AC898

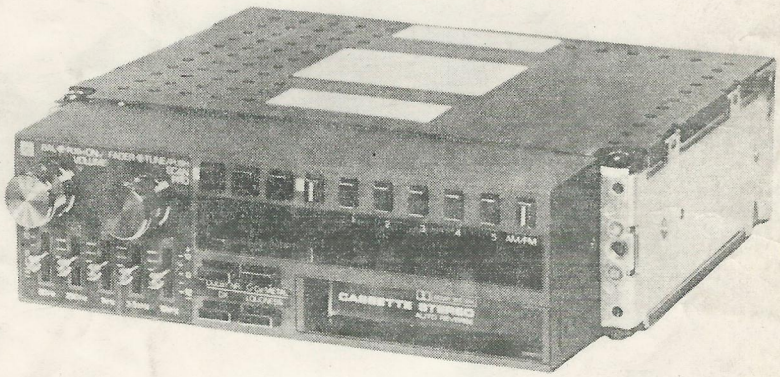
SM-500

"TEN" SERVICE MANUAL

AM-FM MPX RADIO WITH ELECTRONIC TUNER AND CASSETTE TAPE PLAYER

(MICROCOMPUTER DECK, GRAPHIC EQUALIZER, DOLBY* N.R.)

Model ~~CE-4131EX2~~



FEATURES

RADIO	PLAYER	RADIO & PLAYER
PLL FREQUENCY SYNTHESIZER, DIGITAL DISPLAY, °AM/FM, TUNING (MANUAL, SEARCH, °SCAN, PRESET), DISTANT/LOCAL, NOISE BLANKER, ATC, ASC, MPX.	DOLBY* N.R., TAPE SELECTOR, AUTOMATIC REVERSE/MANUAL REVERSE, °FF/REW, °APS, REPEAT, FORCED EJECT, °STOP/EJECT, KEY OFF EJECT, TROUBLE STAND BY	°AR/CS, GRAPHIC EQUALIZER (5-BAND), VOLUME, TONE, BALANCE, LOUDNESS, FADER, TIMER

etc.: DIGITAL CLOCK

NOTES:
1. This unit is designed for combined use with the optional power amplifier 'QM-104EX1' for 4-speaker system or 'QM-100EX1' for 2-speaker system.
2. Connect the optional remote control unit 'QR-101EX1' to this unit, and ring mark functions (°) can be controlled from the rear seat.
3. Refer to service manual No. 'SM-438' and 'SM-439' for explanation of electronic tuner and microcomputer controlled deck.

* Noise reduction of Dolby system manufactured under license from Dolby Laboratories Licensing Corporation.
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FUJITSU TEN LIMITED

REPAIRING PRECAUTIONS MOS IC

The following precautions are necessary for repairing PC boards containing MOS ICs.
This model contains MOS ICs as follows :

RN-EID-MB8735X
RN-EIM-MB8845M-419M-B
RN-EIM-MB8855M-225M-B

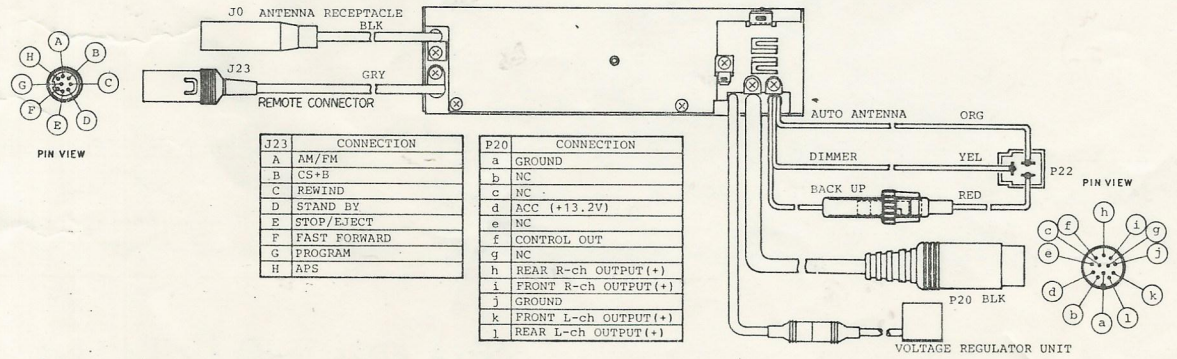
1. MOS ICs should be stored or transported in conductive material so that all exposed leads are shorted together.
   MOS ICs must not be inserted into conventional stylo-form or plastic trays of the type used for storage and transportation of other semiconductor devices.
   Sometimes, several kilo-volt static may exist on an ungrounded bench surface and human body.
2. Therefore, MOS ICs should be placed on a grounded bench surface and the technicians should ground themselves prior to handling devices. This is done most effectively by having the technician wear a conductive wrist strap in series with 100k ohm to ground.
3. Nylon clothing should not be worn while handling MOS circuits.
4. Do not insert or remove MOS ICs with power applied.
5. Use a grounded soldering iron when soldering.
6. MOS ICs should be handled by their packages and not by the leads, if at all possible. Prior to touching the unit, the technician should touch an electrical ground to remove any static charge that may have been accumulated.

COMPOSITION

COMBINATION PLAYER
CE-4131EX2

- Combination unit (CE-4131A) 1
- Trimplate (RN-MDP-1141A) 1
- Bracket (RN-MBE-1188) 2
- Bracket (RN-MBF-11) 1
- Spacer (RN-MSS-1005) 1
- Wiring assembly (RN-EWJ-900) 1
- Installation screw (RN-MWA-1073) ..... 1 set
- Wiring assembly (RN-EWJ-2915) 1
- Installation manual (RN-MXT-1303) 1
- Owners manual (RN-MXM-929) 1

CONNECTIONS



J23	CONNECTION
A	AM/FM
B	CS+B
C	REWIND
D	STAND BY
E	STOP/EJECT
F	FAST FORWARD
G	PROGRAM
H	APS

P20	CONNECTION
a	GROUND
b	NC
c	NC
d	ACC (+13.2V)
e	NC
f	CONTROL OUT
g	NC
h	REAR R-ch OUTPUT(+)
i	FRONT R-ch OUTPUT(+)
j	GROUND
k	FRONT L-ch OUTPUT(+)
l	REAR L-ch OUTPUT(+)

Fig. 1

SPECIFICATIONS

[CE-4131A]

(RADIO SECTION)	AM	FM
TUNING RANGE	522 kHz to 1602 kHz (9 kHz step)	87.5 MHz to 108.0 MHz (50 kHz step)
INTERMEDIATE FREQUENCY	450 kHz	10.7 MHz
SENSITIVITY	35 dB or better (50 mV output)	
SENSITIVITY AT ELECTRONIC TUNING	Distant: 34±8 dB Local: 55±10 dB	Distant: 19±10 dB Local: Distant plus 25±6 dB
LIMITING SENSITIVITY		12±5 dB
SEPARATION		20 dB or better (74 dBμ input) 10±3 dB (40 dBμ input)
ELECTRICAL FIDELITY	100 Hz: 0±4 dB (74 dBμ input) 4 kHz: −15±5 dB (74 dBμ input)	100 Hz: 0±4 dB (74 dBμ input) 10 kHz: −14±6 dB (74 dBμ input)

(CASSETTE DECK SECTION)

NUMBER OF TRACKS 4-track 2-channel

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

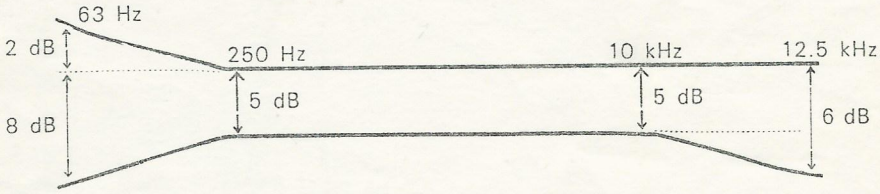
TAPE SPEED ..... 4.76cm/sec. (1-7/8", i.p.s.)

WOW & FLUTTER ..... 0.2% or less (WRMS)

CROSSTALK ..... 46 dB or better

SEPARATION ..... 30 dB or better

FREQUENCY RESPONSE



EQUALIZATION ..... Normal: t1=3,180 μsec., t2=120 μsec.
Chrome and metal: t1=3,180 μsec., t2=70 μsec.

SIGNAL TO NOISE RATIO ..... 46 dB or better (with MTT-150 test tape)

DOLBY NR CIRCUIT

NOISE REDUCTION EFFECT ..... 8 dB or better (400 Hz, MTT-150, CCIR filter)

DOLBY PROCESSOR FREQUENCY RESPONSE ..... Level −25 dB and −40 dB

DOLBY LEVEL ..... 580 mV $^{+70}_{-60}$ mV (with MTT-150 test tape)

TAKE-UP TORQUE ..... 50 to 70 g-cm

(COMMON SECTION)

LOAD IMPEDANCE ..... 10k to 20k ohm

OUTPUT VOLTAGE ..... 100mV (1 kHz, −10 dB tape, volume Max.)

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

Voltage ..... 13.2 VDC

Current ..... Approx. 1.2 ampere
Approx. 3.2 amperes (Max.)

SEMICONDUCTOR ..... 2 LSIs, 30 ICs, 83 Transistors, 73 Diodes, 2 LEDs

DIMENSIONS ..... 178(W)×50(H)×130(D)mm (7-1/64", 1-31/32", 5-1/8")

WEIGHT ..... Unit—1.9 kg (4.2 lbs.)

BLOCK DIAGRAM

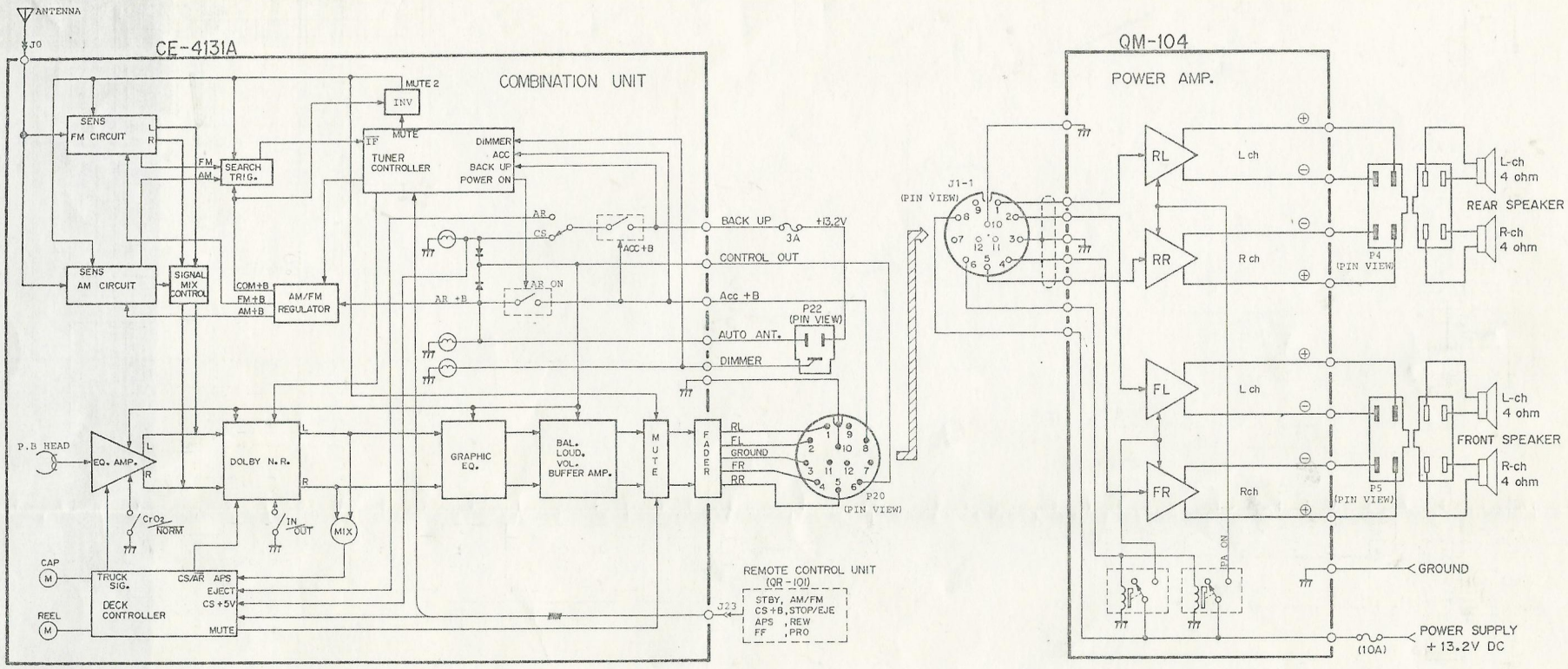
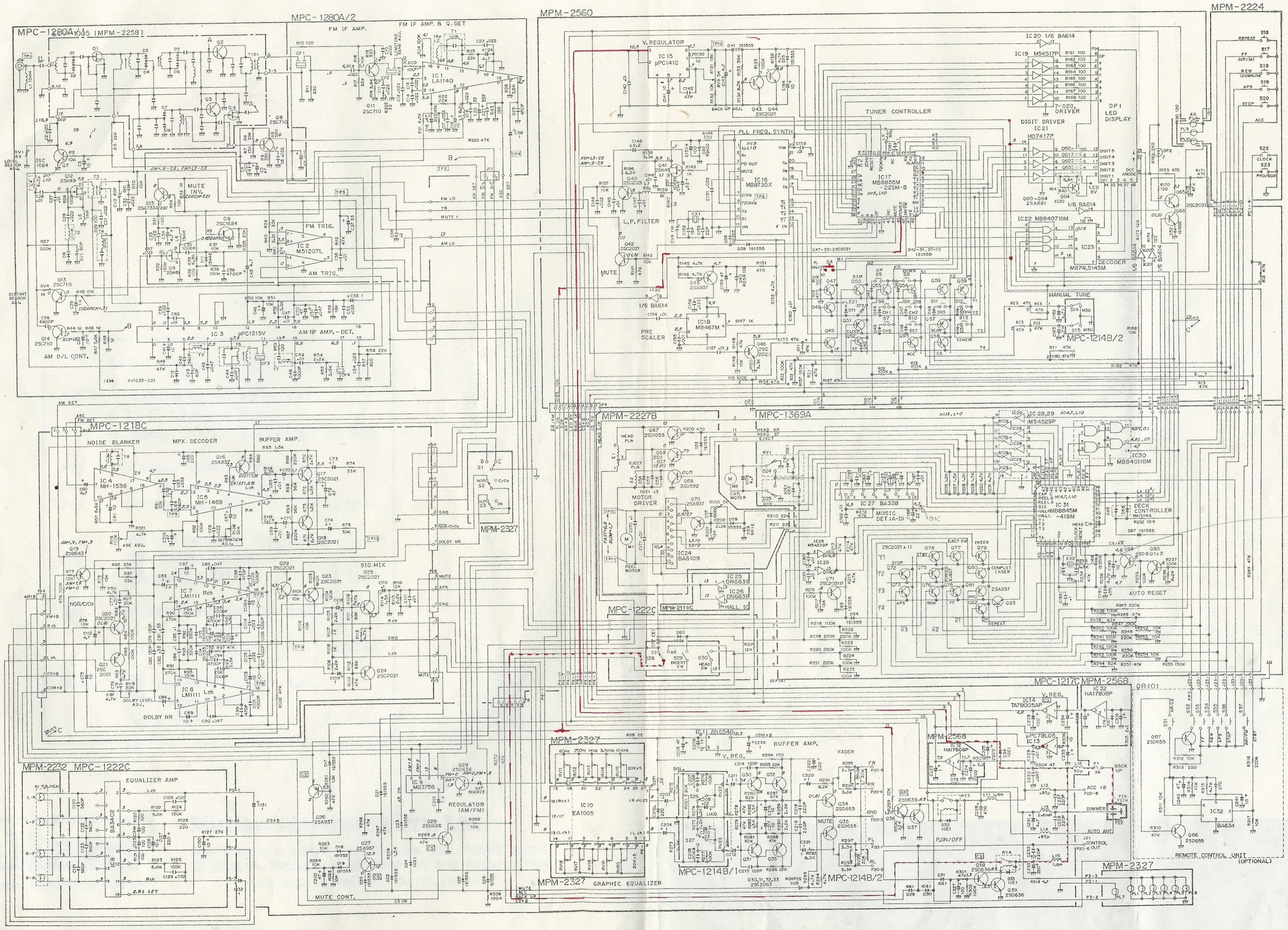


Fig. 2 (C32134131)



NOTES: 1. All resistance in ohm K=10^3

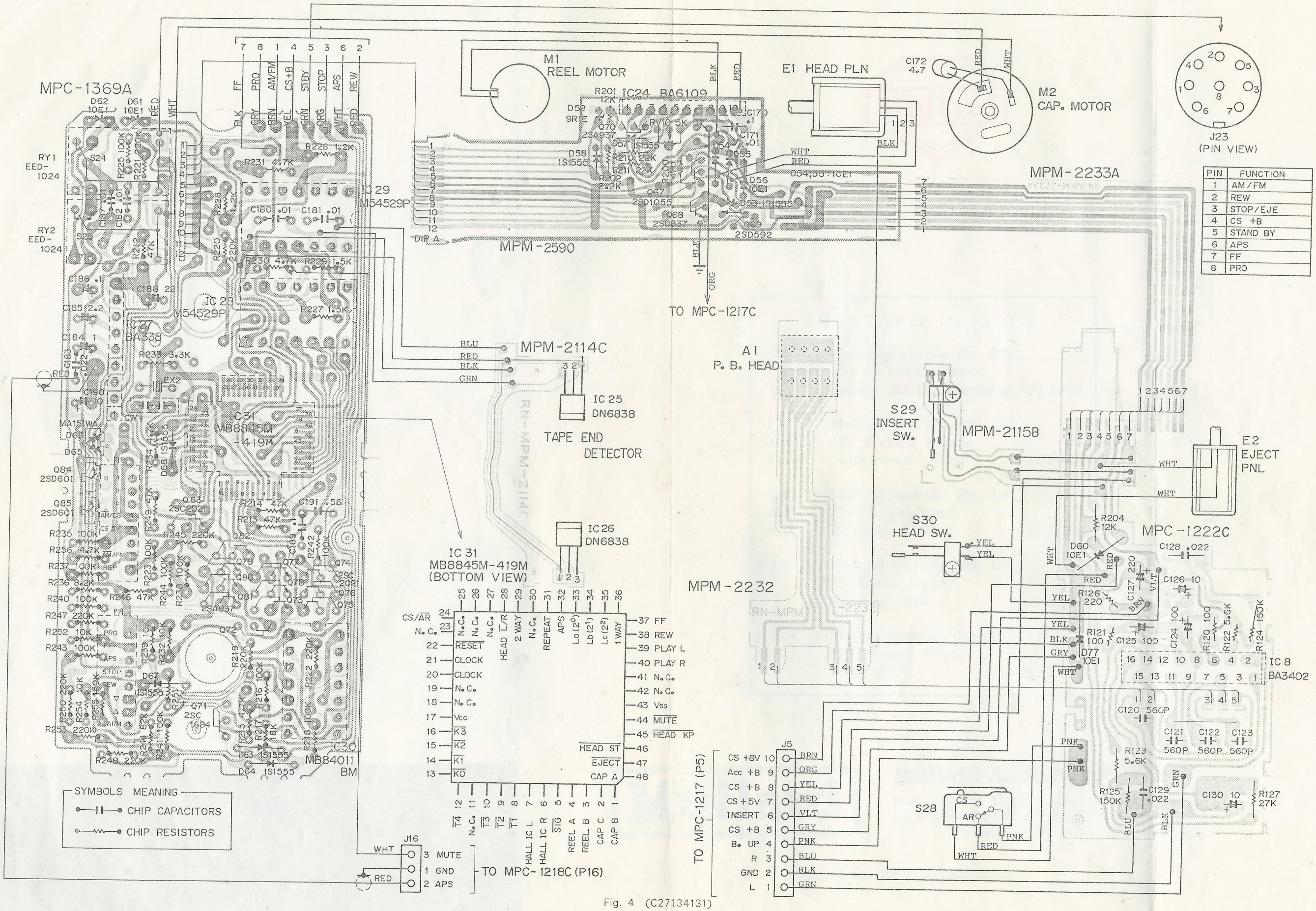
2. All capacitance in μF, P=$\mu\mu$F

Fig. 3 (C24134131)

3. All inductance in henly, m=10^{-3}, μ=10^{-6}

4. DC voltage against the chassis measured with 100k ohm/volt meter, power supply set at +13.2 VDC, no signal input.

WIRING ON PC BOARDS (CASSETTE DECK UNIT)



PIN	FUNCTION
1	AM/FM
2	REW
3	STOP/EJE
4	CS +B
5	STAND BY
6	APS
7	FF
8	PRO

Fig. 4 (C27134131)

WIRING ON PC BOARDS (MPM-2560A, MPC-1214B)

[CE-4131A]

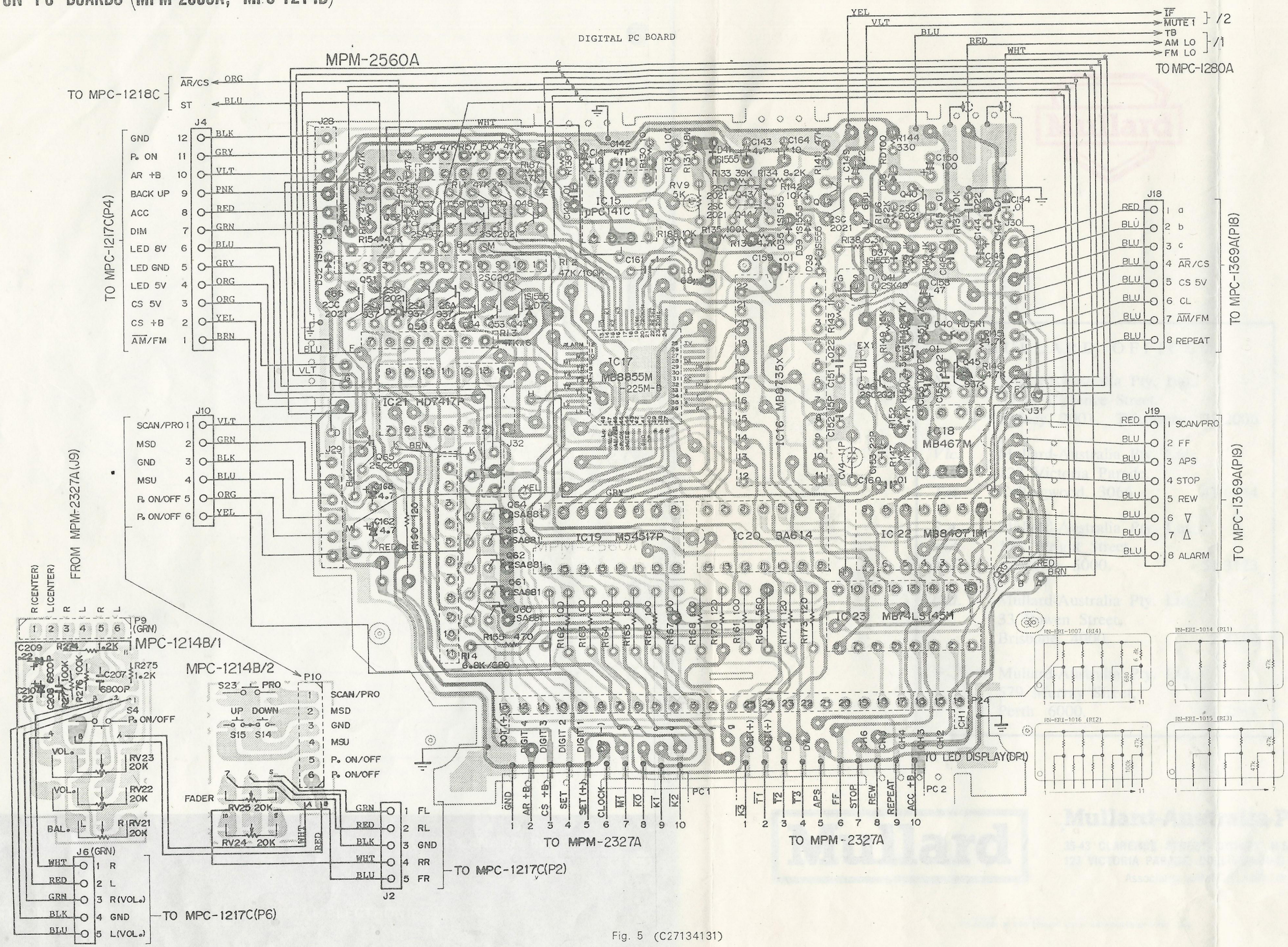


Fig. 5 (C27134131)

WIRING ON PC BOARDS (MPC-1280A, MPM-2258A)

[CE-4131A]

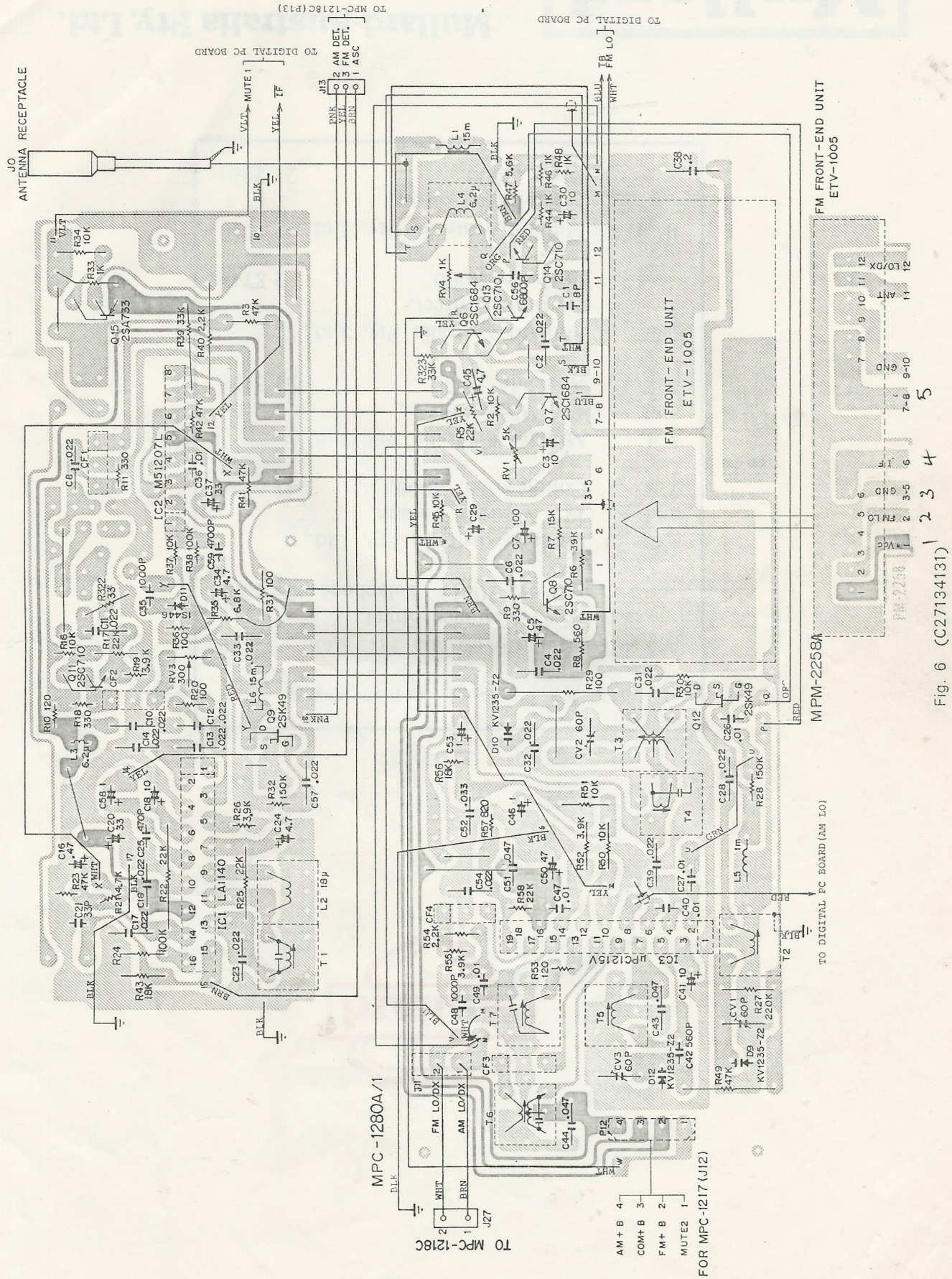


Fig. 6 (C27134131)

WIRING ON PC BOARD (MPC-1218C)

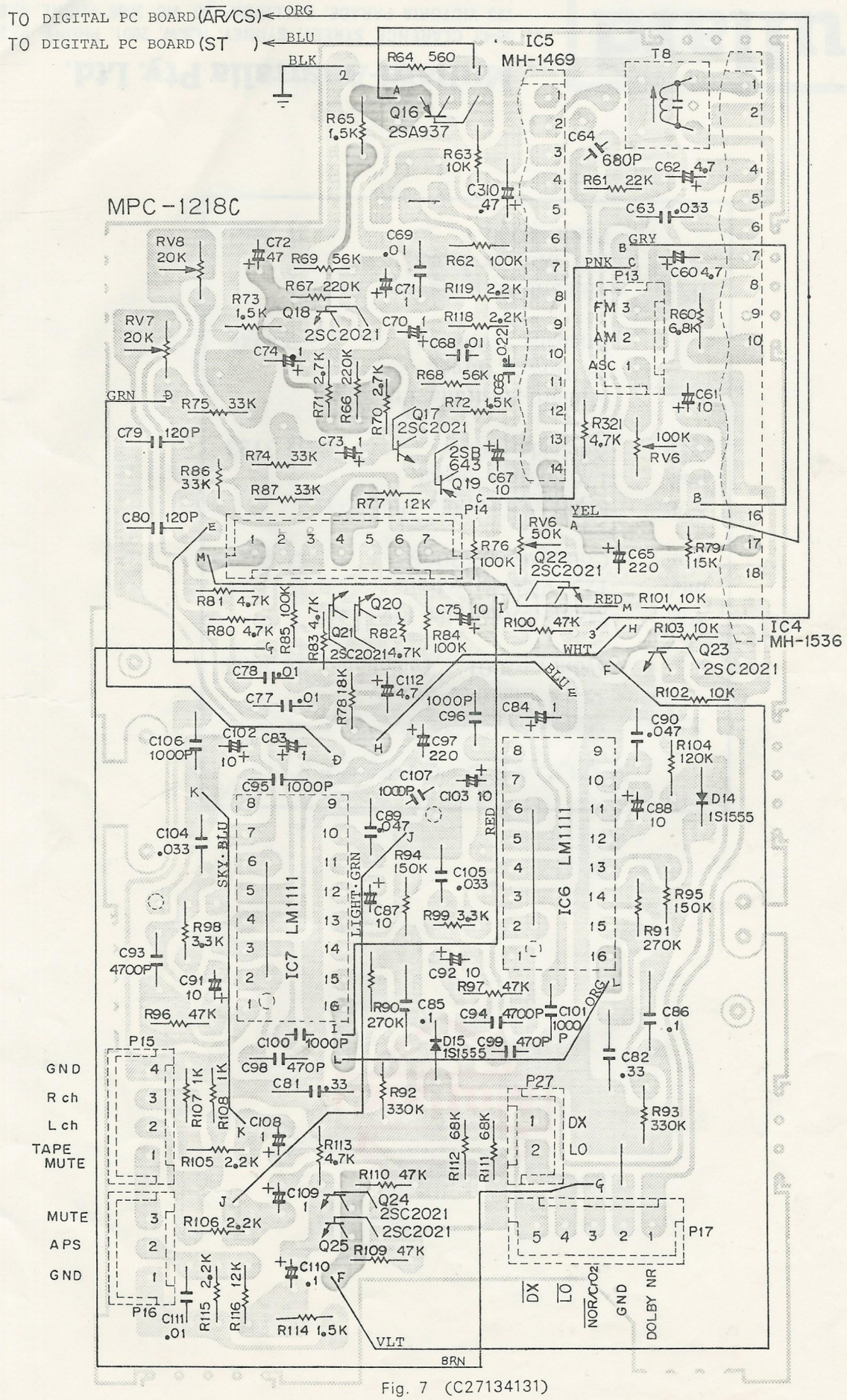


Fig. 7 (C27134131)

WIRING ON PC BOARDS (MPC-1217C, MPM-2568)

[CE-4131A]

BARE PCB = 466 17171

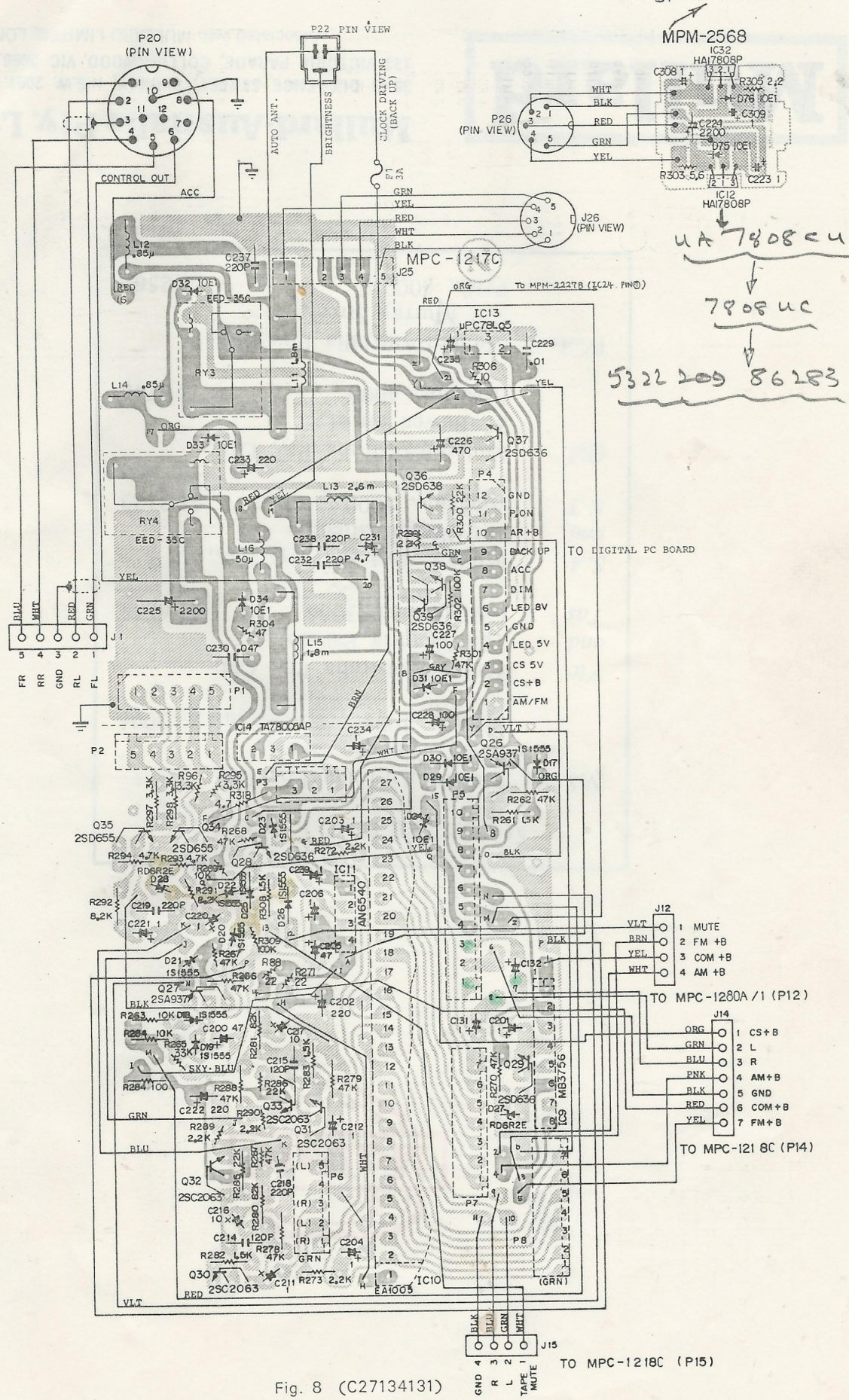


Fig. 8 (C27134131)

WIRING ON PC BOARDS (MPM-2224, MPM-2327)

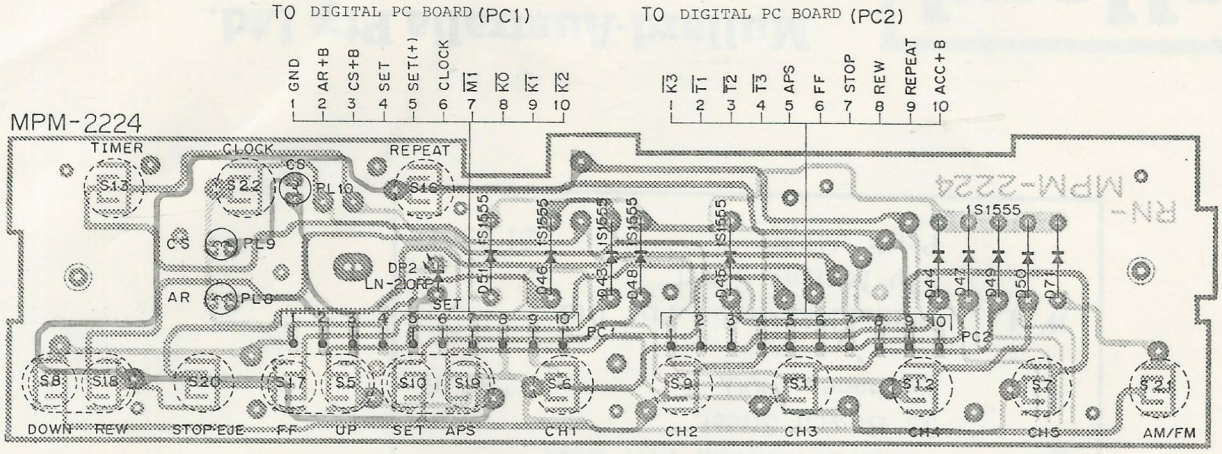


Fig. 9 (C27134131)

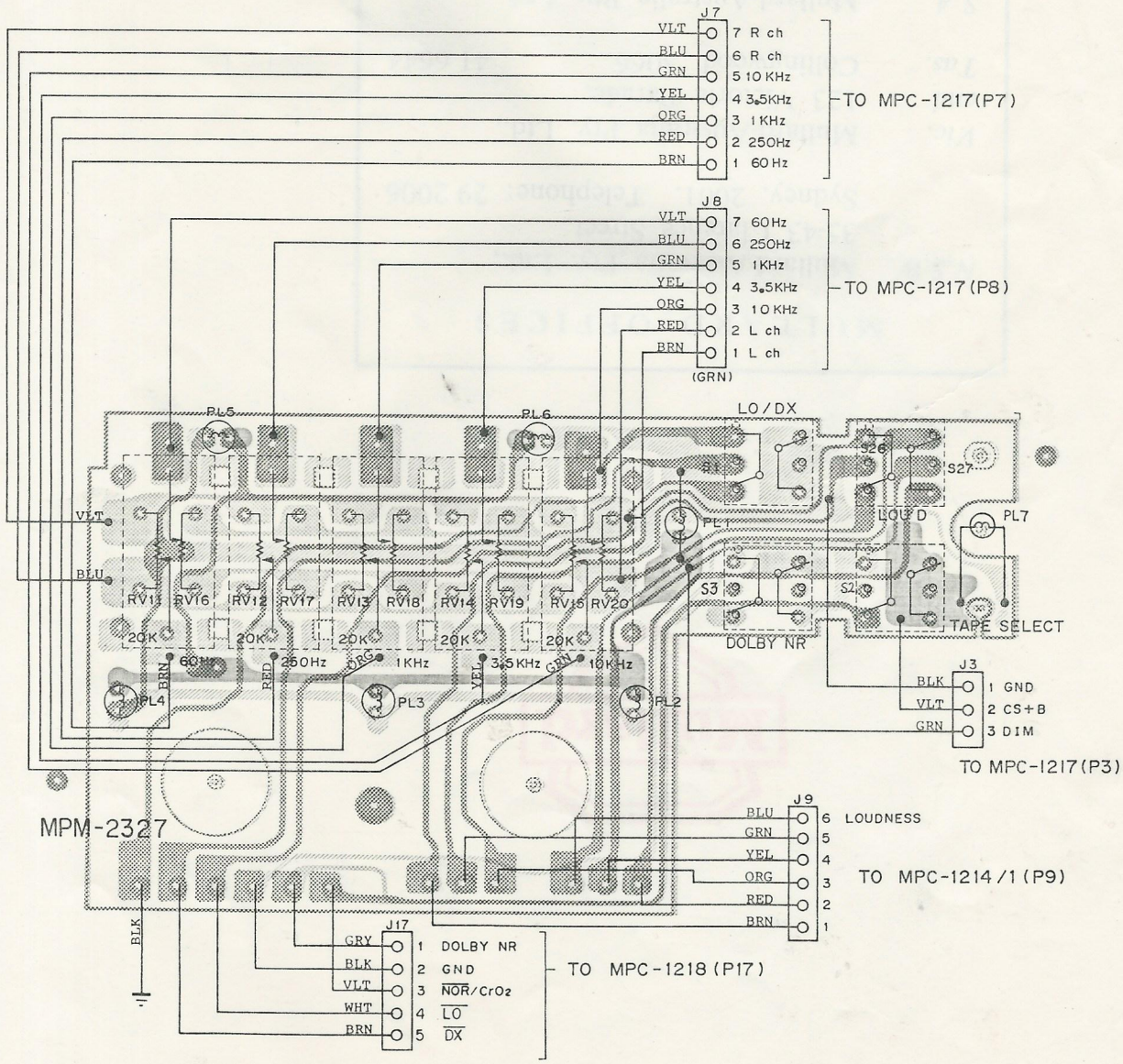


Fig. 10 (C27134131)

INSTRUMENT WIRING

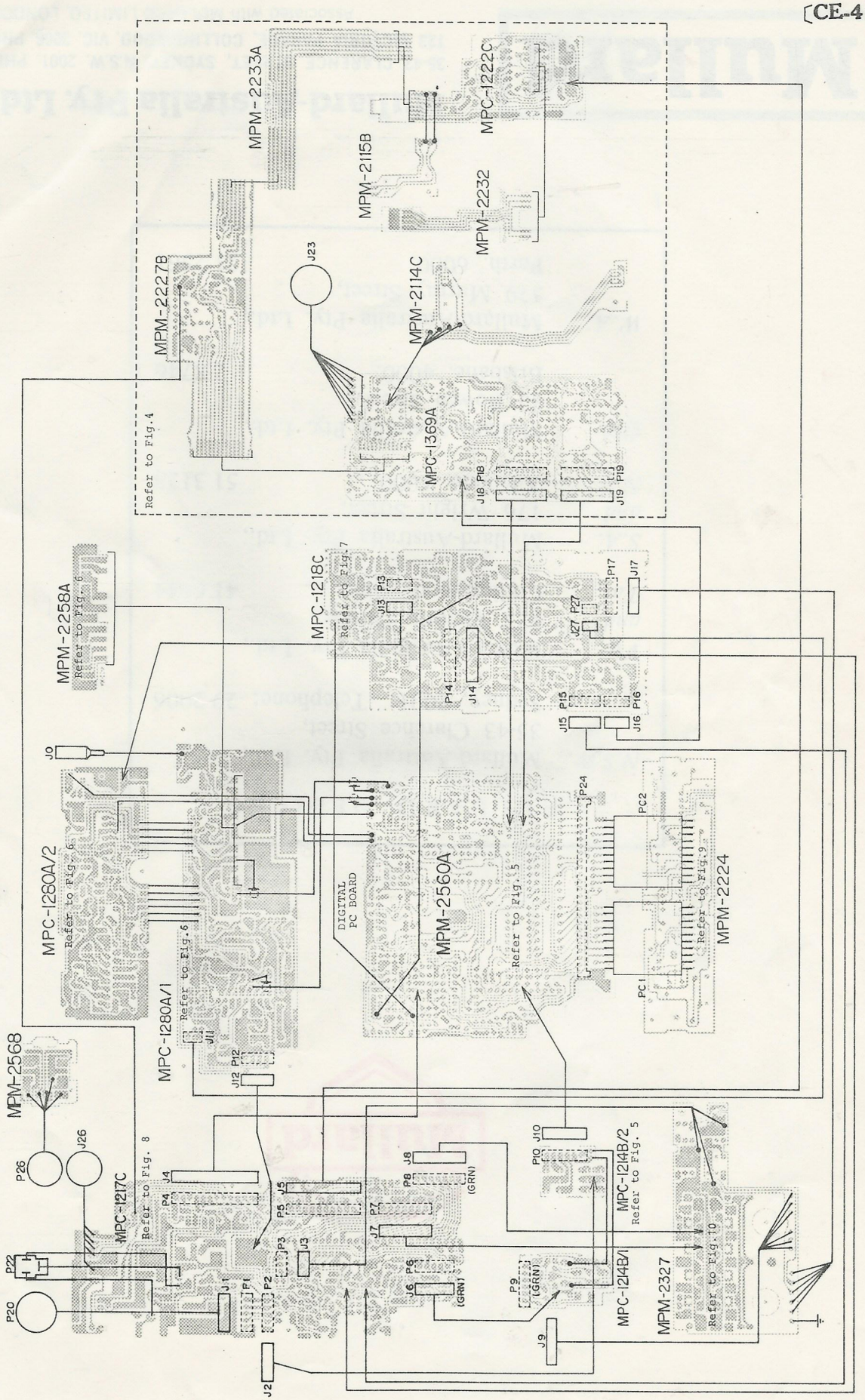


Fig. 11 (C27134131)

EXPLODED VIEW

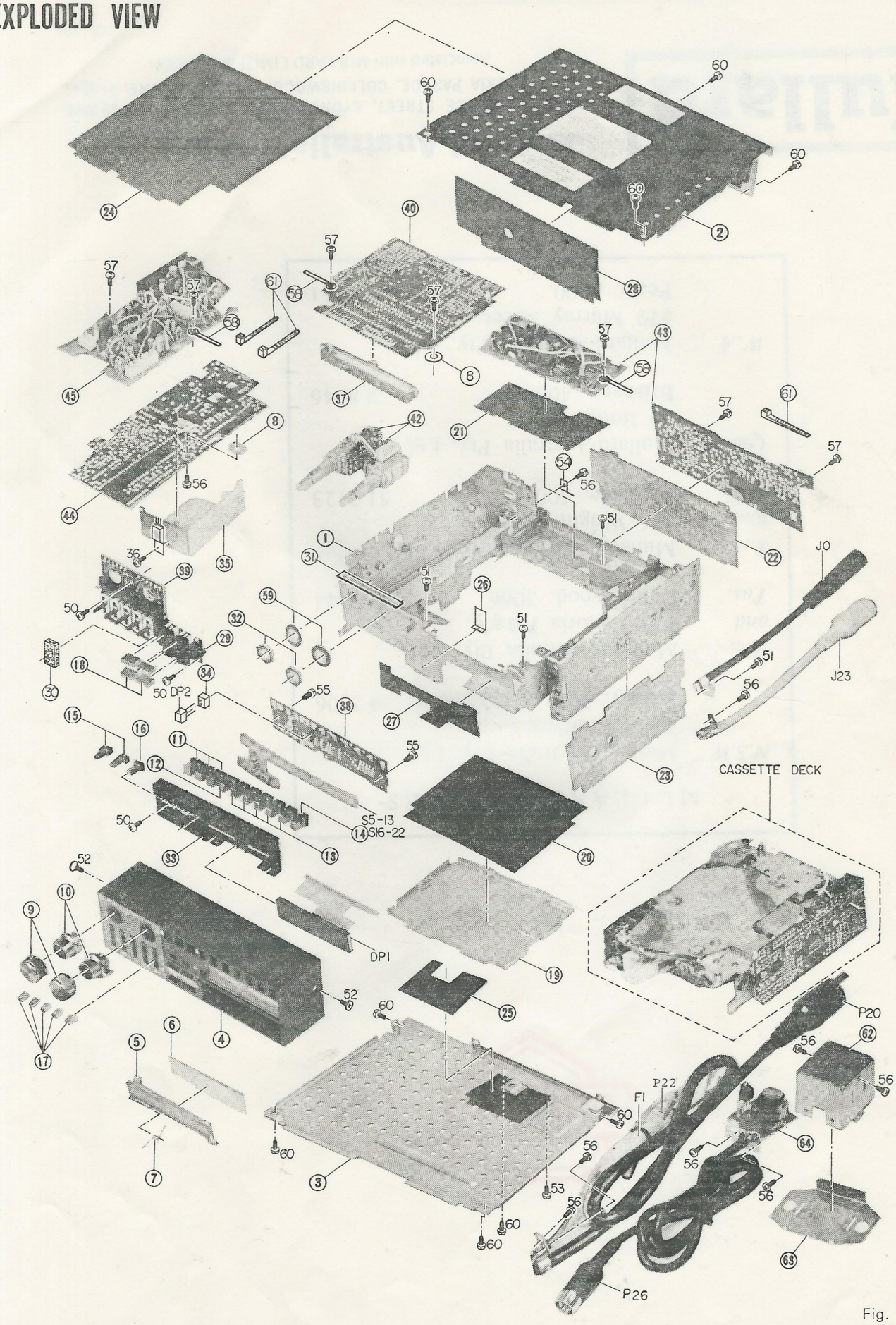


Fig. 12

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

EXPLODED VIEW (CASSETTE DECK UNIT) MDK-46/9

〔CE-4131A〕

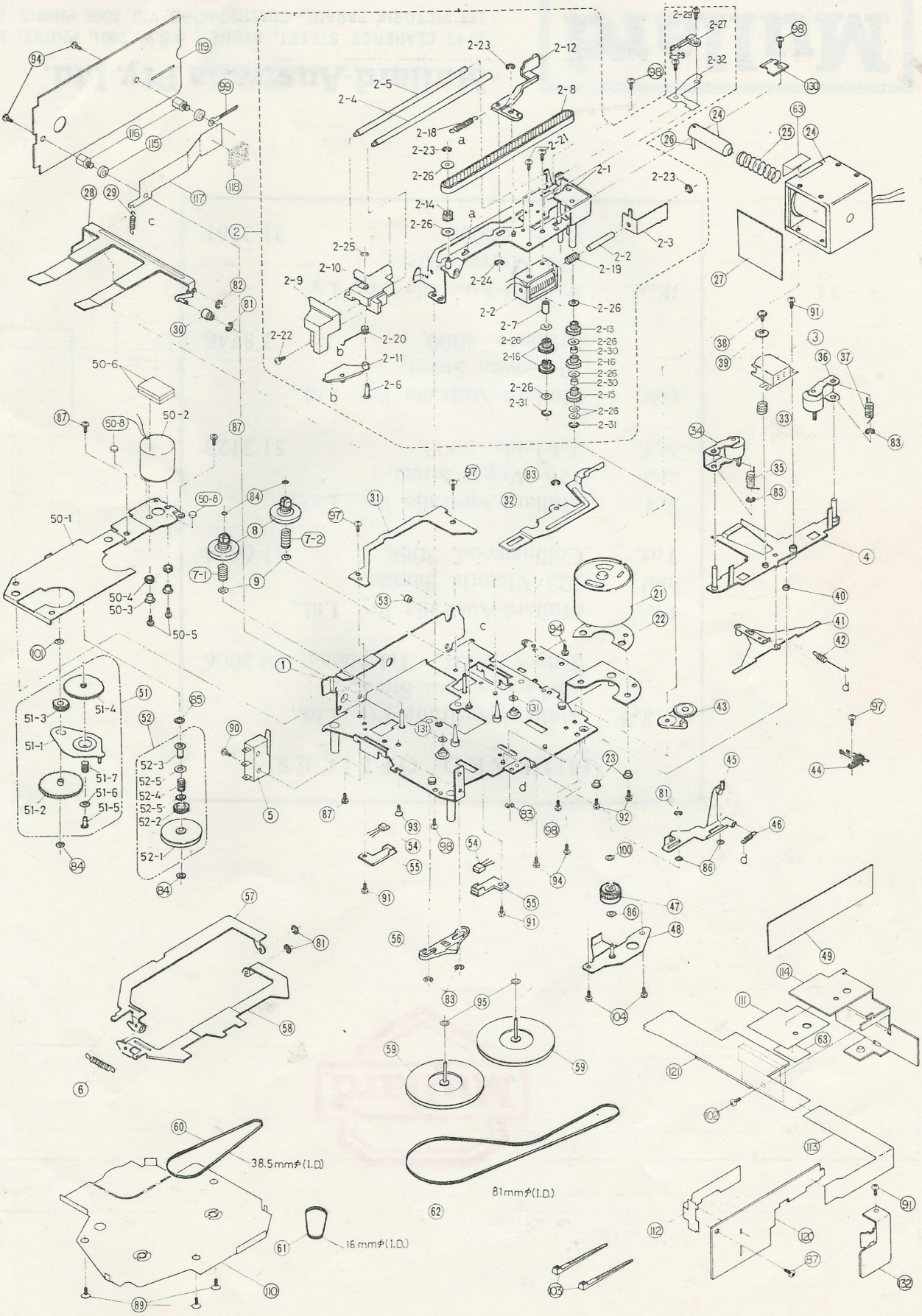


Fig. 13 (C28134131)

AM ALIGNMENT

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

AM Frequency to be pre-set: 522 kHz, 603 kHz, 999 kHz, 1,404 kHz, 1,602 kHz

FM Frequency to be pre-set: 87.5 MHz, 98.0 MHz, 108.0 MHz

Standard adjustment condition

a. Power supply·····13.2V

b. AM/FM changing switch ····· AM (▮)

c. Sensitivity switch·····Distan. (▮)

d. Balance control·····Center

e. Volume·····Adjust to get 2V output level. (with QM-104)

f. Connections

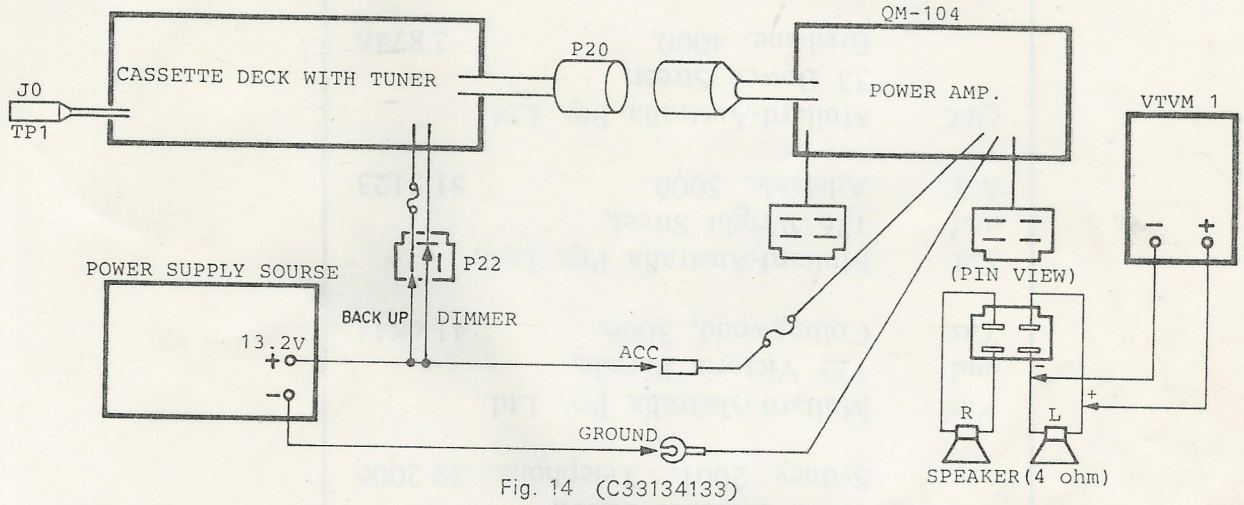


Fig. 14 (C33134133)

〔1〕 IF Alignment

(1) Connections

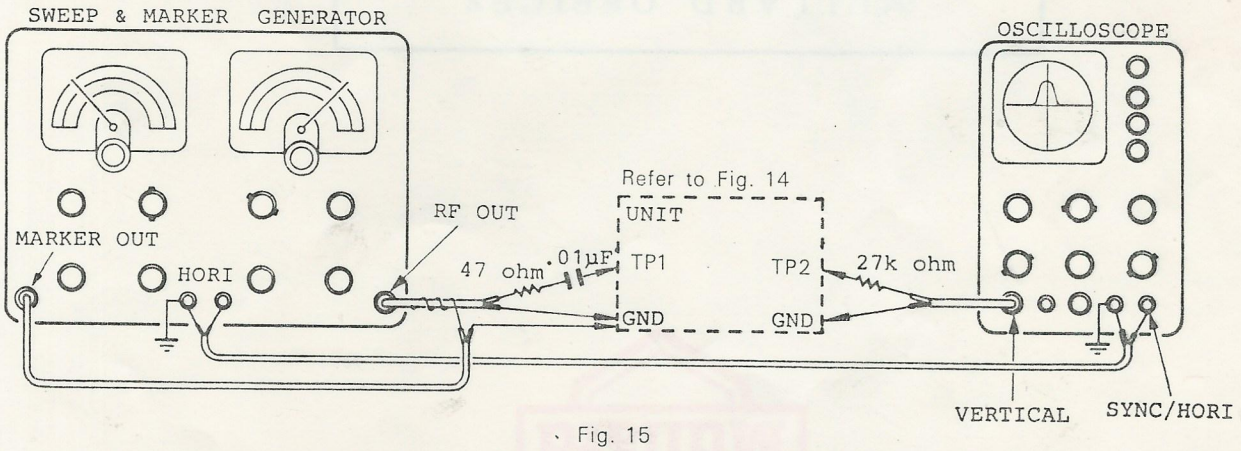


Fig. 15

SWEEP GENERATOR OUTPUT	OSCILLOSCOPE VERTICAL INPUT	OSCILLOSCOPE HORIZONTAL INPUT
Antenna receptacle (J0)	Connect TP 2 in Fig. 15 through 27k-ohm resistor	Connect with HORIZONTAL terminal of sweep generator

(2) Alignment (Refer to Fig. 21 and 22)

STEP	SWEEP GENERATOR MARKER	SWEEP GENERATOR OUTPUT LEVEL	ADJUSTMENT POINTS	PROCEDURE
1	450 kHz	Minimum	T 6, T 7	Get maximum IF curve and best symmetry on both sides.
2				
3	Repeat STEP 1 to 2 until no further gain in output can be obtained.			

〔2〕 Tuning bias and tracking alignment

(1) Connections

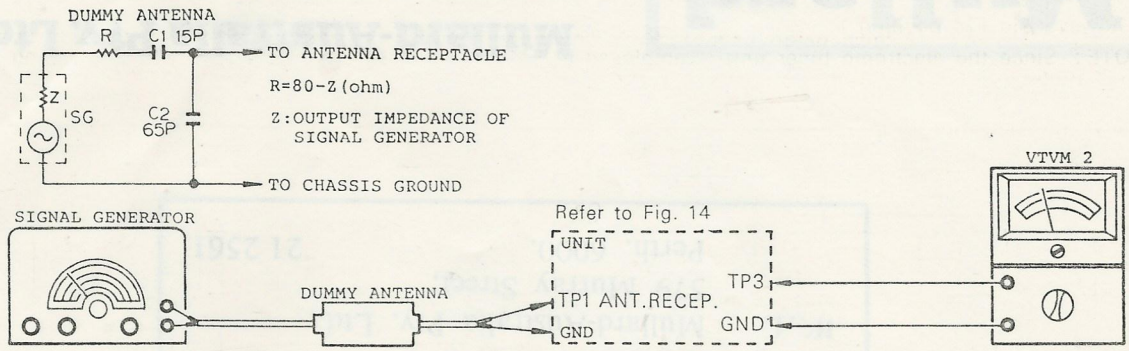


Fig. 16

(2) Alignment (Refer to Fig. 21 and 22)

STEP	PURPOSE	SIGNAL GENERATOR FREQUENCY	FREQ. DISPLAY OF UNIT	ADJUSTMENT POINTS	PROCEDURE
4	Tuning bias range adjustment	———	522 kHz	T 5 (OSC)	Adjust AM tuning bias tor 1.0V (VTVM2)
5		———	1602 kHz	CV 3 (OSC)	Adjust AM tuning bias for 7.5V (VTVM2)
6	Repeat Steps 4 and 5 for alignment to stably obtain approx. 1.0V at 522 kHz and 7.5V at 1602 kHz as bias.				
7	Tracking adjustment	603 kHz (400 Hz, 30%, AM)	603 kHz	T 2, T 3 (ANT, RF)	Adjust output voltage (SPEAKER) for maximum. (See Fig. 14)
8		1404 kHz (400 Hz, 30%, AM)	1404 kHz	CV 1, CV 2 (ANT, RF)	
9	Repeat Steps 7 and 8				

NOTES: 1. Variation characteristics (Voltage to Capacity) of three varactor diodes (D9, 10 and 12) do not coincide completely. In case there is a great difference in characteristic among each diode, a tracking error, i.e. sensitivity fluctuation, occurs.

In case a tracking error occurs, select the upper and lower limit tuning bias with the least tracking error within the range of ±0.1V.

〔3〕 AM Trap coil alignment

(1) Connections Refer to Fig. 16 (VTVM2 : Connect the speaker terminal)

(2) Alignment (Refer to Fig. 21 and 22)

STEP	SIGNAL GENERATOR FREQUENCY	SIGNAL GENERATOR OUTPUT LEVEL	SET FREQUENCY	ADJUSTMENT POINT	PROCEDURE
10	2502 kHz (400 Hz, 30% AM)	50 dBμ	1602 kHz	T 4	Adjust output voltage for minimum.

〔4〕 SEEK Alignment

(1) Connections Refer to Fig. 16

(2) Alignment (Refer to Fig. 21 and 22)

STEP	PURPOSE	SIGNAL GENERATOR FREQUENCY	SIGNAL GENERATOR OUTPUT LEVEL	ADJUSTMENT POINTS	PROCEDURE
11	Set the local/DX selector switch in the DX position. ( )				
12	Distant sensitivity	999 kHz (400Hz, 30% AM)	30 dBμ	RV 4	Depress SEEK button to start searching, and then adjust sensitivity so that the search tuning may stop right near 999 kHz.
13	Set the local/DX selector switch in the local position.				
14	Local sensitivity	999 kHz (400Hz, 30% AM)	55 dBμ (±10 dBμ)	Depress SEEK button to actuate the searching, and then make sure that the output level ("Local" search sensitivity) of the signal generator when the searching function stop near at 999 kHz is 55 dBμ.	

FM ALIGNMENT

* Standard Adjustment Condition
FM adjustment should be the same as in AM standard adjusting condition. (Band 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 adjustment are required.

[1] IF Alignment

(1) Connections

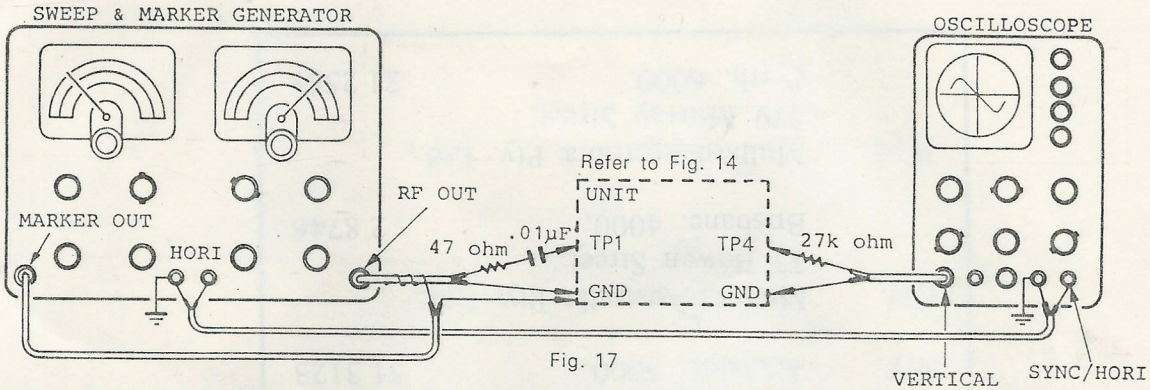


Fig. 17

SWEEP GENERATOR OUTPUT	OSCILLOSCOPE VERTICAL INPUT	OSCILLOSCOPE HORIZONTAL INPUT
Antenna receptacle (J0)	Connect TP 4 in Fig. 17 through 27k-ohm resistor	Connect with HORIZONTAL terminal of sweep generator

(2) Alignment (Refer to Fig. 21 and 22)

TSEP	PURPOSE	SWEEP GENERATOR FREQUENCY	ADJUSTMENT POINTS	PROCEDURE
15	S curve	10.7 MHz	T 101, T 1	Adjust to full gain and length of S-curve at linears. (See Fig. 19)
	S curve (Center)	SG 10.7 MHz	T 1	Fine-adjust the potential difference between IC 1 ⑦ and ⑬ pins to OV.

COLOR	CENTER FREQUENCY
Red	10.70 MHz ± 20 kHz

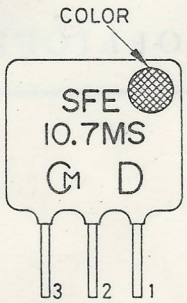


Fig. 18

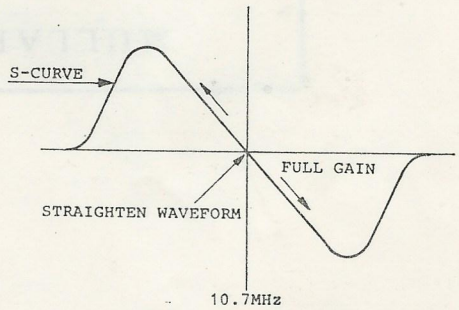


Fig. 19

NOTE: S curve center can be adjusted in the same manner by receiving local FM broadcast near 98.0 MHz.

[2] Limiting Sensitivity alignment

(1) Connections

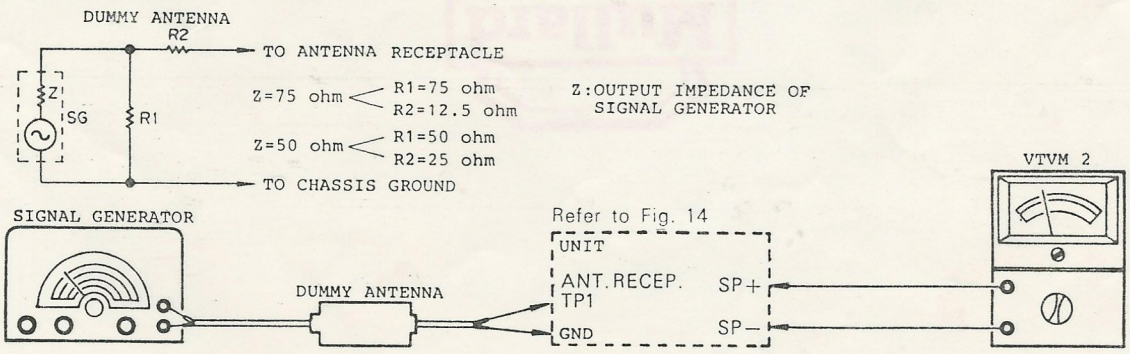


Fig. 20

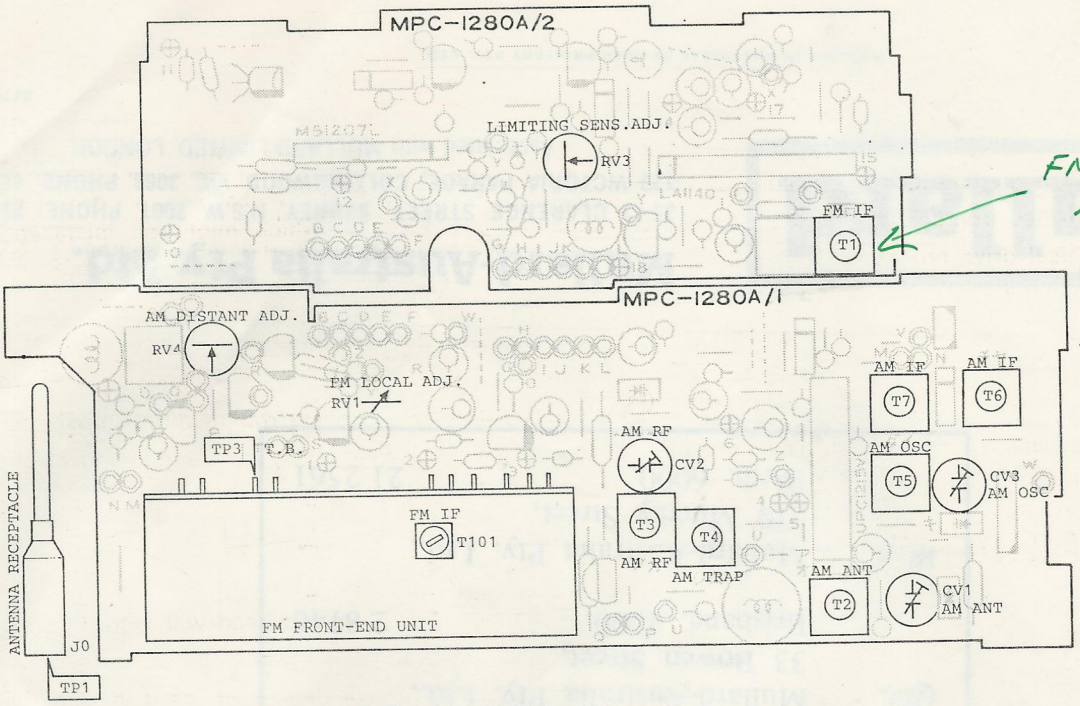


Fig. 22 (C33134131)

〔7〕 Crystal oscillating frequency adjustment

(1) Connections a. Frequency counter (Resolution 1 Hz)·····Connect the TP 6

(2) Alignment (Refer to Fig. 23)

STEP	ADJUSTMENT POINT	PROCEDURE
27	CV 4	Adjust CV4 for 720 kHz (±3 Hz) at the frequency counter by using a screwdriver.

〔8〕 Back UP voltage adjustment

(1) Connections a. VTVM·····Hot side : TP 12

Cold side : GROUND

(2) Alignment (Refer to Fig. 23)

STEP	ADJUSTMENT POINT	PROCEDURE
28	RV 9	Adjust RV 9 for 5.7±.2V at TP12

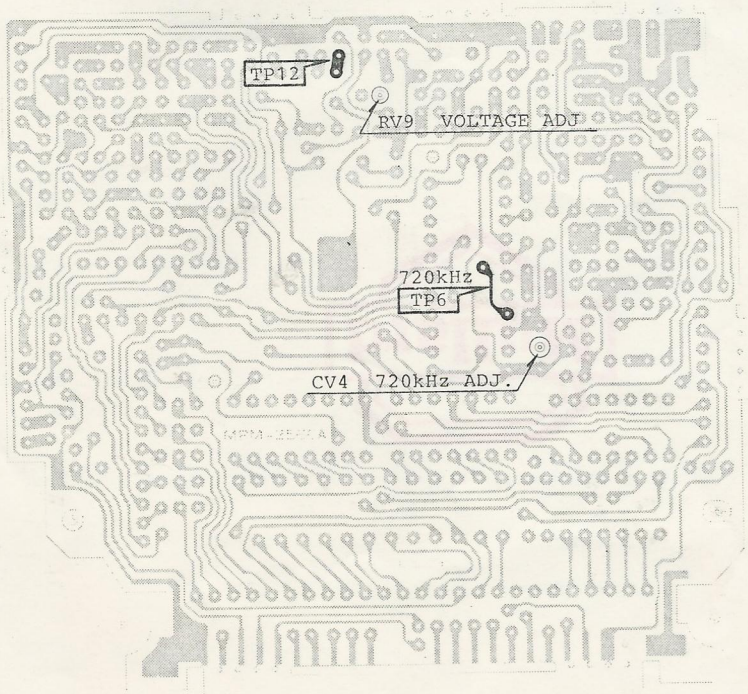


Fig. 23 (C33134131)

(2) Alignment (Refer to Fig. 21 and 22)

STEP	SIGNAL GENERATOR FREQUENCY	SIGNAL GENERATOR OUTPUT LEVEL	ADJUSTMENT POINTS	PROCEDURE
17	98.0 MHz (400 Hz, 30%)	54 dBμ	—	Adjust volume control(VOL)until speaker output voltage is 2V. (with QM-104)
18		12 dBμ (±5 dBμ)	RV 3	Adjust the output voltage to −3 dB (1.41V)

〔3〕 SEEK Alignment

(1) Connections Refer to Fig. 20

(2) Alignment (Refer to Fig. 21 and 22)

STEP	PURPOSE	SIGNAL GENERATOR FREQUENCY	SIGNAL GENERATOR OUTPUT LEVEL	ADJUSTMENT POINT	PROCEDURE
19	Set the local/DX selector switch in the DX position. ( )				
20	Distant sensitivity	98.0 MHz (400Hz, 30%)	—		Depress SEEK button to actuate the searching, and then make sure that the output level ("DX" search sensitivity) of the signal generator when the searching function stops nearly at 98.0 MHz is 19±10 dBμ.
21	Set the loca/DX selector switch in the local position ( )				
22	Local sensitivity	98.0 MHz (400Hz, 30%)	Distant sensitivity plus 25 dBμ	RV 1	Depress SEEK button to actuate the searching, and then adjust sensitivity so that the searching action may stop nearly at 98.0 MHz.

〔4〕 Noise blanker alignment

(1) Connections a. Stereo signal generator·····Connect the TP 1

b. Oscilloscope ·····Connect the TP 5

(2) Alignment (Refer to Fig. 21 and 22)

STEP	STEREO SIGNAL GENERATOR FREQUENCY	STEREO SIGNAL GENERATOR OUTPUT LEVEL	ADJUSTMENT POINT	PROCEDURE
23	98.0 MHz (No modulation, Stereo mode)	54 dBμ	T 8	After making sure of "STEREO" display, adjust the pilot signal wave (19 kHz) to minimum.

〔5〕 Separation alignment

(1) Connections a. Stereo signal generator·····Connect the TP 1

b. Oscilloscope ·····Connect the speaker (L-ch) or TP 13

(2) Alignment (Refer to Fig. 21 and 22)

STEP	STEREO SIGNAL GENERATOR FREQUENCY	STEREO SIGNAL GENERATOR OUTPUT LEVEL	ADJUSTMENT POINT	PROCEDURE
24	98.0 MHz (R-ch: 400 kHz, 30% L-ch: no modulation)	74 dBμ	RV 26	Adjust L-ch output level to minimum.

〔6〕 ASC Working sensitivity adjustment

(1) Connections Same as separation alignment

(2) Alignment (Refer to Fig. 21 and 22)

STEP	STEREO GENERATOR FREQUENCY	STEREO GENERATOR OUTPUT LEVEL	ADJUSTMENT POINT	PROCEDURE
25	98.0 MHz (1 kHz, 30%)	74 dBμ	———	Adjust volume control until the output voltage is 2V. (with QM-104)
26		40 dBμ	RV 6	Adjust the separation for 10 dB.

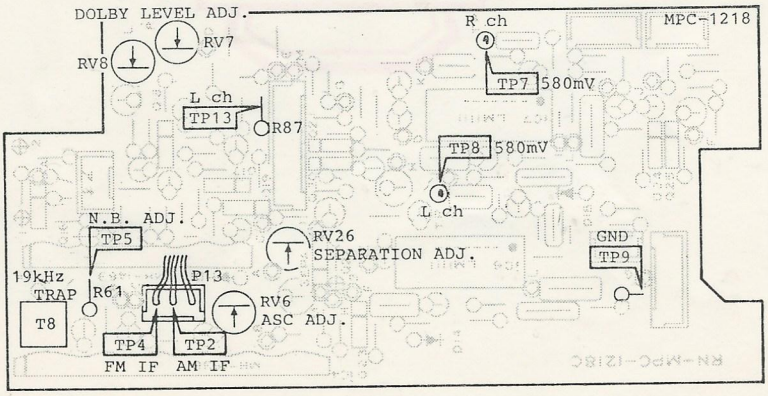


Fig. 21
(C33134131)

CLEANING

[CE-4131A]

After extended use, the tape playback head and the drive capstan will build up a layer of oxided iron from the tape. The oxided iron layer on the tape head prevents the tape from making full contact with the head and the result is a gradual loss of high frequency response and an increased noise level.

The oxided iron deposit on the capstan can cause slippage (wow) which might be mistaken for more serious mechanical drive problems.

A cleaner pen or similar object like the alcohol moistened swab is used.

First, using the end of a pencil, press the rod in the cassette door back until it gives a click sound.

Rub the parts such as playback head, capstan and pinchroller thoroughly to remove all traces of dirt and grime.

After cleaning, always remember to press the eject button to return the rod to former position.

Do not use a solvent such as lighter fuel or lacquer thinner, which may cause damage plastic parts or instrument finish.

DEMAGNETIZATION

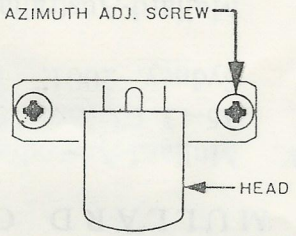
The head may become magnetized over a period of time. A magnetized head will record noise on a tape even when it is being used for playback. It is important that the head be demagnetized periodically.

The head can be demagnetized with a commercial demagnetizer (or degausser, as it is sometimes called.)

Such an instrument is not expensive, and represents a good investment for the owner who wants to keep his equipment in the best possible condition.

PLAYBACK HEAD ADJUSTMENT (Azimuth)

Normally the playback head is precisely aligned at the factory and further adjustment should not be required unless the playback head or its mounting components are replaced. Beware of excessive adjustment because improper adjustment results in inferior performance. If the azimuth is unnecessarily varied, the angle gets out of order, which causes lowering of tonal quality. Carefully adjust the azimuth adjust screw as shown in Fig. 24.



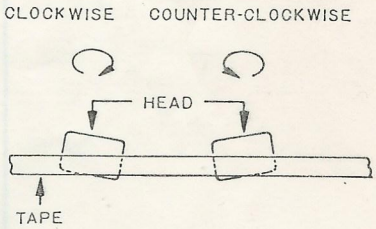


Fig. 24 (EOA-002)

a. Connections : Refer to Fig. 14

b. Power supply : 13.2 VDC

c. Switch : Tape select NORMAL

d. Test tape : MTT-114 (10 kHz, −10 dB full track recording)

Alignment Prodedure

Insert a test tape for the azimuth adjustment and drive the screw a little once.

Adjust the playback head so as to get equal and maximum output or right and left channel in either track, loosening the screw.

〔1〕 TAKE-UP TORQUE adjustment

(1) connections : a. VTVM·····Hot side : TP 11

Cold side : TP 10

b. Test tape ·····C-60

(2) Alignment (Refer to Fig. 25)

STEP	ADJUSTMENT POINT	PROCEDURE
29	———	Play the test tape.
30	RV10	Adjust the driving voltage for 1.65V.

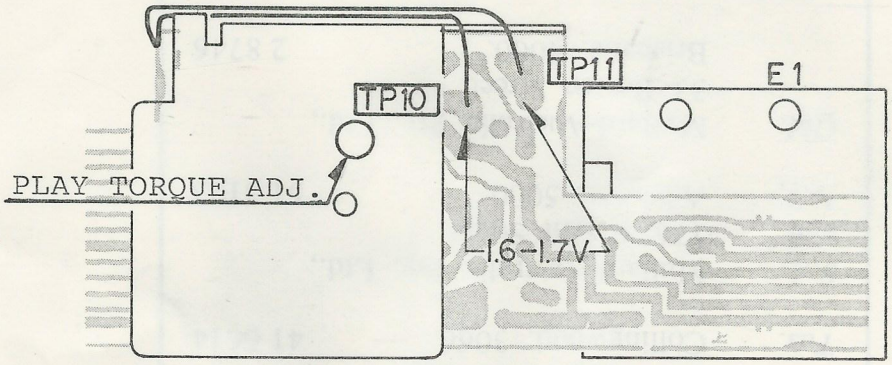


Fig. 25 (C33134130)

〔2〕 DOLBY LEVEL alignment

NOTES : 1. Always use the test tape (MTT-150) for alignment.

2. In alignment of Dolby N.R. circuit, only gain adjustment is required.

3. Make sure that Dolby level falls with in the Dolby standards, when parts in the head or Dolby N.R. circuit being exchanged.

4. Always use the parts listed in the parts list for Dolby circuit.

(1) Connections

a. VTVM·····Hot side : TP 7 or TP 8 Cold side : TP 9

b. Test tape ·····MTT-150 (400 Hz, 0 dB full track recording)

c. Power supply ·····13.2 VDC d. Tape select switch·····Normal (▮)

e. Dolby N.R. switch·····Out (▮)

(2) Alignments (Refer to Fig. 21 for ADJUSTMENT POINTS.)

STEP	ADJUSTMENT POINT	PROCEDURE
31	RV 8	Adjust to get 580 mV $\left(^{+70}_{-60}\text{ mV}\right)$ output of left channel with a volt meter.
32	RV 7	Adjust to get 580 mV $\left(^{+70}_{-60}\text{ mV}\right)$ output of right channel with a volt meter.
33	———	Make sure that the output of left channel is equal to that of right channel, by using a volt meter.

NOTE : Adjust to get equal output of right and left channels in either track.

DISASSEMBLING PROCEDURE

[CE-4131A]

1. To remove the front escutcheon (decorative front plate):
   (1) Remove top and bottom lids (chassis), then each knob, button and flat screws.

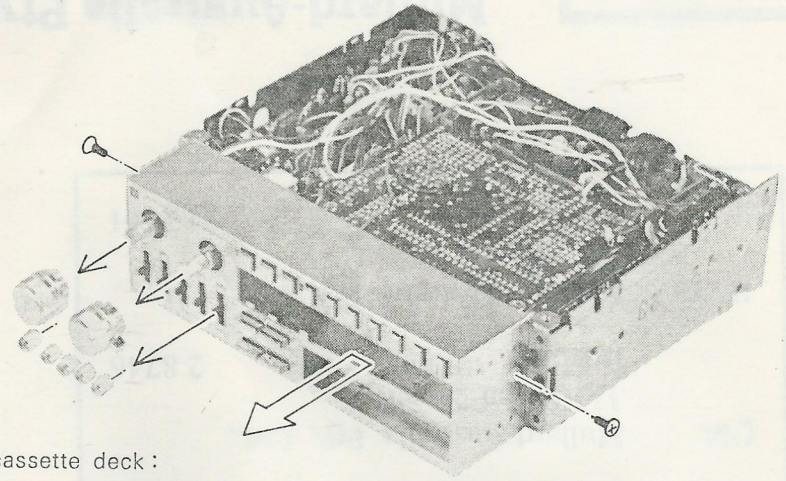


Fig. 26

2. To remove the cassette deck:
   (1) Remove the three screws and connectors.
   (2) Turn the player unit upside down, then remove a connector and solder.
   (3) Pushing backward the AM-FM printed circuit board (RN-MPC-1280/1) lightly and avoiding the projection, the cassette deck can be drawn out upward.

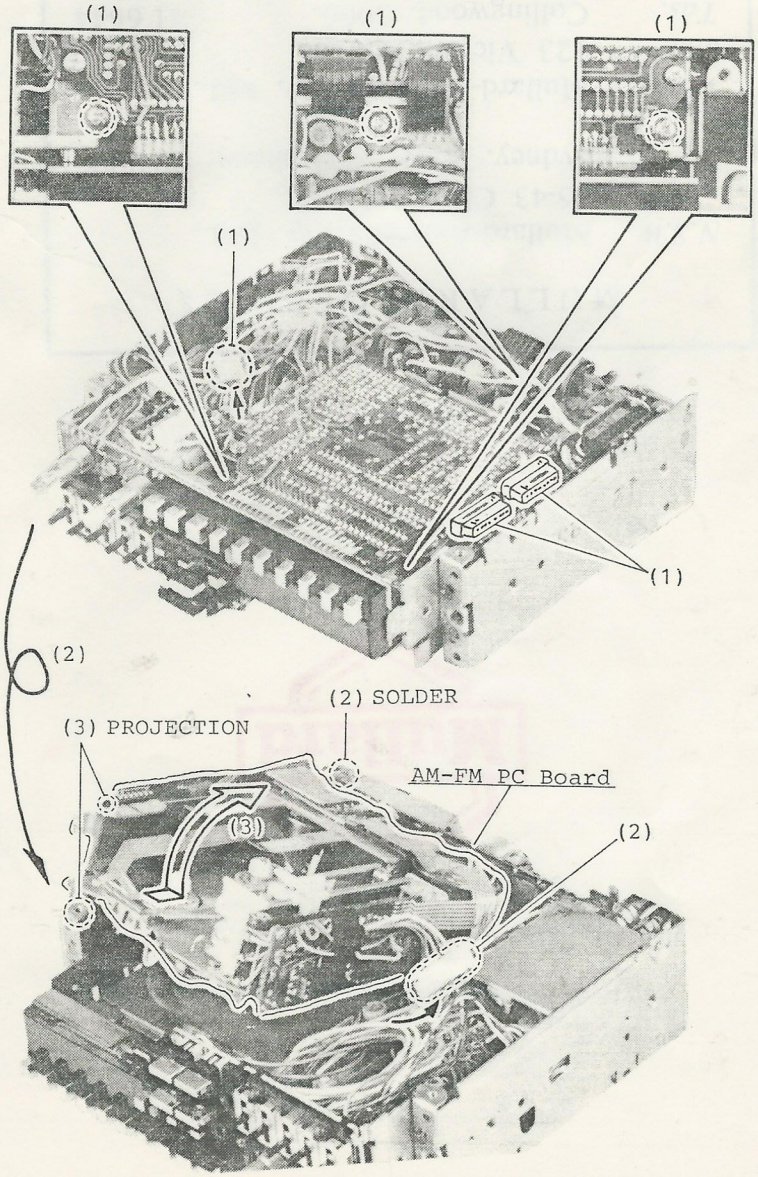


Fig. 27

REPLACEMENT PARTS LIST

Note: Main replacement parts are marked ○ in the remarks column.

Symbol No.	Stock No.	Description			Remark
CAPACITORS					
C 1	RN-ECC-DSL080DY	8 PF	50V	ceramic	
C 2, 4, 6, 8, 10～15, 17, 19, 23, 28 31～33, 39, 54, 57 66, 144, 151, 156	RN-ECB-DOX223E	.022 μF	25V	ceramic	
C 3, 18, 30, 41, 61 67, 75, 87, 88, 91 92, 102, 103, 126 130, 141, 164, 190 216, 217	RN-ECE-M100V16-42	10 μF	16V	electrolytic	
C 5, 50	RN-ECE-M470V16-42	47 μF	16V	electrolytic	
C 7, 124, 125	RN-ECE-M101V10-41	100 μF	10V	electrolytic	
C16	RN-ECE-MR47V50-42	.47 μF	50V	electrolytic	
C20, 37	RN-ECE-M330V10-42	33 μF	10V	electrolytic	
C21	RN-ECC-DSL330JY	33 pF	50V	ceramic	
C22	RN-ECC-DUJ080DY	8 pF	50V	ceramic	
C24, 34	RN-ECE-M4R7V50-42	4.7 μF	50V	electrolytic	
C25, 98, 99	RN-ECK-DB471KY	470 pF	50V	ceramic	
C26, 27, 36, 40, 47 49, 68, 69, 77, 78 111, 140, 145, 147 148, 154, 157, 159 160, 229	RN-ECB-DOX103E	.01 μF	25V	ceramic	
C29, 46, 53, 58, 70 71, 73, 74, 83, 84 108, 109, 131, 132 184, 201, 203, 204 206, 211, 223, 308 309	RN-ECE-M1R0V50-42	1 μF	50V	electrolytic	
C35, 48, 95, 96 100, 101, 106, 107	RN-ECK-DB102KY	1000 pF	50V	ceramic	
C38	RN-ECE-DBC204B	.2 μF	12V	electrolytic	
C42, 120～123	RN-ECK-DB561KY	560 pF	50V	ceramic	
C43, 44, 51, 230	RN-ECB-DOX473E	.047 μF	25V	ceramic	
C45	RN-ECY-M4R7V16-M1	4.7 μF	16V	tantalum	
C52, 63	RN-ECB-DOX333E	.033 μF	25V	ceramic	
C56	RN-ECF-R682V50	6800 pF	50V	mylar	
C59	RN-ECB-DOX472B	4700 pF	12V	ceramic	
C 60, 62, 112, 143 162, 163, 231	RN-ECE-M4R7V25-42	4.7 μF	25V	electrolytic	
C64	RN-ECK-DB681KY	680 pF	50V	ceramic	
C65, 97	RN-ECE-M221V10-9	220 μF	10V	electrolytic	
C72, 205	RN-ECE-M470V10-41	47 μF	10V	electrolytic	
C79, 80	RN-ECK-DB121KY	120 pF	50V	ceramic	
C81, 82	RN-ECH-R334V50	.33 μF	50V	metalized paper	
C85, 86	RN-ECH-R104V50	.1 μF	50V	metalized paper	
C89, 90	RN-ECH-R473V50	.047 μF	50V	metalized paper	
C93, 94	RN-ECF-R472V50-G	4700 pF	50V	mylar	
C104, 105	RN-ECH-R333V50	.033 μF	50V	metalized paper	
C110, 186	RN-ECE-MR10V50-42	.1 μF	50V	electrolytic	
C127	RN-ECE-M221V10-41	220 μF	10V	electrolytic	
C128, 129	RN-ECF-R223V50	.022 μF	50V	mylar	
C142	RN-ECC-DSL470JY	47 pF	50V	ceramic	
C146	RN-ECY-M2R2V16-M1	2.2 μF	16V	tantalum	
C149	RN-ECY-MR22V16-M1	.22 μF	16V	tantalum	
C150	RN-ECE-M101V10-52	100 μF	10V	electrolytic	
C152	RN-ECC-DCH150JY	15 pF	50V	ceramic	
C153	RN-ECC-DCH220JY	22 pF	50V	ceramic	
C155	RN-ECB-DOX102E	1000 pF	25V	ceramic	
C158	RN-ECE-M470V6R3-42	47 μF	6.3V	electrolytic	
C161, 170	RN-ECB-DBC104B	.1 μF	12V	ceramic	
C171	RN-ECB-DOX103B	.01 μF	12V	ceramic	
C172	RN-ECE-M4R7V25-N2	4.7 μF	25V	electrolytic	
C180～182, 187	RN-ECK-CD1H103M/CA-4	.01 μF	50V	ceramic (chip)	
C183	RN-ECK-CD1H223M/CA-4	.022 μF	50V	ceramic (chip)	
C185	RN-ECE-M2R2V50-42	2.2 μF	50V	electrolytic	
C188	RN-ECE-M220V6R3-42	22 μF	6.3V	electrolytic	
C189	RN-ECK-CF1E104Z/CA-4	.1 μF	25V	ceramic (chip)	
C191	RN-ECH-R564V50	.56 μF	50V	metalized paper	

Symbol No.	Stock No.	Description				Remark
C200	RN-ECE-M470V16-6	47 μF	16V		electrolytic	
C202, 222, 233	RN-ECE-M221V16-6	220 μF	16V		electrolytic	
C207, 208	RN-ECB-DOX682E	6800 pF	25V		ceramic	
C209, 210	RN-ECE-MR22V50-42	.22 μF	50V		electrolytic	
C214, 215	RN-ECC-DSL121JY	120 pF	50V		ceramic	
C218, 219, 232 237, 238	RN-ECC-DSL221JY	220 pF	50V		ceramic	
C224	RN-ECE-M222V16-7	2200 μF	16V		electrolytic	
C225	RN-ECE-M222V16-41	2200 μF	16V		electrolytic	
C226	RN-ECE-M471V16-13	470 μF	16V		electrolytic	
C227	RN-ECE-M101V16-10	100 μF	16V		electrolytic	
C228	RN-ECE-M101V10-6	100 μF	10V		electrolytic	
C310	RN-ECE-MR47V50-32	.47 μF	50V		electrolytic	
CAPACITOR COMPONENT						
CW 1	RN-ECW-CSC101K	100 pF×2	50V		ceramic	
VARIABLE CAPACITORS						
CV 1, 2, 3	RN-ECV-A60-73	60 pF			ceramic	
CV 4	RN-ECV-A11-78	11 pF			ceramic	
RESISTORS						
R 2, 30, 45, 63 101~103, 261 263, 264, 269	RN-ERD-AE103JB	10k ohm	5%	¼W	carbon	
R 3,49,96,97,100 109,110,262,266 267,268,270,278 279,287,288,301	RN-ERD-AE473JB	47k ohm	5%	¼W	carbon	
R 5, 58, 61, 285 286, 299	RN-ERD-AE223JB	22k ohm	5%	¼W	carbon	
R 6, 133	RN-ERD-AC393JA	39k ohm	5%	⅛W	carbon	
R 7	RN-ERD-AC153JA	15k ohm	5%	⅛W	carbon	
R 8	RN-ERD-AC561JA	560 ohm	5%	⅛W	carbon	
R 9	RN-ERD-AE331JB	330 ohm	5%	¼W	carbon	
R10	RN-ERD-AC121JA	120 ohm	5%	⅛W	carbon	
R11, 18, 144	RN-ERD-AC331JA	330 ohm	5%	⅛W	carbon	
R16,34,37,50,51 132,137,142,183 188	RN-ERD-AC103JA	10k ohm	5%	⅛W	carbon	
R17, 22, 25, 26 210, 211	RN-ERD-AC223JA	22k ohm	5%	⅛W	carbon	
R19, 52	RN-ERD-AC392JA	3.9k ohm	5%	⅛W	carbon	
R20, 31, 36, 120 121	RN-ERD-AC101JA	100 ohm	5%	⅛W	carbon	
R21, 136, 145 146, 152	RN-ERD-AC472JA	4.7k ohm	5%	⅛W	carbon	
R23,25,41,42,141 148,153,154,171 172,180,182,187	RN-ERD-AC473JA	47k ohm	5%	⅛W	carbon	
R27, 66, 67	RN-ERD-AE224JB	220k ohm	5%	¼W	carbon	
R28, 94, 95	RN-ERD-AE154JB	150k ohm	5%	¼W	carbon	
R29,161~168,284	RN-ERD-AE101JB	100 ohm	5%	¼W	carbon	
R32,157,124,125	RN-ERD-AC154JA	150k ohm	5%	⅛W	carbon	
R33, 139, 140 143, 147	RN-ERD-AC102JA	1k ohm	5%	⅛W	carbon	
R35	RN-ERD-AC682JA	6.8k ohm	5%	⅛W	carbon	
R38,135,276,277	RN-ERD-AC104JA	100k ohm	5%	⅛W	carbon	
R39	RN-ERD-AC333JA	33k ohm	5%	⅛W	carbon	
R40, 202	RN-ERD-AC222JA	2.2k ohm	5%	⅛W	carbon	
R44, 46, 48, 107 108	RN-ERD-AE102JB	1k ohm	5%	¼W	carbon	
R47	RN-ERD-AE562JB	5.6k ohm	5%	¼W	carbon	
R53,170,173,174	RN-ERD-AE121JB	120 ohm	5%	¼W	carbon	
R 54,105,106,115 118,119,272,273 289,290,300	RN-ERD-AE222JB	2.2k ohm	5%	¼W	carbon	
R55	RN-ERD-AE392JB	3.9k ohm	5%	¼W	carbon	
R56, 78	RN-ERD-AE183JB	18k ohm	5%	¼W	carbon	
R57	RN-ERD-AE821JB	820 ohm	5%	¼W	carbon	
R60	RN-ERD-AE682JB	6.8k ohm	5%	¼W	carbon	
R62, 76, 84, 85 302, 309	RN-ERD-AE104JB	100k ohm	5%	¼W	carbon	

Symbol No.	Stock No.	Description				Remark
R64, 169	RN-ERD-AE561JB	560 ohm	5%	¼W	carbon	
R65, 72, 73, 114 282, 283, 308	RN-ERD-AE152JB	1.5k ohm	5%	¼W	carbon	
R68, 69	RN-ERD-AE563JB	56k ohm	5%	¼W	carbon	
R70, 71	RN-ERD-AE272JB	2.7k ohm	5%	¼W	carbon	
R74, 75, 86, 87 265, 323	RN-ERD-AE333JB	33k ohm	5%	¼W	carbon	
R77, 116	RN-ERD-AE123JB	12k ohm	5%	¼W	carbon	
R79	RN-ERD-AE153JB	15k ohm	5%	¼W	carbon	
R80~83, 113 293, 294, 321	RN-ERD-AE472JB	4.7k ohm	5%	¼W	carbon	
R88	RN-ERD-AC220JB	22 ohm	5%	⅛W	carbon	
R90, 91	RN-ERD-AE274JB	270k ohm	5%	¼W	carbon	
R92, 93	RN-ERD-AE334JB	330k ohm	5%	¼W	carbon	
R98,99,295~298	RN-ERD-AE332JB	3.3k ohm	5%	¼W	carbon	
R104	RN-ERD-AE124JB	120k ohm	5%	¼W	carbon	
R111, 112	RN-ERD-AE683JB	68k ohm	5%	¼W	carbon	
R126	RN-ERD-AC221JA	220 ohm	5%	⅛W	carbon	
R122, 123	RN-ERD-AC562JA	5.6k ohm	5%	⅛W	carbon	
R127	RN-ERD-AC273JA	27k ohm	5%	⅛W	carbon	
R130	RN-ERD-AC100JA	10 ohm	5%	⅛W	carbon	
R131	RN-ERD-AC183JA	18k ohm	5%	⅛W	carbon	
R134, 186	RN-ERD-AC822JA	8.2k ohm	5%	⅛W	carbon	
R149	RN-ERD-AC153JA	15k ohm	5%	⅛W	carbon	
R151	RN-ERD-AC471JA	470 ohm	5%	⅛W	carbon	
R155	RN-ERD-AE471JB	470 ohm	5%	¼W	carbon	
R190	RN-ERD-AD121JA	120 ohm	5%	¾W	carbon	
R200	RN-ERD-AC471JA	470 ohm	5%	⅛W	carbon	
R201, 204	RN-ERD-AC123JA	12k ohm	5%	⅛W	carbon	
R212~214,234 239,246,249,251	RN-ERG-IC473J/CA-1	47k ohm	5%	⅛W	metallic (chip)	
R215,230,231,256	RN-ERG-IC472J/CA-1	4.7k ohm	5%	⅛W	metallic (chip)	
R216,218,223~225 235,237,238, 240~243	RN-ERG-IC104J/CA-1	100k ohm	5%	⅛W	metallic (chip)	
R217	RN-ERG-IC183J/CA-1	18k ohm	5%	⅛W	metallic (chip)	
R219~222, 245 247, 248, 250	RN-ERG-IC224J/CA-1	220k ohm	5%	⅛W	metallic (chip)	
R226, 228	RN-ERG-IC122J/CA-1	1.2k ohm	5%	⅛W	metallic (chip)	
R227, 229	RN-ERG-IC152J/CA-1	1.5k ohm	5%	⅛W	metallic (chip)	
R232, 252~254	RN-ERG-IC103J/CA-1	10k ohm	5%	⅛W	metallic (chip)	
R233	RN-ERG-IC332J/CA-1	3.3k ohm	5%	⅛W	metallic (chip)	
R236	RN-ERG-IC822J/CA-1	8.2k ohm	5%	⅛W	metallic (chip)	
R244	RN-ERG-IC823J/CA-1	82k ohm	5%	⅛W	metallic (chip)	
R255	RN-ERG-IC154J/CA-1	150k ohm	5%	⅛W	metallic (chip)	
R271	RN-ERD-AE220JB	22 ohm	5%	¼W	carbon	
R274, 275	RN-ERD-AC122JA	1.2k ohm	5%	⅛W	carbon	
R280, 281	RN-ERD-AE823JB	82k ohm	5%	¼W	carbon	
R291, 292	RN-ERD-AE822JB	8.2k ohm	5%	¼W	carbon	
R303	RN-ERD-AD5R6JA	5.6 ohm	5%	¾W	carbon	
R304	RN-ERD-AE470JB	47 ohm	5%	¼W	carbon	
R305	RN-ERD-AD2R2JA	2.2 ohm	5%	¾W	carbon	
R318	RN-ERD-AF4R7J-1	4.7 ohm	5%	¼W	carbon	
R322	RN-ERD-CC330JA	33 ohm	5%	⅛W	carbon	
R306	RN-ERD-AE100JB	10 ohm	5%	¼W	carbon	
RESISTOR ARRAYS						
RI 1	RN-ERI-1014-4R473J	47k ohm×4		⅛W		
RI 2	RN-ERI-1016-10R	47k ohm×5, 100k ohm×5		⅛W		
RI 3	RN-ERI-1015-6R473J	47k ohm×3, 47k ohm×3		⅛W		
RI 4	RN-ERI-1007	6.8k ohm×5, 680 ohm×5		⅛W		
VARIABLE RESISTORS						
RV 1	RN-ERV-0N1-204	5k ohm			carbon	
RV 3	RN-ERV-0N1-188	300 ohm			carbon	
RV 4	RN-ERV-0N1-189	1k ohm			carbon	
RV 6	RN-ERV-0N1-194	100k ohm			carbon	
RV 7, 8	RN-ERV-0N1-192	20k ohm			carbon	
RV 9	RN-ERV-0N1-190	5k ohm			carbon	
RV10	RN-ERV-0N1-214	5k ohm			carbon	
RV11~20	RN-ERV-9N2-137	20k ohm			carbon	○
RV21,22,23(S4)	RN-ERV-2P3-113	20k ohm×3			carbon	○

Symbol No.	Stock No.	Description	Remark
RV24, 25 (S14, 15, 23)	RN-ERV-2Z2-4	20k ohm×2 carbon	O
RV26	RN-ERV-0N1-193	50k ohm carbon	
SEMICONDUCTORS			
IC 1	RN-EIC-LA1140	FM IF amp., Q. Det., linear-monolithic IC	O
IC 2	RN-EIC-M51207L	Operational amp., linear-monolithic IC	O
IC 3	RN-EIC-UPC1215V-E	AM RF, IF amp. and Det., linear-monolithic IC	O
IC 4	RN-EIE-MH-1536	Noise blanker, hibrid IC	O
IC 5	RN-EIE-MH-1469	Stereo MPX decoder, hibrid IC	O
IC 6, 7	RN-EIC-LM1111	Dolby NR Processor, linear-monolithic IC	O
IC 8	RN-EIC-BA3402	Equalizer amp. (with input selector), linear-monolithic IC	O
IC 9	RN-EIC-MB3756	Voltage regulator, linear-monolithic IC	O
IC10	RN-EIE-EA1005	Graphic equalizer, hibrid IC	O
IC11	RN-EIC-AN6540	Voltage regulator (8.5V), linear-monolithic IC	O
IC12, 32	RN-EIC-HA17808P	Voltage regulator (8V), linear-monolithic IC	O
IC13	RN-EIC-UPC78L05	Voltage regulator (5V), linear-monolithic IC	O
IC14	RN-EIC-TA78005AP	Voltage regulator (5V), linear-monolithic IC	O
IC15	RN-EIC-UPC141C	Voltage regulator. linear-monolithic IC	O
IC16	RN-EID-MB8735X	PLL Synthesizer. digital-monolithic IC (C-MOS)	O
IC17	RN-EIM-MB8855M-225M-B	Tuner controller, digital-monolithic IC (C-MOS)	O
IC18	RN-EID-MB467M	Pre-scaler, digital-monolithic IC	O
IC19	RN-EIC-M54517P	Driver (NOT), linear-monolithic IC	O
IC20	RN-EIC-BA614	Current driver, linear-monolithic IC	O
IC21	RN-EID-HD7417P	Driver (Buffer), digital-monolithic IC	O
IC22	RN-EID-MB84071BM	Driver (OR), digital-monolithic IC	O
IC23	RN-EID-MB74LS145M	BCD to Decimal decoder/driver, digital-monolithic IC	O
IC24	RN-EIC-BA6109	Reel motor driver, linear-monolithic IC	O
IC25, 26	RN-EID-DN6838	Tape end detector, digital-monolithic IC	O
IC27	RN-EIC-BA338	Musical interval detector, linear-monolithic IC	O
IC28, 29	RN-EIC-M54529P	Driver (NOT), linear-monolithic IC	O
IC30	RN-EID-MB84011BM	NAND Gate, digital-monolithic IC	O
IC31	RN-EIM-MB8845M-419M-B	Deck controller, digital-monolithic IC (C-MOS)	O
Q 1~4	———	Included in FM front-end unit (RN-ETV-1005)	O
Q 6, 7, 71	RN-EVS-2SC1684-QR	Silicon transistor	O
Q 8,10,11,13,14	RN-EVS-2SC710-C	Silicon transistor	O
Q 9, 12, 41	RN-EVF-2SK49-H	FET	O
Q15, 45, 51, 56 57, 59	RN-EVS-2SA733A-PQ	Silicon transistor	O
Q16,70,81,26,27	RN-EVS-2SA937-PQ	Siliccn transistor	O
Q17,18,20~25,40 42~44,46~50 52~55,58,65,66 72~80,82,83	RN-EVS-2SC2021-QR	Silicon transistor	O
Q19	RN-EVS-2SB643-QR	Silicon transistor	O
Q28, 29, 36~39	RN-EVS-2SD636-QRS	Silicon transistor	O
Q30~33	RN-EVS-2SC2063-PQ	Silicon transistor	O
Q34, 35	RN-EVS-2SD655	Silicon transistor	O
Q60~64	RN-EVS-2SA881-QR	Silicon transistor	O
Q67	RN-EVS-2SD1055F-QR	Silicon transistor	O
Q68	RN-EVS-2SD837-QR	Silicon transistor	O
Q69	RN-EVS-2SD592-QR	Silicon transistor	O
Q84, 85	RN-EVS-2SD601QRS/CA-1	Silicon transistor (chip)	O
D 1~8	———	Included in FM Front-end unit (RN-ETV-1005)	O
D 9, 10, 12	RN-EDC-KV1235-Z2	Varactor diode (ANT., RF, OSC.)	O
D11	RN-EDG-1S446	Germanium diode	O
D14~15, 17~23 25,26,35,37~39 41~53,57,58,63 64,67,68,71,72	RN-EDS-1S1555	Silicon diode	O
D24,29,30,31,34 54~56, 60~62 75,76,77	RN-EDS-10E1	Silicon diode	O
D27, 28	RN-EDT-RD6R2E-B	Zener diode	O
D32, 33	RN-EDS-1S1885	Silicon diode	O
D36	RN-EDT-RD100EB2	Zener diode	O
D40	RN-EDT-RD5R1E-B	Zener diode	O
D59	RN-EDT-RD9R1E-C	Zener diode	O
D65, 66	RN-EDS-MA151WA/CA-1	Silicon diode (chip)	O
DP 1	RN-EDP-SL-2861	Light emitting diode (display)	O
DP 2	RN-EDP-LN-210RP	Light emitting diode	O

Symbol No.	Stock No.	Description	Remark
COILS			
L 1, 6	RN-ELH-C153	Choke, 15 mH	
L 2	RN-ELH-C180-1	Choke, 18 μH	
L 3	RN-ELH-C6R2	Choke, 6.2 μH	
L 4	RN-ELH-C6R2-2	Choke, 6.2 μH	
L 5	RN-ELH-C102-4	Choke, 1 mH	
L 7, 8	RN-ELH-C680	Choke, 68 μH	
L11, 15	RN-ELL-320	Choke, filter, 1.8 mH	
L12, 14	RN-ELL-321	Choke, filter, .85 μH	
L13	RN-ELL-336	Choke, filter, 2.6 mH	
L16	RN-ELL-209	Choke, filter, 50 μH	
TRANSFORMERS			
T 1	RN-ETF-1006	FM IF	
T 2	RN-ETX-1005	AM ANT.	
T 3	RN-ETX-1004	AM ANT.	
T 4	RN-ELT-1003	AM Trap	
T 5	RN-ETH-1005	AM OSC.	
T 6	RN-ETA-1010	AM IF	
T 7	RN-ETA-1009	AM IF	
T 8	RN-ELT-1002	AM IF trap	
CERAMIC FILTER			
CF 1, 2	RN-EFC-F2-121	10.7 MHz	
CF 3	RN-EFC-E2-2	450 kHz (Band width : 6 kHz)	
CF 4	RN-EFC-E2-1	450 kHz (Band width : 4 kHz)	
MISCELLANEOUS ELECTRICAL			
	RN-ETV-1005	FM Front-end unit	
A 1	RN-EHM-C44-47A	P.B. Head	○
E 1	RN-EEM-1023	Plunger solenoid (head)	
E 2	RN-EEM-1020	Plunger solenoid (eject)	
EX 1	RN-EXC-1004	Crystal, 5.76 MHz	
EX 2	RN-EXB-CSA3R00MS	Crystal, 3 MHz	
M 1	RN-EDM-1012	DC Motor, Reel	○
M 2	RN-EDM-1019	DC Motor, Cap.	○
J 0	RN-EJL-1004A	Antenna receptacle	
J 1—P20	RN-EWJ-2602B	5-12P Connector and lead assembly	
J 2	RN-EWJ-2755	5P Connector and lead assembly	
J 3	RN-EWJ-2760A	3P Connector and lead assembly	
J 4	RN-EWJ-2728C	12P Connector and lead assembly	
J 5	RN-EWJ-2714C	10P Connector and lead assembly	
J 6	RN-EWJ-2754A	5P Connector and lead assembly	
J 7	RN-EWJ-2599A	7P Connector and lead assembly	
J 8	RN-EWJ-2600B	7P Connector and lead assembly	
J 9	RN-EWJ-2598B	6P Connector and lead assembly	
J10	RN-EWJ-2729A	6P Connector and lead assembly	
J11—J27	RN-EWJ-2940A	2P Connector and lead assembly	
J12	RN-EWJ-2725B	4P Connector and lead assembly	
J13	RN-EWJ-2684B	3P Connector and lead assembly	
J14	RN-EWJ-2726A	7P Connector and lead assembly	
J15	RN-EWJ-2727A	4P Connector and lead assembly	
J16	RN-EWJ-2715B	3P Connector and lead assembly	
J17	RN-EWJ-2597B	3P Connector and lead assembly	
J18—J30 J19—J31	RN-EWJ-3135	8P Connector and lead assembly 321 27289	
J23	RN-EWJ-2604A	8P Connector and lead assembly	
J25—J26	RN-EWJ-3133	Wiring sub assembly	
P 1	RN-EJU-S05V-511	5P Connector	
P 2, 17	RN-EJU-S05V-564	5P Connector	
P 3, 13, 16	RN-EJU-S03V-562	3P Connector	
P 4	RN-EJU-S12V-571	12P Connector	
P 5	RN-EJU-S10V-569	10P Connector	
P 6	RN-EJU-S05V-564G	5P Connector	
P 7, 14	RN-EJU-S07V-566	7P Connector	
P 8	RN-EJU-S07V-566G	7P Connector	
P 9	RN-EJU-S06V-512G	6P Connector	
P10	RN-EJU-S06V-512	6P Connector	
P12	RN-EJU-S04V-689	4P Connector	
P15	RN-EJU-S04V-563	4P Connector	

Symbol No.	Stock No.	Description	Remark
P18, 19	RN-EJU-S08V-809	8P Connector 265 47035	
P20	———	Included in J1	
P22	RN-EWP-1047	Wiring sub assembly, power supply	
P24	RN-EJU-S25W-637	25P Connector	
P26	RN-EWJ-3132	5P Connector and lead assembly	
P27	RN-EJU-S02V-561	2P Connector	
PC 1, 2	RN-EWJ-2601	Lead assembly	
PL 1	RN-EPM-1066	Lamp assembly	
PL 2~4	RN-EPM-1064	Lamp assembly	
PL 5, 6	RN-EPM-1065	Lamp assembly	
PL 7	RN-EPM-1061	Lamp assembly	
PL 8, 9	RN-EPM-1052	Lamp assembly	
PL10	RN-EPM-1040	Lamp assembly	
RY 1, 2 (S24, 25)	RN-EED-1024	DC Relay	○
RY 3, 4	RN-EED-35C	DC Relay	○
S 1, 2, 3,26,27	RN-ESB-2L2-189	Push switch	○
S 4	———	Included in RV21	
S5 ~13 S16~22	RN-ESZ-1001	Rubber	○
S14, 15, 23	———	Included in RV24	
S28	RN-ESM-1002A	Micro switch	○
S29	RN-ESL-1009A	Leaf switch	○
S30	RN-ESL-1007	Leaf switch	○
S24, 25	———	Included in RY1 and RY2	
F 1	RN-EFG-B03	Fuse, 3A	○

Illus. No. (Fig. 12)	Stock No.	Description	Q'ty	Remark
MECHANICAL				
1	RN-MAD-1075E	Chassis, main	1	
2	RN-MAD-1076A	Cover, top	1	
3	RN-MAD-1077B	Cover, bottom	1	
4	RN-MDP-1262	Escutcheon	1	O
5	RN-MCV-1148	Door	1	
6	RN-MBS-1008	Back plate, door	1	
7	RN-MSC-1129A	Spring, door	1	
8	RN-MWP-89A	Washer	2	
9	RN-MYC-1015	Knob, VOL. TUNE	2	O
10	RN-MYD-1029	Button, BAL. FADER	2	O
11	RN-MYB-1175	Button, UP/DOWN, FF, STOP, REW	3	O
12	RN-MYB-1176A	Button, SET	1	O
13	RN-MYB-1177	Button, CH	5	O
14	RN-MYB-1178	Button, AM/FM	1	O
15	RN-MYB-1179	Button, T/C	2	O
16	RN-MYB-1180	Button, REP	1	O
17	RN-MYB-1181A	Button, graphic equalizer	5	O
18	RN-MYB-1182A	Button, LOUD, DX, DOLBY NR, CrO_2	4	O
19	RN-MSB-1026C	Shield plate, digital	1	
20	RN-MIP-1077	Insulator, digital	1	
21	RN-MIP-1078A	Insulator, FM PC board	1	
22	RN-MIP-1079	Insulator, AM PC board	1	
23	RN-MIP-1080A	Insulator, deck	1	
24	RN-MIP-1134	Insulator, top cover	1	
25	RN-MIP-1082	Insulator, bottom cover	1	
26	RN-MIP-1083	Insulator, micro switch	1	
27	RN-MIP-1084A	Insulator, SW PC board	1	
28	RN-MIP-1135	Insulator, top cover	1	
29	RN-MLC-1095	Supporter	1	
30	RN-MLC-1075	Supporter	1	
31	RN-MIP-1138	Insulator	1	
32	RN-MSN-1	Nut, M9	2	
33	RN-MHE-1156A	Holder, SW	1	
34	RN-MSE-1078	Spacer	1	
35	RN-MSB-1027	Shield case, buffer PC	1	
36	F6-SBD-3×4S	Screw, 3×4mm	1	
37	RN-MHE-1160	Holder, P24	1	
38	RN-MPM-2224	PC board, SW	1	
39	RN-MPM-2327A	PC board, graphic equalizer	1	
40	RN-MPM-2560A	PC board, digital	1	
41	RN-MPM-2258A	PC board, FM Front-end	1	
42	RN-MPC-1214B	PC board, volume, fader	1	
43	RN-MPC-1280A	PC board, AM-FM	1	
44	RN-MPC-1217C	PC board, buffer	1	
45	RN-MPC-1218D	PC board, dolby NR	1	
50	F6-SBD-2.6×4S	Screw, 2.6×4mm	3	
51	F6-SBD-3×4S	Screw, 3×4mm	4	
52	F6-SSA-3×4S-M-ZN2A	Screw, 3×4mm	2	
53	RN-MET-1109	Special screw, 3×4mm	1	
54	RN-EZE-FA-20	Terminal, ground	1	
55	RN-MET-1054	Special screw, 2.6×4mm (tapping)	2	
56	F6-SBD-3×6S	Screw, 3×6mm	9	
57	F6-SBD-3×5S	Screw, 3×5mm	7	
58	RN-MCF-15	Clamp	3	
59	———	Washer (included in variavle resistors)	2	
60	F6-SBD-3×4S-M-ZN2A	Screw, 3×4mm (BLK)	9	
61	RN-MCF-140	Clamp	3	
62	RN-MHC-1050	Case	1	
63	RN-MCV-1261	Cover	1	
64	RN-MPM-2568	PC board, regulator	1	

CASSETTE DECK (MDK-46/9) (691 67073)

[CE-4131A]

Illus. No. (Fig. 13)	Stock No.	Description	Q'ty	Remark
1	RN-MAS-1028B	Chassis, main	1	
2	RN-MKI-1014/M	Insertion mechanism (assembly of following thirty parts)	1	
2- 1	RN-MYT-1020B	Sub-chassis	1	
2- 2	RN-EEM-1020	Plunger solenoid (E2)	1	
2- 3	RN-MUL-1125	Lever	1	
2- 4	RN-MSI-1018A	Shaft	1	
2- 5	RN-MSI-1019A	Shaft	1	
2- 6	RN-MSI-1021	Shaft	1	
2- 7	RN-MST-1022	Spacer	1	
2- 8	RN-MUB-1013A	Belt	1	O
2- 9	RN-MHE-1081	Holder	1	
2-10	RN-MHE-1082A	Holder	1	
2-11	RN-MUL-1072D	Lever	1	
2-12	RN-MUL-1073B	Lever	1	
2-13	RN-MUG-1021B	Gear	1	
2-14	RN-MUG-1022A	Gear	1	
2-15	RN-MUG-1023A	Gear	1	
2-16	RN-MUG-1047A	Gear	3	
2-18	RN-MSC-1066B	Spring	1	
2-19	RN-MSC-1069	Spring	1	
2-20	RN-MSC-1074C	Spring	1	
2-21	F6-SNA-2.5S-M-ZN2A	Screw, 2.5×3mm	2	
2-22	F6-SBD-2.6×4S	Screw, 2.6×4mm	1	
2-23	RN-MHJ-3	E-type ring, 3mm	3	
2-24	RN-MHJ-2	E-type ring, 2mm	1	
2-25	F6-ER-1.5	E-type ring, 1.5mm	1	
2-26	RN-MWP-1016	Washer	9	
2-27	RN-ESL-1009A	Leaf switch (S29)	1	O
2-29	F6-SNA-2×4S	Screw, 2×4mm	2	
2-30	RN-MST-1028	Spacer	2	
2-31	F6-ER-2	E-type ring, 2mm	2	
2-32	RN-MPM-2115B	PC Board	1	
3	RN-EHM-C44-47A	P.B. Head (A1)	1	
4	RN-MYT-1012C	Sub-chassis	1	
5	RN-ESM-1002A	Micro switch (S28)	1	O
6	RN-MSC-1128A	Spring	1	
7- 1	RN-MSC-1200	Spring	1	
7- 2	RN-MSC-252	Spring	1	
8	RN-MUG-1077	Gear	2	
9	RN-MWP-1026	Washer	2	
21	RN-EDM-1019	DC Motor (M2)	1	O
22	RN-MST-1021B	Spacer	1	
23	RN-MSS-1002	Spacer	2	
24	RN-EEM-1023	Plunger solenoid (E1)	1	
25	RN-MSC-1070A	Spring	1	
26	F6-PS-2×16SUS	Spring pin	1	
27	RN-MSE-1069	Spacer	1	
28	RN-MUL-1076C	Lever	1	
29	RN-MSC-1073	Spring	1	
30	RN-MRP-1021B	Roller	1	
31	RN-MPM-2114C	PC Board	1	
32	RN-MUL-1148	Lever	1	
33	RN-MSC-1124	Spring	1	
34	RN-MKR-1008B	Pinchroller assembly (R)	1	
35	RN-MSC-1077	Spring	1	
36	RN-MKR-1007C	Pinchroller assembly (L)	1	
37	RN-MSC-1078	Spring	1	
38	RN-MET-280A	Special screw	1	
39	RN-MST-133	Spacer	1	
40	RN-MRP-1020A	Roller	1	
41	RN-MUL-1080B	Lever	1	
42	RN-MSC-1067C	Spring	1	
43	RN-MUG-1034E	Gear	1	
44	RN-ESL-1007	Leaf switch (S30)	1	O
45	RN-MUL-1074D	Lever	1	
46	RN-MSC-1068C	Spring	1	
47	RN-MUG-1048A	Gear	1	
48	RN-MHE-1208	Holder	1	
49	RN-MSE-1066	Spacer	1	
50-1	RN-MYT-1068	Sub-chassis	1	

Illus. No. (Fig. 13)	Stock. No.	Description	Q'ty	Remark
50-2	RN-EDM-1012	DC Motor (M1)	1	O
50-3	RN-MRP-1022	Roller	2	
50-4	RN-MSE-1036	Spacer	2	
50-5	F6-SNA-1.6×5S	Screw, 1.6×5mm	2	
50-6	RN-MSE-1071	Spacer	2	
50-8	RN-MSE-1076	Spacer	2	
51	RN-MUG-1060	Gear	1	
52	RN-MKS-1006C	Slip mechanism	1	O
53	RN-MST-1020A	Spacer	1	
54	RN-EID-DN6838	Digital-monolithic IC (IC25, 26)	2	O
55	RN-MHE-1079B	Holder	2	
56	RN-MUL-1070A	Lever	1	
57	RN-MUL-1077A	Lever	1	
58	RN-MUL-1078C	Lever	1	
59	RN-MUF-1005A	Flywheel	2	
60	RN-MUB-1012A	Belt	1	O
61	RN-MUB-1023	Belt	1	O
62	RN-MUB-1011A	Belt	1	O
63	RN-MIP-1122	Insulator	2	
110	RN-MHE-1269	Holder	1	
111	RN-MIP-1110B	Insulator	1	
112	RN-MPM-2232	PC Board	1	
113	RN-MPM-2233A	PC Board	1	
114	RN-MRE-1035A	Radiator	1	
115	RN-MST-1027	Spacer	2	
116	RN-MET-1047B	Special screw	2	
117	RN-MRF-1006A	Radiator	1	
118	RN-MSE-1081	Spacer	1	
119	RN-MPC-1369A	PC Board	1	
120	RN-MPC-1222C	PC Board	1	
121	RN-MPM-2227B	PC Board	1	
130	RN-MHZ-1007A	Holder	1	
131	RN-MWP-1027	Washer	2	
132	RN-MHL-1032	Holder	1	
ASSEMBLY MATERIAL				
81	F6-ER-1.5	E-type ring, 1.5mm	4	
82	F6-ER-2	E-type ring, 2mm	1	
83	RN-MHJ-3	E-type ring, 3mm	6	
84	RN-MWP-80A	Washer	4	
85	RN-MWP-85	Washer	1	
86	RN-MWP-78	Washer	3	
87	F6-SBD-2×3S	Screw, 2×3mm	4	
89	F6-SSA-2.6×4S	Screw, 2.6×4mm	3	
90	F6-SBD-2.3×8S	Screw, 2.3×8mm	1	
91	F6-SBD-2×4S	Screw, 2×4mm	4	
92	F6-SBD-2.6×4S	Screw, 2.6×4mm	2	
93	F6-SSA-2×4S	Screw, 2×4mm	1	
94	RN-MET-242	Special screw, 3×3mm	5	
95	RN-MWP-1053	Washe,	2	
96	F6-SBD-3×3S	Screw, 3×3mm	1	
97	F6-SNA-2×3S	Screw, 2×3mm	3	
98	F6-SNA-2.6×3S	Screw, 2.6×3mm	4	
99	RN-MCF-15	Clamp	1	
100	RN-MWP-1039	Washer	1	
101	RN-MWP-1060	Washer	1	
102	F6-SBD-3×4S	Screw, 3×4mm	1	
103	RN-MCF-1009	Clamp	2	
104	F6-SNA-2.6×2.5S	Screw, 2.6×2.5mm	2	

Stock No.	Description	Q'ty	Remark
INSTALLATION SCREW (RN-MWA-1073)			
RN-MNR-D5S	Nut, 5mm	2	
RN-MCW-B5×8S	Screw w/washer, 5×8mm	2	
RN-MBW-C5×20S	Bolt w/washer, 5×20mm	2	
RN-MBW-C5×8S	Bolt w/washer, 5×8mm	1	
RN-MET-152	Stud bolt	1	
RN-MTN-A6-16	Tapping screw	3	
RN-MBW-C6×20S	Bolt w/washer, 6×20mm	2	
RN-MNR-D6S	Nut, 6mm	2	
F6-WM-6S	Washer, 6mm	2	

NOTE: Specifications subject to change without prior notice.