

FM/AM STEREO TUNER

MODEL NO. **ST-R30E,K,G**

STEREO PREAMPLIFIER

MODEL NO. **SA-C30E,K,G**

DC STEREO POWER AMPLIFIER MODEL NO. **SA-P30E,K,G**

# AIWA®

## (SERVICE MANUAL)

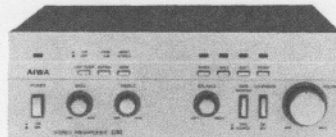
DATE OF ISSUE 7/1980

Code No. 15-300-000-36



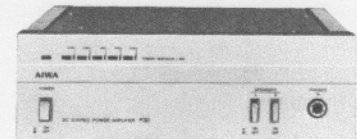
ST-R30

Code No. 16-300-000-36



SA-C30

Code No. 17-300-000-36



SA-P30

### SPECIFICATIONS

|                                  |   |
|----------------------------------|---|
| <b>Semiconductors:</b>           | 4 ICs, 2 FETs, 28 transistors (E,K model), 24 transistors (G model), 22 diodes, 6 LEDs, 4-LED digit numerical display       |
| <b>Power source:</b>             | 220V (E model)<br>240V (K,G model)<br>50/60 Hz  |
| <b>Power consumption:</b>        | 7W  |
| <b>Dimensions:</b>               | 250(W) x 71(H) x 255.5(D) mm  |
| <b>Weight:</b>                   | 2.2 kg  |
| <b>&lt; FM SECTION &gt;</b>      |   |
| <b>Frequency range:</b>          | 87.3 ~ 108.5 MHz  |
| <b>Intermediate frequency:</b>   | 10.7 ± 0.1 MHz  |
| <b>Usable sensitivity:</b>       | 7 ± 2 dB (at 88 MHz)<br>6 ± 2 dB (at 98, 108 MHz)   |
| <b>S/N 50 dB sensitivity:</b>    | 13 ± 2 dB<br>(at 88, 98, 108 MHz)   |
| <b>S/N ratio:</b>                | More than 65 dB   |
| <b>Distortion:</b>               | Less than 0.2%  |
| <b>Frequency response:</b>       | 30 ~ 15,000 Hz (+0.5 dB / -1.5 dB)  |
| <b>Image interference ratio:</b> | More than 40 dB   |
| <b>IF interference ratio:</b>    | More than 65 dB   |
| <b>Capture ratio:</b>            | Less than 2 dB  |
| <b>AM suppression ratio:</b>     | More than 50 dB   |
| <b>Selectivity:</b>              | 68 ± 4 dB (±400 kHz)  |
| <b>Stereo separation:</b>        | More than 43 dB (at 1 kHz)<br>More than 38 dB (at 100 Hz, 6 kHz)  |
| <b>Muting sensitivity:</b>       | 16 ± 6 dB   |
| <b>&lt; AM SECTION &gt;</b>      |   |
| <b>Frequency range:</b>          | MW: 515 ~ 1650 kHz<br>LW: 145 ~ 360 kHz   |
| <b>Intermediate frequency:</b>   | 455 ± 3 kHz (E,G model)<br>460 ± 3 kHz (K model)  |
| <b>Sensitivity:</b>              | MW: 53 ± 3 dB (600 kHz)<br>(S/N 20 dB)<br>51 ± 3 dB (1000, 1400 kHz)<br>LW: 62 ± 3 dB (160 kHz)<br>60 ± 3 dB (250, 350 kHz) |
| <b>S/N ratio:</b>                | MW: 42 ± 5 dB<br>LW: 39 ± 3 dB  |
| <b>Distortion:</b>               | Less than 1.2%  |
| <b>Image interference ratio:</b> | More than 40 dB   |
| <b>Selectivity:</b>              | 32 ± 5 dB (± 9 kHz)   |
| <b>IF interference ratio:</b>    | More than 30 dB   |

### SPECIFICATIONS

|   |  |
|---|--|
| <b>Semiconductors:</b>                  | 2 ICs, 10 transistors, 10 diodes, 5 LEDs   |
| <b>Power source:</b>                    | 220V (E model)<br>240V (K,G model)<br>50/60 Hz   |
| <b>Power consumption:</b>               | 5W   |
| <b>Dimensions:</b>                      | 250(W) x 71(H) x 229.5(D)mm  |
| <b>Weight:</b>                          | 1.85 kg  |
| <b>S/N ratio:</b>                       | phono More than 82 dB<br>tuner More than 93 dB<br>aux 1,2 More than 93 dB<br>(Weighted)<br>tape in More than 93 dB   |
| <b>Distortion:</b>                      | Less than 0.1%<br>(20 Hz ~ 20 kHz)   |
| <b>Frequency response:</b>              | 20 ~ 20,000 Hz (± 0.5 dB)  |
| <b>Tone controls:</b>                   | Bass 100 Hz +9 ± 2 dB<br>-9 ± 2 dB<br>Treble 10 kHz +7 ± 2 dB<br>-7 ± 2 dB   |
| <b>Loudness:</b>                        | 100 Hz +6.5 ± 1 dB<br>10 kHz +3.5 ± 1 dB   |
| <b>Low filter:</b>                      | 30 Hz -3 ± 1 dB  |
| <b>Channel separation:</b>              | phono More than 50 dB<br>tuner More than 50 dB<br>aux 1,2 More than 50 dB  |
| <b>Input sensitivity and impedance:</b> | phono 2.5mV (200 mV max input)<br>tuner 150mV/47 kΩ<br>aux 1,2 150mV/47 kΩ<br>play 150mV/47 kΩ<br>recout 150mV/47 kΩ |
| <b>Tape monitor:</b>                    | 870 ± 50 mV (phono -52 dB in)<br>870 ± 50 mV (tuner, aux 1,2 -16.5 dB in)  |
| <b>Output level:</b>                    |  |
| <b>Residual noise:</b>                  | phono Less than -83 dB<br>tuner Less than -94 dB<br>aux 1,2 Less than -94 dB   |

### SPECIFICATIONS

|                            |   |
|----------------------------|---|
| <b>Semiconductors:</b>     | 4 ICs, 2 FETs, 10 transistors, 25 diodes, 6 LEDs  |
| <b>Power source:</b>       | 220V (E model)<br>240V (K,G model)<br>50/60 Hz  |
| <b>Power consumption:</b>  | 240W  |
| <b>Dimensions:</b>         | 250(W) x 71(H) x 218(D) mm  |
| <b>Weight:</b>             | 4.1 kg  |
| <b>Power output:</b>       | 35W + 35W<br>(4Ω, 0.1% distortion,<br>20 Hz ~ 20 kHz) (E model)<br>35W + 35W<br>(8Ω, 0.03% distortion,<br>20 Hz ~ 20 kHz) (K,G model) |
| <b>Distortion:</b>         | Less than 0.02%<br>(E model)<br>Less than 0.01%<br>(K,G model)<br>More than 105 dB<br>(E model)<br>More than 112 dB<br>(K,G model)    |
| <b>S/N ratio:</b>          | (1 kHz, IHF A curve)<br>More than 105 dB<br>(E model)<br>More than 112 dB<br>(K,G model)  |
| <b>Frequency response:</b> | 10 ~ 100,000 Hz (More than -3 dB)   |
| <b>Power bandwidth:</b>    | 5 ~ 60,000 Hz<br>(Distortion: 0.12%) (E model)<br>(Distortion: 0.1%) (K,G model)  |
| <b>Residual noise:</b>     | Less than 0.5mV   |
| <b>Output voltage:</b>     | phones More than 0.85mW<br>± 1 dB   |

• Specifications and external appearance are subject to change without notice due to product improvement.



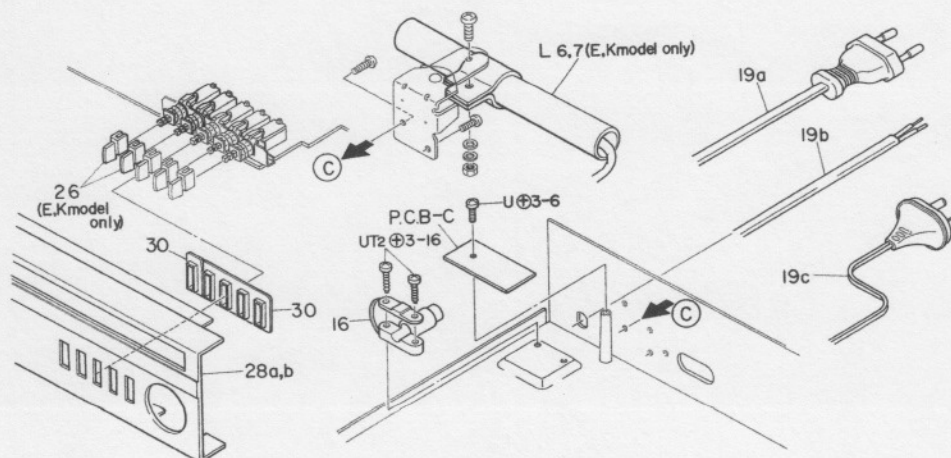


PARTS LIST

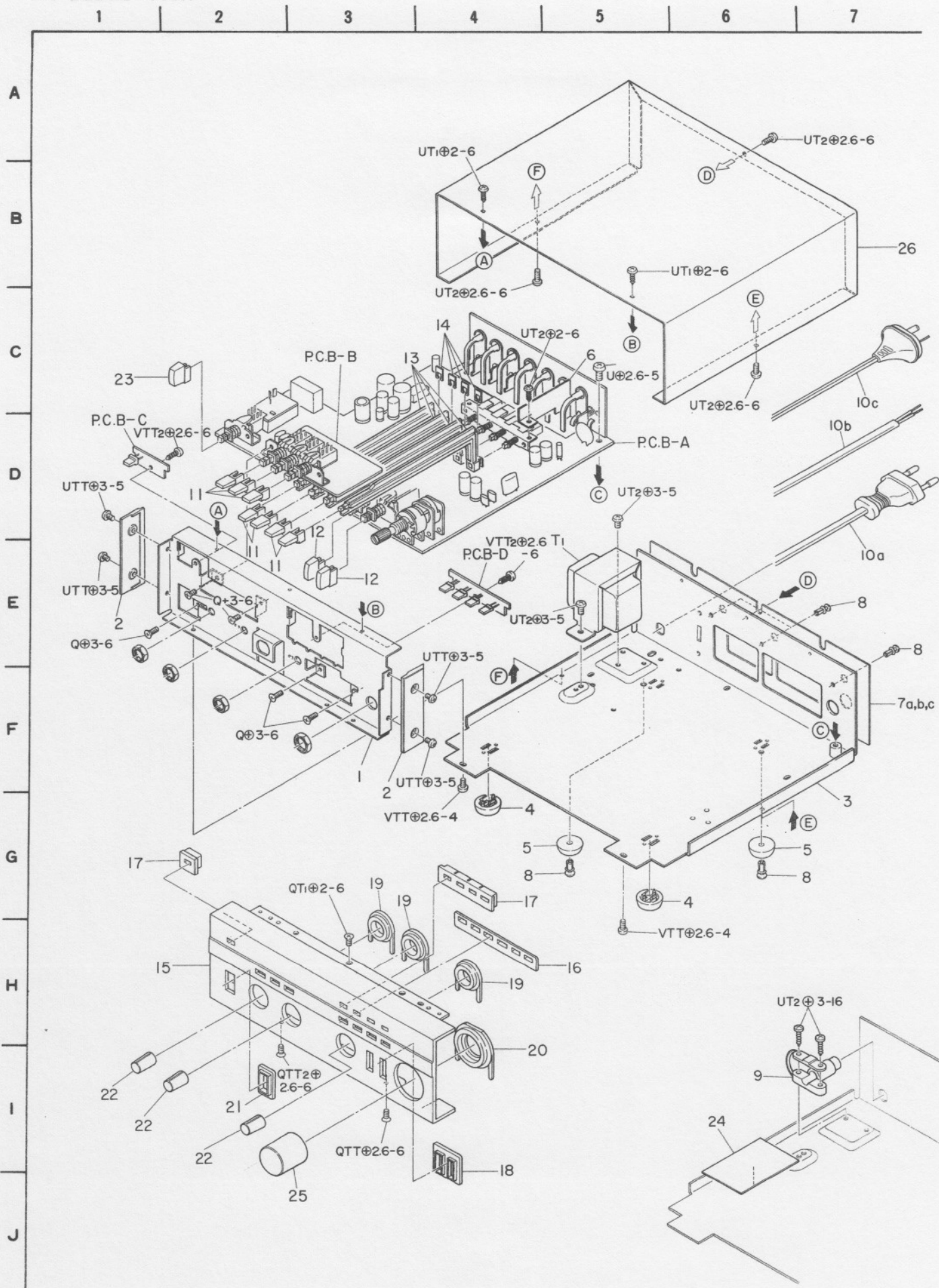
MECHANICAL PARTS

■ \* mark in this part list shows exclusive part (which is used) for only Model No. ST-R30.

| Ref. No. | Part No.      | Part No. Changed to | Description                      | Common Model | Q'ty         |
|----------|---------------|---------------------|----------------------------------|--------------|--------------|
| 1a       | 82-750-025-01 |                     | Display (E,K model only)         | *            | 1            |
| 1b       | 82-750-003-01 |                     | Display (G model only)           | *            | 1            |
| 2        | 82-750-201-01 |                     | Chassis, Front                   | *            | 1            |
| 3        | 82-745-003-01 |                     | Panel L, Side                    |              | 2            |
| 4        | 82-730-206-01 |                     | Shaft bearing                    | ST-R22       | 1            |
| 5        | 82-750-203-01 |                     | Shaft, Tuning                    | *            | 1            |
| 6        | 82-750-204-01 |                     | Flywheel, Tuning                 | *            | 1            |
| 7        | 82-750-214-01 |                     | Amp. chassis ass'y               | *            | 1            |
| 8        | 82-745-019-01 |                     | Foot                             |              | 4            |
| 9        | 82-750-205-01 |                     | Roller holder ass'y              | *            | 1            |
| 10       | 82-473-220-01 |                     | Roller                           | AX-7500      | 1            |
| 11       | 87-071-013-01 |                     | Pulley A                         |              | 1            |
| 12a      | 82-750-005-01 |                     | Jack plate (E model only)        | *            | 1            |
| 12b      | 82-750-006-01 |                     | Jack plate (K model only)        |              | 1            |
| 12c      | 82-750-007-01 |                     | Jack plate (G model only)        |              | 1            |
| 13       | 82-750-001-01 |                     | Tuning knob                      | *            | 1            |
| 14       | 82-473-010-01 |                     | Antenna holder Ass'y             | AX-7500      | 1            |
| 15       | 82-473-013-01 |                     | Holder C, Antenna (G model only) | AX-7500      | 1            |
| 16       | 87-085-166-01 |                     | Holder, AC power cord            |              | 1            |
| 17       | 87-085-101-01 |                     | Cord bushing                     |              | 1            |
| 18       | 87-085-102-01 |                     | Nylon rivet, 3.5-5.5             |              | 2            |
| 19a      | 87-034-877-01 |                     | AC power cord (E model only)     |              | 1            |
| 19b      | 87-034-872-01 |                     | AC power cord (K model only)     |              | 1            |
| 19c      | 87-034-892-01 |                     | AC power cord (G model only)     |              | 1            |
| 20       | 82-304-656-01 |                     | Heat sink                        | AD-6900      | 1            |
| 21       | 85-740-004-01 |                     | Cabinet, Steel                   |              | 1            |
| 22       | 82-461-378-01 |                     | Holder, IC                       | TPR-930      | 1            |
| 23       | 82-747-209-01 |                     | Spacer, Counter                  |              | 1            |
| 24       | 82-470-240-31 |                     | Drum, Dial                       |              | 1            |
| 25       | 82-750-212-01 |                     | Drum, Spring                     | *            | 1            |
| 26       | 82-745-009-01 |                     | Push-button B                    |              | E,K:5<br>G:3 |
| 27       | 82-945-010-01 |                     | Push-button C                    |              | 1            |
| 28a      | 82-750-022-01 |                     | Panel, Front (E model only)      |              | 1            |
| 28b      | 82-750-038-01 |                     | Panel, Front (K model only)      |              | 1            |
| 28c      | 82-750-021-01 |                     | Panel, Front (G model only)      | *            | 1            |
| 29       | 82-745-005-01 |                     | Window                           |              | 1            |
| 30       | 82-745-011-01 |                     | Guide, Push-button B             |              | E,K:2<br>G:1 |
| 31       | 82-745-012-01 |                     | Guide, Push-button C             |              | 1            |
| 32       | 82-750-020-01 |                     | Decorative plate, Tuning knob    | *            | 1            |



EXPLODED VIEW





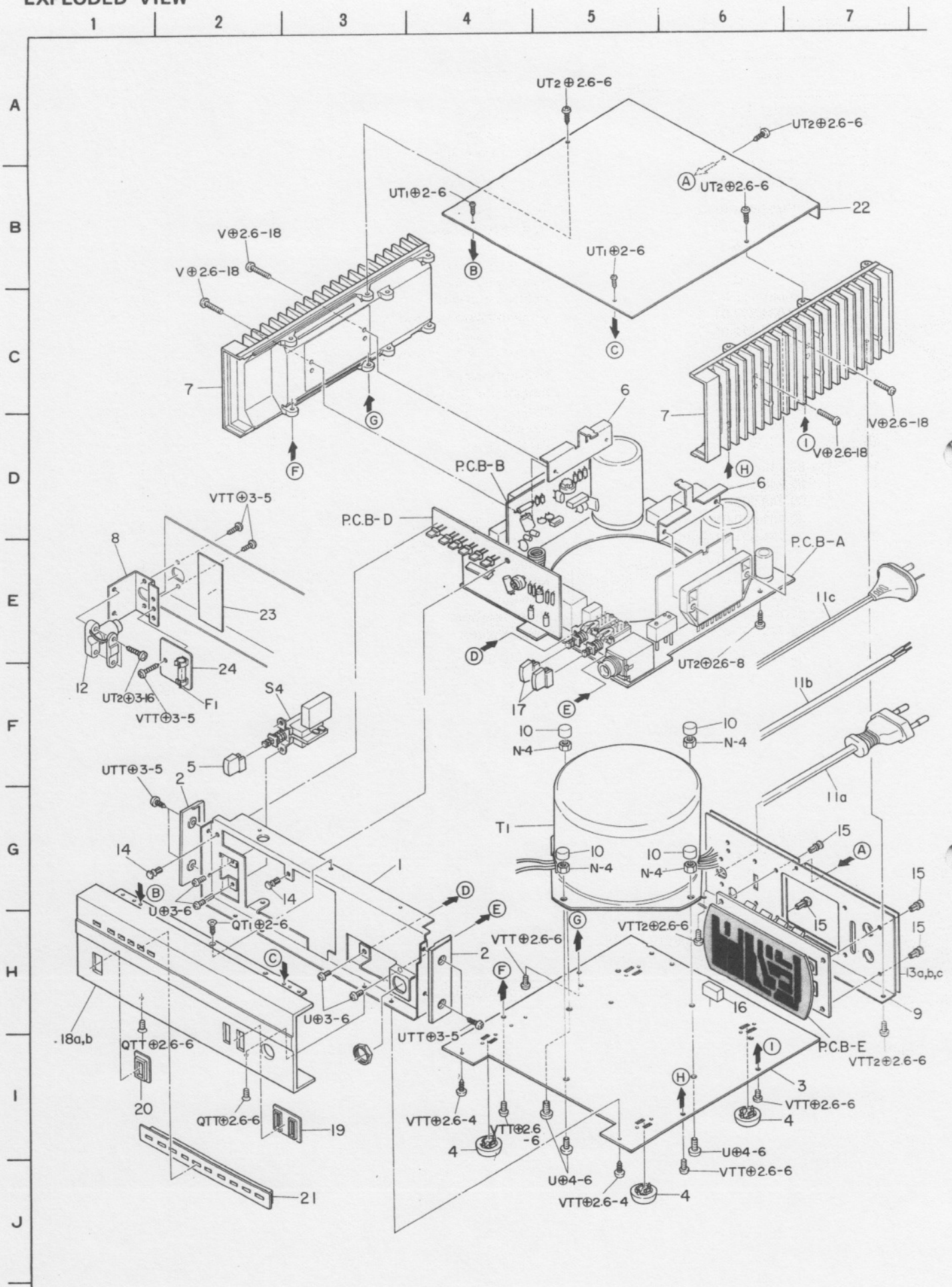
## PARTS LIST

## MECHANICAL PARTS

■ \* mark in this part list shows exclusive part  
(which is used) for only Model No. SA-C30.

| Ref. No. | Part No.      | Part No.<br>Changed to | Description                     | Common<br>Model | Q'ty |
|----------|---------------|------------------------|---------------------------------|-----------------|------|
| 1        | 82-751-206-01 |                        | Chassis, Front                  | *               | 1    |
| 2        | 82-745-003-01 |                        | Panel L, Side                   |                 | 2    |
| 3        | 82-751-207-01 |                        | Amp. chassis ass'y              | *               | 1    |
| 4        | 82-745-019-01 |                        | Foot                            |                 | 2    |
| 5        | 87-085-176-01 |                        | Rubber foot A                   |                 | 2    |
| 6        | 82-751-641-01 |                        | Shield plate                    | *               | 1    |
| 7a       | 82-751-005-01 |                        | Jack plate (E model only)       | *               | 1    |
| 7b       | 82-751-006-01 |                        | Jack plate (K model only)       |                 | 1    |
| 7c       | 82-751-007-01 |                        | Jack plate (G model only)       |                 | 1    |
| 8        | 87-085-102-01 |                        | Nylon rivet 3.5-5.5             |                 | 5    |
| 9        | 87-085-166-01 |                        | Holder, AC power cord           |                 | 1    |
| 10a      | 87-034-877-01 |                        | AC power cord (E model only)    |                 | 1    |
| 10b      | 87-034-872-01 |                        | AC power cord (K model only)    |                 | 1    |
| 10c      | 87-034-892-01 |                        | AC power cord (G model only)    |                 | 1    |
| 11       | 82-745-008-01 |                        | Push-button A                   |                 | 7    |
| 12       | 82-745-009-01 |                        | Push-button B                   |                 | 2    |
| 13       | 82-751-203-01 |                        | Rod                             | *               | 4    |
| 14       | 82-751-205-01 |                        | Stopper rod                     | *               | 4    |
| 15       | 82-751-019-01 |                        | Panel, Front                    | *               | 1    |
| 16       | 82-745-011-01 |                        | Guide, Push-button B            | *               | 1    |
| 17       | 82-748-204-01 |                        | Guide, LED                      |                 | 1    |
| 18       | 82-748-205-01 |                        | Guide, Switch                   |                 | 1    |
| 19       | 82-751-020-01 |                        | Decorative plate G, Knob        | *               | 3    |
| 20       | 82-751-021-01 |                        | Decorative plate G, Volume Knob | *               | 1    |
| 21       | 82-745-012-01 |                        | Guide, Push-button C            |                 | 1    |
| 22       | 82-745-013-01 |                        | Knob                            |                 | 3    |
| 23       | 82-745-010-01 |                        | Push-button C                   |                 | 1    |
| 24       | 82-748-214-01 |                        | Sheet, Insulation               |                 | 1    |
| 25       | 82-748-002-01 |                        | Knob, Volume                    |                 | 1    |
| 26       | 85-740-004-01 |                        | Cabinet, Steel                  |                 | 1    |

EXPLODED VIEW





## PARTS LIST

## MECHANICAL PARTS

■ \* mark in this part list shows exclusive part  
(which is used) for only Model No. SA-P30.

| Ref. No. | Part No.      | Part No.<br>Changed to | Description                   | Common<br>Model | Q'ty |
|----------|---------------|------------------------|-------------------------------|-----------------|------|
| 1        | 82-752-201-01 |                        | Chassis, Front                | *               | 1    |
| 2        | 82-745-003-01 |                        | Panel, L, Side                |                 | 2    |
| 3        | 82-752-203-01 |                        | Chassis, Amp.                 | *               | 1    |
| 4        | 82-745-019-01 |                        | Foot                          |                 | 4    |
| 5        | 82-745-010-01 |                        | Push-button C                 |                 | 1    |
| 6        | 82-752-205-01 |                        | Holder, IC                    | *               | 2    |
| 7        | 82-752-002-01 |                        | Heat sink                     | *               | 2    |
| 8        | 82-499-208-11 |                        | Fuse holder B                 |                 | 1    |
| 9        | 82-752-202-01 |                        | Chassis, Back                 | *               | 1    |
| 10       | 82-752-206-01 |                        | Cover, Nut                    | *               | 4    |
| 11a      | 87-034-941-01 |                        | AC power cord (E model only)  |                 | 1    |
| 11b      | 87-034-942-01 |                        | AC power cord (K model only)  |                 | 1    |
| 11c      | 87-034-892-01 |                        | AC power cord (G model only)  |                 | 1    |
| 12       | 87-085-166-01 |                        | Holder, AC power cord         |                 | 1    |
| 13a      | 82-752-005-01 |                        | Jack plate (E model only)     | *               | 1    |
| 13b      | 82-752-006-01 |                        | Jack plate (K model only)     | *               | 1    |
| 13c      | 82-752-007-01 |                        | Jack plate (G model only)     | *               | 1    |
| 14       | 87-084-077-01 |                        | Nylon rivet, 3.5—4.5          |                 | 2    |
| 15       | 87-085-102-01 |                        | Nylon rivet, 3.5—5.5          |                 | 4    |
| 16       | 82-533-230-01 |                        | Cushion U15-10-10             |                 | 1    |
| 17       | 82-745-009-01 |                        | Push-button B                 |                 | 2    |
| 18a      | 82-752-016-01 |                        | Panel, Front (E model only)   | *               | 1    |
| 18b      | 82-752-012-01 |                        | Panel, Front (K,G model only) | *               | 1    |
| 19       | 82-745-011-01 |                        | Guide, Push-button B          |                 | 1    |
| 20       | 82-745-012-01 |                        | Guide, Push-button C          |                 | 1    |
| 21       | 82-749-206-01 |                        | Guide, LED                    |                 | 1    |
| 22       | 82-752-003-01 |                        | Cabinet, Steel                | *               | 1    |
| 23       | 82-499-210-01 |                        | Sheet, Insulation             |                 | 1    |
| 24       | 87-033-161-01 |                        | Fuse holder, 1P               |                 | 1    |

## ELECTRICAL MAIN PARTS LIST = ST-R30E,K

| Symbol No.                                    | Part No.      | Description  |
|---|---------------|--|
| <b>◀ MAIN CIRCUIT BOARD SECTION ▶</b>         |               |  |
| PCB-A   | 82-750-628-01 | Main circuit board                                 |
| IC1   | 82-494-791-01 | IC, HA-11211                                       |
| IC2   | 87-027-576-01 | IC, HA-12016                                       |
| Q1  | 87-026-100-01 | FET, 2SK-49 (H2)                                   |
| Q2,3  | 89-319-233-01 | Transistor, 2SC1923(O)                             |
| Q4  | 89-307-104-01 | Transistor, 2SC710(D)                              |
| Q5  | 87-026-165-01 | FET, 3SK73(GR)                                     |
| Q6  | 89-303-803-01 | Transistor, 2SC380(O)                              |
| Q7,8,9,10,<br>11,12,13,14,<br>15,17,18,<br>22 | 89-318-154-01 | Transistor, 2SC1815(Y)                             |
| Q16   | 89-110-154-01 | Transistor, 2SA1015(Y)                             |
| Q19,20  | 89-402-275-01 | Transistor, 2SD227(V)                              |
| Q21   | 89-408-804-51 | Transistor, 2SD880(Y,GR)                           |
| Q23   | 89-318-464-01 | Transistor, 2SC1846(R)                             |
| D1  | 87-027-326-01 | Diode, 1S2236                                      |
| D2,3,8,9,11,<br>12,13,14,15,<br>16,17,18      | 87-027-097-01 | Diode, 1S1555                                      |
| D4,5,6,7                                      | 88-052-188-11 | Diode, 1S188(FM)                                   |
| D19,20,21,22                                  | 87-027-365-01 | Diode, S5277B                                      |
| D23   | 87-027-552-01 | Zener diode, HZ6B3L                                |
| L1  | 82-750-609-01 | FM antenna coil                                    |
| L2  | 82-750-610-01 | FM RF coil   |
| L3,4,10,17,<br>18,19                          | 87-005-121-01 | Choke coil, 2.2μH                                  |
| L5  | 82-750-611-01 | FM OSC coil  |
| L8  | 82-750-605-01 | AM OSC coil  |
| L9  | 82-750-606-01 | LW OSC coil  |
| L11   | 82-742-641-01 | Coil, Quad   |
| LPF1,2  | 82-497-635-01 | Low-pass filter                                    |
| CF1   | 87-008-193-01 | FM ceramic filter, MS2GKK<br>(E model only)        |
| CF2,3   | 87-008-192-01 | Ceramic filter M8KY-A<br>(E model only)            |
| CF1,2,3                                       | 87-008-192-01 | Ceramic filter M8KY-A<br>(K model only)            |
| VC1~5   | 82-750-613-01 | Variable condenser                                 |
| TC1,2   | 87-011-110-01 | Trimmer, 5P  |
| TC3   | 87-011-108-01 | Trimmer, 8P  |
| TC4,6   | 87-011-109-01 | Trimmer, 15P                                       |
| TC5,7   | 82-494-674-01 | FM IFT   |
| IFT1  | 87-008-160-01 | AM IFT (DET)                                       |
| IFT2  | 87-030-064-01 | Ceramic filter transformer, 016<br>(E model)       |
| CFT1  | 87-030-071-01 | Ceramic filter transformer, 025<br>(K model)       |
| J1,2,3  | 82-730-633-11 | Antenna terminal plate, w/2p<br>pin jack (E model) |
| J1,2,3  | 82-730-634-11 | Antenna terminal plate w/2p<br>pin jack (K model)  |
| S1~5  | 82-750-615-01 | Push-switch (FM, MW, LW,<br>AFC/MUTE, HI-BLEND)    |
| SFR1  | 87-021-612-01 | Semi-fixed resistor, 4.7kΩ-B                       |
| SFR2  | 87-021-617-01 | Semi-fixed resistor, 220kΩ-B                       |
| PIN-1   | 87-032-897-01 | Pin, 3P  |
| PIN-2   | 87-032-926-01 | Pin, 6P  |
| <b>&lt; Resistor &gt;</b>                     |               |  |
| △R121   | 87-029-010-01 | 10Ω ¼w Fuse resistor                               |

| Symbol No.                  | Part No.      | Description      |
|-----------------------------|---------------|------------------|
| <b>&lt; Capacitors &gt;</b> |               |                  |
| C22                         | 88-254-060-01 | 6pF Ceramic NPO  |
| C19                         | 88-254-150-01 | 15pF Ceramic NPO |
| C21                         | 88-251-210-01 | 22pF Ceramic NPO |
| C17                         | 88-254-270-01 | 39pF Ceramic NPO |
| C20                         | 88-285-080-01 | 8pF Ceramic N150 |
| C49                         | 87-014-039-01 | 180pF PP         |
| C42                         | 87-014-046-01 | 360pF PP         |
| C90                         | 87-014-057-01 | 1000pF PP        |
| C31                         | 87-014-067-01 | 2700pF PP        |

**◀ DISPLAY CIRCUIT BOARD SECTION ▶**

| Symbol No. | Part No.      | Description                          |
|------------|---------------|--------------------------------------|
| PCB-B      | 82-750-629-01 | Display circuit board                |
| IC3        | 82-730-607-01 | IC, T-1400J (E model)                |
| IC3        | 82-730-644-01 | IC, T-1400E (K model)                |
| IC4        | 87-027-261-01 | IC, LB-1405                          |
| Q24~28     | 89-110-154-01 | Transistor, 2SA1015(Y)               |
| Q29,30     | 89-318-154-01 | Transistor, 2SC1815(Y)               |
| D24~28     | 87-027-544-01 | Light-emitting diode, LN05202P       |
| D29        | 87-027-218-01 | Light-emitting diode, SR-105D        |
| D30        | 87-027-695-01 | Light-emitting diode,<br>LN5431GA-3A |
| L12~16     | 87-005-121-01 | Choke coil, 2.2μH                    |
| X1         | 82-747-619-01 | Crystal, 6.4MHz                      |

**◀ RELAY CIRCUIT BOARD SECTION ▶**

| Symbol No. | Part No.      | Description         |
|------------|---------------|---------------------|
| △PCB-C     | 82-750-623-01 | Relay circuit board |

**◀ MISCELLANEOUS ▶**

| Symbol No. | Part No.      | Description                    |
|------------|---------------|--------------------------------|
| △T1        | 82-750-626-01 | Power transformer<br>(E model) |
| △T1        | 82-750-627-01 | Power transformer<br>(K model) |
| △S6        | 87-031-574-01 | Push-switch (POWER)            |
| △          | 87-034-877-01 | AC power cord (E model)        |
| △          | 87-034-872-01 | AC power cord (K model)        |
| L6,7       | 82-750-625-01 | MW, LW bar antenna             |

△ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.



ELECTRICAL MAIN PARTS LIST = ST-R30G









| Symbol No.                               | Part No.      | Description   |
|--|---------------|---|
| <b>◀ MAIN CIRCUIT BOARD SECTION ▶</b>    |               |   |
| PCB-A                                    | 82-750-621-11 | Main circuit board                                  |
| IC1                                      | 82-494-791-01 | IC, HA11211   |
| IC2                                      | 87-027-576-01 | IC, HA12016   |
| Q1                                       | 87-026-100-01 | FET, 2SK-49(H <sub>2</sub> )                        |
| Q2,3                                     | 89-319-233-01 | Transistor, 2SC1923(O)                              |
| Q4                                       | 89-307-104-01 | Transistor, 2SC710(D)                               |
| Q5                                       | 87-026-165-01 | FET, 3SK73(GR)                                      |
| Q6                                       | 89-303-803-01 | Transistor, 2SC380(O)                               |
| Q7~13,15,20                              | 89-318-154-01 | Transistor, 2SC1815(Y)                              |
| Q14                                      | 89-110-154-01 | Transistor, 2SA1015(Y)                              |
| Q16,17                                   | 89-402-275-01 | Transistor, 2SD227(V)                               |
| Q18                                      | 89-318-464-01 | Transistor, 2SC1846(R)                              |
| Q19                                      | 89-408-804-51 | Transistor, 2SD880Y(GR)                             |
| D1                                       | 87-027-326-01 | Diode, 1S2236                                       |
| D3~11,16,17                              | 87-027-097-01 | Diode, 1S1555                                       |
| D12~15                                   | 88-052-188-11 | Diode, 1S188(FM)                                    |
| D18~21                                   | 87-027-365-01 | Diode, S5277B                                       |
| D22                                      | 87-027-552-01 | Zener diode, HZ6B3L                                 |
| L1                                       | 82-705-609-01 | FM antenna coil                                     |
| L2                                       | 82-750-610-01 | FM RF coil  |
| L3,5,7,10                                | 87-005-121-01 | Choke coil, 2.2μH                                   |
| L4                                       | 82-750-611-01 | FM OSC coil   |
| L8                                       | 82-750-605-01 | AM OSC coil   |
| L9                                       | 82-742-641-01 | Quad coil   |
| VC1~5,TC1,2                              | 82-750-613-01 | V.C   |
| TC3                                      | 87-011-110-01 | Trimmer, 5pF  |
| TC4,5                                    | 87-011-108-01 | Trimmer, 8pF  |
| CF1~3                                    | 87-008-192-01 | FM ceramic filter                                   |
| CFT1                                     | 87-030-064-01 | AM ceramic filter transformer                       |
| IFT1                                     | 82-494-674-01 | FM IFT  |
| IFT2                                     | 87-008-160-01 | AM IFT (DET)  |
| LPF1,2                                   | 82-497-635-01 | Low-pass filter                                     |
| SFR1                                     | 87-021-612-01 | Semi-fixed resistor, 4.7kΩ-B                        |
| SFR2                                     | 87-021-617-01 | Semi-fixed resistor, 220kΩ-B                        |
| J1,2                                     | 82-747-618-01 | Antenna terminal plate, with/2P pin jack            |
| S1~3                                     | 82-750-607-01 | Push-switch (BAND, MUTING, HI-BLEND)                |
| △ S4                                     | 87-031-574-01 | Push-switch (POWER)                                 |
| PIN-1                                    | 87-032-897-01 | Pin, 3P   |
| PIN-2                                    | 82-481-647-01 | Pin, 4P   |
| △ R130                                   | 87-029-010-01 | < Resistor ><br>10Ω ¼w Fuse resistor                |
| C39                                      | 87-014-046-01 | < Capacitors ><br>360pF PP                          |
| C72                                      | 87-014-057-01 | 1000pF PP   |
| C12                                      | 88-254-060-01 | 6pF Ceramic   |
| C8                                       | 88-285-080-01 | 8pF Ceramic   |
| C6,7                                     | 88-254-150-01 | 15pF Ceramic  |
| C10                                      | 88-282-182-01 | 18pF Ceramic  |
| C38                                      | 88-287-200-01 | 20pF Ceramic  |
| <b>◀ DISPLAY CIRCUIT BOARD SECTION ▶</b> |               |   |
| PCB-B                                    | 82-750-622-11 | Display circuit board                               |
| IC3                                      | 82-730-607-01 | IC, T-1400J   |
| IC4                                      | 87-027-261-01 | IC, LB-1405   |
| Q21~24                                   | 89-110-154-01 | Transistor, 2SA1015(Y)                              |
| Q25,26                                   | 89-318-154-01 | Transistor, 2SC1815(Y)                              |
| D23                                      | 88-052-188-11 | Diode, 1S188(FM)                                    |
| D24                                      | 87-027-218-01 | Light emitting diode, SR-105D                       |
| D25~29                                   | 87-027-544-01 | Light emitting diode, LN05202(P)                    |
| D30                                      | 87-027-641-01 | Light emitting diode, LN543GA (Frequency Indicator) |


| Symbol No.                             | Part No.      | Description                      |
|--|---------------|----------------------------------|
| L11, 12,13,14<br>15,16                 | 87-005-121-01 | Choke coil, 2.2μH                |
| X1                                     | 82-747-619-01 | Crystal, 6.4 MHz                 |
| <b>◀ RELAY CIRCUIT BOARD SECTION ▶</b> |               |                                  |
| PCB-C                                  | 82-750-623-01 | Relay circuit board              |
| <b>◀ MISCELLANEOUS ▶</b>               |               |                                  |
| △ T1                                   | 82-750-619-01 | Power transformer                |
| △                                      | 87-034-892-01 | AC power cord                    |
| △                                      | 87-085-101-01 | Cord bushing (for bar antenna)   |
| △ L6                                   | 87-085-165-01 | Cord bushing (for AC power cord) |
|  | 82-750-608-01 | AM bar antenna coil              |

△ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

## ELECTRICAL MAIN PARTS LIST = SA-C30E,K,G

| Symbol No.                              | Part No.      | Description  |
|---|---------------|--|
| <b>◀ MAIN CIRCUIT BOARD SECTION ▶</b>   |               |  |
| PCB-A                                   | 82-751-626-11 | Main circuit board                                 |
| IC1,2                                   | 87-027-629-01 | IC, 4558DX   |
| Q1~4                                    | 89-109-916-01 | Transistor, 2SA991(F)                              |
| Q9                                      | 89-304-953-41 | Transistor, 2SC495(O,Y)                            |
| Q10                                     | 89-105-053-41 | Transistor, 2SA505(O,Y)                            |
| Q11,13,14                               | 89-309-456-01 | Transistor, 2SC945L(P)                             |
| Q12                                     | 89-107-336-01 | Transistor, 2SA733(P)                              |
| D1                                      | 87-027-376-01 | Diode, 1B4B41                                      |
| D3,4                                    | 87-027-329-01 | Zener diode, HZ22-3L                               |
| D5~9                                    | 87-027-219-01 | Diode, MA150                                       |
| D11,12                                  | 87-027-365-01 | Diode, S5277B                                      |
| CP1                                     | 87-019-104-01 | Compound capacitor, 0.01 $\mu$ F                   |
| J1~14                                   | 82-498-608-11 | Jack plate ass'y                                   |
| VR1                                     | 82-751-636-01 | Volume, 100k $\Omega$ -B (VOLUME)                  |
| VR2                                     | 82-751-637-01 | Volume, 50k $\Omega$ -W (BALANCE)                  |
| VR3                                     | 87-021-632-01 | Volume, 50k $\Omega$ -O (TREBLE)                   |
| VR4                                     | 87-021-631-01 | Volume, 50k $\Omega$ -S (BASS)                     |
| S1~4                                    | 82-751-606-01 | Push-switch (FUNCTION)                             |
| S8,9                                    | 82-748-617-01 | Push-switch (LOUDNESS, TAPE MONITOR)               |
| S10                                     | 87-031-581-01 | Push-switch (POWER)                                |
| RY1,S11                                 | 87-045-134-01 | Relay, 224S  |
| PIN-1                                   | 87-032-897-01 | Pin, 3P  |
| <b>&lt; Resistors &gt;</b>              |               |  |
| R13,14                                  | 87-025-234-01 | 82 $\Omega$ $\pm$ 1% Metal film resistor           |
| R95                                     | 87-025-055-01 | 270 $\Omega$ 2W Metal film resistor                |
| R17,18                                  | 87-025-235-01 | 3.9k $\Omega$ $\pm$ 1% Metal film resistor         |
| R15,16                                  | 87-025-236-01 | 47k $\Omega$ Metal film resistor                   |
| R47,48,49,<br>50                        | 87-025-241-01 | 150k $\Omega$ Metal film resistor                  |
| R45,46                                  | 87-025-242-01 | 300k $\Omega$ Metal film resistor                  |
| <b>&lt; Capacitors &gt;</b>             |               |  |
| C3,4,77,78                              | 87-015-246-01 | 4.7 $\mu$ F 25V Electrolytic LL                    |
| C17,18                                  | 87-014-121-01 | 0.0012 $\mu$ F PP                                  |
| C15,16                                  | 87-014-122-01 | 0.018 $\mu$ F PP                                   |
| C13,14                                  | 87-014-123-01 | 0.068 $\mu$ F PP                                   |
| <b>◀ SWITCH CIRCUIT BOARD SECTION ▶</b> |               |  |
| PCB-B                                   | 82-751-627-11 | Switch circuit board                               |
| S5,6,7                                  | 82-751-609-01 | Push-switch<br>(MODE, MUTING, LOW FILTER)          |
| <b>◀ LED CIRCUIT BOARD-1 SECTION ▶</b>  |               |  |
| PCB-C                                   | 82-751-628-01 | LED circuit board-1                                |
| D25                                     | 87-027-543-01 | Light emitting diode, LN317GP<br>(POWER INDICATOR) |

| Symbol No.  | Part No.      | Description  |
|---|---------------|--|
| <b>◀ LED CIRCUIT BOARD-2 SECTION ▶</b>  |               |  |
| PCB-D   | 82-751-629-01 | LED circuit board-2  |
| D21~24  | 87-027-542-01 | Light emitting diode, LN217RP<br>(PHONO, AUX 1, AUX 2,<br>TUNER INDICATOR) |
| <b>◀ MISCELLANEOUS ▶</b>  |               |  |
|  T1  | 82-751-633-01 | Power transformer (E model)  |
|  T1  | 82-751-635-01 | Power transformer (K model)  |
|  T1  | 82-751-634-01 | Power transformer (G model)  |
|   | 87-034-877-01 | AC power cord (E model)  |
|    | 87-034-872-01 | AC power cord (K model)  |
|    | 87-034-892-01 | AC power cord (G model)  |
|    | 87-085-165-01 | Cord bushing (G model)   |

 This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.



ELECTRICAL MAIN PARTS LIST = SA-P30E,K,G

| Symbol No.                              | Part No.         | Description                                       |
|---|------------------|---|
| <b>◀ MAIN CIRCUIT BOARD SECTION ▶</b>   |                  |   |
|   | PCB-A            | 82-752-602-21 Main circuit board                  |
|   | IC1,2            | 87-027-627-01 IC, STK00402                        |
|   | IC3              | 87-027-379-01 IC, TA7317P                         |
|   | Q11              | 89-304-953-41 Transistor, 2SC495(O,Y)             |
|   | D19,29           | 87-027-365-01 Diode, S5277B                       |
|   | D21              | 87-027-287-01 Zener diode, WZ-160                 |
|   | D30              | 87-027-626-01 Diode, S5277D                       |
|   | D31              | 87-027-386-01 Encapsulated diode, DS-5BN-L        |
|   | L1,2             | 82-499-639-01 Coil, 1μH                           |
| ▲                                       | CB1,2            | 87-030-074-01 Circuit breaker, 2.7A               |
|   | S2,3             | 87-031-545-01 Push-switch (SPEAKERS A,B)          |
|   | RY1,S5           | 87-045-140-01 Relay, 24V G2Z                      |
|   | RY2,S6           | 82-499-631-01 Relay, 24V MY-2                     |
|   | J3               | 82-499-623-01 Jack, 6.3φ (PHONES)                 |
|   | PIN-1            | 82-481-697-01 Pin, 5P                             |
| <b>&lt; Resistors &gt;</b>              |                  |   |
|   | R51~54           | 87-025-120-01 10Ω 1W Metal film resistor          |
|   | R63,64           | 87-025-154-01 270Ω 1W Metal film resistor         |
|   | R49,50           | 87-025-250-01 0.22Ωx2 3W Metal film resistor      |
|   | R80              | 87-029-066-01 1.5Ω ½W Fuse resistor               |
| ▲                                       | R71              | 87-029-109-01 220Ω ¼W Fuse resistor               |
| <b>&lt; Capacitors &gt;</b>             |                  |   |
|   | C33,34           | 82-473-680-01 47μF 10V Electrolytic BP            |
|   | C43,44           | 87-015-653-01 10000μF 40V Electrolytic            |
| <b>◀ DRIVER CIRCUIT BOARD SECTION ▶</b> |                  |   |
|   | PCB-B            | 82-752-604-01 Driver circuit board (Rch)          |
|   | PCB-C            | 82-752-605-01 Driver circuit board (Lch)          |
|   | Q1,2             | 89-501-505-01 FET, 2SK150GR                       |
|   | Q3,4             | 89-309-456-01 Transistor, 2SC945L(P)              |
|   | Q5,6             | 89-315-834-01 Transistor, 2SC1583(F)              |
|   | Q7,8             | 89-236-316-71 Transistor, 2SC2631RS               |
|   | Q9,10            | 89-111-236-71 Transistor, 2SA1123RS               |
|   | D1,2,5,6         | 87-027-287-01 Zener diode, WZ-160                 |
|   | D3,4,9,10        | 87-027-097-01 Diode, 1S1555                       |
|   | D7,8             | 82-415-637-01 Zener diode, WZ-061                 |
|   | D11~14           | 87-027-681-01 Diode, SV02                         |
|   | SFR1,2           | 87-021-559-01 Semi-fixed resistor, 100Ω-B         |
| <b>&lt; Resistors &gt;</b>              |                  |   |
|   | R25~28           | 87-025-251-01 1.5kΩ 1W Metal film resistor        |
|   | R35,36           | 87-025-078-01 3.3kΩ 1W Metal film resistor        |
| <b>◀ LED CIRCUIT BOARD SECTION ▶</b>    |                  |   |
|   | PCB-D            | 82-752-603-11 LED circuit board                   |
|   | IC4              | 87-027-635-01 IC, AN6875                          |
|   | D15,16,17,18, 22 | 87-027-097-01 Diode, 1S1555                       |
|   | D23              | 87-027-416-01 Zener diode, HZ3C2                  |
|   | D24~28           | 87-027-542-01 Light emitting diode, LN217RP       |
|   | D32              | 87-027-543-01 Light emitting diode, LN317GP       |
|   | SFR3             | 87-021-615-01 Semi-fixed resistor, 47kΩ-B         |
|   | PIN-2            | 87-032-634-01 Pin, 4P                             |
| <b>◀ JACK CIRCUIT BOARD SECTION ▶</b>   |                  |   |
|   | PCB-E            | 82-752-606-11 Jack circuit board                  |
|   | Q12              | 89-206-052-01 Transistor, 2SB605(L)               |
|   | J1~4,S1          | 82-752-629-01 Jack ass'y, with/switch (E,K model) |
|   | J1,2,S1          | 82-752-612-01 Jack ass'y, with/switch (G model)   |
| <b>&lt; Capacitor &gt;</b>              |                  |   |
|   | C1,2             | 87-015-464-01 4.7μF 16V Electrolytic BP           |

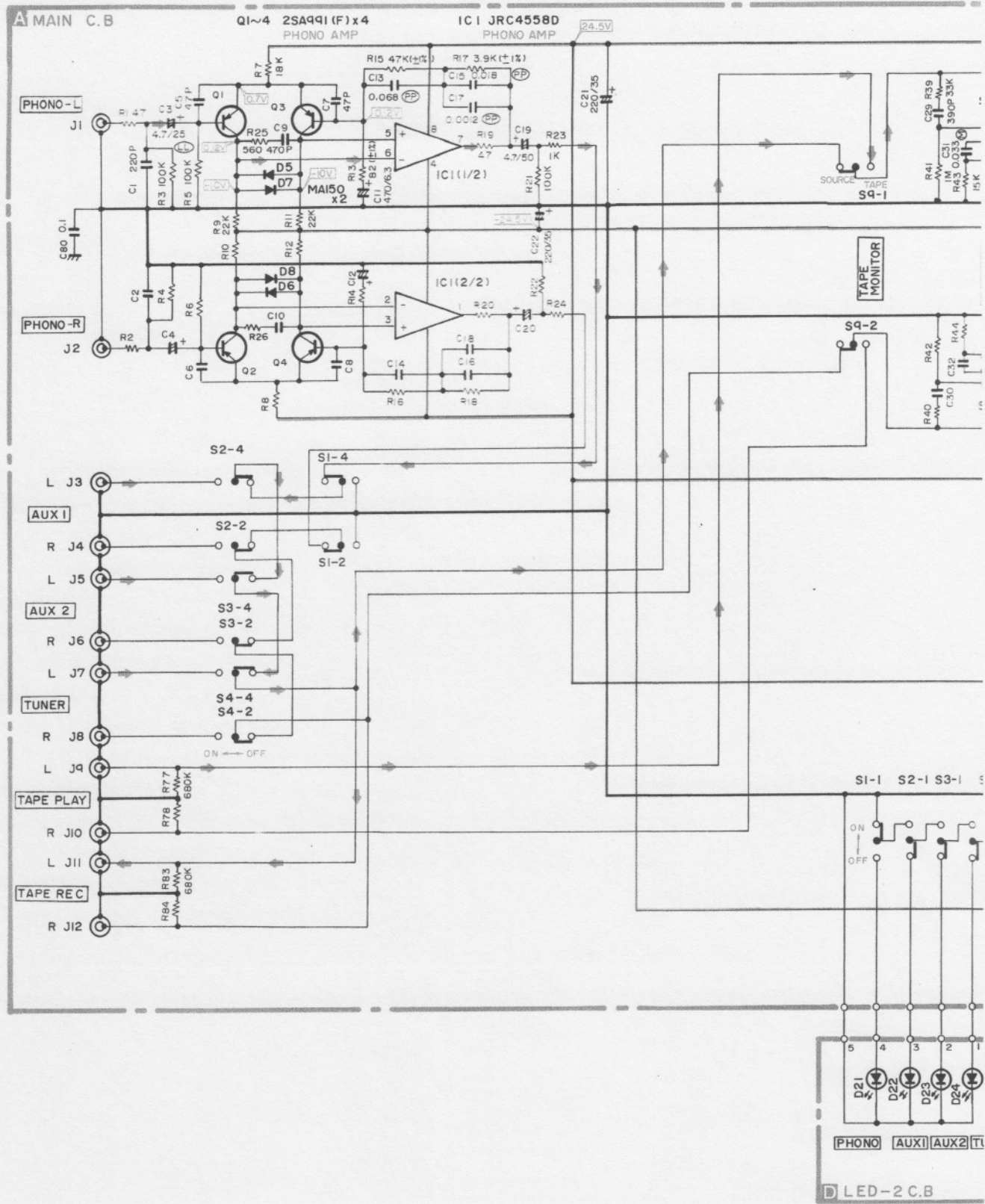
| Symbol No.               | Part No.      | Description                   |
|--------------------------|---------------|-------------------------------|
| <b>◀ MISCELLANEOUS ▶</b> |               |                               |
| ▲ T1                     | 82-752-610-01 | Power transformer (E model)   |
| ▲ T1                     | 82-752-611-01 | Power transformer (K,G model) |
| ▲ CP1                    | 87-019-105-01 | Compound capacitor 0.022μF    |
| ▲ F1                     | 87-035-224-01 | Fuse, T1.6A                   |
| ▲                        | 87-098-018-01 | Fuse label, T1.6A             |
| ▲                        | 87-033-161-01 | Fuse holder                   |
| ▲                        | 87-034-941-01 | AC power cord (E model)       |
| ▲                        | 87-034-942-01 | AC power cord (K model)       |
| ▲                        | 87-034-892-01 | AC power cord (G model)       |
| ▲                        | 87-085-165-01 | Cord bushing (G model)        |
| ▲ S4                     | 87-031-563-01 | Push-switch (POWER)           |

▲ This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

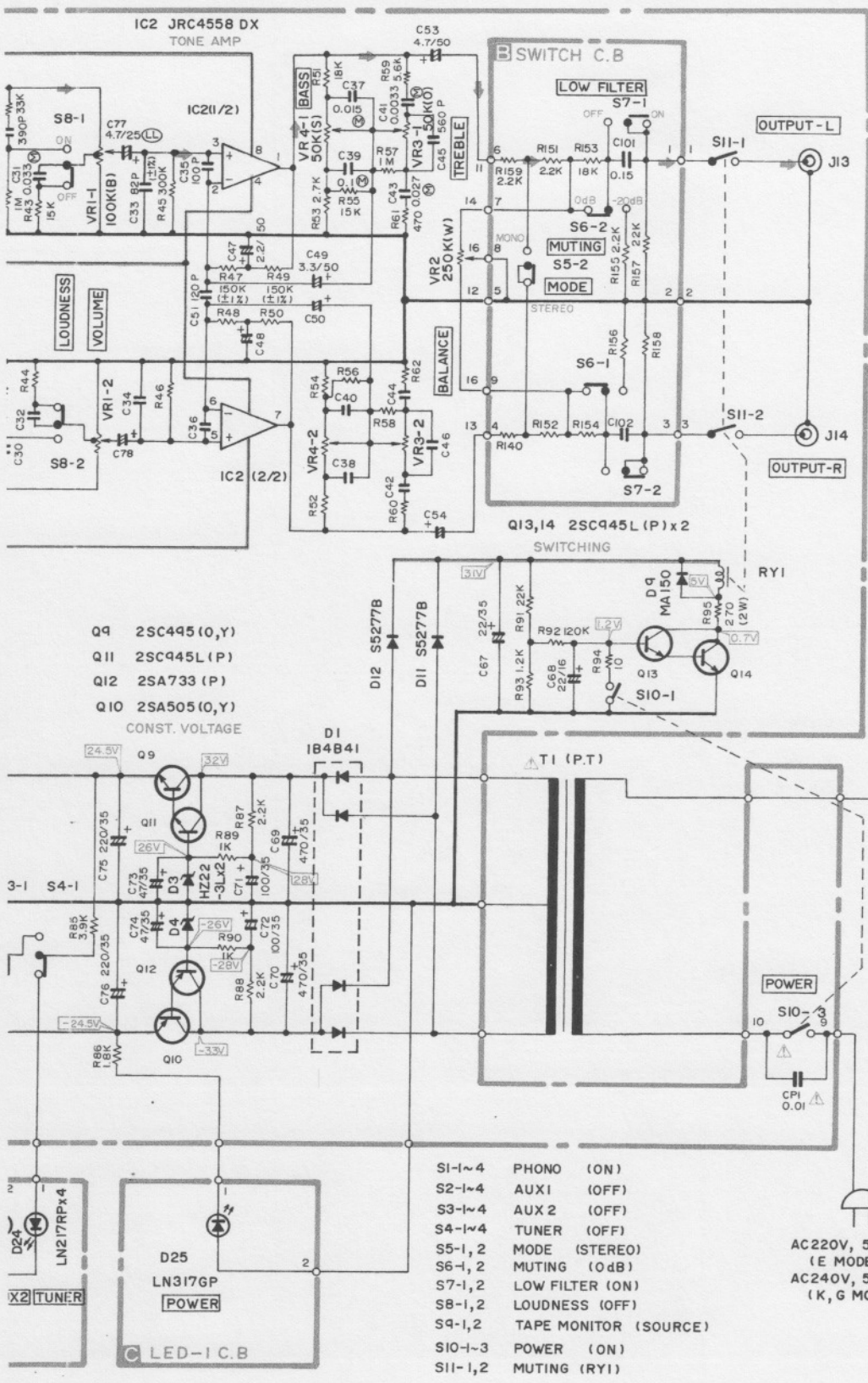
SCHEMATIC DIAGRAM

1 2 3 4 5 6 7

A  
B  
C  
D  
E  
F  
G  
H  
I  
C

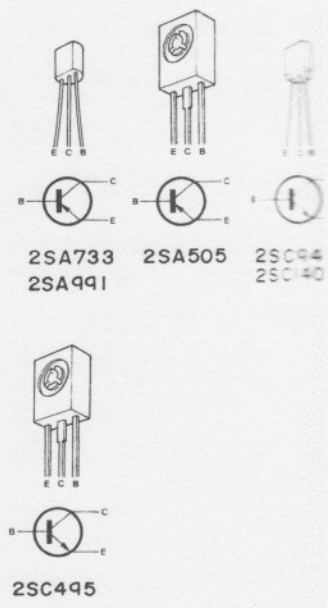






**NOTES:**

- 1) B (+) power supply B (-) power supply
  - 2) Signal path
  - 3) The voltage is the reference value measured by a meter (20 k-ohms/V DC) when there are no signals.
  - 4) Resistors with no designation have a tolerance of  $\pm 5\%$  and a tolerance of  $\pm 5\%$ .
  - 5) Capacitors with no designation have a tolerance of less than 50V.
  - 6) The only capacitor tolerances indicated are  $\pm 10\%$  (K).
  - 7) Ceramic capacitor symbols:  
 For temperature compensation (S, L)  
 High dielectric constant system (Y)  
 High dielectric constant system (M)
  - 8) Explanation of symbols:  
 Mylar capacitor  
 Aluminum solid capacitor  
 Polypropylene film capacitor  
 Bi-polarized capacitor  
 Low-leakage capacitor  
 Fuse resistor  
 Nonflammable resistor  
 Safety component symbol
- This symbol is given to important parts to maintain the safety of the product. It is made to conform to special safety standards. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.



- S1-1~4 PHONO (ON)
- S2-1~4 AUX1 (OFF)
- S3-1~4 AUX2 (OFF)
- S4-1~4 TUNER (OFF)
- S5-1, 2 MODE (STEREO)
- S6-1, 2 MUTING (0dB)
- S7-1, 2 LOW FILTER (ON)
- S8-1, 2 LOUDNESS (OFF)
- S9-1, 2 TAPE MONITOR (SOURCE)
- S10-1~3 POWER (ON)
- S11-1, 2 MUTING (RY1)

AC220V, 50/60Hz (E MODEL)  
 AC240V, 50/60Hz (K, G MODEL)

B (-) power supply

nce value measured with a  
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ensation (S-)

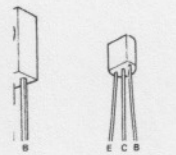
nt system (YY)

nt system (YW, YP, YZ)

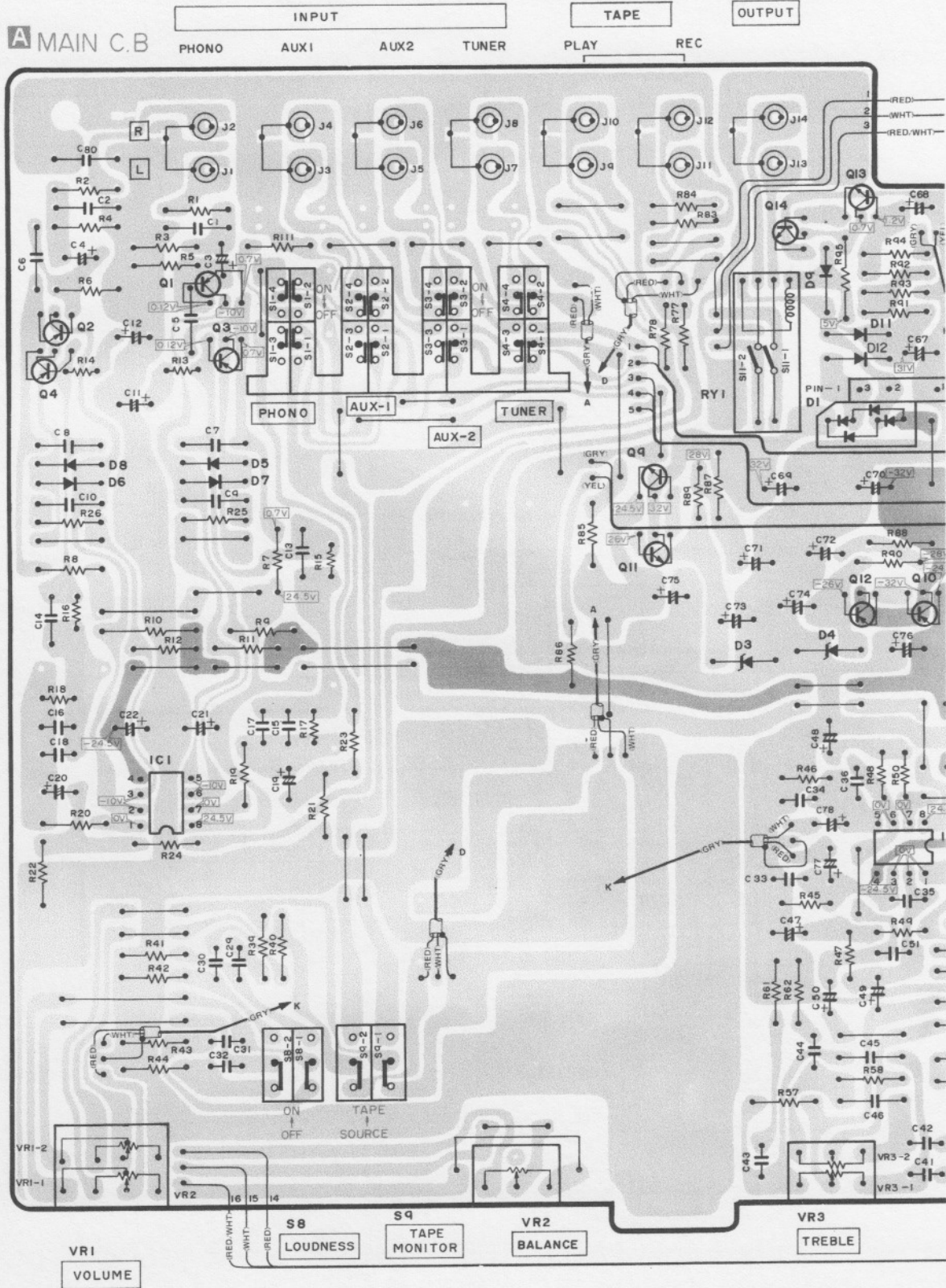
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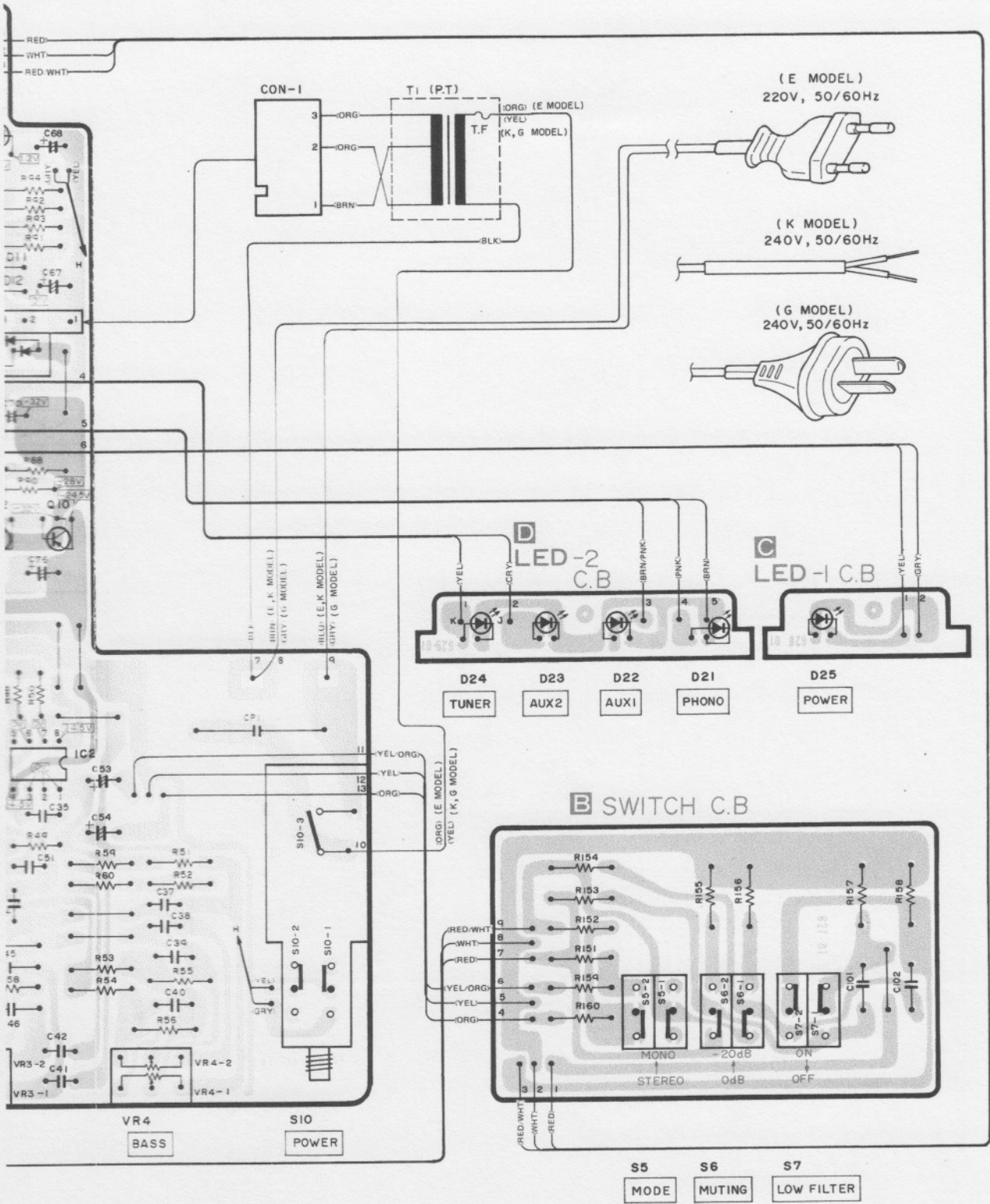


505 2SC945  
2SC1400



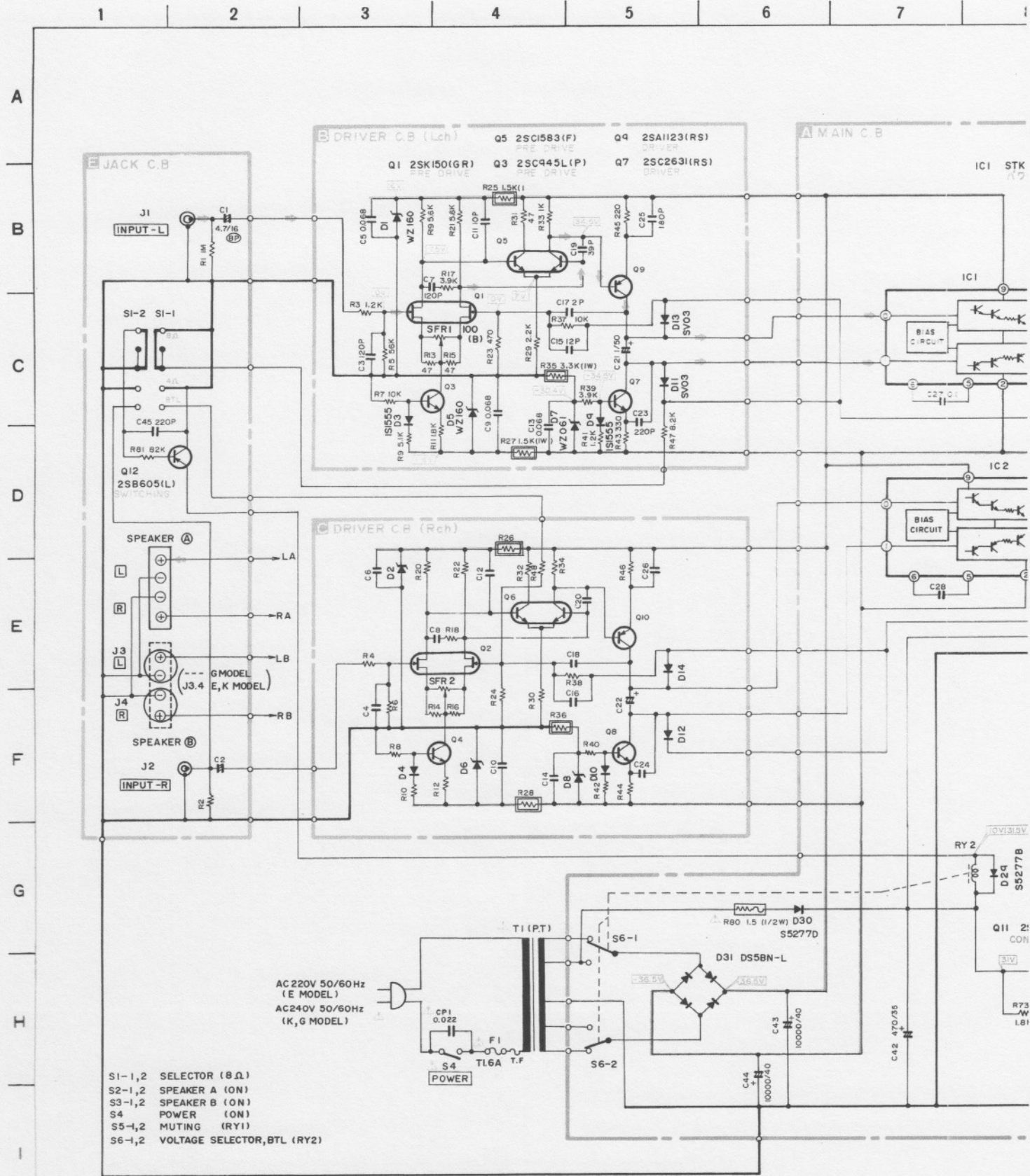
**NOTES** (1) B(+) Pattern B(-) Pattern C  
 (2) The voltage is the reference value measured with  
 An asterisk (\*) indicates that the value was mea  
 ■ \* mark in this part list shows exclusive part  
 (which is used) for only Model.





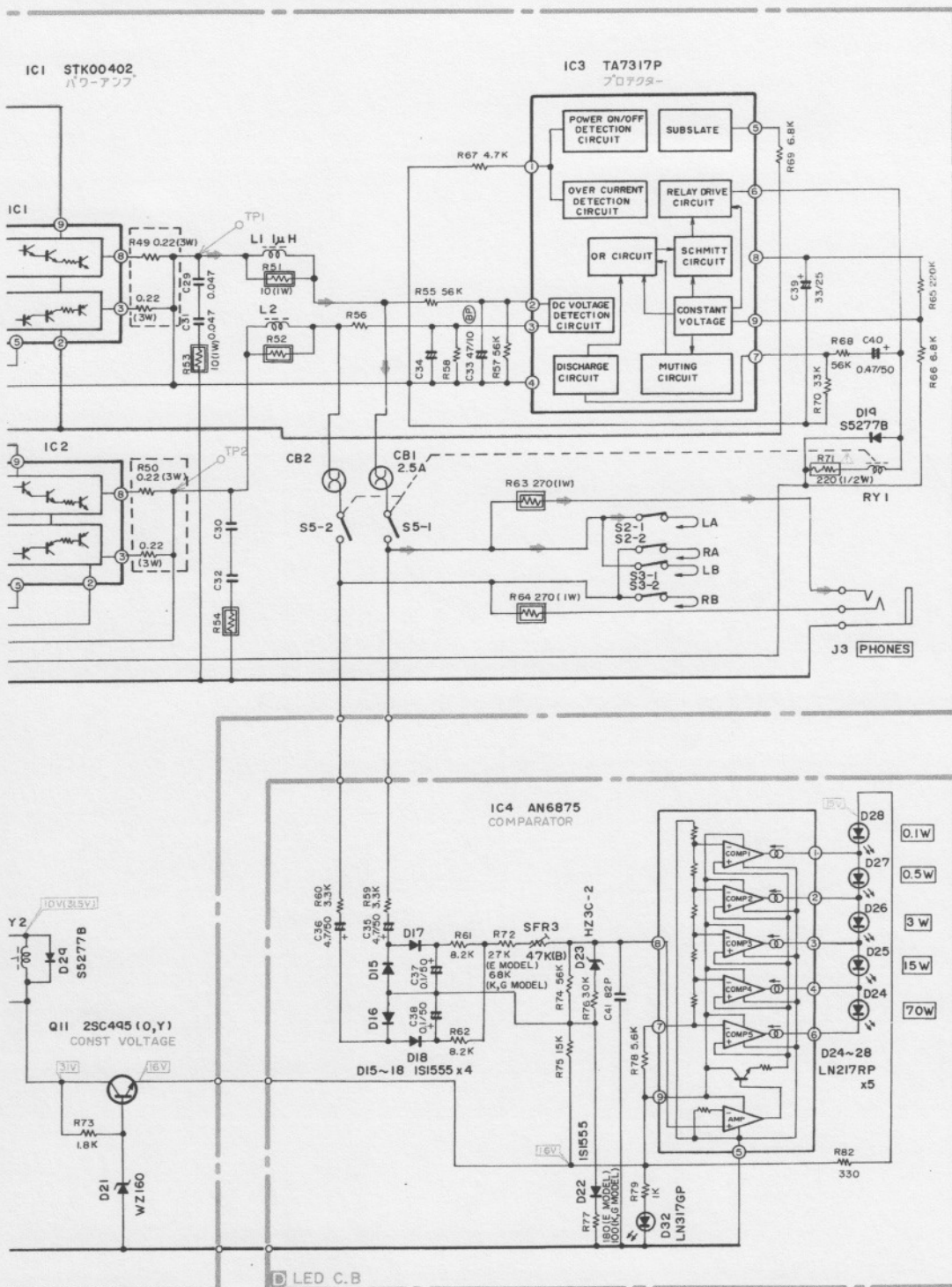
Others pattern  
 measured with a tester (20 K ohms/V DC) when there are no signals.  
 was measured with a vacuum-tube voltmeter during recording.

SCHEMATIC DIAGRAM



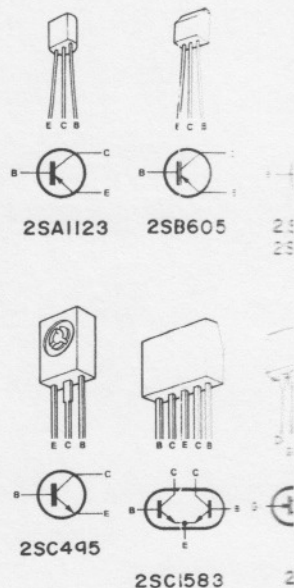
- SI-1,2 SELECTOR (8Ω)
- S2-1,2 SPEAKER A (ON)
- S3-1,2 SPEAKER B (ON)
- S4 POWER (ON)
- S5-1,2 MUTING (RY1)
- S6-1,2 VOLTAGE SELECTOR,BTL (RY2)





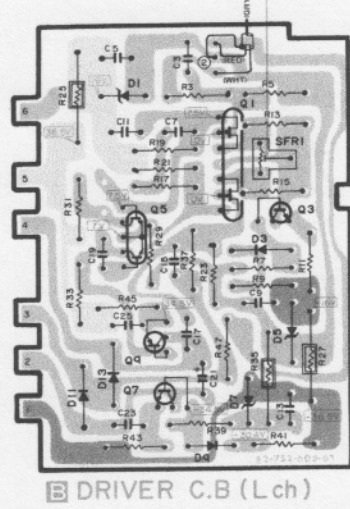
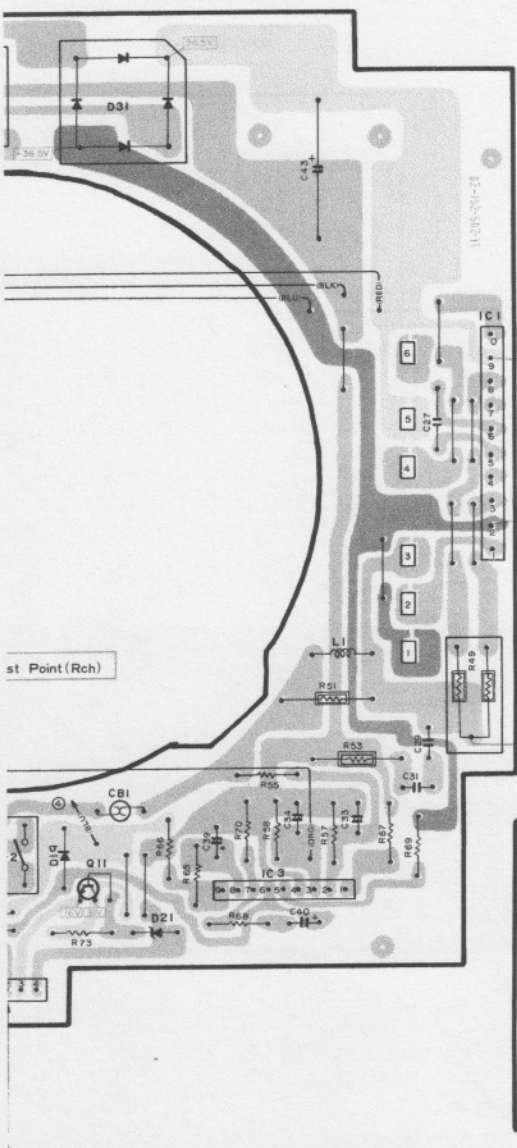
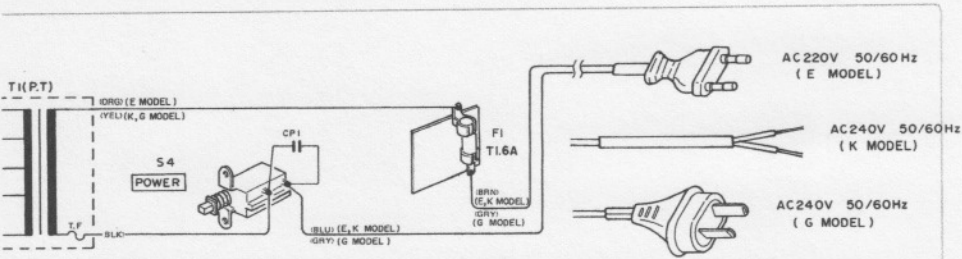
NOTES:

- 1) B (+) power supply B (-)
  - 2) Signal path
  - 3) The voltage is the reference value tester (20 k-ohms/V DC) when there
  - 4) Resistors with no designation have 1/4W and a tolerance of ±5%.
  - 5) Capacitors with no designation strength of less than 50WV.
  - 6) The only capacitor tolerances indicated are ±10% (K).
  - 7) Ceramic capacitor symbols:
    - For temperature compensation
    - High dielectric constant system
    - High dielectric constant system
  - 8) Explanation of symbols
    - Mylar capacitor
    - Aluminum solid capacitor
    - Polypropylene film capacitor
    - Bi-polarized capacitor
    - Low-leakage capacitor
    - Fuse resistor
    - Nonflammable resistor
    - Safety component symbol
- This symbol is given to important parts to maintain the safety of the product made to conform to special safety standards. Therefore, when replacing a component symbol, make absolutely sure the designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.



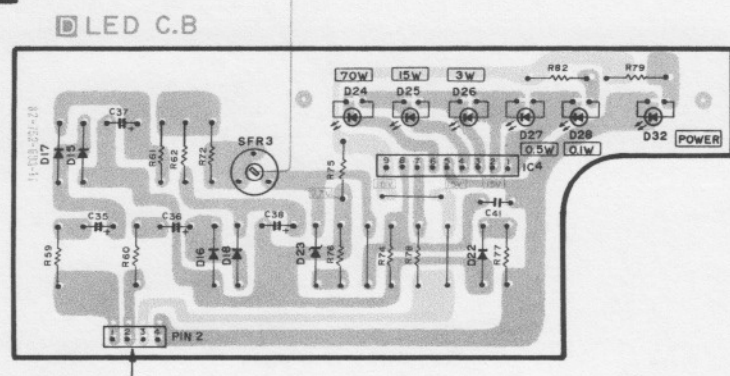






TP1 Zero Potential Test Point (Lch)

Power Indicator Adjustment.  
 Settings: Input signal: 1 kHz, 35W  
 4Ω ... E model, 8Ω ... K, G model  
 Adjustment location: SFR3  
 Method: Adjust so that the power indicator at 70W light up when the output level is 16.7V (K,G model) or 11.8V (E model).

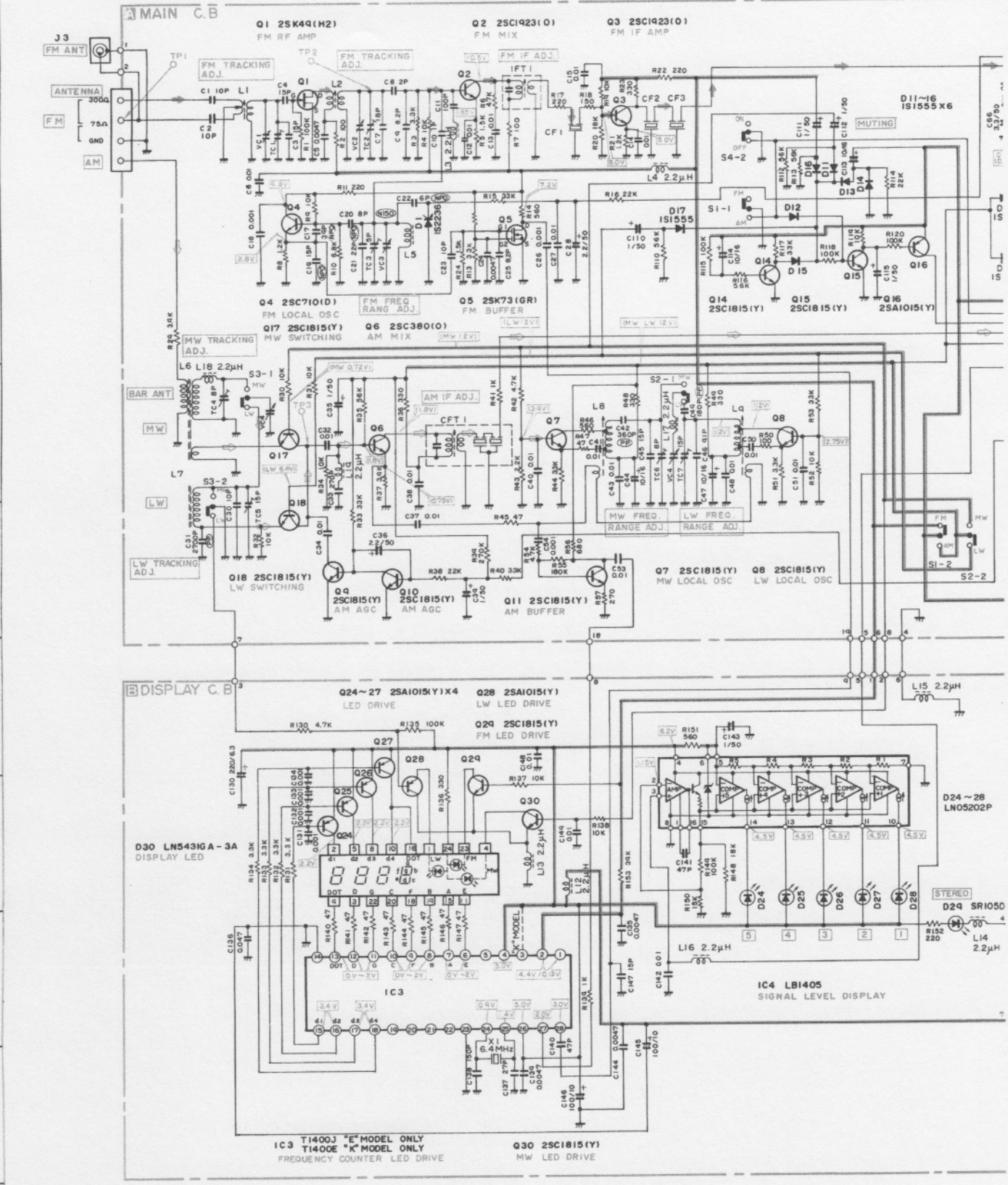


Others pattern measured with a tester (20 K ohms/V DC) when there are no signals. Value was measured with a vacuum-tube voltmeter during recording.

## SCHEMATIC DIAGRAM = ST-R30E,K,

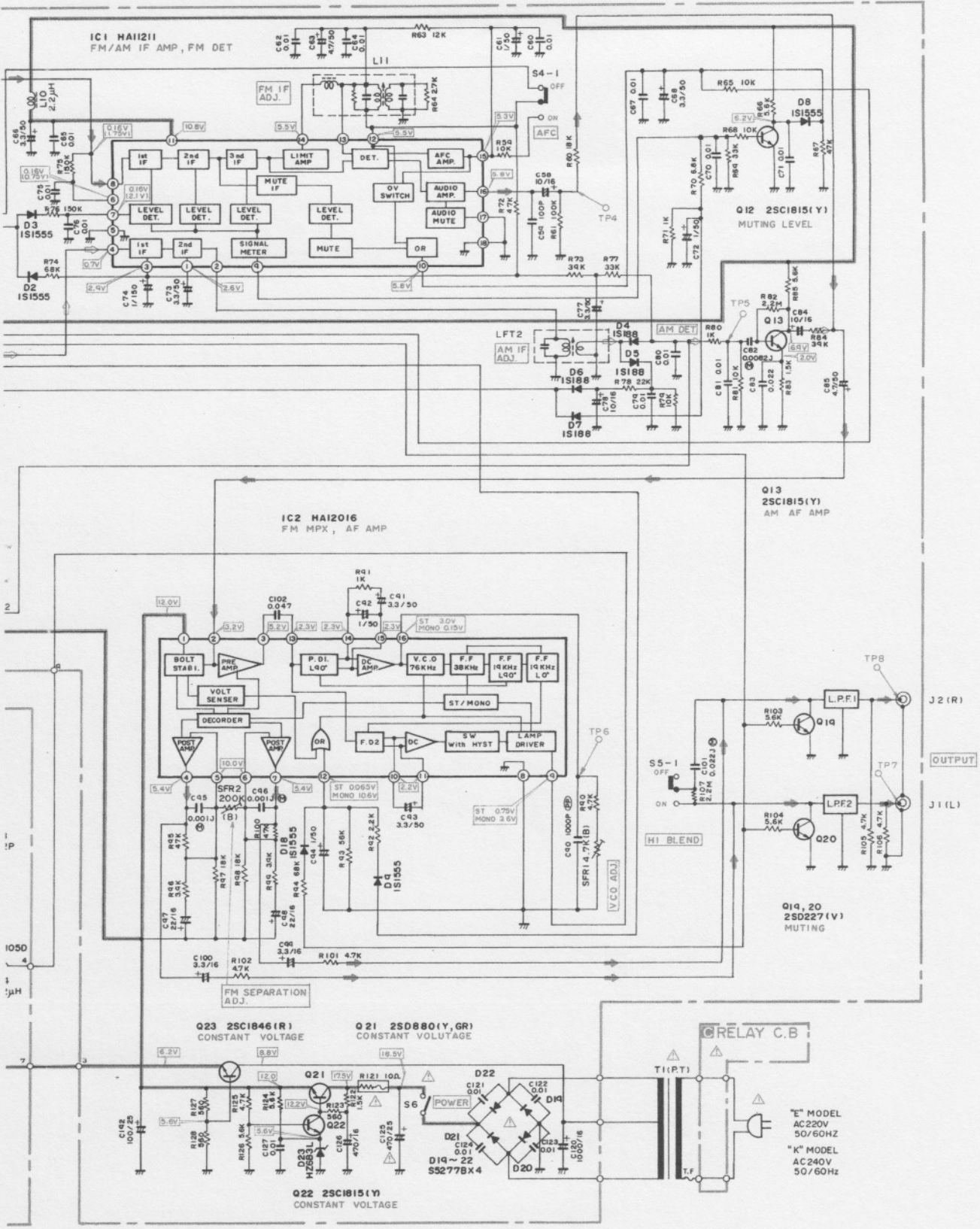
1 2 3 4 5 6 7

A  
B  
C  
D  
E  
F  
G  
H  
I  
J



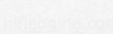
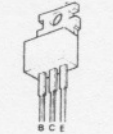
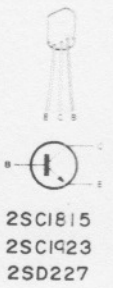
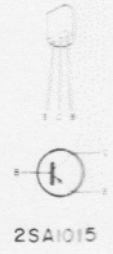
- |        |          |        |                  |
|--------|----------|--------|------------------|
| S1-1,2 | FM (ON)  | S4-1,2 | MUTING AFC (OFF) |
| S2-1,2 | MW (OFF) | S5-1,2 | HI-BLEND (OFF)   |
| S3-1,2 | LW (OFF) | S6     | POWER            |





**NOTES:**

- 1) B (+) power
- 2) Signal path
- 3) AM signal
- 4) The voltage is tester (20 k-ohm) But ( ) is v An asterisk (\*) with a vacuum-tube Resistor with 1/4W and a tolerance Capacitors with strength of less than 100pF The only capacitor and  $\pm 10\%$  (K)
- 5) Ceramic capacitor
- 6) For temperature High dielectric High dielectric Semiconductors For temperature
- 7) Explanation of symbols: PP Polypropylene BP Bi-polarized LL Low-inductance Fuse resistor Non-fusible Safety component
- 8) This symbol is used to maintain the made to conform Therefore, when signed part. This schematic notice in the parts



2SA1015  
2SC1923  
2SD227

2SC1815  
2SC1923  
2SD227

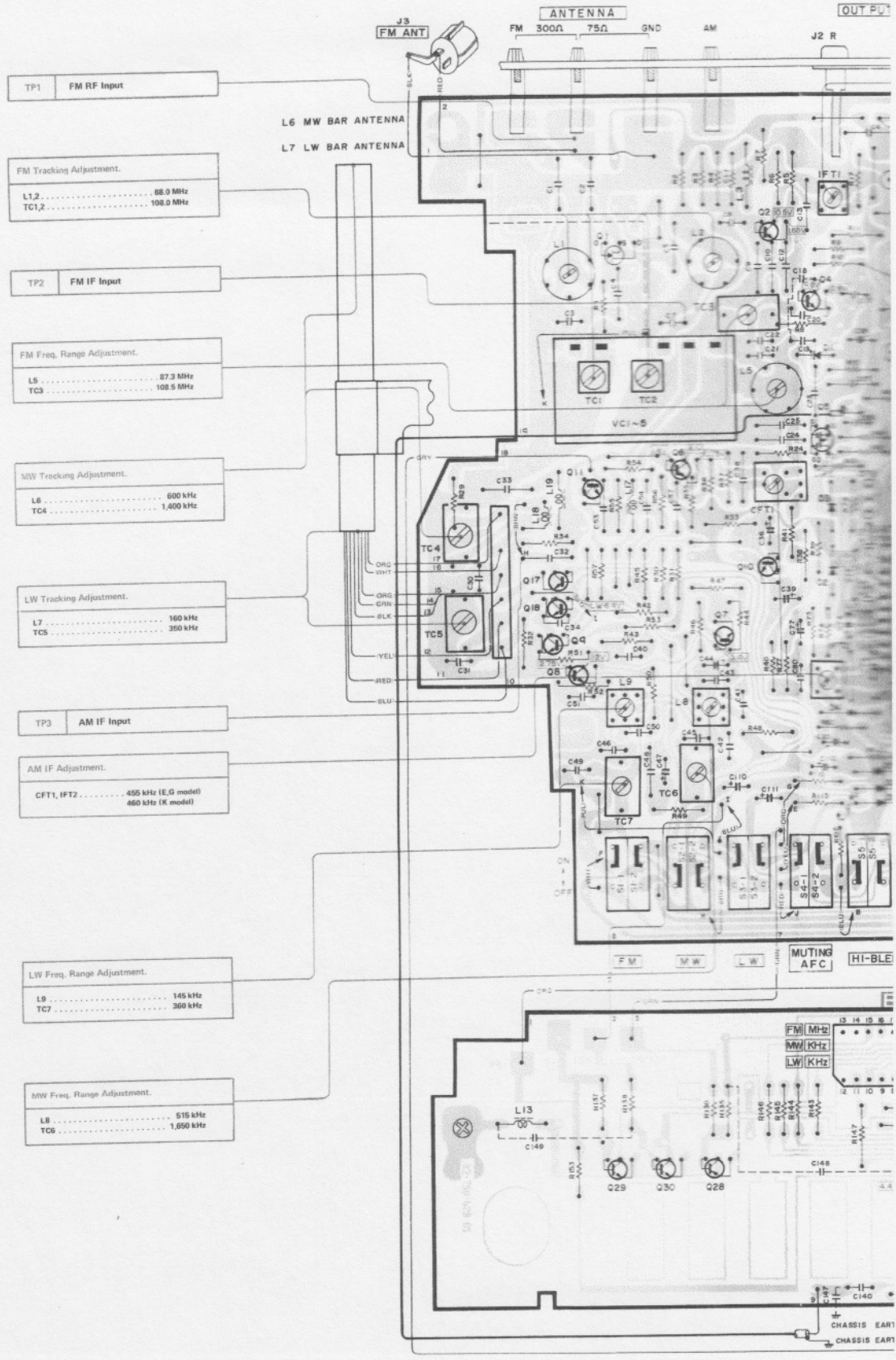
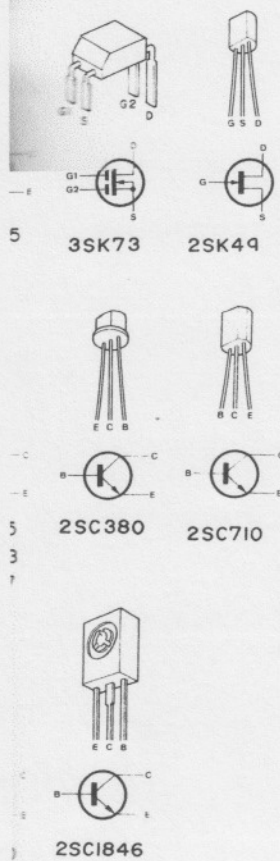
2SD880

# WIRING= ST-R30EK

ver supply  
th  
il path.  
s the reference value measured with a  
rms/V DC) when there are no signals.  
with AM reception  
) indicates that the value was measured  
t-tube voltmeter during recording.  
no designation have a rated power of  
range of  $\pm 5\%$ .  
ith no designation have a dielectric  
s than 50WV.  
actor tolerances indicated are  $\pm 5\%$  (J)

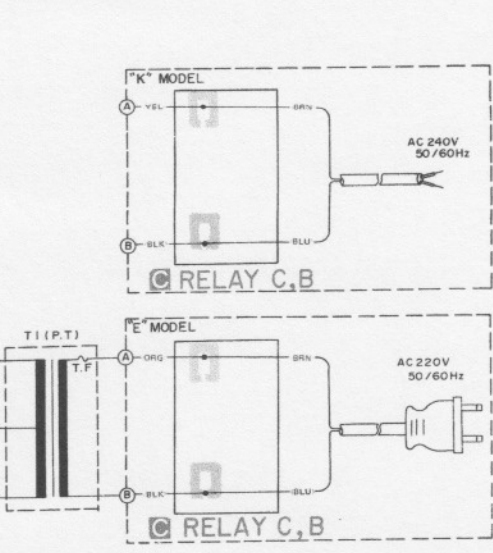
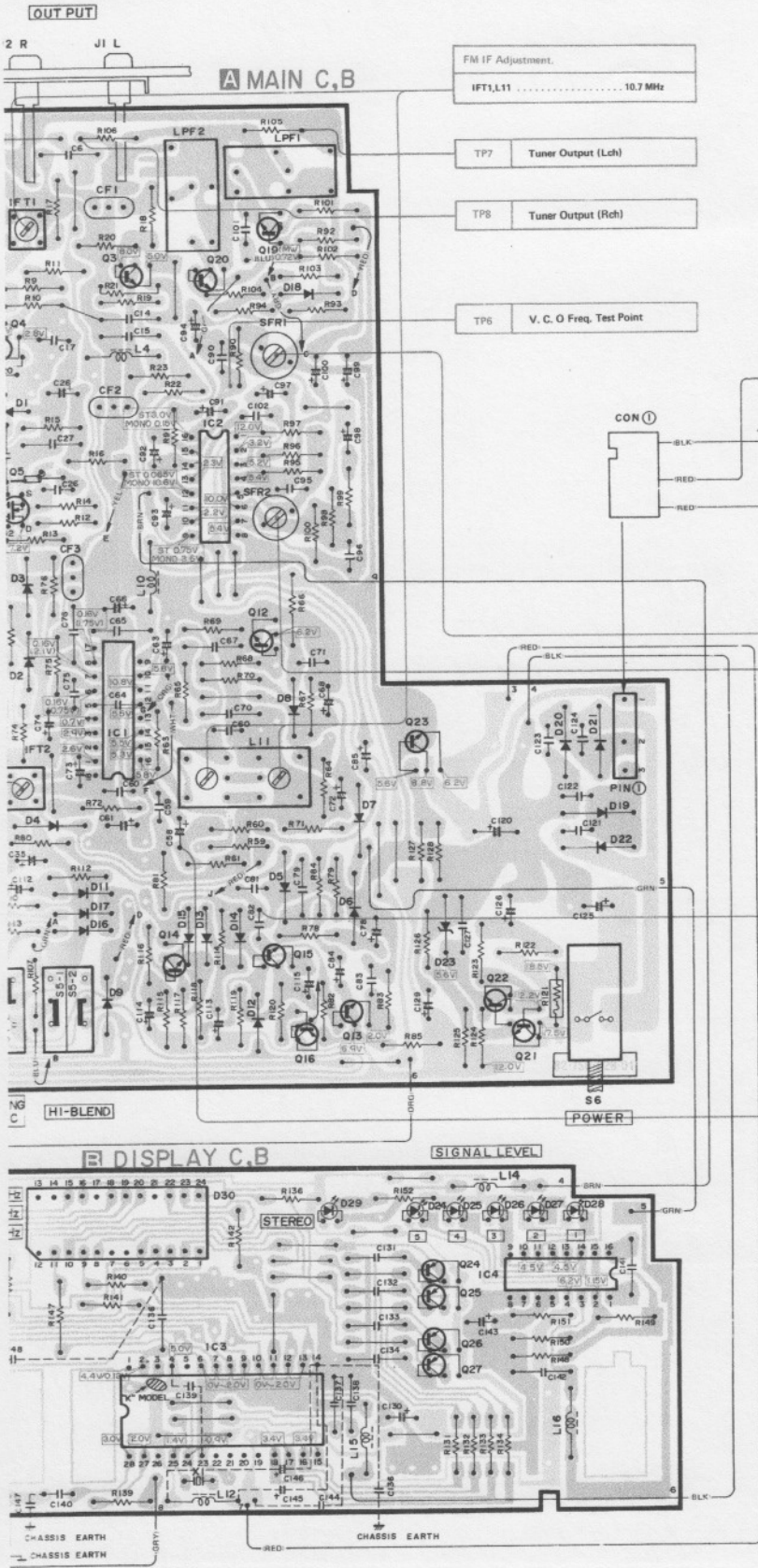
itor symbols:  
erature compensation (SL)  
ectric constant system (YY)  
ectric constant system (YW, YP, YZ)  
uctor ceramic  
erature compensation (SH)  
f symbols  
ylene film capacitor  
ed capacitor  
age capacitor  
itor  
nable resistor  
mponent symbol  
s given to important parts which serve  
he safety of the product, and which are  
iform to special safety specifications.  
en replacing a component with this  
absolutely sure that you use a de-

c diagram is subject to change without  
interests of improved performance.



NOTES (1) B(+) Pattern Others pattern  
(2) The voltage is the reference value measured with a test But ( ) is with AM reception.





V. C. O Freq. Adjustment.

Settings: • Band selector: FM  
• Test point: TP6  
• Adjustment location: SFR1

Method: Adjust so that the frequency at the test point is 76.0 kHz.

FM Separation Adjustment.

Settings: • Carrier frequency: 88 MHz  
• Input signal: 65 dB  
• Modulation frequency: 1 kHz  
• Adjustment location: SFR2

Method: Adjust so that the separation at the test point is at its maximum.

TP5 AM DET. Output.

TP4 FM DET. Output

NOTES:

- B (+)
- Signal
- ⇄ AM signal
- The voltage tester (20 K ohms/V DC) when there are no signals.
- But ( ) An asterisk with a vacuum tube symbol indicates a vacuum tube.
- Resistors: 1/4W and a tolerance of ±10%.
- Capacitors: strength of 50V or higher.
- The only exception is for electrolytic capacitors, which are ±20%.
- Ceramic capacitors: For tolerance of ±10%.
- High voltage: High voltage symbol.
- High current: High current symbol.
- Semiconductor: Semiconductor symbol.
- For test: For test symbol.

- Explanatory symbols:
- ⊖ PP Polypropylene
  - ⊖ BP Bipolar
  - ⊖ LL Low-leakage
  - ⊖ Fuse
  - ⊖ Non-fused
  - ⊖ Safet

This symbol is maintained for reference. Therefore, this symbol is not signed. This schematic notice is for reference.

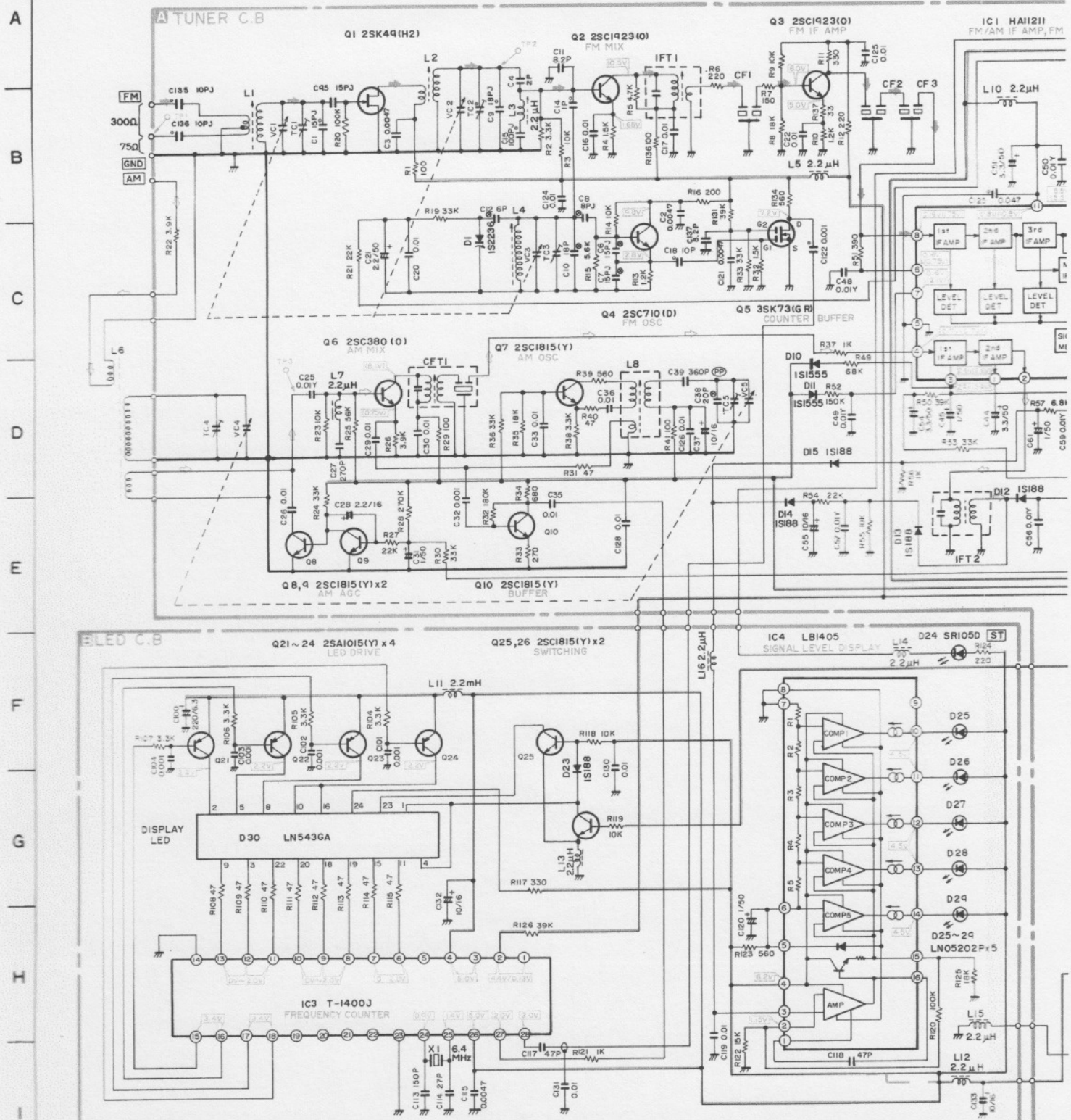
2SA

2SD1  
2SD1  
2SD1

2SD1

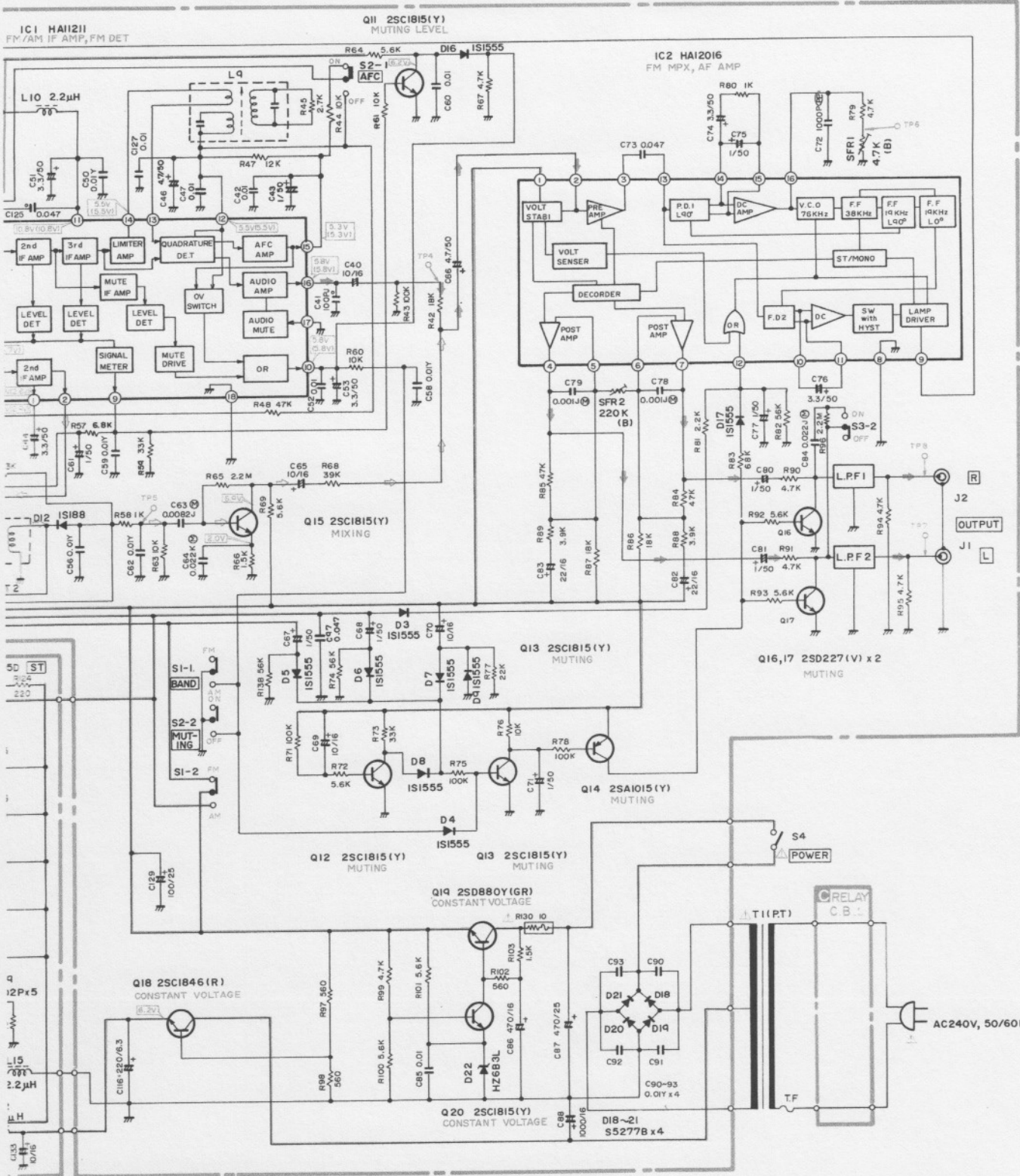
SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8



- S1-1,2 BAND (FM)
- S2-1,2 AFC/MUTING (ON)
- S3-1,2 HI-BLEND (OFF)
- S4 POWER (OFF)





- NOTES:**
- 1) [Symbol]
  - 2) [Symbol]
  - 3) The tester But ( An a: with :
  - 4) Resist ¼W a
  - 5) Capac streng
  - 6) The c and =
  - 7) Ceran
  - 8) Expla
- This to ma made There symbt signat This notice

WIRING

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ES:

- B (+) power supply
- Signal path
- AM signal path.

The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.

But ( ) is with AM reception

An asterisk (\*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

Resistors with no designation have a rated power of 1/4W and a tolerance of ±5%.

Capacitors with no designation have a dielectric strength of less than 50WV.

The only capacitor tolerances indicated are ±5% (J) and ±10% (K).

Ceramic capacitor symbols:

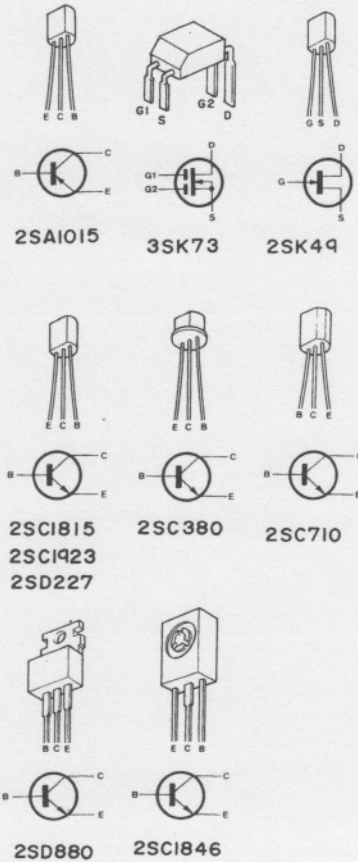
- ⊥ For temperature compensation (SL)
- ⊥ High dielectric constant system (YY)
- ⊥ High dielectric constant system (YW, YP, YZ)
- ⊥ Semiconductor ceramic
- ⊥ For temperature compensation (SH)

Explanation of symbols

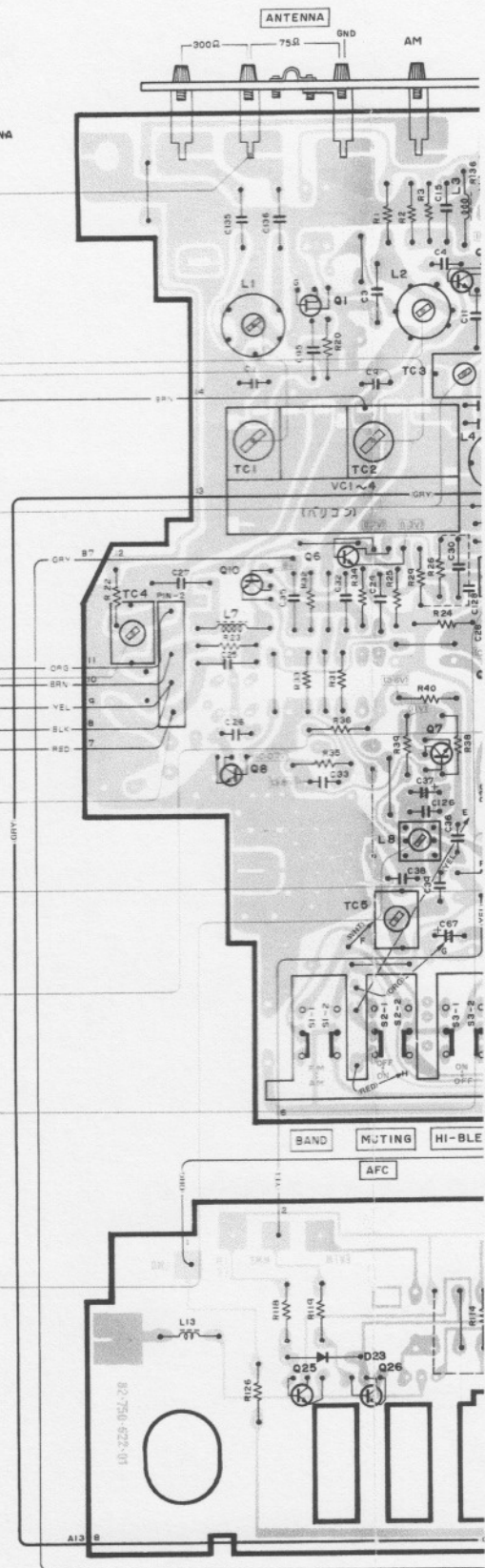
- PP Polypropylene film capacitor
- BP Bi-polarized capacitor
- LL Low-leakage capacitor
- ⊥ Fuse resistor
- ⊥ Nonflammable resistor
- Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

This schematic diagram is subject to change without notice in the interests of improved performance.

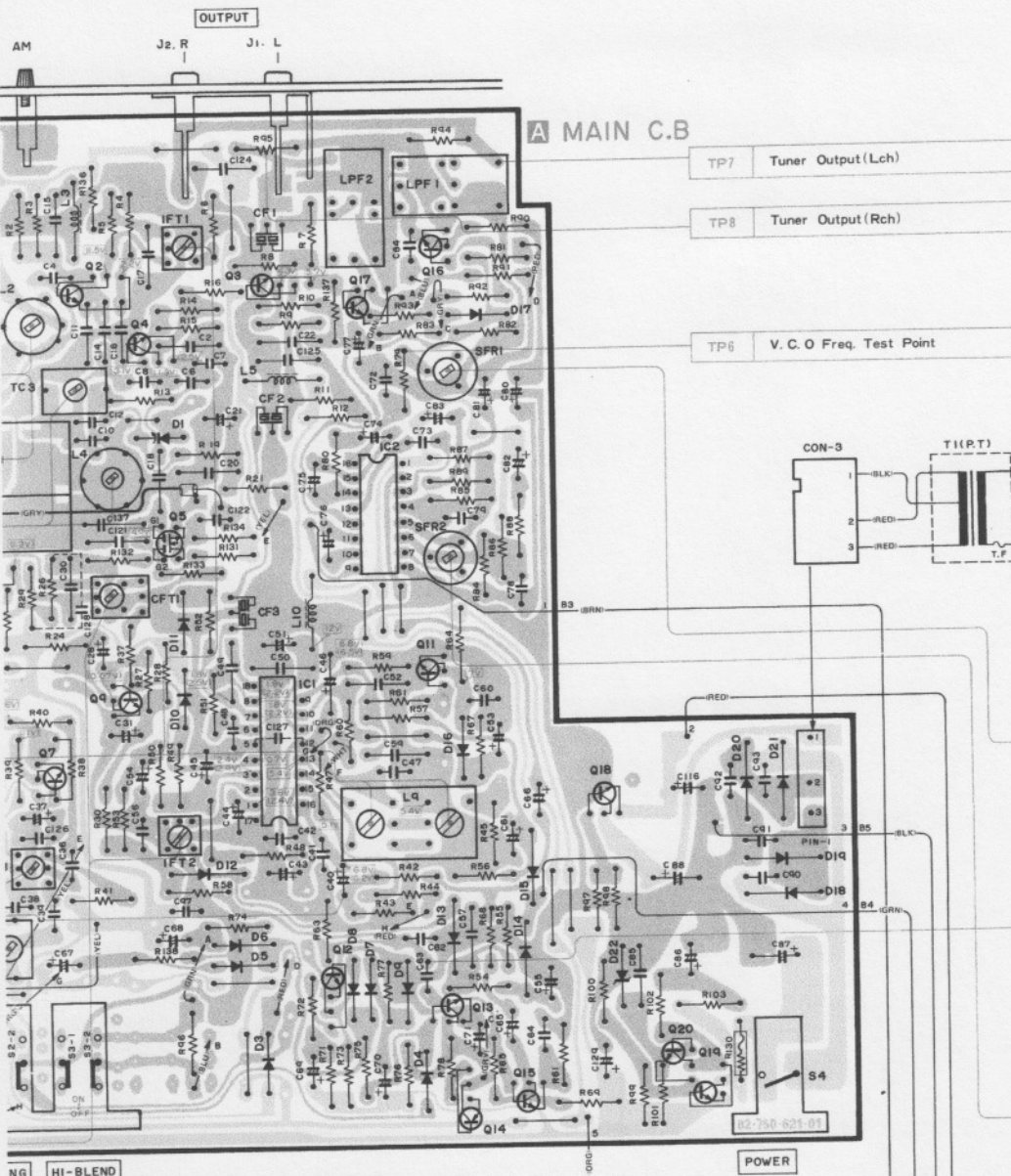


|                            |                |
|----------------------------|----------------|
| TP1                        | FM RF Input    |
| FM Tracking Adjustment.    |                |
| L1,2                       | 88.0 MHz       |
| TC1,2                      | 108.0 MHz      |
| TP2                        | FM IF Input    |
| FM Freq. Range Adjustment. |                |
| L4                         | 87.3 MHz       |
| TC3                        | 108.5 MHz      |
| AM Tracking Adjustment.    |                |
| L6                         | 600 kHz        |
| TC4                        | 1,400 kHz      |
| TP3                        | AM IF Input    |
| TP4                        | FM DET. Output |
| FM IF Adjustment.          |                |
| IFT1, L9                   | 10.7 MHz       |
| AM IF Adjustment.          |                |
| CFT1, IFT2                 | 455 kHz        |
| AM Freq. Range Adjustment. |                |
| L8                         | 515 kHz        |
| TC5                        | 1,850 kHz      |



- NOTES (1) B(+) Pattern (2) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. But ( ) is with AM reception





**V. C. O Freq. Adjustment.**

Settings: • Band selector: FM  
 • Test point: TP6  
 • Adjustment location: SFR1

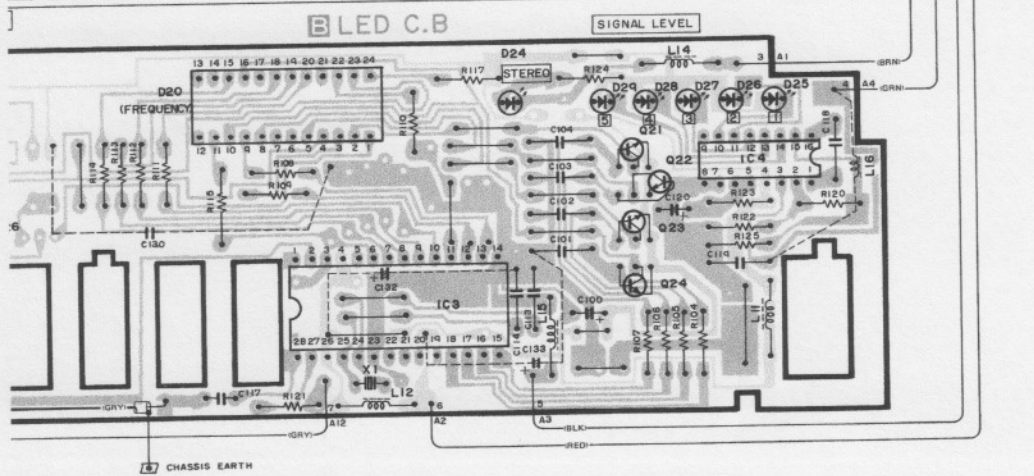
Method: Adjust so that the Frequency at the test point is 76.0 kHz.

**TP5 AM DET. Output.**

**FM Separation Adjustment.**

Settings: • Carrier frequency: 98 MHz  
 • Input signal: 66 dB  
 • Modulation frequency: 1 kHz  
 • Adjustment location: SFR2

Method: Adjust so that the separation at the test point is at its maximum.



Others pattern  
 reference value measured with a tester (20 K ohms/V DC) when there are no signals.  
 with AM reception.

## ACCESSORIES/PACKAGE

## ST-R30E,K,G

| Ref. No. | Part No.      | Part No.<br>Changed to | Description                              | Common<br>Model | Q'ty |
|----------|---------------|------------------------|--|-----------------|------|
| 1a       | 82-750-858-01 |                        | Printed indiv., Packing (E,K model only) | *               | 1    |
| 1b       | 82-750-855-01 |                        | Printed indiv., Packing (G model only)   | *               | 1    |
| 2        | 82-750-852-01 |                        | Cushion L, Printed indiv.                | *               | 1    |
| 3        | 82-750-853-01 |                        | Cushion R, Printed indiv.                | *               | 1    |
| 4        | 87-051-130-11 |                        | Poly-vinyl sack                          |                 | 1    |
| 5a       | 87-051-135-11 |                        | Poly-vinyl sack (E,K model only)         |                 | 1    |
| 5b       | 87-051-137-11 |                        | Poly-vinyl sack (G model only)           |                 | 1    |
| 6        | 87-056-604-01 |                        | Poly-vinyl sack                          |                 | 1    |
| 7a       | 82-750-906-01 |                        | Instructions booklet (E model only)      | *               | 1    |
| 7b       | 82-750-907-01 |                        | Instructions booklet (K model only)      | *               | 1    |
| 7c       | 82-750-908-01 |                        | Instructions booklet (G model only)      | *               | 1    |
| 8        | 87-051-171-11 |                        | Poly-vinyl sack (for instruction)        |                 | 1    |
| 9        | 87-056-009-41 |                        | Distributors list                        |                 | 1    |
| 10       | 87-156-001-01 |                        | Handle                                   |                 | 2    |
| 11       | 86-944-015-01 |                        | Connection cord CW-129CSK                |                 | 1    |
| 12       | 87-043-051-01 |                        | FM feeder antenna                        |                 | 1    |
| 13       | 87-056-008-11 |                        | Label, AC power cord (K model only)      |                 | 1    |
| 14       | 87-056-032-01 |                        | Guarantee card (G model only)            |                 | 1    |

## ACCESSORIES/PACKAGE

## SA-C30E,K,G

| Ref. No. | Part No.      | Part No.<br>Changed to | Description                         | Common<br>Model | Q'ty |
|----------|---------------|------------------------|-------------------------------------|-----------------|------|
| 1        | 82-751-853-01 |                        | Printed indiv., Packing             | *               | 1    |
| 2        | 82-750-852-01 |                        | Cushion L, Printed indiv.           | ST-R30          | 1    |
| 3        | 82-750-853-01 |                        | Cushion R, Printed indiv.           | ST-R30          | 1    |
| 4a       | 87-051-135-11 |                        | Poly-vinyl sack (E,K model only)    |                 | 1    |
| 4b       | 87-051-137-11 |                        | Poly-vinyl sack (G model only)      |                 | 1    |
| 5        | 87-056-603-01 |                        | Poly-vinyl sack                     |                 | 1    |
| 6a       | 82-751-906-11 |                        | Instructions booklet (E model only) | *               | 1    |
| 6b       | 82-751-907-11 |                        | Instructions booklet (K model only) | *               | 1    |
| 6c       | 82-751-908-11 |                        | Instructions booklet (G model only) | *               | 1    |
| 7        | 87-051-171-11 |                        | Poly-vinyl sack (for instruction)   |                 | 1    |
| 8        | 87-056-009-41 |                        | Distributors list                   |                 | 1    |
| 9        | 86-156-001-01 |                        | Handle                              |                 | 2    |
| 10       | 87-056-008-11 |                        | Label, AC power cord (K model only) |                 | 1    |
| 11       | 87-056-032-01 |                        | Guarantee card (G model only)       |                 | 1    |

## ACCESSORIES/PACKAGE

## SA-P30E,K,G

| Ref. No. | Part No.      | Part No.<br>Changed to | Description                         | Common<br>Model | Q'ty |
|----------|---------------|------------------------|-------------------------------------|-----------------|------|
| 1        | 82-752-853-01 |                        | Printed indiv. Packing              | *               | 1    |
| 2        | 82-750-852-01 |                        | Cushion L, Printed indiv.           | ST-R30          | 1    |
| 3        | 82-750-853-01 |                        | Cushion R, Printed indiv.           | ST-R30          | 1    |
| 4        | 87-051-130-11 |                        | Poly-vinyl sack                     |                 | 1    |
| 5a       | 87-051-135-11 |                        | Poly-vinyl sack (E,K model only)    |                 | 1    |
| 5b       | 87-051-137-11 |                        | Poly-vinyl sack (G model only)      |                 | 1    |
| 6        | 87-056-603-01 |                        | Poly-vinyl sack                     |                 | 1    |
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| 7b       | 82-752-907-11 |                        | Instructions booklet (K model only) | *               | 1    |
| 7c       | 82-752-908-11 |                        | Instructions booklet (G model only) | *               | 1    |
| 8        | 87-051-171-11 |                        | Poly-vinyl sack (for instruction)   |                 | 1    |
| 9        | 87-056-009-41 |                        | Distributors list                   |                 | 1    |
| 10       | 86-156-001-01 |                        | Handle                              |                 | 2    |
| 11       | 86-944-015-01 |                        | Connection cord CW-129CSK           |                 | 1    |
| 12       | 87-056-008-11 |                        | Label, AC power cord (K model only) |                 | 1    |
| 13       | 87-056-032-01 |                        | Guarantee card                      |                 | 1    |