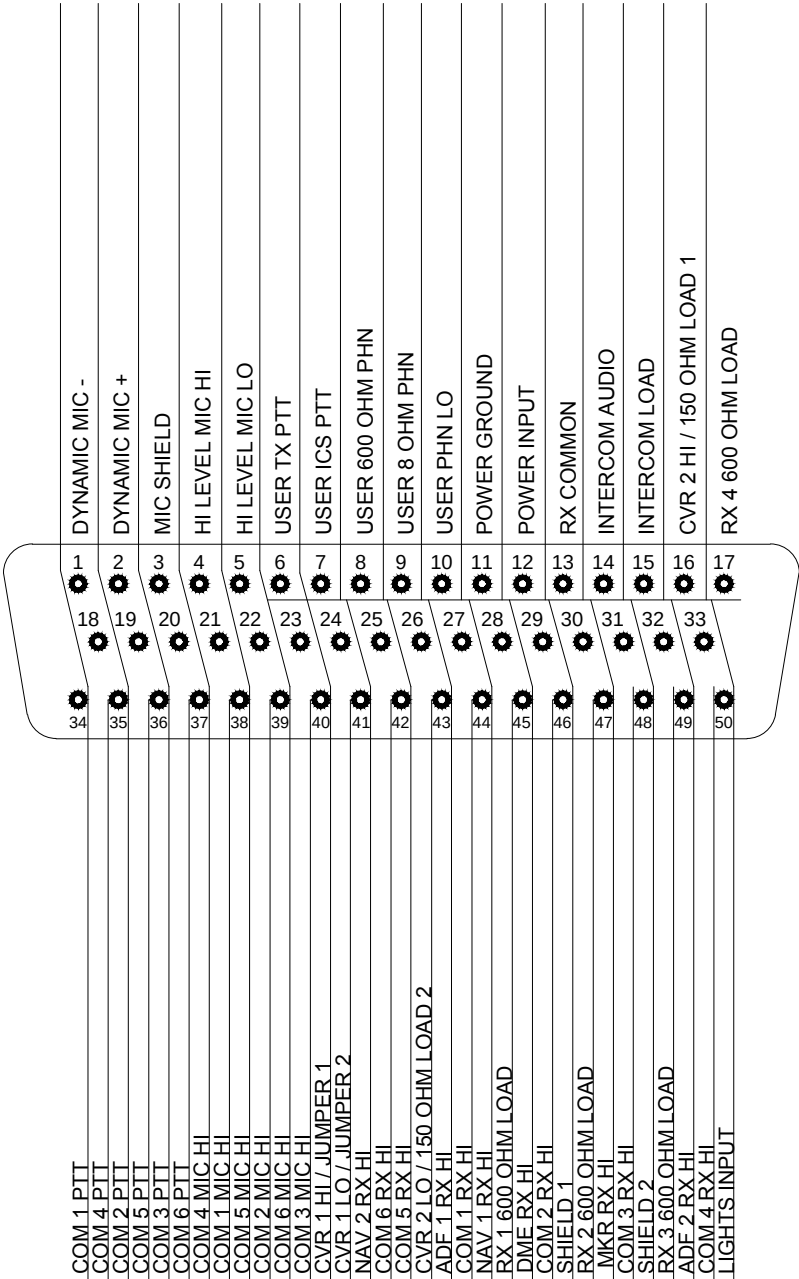
A2 Installation Drawings

DOCUMENT	Rev
J301A-N01 Connector Map	A
J301A-N01 Interconnect	A
J301A-N01 Mechanical Installation	A
J301A-N01 Equipment Block Diagram	A

Reference Documents	
TOL-CUST-EXTR Legend Replacement	A

Main Connector

P1
50 PIN FEMALE DMIN
MATING CONNECTOR

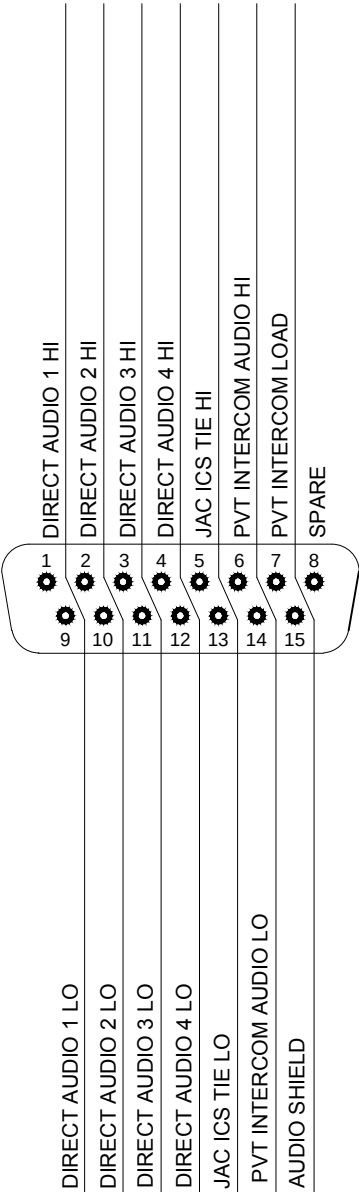


VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	KV	JUPITER AVIONICS CORPORATION TITLE Audio Controller - NVG P1 Connector Map		
CHECKED	JAC 06-21-23 AH			
APPROVED	JAC 06-21-23 KDV	NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 1/5
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. J301A-N01 Connector Map Rev A		

Direct Audio Connector

P2
15 PIN FEMALE DMIN
MATING CONNECTOR

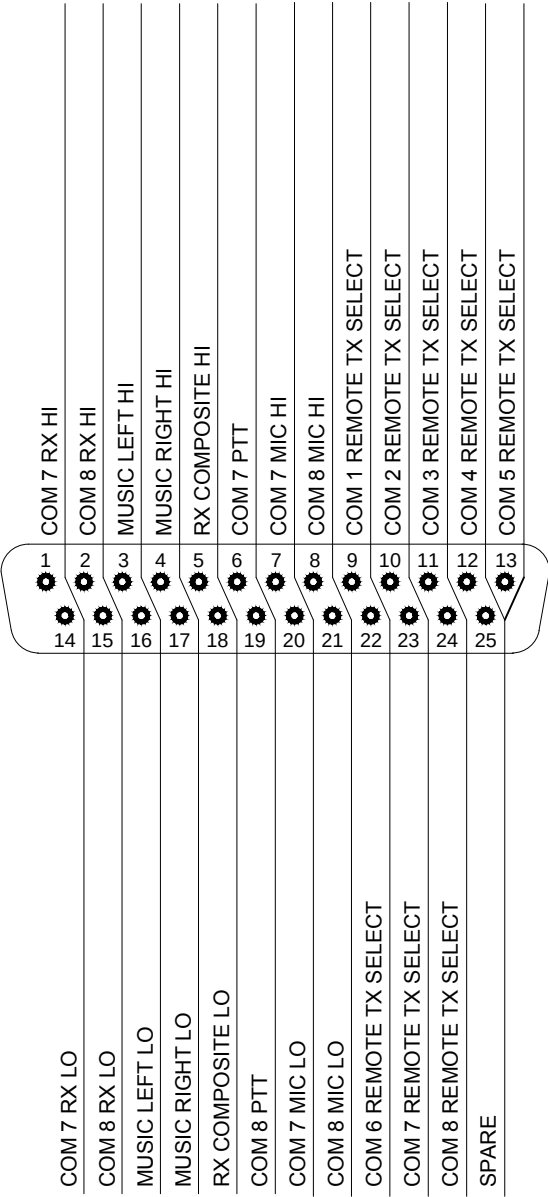


VIEW IS FROM REAR OF MATING CONNECTOR

PREPARED	KV	 JUPITER AVIONICS CORPORATION		
CHECKED	JAC 06-21-23 AH			
APPROVED		TITLE Audio Controller - NVG P2 Connector Map		
		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 2/5
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. J301A-N01 Connector Map Rev A		

Expansion Connector

P3
25 PIN FEMALE DMIN
MATING CONNECTOR



VIEW IS FROM REAR OF MATING CONNECTOR

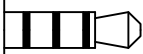
PREPARED	KV	 JUPITER AVIONICS CORPORATION		
CHECKED	JAC 06-21-23 AH			
APPROVED		TITLE Audio Controller - NVG P3 Connector Map		
		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 3/5
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. J301A-N01 Connector Map Rev A		

Front Panel Music / Configuration Connector

P4

ACCEPTS THE FOLLOWING PLUG FORMATS

JA99 CONFIGURATION CABLE
4 POLE MALE 3.5MM STEREO



MATING PLUG NAMES

TIP: TX DATA
1ST RING: RX DATA
2ND RING: GROUND
3RD RING: CONFIG AUDIO

UNIT SIGNAL NAMES

CONFIG DATA TO J301A / MUSIC LEFT
MUSIC RIGHT / CONFIG DATA FROM J301A
GROUND
MODE SELECT

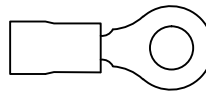
PREPARED	KV	 JUPITER AVIONICS CORPORATION		
CHECKED	JAC 06-21-23 AH			
APPROVED		TITLE Audio Controller - NVG P4 Connector Map		
		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 4/5
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. J301A-N01 Connector Map Rev A		

Chassis Ground Connector

P5

CHASSIS GROUND CONNECTOR

#4 RING TERMINAL
MATING CONECTOR



PREPARED	KV JAC 06-21-23 AH	 JUPITER AVIONICS CORPORATION		
CHECKED				
APPROVED	JAC 06-21-23 KDV	TITLE Audio Controller - NVG P5 Connector Map		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 5/5
		DOC NO. J301A-N01 Connector Map Rev A		

J301A-N01 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 (0.91 M).
3. CABLE SHIELDS AT THE CONNECTOR PINS SHOULD BE TERMINATED TO AIRFRAME GROUND USING A TAG RING P/N: MS27741-5 OR EQUIVALENT.
4. RECEIVERS WITH OUTPUT IMPEDANCE GREATER THAN 1000 OHMS MUST BE TERMINATED WITH A 600 OHM LOAD. "600 OHM LOAD" PINS ARE PROVIDED FOR THIS PURPOSE. TERMINATE AT ONLY ONE J301A AUDIO CONTROLLER
5. FOR A301A-103 COMPATIBLE CVR OUTPUT, CONFIGURE AS CVR 1.
6. FOR A301A-105 COMPATIBLE CVR OUTPUT, CONFIGURE AS CVR 2.
7. LOCAL GROUND NOT MORE THAN 24" FROM RADIO.
8. USE ONLY ONE (600 Ohm OR 8 Ohm) HEADSET DO NOT WIRE BOTH.
9. CONNECT ONLY ONE INTERCOM LOAD PER AIRCRAFT SYSTEM WHEN USED IN INSTALLATIONS THAT ARE CONFIGURED WITH THE ANDREA INTERCOM TIE LINE CONNECTIONS.
10. DO NOT CONNECT MICROPHONE LO OR PHONE LO TO AIRFRAME. SHIELDS TO LOCAL GROUND NOT MORE THAN 12".
11. CONNECT TO POWER GROUND IN ONLY ONE LOCATION.
12. CONNECT EITHER THE JAC TIE LINE OR THE INTERCOM AND OPTIONAL PVT INTERCOM.
13. ONLY ONE +28 VDC, +14 VDC OR +5 VDC LIGHTS INPUT VOLTAGE MAY BE APPLIED AT ONE TIME.
14. REMOTE TX SELECTOR MUST BE CONFIGURED.
15. TERMINATION RESISTORS ARE PROVIDED FOR RECEIVERS REQUIRING 150 OHM TERMINATION. TERMINATE AT ONLY ONE J301A AUDIO CONTROLLER.
16. JUMPER 1 IS INTERNALLY CONNECTED TO JUMPER 2, FOR USE WHEN REQUIRED.

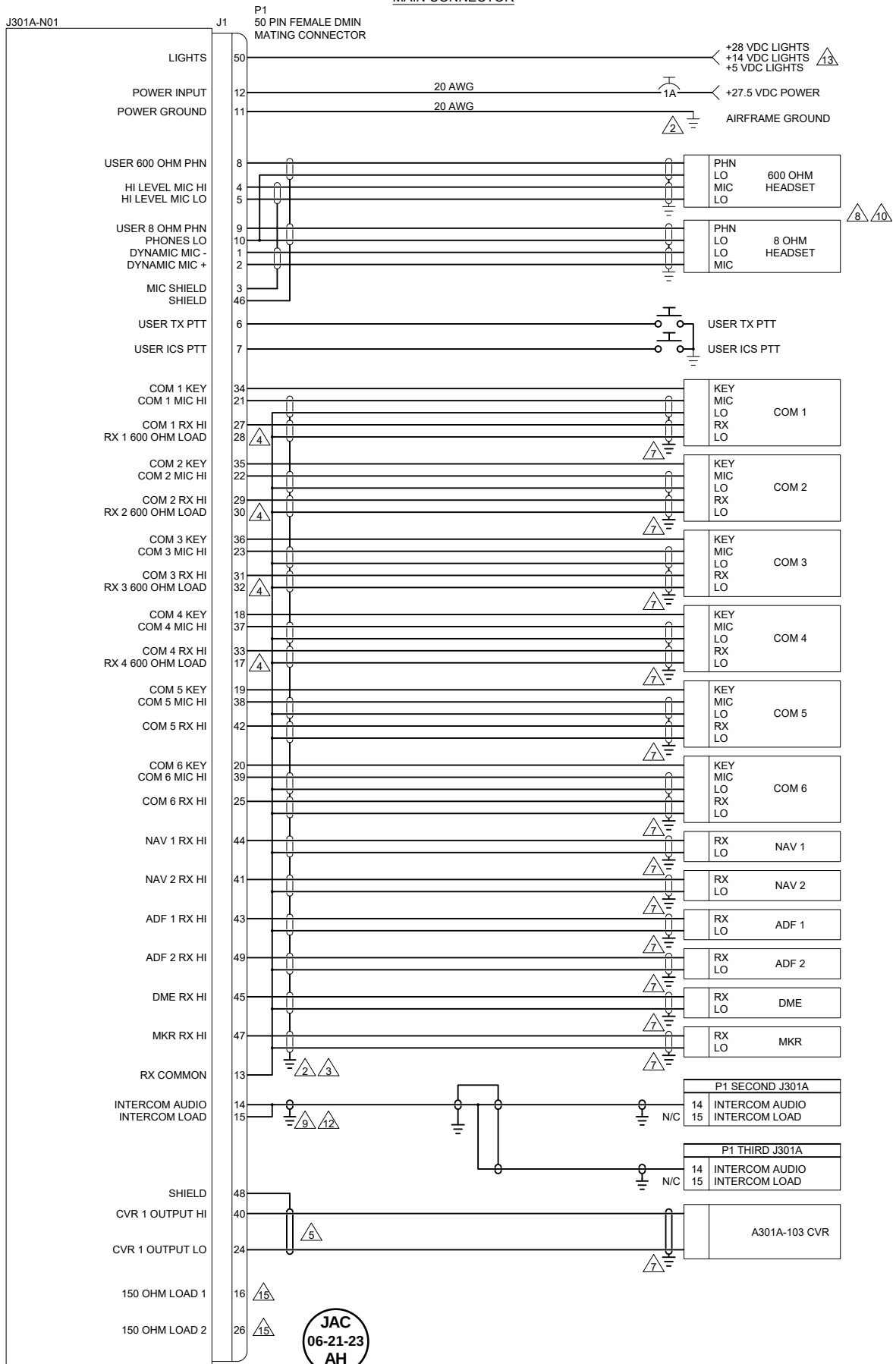
CONNECTOR PIN LEGENDS

LEGEND

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

PREPARED	TAT	 JUPITER AVIONICS CORPORATION		
CHECKED				
APPROVED		TITLE Audio Controller - NVG Interconnect Notes		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 1/4
		DOC NO. J301A-N01 Interconnect Rev A.dwg		

MAIN CONNECTOR

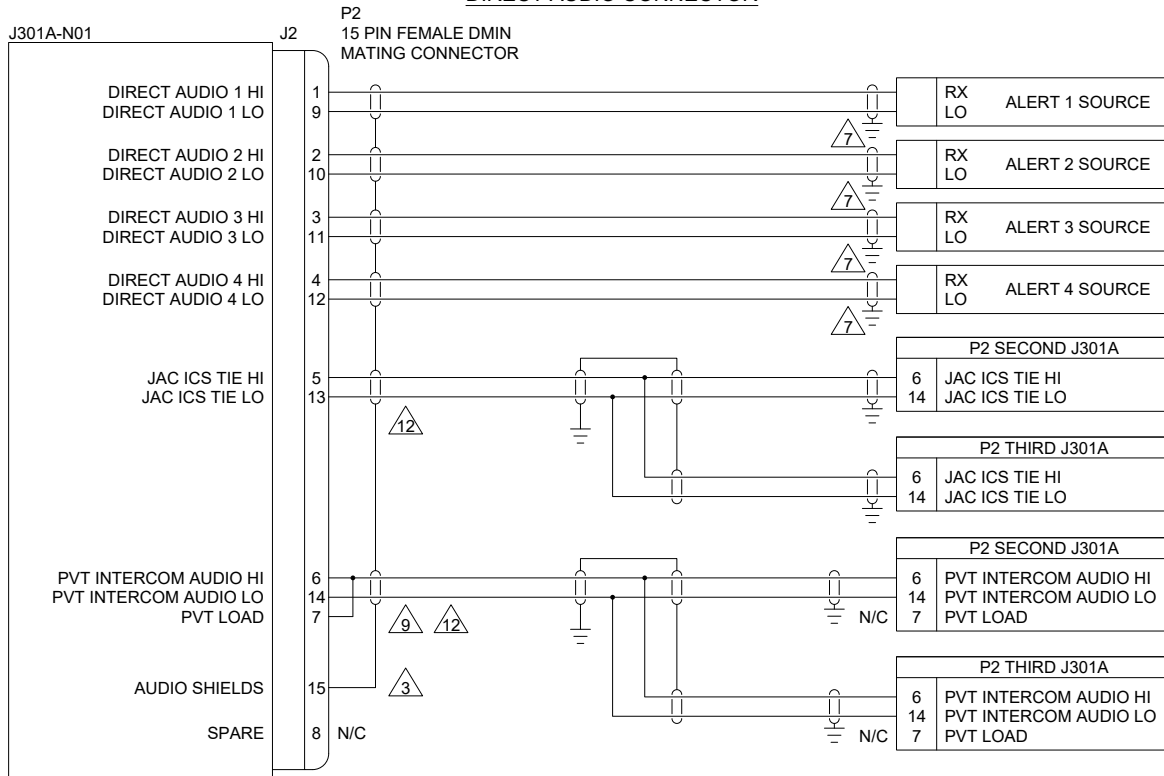


JAC
06-21-23
AH

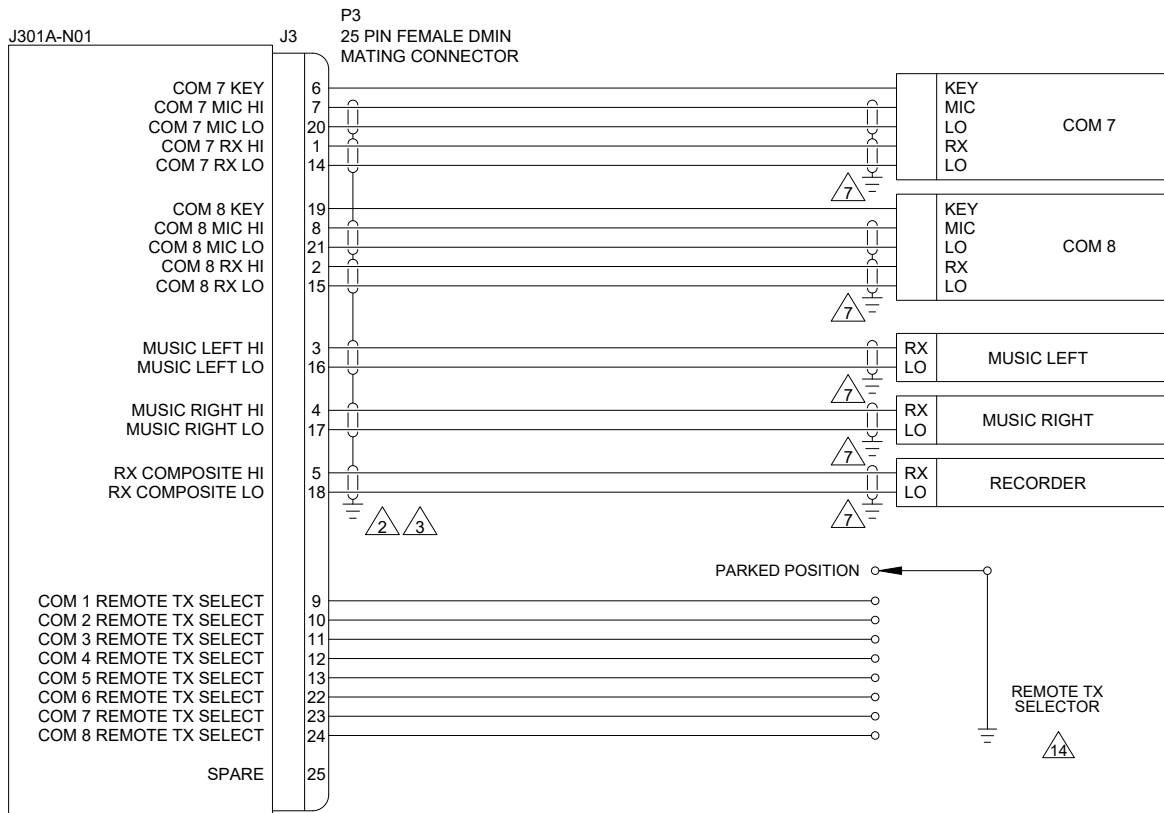
JAC
06-21-23
KDV

PREPARED	TAT			
CHECKED				
APPROVED		TITLE Audio Controller - NVG J1 Interconnect		
		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 2/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. J301A-N01 Interconnect Rev A.dwg		

DIRECT AUDIO CONNECTOR

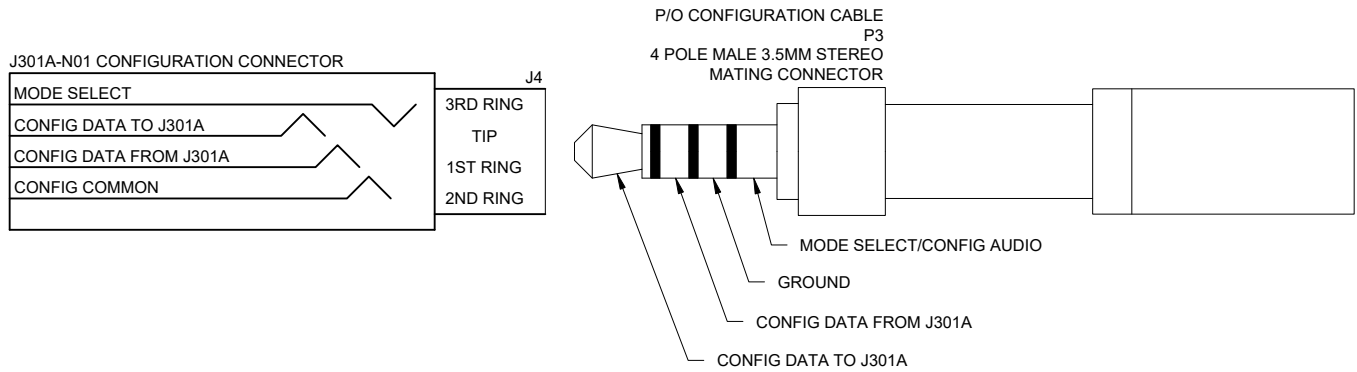


EXPANSION CONNECTOR

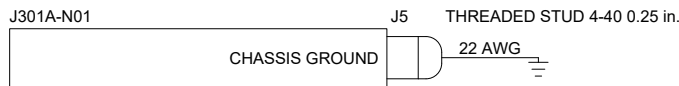


PREPARED	TAT JAC 06-21-23 AH			
CHECKED				
APPROVED	TAT JAC 06-21-23 KDV	Audio Controller - NVG J2 and J3 Interconnect		
		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 3/4
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. J301A-N01 Interconnect Rev A.dwg		

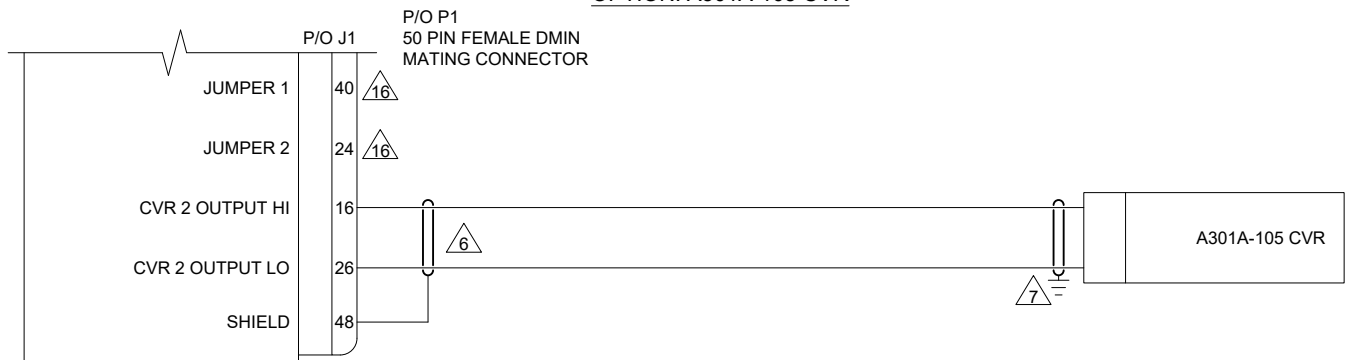
CONFIGURATION FROM ProCS APPLICATION VIA CONFIGURATION CABLE



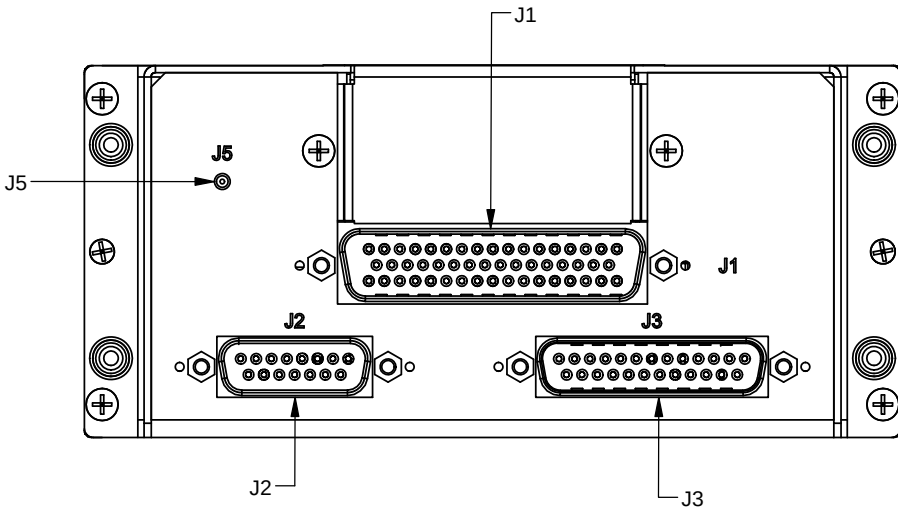
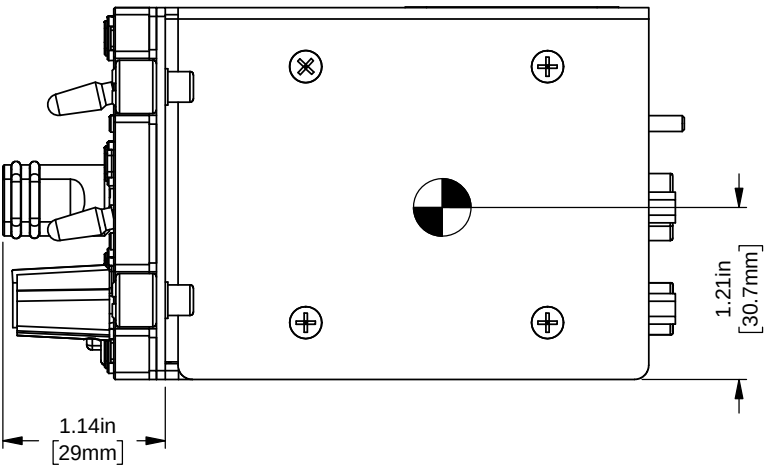
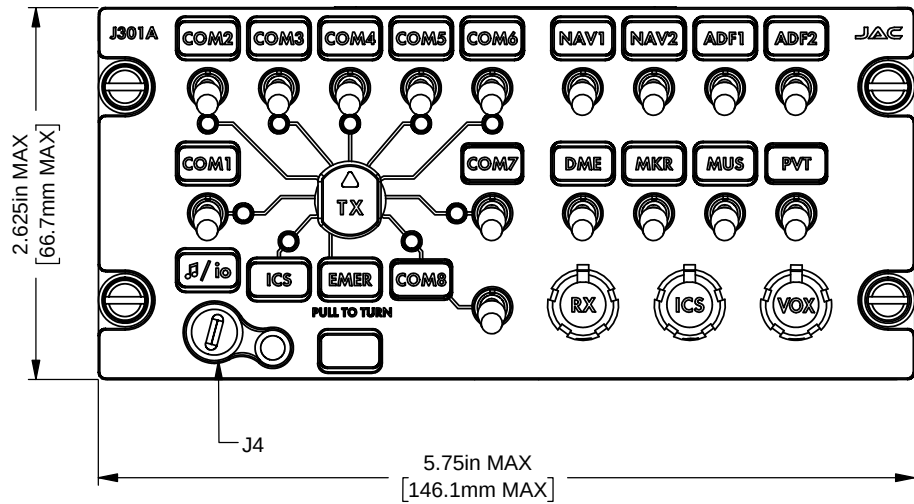
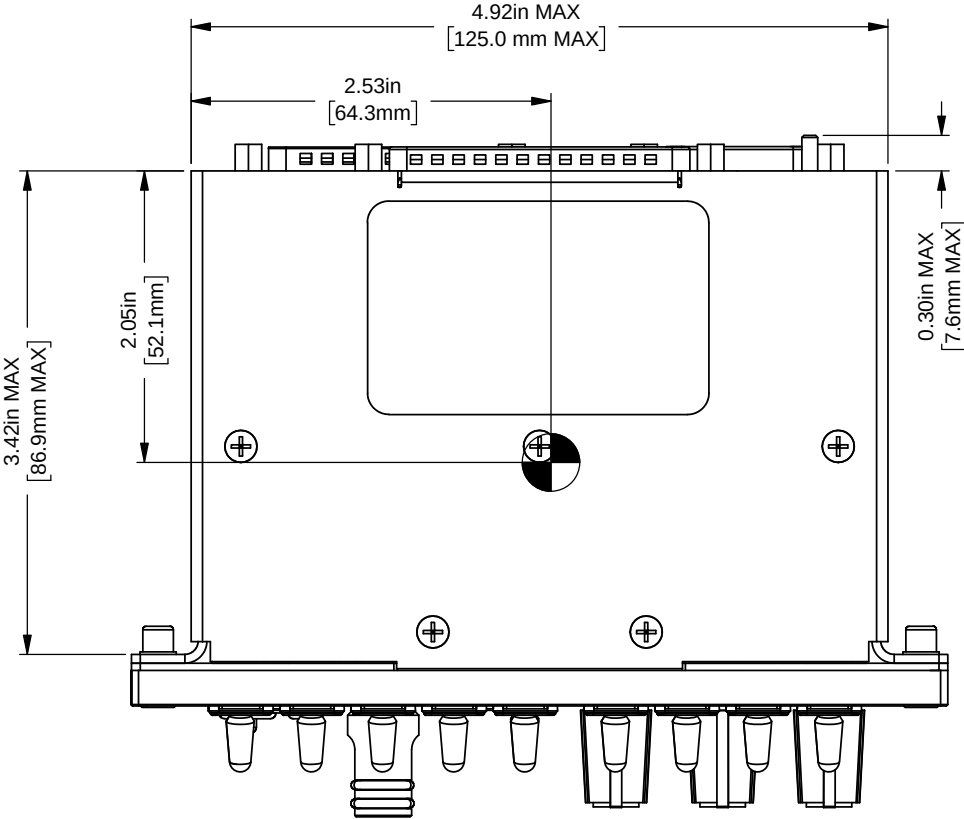
OPTION: CHASSIS GROUND



OPTION: A301A-105 CVR

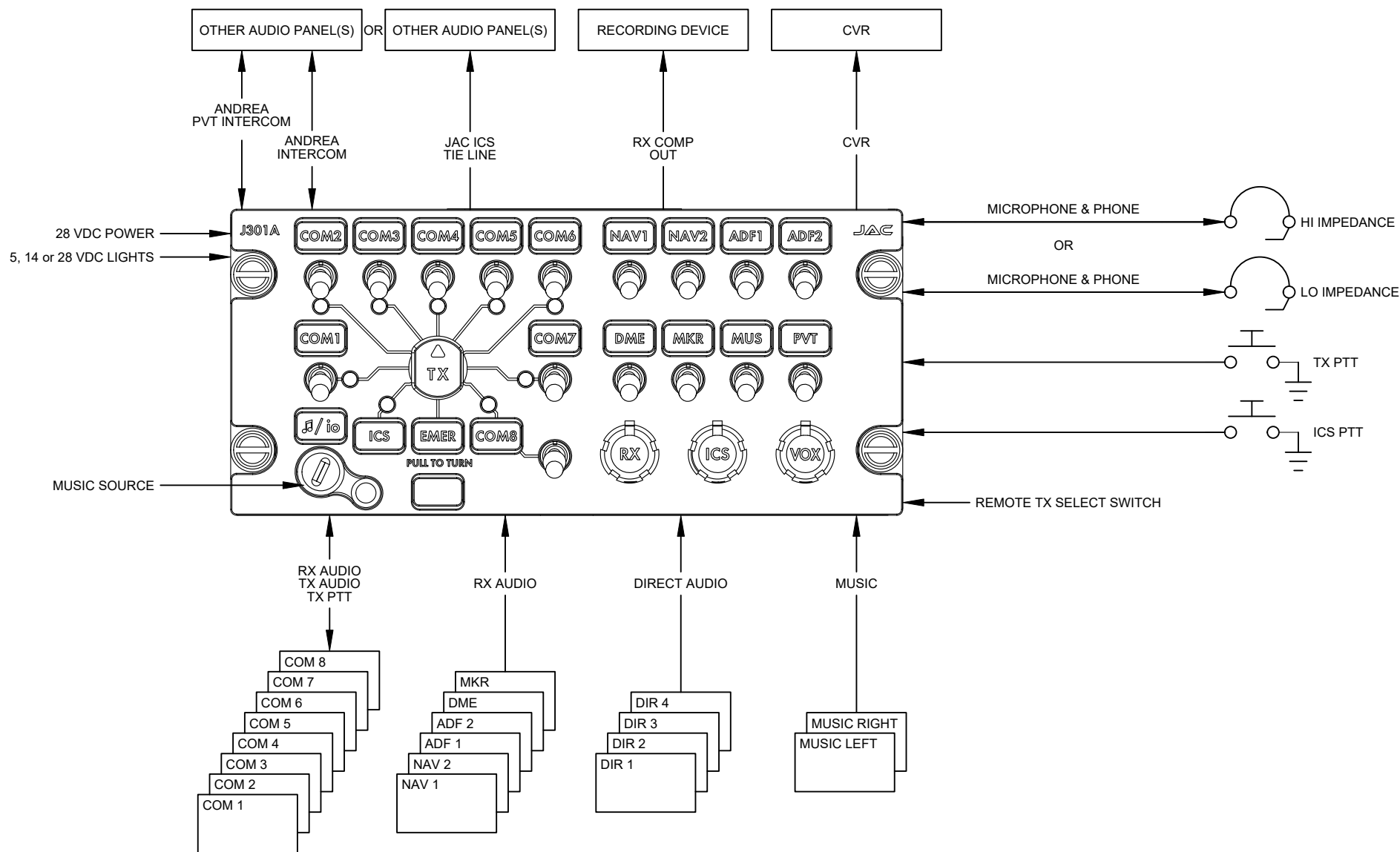


PREPARED	TAT	 JUPITER AVIONICS CORPORATION		
CHECKED				
APPROVED		TITLE Audio Controller - NVG J4, J5 and Options Interconnect		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 4/4
		DOC NO. J301A-N01 Interconnect Rev A.dwg		



CENTER OF GRAVITY
±0.03in [0.8mm]
WEIGHT: 1.85 lbs [0.84 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	 JUPITER AVIONICS CORPORATION		
	CHECKED	JAC 06-19-23 TAT			
	APPROVED	JAC 06-21-23 KDV	TITLE Audio Controller - NVG		
	MATERIAL: N/A		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 1/1
FINISH: N/A		DOC. NO. J301A-N01 Mechanical Installation Rev A.SLDDRW			
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DRAWING NOT TO SCALE			



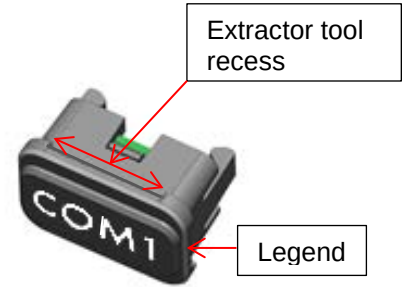
PREPARED	TAT			
CHECKED				
APPROVED		TITLE Audio Controller - NVG Equipment Block Diagram		
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		NCAGE CODE L00N3	PART NO. J301A-N01	SHEET 1/1
		DOC NO. J301A-N01 Equipment Block Diagram Rev A.dwg		



Field-Replaceable Legends

Jupiter Avionics Corporation (JAC) products have field-replaceable illuminated legends. This permits easy customization, and allows the same units to be used in multiple different configurations with only minimal changes.

The internal circuitry ensures that, although the legends are individually illuminated, the illumination is consistent and uniform throughout all legends, and never needs to be balanced. This means that if it is a requirement to change the labelling due to damage or for a different project, there is no need for costly and time-consuming illumination checks.



Legend Removal



Caution: Take care not to scratch or otherwise damage the faceplate or the legend.

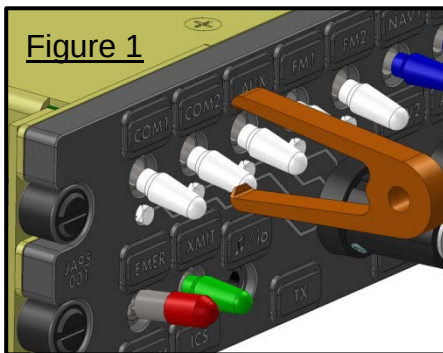


Figure 1

To facilitate legend removal, JAC provides a legend extractor tool - part # TOL-CUST-EXTR (figure 1) that fits into the recesses on the legend.

To remove a legend, hold the extractor firmly between the forefinger and thumb, and use a tweezer-like action to grip the legend (figure 2).

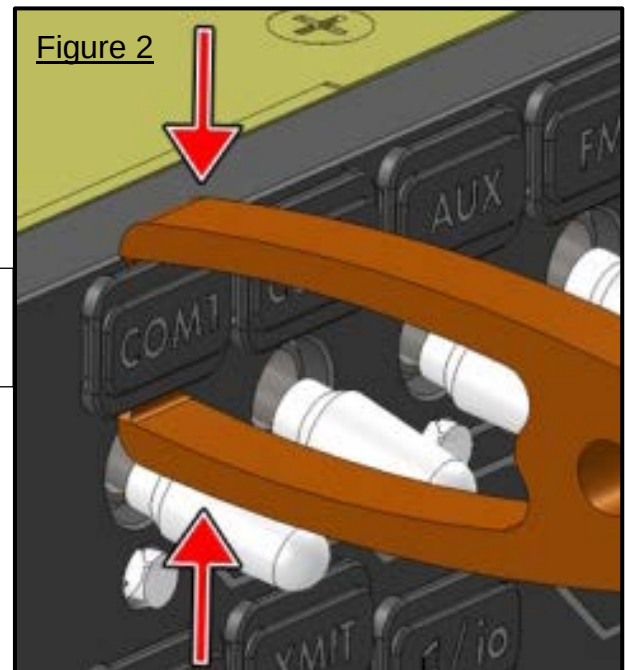


Figure 2

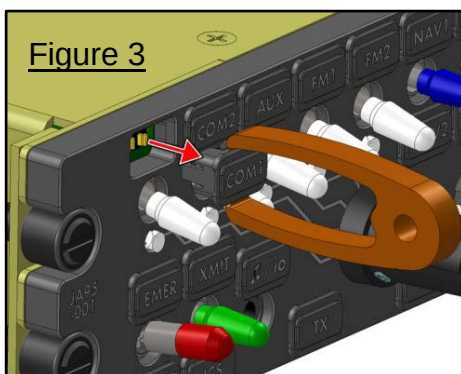


Figure 3

Pull the legend away from the faceplate as shown in figure 3.

Legend Replacement

To replace a legend, align the text correctly, and then apply gentle pressure until the body of the legend support seats firmly into the faceplate.

Once the new legend is in place, ensure that it has seated correctly by checking that it illuminates. The unit is now ready for use.

Installation and Operating Manual

Appendix B - Certification Documents



B1 **Airworthiness Approval**

Airworthiness approval of the J301A-N01 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 J301A-N01 Audio Controller - NVG. 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 J301A-N01 Audio Controller - NVG in [aircraft location].

Installed in accordance with the J301A-N01 Installation and Operating Manual, Revision [], and AC 43.13-2, Chapters 2, and 3.

The J301A-N01 interfaces with existing aircraft systems per the Installation and Operating Manual instructions.

The J301A-N01 Installation and Operating Manual provides detailed installation instructions and wiring diagrams (Section 2, and Appendices A and B).

Power is supplied to the J301A-N01 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 J301A-N01 Audio Controller - NVG is "on condition" only. Refer to the J301A-N01 Maintenance Manual. Periodic maintenance of the J301A-N01 is not required.

The following sample Instructions for Continued Airworthiness (ICA) provides assistance in preparing ICA for the Jupiter Avionics J301A-N01 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 J301A-N01 Audio Controller - NVG 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 J301A-N01 installed in an [aircraft make and model].

Applicability: Applies to a Jupiter Avionics J301A-N01 installed in an [aircraft make and model].

Definitions/Abbreviations: None, N/A.

Precautions: None, N/A.

Units of Measurement: None, N/A.

Referenced Publications: J301A-N01 Installation and Operating Manual
J301A-N01 Maintenance Manual
J301A-N01 Operating 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 J301A-N01 Audio Controller - NVG 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 or to the Jupiter Avionics J301A-N01 Operating Manual.

4. Servicing Information

N/A

5. Maintenance Instructions

Maintenance of the J301A-N01 is 'on condition' only. Periodic maintenance is not required. Refer to the J301A-N01 Maintenance Manual.

6. Troubleshooting Information

Refer to the J301A-N01 Maintenance Manual.

7. Removal and Replacement Information

Refer to Section 2 of this manual - the J301A-N01 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 J301A-N01 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

J301A-N01 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 J301A-N01 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