



# unit instructions

Cedar Rapids Division | Collins Radio Company, Cedar Rapids, Iowa

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# 1. General Description.

### 1.1 PURPOSE OF EQUIPMENT.

The 356B-1 Program/Monitor Amplifier is intended for use as a program or monitor amplifier with broadcast studio equipment such as the 212F-1, 212F-2, or 212G-1 Broadcast Console. It may be used in high-fidelity AM, FM, and TV broadcast service or program control in audio systems.

# 1.2 PHYSICAL DESCRIPTION.

The 356B-1 Program/Monitor Amplifier (figure 1) is a plug-in module containing necessary circuitry for three stages of amplification. The 356B-1 is 5-3/4 inches high, 2-3/4 inches wide, and 9-1/2inches long and weighs approximately 4-3/4 pounds.

### 1.3 TUBE COMPLEMENT.

FUNCTION	SYMBOL	TUBE TYPE
Input amplifier	V301	5879
Phase inverter	V302	5879
Output amplifier	V303	6V6
Output amplifier	V304	6V6

# 1.4 ELECTRICAL CHARACTERISTICS.

1.4.1 CONNECTORS. One 12-pin connector, P301, is located at the front end of the chassis. All connections to the 356B-1 are made at this connector.

1.4.2 POWER REQUIREMENTS. Power requirements for the 356B-1 are as follows: 250 to 300 volts d-c at 63 to 88 ma and 6.3 volts a-c or d-c at 1.2 amperes.

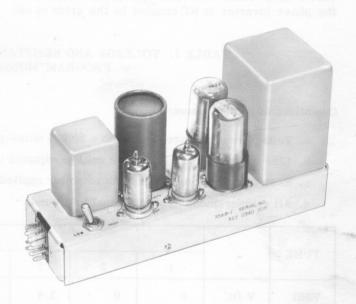


Figure 1. 356B-1 Program/Monitor Amplifier, Equipment Supplied

1.4.3 FREQUENCY RANGE. The frequency range of the 356B-1 is 50 to 15,000 cycles per second.

1.4.4 INPUT IMPEDANCE. The 356B-1 is factory wired for 600 ohms unloaded transformer input impedance. It may be rewired for 150 ohms input impedance if desired. See figure 4.

1.4.5 GAIN. When the HI-LOW gain switch on the top of the amplifier chassis is in the HI position, the amplifier has 68-db gain. When the gain switch is in the LOW position, the gain is 56 db.

1.4.6 OUTPUT IMPEDANCE. The 356B-1 is factory wired for 600 ohms output impedance. It may be rewired for 150 ohms output impedance. See figure 4.

1.4.7 FREQUENCY RESPONSE. The frequency response of the 356B-1 is ±1 db from 50 to 15,000 cps.

1.4.8 DISTORTION. The distortion in the output of the 356B-1 is 0.5 percent maximum at +30 dbm (one watt) output and 3 percent maximum at +39 dbm (8 watts) output.

1.4.9 NOISE LEVEL. The equivalent input noise level of the amplifier is  $-116 \ \mathrm{dbm}$ .

### 2. Circuit Description.

Figure 4 is a schematic diagram of the 356B-1 Program/Monitor Amplifier. Input signal is coupled by transformer T301 to the grid of the input amplifier V301. The input amplifier is a pentode-connected type 5879. Its output is resistance-capacitance coupled to the phase inverter V302. The phase inverter is a triode-connected type 5879. Output from the phase inverter is RC coupled to the grids of two

type 6V6 tubes (V303 and V304) in push-pull. Output from the amplifier is coupled to the load by transformer T302. Inverse feedback is taken from a third winding of T302 and applied to the cathode of V301.

### 3. Maintenance.

Normal maintenance will consist of tube replacement. Table 1 gives voltage and resistance measurements for the 356B-1 Program/Monitor Amplifier. If excessive distortion occurs replace V303 and V304.

#### 4. Parts List.

The parts list gives the description and Collins part number for all replaceable parts in the 356B-1 Program/Monitor Amplifier. When replacement of parts is necessary, only parts identical or equivalent to those listed should be used. All parts on top of the chassis are identified in figure 2. All parts mounted beneath the chassis are identified in figure 3.

TABLE 1. VOLTAGE AND RESISTANCE MEASUREMENTS FOR THE 356B-1 PROGRAM/MONITOR AMPLIFIER

# Conditions of measurement:

- a. Voltage readings are taken with a 20,000 ohms-per-volt meter.
- b. Line voltage 115 v a-c. Plate voltage adjusted to +300 volts.
- c. Resistance readings taken with no power applied.
- d. All measurements from terminal to ground.

MUDE		PIN NUMBER								
TUBE		1	2	3	4	5	6	7	8	9
V301 (5879)	V DC V AC Ohms	0 0 6K	0 0 0	1.4 0 1400	20-50 3.0 2800	20-50 3.0 2800	0 0 0	54 0 27K	141 0 120K	1.4 0 1400
V302 (5879)	V DC V AC Ohms	24 0 1 meg	0 0 0	50 0 23K	20-50 3.0 2800	20-50 3.0 2800	0 0 0	170 0 55K	170 0 55K	170 0 55K
V303 (6V6)	V DC V AC Ohms	0 0 0	20-50 3.0 2800	290 0 24K	300 0 23K	0 0 560K	0 0 Inf	20-50 3.0 2800	18 0 470	QBBQ mbsc3
V304 (6V6)	V DC V AC Ohms	0 0 0	20-50 3.0 2800	290 0 24K	300 0 23K	0 0 560K	0 0 Inf	20-50 3.0 2800	18 0 470	3.28 8.

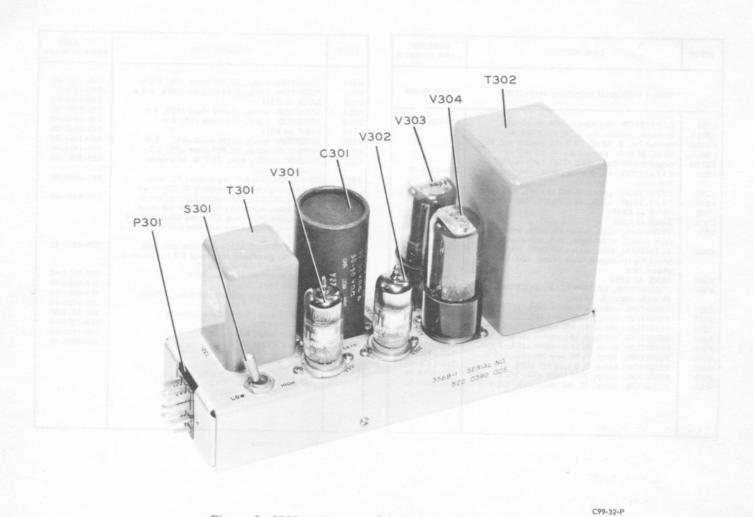


Figure 2. 356B-1 Program/Monitor Amplifier, Top View

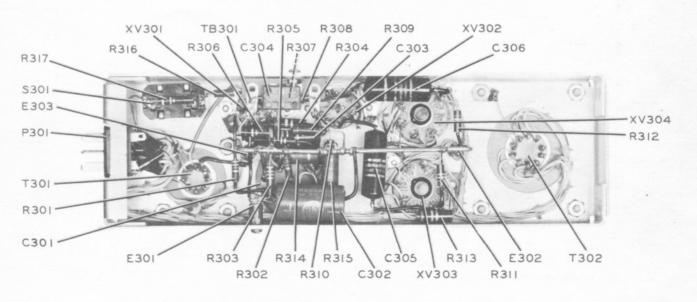


Figure 3. 356B-1 Program/Monitor Amplifier, Bottom View

C99-33-P

C301 C301A, sections, section No. 1, 40 uf, 450 V dc, section No. 2, 50 uf, 50 V dc, section No. 3, 50 uf, 50 V dc, section No. 4, 50 uf V dc capacity tolerance -10% +250% each section C302 CAPACITOR: electrolytic, 4 uf -15% +100%, 250 vdcw  C303 CAPACITOR: paper, 0.047 uf ±10%, 400 vdcw  C304 CAPACITOR: mica, 82 uuf ±10%, 500 vdcw  C305 SAME as C303  C306 SAME as C303  C301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex plated, hex  C303 SAME AS E302  CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp  R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w  R302 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w  R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w  R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w  R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w  R307 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w  R308 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w  R309 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w  R309 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w  R309 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w  R309 RESISTOR: comp, 0.00 megohm ±10%, 1/2 w	ITEM	DESCRIPTION	COLLINS PART NUMBER
C301A, sections, section No. 1, 40 uf, 450 V dc, section No. 2, 50 uf, 50 V dc, section No. 3, 50 uf, 50 V dc, section No. 4, 50 uf V dc capacity tolerance -10% +250% each section C301D CAPACITOR: electrolytic, 4 uf -15% +100%, 250 vdcw CAPACITOR: paper, 0. 047 uf ±10%, 400 vdcw CAPACITOR: mica, 82 uuf ±10%, 500 vdcw SAME as C303 SAME AS C304 SAME AS C304 SAME AS C305 SAME AS E302 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp RESISTOR: comp, 330 ohms ±10%, 1/2 w RESISTOR: comp, 1100 ohms ±5%, 1/2 w RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w 745-1354-04 745-048-04 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w 745-1436-04 RESISTOR: comp, 0. 20 megohm ±5%, 1/2 w RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w 745-1436-04 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w 745-1478-04 RESISTOR: comp, 2000 ohms ±5%, 1/2 w 745-1364-04 RESISTOR: comp, 2000 ohms ±5%, 1/2 w 745-1478-04 RESISTOR: comp, 2000 ohms ±5%, 1/2 w 745-1478-04 RESISTOR: comp, 2000 ohms ±5%, 1/2 w 745-1478-04 RESISTOR: comp, 2000		356B-1 PROGRAM/MONITOR AMPLIFIER	522-0390-005
C301B, Section No. 2, 50 uf, 50 V dc, section No. 3, 50 uf, 50 V dc, section No. 4, 50 uf V dc capacity tolerance -10% +250% each section CAPACITOR: electrolytic, 4 uf -15% +100%, 250 vdcw  C303 CAPACITOR: paper, 0.047 uf ±10%, 400 vdcw CAPACITOR: mica, 82 uuf ±10%, 500 vdcw SAME as C303  C304 CAPACITOR: mica, 82 uuf ±10%, 500 vdcw SAME as C303  C305 SAME as C303  C306 SAME as C303  E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex SAME AS E302  CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp  R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R45-1354-01 R304  R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R45-13436-01 R306  R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R45-1436-01 R306  R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R45-1436-01 R308  RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R45-1436-01 R308  RESISTOR: comp, 2000 ohms ±5%, 1/2 w R45-1348-01 R308  RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R45-1478-01 R308  RESISTOR: comp, 2000 ohms ±5%, 1/2 w R45-1364-01 R308	C301		183-1261-00
C301C, 50 uf, 50 V dc, section No. 4, 50 uf V dc C301D capacity tolerance -10% +250% each section C302 CAPACITOR: electrolytic, 4 uf -15% +100%, 250 vdcw C303 CAPACITOR: paper, 0. 047 uf ±10%, 400 vdcw C304 CAPACITOR: mica, 82 uuf ±10%, 500 vdcw C305 SAME as C303 C306 SAME as C303 C301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex C302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex C303 SAME AS E302 C304 CAPACITOR: mica, 82 uuf ±10%, 10 und 10 un			
C301D   capacity tolerance -10% +250% each section   CAPACITOR: electrolytic, 4 uf -15% +100%, 250 vdcw   CAPACITOR: paper, 0. 047 uf ±10%, 400 vdcw   CAPACITOR: mica, 82 uuf ±10%, 500 vdcw   931-0295-06   SAME as C303   SAME as C302   CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp   RESISTOR: comp, 1100 ohms ±5%, 1/2 w   RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w   RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w   745-1415-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-1448-01   745-			
C302 CAPACITOR: electrolytic, 4 uf -15% +100%, 250 vdcw C303 CAPACITOR: paper, 0.047 uf ±10%, 400 vdcw C304 CAPACITOR: mica, 82 uuf ±10%, 500 vdcw S3ME as C303 C306 SAME as C303 E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex E302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex E303 SAME AS E302 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R302 RESISTOR: comp, 33,000 ohms ±5%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R307 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R308 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R309 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.00 megohm ±1			
C303 CAPACITOR: paper, 0. 047 uf ±10%, 400 vdcw C304 CAPACITOR: mica, 82 uuf ±10%, 500 vdcw C305 SAME as C303 C306 SAME as C303 C301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex C302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex C303 SAME AS E302 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R302 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R304 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R307 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R308 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 2000 ohns ±5%, 1/2 w R45-1478-00			100 1000 00
C303 CAPACITOR: paper, 0. 047 uf ±10%, 400 vdcw CAPACITOR: mica, 82 uuf ±10%, 500 vdcw SAME as C303 C306 SAME as C303 E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex E302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex E303 SAME AS E302 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp RSISTOR: comp, 330 ohms ±10%, 1/2 w RESISTOR: comp, 1100 ohms ±5%, 1/2 w R304 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R307 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R308 RESISTOR: comp, 0. 0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0. 0 megohm ±10%, 1/2 w RESISTOR: comp, 2000 ohms ±5%, 1/2 w	C302		183-1209-00
C304 CAPACITOR: mica, 82 uuf ±10%, 500 vdcw C305 SAME as C303 E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex E302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex E303 SAME AS E302 P301 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R303 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R304 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0. 20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 1. 0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w RESISTOR: comp, 2000 ohms ±5%, 1/2 w RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R307 RESISTOR: comp, 0. 20 megohm ±5%, 1/2 w R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R45-1348-0	C303		931-0295-00
C305 SAME as C303 C306 SAME as C303 E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex E302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex E303 SAME AS E302 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R302 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R303 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R306 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w R307 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R308 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R51478-00 R51570R: comp, 2000 ohms ±5%, 1/2 w R51478-00 R51570R: comp, 2000 ohms ±5%, 1/2 w			935-0170-00
C306 SAME as C303  E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex SAME AS E302  P301 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp  R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R302 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R303 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.00 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.00 megohm ±10%, 1/2 w R309 RESISTOR: comp, 0.00 megohm ±10%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R45-1478-00			931-0295-00
E301 TERMINAL: stud, melamine body, brass term tinned, brass base, cadmium plated, hex E302 TERMINAL: stud, melamine body, terminal, brass hot tin dipped, base brass, cadmium plated, hex E303 SAME AS E302 306-0234-00 E304 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R302 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R303 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w RESISTOR: comp, 2000 ohms ±5%, 1/2 w R509 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R509 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R509 R509 R509 R509 R509 R509 R509 R509			931-0295-00
E302 TERMINAL: stud, melamine body, terminal, brass hot fin dipped, base brass, cadmium plated, hex SAME AS E302 306-0234-06 365-0040-06 12 male contacts, 10 amp RESISTOR: comp, 330 ohms ±10%, 1/2 w RESISTOR: comp, 1100 ohms ±5%, 1/2 w RESISTOR: comp, 0.10 megohm ±10%, 1/2 w RESISTOR: comp, 0.10 megohm ±10%, 1/2 w RESISTOR: comp, 0.10 megohm ±10%, 1/2 w RESISTOR: comp, 0.20 megohm ±5%, 1/2 w RESISTOR: comp, 0.20 megohm ±10%, 1/2 w RESISTOR: comp, 0.20 megohm ±10%, 1/2 w RESISTOR: comp, 1.0 megohm ±10%, 1/2 w RESISTOR: comp, 1.0 megohm ±10%, 1/2 w RESISTOR: comp, 2000 ohms ±5%, 1/2 w RESISTOR: comp, 2000 ohms ±10%, 1/2 w RE	0.000	TERMINAL: stud, melamine body, brass	306-0233-00
brass hot fin dipped, base brass, cadmium plated, hex  SAME AS E302  P301 CONNECTOR, RECEPTACLE, ELECTRICAL: 365-0040-00 12 male contacts, 10 amp  R301 RESISTOR: comp, 330 ohms ±10%, 1/2 w R302 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R303 RESISTOR: comp, 33,000 ohms ±10%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R45-1364-00		term tinned, brass base, cadmium plated, hex	
plated, hex   306-0234-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00   365-0040-00	E302		306-0234-00
E303 SAMÉ AS E302 306-0234-06 P301 CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amp R302 RESISTOR: comp, 330 ohms ±10%, 1/2 w R303 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 0.20 megohm ±10%, 1/2 w R308 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R45-1364-00			
R301   RESISTOR: comp, 330 ohms ±10%, 1/2 w   RESISTOR: comp, 330 ohms ±10%, 1/2 w   R45-1331-00   R45-1354-00			000 0004 00
12 male contacts, 10 amp   745-1331-01   745-1331-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1351-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   745-1361-01   7			
R301     RESISTOR: comp, 330 ohms ±10%, 1/2 w     745-1331-0       R302     RESISTOR: comp, 1100 ohms ±5%, 1/2 w     745-1354-0       R303     RESISTOR: comp, 33,000 ohms ±10%, 1/2 w     745-1415-0       R304     RESISTOR: comp, 0.10 megohm ±10%, 1/2 w     745-1436-0       R305     RESISTOR: comp, 0.10 megohm ±10%, 1 w     745-3436-0       R306     RESISTOR: comp, 0.20 megohm ±5%, 1/2 w     745-1448-0       R307     RESISTOR: comp, 1.0 megohm ±10%, 1/2 w     745-1478-0       R308     RESISTOR: comp, 2000 ohms ±5%, 1/2 w     745-1478-0	P301		365-0040-00
R302 RESISTOR: comp, 1100 ohms ±5%, 1/2 w R303 RESISTOR: comp, 33,000 ohms ±10%, 1/2 w R304 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0. 10 megohm ±10%, 1/2 w R306 RESISTOR: comp, 0. 20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 0. 20 megohm ±10%, 1/2 w R308 RESISTOR: comp, 1. 0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w R309 RESISTOR: comp, 2000 ohms ±5%, 1/2 w	D201		745-1331-00
R303 RESISTOR: comp, 33,000 ohms ±10%, 1/2 w R304 RESISTOR: comp, 0.10 megohm ±10%, 1/2 w R305 RESISTOR: comp, 0.10 megohm ±10%, 1 w R306 RESISTOR: comp, 0.20 megohm ±5%, 1/2 w R307 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 1.0 megohm ±10%, 1/2 w R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w	70707		745-1354-00
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			745-1415-00
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			745-1436-00
R306 RESISTOR: comp, 0. 20 megohm ±5%, 1/2 w 745-1448-00 R307 RESISTOR: comp, 1. 0 megohm ±10%, 1/2 w 745-1478-00 R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w 745-1364-00 R508-00 R508-0	****		745-3436-00
R308 RESISTOR: comp, 2000 ohms ±5%, 1/2 w 745-1364-0			745-1448-00
1000 Ittibibiote. comp, 2000 ommo 2010, 272 "	R307	RESISTOR: comp, 1.0 megohm ±10%, 1/2 w	745-1478-00
D200 DESIGNOD, some 22 000 obms +5% 1/2 w 745-1407-0	R308		745-1364-00
R309 RESISTOR: Comp, 22,000 onns ±3%, 1/2 w	R309	RESISTOR: comp, 22,000 ohms ±5%, 1/2 w	745-1407-00

RESISTOR: comp, 24,000 ohms ±5%, 1/2 w	745-1410-00
RESISTOR: comp, 0.56 megohm ±10%, 1/2 w	745-1468-00
SAME as R311	745-1468-00
RESISTOR: comp, 15,000 ohms ±10%, 1 w	745-3401-00
RESISTOR: comp, 510 ohms ±5%, 2 w	745-5640-00
SAME as R314	745-5640-00
RESISTOR: comp, 9, 100 ohms ±5%, 1/2 w	745-1392-00
RESISTOR: comp, 91,000 ohms ±5%, 1/2 w	745-1434-00
SWITCH: toggle, spst, 30 V dc 20 amp in locking position	266-3072-00
TRANSFORMER AF: input type, 600 ohms primary impedance; secondary 50,000 ohms	667-0435-00
9,000 ohms, secondary impedance 600 ohms when series connected; 150 ohms when parallel connected; transformer contains a feedback	667-0437-00
BOARD, TERMINAL: component mtg; four solder lug terminals; terminals 3/8 in. between	306-2230-00
	257-0104-00
SAME as V301	257-0104-00
TUBE: electron, tetrode amplifier, 6Y6GT	255-0021-00
SAME as V303	255-0021-00
SOCKET: tube, 9 miniature contacts	220-1274-00
SAME as XV301	220-1274-00
SOCKET: tube, 8 prong octal	220-1005-00
SAME as XV303	220-1005-00
	SAME as R311 RESISTOR: comp, 15,000 ohms ±10%, 1 w RESISTOR: comp, 510 ohms ±5%, 2 w SAME as R314 RESISTOR: comp, 9,100 ohms ±5%, 1/2 w RESISTOR: comp, 91,000 ohms ±5%, 1/2 w RESISTOR: comp, 91,000 ohms ±5%, 1/2 w SWITCH: toggle, spst, 30 V dc 20 amplin locking position TRANSFORMER AF: input type, 600 ohms primary impedance; secondary 50,000 ohms TRANSFORMER, AF: output type; primary 9,000 ohms, secondary impedance 600 ohms when series connected; 150 ohms when parallel connected; transformer contains a feedback winding BOARD, TERMINAL: component mtg; four solder lug terminals; terminals 3/8 in. between centers; brown bakelite board TUBE: electron, pentode, 5879 SAME as V301 TUBE: electron, tetrode amplifier, 6Y6GT SAME as V303 SOCKET: tube, 9 miniature contacts SAME as XV301 SOCKET: tube, 8 prong octal

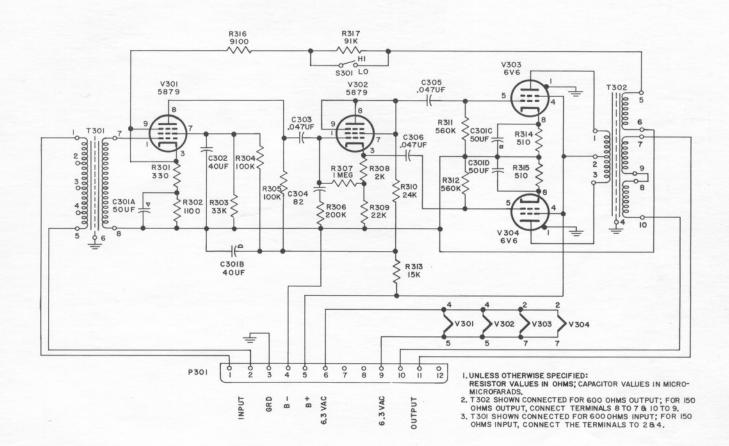


Figure 4. 356B-1 Program/Monitor Amplifier, Schematic Diagram

C99-09-3