SERVICE MANUAL

CASSETTE DECK WITH ELECTRONIC TUNER

Model CS202A (TEN Model No. CE-6135PH1)

Model CS204A (TEN Model No. CE-6136PH1)

SPECIFICATIONS

(RADIO SECTION)	AM	FM
TUNING RANGE	531 to 1611kHz(9kHz step)	88.1 to 107.9MHz(.1MHz step)
INTERMEDIATE FREQUENCY	450kHz	10.7MHz
SENSITIVITY	35dBμ or better(1.4V output)	
SENSITIVITY AT ELECTRONIC TUNING	Distant: 32±6dBμ Local : "Distant"plus 25±6dBμ	Distant:20±6dBμ Local :"Distant"plus 25±6dBμ
LIMITING SENSITIVITY		10±6dBμ
SEPARATION		20dB or better
ELECTRICAL FIDELITY	100Hz:4±3dB (74dBμ input,1.4V out.) 4kHz:-16±5dB (74dBμ input,1.4V out.)	100Hz:4±3dB (54dBμ input,1.4V out.) 10kHz:-14dB±5dB (54dBμ input,1.4V out.)

(CASSETTE EDCK SECTION)

NUMBER OF TRACKS.....4-track 2-channel

TAPE CARTRIDGE.....Stereo/Monaural compact cassette

TAPE SPEED.....4.76cm/sec.(1-7/8",i.p.s.)

WOW & FLUTTER.....0.3 % or less(WRMS)

CROSSTALK.....40dB or better

SEPARATION.....25dB or better

FREQUENCY RESPONSE.....125Hz:6±4dB

10kHz:4±4dB

EQUALIZATION.....Normal: t1=3,180μsec., t2=120μsec.

Chrome and metal:t1=3,180μsec,, t2=70μsec.

SIGNAL TO NOISE RATIO.....35dB or better(with MTT-150 test tape)

TAKE-UP TORQUE.....40 to 80 g-cm

(COMMON SECTION)

SPEAKER IMPEDANCE.....4 ohm per channel

POWER OUTPUT..... 2.5 watts x4(THD=10%)

POWER INPUT.....12-volt car battery, negative terminal to ground

Voltage.....13.2VDC

Current ..... Approx. 1 amperes(0.5 watts x4)
Approx. 3 amperes(Max.)

SEMICONDUCTORS..... 1 LSI, 18 ICs, 29 Transistors, 5 FETs, 47 Diodes

DIMENSIONS.....180(W)x51(H)x162(D)mm

WEIGHT..... Unit-- 1.6 kg

DETAILS OF CONNECTOR

CS202A
CS204A

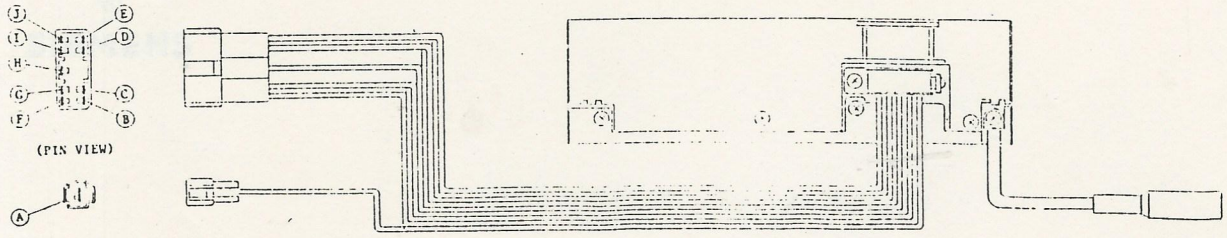


Fig. 1

PIN No.	DETAILS	COLOR	PIN No.	DETAILS	COLOR
A	BACK UP (+13.2V)	YEL	F	GROUND (FRONT SP.)	BLK
B	FRONT SPEAKER (Rch)	BLU	G	GROUND (REAR SP.)	BLK
C	FRONT SPEAKER (Lch)	GRN	H	GROUND	BLK
D	POWER SUPPLY (+13.2V)	RED	I	REAR SPEAKER (Lch)	LIGHT•GRN
E	AUTO ANT. (+13.2V)	ORG	J	REAR SPEAKER (Rch)	SKY•BLU

EXPLODED VIEW
CS202A
CS204A

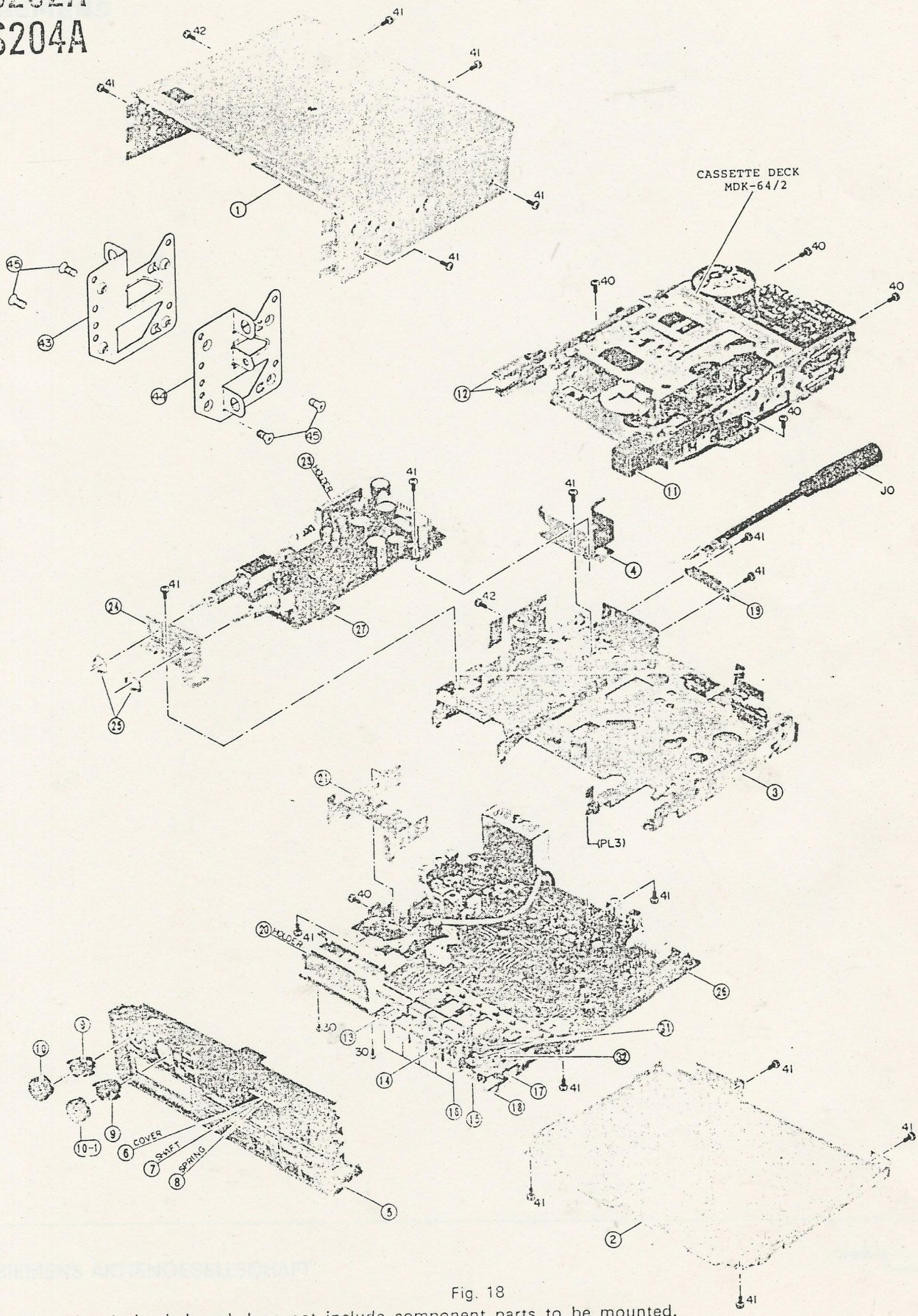


Fig. 18

NOTE : Printed circuit board does not include component parts to be mounted.

REPLACEMENT PARTS LIST
ELECTRICAL PARTS

Symbol No. (Fig. 3)	Stock No.	Description			CS202A	CS204A
CAPACITORS						
C1,2,22,23,46 47,59,69,70 72,73,75,87 90,94,95,97	RN-ECK-CB1H103M-1/TY	.01 μF	50V	ceramic(chip)	○	○
C3~6,43,55,58 67	RN-ECK-CB1E473M-1/TY	.047μF	50V	ceramic(chip)	○	○
C7,9	RN-ECE-M4R7V25-6	4.7 μF	25V	electrolytic	○	○
C8,10,13,62,64 65,68	RN-ECK-CB1E223M-1/TY	.022μF	25V	ceramic(chip)	○	○
C11	RN-ECE-M100V16-10	10 μF	16V	electrolytic	○	○
C12	RN-ECC-CSL1H330J-1/TY	33 PF	50V	ceramic(chip)	○	○
C14	RN-ECC-CSL1H151J-1/TY	150 PF	50V	ceramic(chip)	○	○
C15,34,41,88 100,103,112	RN-ECE-M1R0V50-7	1 μF	50V	electrolytic	○	○
C16~19	RN-ECC-CCH1H181J-1/TY	180 PF	50V	ceramic(chip)	○	○
C20	RN-ECC-CSL1H050C-1/TY	5 PF	50V	ceramic(chip)	○	○
C21,42	RN-ECE-M100V16-10	10 μF	16V	electrolytic	○	○
C24,25,40	RN-ECE-MR47V50-8	.47 μF	50V	electrolytic	○	○
C26,50	RN-ECK-CB1H222K-1/TY	2200 PF	50V	ceramic(chip)	○	○
C27,28,36	RN-ECC-CSL1H681J-1/TY	680 PF	50V	ceramic(chip)	○	○
C29	RN-ECK-CB1H122K-1/TY	1200 PF	50V	ceramic(chip)	○	○
C30	RN-ECC-CSL1H680J-1/TY	68 PF	50V	ceramic(chip)	○	○
C31	RN-ECK-CB1H682M-1/TY	6800 PF	50V	ceramic(chip)	○	○
C32	RN-ECK-CB1H153M-1/TY	.015μF	50V	ceramic(chip)	○	○
C33,108	RN-ECK-CB1E333K-1/TY	.033μF	50V	ceramic(chip)	○	○
C35,78	RN-ECE-M470V10-10	47 μF	10V	electrolytic	○	○
C37	RN-ECC-CCH1H471J-1/TY	470 PF	50V	ceramic(chip)	○	○
C38,48,49,51 106,107	RN-ECK-CB1H223K-1/TY	.022μF	50V	ceramic(chip)	○	○
C39,110,111	RN-ECE-M1R0V50-7	1 μF	50V	electrolytic	○	○
C44,45	RN-ECK-CB1E473K-1/TY	.047μF	25V	ceramic(chip)	○	○
C52	RN-ECE-M1R0V50-32	1 μF	50V	electrolytic	○	○
C53	RN-ECC-CCH1H391J-1/TY	390 PF	50V	ceramic(chip)	○	○
C54	RN-ECC-CCH1H390J-1/TY	39 PF	50V	ceramic(chip)	○	○
C56	RN-ECE-M330V10-7	33 μF	10V	electrolytic	○	○
C57	RN-ECE-MR47V50-32	.47 μF	50V	electrolytic	○	○
C60,79,83,85	RN-ECE-M221V10-41	220 μF	10V	electrolytic	○	○
C61	RN-ECE-M3R3V50-32	3.3 μF	50V	electrolytic	○	○
C63	RN-ECE-M470V16-32	47 μF	16V	electrolytic	○	○
C66,86	RN-ECK-CF1E104Z-1/TY	.1 μF	25V	ceramic(chip)	○	○
C71,74	RN-ECE-M2R2V50-7	2.2 μF	50V	electrolytic	○	○
C76,77	RN-ECE-MR10V50-4	.1 μF	50V	electrolytic	○	○
C80,81	RN-ECE-M1R0V50-32	1 μF	50V	electrolytic	○	○
C82	RN-ECB-D0X103E	.01 μF	25V	ceramic	○	○
C84	RN-ECE-M100V16-32	10 μF	16V	electrolytic	○	○
C91,92	RN-ECC-CCH1H220J-1/TY	22 PF	50V	ceramic(chip)	○	○
C93	RN-ECY-M4R7V16-M1	4.7 μF	16V	tantalum	○	○

Symbol No. (Fig. 3)	Stock No.	Description				CS202A	CS204A
C98,99	RN-ECE-M470V16-11	47 μF	16V		electrolytic	○	○
C101,102	RN-ECC-CSL1H471J-1/TY	470 PF	50V		ceramic(chip)	○	○
C104,105	RN-ECE-M470V6R3-1/TR	47 μF	6.3V		electrolytic	○	○
C109	RN-ECB-D0X333B	.033 μF	12V		ceramic	○	○
C113	RN-ECE-M470V16-11	47 μF	16V		electrolytic	○	○
C114	RN-ECH-R104V50	.1 μF	50V		MP	○	○
C115,116	RN-ECC-DSL030CY	3 pF	50V		ceramic(chip)	○	○
C200,201,218 219,240,241	RN-ECE-M1R0V50-51	1 μF	50V		electrolytic	○	○
C203,204,220 221	RN-ECC-CSL1H102K-1/TY	1000 PF	50V		ceramic(chip)	○	○
C205,206,225 226	RN-ECE-M101V10-31	100 μF	10V		electrolytic	○	○
C207	RN-ECE-M100V16-11	10 μF	16V		electrolytic	○	○
C210,211～213	RN-ECE-M4R7V25	4.7 μF	25V		electrolytic	○	○
C214,215,228	RN-ECK-CB1E103K-2/TY	.01 μF	25V		ceramic(chip)	○	○
C216,217	RN-ECE-MR22V50-5	.22 μF	50V		electrolytic	○	○
C222~224,242	RN-ECE-M470V10-4/TP	47 μF	10V		electrolytic	○	○
C227	RN-ECE-M471V16-13	470 μF	16V		electrolytic	○	○
C229,230	RN-ECH-R224V50	.22 μF	50V		MP	○	○
C231,232	RN-ECE-M102V10-7	1000 μF	10V		electrolytic	○	○
C233,234,238 239	RN-ECC-CSL1H221J-1/TY	220 PF	50V		ceramic(chip)	○	○
C235	RN-ECE-M222V16-7	2200 μF	16V		electrolytic	○	○
C237	RN-ECE-M102V16-13	1000 μF	16V		electrolytic	○	○
C300	RN-ECE-M220V16-3	22 μF	16V		electrolytic	○	○
C301	RN-ECB-D0X103E	.01 μF	25V		ceramic	○	○
VARIABLE CAPACITORS							
CV1	RN-ECV-A40-90	40 PF	AM OSC			○	○
FILTERS							
CI1	RN-ECI-A271-1	270 PF	100V			○	○
CI2	RN-ECI-B271-2	270 PF	100V			○	○
RESISTORS							
R1,6,76,77	RN-ERG-IC331J-1/TY	330 ohm	5%	1/8W	metallic(chip)	○	○
R2,24,38~41 41	RN-ERG-IC332J-1/TY	3.3Kohm	5%	1/8W	metallic(chip)	○	○
R3,9,31,45,47 55,56,67,85 86,120,121 123,124 128~130	RN-ERG-IC103J-1/TY	10K ohm	5%	1/8W	metallic(chip)	○	○
R4	RN-ERG-IC221J-1/TY	220 ohm	5%	1/8W	metallic(chip)	○	○
R5,66	RN-ERG-IC152J-1/TY	1.5Kohm	5%	1/8W	metallic(chip)	○	○
R7,62	RN-ERG-IC101J-1/TY	100 ohm	5%	1/8W	metallic(chip)	○	○
R8,68,110,111	RN-ERG-IC562J-1/TY	5.6Kohm	5%	1/8W	metallic(chip)	○	○
R10,93~96,99	RN-ERG-IC224J-1/TY	220Kohm	5%	1/8W	metallic(chip)	○	○

Symbol No. (Fig. 3)	Stock No.	Description	CS202A	CS204A
R11,12,37,42 69,71,84,91 100	RN-ERG-IC473J-1/TY	47K ohm 5% 1/8W metallic(chip)	○	○
R13,15,21,70 97	RN-ERG-IC223J-1/TY	22K ohm 5% 1/8W metallic(chip)	○	○
R14,52,64,72 75	RN-ERG-IC392J-1/TY	3.9Kohm 5% 1/8W metallic(chip)	○	○
R16,27~30	RN-ERG-IC472J-1/CC	4.7Kohm 5% 1/8W metallic(chip)	○	○
R17~19,92,101 114,115	RN-ERG-IC222J-1/TY	2.2Kohm 5% 1/8W metallic(chip)	○	○
R20,51,57,112 113	RN-ERG-IC272J-1/TY	2.7Kohm 5% 1/8W metallic(chip)	○	○
R22	RN-ERG-IC474J-1/TY	470Kohm 5% 1/8W metallic(chip)	○	○
R23,34,43,46 48,49,53,61 63,65,98,116 117,127	RN-ERG-IC104J-1/TY	100Kohm 5% 1/8W metallic(chip)	○	○
R25,33,36,74 79,80,83,87 88~90	RN-ERG-IC102J-1/TY	1K ohm 5% 1/8W metallic(chip)	○	○
R26,73	RN-ERG-IC182J-1/TY	1.8Kohm 5% 1/8W metallic(chip)	○	○
R32	RN-ERG-IC123J-1/TY	12K ohm 5% 1/8W metallic(chip)	○	○
R35,54,133	RN-ERG-IC153J-1/TY	15K ohm 5% 1/8W metallic(chip)	○	○
R44	RN-ERG-IC822J-1/TY	8.2Kohm 5% 1/8W metallic(chip)	○	○
R50	RN-ERG-IC560J-1/TY	56 ohm 5% 1/8W metallic(chip)	○	○
R58	RN-ERG-IC820J-1/TY	82 ohm 5% 1/8W metallic(chip)	○	○
R59,126	RN-ERG-IC183J-1/TY	18K ohm 5% 1/8W metallic(chip)	○	○
R60	RN-ERG-IC750J-1/TY	75 ohm 5% 1/8W metallic(chip)	○	○
R102	RN-ERG-IC151J-1/TY	150 ohm 5% 1/8W metallic(chip)	○	○
R105,106	RN-ERG-IC470J-1/TY	47 ohm 5% 1/8W metallic(chip)	○	○
R108,109	RN-ERG-IC154J-1/TY	150Kohm 5% 1/8W metallic(chip)	○	○
R118,119	RN-ERG-IC122J-1/TY	1.2Kohm 5% 1/8W metallic(chip)	○	○
R122	RN-ERG-IC334J-1/TY	330Kohm 5% 1/8W metallic(chip)	○	○
R134	RN-ERG-IC681J-1/TY	680 ohm 5% 1/8W metallic(chip)	○	○
R136	RN-ERG-IC102J-1/TY	1K ohm 5% 1/8W metallic(chip)	○	○
R200,222,223	RN-ERG-IC102J-3/TY	1K ohm 5% 1/8W metallic(chip)	○	○
R202,203	RN-ERG-IC472J-3/TY	4.7Kohm 5% 1/8W metallic(chip)	○	○
R204,205	RN-ERG-IC682J-3/TY	6.8Kohm 5% 1/8W metallic(chip)	○	○
R206,207,224 225	RN-ERG-IC182J-3/TY	1.8Kohm 5% 1/8W metallic(chip)	○	○
R215,217	RN-ERG-IC221J-3/TY	220 ohm 5% 1/8W metallic(chip)	○	○
R216	RN-ERG-IC222J-3/TY	2.2Kohm 5% 1/8W metallic(chip)	○	○
R218,219	RN-ERG-IC823J-3/TY	82K ohm 5% 1/8W metallic(chip)	○	○
R220,221	RN-ERG-IC333J-3/TY	33K ohm 5% 1/8W metallic(chip)	○	○
R222,223	RN-ERG-IC101J-1/TY	100 ohm 5% 1/4W metallic(chip)	○	○
R224,225	RN-ERG-IC181J-1/TY	180 ohm 5% 1/8W metallic(chip)	○	○
R226	RN-ERG-IC103J-3/TY	10K ohm 5% 1/8W metallic(chip)	○	○
R300	RN-ERD-AE563JB	56K ohm 5% 1/4W carbon	○	○
R301	RN-ERD-AC181JA	180 ohm 5% 1/8W carbon	○	○
R302	RN-ERC-AE2R2K	2.2 ohm 5% 1/4W solid	○	○

Symbol No. (Fig. 3)	Stock No.	Description	CS202A	CS204A
VARIABLE RESISTORS				
RV1	RN-ERV-ON1-237	300 ohm, Limmiter	○	○
RV2	RN-ERV-ON1-238	500 ohm, FM SEARCH	○	○
RV3	RN-ERV-ON1-247	100Kohm, Separation	○	○
RV4	RN-ERV-ON1-246	50K ohm, ASC	○	○
RV5,6	RN-ERV-ON1-243	10K ohm, 76KHz, AM SEARCH	○	○
RV14~17(SW7)	RN-ERV-2P4-27	80 ohm×2. FADER,10K ohm×2. VOL.	○	○
RV9~13	RN-ERV-2N5-4	50K ohm×2,BASS/TRE. 20 Kohm:BAL.	○	○
SEMICONDUCTORS				
IC1	RN-EIC-LA1143	FM IF amp.~ Q. DET linear-monolithic IC	○	○
IC2	RN-EIC-AN6130N	Noise blanker linear-monolithic IC	○	○
IC3	RN-EIC-MB4105M	MPX, decoder linear-monolithic IC	○	○
IC4	RN-EIC-LA1135	AM tuner linear-monolithic IC	○	○
IC5	RN-EIC-LA6358S	IF Trigger linear-monolithic IC	○	○
IC6	RN-EIC-AN6540	Voltage regulator, 8.5V linear-monolithic IC	○	○
IC7	RN-EIC-UPC78L05	Voltage regulator, 5V linear-monolithic IC	○	○
IC8	RN-EIC-UPC78L05A	Voltage regulator, 5V linear-monolithic IC	○	○
IC9	RN-EIC-LA3161	Equalizer amp. linear-monolithic IC	○	○
IC10	RN-EIM-UPD1708G-575	Tuner controller C-MOS IC	○	○
IC12	RN-EIE-MH-1993	Tone control hibrid IC	○	○
IC14	RN-EIC-TA7240AP	Power amp. linear-monolithic IC	○	○
IC15	RN-EIC-AN6540	Voltage regulator, 8.5V linear-monolithic IC	○	○
IC16	RN-EID-CX10006	Auto reverse cont., digital-monolithic IC	○	○
IC17,18	RN-EIA-DM106A	Tape end det.	○	○
Q1~3,5,6	RN-EVS-2SC3053C	Silicon tran. (chip), mark:FC	○	○
Q4,7,8,11~13 21,29,30	RN-EVS-2SC3052-EF/CA	Silicon tran. (chip), mark:LE,LF	○	○
Q9	RN-EVF-2SK427-RST	FET	○	○
Q10	RN-EVF-2SJ106-YG/TY	FET, mark:VY,VG	○	○
Q14,15	RN-EVF-2SK49-F	FET	○	○
or	RN-EVF-2SK195-F	FET	○	○
Q18~20,22	RN-EVS-2SB815-67/TY	Silicon tran. (chip), mark:B6,B7	○	○
or	RN-EVS-2SB970-RS/TY	Silicon tran. (chip), mark:1RR,1RS	○	○
Q23~26	RN-EVS-2SA1235-E/TZ	Silicon tran. (chip), mark:ME	○	○
or	RN-EVS-2SB709-QR/CC	Silicon tran. (chip), mark:AQ,AR	○	○
Q27,28	RN-EVS-2SD1328-ST/CC	Silicon tran. (chip), mark:1DS,1DT	○	○
Q200,201	RN-EVS-2SC2405-RS/TY	Silicon tran. (chip), mark:SR,SS	13047543 ○	○
Q202	RN-EVS-2SB710-RS	Silicon tran.	○	○
Q300	RN-EVS-2SD882	Silicon tran.	○	○
or	RN-EVS-2SC2594		○	○
D1,16,19,24~27 32,33	RN-EDS-MA151K/TY	Silicon diode (chip), mark:MH	○	○

Symbol No. (Fig. 3)	Stock No.	Description	CS202A	CS204A
D2	RN-EDG-1S446	Germanium diode	○	○
D3~5	RN-EDC-SVC321-CD	Varactor diode	○	○
D6~13,17,18 20~23,29,30 34~39	RN-EDS-MA151WK	Silicon diode (chip), mark:MT	○	○
or	RN-EDS-MC2838/TZ	Silicon diode (chip), mark:A6	○	○
D14	RN-EDS-MA151A/TY	Silicon diode (chip), mark:MA	○	○
D100,103	RN-EDS-S5566B/TP	Silicon diode	○	○
D101,102	RN-EDS-MA151WK/TY	Silicon diode (chip), mark:MT	○	○
D200	RN-EDS-SR1K2	Silicon diode	○	○
CERAMIC FILTERS				
CF1	RN-EFC-F2-124	FM IF, 10.7MHz (Red)	○	○
CF2	RN-EFC-E2-2	AM IF, 450KHz	○	○
CF3	RN-EFC-A1-142	AM IF, 450KHz	○	○
TRANSFORMERS				
T1	RN-ETF-1004A	FM IF, 10.7MHz	○	○
T2	RN-ETX-1012	AM ANT, 224μH	○	○
T3	RN-ETX-1013	AM RF, 224μH	○	○
T4	RN-ETA-1010A	AM IF, 450KHz	○	○
T5	RN-ETA-1032	AM IF, 450KHz	○	○
T6	RN-ETH-1020	AM OSC., 118μH	○	○
COILS				
L1	RN-ELH-C6R8-KAG	Choke, 6.8μH	○	○
L2	RN-ELH-C6R8-KAL	Choke, 6.8μH	○	○
L3	RN-ELT-1002	Trap, 19KHz	○	○
L4	RN-ELH-C332-2	Choke, 3.3mH	○	○
L5	RN-ELH-B6R2-4/CA	Choke, 6.2μH	○	○
L6	RN-ELH-C101-1	Choke, 100μH	○	○
L7	RN-ELL-326	Choke, 1.8mH (included in J3)	○	○
MISCELLANEOUS ELECTRICAL				
A1	RN-EHM-C44-65	P. B. head	○	○
E1	RN-EEM-1036	Plunger solenoid	○	○
EX1	RN-EXC-1018	Crystal, 4.5MHz	○	○
or	RN-EXC-1021	Crystal, 4.5MHz	○	○
M1	RN-EDM-1060	DC Motor	○	○
TV1	RN-ETV-1014	FM Front-end	○	○
VE1	RN-EVE-1004A-MPC02TN	LCD	○	○
J0	RN-EJL-1012A	Antenna receptacle	○	○
J1(J11)	RN-EWJ-3703	8P-8P connector and lead assembly	○	○
J2(J10)	RN-EWJ-3726	7P-7P connector and lead assembly	○	○
J5	RN-EWJ-3671B	2P connector and lead assembly	○	○
J12,13	RN-EWJ-3727	6P-6P connector and lead assembly	○	○
P1	RN-EJU-S08V-579	8P connector	○	○
P2	RN-EJU-S07V-578	7P connector	○	○
P3	RN-EJU-S10V-312	10P connector	○	○

Symbol No. (Fig. 3)	Stock No.	Description	CS202A	CS204A
P5	RN-EJU-S02V-573	2P connector	○	○
PL1	RN-EPM-1174	Lamp assembly, GRN	○	
	RN-EPM-1150	Lamp assembly, ORG 134-47233		○
PL3	RN-EPM-1173	Lamp assembly, GRN	○	
	RN-EPM-1149	Lamp assembly, ORG 134 47 232		○
NL1	RN-EPN-54	Neon lamp	○	○
SW1, 2	RN-ESB-1N1-191	Push switch	○	○
SW4, 5	RN-ESB-2L2-183	Push switch	○	○
SW7	———	Included in RV14	○	○
SW8	RN-ESL-1032B	Leaf switch	○	○
SW9	RN-ESL-1017	Leaf switch	○	○
SW300	RN-ESS-42-187	Slide switch	○	○

MECHAMICAL PARTS

Illus.No. (Fig. 18)	Stock No.	Description	Q'ty CS202A	Q'ty CS204A
1	RN-MTD-1155	Chassis, top	1	1
2	RN-MTD-1211	Chassis, bottom	1	1
3	RN-MHE-1438A	Holder, main	1	1
4	RN-MHE-1411B	Holder, rear	1	1
5	RN-MDP-1489	Escutcheon	1	
	RN-MDP-1648	Escutcheon		1
6	RN-MCV-1505	Door	1	
	RN-MCV-1700	Door Same as CD2.03A		1
7	RN-MSI-1054	Shaft	1	1
8	RN-MSC-1201	Spring	1	1
* 9	RN-MYD-1055	Knob, FADER, TRE	2	2
*10	RN-MYC-1035	Knob, VOL, BASS	2	2
11	RN-MYB-1494	Button, EJE	1	1
12	RN-MYB-1495	Button, LEFT, RIGHT (FF/REW)	2	2
13	RN-MYB-1496	Button, SEEK	1	1
14	RN-MYB-1497	Button, TUNE, MEMO	3	3
15	RN-MYB-1498	Button, AM/FM, PRO	1	1
16	RN-MYB-1499	Button, SET	5	5
17	RN-MYB-1501	Button, LO/DX	1	1
18	RN-MYB-1500	Button, METAL	1	1
19	RN-MCE-1091	Clamp	1	1
20	RN-MHE-1408A	Holder	1	1
21	RN-MHE-1414	Holder	1	1
23	RN-MHE-1260	Holder	1	1
24	RN-MHE-1412A	Holder	1	1
25	RN-MSN-1	Nut	2	2
26	RN-MPM-2923A	PC Board, main	1	1
27	RN-MPC-1862	PC Board, amp and volume	1	1
30	RN-MTJ-2B2.6×6	Screw, tapping. 2.6×6mm	2	2
31	RN-MSE-1310A	Spacer	2	2
32	RN-MSE-1311	Spacer	1	1
40	F6-SBD-2.6×6S	Screw, 2.6 ×6mm	5	5
41	F6-SBD-3×6S	Screw, 3×6mm	17	17
42	F6-SBD-3×10S	Screw, 3×10mm	2	2
43	RN-MBE-1766	Bracket, L	1	1
44	RN-MBE-1765	Bracket, R	1	1
45	F6-SSA-5×8S	Screw, 5×8mm	4	4

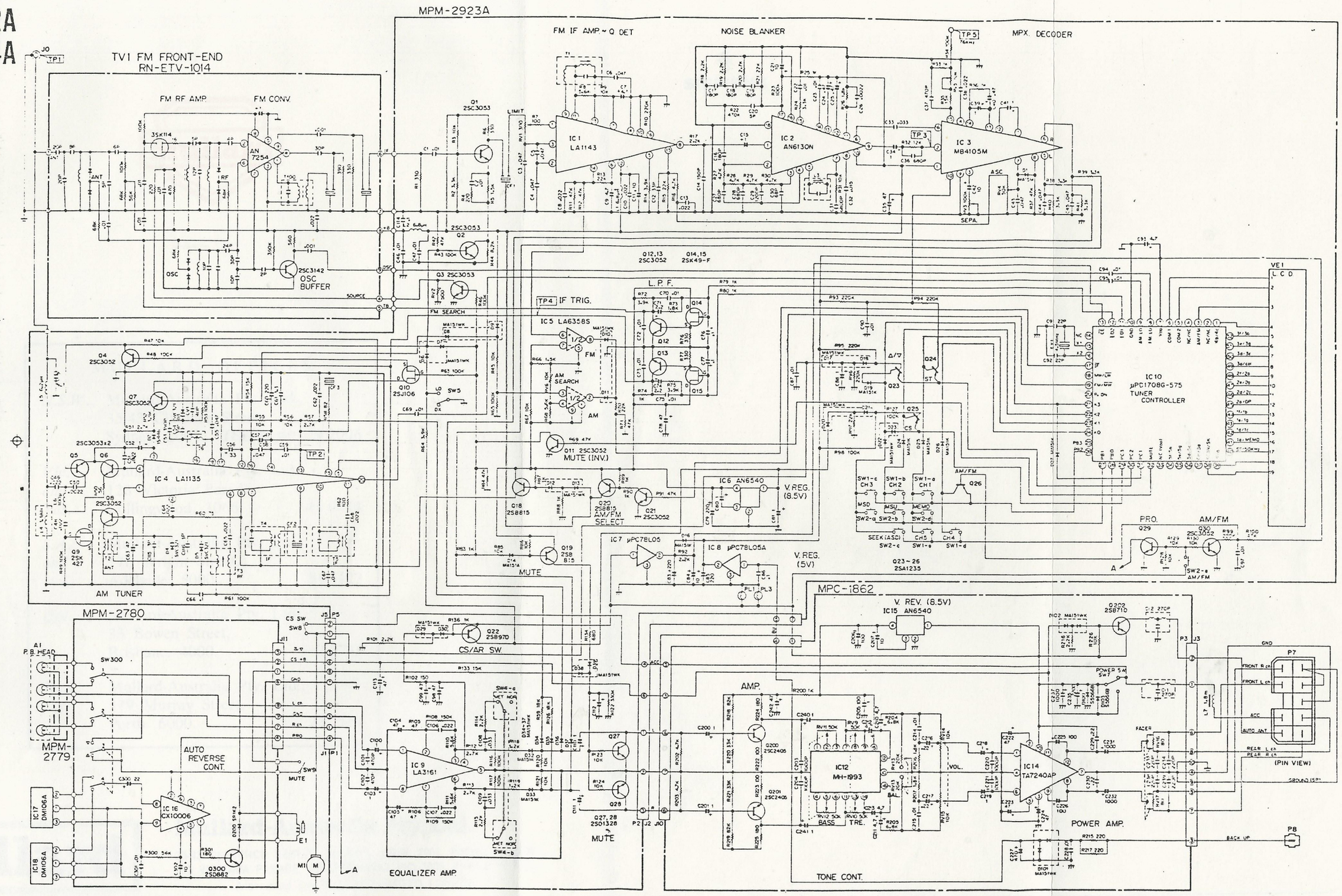
CASSETTE DECK (RN-MDK-64/2)

Illus.No. (Fig. 19)	Stock No.	Description	Q'ty
1	RN-MAS-1052	Chassis	1
2	RN-MUL-1150	Lever	1
3	RN-MYT-1187	Sub-chassis	1
4	RN-MYT-1188	Holder	1
5	RN-MHE-1441	Holder	1
6	RN-MKI-1018	Slide Plate assembly	1
7	RN-MUL-1151	Lever	1
9	RN-MHL-1064A	Holder	1
10	RN-MUL-1132	Lever	1
11	RN-MUL-1152	Lever	1
12	RN-MKS-1009	Slip mechanism	2
13	RN-MKR-1026A	Pinchroller assembly	1
14	RN-MKR-1027A	Pinchroller assembly	1
15	RN-MUL-1153	Lever	1
16	RN-MUL-1154	Lever	1
17	RN-MUB-1024	Belt	1
18	RN-MUF-1008	Flywheel	2
19	RN-MUG-1049	Gear	2
20	RN-MUG-1050	Gear	1
21	RN-MUC-1009	Cum	1
23	RN-MRP-1055	Roller	1
24	RN-MRP-1056	Roller	1
25	RN-MUL-1156	Lever	1
26	RN-MUL-1138	Lever	1
27	RN-MUL-1268	Lever	1
28	RN-MUL-1269	Lever	1
29	RN-MUL-1270	Lever	1
30	RN-MUL-1127A	Lever	1
31	RN-MYT-1038	Bub-chassis	1
32	RN-MSP-1047	Spring	1
33	RN-MRP-1057	Roller	1
34	RN-MEN-1022	Nut	1
35	RN-MSI-1077	Shaft	1
37	RN-MRP-1044	Roller	1
38	RN-MRP-1094	Roller	1
41	RN-MUL-1128	Lever	1
42	RN-MSW-1002	Spring	1
43	RN-MSW-1004	Spring	1
44	RN-MSC-1130	Spring	1
46	RN-MSC-1323	Spring	1
48	RN-MSC-1134	Spring	1
49	RN-MSC-1135	Spring	1
50	RN-MSC-1152	Spring	1
51	RN-MSC-1153	Spring	1
52	RN-MSC-1154	Spring	1
57	RN-MSC-1157	Spring	2
59	RN-MSC-1158	Spring	1
62	F6-SBD-1.7×4S	Screw, 1.7×4mm	1

Illus.No. (Fig. 19)	Stock No.	Description	Q'ty CS203A
63	F6-SBD-2×3S	Screw, 2×3mm	1
65	F6-SBD-3×6S	Screw, 3×6mm	1
66	F6-SW4NA-3×4S	Screw, 3×4mm	1
67	F6-SNA-2.6×3S	Screw, 2.6×3mm	11
68	F6-SNA-2.6×5S	Screw, 2.6×5mm	1
70	F6-ER-1.2SUS	E-type ring, 1.2mm	1
71	RN-MHJ-1003	E-type ring	7
72	F6-ER-2SUS	E-type ring, 2mm	1
73	F6-ER-2.5SUS	E-type ring, 2.5mm	5
76	F6-WK-3S	Washer, 3mm	1
77	F6-WK-2.6S	Washer, 2.6mm	1
78	RN-MWS-1013	Washer	1
79	RN-MSP-1020	Spring	2
80	RN-MWP-1043	Washer	2
81	RN-MWP-1044	Washer	1
83	RN-MWP-1029	Washer	6
87	RN-MWP-1041	Washer	2
91	RN-MIT-1005	Insulator	1
92	RN-MST-133	Spacer	1
93	RN-MCP-1018	Clamp	1
94	RN-EEM-1036	Plunger solenoid	1
95	RN-ESL-1017	Leaf switch	1
96	RN-EDM-1060	DC Motor	1
97	RN-MST-1096A	Spacer	1
99	RN-ESL-1032B	Leaf switch	1
201	RN-MPM-2779	PC board	1
202	RN-MPM-2780	PC board	1
203	RN-EHM-C44-65	P. B. Head	1

NOTE : Specification subject to change without notice.

SCHEMATIC
CS202A
CS204A



NOTES:
1. All capacitance in Micro farad, $P=10^{-12}$
2. All resistance in ohm, $K=10^{3}$
3. All inductance in henry, $m=10^{-3}$, $\mu=10^{-6}$

Fig. 2 (C24190140)

4. DC voltages against the chassis measured with 10M ohms digital volt meter, power supply set at +13.2 VDC, no signal input.
5. A red line and a red dotted feeble line show a power supply system flow and a signal system flow, respectively.

MAIN PC BOARD
CS202A
CS204A

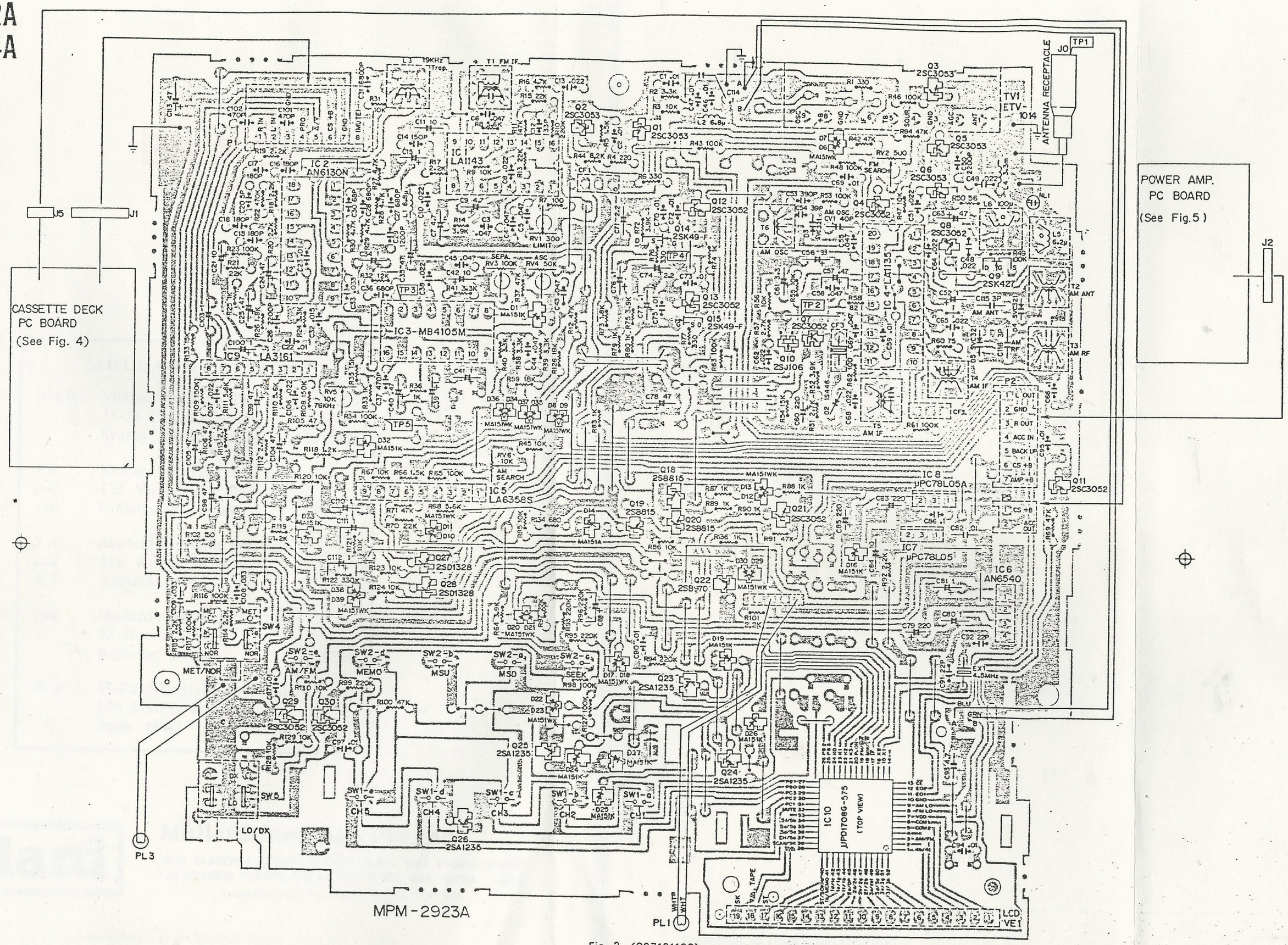


Fig. 3 (C27191133)

CASSETTE DECK PC BOARDS

CS202A
CS204A

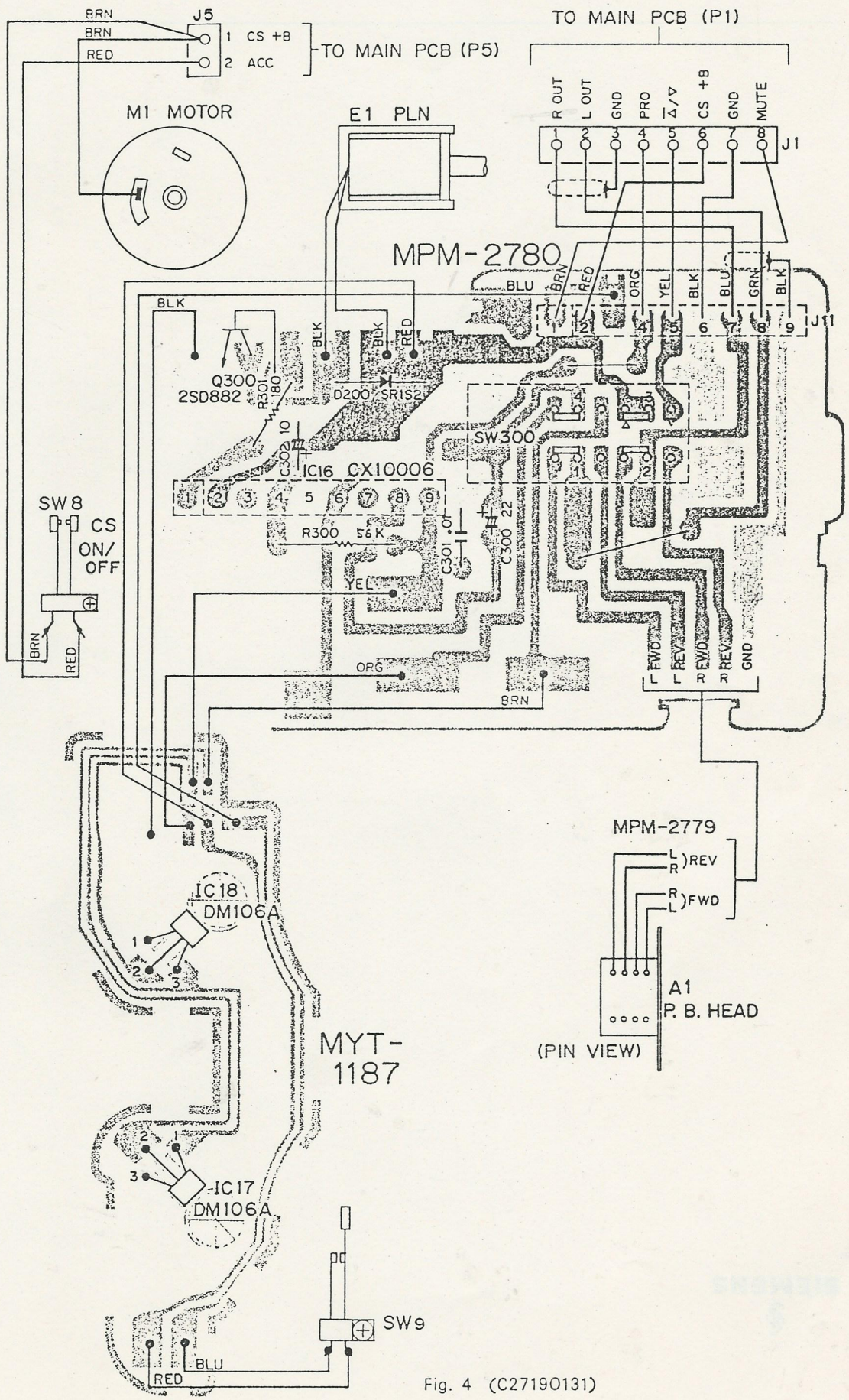
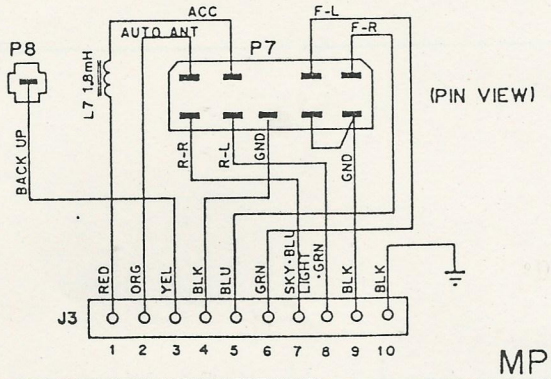


Fig. 4 (C27190131)

POWER AMP PC BOARD

CS202A
CS204A



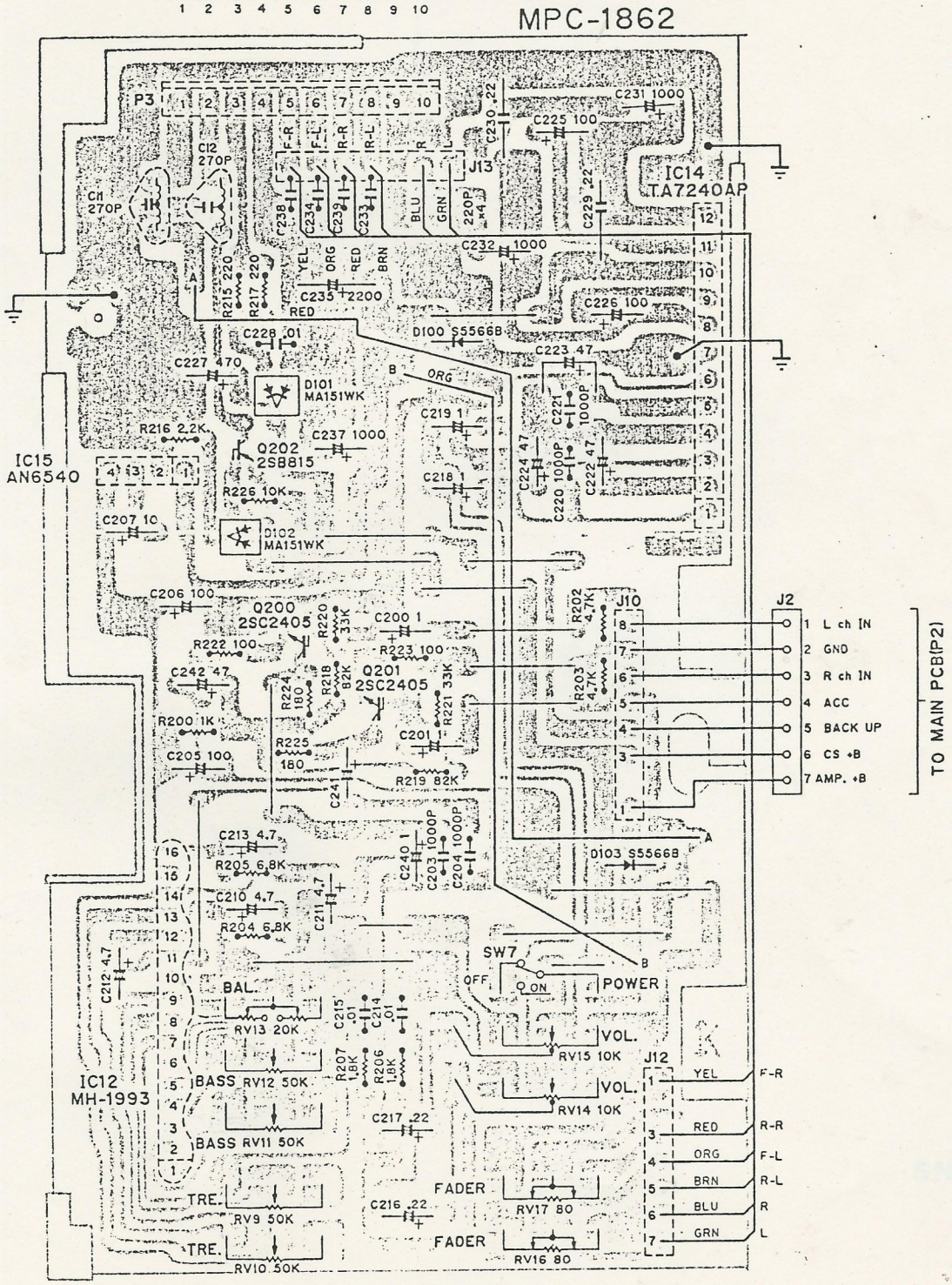


Fig. 5 (C27190140)

AM ALIGNMENT

Pre-setting of the frequency at each adjustment point will make the tuning for adjustment easier.

AM Frequnecy to be pre-set: 603 kHz, 999 kHz, 1404 kHz, 531 kHz, 1611 kHz

FM Frequency to be pre-set: 88.1 MHz, 98.1 MHz, 107.9 MHz, 105.1 MHz, 95.1 MHz

Standard alignment condition

a. Power supply·····13 2V b. AM/FM Changing switch·····AM

c. Sensitivity switch·····Distant

d. Balance, bass and treble control·····Center e. Fader control·····front

e. Volume control·····Adjust to get 1.4V output level.

f. Connections

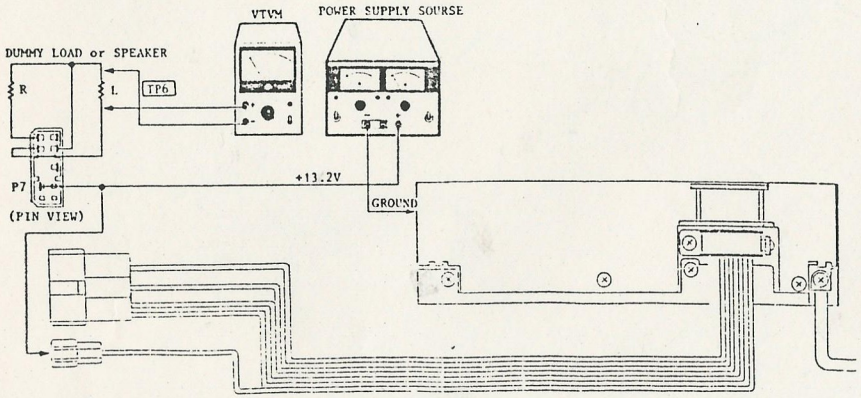


Fig. 8 (C33191136)

〔1〕 IF Alignment

(1) Connections

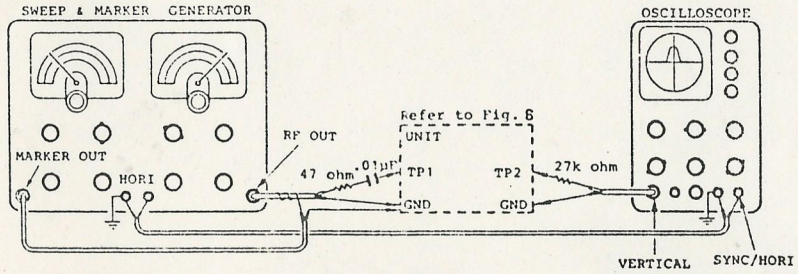


Fig. 9 (EOI-011)

SWEEP GENERATOR OUTPUT	OSCILLOSCOPE VERTICAL INPUT	OSCILLOSCOPE HORIZONTAL INPUT
Antenna receptacle (JO)	Connect TP2 in Fig. 15 through 27k-ohm resistor	Connect with HORIZONTAL terminal of sweep generator

(2) Alignment (Refer to Fig. 15)

STEP	SWEEP GENERATOR MARKER	SWEEP GENERATOR OUTPUT LEVEL	ADJUSTMENT POINTS	PROCEDURE
1	450 kHz	Minimum	T 4	Get maximum IF curve and best symmetry on both sides.
2			T 5	
3	Repeat STEP 1 to 2 until no further gain in output can be obtained.			

〔2〕 Tuning bias and tracking alignme

(1) Connections

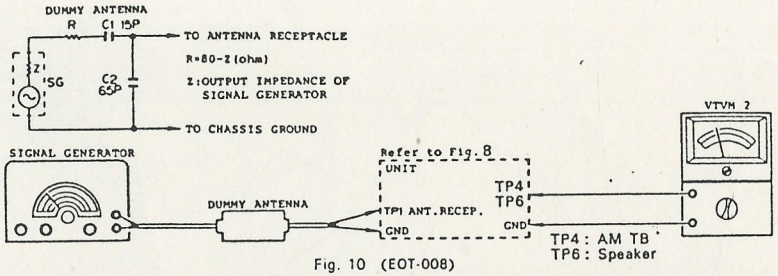


Fig. 10 (EOT-008)

(2) Alignment (Refer to Fig. 15)

STEP	PURPOSE	SIGNAL GENERATOR FREQUENCY	FREQ. DISPLAY OF UNIT	ADJUSTMENT POINTS	PROCEDURE
1	Tuning bias range	———	1611 kHz	CV 1 (OSC)	Adjust AM tuning bias for 7.3V.
2		———	531 kHz	T 6 (OSC)	Adjust AM tuning bias for 1.4V
3	Repeat Steps 1 and 2 for alignment to stably obtain 1.4±.05V at 531 kHz and 7.3±.1V at 1611 kHz as bias.				
4	Tracking	603 kHz (400 Hz, 30%, AM)	603 kHz	T 2, T 3 (ANT, RF)	Adjust output voltage (TP6) for maximum. (See Fig. 8)

〔3〕 SEEK Alignment

(1) Connections Refer to Fig. 10 Signal generator·····connect the TP 1

(2) Alignment (Refer to Fig. 15) VTVM2 ·····No used

STEP	PURPOSE	SIGNAL GENERATOR FREQUENCY	SIGNAL GENERATOR OUTPUT LEVEL	ADJUSTMENT POINTS	PROCEDURE
1	Set the local/distant selector switch in the distant position.				
2	Distant sensitivity	999 kHz (400 Hz, 30% AM)	32 dBμ (±6 dBμ)	RV 6	Depress SEEK button to start searching, and then adjust sensitivity so that the search tuning may stop right near 999 kHz.

FM ALIGNMENT

* Standard alignment Condition

FM alignment should be the same as in AM standard adjusting condition. (AM/FM selector switch is, however, in FM position.)

NOTE: Since the electronic tuner unit is employed at FM front end section, no tracking and receiving frequency range alignment are required.

〔1〕 IF Alignment

(1) Connections

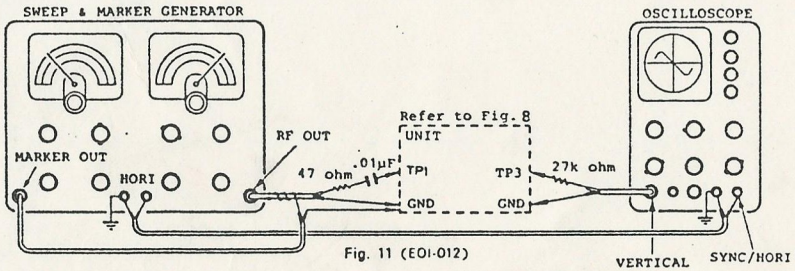


Fig. 11 (EOI-012)