

STR-7065

USA Model



FM STEREO/FM-AM RECEIVER

SPECIFICATIONS

Fm Tuner Section

- Tuning range:** 87.5 MHz to 108 MHz
Usable sensitivity: 1.6 μ V
Signal-to-noise ratio: 70 dB
Capture ratio: 1.0 dB
Frequency response: 20 Hz to 15 kHz \pm 1 dB
Stereo separation: Better than 38 dB at 400 Hz

A-m Tuner Section:

- Tuning range:** 530 kHz to 1,605 kHz
Sensitivity: 53 dB/m, built-in antenna at 1,000 kHz
30 μ V, external antenna
Signal-to-noise ratio: 50 dB at 50 mV/m

Audio Amplifier Section:

Continuous RMS

- power output:** Both channels driven simultaneously
(Less than 0.2 % THD)
60 + 60 watts (8 ohms)
at 20 Hz to 20 kHz
70 + 70 watts (8 ohms)
85 + 85 watts (4 ohms) at 1 kHz
One channel driven
85 + 85 watts (8 ohms),
110 + 110 watts (4 ohms)

- Dynamic power output:** 240 watts (8 ohms)
(IHF constant power supply method)
380 watts (4 ohms)

- Harmonic distortion:** Less than 0.2 % at rated output
Less than 0.1 % at 1 watt output

General

- Power requirements:** 120 volts, 60 Hz ac

- Power consumption:** 180 watts

- Dimensions:** 471 (w) x 157 (h) x 375 (d) mm
18⁹/₁₆ x 6³/₁₆ x 14³/₄ inches

- Net weight:** 15.2 kg (33 lb 8 oz)

SONY
SERVICE MANUAL

SECTION 1
TECHNICAL DESCRIPTION

1-1. SPECIFICATIONS

Fm Tuner Section

Tuning range: 87.5 MHz to 108 MHz

Antenna terminals: 300 ohms balanced
75 ohms unbalanced

Intermediate frequency: 10.7 MHz

Sensitivity: 2.0 μ V (IHF), 1.6 μ V (S/N = 30 dB)

Image rejection: 70 dB

I-f rejection: 100 dB

Spurious rejection: 90 dB

A-m suppression: 56 dB

Capture ratio: 1.0 dB

Selectivity: 70 dB, IHF

Signal-to-noise ratio: 70 dB

Frequency response: 20 Hz to 15 kHz \pm 1 dB

Harmonic distortion: Mono 0.2 % at 400 Hz, 100 % modulation
Stereo 0.5 % at 400 Hz, 100 % modulation

Stereo separation: Better than 38 dB at 400 Hz

19 kHz, 38 kHz suppression: 40 dB

SCA suppression: 55 dB

Muting level: Less than 5 μ V

A-m Tuner Section

Tuning range: 530 kHz to 1,605 kHz

Antenna: Built-in bar antenna and external antenna terminal

Intermediate frequency: 455 kHz

Sensitivity: 53 dB/m, built-in bar antenna at 1,000 kHz
30 μ V, external antenna

Image rejection: 50 dB at 1,000 kHz

I-f rejection: 40 dB at 1,000 kHz

Signal-to-noise ratio: 50 dB at 50 mV/m

Harmonic distortion: 0.8 % at 50 mV/m

Amplifier Section

Continuous RMS power output: Both channels driven simultaneously
(rated output) 60 + 60 watts (8 ohms)
(Less than 0.2 % THD) at 20 Hz to 20 kHz
70 + 70 watts (8 ohms)
85 + 85 watts (4 ohms) at 1 kHz
One channel driven
85/85 watts (8 ohms)
110/110 watts (4 ohms)

Dynamic power output: 240 watts (8 ohms)
(IHF constant 380 watts (4 ohms)
power supply method)

Power bandwidth, IHF: 15 Hz to 35 kHz

Damping factor: 50 (8 ohms)

Harmonic distortion: Less than 0.2 % at rated output
Less than 0.1 % at 1 watt output

IM distortion: (60 Hz : 7 kHz = 4 : 1)
Less than 0.2 % at rated output
Less than 0.1 % at 1 watt output

Frequency response: PHONO RIAA equalization curve \pm 1 dB
MIC 100 Hz to 10 kHz \pm 0 dB
AUX }
TAPE }
REC/PB (input) }

POWER AMP } 10 Hz to 100 kHz \pm 0 dB

Signal-to-noise ratio:

	S/N	Weighting network	Input level
PHONO	74 dB	A	2 mV
MIC	65 dB	B	1 mV
AUX	90 dB	A	150 mV
TAPE			
REC/PB (input)			
POWER AMP	110 dB		1 V

Input sensitivity and impedance:

	Maximum sensitivity	Impedance
PHONO	2 mV	47 k ohms
MIC	1 mV	47 k ohms
AUX	150 mV	50 k ohms
TAPE		
REC/PB (input)		
POWER AMP	1 V	50 k ohms

Note: Maximum sensitivity means the input level at which the rated output is provided into 8 ohms (with both channels driven at full volume) at 1 kHz.

Output level and impedance:

	Level	Impedance
REC OUT	250 mV	10 k ohms
REC/PB (output)	30 mV	82 k ohms
PREAMP OUTPUT	1 V	4.7 k ohms

HEADPHONE: Accepts all low and high impedance headphones.

SPEAKER: Accepts 4 ~ 16 ohm speakers.

Tone controls: BASS \pm 10 dB at 100 Hz
TREBLE \pm 10 dB at 10 kHz

High filter: 12 dB/oct. above 9 kHz

Low filter: 12 dB/oct. below 50 Hz
Loudness control: + 10 dB at 50 Hz, + 4 dB at 10 kHz
(Attenuation : 30 dB)

General:

System: Superheterodyne fm/a-m, switching MPX Complementary symmetry circuit (SEPP OTL), Direct output coupling

Power requirements: 120 volts, 60 Hz ac

Power consumption: 180 watts

AC outlets: 2 switched, 200 watts, total
1 unswitched, 200 watts

Dimensions: 471 (w) x 157 (h) x 375 (d) mm
18⁹/₁₆ x 6³/₁₆ x 14³/₄ inches

Net weight: 15.2 kg (33 lb 8 oz)

Shipping weight: 18.9 kg (41 lb 11 oz)

1-2. CIRCUIT DESCRIPTION DIGEST

1. Noise Elimination Circuit for Tuner Section

This circuit is used to eliminate noises due to B+ voltage fluctuation of tuner when changing the FUNCTION switch S1 to FM or AM from other position. Referring to Fig. 1-1, when S1 is changed

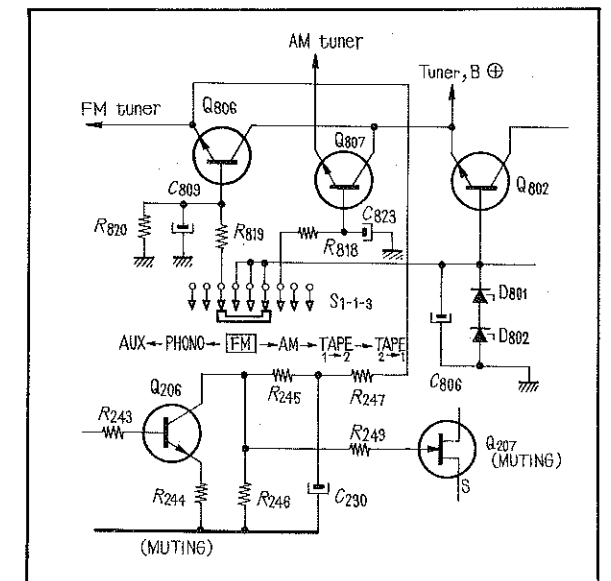


Fig. 1-1. Noise elimination circuit for tuner section

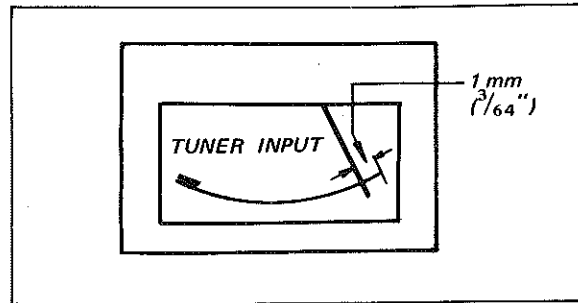


Fig. 3-9. TUNER INPUT meter calibration

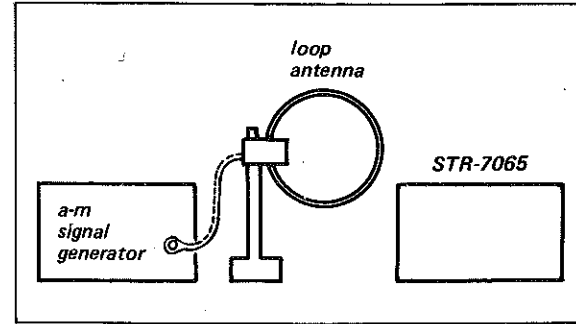
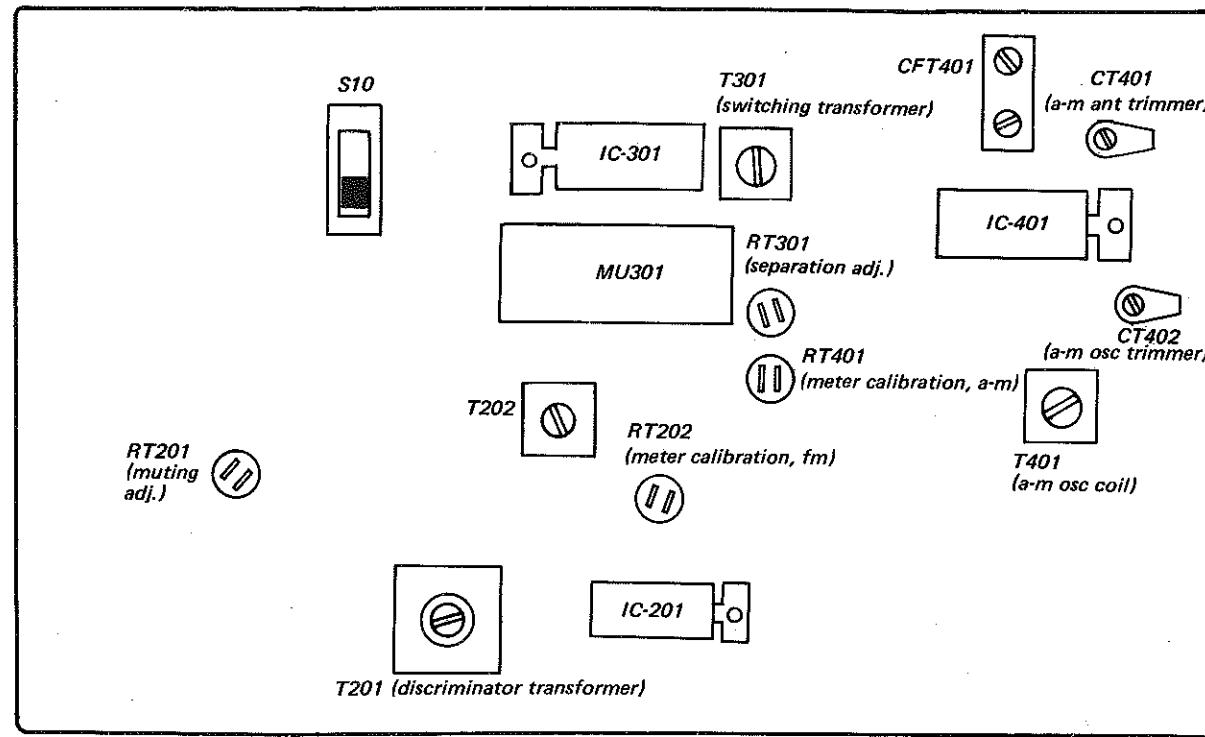


Fig. 3-10. Tuner input meter calibration test setup (A-m)

Adjustment Parts Location

A-m Front End/I-f Amplifier/MPX Board
- Component Side -

rear panel side



front panel side

Fig. 3-11. Adjustment parts location

3-9. POWER-AMPLIFIER ADJUSTMENT

Dc-Bias Adjustment

Serious deficiencies in performance, such as thermal runaway of power transistors, will result if this adjustment is improperly set.

CAUTION

To avoid accidental power transistor damage, increase the ac line voltage gradually, using a variable transformer.

Test Equipment Required

1. Dc millivoltmeter
2. Variable transformer
3. Screwdriver, 3 mm (1/8") blade

Preparation

1. Remove the wooden case.
2. Connect the dc millivoltmeter across the test points as shown in Fig. 3-12.
3. Turn the adjustable resistors RT701 and RT751 on the power amp/power supply board fully counterclockwise as shown in Fig. 3-12.
4. Set the variable transformer for minimum output.

Procedure

1. Turn on POWER switch, and increase the line voltage up to the rated value (120 V).
2. Adjust RT701 (RT751) for 50 mV reading on the meter.

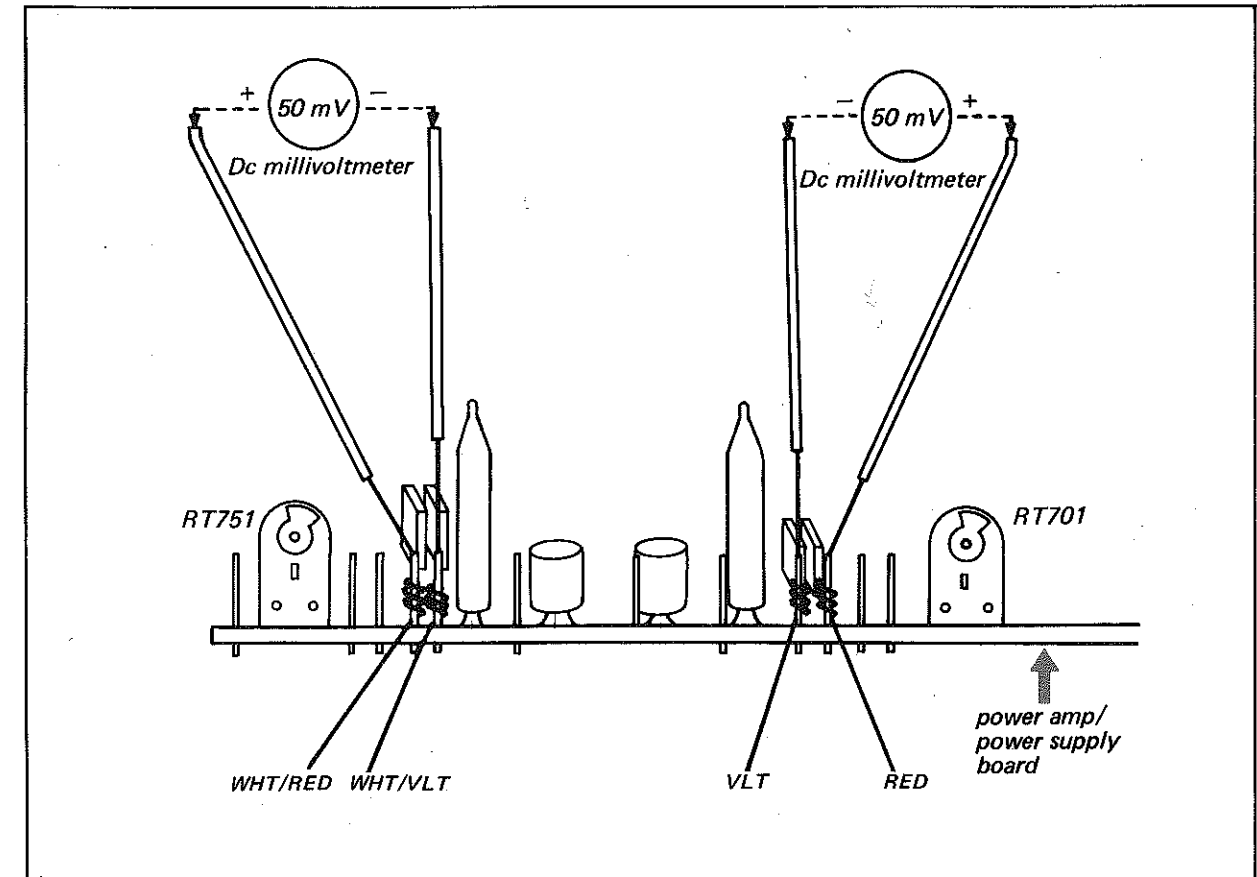
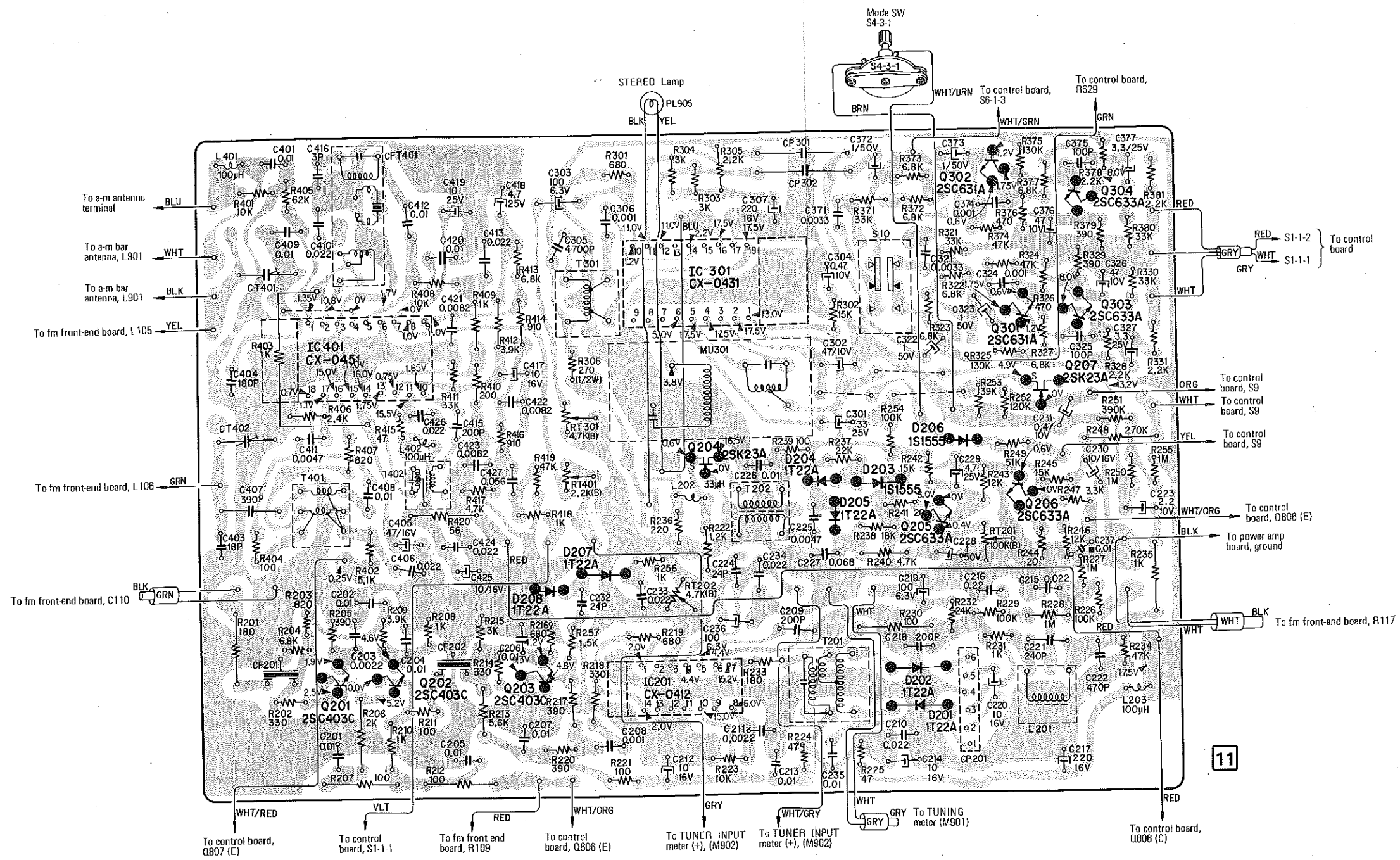
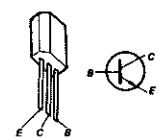


Fig. 3-12. Power-amplifier adjustment test setup

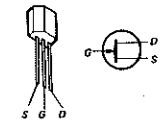
5.5. MOUNTING DIAGRAM – A-m Front End/I-f Amplifier/MPX Board
 – Conductor Side –



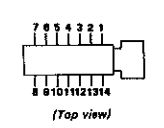
2SC403C
 2SC631A
 2SC633A



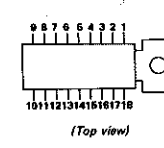
2SK23A



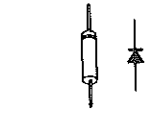
CX-0412



CX-0431
 CX-0451



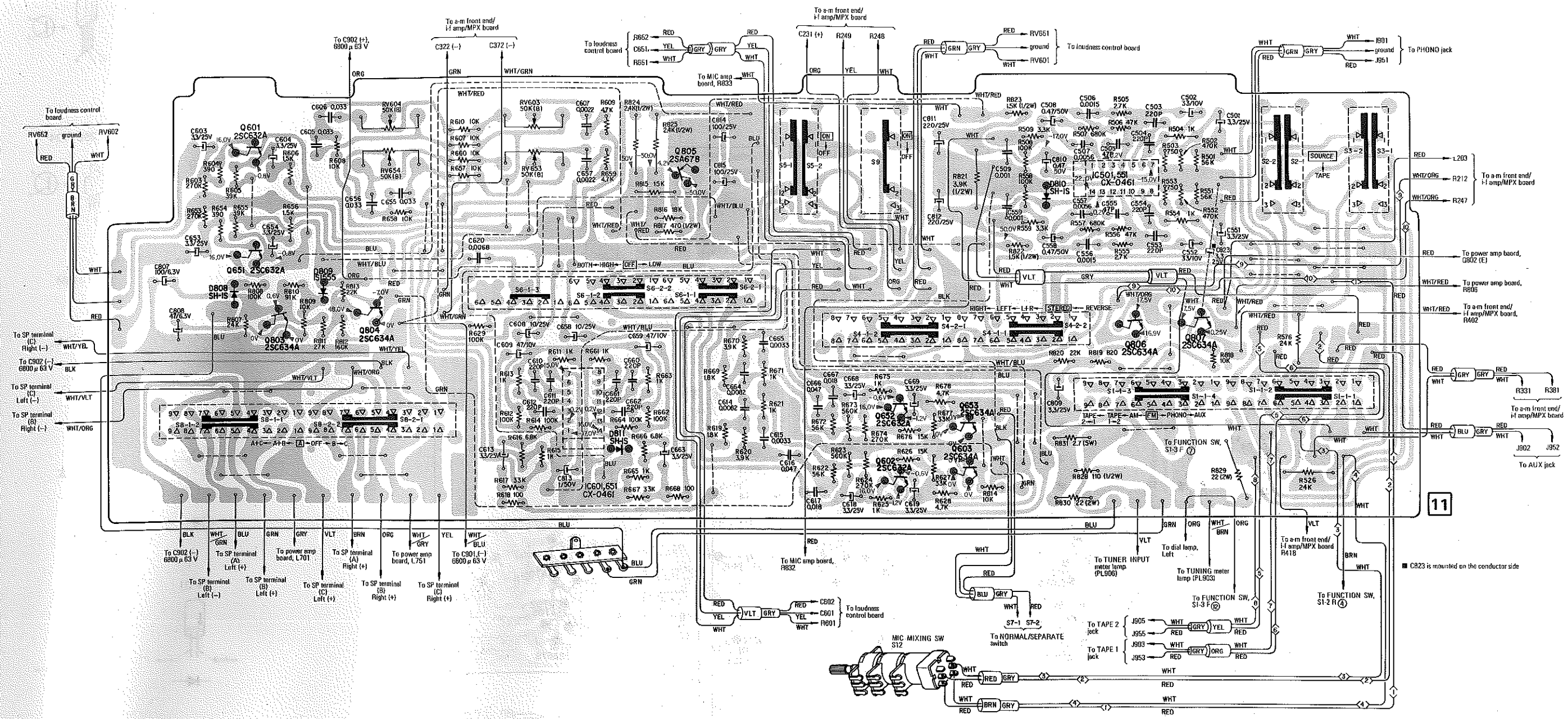
1T22A
 1S1555



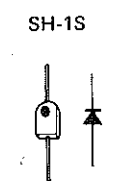
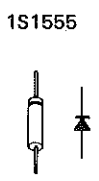
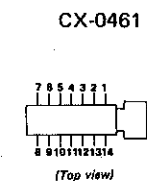
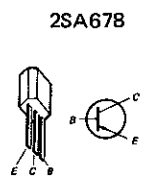
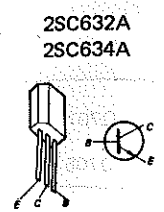
■ C237 is mounted on the conductor side

Transistor Location	Q201	Q202	Q203	Q204	Q205	Q301 Q206	Q302 Q207	Q303 Q304

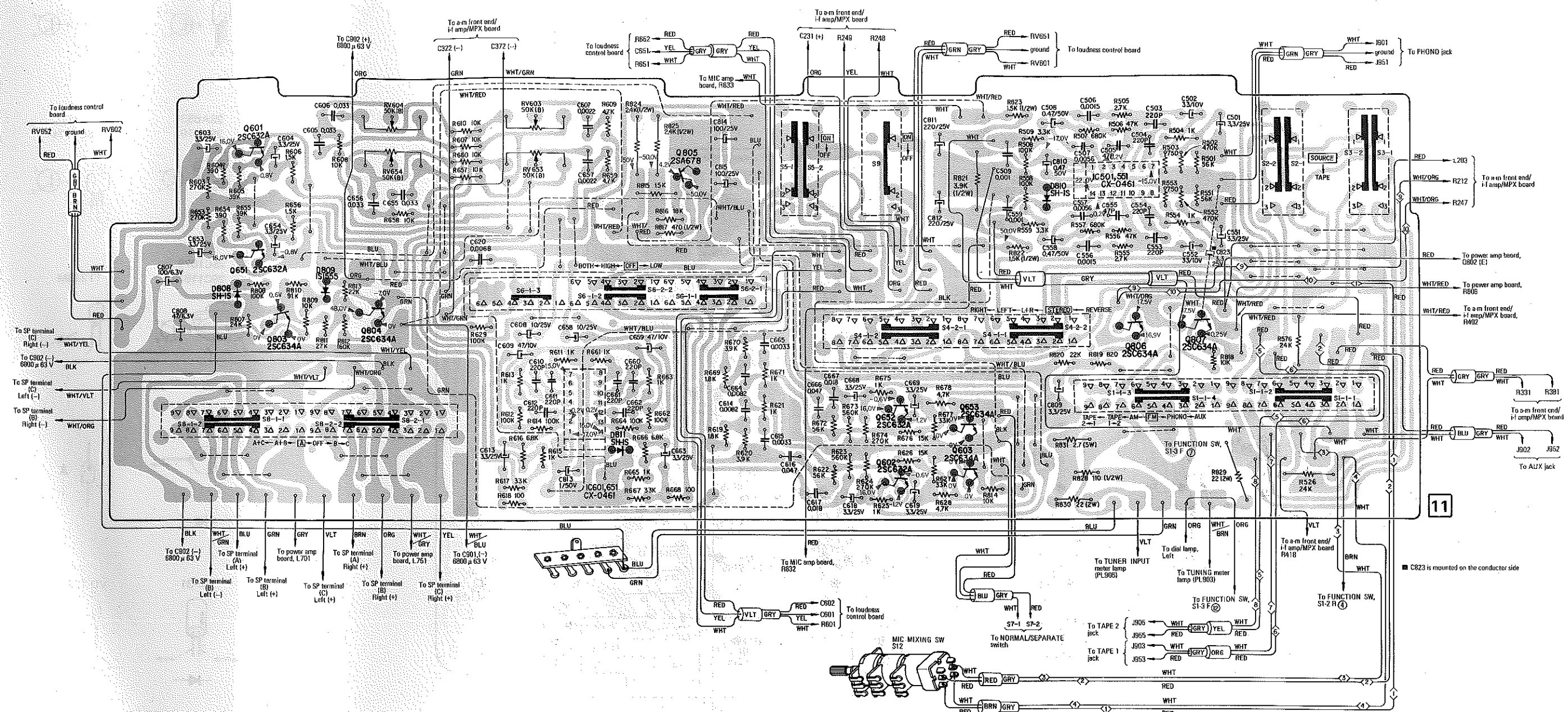
5-6. MOUNTING DIAGRAM - Control Board -
- Conductor Side - (CCB-115)



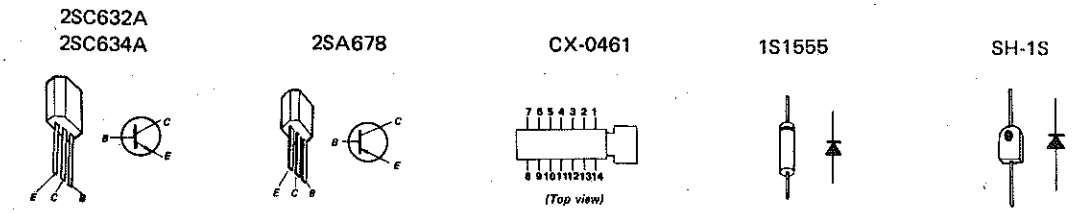
Transistor Location	Q601	Q651	Q803	Q804	Q805	Q652	Q602	Q653	Q603	Q806	Q807
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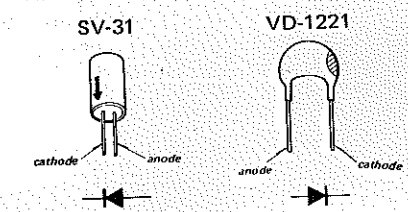
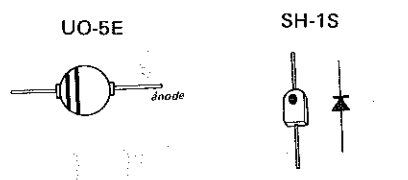
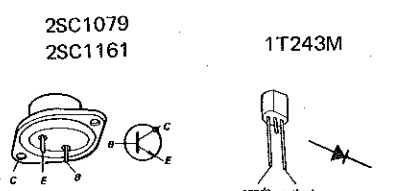
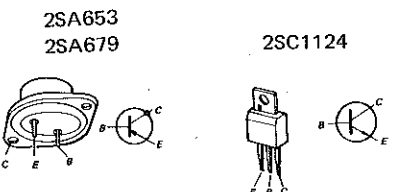
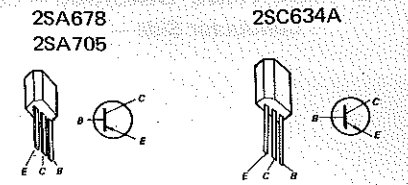
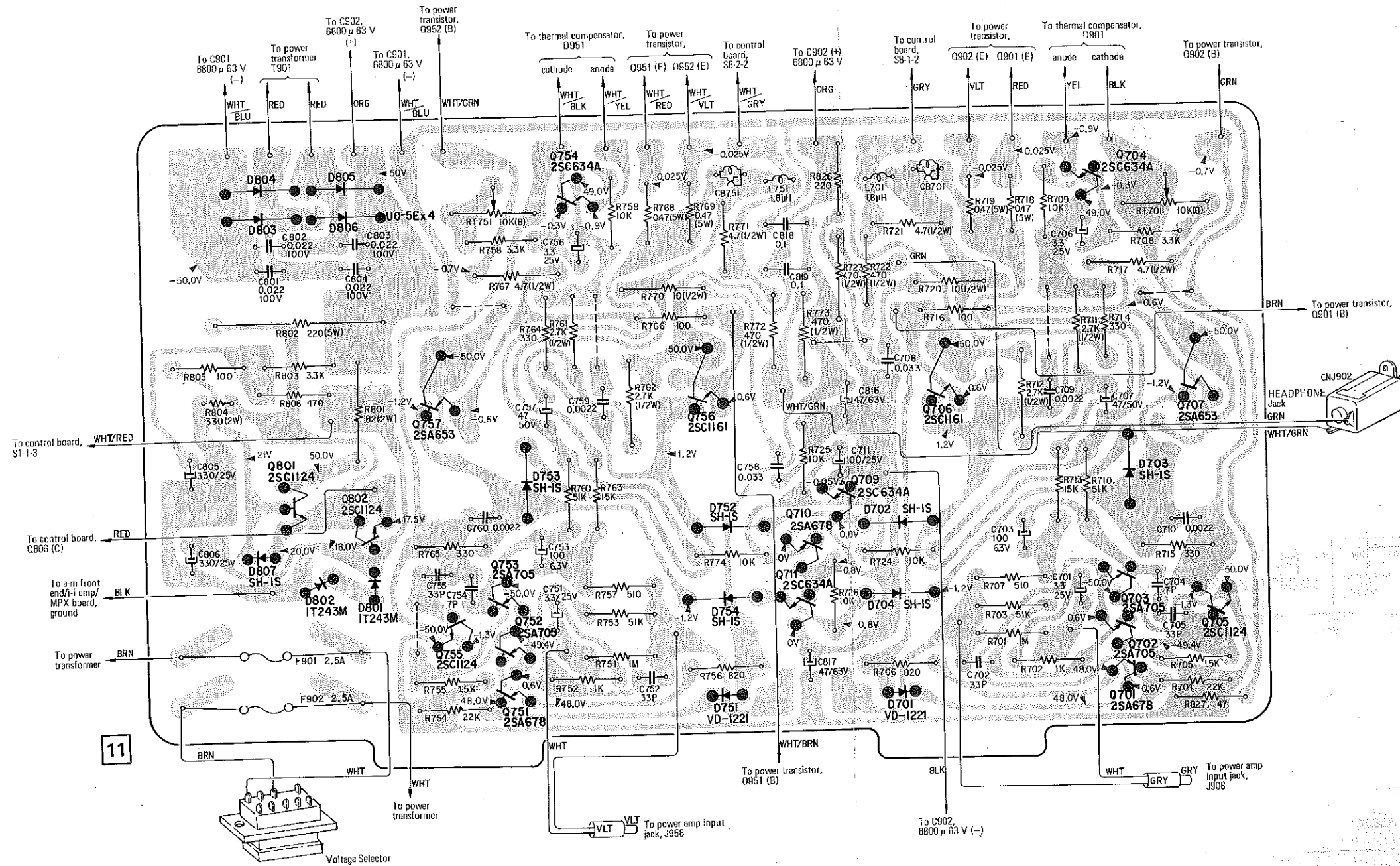
5-6. MOUNTING DIAGRAM - Control Board -
- Conductor Side - (CCB-115)



Transistor Location	Q601 Q651 Q803	Q804	Q805	Q652 Q602	Q653 Q603	Q806	Q807
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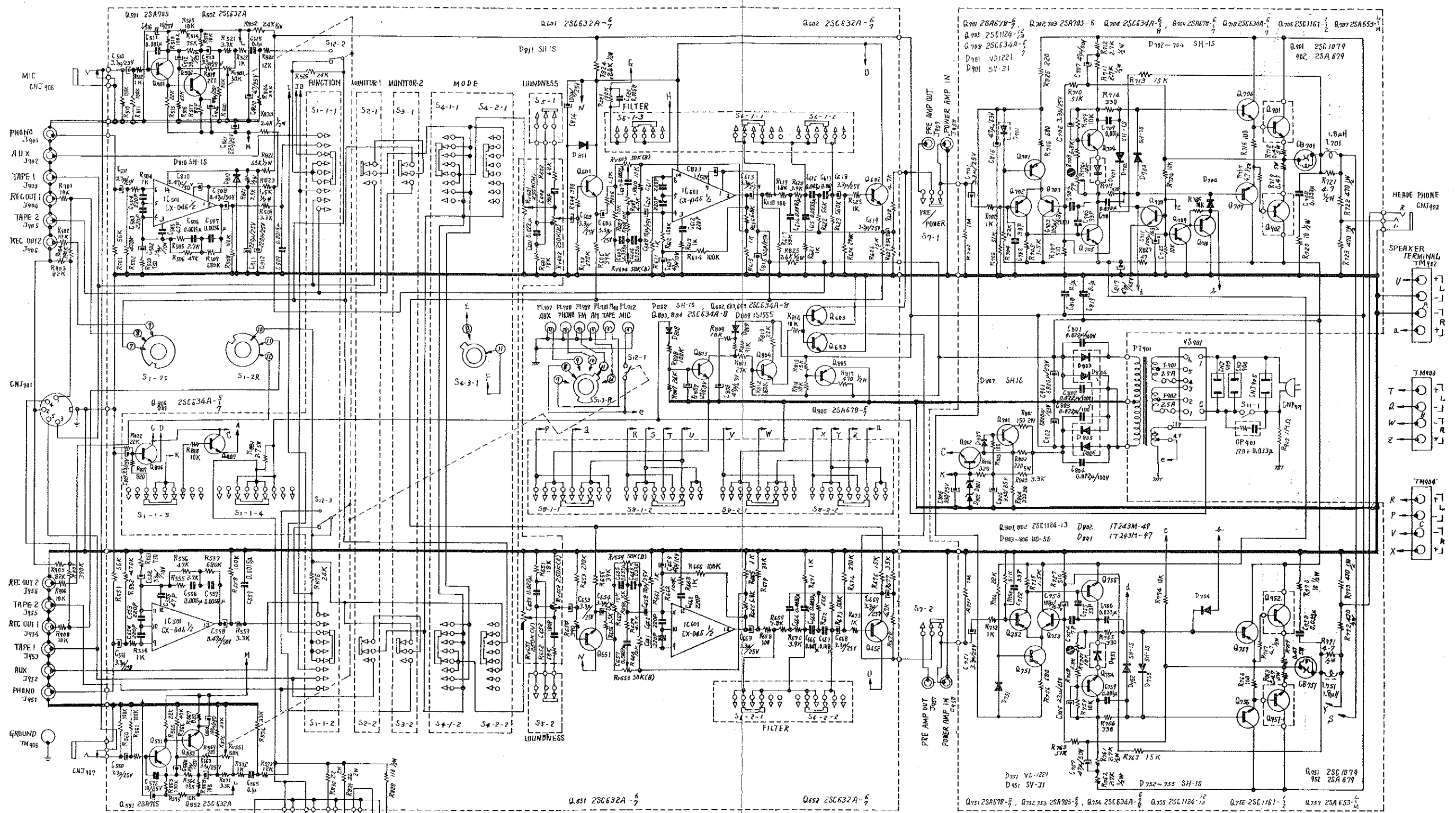


5-7. MOUNTING DIAGRAM - Power Amplifier/Power Supply Board -
- Conductor Side -

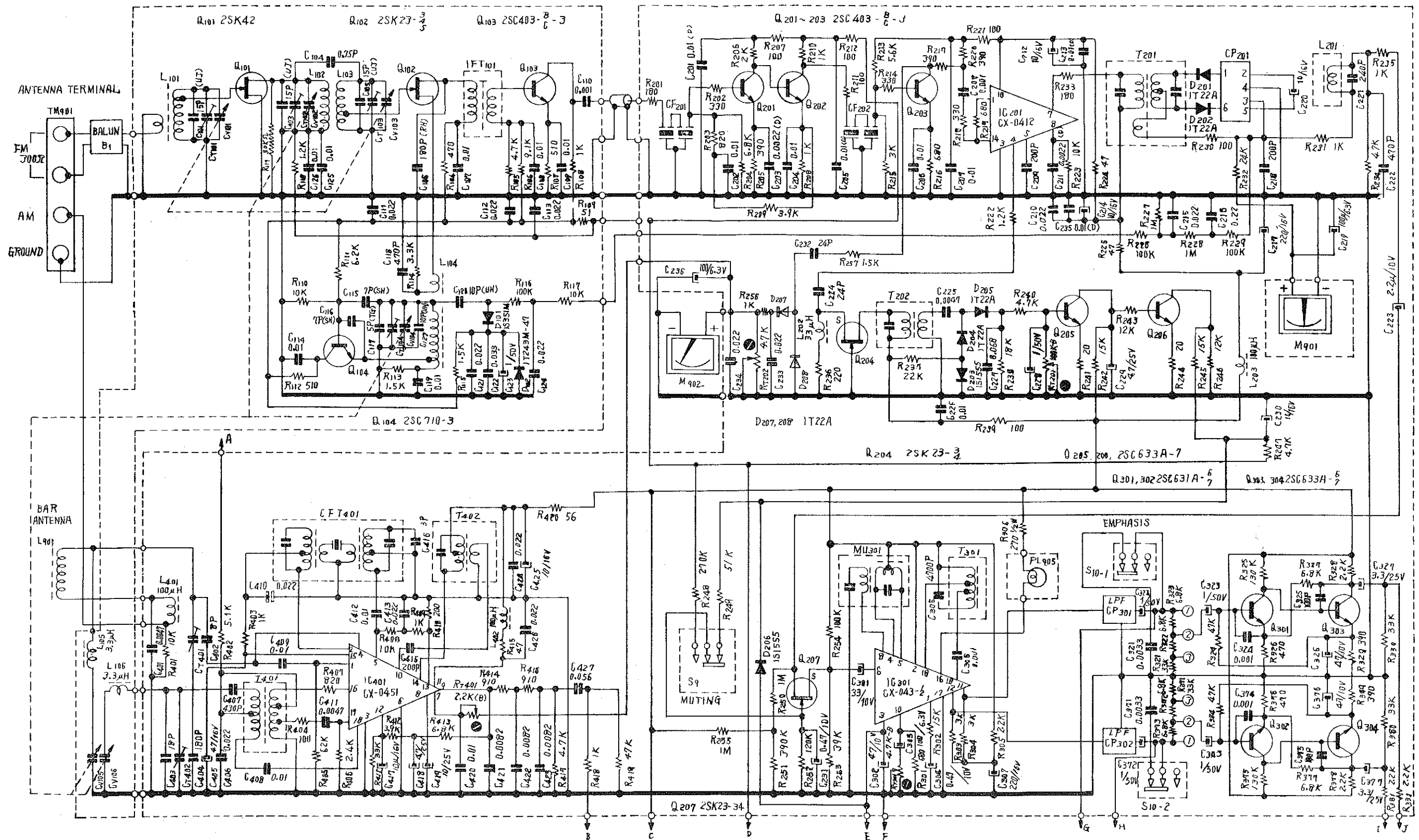


Transistor	Q801	Q802	Q757	Q753	Q752	Q751	Q756	Q710	Q711	Q709	Q704	Q703	Q702	Q701	Q707	Q705
Location																

SONY STR-7065 CIRCUIT DIAGRAM/DIAGRAMME DE CIRCUIT/SCHALTBILD



- | | |
|--------------------------------------|-----------------------------------|
| S1 ; FUNCTION SW: FM STEREO POSITION | PL901,902 ; DIAL LAMP |
| S2 ; MONITOR-1 SW: SOURCE POSITION | PL903,906 ; METER LAMP |
| S3 ; MONITOR-2 SW: " " " " | PL904 ; DIAL INDICATOR LAMP |
| S4 ; MODE SW: STEREO " " " " | PL907-912 ; FUNCTION |
| S5 ; LOUDNESS SW: ON " " " " | AUX- PHONO - FM - AM - TAPE - MIC |
| S6 ; FILTER SW: OFF " " " " | |
| S7 ; PRE/MAIN AMP SW: NORMAL " " " " | |



R_T201 : MUTING LEVEL ADJ.
 R_T202 : FM INPUT METER ADJ.
 R_T301 : STEREO SEPARATION ADJ.

R_T401 : AM INPUT METER ADJ.

PL905 : STEREO INDICATOR LAMP

S₉ : MUTING SW ON POSITION

S₁₀ : EMPHASIS SW 75μ sec. POSITION.

Ref. No.	Part No.	Description
R408	1-242-697-11	10 k
R409	1-242-673-11	1 k
R410	1-242-656-11	200
R411	1-242-709-11	33 k
R412	1-242-687-11	3.9 k
R413	1-242-693-11	6.8 k
R414	1-242-672-11	910
R415	1-242-641-11	47
R416	1-242-672-11	910
R417	1-242-689-11	4.7 k
R418	1-242-673-11	1 k
R419	1-242-713-11	47 k
R420	1-244-643-11	56
R501(R551)	1-242-715-11	56 k
R502(R552)	1-242-737-11	470 k
R503(R553)	1-242-670-11	750
R504(R554)	1-242-673-11	1 k
R505(R555)	1-242-683-11	2.7 k
R506(R556)	1-242-713-11	47 k
R507(R557)	1-242-741-11	680 k
R508(R558)	1-242-721-11	100 k
R509(R559)	1-242-685-11	3.3 k
R510(R560)	1-242-721-11	100 k
R511(R561)	1-242-721-11	100 k
R512(R562)	1-242-673-11	1 k
R513(R563)	1-242-721-11	100 k
R514(R564)	1-242-718-11	75 k
R515(R565)	1-242-705-11	22 k
R516(R566)	1-242-713-11	47 k
R517(R567)	1-242-671-11	820
R518(R568)	1-242-697-11	10 k
R519(R569)	1-242-657-11	220
R520(R570)	1-242-709-11	33 k
R521(R571)	1-242-685-11	3.3 k
R522(R572)	1-242-673-11	1 k
R523(R573)	1-242-698-11	12 k
R524(R574)	1-242-709-11	33 k
R525(R575)	1-242-697-11	10 k
R526(R576)	1-244-699-11	24 k
R601(R651)	1-244-703-11	18 k
R602(R652)	1-244-717-11	68 k
R603(R653)	1-242-731-11	270 k
R604(R654)	1-242-663-11	390
R605(R655)	1-242-711-11	39 k
R606(R656)	1-242-677-11	1.5 k
R607(R657)	1-242-697-11	10 k
R608(R658)	1-242-697-11	10 k
R609(R659)	1-242-689-11	4.7 k
R610(R660)	1-242-697-11	10 k
R611(R661)	1-242-673-11	1 k
R612(R662)	1-242-721-11	100 k

Ref. No.	Part No.	Description
R613(R663)	1-242-673-11	1 k
R614(R664)	1-242-721-11	100 k
R615(R665)	1-242-673-11	1 k
R616(R666)	1-242-693-11	6.8 k
R617(R667)	1-242-709-11	33 k
R618(R668)	1-242-649-11	100
R619(R669)	1-242-679-11	1.8 k
R620(R670)	1-242-687-11	3.9 k
R621(R671)	1-242-673-11	1 k
R622(R672)	1-242-715-11	56 k
R623(R673)	1-242-739-11	560 k
R624(R674)	1-242-731-11	270 k
R625(R675)	1-242-673-11	1 k
R626(R676)	1-242-701-11	15 k
R627(R677)	1-242-709-11	33 k
R628(R678)	1-242-689-11	4.7 k
R629	1-242-721-11	100 k
R701(R751)	1-244-745-11	1 M
R702(R752)	1-244-673-11	1 k
R703(R753)	1-244-714-11	51 k
R704(R754)	1-244-705-11	22 k
R705(R755)	1-244-677-11	1.5 k
R706(R756)	1-244-671-11	820
R707(R757)	1-244-666-11	510
R708(R758)	1-244-685-11	3.3 k
R709(R759)	1-244-697-11	10 k
R710(R760)	1-244-714-11	51 k
R711(R761)	1-202-583-11	2.7 k ±10% ½ W composition
R712(R762)	1-202-583-11	2.7 k ±10% ½ W composition
R713(R763)	1-244-701-11	15 k
R714(R764)	1-244-661-11	330
R715(R765)	1-244-661-11	330
R716(R766)	1-244-649-11	100
R717(R767)	1-202-517-11	4.7 ±10% ½ W composition
R718(R768)	1-217-158-11	0.47 ±10% 5 W metal
R719(R769)	1-217-158-11	0.47 ±10% 5 W metal
R720(R770)	1-202-525-11	10 ±10% ½ W composition
R721(R771)	1-202-517-11	4.7 ±10% ½ W composition
R722(R772)	1-202-565-11	470 ±10% ½ W composition
R723(R773)	1-202-565-11	470 ±10% ½ W composition
R724(R774)	1-244-697-11	10 k
R725	1-244-697-11	10 k
R726	1-244-697-11	10 k
R801	1-207-635-11	82 ±10% 2 W wirewound
R802	1-207-688-11	220 ±10% 5 W wirewound
R803	1-244-685-11	3.3 k
R804	1-207-639-11	330 ±10% 2 W wirewound
R805	1-244-649-11	100
R806	1-244-665-11	470
R807	1-242-706-11	24 k
R808	1-242-721-11	100 k

Ref. No.	Part No.	Description
R809	1-242-697-11	10 k
R810	1-242-720-11	91 k
R811	1-242-707-11	27 k
R812	1-242-726-11	160 k
R813	1-242-705-11	22 k
R814	1-242-697-11	10 k
R815	1-242-701-11	15 k
R816	1-242-703-11	18 k
R817	1-202-565-11	470 ±10% ½ W composition
R818	1-242-697-11	10 k
R819	1-242-671-11	820
R820	1-242-705-11	22 k
R821	1-202-587-11	3.9 k ±10% ½ W composition
R822	1-202-577-11	1.5 k ±10% ½ W composition
R823	1-202-577-11	1.5 k ±10% ½ W composition
R824	1-202-582-11	2.4 k ±10% ½ W composition
R825	1-202-582-11	2.4 k ±10% ½ W composition
R826	1-244-657-11	220
R827	1-244-641-11	47
R828	1-202-550-11	110 ±10% ½ W composition
R829	1-207-630-11	22 ±10% 2 W wirewound
R830	1-207-630-11	22 ±10% 2 W wirewound
R831	1-207-929-11	2.7 ±10% 5 W wirewound
R832	1-202-510-11	2.4 k ±10% ½ W composition
R833	1-202-510-11	2.4 k ±10% ½ W composition
R901(R951)	1-244-697-11	10 k
R902(R952)	1-244-697-11	10 k
R903(R953)	1-244-719-11	82 k
R904(R954)	1-244-735-11	390 k
R905	1-202-645-11	1 M ±10% ½ W composition
RT201	1-222-845-11	100 k (B), adjustable
RT202	1-221-978-11	4.7 k (B), adjustable
RT301	1-221-978-11	4.7 k (B), adjustable
RT401	1-221-997-11	2.2 k (B), adjustable
RT701 (RT751)	1-221-967-11	10 k (B), adjustable
RV501 (RV551)	1-224-103-11	50 k (C), variable (MIC MIXING)
RV601 (RV651)	1-224-102-11	250 k (B)/250 k (M), variable (VOLUME)
RV602 (RV652)	1-224-102-11	250 k (B)/250 k (M), variable (BALANCE)
RV603 (RV653)	1-224-101-11	50 k (B), variable (TREBLE)
RV604 (RV654)	1-224-101-11	50 k (B), variable (BASS)

Ref. No.	Part No.	Description
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SWITCHES

S1	1-516-199-00	switch, rotary/slide (FUNCTION)
S2	1-516-036-00	switch, lever (MONITOR 1)
S3	1-516-036-00	switch, lever (MONITOR 2)
S4	1-516-196-00	switch, rotary/slide (MODE)
S5	1-516-036-00	switch, lever (LOUDNESS)
S6	1-516-197-00	switch, rotary/slide (FILTER)
S7	1-514-524-00	switch, slide (NORMAL/SEPARATE)
S8	1-514-198-00	switch, rotary/slide (SPEAKER)
S9	1-516-036-00	switch, lever (MUTING)
S10	1-514-448-00	switch, slide (DE-EMPHASIS)
S11	1-516-007-00	switch, seesaw (POWER)
S12-1 ~ 3		switch, MIC MIXING (built in RV501, 551)

FILTERS

CF201,202	1-527-507-12	fm i-f, ceramic 10.70 MHz (red)
	1-527-507-22	fm i-f, ceramic 10.66 MHz (black)
	1-527-507-32	fm i-f, ceramic 10.74 MHz (white)
	1-527-507-42	fm i-f, ceramic 10.62 MHz (green)
	1-527-507-52	fm i-f, ceramic 10.78 MHz (yellow)

MISCELLANEOUS

CB701 (CB751)	1-515-194-00	breaker, circuit
CP201	1-231-193-00	encapsulated component
CP301,302	1-231-224-00	encapsulated component
CP901	1-231-057-12	encapsulated component, 0.033 μF + 120 Ω
CNJ901	1-509-517-00	connector, REC/PB
CNJ902	1-507-265-00	jack, HEADPHONE
CNJ903,904 CJN905	1-509-403-00	outlet, ac
CNJ906 CJN907	1-507-394-00	jack, MIC
F901,902	1-532-269-00	fuse, 2.5 A
J901 ~ 908 (J951 ~ 958)	1-507-393-00	jack, phono; 8-p
M901	1-520-140-00	meter, TUNING
M902	1-520-141-00	meter, TUNER INPUT
PL901,902	1-518-116-00	lamp, dial 11V/0.36 A
PL903	1-518-124-00	lamp, TUNING 8 V/0.25 A
PL904	1-518-151-00	lamp, pointer
PL905	1-518-158-00	lamp, STEREO
PL906	1-518-124-00	lamp, TUNER INPUT meter 8 V/0.25 A
PL907 ~ PL912	1-518-121-00	lamp, AUX, PHONO, FM, A-M, TAPE, MIC 4.5 V/0.04 A
VS901	1-526-520-00	selector, voltage
	1-509-437-00	socket, power transistor
	1-517-057-00	holder, meter lamp; 2-p

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	1-533-090-00	holder, dial lamp
	1-534-526-21	cord, power
	1-535-055-00	lug terminal
	1-536-353-00	terminal post, U-shaped (single)
	1-536-354-00	terminal post (C)
	1-536-355-00	terminal post, U-shaped (double)

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	1-536-395-00	terminal strip, 1L1C
	1-536-398-00	terminal strip, 2L2C
TM901 ~ TM904	1-536-415-00	screw terminal strip, 4-p (ANTENNA)
	1-582-233-00	jumper board, 8-p phono jack

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