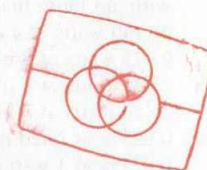


ONKYO SERVICE MANUAL

QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL R-200



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UG, UGV	220V AC, 50Hz
UW	120/220V AC, 50/60Hz
UQA, UQB	240V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

TABLE OF CONTENTS

Specifications	2
Service procedures	2
Exploded view	4
Parts list	5
IC block diagram and descriptions	6
Adjustment procedures	12
Pc board views	15
Main amplifier	15
Main circuit	15
Digital circuit	19
Headphone terminal	19
Tone circuit	19
Power supply	19
Volume	20
Equalizer amplifier	20
Band selector switch	20
Pc board parts list	17
Disassembling procedures	22
Block diagram	23
Packing view	24

ONKYO

AUDIO COMPONENTS

SPECIFICATIONS

AMPLIFIER SECTION

Power Output:	40 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.025% THD.
Musical Power Output:	2×140 watts at 4 ohms, 1kHz (DIN) 2×75 watts at 8 ohms, 1kHz (DIN)
Continuous Power Output:	2×65 watts at 4 ohms, 1kHz (DIN) 2×50 watts at 8 ohms, 1kHz (DIN)
Total Harmonic Distortion:	0.025% at rated power 0.025% at 1 watt output
IM Distortion:	0.025% at rated power 0.025% at 1 watt output
Damping Factor:	60 at 8 ohms
Frequency Response:	20 – 30,000Hz ± 0.5dB
RIAA Deviation:	20 – 20,000Hz ± 0.5dB
Sensitivity and Impedance:	Phono: 2.5mV/50 kohms CD/Tape Play: 150mV/50 kohms TapeRec: 150mV/2.2 kohms (PHONO)
Phono Overload:	120mV RMS at 1kHz, 0.025% THD
Signal-to-Noise Ratio:	Phono: 80dB (IHF A, 5mV input) CD/Tape: 102dB (IHF A)
Tone (Vol-30dB):	Tone-1: +6dB at 100Hz Tone-2: +9dB at 100Hz +5dB at 10kHz

Muting: —∞

TUNER SECTION

FM:

Tuning Range:	87.5 – 108.0 MHz (50kHz steps)
Usable Sensitivity:	Mono: 11.2dBf, 1.0μV, 70 ohms 0.9μV (S/N 26dB, 40kHz Dev.) 75 ohms DIN Stereo: 18.0dBf, 2.2μV, 75 ohms 23μV (S/N 46dB, 40kHz Dev.) 75 ohms DIN
50dB Quieting Sensitivity:	Mono: 18.0dBf, 2.2μV, 75 ohms Stereo: 37.2dBf, 20μV, 75 ohms

Capture Ratio:	1.5dB
Image Rejection Ratio:	85dB
IF Rejection Ratio:	90dB
Signal-to-Noise Ratio:	Mono: 73dB Stereo: 67dB
Selectivity:	50dB DIN (±300kHz, 40kHz dev.)
AM Suppression Ratio:	50dB
Harmonic Distortion:	Mono: 0.15% Stereo: 0.25%
Frequency response:	30 – 15,000Hz ± 1.5dB
Stereo Separation:	45dB at 1kHz 30dB at 100 – 10,000Hz

AM:

Tuning Range:	522 – 1611kHz (9kHz steps)
Usable Sensitivity:	30μV
Image Rejection Ratio:	40dB
IF Rejection Ratio:	40dB
Signal-to-Noise Ratio:	40dB
Harmonic Distortion:	0.7%

GENERAL

Power Supply:	European models: AC220V, 50Hz U.K. & Australian models: AC 240V, 50Hz Worldwide models: 120 and 220V switchable. 50/60Hz
Dimensions (W×H×D):	435×87×352mm
Weight:	7.0 kg
Supplied Accessories	<ul style="list-style-type: none"> • Remote control transmitter RC-153S × 1 • UM-3/R6/AA batteries × 2 • AM loop antenna × 1 • FM T-shaped antenna × 1 • RI remote control cable × 1

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

G (220V) model

Circuit no.	Part no.	Description
F901	252074	2A-SE-EAK, Primary
F902	252074	2A-SE-EAK, AC outlet

Q (240V) model

Circuit no.	Part no.	Description
F901	252074	2A-SE-EAK, Primary

W (Worldwide) model

Circuit no.	Part no.	Description
F901	252049	4A (ST-6), Primary
F902	252074	2A-SE-EAK, Primary

2. Memory preservation

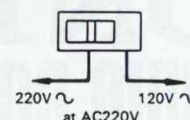
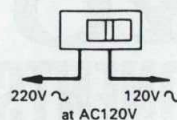
This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after

power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

3. Change of voltage

Worldwide models are equipped with a voltage selector to conform with local power supplies. This switch is located on the back panel. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

This switch is set to 220V at the factory. Voltage is changed by sliding the groove in the switch with the screw-driver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.



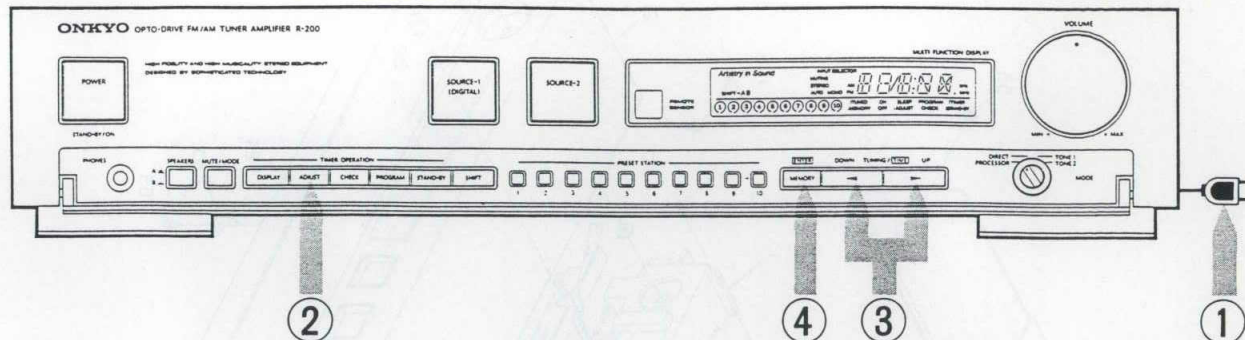


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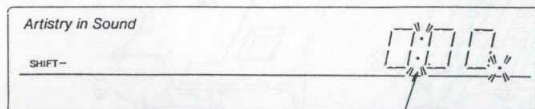
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4. How to Set the Current Time

Make sure to adjust the time to the current time before setting the timer. Also do the same adjustment after a power failure has occurred or the power cord has been unplugged.



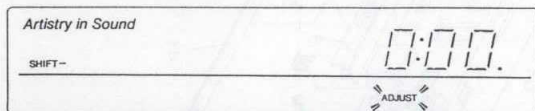
- ① Plug the power cord to a power socket after completing all the connections between the components. The dots then flash.



These dots are flashed when the power stoppage is interrupted.

- ② Press the ADJUST button.

- The ADJUST indicator below the numbers flashes.



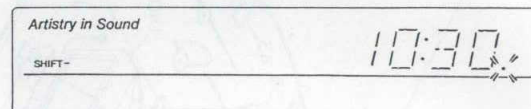
- ③ Adjust the time by pressing the UP ► or DOWN ◀ button.
 - Each press of the UP ► or DOWN ◀ button increases or decreases the time by one minute. Pressing the buttons for more than 0.5 seconds changes the time fast. Pressing

the buttons for more than 3 seconds changes the time even faster.

- The time is indicated in 24-hour display.

- ④ Press the **ENTER** button.

- The ADJUST indicator goes out and the dots flash. The clock then starts. Pressing the **ENTER** button according to an announcement of time on the radio or TV enables an accurate time adjustment to the level of second.



NOTE:

The time adjustment is also possible when the Power Switch is off.
The timer reservation cannot be set unless the current time has been set.

5. Change of FM/AM band step.

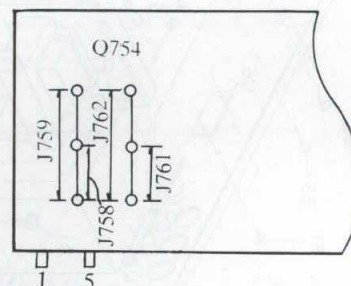
With the exception of the UG and UQ models, a BAND STEP selector switch is not provided.

(FM)

BAND STEP	J762	J761
200kHz→ 50kHz	short	open
50kHz→200kHz	open	short

(AM)

BAND STEP	J758	J759
10kHz→ 9kHz	short	open
9kHz→10kHz	open	short



—Worldwide model—

Worldwide models are equipped with a step band selector switch. This switch is located on the back panel. This switch is set to 50kHz (FM) and 9kHz (AM) at the factory, but may have to be reset to 200kHz and 10kHz depending on the area where the unit is used.

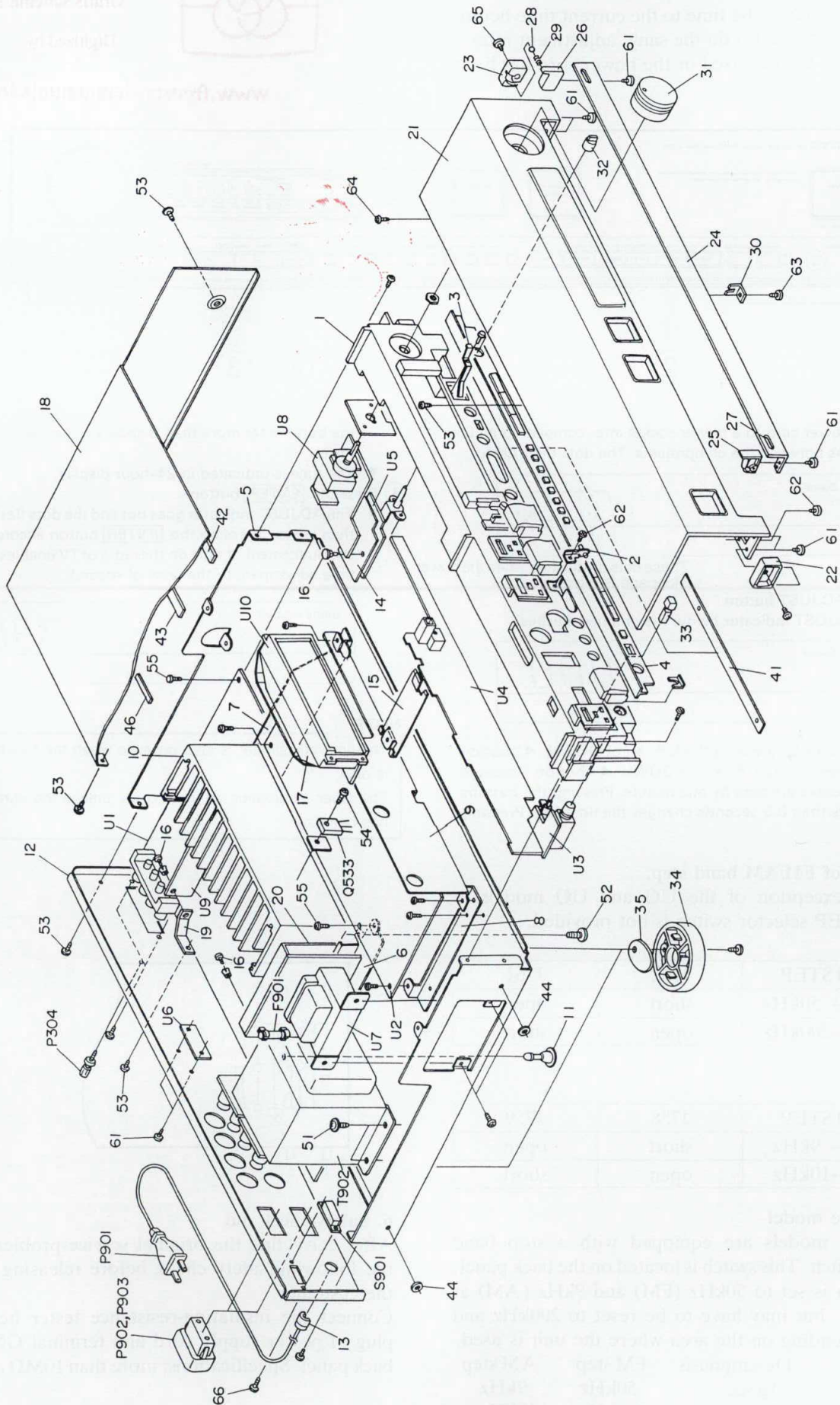
	De-emphasis	FM step	AM step
Europe:	50 μ sec	50kHz	9kHz
U.S.A.:	75 μ sec	200kHz	10kHz

6. Safety-check out

After correcting the original service problem perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel. Specifications: more than 10M Ω at 500V.

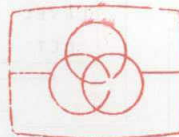
EXPLODED VIEW



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110443B	Front bracket ass'y	U5	1A185527-1	NASW-3627-1, Tone circuit pc board ass'y
2	27141289	Bracket, door	U6	1A185526-1	NASW-3626-1, Band selector switch pc board ass'y <W>
3	27180410	Compressive spring	U7	1A185528-1A	NAPS-3628-1A, Power supply pc board ass'y <G>
4	27190664-1A	Holder knob	U8	1A185528-1B	NAPS-3628-1B, Power supply pc board ass'y <W>
5	27100172A	Chassis	U9	1A185528-1C	NAPS-3628-1C, Power supply pc board ass'y <Q>
6	27141286	Bracket L	U10	1A185529-1	NAAF-3629-1, Volume pc board ass'y
7	27141287A	Bracket R	U9	1A185530-1A	NAAF-3630-1A, Equalizer amplifier pc board ass'y
8	27141288	Bracket FL	U10	24190013	LTAE6081A, LCD ass'y
9	27130554	Bracket F		210197	14V, 240mA, Lamp for LCD
10	27160233	Radiator			
11	27190511	Holder			
12	27121183-3	Back panel <G>			
13	27121183-4	Back panel <W>			
14	27121183-5A	Back panel <Australian model>			
15	27121183-6	Back panel <U.K. model>			
16	27300750	Bushing(strainrelief)			
17	28175153	Insulating plate			
18	27141290	Bracket K			
19	880009	Rivet			
20	27225102	Shield case (LCD)			
21	28184412	Top cover			
22	27141344	Bracket, equalizer			
23	28175161	Insulating plate L			
24	1A185121	Front panel ass'y			
25	28180098	Holder L, hinge			
26	28180099	Holder R, hinge			
27	28148230	Door			
28	28180100	Hinge L			
29	28180101	Hinge R			
30	28323479	Knob, DOOR			
31	270555	Stellball			
32	27180401	Spring			
33	27190667	Holder, door			
34	28323473	Knob VOLUME			
35	28323584	Knob SELECTOR			
36	28323475A	Knob SPEAKER			
37	27175190	Leg			
38	28140985	Cushion			
39	28140982	t3×30×10, Cushion			
40	27190733	Holder			
41	28140893	Cushion			
42	28140720	t0.5×150×10, Cushion			
43	28140907	t2×90×4, Cushion			
44	27270212	Spacer			
45	28140955	t3×60×10, Cushion			
46	28140983	t2×45×4, Cushion			
47	830440089	4TTC+8C(BC), Tapping screw			

NOTE: <G>: Only 220V model
<W>: Only Worldwide model
<Q>: Only 240V model



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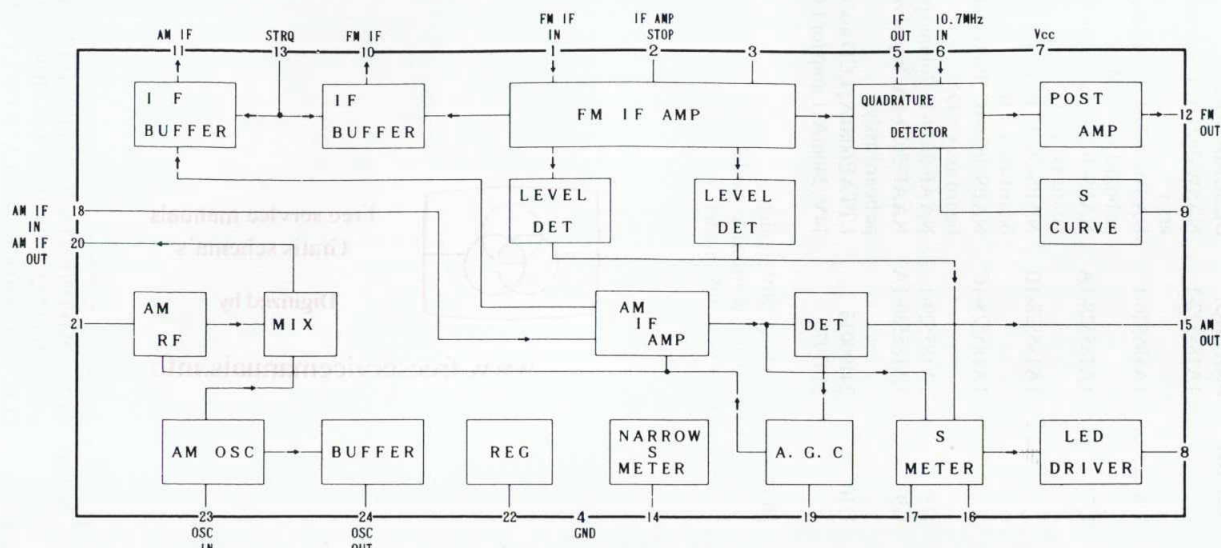
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NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

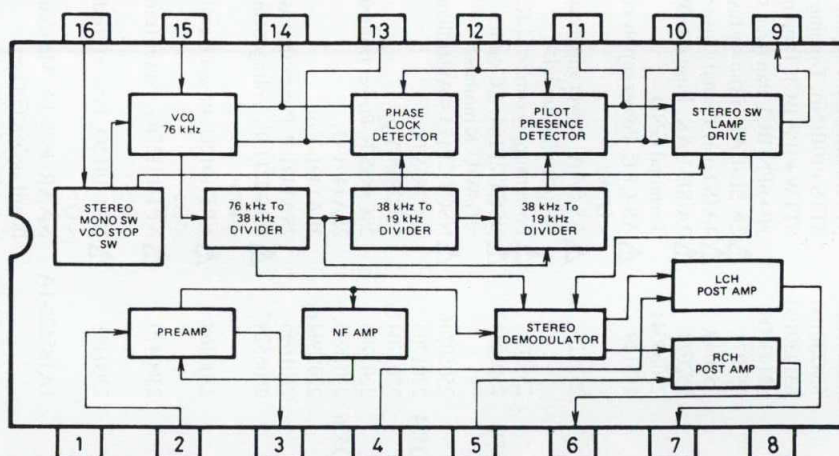
Q103

LA1266 (FM IF & AM radio system)



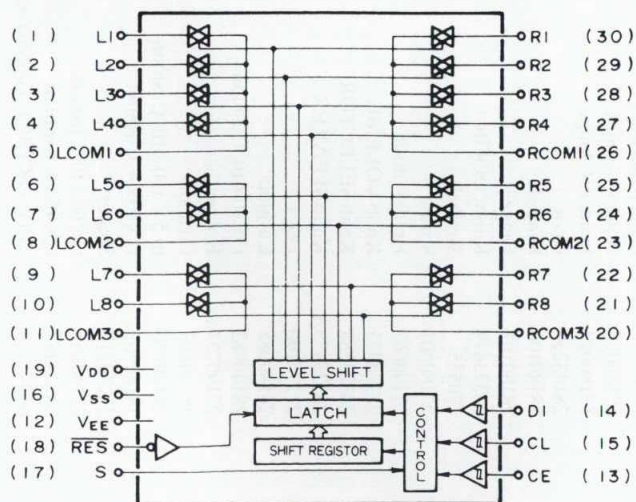
Q201

AN7470 (FM stereo decoder)

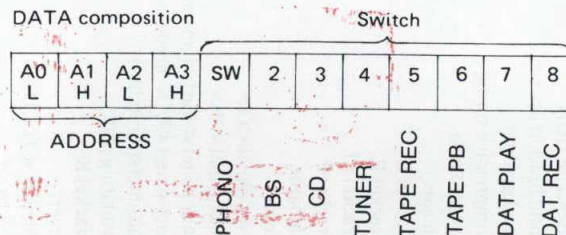


Q301

LC7821 (Analog switch)



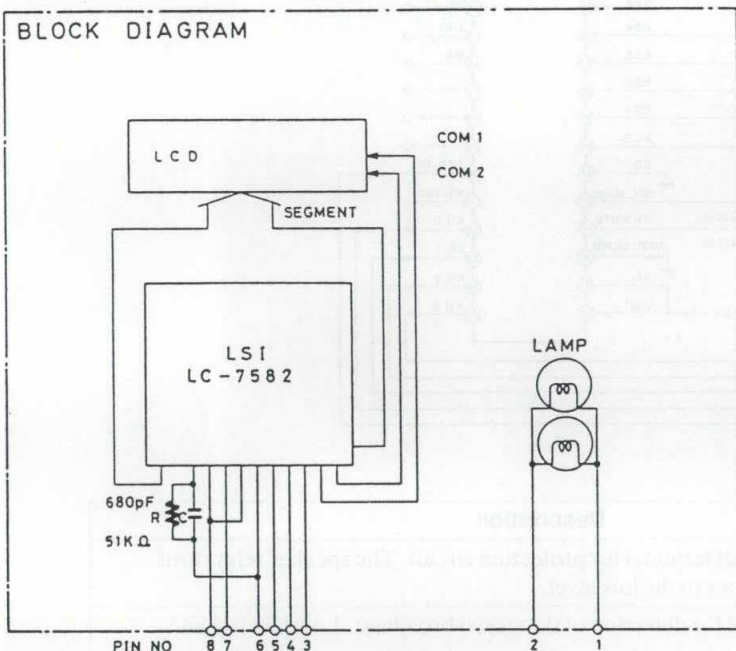
DATA composition



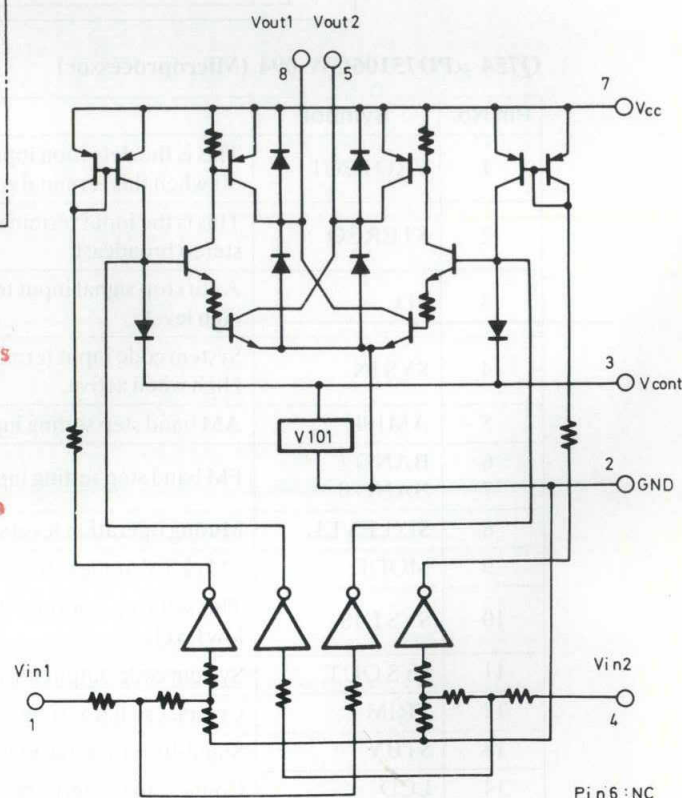
The source becomes ON when the bit of switch becomes high.

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	PHONO	Input/output terminals of audio signal of right channel. Control to the inside analog switch at the serial data.	16	Vss	Ground terminal.
2	BS		17	S	Selector terminal.
3	CD		18	RES	Reset terminal. When power is turned ON, the condition of the analog switch is not determined, but when this terminal is "L", all analog switches are OFF.
4	TUNER		19	VDD	Power supply terminal. (+V)
5	L COM 1		20	R COM 3	Input/output terminals of audio signal of left channel. Control to the inside analog switch at the serial data.
6	TAPE REC		21	DAT REC	
7	TAPE PLAY		22	DAT PLAY	
8	L COM 2		23	R COM 2	
9	DAT PLAY		24	TAPE PB	
10	DAT REC		25	TAPE REC	
11	L COM 3		26	R COM 1	
12	Vss	Negative power supply terminal. (-15V)	27	TUNER	
13	CE	Chip enable terminal. Connect to SEL terminal of μ PD75106CW-094.	28	CD	
14	DI	Serial data input terminal. Connect to DATA terminal of μ PD75106CW-094.	29	BS	
15	CL	Serial clock input terminal. Connect to CLOCK terminal of μ PD75106CW-094.	30	PHONO	

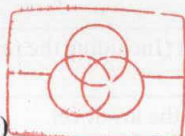
LCD-AS



Pin no.	Function
1	LAMP AC12V
2	LAMP AC12V
3	DATA
4	CLK
5	CE
6	Vss
7	INH
8	VDD



Q364 LB1630 (Motor drive)

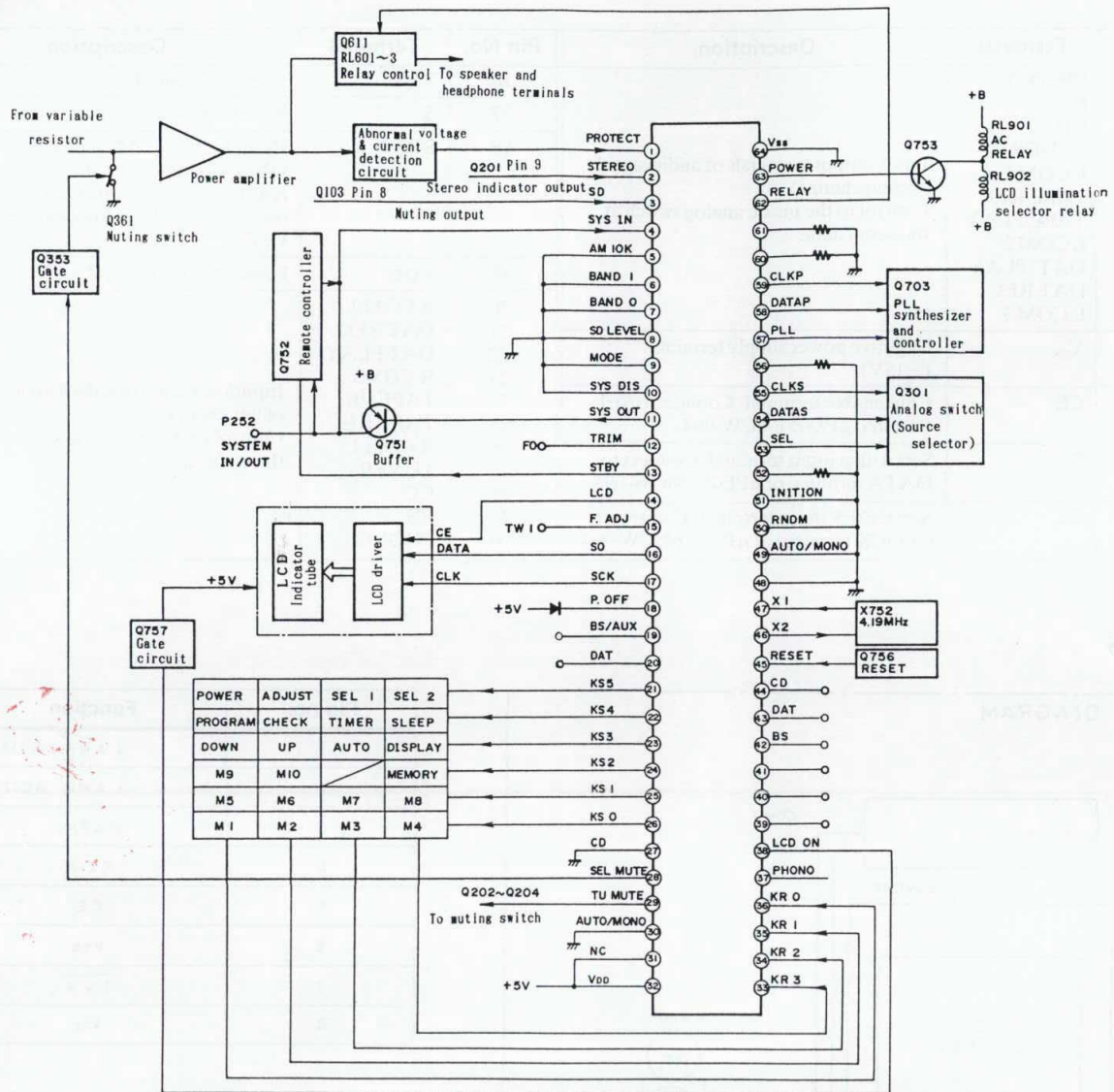


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TRUTH TABLE

IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	Normal
L	H	L	H	Reverse
H	H	OFF	OFF	Wait
L	L	OFF	OFF	Wait

Q754 μ PD75106CW-094 (Microprocessor)

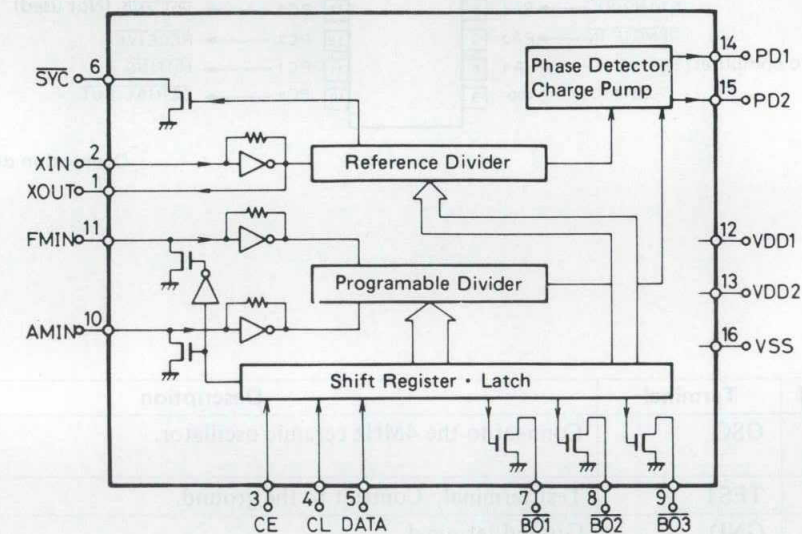
Pin No.	Symbol	Description
1	PROTECT	This is the detection input terminal for protection circuit. The speaker relay turns off when this terminal goes to the low level.
2	STEREO	This is the input terminal for detection of the stereo broadcast. Low level when stereo broadcast.
3	SD	Auto stop signal input terminal. Auto tuning stops when this terminal goes to the high level.
4	SYS IN	System code input terminal from the other product (Including the remote control) High when active.
5	AM10K	AM band step setting input terminal .9kHz step at the low level.
6	BAND 1	FM band step setting input terminal. Refer to initial setting terminal descriptions.
7	BAND 0	
8	SD LEVEL	Muting operation level setting input terminal. Muting level low at the low level.
9	MODE	FM or TV mode setting input terminal. FM mode at the low level.
10	SYS DIS	This is the operation setting input terminal for system code. Operation at the low level.
11	SYS OUT	System code output terminal to other product. Active low.
12	TRIM	Crystal oscillator frequency adjustment terminal.
13	STBY	Stand-by output terminal .5V when the power turns on.
14	LCD	Connect to the terminal CE of LCD driver LC7852.

15	F. ADJ	Crystal oscillator adjustment mode when test points TW1 and TW2 are connected.
16	SO	Connect to the terminal DATA of LC7852.
17	SCK	Connect to the terminal CLK of LC7852.
18	P OFF	This is the input terminal for detection of the stoppage of electric current. "H" when the stoppage of electric current.
19	BS/AUX	BS/AUX video signal control output terminal. Not used.
20	DAT	DAT video signal control output terminal.
21	KS5	These are the auto scan output terminals. 5V when the operation switch is operated.
22	KS4	
23	KS3	
24	KS2	
25	KS1	
26	KS0	
27	CD	CD video signal control output terminal.
28	SEL MUTE	Muting output terminal when the source selector switch is operated.
29	TU MUTE	Tuner muting output terminal.
30	AUTO/MONO	AUTO/MONO selection output terminal.
31	NC	No connection.
32	VDD	This is the power supply terminal. Connect to 5V.
33	KR3	These are the key scan input terminals.
34	KR2	
35	KR1	
36	KR0	
37	PHONO	Low level when the source selector is PHONO.
38	LCD ON	LCD lighting output terminal. Active high.
39		Not used.
40		
41		
42	BS	Input selection indication output terminal for video. Active low.
43	DAT	
44	CD	
45	RESET	Reset input terminal. Active low.
46	X2	Connect to 4.19MHz crystal oscillator.
47	X1	
48		Not used.
49	AU-MO	Setting input terminal for AUTO/MONO operation of PLL IC LM7001. AUTO/MONO operation is operated at the low level.
50	RNDM	Setting input terminal for station memory.
51	INITON	Setting input terminal for condition when the power is turned on.
52		Not used.
53	SEL	Connect to the terminal CE of analog switch LC7821.
54	DATAS	Connect to the terminal D1 of analog switch LC7821.
55	CLKS	Connect to the terminal CL of analog switch LC7821.
56		Not used.
57	PLL	Connect to the terminal CE of PLL IC LM7001.
58	DATAP	Connect to the terminal DATA of PLL IC LM7001.
59	CLKP	Connect to the terminal CLK of PLL IC LM7001.
60		Not used.
61		
62	RELAY	This is the control output terminal for speakers and headphone relays. Active high.
63	POWER	This is the control output terminal for AC outlet relay and LCD illumination setting relay. Active high.
64	V _{SS}	Connect to the ground terminal.

Initial setting terminal descriptions

Terminal	Function descriptions			
AM10K	AM band setting input terminal.			
	AM10K	Frequency range	Channel step	Reference frequency
	L	522~1611kHz	9kHz	9kHz
AM10K	H	530~1620kHz	10kHz	10kHz
	FM band setting input terminal.			
	BAND0	BAND1	Frequency range	Channel step
	H	H	87.50~108.00MHz	50kHz
	H	L	87.9 ~107.9 MHz	200kHz

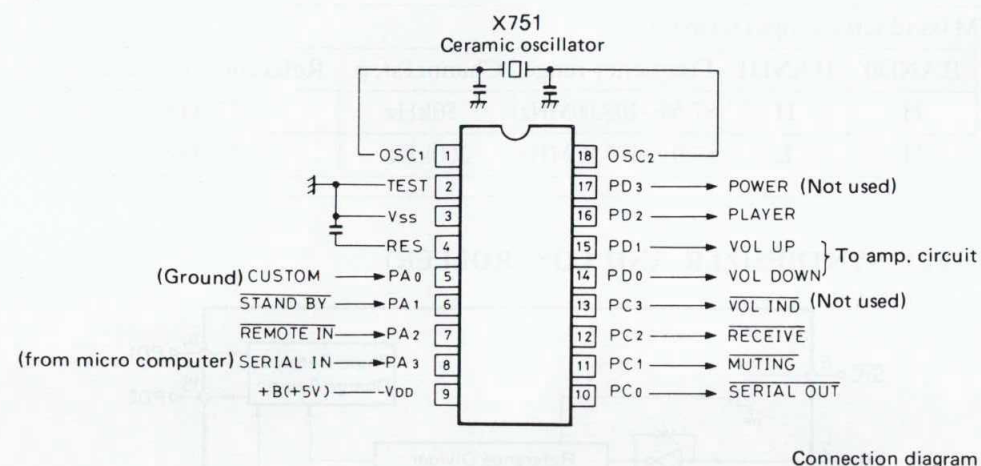
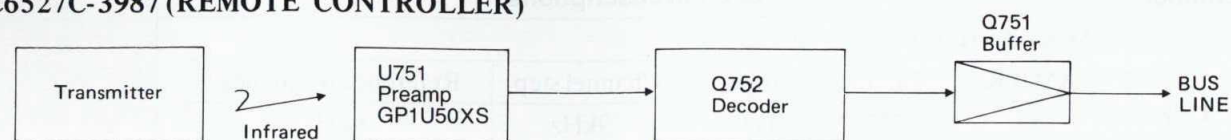
Q703 LM7001 (PLL SYNTHESIZER AND CONTROLLER)



Pin No.	Terminal	Description
1	XOUT	Connect to the 7.2 MHz crystal oscillator.
2	XIN	
3	CE	Chip enable terminal. Connect to the PLL terminal of μ PD75106CW-094.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of μ PD75106CW-094.
5	DATA	Serial data input terminal. Connect to the DATA terminal of μ PD75106CW-094.
6	SYN	Not used.
7	BO1	AUTO/MONO selector output terminal. "L" when AUTO.
8	BO2	FM control signal output terminal. "L" when FM.
9	BO3	AM control signal output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD1	Power supply terminal for back-up.
13	VDD2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	VSS	Ground terminal.

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Q752 LC6527C-3987 (REMOTE CONTROLLER)



Connection diagram

Terminal No.	Symbol	Terminal	Description
1 18	OSC1 OSC2	OSC	Connect to the 4MHz ceramic oscillator.
2	TEST	TEST	Test terminal. Connect to the ground.
3	Vss	GND	Ground terminal.
4	RES	RES	Reset terminal.
5	PA0	CUSTOM	The custom code for decode is selected at this terminal. For European model, the level is low.
6	PA1	STANDBY	Terminal for STANDBY detection. During low input, only the POWER code is decoded.
7	PA2	REMOTE IN	Signal input terminal for remote control preamp. Active low.
8	PA3	SERIAL IN	Serial data input terminal from microprocessor.
9	VDD	+B	Power supply terminal. (+5V)
10	PC0	SERIAL OUT	Output at this terminal are the custom code (16 bit) remote control code input to REMOTE IN, data code (8 bit), and the serial code (12 bit) that has been converted corresponding to the decoded data code (8 bit).
11	PC1	MUTING	At this terminal, the audio muting code that is input is inverted for each L/H. When power is ON, the level is high. (Not used)
12	PC2	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being received. (Not used)
13	PC3	VOL IND	During output of VOLUME UP/DOWN, a pulse ($\sqrt{T \cdot I \cdot T}$; $T = 0.3ms$) is output. (Not used)
14	PD0	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
15	PD1	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
16	PD2	PLAYER	When the player PLAY/REJECT is input, a high pulse of 200ms is output. (Not used)
17	PD3	POWER	The power code input inverts the L/H. Level is high for power being turned ON.

ADJUSTMENT PROCEDURES

Preparation

• Input

FM mono: 1kHz, 75kHz devi., 60dB/ μ V
FM stereo: 1kHz, L+R 67.5kHz devi.: Pilot signal
19kHz 7.5kHz devi.
AM: 400Hz, 30% mod.,

• Output

Connect the non-inductive type resistor of 8 ohms to the speaker terminal A of left and right channels unless otherwise noted.

• Standard knob position

Input selector CD
MUTING OFF
MODE DIRECT
VOLUME Maximum
SPEAKER A

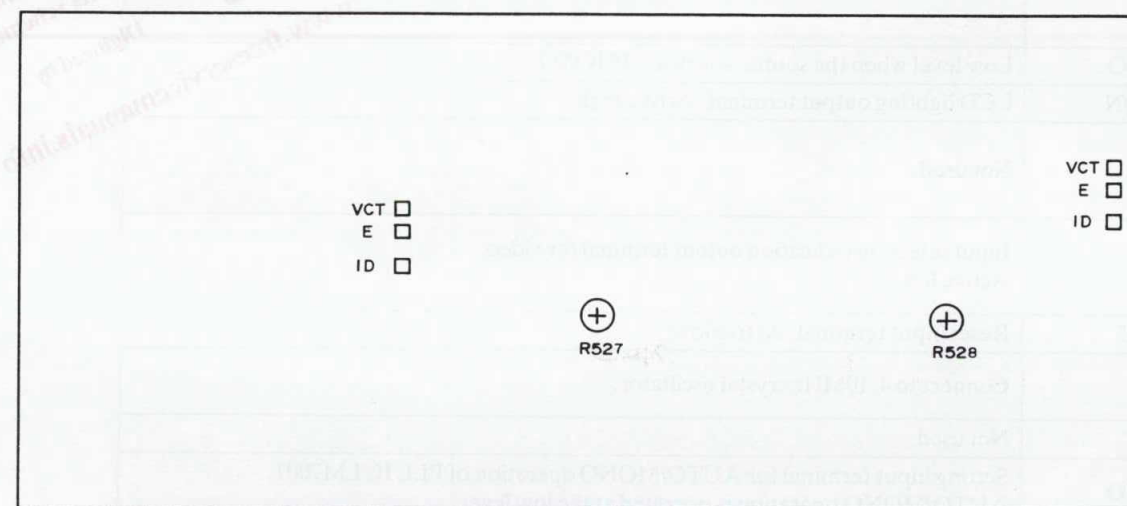
Amplifier section

Idling current adjustment

Connect the DC voltmeter to the terminals I_{ID} and V_{CT} on the power amplifier pc board.

Adjust the semi-fixed resistors R527 and R528 so that the indication of voltmeter is $3.5 \pm 0.5mV$.

Notes: VOLUME Maximum, Open load,
Adjust after switching on for 5 minutes.



Clock Frequency adjustment

Remove the top cover and front panel.

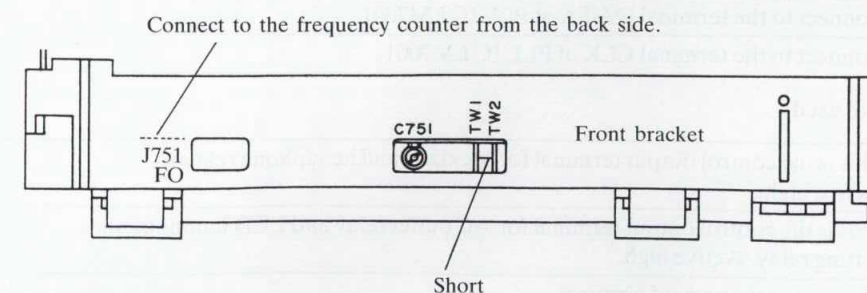
Set the input selector switch to FM.

Set the tuning to 98.00MHz.

Short between terminals TW1 and TW2 with the short clip, and connect the frequency counter to terminal FO(J751).

Adjust C751 so that the counter reading becomes $1,048,578 \pm 3Hz$.

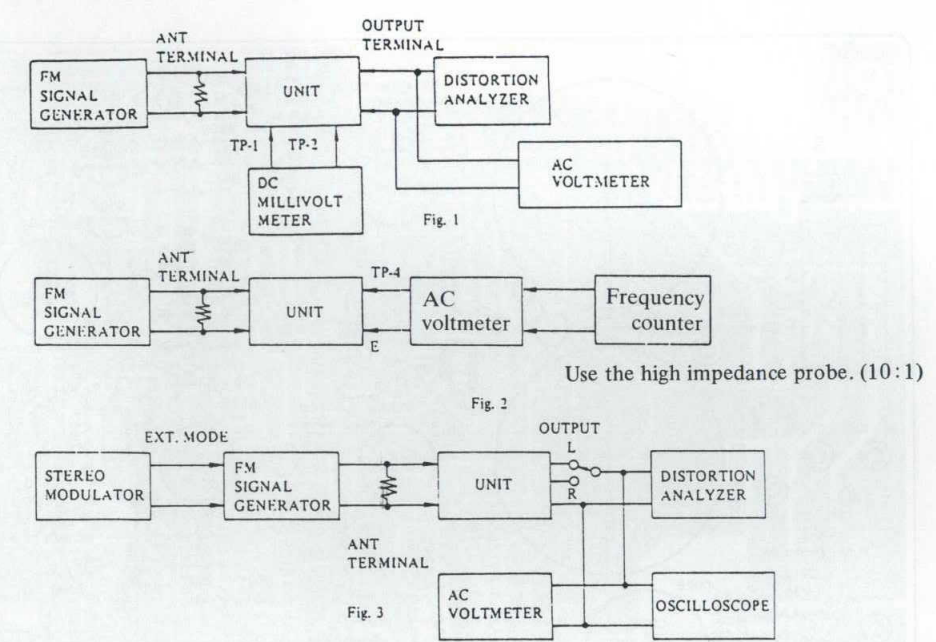
After adjustment, disconnect the short clip and frequency counter.



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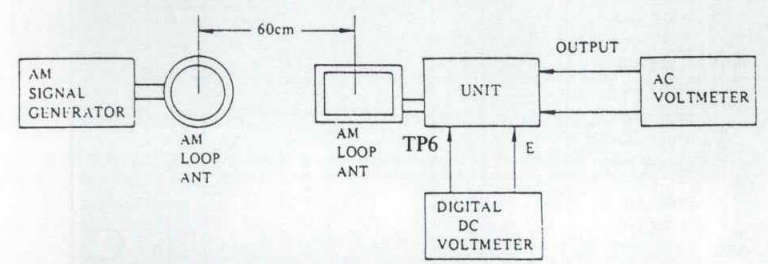
FM section

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Turning dial setting	Output indicator	Adjustment	Adjust for	Remarks
FM IF	1	Fig. 1	98.00MHz 1kHz, 75kHz devi. 65dBf (60dB)	—	98.00MHz	DC voltmeter	L101	0V ± 30mV	Mode switch: MONO Repeat the steps 1 and 2 until no further adjustment is necessary
	2					Distortion analyzer	L102	Minimum	
TUNED indicator level	1	Fig. 2	98.00MHz 19.2dBf (14dB)	—	98.00MHz	TUNED indicator	R101	Light on	Remove R102 when this adjustment can not.
	2		98.00MHz 18.2dBf (12dB)					Light off	
VCO		Fig. 2	98.00MHz 1kHz, 75kHz devi. 65dBf (60dB)	—	98.00MHz	Frequency counter	R201	19kHz ± 10Hz	Mode switch STEREO
Stereo Distortion		Fig. 3	98.00MHz 65dB (60dB) Ext. modulation	L or Rch. 1kHz	98.00MHz	Distortion analyzer	IF on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig. 3	98.00MHz 65dBf (60dB) Ext. modulation	Lch. 1kHz	98.00MHz	Rch. AC voltmeter	R202	Minimum	Maximum and same separation
	2			Rch. 1kHz		Lch. AC voltmeter		Minimum	

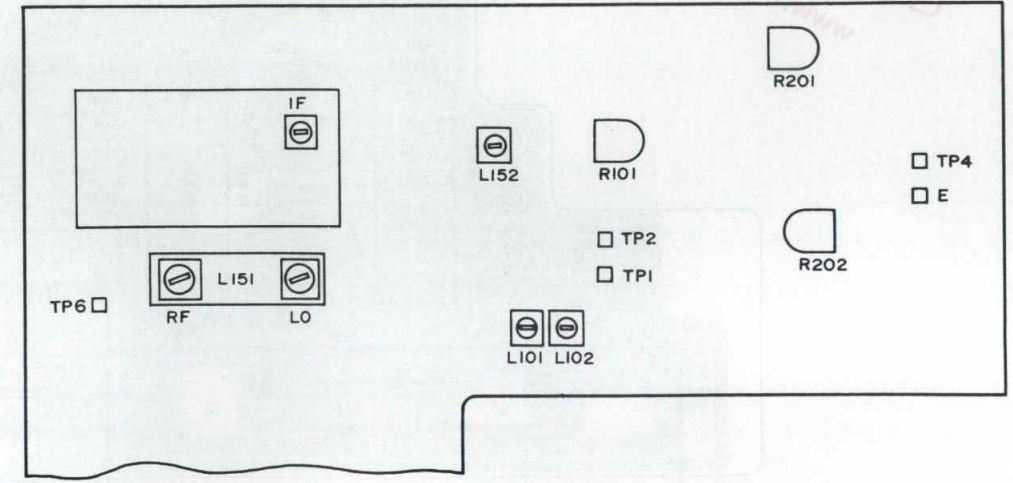


AM section

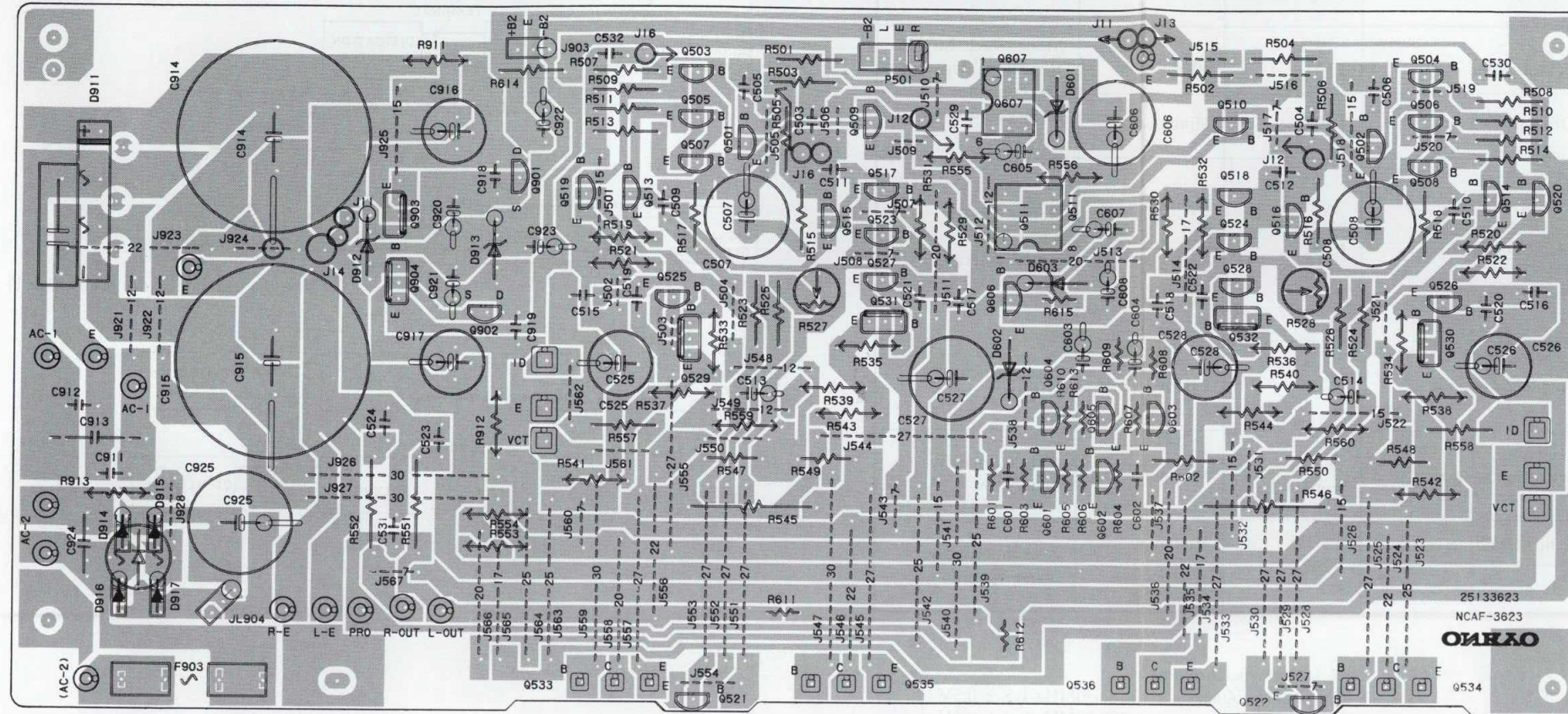
Step	AM SG output	Tuned frequency	Output indicator	Adjustment point	Adjust for
1		522kHz	Digital DC voltmeter	OSC on RF block (L151)	1.3V ± 0.1V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF on RF block (L151)	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L152	Maximum & TUNED indicator lights on



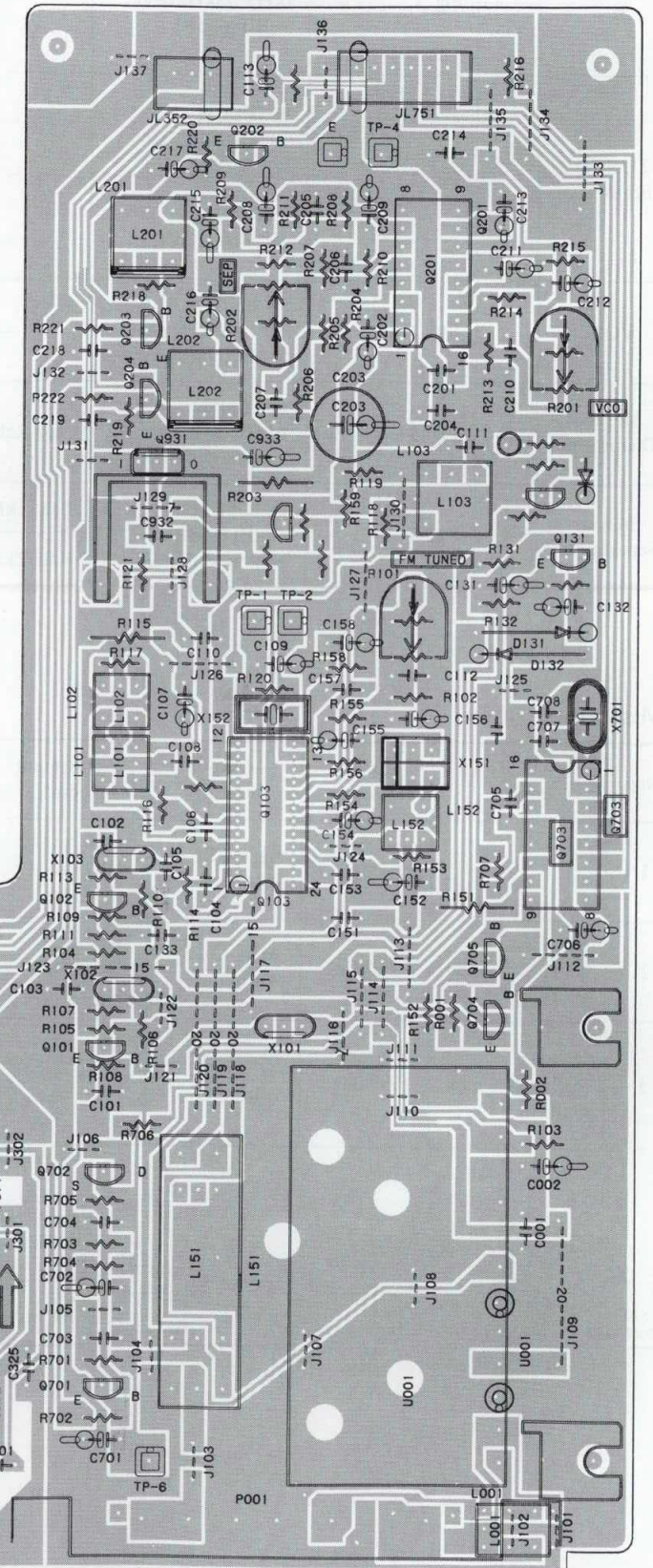
Reference specifications
FM Tuned voltages 87.50MHz 1.5 ± 0.5V
108.00MHz 8.0 ± 0.5V
Auto stop level AM: Less than 68dB/m
FM: Less than 16 dBμ
AM Tuned voltage 522kHz 1.3 ± 0.5V
1611kHz 7.5 ± 0.5V



PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



MAIN AMPLIFIER PC BOARD



MAIN CIRCUIT PC BOARD

①
○ MAIN CIRCUIT PC BOARD(NAAR-3622-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
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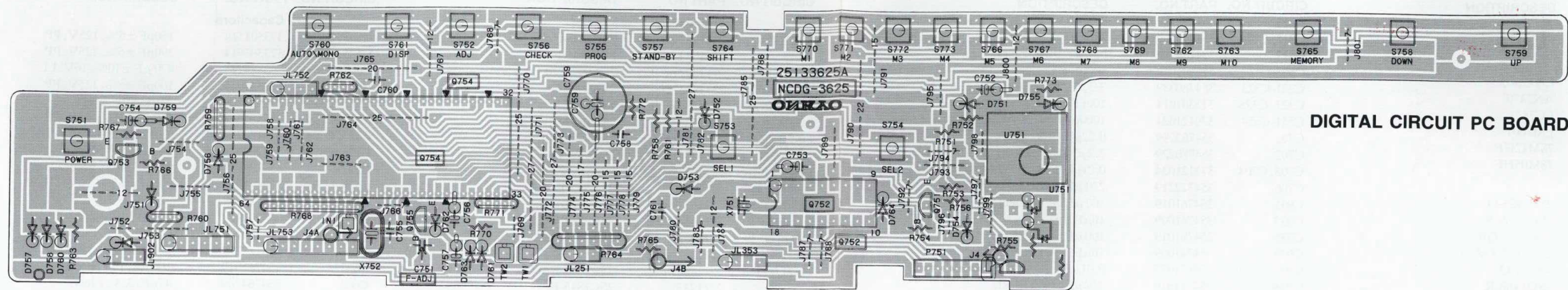
CAUTION: Replacement for transistor of mark ☆, if necessary, must be made from the same beta group (H_{FE}) as the original type.

Ex.	2SC3855-O	2SA1491-O
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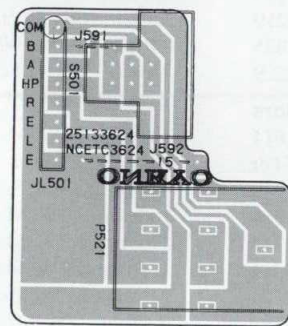
Same beta group

NOTE: <G> Only 220V model
<Q> Only 240V model
<W> Only Worldwide model

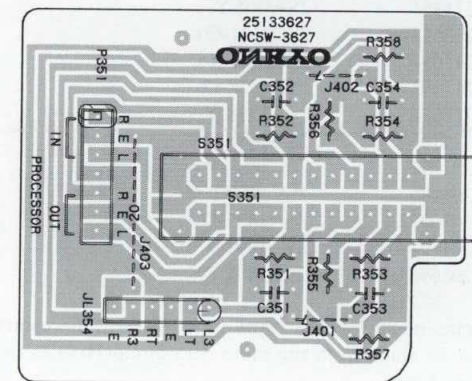
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



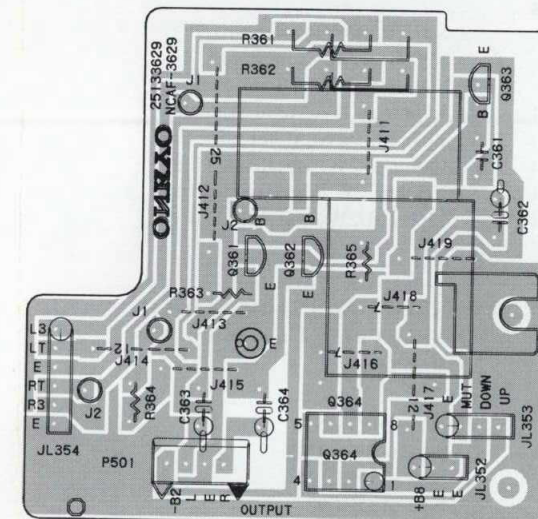
DIGITAL CIRCUIT PC BOARD



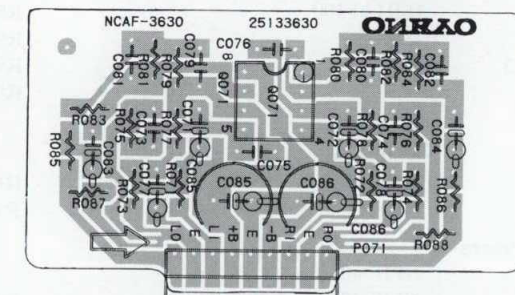
HEADPHONE TERMINAL PC BOARD



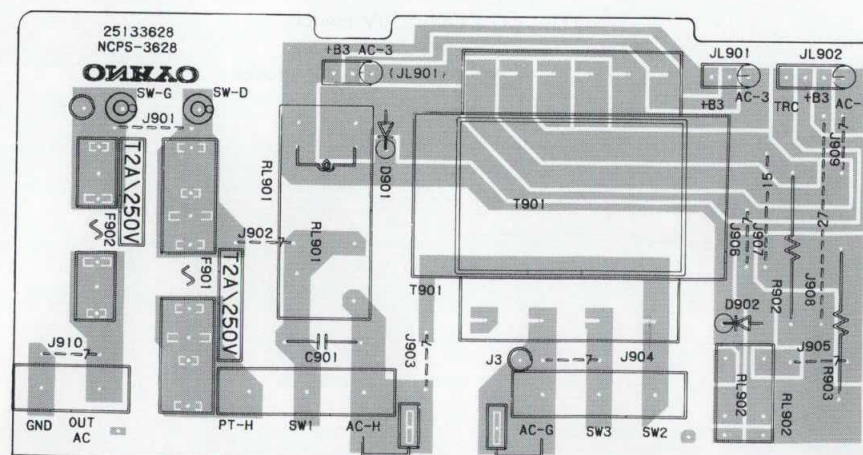
TONE CIRCUIT PC BOARD



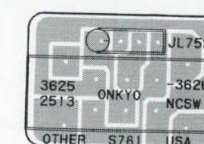
VOLUME PC BOARD



EQUALIZER AMPLIFIER PC BOARD



POWER SUPPLY PC BOARD



BAND SELECTOR SWITCH PC BOARD
(Only Wolrdwide model)

PRINTED CIRCUIT BOARD PARTS LIST

HEADPHONE TERMINAL PC BOARD (NAETC-3624-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
S501	25035592	NPS-122-L554, Speaker switch
P521	25045135	HLJ4307-01-3010, Stereo headphone terminal

DIGITAL CIRCUIT PC BOARD (NADG-3625-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
Remote sensor		
U751	24130003	GP1U501XS
Transistors		
Q751	2212600	DTA124ES
Q753	2211256	2SC1815-BL
Q755	221282	DTC144ES
ICs		
Q752	22240243	LC6527C-3987
Q754	22240193	μ PD75106CW-094
Diodes		
D751	224450562	MTZ5.6B
D752-D764	223163	1SS133
Osc elements		
X751	3010150	CST4.00MGW, Ceramic
X752	3010121A	XTL-4.19M, X'tal
Capacitors		
C751	3060024	NTC-30P21, Trimmer
C752	353721019	100 μ F, 6.3V, Elect.
C753, C757	353780109	1 μ F, 50V, Elect.
C754	353741009	10 μ F, 16V, Elect.
C756	354742209	22 μ F, 16V, Elect.
C759	3000051 or 3020027	0.047F, 5.5V Super
Resistors		
R759	49163104404	100kohm \times 4, 1/10W, Network
R760	49163332403	3.3kohm \times 3, 1/10W, Network
R762	49163104403	100kohm \times 3, 1/10W, Network
R764	49121104405	100kohm \times 5, 1/8W, Network
R768	49163104411	100kohm \times 11, 1/10W, Network
R771	49163103404	10kohm \times 4, 1/10W, Network
Switches		
S751-S773	25035548	NPS-111-S510
Socket		
P751	2000608	NSAS-16P564

BAND SELECTOR SWITCH PC BOARD (NASW-3626-1) (Only Worldwide model)

CIRCUIT NO.	PART NO.	DESCRIPTION
S781	25065267	NSS-22109

TONE CIRCUIT PC BOARD (NASW-3627-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
C353, C354	379123334	0.033 μ F \pm 5%, 50V, Capacitor DEW
S351	25030306	NRSF-144-20SS, Rotary switch, MODE
P351	2000895	NSAS-14P851, Socket

POWER SUPPLY PC BOARD (NAPS-3628-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
D901	223163	1SS133, Diode
T901	2300467	Δ NPT-1011G, Power transformer <G>

2300469	Δ NPT-1011DG, Power transformer <W>
2300484	Δ NPT-1011Q, Power transformer <Q>
3500065A	Δ DE7150FZ103P AC400V/125V, Capacitor IS
441723604	36ohm, 2W, Metal oxide film resistors
25065248	NRL-1P15A-DC-12-29, Relay
25065370	NRL-1P1A-DC12-056, Relay
250113	Δ SN5051, Fuseholder <W>
25050065	Δ YSH4037, Fuseholder <G/Q>
25050065	Δ YSH4037, Fuseholder <G/W>
252049	Δ 4A(ST-6), Fuse, primary <W>
252074	Δ 2A-SE-EAK, Fuse, primary <G/Q>
252074	Δ 2A-SE-EAK, Fuse, primary <G/W>
28175137	Insulating plate

VOLUME PC BOARD (NAAF-3629-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
Transistors		
Q361, Q362	2212285 or 2212286	2SC2878-A or 2SC2878-B
Q363	2212600	DTA124ES
IC		
Q364	222963	LB1630
Capacitors		
C361	371124734	0.047 μ F \pm 5%, 50V, Mylar
C362	354741009	10 μ F, 16V, Elect.
C363, C364	392850477	4.7 μ F, 25V, LL
Resistor		
R361, R362	5104243	N16RGM100KBTP25F, Variable, VOLUME
Plug		
P501	25055134	NPLG-4P118

EQUALIZER AMPLIFIER PC BOARD (NAAF-3630-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q071	222570 or 22240191	NJM4560D-X or NJM4565D-D, IC
C071, C072	354780229	2.2 μ F, 50V, Elect. capacitors
C073, C074	372121514	150 pF \pm 5%, 50V, Styrol capacitors
C075, C076	372121024	1000pF \pm 5%, 50V, Styrol capacitors
C077, C078	354721019	100 μ F, 6.3V, Elect. capacitors
C079, C080	371126224	6200pF \pm 5%, 50V, Mylar capacitors
C081, C082	371121824	1800pF \pm 5%, 50V, Mylar capacitors
C083, C084	354780229	2.2 μ F, 50V, Elect. capacitors
C085, C086	354742219	220 μ F, 16V, Elect. capacitors
P071	25055334	NPLG-9P317, Plug

NOTE: <G> Only 220V model
<Q> Only 240V model
<W> Only Worldwide model

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

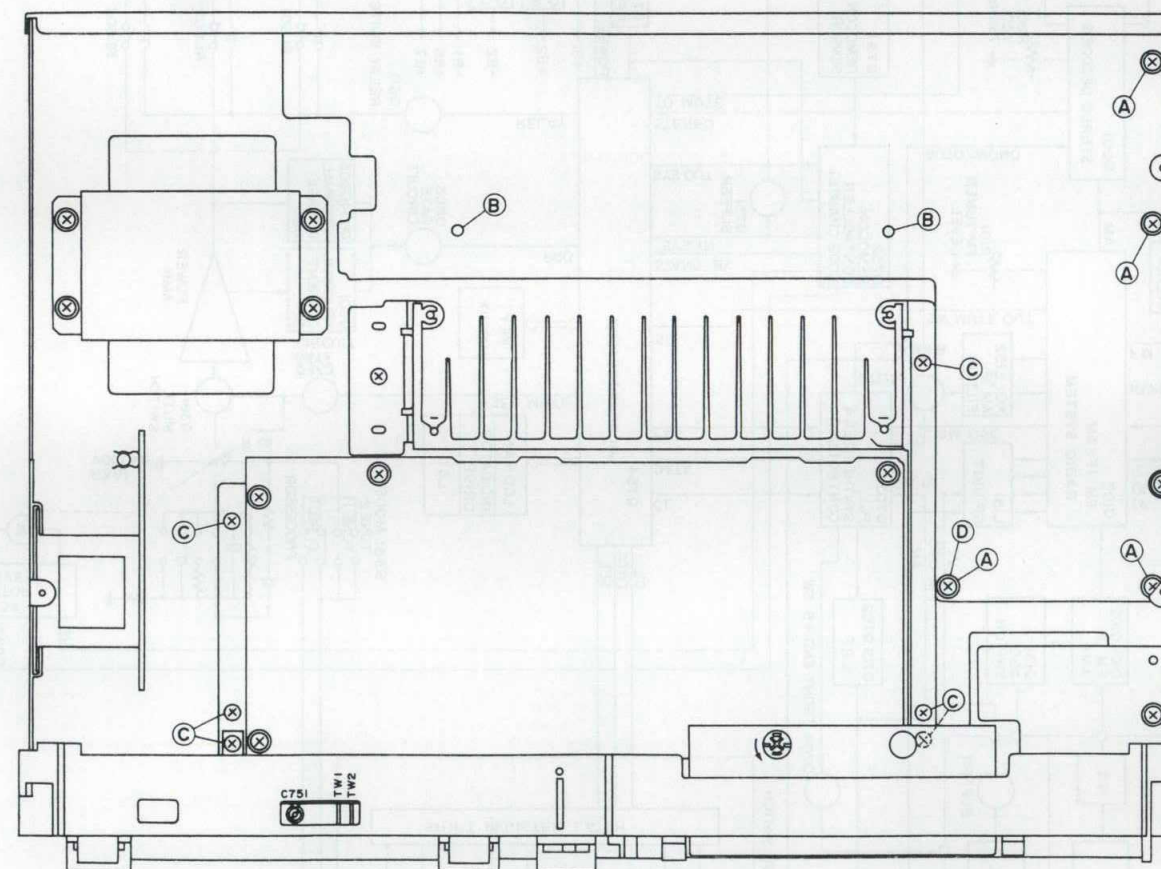
DISASSEMBLING PROCEDURES

1. Checking the main circuit pc board

- ① Remove the top cover and front panel.
- ② Remove the four screws holding the back panel and the chassis.
- ③ Remove the four screws A as shown below holding the chassis and the main pc board.
- ④ Remove the main pc board from two holder B.
- ⑤ Lift up the back panel and check the main pc board.

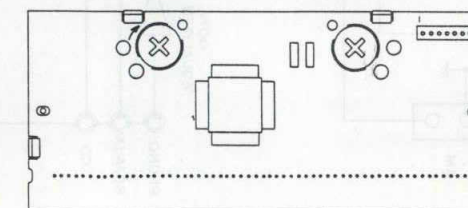
2. Checking the main amplifier pc board.

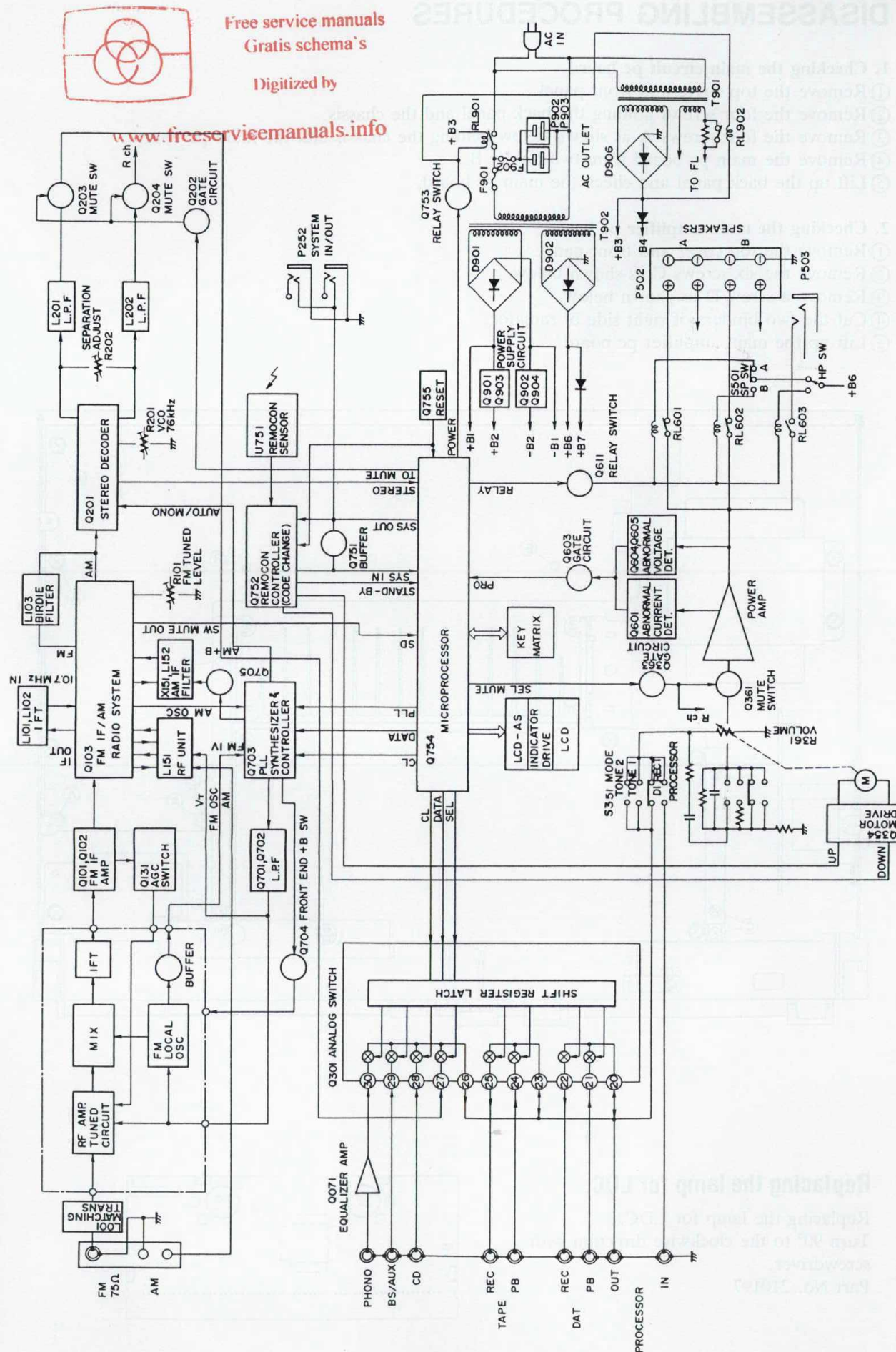
- ① Remove the top cover and front panel.
- ② Remove the six screws C as shown below.
- ③ Remove a screw D as shown below.
- ④ Cut the two binders of right side of radiator.
- ⑤ Lift up the main amplifier pc board.



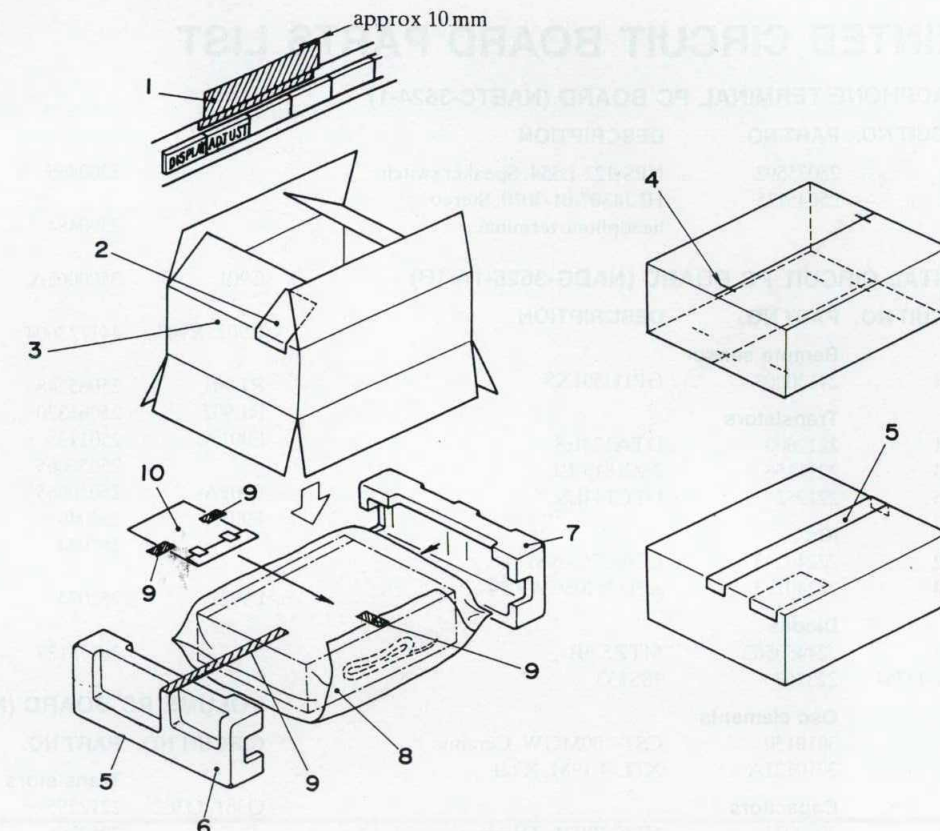
Replacing the lamp for LDC.

Replacing the lamp for LDC.
Turn 90° to the clockwise direction with screwdriver.
Part No. 210197

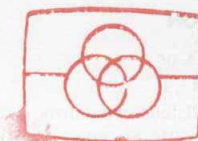




PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
1	29110069	12x50, Fixed tape
2	29365020A	Warranty card <West Germany model>
3	29100094A	Poly-vinyl bag
4	29051961	Master carton box
5	282301	Sealing hook
6	260012	Damplon tape
7	29091285B	Pad R
8	29091284A	Pad L
9	29100036A	550 x 850, Poly-vinyl bag
10	261504	Adhesive tape
		Accessory bag ass'y
	24140153	RC-153S, Remote control transmitter
	29341441A	instruction manual
	292092	FM antenna
	232140	NMA-3057, AM loop antenna
	3010054	UM-3x2, Battery
	29100097	350 x 250, Poly-vinyl bag
	2010169	Connection cord for remote control
	25055040	CV-K-2, Conversion plug <Worldwide model>
	25060123	FM antenna adaptor <Worldwide and 240V models>
	250153	Four short pins for AUX/BS and DAT play terminals



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