Intercommunication System Control
Model A301-1A (C-6533A)

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.
- A momentary CALL button which provides emergency call operations with the audio raised 6 dB above all monitored signals.
- Custom panel markings.
- Transmitter outputs can be preset at the factory to customer specified levels.
- Red, White, or Night Vision lighted panels.
- Embedded or Electroluminescent 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 of RTCA DO-160F.
- EMI tested to MIL-STD-461F and ADS-37A-PRF, as well as MIL-STD-704A for aircraft power.
SPECIFICATIONS*

PHYSICAL CHARACTERISTICS
• Size: 5.75" W x 2.62" H x 4.50" D
• Weight: 1.85 lbs Max.

CERTIFICATION
• MIL-E-5400 CLASS 1
• Continuous Operating Temperature: -54˚ C to +55˚ C
• Intermittent Operating Temperature: +55˚ C to +71˚ C
• EMI: MIL-STD-461F and ADS-37A-PRF
• Aircraft Power: MILSTD-704A
• Lightning: RTCA DO-160F, A2G22

MATING CONNECTOR
• Winchester MRE42SJTC6H (not included)

POWER REQUIREMENTS
• Normal Power @ 28 VDC
  - No Signal - 3 W Max.
  - 350 mW Headset Output - 6 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

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.

* Specifications subject to change without notice.

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