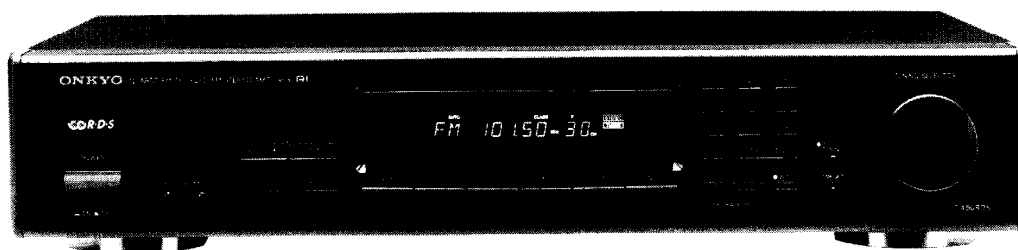


ONKYO SERVICE MANUAL

SYNTHESIZED FM STEREO/AM TUNER MODEL T-450RDS



Black model

BUD, BUDN	120V AC, 60Hz
BUP	230V AC, 50Hz
BUW	120/220V 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 connection diagram.....	6
Microprocessor terminal description.....	7
IC block diagrams and descriptions.....	8
Adjustment procedures.....	11
Printed circuit board views from bottom side.....	13
Schematic diagram.....	15
Printed circuit board-parts list.....	19
Packing view.....	22

ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

FM

Tuning range: European & Worldwide models
87.50 – 108.00MHz
(50kHz steps)
U.S.A. & Canadian models
87.90 – 107.90MHz
(200kHz steps)

Usable sensitivity: Mono: 11.2dBf, 1.0μV, 75 Ohms IHF
0.9μV 75 Ohms DIN
Stereo: 17.2dBf 2.0μV, 75 Ohms IHF
20μV 75 Ohms DIN

50dB quieting sensitivity: Mono: 16.1dBf 1.7μV 75 Ohms
Stereo: 36.1dBf 17μV 75 Ohms

Capture ratio: 1.5dB

Image rejection ratio: 80dB

IF rejection ratio: 90dB

Signal-to-noise ratio: Mono: 76dB IHF
Stereo: 66dB IHF

Alternate channel attenuation: 60 dB IHF

Selectivity: 60dB DIN (Narrow)
(±300kHz, 40kHz dev)

AM suppression ratio: 50dB

Total Harmonic Distortion: Mono: 0.1% (wide)
Stereo: 0.2% (wide)

Frequency response: 30 – 15,000Hz (±1.5 dB)

Stereo separation: 40dB at 1kHz (wide)
30dB at 70 – 10,000Hz (wide)

Output voltage: 0.75V, 0.5V (U.S.A. models only)

Muting level: 17.2 dBf 2.0 μV, 75 Ohms

AM

Tuning range: U.S.A. & Canadian models:
530–1710 kHz (10 kHz steps)
European models:
522 –1611 kHz (9 kHz steps)
Worldwide models:
531–1602 kHz (9 kHz steps)
530–1710 kHz (10 kHz steps)

Usable sensitivity: 25μV

Image rejection ratio: 40dB

IF rejection ratio: 40dB

Signal-to-noise ratio: 40dB

Total Harmonic Distortion: 0.7%

Output voltage: 150mV

General

Power supply: European models (except U.K.):
AC 230V, 50Hz
U.S.A. & Canadian models:
AC 120V, 60Hz
U.K. & Australian models:
AC 240V, 50Hz
Worldwide models:
AC 120V and 220V
switchable, 50/60Hz

Dimensions (W × H × D): 455 × 90 × 306 mm
17-15/16" × 3-9/16" × 12-1/16"

Weight: 3.6 kg, 7.4 lbs.

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: More than 10MΩ 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 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. Voltage Selector (Rear 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. Tuning Step Frequency Switch (Rear Panel)

W models are equipped with a switch for the AM (9kHz/10kHz) and FM (50kHz/100kHz) bands. The switch should be set to the proper steps for the radio broadcast frequencies in your area.

5. Changing the band step

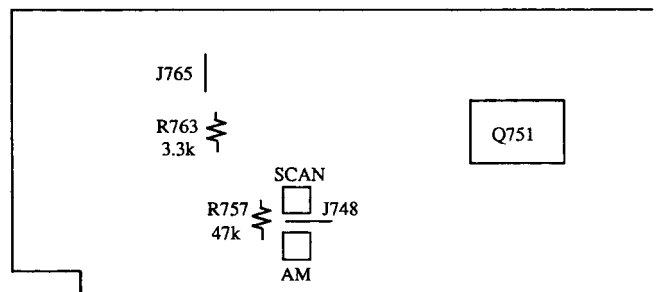
With the exception of the Worldwide models, a BAND STEP selector switch is not provided.

FM

MODEL	BAND STEP	J765	R763
UD	200kHz→50kHz	Short	Remove
UP	50kHz→200kHz	Open	Add

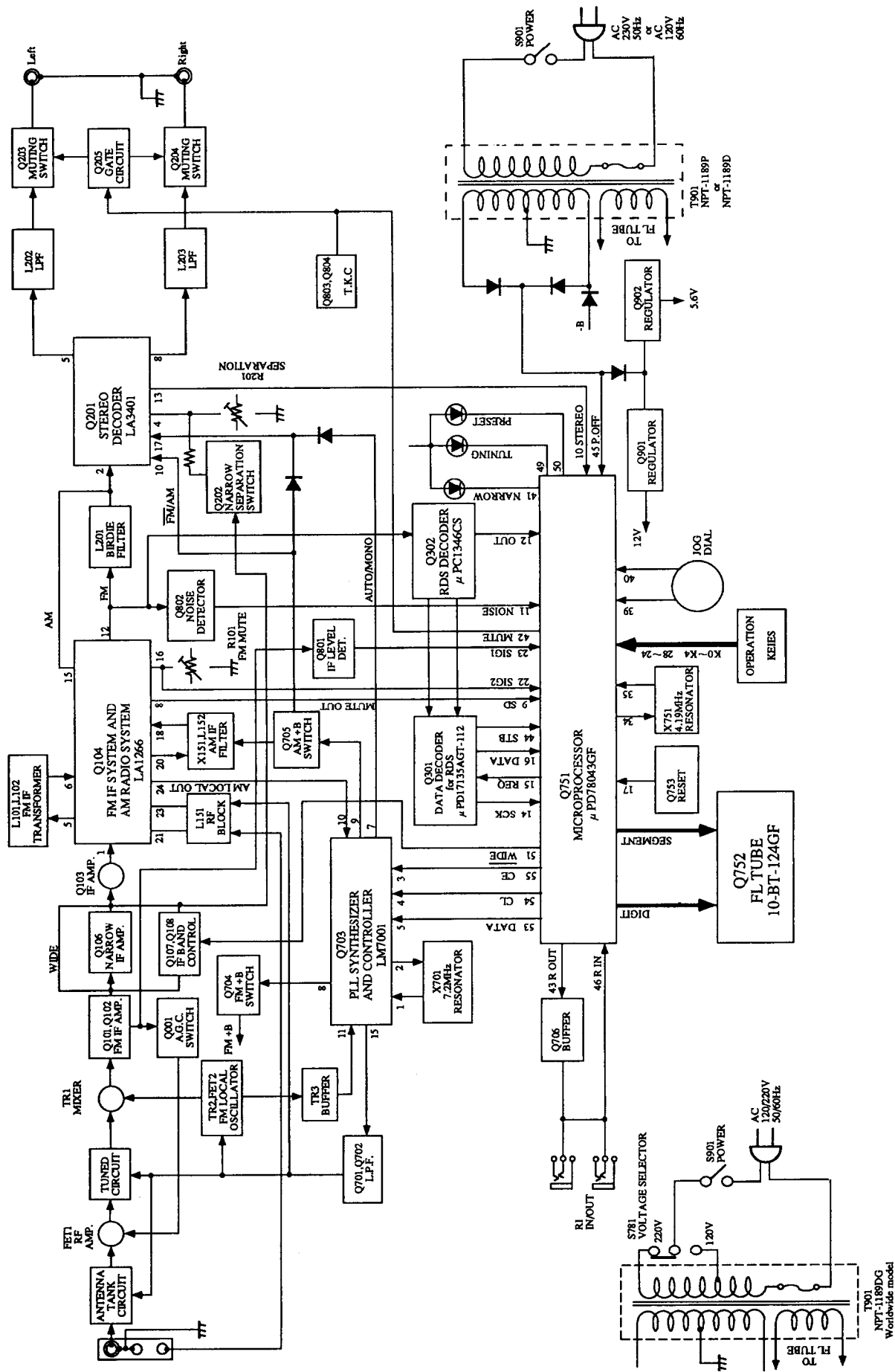
AM

MODEL	BAND STEP	J748	R757
UD	10kHz→9kHz	Short	Remove
UP	9kHz→10kHz	Open	Add



DISPLAY CIRCUIT PC BOARD

BLOCK DIAGRAM



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

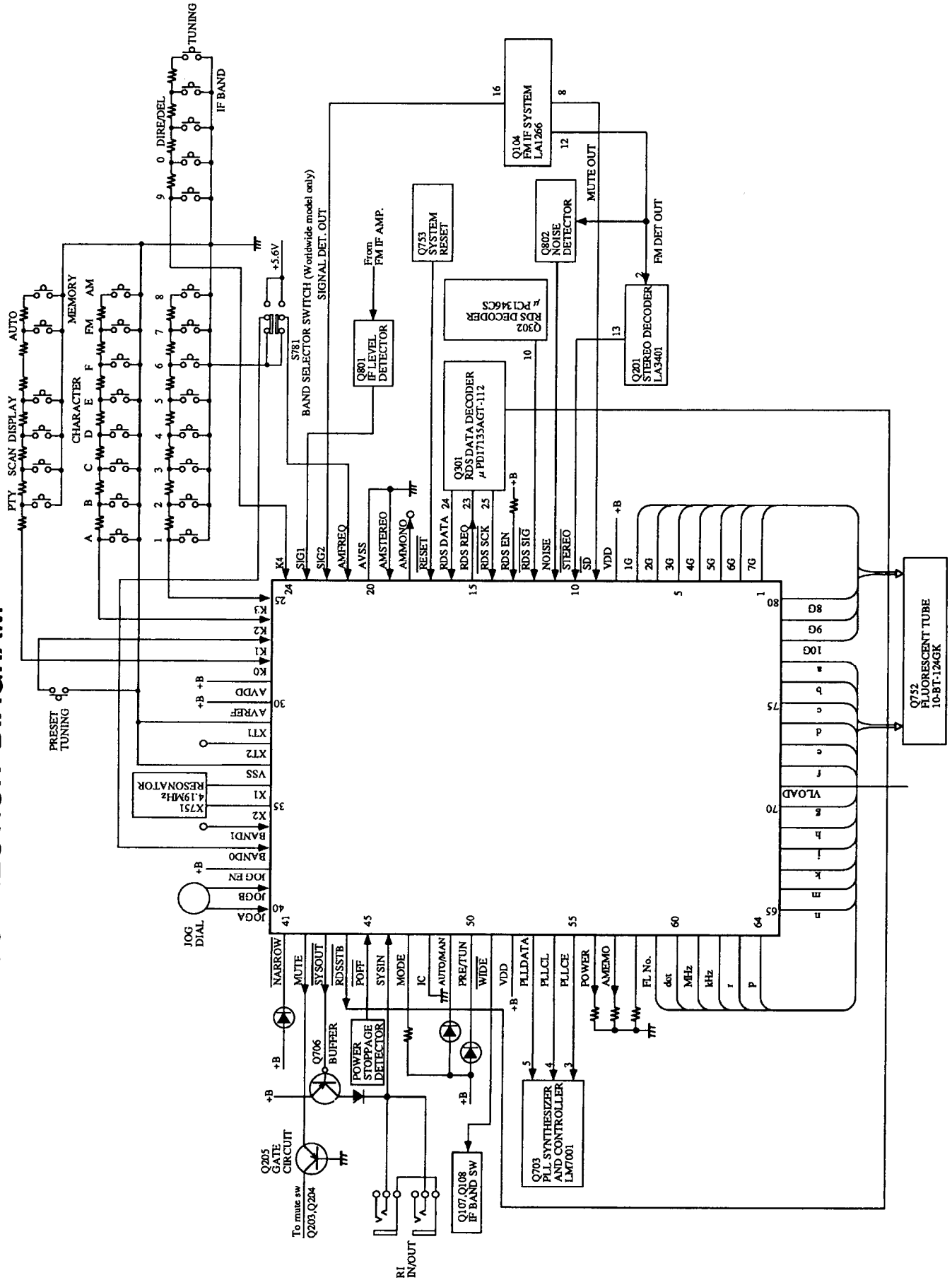
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110787A	Front bracket	P701	2047251512	NCFC7-251512,Flexible flat cable
2	28191669	Clear plate	P901	253191HIT 	AS-UC-7 #18,Power supply cord <D>
4	27100276	Chassis		253193HIT 	AS-CEE,Power supply cord <P/W>
5	27190511	KGLS-16RT,Holder	U1	1A462546-1	NARF-4846-1,Main circuit pc board ass'y <D>
10	27121804A	Rear panel <D>		1A462546-1A	NARF-4846-1A,Main circuit pc board ass'y <P>
	27121805A	Rear panel <P>		1A462546-1B	NARF-4846-1B,Main circuit pc board ass'y <W>
	27121807A	Rear panel <W>	U2	1A462547-1	NADIS-4847-1,Display circuit pc board ass'y <D>
11	27300750 	Bushing cord		1A462547-1A	NADIS-4847-1A,Display circuit pc board ass'y <P>
14	82143006	3P+6FN(BC),Pan head screw		1A462547-1B	NADIS-4847-1B,Display circuit pc board ass'y <W>
15	834430088	3TTS+8B(BC),Self-tapping screw	U3	1A462548-1	NASW-4848-1,Log dial pc board ass'y
16	831130088	3TTW+8B,Self-tapping screw	U4	1A462549-1	NAPS-4849-1,Power supply pc board ass'y <D>
17	833430080	3TTP+8P(BC),Self-tapping screw		1A462549-1A	NAPS-4849-1A,Power supply pc board ass'y <P>
31	28184488B	Top cover		1A462549-1B	NAPS-4849-1B,Power supply pc board ass'y <W>
32	28140680	Cushion	U5	1A462550-1	NAPS-4850-1,Voltage selector switch pc board ass'y <W>
51	1A462121	Front panel ass'y			
	28135199Y	Badge			
54	28198778	Facet			
55	28125257	End cap L			
56	28125258	End cap R			
61	28324898	Knob, tuning			
62	28324140	Knob, power			
63	27267830	Guide, power			
66	27175254	Leg			

NOTE: <P>:Only 120V model
 <P>:Only 230V model
 <W>:Only Worldwide model

T-450RDS

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

MICROPROCESSOR CONNECTION DIAGRAM



TERMINAL DESCRIPTION

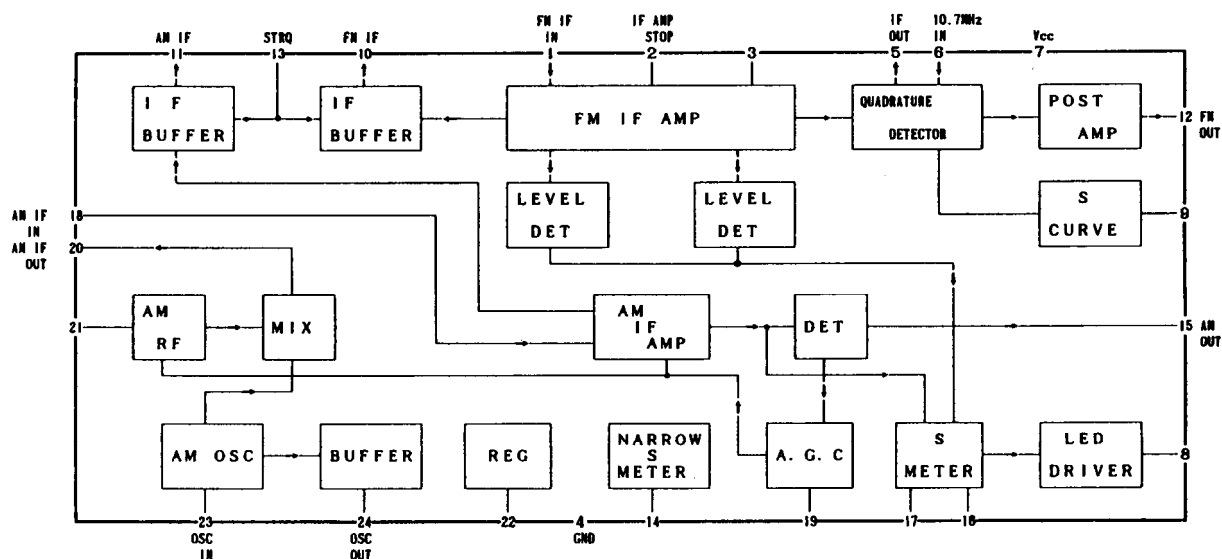
Pin No.	Function	I/O	Descriptions
1~7	7G~1G	O	Grid output terminals for fluorescent tube.
8	VDD		Power supply terminal
9	SD	I	Broadcast detection input more than the muting level
10	STEREO	I	Stereo broadcast detection input
11	NOISE	I	Noise detection input
12	RDSSIG	I	RDS broadcast detection input
13	RDSIN	I	Initializing input for RDS operation
14	RDSSCK	I	Connect to the terminal SCK of RDS data decoder IC μ PDI7135AGT-112.
15	RDSREQ	O	Connect to the terminal REQ of RDS data decoder IC μ PDI7135AGT-112.
16	RDSDATA	I	Connect to the terminal DATA of RDS data decoder IC μ PDI7135AGT-112.
17	RESET	I	System reset terminal
18	AMMONO	O	AM AUTO/MANUAL control output. Not used.
19	AMST	I	Initializing input for AM stereo operation
20	AVSS		Ground terminal of A/D converter
21	AMFREQ	I	Initializing input for AM band step
22	SIG2	I	Signal strength level input
23	SIG1	I	Signal strength level input
24~28	K4~K0	I	Operation key connection terminals
29	AVDD		Analog power supply terminal of A/D converter
30	AVREF		Reference voltage input of A/D converter
31	XT1		Resonator terminals for sub system.
32	XT2		Not used.
33	VSS		Ground terminal
34	X1		Resonator terminals for main system
35	X2		Connect the 4.19MHz ceramic resonator.
36	BAND1	I	Initializing input for FM band step
37	BAND0	I	
38	JOGEN	I	Initializing input for Jog operation
39	JOGB	I	Jog dial signal A
40	JOGA	I	Jog dial signal B

Pin No.	Function	I/O	Descriptions
41	NARROW	O	NARROW indicator output
42	MUTE	O	Muting control output
43	SYSOUT	O	System code output
44	RDSSTB	I	Connect to the terminal STB of RDS data decoder. Not used.
45	POFF	I	Power stoppage detection input
46	SYSIN	I	System code input
47	MODE	I	Initializing input for operation mode
48	IC		Connect to the ground terminal.
49	AUTO/MAN	O	TUNING indicator output
50	PRE/TUN	O	PRESET indicator output
51	NARROW	O	IF BAND control output
52	VDD		Power supply terminal
53	PLLDATA	O	Connect to the terminal DATA of PLL IC LM7001.
54	PLLCL	O	Connect to the terminal CL of PLL IC.
55	PLLCE	O	Connect to the terminal CE of PLL IC.
56	POWER	O	Power source control output
57	AMEMO	O	AUTO MEMORY control output
58			Not used.
59~70	P18~P7	O	Segment output terminals for fluorescent tube.
71	VLOAD		Pull-down resistor connection terminal of FL controller and driver.
72~77	P6~P1	O	Segment output terminals for fluorescent tube
78~80	10G~8G	O	Grid output terminals for fluorescent tube

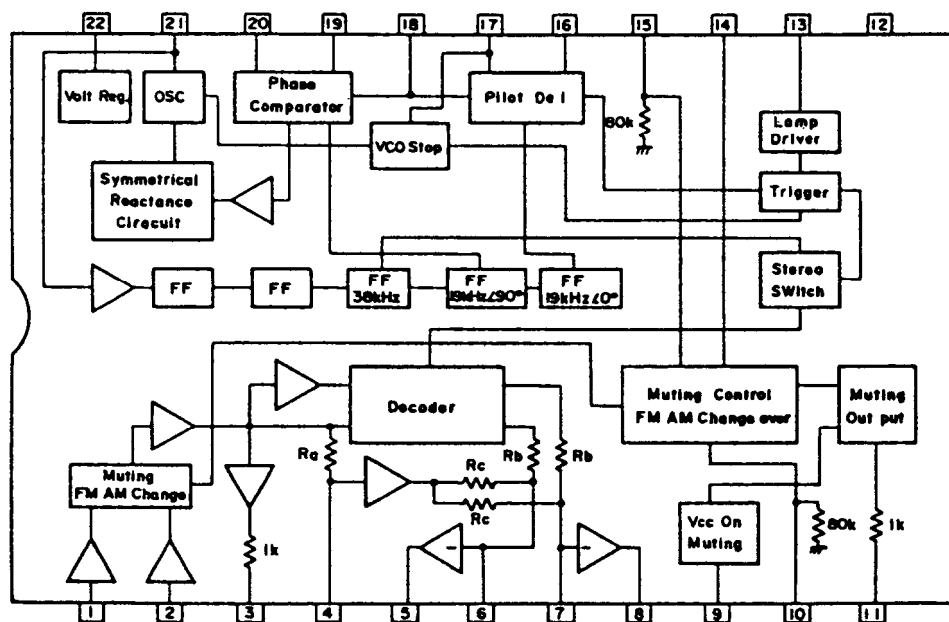
INITIALIZING OF FM/AM BAND

			FM		AM	
BAND0	BAND1	AM10K	Region	Frequency range	Step	Frequency range
0	1	0	Europe	87.5~108.00MHz	50kHz	522~1611kHz
1	0	0	Worldwide	87.5~108.00MHz	50kHz	531~1602kHz
1	1	1	120V model	87.9~107.9MHz	200kHz	530~1710kHz
0	0	0	Japan	76.0~108.0MHz	100kHz	522~1611kHz

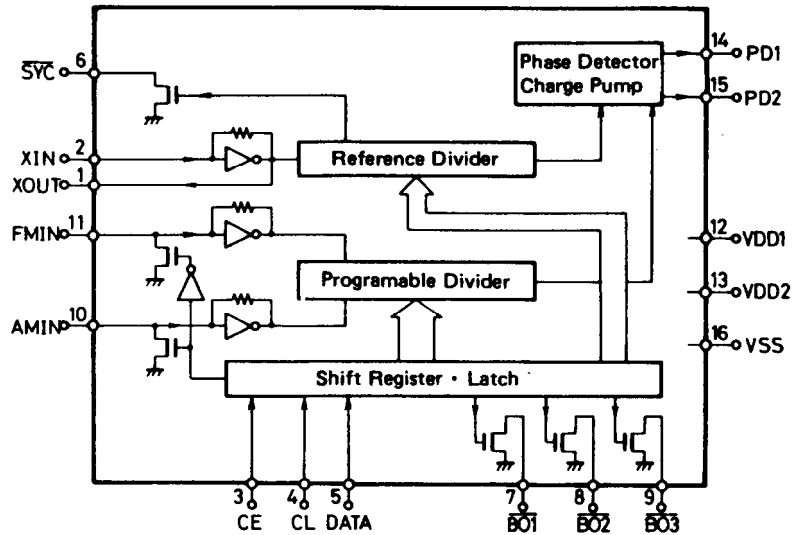
LA1266 (FM IF/AM radio system)



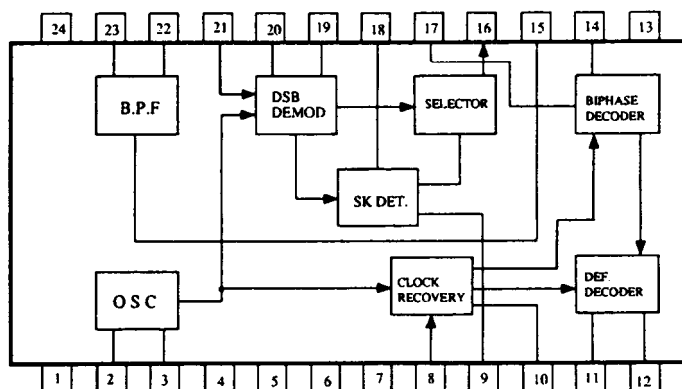
AN3401 (FM stereo decoder)



LM7001 (PLL frequency synthesizer)



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 microprocessor .									
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of microprocessor .									
5	DATA	Serial data input terminal. Connect to the DATA terminal of microprocessor .									
6	SYN	Not used.									
8	BAND1	Band selector output terminal. <table border="1"><tr><td>BAND</td><td>BAND 1</td><td>BAND 2</td></tr><tr><td>FM</td><td>L</td><td>H</td></tr><tr><td>AM</td><td>H</td><td>L</td></tr></table>	BAND	BAND 1	BAND 2	FM	L	H	AM	H	L
BAND	BAND 1		BAND 2								
FM	L		H								
AM	H	L									
9	BAND2										
7	BO1	This is the output terminal for AUTO/MONO. 'L' when AUTO.									
10	AMIN	AM local oscillator input terminal.									
11	FMIN	FM local oscillator input terminal.									
12	VDD 1	Power supply terminal for back-up.									
13	VDD 2	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. 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.									
15	PD2										
16	Vss	Ground terminal.									

μ PC1346CS (RDS Decoder)

No.	Terminal	Description	No.	Terminal	Description
1	Vcc	Supply voltage for the digital circuit	13	GND	Ground for the analog circuit
2	OSC IN	Resonator input	14	INTEG	Integrating filter terminal
3	OSC OUT	Resonator output	15	BPF ADJ	Adjustment fc of band pass filter
4	GND	Ground for the digital circuit	16	PSK OUT	Biphase signal output
5	TEST1	Test input	17	PSK IN	Biphase decoder input
6	TEST2	Test input	18	LPF SK	Low pass filter for the detection SK
7	OP.CTL	Control input of the operation stop	19	LPF Q	Low pass filter for the crossed detector
8	S/L CTL	Mode control input of the synchronizing detection	20	LPF I	Low pass filter for the synchronizing detector
9	SK OUT	SK detection output	21	DSB IN	DSB demodulator circuit input
10	RDS OUT	RDS synchronizing detection output	22	BPF OUT	Band pass filter output
11	CLOCK OUT	Bit rate clock output	23	BPF IN	Band pass filter input
12	DATA OUT	RDS data output	24	Vcc	Supply voltage for analog circuit

ADJUSTMENT PROCEDURES

T-450RDS

Preparation

• Input

FM mono: 1kHz, 75kHz devi., 60dB/μV (65dBf)

FM stereo: 1kHz, L+R 67.5kHz devi.: Pilot signal 19kHz
7.5kHz devi.

AM: 400Hz, 30% mod.,

1.FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.1MHz 1kHz 75kHz devi. 65dBf(60dB)	—	99.1MHz	DC voltmeter	L102	0±20mV	IF BAND switch: WIDE FM MUTE/MODE switch:OFF/MONO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L103	Minimum	
Stereo Distortion		Fig.2	99.1MHz Ext. mod.65dBf(60dB)	Channel L or R 1kHz	99.1MHz	Distortion analyzer	IFT on the front end	Minimum	FM MUTE/MODE switch:ON/STEREO Don't turn more than ±180°
Stereo Separation	1	Fig.2	99.1MHz Ext. mod. 65dBf(60dB)	Channel L 1kHz	99.1MHz	Channel R AC voltmeter	R202	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.2	99.1MHz 1kHz 22.5kHz devi. 19.2dBf(14dB)	—	99.1MHz	Oscilloscope	R101	Signal output	
RDS		Fig.3	99.1MHz Ext. mod.60dB	RDS data or 57kHz 3% devi.	99.1MHz	Oscilloscope	R301	Maximum	

2.AM ADJUSTMENT

120V model

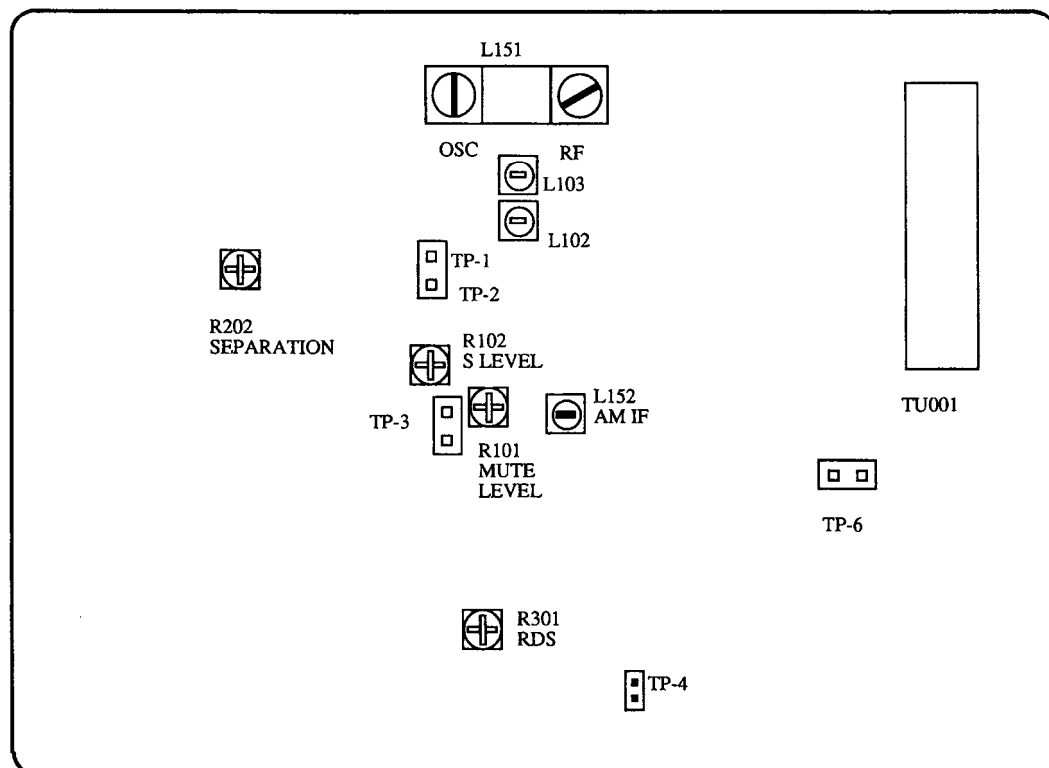
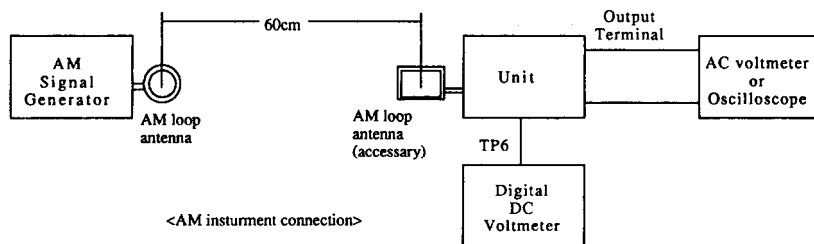
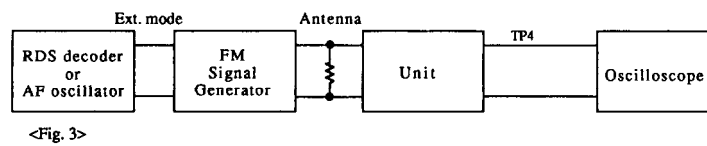
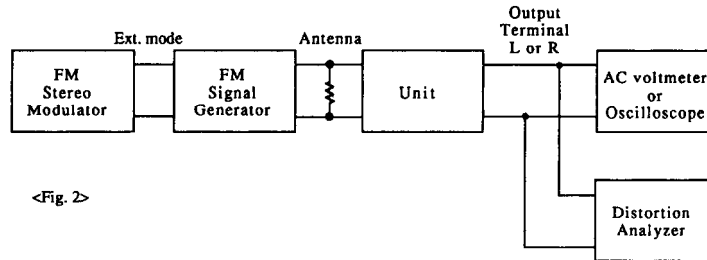
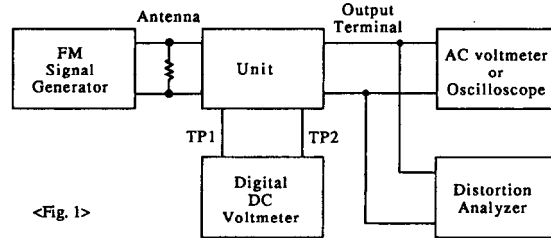
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.5±0.4V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specification
FM tuned voltage:87.9MHz~107.9MHz
2.0±0.5V~7.5±0.5V
AM tuned voltage:530kHz~1710kHz
1.5±0.5V~8.0±0.5V

230V and Wolrdwide models

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L151	1.5±0.4V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L152	Maximum

Reference Specification
FM tuned voltage:87.5MHz~108.0MHz
2.0±0.5V~7.5±0.5V
AM tuned voltage:522kHz~1611kHz
1.5±0.5V~7.5±0.5V (230V model)
AM tuned voltage:531kHz~1602kHz
1.5±0.5V~7.5±0.5V (Worldwide model)



L102 NF1F-4072 L103 NF1F-4073



PRINTED CIRCUIT BOARD – PARTS LIST

MAIN CIRCUIT PC BOARD (NARF-4846-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end			Resonators	
U001	240089	FE415-G11	X201	3010152	CSB456F11,Ceramic
	ICs		X301	3010190	CST8.00MTW,Ceramic
Q104	22240039	LA1266	X302	3010203	AF6146CG,Crystal
Q201	22240252	LA3401	X701	3010141 or	XTL-7.2M,Crystal
Q301	22240639A	μ PD17135AGT-112		3010158	
Q302	22240679	μ PC1346CS		Capacitors	
Q703	22240090	LM7001	C001,C160	354741019	100 μ F,16V,Elect.
Q901	222780125NEC	78M12HF	C003,C122	354784799	0.47 μ F,50V,Elect.
Q902	222780565JRC	78M56	C004,C116	354742209	22 μ F,16V,Elect.
	Transistors		C118	354780109	1 μ F,50V,Elect.
Q001,Q701	2211255 or	2SC1815-GR or	C154,C156	354741009	10 μ F,16V,Elect.
Q802-Q804	2214915	2PC1815-GR	C155	354780479	4.7 μ F,50V,Elect.
Q101	2212195	2SK241-GR	C157,C202	354741009	10 μ F,16V,Elect.
Q102	2211723	2SC1923-O	C158,C204	374724734	0.047 μ F $\pm$ 5%,50V,Plastic
Q103,Q106	2210746	2SC945A-P	C159	374722234	0.022 μ F $\pm$ 5%,50V,Plastic
Q107,Q108	221281	DTC114YS	C205,C209	354741009	10 μ F,16V,Elect.
Q202	2211945	2SK246-GR	C206,C207	370135614	560pF $\pm$ 5%,100V,Plastic <D>
Q203,Q204	2212794	2SD1468-R		370132714	270pF $\pm$ 5%,100V,Plastic <P/W>
Q205	2213074	2SA933-R	C210,C221	354741009	10 μ F,16V,Elect.
Q702	2212445	2SK365-GR	C211,C212	354780109	1 μ F,50V,Elect.
Q704,Q705	2213090	DTA114YS	C213,C701	354782299	0.22 μ F,50V,Elect.
Q706	2212600	DTA124ES	C214	354780109	1 μ F,50V,Elect.
Q707	221282	DTC144ES	C215,C811	354744719	470 μ F,16V,Elect.
Q801	2212274	2SK192A-Y	C219,C220	370131514	150pF $\pm$ 5%,100V,Plastic <W>
	Diodes		C222,C803	354784799	0.47 μ F,50V,Elect.
D001,D002	223191	SD101	C301,C303	354744709	47 μ F,16V,Elect.
D101-D109	223163,	1SS133,	C304,C310	374724724	4700pF $\pm$ 5%,50V,Plastic
D201-D203	223222 or	WG713A or	C305,C306	374722234	0.022 μ F $\pm$ 5%,50V,Plastic
D301,D701	223171	1SS270A	C307	354780229	2.2 μ F,50V,Elect.
D204	224450361	MTZ3.6A	C308,C309	374723324	3300pF $\pm$ 5%,50V,Plastic
D703	223163,	1SS133,	C312,C810	354741009	10 μ F,16V,Elect.
D805-D808	223222 or	WG713A or	C702,C705	354780229	2.2 μ F,50V,Elect.
D810	223171	1SS270A	C703,C704	374721034	0.01 μ F $\pm$ 5%,50V,Plastic
D704	224450562	MTZ5.6B	C707	354722219	220 μ F,6.3V,Elect.
D801-D804	223191	SD101	C807,C808	354784799	0.47 μ F,50V,Elect.
D901-D905	22380032 or	1SR139-100 or	C809,C908	354744709	47 μ F,16V,Elect.
	22380035	GP104003E	C902,C911	354764709	47 μ F,35V,Elect.
D906	224452702	MTZ27B	C903	354761029	1000 μ F,35V,Elect.
D907	224450753	MTZ7.5C	C905,C906	354741009	10 μ F,16V,Elect.
	Transformers		C909	354762219	220 μ F,35V,Elect.
L102	233401	NFIF-4072	C910	354782219	220 μ F,50V,Elect.
L103	233402	NFIF-4073	C912	354761009	10 μ F,35V,Elect.
L152	232139	NMIF-4062		Resistors	
	Coils		R006	431523355	3.3M Ω $\pm$ 10%,1/2W,Solid <D>
L101	233411K220	NCH-1387	R101	5210266	N06HR100KBC,Trim
L104	231081	NCH-2129	R202	5210267	N06HR200KBC,Trim
L151	232148	NMRF-7050	R301	5210265	N06HR50KBC,Trim
L201	233383	NMC-6070	R904	442629114	910 Ω $\pm$ 5%,1W,Metal oxide
L202,L203	233355A	NMC-4059		Plugs	
	Ceramic filters		TP-4	25055038	NPLG-2P29
X101,X102	3010137	SFE10.7MMK		Terminals	
X103,X104	3010087	SFE10.7MJA	P101	25060117	NTM-2PDML051
X151	3010123	SFZ-450JL	P102	25045333	NPJ-2PDBL185
X152	3010076	BFU-450C	P103	25045330	HSJ-2PDBL184

VOLTAGE SELECTOR SWITCH PC BOARD (NAPS-4850-1)

(Worldwide model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Wire traps	
P701	25051010	NSCT-25P797
P971	25051109	NSCT-5P896
	Switch	
S201	25065286	NSS-22112,Slide <W>

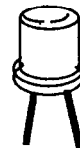
CIRCUIT NO.	PART NO.	DESCRIPTION
P906	25065437	▲ NSS-22157,Slide switch

NOTE: <D>:120V model only
 <P>:230V model only
 <W>:Worldwide model only

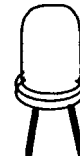
DISPALY CIRCUIT PC BOARD (NADIS-4847-1/1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q751	22240757	μ PD78043GF-052 <D>
	22240732	μ PD78043GF-037 <P/W>
	FL tube	
Q752	212125	10-BT-124GK
	Transistor	
Q753	221282	DTC144ES
	Diodes	
D751-D753	223163,	1SS133,
D755,D756	223222 or	WG713A or
	223171	1SS270A
D759-D761	225142 or	* SEL2913K or
	225206D	* SEL2910D-D,LED
	Resonator	
X751	3010224	XTL-4.19M,Crystal
	Capacitors	
C751	355780479	4.7 μ F,50V,Elect.
C753	355741009	10 μ F,16V,Elect.
C754	3000057	0.1F,5.5V,Super
C755	375524744	0.47 μ F $\pm$ 5%,50V,Plastic
C758	355780109	1 μ F,50V,Elect.
	Switches	
S751-S778	25035652	NPS-111-S604
S781	25065414	NSS-2215S <W>
	Wire trap	
P701	25050722 or	NSCT-25P526 or
	25050931	NSCT-25P718
	Holder	
	27190929	FL tube
	Spacer	
	27270376 or	for SEL2913K
	27270378	for SEL2910D

NOTE:



SEL2913K



SEL2910D-D

Use the same type LED when replacement for LED of mark *.

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

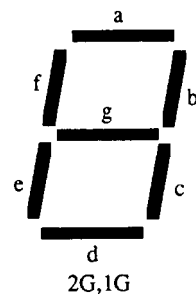
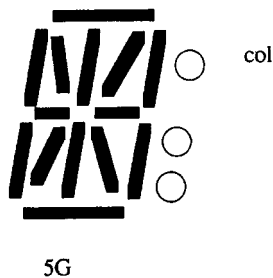
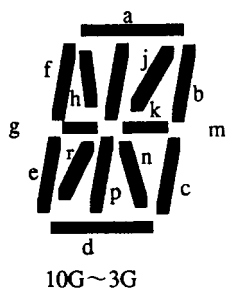
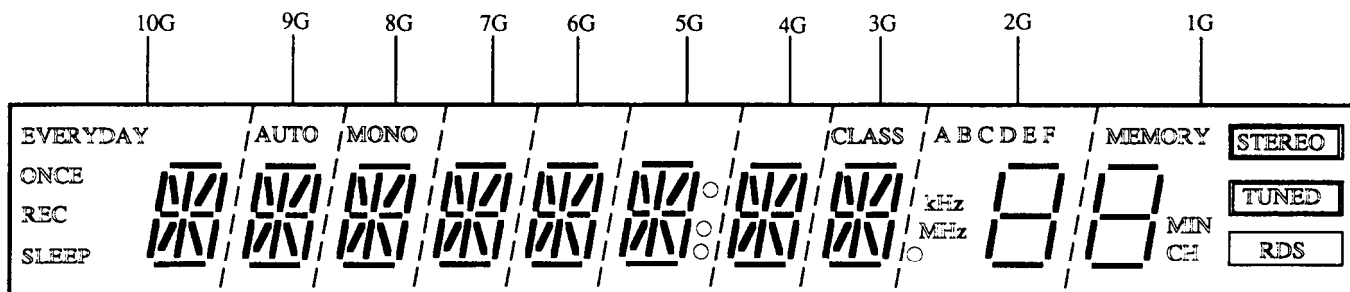
JOG DIAL PC BOARD (NASW-4848-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
S731	25065481	EC16B25B0,Encode
P703	25050267	NSCT-3P95,Wire trap

POWER SUPPLY PC BOARD (NAPS-4849-1/1A/1B)

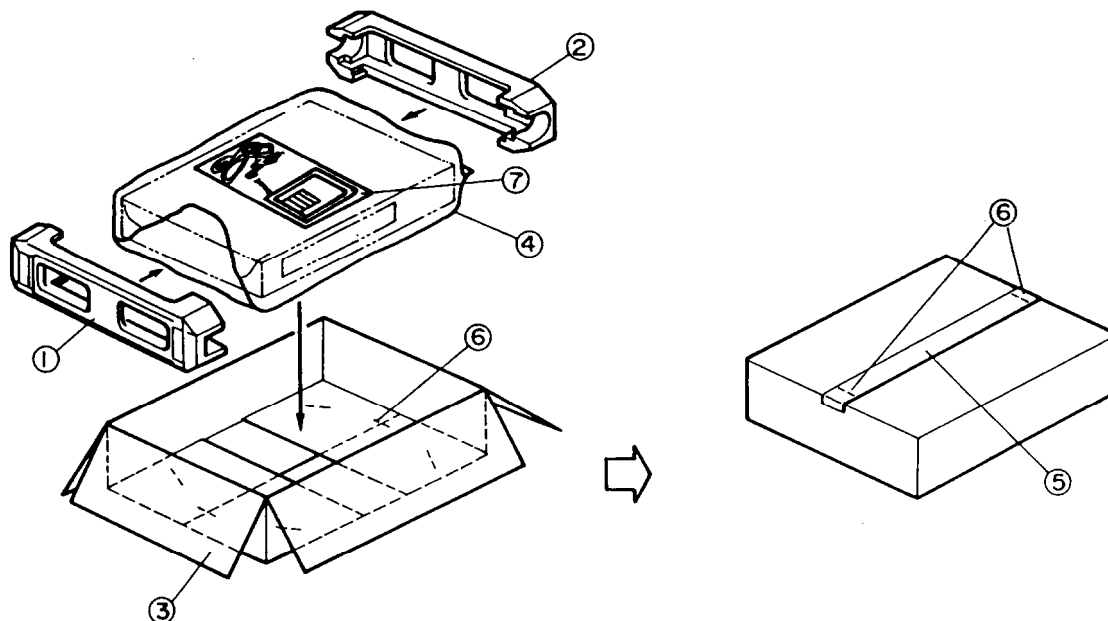
CIRCUIT NO.	PART NO.	DESCRIPTION
T901	2300963	▲ NPT-1189D,Power transformer <D>
	2300964	▲ NPT-1189P,Power transformer <P>
	2300965	▲ NPT-1189DG,Power transformer <W>
C901	3500065A	▲ DE7150FZ103PAC400V/125V, Capacitor IS
S901	25035636	▲ NPS-111-L590P,Push switch
P902	25055675	NPLG-2P631,Plug
R901	431523355	▲ 3.3M,1/2W,Solid resistor <D>

FL TUBE VIEW



	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	a	a	a	a
P2	b	b	b	b	b	b	b	b	b	b
P3	c	c	c	c	c	c	c	c	c	c
P4	d	d	d	d	d	d	d	d	d	d
P5	e	e	e	e	e	e	e	e	e	e
P6	f	f	f	f	f	f	f	f	f	f
P7	g	g	g	g	g	g	g	g	g	g
P8	h	h	h	h	h	h	h	h	—	—
P9	j	j	j	j	j	j	j	j	A	MEMORY
P10	k	k	k	k	k	k	k	k	B	STEREO
P11	m	m	m	m	m	m	m	m	C	TUNED
P12	n	n	n	n	n	n	n	n	D	RDS
P13	p	p	p	p	p	p	p	p	E	—
P14	r	r	r	r	r	r	r	r	F	—
P15	EVERYDAY	AUTO	MONO	—	—	col	—	CLASS	kHz	MIN
P16	ONCE	—	—	—	—	○	—	—	MHz	CH
P17	REC	—	—	—	—	—	—	—	○	—
P18	SLEEP	—	—	—	—	—	—	—	—	—

PACKING VIEW



REF.NO.	PART NO.	DESCRIPTION
1	29091647	Pad L
2	29091648	Pad R
3	29052677	Master carton box
4	29100033A	Styrene bag
5	29110071	PP tape
6	261504	Adhesive tape
7	282301	Staple
8	Accessory bag ass'y	
	29341884	Instruction manual
	29341885	Instruction manual <P>
	29341886	Instruction manual <W>
	29100097	350×250, Styrene bag
	25065462	FM adaptor <D>
	292112Y	FM antenna
	232140	NMA-3057, AM loop antenna
	2010098A	Connection cord
	2010200	Connection cord RI
	29365019A	Warranty card <N>
	25055040	CV-K-2, Conversion plug <W>
	29358002J	Service station list <N>

NOTE: <D>:120V model only
 <P>:230V model only
 <W>:Worldwide model only
 <N>:U.S.A. model only

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