

## Intercommunication System Control

### Model A301-1A (C-6533A)



**Model A301-1A**

The A301-1A is an upgraded version of Andrea Systems C-6533 product which has been providing reliable service in a variety of helicopters, military and commercial aircraft for almost 40 years. This modernized version boasts a range of new features including digital switching, surface mount technology, and an option to add VOX.

The A301-1A is a single user intercommunication control designed to be the basic unit for an eight user intercommunication system of advanced design.

#### OPERATING CONTROLS

- Six (6) position rotary selector switch for control of five (5) transmitters / receivers and an Interphone line.
- Seven (7) monitor switches provide for individual selection and mixing of eight (8) audio input lines. (One switch controls two inputs.)
- A Hot Mike switch activates the hot mike function on the interphone line.
- A Master Volume Control permits adjustment of the headset level.

#### OPTIONAL FEATURES

- Adjustable VOX with ON/OFF.
- A second ICS line (PVT) allows flexible aircraft configurations for a boom operator or other private communications.
- Custom panel markings.
- Transmitter outputs can be preset at the factory to customer specified levels.
- Red, White, or Night Vision lighted panels.
- Embedded lighting in place of lamps.

#### ADVANCED FEATURES

- Digital switching of audio paths using solid state switches and hardware CPLD controls eliminates mechanical contact noise from the audio path.
- Immediate start-up without software delays.
- EMI and lightning protected.
- Modular construction with plug together boards maximizes internal interconnect reliability.
- Low level or high level mic inputs.
- Supports low impedance (8 ohm, 350 mW) or high impedance (150 ohm, 100 mW) headsets.
- Limited operation down to 10 VDC input voltage for communication during engine start.
- Microphone AGC for consistent talk quality.

#### READY FOR TODAY'S ENVIRONMENT

- Environmental testing to MIL-E-5400 Class 1
- Lightning including multi-stroke and multi-burst. Tested to A2G22 and A2C3 levels of RTCA DO-160D.
- EMI tested to MIL-STD-461.

C46-5459 Rev 5

## SPECIFICATIONS\*

### PHYSICAL CHARACTERISTICS

- Size: 5.75" W x 2.62" H x 4.50" D
- Weight: 1.85 lbs Max.

### ENVIRONMENTAL

- MIL-E-5400 CLASS 1
- Continuous Operating Temperature: -54° C to +55° C
- Intermittent Operating Temperature: +55° C to +71° C
- EMI: MIL-STD-461
- Lightning: RTCA DO-160D, A2G22 and A2C3

### MATING CONNECTOR

- Winchester MRE42SJTC6H (not included)

### POWER REQUIREMENTS

- Normal Power @ 28 VDC
  - No Signal - 5 W Max.
  - 350 mW Headset Output - 8 W Max.
- Panel Lighting, Standard Configuration with Two Lamps
  - 0.25A @ 27.5 VDC

### VOLTAGE LEVELS

- 5 ohm Mic Input: 0.1 to 4.0 mVrms
- High Level Mic Input: 0.1 to 1.0 Vrms
- Headset Output: 1.67 Vrms into 8 ohms,  
3.87 Vrms into 150 ohms
- ICS, PVT Interphone Lines: 2.75 Vrms
- Receive Line Inputs: 2.75 Vrms
- Transmitter Outputs: 0 dBm (1 mW = .4 Vrms),  
Adjustable+/-3dB

### IMPEDANCES

- Microphone Input: 5 ohms (Dynamic Mic) or 200 ohm - 2.2K High Level Mic
- Talk-Out (INT & XMIT): 150 ohms load
- Receiver Input: 150 ohms load
- Headset Output: 8 ohms or 150 ohms load

### MICROPHONE AMPLIFIER PERFORMANCE

- Distortion: 3% Max. @ 0.6 mVrms In,  
5% Max. @ 4.0 mVrms In.
- Frequency Response: +1/-2 dB 300 to 6000 Hz
- AGC - Maintains constant output for wide variations in input.
  - Breakpoint: 0.2 to 0.5 V applied to the 5000 to 5 ohm pad
  - Attack time: 200 mS Max.
  - Release time: approx. 6 sec.
  - Slope: 3 dB Max. output change for 20 dB input change

\* Specifications subject to change without notice.

### HEADSET AMPLIFIER PERFORMANCE

- Distortion: 5% Max.
- Frequency Response: +1/-2 dB 300 to 6000 Hz

### SIGNAL ISOLATION AT 1KHZ

- Open Monitor Switch: -60 dB minimum
- Audio Input Lines: -60 dB below 50 mW
- Transit Lines: -70 dB below 50 mW  
(2.75V)
- Volume Control Range: 28 to 37dB

### TALK CAPABILITIES

- Transmitters: Up to 5.
- ICS Lines: One is standard. A PVT interphone line can be added as an option.

### MONITOR CAPABILITIES

- Receivers / Audio Inputs: Up to 8. (One toggle switch controls two inputs.)
- 4 Direct Inputs,
  - 2 adjust with volume control
  - 2 have fixed level for alerts or warnings

### CONTROLS

- Rotary Switch - 6 position, 5 for transmitters/receivers and one for ICS. As an option a second ICS position can be added for PVT.
- 7 Toggle switches to select audio input lines for monitoring.
- Volume Control for adjustment of the headset level.
- Hot Mike Toggle Switch to activate the Hot Mike function for Interphone. On units where VOX has been added as an option this switch is replaced with a knob to adjust sensitivity.

### INTERNAL ADJUSTMENTS

- 5 Individual internal adjustments of the audio output level to each of the five associated transmitters.