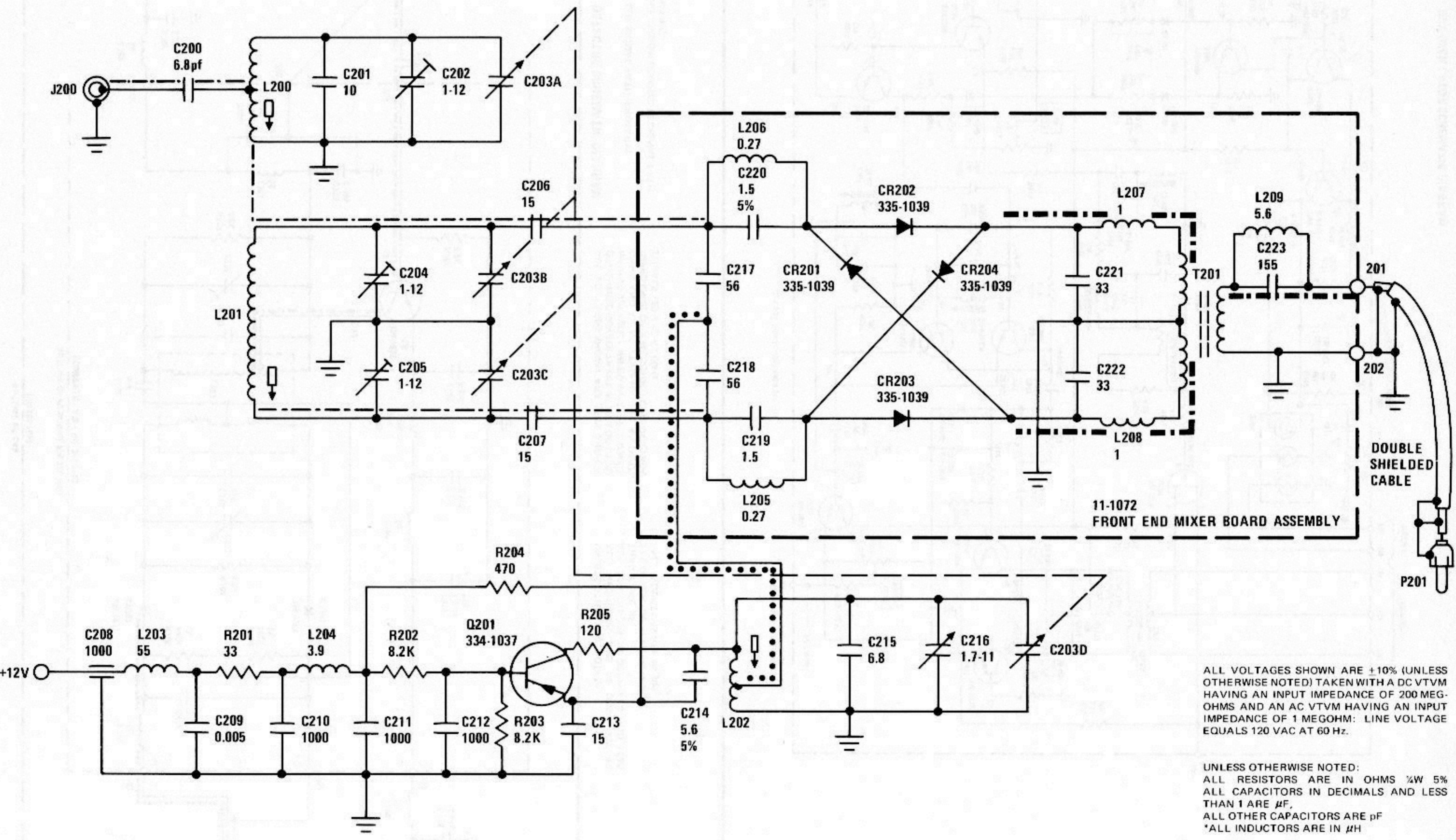


*USED IN MODEL 20B ONLY

- NOTES: 1. ALL SWITCHES SHOWN IN EXTREME CCW POSITION AS SEEN FROM THE FRONT.
 S1 - EXT.
 S2 - OFF
 S3 - MONO
2. \perp SIGNAL GROUND
 3. --- CHASSIS GROUND

- ⚠ **R13 VALUE MAY VARY FROM UNIT TO UNIT FROM 2.2 MEG TO 3.3 MEG 1/2 WATT
- ⚠ SEE SERVICE NOTE NUMBER 7 ON PAGE 2.
- ⚠ F1 IS 0.4 AMPS, 250 VOLTS ON 240 VOLT MODELS.

MODEL 20 UNIT SCHEMATIC



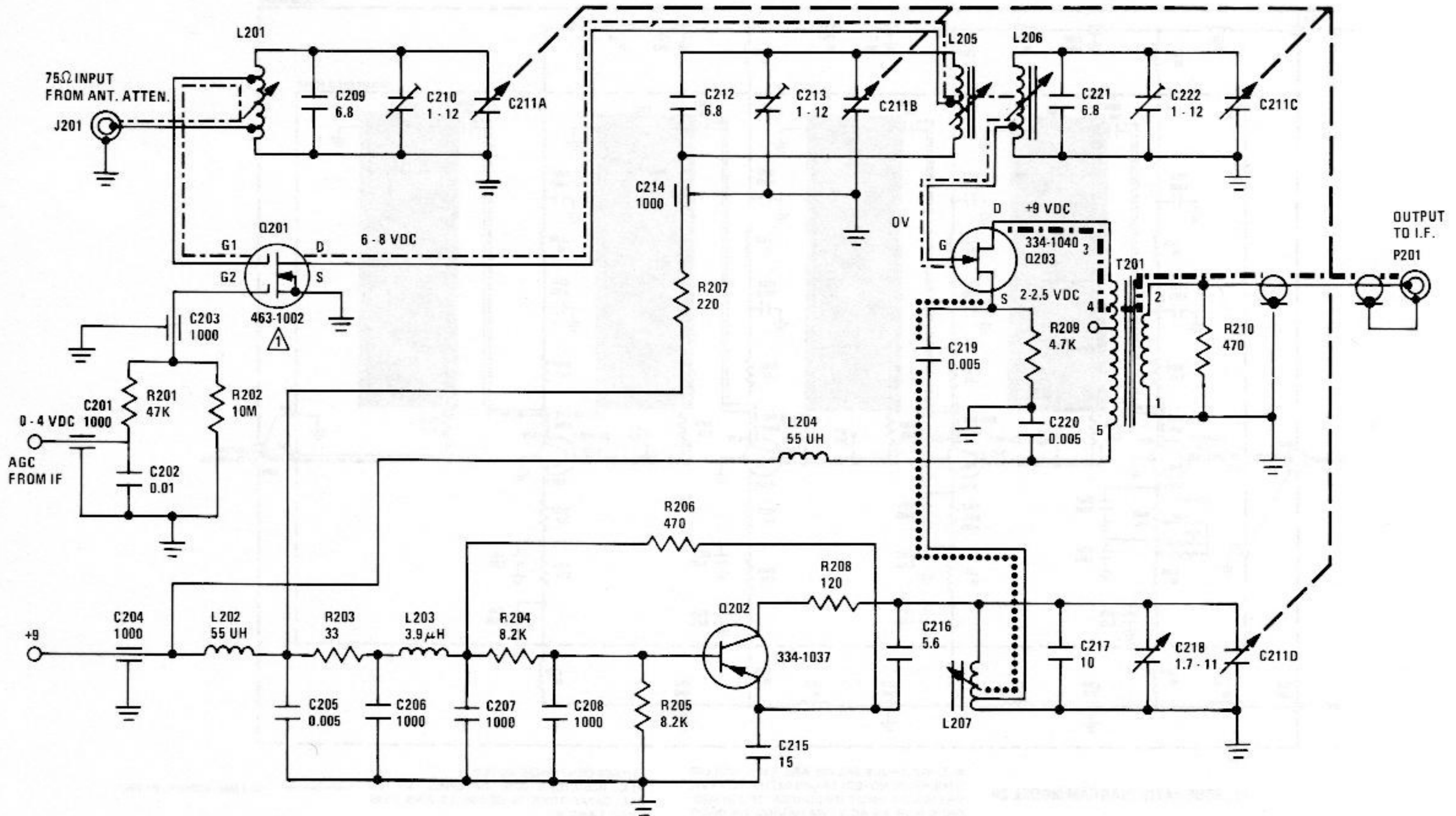
ALL VOLTAGES SHOWN ARE $\pm 10\%$ (UNLESS OTHERWISE NOTED) TAKEN WITH A DC VTVM HAVING AN INPUT IMPEDANCE OF 200 MEG-OHMS AND AN AC VTVM HAVING AN INPUT IMPEDANCE OF 1 MEGOHM: LINE VOLTAGE EQUALS 120 VAC AT 60 Hz.

UNLESS OTHERWISE NOTED:
 ALL RESISTORS ARE IN OHMS $\frac{1}{4}W$ 5%
 ALL CAPACITORS IN DECIMALS AND LESS THAN 1 ARE μF ,
 ALL OTHER CAPACITORS ARE pF
 *ALL INDUCTORS ARE IN μH

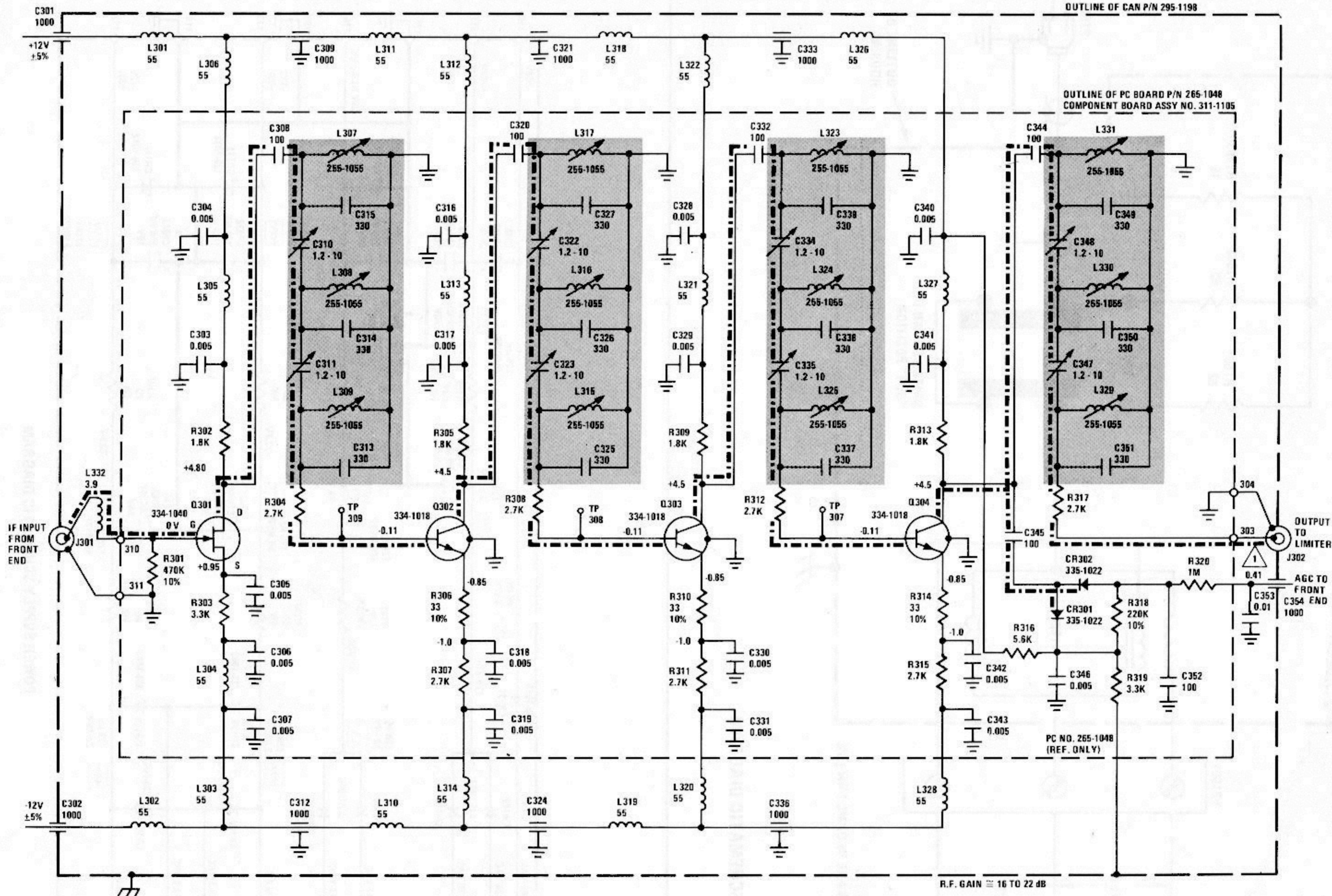
- LOCAL OSCILLATOR SIGNAL PATH
- RF PRIMARY SIGNAL PATH
- ■ ■ ■ ■ 10.7 MHz OUTPUT

MODEL 20 FRONT END SCHEMATIC DIAGRAM

RF GAIN \approx 20 dB



FRONT END SCHEMATIC DIAGRAM MODEL 20B



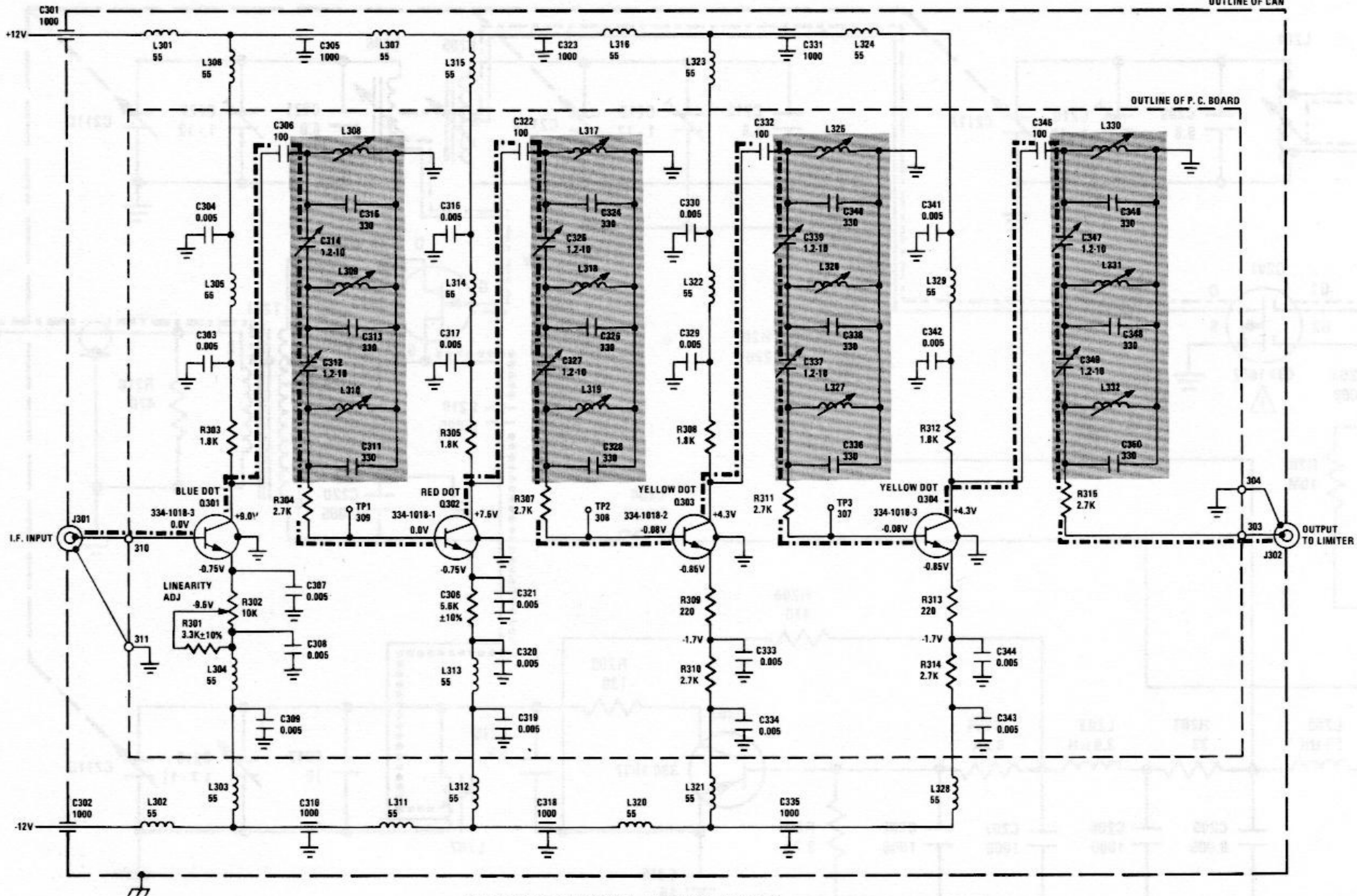
MODEL 20B I.F. SCHEMATIC DIAGRAM

----- 10.7 MHz SIGNAL PATH
 ▲ AGC VOLTAGE VARIES WITH SIGNAL STRENGTH.

ALL VOLTAGES SHOWN ARE ±10% (UNLESS OTHERWISE NOTED) TAKEN WITH A DC VTVM HAVING AN INPUT IMPEDANCE OF 200 MEG-OHMS AND AN AC VTVM HAVING AN INPUT IMPEDANCE OF 1 MEGOHM: LINE VOLTAGE EQUALS 120 VAC AT 60 Hz.

UNLESS OTHERWISE NOTED:
 ALL RESISTORS ARE IN OHMS ¼W 5%
 ALL CAPACITORS IN DECIMALS AND LESS THAN 1 ARE µF,
 ALL OTHER CAPACITORS ARE pF
 *ALL INDUCTORS ARE IN µH

R.F. GAIN = 16 TO 22 dB

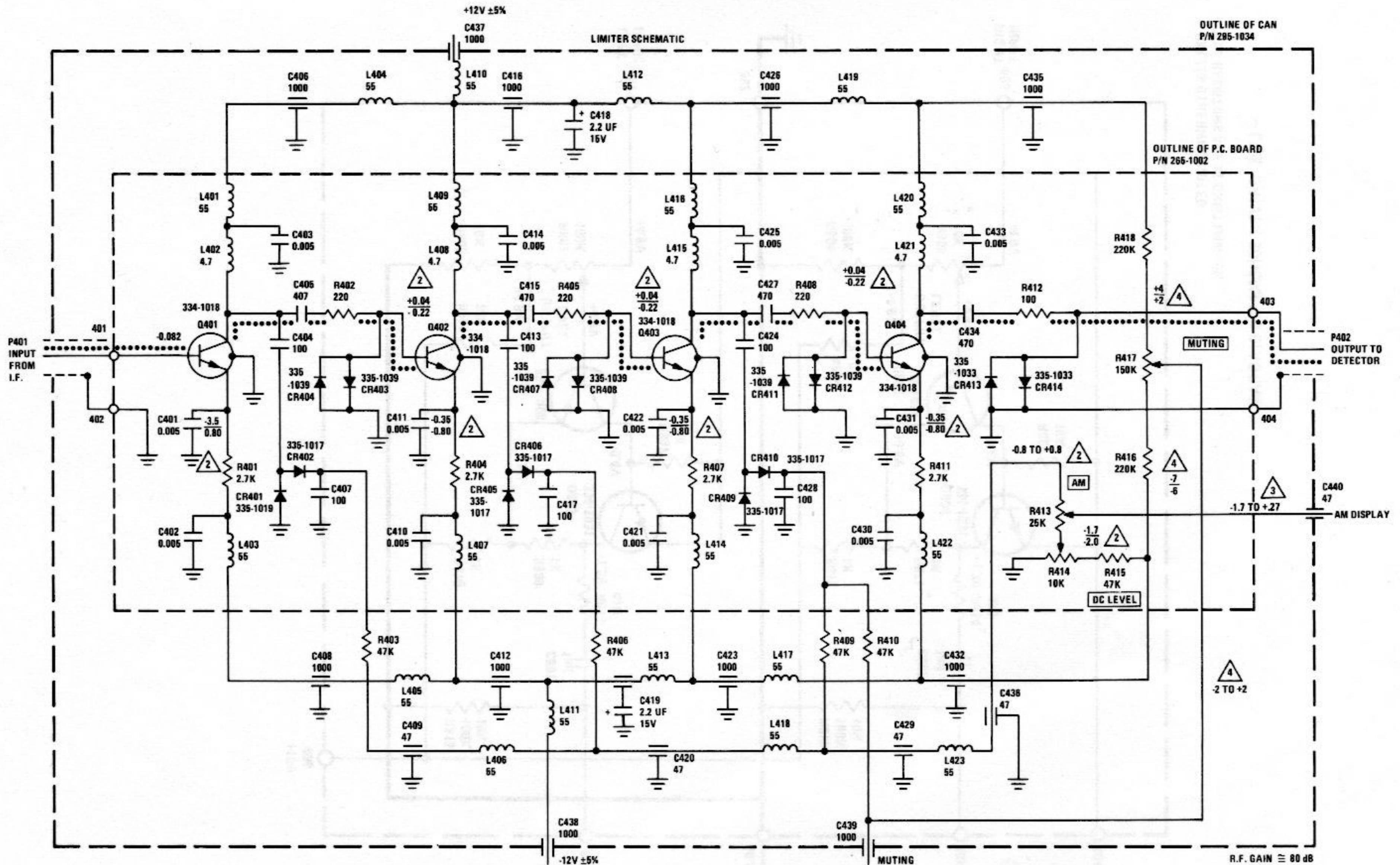


I.F. SCHEMATIC DIAGRAM MODEL 20

ALL VOLTAGES SHOWN ARE $\pm 10\%$ (UNLESS OTHERWISE NOTED) TAKEN WITH A DC VTVM HAVING AN INPUT IMPEDANCE OF 200 MEG-OHMS AND AN AC VTVM HAVING AN INPUT IMPEDANCE OF 1 MEGOHM: LINE VOLTAGE EQUALS 120 VAC AT 60 Hz.

UNLESS OTHERWISE NOTED:
 ALL RESISTORS ARE IN OHMS $\frac{1}{4}W$ 5%
 ALL CAPACITORS IN DECIMALS AND LESS THAN 1 ARE μF ,
 ALL OTHER CAPACITORS ARE pF
 *ALL INDUCTORS ARE IN μH

----- 10.7 MHz SIGNAL PATH



LIMITER SCHEMATIC DIAGRAM

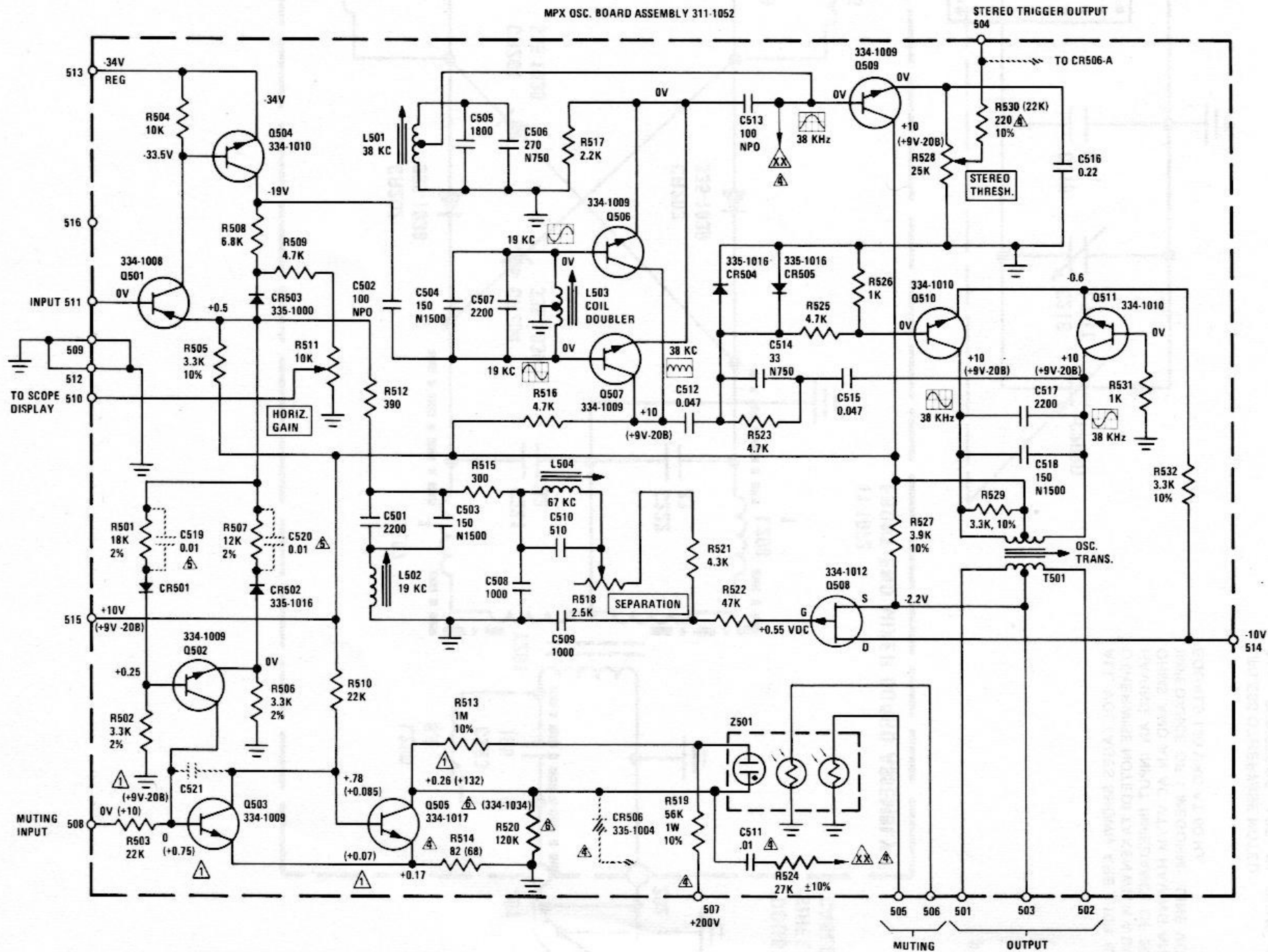
UNLESS OTHERWISE NOTED:
 ALL RESISTORS ARE IN OHMS $\frac{1}{4}$ W 5%
 ALL CAPACITORS IN DECIMALS AND LESS
 THAN 1 ARE μ F,
 ALL OTHER CAPACITORS ARE pF
 *ALL INDUCTORS ARE IN μ H

ALL VOLTAGES SHOWN ARE $\pm 10\%$ (UNLESS
 OTHERWISE NOTED) TAKEN WITH A DC VTVM
 HAVING AN INPUT IMPEDANCE OF 200 MEG-
 OHMS AND AN AC VTVM HAVING AN INPUT
 IMPEDANCE OF 1 MEGOHM: LINE VOLTAGE
 EQUALS 120 VAC AT 60 Hz.

- \triangle RANGE OF VOLTAGE AT THESE POINTS DETERMINED BY SIGNAL STRENGTH.
- \triangle VOLTAGES SHOW VARY WITH SETTINGS OF AM DISPLAY AND DC LEVEL POTS.

- \triangle VOLTAGES SHOWN VARY WITH SETTING OF MUTING POT.
- 10.7 MHz SIGNAL PATH (PRIMARY).

R.F. GAIN \approx 80 dB



MPX OSCILLATOR SCHEMATIC DIAGRAM

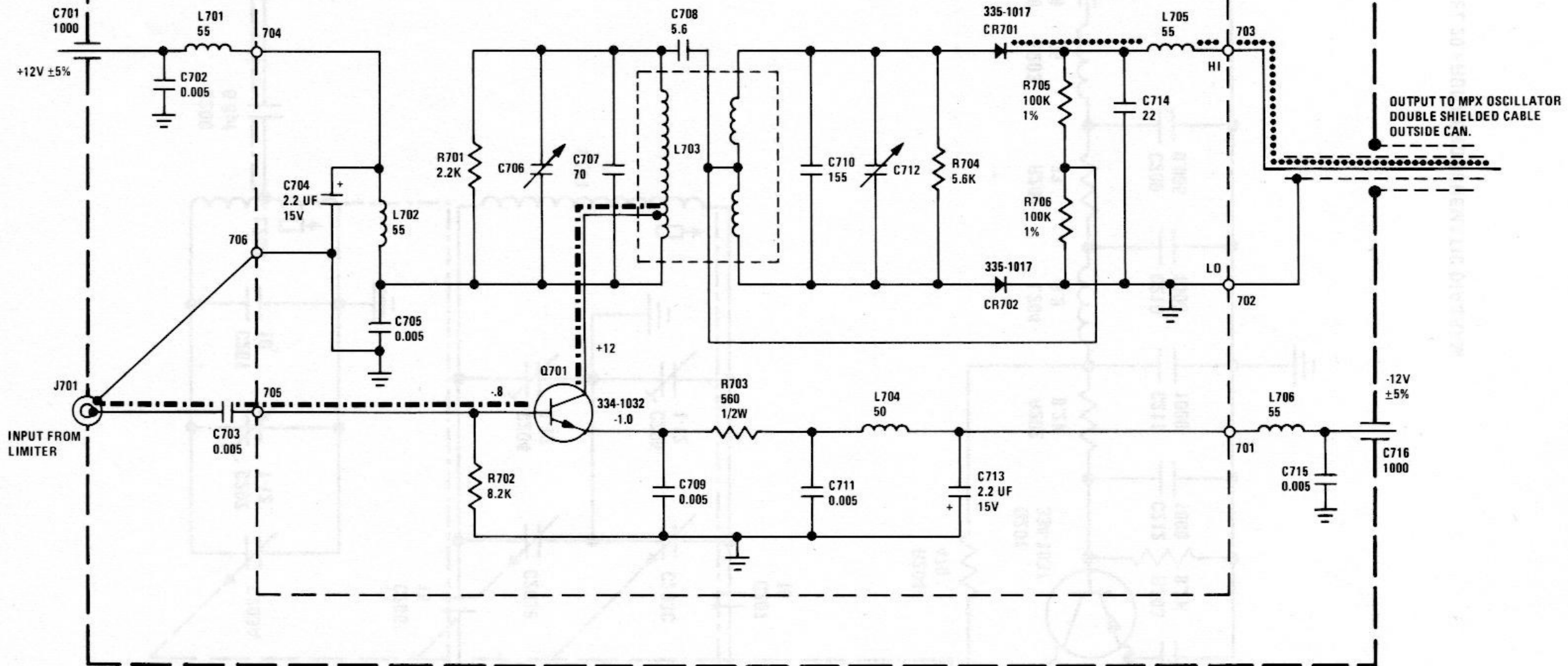
- 1 VOLTAGES IN PARENTHESES TAKEN WITH "MUTING OFF" PUSHBUTTON IN.
- 2 ALL VOLTAGES SHOWN TAKEN WITH PIN 511 CONNECTED TO PIN 512 (GROUND).
- 3 WAVEFORMS SHOWN ARE WITH 19 KHz PILOT ONLY - NO MODULATION. - AND ARE FOR APPROXIMATE PHASE RELATIONSHIP ONLY.
- 4 SEE SERVICE NOTE NO. 4
- 5 SEE SERVICE NOTE NO. 5
- 6 SEE SERVICE NOTE NO. 6

OUTLINE OF CAN.

P/N 295-1036

OUTLINE OF PC BOARD, P/N 265-1003

COMPONENT ASSY NO. 311-1103



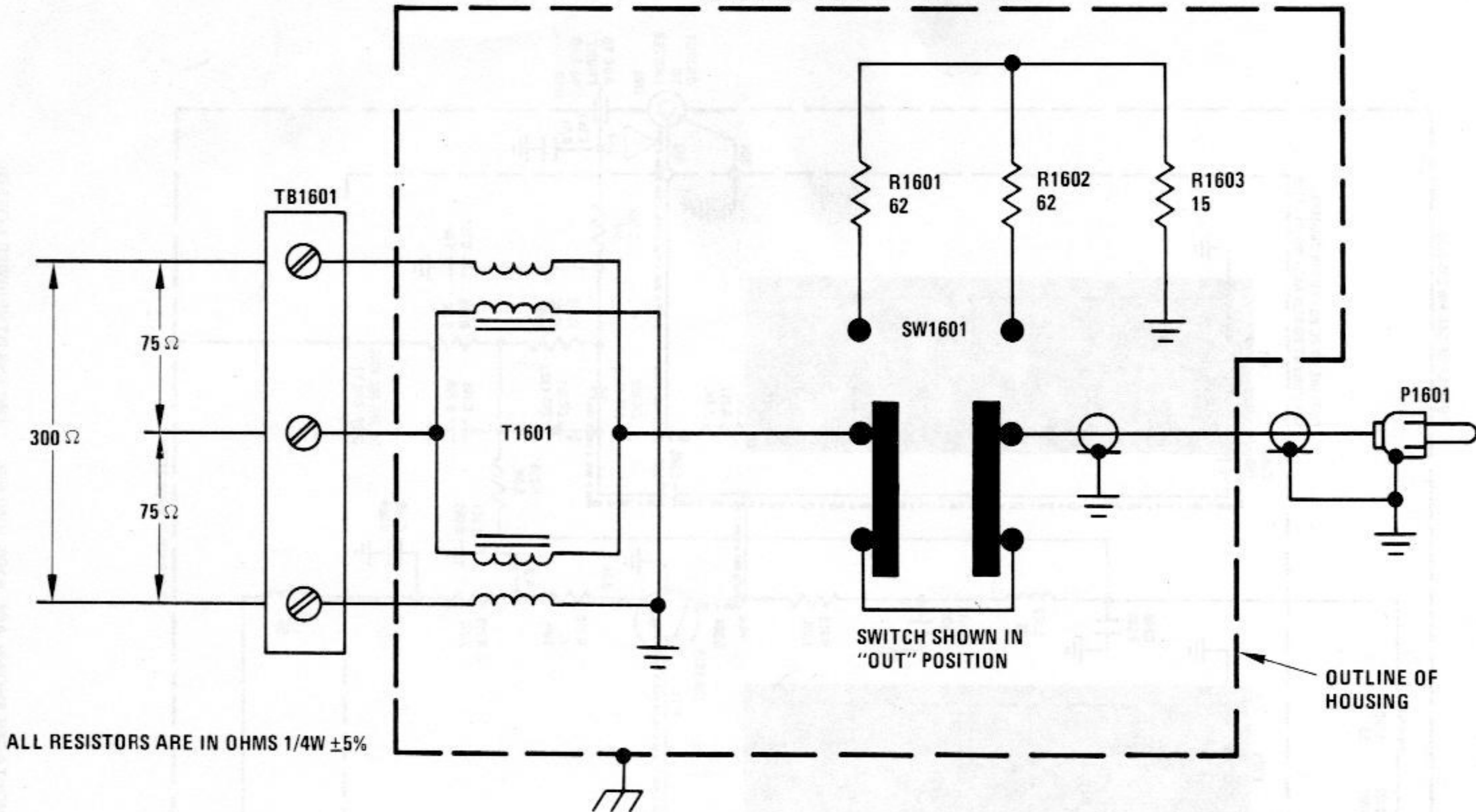
DETECTOR SCHEMATIC DIAGRAM

ALL VOLTAGES SHOWN ARE +10% (UNLESS OTHERWISE NOTED) TAKEN WITH A DC VTVM HAVING AN INPUT IMPEDANCE OF 200 MEG-OHMS AND AN AC VTVM HAVING AN INPUT IMPEDANCE OF 1 MEGOHM: LINE VOLTAGE EQUALS 120 VAC AT 60Hz.

UNLESS OTHERWISE NOTED:
 ALL RESISTORS ARE IN OHMS ¼W 5%
 ALL CAPACITORS IN DECIMALS AND LESS THAN 1 ARE μF,
 ALL OTHER CAPACITORS ARE pF
 *ALL INDUCTORS ARE IN μH

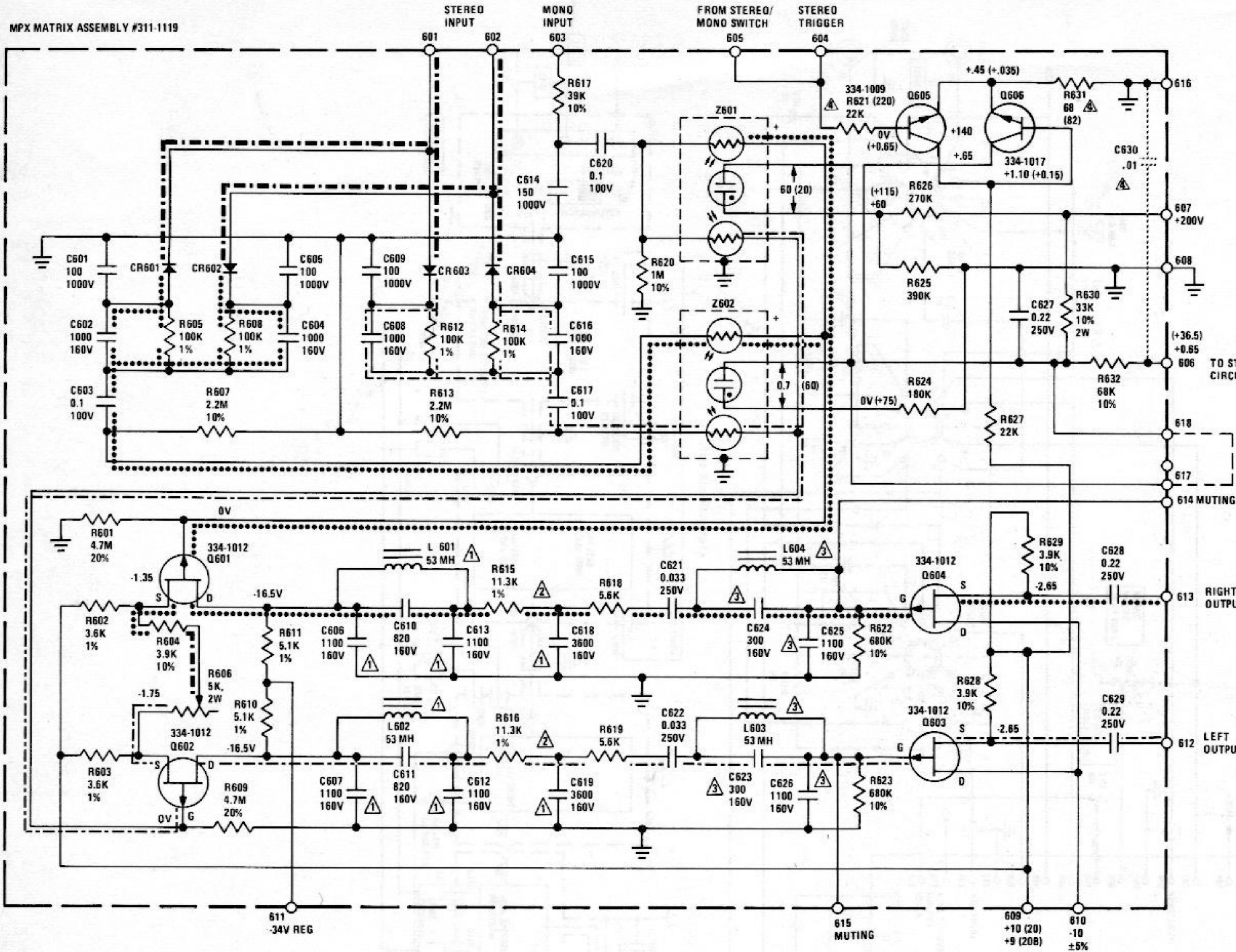
- 10.7 MHz SIGNAL PATH (PRIMARY)
- AUDIO AND/OR COMPOSITE SIGNAL PATH (PRIMARY)

BALUN HOUSING ASSEMBLY 11-1062



ALL RESISTORS ARE IN OHMS 1/4W ±5%

BALUN SCHEMATIC DIAGRAM



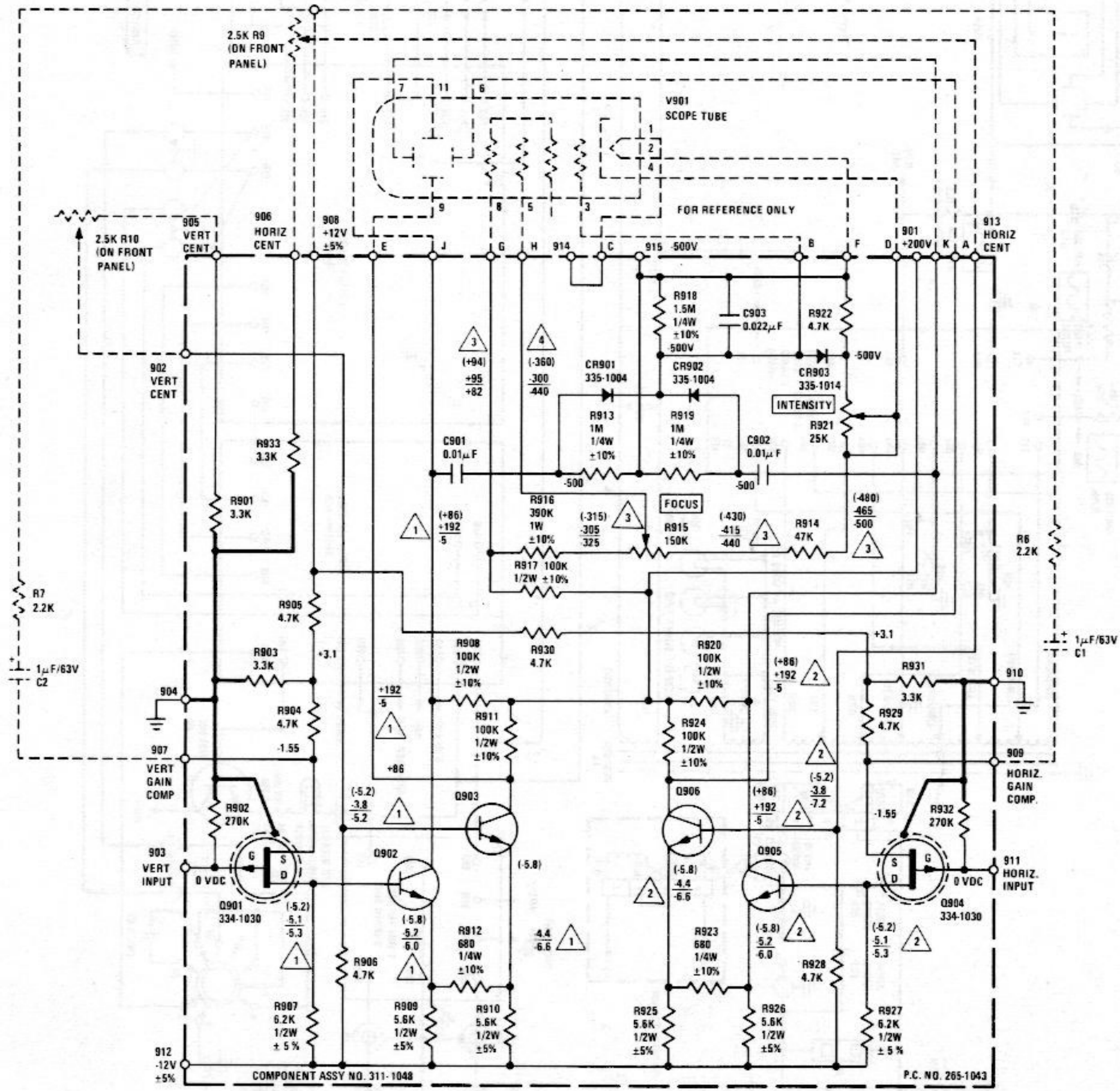
ALL VOLTAGES SHOWN ARE ±10% (UNLESS OTHERWISE NOTED) TAKEN WITH A DC VTVM HAVING AN INPUT IMPEDANCE OF 200 MEG-OHMS AND AN AC VTVM HAVING AN INPUT IMPEDANCE OF 1 MEGOHM; LINE VOLTAGE EQUALS 120 VAC AT 60 Hz.

UNLESS OTHERWISE NOTED:
 ALL RESISTORS ARE IN OHMS 1/4W 5%
 ALL CAPACITORS IN DECIMALS AND LESS THAN 1 ARE μF,
 ALL OTHER CAPACITORS ARE pF
 *ALL INDUCTORS ARE IN μH

- ⚠ L601, L602, C606, C607, C610, C611, C612 AND C613 COMPRISE 19 KHz TO 24 KHz FILTER.
- ⚠ R615 AND R616 WITH C618 AND C619 PROVIDE THE MAJOR PORTION OF 75 μS DEMPHEIS. TO CHANGE TO 50 μS (EUROPEAN), CHANGE R615 AND R616 TO 5.3K OR PARALLEL EXISTING 11.3K ±1% RESISTORS WITH 1 EACH 10K ±1% RESISTOR.
- ⚠ L604, L603, C623, C624, C625 AND C626 COMPRISE 38 KHz FILTER.
- RIGHT CHANNEL AUDIO
- LEFT CHANNEL AUDIO
- ▬▬▬▬▬ COMPOSITE WAVEFORM (PRIMARY SIGNAL)
- ⚠ SEE SERVICE NOTE NO. 4

VOLTAGES IN PARENTHESES IN STEREO MODE. ALL OTHER VOLTAGES TAKEN WITH PIN 511 ON OSCIL-LATOR BOARD GROUNDED TO PIN 512.

MPX MATRIX SCHEMATIC DIAGRAM



SCOPE SCHEMATIC DIAGRAM

- 1 +192/-5 READINGS INDICATE THE TOTAL VOLTAGE RANGES ENCOUNTERED WITH THE VERTICAL POSITION POT SET AT ITS TWO EXTREMES.
- 2 +192/-5 READINGS INDICATE THE TOTAL VOLTAGE RANGES ENCOUNTERED WITH THE HORIZONTAL POSITION POT SET AT ITS TWO EXTREMES.

ALL VOLTAGES SHOWN ARE ±10% (UNLESS OTHERWISE NOTED) TAKEN WITH A DC VTVM HAVING AN INPUT IMPEDANCE OF 200 MEG-OHMS AND AN AC VTVM HAVING AN INPUT IMPEDANCE OF 1 MEGOHM. LINE VOLTAGE EQUALS 120 VAC AT 60 Hz.

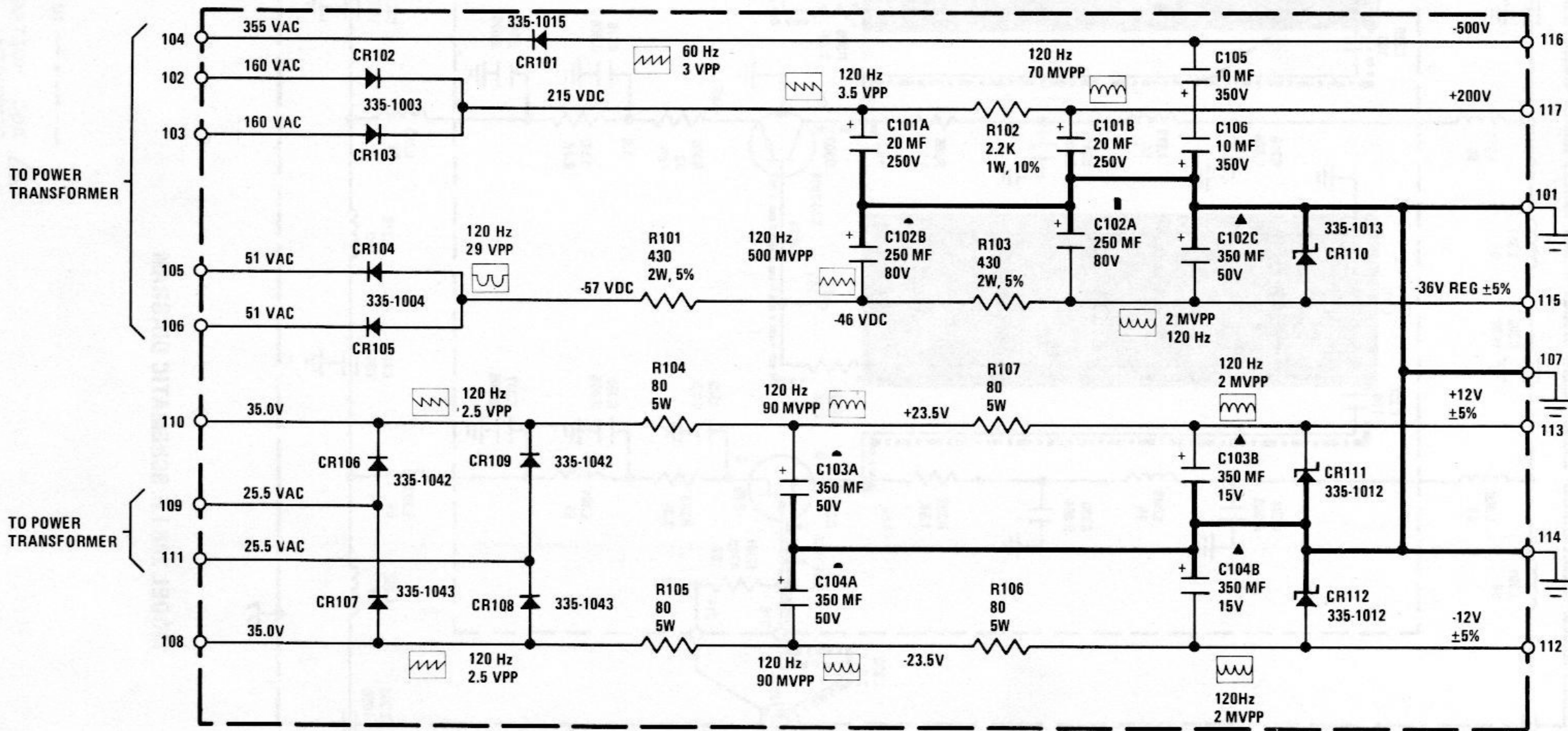
UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS ¼W 5%
ALL CAPACITORS IN DECIMALS AND LESS THAN 1 ARE μF.
ALL OTHER CAPACITORS ARE pF
*ALL INDUCTORS ARE IN μH

415/440 READINGS INDICATE THE TOTAL VOLTAGE RANGES ENCOUNTERED WITH THE INTENSITY CONTROL POT SET AT ITS TWO EXTREMES.

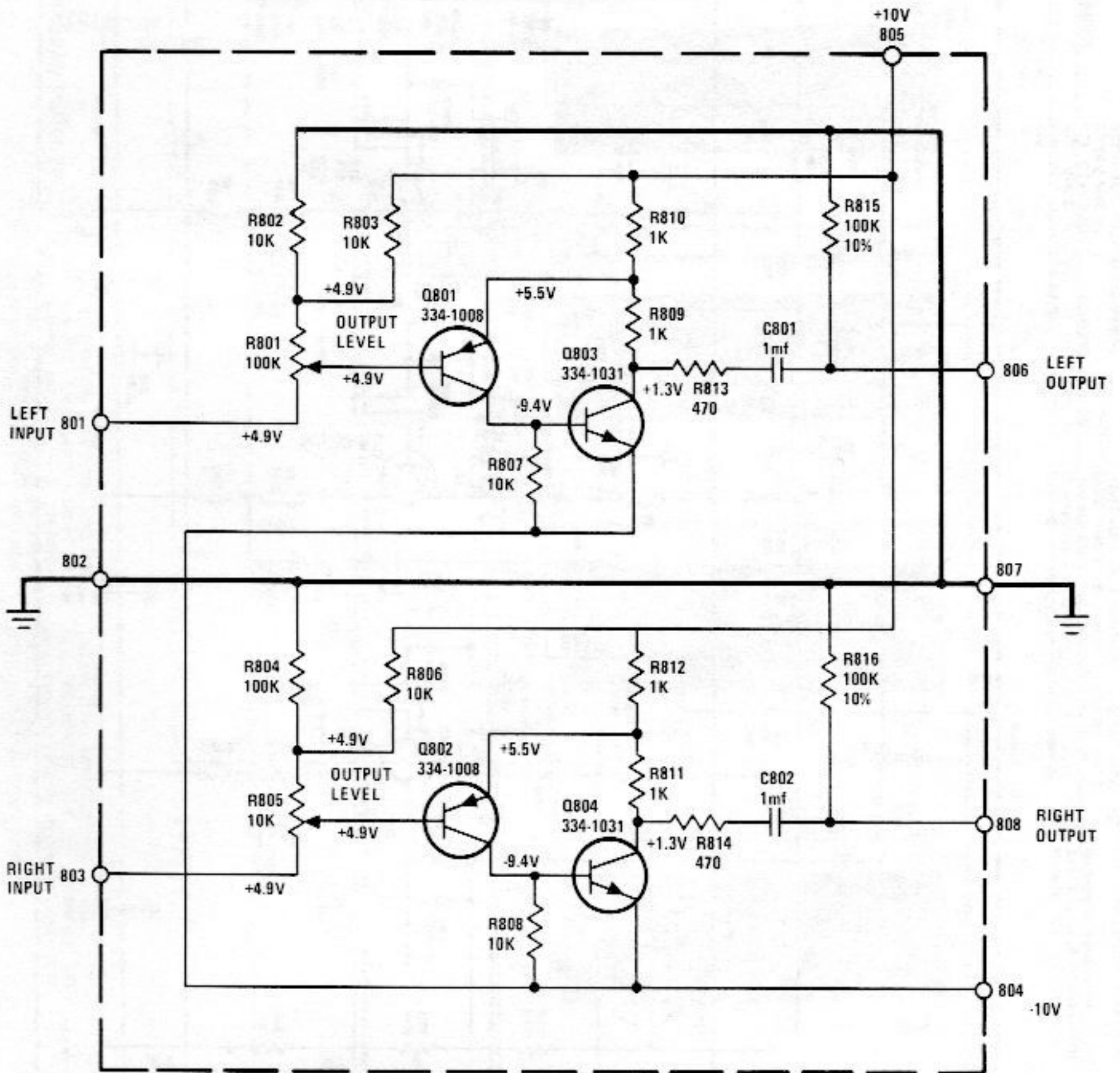
300/440 READINGS INDICATE THE TOTAL VOLTAGE RANGE ENCOUNTERED WITH BOTH THE INTENSITY AND FOCUS POTS SET TO EITHER OF THEIR TWO EXTREMES.

VOLTAGES SHOWN IN PARENTHESES (+80) ARE APPROXIMATE FOR NORMAL OPERATION WITH SMALL DOT ONLY DISPLAYED AT CENTER OF CRT.

- 3
- 4
- 5



POWER SUPPLY SCHEMATIC DIAGRAM



UNLESS OTHERWISE NOTED
 ALL RESISTORS ARE IN OHMS 1/4W ±5%

- LINE DRIVER SCHEMATIC DIAGRAM