

## AA24 / AA25 Single-User Audio Controllers

The AA24 and AA25 single-user audio controllers offer a compact and cost effective way of providing dedicated individual controls for each user in larger multi-station installations. The inter-changeable connector mapping and multi-station junction boxes (JB37-4XX) allow simple, flexible and fast installations of large networks. Designed with fully floating inputs to prevent ground-loop and common mode noise, this series of audio controllers will accommodate

up to four transceivers, a PA position, five switched Nav Aid inputs and a dedicated alerting input. Additional panel controls include independent VOX, ICS level and Radio level adjustments and a two color TX/ICS annunciator light. The ICS features NAT's exclusive ICS Tie line and ANF™ noise reduction system. The controls can be specified for either high or low impedance systems and can be custom-configured to meet individual requirements.

### TECHNICAL SPECIFICATIONS

#### Interface:

Input Z	5 k ohm RX and direct lines
Tie-line	Bi-directional ICS
Tie line Z	2.2 k ohm
Microphone	150 ohm carbon equivalent or amplified dynamic or un-amplified 5 ohm dynamic
Headset	150/600 ohm / 250 mW or 8 ohm / 200 mW
TX Positions	Up to 5, or 4 + PA
Key Out	Hard ground
TX Annunciator	LED (Green)
Switched Inputs	5 Nav, 4 Com
Direct Inputs	1 (suitable for alerting)

#### Inputs:

Power	22 - 32 VDC @ 0.4 A (max.)
Lighting	160 mA/28 VDC, 600 mA/5 VDC

#### ICS:

Modes	LIVE/KEYED/VOX (w/ANF™)
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#### Environmental:

Temperature	-40 C to +70 C (Operational) -55 C to +85 C (Survival)
Altitude	25,000 ft max
Humidity	95%
Shock	12 g (any axis)

### MODEL

#### AA24-001

#### VFR/IFR



(Refer to Outline Drawing No. 2-1)

### DESCRIPTION

COM 1, COM 2, COM 3, COM 4 + PA.  
NAV, ADF, DME, MKR & AUX.

28 VDC Lights.

High impedance H/S.

ICS, RX and VOX Sq. controls.

Weight: 1.1 lb / 0.5 kg

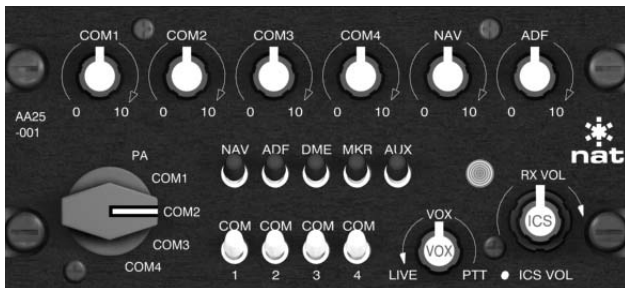
Power: 0.4 A / 28 VDC

AA24-801 Low impedance headset

Install Kit: AA24-IKC (Crimp)

#### AA25-001

#### VFR/IFR



(Refer to Outline Drawing No. 2-2)

COM 1, COM 2, COM 3, COM 4 + PA.  
NAV, ADF, DME, MKR & AUX.

28 VDC Lights.

High impedance H/S.

ICS, RX and VOX Sq. controls.

Weight: 1.5 lb / 0.68 kg

Power: 0.4 A / 28 VDC

AA25-801 Low impedance headset

Install Kit: AA24-IKC (Crimp)

### Junction Boxes

JB37-403 for up to 3 stations.

JB37-404 for up to 4 stations.

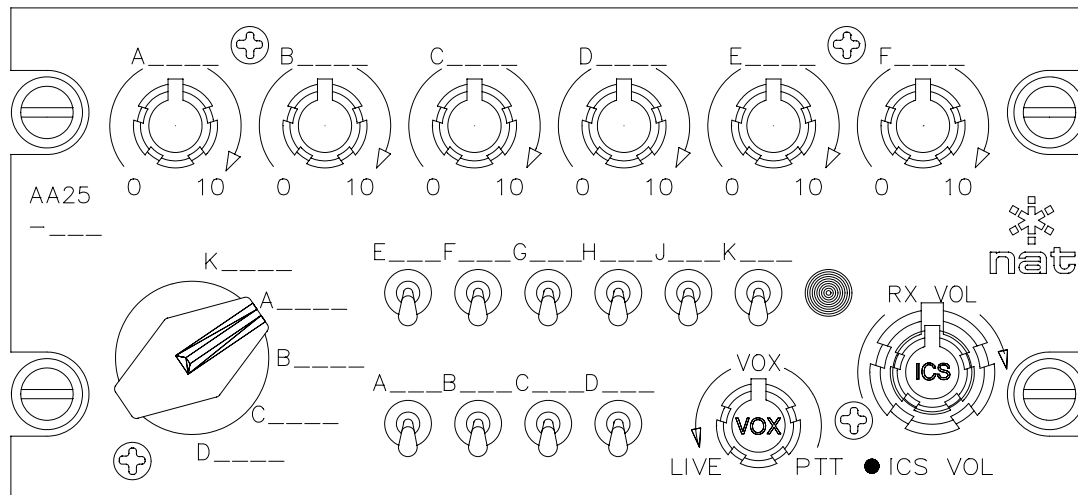
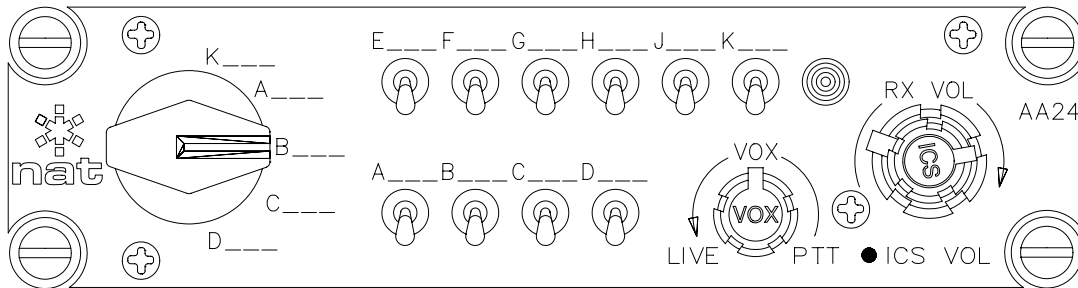
JB37-405 for up to 5 stations.

Contact NAT for more information on this product. Used with either AA24 or AA25 series.

# AA24 / 25 Series Custom Configuration Chart

Note the panel legends closely. Those designated for RX switch functions must match those similarly labeled for TX functions (A, B, C, etc.). Additionally, the top row of individual volume controls on the AA25 must correspond to the respective switch. The "K" RX switch is a multi-use position. If the "K" TX select function is used for PA, the "K" RX switch may be used as an additional RX audio input. If the "K" TX select function is used for a fifth transceiver, the

"K" RX switch must be used for the corresponding RX audio. The AA24 and AA25 can be configured at the factory for either high or low impedance headsets. This configuration choice must apply to both the microphone and headphones. A lit TX select knob is normally supplied. A rubberized TX select knob, in the same style as the ICS, VOX, and RX level knobs, can be ordered as an option.



## Installation Information:

Airframe Type: .....

Control Location(s): .....

Number of Controls/Ship: .....

## Functions:

Similar to existing model: .....

Microphone Z: .....

Headphone Z: .....

Special Lighting: .....  
*(Must be DC; 28 VDC default)*

## Legends:

A: .....	F: .....
B: .....	G: .....
C: .....	H: .....
D: .....	J: .....
E: .....	K: .....

# N301A / Single-User Audio Controllers



N301A-000

## PRODUCT DESCRIPTION

The N301A provides upgraded performance in a plug compatible replacement for the A301-6. Many improvements have been incorporated such as extensive noise suppression and fully floating inputs to remove ground-loop or common mode noise. Both high and low impedance headsets are supported and mic outputs can be individually adjusted for each transceiver.

The N301A can be utilized in new installations where single or multiple user networks (up to 10 stations) are required. User controlled features of the N301A include split RX and ICS volume controls, VOX squelch control, an additional RX input for the AUX TX position and an extra Nav Aid position. Additional internal inputs have been added to

improve airframe alerting capability. Each panel is self-contained, with solid state modular plug-in construction, sealed switching devices for low noise and gold switch/relay contacts for long life. Other features of the N301A include a CVR output, TX annunciator light, Emergency mode switch, and a second connector to permit supplemental inputs with two additional ICS buses (PVT & NAT) to support more complex ICS networks. A VOX circuit and front panel control on the N301A series provide the convenience of voice activated intercom.

NAT offers the N301A in standard configurations or customized panel layouts, with 5 VDC or 28 VDC standard Blue/White lighting, plus optional NVG compatible lighting.

## TECHNICAL SPECIFICATIONS

### Environmental Categories:

Temperature	-20 C to +70 C (Ambient) -55 C to +85 C (Survival)
Altitude	25,000 ft max.
Humidity	95%
Vibration	Conforms to DO-160C categories M, N, Y

### Mechanical:

Panel Height	2.625"
Width	5.75" front, 5.0" rear
Depth	3.7" excluding mating connector
Weight	1.75 lbs/795 g

### Lighting:

Panel	160 mA/28 VDC 600 mA/5 VDC Blue/White or NVG
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### ICS Functions:

Modes	Live or keyed with ANF™ and dedicated level control VOX function available.
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### Interface:

Power Requirements	22 - 32 VDC @ 0.17 A typical
Input Z	10 k ohm, all RX and direct lines
Tie line Z	30 k ohm in/600 ohm out bi-directional ICS
Microphone	150 ohm carbon equivalent/amplified dynamic and un-amplified 5 ohm dynamic.
Headphones	150/600 ohm high impedance 250 mW min. and 8 ohm low impedance 250 mW min.
TX Positions	Up to 6, plus ICS and PVT ICS
Key Out	Hard ground, visual annunciator
RX Inputs	Up to 6 selectable
Direct Inputs	4, with 2 suitable for alerting (fixed level)

**TSO-C50c Compliance:** (Only applicable to units Serial #3000 and up)

**B**

DO-160C Env. Cat. B4-BA[MNY]XXXXXXABABAZXXX  
RTCA DO-170 Class 1b

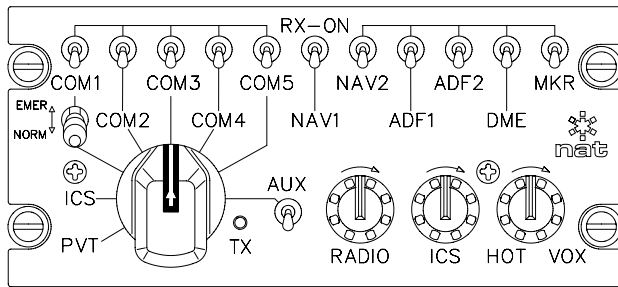
# N301A Single-User Audio Controllers

## MODEL

## DESCRIPTION

### N301A-000

### HEAVY IFR

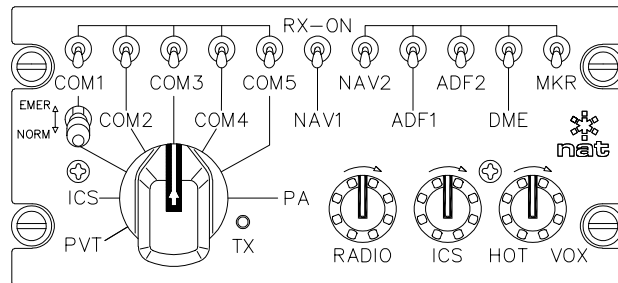


(Refer to Outline Drawing No. 2-3)

COM 1, COM 2, COM 3, COM 4, COM 5, and AUX TX positions, plus ICS/PVT.  
 Switched Nav Aids inputs NAV 1, NAV 2, ADF 1, ADF 2, DME, MKR.  
 4 direct un-switched inputs, 2 suitable for alerts.  
 HOT/PTT/VOX ICS mode switch.  
 28 VDC Blue/White lights.  
 Split ICS and RX controls.  
 TX annunciator.  
 CVR Output.  
 Weight: 1.75 lb / 0.795 kg  
 Power: 0.17 A / 28 VDC  
 Install Kit: N301-IKC (Crimp)

### N301A-015

### Special Mission

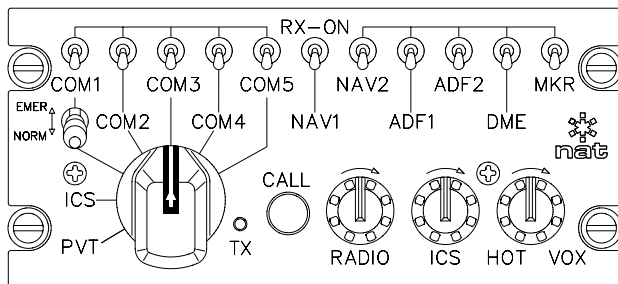


(Refer to Outline Drawing No. 2-3)

COM 1, COM 2, COM 3, COM 4, COM 5, and PA positions, plus ICS/PVT.  
 Switched Nav Aids inputs NAV 1, NAV 2, ADF 1, ADF 2, DME, MKR.  
 4 direct un-switched inputs, 2 suitable for alerts.  
 HOT/PTT/VOX ICS mode switch. 5 VDC Blue/White lights.  
 Split ICS and RX controls.  
 TX annunciator.  
 CVR Output.  
 Weight: 1.75 lb / 0.795 kg  
 Power: 0.17 A / 28 VDC  
 Install Kit: N301-IKC (Crimp)

### N301A-017

### Special Mission

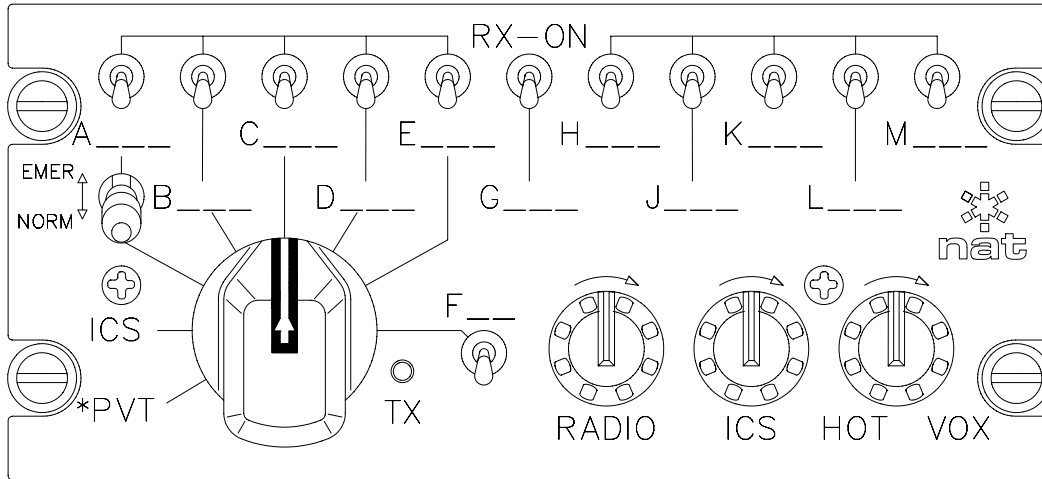


(Refer to Outline Drawing No. 2-3)

COM 1, COM 2, COM 3, COM 4, COM 5, and AUX TX positions, plus ICS/PVT.  
 Switched Nav Aids inputs NAV 1, NAV 2, ADF 1, ADF 2, DME, MKR.  
 4 direct un-switched inputs, 2 suitable for alerts.  
 HOT/PTT/VOX ICS mode switch.  
 ICS Call Push button.  
 28 VDC red lights.  
 Split ICS and RX controls.  
 TX annunciator.  
 CVR Output.  
 Weight: 1.75 lb / 0.795 kg  
 Power: 0.17 A / 28 VDC  
 Install Kit: N301-IKC (Crimp)

# N301A Series Custom Configuration Chart

Section 2



## Installation Information:

Airframe Type: .....

Number of Controls/Aircraft: .....

Control Location(s): .....

## Functions:

Similar to existing model: .....

Low or High Impedance: .....

NAT or Andrea Tie-Line\*: .....

#1 Direct Input: .....  
*(Through radio volume control)*

#2 Direct Input: .....  
*(Through radio volume control)*

#3 Direct Input: .....  
*(Emergency mode)*

#4 Direct Input: .....

Special Knobs: .....

Special Lighting: .....  
*(Must be DC; default - 28 VDC natural)*

## Legends:

A: .....	G: .....
B: .....	H: .....
C: .....	J: .....
D: .....	K: .....
E: .....	L: .....
F: .....	M: .....

Toggle switch positions A - E should be used for transceivers. These may be remapped to RX inputs if needed, but the corresponding TX position will be eliminated. Position F may be used for either a transceiver or PA function.

Toggles switch positions G - M must be receiver inputs only.

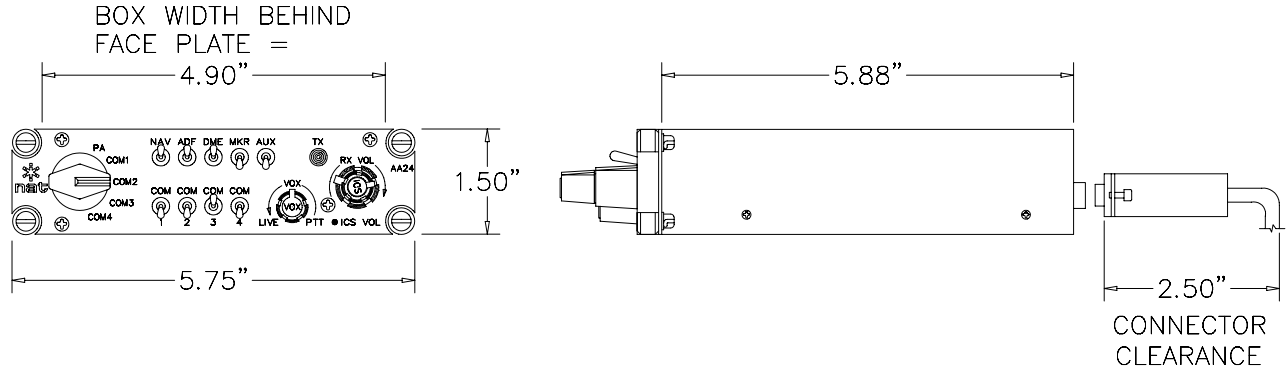
Lighted knobs are standard on this control. A smaller TX select knob can be used but is not lighted.

Other Special Functions: .....

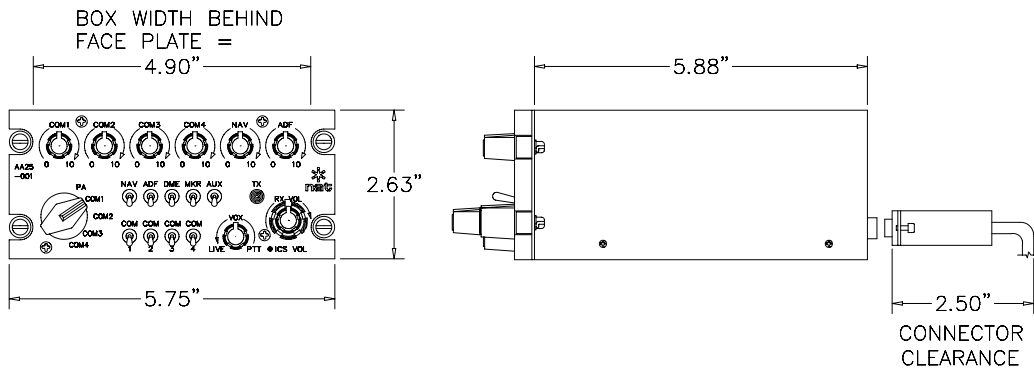
*\*PVT function only available when using the Andrea Tie-Line option.*

# Outline Drawings - Single User Audio Controllers

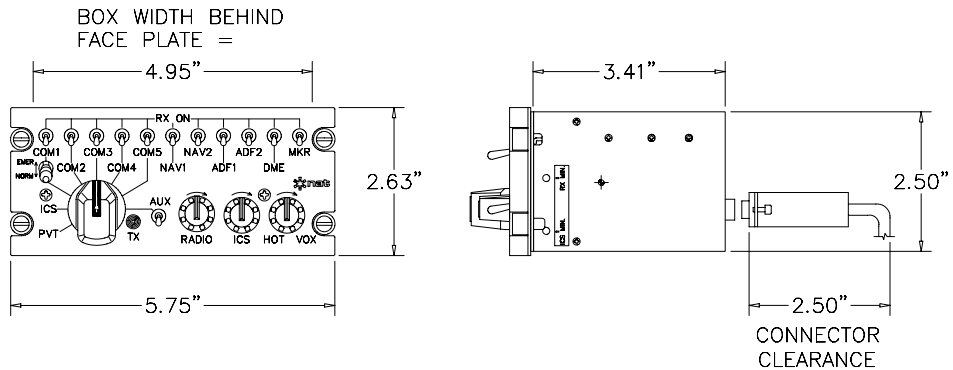
## No. 2-1



## No. 2-2



## No. 2-3



Section 2