

AM / FM STEREO TUNER

**T-88V**

**SERVICE MANUAL**

## T-88V CIRCUIT DESCRIPTION

### Power Supply

The mains input to the tuner goes via power switch to the mains transformer which has two windings:

1. A 12 volt winding for the panel lamps.
2. Q225 (2SD235) transistor is used as a regulator to obtain from 17 volt to a 12 volt DC supply for AM and FM tuner section.

### AM Section

A superhet design using a mixer/local oscillator and two stages of IF amplifications at 455KHz. A ferrite rod antenna with 3 windings is used, the first winding is connected to the external antenna terminal, the second is connected to the first section of a 2 gang tuning condenser, the last winding feeding the base of the mixer transistor.

The oscillator operates at 455KHz above the incoming signal to produce the intermediate frequency, which is passed through a ceramic filter and then amplified by two further transistor IF stages. The audio is then recovered by a D216 germanium diode detector and passed on to the pre-amp via selector switch, and signal strength meter is driven from a D215 germanium diode detector. An AGC voltage which is detected at the D217 and D218 controls the gain of the first IF amplifier, two diodes D213 and D214 are used for increasing the AGC effect. This method used provides an audio output relatively constant with varying RF signal strength.

### FM Front-end

An input balun transformer matches either 300-ohm or 75-ohm antenna input to the front-end, which has a 4 gang tuning capacitors and consists of a FET for the tuned RF amp feeding, via a two section transformer, the bi-polar transistor "Colpitts" oscillator operates at 10.7MHz above the incoming signal. C115, C116, C117 and C118 are negative temperature coefficient condensers to stabilize the oscillator to less than 25KHz per 10 deg. Celsius. The output is then fed via 3pF condenser to the mixer, the resultant 10.7MHz passes through a double tuned IFT included in the front-end module. The front-end module is well shielded to prevent any spurious radiation, and to offer good image and selectivity response.

### FM IF and MPX Sections

The IF strip is contained on the same printed circuit board as the AM, the stereo multiplex decoder and muting circuit. The 10.7MHz IF intermediate frequency is amplified by a transistor Q214 then passed through a ceramic filter with a side chain AGC amplifier to provide a DC control voltage for the RF input FET to improve the front-end overload capabilities. The main chain is again amplified by a further transistor and ceramic filter providing a wide pass band with steep sides.

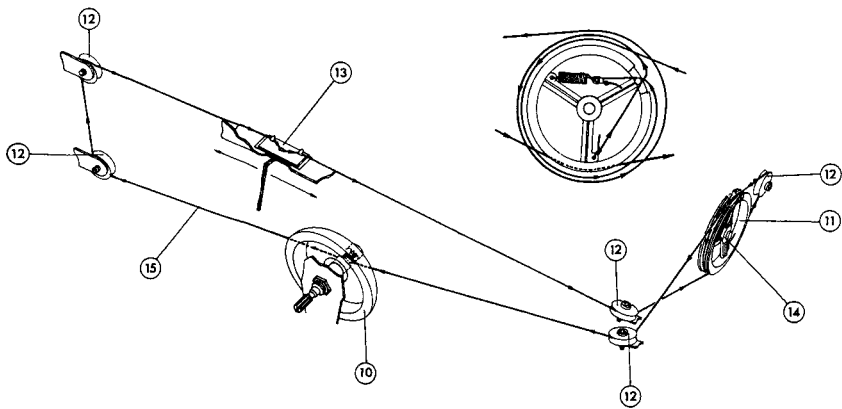
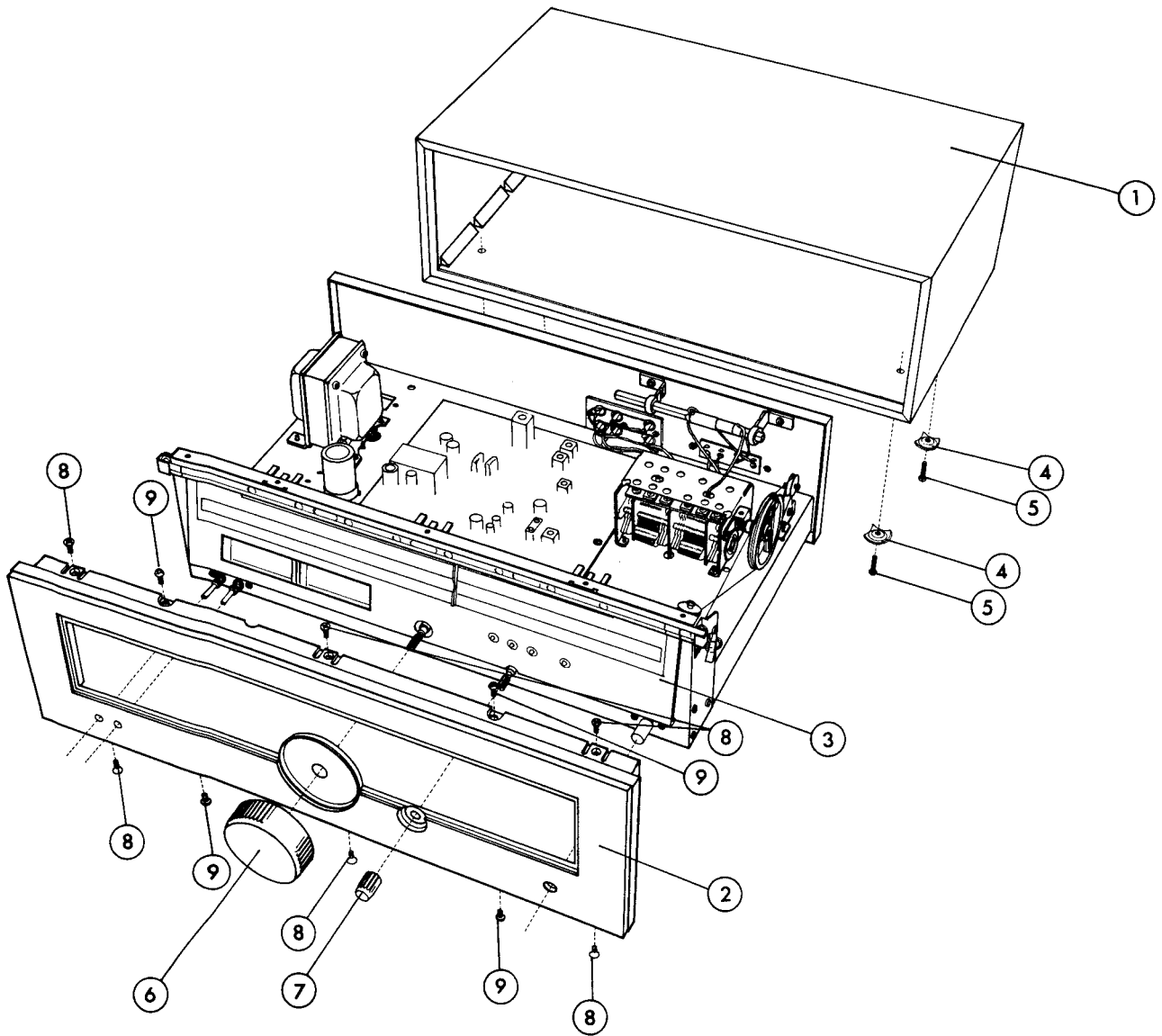
At the audio output when the receiver is off-tuned from centre either a positive or negative DC will appear which is monitored both by a centre tune meter and a bi-phase detector using one NPN and one PNP transistor which with another NPN forms an "AND" gate for one of two "shmitt" trigger circuits. The other shmitt trigger receives a command from the signal strength circuit previously mentioned. The collectors of the final transistor in each circuit form a "wired OR" gate which via the muting "on-off" switch on the front panel controls the gate on the FET audio mute circuit if it is enabled. The composite audio passes on to the PLL stereo demodulator, which will derive the L and R audio output, the PLL stereo demodulator also is connected directly to the stereo indicator lamp.

The Left and Right go through L.C, type rejection filters to remove the 19KHz pilot. These are both in one moulding. Finally, a one transistor amplifier is used in each channel to raise the level to 1.6V for the audio preamp.

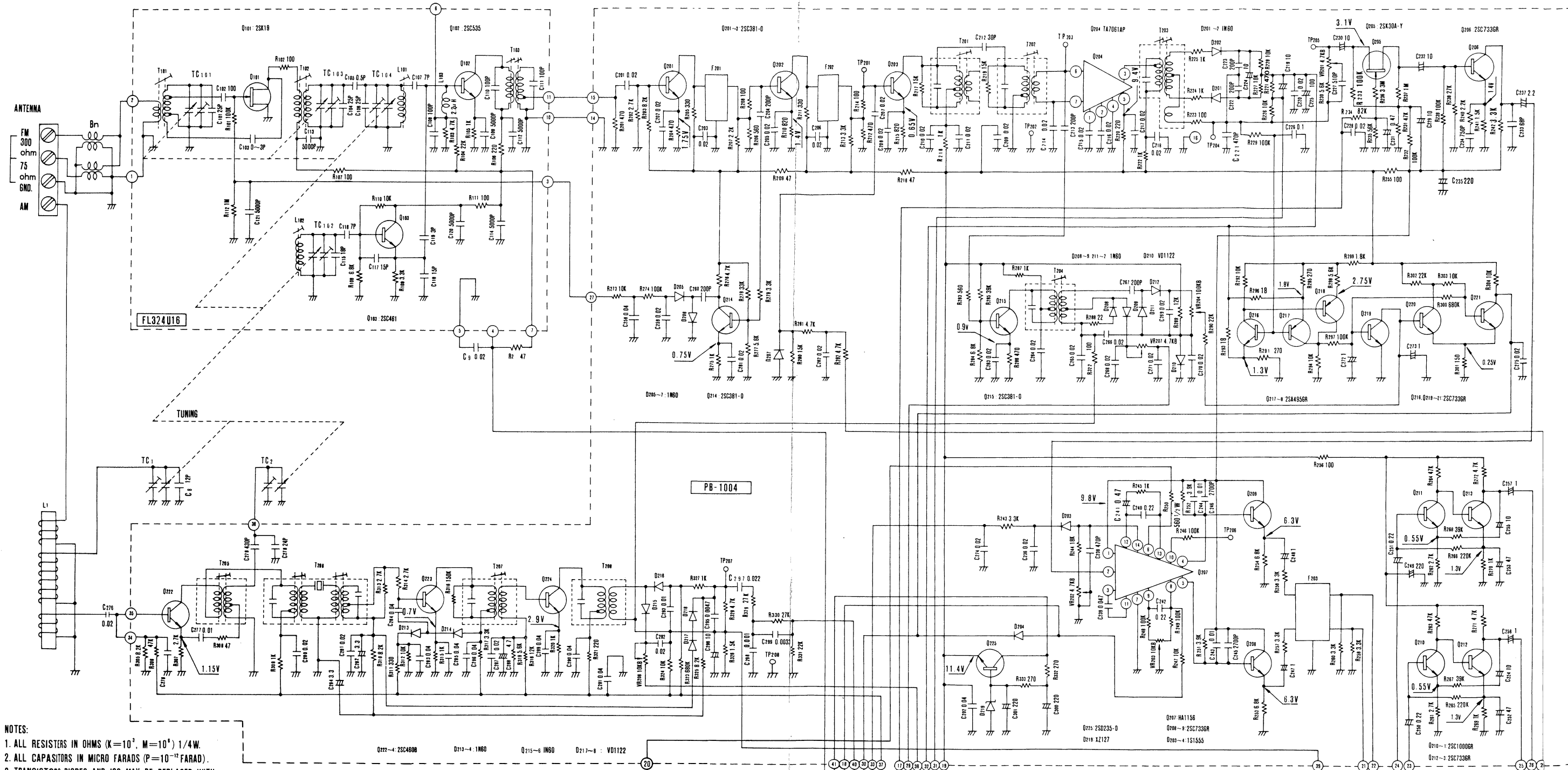
| STEP | Signal Source Connected to  | Set Signal to  | Set Radio Dial to   | Output Indicator Connected to  | Adjust  | Adjust for   |  |
|------|---|--|---------------------|--|---|--|--|
| 1    | Set selector switch to "FM", muting switch to "off", and turn power switch "on".  |  |                     |  |   |  |  |
| 2    |   |  |                     | DC VTVM<br>PB1004 (19)   |   | Check that voltage is between 11.2 - 12.0V   |  |
| 3    |   |  |                     |  |   | Check voltage at each part   |  |
| 4    | <u>Sweep Generator</u><br>PB1004 (15)   | +400KHz sweep centered at 10.7MHz<br>Generator output level 90 - 100dB | Quiet point on band | <u>Oscilloscope</u><br>PB1004 TP201                                    |   | Due to the fixed frequency of the ceramic filters, find the center frequency of a symmetrical band pass response. Make a note of it (for example 10.75MHz) |  |
| 5    |   |  |                     |  | <u>Oscilloscope</u><br>PB1004 TP203             | T201 T202 core   | Symmetrical response centered at the frequency noted by step 4.                        |
| 6    |   |  |                     |  | <u>Oscilloscope</u><br>PB1004 TP205             | T203 top core<br>T203 bottom core  | Maximum linearity and amplitude of "S" curve centered at the frequency noted by step 4 |
| 7    | <u>FM Signal Generator</u><br>Across FM antenna terminals(300-ohm) through matching net work  | Reduce the output level to zero (interstation receiving condition)     | 93MHz               |  | T203 top core                                   | Center indication of the tuning meter  |  |
| 8    |   | 93MHz at 400Hz 100% modulation, output level 1mV                       |                     | <u>Oscilloscope</u><br><u>DistortionMeter</u><br><u>AC VTVM</u><br>OUT | T203 bottom core                                | Minimum distortion. At the minimum distortion setting, the output level must be within 1/2dB of peak output.   |  |
| 9    | Repeat steps 8 and 9 as necessary to obtain maximum output level and minimum distortion at center point of tuning meter and the meter must also shows center at interstation state. |  |                     |  |   |  |  |
| 10   | <u>FM Signal Generator</u><br>Across FM antenna terminals(300-ohm) through matching network   | 88MHz at 400Hz 100% modulation, generator output level 1mV             | 88MHz               | <u>Oscilloscope</u><br><u>DistortionMeter</u><br><u>AC VTVM</u><br>OUT | T204 core                                       | The signal strength meter must indicate its maximum, at the same time as the center tune meter indicates center.   |  |
| 11   |   |  |                     |  | L102  | Accurate indication of pointer on dial to within $\pm 1$ pointer width   |  |
| 12   |   | 108MHz at 400Hz 100% modulation, generator output level 1mV            | 108MHz              |  | TC102   |  |  |
| 13   |   | 88MHz at 400Hz 100% modulation, generator output level 5-10uV          | 88MHz               |  | T103 top core<br>T103 bottom core<br>T101, T102 | Maximum indication of signal strength meter  |  |
| 14   |   |  |                     | L101   |   |  |  |

| STEP | Signal Source<br>Connected to  | Set Signal to   | Set Radio Dial to | Output Indicator<br>Connected to                                       | Adjust   | Adjust for  |
|------|--|---|-------------------|--|--|---|
| 15   | <u>FM Signal Generator</u><br>Across FM antenna terminals(300-ohm) through matching network  | 108MHz at 400Hz 100% modulation generator output level 5 - 10uV   | 108MHz            | <u>Oscilloscope</u><br><u>DistortionMeter</u><br><u>AC VTVM</u><br>OUT | TC103  | Maximum indication of signal strength meter   |
| 16   |  |   |                   |  | TC104  |   |
| 17   |  |   |                   |  | TC101  |   |
| 18   | Repeat steps 10 - 17 as necessary to obtain correct tuning on dial and the maximum indication of signal meter with uniform sensitivity throughout the band |   |                   |  |  |   |
| 19   | <u>FM Signal Generator</u><br>Across FM antenna terminals(300-ohm) through matching network  | Reduce the output level to zero (interstation receiving state)    | 93MHz             | <u>Oscilloscope</u><br><u>DistortionMeter</u><br><u>AC VTVM</u><br>OUT | T203top core   | Center indication of the tuning meter   |
| 20   |  | 93MHz at 400Hz 100% modulation, output level 1mV                  |                   |  | T203 bottom core   | Minimum distortion. At the minimum distortion setting, the output level must be within 1/2dB of peak output |
| 21   |  | 88MHz at 400Hz 100% modulation                                    | 88MHz             |  | IHF maximum usable sensitivity which is the minimum output level of FMSC required for distortion and noise to be -30dB of total output |   |
| 22   |  | 108MHz at 400Hz 100% modulation                                   | 108MHz            |  |  |   |
| 23   | Set muting switch at "on"  |   |                   |  |  |   |
| 24   | <u>FM Signal Generator</u><br>Across FM antenna terminals(300-ohm) through matching network  | 98MHz at 400Hz 100% modulation, generator output level 1mV        | 98MHz             | <u>Oscilloscope</u><br><u>AC VTVM</u><br>OUT                           | VR205  | Adjust to read 90% of full scale of meter   |
| 25   |  | 98MHz at 400Hz 100% modulation output level 7 uV                  |                   |  | VR204  | Fix VR204 at the point where output signals appear (muting adjustment)                                      |
| 26   | Set selector switch to "FM auto", muting switch to "off"   |   |                   |  |  |   |
| 27   | <u>FM Signal Generator</u><br>Across FM antenna terminals(300-ohm) through matching network  | 98MHz at 400Hz 100% modulation, generator output level 1mV        | 98MHz             | Frequency Counter  | VR202  | Adjust VR202 until 19,00KHz is read at TP206 on the frequency counter                                       |
| 28   |  | 98MHz at 19KHz 10% L(or R) stereo 90% modulation output level 1mV | 98MHz             | <u>Oscilloscope</u><br><u>AC VTVM</u><br>OUT                           | VR201  | Maximum separation  |
| 29   |  | 98MHz at 19KHz 5% L (or R) stereo 90% modulation output level 1mV |                   |  | VR203  | Adjust VR203 until the stereo indicator lamp lights up  |
| 30   | Set selector switch to "AM" position   |   |                   |  |  |   |
| 31   | Adjust VR206 at its extreme counter-clockwise position   |   |                   |  |  |   |

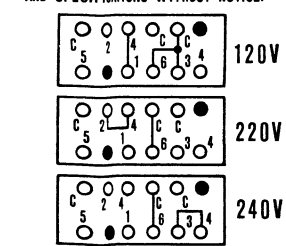
| STEP | Signal Source<br>Connected to  | Set Signal to   | Set<br>Radio<br>Dial to                   | Output Indicator<br>Connected to                 | Adjust       | Adjust for  |
|------|--|---|---|--|--------------|---|
| 32   | <u>Sweep Generator</u><br>TC1, through 1uF<br>mylar capacitor  | +20 - 25KHz sweep centered at<br>455KHz generator output<br>level 3mV   | Quiet<br>point on<br>band near<br>1600KHz | <u>Oscilloscope</u><br>PB1004 TP207              | T206         | Maximum amplitude<br>Do not adjust for two humps<br>Symmetrical response with flat<br>top |
| 33   | <u>AM Signal Generator</u><br>Standard radiating<br>loop antenna placed<br>near AM built-in<br>antenna | 600KHz at 400Hz 30% modulation<br>field strength 50dB/m<br><br>1400KHz at 400Hz 30%<br>modulation, field strength<br>50dB/m | 600KHz<br><br>1400KHz                     | <u>Oscilloscope</u><br><u>AC VTVM</u><br><br>OUT | T205<br>core | Accurate indication of pointer<br>on dial to within $\pm 1$ pointer<br>width              |
| 34   |  |   |   |  | L1 core      | Maximum reading on AC VTVM  |
| 35   |  |   |   |  | TC 2         | Accurate indication of pointer<br>on dial to within $\pm 1$ pointer<br>width              |
| 36   |  |   |   |  | TC 1         | Maximum reading on AC VTVM  |
| 37   | Repeat steps 33 - 36 as necessary to obtain exact tuning on dial scale and maximum sensitivity         |   |   |  |              |   |
| 38   | <u>AM Signal Generator</u><br>Standard radiating<br>loop antenna placed<br>near AM built in<br>antenna | 1000KHz at 400Hz 30%<br>modulation, field<br>strength 100dB/m   | 1000KHz                                   |  | VR206        | Adjust to read 90% of full scale<br>of meter  |



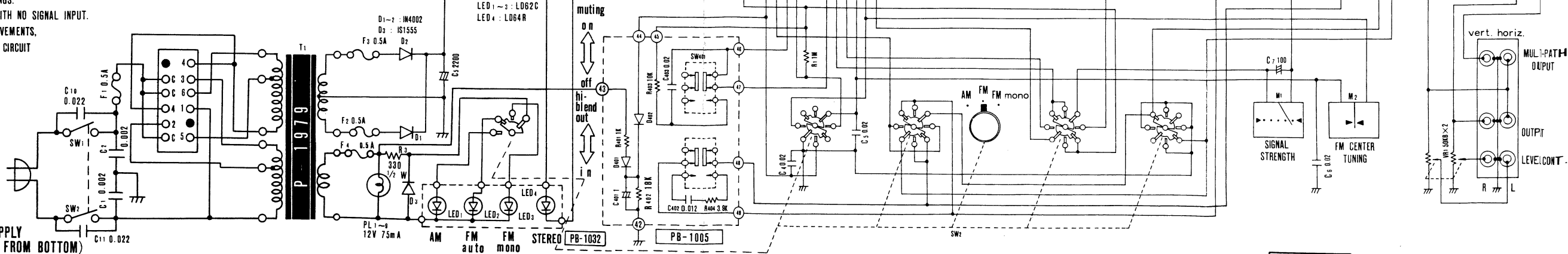
- 1 Cover
- 2 Pannel (Front Complete Ass'y)
- 3 Dial Scale
- 4 Washer 4mm
- 5 Screw 4mm x 15mm
- 6 Knob (Tuning)
- 7 Knob (Band Selector)
- 8 Screw 3mm x 6mm
- 9 Screw 3mm x 6mm
- 10 Tuning Shaft and Flywheel Ass'y
- 11 Drum (Tuning Capacitor)
- 12 Pulley
- 13 Tuning Pointer Ass'y
- 14 Spring (Tension for Dial Cord)
- 15 Cord, Dial
- 16 Antenna for AM
- 17 FM Center Meter
- 18 Signal Meter
- 19 Power Trans # P-2037 U type model  
# P-1979 X type model
- 20 Type X model replaced by Voltage Selector



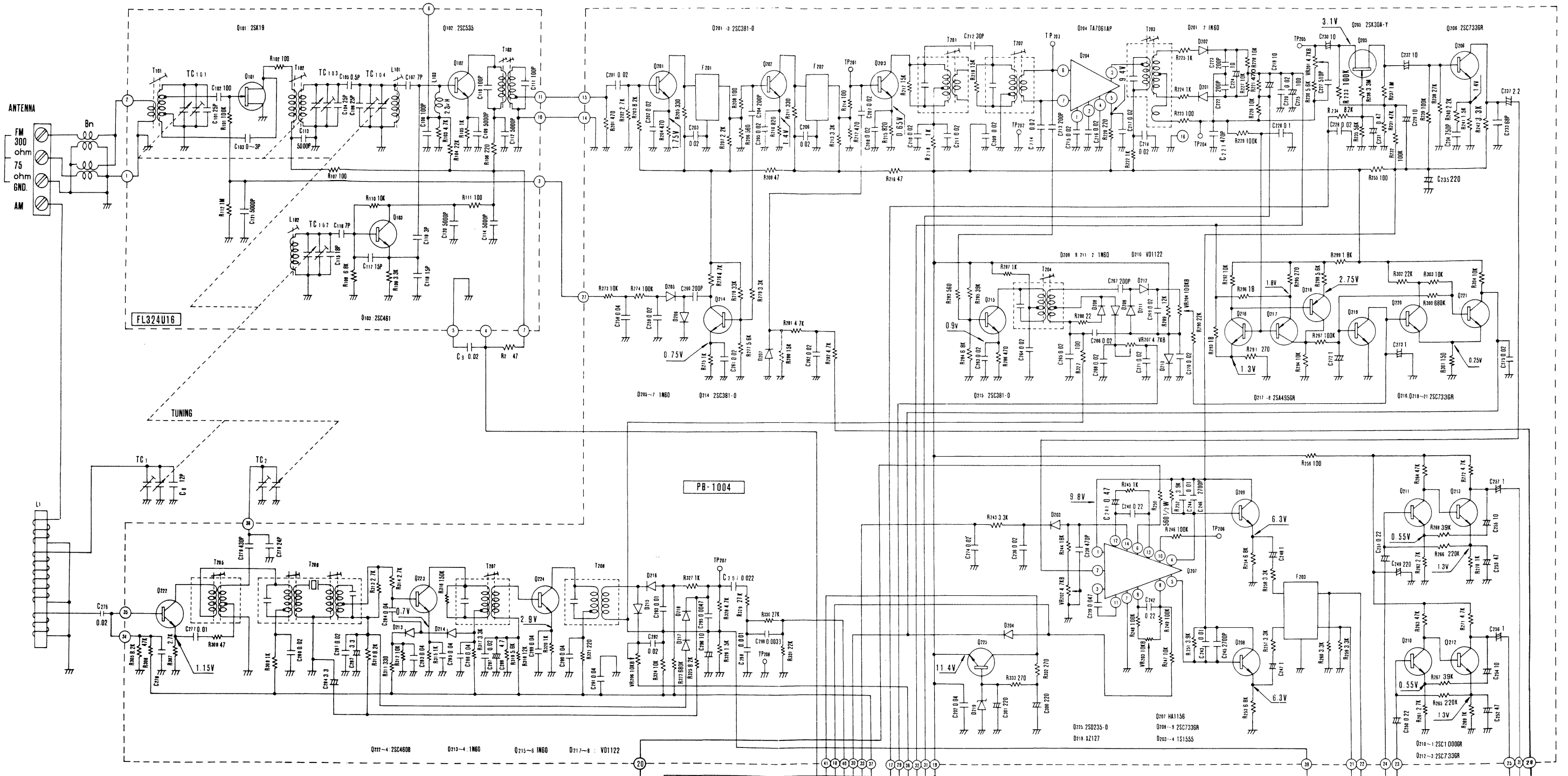
- NOTES:
1. ALL RESISTERS IN OHMS ( $K=10^3$ ,  $M=10^6$ ) 1/4W.
  2. ALL CAPASITORS IN MICRO FARADS ( $P=10^{-12}$ FARAD).
  3. TRANSISTORS, DIODES AND ICs MAY BE REPLACED WITH ANY TYPES HAVING COMPARABLE RATINGS.
  4. VOLTAGES MEASURED WITH "VTVM" WITH NO SIGNAL INPUT.
  5. DUE TO CONTINUED RESEARCH FOR IMPROVEMENTS, LUX RESERVES THE RIGHT TO ALTER THE CIRCUIT AND SPECIFICATIONS WITHOUT NOTICE.



CONNECTIONS FOR POWER SUPPLY VOLTAGE SELECTOR (VIEWED FROM BOTTOM)

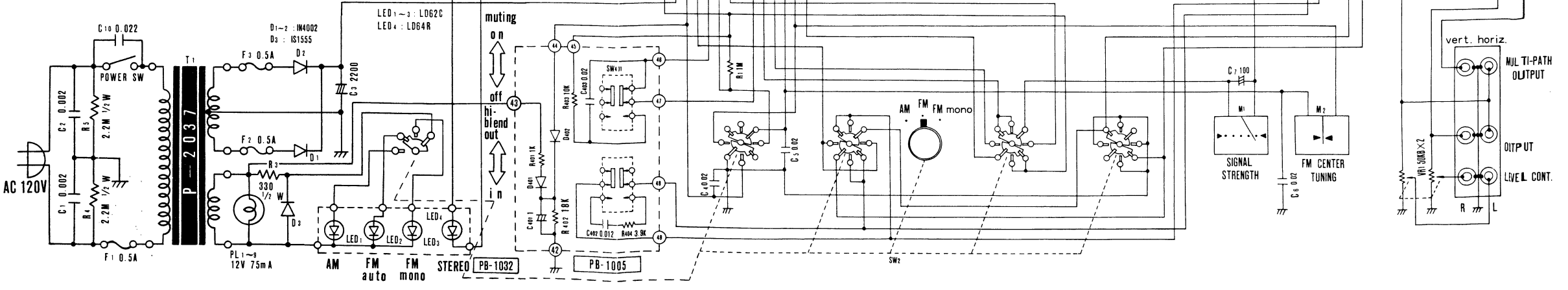


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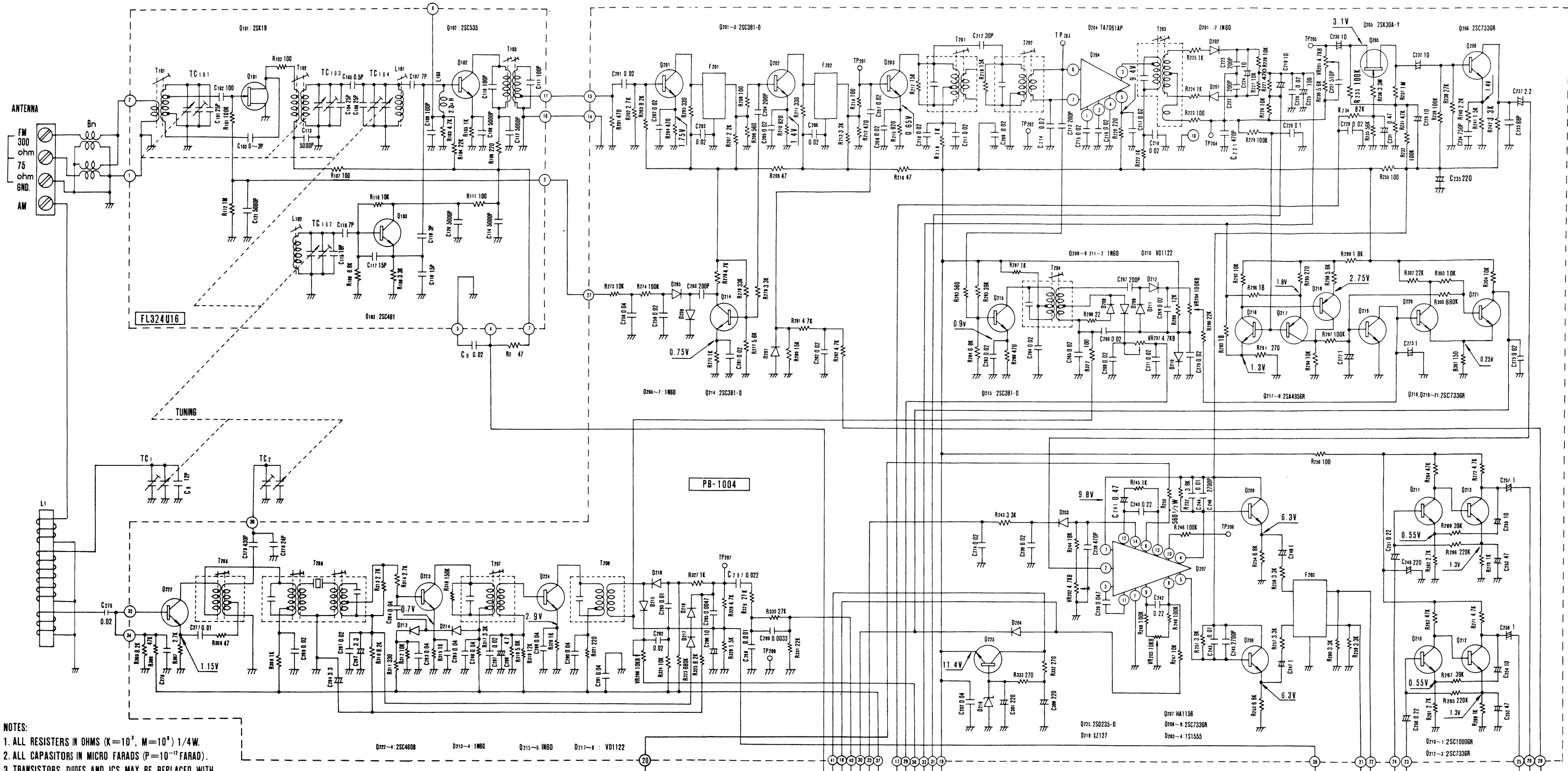
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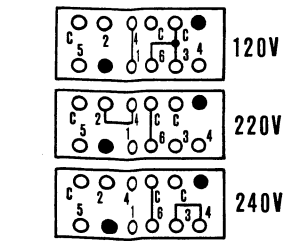


MUL TI-PATH  
OUTPUT  
LEVEL CONT.

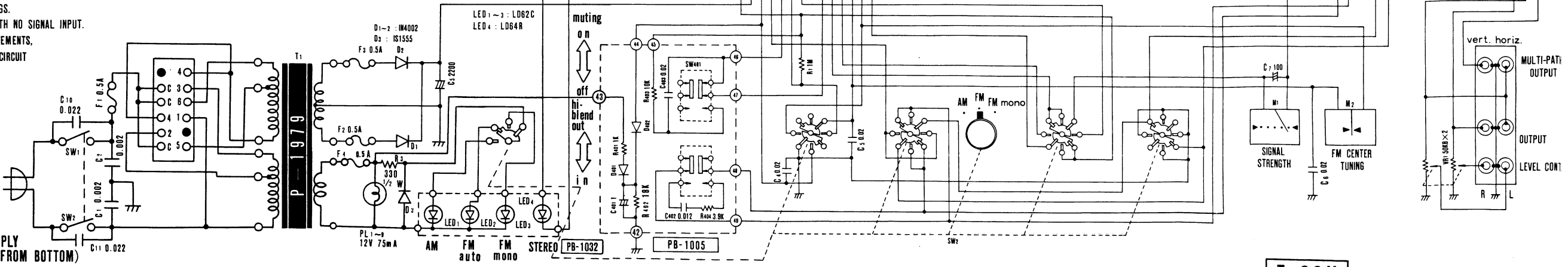




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CONNECTIONS FOR POWER SUPPLY VOLTAGE SELECTOR (VIEWED FROM BOTTOM)



T-88V

vert. horiz. MULTI-PAT. OUTPUT OUTPUT LEVEL CONT.



PB-1004

REPLACEMENT PARTS & LOCATION

RESISTORS;  $\pm 10\%$  1/4 watt deposited carbon, unless noted otherwise.

SYMBOL NO.

|      |      |    |      |         |    |      |             |    |
|------|------|----|------|---------|----|------|-------------|----|
| R201 | 470  | X5 | R240 | 2.2K    | X1 | R279 | 33K         | Y5 |
| 202  | 2.7K | X5 | 241  | 1.5K    | X1 | 280  | 15K         | Y5 |
| 203  | 8.2K | X5 | 242  | 3.3K    | Y2 | 281  | 4.7K        | Y5 |
| 204  | 470  | X5 | 243  | 3.3K    | Y2 | 282  | 4.7K        | Y5 |
| 205  | 330  | X5 | 244  | 18K     | Y2 | 283  | 560         | Y4 |
| 206  | 560  | X5 | 245  | 1K      | Y2 | 284  | 6.8K        | Y4 |
| 207  | 2.2K | X5 | 246  | 100K    | Y2 | 285  | 39K         | Y4 |
| 208  | 100  | X5 | 247  | 10K     | Y3 | 286  | 470         | Y4 |
| 209  | 47   | Y5 | 248  | 100K    | Y3 | 287  | 1K          | Y4 |
| 210  | 820  | X5 | 249  | 100K    | Y3 | 288  | 22 $\Omega$ | Y4 |
| 211  | 330  | X5 | 250  | 56K1/2W | Z3 | 289  | 12K         | Y4 |
| 212  | 470  | X5 | 251  | 3.9K    | Y2 | 290  | 22K         | Y4 |
| 213  | 3.3K | X5 | 252  | 3.9K    | Y2 | 291  | 270         | X4 |
| 214  | 100  | X4 | 253  | 6.8K    | Z2 | 292  | 10K         | Y3 |
| 215  | 820  | X4 | 254  | 6.8K    | Z2 | 293  | 18          | X3 |
| 216  | 47   | Y4 | 255  | 100     | Z2 | 294  | 10K         | Y4 |
| 217  | 15K  | X4 | 256  | 100     | Y2 | 295  | 270         | Y3 |
| 218  | 1K   | X4 | 257  | 3.3K    | Z2 | 296  | 18          | Y3 |
| 219  | 15K  | X4 | 258  | 3.3K    | Z2 | 297  | 100K        | Y3 |
| 220  | 220  | X3 | 259  | 3.3K    | Y1 | 298  | 5.6K        | Y3 |
| 221  | 470  | X2 | 260  | 3.3K    | Y1 | 299  | 1.8K        | Y3 |
| 222  | 1K   | X3 | 261  | 2.7K    | X1 | 300  | 680K        | Y3 |
| 223  | 100  | X2 | 262  | 2.7K    | X1 | 301  | 150         | Y4 |
| 224  | 1K   | X3 | 263  | 47K     | Y1 | 302  | 22K         | Y3 |
| 225  | 1K   | X3 | 264  | 47K     | X1 | 303  | 10K         | Y3 |
| 226  | 10K  | X3 | 265  | 220K    | Y1 | 304  | 10K         | Y3 |
| 227  | 10K  | X3 | 266  | 220K    | X1 | 305  | 8.2K        | Z5 |
| 228  | 10K  | X3 | 267  | 39K     | Y1 | 306  | 47K         | Z5 |
| 229  | 100K | X2 | 268  | 39K     | X1 | 307  | 2.7K        | Z5 |
| 230  | 5.6K | X2 | 269  | 1K      | Y1 | 308  | 47          | Z5 |
| 231  | 47K  | X2 | 270  | 1K      | X1 | 309  | 1K          | Z4 |
| 232  | 100K | X2 | 271  | 4.7K    | Y1 | 310  | 8.2K        | Z4 |
| 233  | 100K | X2 | 272  | 4.7K    | X1 | 311  | 330         | Z4 |
| 234  | 82K  | X2 | 273  | 10K     | Y5 | 312  | 10K         | Z4 |
| 235  | 56K  | X2 | 274  | 100K    | Z5 | 313  | 2.7K        | Z5 |
| 236  | 3.3M | X2 | 275  | 1K      | Y5 | 314  | 2.7K        | Z4 |
| 237  | 1M   | X2 | 276  | 4.7K    | Y5 | 315  | 1K          | Z4 |
| 238  | 27K  | X2 | 277  | 5.6K    | Y5 | 316  | 150K        | Z4 |
| 239  | 100K | X2 | 278  | 33K     | Y5 | 317  | 3.3K        | Z4 |
| R318 | 12K  | Z4 | R327 | 1K      | Z3 | R 1  | 1M          |    |
| 319  | 5.6K | Z3 | 328  | 4.7K    | Z3 | 2    | 47          |    |
| 320  | 1K   | Z3 | 329  | 27K     | Z2 | 3    | 330 1/2W    |    |
| 321  | 220  | Z4 | 330  | 27K     | Z2 | 4(U) | 2.2M 1/2W   |    |
| 322  | 100  | Z4 | 331  | 22K     | Z2 | 5(U) | 2.2M 1/2W   |    |
| 323  | 680K | Z3 | 332  | 270     | Z1 |      |             |    |
| 324  | 10K  | Z3 | 333  | 270     | Z1 |      |             |    |
| 325  | 8.2K | Z2 |      |         |    |      |             |    |
| 326  | 1.5K | Z3 |      |         |    |      |             |    |

CAPACITORS

E...electrolytic, C...ceramic, S...styrol, T...tantalum, M...mylar

|      |      |          |     |   |    |      |      |          |      |   |    |      |       |          |      |     |    |    |
|------|------|----------|-----|---|----|------|------|----------|------|---|----|------|-------|----------|------|-----|----|----|
| C201 | 0.02 | +80%-20% | 25V | C | X5 | C219 | 10   | +50%-10% | 16V  | E | X2 | C237 | 2.2   | +50%-10% | 16V  | E   | Y2 |    |
| 202  | 0.02 | "        | "   | C | X5 | 220  | 0.02 | +80%-20% | 25V  | C | X3 | 238  | 470p  | +5%-5%   | 25V  | S   | Y2 |    |
| 203  | 0.02 | "        | "   | C | X5 | 221  | 470p | +20%-20% | 25V  | C | X2 | 239  | 0.047 | +10%-10% | 50V  | M   | Y3 |    |
| 204  | 200P | +10%-10% | 25V | C | X5 | 222  | 200p | +10%-10% | 25V  | C | X2 | 240  | 0.22  | "        | 50V  | M   | Y2 |    |
| 205  | 0.02 | +80%-20% | 25V | C | X5 | 223  | 200p | "        | "    | C | X2 | 241  | 4.7   | +50%-20% | 6.3V | T   | Y2 |    |
| 206  | 0.02 | "        | "   | C | X5 | 224  | 10   | +50%-10% | 16V  | E | X2 | 242  | 0.22  | +10%-10% | 50V  | M   | Y3 |    |
| 207  | 0.02 | "        | "   | C | X4 | 225  | 100  | "        | "    | E | X2 | 243  | 0.01  | "        | 50V  | M   | Z2 |    |
| 208  | 0.02 | "        | "   | C | X4 | 226  | 0.1  | +10%-10% | 50V  | M | Y4 | 244  | 0.01  | "        | "    | M   | Y2 |    |
| 209  | 0.02 | "        | "   | C | X4 | 227  | 510p | +5%-5%   | 250V | S | X2 | 245  | 2700p | +5%-5%   | 25V  | S   | Z2 |    |
| 210  | 0.02 | "        | "   | C | X4 | 228  | 0.02 | +80%-20% | 25V  | C | Y3 | 246  | 2700p | "        | "    | S   | Z2 |    |
| 211  | 0.02 | "        | "   | C | X4 | 229  | 10   | +50%-10% | 16V  | E |    | 247  | 1     | +75%-10% | 50V  | E   | Z2 |    |
| 212  | 30P  | +10%-10% | 25V | C | X4 | 230  | 10   | +50%-20% | 16V  | T | Y2 | 248  | 1     | "        | "    | E   | Z2 |    |
| 213  | 200p | "        | "   | C | X4 | 231  | 0.47 | "        | "    | E | Y2 | 249  | 220   | +50%-10% | 16V  | E   | Y1 |    |
| 214  | 0.02 | +80%-20% | 25V | C | X4 | 232  | 10   | +50%-20% | 16V  | T | Y2 | 250  | 0.22  | +50%-20% | 35V  | T   | Y1 |    |
| 215  | 0.02 | "        | "   | C | X3 | 233  | 68p  | +10%-10% | 250V | C | Y2 | 251  | 0.22  | "        | "    | T   | X1 |    |
| 216  | 0.02 | "        | "   | C | X3 | 234  | 750p | +5%-5%   | 250V | S | X1 | 252  | 47    | +50%     | -10% | 16V | E  | X1 |
| 217  | 0.02 | "        | "   | C | X3 | 235  | 220  | +50%-10% | 16V  | E | Y2 | 253  | 47    | "        | "    | E   | X1 |    |
| 218  | 0.02 | "        | "   | C | X3 | 236  | 0.02 | +80%-20% | 25V  | C | Y2 | 254  | 10    | "        | "    | E   | X1 |    |

|      |      |          |     |   |    |      |        |          |     |   |    |     |                        |
|------|------|----------|-----|---|----|------|--------|----------|-----|---|----|-----|------------------------|
| C255 | 10   | +50%-10% | 16V | E | Y1 | C279 | 430p   | +5%-5%   | 25V | S | Z5 | C 1 | 2200p[oil(X), film(U)] |
| 256  | 1    | +75%-10% | 50V | E | X1 | 280  | 0.02   | +80%-20% | 25V | C | Z4 | 2   | 2200p[oil(X), film(U)] |
| 257  | 1    | "        | "   | E | X1 | 281  | 0.02   | "        | "   | C | Z5 | 3   | 2200 +50%-10% 25V E    |
| 258  | 0.04 | +80%-20% | 25V | C | Y5 | 282  | 3.3    | +75%-10% | 25V | E | Z5 | 4   | 0.02 +80%-20% 25V C    |
| 259  | 0.02 | "        | "   | C | Z5 | 283  | 0.04   | +80%-20% | 25V | C | Z4 | 5   | 0.02 " " C             |
| 260  | 200p | +10%-10% | "   | C | Y5 | 284  | 0.04   | "        | "   | C | Z4 | 6   | 0.02 " " C             |
| 261  | 0.02 | +80%-20% | "   | C | Y5 | 285  | 0.04   | "        | "   | C | Z4 | 7   | 100 +50%-10% 16V E     |
| 262  | 0.02 | "        | "   | C | Y5 | 286  | 0.04   | "        | "   | C | Z4 | 8   | 12p +10%-10% 25V C     |
| 263  | 0.02 | "        | "   | C | Y4 | 287  | 0.02   | "        | "   | C | Z4 | 9   | 0.02 +80%-20% 25V C    |
| 264  | 0.02 | "        | "   | C | Y4 | 288  | 4.7    | +75%-10% | 25V | E | Z4 | 10  | 0.022                  |
| 265  | 0.02 | "        | "   | C | Y4 | 289  | 0.04   | +80%-20% | "   | C | Z3 | 11  | 0.022                  |
| 266  | 0.02 | "        | "   | C | Y4 | 290  | 0.04   | "        | "   | C | Z3 |     |                        |
| 267  | 200p | +10%-10% | 25V | C | Y5 | 291  | 0.04   | "        | "   | C | Z3 |     |                        |
| 268  | 0.02 | +80%-20% | 25V | C | Y5 | 292  | 0.02   | "        | "   | C | Z3 |     |                        |
| 269  | 0.02 | "        | "   | C | Y4 | 293  | 0.01   | "        | "   | C | Z3 |     |                        |
| 270  | 0.02 | "        | "   | C | Y5 | 294  | 3.3    | +75%-10% | 25V | C | Z3 |     |                        |
| 271  | 0.02 | "        | "   | C | Z5 | 295  | 0,0047 | +10%-10% | "   | M | Z3 |     |                        |
| 272  | 1    | +75%-10% | 16V | E | Y4 | 296  | 10     | +50%-10% | 16V | E | Z3 |     |                        |
| 273  | 1    | "        | "   | E | Y3 | 297  | 0.02   | +10%-10% | "   | M | Z2 |     |                        |
| 274  | 0.02 | +80%-20% | 25V | C | Y2 | 298  | 0.001  | "        | "   | M | Z2 |     |                        |
| 275  | 0.02 | "        | "   | C | Y3 | 299  | 0.0033 | "        | "   | M | Z2 |     |                        |
| 276  | 0.02 | "        | "   | C |    | 300  | 220    | +50%-10% | 16V | E | Z1 |     |                        |
| 277  | 0.01 | "        | "   | C | Z5 | 301  | 220    | "        | "   | E | Z1 |     |                        |
| 278  | 24p  | +10%-10% | "   | C | Z5 | 302  | 0.04   | +80%-20% | 25V | C | Z1 |     |                        |

TRANSISTORS & IC's

|      |          |    |
|------|----------|----|
| Q201 | 2SC381   | X5 |
| 202  | 2SC381   | X5 |
| 203  | 2SC381   | X4 |
| 204  | TA7061AP | X3 |
| 205  | 2SK30A   | X2 |
| 206  | 2SC733   | Y2 |
| 207  | HA1156W  | Y2 |
| 208  | 2SC733   | Z2 |
| 209  | 2SC733   | Z2 |
| 210  | 2SC1000  | Y1 |
| 211  | 2SC1000  | X1 |
| 212  | 2SC733   | Y1 |
| 213  | 2SC733   | X1 |
| 214  | 2SC381   | Y5 |
| 215  | 2SC381   | Y4 |
| 216  | 2SC733   | Y3 |
| 217  | 2SA495   | Y3 |
| 218  | 2SA495   | Y4 |
| 219  | 2SC733   | Y3 |
| 220  | 2SC733   | Y3 |
| 221  | 2SC733   | Y3 |
| 222  | 2SC460   | Z5 |
| 223  | 2SC460   | Z4 |
| 224  | 2SC460   | Z3 |

DIODES

|      |        |         |
|------|--------|---------|
| D201 | IN60   | X3      |
| 202  | IN60   | X3      |
| 203  | IS1555 | Y2      |
| 204  | IS1555 | Y3      |
| 205  | IN60   | Y5      |
| 206  | IN60   | Y5      |
| 207  | IN60   | X5      |
| 208  | IN60   | Y5      |
| 209  | IN60   | Y5      |
| 210  | VD1122 | Y5      |
| 211  | IN60   | Y5      |
| 212  | IN60   | Y5      |
| 213  | IN60   | Z4      |
| 214  | IN60   | Z4      |
| 215  | IN60   | Z3      |
| 216  | IN60   | Z3      |
| 217  | VD1122 | Z4      |
| 218  | VD1122 | Z3      |
| 219  | WZ120  | Z1      |
| D 1  | IN4002 | chassis |
| 2    | IN4002 | chassis |
| 3    | IS1555 | chassis |

L.E.D.'s

|       |       |
|-------|-------|
| LED 1 | LD62C |
| LED 2 | LD62C |
| LED 3 | LD62C |
| LED 4 | LD64R |

VARIABLE RESISTORS

|       |           |         |
|-------|-----------|---------|
| VR201 | 4.7K-B    | X2      |
| 202   | 4.7K-B    | Y2      |
| 203   | 10K-B     | Y3      |
| 204   | 100K-B    | Y4      |
| 205   | 4.7K-B    | Y5      |
| 206   | 10K-B     | Z3      |
| VR 1  | 50K-B x 2 | chassis |

SWITCH

|       |       |           |
|-------|-------|-----------|
| SW401 | 2-2   | push sw   |
| SW402 | 2-2   | push sw   |
| SW 1  |       | push sw   |
| SW 2  | 4-8-3 | rotary sw |

TRANSFORMER & FILTERS

|      |                |         |      |              |             |
|------|----------------|---------|------|--------------|-------------|
| T1   | power trans    | chassis | T101 | FM ANT COIL  | FM frontend |
|      | P-1979 (E)     |         | 102  | FM RF COIL   | FM frontend |
|      | P-2037 (U)     |         | 103  | FM IFT       | FM frontend |
| T201 | 154AC-40716N   | X4      | L101 | FM RF COIL   | FM frontend |
| 202  | 154AC-40716N   | X4      | 102  | FM OSC COIL  | FM frontend |
| 203  | MV4FCC-20600BW | X3      | L 1  | 5638         |             |
| 204  | 154AC-40783AIS | Y4      | F201 | CFSA-30AC-10 | X5          |
| 205  | RWR-41097A     | Z5      | 202  | CFSA-30AC-10 | X5          |
| 206  | CFT-455B       | Z4      | 203  | LUX-14562    | Y1          |
| 207  | 7LC-352713N9   | Z4      |      |              |             |
| 208  | 159GC-1008A    | Z4      |      |              |             |

PB-1005

|      |      |          |      |                  |      |        |          |     |   |
|------|------|----------|------|------------------|------|--------|----------|-----|---|
| R401 | 1K   | +10%-10% | 1/4W | deposited carbon | C401 | 1u     | +75%-10% | 50V | E |
| 402  | 18K  | "        | "    | "                | 402  | 0.012  | +10%-10% | 50V | M |
| 403  | 10K  | "        | "    | "                | 403  | 0.02   | +80%-20% | 25V | C |
| 404  | 3.9K | "        | "    | "                | D401 | IN60   | diode    |     |   |
|      |      |          |      |                  | 402  | IS1555 | diode    |     |   |

## **LUX CORPORATION, JAPAN**

HEAD OFFICE & FACTORY 1-8-31 NAGAHASHI, NISHINARI-KU, OSAKA  
PHONES: 632 0031 CABLE: LUXELECT OSAKA  
TELEX: J63694

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