

SERVICE MANUAL

RADIO RECEIVER

SPECIFICATIONS

Frequency range	
Reception area "E"	AM : 531 - 1,602 kHz (9 kHz steps) FM1, FM2 : 87.5 - 108 MHz (50 kHz step)
Reception area "U"	AM : 530 - 1,710 kHz (10 kHz steps) FM1, FM2 : 87.5 - 108.1 MHz (200 kHz step)
Output	Headphones jack (3.5 mm dia. Stereo mini-jack)
Maximum output	8 mW + 8 mW (EIAJ / 32 ohms)
Power source	DC 1.5 V using one R03 (size AAA) battery
Dimensions	80.7 (W) x 44.5 (H) x 19.3 (D) mm (3 ¹ / ₄ x 1 ¹³ / ₁₆ x 2 ⁵ / ₃₂ in.)
Weight	Approx. 46 g (1.6 oz) excluding a battery

- Design and specifications are subject to change without notice

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				J151	S0-014-560-010		JACK,HP 3.5MM ST 7P
	87-A20-745-040	IC,TA2030FN		L151	87-005-286-080		C-INDUCTOR 1UH
	87-017-789-080	IC,TA2022FN		L152	87-005-286-080		C-INDUCTOR 1UH
	S2-720-960-000	IC,NJM2096M		L153	87-005-286-080		C-INDUCTOR 1UH
	87-A21-383-010	IC,UPD17934AGK512		L201	S0-002-002-000		COIL,20UH
	87-A20-089-040	IC,PST9011NL/NR		L202	87-A50-639-080		C-COIL,33UH
	87-A20-090-040	IC,PST9010NL/NR		L251	87-A50-037-080		IFT,5CDLU-M005GNE 5.5MM
	87-A20-124-080	IC,TK11823MTL/DB3-G140		L252	87-A50-639-080		C-COIL,33UH
TRANSISTOR				LCD201	S0-041-580-000		LCD,DISPLAY
	89-115-884-080	C-TR,2SA1588Y		S201	SK-QL9-020-000		SW,TACT SKQLLC/SPEC#KQL-902
	89-342-153-070	C-TR,2SC4215		S202	87-A90-665-080		SW,LUMI LS7A2M-T
	87-026-425-080	C-TR,RN2307		S203	87-A90-665-080		SW,LUMI LS7A2M-T
	89-508-824-080	C-FET,2SK882Y		S204	SK-QL9-020-000		SW,TACT SKQLLC/SPEC#KQL-902
	87-026-460-080	C-TR,IMX1		S205	SK-QL9-020-000		SW,TACT SKQLLC/SPEC#KQL-902
	SA-000-102-000	C-TR,HN1B01F		S207	87-A90-665-080		SW,LUMI LS7A2M-T
	87-026-470-080	C-TR,HN1C03F		S208	SK-QL9-020-000		SW,TACT SKQLLC/SPEC#KQL-902
	SA-013-130-000	C-TR,2SA1313		S209	SK-QL9-020-000		SW,TACT SKQLLC/SPEC#KQL-902
	89-341-165-070	C-TR,2SC4116GR		S210	87-A90-665-080		SW,LUMI LS7A2M-T
	89-113-625-080	C-TR,2SA1362GR		X201	87-030-349-010		X'TAL,75KHZ
	89-508-804-080	C-FET,2SK880Y		TUNER C.B			
DIODE				BPF101	87-008-555-080		FILTER BANDPASS GTVS05
	87-020-691-080	C-DIODE,1SS302		C142	SA-030-000-4C0		C-CAP,E 3.3-4V
MAIN C.B				C164	87-010-851-080		C-CAP,47-4V
C155	87-010-424-080	C-CAP,TN 4.7-4V		CD101	S0-051-570-000		C-FILTER CFKMF5157
C157	87-010-667-080	C-CAP,E 100-4V		CF101	S0-051-570-000		C-FILTER CFKMF5157
C160	SA-331-000-4C0	C-CAP,E 330-4V		CF102	S0-051-570-000		C-FILTER CFKMF5157
C203	87-B30-196-010	CAP,E 0.6-2.5V		CF103	87-A90-456-080		CER,FILTER PFWCC450J3
C216	87-010-667-080	C-CAP,E 100-4V		CN101	S0-524-652-000		CONN,B-B 20P
C217	SA-100-000-4C0	C-CAP,E 10-4V		IFT101	87-008-420-080		IFT,S5CDLN-1431AYV 5.5MM
C222	SA-020-000-6C0	C-CAP,E 2.2-6.3V		L101	87-A50-583-080		C-COIL,2.2UH
C251	87-A10-419-080	C-CAP,E 1-16V		L102	S1-124-300-040		IFT,FM RF 3.5T 4MM
C253	87-010-731-080	C-CAP,E 22-4V		L104	S1-124-290-040		IFT,FM OSC 3.5T 4MM
C254	87-A10-419-080	C-CAP,E 1-16V		L110	87-003-247-080		C-COIL,100UH
CN201	S0-533-642-000	CONN,B-B 20P		L112	S1-929-430-000		ANT COIL ASSY 5-8-34
				TC101	S1-000-300-050		CAP,TRIMMER 30PF
				VC101	87-017-925-070		DIODE,KV1460TL
				VC102	87-017-925-070		DIODE,KV1460TL
				VC103	87-017-925-070		DIODE,KV1460TL
				VC110	87-A40-799-040		DIODE,KV1610S
				VR151	SC-102-031-030		C-RES,VARIABLE XV0102GPHN15C2

- コネクタについては、初回発注の扱いとはせず、受注後に業者へ発注し、供給致します。
- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

チップ抵抗部品コード/CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

Chip Resistor Part Coding



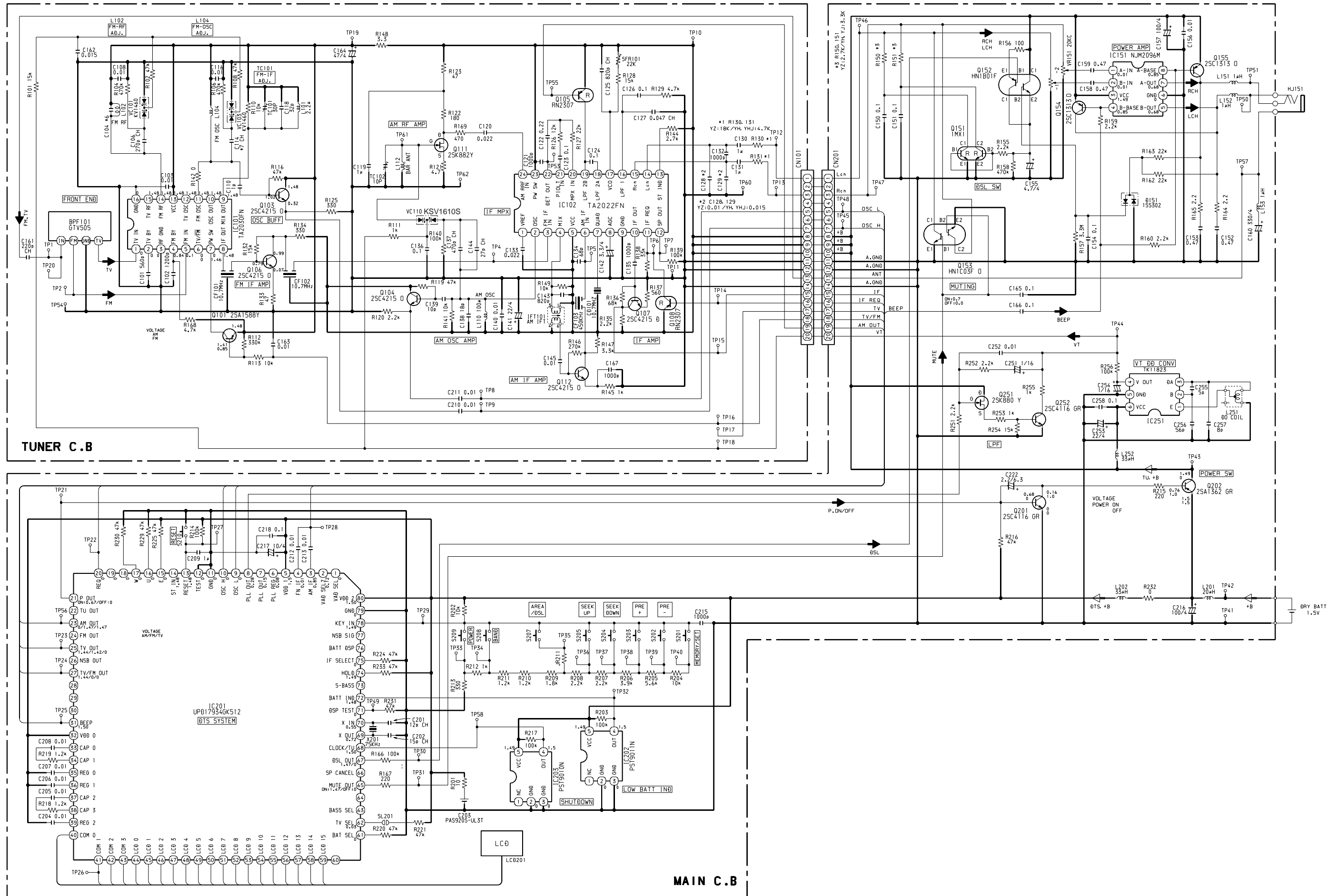
A
抵抗部品コード
Resistor Code

桁表示
Figure
抵抗値
Value of resistor

チップ抵抗 Chip resistor

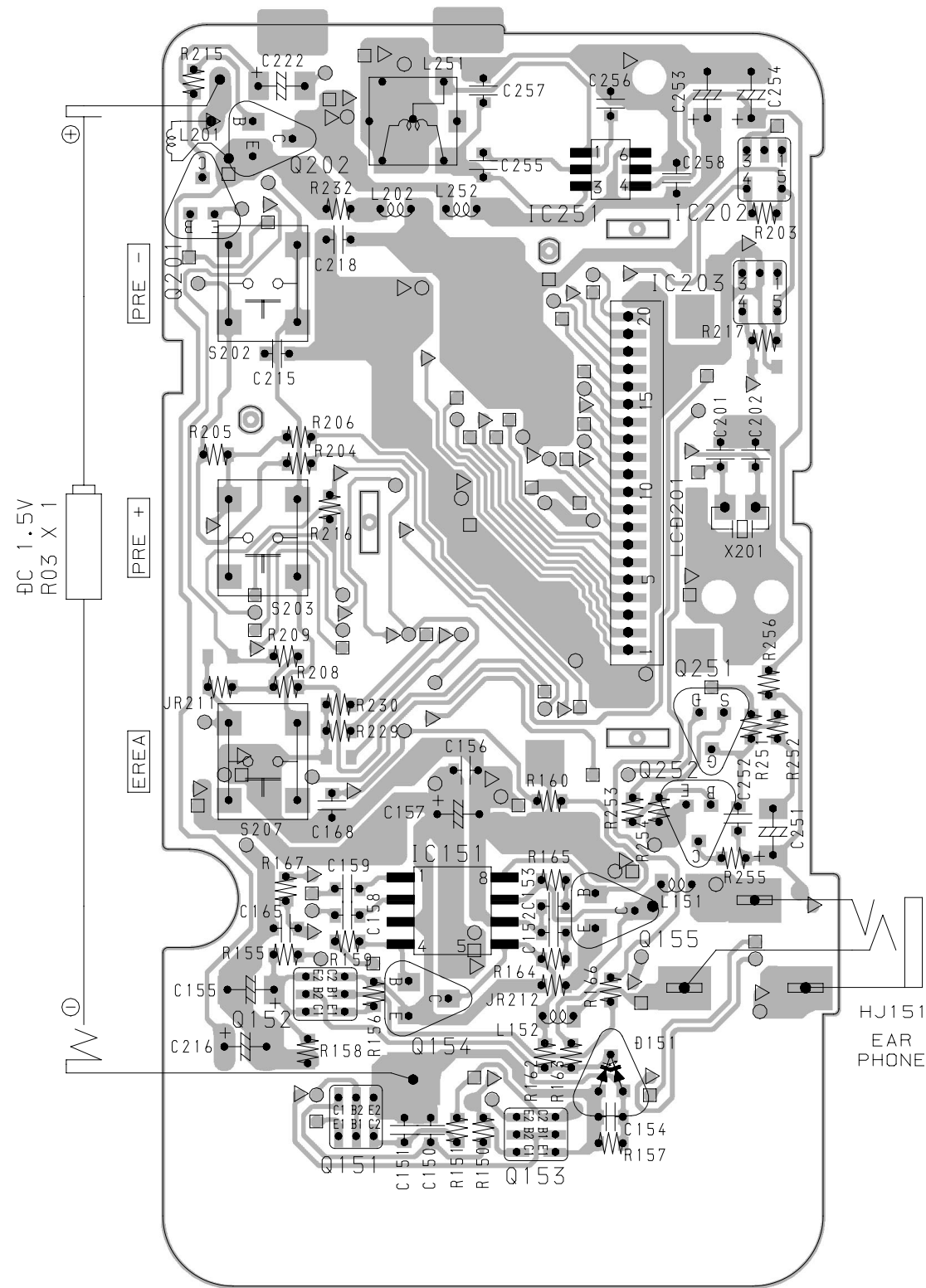
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法/Dimensions (mm)			抵抗コード : A Resistor Code : A	
				外形/Form	L	W		t
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

SCHEMATIC DIAGRAM -1



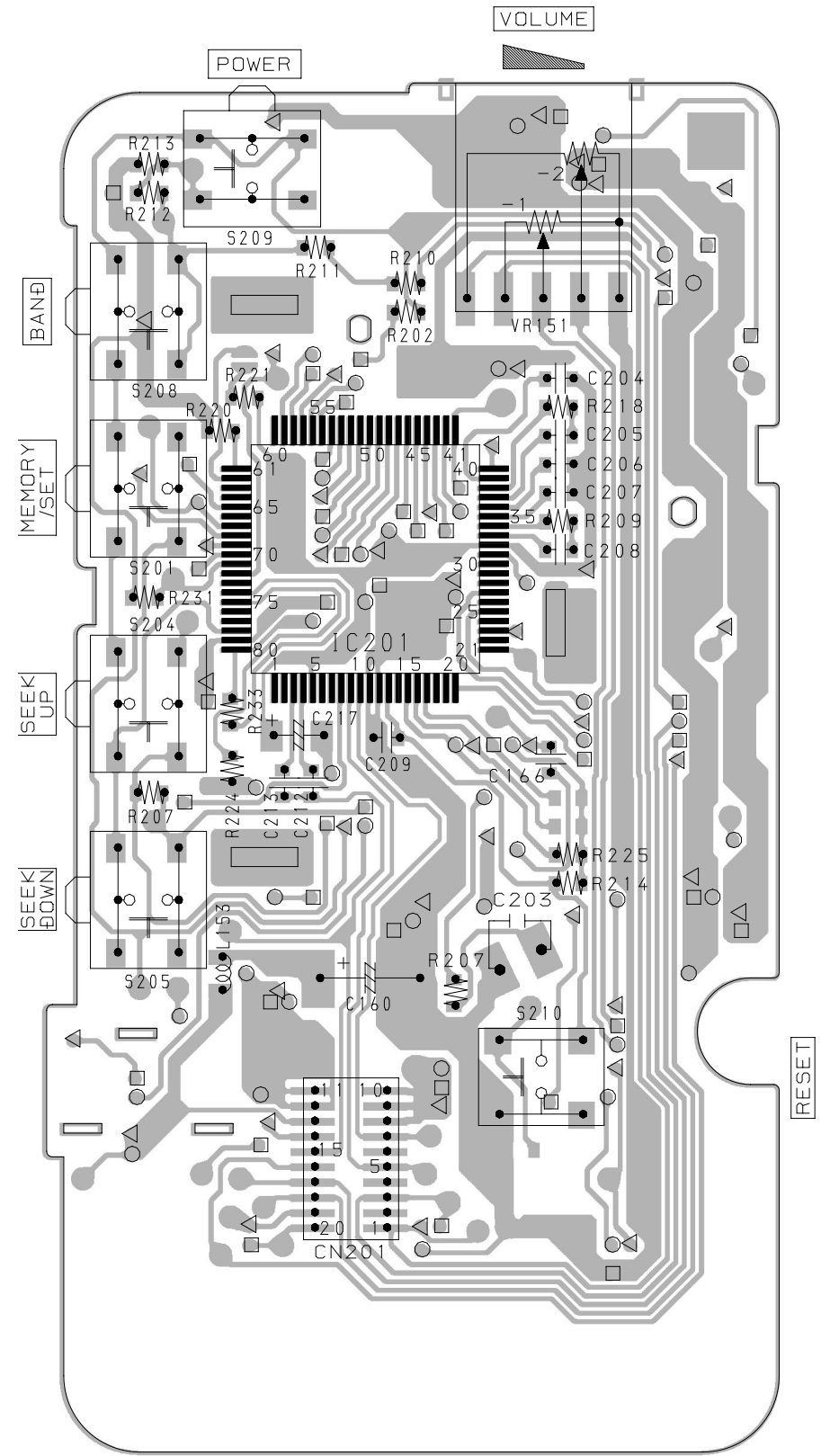


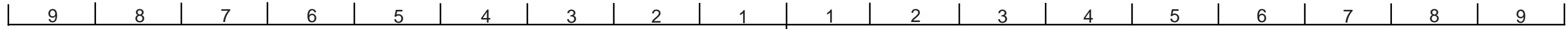
MAIN C. B



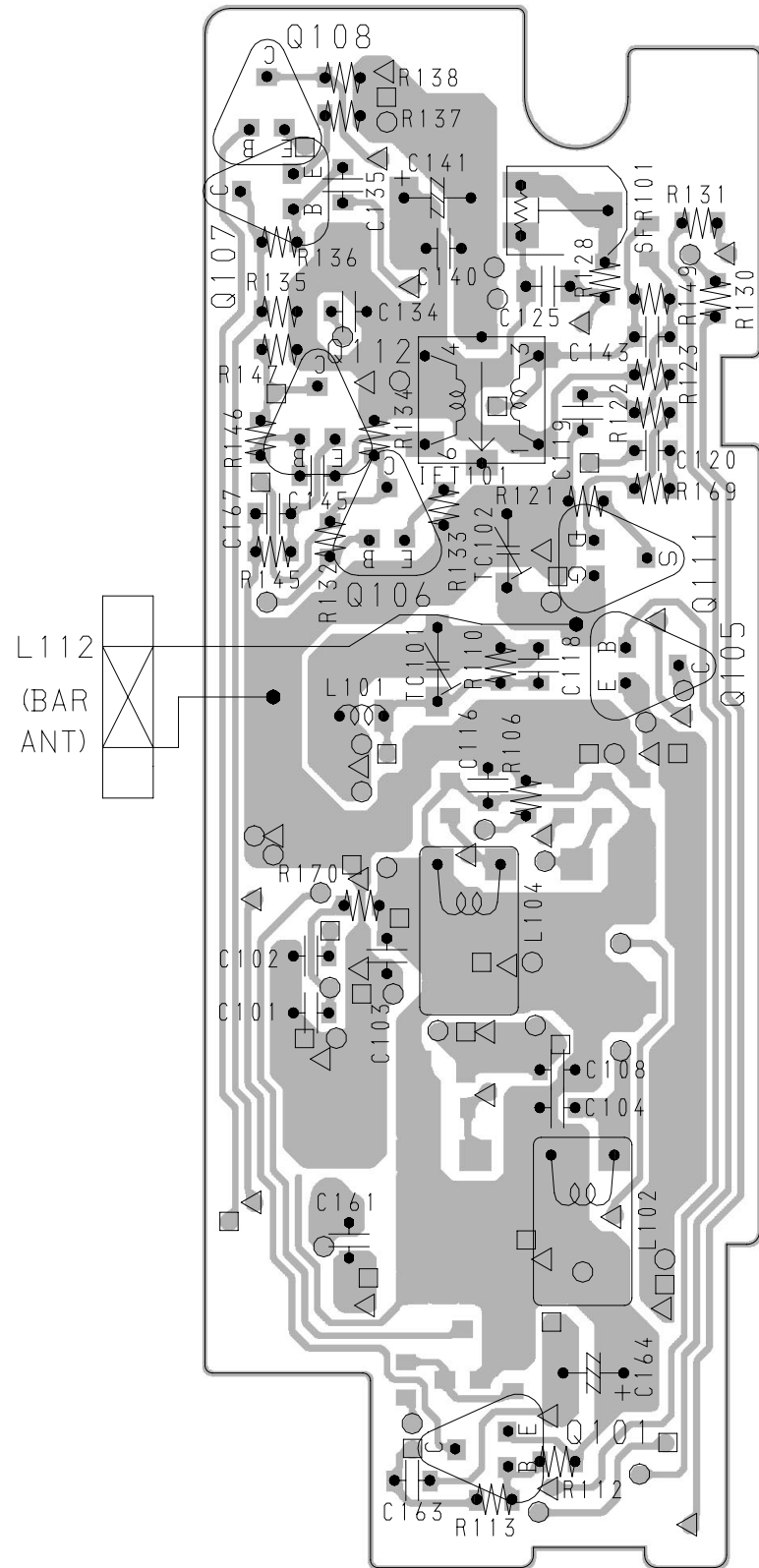
A A
 B B
 C C
 D D
 E E
 F F
 G G
 H H
 I I
 J J
 K K
 L L

MAIN C. B

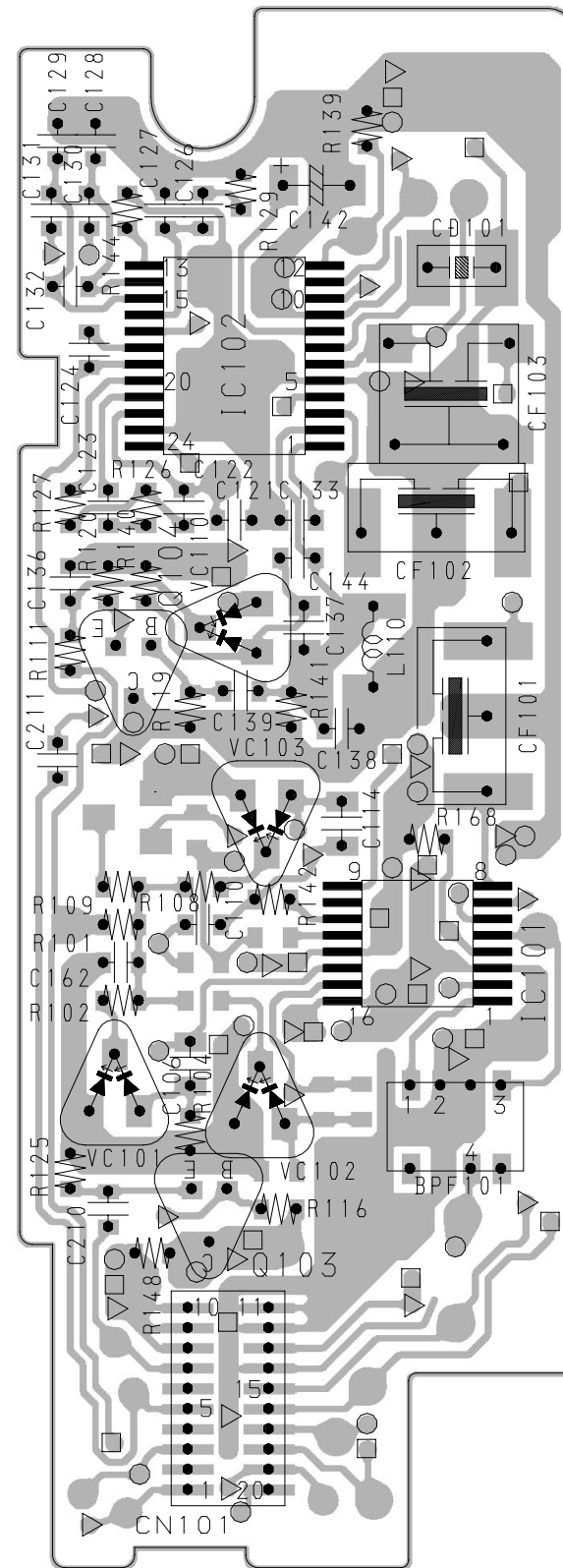




TUNER C. B

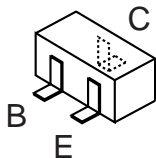


TUNER C. B

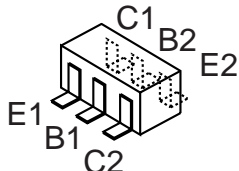


A A
 B B
 C C
 D D
 E E
 F F
 G G
 H H
 I I
 J J
 K K
 L L

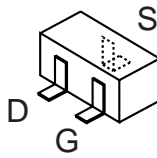
TRANSISTOR ILLUSTRATION



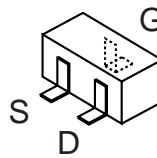
2SA1313
2SA1588Y
2SC4116GR
2SC4215
RN2307
2SA1362GR



1MX1
HN1C03F
HN1B01F

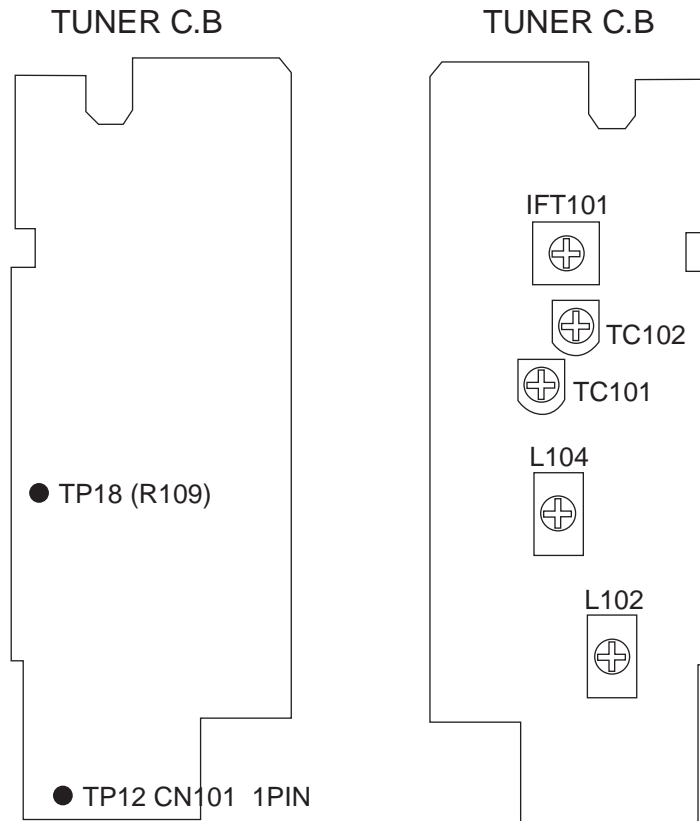


2SK882



2SK880Y

ELECTRICAL ADJUSTMENT



1. AM VT Adjustment

Setting : • Test point : TP18

Method : Set to AM 531kHz, and check the voltage $1.1 \pm 0.02V$, and set to AM 1602kHz and check voltage $7.2 \pm 0.075V$.

2. FM VT Adjustment

Setting : • Test point : TP18

• Method : L104

Method : Set to FM 87.5MHz, and check the voltage $2.3 \pm 0.2V$, and set to FM 108.0kHz and check voltage $4.1 \pm 0.2V$.

3. AM RF Adjustment

Setting : • Test point : TP12

L112(BAR COIL) 603kHz
 TC102 1440kHz

4. FM RF Adjustment

Setting : • Test point : TP12

L102 87.5MHz

5. AM IF Adjustment

Setting : • Test point : TP12

IFT101 1440kHz

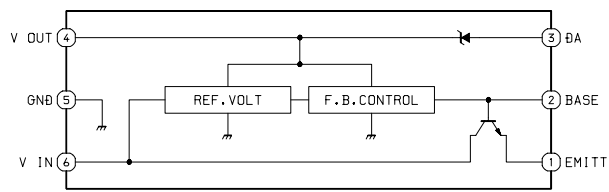
6. FM IF Adjustment

Setting : • Test point : TP12

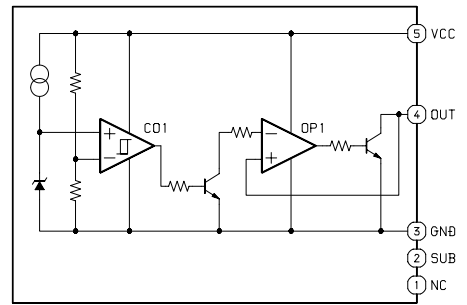
TC101 10.7MHz

IC BLOCK DIAGRAM

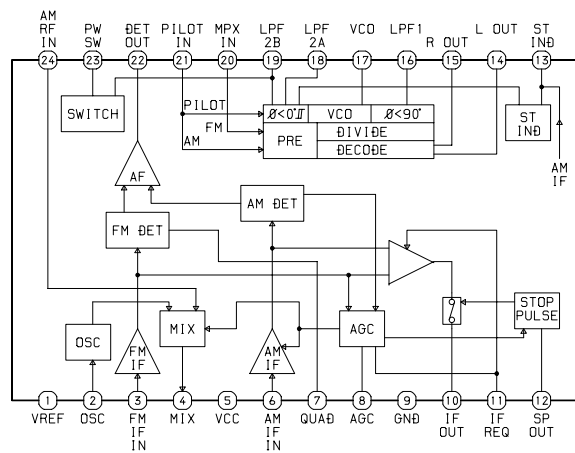
IC,TK11823



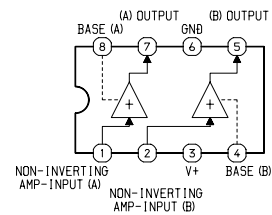
IC,PST9010N/PST9011N



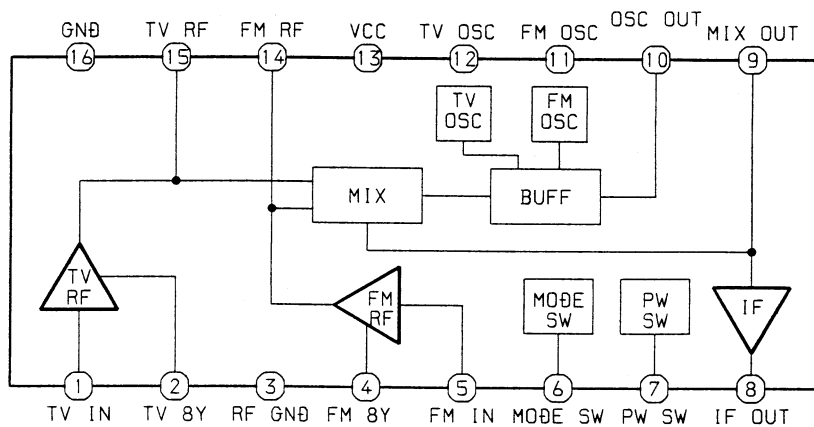
IC,TA2022AFN



IC,NJM2069



IC,TA2030FN



PRACTICAL SERVICE FIGURE

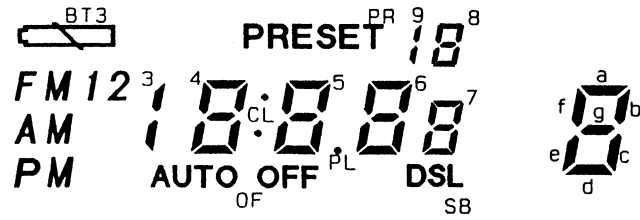
<AM SECTION>

Sensitivity(S/N10dB)	Less than 52 dB (630kHz)
S/N (Input 74dB)	Less than 48dB (999/1440kHz)
	Less than 30dB (630/999kHz)
	Less than 32dB (1400kHz)
Distortion	Less than 3% (999kHz)
Intermediate frequency	450kHz

<FM SECTION>

IHF Sensitivity	Less than 15dB (76/90/108MHz)
S/N(Input 54dB)	Less than 50dB (76/90/108MHz)
Distortion	Less than 3% (90MHz)
Separation	More than 20dB (1000Hz)
Intermediate frequency	10.7MHz

LCD DIAGRAM



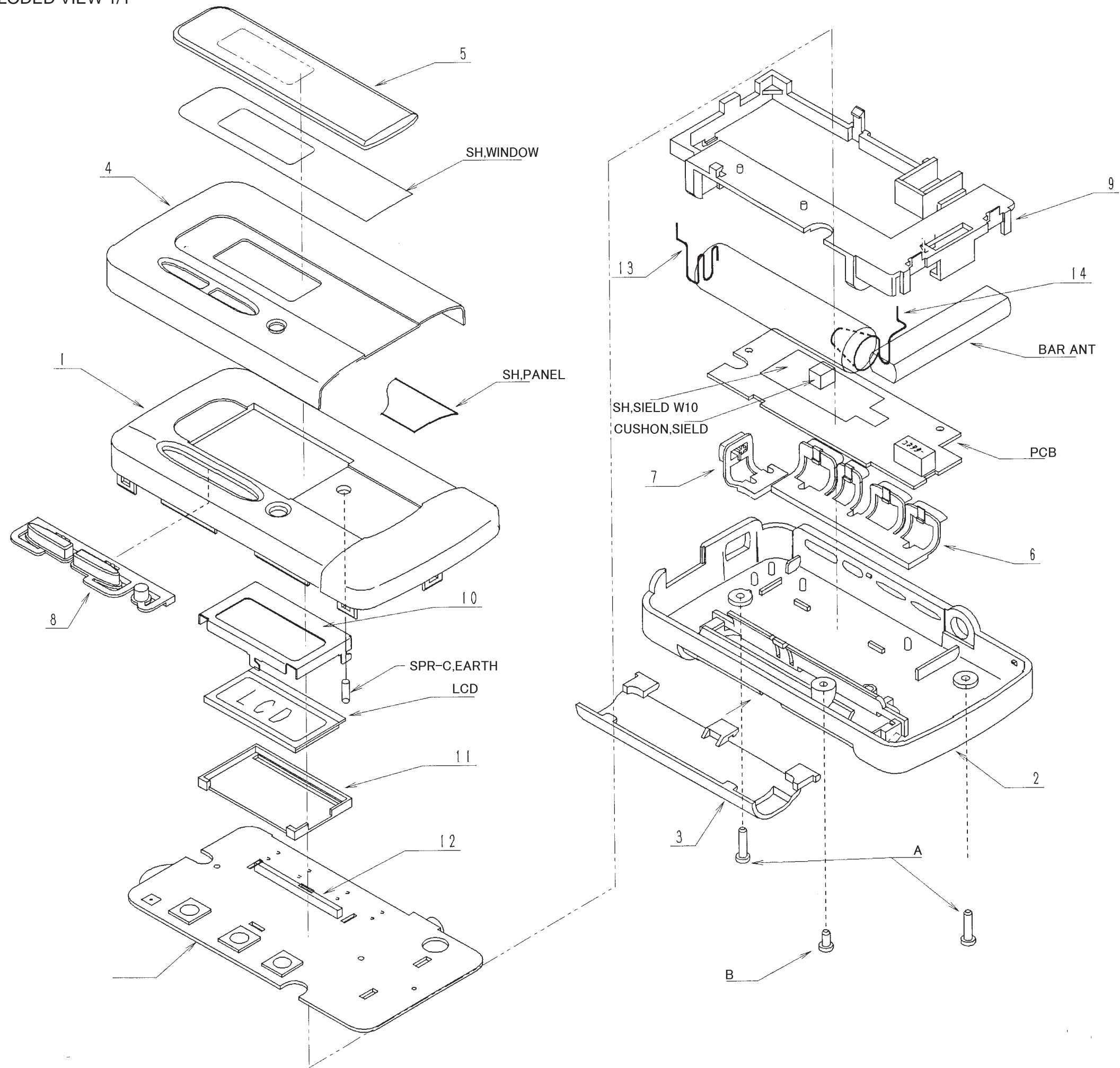
Seg No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
COM0	X	7d	7e	6d	6c	6e	PL	5d	-	4d	4e	3	2	-	-
COM1	7c	7g	7f	8d	6b	6g	6f	5c	5e	4c	4g	4f	1	PM	FM
COM2	7b	7a	8c	8g	8e	6a	⊙	5b	5g	CL	4b	4a	⊙	AM	-
COM3	OF	SB	8b	8a	8f	9	PR	⊙	5a	5f	X	X	BT3	X	X

IC DESCRIPTION

IC, μ PD1793GK

Pin No.	Pin Name	I/O	Description
1	VAD SEL	I	“H” : voltage detection at Vdd = 3.0V “L” : at Vdd 1.5V
2	VAD SEL2	I	No using
3	AM IF	I	Input IF counter
4	FM IF	I	Input IF counter
5	VDD 1	-	Input power supply
6	PLL REG	-	Input PLL regulator
7	PLL OUT	O	Output PLL charge-pomp
8	PLL OUT	O	Output PLL charge-pomp
9	OSC L	I	Input OSC low
10	OSC H	I	Input OSC high
11	GND	-	GND
12	TEST	-	No using
13	RESET	I	“L” : system reset
14	ST IN	I	“H” : stereo indicator turn on
15	E	I	Version select. “L” : JAPAN, “H” : EUROPE, “L” USA, “ H” : USA WIDE
16	U	I	Version select. “L” : JAPAN, “L” : EUROPE, “H” USA, “ H” : USA WIDE
17	W	I	At USA WIDE “L” : TV & WEATHER, “H” : TV/WEATHER
18,19	-	-	No using
20	REQ	O	“H” : IF output
21	P OUT	O	Output high voltage at TUNER & TIMER & ALARM operating
22	TU OUT	O	Output high voltage at TUNER operating
23	AM OUT	O	Output low voltage at TUNER operating AM band
24	FM OUT	O	Output low voltage at TUNER operating FM band
25	TV OUT	O	Output low voltage at TUNER operating TV band
26	NSB OUT	O	Output low voltage at TUNER operating NSB band
27	TV/FM OUT	O	Output low voltage at TUNER operating FM/TV band
28 - 30	-	-	No using
31	BEEP	O	Out BEEP sound
32	VDD 0	-	Input power supply
33 - 34	CAP 0 - 1	-	Connect capacitor for LCD
35 - 36	REG 0 - 1	-	LCD regulator
37 - 38	CAP 2 - 3	-	Connect capacitor for LCD
39	REG 2	-	LCD regulator
40 - 43	COM 0 - 3	O	LCD common
44 - 60	LCD 0 - 16	O	LCD segment
61	BAT SEL	I	Selection of voltage detection “H” : using 76 “L” : using 78
62	TV SEL	I	Selection of TV “H” : without TV “L” : within TV
63	BASS SEL	I	Selection of S-BSS operation “H” : using 73 “L” : using 78
64	-	-	No using
65	MUTE OUT	O	Output high voltage at muting
66	SP CANCEL	O	Output high voltage at speaker cancelling (may be no using)

Pin No.	Pin Name	I/O	Description
67	DSL OUT	O	Output high voltage at S-BASS operating
68	CLOCK/TU	I	Tuner/clock direction "H" : tuner operation "L": clock operation
69	X OUT	O	Output CPU clock
70	X IN	I	Input CPU clock
71	DSP TEST	I/O	Display test "H" : all characters turn on
72	BATT IND	O	"L" : battery indicator (BT3) turn on
73	S-BASS	I	"H" : S-BASS operate
74	HOLD	I	"L" : holding key operation
75	IF SELECT	I	IF selection "H" : IF = 10.75MHz "L" : 10.7MHz
76	BATT DSP	I	Input supply voltage for battery indication
77	NSB SIG	I	Input NSB signal (DC) for selection of NSB stations
78	KEY IN	I	Input DC for KEY operation
79	GND	-	GND
80	VDD2	-	Input power supply



MECHANICAL PARTS LIST 1/1

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REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-RC6-010-500		CAB, FRONT(MK2)
2	S8-RC6-020-300		CAB, REAR(Y, MK2)
3	S8-RC6-030-020		LID BATT(MK2)
4	S8-RC6-100-300		PANEL, FRONT(Y, MK2)
5	S8-RC6-040-300		LCD WINDOW
6	S8-RC6-050-010		BTN, BAND(MK2)
7	S8-RC6-070-010		KNOB, POWER(MK2)
8	S8-RC6-060-100		BTN, PRESET
9	S8-RC6-080-000		PCB, HOLDER
10	S8-RC6-110-000		LCD COVER
11	S8-RC6-090-000		LCD, HOLDER
12	S0-524-221-500		LCD, CONN RUBBER 24.8-2.2-1.5
13	S8-RC6-130-000		BATT, CONTACT (+)
14	S8-RC6-140-000		BATT, CONTACT (-)
A	87-B10-074-010		SCREW, ST1.7-3.5
B	87-B10-044-010		SCREW, ST1.7-6

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
N	Gold	P	Pink	R	Red
S	Silver	ST	Titan Silver	T	Brown
V	Violet	W	White	Y	Yellow

ACCESSORIES LIST

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REF.NO	PART NO.	KANRI NO.	DESCRIPTION
1	S0-100-220-020	HP,HP-M022(T)	ST SET
2	S8-RC6-910-700		INSTRUC BOOK

