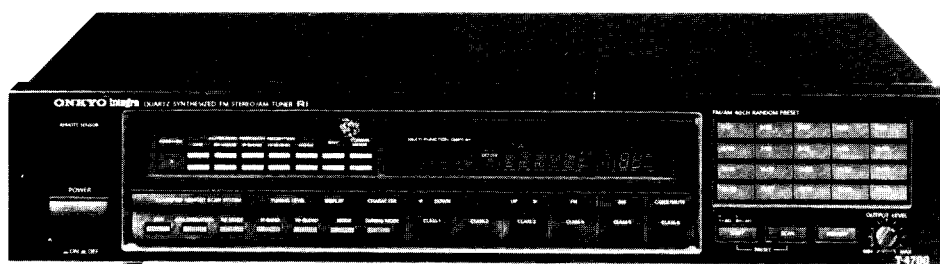


ONKYO SERVICE MANUAL

SYNTHESIZED FM STEREO/AM TUNER MODEL T-4700



Black model

BUD, BUDN	120V AC, 60Hz
BUG	220V AC, 50Hz
BUW	120V/220V AC, 50/60Hz

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
Block diagram	3
Exploded view	4
Parts list	5
Microprocessor description	6
Block diagrams of IC	8
Adjustment procedures	11
Printed circuit board view	13
Main circuit	13
Display/Switches/Remocon/Volume	19
Schematic diagram	15
120V model	15
Other models	17
Printed circuit board parts list	19
Packing view	22

ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

FM:

Tuning Range: 87.50 – 108.00 MHz (50/25kHz steps) and/or 88.00 – 108.00MHz

Usable Sensitivity: Mono: 10.3dBf, 0.9 μ V, IHF
0.8 μ V DIN (75 ohms)
Stereo: 17.2dBf, 2.0 μ V, IHF
20 μ V DIN (75 ohms)

50dB Quieting Sensitivity: Mono: 16.1dBf, 1.7 μ V (75 ohms)
Stereo: 36.1dBf, 17 μ V (75 ohms)

Capture Ratio: 1.3dB (Wide)

Image Rejection Ratio: 100dB

IF Rejection Ratio: 100dB

Signal-to-Noise Ratio: Mono: 85dB, IHF
Stereo: 77dB, IHF

Selectivity: 60dB DIN (Narrow)

Alternate Channel Attenuation: 80dB IHF ($\pm$ 400kHz)

AM Suppression Ratio: 55dB

Total Harmonic Distortion: Mono: 0.03% (Wide)
Stereo: 0.07% (Wide)

Frequency Response: 30 – 15,000Hz (+0.5 – 1.0dB)

Stereo Separation: 45dB at 1kHz (Wide)
33dB at 70 – 10,000Hz (Wide)

Output Voltage: 0 ~ 1 V

Muting Level: 17.2dBf, 2.0 μ V (75ohms)

AM:

Tuning Range: European models:
522 – 1611kHz (9kHz steps)
Canadian and USA models:
530 – 1710kHz (10kHz steps)
Saudi Arabia &
Worldwide models:
531 – 1602kHz (9kHz steps)

Usable Sensitivity: 25 μ V

Image Rejection Ratio: 40dB

IF Rejection Ratio: 40dB

Signal-to-Noise Ratio: 40dB

Total Harmonic Distortion: 0.7%

Output Voltage: 0~300mV

General

Dimensions (W×H×D): 435×92×366mm
17-1/8"×3-5/8"×14-7/16"

Weight: 4.2kg 9.3lbs.

Supplied accessories:

- AM loop antenna×1
- FM T-shaped antenna×1
- Connecting cable×1
- RI remote control cable×1
- 75/300ohm antenna adapter×2 (Except 220V model)
- Remote control transmitter

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Safety-check out

(Only U.S.A. model)

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 chassis.

Specifications: 3.3Mohm $\pm$ 10% at 500V.

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 change 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. Voltage Selector (Back Panel)

W models are equipped with a voltage selector to conform with local power supplies. 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 a screwdriver 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. Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.

4. Tunign Step Frequency Switch (Bottom Panel)

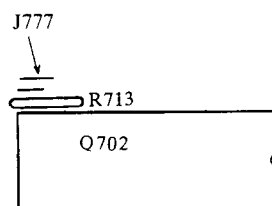
W models are equipped with a switch for the AM (9kHz/10kHz) band. The switch should be set to the proper steps for the radio broadcast frequencies in your area.

5. Changing the AM band step

With the exception of the worldwide model, AM BAND STEP selector switch is not provided.

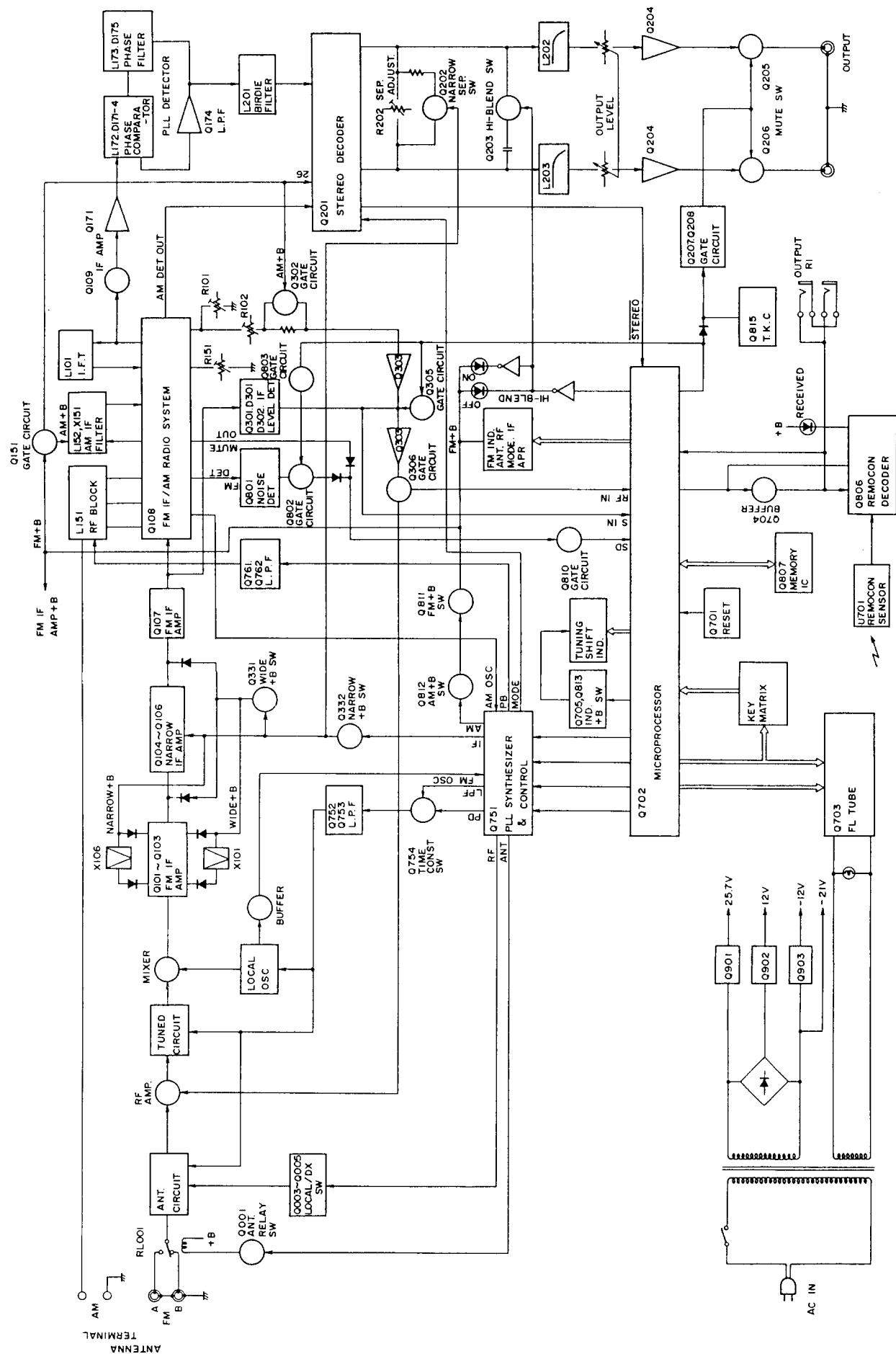
When change the band step, refer the table as shown below.

MODEL	BAND STEP	J777
UD	10kHz→ 9kHz	Additional
UG/UQ	9kHz→10kHz	Eliminated

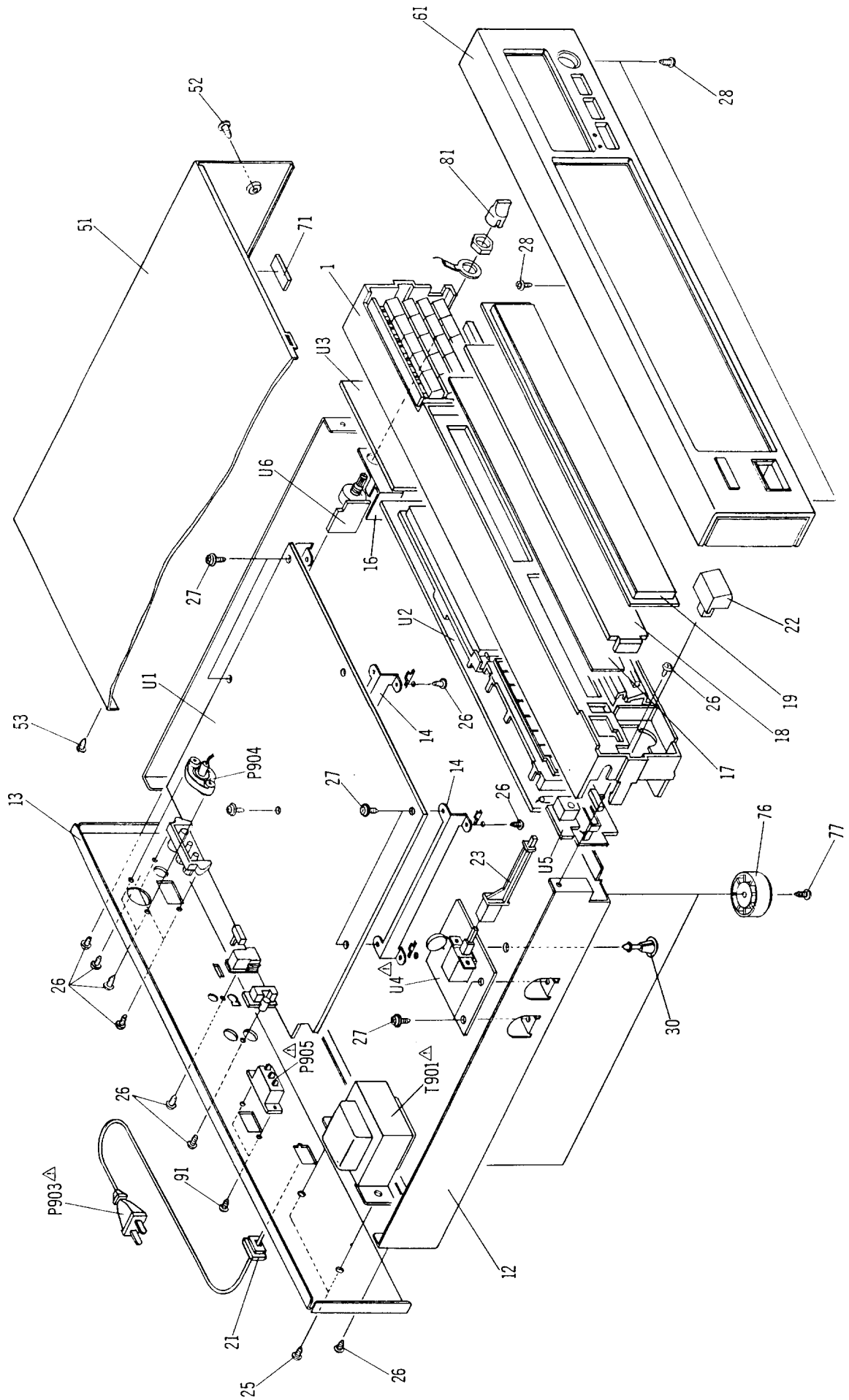


DISPLAY PC BOARD

BLOCK DIAGRAM



EXPLODED VIEW

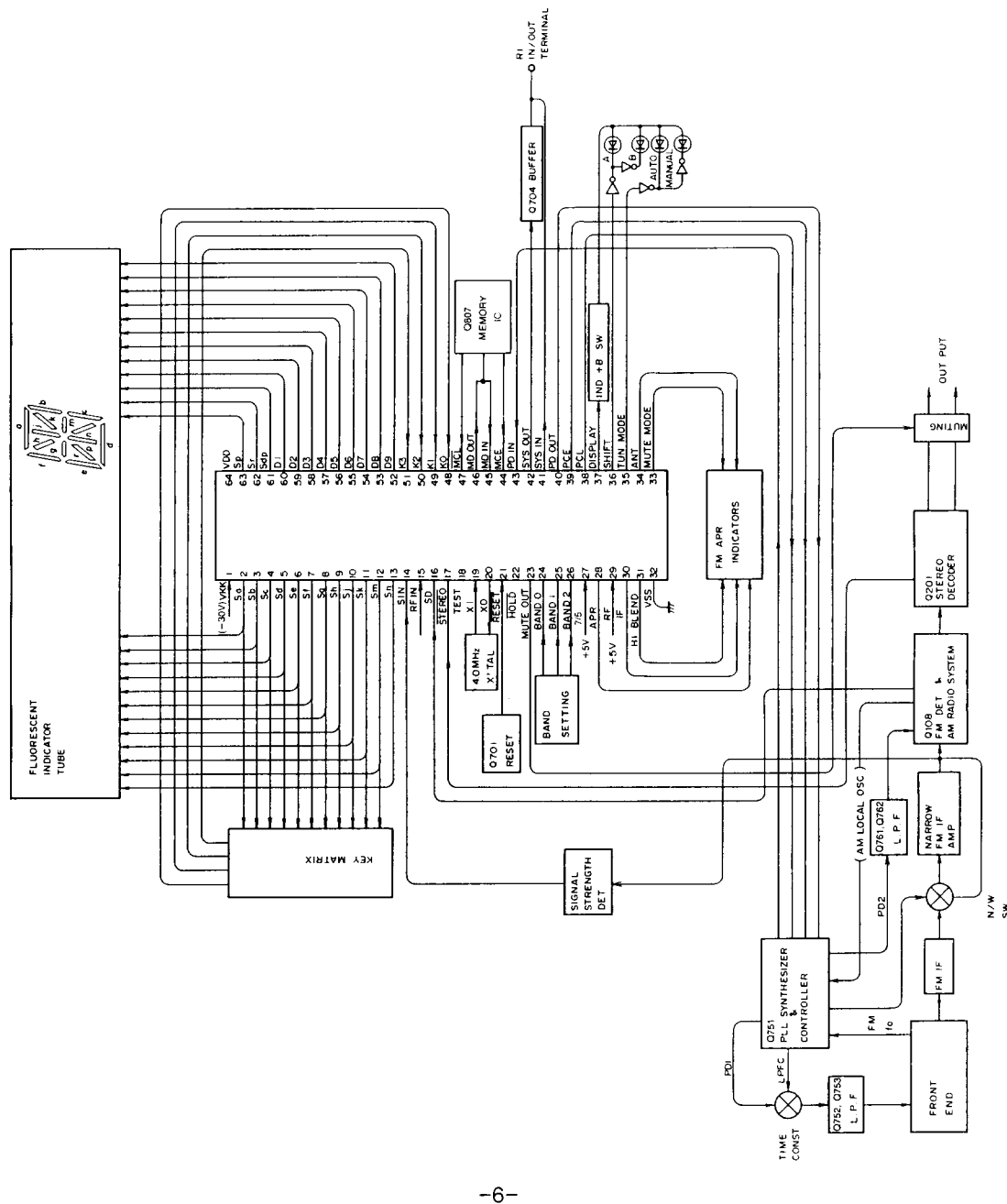


PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110525A	Front bracket ass'y	T901	2300497A	△ NPT-1050D, Power transformer <D>
12	27100191A	Chassis		2300498A	△ NPT-1050G, Power transformer <D>
13	27121299	Back panel <D>		2300499A	△ NPT-1050DG, Power transformer <W>
14	27121299-1	Back panel <G>			
16	27121299-2	Back panel <W>			
17	27141358	Bracket, pcb			
18	27150283	Shield plate	U1	1A194595-1	NARF-3695-1, Main circuit pc board ass'y <D>
19	28133223-1	Back plate		1A194595-1A	NARF-3695-1A, Main circuit pc board ass'y <G>
20	28130257-1	Dial plate		1A194595-1B	NARF-3695-1B, Main circuit pc board ass'y <W>
21	28191510A	Clear plate			
22	27300750	△ Bushing, code(Strainrelief)			
23	28323175	Knob, power			
24	27273069A	Joint, power	U2	1A194580-1	NADIS-3780-1, Display circuit pc board ass'y <D>
25	838440089	4TTTB+8C(BC), Self-tapping screw		1A194580-1A	NADIS-3780-1A, Display circuit pc board ass'y <G>
26	834430088	3TTS+8B(BC), Self-tapping screw		1A194580-1B	NADIS-3780-1B, Display circuit pc board ass'y <W>
27	831130088	3TTTW+8B, Self-tapping screw			
28	833430080	3TTP+8P(BC), Self-tapping screw	U3	1A194581-1	NASW-3781-1, Station switch pc board ass'y
30	27190524	KGLS-14R, Holder	U4	1A194582-1	NAPS-3782-1, Power switch pc board ass'y <D>
51	28184437	Top cover		1A194582-1A	NAPS-3782-1A, Power switch pc board ass'y <G/W>
52	838440089	4TTTB+8C(BC), Self-tapping screw		1A194583-1	NAETC-3783-1, Remote control sensor pc board ass'y
53	834430088	3TTS+8B(BC), Self-tapping screw	U5		NAETC-3696-1, Output volume pc board ass'y
61	1A194121	Front panel ass'y			
71	28140250	Cushion			
76	27175219-1	Leg			
77	834430088	3TTS+8B(BC), Self-tapping screw			
81	28323818	Knob, level			
91	82143006	3P+6FN(BC), Pan head screw <W>			
P903	253142A	△ AS-UC-7#18, Power supply cord <D>			
	253149	△ AS-CEE, Power supply cord <G/W>			
P904	25045156	KE31-0006, Socket, antenna			
P905	25065123	△ NPS-1258P, Switch, slide, Voltage selector <W>			

NOTE: <D>: Only 120V model
 <G>: Only 220V model
 <W>: Only Worldwide model

CONNECTION OF MICROPROCESSOR



Key matrix

Input Output	K0 (48)	K1 (49)	K2 (50)	K3 (51)
Sa (2)	P1/21	P2/22	P3/23	P4/24
Sb (3)	P5/25	P6/26	P7/27	P8/28
Sc (4)	P9/29	P10/30	P11/31	P12/32
Sd (5)	P13/33	P14/34	P15/35	P16/36
Se (6)	P17/37	P18/38	P19/39	P20/40
Sf (7)	TUN LEVEL	DISPLAY	CHARACTER	CABLE
Sg (8)	DOWN/LAST	UP/NEXT	FM	AM
Sh (9)	APROPE	RFMDOE	IFBAND	HIBLEND
Sj (10)	MUTE MODE	ANTENNA	TUN MODE	MEMORY
Sk (11)	C1	C2	C3	C4
Sm (12)	C5	C6	SHIFT	PRESENT/SCAN

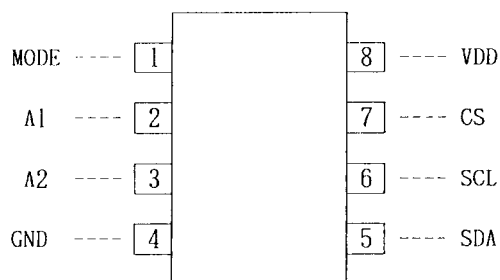
TMP47C870 Terminal Description

Pin No.	Symbol	Description
1	VKK	This is the power supply terminal for fluorescent indicator tube drive. Connect to -30V.
2	Sa	These are the output terminals for segment and key return signal. "H" when active
3	Sb	
4	Sc	
5	Sd	
6	Se	
7	Sf	
8	Sg	
9	Sh	
10	Sj	
11	Sk	
12	Sm	This is the signal strength input terminal. (A/D converter input)
13	Sn	
14	SIN	This is RF input terminal. DX at the high level.
15	RF IN	This is the auto stop control input terminal. Auto tuning stops when this terminal becomes the high level.
16	SD	This is the input terminal for detection of stereo broadcast. "L" when stereo broadcast.
17	STEREO	This is the test terminal for LSI. Connect to the ground terminal.
18	TEST	Connect to the 4.00MHz ceramic oscillator.
19	X1	This is the reset terminal. Reset at the low level when the power is turned on.
20	XO	
21	RESET	This is the hold input terminal. "L" when active.
22	HOLD	This is the muting output terminal. "H" when active.
23	MUTE OUT	These are the band setting connection terminal.
24	BAND 0	
25	BAND 1	
26	BAND 2	This is the connection terminal for function setting.
27	7/5	
28	APR	This is the output terminal for indication APR. ON at the high level. OFF at the low level.
29	RF	This is the output terminal for indication RX. DX at the high level. LOCAL at the low level.
30	IF	This is the output terminal for indication IF BAND. WIDE at the high level. NARROW at the low level.
31	HI BLEND	This is the output terminal for indication HI-BLEND. OFF at the high level. ON at the low level.
32	Vss	Connect to the ground terminal.

Pin No.	Symbol	Description
33	MUTE MODE	This is the output terminal for indication MUTE MODE. AUTO at the high level. MONO at the low level.
34	ANT	This is the output terminal for indication ANT. A at the high level. B at the low level.
35	TUN MODE	This is the output terminal for indication TUNING MODE. AUTO at the high level. MANUAL at the low level.
36	SHIFT	This is the output terminal for indication SHIFT. 1-20 at the high level. 21-40 at the low level.
37	DISPLAY	This is the display control output terminal. "L" during FL tube lights on.
38	PCL	This is the clock output terminal to PLL IC (LC7218).
39	PCE	This is the chip selector output terminal to PLL IC. "H" when active.
40	PD OUT	This is the data output terminal to PLL IC.
41	SYS IN	This is the system code input terminal. "H" when active.
42	SYS OUT	This is the system code output terminal. "L" when active.
43	PD IN	This is the data input terminal from PLL IC (LC7218).
44	MCE	This is the chip selector output terminal to memory IC.
45	MD IN	This is the data input terminal from memory IC.
46	MD OUT	This is the data output terminal to memory IC.
47	MCL	This is the clock output terminal to memory IC.
48	K0	These are the key scan input terminals. "H" when active.
49	K1	
50	K2	
51	K3	
52	D9	These are the digit output terminals for fluorescent indicator tube. "H" when active.
53	D8	
54	D7	
55	D6	
56	D5	
57	D4	
58	D3	
59	D2	
60	D1	
61	DP	These are the segment output terminal for fluorescent indicator tube. "H" when active.
62	Sr	
63	Sp	
64	VDD	This is the device power source terminal. At the time of operation, the supply is 5V. The internal data memory is maintained by means of super capacitor.

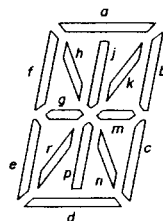
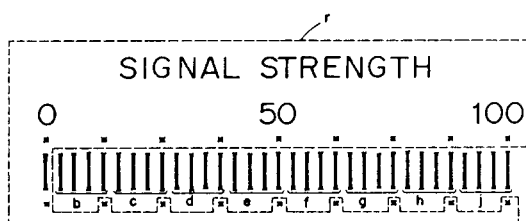
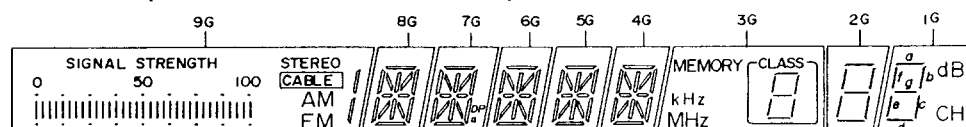
μ PD6252C (2048 bits EEPROM)

(EEPROM: Electrically Erasable Programmable Read Only Memory)



Pin No.	Symbol	Description
1	MODE	Input terminal to select the interface method to external IC.
2	A1	Not used. Connect to the ground terminal.
3	A2	
4	GND	Ground terminal.
5	SDA	Data input/output terminal. Connect to the terminals MDIN/MDOUT of the microprocessor IC and the terminal DI of PLL IC.
6	SCL	Clock input terminal. Connect to the terminal MCL of microprocessor IC.
7	CS	Chip selector terminal. Connect to the terminal MCE of microprocessor IC.
8	V _{DD}	Power supply terminal. Connect to 5V.

9-BT-61GK (Fluorescent indicator tube)



PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	-
CONNECTION	F 1	F 1	NP	NP	NP	NP	s	1 G	2 G	3 G	4 G	5 G	6 G	7 G	8 G	9 G	NP	NP	NP	NP	NP	p	r	a	-
PIN NO.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
CONNECTION	b	c	d	e	f	g	h	j	k	m	n	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	F 2	F 2

ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
a		a	a	a	a	a	a	a	a
b		b	b	b	b	b	b	b	b
c		c	c	c	c	c	c	c	c
d		d	d	d	d	d	d	d	d
e		e	e	e	e	e	e	e	e
f		f	f	f	f	f	f	f	f
g		g	g	g	g	g	g	g	g
h		h	h	h	h	h	-	-	-
j		j	j	j	j	j	-	-	-
k	STEREO	k	k	k	k	k	-	-	-
m	CABLE	m	m	m	m	m	MEMORY	-	-
n	AM	n	n	n	n	n	kHz	-	dB
p	FM	p	p	p	p	p	MHz	-	CH
r	SIGNAL STRENGTH 0 50 100	r	r	r	r	r	CLASS	-	-
s	-	-	DP	-	-	-	-	-	-

ADJUSTMENT PROCEDURES

- Preparation
FM mono: 1kHz, 75kHz devi. 60dB μ (65dBf)
FM stereo: 1kHz, L+R 67.5kHz devi.,
Pilot signal 19kHz 7.5kHz devi.
AM: 400Hz, 30% mod.
- Set the operation keys as shown below.
ANTENNA: A HI-BLEND: OFF
RF MODE: DX MODE: AUTO
IF BAND: WIDE CABLE/MUTE: CABLE

FM section

Item	Step	Connection of instrument	FM SC output	Stereo modulaotr output	Tuned frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM RF/IF	1	Fig. 1	98.1MHz, 1kHz 75kHz devi. 60dB (65dBf)	—	98.1MHz	DC voltmeter	L101	0±20mV	
	2		AC voltmeter			IFT core on front end	Maximum	RF MODE:LOCAL	
	3		AC voltmeter			L001, L002	Maximum		
FM DET		Fig. 2	98.1MHz, No mod. 60dB (65dBf)	—	98.1MHz	DC voltmeter	L173	0±0.1V	RF MODE:DX
STEREO DISTORTION		Fig. 3	98.1MHz, Ext. mod. 60dB (65dBf)	L+R 67.5kHz devi. Pilot signal 7.5kHz devi.	98.1MHz	Distortion analyzer	IFT core on front end	Minimum	Don't turn more than 180°
STEREO SEPARATION		Fig. 3	98.1MHz, Ext. mod. 60dB (65dBf)	Channel L	98.1MHz	AC voltmeter of right channel	R202 L172 (Don't turn more than 180°) L201	Minimum	Maximum and same separation.
				Channel R		AC voltmeter of left channel		Minimum	
MUTING LEVEL		Fig. 2	98.1MHz, 1kHz, 75kHz devi. 14dB (19.2dBf)	—	98.1MHz	Oscilloscope	R101	Output: ON	CABLE/MUTE SW: OFF CABLE indicator is turned off.
								Output:OFF	
DX/LOCAL LEVEL		Fig. 2	60dB (65dBf)	—		LO CAL indicator	R102	Light on	RF MODEL: LOCAL When press the APR OPERATION switch, adjust R102 so that the LOCAL indicator lights on.

Step	AM SG output	Tuned frequency	Output indicator	Adjustment point	Adjustment for
1		530kHz (522kHz) <531kHz>	DC voltmeter	OSC coil L151	1.3±0.1V
2	600kHz (603kHz) 400Hz, 30% mod.	600kHz (603kHz)	AC voltmeter	RF coil on L151	Maximum
3	990kHz 60dB/m	990kHz	AC voltmeter	L152	Maximum
4	990kHz 55dB/m	990kHz	4th signal indicator	R151	Light on

(): 9kHz step models < >: Worldwide models

Reference specifications

Tuned voltage

AM: 10kHz step models

1.3±0.4V~7.5±0.4V(530kHz~1710kHz)

9kHz step models(European models)

1.2±0.4V~7.0±0.4V(522kHz~1611kHz)

9kHz step models(Worldwide models)

1.2±0.4V~7.0±0.4V(531kHz~1602kHz)

FM: 5±0.4V~25±0.4V(87.50MHz~108.00MHz)

AM: Less than 67dB/m

FM: High level Less than 35dB/m

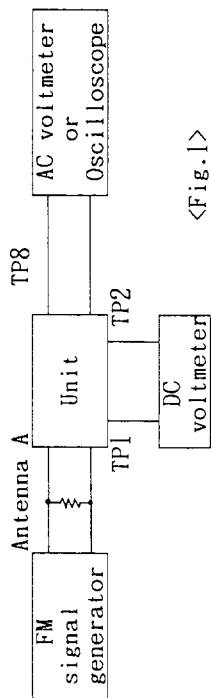
Low level Less than 22dB/m

Auto stop level

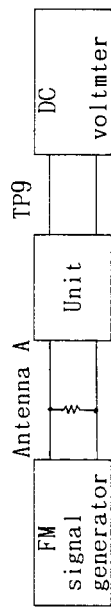
AM: Less than 67dB/m

FM: High level Less than 35dB/m

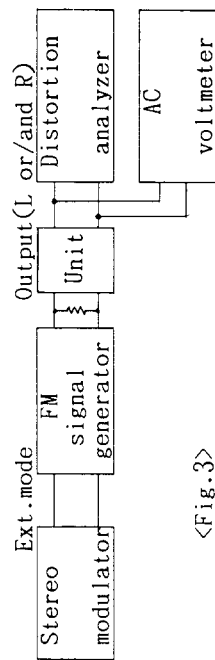
Low level Less than 22dB/m



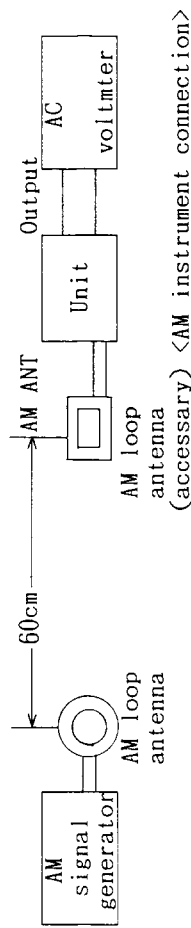
<Fig. 1>



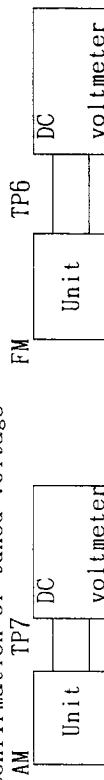
<Fig. 2>



<Fig. 3>



Confirmation of tuned voltage



MAIN CIRCUIT PC BOARD (NARF-3695-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end	
U001	240087	FE502
	ICs	
Q103-Q106	222407	TA7060AP
Q108	22240214	LA1266A
Q171	222407	TA7060P
Q174	222579	NJM4560D
Q201	22240285	LA3450
Q204	222579	NJM4560D
Q303	222502	NJM4558DX
Q751	22240253	LC7218
Q902	222780125NEC	78M12HF
	Transistors	
Q001	221281	DTC114YS
Q003	2212600	DTA124ES
Q004, Q305	2211183 or	2SC1740-R or
Q306	2211255	2SC1815-GR
Q005, Q151	2213074 or	2SA933-R or
Q207, Q208	2211455	2SA1015-GR
Q101, Q102	2212194	2SK241-Y
Q107, Q109	2210746	2SC945A-P
Q172, Q173	2212274	2SK192A-Y
Q202, Q203	2211945	2SK246-GR
Q205, Q206	2212794 or	2SD1468-R or
	2211705	2SD655-E
Q301	2212274	2SK192A-Y
Q302, Q754	2211945	2SK246-GR
Q331, Q332	2212600	DTA124ES
Q752	2212294	2SK108-D
Q753, Q901	2211255	2SC1815-GR
Q761, Q762	2211183 or	2SC1740-R or
Q801-Q803	2211255	2SC1815-GR
Q804	221281	DTC114YS
Q810-Q815	2211183 or	2SC1740-R or
	2211255	2SC1815-GR
Q903	2211455	2SA1015-GR
	Diodes	
D001-D004	223165	BA282
D005, D006	223154	1SV103, Variable capacitor
D007, D201	223163	1SS133
D101-D113	223163	1SS133
D171-D174	223170	SD187-4
D175	223136	KV1226, Variable capacitor
D301, D302	223132	1K60, Germanium

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
D303	224450562	MTZ5.6B, Zener	C154, C156 -	354780479	4.7 μ F, 50V, Elect.
D304, D305	223163	1SS133	C158	371123334	0.033 μ F $\pm$ 5%, 50V, Mylar
D307	224450512	MTZ5.1B, Zener	C159	354782299	0.22 μ F, 50V, Elect.
D308, D331	223163	1SS133	C160	354741009	10 μ F, 16V, Elect.
D751-D753	223163	1SS133	C173	391244717	470 μ F, 16V, Elect.(MUSE)
D754	224450361	MTZ3.6A, Zener	C177, C178	391241017	100 μ F, 16V, Elect.(MUSE)
D755, D758	223163	1SS133	C201	354741009	10 μ F, 16V, Elect.
D771, D811	223163	1SS133	C203	354741019	100 μ F, 16V, Elect.
D801-D809	223163	1SS133	C204	354763309	33 μ F, 35V, Elect.
D810	224450361	MTZ3.6A, Zener	C205, C206	370137514	750pF $\pm$ 5%, 100V, Plastic film(APS) <D>
D901	224453004	MTZ30D, Zener			
D902-D908	22380032	1SR139-100		370134714	470pF $\pm$ 5%, 100V, Plastic film(APS) <G/W>
D909	224450562	MTZ5.6B, Zener			
D910, D911	22380032	1SR139-100	C207, C208	371121034	0.01 μ F $\pm$ 5%, 50V, Mylar
D912	224452202	MTZ22B, Zener	C209, C210	354784799	0.47 μ F, 50V, Elect.
D913	224451203	MTZ12C, Zener	C211	371121034	0.01 μ F $\pm$ 5%, 50V, Mylar
	Coils		C212, C213	354780109	1 μ F, 50V, Elect.
L001, L002	233404	NFRF-3054	C214	371124734	0.047 μ F $\pm$ 5%, 50V, Mylar
L101	233403	NFIF-4074	C215	354780109	1 μ F, 50V, Elect.
L102, L171	233400M022	NCH-2226	C216	354784799	0.47 μ F, 50V, Elect.
L151	232148	NMRF-7050	C218	391244717	470 μ F, 16V, Elect.(MUSE)
L152	232139	NMIF-4062	C219, C220	354741009	10 μ F, 16V, Elect.
L172	233296	NFIF-4048	C221, C222	371123924	3900pF $\pm$ 5%, 50V, Mylar
L173	233297	NFIF-4049	C223, C224	354741009	10 μ F, 16V, Elect.
L174	233400K220	NCH-2238	C227	354784799	0.47 μ F, 50V, Elect.
L201	233383	NMC-6070	C228, C229	370132714	270pF $\pm$ 5%, 100V, Plastic film(APS) <W>
L202, L203	233294	NMC-5040	C231, C232	391241017	100 μ F, 16V, Elect.(MUSE)
L801	231081	NCH-2129	C304	354784799	0.47 μ F, 50V, Elect.
	Ceramic filters		C753	354721019	100 μ F, 6.3V, Elect.
X101, X105	3010041	SFE10.7MX	C756, C757	371124734	0.047 μ F $\pm$ 5%, 50V, Mylar
X102, X104	3010130	SFE10.7MZ2K-A	C758, C760	354784799	0.47 μ F, 50V, Elect.
X103, X106	3010132	SFE10.7MJK-A	C759	354764709	47 μ F, 35V, Elect.
X151	3010123	SFZ450JL	C763, C805	354782299	0.22 μ F, 50V, Elect.
X152	3010076	SFU450C	C803	354784799	0.47 μ F, 50V, Elect.
X201	3010152	CSB456F11	C806	354780109	1 μ F, 50V, Elect.
	Crystal oscillator		C807	354744709	47 μ F, 16V, Elect.
X751	3010151	XTL7.2M	C808	354741009	10 μ F, 16V, Elect.
	Capacitors		C809	354744719	470 μ F, 16V, Elect.
C007	354741009	10 μ F, 16V, Elect.	C902	354761009	10 μ F, 35V, Elect.
C009, C117	391241017	100 μ F, 16V, Elect.(MUSE)	C903	354761019	100 μ F, 35V, Elect.
C134	354780229	2.2 μ F, 50V, Elect.	C904	354782219	220 μ F, 50V, Elect.
C135	354744709	47 μ F, 16V, Elect.	C905	354784709	47 μ F, 50V, Elect.
C153, C155	354741009	10 μ F, 16V, Elect.	C913	354764709	47 μ F, 35V, Elect.
			C914	354752229	2200 μ F, 25V, Elect.
			C916	354741009	10 μ F, 16V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
C917	354721019	100 μ F, 6.3V, Elect.
C918	354763319	330 μ F, 35V, Elect.
C920	354764719	470 μ F, 35V, Elect.
C921	354761009	10 μ F, 35V, Elect.
C922, C923	354741009	10 μ F, 16V, Elect.
Resistors		
R001, R002	431523355	3.3Mohm, 1/2W, Solid <D>
R101	5210070	N06HR100KBD, Semi-fixed
R102	5210072	N06HR220KBD, Semi-fixed
R151	5210064	N06HR10KBD, Semi-fixed
R202	5210074	N06HR470KBD, Semi-fixed
R904	441720474	4.7ohm, 2W, Metal oxide film
R905	442521014	100ohm, 1/2W, Metal oxide film
Relay		
RL001	25065356	NRL-IP0.1A-DC12-050
Switch		
	25065286	NSS-22112, Slide, De-emphasis <W>
Terminals		
P901	25060087	NTM-2PDMN31, Antenna
P902	25045182	NPJ-2PDBL72, Output <D>
	25045211	NPJ-2PDBL91, Output <G/W>
P905	25045172	HSJ-1003-01-020, RI
Radiator		
	27160146	RAD-52
Sockets		
JL101, JL102	25050272	NSCT-8P-100
JL103	25050273	NSCT-9P-101
	2009990025	NSAS-12P0049
Holder		
	27190432	UAMS-07-0, Clamp
Cable		
	2010102	Antenna
Shield plate		
	27150181	

DISPLAY CIRCUIT PC BOARD(NADIS-3780-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
Lamp		
PL701	210064B	PL6.3V, 250mA
ICs		
Q702	22240251	TMP47C870-4631
Q804, Q805	222807	μ PA81C
Q806	22240243	LC6527C-3987
Q807	22240291	μ PD6252C
Transistors		
Q701	2213284	2SC1740S-R
Q704	2213074 or 2211455	2SA933-R or 2SA1015-GR
Q705, Q808	2211183 or	2SC1740-R or
Q809	2211255	2SC1815-GR
FL tube		
Q703	212077	9-BT-61GK
Diodes		
D701, D703	223163	1SS133
D704, D706	223163	1SS133
D707	223163	1SS133
D708	224450361	MTZ3.6A, Zener
D710-D712	223163	1SS133
D714-D719	223163	1SS133
D725	223163	1SS133
D730-D733	223163	1SS133
D734	224450562	MTZ5.6B, Zener
L.E.Ds		
D810, D811	225142	SEL2913K
D820, D821	225137CG,	SEL2413E-CG,
D824, D826	225137DG or	SEL2413E-DG or
D829, D831	225137DY	SEL2413E-DY
D833, D835	225137CG,	SEL2413E-CG,
	225137DG or	SEL2413E-DG or
	225137DY	SEL2413E-DY

CIRCUIT NO.	PART NO.	DESCRIPTION
D825, D827	225142	SEL2913K
D828, D830	225142	SEL2913K
D832, D836	225142	SEL2913K
D834	225141	SEL2213C
Ceramic oscillators		
X701	3010150	CST4.000MGW
X702	3010099	CSA4.00MG
Capacitors		
C701	353781009	10 μ F, 50V, Elect.
C702	353780109	1 μ F, 50V, Elect.
C703	395160477	4.7 μ F, 35V, Tantal
C706	375524744	0.47 μ F $\pm$ 5%, 50V, Plastic(MMT)
C707	3000057	0.1F, 5.5V, Super
C711, C713	353780109	1 μ F, 50V, Elect.
C712	353781009	10 μ F, 50V, Elect.
Resistors		
R713	49163103408	10k $\times$ 8, 1/10W, Network
R718	49121333403	33k $\times$ 3, 1/8W, Network
R719	49163103408	10k $\times$ 8, 1/10W, Network
Switches		
S751-S771	25035548	NPS-122-S510
S791	25065286	NSS-22112, Band <W>
Holders		
	27190710	Lamp
	27190712	L.E.D.

STATION SWITCH PC BOARD(NASW-3781-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
Diodes		
D841-D846	223163	1SS133
L.E.Ds		
D847, D848	225137CG, 225137DG or 225137DY	SEL2413E-CG, SEL2413E-DG or SEL2413E-DY
Switches		
S810-S832	25035548	NPS-122-S510
Holder		
	27190711	

POWER SWITCH PC BOARD(NAPS-3782-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
C901	3500065A	Δ DE7150FZ103PAC400V/125V, Capacitor IS
R901	431523355	Δ 3.3Mohm, 1/2W, Solid resistor <D>
S901	25035558	Δ NPS-111-L520P, Power switch

REMOTE CONTROL SENSOR PC BOARD (NAETC-3783-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
U701	24130003	GP1U50XS, Remote control sensor

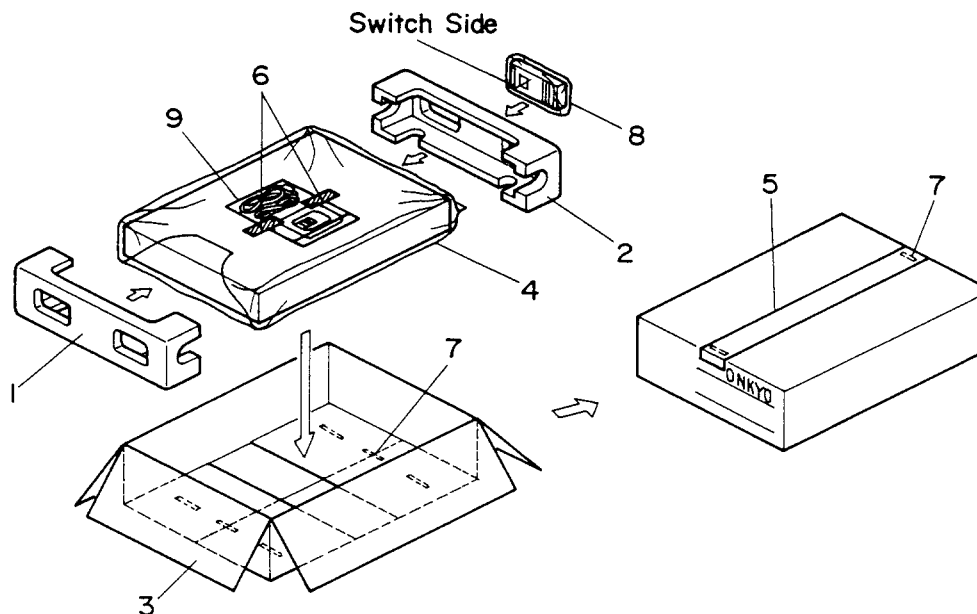
OUTPUT VOLUME PC BOARD(NAETC-3696-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
R241	5142003A	N16RGM3KB15, Variable resistor

NOTE: <D>: Only 120V model
 <G>: Only 220V model
 <W>: Only Worldwide model

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

PACKING VIEW



REF. NO.	PART NO.	DESCRIPTION		
1	29091329B	Pad L	29100006A	Poly-vinyl bag
2	29091330B	Pad R	25055040	CV-K-2, Cnversion plug <W>
3	29051986	Master carton box	25060123	Two FM adaptors <D/W>
4	29100036A	Poly-vinyl bag	29365019	Warranty card <DN>
	29095012-1	Protection sheet	29365024	Warranty card <F>
5	29110071-1	50×700 mm, Damplon tape	29100107	Bag for warranty card <F>
6	29110032	30×300 mm, Adhesive tape	29358002G	Service station list <DN>
7	282301	Sealing hook		
8	24140165	RC-165T, Remote control transmitter		
9	Accessory bag ass'y			
	29341470	Instruction manual <D>		
	29341472	Instruction manual <G/W>		
	292064B	FM antenna <D>		
	292092	FM antenna <G/W>		
	232140	NMA-3057, AM loop antenna		
	2010098A	Connection cord		
	2010200	Connection cord for remote control		
	3010054	UM-3, Two batteries		

NOTE: <D>: Only 120V model
 <G>: Only 220V model
 <W>: Only Worldwide model
 <DN>: Only U.S.A. model
 <F>: Only French model

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