

# AA82 / AA83 / AA85 / DA80 Intercom Systems



DA80 DigiVOX™



AA85 InterVOX II™



AA82 / AA83 InterMUSIC™



## PRODUCT DESCRIPTION

Designed to satisfy demanding environments, Northern Airborne's general aviation intercoms are high quality, rugged, compact, voice activated systems with many of the features found in larger commercial aircraft. NAT's exclusive state of the art technology ensures clear, crisp communications throughout the aircraft without annoying clipping, which often occurs with relay-activated systems. All NAT panels are loaded with features that will satisfy most aircraft audio system requirements.

### ANF™ (Active Noise Filtering)

This advanced technology helps to isolate the human voice while filtering out unwanted ambient noise entering the intercom channel. Clear, clean intercom communications result in a more comfortable and safe flight.

### Quality Enhanced by SMT

Our products use high quality components, including sealed gold contact switches, dry nitrogen filled/high vibration rated sealed relays, gold contact connectors and a fully masked, post coated, flame retardant circuit board. Each unit is temperature cycled and life tested.

### Pilot Isolate Mode

Separates the pilot from the system, allowing confidential radio communications without interference from passenger intercom or music.

### Gradual Return of Music Mute

Music muting is automatic during all radio and ICS activity. Upon conclusion of radio or ICS operation, the music gradually returns to its previous level.

### Power Input

11 - 32 VDC

### Headset Output Power

100mW into 600 ohms per channel, typical

### Bicolor LED-ICS/TX Activity

Indicates amber during ICS activity and green during transmit.

### Pilot Priority Transmit Override

Allows the pilot to override the co-pilot (or instructor to override the student) during radio transmissions.

### Patented Individual Microphone Gating

Aircraft noise is significantly reduced within the intercom through independent microphone circuits. By "turning on" only the active microphone, internal communications are quieter and less stressful.

### Mounting Options

Vertical or horizontal. See outline drawing 5-1 for dimensions.

### Emergency Fail-Safe

In the event of a power failure, the ICS is automatically bypassed and the pilot is routed directly to the radio audio system.

### Short Circuit Protection

Provided to ensure continued operation in the event of a headset failure.

## TECHNICAL SPECIFICATIONS:

Contact NAT Product Support.

# AA82 / AA83 / AA85 / DA80 Intercom Systems

## DA80 DigiVOX™

The digital signal processing (DSP) DA80 intercom accommodates up to 4 places. The advanced DSP filtering combined with proven design concepts provides superior performance over analog devices in filtering unwanted electrical noise from other aircraft systems.

**Digital Voice Messages** On power up and selection of specific actions, the pilot is notified with verbal confirmation: “System Ready” “Normal Mode” “AutoVOX” “Stuck Mic” and “Pilot Isolate”.

**VOX / LIVE / AutoVOX Mode** The VOX squelch adjustment on the front panel provides 3 modes of intercom operation. The full counterclockwise position puts all microphones in the LIVE mode for continuous voice operation. Turn the squelch control to manually set the VOX threshold for noisier environments, or turn fully clockwise to AutoVOX for true ‘set and forget’ operation.

**Stereo Music Input** Accepted from either portable entertainment units, CD changers, or other integrated onboard systems. Sophisticated channel mixing delivers high quality monaural music to standard aviation headsets.

**AA80 Compatible** Direct plug compatibility.

## AA85 InterVOX II™ (TSO'd)

Designed to satisfy demanding pilots, the AA85 InterVOX II™ is a high quality voice-activated intercom with many of the characteristics found in larger commercial systems. A single compact AA85 can accommodate 2, 4 or 6 place installations. It provides full transmit and intercom capabilities for the pilot and co-pilot, plus intercom functions for up to four passengers. NAT's exclusive tie line feature allows the AA85 to be part of complex multi-unit systems as either a primary or secondary component.

### 4 or 6 Place

**ICS Tie Line** NAT's exclusive feature allows the panel to be part of a complex multi-unit system as either a primary or secondary component.

**Pilot / Crew / All Modes** Three position toggle switch allows pilot and crew isolation from passengers. Both the crew and passengers retain full intercom and music capabilities within their group while passengers are prevented from hearing any radio communications during ‘isolated’ operation.

**VOX / LIVE / PTT Modes** The intercom mode is set by the position of respective VOX controls. Separate VOX controls for the pilot and crew/passengers compensate for the differences in noise levels and headset types between the front and rear of the aircraft.

**Stereo Music Input** Accepted from either portable entertainment units, CD changers, or other integrated onboard systems. Sophisticated channel mixing delivers high quality monaural music to standard aviation headsets.

### Adjustable Music Mute / Radio Input Levels

Music mute level can be adjusted to mute up to 50% for passengers and 100% for the crew. Radio volume levels can also be set at a lower level for passengers while maintaining optimum volume for the crew.

**TSO-C50c Certification:** RTCA DO-170 Class 1b (Only applicable to units Serial # 3000 and above) DO-160C Env. Cat. A1/D1-BA[BMN]XXXXXXXXZBABAUXXXX

### AA80 Compatible

## AA83/AA82 InterMUSIC™

The AA83 Stereo Crew Intercom is an expansion of the AA80 family. The AA83 InterMUSIC™ unit can support four stereo positions, and can be linked via the ICS Tie line to a rear AA82 passenger system, providing true split bus stereo operation for up to 10 users.

The AA82 Stereo Intercom offers the ability to create passenger entertainment loops within an aircraft, and link them to the flight crew for common intercom and radio monitor functions. The AA82 InterMUSIC™ unit can support up to six stereo positions, and be linked via the ICS Tie line to a forward flight crew system. Because rear passenger stereo requires controls to be located in close proximity to the users, the AA82 is normally mounted in the rear cabin, and its compact enclosure and faceplate design make mounting simple.

**ICS Tie Line** NAT's exclusive feature allows the panel to be part of a complex multi-unit system as either a primary or secondary component.

**Pilot / Split / All Modes** In the split mode, the AA83 and AA82 become independent intercoms to support separate ICS groups.

**VOX / LIVE / PTT Modes** Separate VOX controls for the pilot and crew/passengers.

**Music / ICS Volume** Adjusted on the front panel with individual controls.

**Stereo Music** The intercom is combined with a wide band stereo music processor and RX audio functions to provide an integrated communication system.

### RX Volume, RX Balance, ICS Balance, Music Balance, Bass, Music Mute

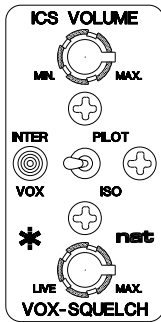
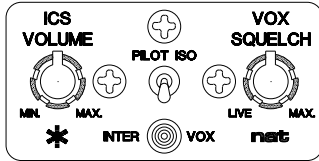
Adjustable internally.

**Contact NAT Product Support for Technical Specifications.**

# AA80 InterVOX™ Intercom Systems

## MODEL

AA80-001



## DESCRIPTION

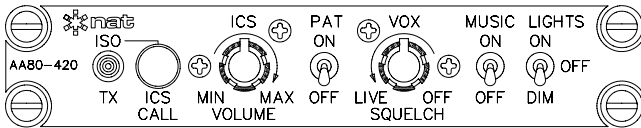
Power : 11-32 VDC @385mA nom.  
 Microphones: 250 mVrms full output,150 ohm  
 Music: stereo in, mono out (500 ohm/3 Vp-p max)  
 Radio: 1 k ohm, 2.5 Vrms  
 Headset: 4 or 6, 150-600 ohm  
 Power 400 mW (150 ohm)  
 Weight: .7 lb (310 g)  
 Mounting: Vertical, horizontal or clock  
 Operational temperature: 20C to +60C  
 Humidity: 95%

(Refer to Outline Drawing No. 5-1)

Install Kit: AA80-IKC (Crimp, included with unit)

## AA80-420

### EMS Medical Station



Four passenger control, 2 position RX/TX/ICS, 2 position ICS/RX, LIVE/KEYED/VOX ICS operation with squelch control, Patient H/S ON/OFF switch, Automatic music muting on ICS or incoming receive audio, Music ON/OFF.  
 Built-in dimmer (28 VDC) for lighted panel., TX LED Annunciator (Green), ISO LED (Red) warns that ICS is disconnected from forward crew (via AA31).  
 ICS CALL button.

Power-fail reversion to basic RX operation.  
 One TX output, one RX input.  
 See AA80 for additional data.

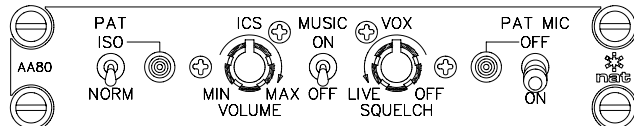
Weight: 1.1 lb / 0.5 kg  
 Power: 0.25 A / 28 VDC

(Refer to Outline Drawing No. 4-1)

Install Kit: AA80-IKC (Crimp)

## AA80-421

### EMS Patient Station



Unique support for two patients.  
 VOX or LIVE ICS operation with squelch control.  
 Patient ISO switch with Amber annunciator.  
 Patient MIC locking switch with Red annunciator.  
 Music ON/OFF.

Patient Monitor O/P to medic audio panel.  
 Weight: 1.1 lb / 0.5 kg  
 Power: 0.25 A / 28 VDC

(Refer to Outline Drawing No. 4-1)

Install Kit: AA80-IKC (Crimp)

## Outline Drawing - Intercoms

### No. 5-1

BOX WIDTH BEHIND FACE PLATE =

