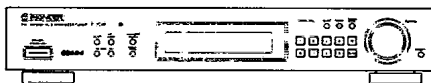


Service Manual



ORDER NO.
ARP2891

FM/AM DIGITAL-SYNTHESIZER TUNER F-204RDS

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	F-204RDS		
HEXK	○	AC 220-230V	AC240V, *
HBWXX	○	AC230V	AC240V, *
HEWZXX	○	AC220-230V	AC240V, *
HEWIXK	○	AC220-230V	AC240V, *

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

●For HBWXX, HEWZXX and HEWIXK types, refer to page 27.

CONTENTS

1. EXPLODED VIEWS ,PACKING AND PARTS LIST	2	6. FL INFORMATION	24
2. BLOCK DIAGRAM	5	7. IC INFORMATION	25
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS	6	8. FOR HBWXX, HEWZXX AND HEWIXK TYPES	27
4. PCB PARTS LIST	20	9. CONNECTIONS	29
5. ADJUSTMENTS	22	10. PANEL FACILITIES	30
		11. SPECIFICATIONS	32

1. EXPLODED VIEWS, PACKING AND PARTS LIST

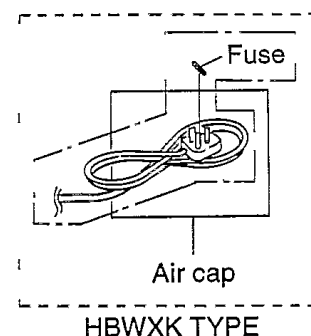
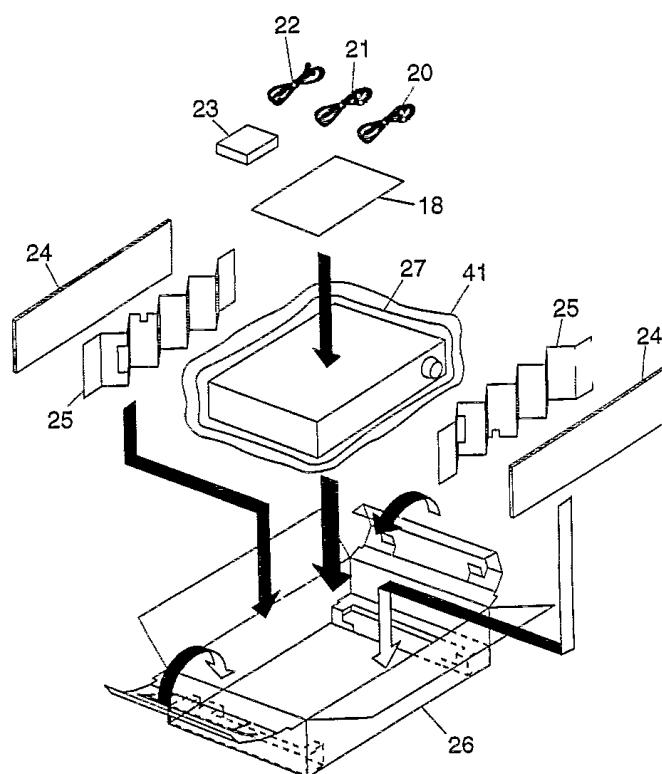
NOTES:

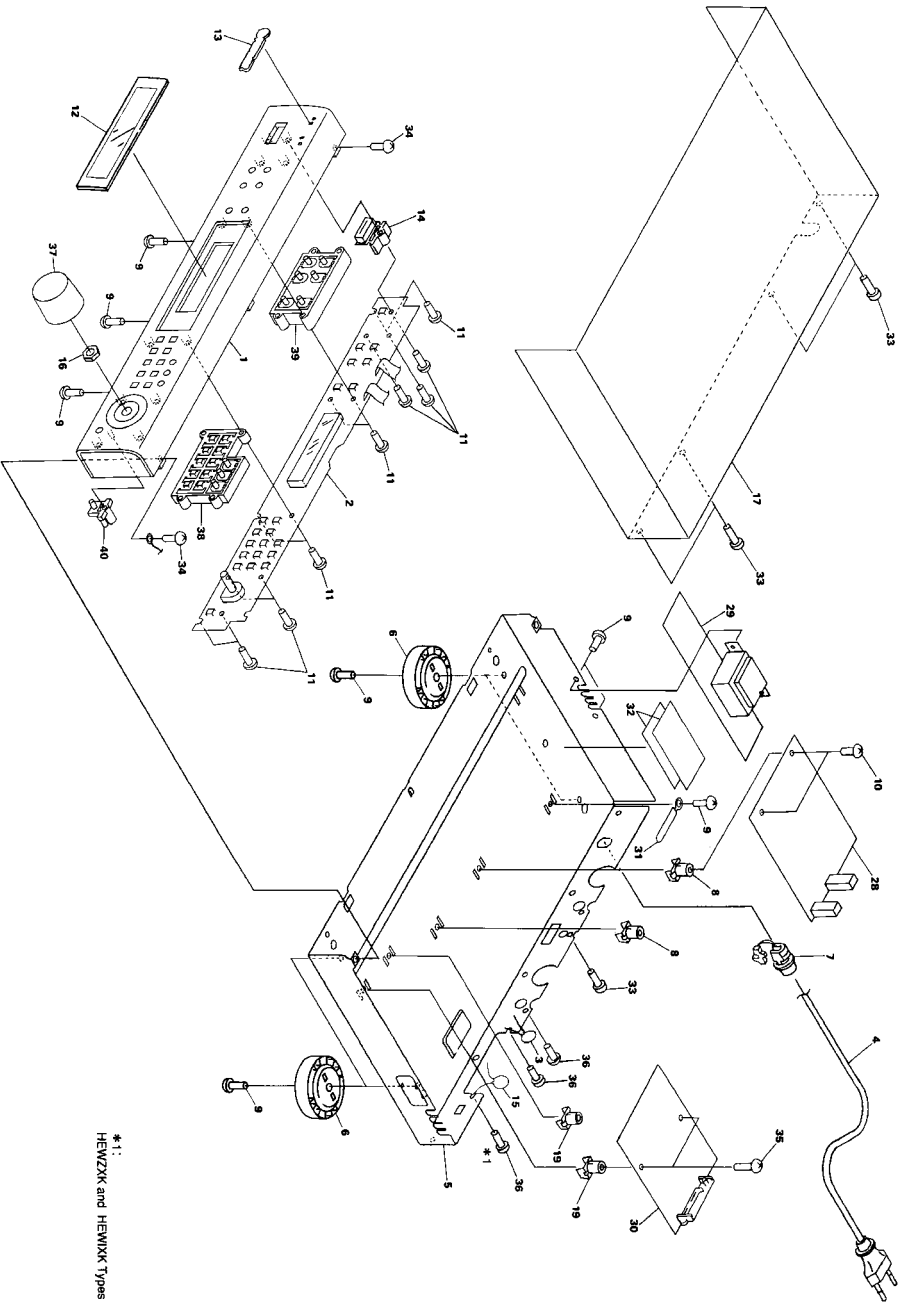
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

PARTS LIST (for F-204RDS/HEXK)

Mark	No.	Description	Parts No.
	1	FRONT PANEL (PLS)	AMB7241
	2	CONTROL ASS'Y	AWZ7714
	3	C1 CERAMIC CAPACITOR	CCDSL221J50
Δ	4	AC POWER CORD	ADG1138
	5	CHASSIS (MET)	ANA1478
	6	INSULATOR	PNW1912
Δ	7	STRAIN RELIEF	AEC-882
NSP	8	PCB MOULD	AMR1525
	9	SCREW	ABA-298
	10	SCREW	ABA1018
	11	SCREW	BPZ26P080FMC
	12	FL PANEL (PLS)	AAK7132
	13	NAME PLATE	PAM1608
	14	POWER BUTTON (ABS)	AAD2425
	15	C2 CERAMIC CAPACITOR	CKDYB102K50
	16	NUT	NK70FUC
	17	BONNET(FE)	ANE7058
	18	OPERATING INSTRUCTIONS (English/French/German/Italian/ Swedish/Dutch/Spanish/Portuguese)	ARE7031
NSP	19	PCB MOULD	AMR2115
	20	CORD WITH PLUG	PDE1249
	21	CORD WITH PLUG	PDE1095
	22	FM ANTENNA	ADH7001
	23	LOOP ANTENNA	ATB7001
	24	SPACER (PAP)	AHA7058
	25	SPACER (PAP)	AHA7074
	26	PACKING CASE	AHD7133
	27	PACKAGING SHEET	AHG1107
	28	RDS ASS'Y	AWZ7711
NSP	29	POWER ASS'Y	AWZ7709
	30	FM/AM TUNER MODULE	AXQ7040
	31	BINDER	AEP-215
NSP	32	BARRIER	AEC1416
	33	SCREW (STEEL)	ABA1006
	34	SCREW (STEEL)	ABA1011
	35	SCREW	ABA1024
	36	SCREW (STEEL)	ABA1047
	37	ROTARY KNOB M (PLS)	AAB7049
	38	HINGE BUTTON A (PLS)	AAD7162
	39	HINGE BUTTON B (PLS)	AAD7164
	40	HINGE BUTTON C (PLS)	AAD7166
NSP	41	VINYL SHEET	AHG7013

● PACKING

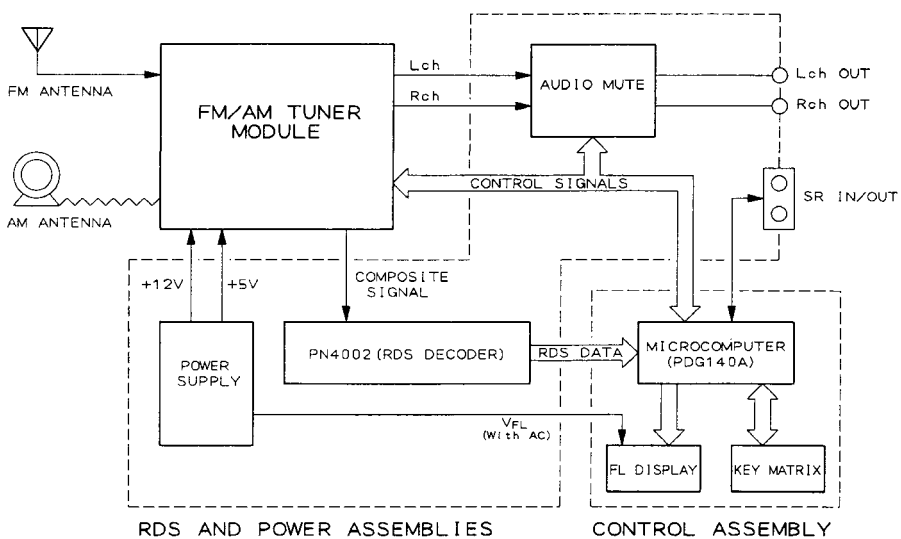




NOTE: Screws adjacent to V mark on product are used for disassembly.

*1: HEWLETT and HEWLETT Types / ABA1006

2. BLOCK DIAGRAM



3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 3A)

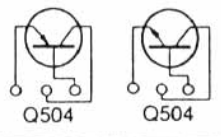
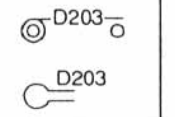
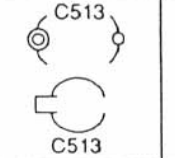
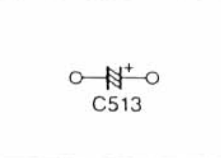
1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
3. RESISTORS:
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. CAPACITORS:
Unit: p: pF or μF unless otherwise noted.
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
5. COILS:
Unit: m: mH or μH unless otherwise noted.
6. VOLTAGE AND CURRENT:
mV : Signal voltage at FM 1kHz, 100% MOD.
or - V :
DC voltage (V) at no input signal unless otherwise noted.
Value in () is DC voltage at rated power.
mA or - mA :
DC current at no input signal unless otherwise noted.

7. OTHERS:
• or • : Adjusting point.
• : Measurement point.
• The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. SCH-□ ON THE SCHEMATIC DIAGRAM:
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. SWITCHES (Underline indicates switch position):

- CONTROL ASSY
- | | |
|----------------------------|--------------------|
| S401 : POWER(STANDBY/ON) | S414 : 1 |
| S402 : AM | S415 : 6 |
| S403 : FM | S416 : 7 |
| S404 : DISPLAY MODE | S417 : 8 |
| S405 : CHARACTER/SEARCH | S418 : 9 |
| S406 : MPX MODE(AUTO/MONO) | S419 : 0/10 |
| S407 : MEMORY | S420 : DIRECT |
| S410 : 5 | S421 : CLASS |
| S411 : 4 | S422 : RF ATT |
| S412 : 3 | S423 : TUNING |
| S413 : 2 | S424 : TUNING MODE |

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
 Q504	 Q504	Transistor
 D203	 D203	Diode
 C513	 C513	Capacitor (Polarized)

3. The transistor terminal marked with E or C shows the emitter.
4. The diode terminal marked with C or C shows cathode side.
5. The capacitor terminal marked with C or C shows negative terminal.

6. The parts mounted on each PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

3.1 RDS, POWER AND CONTROL ASSEMBLIES

Line Voltage Selection

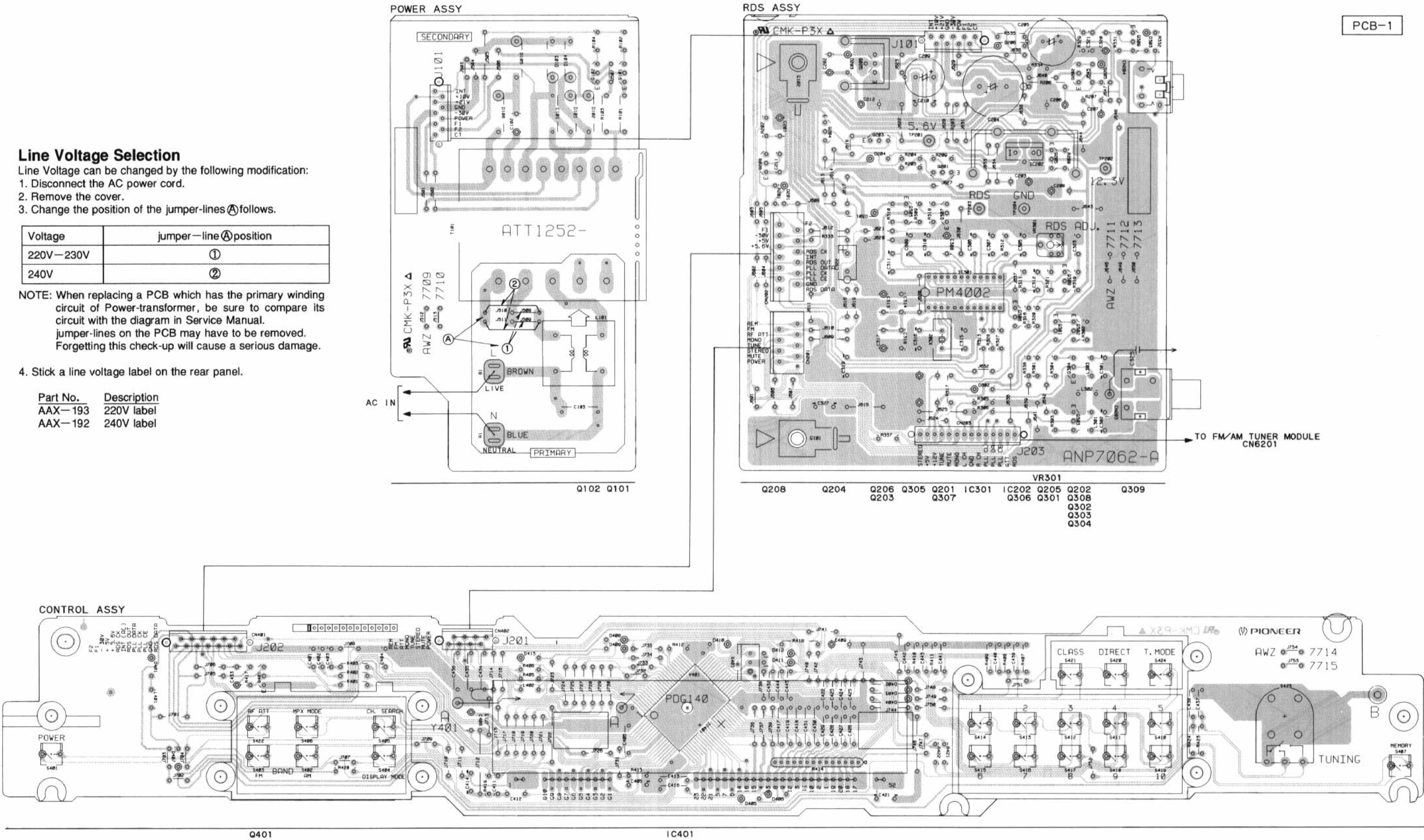
- Line Voltage can be changed by the following modification:
1. Disconnect the AC power cord.
 2. Remove the cover.
 3. Change the position of the jumper-lines A follows.

Voltage	jumper—line A position
220V—230V	①
240V	②

NOTE: When replacing a PCB which has the primary winding circuit of Power-transformer, be sure to compare its circuit with the diagram in Service Manual. Jumper-lines on the PCB may have to be removed. Forgetting this check-up will cause a serious damage.

4. Stick a line voltage label on the rear panel.

Part No.	Description
AAX—193	220V label
AAX—192	240V label



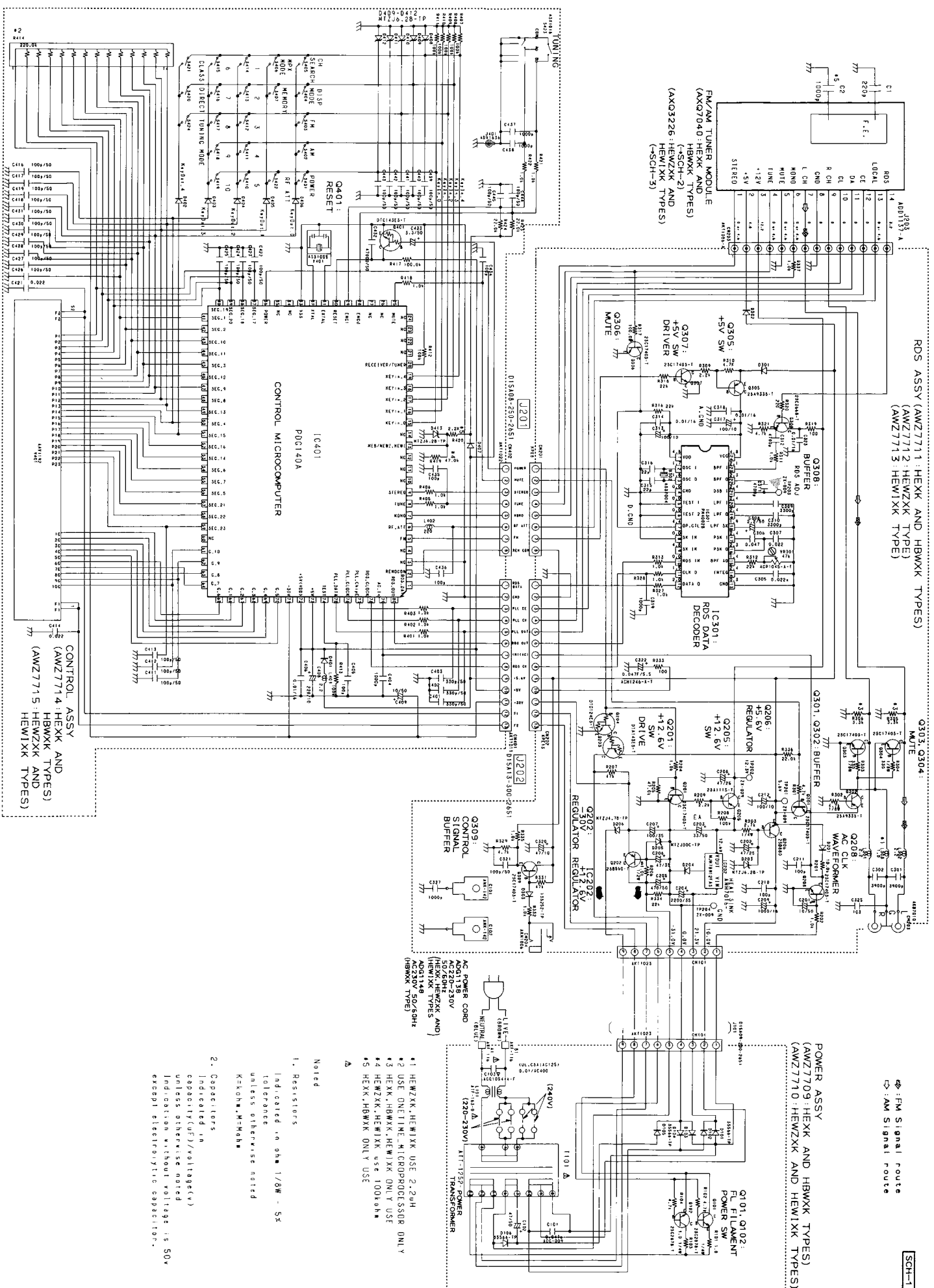
FM Signal route
AM Signal route

SCH-1

POWER ASSY
(AWZ7709:HEXX AND HBWXX TYPES)
(AWZ7710:HEWZXX AND HEW1XX TYPES)

FM/AM TUNER MODULE
(AWZ7040:HEXX AND HBWXX TYPES)
(-SCH-2)
(AXO3226:HEWZXX AND HEW1XX TYPES)
(-SCH-3)

RDS ASSY (AWZ7711:HEXX AND HBWXX TYPES)
(AWZ7712:HEWZXX TYPE)
(AWZ7713:HEW1XX TYPE)



AC POWER CORD
(AC230V 50/60Hz)
(AC230V 50/60Hz)
(AC230V 50/60Hz)

1. HEWZXX, HEW1XX USE 2.2μH
2. USE ON-TIME MICROPROCESSOR ONLY
3. HEWZXX, HEW1XX USE 100μH
4. HEWZXX, HEW1XX USE 100μH
5. HEWZXX, HEW1XX ONLY USE

A

Noted

1. Resistors

Indicated on ohm 1/8W - 5x

unless otherwise noted

K=ohm, M=Mega

2. Capacitors

Indicated in

capacitor (uf/voltage)

unless otherwise noted

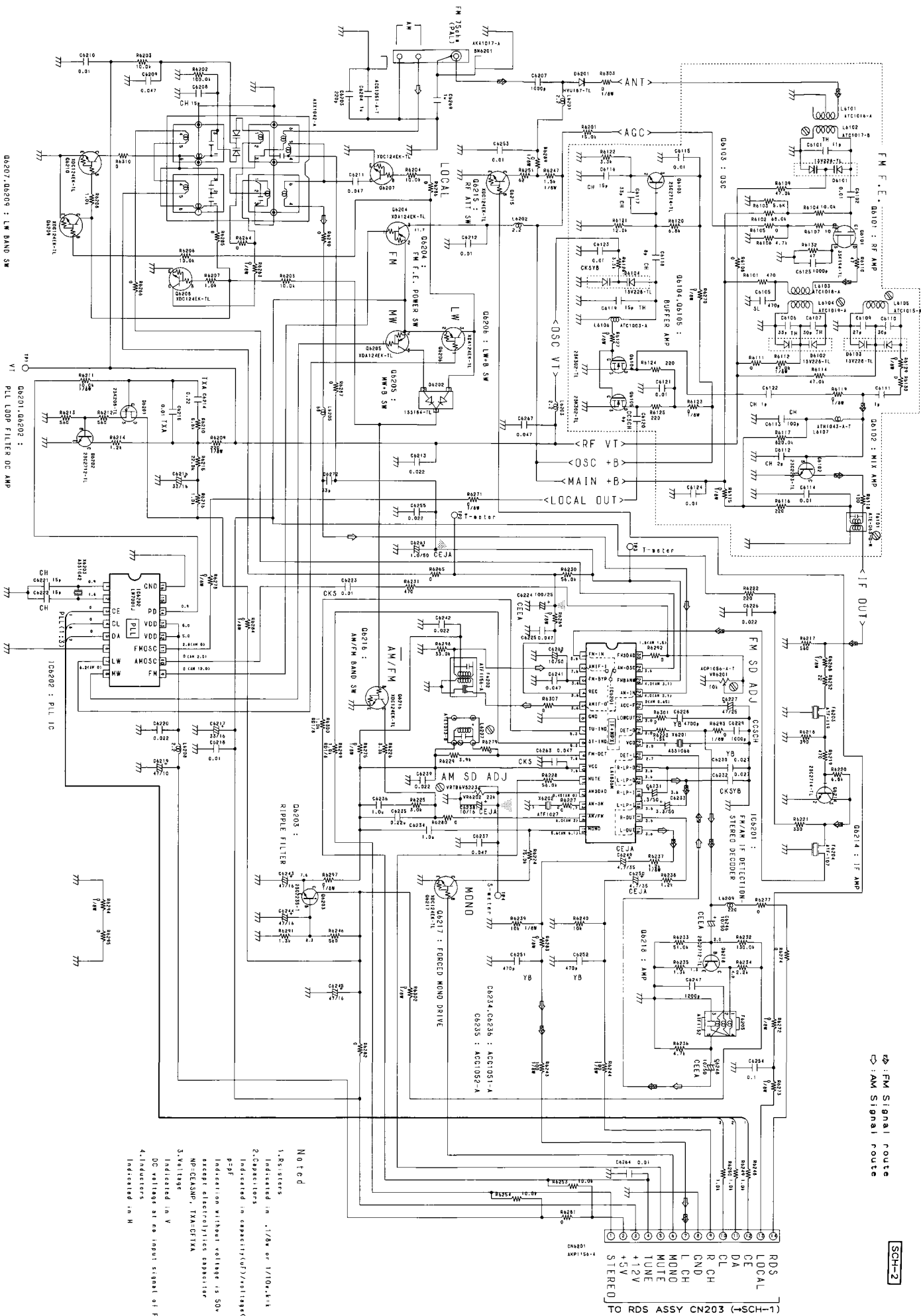
Indication without voltage is 50V

except electrolytic capacitor.

SCH-1

RDS ASSY, POWER ASSY,
CONTROL ASSYRDS ASSY, POWER ASSY,
CONTROL ASSY

SCH-1



SCH-2

0d207,0d209 : LW BAND SW
0d208,0d210 : MW BAND SW

FM/AM TUNER MODULE
(FOR HEXK AND HBWXX TYPES)

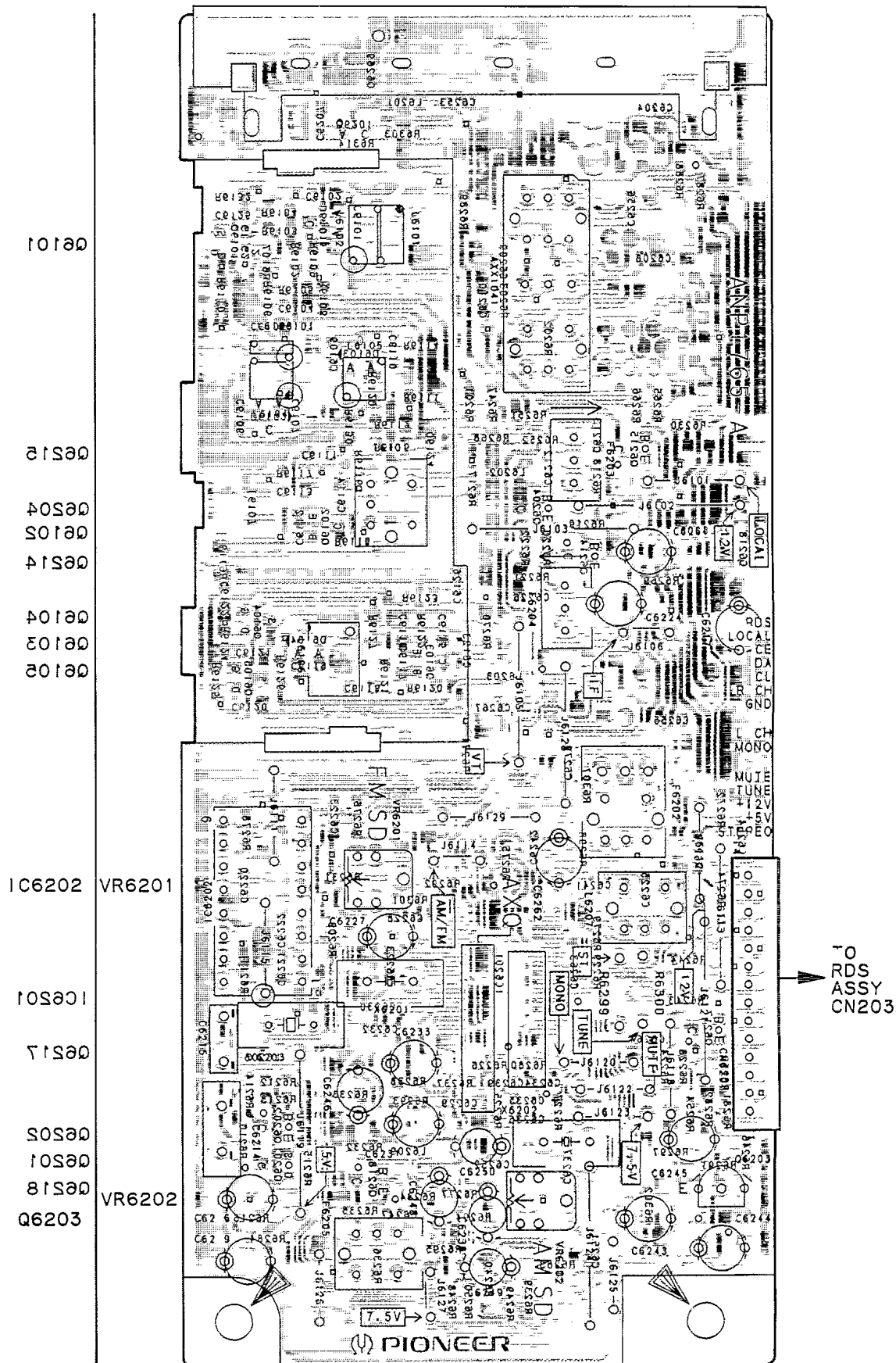
SCH-2

3.3 FM/AM TUNER MODULE (FOR HEWZXX AND HEWIXX TYPES)

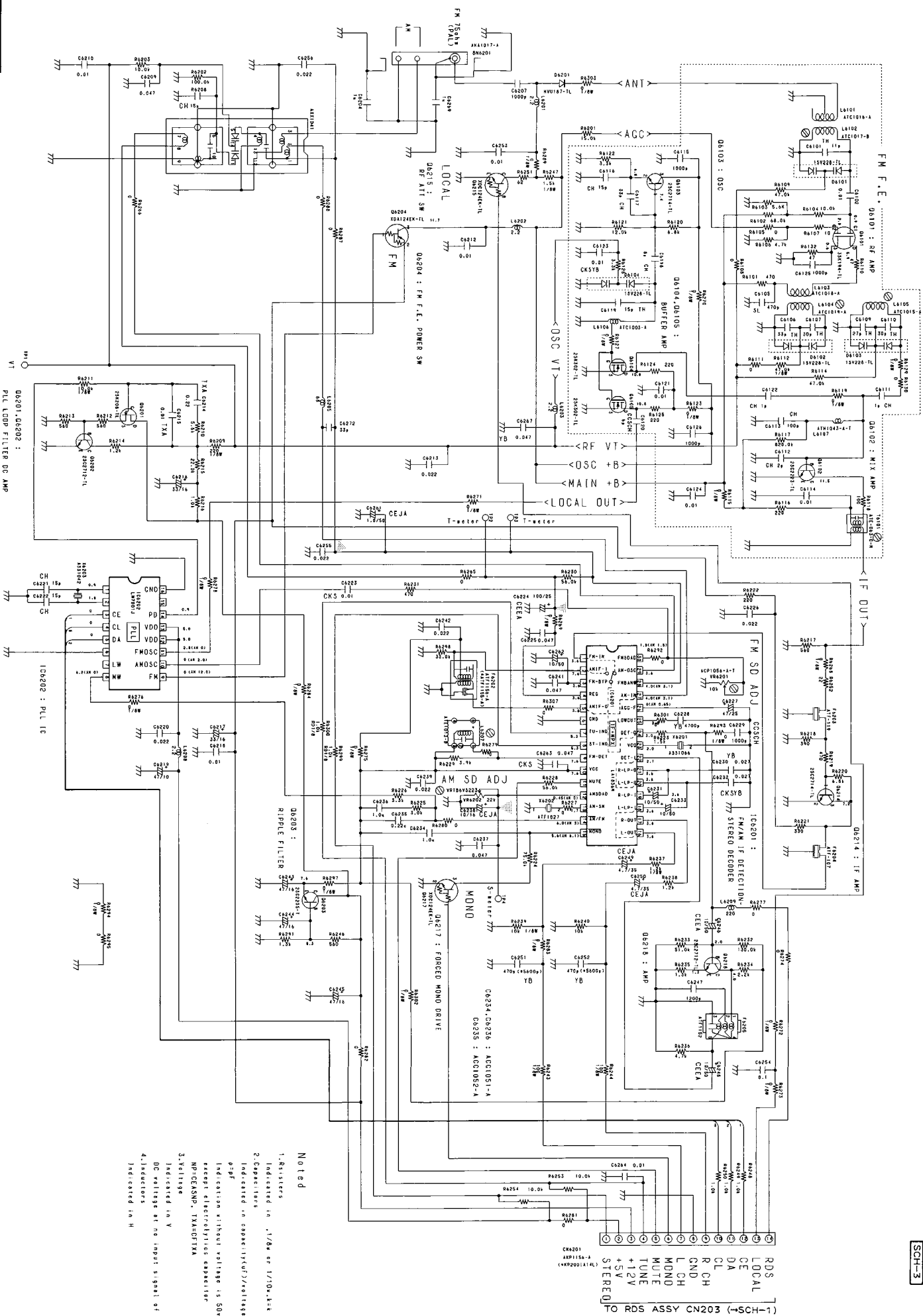
● This diagram is viewed from the mounted parts side.

PCB-3

FM/AM TUNER MODULE (HEWIXX AND HEWZXX TYPES)



SCH-3



TO RDS ASSY CN203 (→SCH-1)

Noted

1. Resistors indicated in .1/8w or 1/10w are
2. Capacitors indicated in capacitor values are indicated as capacitance/voltage/temperature
3. Voltage indicated without voltage is 50v except electrolytic capacitor
- NP-CASMP-1XA=DT1XA
3. Voltage indicated as V
- DC voltage at no input signal of FM
4. Inductors indicated in H

4. PCB PARTS LIST
(for F-204RDS/HEXX)

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "  " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohms and 47k ohms (Tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10¹ → 561 RD1/8PM  J
47k Ω → 47 × 10³ → 473 RD1/4PS  J
0.5 Ω → 0R5 RN2H  K
1 Ω → 010 RS1P  K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 RN1/4PC 5 6 2 1 F

Mark.	No.	Description	Parts No.	Mark.	No.	Description	Parts No.
LIST OF ASSEMBLIS							
NSP	TUNER ASS'Y		AWE7009	COILS AND FILTERS	D201 ,D204 ,D301 -D303		1SS252
	└ POWER ASS'Y	AWZ7709	D205		MTZJ30C		
		└ RDS ASS'Y	AWZ7711		D206	MTZJ4.7B	
		└ CONTROL ASS'Y	AWZ7714		D203	MTZJ6.2B	
		FM/AM TUNER MODULE	AXQ7040		L303	LAU010J	
			L301 ,L302	LAU2R2J			
				CAPACITORS			
				C322 (47mF/5.5)		ACH1135	
				C315 ,C316		CCCCCH220J50	
				C210		CCCSL101J50	
				C201		CEAS100M50	
				C212 ,C313 ,C317		CEAS101M10	
				C207		CEAS101M35	
				C209		CEAS102M16	
				C204		CEAS222M35	
				C308		CEAS2R2M50	
				C202 ,C208 ,C320		CEAS470M25	
				C206		CEAS470M50	
				C205		CEEA371M50	
				C109 ,C327		CEE4330M50	
				C309 ,C310		CKCYB102K50	
				C301 ,C302		CKCYB392K50	
				C311 ,C312		CKCYB472K50	
				C307		CKCYF223Z50	
				C305		CKCYX223M25	
				C306		CKCYX473M25	
				C325		CKDYF103Z50	
				C211 ,C321		CKPUYB101K50	
				C314 ,C318 ,C323		CKPUY103M16	
				RESISTORS			
				R206		RD1/2PM102J	
				R203		RD1/4PM272J	
				VR301		ACP1045	
				Other Resistors		RD1/8PM□□□J	
				OTHERS			
				CABLE HOLDER		AKT1023	
RDS ASS'Y							
SEMICONDUCTORS							
IC202				NJM78M12FAS			
IC301				PM4002B			
Q205				2SA1115			
Q302 ,Q305				2SA993S			
Q202				2SC560			
Q201 ,Q208 ,Q301 ,Q303 ,Q304				2SC1740S			
Q306 ,Q307 ,Q309				2SC1740S			
Q308				2SC2668			
Q206				2SD880			
Q203				DTA143ES			
Q204				DTC124ES			
				SCREW		ABA-298	
				CN205 2P PIN JACK		AKB7010	
				CN204 JACK		AKN1006	
				CABLE HOLDER		AKT1023	
				CABLE HOLDER (14P)		AKT1086	
				X302 CRYSTAL RESONATOR (4.332MHz)		ASS7004	
				CN202 CONNECTOR(13P)		KPE13	
				CN201 CONNECTOR(8P)		KPE8	

■ AM Tuner Section

- Set the mode selector to AM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	AM SG(400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency(KHz)	Level(dBμV/m)			
1	TUNED IND. Lighting level	999	47 ± 2	999KHz	VR6202	Adjust so that the indicator of TUNED IND. starts to light up.

■ FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	FM SG(1kHz, ± 75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency(KHz)	Level(dBμV)			
1	Center Adjustment	98 Non modulation	80 or more	98MHz	L6207	Adjust so that the DC voltage between Pin 4 and Pin 28 (or ⊕ leads of C6224 and C6261) of IC 6201 becomes 0V ± 50mV.
2	Front End Sensitivity	98	10 - 30	98MHz	*1 L6104 L6105 L6102 T6101	Adjust so that the DC voltage between Pin 12 (or ⊕ lead of C6238) of IC6201 (S-meter) and GND becomes at maximum level.
3	TUNED IND. Lighting Level	98	15 ± 2	98MHz	VR6201	Adjust so that the indicator of TUNED IND. starts to light up.
4	SK Level Adjustment	88 EXTERNAL *2 (RDS SG)	60	88MHz (RF ATT ON)	VR301	Adjust so that the output level 57KHz between TP 203 and GND becomes maximum.

*1 : HEW/ZXK and HEW/IXK types only.

*2 : RDS SG (AUDIO, PILOT, RDS, BK and DK : OFF, SK : ON)

Notes:

- Before adjusting, make sure there is no gap between L6101 and L6102. If there is a gap between them, bring them into contact with each other first, and then make adjustments.
- Make indicator adjustments in order of AM → FM.

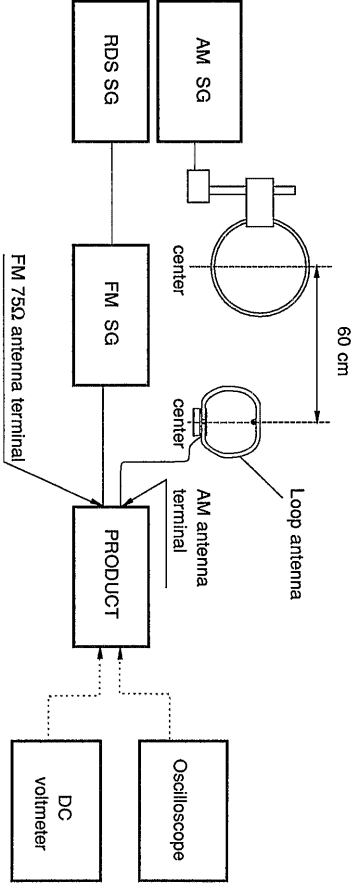


Fig. 1 FM and AM adjustment wiring diagram

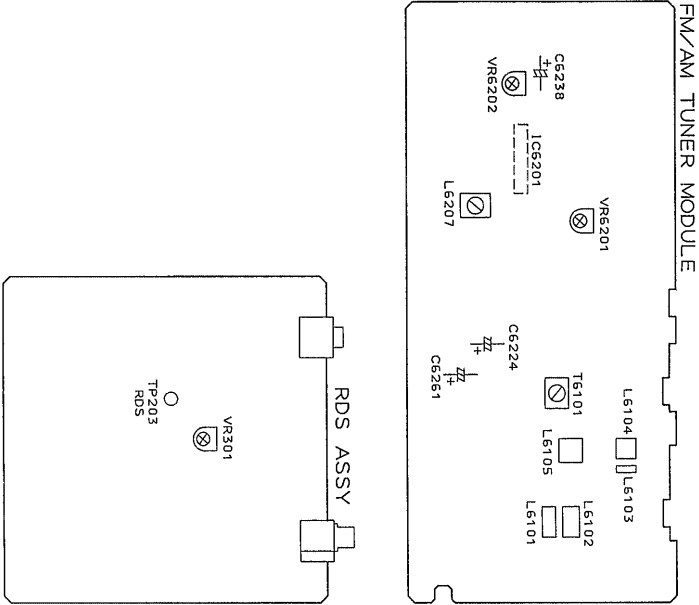


Fig. 2 Adjustment Points

6. FL INFORMATION

- **AAV1192**

PIN LOCATION

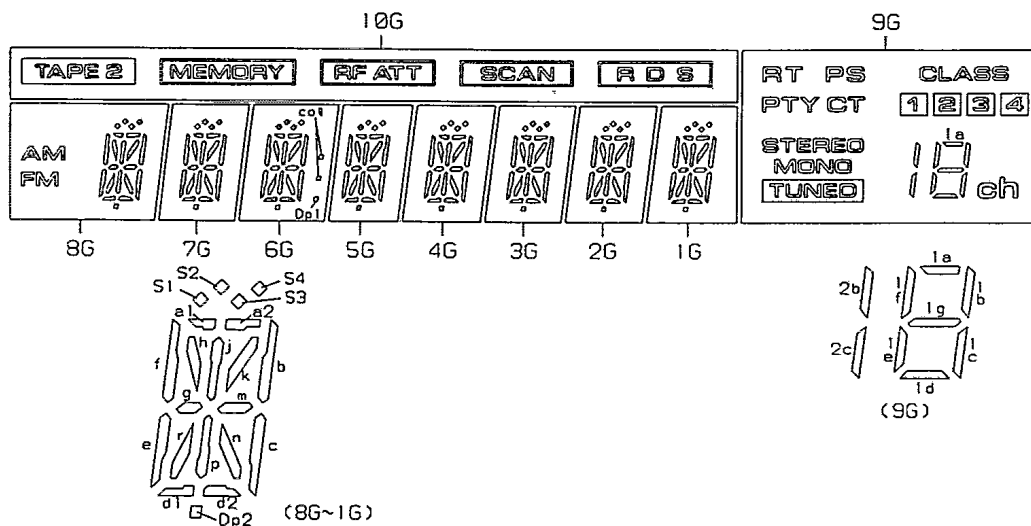


PIN CONNECTION

[illegible]

NOTE 1) F1,F2 --- Filament
2) NP ----- No pin
3) NX ----- No extend pin
4) DL ----- Datum Line
5) 1G~10G --- Grid

GRID ASSIGNMENT



ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	TUNED	S1	S1	S1	S1	S1	S1	S1	S1
P2	-	STEREO	S2	S2	S2	S2	S2	S2	S2	S2
P3	-	2	S4	S4	S4	S4	S4	S4	S4	S4
P4	-	3	S3	S3	S3	S3	S3	S3	S3	S3
P5	MEMORY	MONO	a1	a1	a1	a1	a1	a1	a1	a1
P6	REATT	4	a2	a2	a2	a2	a2	a2	a2	a2
P7	-	CLASS	h	h	h	h	h	h	h	h
P8	-	1	j	j	j	j	j	j	j	j
P9	TAPE 2	2b	b	b	b	b	b	b	b	b
P10	-	RT	k	k	k	k	k	k	k	k
P11	-	1a	g	g	g	g	g	g	g	g
P12	-	1b	f	f	f	f	f	f	f	f
P13	-	2c	m	m	m	m	m	m	m	m
P14	SCAN	CT	c	c	c	c	c	c	c	c
P15	-	PTY	p	p	p	p	p	p	p	p
P16	-	PS	r	r	r	r	r	r	r	r
P17	-	1g	n	n	n	n	n	n	n	n
P18	-	1e	d1	d1	d1	d1	d1	d1	d1	d1
P19	-	1c	e	e	e	e	e	e	e	e
P20	RDS	1d	d2	d2	d2	d2	d2	d2	d2	d2
P21	-	1f	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2
P22	-	CH	AM	-	col	-	-	-	-	-
P23	-	-	FM	-	Dp1	-	-	-	-	-

7. IC INFORMATION

● The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PDG140A (IC401)

● CONTROL MICROCOMPUTER

● Pin Function

No.	NAME	I/O	FUNCTION	ACT
1	RDS DATA	I	Data from LC7073 input	—
2	REMOCON	I	REMOCON signal input	—
3	NOT USED	I	GND standard electric potential	—
4	NC	O	Not used	—
5	FM	O	FM BAND select output	H
6	RF ATT	O	RF ATT ON/OFF output	H
7	MONO	O	FM MONO output	H
8	TUNE	I	TUNE indicator signal input	L
9	STEREO	I	STEREO indicator signal input	L
10	NC	O	Not used	—
11	DIRECT	O	DIRECT ON/OFF (Receiver only) *1	H
12	LW be or not	I	L: LW not being H: LW being (Tuner only) *1	—
13	LOUDNESS	O	LOUDNESS ON/OFF (Receiver only) *1	H
14	K10	I	KEYSCAN input 0	H
15	K11	I	KEYSCAN input 1	H
16	K12	I	KEYSCAN input 2	H
17	K13	I	KEYSCAN input 3	H
18	K14	I	KEYSCAN input 4	H
19	RECEIVER/ TUNER	I	Change-over of RECEIVER/ TUNER (L: Tuner H: Receiver)	—
20	K15	I	KEYSCAN input 5 (Receiver only) *1	H
21	K16	I	KEYSCAN input 6 (Receiver only) *1	H
22	REMOCON be or not	I	Change-over of destination (Receiver only) *1	H
23	NC		Not used	—

No.	NAME	I/O	FUNCTION	ACT
24	FUNCTION ST	O	Change-over of FUNCTION IC (TC9164N) Stroke (Receiver only) *1	
25	MUTE	O	TUNER, MUTE control output	H
26	VOL UP	O	VOLUME UP output	H
27	VOL DOWN	O	VOLUME DOWN output	H
28	Rotary input	O	Rotary encoder input A (Tuner only) *1	H
29	Rotary input	O	Rotary encoder input B (Tuner only) *1	H
30	$\overline{\text{RST}}$	I	Reset input	
31	EX' TAL		Connecting 7.7 MHz oscillation crystal between pins	—
32	X' TAL			—
33	Vss		GND standard electric potential	—
34	NC		Not used	—
35	FL AC	O	FC AC ON/OFF	L
36	POWER	O	POWER ON/OFF	H
37	Seg 17	O	Segment indication output	H
38	Seg 18	O		
39	Seg 20	O		
40	Seg 19	O		
41	Seg 1	O		
42	Seg 2	O		
43	Seg 10	O		
44	Seg 11	O		
45	Seg 3	O		
46	Seg 12	O		
47	K00/S9	O	Segment indication output / KEYSCAN output	H

No.	NAME	I/O	FUNCTION	ACT
48	K01/S8	O	Segment indication output / KEYSCAN output	H
49	K02/S13	O		
50	K03/S4	O		
51	K04/S15	O		
52	Seg 16	O	Segment indication output	H
53	Seg 14	O		
54	Seg 6	O		
55	Seg 7	O		
56	Seg 5	O		
57	Seg 21	O		
58	Seg 22	O		
59	Seg 23	O		
60	Seg 24	O	Segment indication output (Receiver only) *1	H
61	R: G 1 T: G 10	O	Grid FL indication output	H
62	R: G 2 T: G 9	O		
63	R: G 3 T: G 8	O		
64	R: G 4 T: G 7	O		
65	R: G 5 T: G 6	O		
66	R: G 6 T: G 1	O		
67	R: G 7 T: G 2	O		
68	R: G 8 T: G 3	O		
69	R: G 9 T: G 4	O		
70	R: G 10 T: G 5	O		

No.	NAME	I/O	FUNCTION	ACT
71	-VFDP		Electric potential for EDP (-30 V)	—
72	VDD		+5 V Power source input	—
73	NC		+5 V Power source input	—
74	TEST	I	TEST MODE judgement input	H
75	PLL_DT	O	PLL communication data output (LM7001) and change-over function (TC9164N)	—
76	PLL_CK	O	PLL communication clock output (LM7001) and change-over function (TC9164N)	—
77	PLL_CE	O	PLL communication chip unable output (LM7001)	H
78	RDS_CK	I	Each bit from LC7073 synchronizing clock input	—
79	AC	I	WAKE • UP AC pulse input	—
80	RDS_OUT	I	Judging RDS signals output or not	L

*1 : Functions will be changed according to setting (L or H) of Pin 19.

8. FOR HBWXX, HEWZXX AND HEWIXX TYPES

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The $\triangle$ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohms and 47k ohms (Tolerance is shown by J = 5%, and K = 10%).
- 560 Ω $\rightarrow$ 56 $\times 10^1 \rightarrow$ 561----- RD1/8PM $\boxed{5} \boxed{6} \boxed{1}$ J
 47k Ω $\rightarrow$ 47 $\times 10^3 \rightarrow$ 473----- RD1/4PS $\boxed{4} \boxed{7} \boxed{3}$ J
 0.5 Ω $\rightarrow$ 0R5----- RN2H $\boxed{0} \boxed{R} \boxed{5}$ K
 1 Ω $\rightarrow$ 010----- RS1P $\boxed{0} \boxed{1} \boxed{0}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω $\rightarrow$ 562 $\times 10^1 \rightarrow$ 5621----- RN1/4PC 5 6 2 1 F

HBWXX, HEWZXX, HEWIXX and HEXX have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		HEXX	HBWXX	HEWZXX	HEWIXX	
NSP	TUNER ASSY POWER ASSY RDS ASSY CONTROL ASSY FM/AM TUNER MODUL	AWE7009 AWZ7709 AWZ7711 AWZ7714 AXQ7040	AWE7009 AWZ7709 AWZ7711 AWZ7714 AXQ7040	AWE7010 AWZ7710 AWZ7712 AWZ7715 AXQ3226	AWE7011 AWZ7710 AWZ7713 AWZ7715 AXQ3226	
$\triangle$	C2 Ceramic capacitor	CKDYB102K50	CKDYB102K50	Not used	Not used	With AC power cord
$\triangle$	AC power cord	ADG1138	ADG1148	ADG1138	ADG1138	
	Fuse (5A/250V)	Not used	AEK1046	Not used	Not used	
	Operating instructions (English, French, German, Swedish, Italian, Dutch, Spanish, Portuguese)	ARE7031	Not used	Not used	Not used	
	Operating instructions (English)	Not used	ARB7032	Not used	Not used	For AC power cord
	Operating instructions (German)	Not used	Not used	ARC7051	Not used	
	Operating instructions (Italian)	Not used	Not used	Not used	ARC7052	
	Air cap	Not used	AHG1203	Not used	Not used	
	Packing case	AHD7133	AHD7134	AHD7133	AHD7133	

● POWER ASSY

Although AWZ7715 and AWZ7714 are different in part number, they have the same service parts.

● RDS ASSY

AWZ7712, AWZ7713 and AWZ7711 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ7711	AWZ7712	AWZ7713	
	L303 R305, R306	LAU010J RD1/8PM332J	LAU2R2J Not used	LAU2R2J RD1/8PM332J	

● CONTROL ASSY

AWZ7715 and AWZ7714 have the same construction except for the following:

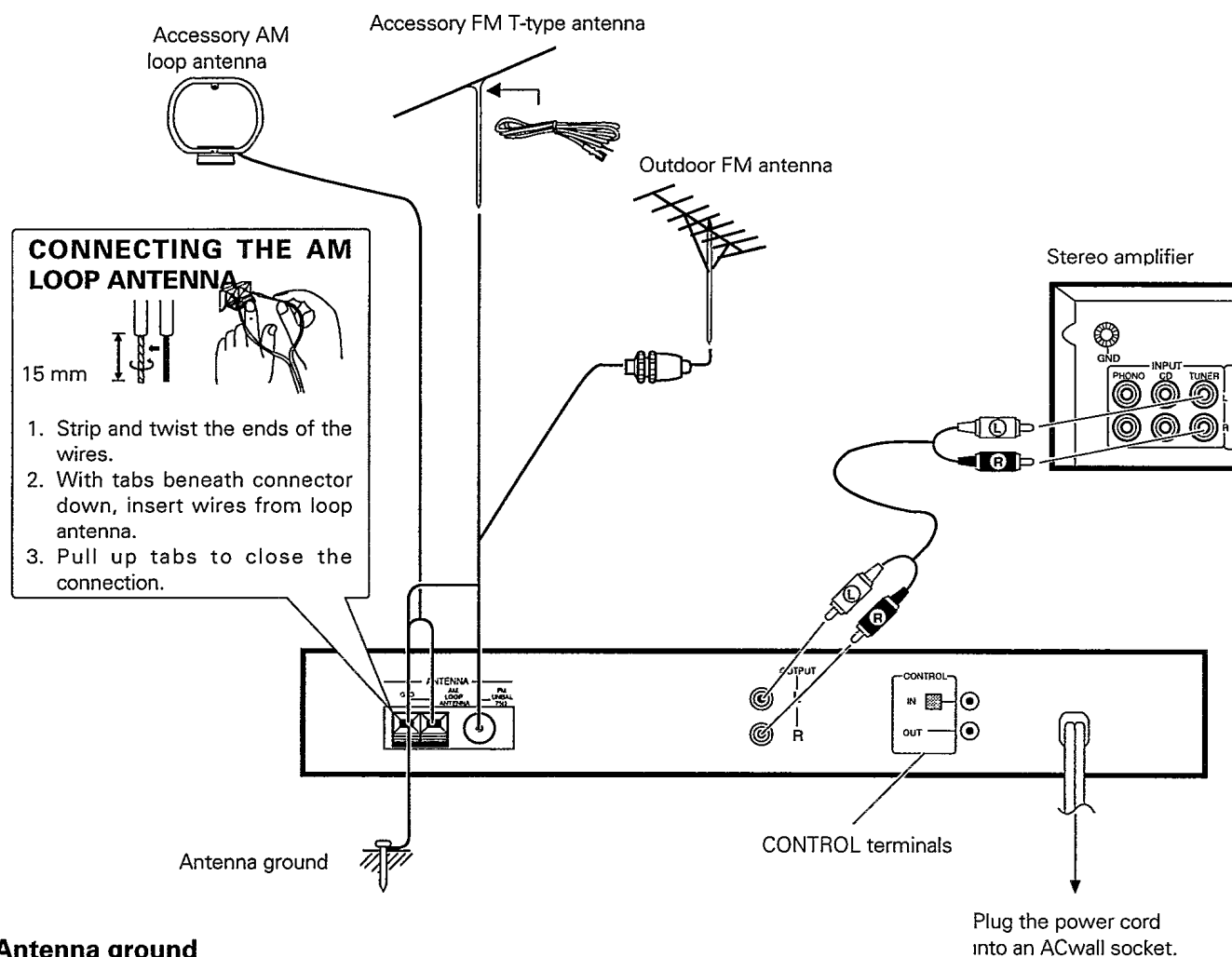
Mark	Symbol & Description	Part No.		Remarks
		AWZ7714	AWZ7715	
	R419 R420	RD1/8PM473J RD1/8PM222J	RD1/8PM104J Not used	

● FM/AM TUNER MODUL

AXQ3226 and AXQ7040 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AXQ7040	AXQ3226	
	Q6205, Q6206 Q6207 - Q6209, Q6210, Q6216 D6202 C6115 C6126	XDA124EK XDC124EK 1SS184 CKSQYB103K50 Not used	Not used Not used Not used CKSQYB102K50 CKSQYB102K50	
	C6203 C6211 C6216, C6217 C6219 C6231, C6233	CCSQCH221J50 CKSQYF473Z50 CEAS330M25 CEAS470M25 CEAS3R3M50	Not used Not used CEAS330M16 CEAS470M10 CEAS100M50	
	C6243 - C6245 C6256 R6204 - R6206 R6207, R6208 R6263	CEAS470M25 Not used RS1/10S103J RS1/10S102J RS1/8S000J	CEAS470M16 CKSQYF223Z50 Not used Not used Not used	
	R6264, R6285, R6286, R6310 R6276 R6288 AM RF tuning block	RS1/10S000J Not used Not used AXX1042	Not used RS1/8S000J RS1/10S000J AXX1041	

9. CONNECTIONS

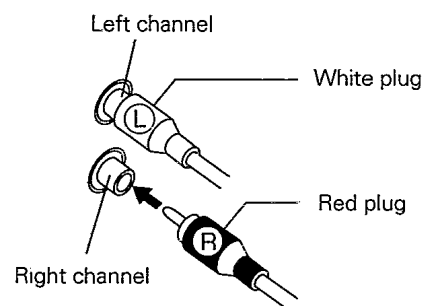


Antenna ground

Although grounding is not always necessary for reception, it is recommended for protection against damage from lightning if an outdoor FM antenna is used. It is also recommended for reducing noise and hum.

Pin plug connecting cord

- Connect the white plug to the white terminal (L) and the red plug to the red terminal (R).
- Make sure that the connections are secure.



CAUTION:

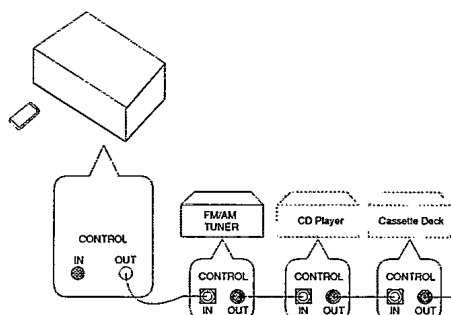
Never make the ground connection to a gas pipe as sparks can cause the gas to ignite.

CONTROL Terminals

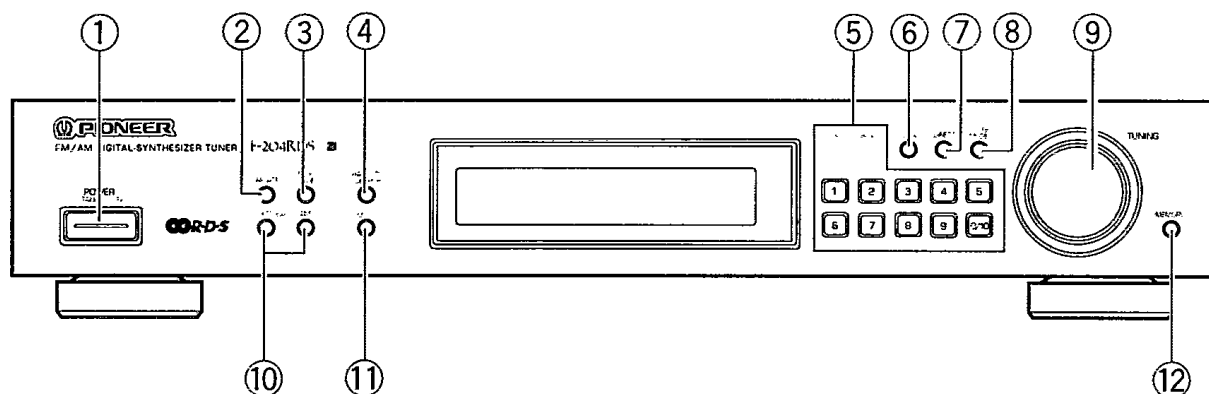
When using together with a Pioneer component bearing the  mark, connect the CONTROL IN terminal on the rear panel of the tuner to the CONTROL OUT terminal on the component using the supplied control cord. This will enable the tuner to be controlled from a distance with the remote control unit supplied with the component.

When this feature is not used, connection is not necessary.

- For instructions regarding connection and operation, please refer to the operating instruction manual of your stereo component.



10. FRONT PANEL FACILITIES



① POWER (STANDBY/ON) switch

This is the switch for electric power.

ON When set to ON position, power is supplied and the unit becomes operational.

STANDBY When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

NOTE:

- The memory will be backed up so long as the power cord is unplugged.
- If the power cord is unplugged, the memory will be retained for several days.
- When not using the unit for a long period, disconnect the power cord.

② RF ATT button

Set this button to on when receiving strong FM signals (nearby stations) to reduce sound distortion (RF ATT indicator lights).

Normally, this button should be set to off.

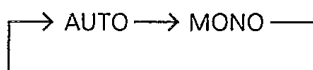
This button does not affect AM reception.

NOTE:

This button's status is preset for each station in station memory.

③ MPX (multiplex) MODE button

Mode changes as follows each time this button is pressed:



This button does not affect AM reception.

AUTO:

"AUTO" is not displayed.

Normally leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo sound and the STEREO indicator lights up.

NOTE:

When the signal level is too weak for reception, sound output is automatically muted.

MONO:

MONO indicator lights up.

To receive stereo broadcasts in monaural.

If there is too much noise during stereo reception of a weak signal, you can reduce the level of noise by switching to MONO.

NOTE:

This button's status is preset for each station in station memory.

④ CHARACTER/SEARCH button

When receiving an AM broadcast, or when in the FM RT or PS mode:

Press this button, "INPUT" is displayed, and the mode switches to manual station name input.

When in the FM PTY mode:

Press this button, "SEARCH" is displayed, and the mode switches to program type search.

⑤ STATION CALL buttons

Use these buttons to preset stations and to receive the already preset stations.

These are also used when performing direct access tuning.

⑥ CLASS button

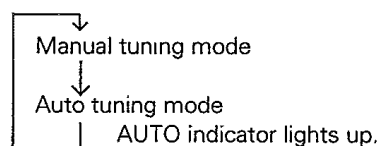
Use to switch between preset memory classes 1 to 3. In each class, 10 stations can be memorized using the STATION CALL buttons, enabling a total of 30 stations to be memorized.

⑦ DIRECT button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.

⑧ TUNING MODE button

Each time you press this button, the TUNING knob's function changes as follows.



- Auto Tuning is not possible on the LW band.

⑨ TUNING knob

Use for tuning. To raise the frequency, turn in a clockwise direction; to lower the frequency, turn counterclockwise.

AM: For MW, frequency changes in 9 kHz steps.

For LW, frequency changes in 1 kHz steps.

FM: Frequency changes in 50kHz steps.

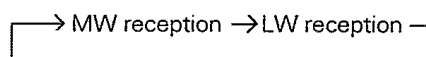
In the Station Name input mode, PTY Search mode, the TUNING knob is used to select characters and program types.

⑩ BAND selector buttons

These buttons are used to select either FM or AM reception.

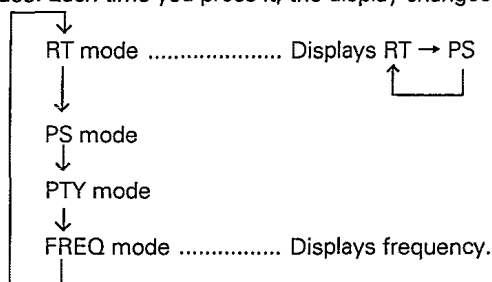
FM: Press to receive FM broadcasts.

AM: The bands change alternately as follows, each time this button is pressed.

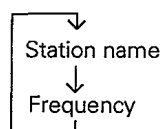


11 DISPLAY MODE button

Use only during FM reception. Use this to switch between display modes. Each time you press it, the display changes as follows.



When receiving AM, valid only when the station name is memorized.



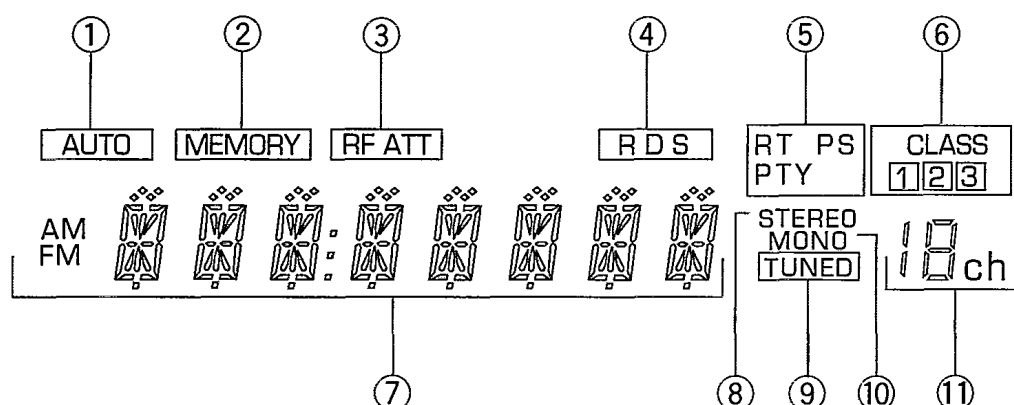
Does not show other displays. When no station name is memorized, the DISPLAY MODE button becomes invalid.

12 MEMORY button

Use to preset stations.

This is also used for FM or AM broadcast manual station name character selection.

● DISPLAY



1 AUTO indicator

Lights during auto tuning mode.

2 MEMORY indicator

3 RF ATT indicator

Stays lit while RF ATT button is on.

4 RDS indicator

Lights when an RDS broadcast is received.

5 RT, PS, PTY indicator

One of these lights to indicate the selected display mode (selected by the DISPLAY MODE button).

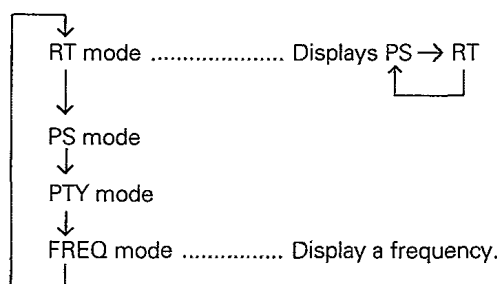
6 CLASS 1, 2, 3 indicator

Shows the class selected by the CLASS button. The current CLASS is displayed.

7 Frequency and character display section

Band and frequency data is displayed.

During FM reception, the display changes as follows each time the DISPLAY MODE button is pressed.



8 STEREO indicator

Lights up when a stereo broadcast is received (the indicator does not light when the MPX MODE button is set to MONO).

9 TUNED indicator

Lights when a broadcast is received.

10 MONO indicator

Stays lit while MPX MODE button is set to MONO.

11 Station display section

When STATION CALL buttons are pressed, it will show the corresponding station number.

