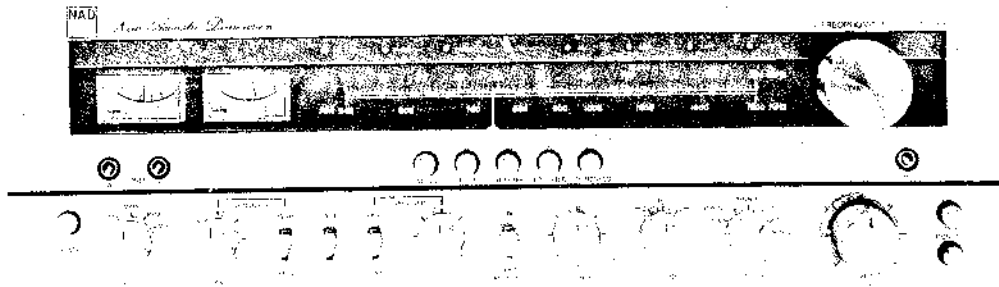


SERVICE MANUAL

NAD MODEL 7080

AM/FM STEREO RECEIVER



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SPECIFICATION

* Measurements identified by an asterisk are taken in accordance with the new IHF A-202 amplifier measurement standard.

Power Amplifier Section

| | |
|---|----------|
| * Continuous average power output at 8 ohms 20-20K Hz both channel driven | 90W |
| Rated distortion, 20-20K Hz | < 0.03% |
| * Clipping headroom at 8 ohms | +1.6db |
| Clipping power at 8 ohms | 130W |
| at 4 ohms | 160W |
| at 2 ohms | 180W |
| Dynamic headroom at 8 ohms | +2.5db |
| Dynamic power at 8 ohms | 160W |
| at 4 ohms | 200W |
| at 2 ohms | 220W |
| * Reactive load rating | +2.5db |
| * Transient Overload Recovery Time | < 1usec |
| * Slew Factor | > 50 |
| Slew Rate | 40V/Nsec |
| Damping factor at 50 Hz (Ref. 8 ohms) | 120 |
| T.H.D. 20-20K Hz From 250 mW to 80W | < 0.03% |
| S.M.P.T.E. I.M.D. (60 Hz + 7KHz, 4:1) From 250mW to 80W | < 0.04% |
| I.H.F. I.M.D. (19KHz + 20KHz) at 80W | < 0.03% |
| T.I.M. (15KHz Sine + 3.18KHz Square Wave) at 80W | < 0.03% |
| Frequency Response, 20-20K HZ | ± 0.5db |
| Frequency Response Range ± 3dB | 5-50kHz |

Preamplifier Section

| | |
|---|-----------|
| * Input Impedance Resistance/Capacitance | 47kΩ/47PF |
| Input Sensitivity (1KHz) * For 1 watt out | 0.25mV |
| 80Watt out | 2.5mV |
| Input Overload at 1KHz | 200mV |
| 20 Hz | 20mV |
| 20 KHz | 2.0V |
| THD (20-20K Hz) and IMD at + 30dB input level | < 0.01% |
| RIAA Response Accuracy | ± 0.3db |
| Signal to Noise Ratio A-weighted | > 82db |
| (a) with phono cartridge connected Ref 10mV | > 76 db |
| * Ref 5mV | > 90db |
| (b) with short-circuit input Ref 10mV | |

High level input

| | |
|--|------------|
| * Input impedance Resistance/Capacitance | 50kΩ/100PF |
| Input sensitivity * For 1 watt out | 16mV |
| For 80 watt out | 150mV |
| Signal to Noise Ratio, A-Weighted | > 80db |
| (a) with mute off * Ref 1 watt out | > 95db |
| Ref 80 watt out | > 85db |
| (b) with mute on Ref 1 watt out | Infinite |
| * Maximum input signal | ± 0.5db |
| Frequency Response, 20-20K Hz | |

Controls

| | |
|---------------------------------------|-----------------|
| Bass control, range at 50 Hz | ± 11 and ± 13db |
| Treble control, range at 10 KHz | ± 6 and ± 9db |
| Infrasonic filter Turn over frequency | 20Hz |
| Slope (dB/octave) | 12 |
| High filter Turn over frequency | 8KHz |
| Slope (dB/octave) | 12 |

SPECIFICATION

FM Tuner Section

| | | | |
|--|----------------------|------------|-------------|
| Input Sensitivity | IHF, 30dB quieting | | 1.8 μ V |
| | IHF, 50dB S/N Mono | | 3.0 μ V |
| | IHF, 50dB S/N Stereo | | 35 μ V |
| Signal to Noise Ratio (A Weighted, at 65 dBf) mono | | | 74db |
| | | | 70db |
| Frequency Response, 30–15K Hz | | | \pm 0.5db |
| De-emphasis Accuracy 75 μ sec | | | \pm 0.3db |
| Channel Separation | 1 KHz | | 40db |
| | 30 – 15KHz | | 30db |
| Selectivity, alternate channel (400 KHZ) | | | 70db |
| Capture Ratio at 45 dBf and 65 dBf | | | 1.0db |
| AM Suppression at 45dBf and 65dBf | | | 65db |
| Image Rejection | | | 70db |
| I. F. Rejection | | | 80db |
| SCA Rejection | | | 70db |
| Pilot Signal Suppression | | | 55db |
| THD at 100% Modulation | 1 KHZ | Mono | 0.2% |
| | | Stereo | 0.3% |
| | 100 HZ | Mono | 0.2% |
| | | Stereo | 0.3% |
| | 6 KHZ | Mono | 0.3% |
| | | Stereo | 0.4% |
| THD, Stereo, 1 KHZ | 50% | Modulation | 0.3% |
| | 150% | Modulation | 0.4% |

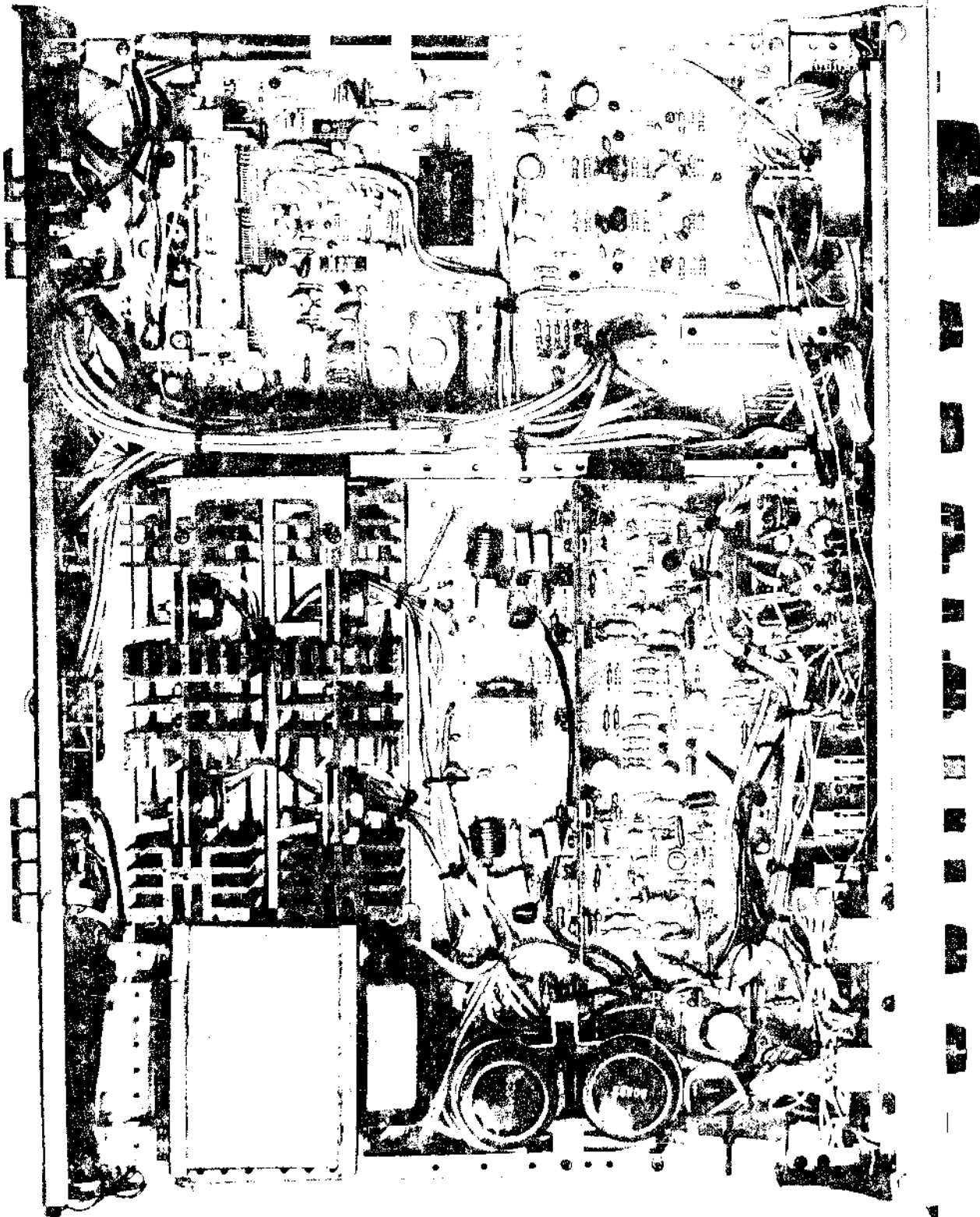
AM Tuner Section

| | | | |
|--------------------|--|--|-------------|
| Usable Sensitivity | | | 300 μ V |
| Selectivity | | | 30db |
| Image Rejection | | | 55db |
| I. F. Rejection | | | 45db |

Physical Specification

| | | |
|---------------------------------|------------------------|-----------------|
| Dimensions | Width x Height x Depth | 19.6x6x14 inch |
| | | 49 x 15 x 36 cm |
| Net Weight | | 38.5lbs/17.5kg |
| Shipping Weight | | 47lbs/21.5kg |
| Power Consumption at 1 watt out | | 30VA |
| 80 watt out | | 400VA |

INSIDE VIEW OF UNIT



ALIGNMENT (AUDIO)

I. IDLE CURRENT ALIGNMENT

1. 5 Minutes minimum pre-heating is necessary for idle current alignment.
 2. Set the volume control at minimum position.
 3. Speaker switch should be set at off position.
 4. Connect DC voltmeter across R638 for right channel and across R637 for left channel. (see fig. 1)
 5. Record the reading of DC voltmeter and refer to the following chart to find the appropriate value resistor to connect in parallel with R622 (right channel), or R621 (left channel) on the bottom side (pattern side) of PCB.
- * Important notice: The power switch must be in the off position when soldering is done.

| Reading of DC Voltmeter | Parallel Resistor | Reading of DC Voltmeter | Parallel Resistor |
|-------------------------|-------------------|-------------------------|-------------------|
| 0.5 to 1.0mV | 820 ohm | 2.5 to 3.5mV | 1k8 ohm |
| 1.0 to 1.5mV | 1k ohm | 3.5 to 4.5mV | 2k2 ohm |
| 1.5 to 2.0mV | 1k2 ohm | 4.5 to 5.5mV | 2k7 ohm |
| 2.0 to 2.5mV | 1k5 ohm | 5.5 to 7.0mV | 3k3 ohm |

6. Read the DC voltage across to R638 (right channel) and R637 (left channel) again.
7. If the DC voltage were between 6mV and 9mV, then the alignment is completed.
8. If the DC voltage were less than 6mV, the value of parallel resistor should be decreased until the DC voltage is between 6mV and 9mV.
9. If the DC voltage were more than 9mV, the value of parallel resistor should be increased until the DC voltage is between 6mV and 9mV.

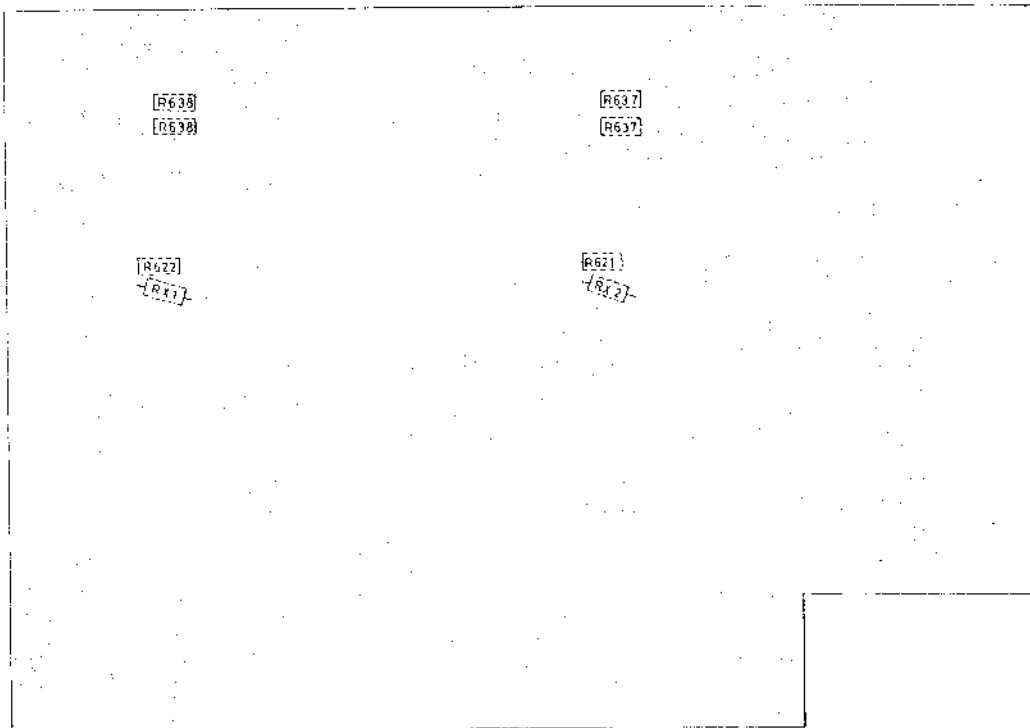
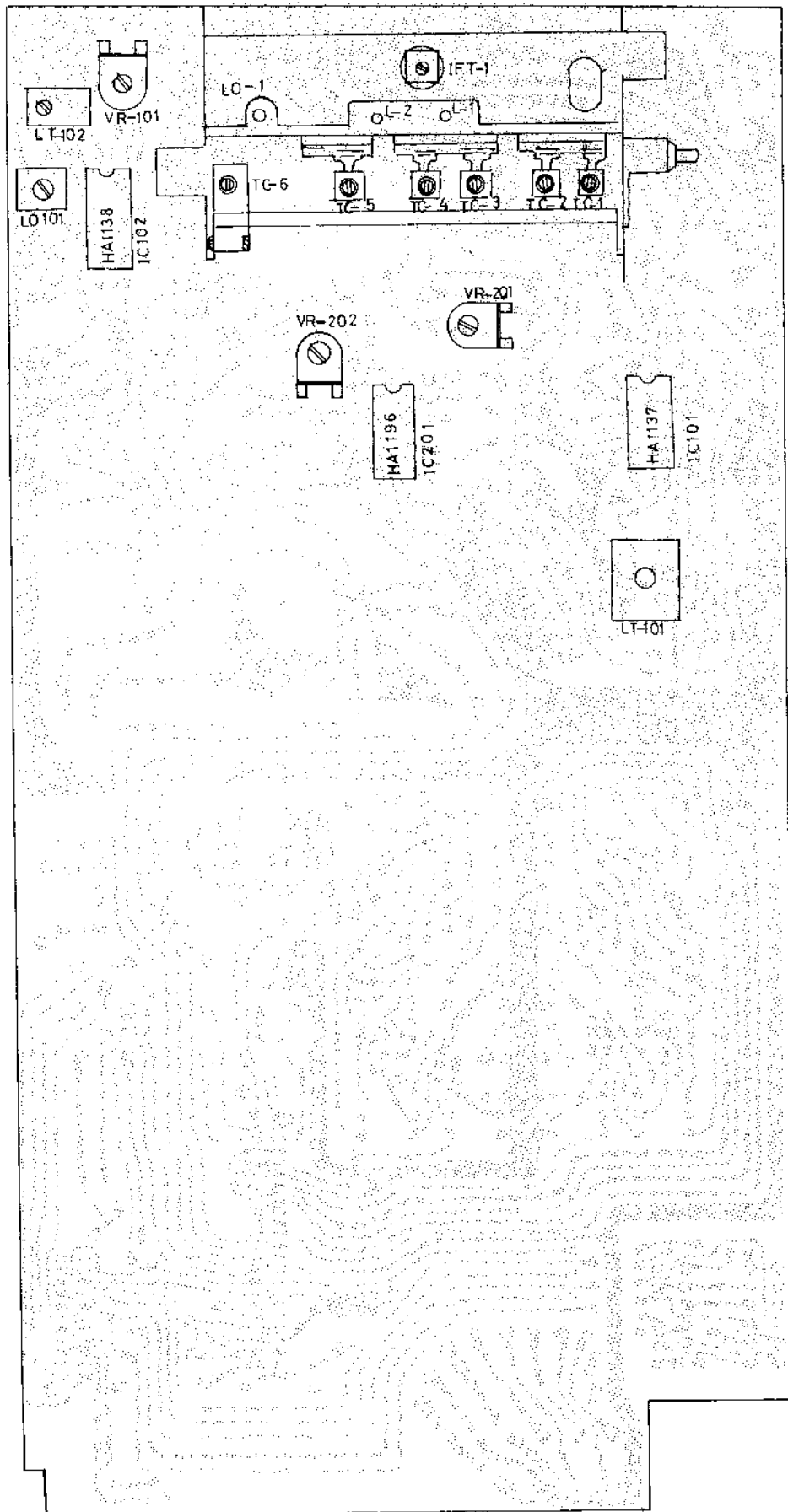


Fig 1.

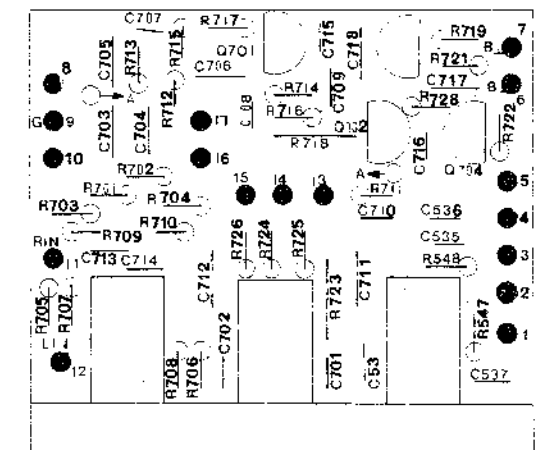
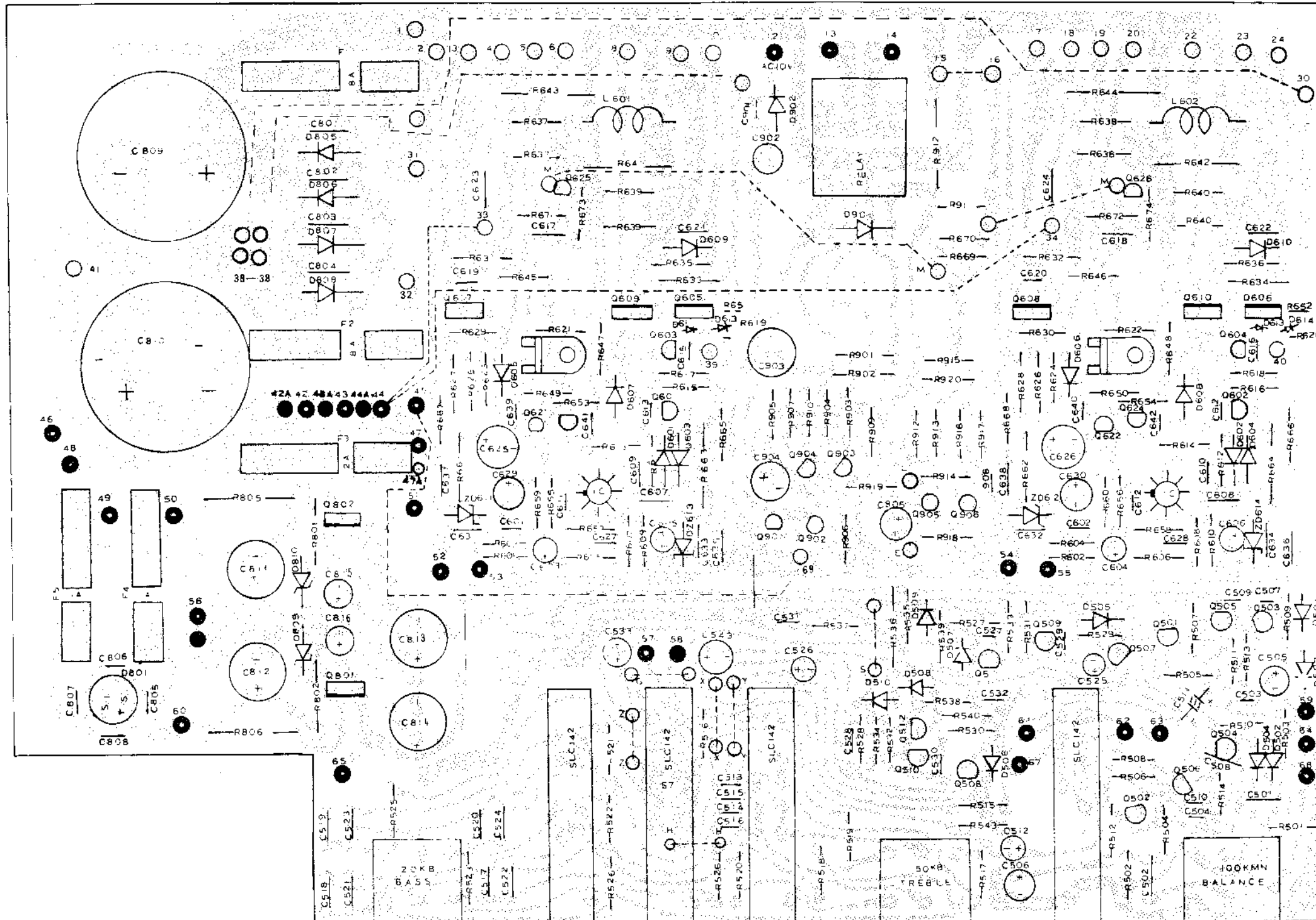
ALIGNMENT (TUNER)

| 1. AM ALIGNMENT: 1. Selector switch in AM position 2. AC line voltage at rated voltage 3. Monitor output at REC OUT (TAPE 1 or TAPE 2) | | | | | | | | |
|--|---|---|--|-----------------------------|--|--------------------------|--------------------|--|
| Section | AM SG | | | Dial Setting | Indicator | Adjustment Point | Adjust for | |
| | Connection | Carrier Freq. | Modulation | | | | | |
| AM IF | Hot side of SG output through 200 pF to AM antenna trimmer Terminal (TP 1) | 455 KHZ | 30% Mod. 400 HZ | Point of non-interference | V. T. V. M. or Oscilloscope | LT 102 | Maximum output | |
| AM RF | Hot side of SG output through 200 pF to EXT AM antenna Terminal on rear panel | 600KHZ | 30% MOD. 400 HZ | 600KHZ | V.T.V.M or Oscilloscope | LA 101 LO 101 | Maximum output | |
| | | 1400 KHZ | 30% MOD 400HZ | 1400KHZ | | TC - 2 TC - 4 | | |
| | | Repeat Step 4 and Step 2 | | | | | | |
| 2. FM ALIGNMENT: 1. Selector switch in FM position and Mode switch in stereo position 2. AC line voltage at rated voltage 3. Monitor output at REC OUT (TAPE 1 or TAPE 2) | | | | | | | | |
| Section | FM SG | | | Dial Setting | Indicator | Adjustment Point | Adjust for | |
| | Connection | Carrier Freq. | Modulation | | | | | |
| FM IF | — | — | — | Point of non-interference | Tuning Meter of set | LT 101 Lower Side | Center Indication | |
| FM RF | Connect to FM 300 ohm antenna Terminal on the rear panel through FM dummy antenna | 90MHz | 100% Mod | 90 MHz | V. T. V. M. or Oscilloscope | LO -1, L-1 L-2, IFT-1 | Maximum output | |
| | | 106MHz | 400 Hz | 106 MHz | | TC-1, TC-3 TC-5, TC-6 | | |
| | | Repeat Step 1 and Step 2 | | | | | | |
| FM mono Distortion | | 98 MHz | 100% Mod. 400 Hz | 98 MHz | Distortion Meter | LT 101 Upper Side | Minimum Distortion | |
| | | Repeat FM IF and FM MONO DISTORTION Step 1. | | | | | | |
| 3. FM MPX ALIGNMENT: 1. Same as FM ALIGNMENT 1, 2, 3 2. FM SG is external modulated by stereo SG and connected to FM 300Ω antenna terminal on the rear panel through FM dummy antenna | | | | | | | | |
| Section | Step | FM SG | Stereo SG | Dial Setting | Indicator | Adjustment | Adjust for | |
| MPX pilot | 1 | — | — | Point of no signal received | Connet frequency counter through look to TP 10 | VR 201 | 76KHZ ± 30HZ | |
| | 2 | 98MHz | 10% 19KHz Pilot 90% L + R, L - R | 98MHz | — | VR201 | Stereo LED Light | |
| Separation | 1 | 98MHz | 10% 19KHz Pilot L. only | 98MHz | Connect VT1 VTIM or oscilloscope to R REC out | VR202 | Minimum output | |
| | 2 | | 10% 19KHz Pilot R. only | 98MHz | Connect VTVM or oscilloscope to L REC out | | | |
| | 3 | | Repeat Step 1 and Step 2 | | | | | |
| | 4 | | If there is an excessive difference between leak-free effects of both channels, slightly adjust VR 202 so that the levels of signal leakage of both channels are equal | | | | | |

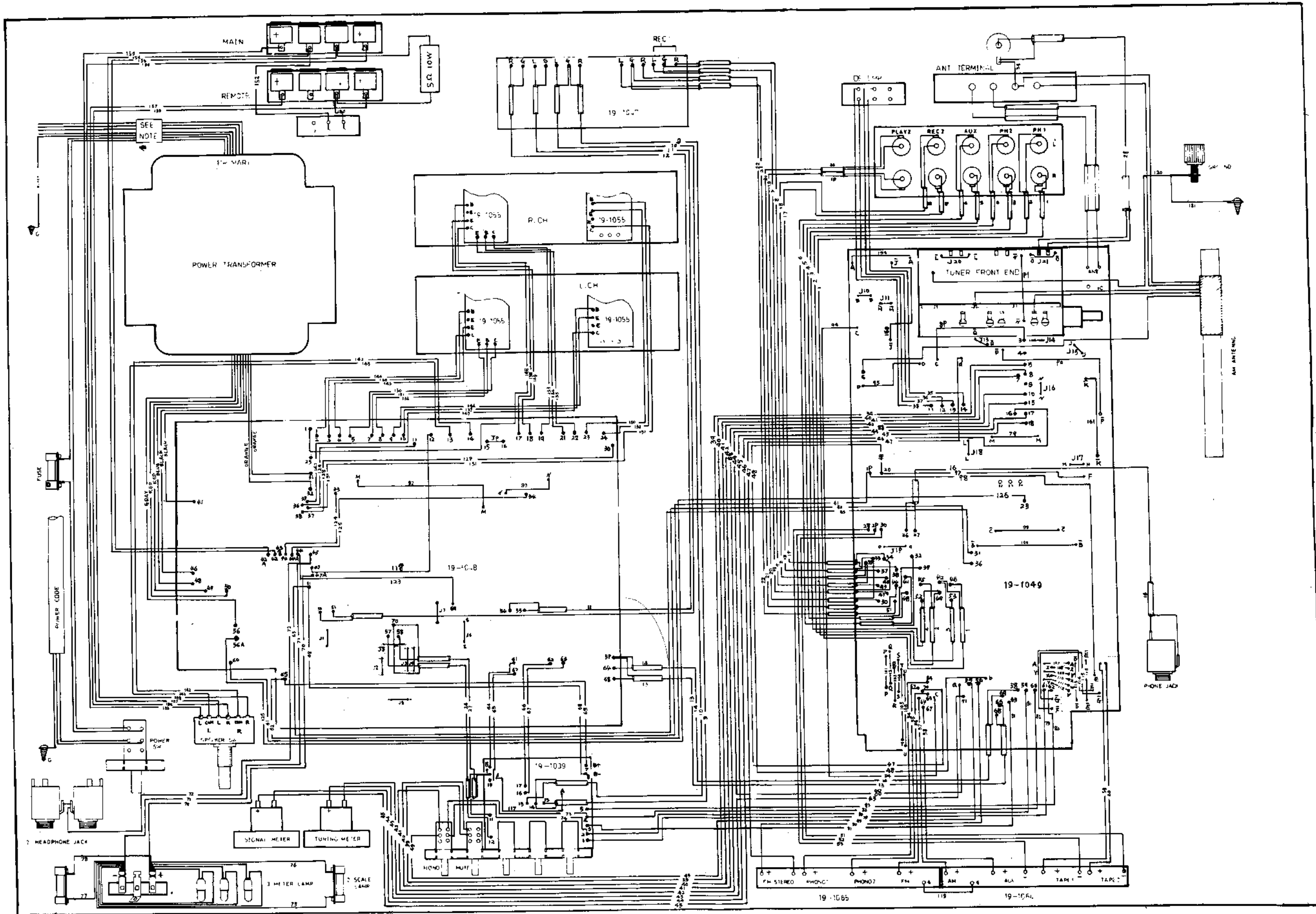
ALIGNMENT (TUNER)



PCB PARTS LOCATION



WIRING DIAGRAM



PARTS LIST

90-1048 MAIN SECTION

| ITEM | PARTS NO. | DESCRIPTION | Q'TY | SYMBOL NO. |
|------|--------------|---|------|--|
| 1 | 16-1/2CP220J | CARBON RES. 22 OHM 1/2W ±5% | 6 | R631,632,633,634,635,636 |
| 2 | 16-1/2CP332J | CARBON RES. 3.3K OHM 1/2W ±5% | 2 | R801,802 |
| 3 | 16-1/2CP680J | CARBON RES. 68 OHM 1/2W ±5% | 2 | R805,806 |
| 4 | 16-1/2CM101J | CARBON RES. 100 OHM 1/2W ±5% | 2 | R515,516 |
| 5 | 16-1/2CM102J | CARBON RES. 1K OHM 1/2W ±5% | 12 | R607,608,659,660,647,648,645,646,671,672,673,674 |
| 6 | 16-1/2CM103J | CARBON RES. 10K OHM 1/2W ±5% | 5 | R509,510,521,522,916 |
| 7 | 16-1/2CM104J | CARBON RES. 100K OHM 1/2W ±5% | 1 | R907 |
| 8 | 16-1/2CM123J | CARBON RES. 12K OHM 1/2W ±5% | 1 | R904 |
| 9 | 16-1/2CM153J | CARBON RES. 15K OHM 1/2W ±5% | 6 | R539,540,655,656,657,658 |
| 10 | 16-1/2CM181J | CARBON RES. 180 OHM 1/2W ±5% | 2 | R313,514 |
| 11 | 16-1/2CM182J | CARBON RES. 1.8K OHM 1/2W ±5% | 2 | R603,604 |
| 12 | 16-1/2CM184J | CARBON RES. 180K OHM 1/2W ±5% | 1 | R914 |
| 13 | 16-1/2CM221J | CARBON RES. 220 OHM 1/2W ±5% | 4 | R503,504,619,620 |
| 14 | 16-1/2CM222J | CARBON RES. 2.2K OHM 1/2W ±5% | 4 | R517,518,519,520 |
| 15 | 16-1/2CM223J | CARBON RES. 22K OHM 1/2W ±5% | 5 | R611,612,669,670,920 |
| 16 | 16-1/2CM224J | CARBON RES. 220K OHM 1/2W ±5% | 3 | R601,602,912 |
| 17 | 16-1/2CM271J | CARBON RES. 270 OHM 1/2W ±5% | 1 | R917 |
| 18 | 16-1/2CM273J | CARBON RES. 27K OHM 1/2W ±5% | 2 | R609,610 |
| 19 | 16-1/2CM330J | CARBON RES. 33 OHM 1/2W ±5% | 2 | R629,630 |
| 20 | 16-1/2CM331J | CARBON RES. 330 OHM 1/2W ±5% | 2 | R621,622 |
| 21 | 16-1/2CM332J | CARBON RES. 3.3K OHM 1/2W ±5% | 4 | R505,506,617,618 |
| 22 | 16-1/2CM333J | CARBON RES. 33K OHM 1/2W ±5% | 4 | R901,902,905,919 |
| 23 | 16-1/2CM334J | CARBON RES. 330K OHM 1/2W ±5% | 4 | R501,502,527,528, |
| 24 | 16-1/2CM392J | CARBON RES. 3.9K OHM 1/2W ±5% | 8 | R507,508,523,524,525,526,531,532 |
| 25 | 16-1/2CM471J | CARBON RES. 470 OHM 1/2W ±5% | 2 | R511,512 |
| 26 | 16-1/2CM472J | CARBON RES. 4.7K OHM 1/2W ±5% | 1 | R918 |
| 27 | 16-1/2CM561J | CARBON RES. 560 OHM 1/2W ±5% | 1 | R911 |
| 28 | 16-1/2CM564J | CARBON RES. 560K OHM 1/2W ±5% | 1 | R909 |
| 29 | 16-1/2CM682J | CARBON RES. 6.8K OHM 1/2W ±5% | 2 | R535,536 |
| 30 | 16-1/2CM683J | CARBON RES. 68K OHM 1/2W ±5% | 2 | R910,915 |
| 31 | 16-1/2CM821J | CARBON RES. 820 OHM 1/2W ±5% | 2 | R623,624 |
| 32 | 16-1/2CM822J | CARBON RES. 8.2K OHM 1/2W ±5% | 5 | R605,606,903,913,906 |
| 33 | 16-1/2CN101J | CARBON RES. 100 OHM 1/2W ±5% | 2 | R613,614 |
| 34 | 16-1/2CN221J | CARBON RES. 220 OHM 1/2W ±5% | 4 | R529,530,619,620 |
| 35 | 16-1/2CN2R2J | CARBON RES. 2.2 OHM 1/2W ±5% | 4 | R665,666,667,668 |
| 36 | 16-1/2CN561J | CARBON RES. 560 OHM 1/2W ±5% | 2 | R615,616 |
| 37 | 16-1/2CN820J | CARBON RES. 82 OHM 1/2W ±5% | 2 | R533,534 |
| 38 | 16-1/2CU5R6J | CARBON RES. 5.6 OHM 1/2W ±5% | 2 | R651,652 |
| 38 | 16-1003 | RES. MPC. 71 0.22 OHM 5W | 8 | R637,638,639,640,637A,638A,639A,640A |
| 40 | 16-1A102J | METAL OXIDE RES. 1K 1W ±5% | 2 | R627,628 |
| 41 | 16-1A152J | METAL OXIDE RES. 1.5K 1W ±5% | 2 | R625,626 |
| 42 | 16-1A222J | METAL OXIDE RES. 2.2K 1W ±5% | 4 | R661,662,663,664 |
| 43 | 16-1A471J | METAL OXIDE RES. 470 OHM 1W ±5% | 1 | R921 |
| 44 | 16-2A100J | METAL OXIDE RES. 10 OHM 2W ±5% | 4 | R641,642,643,644 |
| 45 | 17-0.63E227Y | ELEC. CAPA. 220μF 6.3V +50% -10% | 2 | C505,506 |
| 46 | 17-0.63E336Y | ELEC. CAPA. 33μF 6.3V +50% -10% | 2 | C629,630 |
| 47 | 17-1.6E226Y | ELEC. CAPA. 23μF 16V +50% -10% | 2 | C603,604 |
| 48 | 17-1.6S227Y | ELEC. CAPA. 220μF 16V +50% -10% (NON-POLAR) | 1 | C903 |
| 49 | 17-1E106Y | ELEC. CAPA. 10μF 10V +50% -10% | 2 | C525,526 |
| 50 | 17-1E107Y | ELEC. CAPA. 100μF 10V +50% -10% | 2 | C904,905 |
| 51 | 17-1E226Y | ELEC. CAPA. 22μF 10V +50% -10% | 2 | C605,606 |
| 52 | 17-2.5E106Y | ELEC. CAPA. 10μF 25V +50% -10% | 4 | C511,512,533,534 |
| 53 | 17-2.5E107Y | ELEC. CAPA. 100μF 25V +50% -10% | 2 | C815,816 |
| 54 | 17-2.5E108Y | ELEC. CAPA. 1000μF 25V +50% -10% | 2 | C813,814 |
| 55 | 17-2.5E475Y | ELEC. CAPA. 4.7μF 25V +50% -10% | 1 | C902 |
| 56 | 17-25D223K | CER. CAPA. 0.0022μF 250V ±10% | 8 | C801,802,803,804,805,806,807,808 |
| 57 | 17-3.5E 477Y | ELEC. CAPA. 470μF 35V +50% -10% | 2 | C811,812 |
| 58 | 17-5D100D | CER. CAPA. 10PF ±0.5P 50V | 2 | C509,510 |
| 59 | 17-5D101M | CER. CAPA. 100PF ±20% 50V | 4 | C609,610,627,628 |
| 60 | 17-5D103M | CER. CAPA. 0.01μF ±20% 50V | 6 | C639,640,641,642,901,906 |
| 61 | 17-5D104M | CER. CAPA. 0.1μF ±20% 50V | 16 | C607,608,631,632,633,634,635,636,637,638,617,618,623,624,623A,624A |
| 62 | 17-4D121M | CER. CAPA. 120P ±20% 50V | 4 | C619,620,645,646 |
| 63 | 17-5D220M | CER. CAPA. 229 ±20% 50V | 2 | C611,612 |
| 64 | 17-5D221M | CER. CAPA. 220P ±20% 50V | 4 | C503,504,531,532 |
| 65 | 17-5D330M | CER. CAPA. 339 ±20% 50V | 4 | C527,528,529,530 |
| 66 | 17-5D470M | CER. CAPA. 479 ±20% 50V | 4 | C507,508,615,616 |
| 67 | 17-5D471M | CER. CAPA. 470P ±20% 50V | 2 | C601,602 |
| 68 | 17-5D680M | CER. CAPA. 689 ±20% 50V | 2 | C643,644 |
| 69 | 17-5D820M | CER. CAPA. 829 ±20% 50V | 2 | C613,614 |

| ITEM | PARTS NO. | DESCRIPTION | Q'TY | SYMBOL NO. |
|------|------------|--------------------------------|------|--|
| 70 | 17-5E476Y | ELEC. CAPA. 47μF 50V +50% -10% | 2 | C625,626 |
| 71 | 17-5F104J | MYLAR CAPA. 0.1μF 50V ±5% | 8 | C517,518,519,520,521,522,523,524 |
| 72 | 17-5F 122J | MYLAR CAPA. 0.0012μF 50V ±5% | 4 | C513,514,515,516 |
| 73 | 17-4F224J | MYLAR CAPA 0.22μF 50V ±5% | 2 | C501,502 |
| 74 | 19-1048 | PCB | 1 | |
| 75 | 29-1040 | INDUCTOR 0.6x6φx15T | 2 | L601,602 |
| 76 | 29-4057 | BASS CONTROL 20KBx2 | 1 | VR503A,VR503B |
| 77 | 29-4058 | TREBLE CONTROL 50KBx2 | 1 | VR501A,VR501B |
| 78 | 29-4060 | BALANCE CONTROL 100KNN | 1 | VR505,505A |
| 79 | 30-1011 | ZENER DIODE 12V 0.5W | 4 | D611,612,613,614 |
| 80 | 30-1016 | ZENER DIODE 23V 0.5W | 2 | D801,802 |
| 81 | 30-1017-2 | DIODE G3D 100V | 4 | D803,804,805,806 |
| 82 | 30-1019 | DIODE BAW62 | 24 | D501,502,503,504,505,506,507,508,509,510,601,602,603,604,605,606,607,608,615,616,617,618,901,902 |
| 83 | 30-1040 | BRIDGE DIODE W02 | 1 | B.D.801 |
| 84 | 30-2082 | TRANSISTOR BD140 | 2 | Q802,805 |
| 85 | 30-2083 | TRANSISTOR BD139 | 3 | Q801,901,906 |
| 86 | 30-2084-3 | TRANSISTOR BC549C | 4 | Q503,504,505,506 |
| 87 | 30-2085-2 | TRANSISTOR BC559B | 4 | Q501,502,507,508 |
| 88 | 30-2086 | TRANSISTOR 2SB536M | 2 | Q609,610 |
| 89 | 30-2087 | TRANSISTOR 2SD381M | 4 | Q605,606,607,608 |
| 90 | 30-2090-2 | TRANSISTOR BC546B | 13 | Q509,510,511,512,603,604,621,622,903,904,902,625,626 |
| 91 | 30-2096 | TRANSISTOR BC556A | 4 | Q601,602,603,624 |
| 92 | 30-3010 | IC. CA3100 | 2 | IC601,602 |
| 93 | 31-1020 | LEVER SW. SLC-142 | 4 | SW5a.b. SW7a.b |
| 94 | 35-3002 | RELAY SD-205P | 1 | SW6a.b. SW8a.b.c.d. |

90-1049 TUNER & EQ. SECTION

| | | | | |
|-----|---------------|-----------------------------------|---|----------------------|
| 95 | 16-1/2CP272J | CARBON RES. 2.7K OHM 1/2W ±5% | 2 | R133,134 |
| 96 | 16-1/2CM101J | CARBON RES. 100 OHM 1/2W ±5% | 1 | R135 |
| 97 | 16-1/2CM 102J | CARBON RES. 1K OHM 1/2W ±5% | 4 | R425,426,128,202 |
| 98 | 16-1/2CM 104J | CARBON RES. 100K OHM 1/2W ±5% | 5 | R443,444,115,116,208 |
| 99 | 16-1/2CM122J | CARBON RES. 1.2K OHM 1/2W ±5% | 1 | R129 |
| 100 | 16-1/2CM123J | CARBON RES. 12K OHM 1/2W ±5% | 1 | R107 |
| 101 | 16-1/2CM151J | CARBON RES. 150 OHM 1/2W ±5% | 1 | R123 |
| 102 | 16-1/2CM153J | CARBON RES. 15K OHM 1/2W ±5% | 3 | R210,419,420 |
| 103 | 16-1/2CM154J | CARBON RES. 150K OHM 1/2W ±5% | 1 | R102 |
| 104 | 16-1/2CM184J | CARBON RES. 180K OHM 1/2W ±5% | 2 | R431,432 |
| 105 | 16-1/2CM221J | CARBON RES. 220 OHM 1/2W ±5% | 2 | R415,416 |
| 106 | 16-1/2CM222J | CARBON RES. 2.2K OHM 1/2W ±5% | 5 | R103,119,122,130,209 |
| 107 | 16-1/2CM223J | CARBON RES. 2.2K OHM 1/2W ±5% | 2 | R117,131 |
| 108 | 16-1/2CM332J | CARBON RES. 3.3K OHM 1/2W ±5% | 5 | R125,214,215,216,217 |
| 109 | 16-1/2CM333J | CARBON RES. 33K OHM 1/2W ±5% | 3 | R127,203,212 |
| 110 | 16-1/2CM392J | CARBON RES. 3.9K OHM 1/2W ±5% | 1 | R121 |
| 111 | 16-1/2CM393J | CARBON RES. 39K OHM 1/2W ±5% | 2 | R441,442 |
| 112 | 16-1/2CM471J | CARBON RES. 470 OHM 1/2W ±5% | 2 | R104,106 |
| 113 | 16-1/2CM472J | CARBON RES. 4.7K OHM 1/2W ±5% | 3 | R433,434 |
| 114 | 16-1/2CM473J | CARBON RES. 47K OHM 1/2W ±5% | 4 | R118,204,207, 213 |
| 115 | 16-1/2CM474J | CARBON RES. 470K OHM 1/2W ±5% | 2 | R201,206 |
| 116 | 16-1/2CM560J | CARBON RES. 56 OHM 1/2W ±5% | 1 | R105 |
| 117 | 16-1/2CM562J | CARBON RES. 5.6K OHM 1/2W ±5% | 2 | R417,418 |
| 118 | 16-1/2CM682J | CARBON RES. 6.8K OHM 1/2W ±5% | 3 | R120,205,218 |
| 119 | 16-1/2CM684J | CARBON RES. 680K OHM 1/2W ±5% | 2 | R435,436 |
| 120 | 16-1/2CM821J | CARBON RES. 820 OHM 1/2W ±5% | 4 | R108,111,211,136 |
| 121 | 16-1/2CN151J | CARBON RES. 150 OHM 1/2W ±5% | 2 | R413,414 |
| 122 | 16-1/2CN221J | CARBON RES. 220 OHM 1/2W ±5% | 2 | R124,126 |
| 123 | 16-1/2CN331J | CARBON RES. 330 OHM 1/2W ±5% | 2 | R411,412 |
| 124 | 16-1/2CM470J | CARBON RES. 47 OHM 1/2W ±5% | 1 | R112 |
| 125 | 16-1/2CN680J | CARBON RES. 68 OHM 1/2W ±5% | 4 | R421,422,423,424 |
| 126 | 16-1/2CN821J | CARBON RES. 820 OHM 1/2W ±5% | 1 | R110 |
| 127 | 16-1/2M222J | METAL FILM RES. 2.2K OHM 1/2W ±5% | 4 | R403,404,407,408 |
| 128 | 16-1/2M272J | METAL FILM RES. 2.7K OHM 1/2W ±5% | 2 | R429,430 |
| 129 | 16-1/2M392J | METAL FILM RES. 3.9K OHM 1/2W ±5% | 2 | R405,406 |
| 130 | 16-1/2M393J | METAL FILM RES. 39K OHM 1/2W ±5% | 2 | R427,428 |
| 131 | 16-1/2M560J | METAL FILM RES. 56 OHM 1/2W ±5% | 2 | R409,410 |
| 132 | 16-1/2M563T | METAL FILM RES. 56K OHM 1/2W ±5% | 2 | R401,402 |
| 133 | 16-1A390K | METAL OXIDE RES. 39 OHM 1W ±10% | 1 | R109 |
| 134 | 16-2A121K | METAL OXIDE RES. 120 OHM 2W ±10% | 1 | R132 |
| 135 | 17-0.63E227Y | ELEC. CAPA. 220μF 6.3V +50% -10% | 1 | C218 |

| ITEM | PARTS NO. | DESCRIPTION | Q'TY | SYMBOL NO. |
|-------------------------------|---------------|---|------|---|
| 136 | 17-0.63E687Y | ELEC. CAPA. 680 μ F 6.3V +50% -10% | 2 | C407,408 |
| 137 | 17-1.6E106Y | ELEC. CAPA. 10 μ F 16V +50% -10% | 1 | C120 |
| 138 | 17-1.6E107Y | ELEC. CAPA. 100 μ F 16V +50% -10% | 2 | C114,115 |
| 139 | 17-1.6E227Y | ELEC. CAPA. 220 μ F 16V +50% -10% | 2 | C127,132 |
| 140 | 17-1.6E475Y | ELEC. CAPA. 4.7 μ F 16V +50% -10% | 1 | C138 |
| 141 | 17-1.6E476Y | ELEC. CAPA. 47 μ F 16V +50% -10% | 2 | C133,134 |
| 142 | 17-1.60224M | TA. CAPA. 0.22 μ F 16V \pm 20% | 1 | C212 |
| 143 | 17-1.60335M | TA. CAPA. 3.3 μ F 16V \pm 20% | 3 | C205,401,402 |
| 144 | 17-2.5E106Y | ELEC. CAPA. 10 μ F 25V +50% -10% | 6 | C209,210,214,215,421,422 |
| 145 | 17-2.5E227Y | ELEC. CAPA. 220 μ F 25V +50% -10% | 3 | C113,417,418 |
| 146 | 17-2.5E475Y | ELEC. CAPA. 4.7 μ F 25V +50% -10% | 1 | C202 |
| 147 | 17-2.50155M | TA. CAPA. 1.5 μ F 25V \pm 20% | 1 | C206 |
| 148 | 17-5D100D | CER. CAPA. 109 \pm 0.59 50V | 2 | C405,406 |
| 149 | 17-5D103M | CER. CAPA. 0.01 μ F 50V \pm 20% | 6 | C101,121,122,131,135,136 |
| 150 | 17-5D104M | CER. CAPA. 0.1 μ F 50V \pm 20% | 2 | C137,211 |
| 151 | 17-5D221M | CER. CAPA. 220PF 50V \pm 20% | 2 | C409,410 |
| 152 | 17-5D101M | CER. CAPA. 100PF 50V \pm 20% | 2 | C403,404 |
| 153 | 17-5D473M | CER. CAPA. 0.047 μ F 50V \pm 20% | 10 | C106,102,103,104,105,107,108, 109,119,123 |
| 154 | 17-5D511K | CER. CAPA. 510PF 50V \pm 10% | 2 | C216,217 |
| 155 | 17-5E105Y | ELEC. CAPA. 1 μ F 50V +50% -10% | 2 | C111,116 |
| 156 | 17-5E336Y | ELEC. CAPA. 33 μ F 50V +50% -10% | 2 | C427,428 |
| 157 | 17-5E474Y | ELEC. CAPA. 0.47 μ F 50V +50% -10% | 1 | C112 |
| 158 | 17-5F104J | MYLAR CAPA. 0.1 μ F 50V \pm 5% | 2 | C411,412 |
| 159 | 17-5F122J | MYLAR CAPA. 0.012 μ F 50V \pm 5% | 2 | C207,208 |
| 160 | 17-5F222J | MYLAR CAPA. 0.0022 μ F 50V \pm 5% | 2 | C419,420 |
| 161 | 17-5F 272J | MYLAR CAPA. 0.0027 μ F 50V \pm 5% | 2 | C425,426 |
| 162 | 17-5F273J | MYLAR CAPA. 0.027 μ F 50V \pm 5% | 2 | C413,414 |
| 163 | 17-5F472J | MYLAR CAPA. 0.0047 μ F 50V \pm 5% | 2 | C423,424 |
| 164 | 17-5F473J | MYLAR CAPA. 0.047 μ F 50V \pm 5% | 1 | C204 |
| 165 | 17-5M331J | SILVERED MICA 330PF 50V \pm 5% | 1 | C130 |
| 166 | 17-5V471J | STYROLENE CAPA. 470PF 50V \pm 5% | 1 | C213 |
| 167 | 17-5V100K | CER. CAPA. 109F 50V \pm 10% (RH) | 1 | C129 |
| 168 | 17-5V470K | CER. CAPA. 47PF 50V \pm 10% (RH) | 1 | C124 |
| 169 | 17-5W100K | CER. CAPA. 10PF 50V \pm 10% (SL) | 1 | C118 |
| 170 | 17-5W201K | CER. CAPA. 200PF 50V \pm 10% (SL) | 2 | C126,201 |
| 171 | 18-1016-1 | CORE ASS'Y | 1 | |
| 172 | 19-1049 | PCB FOR TUNER & EQ | 1 | |
| 173 | 29-1037 | INDUCTOR 1 MH | 1 | L101 |
| 174 | 29-1038 | INDUCTOR 40 μ H | 1 | L102 |
| 175 | 29-1039 | INDUCTOR 18 μ H | 1 | L103 |
| 176 | 29-3008 | FM DET COIL 10.7MHZ | 1 | LT101 |
| 177 | 29-3016-1 | L.P.F. 19 & 38 KHZ FILTER | 1 | FT201 |
| 178 | 29-3017 | CERAMIC SFL455 | 1 | LT102 |
| 179 | 29-3018 | AM OSC L-39 | 1 | L0101 |
| 180 | 29-3027 | CERAMIC FILTER SFE 10.7MA8 | 3 | CF101,102,103 |
| 181 | 29-4021 | SEMIFIXED RES. 2K | 1 | VR101 |
| 182 | 29-4023 | SEMIFIXED RES. 20K | 1 | VR201 |
| 183 | 29-4047 | VOLUME CONTROL 50KBx2 41 CLICK | 1 | VR507 |
| 184 | 29-4056 | SEMIFIXED RES. 200K | 2 | VR202 |
| 185 | 30-1010 | DIODE IN60 | 4 | D101,102,103,104 |
| 186 | 30-1011 | ZENER DIODE 12V 0.5W | 1 | D105 |
| 187 | 30-1019 | DIODE BAW62 | 11 | D401,402,403,404,405,406,407, 408,106,107,201. |
| 188 | 30-2019 | TRANSISTOR 2SC930C | 1 | Q101 |
| 189 | 30-2069 | TRANSISTOR 2SC693FU | 1 | Q102 |
| 190 | 30-2080 | TRANSISTOR 2SD315E | 1 | Q103 |
| 191 | 30-2084-3 | TRANSISTOR BC549C | 2 | Q403,404 |
| 192 | 30-2085-2 | TRANSISTOR BC559B | 4 | Q401,402,405,406 |
| 193 | 30-2090-2 | TRANSISTOR BC546B | 2 | Q409,410 |
| 194 | 30-2096 | TRANSISTOR BC556A | 4 | Q407,408,411,412 |
| 195 | 30-3013 | I.C. LA1230 | 1 | IC101 |
| 196 | 30-3016 | I.C. HA 1196 | 1 | IC201 |
| 197 | 30-3018 | I.C. HA 1138 | 1 | IC102 |
| 198 | 31-1018 | SELECTOR SW. SRZ-V066N | 1 | SW1 |
| 199 | 31-1043 | SWITCH SRZ-V043N | 1 | SW2 |
| 200 | 31-1044 | PUSH SW. 2P | 1 | SW3,SW4 |
| 201 | 35-2008 | FRONT END FB621V | 1 | TU101 |
| 90-1039 FILTER SECTION | | | | |
| 202 | 16-1/4CM102J | CARBON RES. 1K OHM 1/4W \pm 5% | 1 | R718 |
| 203 | 16-1/4CM105J | CARBON RES. 1M OHM 1/4W \pm 5% | 1 | R723 |
| 204 | 16-1/4CV102J | CARBON RES. 1K OHM 1/4W \pm 5% | 1 | R717 |
| 205 | 16-1/4CV 105J | CARBON RES. 1M OHM 1/4W \pm 5% | 3 | R709,710,724 |

| ITEM | PARTS NO. | DESCRIPTION | Q'TY | SYMBOL NO. |
|------|--------------|---------------------------------|------|--------------------------|
| 206 | 16-1/4CV124J | CARBON RES. 120K OHM 1/4W ±5% | 2 | R713,714 |
| 207 | 16-1/4CV151J | CARBON RES. 150 OHM 1/4W ±5% | 2 | R725,726 |
| 208 | 16-1/4CV153J | CARBON RES. 15K OHM 1/4W ±5% | 2 | R553,554 |
| 209 | 16-1/4CV222J | CARBON RES. 2.2K OHM 1/4W ±5% | 2 | R703,704 |
| 210 | 16-1/4CV272J | CARBON RES. 2.7K OHM 1/4W ±5% | 2 | R721,722 |
| 211 | 16-1/4CV332J | CARBON RES. 3.3K OHM 1/4W ±5% | 2 | R547,548 |
| 212 | 16-1/4CV333J | CARBON RES. 33K OHM 1/4W ±5% | 2 | R701,702 |
| 213 | 16-1/4CV392J | CARBON RES. 3.9K OHM 1/4W ±5% | 2 | R791,720 |
| 214 | 16-1/4CV393J | CARBON RES. 39K OHM 1/4W ±5% | 2 | R711,712 |
| 215 | 16-1/4CV474J | CARBON RES. 470K OHM 1/4W ±5% | 2 | R715,716 |
| 216 | 16-1/4CV562J | CARBON RES. 5.6K OHM 1/4W ±5% | 4 | R705,706,707,708 |
| 217 | 17-1.6E475Y | ELEC. CAPA. 4.7μF 16V +50% -10% | 2 | C707,708 |
| 218 | 17-2.5E 106Y | ELEC. CAPA. 10μF 25V +50% -10% | 2 | C709,710 |
| 219 | 17-5D104M | CER. CAPA. 0.1μF 50V ±20% | 2 | C717,718 |
| 220 | 17-5D220M | CER. CAPA. 22PF 50V ±20% | 2 | C715,716 |
| 221 | 17-5D391M | CER. CAPA. 3909F 50V ±20% | 2 | C535,536 |
| 222 | 17-5F124J | MYLAR CAPA. 0.12μF 50V ±5% | 6 | C703,704,705,706,711,712 |
| 223 | 17-5F222J | MYLAR CAPA. 0.0022μF 50V ±5% | 2 | C713,714 |
| 224 | 17-5F224J | MYLAR CAPA. 0.22μF 50V ±5% | 2 | C537,538 |
| 225 | 17-5F562J | MYLAR CAPA. 0.0056μF 50V ±5% | 2 | C701,702 |
| 226 | 19-1039 | PCB FOR FILTER | 1 | |
| 227 | 30-2090-2 | TRANSISTOR BC546B | 2 | Q701,702 |
| 228 | 30-2096 | TRANSISTOR BC556A | 2 | Q703,704 |
| 229 | 31-1040 | PUSH SW. SKEY 2U | 1 | |

Others

| | | | | |
|-----|--------------|---------------------------------|---|----------------------------------|
| 230 | 16-1/4CM102J | CARBON RES. 1K OHM 1/4W ±5% | 4 | R555,556,557,558 |
| 231 | 16-1/4CM104J | CARBON RES. 100K OHM 1/4W ±5% | 2 | R549,550 |
| 232 | 16-1/4CM334J | CARBON RES. 330K OHM 1/4W ±5% | 4 | R437,438,439,440 |
| 233 | 16-1/4CM394J | CARBON RES. 390K OHM 1/4W ±5% | 2 | R551,552 |
| 234 | 16-1003 | RES. MPC71 0.22 OHM 5W ±5% | 8 | R675,676,677,678,679,680,681,682 |
| 235 | 16-10B5ROJ | CEMENT RES. 5 OHM 10W ±5% | 1 | R687 |
| 236 | 16-2A471J | METAL OXIDE RES. 470 OHM 2W ±5% | 4 | R683,684,685,686 |
| 237 | 17-6.3915PY | ELEC. CAPA. 15000μF 63V | 2 | C809,810 |
| 238 | 19-1047 | PCB FOR TAPE | 1 | |
| 239 | 19-1055 | PCB FOR TRANSISTOR | 4 | |
| 240 | 19-1064 | LED PCB | 1 | |
| 241 | 19-1065 | LED PCB | 1 | |
| 242 | 29-5005 | AM ANT COIL LN-16 | 1 | |
| 243 | 30-1026 | YELLOW LED 3φ | 7 | |
| 244 | 30-1027 | GREEN LED 3φ | 1 | |
| 245 | 30-2083 | TRANSISTOR BD139 | 2 | Q619,620 |
| 246 | 30-2088 | TRANSISTOR 2SD287BR | 4 | Q627,628,631,632 |
| 247 | 30-2109 | TRANSISTOR 2SB539BR | 4 | Q629,630,633,634 |
| 248 | 31-1002 | SWITCH 69 | 2 | |
| 249 | 31-1021 | SPEAKER ROTARY SW. (SRY-2044) | 1 | SW13 |
| 250 | 31-2014 | LAMP (FUSE TYPE) | 2 | |
| 251 | 31-2016 | LAMP 6.3V 150MA | 3 | |
| 252 | 35-1011 | TUNING METER | 1 | |
| 253 | 35-1012 | SIGNAL METER | 1 | |
| 254 | 12-2006 | AC OUTLET | 2 | FOR: IL,UL,SI,HK,SA,CSA |
| 255 | 16-1/2C275K | CARBON FILM 2.7M OHM 1/2W ±10% | 1 | FOR: UL, CSA. |
| 256 | 17-2001 | CER. CAPA. ECK-DHS472MD | 2 | FOR: EC,SC,IL,SI,HK,AG,SA. |
| 257 | 17-2003 | CER. CAPA. ECK-DEL 472ZE | 2 | FOR: UL,CSA |
| 258 | 17-2004 | CER. CAPA. ECK-DGS 472 MD4 | 2 | FOR: UK, AS. |
| 259 | 29-2017A | POWER TRANSFORMER | 1 | FOR: SI,HK,SA |
| 260 | 29-2017A-1 | POWER TRANSFORMER 117V | 1 | FOR: UL |
| 261 | 29-2017A-2 | POWER TRANSFORMER 240V | 1 | FOR: UK,AS |
| 262 | 29-2017A-3 | POWER TRANSFORMER 220V | 1 | FOR: EC,SC,IL,AG |
| 263 | 29-2017A-4 | POWER TRANSFORMER 120V | 1 | FOR: CSA |
| 264 | 31-1072A | POWER SW. | 1 | FOR: UL,CSA |
| 265 | 31-1073A | POWER SW. | 1 | FOR: EC,SC,IL,UK,AS,SI,HK,AG,SA. |
| 266 | 32-11001SS | FUSE 1A SEMCO | 4 | FOR: SC |
| 267 | 32-12001SS | FUSE 2A SEMCO | 2 | FOR: SC |
| 268 | 32-13151SS | FUSE 3.15A SEMCO | 2 | FOR: EC,IL,UK,AS,AG,SA |
| 269 | 32-13001UT | FUSE 3A UL | 2 | FOR: SI,HK |
| 270 | 32-15001UT | FUSE 5A UL | 2 | FOR: UL,CSA |
| 271 | 32-16301SS | FUSE 6.3A SEMCO | 4 | FOR: SC |
| 272 | 32-2001 | FUSE HOLDER S-N 1301 | 1 | FOR: VL,SI,HK |
| 273 | 32-2003 | FUSE HOLDER S-N 2250 | 1 | FOR: IL,SA |
| 274 | 32-2005 | FUSE HOLDER | 1 | FOR: CSA |