

**Audio Frequency Amplifier**  
**Model AM-1964F/AIC (Andrea P/N A81-77)**  
**Model AM-4347/AIC-25 (Andrea P/N A81-85)**



**Model AM1964F/AIC**

**THIS UNIT IS USED ON THE  
FOLLOWING AIRCRAFT:**

- F-117
- F-16
- C-130
- KC-135
- C-5
- B-52

**GENERAL CHARACTERISTICS**

Mean Time Between Failure.....	3000 hrs.
Size.....	3 1/2" W x 1 49/64" H x 2 1/2" D
Weight.....	0.7 lbs. Max.
Environmental.....	Class 3 per MIL-E-5400
Temperature:	
Continuous Operation.....	-54° C to +95° C
Intermittent Operation.....	+95° C to +150° C
Storage.....	-62° C to +150° C
Input Voltage.....	27.5 VDC (17-29 V)
Input Power.....	1.25 W max.
Magnetic Susceptibility to a 2 gauss field.....	0.02 V max. @ 400 cycles
Gain @ 1 KHz.....	68 +/- 5 dB
Frequency Range.....	300 to 6000 Hz
<b>MICROPHONE AMPLIFIER</b>	
Input Source Impedance.....	5 ohms
Output Load Impedance.....	150 ohms
Input level range.....	-75 to -30 dBm
Output volts.....	2V @ -40 dBm input
<b>AGC CHARACTERISTICS</b>	
Breakpoint.....	-55 dBm +/- 3 dB
Slope.....	3 dB / 20 dB output-input ratio
Attack time.....	.10 sec. max.
Release time.....	3 to 8 sec. max.
Distortion.....	5% max. for -50 dBm input
Internal Noise.....	0.002 V max.
Noise with 3V, ripple on 27.5 VDC line.....	2.5 mV @ 400 Hz 3.5 mV @ 1200 Hz 4.5 mV @ 6000 Hz

**DESCRIPTION AND USE**

The Andrea Model A81-77, Audio Frequency Amplifier is a low noise, high gain unit that features a patented Automatic Gain circuit. This maintains the output virtually constant and distortion less over a wide range of input level.

The AGC action makes the unit ideal for use as an instrument amplifier and recorder driver in systems with widely varying signals, such as in seismological measurements. Model A81-77 was originally designed as a microphone amplifier in high quality intercommunication systems.

The A81-77 and companion unit, Andrea Model A81-78, form a pair of talk and listen amplifiers, which have logged many hours of reliable service in a variety of aircraft and ground based communication systems.

C46-5385 Rev C

## INTERFACE DESCRIPTION

- Audio Amplifiers
- AM-4347 / AIC-25 (Andrea A81-25)
  - AM-1964F / AIC (Andrea A81-77)
- Unit Connector
- Vishay / Dale SMP20-11-027 or equivalent
  - 11 pins

<u>Pin</u>	<u>Name</u>	<u>Description / Comments</u>
A	Internal connection	<ul style="list-style-type: none"><li>• DO NOT USE</li></ul>
B	Input High	<ul style="list-style-type: none"><li>• Input Audio, 0.001mV to 1 mV from a 5 Ohm source</li><li>• Input impedance is 15 Ohms (between pins B, C)</li><li>• With AGC, the max input is close to 7.5 mV</li><li>• Typical use connects a 5 Ohm dynamic microphone between pins B and C.</li><li>• The input is transformer isolated.</li></ul>
C	Input Low	<ul style="list-style-type: none"><li>• Input Audio return</li></ul>
D	Unused	<ul style="list-style-type: none"><li>• Reserved for chassis ground in some applications</li></ul>
E	Unused	
F	Unused	<ul style="list-style-type: none"><li>• Reserved for chassis ground in some applications</li></ul>
H	Battery ground	<ul style="list-style-type: none"><li>• DC Power return</li></ul>
K	N/C	
J	Audio Output Low	<ul style="list-style-type: none"><li>• Output Audio return</li></ul>
L	27.5 VDC Power Input	<ul style="list-style-type: none"><li>• Normal Input range 17 to 29 VDC</li><li>• Input current maximum 75 mA @ 28 VDC</li></ul>
M	Audio Output High	<ul style="list-style-type: none"><li>• Output Audio</li><li>• Rated output 2V rms into 150 Ohm load</li><li>• Output impedance &lt;50 Ohms @ 1 KHz</li><li>• With AGC, an input of 0.3 mV to 7.5 mV has a maximum 3 dB output variation</li><li>• The output is transformer isolated</li></ul>