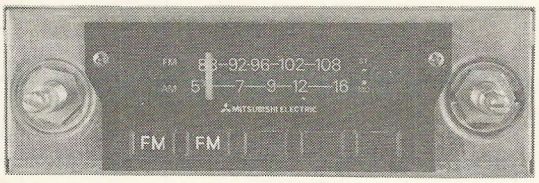
MITSUBISHI

SERVICE MANUAL

AM/FM CAR RADIO

MODEL : AR-2779SUK-Y3
PART NO. MB184123



SPECIFICATIONS

Circuit System :	Superheterodyne	Stereo Switching Level :	Less than 20dB(μV)
Tuning Range :	AM 525—1605KHz	Output Power :	Max. 6W
	FM 88—108MHz		THD 10% 4W
Intermediate Frequency :	AM 455KHz	Output Inpedance :	4Ω
	FM 10.7MHz	Power Source :	DC 13.2V Negative Ground Only
Sensitivity :	AM More than 26dB(μV)	Current Consumption :	More than 1.5A
Usable Sensitivity :	FM More than 21dB(μV)	Size :	W 160mm (6—19/64")
SN Ratio :	AM More than 40dB		H 51mm (2")
	FM More than 53dB		D 125mm (5")
Stereo Separation :	More than 20dB	Weight :	1.2kg (2.6 lb)

MITSUBISHI ELECTRIC CORPORATION

Head Office : 2-3 Marunouchi 2-Chome, Chiyodaku, Tokyo, Japan Cable Address : MELCO TOKYO

ALIGNMENT PROCEDURES

1 AM (IF, RF) Alignment (Power Source Voltage DC 14.4 V)

Procedures	Circuit	Signal generator connection	Signal generator frequency	Radio dial setting	Indicator connection	Adjust	Remarks
1	IF	Fig. 1	455 KHz	High freq. end stop	Fig. 2	T2~T5	Try to get the maximum voltage and equalize the degree of diminution near ±3 KHz
2							
3							
4	RF	Fig. 3	1630 kHz	High freq. end stop	"	VC3	Tune in
5			1400 KHz	1400 KHz	"	VC1, VC2	Adjust VC1, VC2 and get the maximum voltage of the output.
6			600 KHz	600 KHz	"	T1	Turn T1 gradually and find the maximum sensitivity near 600 KHz.
7					"	Repeat procedures 5–6	
8				Low freq. end stop			Check the range of the frequency of the received wave. This is the end of the adjustment.

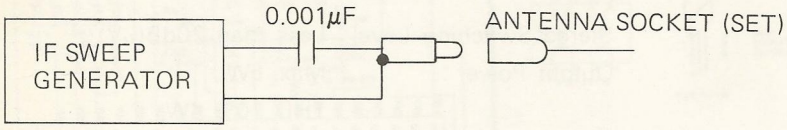


Fig. 1

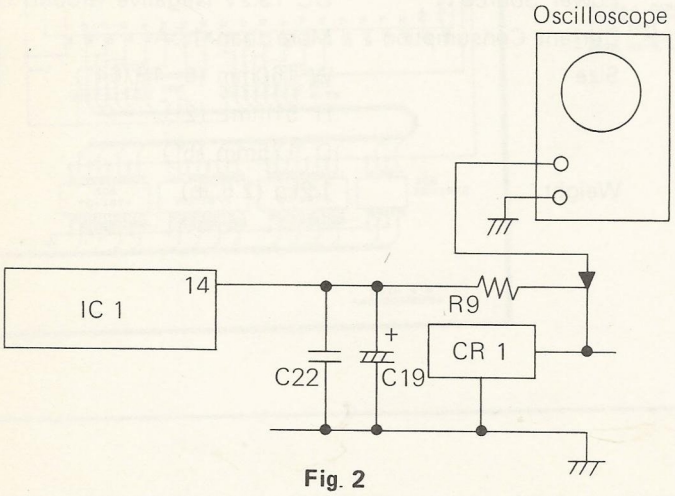


Fig. 2

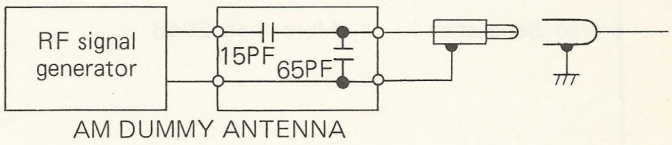


Fig. 3

2 FM Alignment

- Power source voltage DC·14.4 V.

Step	Circuit	Connection		Signal generator frequency	Radio tuning	Adjust	Remarks
		Input	Output				
1	IF	SMG output TP1 thru. 33 PF	SMG input TP3	10.7 MHz 40 dB (μV)	High freq. end stop (TP2 and C161 open)	T101 T151, 152 VR151	Center freq. is determined by ceramic filter characteristic
2	Discrimi-nator	SMG output TP1 thru. 33 PF	SMG input TP4	10.7 MHz 40 dB (μV)	High freq. end stop (TP2 con-nected)	T153	Adjust T153 to make the linear part of the S curve sharp.
3	RF	SSG output, Ant socket thru. dummy antenna (Fig. 4)	AC voltmeter speaker connector	108 MHz	High freq. end stop (C161 con-nected)	VC103	Maximum reading
4				88 MHz	Low freq. end stop	–	
5				98 MHz	98 MHz	VC101, 102	
6				Repeat steps 3 to 5			
7	MPX		Freq. counter TP5		High freq. end stop	VR202	19.0 ± 0.1 KHz
8	Separation	SSG output Ant socket thru. dummy antenna (Fig. 4)	AC voltmeter speaker connector	98 MHz 1 KHz, 30% mod.	98 MHz	VR201	Maximum separation
9						VR151	Limiting sensitivity 13～14 dB (μV)

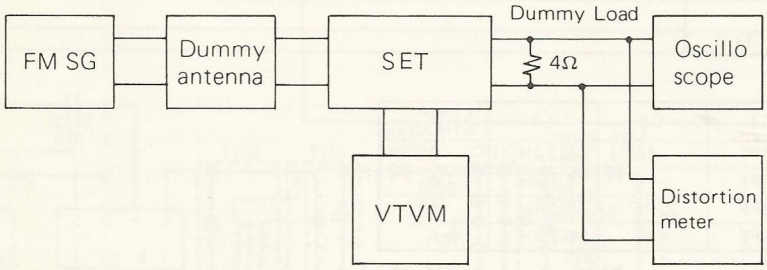
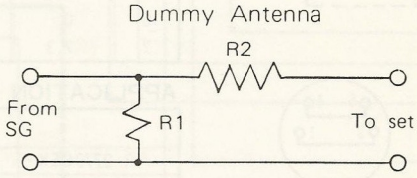


Fig. 4



Open circuit R1: —— R2: 25Ω

Close circuit R1: 50Ω R2: 25Ω

* CF151.152

Center Frequency	RANK	CARE coad
10.70MHz ± 30KHz	A	RED
10.67MHz ± "	B	BLU
10.73MHz ± "	C	ORG
10.64MHz ± "	D	BLK
10.76MHz ± "	E	WHT

ELECTRICAL PARTS LIST

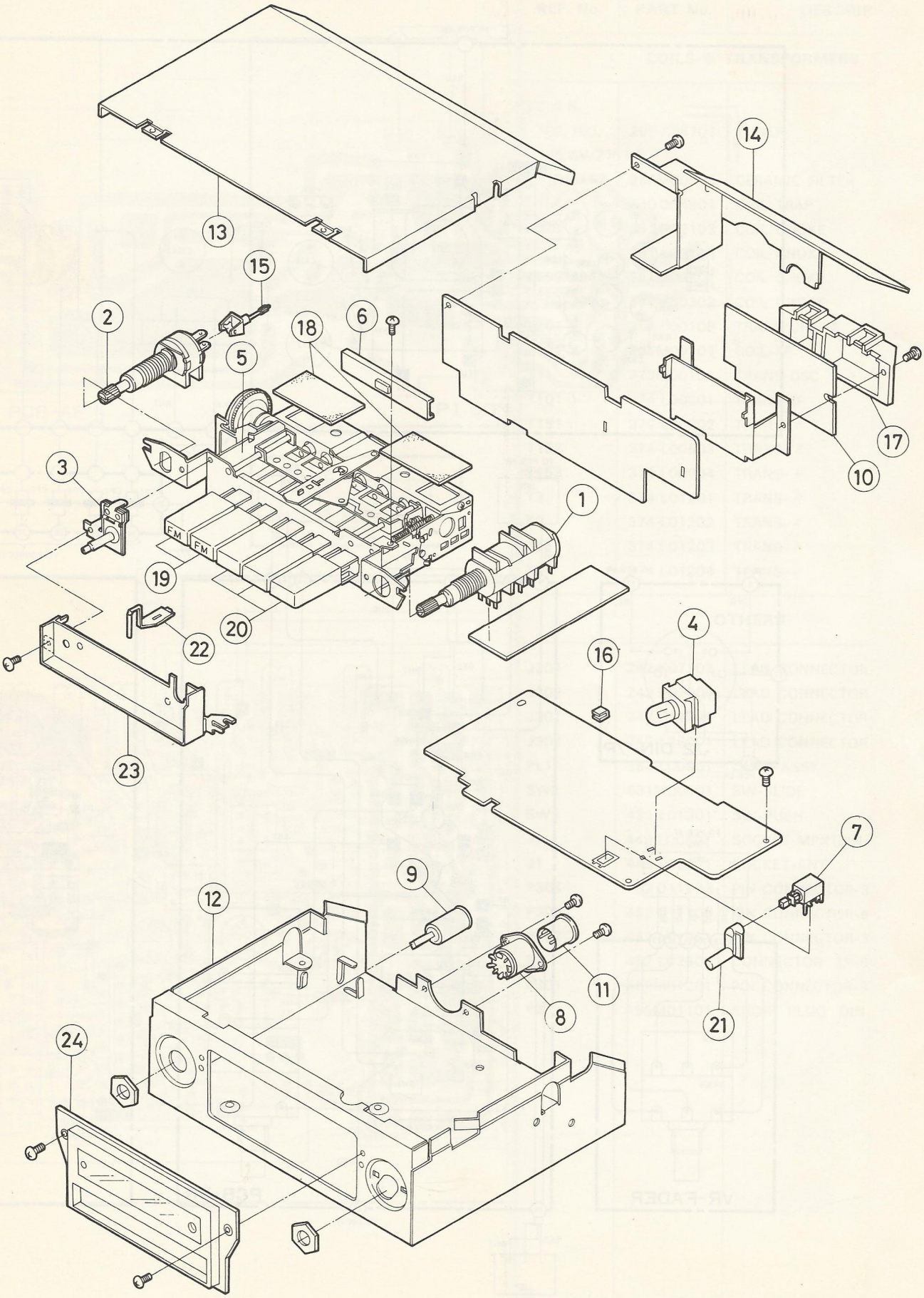
REF. No.	PART No.	DESCRIPTION	
RESTORS & CAPACITORS			
VR301, 401, 302, 402, 303, 403, SW1	122 L06205	VR-DOUBLE-SHAFT	
VR202	127M03003	VR-SEMIFIXED	20kΩ
VR201	127M03102	VR-SEMIFIXED	20kΩ
VR151	127M03103	VR-SEMIFIXED	10kΩ
VR304, 404	129 L08903	VR-FADER	40Ω
CP1, 2, 4	141 P02001	C-CERAMIC	1000PF
CP5, 6, 7, 8	141 P02003	C-CERAMIC	1000PF
CR151	149 L00102	CR-MULTIPLE	
CR1	149 L00201	CR-MULTIPLE	
VC101, 102, 103	202 L00301	C-TRIMMER	10PF
VC1	202 L01301	C-TRIMMER	100PF
VC2, 3	202 P10401	C-TRIMMER	48PF
SEMICONDUCTORS			
Q103	260 P05403	TR	2SC738-C
Q201	260 P17502	TR	2SC711-E
Q102	260 P17603	TR	2SC763-C
Q101	260 P23702	TR	2SK61-0
D1	264 P00401	DIODE	1N34A/1K34A
D152, 153, 154, 155, 252, 253	264 P01306	DIODE	1N60P/2-1K261
D301	264 P13201	DIODE	GM-3Z
D158	264 P14101	LED	SLT-214B Green
D201	264 P14301	LED	SLP-114B Red
D151	264 P21103	DIODE	RD9.1F
D101	264 P29801	DIODE	SD113
IC1	266 P01201	IC	μPC1171C
IC151	266 P30402	IC	LA1201FM-C
IC301	266 P35101	IC	M51517L
IC201	266 P78901	IC	LA3370
IC2	267 P30301	HIC	SA8159
IC152	267 P30502	HIC	IL0001
IC251	267 P71002	HIC	NC8201
IC202	267 P71103	HIC	SAF089
D2, 3, 4, 154, 155, 202, 203	269M01201	DIODE	1S2076/1S2473 /1S953

REF. No.	PART No.	DESCRIPTION
COILS & TRANSFORMERS		
L2, 4, 5, 102, 103, 105, SW2	295 K08701	TUNER
CF151, 152	296M00501	CERAMIC FILTER
L104	320 D04601	COIL TRAP
L3, 6	351 D02103	COIL CHOKE
L1	351 L00103	COIL CHOKE
L304, 404	351M00201	COIL CHOKE
L302, 303	351M00202	COIL CHOKE
L301	351 P00108	TRANS CHOKE
L101	361M00101	COIL-RF
T1	373M00101	TRANS-OSC
T101	374 L00201	TRANS- IF
T151	374 L00202	TRANS- 〃
T152	374 L00603	TRANS- 〃
T153	374 L00604	TRANS- 〃
T3	374 L01201	TRANS- 〃
T2	374 L01202	TRANS- 〃
T4	374 L01203	TRANS- 〃
T5	374 L01204	TRANS- 〃
OTHERS		
J304	242 K07102	LEAD CONNECTOR-3P
J303	242 K07504	LEAD CONNECTOR-6P
J301	242 L11207	LEAD CONNECTOR-3P
J302	242 L28001	LEAD CONNECTOR-3P
PL1	253 L00801	LAMP-ASSY
SW2	431M00601	SW-SLIDE
SW3	432 L01301	SW-PUSH
J2	449 L00501	SOCKET-MPX (DIN-7P)
J1	449 L02501	SOCKET-ANT
P304	452 D11103	PIN CONNECTOR-3P
P303	452 D11106	PIN CONNECTOR-6P
P302	452 L01601	PIN CONNECTOR-3P
P1	452 L02504	CONNECTOR 2P-5P
P301	452M01201	PIN CONNECTOR-3P
P2	459M01101	SHORT PLUG DIN-5P

MECHANICAL PARTS LIST

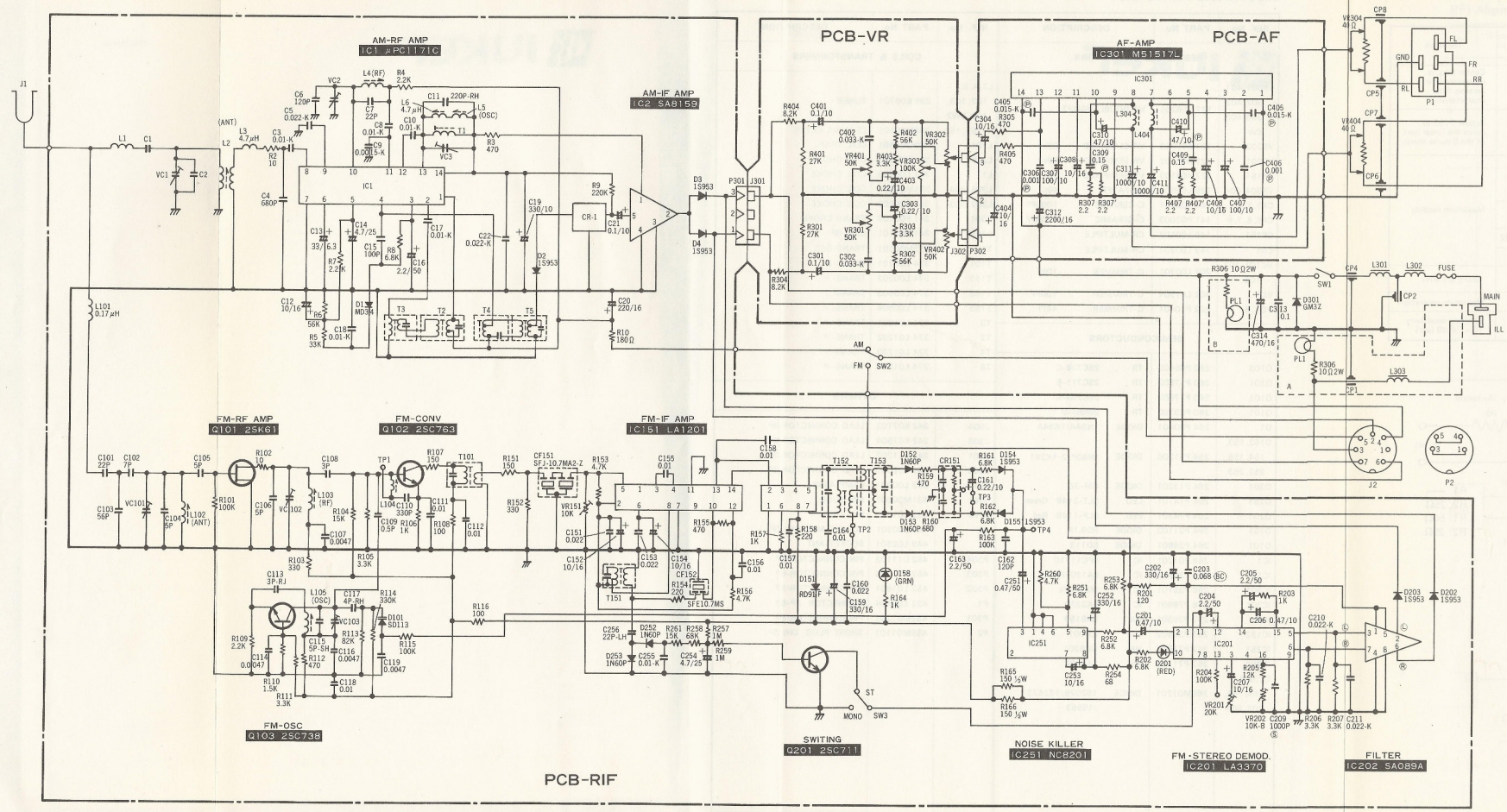
REF. No.	PART No.	DESCRIPTION	REF. No.	PART No.	DESCRIPTION
1	122 L06205	VR-DOUBLE SHAFT	13	590 K13704	UPPER COVER
2	129 L08903	VR-FADER	14	590 L90501	HEAT SINK
3	202 L01301	C-TRIMMER (VC1)	15	591M17901	JOINT
4	253 L00801	LAMP ASSY (PL1)	16	591M24601	TERMINAL CLIP
5	295 K08701	TUNER(Attached No. 2, 6, 15, 19 & 20)	17	641 L03201	STOPPER CONNECTOR
6	431M00601	SW-SLIDE (SW2)	18	642M06803	DAMPER
7	432 L01301	SW-PUSH (SW3)	19	704 L06103	BUTTON TUNER (FM)
8	449 L00501	SOCKET-MPX (J2)	20	704M18201	BUTTON TUNER (AM)
9	449 L02501	SOCKET-ANT (J1)	21	704M19701	KNOB-ST
10	452 L02504	CONNECTOR 2P-5P (P1)	22	768 L02801	POINTER
11	459M01101	SHORT PLUG DIN-5P (P2)	23	768M10101	BACK PLATE
12	560 K06502	CHASSIS	24	943 L41905	PANEL ASSY

EXPLODED VIEW



Printed in Japan

SCHEMATIC DIAGRAM



VOLTAGE READING

IC1 μPC1171			
1	11.0V	8	2.5V
2	0.6	9	2.0
3	0.7	10	8.0
4	11.0	11	1.3
5	—	12	3.5
6	0	13	5.6
7	0	14	5.6

IC2 SA8159	
1	10.5V
2	6.0
3	0
4	0
5	5.4

IC151 LA1201			
1	2.4V	8	2.7V
2	2.7	9	0.9
3	0.6	10	1.8
4	1.7	11	0
5	1.1	12	4.5
6	0.5	13	4.2
7	0	14	4.5

Q101 2SK61	
D	7.0V
G	0
S	0

Q102 2SC763	
C	7.4V
B	1.3
E	0.8

Q103 2SC738	
C	7.2V
B	2.4
E	3.0

Q201 2SC711	
C	1.5V
B	—
E	0

IC152 IL0001	
1	0 V
2	4.2
3	4.5
4	1.1
5	5.8
6	0.5
7	5.8
8	7.0

IC251 NC8201	
1	0 V
2	3.0
3	3.0
4	0
5	0
6	0
7	12.0
8	12.5
9	4.0

IC201 LA3370			
1	11.5V	9	0 V
2	1.6	10	9.6
3	2.8	11	1.5
4	2.2	12	2.0
5	3.2	13	1.4
6	3.2	14	2.0
7	—	15	2.0
8	—	16	2.1

IC202 SAF089	
1	11.5V
2	—
3	3.2
4	0
5	11.5
6	—
7	3.2
8	0

IC301 M51517L			
1	14.2V	8	7.3 V
2	—	9	0
3	1.25	10	13.5
4	3.3	11	3.3
5	13.5	12	1.25
6	0	13	—
7	7.3	14	14.2

APPLICATION

	C1	C2	L1	LAMP CIRCUIT
AR-2779SEK-3	680PF	—	5.2μH	B
AR-2779SUK-3	680PF	—	5.2μH	A
AR-2779SUBK-3	820PF	22PF	3.2μH	A
AR-2779SUK-Y3	680PF	—	5.2μH	A

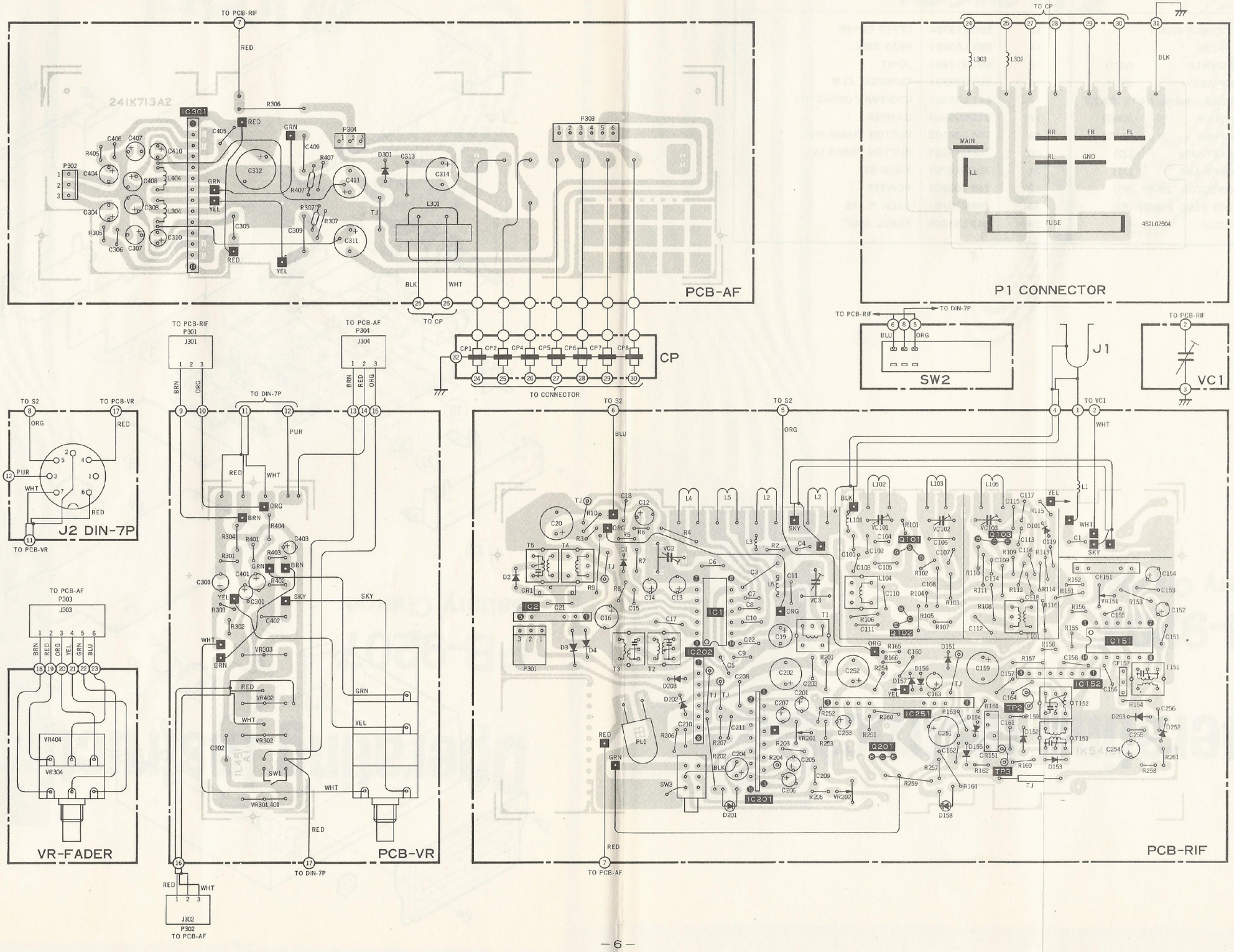
NOTICE:

1. Indication
   - All resistors are ohms unless otherwise specified. (K = 10^3 ohm, M = 10^6 ohm).
   - All capacitors are microfarads unless otherwise specified. (P = 10^{-6} microfarad)
2. Resistors
   - Types:, Carbon resistor: No mark; Solid resistor: (S) mark; Printed resistor: (PR) mark; Tip resistor: (TR) mark
   - Wattage: No indication = 1/4W. Other wattage will be indicated.
   - Tolerance

Mark	Tolerance
J	±5%
K	±10%

3. Capacitors
   - Types: Ceramic condenser: No mark; Semiconductor ceramic condenser: (BC) mark; Polyester film condenser: (P) mark; Styrol condenser: (S) mark; Tantalic condenser: (T) mark; Aluminum electrolytic condenser: (Al) mark; Tip condenser: (TE) mark
   - Tolerance

Mark	Tolerance	Mark	Tolerance
C	±0.25P	M	±20%
D	±0.5P	Z	-80% +20%
J	±5%	No mark	+100% -0
K	±10%		

4. Voltage Measurements
   Voltage measurement made with D.C. voltmeter (20 KΩ/V DC) to chassis ground with no signal input (Source voltage 13.2V).
5. This circuit is subject to change for improvement without notice.

PRINTED CIRCUIT BOARD(Pattern Side)