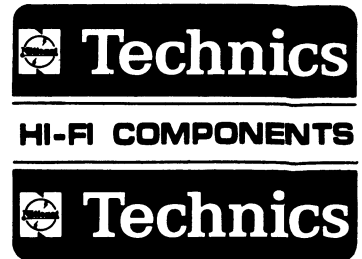


Service Manual



CD-4 FM/AM
4 CHANNEL/2 CHANNEL RECEIVER



MODEL SA-8000X

TECHNICAL SPECIFICATIONS (IHf) Specifications are subject to change without notice for further improvement.

AUDIO SECTION

Music power:		
4 CH operation		160W (4Ω)
2 CH Balanced Transformerless operation		160W (8Ω)
1 kHz RMS (continuous) power:		
4 CH operation (Each ch. driven)		30W/30W/30W/30W (4Ω)
		22W/22W/22W/22W (8Ω)
(All ch. driven)		18W+18W+18W+18W (4Ω)
		16W+16W+16W+16W (8Ω)
2 CH Balanced Transformerless (Each ch. driven)		57W/57W (8Ω)
(Both ch. driven)		42W+42W (8Ω)
20 Hz~20 kHz RMS (continuous) power:		
4 CH operation all ch. driven		13W+13W+13W+13W (8Ω)
2 CH Balanced Transformerless operation Both ch. driven		36W+36W (8Ω)
Power bandwidth (all ch. driven 8Ω):		5 Hz~40 kHz, -3 dB
Frequency response:		PHONO RIAA standard curve ±1 dB
	AUX	10 Hz~50 kHz, +0 dB -3 dB
Residual hum & noise:		1.5 mV
Input sensitivity & impedance:		PHONO MM 1.5 mV/50 kΩ
	AUX, PLAYBACK	150 mV/60 kΩ
S/N (IHf, A):		MIC 2 mV/50 kΩ
	PHONO	70 dB
	AUX	90 dB
Tone control:		BASS 50 Hz, +13 dB -13 dB
	TREBLE	10 kHz, +10 dB -10 dB
Loudness control: (Volume at -30 dB)		50 Hz, +10 dB
REC OUT:		150 mV
Damping factor:		30 (8Ω)
Load impedance:		4 CH (4~16Ω) Balanced Transformerless (8~16Ω)

Total harmonic distortion: 0.5%
Intermodulation distortion: (60 Hz : 7 kHz = 4 : 1, SMPTE) 0.7%

FM TUNER SECTION

Frequency range:	88~108 MHz
FM sensitivity (IHf):	1.9 μV
Alternate channel selectivity:	65 dB
Harmonic distortion:	MONO 0.3% STEREO 0.4%
S/N:	65 dB
Frequency response:	20 Hz~13 kHz, ±1 dB
Image rejection (at 98 MHz):	55 dB
IF rejection (at 98 MHz):	60 dB
Spurious response rejection (at 98 MHz):	60 dB
Capture ratio:	1.8 dB
AM suppression:	50 dB
Stereo separation (at 1 kHz):	40 dB
Leak carrier (19 kHz, 38 kHz):	50 dB

AM TUNER SECTION

Frequency range:	520~1610 kHz
Sensitivity:	20 μV
Selectivity:	25 dB
Image rejection (at 1000 kHz):	40 dB
IF rejection (at 1000 kHz):	40 dB

GENERAL

Power consumption:	345 W
Power supply:	50/60 Hz 110/120/200/240 V
Dimensions (W x H x D):	495 x 160 x 400 mm (19 3/4" x 6 3/8" x 15 3/4")
Weight:	13.5 kg (29.8 lb)

TECHNISCHE DATEN (DIN 45 500) Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

VERSTÄRKERTEIL

Musikleistung:	4-Kanal Betrieb	4 x 40W (4Ω)
	Transformatorlos Ausgeglichen Betrieb	2 x 80W (8Ω)
Nennleistung 1 kHz:		
	4-Kanal Betrieb Alle Kanäle in Betrieb	4 x 18W (4Ω) 4 x 16W (8Ω)
	Transformatorlos Ausgeglichen Betrieb Beide Kanäle in Betrieb	2 x 42W (8Ω)
Nennleistung 20 Hz~20 kHz:		
	4-Kanal Betrieb Alle Kanäle in Betrieb	4 x 15W (4Ω) 4 x 13 W (8Ω)
	Transformatorlos Ausgeglichen Betrieb Beide Kanäle in Betrieb	2 x 36W (8Ω)
Harmonische Verzerrung: Nennleistung, bei 1000 Hz 4Ω 0.5%		
Intermodulations Verzerrung: Nennleistung, bei 250 Hz: 8000 Hz = 4 : 1 0.7%		
Leistungsbandsbreite (Alle Kanäle in Betrieb 4Ω): 5 Hz~40 kHz -3 dB		
Frequenzgang: 10 Hz~50 kHz, -3 dB		
Eingangsempfindlichkeit und-Impedanz: PHONO MM 1.5 mV/50 kΩ		
	AUX	150 mV/60 kΩ
	MIC	2 mV/50 kΩ
Tonband-Cinchbuchse: PLAYBACK 150 mV/60 kΩ		
	REC OUT	150 mV
Fremdspannungsabstand:		
	bei Nennleistung	PHONO 60 dB
		AUX 78 dB
	bei 50 mW Ausgangsleistung	PHONO 50 dB
		AUX 56 dB
Klangregler: Tiefen-Bereich +13 dB, -13 dB bei 50 Hz		
	Höhen-Bereich	+10 dB, -10 dB bei 10 kHz
Loudness-Regler: 50 Hz, +10 dB		
Dämpfungsfaktor: 15 bei 4Ω, 30 bei 8Ω		
Ausgänge Lautsprecher: 4-Kanal Betrieb 4~16Ω		
	Transformatorlos Ausgeglichen Betrieb	8~16Ω

UKW-TUNERTEIL

Empfangsbereich:	88~108 MHz
Antennenanschluß:	300 Ω (symmetrisch) 75 Ω (unsymmetrisch)
Empfindlichkeit (bei ±40 kHz Hub):	1.8 μV, 30 dB Fremdspannungsabstand 300 Ω
	1.5 μV, 20 dB Fremdspannungsabstand 300 Ω
	1.0 μV, 20 dB Fremdspannungsabstand 75 Ω
Klirrfaktor (bei =40 kHz Hub):	MONO 0.3% STEREO 0.7%
Fremdspannungsabstand:	MONO 52 dB STEREO 50 dB
Selektivität bei 400 kHz:	65 dB
Spiegelselektion (bei 98 MHz):	55 dB
ZF-Festigkeit (bei 98 MHz):	60 dB
Verzerrungsfestigkeit (bei 98 MHz):	60 dB
Gleich wellen-Selektion:	1.8 dB
AM-Unterdrückung:	50 dB
Stereo-Übersprechdämpfung:	40 dB bei 1 kHz
Pilotton-Unterdrückung:	48 dB bei 19 kHz, 58 dB bei 38 kHz
Begrenzung, Einsatzpunkt:	1.2 μV
Bandbreite:	ZF-Verstärker 350 kHz
	UKW-Demodulator 700 kHz

MW-TUNERTEIL

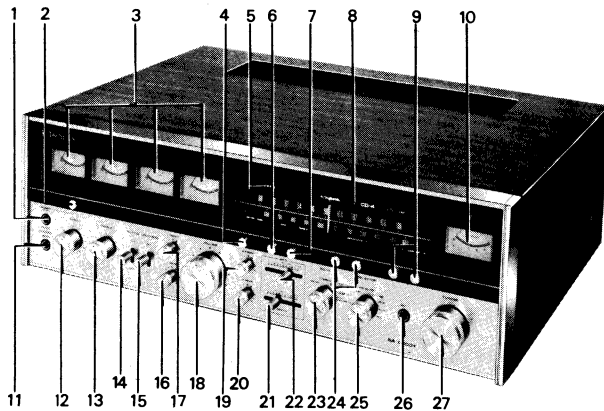
Empfangsbereich:	520~1610 kHz
Empfindlichkeit:	20 μV
Selektivität:	25 dB
Spiegelselektion:	40 dB
ZF-Festigkeit:	40 dB

ALLGEMEINE DATEN

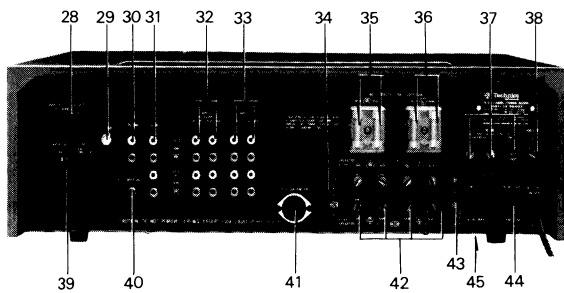
Leistungsaufnahme:	345 W
Netzspannung umschaltbar:	50/60 Hz, 110/120/200/240 V
Abmessungen (B x H x T):	495 x 160 x 400 mm
Gewicht:	13.5 kg

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288, Central Osaka, Japan

LOCATION OF CONTROLS

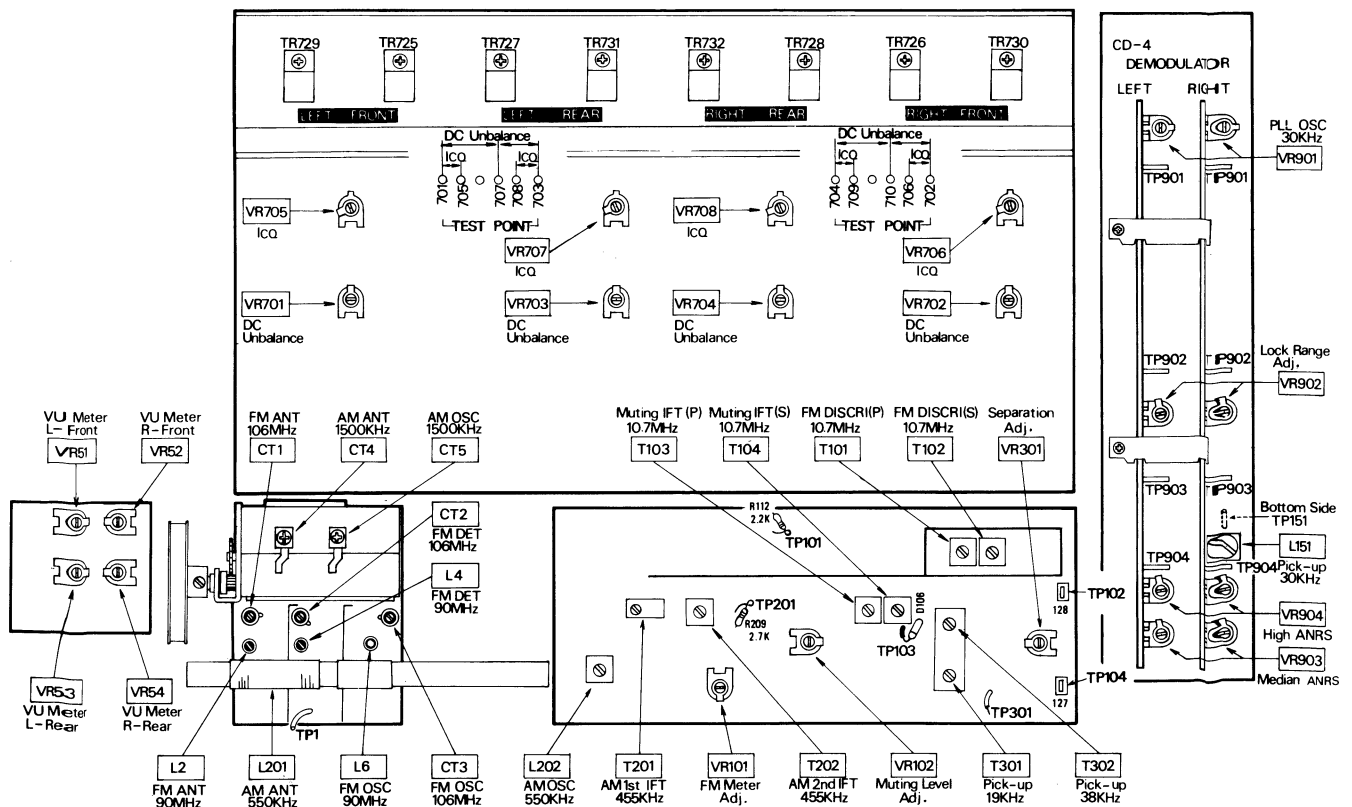


1. HEADPHONES JACK Front Channel
2. POWER SOURCE SWITCH (S8)
3. V.U. [OUTPUT LEVEL] METER
4. V.U. METER RANGE SWITCH (S11)
5. FM STEREO INDICATOR
6. TAPE MONITOR SWITCH TAPE 1 (S3)
7. TAPE MONITOR SWITCH TAPE 2 (S4)
8. CD-4 CHANNEL RADAR
9. CD-4 CARRIER LEVEL ADJUSTMENT [Left and Right] (VR7, 8)
10. SIGNAL STRENGTH METER
11. HEADPHONES JACK Rear Channel
12. BASS CONTROL (VR602)
13. TREBLE CONTROL (VR603)
14. MUTING SWITCH (S5)
15. LOUDNESS SWITCH (S6)
16. LEFT REAR LEVEL CONTROL (VR4)
17. LEFT FRONT LEVEL CONTROL (VR3)
18. MAIN VOLUME CONTROL (VR601)
19. RIGHT FRONT LEVEL CONTROL (VR5)
20. RIGHT REAR LEVEL CONTROL (VR6)
21. AFD [DEPTH] CONTROL (VR2)
22. AFD [WIDTH] CONTROL (VR1)
23. MODE SWITCH (S2)
24. CD-4 SEPARATION ADJUSTMENT [Left and Right] (VR9, 10)
25. SELECTOR SWITCH (S1)
26. MICROPHONE JACK
27. TUNING CONTROL



28. CARRIER LEVEL ADJUSTMENT SWITCH (S9)
29. GROUND TERMINAL
30. PHONO INPUT TERMINALS
31. AUX INPUT TERMINALS
32. TAPE MONITOR TERMINALS TAPE 1
33. TAPE MONITOR TERMINALS TAPE 2
34. BALANCED TRANSFORMER LESS SWITCH (S7)
35. RIGHT CHANNEL CIRCUIT PROTECTION FUSES
36. LEFT CHANNEL CIRCUIT PROTECTION FUSES
37. EXT FM ANTENNA TERMINALS
38. EXT AM ANTENNA TERMINAL
39. CARTRIDGE SELECTOR SWITCH (S10)
40. 4CH MPX OUTPUT TERMINAL
41. 4CH REMOTE BALANCER CONNECTION SOCKET
42. SPEAKER TERMINALS
43. AC POWER OUTLET Switched
44. AC POWER OUTLET Unswitched
45. VOLTAGE SELECTOR SWITCH (S12).....(Set Bottom Side)

ALIGNMENT POINTS



■ CD-4 RECORD PLAY

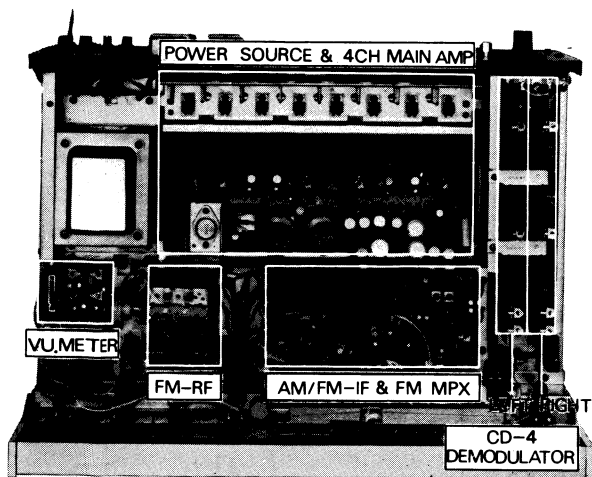
Before playing

1. Connect all of the equipment required for CD-4 play. (Refer to the instruction booklets.)
2. According to the cartridge to be used, set the CARTRIDGE SELECTOR switch of the unit to the proper position.
3. Set the MODE switch to the 4CH DISCRETE position.
4. Set the SELECTOR switch to the CD-4 position.
5. While playing the included CD-4 test record (No. SPR111-1), assure that the sounds are emitted from the speakers of each channel.

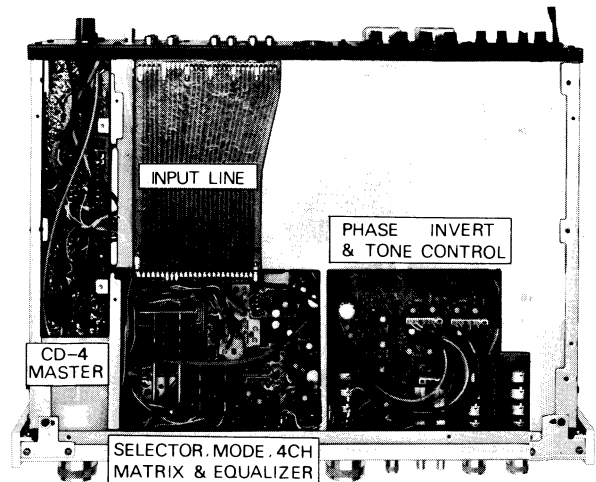
MAIN VOLUME (VR601) CHANNEL LEVEL (VR3, 4, 5, 6)	CARRIER LEVEL CONTROL L(VR7), R(VR8)	SEPARATION CONTROL L(VR9), R(VR10)	CARRIER LEVEL ADJUST SWITCH (S9)	PORTION OF THE INCLUDED TEST RECORD TO BE PLAYED	REMARKS
CARRIER LEVEL ALIGNMENT					
Minimum	Turn completely counterclockwise (to minimum)	Optional Position	L	SIDE A BAND 1	Slowly turn the(L) carrier level control clockwise until the 4 CH RADAR light just illuminates.
			R	SIDE A BAND 1	Slowly turn the(R) carrier level control clockwise until the 4 CH RADAR light just illuminates.
Notes : 1. If the carrier level controls (VR7, VR8) are turned too far, return them to the minimum position and carefully repeat the carrier level control adjustment from the beginning. 2. After the carrier level control adjustment has been completed, set the carrier level adjust switch (S9) to the NORMAL position.					
SEPARATION ALIGNMENT					
Turn VR601 to the max. position. Turn only L _F (VR3) & R _F (VR4) to their min. positions.	Remaining at the position where the carrier level was adjusted.	Variable	NORMAL	SIDE A BAND 2	Turn the left side separation control until the left rear sound becomes minimum.
				SIDE A BAND 3	Turn the right side separation control until the right rear sound becomes minimum.

Note : When the adjustment procedure is completed, set L_F, R_F, L_R, R_R, and the main volume controls back to their original positions.

■ LOCATION OF CIRCUIT BOARDS



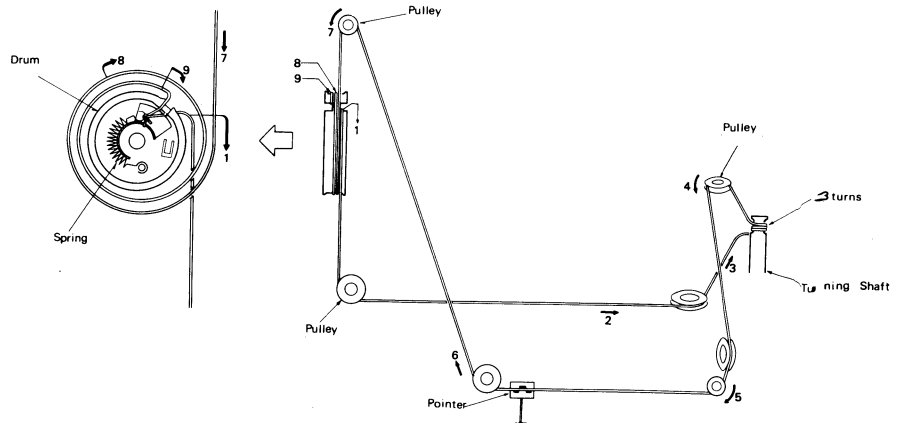
Top View



Bottom View

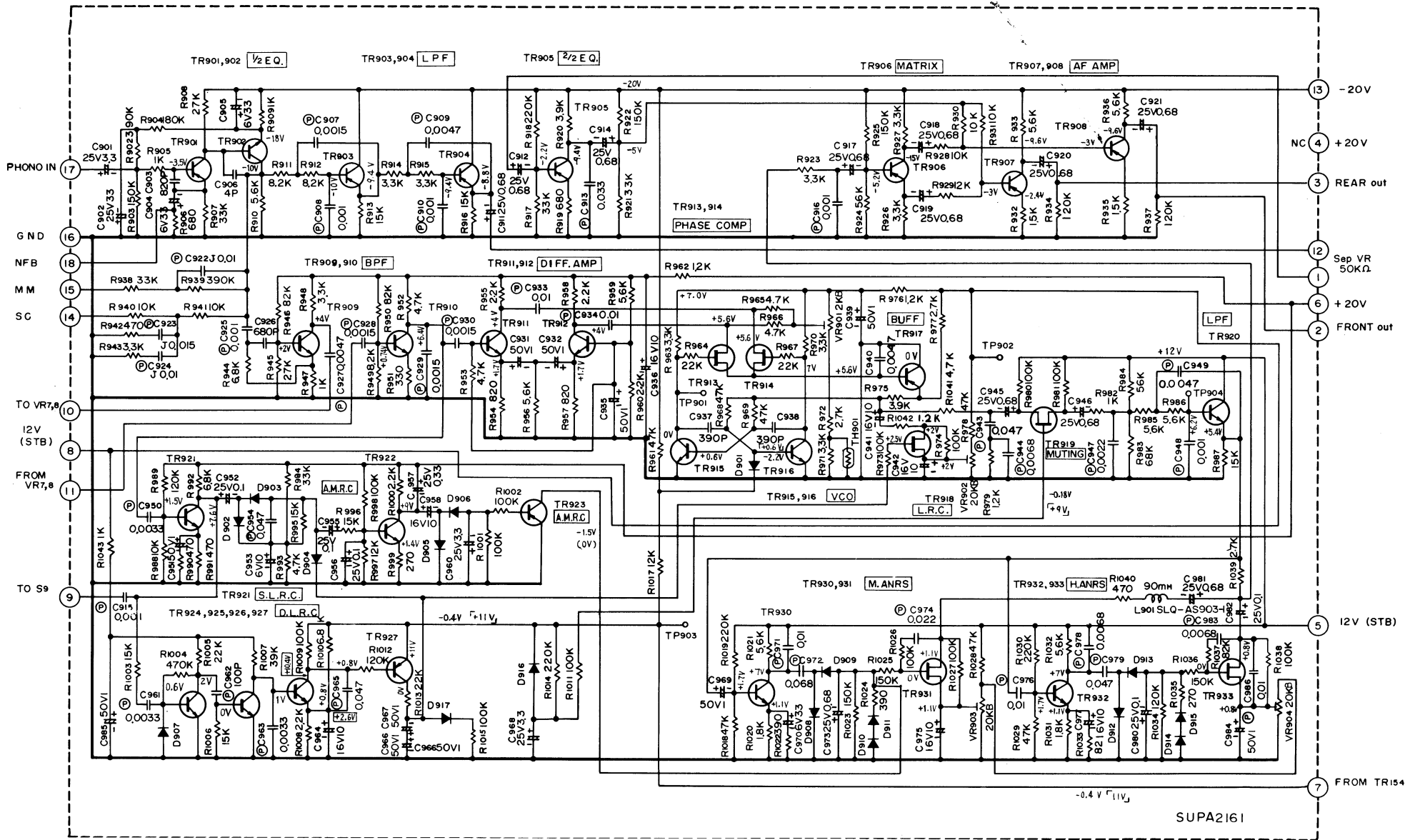
■ DIAL CORD INSTALLATION GUIDE

1. Dial cord length is 63 3/4" (160cm)
2. Tuning gang is positioned at maximum capacity. (Frequency is minimum)
3. Arrow marks (1 ~ 9) indicate correct order and direction of stringing dial cord.



Schematic Diagram Model SA-8000X

CD-4 Demodulator



TR 917, 923, 927 2SA 564
 TR 901, 903, 904, 905 2SA 721
 906, 907, 908 2SA 721
 TR 909, 910, 911, 912, 915, 916, 921
 922, 924, 925, 926, 930, 932 2SC 828
 TR 902, 920 2SC 1327

TR 913, 914, 918, 919, 931, 933 2SK 30
 D 910, 911, 914, 915 MA 26-1
 D 901, 917 MA 150
 D 902, 903, 904, 905, 906 OA 99
 907, 908, 909, 912, 913, 916

TH 901 RRT 202-2

STANDARD VOLTAGE
 [Symbol] CD 4 Operation
 [Symbol] DLRC Operation
 [Symbol] AMRC Operation

ALIGNMENT INSTRUCTIONS.....READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Notes :

- | | |
|--|--|
| 1. Volume control Minimum | 5. The adjustment should be started 1~2 minutes after setting the power switch to the ON position. |
| 2. Balanced transformer less switch..... 4CH | 6. Before adjusting, Icq adjusting volumes (VR805, VR806, VR807 and VR808) as shown in Alignment |
| 3. Other controls Optional position | Point Location. Refer to page 2. |
| 4. Maintain line voltage at rated voltage. | |

CIRCUIT	VTVM CONNECTION	ADJUSTMENT POINTS	REMARKS
MAIN AMP ALIGNMENT			
1	DC Unbalance Connect DC VTVM to TP702 and TP710 (R-Front) , TP701 and TP707 (L-Front) terminal. Connect DC VTVM to TP704 and TP710 (R-Rear) , TP703 and TP707 (L-Rear) terminal.	VR702 (R-Front) VR701 (L-Front) VR704 (R-Rear) VR703 (L-Rear)	Make sure that DC VTVM becomes 0mV.
2	Icq Connect DC VTVM to TP702 and TP706 (R-Front) , TP701 and TP705 (L-Front) terminal. Connect DC VTVM to TP704 and TP709 (R-Rear) , TP703 and TP708 (L-Rear) terminal.	VR706 (R-Front) VR705 (L-Front) VR708 (R-Rear) VR707 (L-Rear)	Make adjustments so that the indication on DC VTVM becomes 4mV.

Notes :

- | | |
|---|--|
| 1. Volume control Maximum (AM-RF)
Minimum (AM-IF, FM-IF)
Variable (FM-RF) | 5. Muting switch OFF |
| 2. Bass and treble control Center | 6. Balanced transformer less switch..... 4CH |
| 3. Band selector switch AM
FM-Auto (FM-RF, FM-IF) | 7. Tape-monitor switch Source |
| 4. Loudness switch OFF | 8. Mode switch Stereo |
| | 9. Maintain line voltage at rated voltage. |
| | 10. Output of signal generator should be no higher than necessary to obtain an output reading. |

SIGNAL GENERATOR or SWEEP GENERATOR		RECEIVER DIAL SETTING [DISTANCE]	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
CONNECTION	FREQUENCY				
AM ALIGNMENT					
3	High side through 0.001μF to antenna terminal. Common to chassis. 455 kHz (20kHz Sweep)	Point of non-interference	Connect vert. amp. of scope to TP201 .	T201 (1st IFT) T202 (2nd IFT)	Adjust for maximum output.
4	Fashion loop of several turns of wire and radiate signal into loop of receiver. 550 kHz (30% Mod. with 400Hz)	550 kHz [4.6mm (3/16")]	Connect meter to speakers terminal of set.	L202 (OSC Coil) L201 (ANT Coil)	Adjust for maximum output. Adjust L201 by moving coil bobbin along ferrite core.
5	Fashion loop of several turns of wire and radiate signal into loop of receiver. 1500 kHz (30% Mod. with 400 Hz)	1500 kHz [131mm (5 1/2")]	Connect meter to speakers terminal of set.	CT5 (OSC Trimmer) CT4 (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

FM-IF ALIGNMENT

6	/	Point of non-interference.	Connect DC VTVM between TP102 and TP104 .	T102 (FM DISCRI IFT)(S)	Make sure that VTVM becomes 0V.
7	High side through 0.001μF to TP1 . Common to chassis. 10.7 MHz (400kHz Sweep)	Point of non-interference.	Connect vert. amp. of scope through detector to TP101 . Refer to figure 1.	/	Confirm center frequency.
8	High side through 0.001μF to TP1 . Common to chassis. 10.7 MHz (400kHz Sweep)	Point of non-interference.	Connect vert. amp. of scope to TP103 .	T103 (Muting IFT) (P) T104 (Muting IFT) (S)	Adjust for maximum sharp and proper linearity. Adjust to center frequency as step 7. Refer to figure 2.

FM-RF ALIGNMENT

9	Connect to FM antenna terminal through FM dummy antenna. (Refer to fig. 3) 90 MHz (100% Mod. with 400 Hz)	90 MHz [17.3mm (2/32")]	Output meter across speaker terminals.	L6 (FM OSC Coil) * L4 (FM DET Coil) L2 (FM ANT Coil)	Adjust for maximum output.
10	Connect to FM antenna terminal through FM dummy antenna. (Refer to fig. 3) 106 MHz (100% Mod. with 400 Hz)	106 MHz [122.7mm (4 7/32")]	Output meter across speaker terminals.	CT3 (FM OSC Trimmer) CT2 (FM DET Trimmer) CT1 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (9) and (10).

* Use six cornered alignment tool for aligning FM OSC coil (L6).

MUTING LEVEL ALIGNMENT

Note : Muting switch.....ON

11	Connect to FM antenna terminal through FM dummy antenna. 98 MHz (100% Mod. with 400 Hz) Output 28 dB	98 MHz	Output meter or speaker across speaker terminals.	VR102 (Muting Level)	Adjust so that output can be obtained.
----	--	--------	---	----------------------	--

SIGNAL GENERATOR		RECEIVER DIAL SETTING	INDICATOR (DISTORTION METER and SIGNAL METER)	ADJUSTMENT POINTS	REMARKS
CONNECTION	FREQUENCY				
FM-MONO DISTORTION ALIGNMENT					
Note: Muting switch OFF					
12	Connect to FM antenna terminal through FM dummy antenna.	98 MHz (100% Mod. with 400 Hz) Output 72 dB	98 MHz	Connect distortion meter to speaker terminals.	T101 (FM DISCRI IFT) (P) Adjust for minimum distortion.
SIGNAL METER ALIGNMENT					
13	Connect to FM antenna terminal through FM dummy antenna.	98 MHz (30% Mod. with 400 Hz) Output 72 dB	98 MHz	Signal meter of set.	VR101 (Indicated Position) Adjust for about 4.6 point of signal meter indication.
Notes:					
Stereo-modulator Connect stereo-modulator output to EXT. MOD. terminal of signal generator. Internal OSC 1kHz. Pilot signal modulation 10%.					
Signal generator Frequency approximately 98 MHz. Output level 72 dB. Modulation mode to FM.					
1. Band selector FM-Auto					
2. Bass and treble control Center					
3. Balanced transformer less switch 4CH					
4. Mode switch Stereo					
5. Maintain line voltage at rated voltage					
6. Muting switch OFF					
7. Loudness-switch OFF					
8. Tape monitor switch Source					
9. Dummy load Source					
19kHz COIL and PHASE ALIGNMENT					
SIGNAL GENERATOR CONNECTION		STEREO MODULATOR MODE and MOD. RATE	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
14	FM antenna terminal through dummy antenna.	Pilot signal to ON.	Connect scope to TP ₃₀₁ , Common to chassis.	T ₃₀₁ (19 kHz Coil)	Adjust for maximum output.
15	"	L (or R) 30% Mod.	Connect scope to speaker terminals.	T ₃₀₂ (38 kHz Coil) (Phase Alignment)	Adjust for minimum right (or left) output.
SEPARATION ALIGNMENT					
16	FM antenna terminal through dummy antenna.	L (and R) 30% Mod.	Output meter across speaker terminals through low pass filter. (Refer to fig. 4)	VR ₃₀₁ (Separation)	Adjust for minimum right (and left) output.

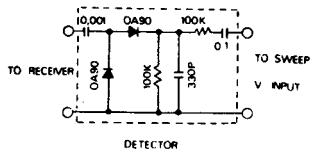


Fig. 1

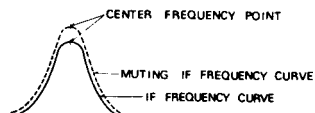
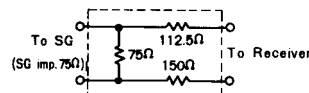


Fig.2



300Ω FM Dummy Antenna

Fig. 3

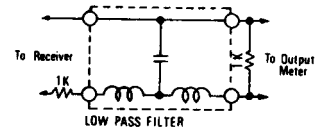


Fig.4

FM-RF ALIGNMENT INSTRUCTIONS Only set for Germany

ABGLEICHANWEISUNGEN.....VOR DEM ABGLEICH SORGFÄLTIG DURCHLESEN					
MESSENDER		SKALENZEIGER-EINSTELLUNG DES EMPFANGERS [ABSTAND]	ANGEIGE (RÖHRENVOLTMETER ODER OSZILLOGRAPH)	ABGLEICH	BEMERKUNGEN
SCHALTUNG	FREQUENZ				
FM HF-ABGLEICH					
Anschluß an den FM Antennenanschluß über die künstliche FM Antenne	87.5 MHz (100% Mod bei 400Hz)	87.5MHz [0mm]	Output meter über Lautsprecher-schwingspule anschließen	L ₆ (Oszillatorspule)	Auf max. Ausgang abgleichen
"	90 MHz (")	90 MHz	"	L ₄ (Zwischenkreis) L ₂ (Antennenspule)	"
"	106 MHz (")	106 MHz [122.7mm]	"	CT ₃ (OSZ. Trimmer) CT ₂ (DET. Trimmer) CT ₁ (ANT. Trimmer)	"

CD-4 DEMODULATOR ALIGNMENT INSTRUCTIONS

Notes :

- | | |
|--|---|
| 1. Volume control..... Minimum (ANRS, MUTING)
2. Channel level control Maximum
3. Balanced transformer less switch..... 4 CH
4. Cartridge selector switch MM (or SC)
5. Carrier level adjustment switch..... NORMAL
6. Selector switch..... CD-4
7. Mode switch 4 CH DISCRETE
8. Tape monitor switch 1 & 2 Source | 9. Bass & treble control..... Flat
10. Loudness switch..... OFF
11. Separation control (L & R) Minimum
12. Maintain line voltage at rated voltage.
13. Before adjusting, turn volume control VR901, VR902, VR903 and VR904 as shown in the Alignment Points Location. Refer to pag 2.
14. CD-4 demodulator alignment record No. RG-1256, RG-1257
15. Use a player and MM (or SC) cartridge for CD-4 play. |
|--|---|

OSCILLATOR (or CD-4 ALIGNMENT RECORD) CONNECTION	INPUT FREQUENCY & INPUT LEVEL	INDICATOR (VTVM & SCOPE)	ADJUSTMENT POINTS	REMARKS
--	-------------------------------	--------------------------	-------------------	---------

AUTOMATIC NOISE REDUCTION SYSTEM (ANRS) ALIGNMENT

1 Connect oscillator to TP904 (Right & Left) through electrolytic capacitor (25V, 10 μ F). Refer to fig. 1.	1 kHz (92 mV)	Connect VTVM to R _F & L _F REC OUT terminals through ATT 2. Refer to fig. 1.	ATT 2 (Attenuator)	Adjust ATT 2 until the output of R _F becomes 0dB when the right input is applied, and until the output of L _F becomes 0dB when the left input is applied.
2 Connect oscillator to TP904 (Right & Left) through electrolytic capacitor (25V, 10 μ F). Refer to fig. 1.	6.3 kHz (-10dB from Step 1)	Connect VTVM to R _F & L _F REC OUT terminals through ATT 2. Refer to fig. 1.	VR904 (High ANRS)	Adjust VR904 until the output becomes -15 dB (right & left sides).
3 Connect oscillator to TP904 (Right & Left) through electrolytic capacitor (25V, 10 μ F). Refer to fig. 1.	630 Hz (-10dB from Step 1)	Connect VTVM to R _F & L _F REC OUT terminals through ATT 2. Refer to fig. 1.	VR903 (Median ANRS)	Adjust VR903 until the output becomes -16.4dB (right & left sides).

MUTING COIL ALIGNMENT

4 Connect oscillator to PHONO input of set's left terminal. Or play CD-4 alignment record (RG-1256 BAND 9). Refer to fig. 2.	30 kHz \pm 50 Hz (1 mV)	Connect scope to TP151 *	VR7 (Left Carrier Level)	Adjust VR7 until a sine wave with the best appearance can be obtained.
5 Connect oscillator to PHONO input of set's left terminal. Or play CD-4 alignment record (RG-1256 BAND 9). Refer to fig. 2.	30 kHz \pm 50 Hz (1 mV)	Connect scope to TP151 *	L151 ** (Muting Coil)	Adjust for maximum proper linearity.

* TP151 is on the rear side of the CD-4 MASTER P.C.B.

** L151 can be easily adjusted if the right side of the CD-4 DEMODULATOR is pulled out.

PLL FREE RUNNING FREQUENCY ALIGNMENT

Notes :

1. Be sure to connect the right side demodulator **TP902** with **TP903***, and that the CD-4, 4 CH RADAR light is illuminated. Adjust the left side in the same manner as described above.
2. Correctly adjust the rotational speed of the player to 33-1/3 rpm.
3. Set the CARRIER LEVEL ADJUST switch (S9) to the NORMAL position.
4. Connect the probe (Impedance more than 1M Ω , less than 30 pF) to scope.

SCOPE or SPEAKER CONNECTION	CD-4 ALIGNMENT RECORD	ADJUSTMENT POINTS	REMARKS
6 Connect scope to POINT A of S9 through probe. Refer to fig. 3.	RG-1256 BAND 9	VR8 (Right Carrier Level Control)	Adjust VR8 until a 50 mV P-P wave is measured using the scope.
7 Connect speaker or scope to R _R (or R _F) speaker terminals.	RG-1256 BAND 9	VR901 (Right PLL Free Running)	Listening to the beat sound from speakers, or by observing the beat wave form, adjust VR901 until the beat frequency disappears.
8 Connect scope to POINT B of S9 through probe. Refer to fig. 3.	RG-1256 BAND 9	VR7 (Left Carrier Level Control)	Adjust VR7 until a 50 mV P-P wave is measured using the scope.
9 Connect speaker or scope to L _R (or L _F) speaker terminals.	RG-1256 BAND 9	VR901 (Left PLL Free Running)	Listening to the beat sound from speakers, or by observing the beat wave form, adjust VR901 until the beat frequency disappears.

* Disconnect **TP902** from **TP903** after the adjustment has been completed.

SCOPE or SPEAKER CONNECTION	CD-4 ALIGNMENT RECORD	ADJUSTMENT POINTS	REMARKS
STATIC LOCK RANGE CONTROL ALIGNMENT			
Note: Adjust the carrier level using the included CD-4 test record (SPR111-1). (Refer to "CD-4 RECORD PLAY" for the adjusting method.) Set the CARRIER LEVEL ADJUST switch to the NORMAL position after adjustment has been made.			
10	Connect scope to POINT A of S9 through probe. Refer to fig. 3.	RG-1257 BAND 4 (The second from the inner side)	Measure the voltage level of the wave using the scope. This is defined as the specified voltage. Refer to fig. 4.
11	Connect scope to POINT A of S9 through probe. Refer to fig. 3.	RG-1257 BAND 4 (The second from the inner side)	VR8 (Right Carrier Level Control)
12	Connect scope to R _R (or R _F) speaker terminals.	RG-1257 BAND 4 (The second from the inner side)	VR902 (Right Static Lock Range)
13	Connect scope to POINT B of S9 through probe. Refer to fig. 3.	RG-1257 BAND 4 (The second from the inner side)	Measure the voltage level of the wave using the scope. This is defined as the specified voltage. Refer to fig. 4.
14	Connect scope to POINT B of S9 through probe. Refer to fig. 3.	RG-1257 BAND 4 (The second from the inner side)	VR7 (Left Carrier Level Control)
15	Connect scope to L _R (or L _F) speaker terminals.	RG-1257 BAND 4 (The second from the inner side)	VR902 (Left Static Lock Range)

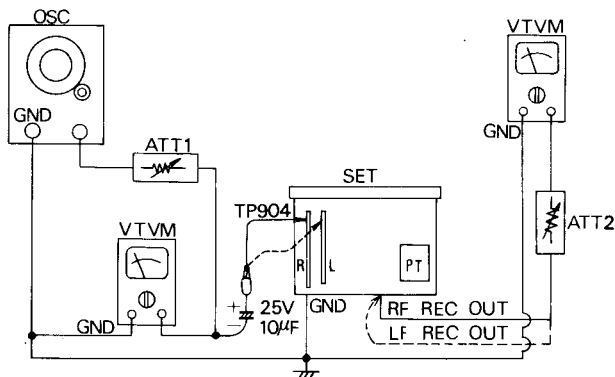


Fig. 1

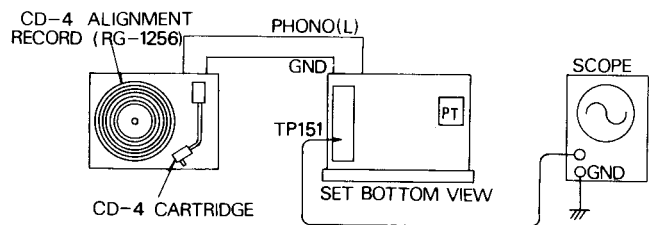


Fig. 2

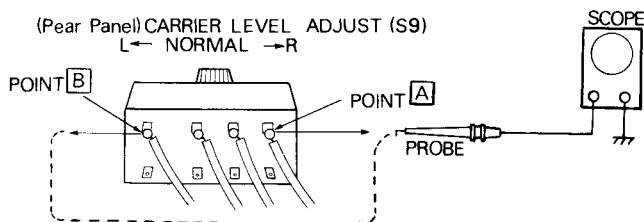


Fig. 3



Fig. 6

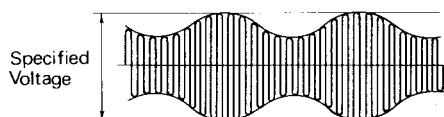


Fig. 4

-3dB

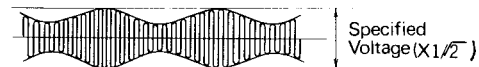
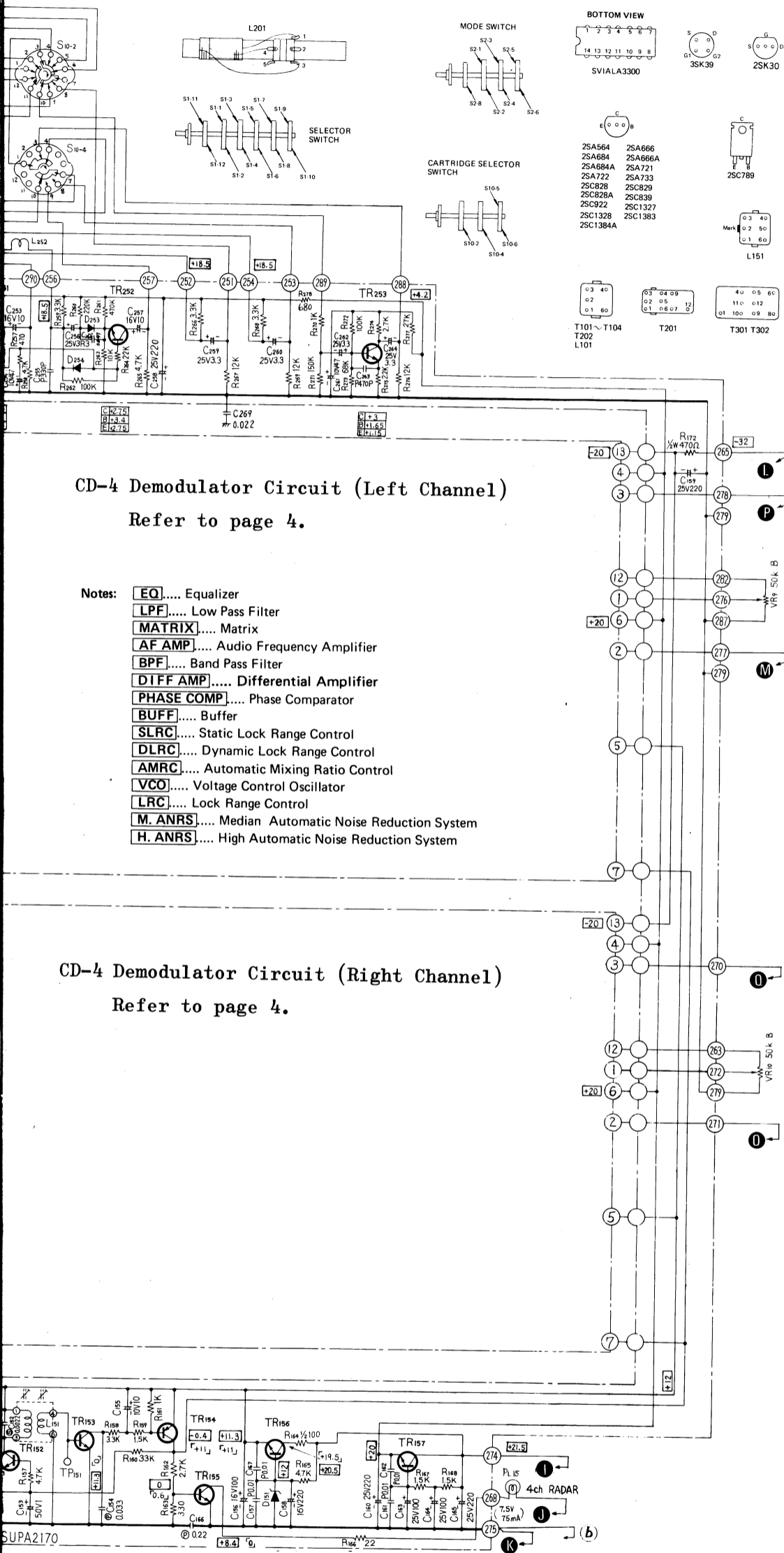


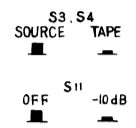
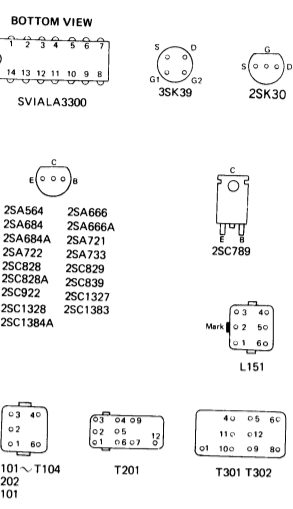
Fig. 5



CD-4 Demodulator Circuit (Left Channel)
Refer to page 4.

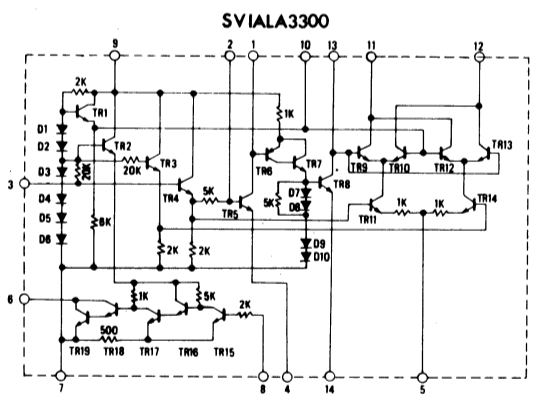
- Notes:**
- EQ**..... Equalizer
 - LPF**..... Low Pass Filter
 - MATRIX**..... Matrix
 - AF AMP**..... Audio Frequency Amplifier
 - BPF**..... Band Pass Filter
 - DIFF AMP**..... Differential Amplifier
 - PHASE COMP**..... Phase Comparator
 - BUFF**..... Buffer
 - SLRC**..... Static Lock Range Control
 - DLRC**..... Dynamic Lock Range Control
 - AMRC**..... Automatic Mixing Ratio Control
 - VCO**..... Voltage Control Oscillator
 - LRC**..... Lock Range Control
 - M. ANRS**..... Median Automatic Noise Reduction System
 - H. ANRS**..... High Automatic Noise Reduction System

CD-4 Demodulator Circuit (Right Channel)
Refer to page 4.



- Notes:**
1. S1-1 ~ S1-12: Selector switch in "AM" position
AM ↔ FM AUTO ↔ PHONO ↔ CD-4 ↔ AUX ↔ MIC
 2. S2-1 ~ S2-8: Mode switch in "MONO" position.
MONO ↔ STEREO ↔ PHASE 90° ↔ PHASE 0° ↔ 4CH DISCRETE
- 4CH MATRIX
3. S3-1 ~ S3-4: Tape monitor (TAPE 1) switch in "SOURCE" position.
 4. S4-1 ~ S4-4: Tape monitor (TAPE 2) switch in "SOURCE" position.
 5. S5: Muting switch in "OFF" position.
 6. S6-1 ~ S6-4: Loudness switch in "OFF" position.
 7. S7-1 ~ S7-4: Balanced transformerless switch in "4CH" position.
 8. S8-1, S8-2: Power source switch in "OFF" position.
 9. S9: Carrier level adjustment switch in "NORMAL" position.
L ↔ NORMAL ↔ R
 10. S10-1 ~ S10-4: Cartridge selector switch in "MM" position.
MM ↔ SEMI CONDUCTOR A ↔ SEMI CONDUCTOR B
 11. S11-1 ~ S11-4: VU meter range switch in "OFF" position.
 12. S12-1 ~ S12-4: Voltage selector switch in "110V" position
MARK 110V ↔ 120V ↔ 220V ↔ 240V
 13. RLY: Speakers protection relay in "OFF" position.
 14. DC voltage measurements are taken with DC voltmeter from chassis ground.
- FM/AM No signal condition.
 < > FM stereo signal reception or FM muting to "ON" position.
 ▭ CD-4 operation

- VR1: AFD control WIDTH
- VR2-1, VR2-2: AFD control DEPTH
- VR3 ~ VR6: Channel level control
- VR7, VR8: Carrier level control
- VR9, VR10: Separation control
- VR101: FM meter adjustment
- VR102: FM muting level adjustment
- VR301: FM separation adjustment
- VR601-1 ~ VR601-4: Main volume control
- VR602-1 ~ VR602-4: Bass control
- VR603-1 ~ VR603-4: Treble control
- VR701 ~ VR704: DC unbalance adjustment
- VR705 ~ VR708: ICQ adjustment
- VR901 (Left & Right): PLL free running frequency adjustment
- VR902 (Left & Right): Lock range control adjustment
- VR903 (Left & Right): Median automatic noise reduction system adjustment
- VR904 (Left & Right): High automatic noise reduction system adjustment



- TR151, 152, 153, 155
- 27 2SC828
- 30KHz AMP
- ER 4CH RADAR SWITCHING
- TR154 2SA564
- TR156, 157 2SC1383
- 251-D254 MA150
- D151 SVDAEQA0112R

■ TO REMOVE TUNER

1. Remove four (4) cabinet mounting screws.
(Refer to Cabinet and Chassis Parts Location on page 19.)
2. Remove cabinet from chassis.
3. Remove fourteen (14) control knobs from front panel.
4. Remove six (6) front panel mounting black screws.
(Refer to Cabinet and Chassis Parts Location on page 19.)
5. Remove front panel from chassis.
6. Remove ten (10) tuner mounting black screws.
nos. 1 ~ 10 as figure 1 and 2.
7. Loosen power switch mounting screws, nos. 11, 12 and slide
power switch as figure 1.
8. Then tuner can be moved in front of chassis as figure 3.

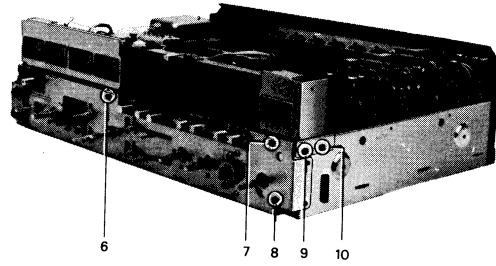


Fig. 2

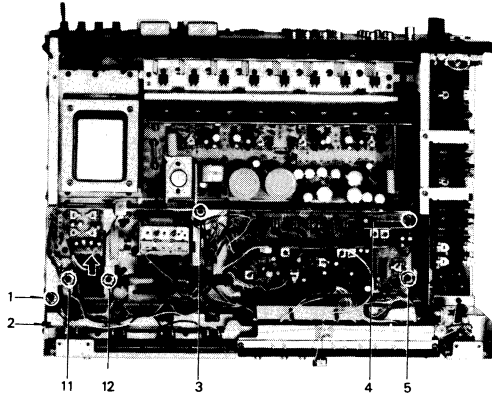


Fig. 1

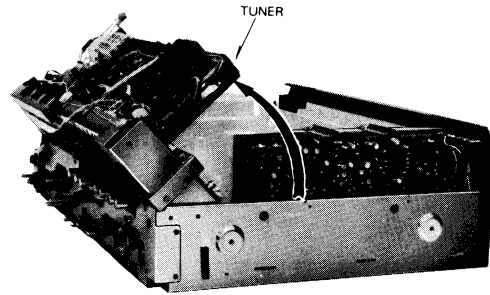
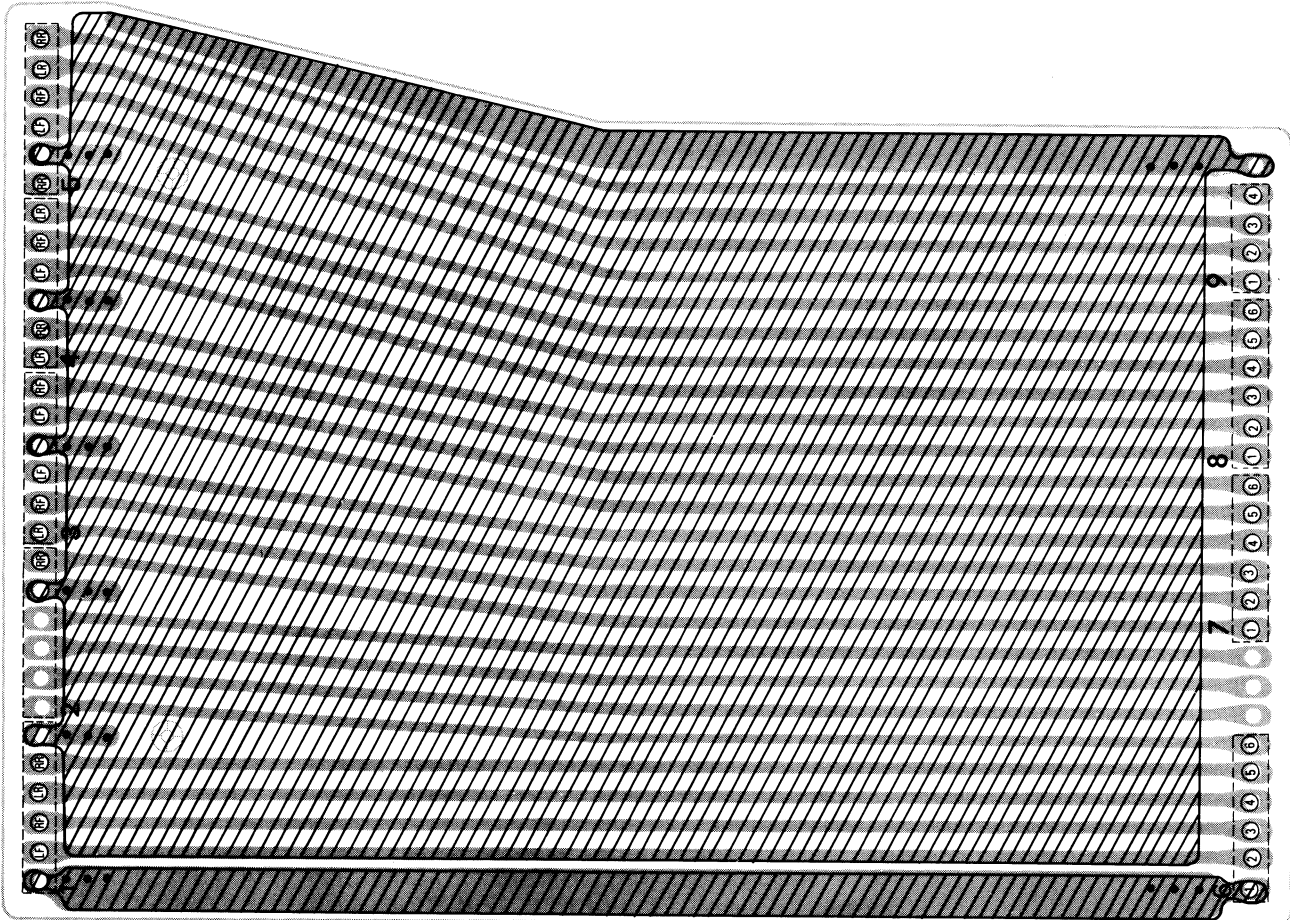


Fig. 3

INPUT LINE Circuit Board

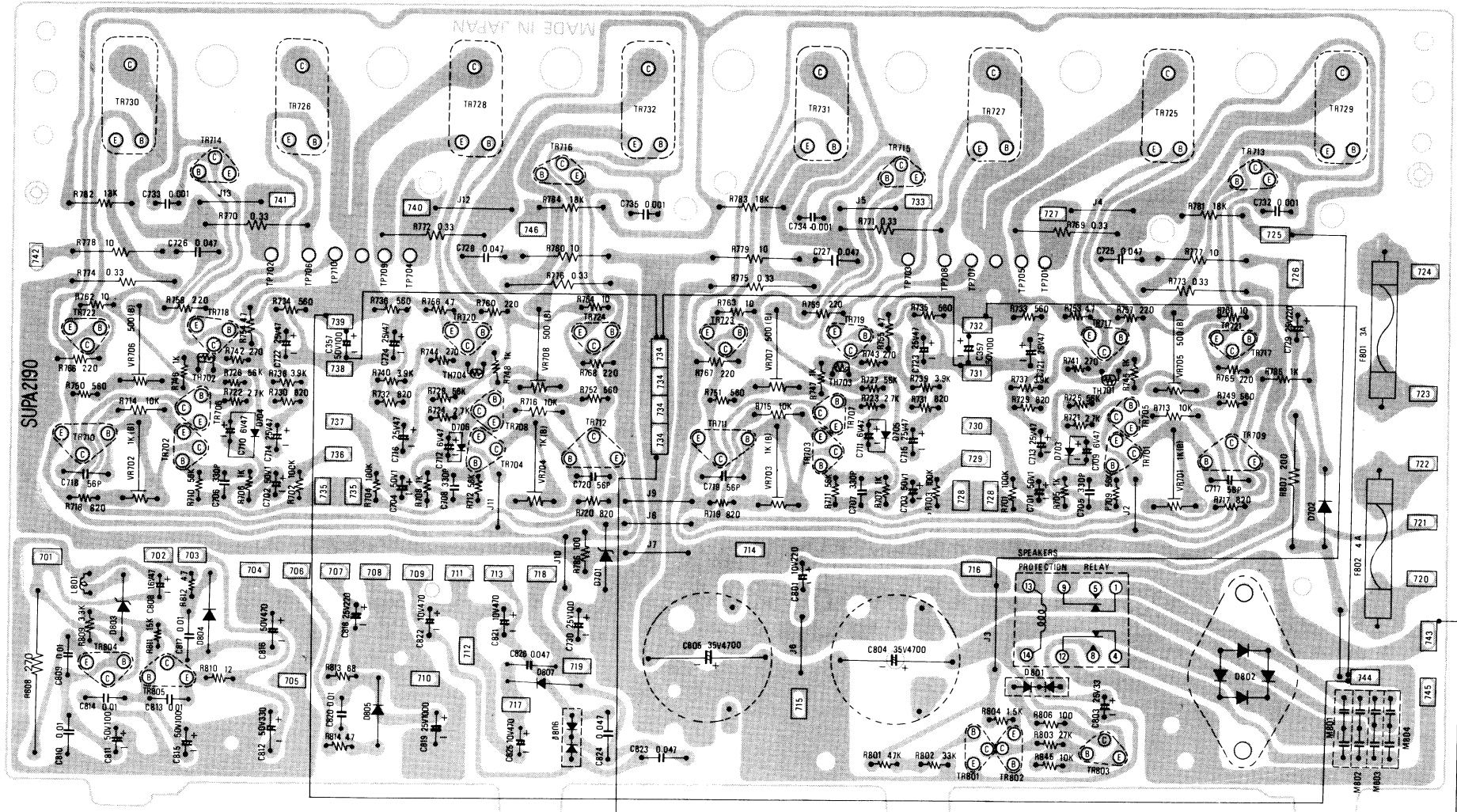
 Printed Circuit View on Top of p.c.b.

 Printed Circuit View on Bottom of p.c.b.



POWER SOURCE & 4CH MAIN AMPLIFIER Circuit Board

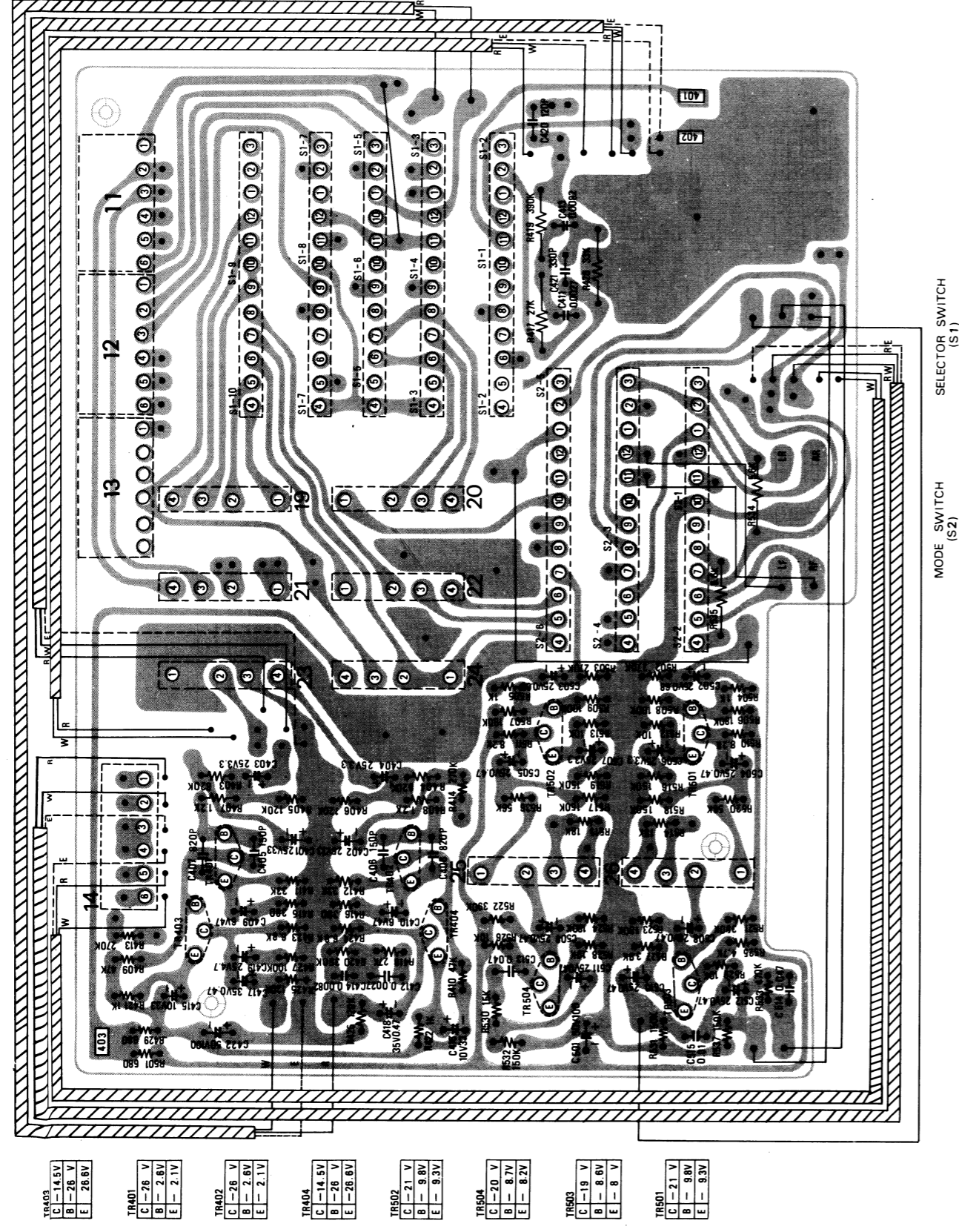
TR722 C -25.2 V B -0.62V E -0.02V	TR730 C 0 V B -25.2 V E -26 V	TR714 C +12 V B +0.01 V E -0.62 V	TR726 C +25.8 V B +0.59V E 0 V	TR720 C +25.6 V B +12 V E +0.59V	TR728 C +25.8 V B +0.59 V E 0 V	TR716 C +12 V B +0.01 V E -0.62 V	TR724 C -25.2 V B -0.62 V E -0.02 V	TR732 C 0 V B -25.2 V E -26 V	TR723 C -25.2 V B -0.62 V E -0.02 V	TR731 C 0 V B -25.2 V E -26 V	TR715 C +12 V B +0.01 V E -0.62 V	TR727 C +25.8 V B +0.59 V E 0 V	TR717 C +25.6 V B +12 V E +0.59V	TR725 C +25.8 V B +0.59V E 0 V	TR721 C -25.2 V B -0.62 V E -0.02 V	TR713 C +12 V B +0.01 V E -0.62 V	TR729 C 0 V B -25.2 V E -26 V
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TR710 C -0.62V B -23.1 V E -23.5 V	TR804 C -39 V B -37.1 V E -36.5 V	TR805 C -39 V B -35.3 V E -34.7 V	TR702 C -23.1 V B +0.12 V E +0.73 V	TR706 C -23.8 V B +0.12 V E +0.73 V	TR718 C +25.6 V B +12 V E +0.59V	TR704 C -23.1 V B +0.12 V E +0.73 V	TR708 C -23.8 V B +0.12 V E +0.73 V	TR72 C -0.62 V B -23.1 V E -23.5 V	TR711 C -0.62 V B -23.1 V E -23.5 V	TR703 C -23.1 V B +0.12 V E +0.73 V	TR707 C -23.8 V B +0.12V E +0.73V	TR719 C +25.6 V B +12 V E +0.59 V	TR801 C +25.5 V B 0 V E 0 V	TR802 C +25.5 V B 0 V E 0 V	TR803 C +208V B +25.5 V E +25.5 V	TR701 C -23.1 V B +0.12 V E +0.73 V	TR705 C -23.8 V B +0.12 V E +0.73 V	TR709 C -0.62 V B -23.1 V E -23.5 V
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SELECTOR/MODE SWITCH, 4 CH MATRIX & EQUALIZER Circuit Board

Bottom View



TR403	C - 14.5V
	B - 28 V
	E - 28.8V

TR401	C - 28 V
	B - 2.8V
	E - 2.1V

TR402	C - 28 V
	B - 2.8V
	E - 2.1V

TR404	C - 14.5V
	B - 28 V
	E - 28.8V

TR502	C - 21 V
	B - 9.8V
	E - 9.3V

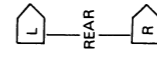
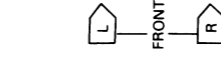
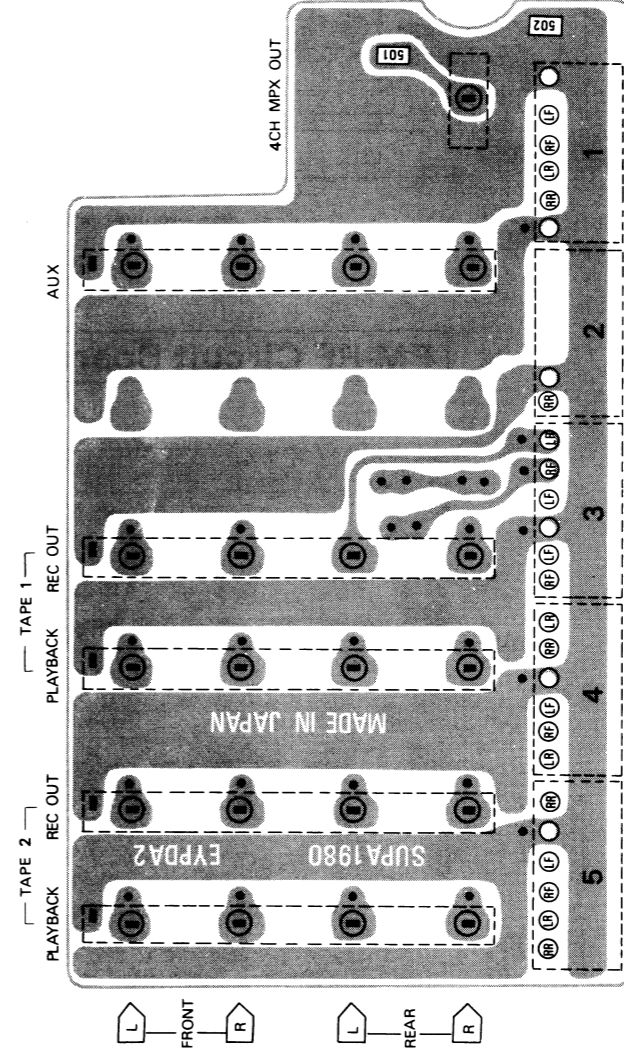
TR504	C - 20 V
	B - 8.7V
	E - 8.2V

TR503	C - 19 V
	B - 8.8V
	E - 8 V

TR501	C - 21 V
	B - 9.8V
	E - 9.3V

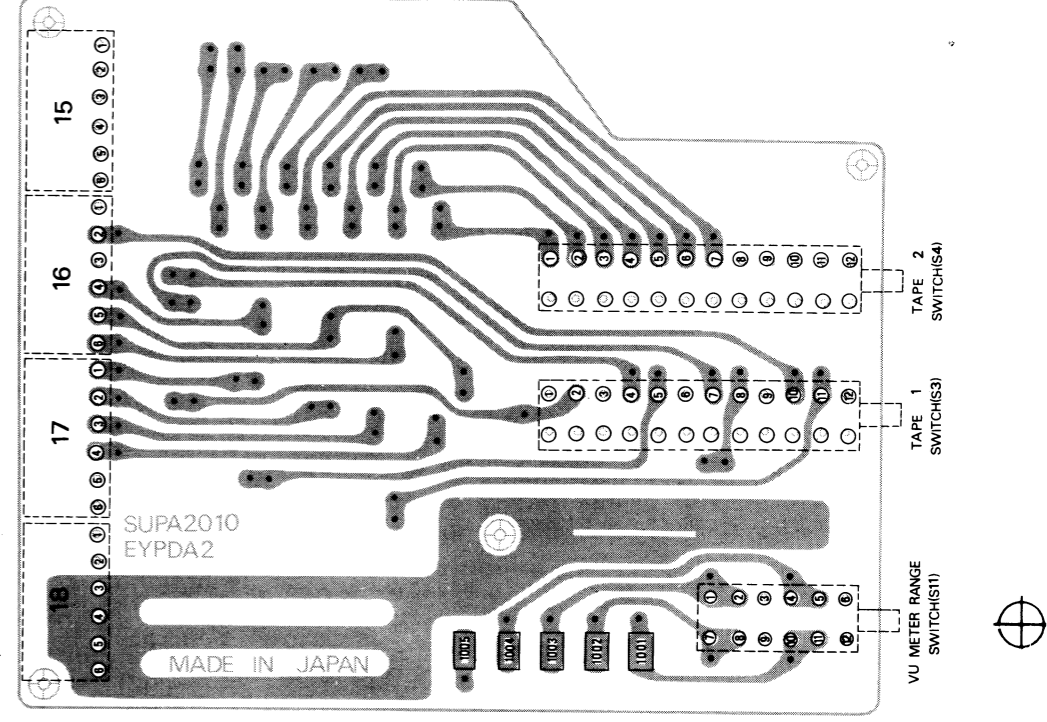
INPUT TERMINAL Circuit Board

Bottom View

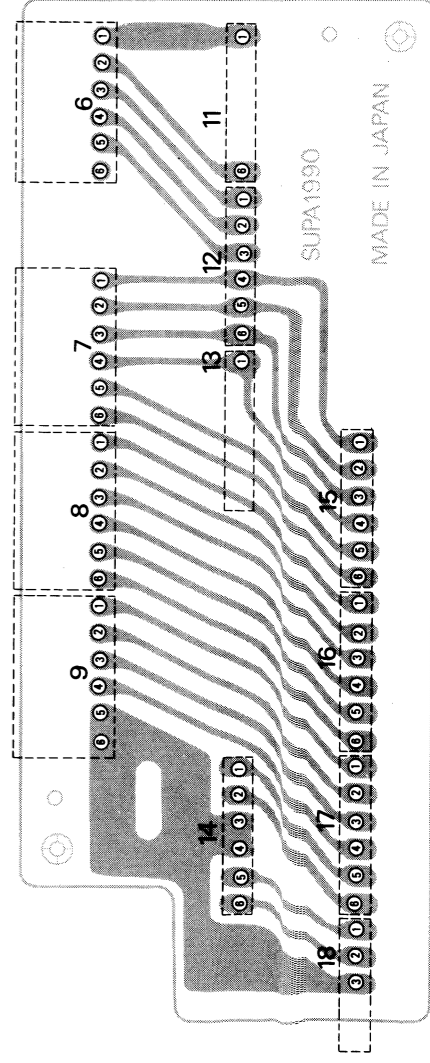


TAPE MONITOR SWITCH Circuit Board

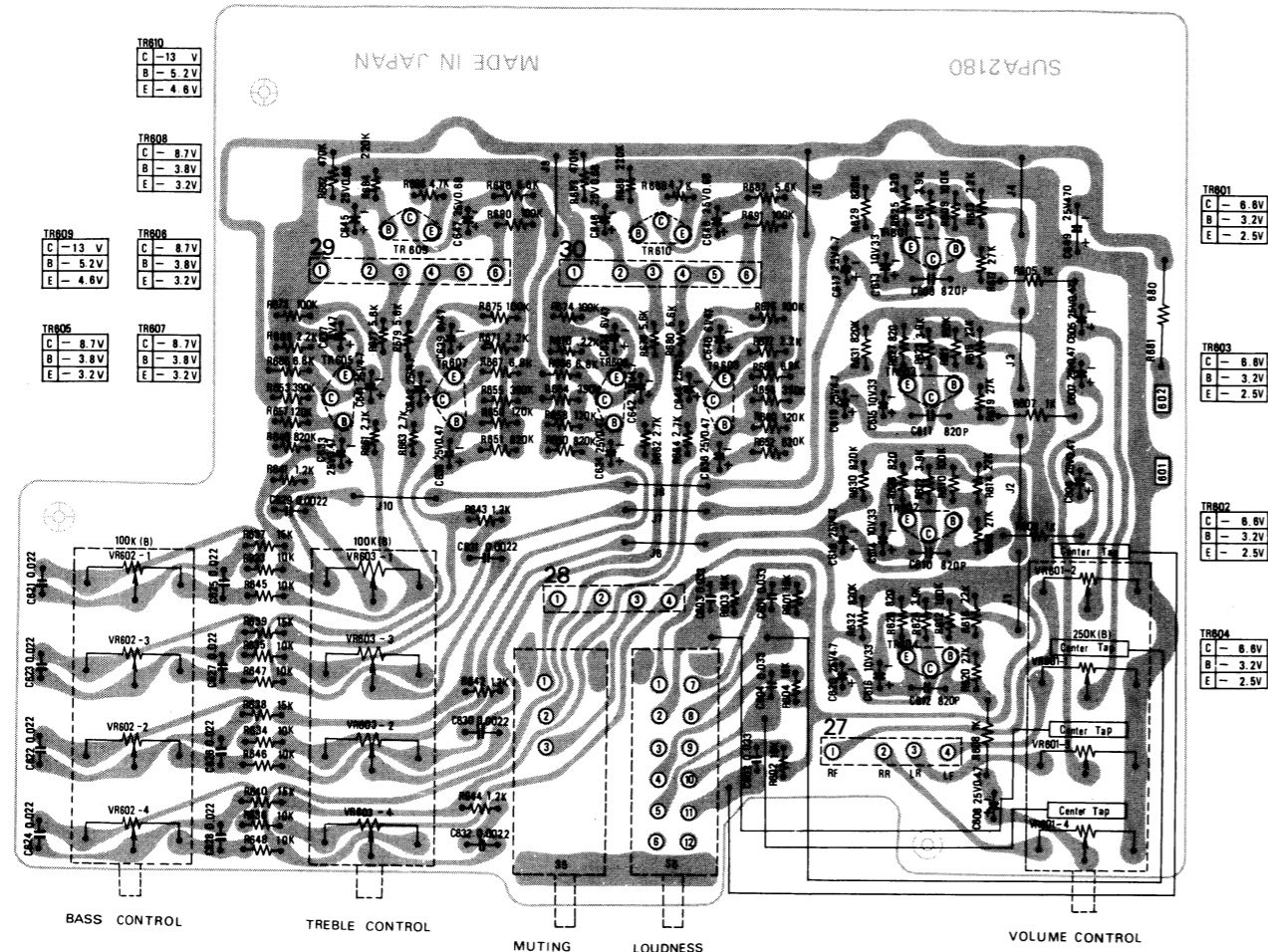
Top View



CONNECTING Circuit Board



PHASE INVERT & TONE CONTROL Circuit Board



TR808	C - 13 V
	B - 5.2 V
	E - 4.8 V

TR808	C - 8.7 V
	B - 3.8 V
	E - 3.2 V

TR805	C - 8.7 V
	B - 3.8 V
	E - 3.2 V

TR807	C - 8.7 V
	B - 3.8 V
	E - 3.2 V

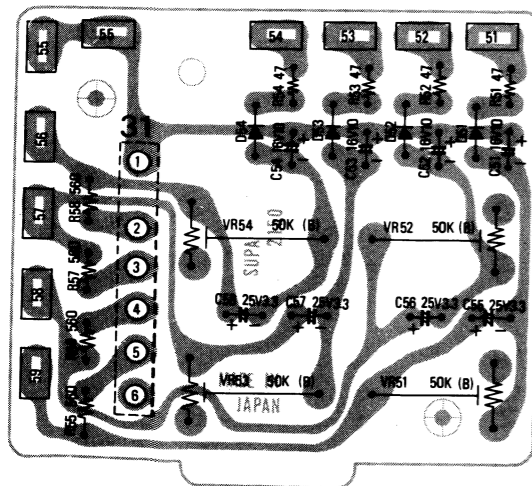
TR801	C - 8.8 V
	B - 3.2 V
	E - 2.5 V

TR803	C - 8.8 V
	B - 3.2 V
	E - 2.5 V

TR802	C - 8.8 V
	B - 3.2 V
	E - 2.5 V

TR804	C - 8.8 V
	B - 3.2 V
	E - 2.5 V

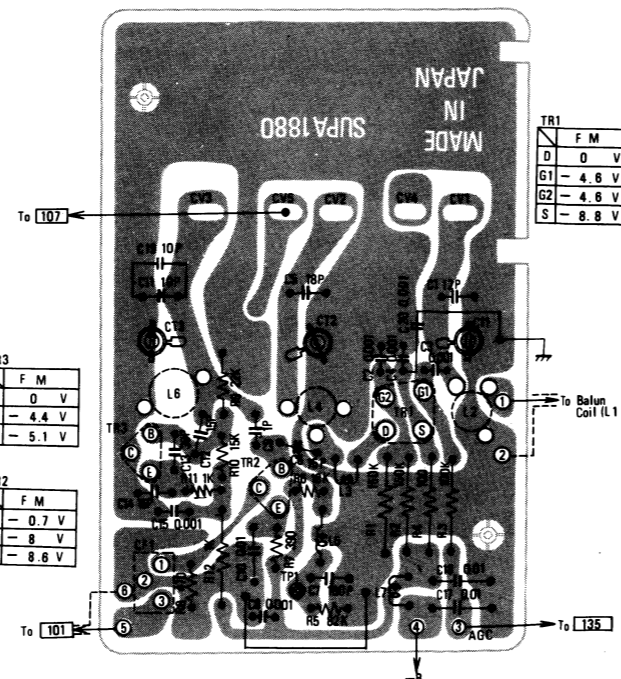
VU METER Circuit Board



TR3	F M
C	0 V
B	- 4.4 V
E	- 5.1 V

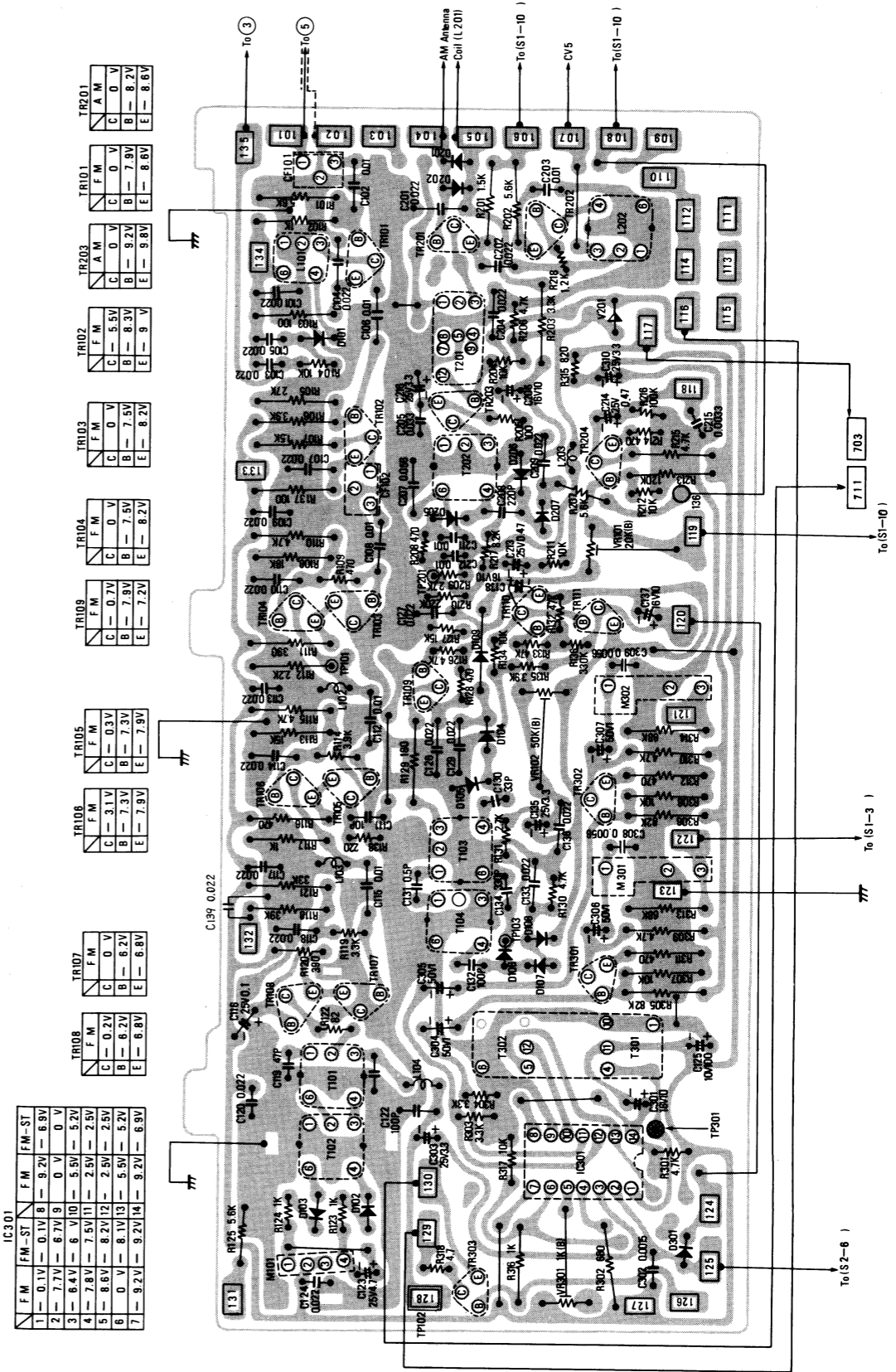
TR2	F M
C	0.7 V
B	- 8 V
E	- 8.8 V

FM-RF Circuit Board



TR1	F M
D	0 V
G1	- 4.6 V
G2	- 4.6 V
S	- 8.8 V

AM, FM-IF & FM MPX Circuit Board



IC3 01	F M	F M	F M	F M	F M	F M	F M	F M	F M
1	- 0.1 V	- 0.1 V	8	- 9.2 V	- 6.9 V				
2	- 7.7 V	- 6.7 V	9	0 V	0 V				
3	- 6.4 V	- 6 V	10	- 5.5 V	- 5.2 V				
4	- 2.8 V	- 7.5 V	11	- 2.5 V	- 2.5 V				
5	- 8.6 V	- 8.2 V	12	- 2.5 V	- 2.5 V				
6	0 V	- 8.1 V	13	- 5.5 V	- 5.2 V				
7	- 9.2 V	- 9.2 V	14	- 9.2 V	- 6.9 V				

TR201	A M
C	0 V
B	- 7.9 V
E	- 8.8 V

TR203	A M
C	0 V
B	- 8.3 V
E	- 9.8 V

TR102	F M
C	- 5.5 V
B	- 8.3 V
E	- 9 V

TR103	F M
C	0 V
B	- 7.5 V
E	- 8.2 V

TR104	F M
C	0 V
B	- 7.5 V
E	- 8.2 V

TR105	F M
C	- 0.3 V
B	- 7.3 V
E	- 7.9 V

TR108	F M
C	- 3.1 V
B	- 7.3 V
E	- 7.9 V

TR107	F M
C	0 V
B	- 6.2 V
E	- 6.8 V

TR106	F M
C	- 0.2 V
B	- 6.2 V
E	- 6.8 V

TR & IC	IC301	TR302	TR105	TR106	TR108	TR301	TR104	TR110	TR111	TR204	TR202	TR203	TR101	TR202	D202	D201
D & V	D301	D102	D103	D106	D107	D108	D105	D104	D102	D205	D207	D208	D101	V201	L201	L202
T & L	T102	T101	L104	L301	L302	L102	L103	T103	L102	L202	L203	L201	L101	L202		

TR202	A M
C	0 V
B	- 0.1 V
E	- 0.6 V

TR204	A M
C	- 12 V
B	- 17 V
E	- 1 V

TR110	Multiplex
C	- 8.5 V
B	- 8.8 V
E	- 9.2 V

TR111	Multiplex
C	- 0.1 V
B	- 9.1 V
E	- 9.2 V

TR201	A M
C	0 V
B	- 7.9 V
E	- 8.8 V

TR301	F M
C	- 8 V
B	- 2.4 V
E	- 1.7 V

TR302	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR303	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR304	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR305	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR306	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR307	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR308	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR309	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR310	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR311	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR312	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR313	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR314	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR315	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR316	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR317	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR318	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR319	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR320	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR321	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR322	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR323	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR324	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR325	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR326	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

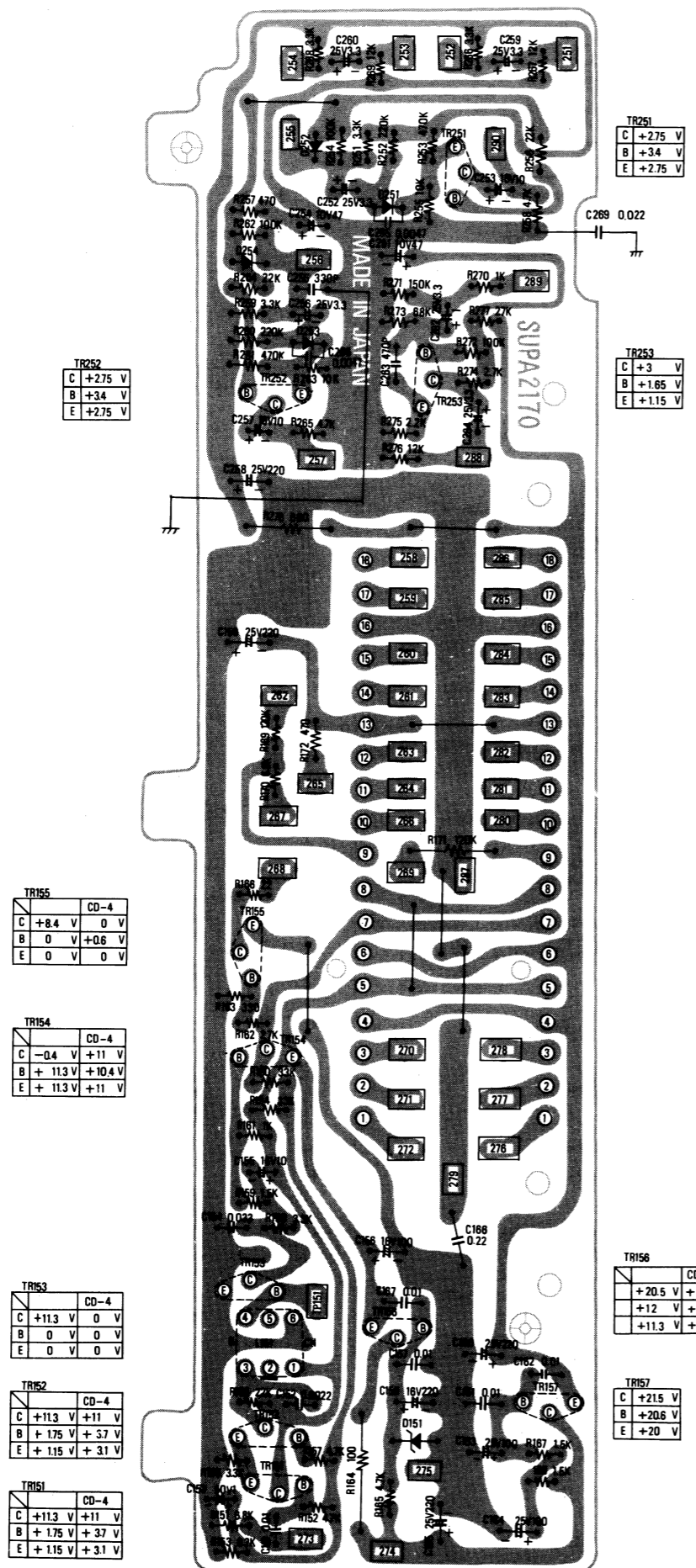
TR327	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR328	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR329	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

TR330	F M
C	- 8.8 V
B	- 9.2 V
E	- 9.2 V

CD-4 MASTER Circuit Board



TR252	C +2.75 V
	B +3.4 V
	E +2.75 V

TR155	CD-4	
C	+8.4 V	0 V
B	0 V	+0.6 V
E	0 V	0 V

TR154	CD-4	
C	-0.4 V	+1.1 V
B	+11.3 V	+10.4 V
E	+11.3 V	+1.1 V

TR153	CD-4	
C	+11.3 V	0 V
B	0 V	0 V
E	0 V	0 V

TR152	CD-4	
C	+11.3 V	+1.1 V
B	+1.75 V	+3.7 V
E	+1.15 V	+3.1 V

TR151	CD-4	
C	+11.3 V	+1.1 V
B	+1.75 V	+3.7 V
E	+1.15 V	+3.1 V

TR251	C +2.75 V
	B +3.4 V
	E +2.75 V

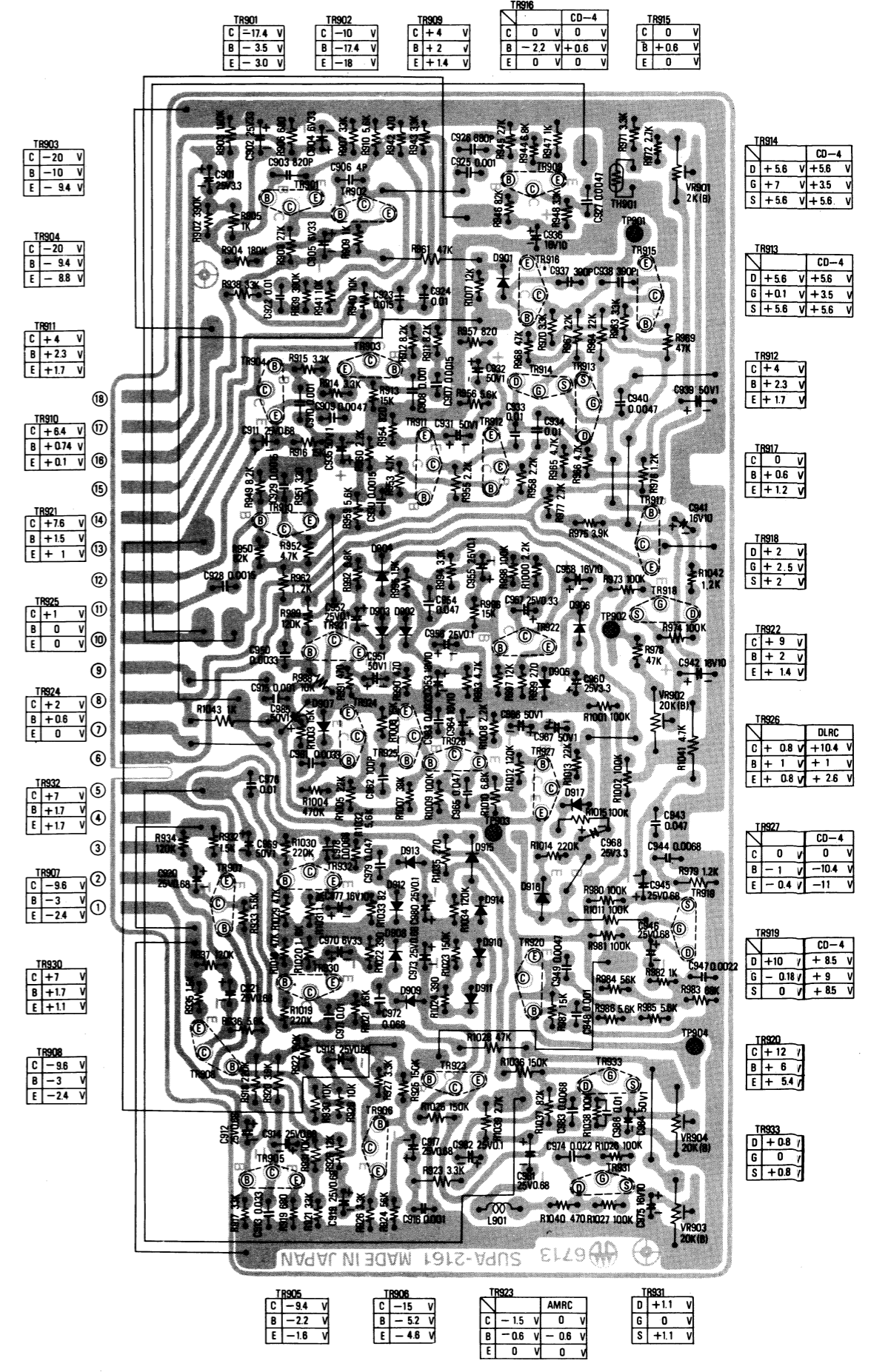
TR253	C +3 V
	B +1.65 V
	E +1.15 V

TR156	CD-4	
	+20.5 V	+19.5 V
	+12 V	+12 V
	+11.3 V	+1.1 V

TR157	C +21.5 V
	B +20.6 V
	E +2.0 V

CD-4 DEMODULATOR (Left or Right) Circuit Board

Left channel is same as Right channel



TR903	C -2.0 V
	B -1.0 V
	E -9.4 V

TR904	C -2.0 V
	B -9.4 V
	E -8.8 V

TR911	C +4 V
	B +3 V
	E +1.7 V

TR910	C +8.4 V
	B +0.74 V
	E +0.1 V

TR921	C +7.6 V
	B +1.5 V
	E +1 V

TR925	C +1 V
	B 0 V
	E 0 V

TR924	C +2 V
	B +0.6 V
	E 0 V

TR932	C +7 V
	B +1.7 V
	E +1.7 V

TR907	C -9.6 V
	B -3 V
	E -2.4 V

TR930	C +7 V
	B +1.7 V
	E +1.1 V

TR908	C -9.6 V
	B -3 V
	E -2.4 V

TR901	C -17.4 V
	B -3.5 V
	E -3.0 V

TR902	C -1.0 V
	B -17.4 V
	E -1.8 V

TR909	C +4 V
	B +2 V
	E +1.4 V

TR916	CD-4	
C	0 V	0 V
B	-2.2 V	+0.6 V
E	0 V	0 V

TR915	C 0 V
	B +0.6 V
	E 0 V

TR914	CD-4	
D	+5.6 V	+5.6 V
G	+7 V	+3.5 V
S	+5.6 V	+5.6 V

TR913	CD-4	
D	+5.6 V	+5.6 V
G	+0.1 V	+3.5 V
S	+5.6 V	+5.6 V

TR912	C +4 V
	B +2.3 V
	E +1.7 V

TR917	C 0 V
	B +0.6 V
	E +1.2 V

TR918	D +2 V
	G +2.5 V
	S +2 V

TR922	C +9 V
	B +2 V
	E +1.4 V

TR926	DLRC	
C	+0.8 V	+10.4 V
B	+1 V	+1 V
E	+0.8 V	+2.6 V

TR927	CD-4	
C	0 V	0 V
B	-1 V	-10.4 V
E	-0.4 V	-1.1 V

TR919	CD-4	
D	+10 V	+8.5 V
G	-0.18 V	+9 V
S	0 V	+8.5 V

TR920	C +12 V
	B +6 V
	E +5.4 V

TR933	D +0.8 V
	G 0 V
	S +0.8 V

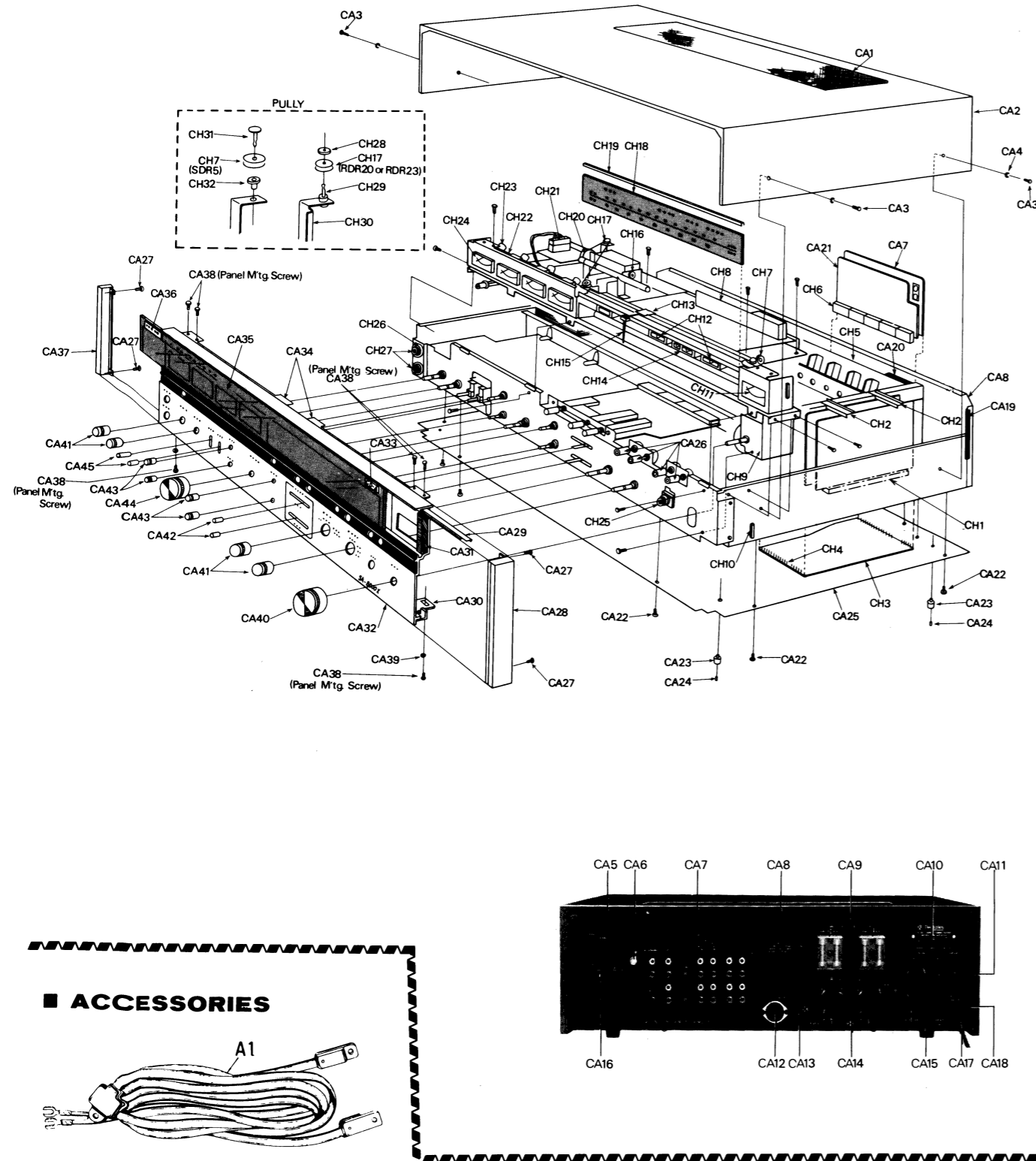
TR905	C -9.4 V
	B -2.2 V
	E -1.6 V

TR906	C -1.5 V
	B -5.2 V
	E -4.6 V

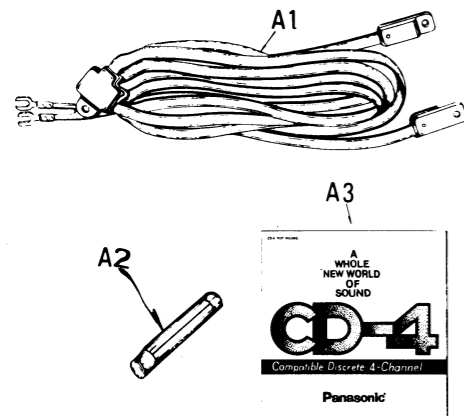
TR923	AMRC	
C	-1.5 V	0 V
B	-0.6 V	-0.6 V
E	0 V	0 V

TR931	D +1.1 V
	G 0 V
	S +1.1 V

■ CABINET & CHASSIS PARTS LOCATION



■ ACCESSORIES



■ REPLACEMENT PARTS LIST

NOTES:

- Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
- N indicates the New Parts.
- X-Z rank: X rank parts will cover 80% of repair needs. X+Y rank parts will cover 95% of repair needs. Z rank parts are less necessary.

Bemerkungen:

- Die meisten mechanischen Teile sind mit Teilnummern versehen. Bitte geben Sie diese Nummern an, sofern die Teile keine Bezugsnummern haben.
- N bedeutet: Neue Teile.
- Gruppen X-Z: Teile der Gruppe X machen 80% des Ersatzteilbedarfes aus. Teile der Gruppen X und Y machen 95% des Ersatzteilbedarfes aus. Teile der Gruppe Z werden seltener benötigt.

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
INTEGRATED CIRCUIT					D102,103	2-OA99	FM Discriminator	1 pair	X
					D108,109	1S1211	AOC, Meter Detector	2	X
					D151	SVDAEQA0112R	Zener, 12V, Voltage Stabilizer	1	N
IC301	SVIALA3300	MPX Circuit	1	X	D251,252,253,254,703,704,705,706,(901,917) x 2	MA150	30kHz Rectifier	12	X
TRANSISTORS					D701	SVDEQA01-11R	Zener, 11V, Noise Cancel	1	X
TR1	3SK39Q	FM RF Amplifier [FET]	1	X	D801,806	SVDAC08P-1	Rectifier	2	X
TR2	2SC922M	FM Mixer	1	X	D802	SVDAS2HB10	Rectifier	1	X
TR3	2SC839H	FM Oscillator	1	X	D803	SVDAEQB01-09	Zener, 9V, Voltage Stabilizer	1	X
TR101, 102, 103, 104, 105, 106, 107, 108, 109, 201, 202, 203	2SC829C	FM IF Amp, Limiter, & FM Mix. AM OSC & AM IF Amplifier	12	X	D1910,911,914,915) x 2	MA26-1	Thermal Compensation	8	X
TR110, 111, 151, 152, 153, 155, 713, 714, 715, 716, (909, 910, 911, 912, 915, 916, 921, 922, 924, 925, 926, 930, 932) x 2	2SC828R	Muting Amp, Thermal Compensation 30kHz Amp, Switching, Band Pass Filter, Differential Amp, Voltage Control Oscillator, Static Lock Range Control & Dynamic Lock Range Control	36	X	V201	EYV320D1R2J3	Variatite, AOC	1	X
TR154, (917, 923, 927) x 2	2SA564R	Switching, Buffer, Automatic Mixing Ratio Control	7	X	COILS and TRANSFORMERS				
TR156, 157	2SC1383R	Ripple Filter	2	N	L1	SLAA4W1-1	Balun Coil	1	X
TR204, 301	2SA666Q	FM/AM AF Amp, Tone Amp, & Phase Inverter	9	X	L2	SLAA4N9	FM Antenna Coil	1	X
302, 605, 606, 607, 608, 609, 610					L3	RLOY25S5	Choke Coil	1	Y
TR251, 252, 253, (902, 920) x 2	2SC1327T	SC Shock Noise Cancel, Phase Inverter, 1/2 Equalizer & Low Pass Filter	7	N	L4	SLDA4N18	FM DET Coil	1	X
TR303	2SA733MAP	Stereo Eye Switching	1	X	L5	RLOY15G5	Choke Coil	1	Y
TR401, 402, 501, 502, 503, 504	2SA722T	Equalizer Mic Amp, & 4 ch. Matrix	6	X	L6	SLOA4N9	FM OSC Coil	1	X
TR403, 404	2SC1328T	Equalizer & Mic Amp.	2	X	L7,8,102	SLQX151-1Y	Choke Coil	9	Y
TR601, 602, 603, 604, (901, 903, 904, 905, 906, 907, 908) x 2	2SA721T	Volume Control Flat Amp, Equalizer, Low Pass Filter, Matrix & AF Amp.	18	X	L101	SLIA4B1	FM AGC Coil	1	X
TR701, 702, 703, 704, 705, 706, 707, 708	2SA666A-AD3	Differential Amplifier	8	X	L151	SLMIC3T-1	30kHz Coil	1	X
TR709, 710, 711, 712, 717, 718, 719, 720	2SC1384A-Q	Pre Driver Amplifier	8	X	L201	SLFA2E15	AM Antenna Coil	1	X
TR721, 722, 723, 724	2SA684A-Q	Driver Amplifier	4	X	L202	SLOA2C6	AM OSC Coil	1	X
TR725, 726, 727, 728, 729, 730, 731, 732	2SC789Y	Power Amplifier	8	X	L(901) x 2	SLQA5903-1	Choke Coil	2	N
TR801, 802	2SC828A-R	Speakers Protection Switching Amp.	2	X	T101	SLIA4C54	FM DISCRI IF Transformer (P)	1	X
TR803, 804	2SA684R	Switching & Ripple Filter	3	X	T102	SLIA4C56	FM DISCRI IF Transformer (S)	1	X
805					T103,104	SLIA4C24	FM Muting IF Transformer (P),(S)	2	X
TR(913, 914, 918, 919, 931, 933) x 2	2SK30A	Phase Comparator, Lock Range Control, Median ANRS & High ANRS [FET]	12	N	T201	RLI7W105S-T	AM 1st IF Transformer	1	X
DIODES and VARIATITE					T202	RLI2C450	AM 2nd IF Transformer	1	X
D51,52,53, 54,702,804, 805,807	RVD10D1	VU Meter Detector, Shock Noise Cancel & Rectifier	8	X	T301,(T302)	SLMAI22-K	19kHz, 38kHz Pick-up Transformer	1	X
D101,104,105, 106,107,201, 202,205,206, 207,301, (902,903,904, 905,906,907, 908,909,912, 913,916) x 2	OA99	AGC, AOC, AM Detector, Meter Detector & 30 kHz Rectifier	33	X	T901	SLTA5Q16S	Power Transformer	1	N
CERAMIC FILTERS					CF1,101,102	RVFCF10M12CG	FM IF Circuit, Green (10.6MHz)	each	X
						RVFCF10M12CB	FM IF Circuit, Black (10.65MHz)	3	
						RVFCF10M12CR	FM IF Circuit, Red (10.7MHz)		
						RVFCF10M12CW	FM IF Circuit, White (10.75MHz)		
						RVFCF10M12CY	FM IF Circuit, Yellow (10.8MHz)		
RESISTORS					R4,103,137	ERD14TJ101	100Ω, ¼W ±5% Carbon	3	Y
					R129	ERD14TJ181	180Ω, ¼W ±5% Carbon	1	Y
					R111	ERD14TJ391	390Ω, ¼W ±5% Carbon	1	Y
					R116,311,312	ERD14TJ471	470Ω, ¼W ±5% Carbon	3	Y
					R278,302	ERD14TJ681	680Ω, ¼W ±5% Carbon	2	Y
					R12,102,117, 316,605,606, 607,608, (1043) x 2	ERD14TJ102	1kΩ, ¼W ±5% Carbon	10	Y
					R107,201	ERD14TJ152	1.5kΩ, ¼W ±5% Carbon	2	Y
					R112	ERD14TJ222	2.2kΩ, ¼W ±5% Carbon	1	Y
					R209	ERD14TJ272	2.7kΩ, ¼W ±5% Carbon	1	Y
					R203	ERD14TJ332	3.3kΩ, ¼W ±5% Carbon	1	Y
					R106	ERD14TJ392	3.9kΩ, ¼W ±5% Carbon	1	Y
					R110,115,215, 309,310, (1041) x 2	ERD14TJ472	4.7kΩ, ¼W ±5% Carbon	7	Y
					R101,125,202, 534,535	ERD14TJ562	5.6kΩ, ¼W ±5% Carbon	5	Y
					R307,308	ERD14TJ103	10kΩ, ¼W ±5% Carbon	2	Y
					R113	ERD14TJ153	15kΩ, ¼W ±5% Carbon	1	Y
					R108,781,782, 783,784	ERD14TJ183	18kΩ, ¼W ±5% Carbon	5	Y
					R105,417	ERD14TJ273	27kΩ, ¼W ±5% Carbon	2	Y
					R121,428	ERD14TJ333	33kΩ, ¼W ±5% Carbon	2	Y
					R118	ERD14TJ393	39kΩ, ¼W ±5% Carbon	1	Y
					R(961,1028)x2	ERD14TJ473	47kΩ, ¼W ±5% Carbon	4	Y
					R313,314	ERD14TJ683	68kΩ, ¼W ±5% Carbon	2	Y
					R305,306,279, 280	ERD14TJ823	82kΩ, ¼W ±5% Carbon	4	Y
					R3,(1011, 1015) x 2	ERD14TJ104	100kΩ, ¼W ±5% Carbon	5	Y
					R171,213	ERD14TJ124	120kΩ, ¼W ±5% Carbon	2	Y
					R1,2	ERD14TJ154	150kΩ, ¼W ±5% Carbon	2	Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
R419	ERD14TJ394	390kΩ, ¼W ±5% Carbon	1	Y	R207,677,678,	ERD14VJ562	5.6kΩ, ¼W ±5% Carbon	25	Y
R356	ERD14FJ2R2	2.2Ω, ¼W ±5% Carbon	1	Y	679,680,686,				
R318,753,754,	ERD14FJ4R7	4.7Ω, ¼W ±5% Carbon	9	Y	687,1910,933,				
755,756,761,					936,956,959,				
762,763,764					985,986,1021,				
R757,758,759,	ERD14FJ221	220Ω, ¼W ±5% Carbon	8	Y	1032)x2				
760,765,766,					R151,170,423,	ERD14VJ682	6.8kΩ, ¼W ±5% Carbon	14	Y
767,768					424,665,666,				
R733,734,735,	ERD14FJ561	560Ω, ¼W ±5% Carbon	4	Y	667,668,1944,				
736					992,1010)x2				
R812,814	ERD18FJ4R7	4.7Ω, ¼W ±5% Carbon	2	Y	R153,217,510,	ERD14VJ822	8.2kΩ, ¼W ±5% Carbon	10	Y
R786	ERD12FJ101	100Ω, ¼W ±5% Carbon	1	Y	511,1911,912,				
					949)x2				
					R104,134,204,	ERD14VJ103	10kΩ, ¼W ±5% Carbon	38	Y
R164	ERD12TJ101	100Ω, ¼W ±5% Carbon	1	Y	211,212,255,				
R351,352,353,	ERD12TJ221	220Ω, ¼W ±5% Carbon	4	Y	263,317,512,				
354					513,526,528,				
R172	ERD12TJ471	470Ω, ¼W ±5% Carbon	1	Y	529,633,634,				
R681	ERD12TJ681	680Ω, ¼W ±5% Carbon	1	Y	635,636,645,				
					646,647,648,				
					713,714,715,				
R810	ERD14FJ120	12Ω, ¼W ±5% Carbon	1	Y	716,845,				
R166	ERD14VJ220	22Ω, ¼W ±5% Carbon	1	Y	(928,930,931,				
R51,52,53,54	ERD14VJ470	47Ω, ¼W ±5% Carbon	4	Y	940,941,988)				
R813	ERD14FJ680	68Ω, ¼W ±5% Carbon	1	Y	x2				
R122,	ERD14VJ820	82Ω, ¼W ±5% Carbon	3	Y	R267,269,276,	ERD14VJ123	12kΩ, ¼W ±5% Carbon	9	Y
(1033) x 2					(929,997,				
R205,806	ERD14VJ101	100Ω, ¼W ±5% Carbon	2	Y	1017)x2				
R138	ERD14VJ221	220Ω, ¼W ±5% Carbon	1	Y	R9,127,530,	ERD14VJ153	15kΩ, ¼W ±5% Carbon	22	Y
R741,742,743,	ERD14VJ271	270Ω, ¼W ±5% Carbon	8	Y	637,638,639,				
744, (999,					640,811,				
1035) x 2					(913,916,987,				
R163,(951)x2	ERD14VJ331	330Ω, ¼W ±5% Carbon	3	Y	995,996,1003,				
R7,120,415,	ERD14VJ391	390Ω, ¼W ±5% Carbon	8	Y	1006)x2				
416,(1022,					R6,514,515,	ERD14VJ183	18kΩ, ¼W ±5% Carbon	7	Y
1024) x 2					601,602,603,				
R8,109,128,	ERD14VJ471	470Ω, ¼W ±5% Carbon	14	Y	604				
208,214,257,					R10,155,170,	ERD14VJ223	22kΩ, ¼W ±5% Carbon	13	Y
(942,990,991,					256,264,1964				
1040)x2					967,1005				
R55,56,57,58,	ERD14VJ561	560Ω, ¼W ±5% Carbon	8	Y	1013)x2				
749,750,751,					R613,614,615,	ERD14VSJ223	22kΩ, ¼W ±5% Carbon	4	Y
752					616				
R429,501,	ERD14VJ681	680Ω, ¼W ±5% Carbon	6	Y	R617,618,619,	ERD14VSJ273	27kΩ, ¼W ±5% Carbon	4	Y
(906,919)x2					620				
R315,625,626,	ERD14VJ821	820Ω, ¼W ±5% Carbon	17	Y	R277,418,803,	ERD14VJ273	27kΩ, ¼W ±5% Carbon	7	Y
627,628,717,					(908,945)x2				
718,719,720,					R154,160,411,	ERD14VJ333	33kΩ, ¼W ±5% Carbon	11	Y
729,730,731,					412,802,(907,				
732,(954,					938,994)x2				
957)x2					R(917,921)x2	ERD14VSJ333	33kΩ, ¼W ±5% Carbon	4	Y
R11,123,124,	ERD14VJ102	1kΩ, ¼W ±5% Carbon	26	Y	R132,133,409,	ERD14VJ473	47kΩ, ¼W ±5% Carbon	15	Y
161,270,421,					410,801,(968,				
422,504,505,					969,978,1018				
705,706,707,					1029)x2				
708,745,746,					R520,536,709,	ERD14VJ563	56kΩ, ¼W ±5% Carbon	14	Y
747,748,785,					710,711,712,				
(905,909,947,					725,726,727,				
982)x2					728,(924,				
R218,407,408,	ERD14VJ122	1.2kΩ, ¼W ±5% Carbon	15	Y	984)x2				
641,642,643,					R273,(983)x2	ERD14VJ683	68kΩ, ¼W ±5% Carbon	3	Y
644,(962,976,					R5,(946,950,	ERD14VJ823	82kΩ, ¼W ±5% Carbon	7	Y
979,1042)x2					1037)x2				
R159,167,168,	ERD14VJ152	1.5kΩ, ¼W ±5% Carbon	8	Y	R216,254,262,	ERD14VJ104	100kΩ, ¼W ±5% Carbon	37	Y
804,(932,					272,427,637,				
935)x2					674,675,676,				
R11020,	ERD14VJ182	1.8kΩ, ¼W ±5% Carbon	4	Y	690,691,701,				
1031)x2					702,703,704				
R275,669,670,	ERD14VJ222	2.2kΩ, ¼W ±5% Carbon	15	Y	(973,974,980,				
671,672,(955,					981,998,1001				
958,960,1000					1002,1009,				
1008)x2					1026,1027				
R131,162,274,	ERD14VJ272	2.7kΩ, ¼W ±5% Carbon	17	Y	1038)x2				
661,662,663,					R508,509,609,	ERD14VSJ104	100kΩ, ¼W ±5% Carbon	6	Y
664,721,722,					610,611,612				
723,724,					R405,406,657,	ERD14VSJ124	120kΩ, ¼W ±5% Carbon	6	Y
(972,977,					658,659,660				
1039)x2					R169,425,426,	ERD14VJ124	120kΩ, ¼W ±5% Carbon	13	Y
R119,156,158,	ERD14VJ332	3.3kΩ, ¼W ±5% Carbon	30	Y	(934,937,989,				
251,259,266,					1012,1034)x2				
268,303,304,					R271,516,517,	ERD14VJ154	150kΩ, ¼W ±5% Carbon	16	Y
809,(914,915,					518,519,531,				
923,926,927,					532,537,(925,				
943,948,963,					1023,1025,				
970,971)x2					1036)x2				
R114,135,527,	ERD14VJ392	3.9kΩ, ¼W ±5% Carbon	15	Y	R(903,922)x2	ERD14VSJ154	150kΩ, ¼W ±5% Carbon	4	Y
621,622,623,					R506,507,523,	ERD14VSJ184	180kΩ, ¼W ±5% Carbon	6	Y
624,737,738,					524,(904)x2				
739,740,					R684,685,	ERD14VSJ224	220kΩ, ¼W ±5% Carbon	4	Y
(920,975)x2					(918)x2				
R126,130,152,	ERD14VJ472	4.7kΩ, ¼W ±5% Carbon	22	Y	R210,252,260,	ERD14VJ224	220kΩ, ¼W ±5% Carbon	9	Y
157,165,206,					(1014,1019,				
258,265,301,					1030)x2				
525,688,689,					R502,503	ERD14VJ274	270kΩ, ¼W ±5% Carbon	2	Y
(952,953,965,					R413,414	ERD14VSJ274	270kΩ, ¼W ±5% Carbon	2	Y
966,993)x2					R(1007)x2	ERD14VJ393	39kΩ, ¼W ±5% Carbon	2	Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
R521,522,653,654,655,656,(902)x2	ERD14VSJ394	390kΩ, ¼W ±5% Carbon	8	Y	C10,17,18,102,106,108,112,115,157,161,162,167,809,810,813,814,820	ECKE1H103PF	0.01µF, 50WV, +100%, -0% Ceramic	17	Z
R420,(939)x2	ERD14VJ394	390kΩ, ¼W ±5% Carbon	3	Y	C817	ECKD2H103PF	0.01µF, 500WV, +100%, -0% Ceramic	1	Z
R136,253,261,533,(1004)x2	ERD14VJ474	470kΩ, ¼W ±5% Carbon	6	Y	C104,107,110,114,120,126,129,133,136,201,204,209,269	ECKE1H223PF	0.022µF, 50WV, +100%, -0% Ceramic	13	Z
R682,683	ERD14VSJ474	470kΩ, ¼W ±5% Carbon	2	Y	C823,824,826	ECKD1H473ZF	0.047µF, 50WV, +80%, -20% Ceramic	3	Z
R403,404	ERD14VSJ824	820kΩ, ¼W ±5% Carbon	2	Y	C(908,910,915,916,925,948)x2	ECQG05102KZN	0.001µF, 50WV, +10%, Polyester	12	Z
R629,630,631,632,649,650,651,652	ERD14VJ824	820kΩ, ¼W ±5% Carbon	8	Y	C302,(907,928,929,930)x2	ECQG05152KZN	0.0015µF, 50WV, ±10%, Polyester	9	Z
R769,770,771,772,773,774,775,776	ERX2ANKR33	0.33Ω, 2W ±10% Metallic	8	Y	C629,630,631,632,(947)x2	ECQG05222KZN	0.0022µF, 50WV, ±10%, Polyester	6	Z
R777,778,779	ERX1ANJ100	10Ω, 1W, ±5%, Metallic	4	Y	C411,412	ECQG05272JZN	0.0027µF, 50WV, ±5%, Polyester	2	Z
R807	ERM2P201	200Ω, 2W, ±5% Wire	1	Z	C215,(950,961,963)x2	ECQG05332KZN	0.0033µF, 50WV, ±10%, Polyester	7	Z
R808	ERM4P271	270Ω, 4W, ±5% Wire	1	Z	C265,266,(909,927,940,949)x2	ECQG05472KZN	0.0047µF, 50WV, ±10%, Polyester	10	Z
VARIABLE RESISTORS					C308,309	ECQG05562JZN	0.0056µF, 50WV, ±5%, Polyester	2	Z
VR1	EVB17AA1654U	50kΩ (ZU), AFD Control (WIDTH)	1	X	C(944,978,983)x2	ECQG05682KZN	0.0068µF, 50WV, ±10%, Polyester	6	Z
VR2-1,2-2	EVA77AA16D55	500kΩ (D), AFD Control (DEPTH)	1	X	C413,414	ECQG05822JZN	0.0082µF, 50WV, ±5%, Polyester	2	Z
VR3,4,5,6	EVHB8A034BF5	250kΩ (B), Channel Level Control	4	X	C151,203,211,212,515,(933,934,971,976,986)x2	ECQG05103KZN	0.01µF, 50WV, ±10%, Polyester	13	Z
VR7,8	EVHB8A018B14	10kΩ (B), Carrier Level Control	2	X	C(922,924)x2	FCQG05103JZN	0.01µF, 50WV, ±5%, Polyester	4	Z
VR9,10	EVHB8A018B54	50kΩ (B), CD-4 Separation Control	2	X	C(923)x2	ECQG05153JZN	0.015µF, 50WV, ±5%, Polyester	2	Z
VR51,52,53,54,102	EVLS3AA00B54	50kΩ (B), VU Meter & Muting Level Adj.	5	X	C101,103,105,109,113,117,118,124,127,139,202,621,622,623,624,625,626,627,628,(974)x2	ECQG05223KZN	0.022µF, 50WV, ±10% Polyester	21	Z
VR101	EVLS3AA00B24	20kΩ (B), Signal Meter Adjustment	1	X	C154,205,601,602,603,604(913)x2	ECQG05333KZN	0.033µF, 50WV, ±10%, Polyester	8	Z
VR601-1~601-4	EVB83A030BF5	250kΩ (B), Main Volume Control	1	X	C513,514,(943,954,965,979)x2	ECQG05473KZN	0.047µF, 50WV, ±10%, Polyester	10	Z
VR602-1~602-4	EVB84A030B15	100kΩ (B) Bass & Treble Control	2	X	C725,726,727,728	ECQM05473KZ	0.047µF, 50WV, ±10%, Polyester	4	Z
VR603-1~603-4	EVLS3AA00B13	1kΩ (B), FM Separation & DC Balance Adjustment	5	X	C207	ECQG05563KZN	0.056µF, 50WV, ±10%, Polyester	1	Z
VR301,701,702,703,704	EVLS3AA00B52	500Ω (B), ICQ Adjustment	4	X	C(972)x2	ECQG05683KZN	0.068µF, 50WV, ±10%, Polyester	2	Z
VR705,706,707,708	EVLS0AA00B23	2kΩ (B), Free Running Frequency Adjustment	2	X	C166	ECQG05224KZN	0.22µF, 50WV, ±10%, Polyester	1	Z
VR(901)x2	EVLS0AA00B24	20kΩ (B), Lock Range Control & Automatic Noise Reduction System Adj.	6	X	C352,353	ECQU2A103MD	0.01µF, 250VAC, ±20%, Polyester	2	Z
VR(902,903,904)x2					C(937,938)x2	ECQS1391KZ-K	390pF, 125WV, ±10%, Styro	4	Z
THERMISTORS					C152	ECQS1222JZ	2200pF, 125WV, ±5%, Styro	1	Z
TH701,702,703,704	RRT251	Driver Circuit	4	Y	C252,256,259,260,262,264,267,268,403,404,506,507,(901)x2	ECSZ25EF3R3	3.3µF, 25WV, Electrolytic	14	Y
TH(901)x2	RRTA202-2	Phase Locked Loop Circuit	2	Y	C419,617,618,619,620,641,642,643,644,647,418	ECSZ25EF4R7	4.7µF, 25WV, Electrolytic	9	Y
CAPACITORS					C417,418	ECSZ35EFR47	0.47µF, 35WV, Electrolytic	2	Y
C131	ECCD1HOR5CC	0.5pF, 50WV, ±0.25pF, Ceramic	1	Z	C116,213,214	ECAG25ER1X	0.1µF, 25WV, Electrolytic	13	Y
C9	ECCD1H010CC	1pF, 50WV, ±0.25pF, Ceramic	1	Z	(952,955,956,980,982)x2	ECAG25ER33X	0.33µF, 25WV, Electrolytic	2	Y
C(906)x2	ECCD1H040CC	4pF, 50WV, ±0.25pF, Ceramic	2	Z	C(957)x2	ECAG25ER47X	0.47µF, 25WV, Electrolytic	15	Y
C217	ECCD1H050CC	5pF, 50WV, ±0.25pF, Ceramic	1	Z	C504,505,508,509,510,511,512,605,606,607,608,633,634,635,636	ECAG25ER68X	0.68µF, 25WV, Electrolytic	30	Y
C111	ECCD1H100KC	10pF, 50WV, ±10%, Ceramic	1	Z	C502,503,645,646,647,648,(911,912,914,917,918,919,920,921,945,946,973,981)x2				
C11	ECCD1H100KU	10pF, 50WV, ±10%, Ceramic	1	Z	C(904,905,970)x2	ECEA6V33	33µF, 6.3WV, Electrolytic	6	Y
C19	ECCD1H100KT	10pF, 50WV, ±10%, Ceramic	1	Z	C409,410,637,638,639,640,709,710,711,712	ECEA6V47	47µF, 6.3WV, Electrolytic	10	Y
C1	ECCD1H120KC	12pF, 50WV, ±10%, Ceramic	1	Z	C351	ECEA6V100	100µF, 6.3WV, Electrolytic	1	Y
C6,12,14	ECCD1H150KC	15pF, 50WV, ±10%, Ceramic	3	Z	C415,416,613,614,615,616	ECEA10V33	33µF, 10WV, Electrolytic	6	Y
C5	ECCD1H180KC	18pF, 50WV, ±10%, Ceramic	1	Z					
C130	ECCD1H330KC	33pF, 50WV, ±10%, Ceramic	1	Z					
C13	ECCD1H390KC	39pF, 50WV, ±10%, Ceramic	1	Z					
C119	ECCD1H470KU	47pF, 50WV, ±10%, Ceramic	1	Z					
C717,718,719,720	ECCD1H560K	56pF, 50WV ±10%, Ceramic	4	Z					
C121,122,132,(962)x2	ECCD1H101K	100pF, 50WV, ±10%, Ceramic	5	Z					
C420	ECCD1H121K	121pF, 50WV, ±10%, Ceramic	1	Z					
C405,406	ECCD1H151K	150pF, 50WV, ±10%, Ceramic	2	Z					
C7	ECCD1H181K	180pF, 50WV, ±10%, Ceramic	1	Z					
C208	ECCD1H221K	220pF, 50WV, ±10%, Ceramic	1	Z					
C134,251,255,421,705,706,707,708	ECCD1H331K	330pF, 50WV, ±10%, Ceramic	8	Z					
C263,356	ECKD1H471KB	470pF, 50WV, ±10%, Ceramic	2	Z					
C(926)x2	ECKD1H681KB	680pF, 50WV, ±10%, Ceramic	2	Z					
C407,408,609,610,611,612,(903)x2	ECKD1H821KB	820pF, 50WV, ±10%, Ceramic	8	Z					
C2,3,48,15,20	ECKD1H102PF	0.001µF, 50WV, +100%, -0% Ceramic	6	Z					
C732,733,734,735	ECKE1H102MD	0.001µF, 50WV, ±20%, Ceramic	4	Z					

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
C254,261	ECEA10V47	47µF, 10WV, Electrolytic	2	Y	F802	XBA1K40NS5	4A, Power Source	1	X
C125	ECEA10V100	100µF, 10WV, Electrolytic	1	Y	F803	XBAS1B2002	2A, Power Source	1	X
C801	ECEA10V220	220µF, 10WV, Electrolytic	1	Y					
C821,822,825	ECEA10V470	470µF, 10WV, Electrolytic	3	Y					
C51,52,53,54, 137,138,155, 206,253,257, 301,936,941, 942,953,958, 964,975,977	ECEA16V10	10µF, 16WV, Electrolytic	27	Y					
LIGHTS									
					PL1,2,3,4,5,6, 7,8,9,	XAM35K	Meter & Dial Lamp. (6.3V 0.25A)	9	X
					PL10	XAMR33S400	Pointer Lamp. (6.3V 75mA)	1	X
					PL11,12,13	XAM37K250	Stereo & Channel Indicator. (7.5V 75mA)	3	X
					PL14,15	XAM37K75	CD-4 Indicator & 4 ch. Radar (7.5V 75mA)	2	X
CABINET PARTS									
					CA1	SKAA630	Cabinet, Complete	1	Y
					CA2	SKPA3	Hole, Ventilation Not Available	(1)	
					CA2	SKMA190	Wooden Cabinet Order SKAA630	(1)	
					CA3	SJB4+16BVCS	Screw, Cabinet M'tg.	4	Z
					CA4	SNTA502	Washer, Cabinet M'tg.	4	Z
						SYPA191AS	Rear Panel, Complete	1	Y
					CA5	SSSA6S	Switch, Carrier Level (S9)	1	Y
					CA6	SNEA404	Nut, Ground Terminal (Outer)	1	Z
					CA7	SNEA204-2S	Volt, Ground Terminal	1	Z
					CA7	SJFA3012	Terminal, PHONO, AUX, Tape Monitor 1&2, 4 CH MPX OUT	1	Z
					CA8	SGPA330B	Rear Panel Only	1	Z
					CA9	SJFA5201	Holder, Circuit Protection Fuses	2	Z
					CA10	SGTA1550	Name Plate	1	Z
					CA11	SJFA4401	Terminal, FM/AM Ext. Antenna	1	Z
					CA12	RJ37A	Socket, 4ch. Remote Balancer	1	Y
					CA13	SSSA7S	Switch, Balanced Transformerless (S7)	1	Y
					CA14	SJFA4806	Terminal, Speakers	1	Z
					CA15	SJSA1	Socket, AC Outlet	2	Z
					CA15	SMKA3S	Mounting, AC Outlet	1	Z
					CA16	SBSA7	Knob, Cartridge Selector Switch	1	X
						SJFA5202	Cap, Protection Fuse Holder	2	Z
						XSN26+12	Screw, Protection Fuse Holder Cap	2	Z
						SJAA3	Cord, AC Power Source	1	Z
						RHR111	Bushing, AC Cord	1	Z
						SHGA906	Rubber Cushion, Rear Panel	2	Z
						SHGA639	Rubber Cushion, Rear Panel	2	Z
						SUPA1980	Printed Circuit Board Only	1	Z
						XTV3D8CR	Red Screw, Bottom Board M'tg.	10	Z
						SYUA71A	Bottom Board, Complete	1	Z
						SKLA2-1	Leg, Bottom Board	4	Z
						SHEA3-1	Lock Pin, Leg	4	Z
						SKUA330-2	Bottom Board Only (Order SYUA71A)	(1)	Z
						SBNA113	Knob, Carrier & Separation Control	4	X
						SYWA111A	Front Panel, Complete	1	Y
					CA27	XTV3D8C	Screw, Panel M'tg.	12	Z
					CA28	SGXA54	Side Panel, Right	1	Z
					CA29	SUSA42-2	Spring, Dial Panel	2	Z
					CA30	SULA45	Mounting, Panel, Right Side	1	Z
						SULA43	Mounting, Panel, Left Side	1	Z
						SHGA969	Rubber, Panel	2	Z
						SGWA1120	Panel (Order SYWA111A)	(1)	Z
						SGBA45	Badge, CD-4	1	Z
						SULA42	Mounting, Panel	2	Z
						SGUA14	Panel, Dial	1	Z
						SGBA46	Badge, National Technics	1	Z
						LSGXA55	Side Panel, Left	1	Z
						XTV3D8CK	Black Screw, Panel & Tuner M'tg.	16	Z
						XWG3F10	Washer, Panel M'tg.	2	Z
						CA40	Knob, Tuning Control	1	Z
						SBNA111	Knob, Mode, Selector, Bass & Treble	4	X
						SBDA1	Knob, AFD Control	4	X
						SBNA103	Knob, Channel Level Control	2	X
						SBDA1	Knob, Main Volume Control	4	X
						SBNA102	Knob, Main Volume Control	1	X
						SBLA2	Button, Lever Switch	2	X
						SBCA47	Button, Power Source Switch	1	X
CHASSIS									
					CH1	SJSA5	Socket, CD-4 Demodulator P.C.B.	2	Z
					CH2	SULA44	Mounting, CD-4 Demodulator P.C.B.	2	Z
					CH3	SUPA2000	Printed Circuit Board Only	1	Z
					CH4	SJT A307	Pin Terminal, Circuit Connection	160	Z
					CH5	SMYA36	Hear Sink, Power Transistor	1	Z
					CH6	SJSA65	Socket, Circuit Connection Pin Terminal	17	Z
					CH7	SDR5	Pulley, Dial Cord	4	Z
					CH8	SMCA83-1	Shield Plate, FM-IF P.C.B.	1	Z
						SDTA5S	Tuning Shaft, Complete	1	Z
						SDXA304	Mounting	(1)	Z
						SDTA6005	Shaft Only Not Available	(1)	Z
						SDXA705S	Flywheel Order SDTA5S	(1)	Z
					CH10	SHGA624	Rubber Cushion, Cabinet	½	Z
					CH11	SMA19-2	Meter, Signal Strength	1	X
					CH12	SHGA202	Bracket, Stereo Eye, 4CH/2CH Indicator	3	Z
VARIABLE CAPACITORS									
CV1,2,3,4,5 (CT4,5)	ECV5MX25X14G	Tuning Gang, FM/AM (Trimmer, AM ANT & AM OSC)	1	X					
CT1,2	ECV1ZW10P32	Trimmer, FM ANT & FM DET, 10pF Type	2	X					
CT3	ECV1ZW06P35	Trimmer, FM OSC, 6pF Type	1	X					
COMPONENT COMBINATIONS									
M101	EXA5DL04C	FM Discriminator Circuit	1	X					
M301,302	SXAM675F	Low Pass Filter, 19kHz & 38kHz	2	X					
M801,802,803 804	RXAF103P22HD	Hum Cancel, 0.01µF(x2), 500WV	4	Y					
SWITCHES									
S1-1 ~ S1-12	SSRA51	Selector Switch	1	X					
S2-1 ~ S2-8	SSRA50	Mode Switch	1	X					
S3-1 ~ S3-4	SSHA37S	Tape Monitor 1 Switch	1	X					
S4-1 ~ S4-4		Tape Monitor 2 Switch							
S11-1 ~ S11-4		VU Meter Range Switch							
		Button (Not Available Order SSHA37S)			(3)				
S5	SSLA18S	Muting Switch	1	X					
S6-1 ~ S6-4	SSLA19S	Loudness Switch	1	X					
S7-1 ~ S7-4		Balanced Transformerless Switch	1	X					
S8-1, S8-2	ESB7025	Refer to Ref. No. CA13	1	X					
S9		Power Source Switch Only							
		Carrier Level Adjustment Switch	1	X					
		Refer to Ref. No. CA5							
S10-1 ~ S10-4	SSRA52	Cartridge Selector Switch	1	X					
S12-1 ~ S12-4	SSRA7S	Voltage Selector Switch	1	X					
SPEAKER PROTECTION RELAY									
	SSYA1	Relay, Speaker Protection	1	X					
FUSES									
F1,2,3,4	XBAS1A3001	3A, Circuit Protection	4	X					
F801	XBAS1B3001	3A, Power Source	1	X					

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
CH13	SDPA1009	Slider, Dial Pointer	1	Y	ACCESSORIES				
CH14	SHGA203	Bracket, CD-4 Eye & CD-4 Indicator	1	Y					
CH15	SDPA5018	Pointer Only, Dial	1	Y	A1	SSAA1	Cord, FM Antenna	1	Y
CH16	RHG5-1	Rubber Cushion, Variable Capacitor	1	Z	A2	XBAS1A3001	Fuse, Circuit Protection [3A]	4	X
CH17	RDR20	Pulley, Dial Cord, Small Size	2	Z	A3	SPR111-1	Record, CD-4 Test	1	Y
	RDR23	Pulley, Dial Cord, Large Size	2	Z	A4	RJP16AS	Plug, AC Power Source	1	Y
CH18	SKDA360	Scale, Dial	1	Y	A5	RJP17AS	Plug, AC Power Source	1	Y
CH19	SUMA7	Mounting, Dial Scale	1	Y	A6	RJP5	Pin Plug	8	Y
CH20	SDDA321S	Drum, Dial Cord	1	Z	PACKING PARTS				
	SDSA4141	Spring, Dial Cord	1	Z					
	XXAR3H6S	Screw, Durm M'tg.	2	Z	P1	SPPA30	Soft Cover	1	Z
	RDZ05-5	Cord, Dial, 160cm (63-1/8")	1 roll	Z		SPEA3	Cover, AC Plug	1	Z
CH21	SJSA64	Socket, Circuit Connection, 6 pin	3	Z	P2	SPHA6008	Polyethylene Sheet	1	Z
	SJSA63	Socket, Circuit Connection, 4 pin	10	Z	P3	SPSA63	Pad, Upper & Lower	2	Z
CH22	SHGA635	Rubber Cushion, VU Meter	1	Z	P4	SPSA61	Pad, Inside	1	Z
CH23	RJV1A	Holder, Meter Light	5	X	P5	SPSA62	Pad, Right & Left Side	2	Z
CH24	SSMA21	Volume Unit (Output Level) Meter	4	X	P6	SPNA150A	Carton Box [Inner]	1	Z
CH25	SJJA13	Jack, Microphone	1	Z	P7	SQFA160	Printed Matter, Complete	1	Y
CH26	SNWA121	Nylon Sheet, Mic & Headphone Jack	3	Z		SQXA5102	Instructions Book (Order SQFA160)	(1)	Z
CH27	SJJA14	Jack, Headphones	2	Z	P8	SPSA71	Pad, Carton Box	1	Z
CH28	RNW150-2	Lock Washer, Pulley	3	Z	P9	SPGA232A	Carton Box [Outer]	1	Z
CH29	RDY34	Shaft, Small Pulley	2	Z					
	RDY32	Shaft, Large Pulley	1	Z					
CH30	SUR3A6	Mounting, Pulley	1	Z					
CH31	SDY11	Shaft, Pulley Lock	4	Z					
CH32	SDY9	Bracket, Pulley & Pulley Shaft	4	Z					
	SJSA202	Holder, Dial Light	1	Z					

■ PACKINGS

