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clarion Service Manual

Published by Service Information Section

MAZDA Automobile Genuine Electronic Tuner

Model RT-9223F
(Genuine No. BA5P 66 ARO)

RT-9223P
(Gennine No. WE90 66 ARO)

RT-9225E
(Genuine No. WE81 66 ARO)

RT-9225F
(Genuine No. BA5L 66 ARO)

SPECIFICATIONS:

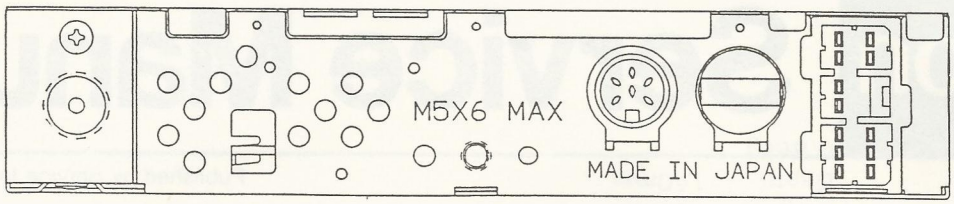
Circuit system:	Superheterodyne
Tuning system:	Electronic tuning
Receiving range:	**RT-9223** AM 530 to 1,710kHz FM 87.9 to 107.9MHz **RT-9225** AM 531 to 1,602kHz FM 87.9 to 107.9MHz
Intermediate frequency:	AM 450kHz FM 10.7MHz
Quieting sensitivity:	AM Less than 32dB (at 20dB S/N) FM Less than 15dB (at 30dB S/N)
Separation:	FM More than 20dB
Auto tuning stop sensitivity:	AM DX 27 to 41dB FM DX 22 to 38dB
Load impedance:	4Ω×2
Power output:	5W+5W (MAX)
Power supply voltage:	DC 13.2V (10.8V to 15.6V) Negative ground
Current consumption:	Less than 5A (at max. output)
Dimensions:	Width 180mm Height 35mm Depth 150mm
Weight:	930g

COMPONENT:

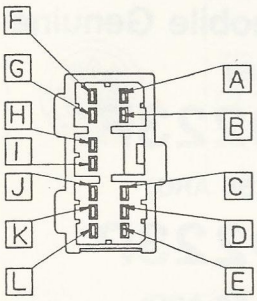
- **RT-9223F-A/P-A**
- **RT-9225E-A/F-A**

Main unit 1

■REAR VIEW and CONNECTORS:

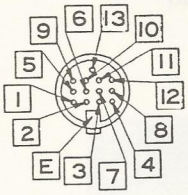


(MS-AL-12M)



A	FR. SP L CH ⊕
B	FR. SP R CH ⊕
C	ILLMI
D	BACH UP
E	ACC
F	FR SP R CH
G	FR SP L CH
H	
I	
J	
K	
L	

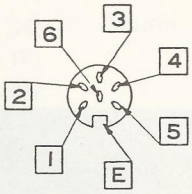
(DIN-13P-F)



1	OUTPUT-LH ⊕
2	INPUT-LH ⊕
3	OUTPUT-RH ⊕
4	INPUT-RH ⊕
5	SIGNAL EARTH
6	ILLUMI
7	⊕ ACC
8	⊕ B(BACK UP)
9	SYSTEM ON
10	SYSTEM OFF(DECK)
11	SYSTEM OFF(AUX)
12	N C
13	MUTE
E	CHASSIS GROUND

SHORT CONNECTOR

(DIN-6P-F)



1	OUTPUT-RH ⊕
2	CONTROL POWER
3	OUTPUT-LH ⊕
4	OUTPUT-RH ⊖
5	OUTPUT-LH ⊖
6	GROUND
E	CHASSIS GROUND

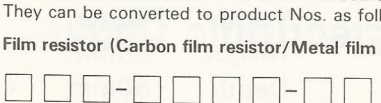
■EXPLANATION OF IC's:

Refer to description in IC service manual vol.2~vol.4.

● How to read resistor

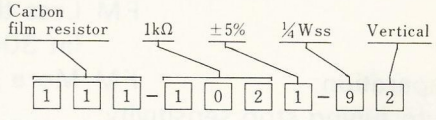
Resistors are deleted from the table of electric components, (except special resistors).
They can be converted to product Nos. as follows.

Film resistor (Carbon film resistor/Metal film resistor)



Classification	Resistance *	Tolerance of the value of resistance		Rated power			Shape	
111 (Carbon film resistor)		0	± 2 %	0			0	
	Example	1	± 5 %	1	1/8W	Approx. 3.7mm	1	Horizontal
	33Ω=330	2		2	1/4Ws	Approx. 6.5mm	2	Vertical
	33kΩ=333	3		3			3	
		4		4	1/2W	Approx. 9mm	4	
				7	1/6W	Approx. 3.5mm		
				8	1/2Ws	Approx. 6.6mm		
				9	1/4Wss	Approx. 3.2mm		

(Example)



Note 1. The first two of three digits representing resistance are effective digits and the last one represents number of "0" following this.
Unit is given in ohm (Ω).

■PARTS LIST:

◎Electrical section

◎Main P.W.B

REF NO.	PART NO.	DESCRIPTION	QTY
D132	001-0188-01	DIODE 1S1885A	1
D101-103,105	001-0330-00	DIODE 1SS119	23
106,108-113	001-0294-00	1SS133	
116,117			
124-130,133			
137,138			
D134	001-0377-30	DIODE MA4051H	1
	001-0376-31	MTZ5.6JA	
	001-0400-31	HZS5.6JB1	
D135	001-0377-39	DIODE MA4068H	1
	001-0376-40	MTZ7.5JA	
	001-0400-39	HZS6.8JB3	
D118	001-0377-40	DIODE MA4075L	1
	001-0376-41	MTZ7.5JB	
	001-0400-40	HZS7.5JB1	
D105	001-0377-47	DIODE MA4091M	1
	001-0376-48	MTZ9.1JC	
	001-0400-47	HZS9.1JB2	
D104,107,120	001-0377-48	DIODE MA4091H	5
122,123	001-0376-49	MTZ10JA	
	001-0400-48	HZS9.1JB3	
D119	001-0377-49	DIODE MA4100L	1
	001-0376-50	MTZ10JB	
	001-0400-49	HZS10JB1	
D121,131	001-0466-01	DIODE S5688G	2
	001-0499-01	ERA15-04	
D114	001-0567-36	DIODE RD6.2JSN3	1
	001-0503-36	HZS7 A1L	
TH101	002-0206-91	THERMISTOR	1
L102	009-0470-05	CHOKE	1
L103	009-0633-00	CHOKE	1
L101	010-2003-03	COIL	1
C176	042-0348-00	ELECTRO-C 16V 2200μF	1
IC102	051-0350-55	IC NJM4558M	1
IC103	051-0556-01	IC NJM2058M	1
IC104	051-1111-51	IC MC13304T3S	1
	051-1111-01	TA8210AH	
IC101	051-1175-02	IC μPD1719G(A)-926-11	1
SUP101	060-0122-10	SURGE PROTECTOR	1
X101	061-1064-00	CRYSTAL	1
Q105,114	100-1048-00	TRANSISTOR 2SA1048	2
Q124,129,131	100-1297-00	TRANSISTOR 2SA1297	3
Q111	102-1815-50	TRANSISTOR 2SC1815	1
Q115,121	102-1846-00	TRANSISTOR 2SC1846	2
Q101,103,104	102-2458-51	TRANSISTOR 2SC2458	19
106-108,110			
112,113,116			
117,122,123			
125-128,132			
133			

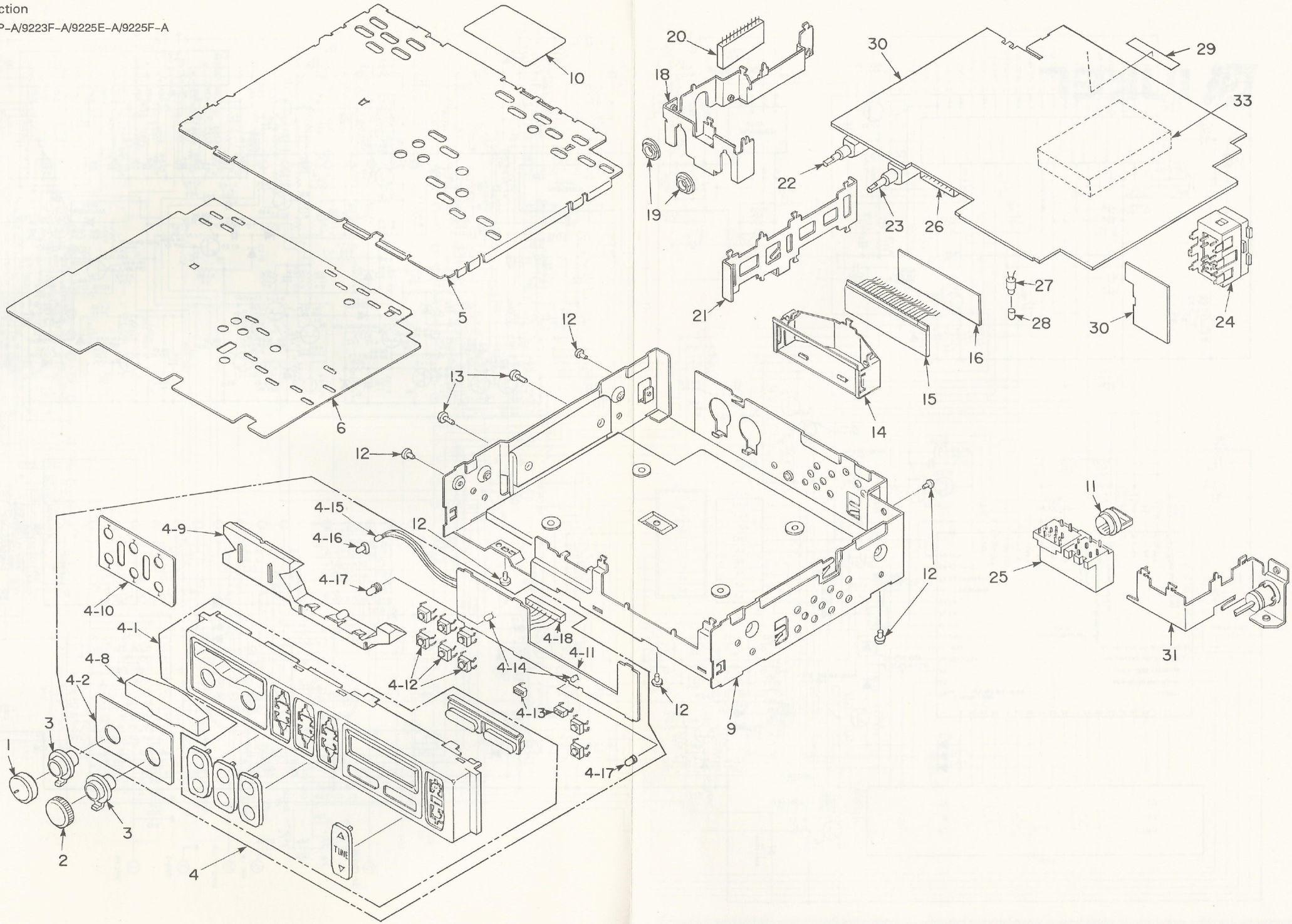
REF NO.	PART NO.	DESCRIPTION	QTY
Q118,119	103-1450-00	TRANSISTOR 2SD1450	2
	103-1504-00	TRANSISTOR 2SD1504	
Q102,120	103-1858-50	TRANSISTOR 2SD1858	2
Q109	125-0003-03	TRANSISTOR RN2203	1
C113,120,159	160-1022-05	CERAMIC-C 1000pF	7
169,180,183			
187			
C110	160-5612-05	CERAMIC-C 560pF	1
C105,116,185	171-1033-06	CERAMIC-C 0.01μF	4
186			
C103	171-1532-06	CERAMIC-C 0.015μF	1
C106,107	171-2232-06	CERAMIC-C 0.022μF	2
C188	171-4732-06	CERAMIC-C	1
C128,151	172-1031-11	POLYESTOR-C 0.01μF	2
C167,174,177	172-1041-11	POLYESTOR-C 0.1μF	6
181,182,189			
C172,173,175	172-1541-11	POLYESTOR-C 0.15μF	4
178			
C141,142,145	172-2231-11	POLYESTOR-C 0.022μF	4
146			
C161,164	172-6831-11	POLYESTOR-C 0.068μF	2
C143,144	173-3921-11	POLYESTOR-C 3900pF	2
C101,102,104	174-2200-13	CERAMIC-C 22pF	7
126,127,137			
138			
C184	174-3300-13	CERAMIC-C 33pF	1
C179	174-5600-13	CERAMIC-C 56pF	1
C154,157	181-1053-62	ELECTRO-C 50V 1μF LN	2
C155,156	182-1053-62	ELECTRO-C 50V 1μF	2
C115,150	182-1073-22	ELECTRO-C 10V 100μF	2
C200	182-1073-33	ELECTRO-C 16V 100μF	1
C111,114	182-3353-62	ELECTRO-C 50V 3.3μF	2
C108,109	182-3363-22	ELECTRO-C 10V 33μF	2
C152	182-4763-22	ELECTRO-C 10V 47μF	1
C112,130,133	183-1063-32	ELECTRO-C 16V 10μF	10
136,139,148			
149,158,165			
168			
C160	183-1066-31	ELECTRO-C 16V 10μF NP	1
C119	183-2243-62	ELECTRO-C 50V 0.22μF	1
C117,135,140	183-2256-61	ELECTRO-C 50V 2.2μF	3
C162,163	183-4753-51	ELECTRO-C 35V 4.7μF	2
C132,147	183-4763-12	ELECTRO-C 6.3V 47μF	2
C131	183-4763-32	ELECTRO-C 16V 47μF	1
C153	184-1073-22	ELECTRO-C 10V 100μF	1
C166	184-1073-32	ELECTRO-C 16V 100μF	1
C171	184-2273-22	ELECTRO-C 10V 220μF	1
C180	184-2273-32	ELECTRO-C 16V 220μF	1
C118,134	184-4763-41	ELECTRO-C 25V 47μF	2
C129	184-4773-12	ELECTRO-C 6.3V 470μF	1
C179	184-4773-22	ELECTRO-C 10V 470μF	1

NO.	DESCRIPTION	RT-9223P PART NO.	RT-9223F PART NO.	RT-9225E PART NO.	RT-9225F PART NO.	QTY
1	KNOB *VOL	380-5038-00	380-5038-00	380-5038-00	380-5038-00	1
2	KNOB *B/T	380-5039-00	380-5039-00	380-5039-00	380-5039-00	1
3	KNOB	380-5040-00	380-5040-00	380-5040-00	380-5040-00	2
4	ESCUTCHEON-ASSY	940-1050A	940-1587A	940-1050A	940-1587A	1
4-1	SUB ESCUT-ASSY	940-3020-05	940-3020-04	940-3020-05	940-3020-04	1
4-2	TRIM PLATE	371-3563-00	371-3563-04	371-3563-00	371-3563-04	1
4-8	ILLUMI *VOL	335-2978-00	335-2978-00	335-2978-00	335-2978-00	1
4-9	BUTTON ILLUMI	335-2979-01	335-2979-01	335-2979-01	335-2979-01	1
4-10	SHADE	353-0330-00	353-0330-00	353-0330-00	353-0330-00	1
4-11	PWB	099-8596-00	099-8596-00	099-8596-00	099-8596-00	1
4-12	SWITCH	013-3694-00	013-3694-00	013-3694-00	013-3694-00	8
4-13	SWITCH	013-3812-00	013-3812-00	013-3812-00	013-3812-00	2
4-14	PILOTLAMP	017-0396-00	017-0396-00	017-0396-00	017-0396-00	2
4-15	PILOTLAMP	017-0396-01	017-0396-01	017-0396-01	017-0396-01	1
4-16	PL CAP	345-3337-09	345-3337-25	345-3337-09	345-3337-25	1
4-17	PL CAP	345-3436-11	345-3436-49	345-3436-11	345-3436-49	2
4-18	EXTENSION LEAD	854-0966-00	854-0966-00	854-0966-00	854-0966-00	1
5	UPPER CASE	310-1380-02	310-1380-02	310-1380-02	310-1380-02	1
6	INSULATOR	347-3834-00	347-3834-00	347-3834-00	347-3834-00	1
9	LOWER CASE	311-1338-10	311-1338-10	311-1338-10	311-1338-10	1
10	SETPLATE	286-7988-00	286-7993-00	286-7994-00	286-7995-00	1
11	PLUG *13P	076-0318-01	076-0318-01	076-0318-01	076-0318-01	1
12	MACHINE SCREW	714-3005-81	714-3005-81	714-3005-81	714-3005-81	6
13	MACHINE SCREW	714-3010-81	714-3010-81	714-3010-81	714-3010-81	2
14	LCD-HOLDER	330-9070-01	330-9070-01	330-9070-01	330-9070-01	1
15	INDICATOR	379-0236-00	379-0236-00	379-0236-00	379-0236-00	1
16	COLOR-FILTER	335-3304-00	335-3348-00	335-3304-00	335-3348-00	1
18	IC-HOLDER	330-9071-02	330-9071-02	330-9071-02	330-9071-02	1
19	NUT	722-0368-00	722-0368-00	722-0368-00	722-0368-00	2
20	IC	051-1111-01	051-1111-01	051-1111-01	051-1111-01	1
21	PWB SPACER	330-9075-01	330-9075-01	330-9075-01	330-9075-01	1
22	VARIABLE-R *VOL	012-4791-00	012-4791-00	012-4791-00	012-4791-00	1
23	VARIABLE-R *B/T	012-4792-00	012-4792-00	012-4792-00	012-4792-00	1
24	OUTLET SOCKET*12P	074-0877-00	074-0877-00	074-0877-00	074-0877-00	1
25	OUTLET SOCKET*13P,6P	074-0878-00	074-0878-00	074-0878-00	074-0878-00	1
26	PLUG *9P	076-0313-09	076-0313-09	076-0313-09	076-0313-09	1
27	PILOTLAMP	017-0393-00	017-0393-00	017-0393-00	017-0393-00	1
28	PL CAP	345-3446-00	345-3446-19	345-3446-00	345-3446-19	1
29	DOUBLE FACE	347-3835-00	347-3835-00	347-3835-00	347-3835-00	1
30	MAIN PWB	099-9973-01	099-9973-01	099-9973-01	099-9973-01	1
31	ANT-HOLDER	331-0206-00	331-0206-00	331-0206-00	331-0206-00	1
33	AM/FM TUNER BLOCK	880-1912B	880-1912B	880-1912B	880-1912B	1

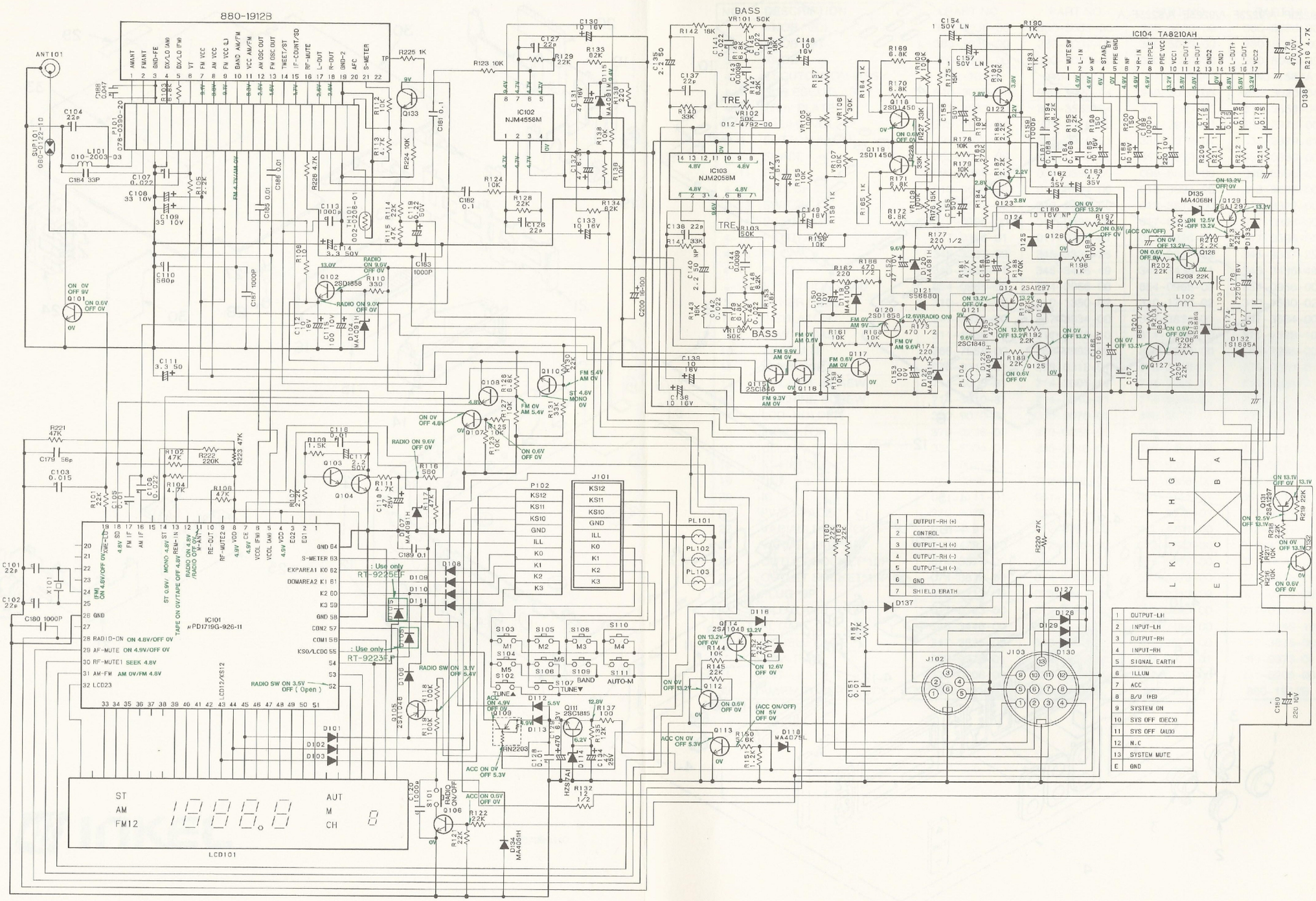
■EXPLODED VIEW • PARTS LIST:

◎Main section

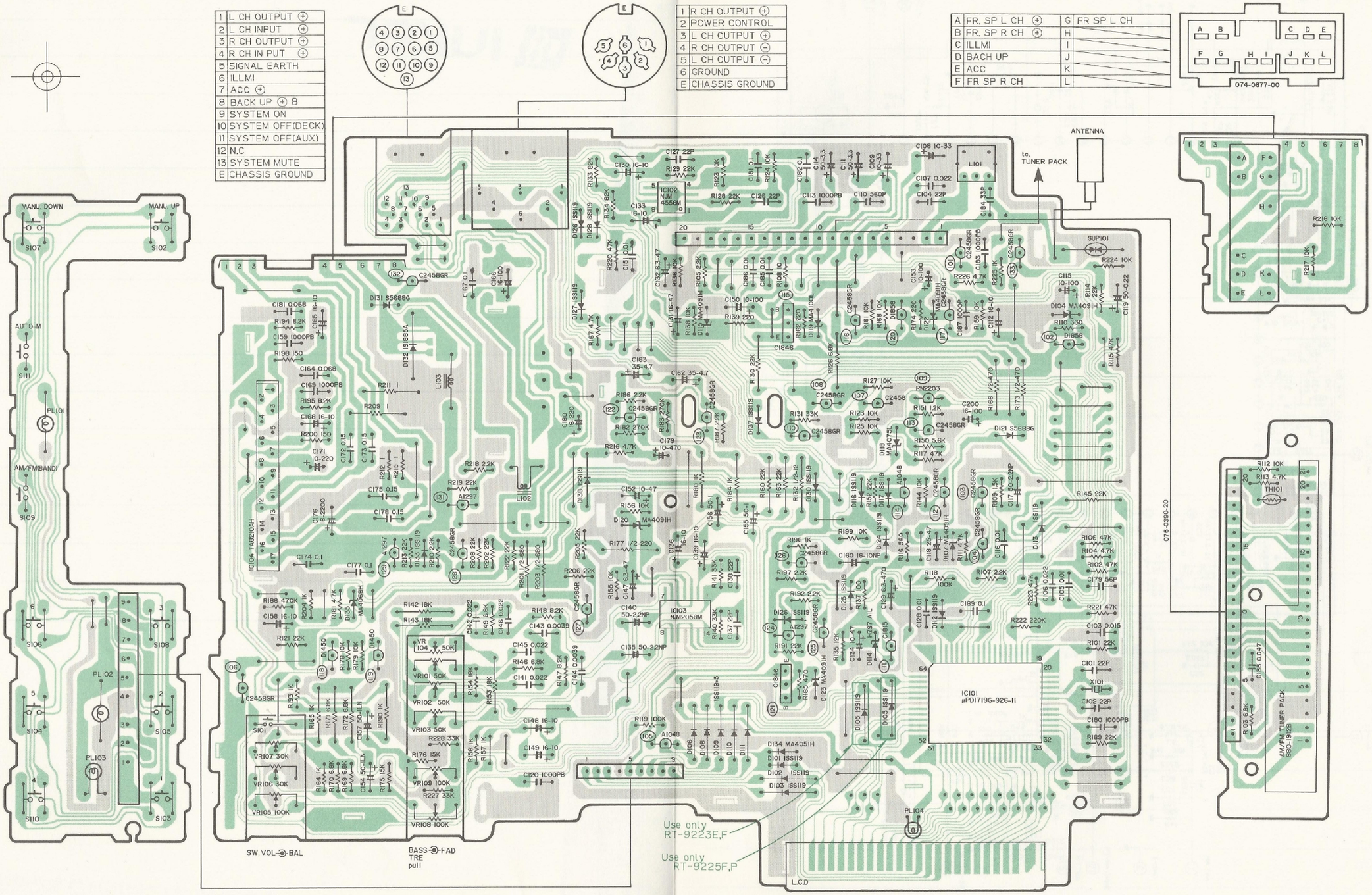
● RT-9223P-A/9223F-A/9225E-A/9225F-A



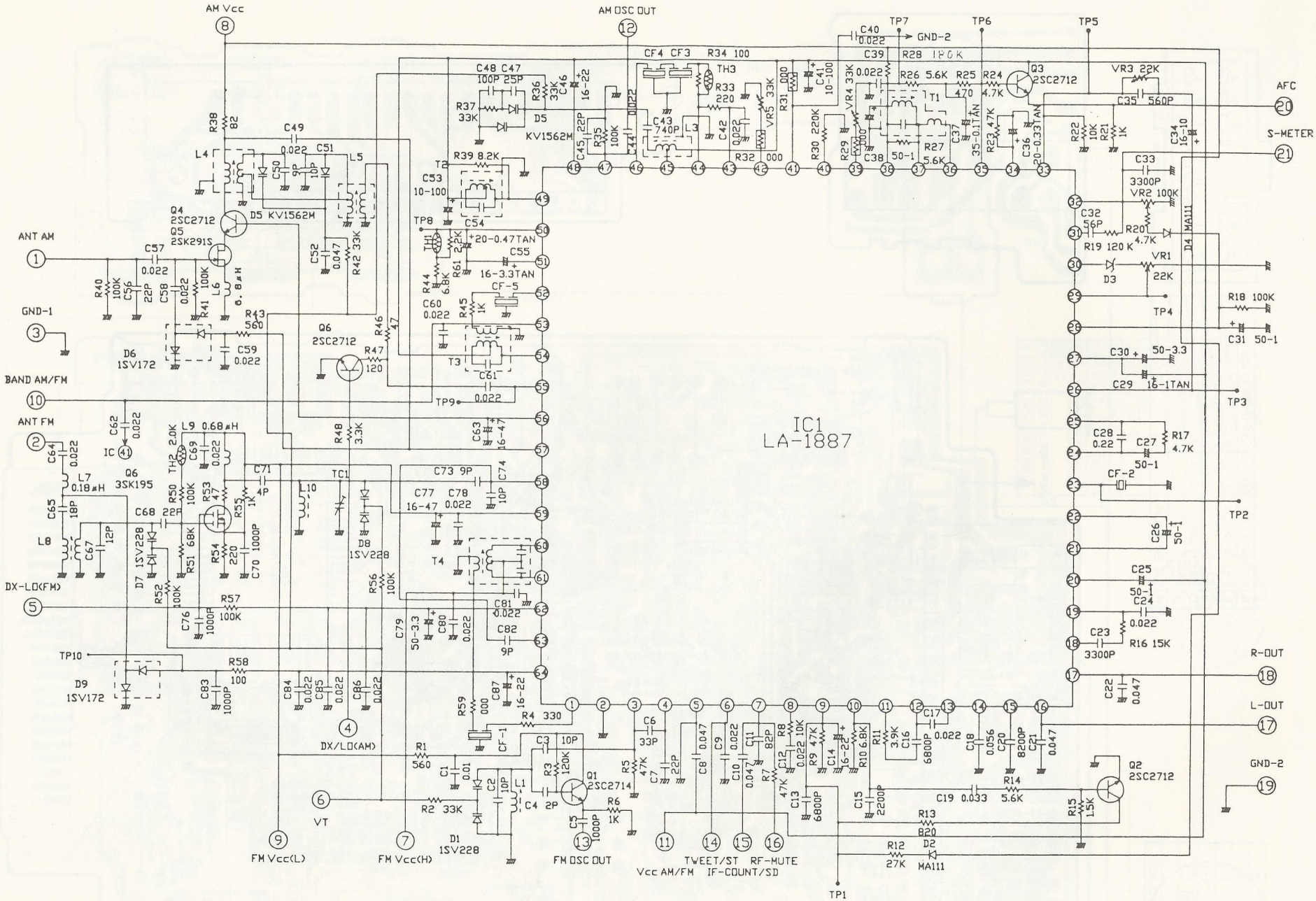
■CIRCUIT DIAGRAM:



■PRINTED WIRING BOARD:



AM/FM TUNER BLOCK: 880-1912B



RT-9223,9225