

WM-FX481

SERVICE MANUAL

Ver 1.0 2001.04

*E Model
Chinese Model*



Model Name Using Similar Mechanism	NEW
MD Mechanism Type	MF-WMFX481-114 (5E, 6E, 9E) MF-WMFX467-114 (CH)

SPECIFICATIONS

- **Frequency range**
FM: 87.5 - 108 MHz
AM: 530 - 1 710 kHz (North, Central and South America)
531 - 1 602 kHz (Other countries)
- **Power requirements**
3V DC batteries R6 (AA) x 2
- **Dimensions (w/h/d)**
Approx. 91.2 x 114.8 x 35.5 mm (3 5/8 x 4 5/8 x 1 1/16 inches)
excl. projecting parts and controls
- **Mass**
Approx. 150 g (5.3 oz) (main unit only)
- **Supplied accessories**
Stereo headphones or Stereo earphones (1)
Carrying case with belt clip (1)

- Abbreviation
CH : Chinese
9E : No Indication of country of origin
5E, 6E : Indication of country of origin

Design and specifications are subject to change without notice.

Battery life (approximate hours) (JEITA*)		
	Sony alkaline LR6 (SG)**	Sony R6P (SR)
Tape playback	32	9
Radio reception	40	14

* Measured value by the standard of JEITA (Japan Electronics and Information Technology Industries Association). (Using a Sony HF series cassette tape)

**When using Sony LR6 (SG) "STAMINA" alkaline dry batteries (produced in Japan).

Note

- The battery life may be shorter depending on the operating condition, the surrounding temperature and battery type.

RADIO CASSETTE PLAYER

9-873-125-11
2001D0200-1
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Sony Corporation
Personal Audio Company
Shinagawa Tec Service Production Group

SONY®

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(MF-WMFX467-114:CH)
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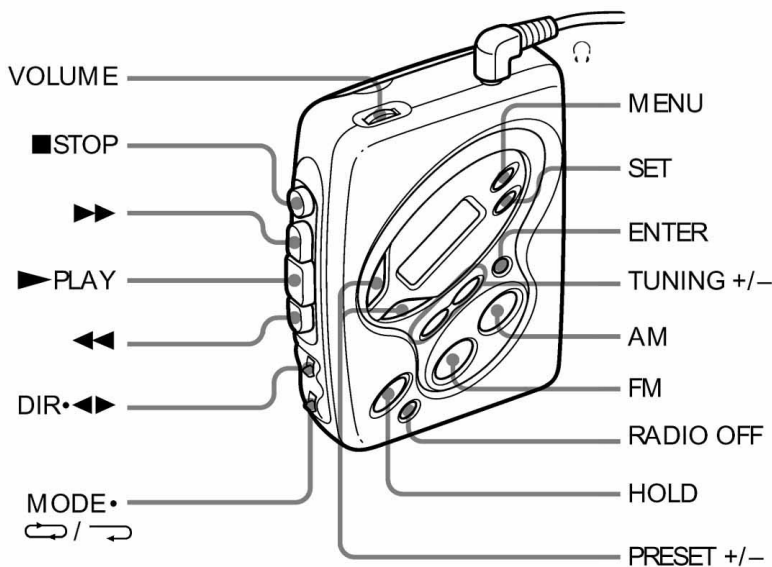
Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

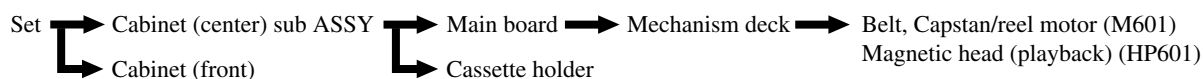
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
GENERAL



SECTION 2 DISASSEMBLY

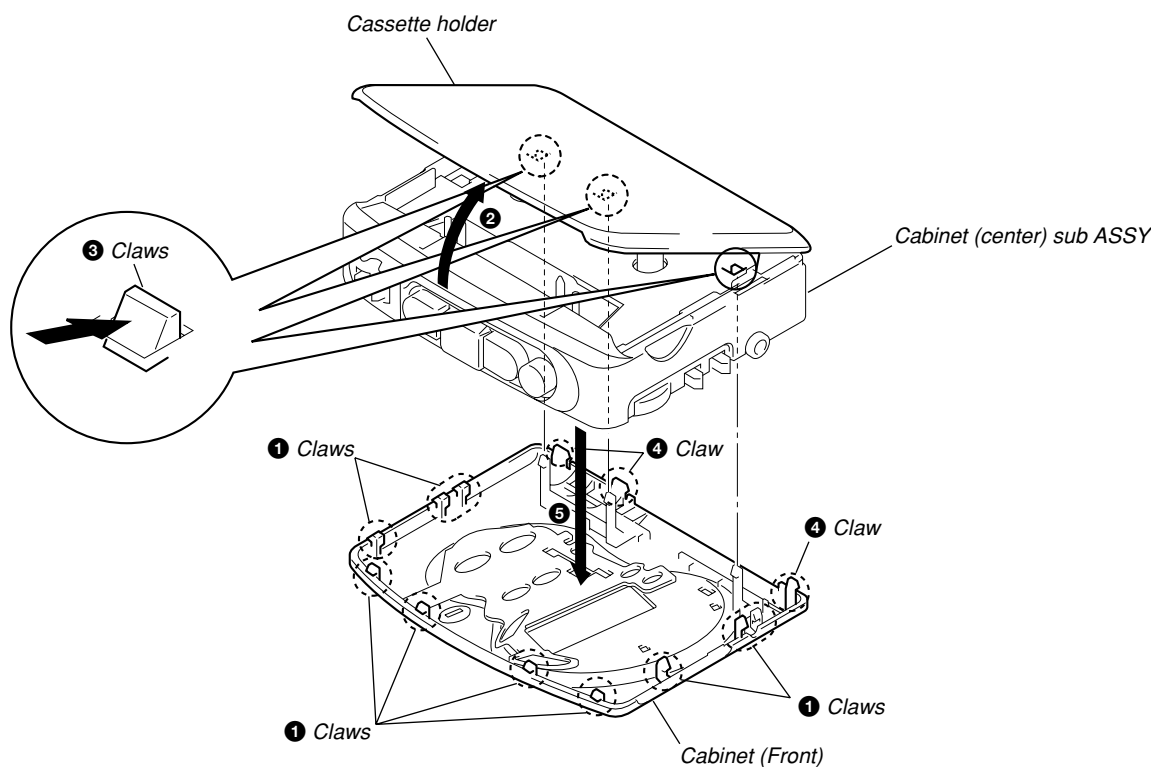
- The equipment can be removed using the following procedure.



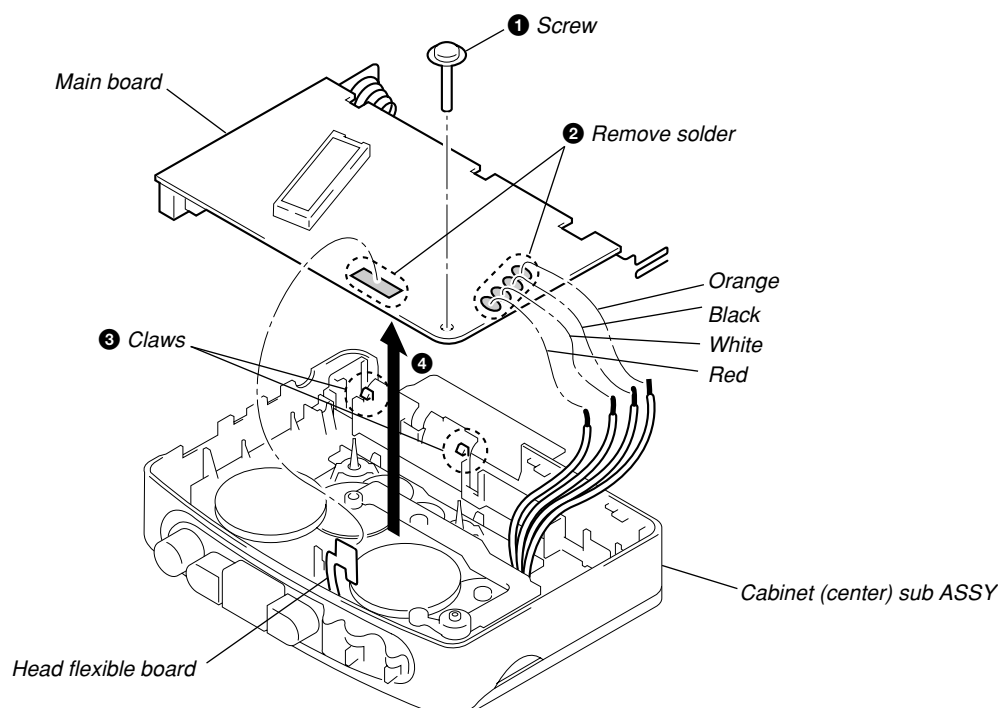
Note : Follow the disassembly procedure in the numerical order given.

2-1. CABINET (FRONT), CABINET (CENTER) SUB ASSY

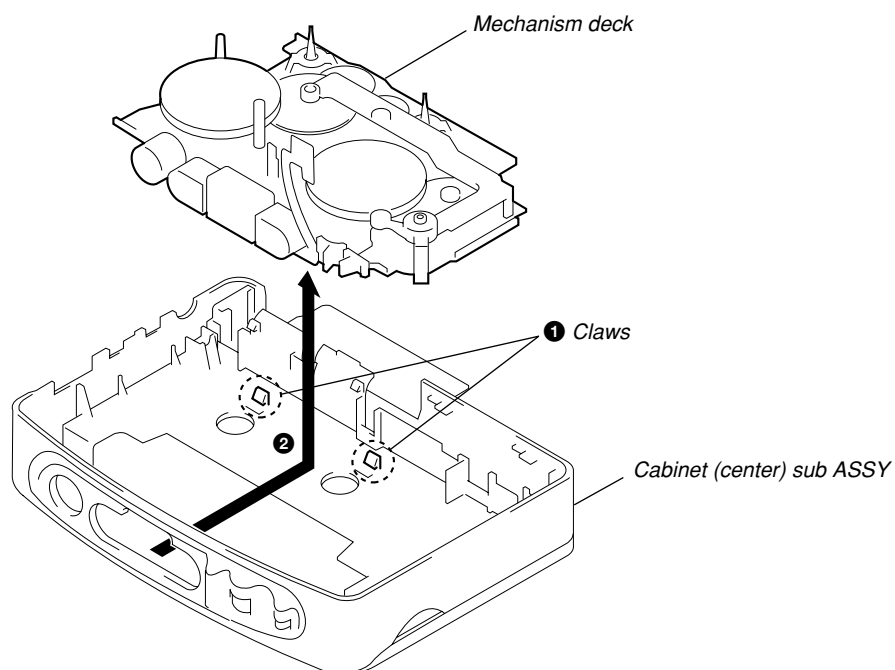
Note : Use the precision driver with cover a point by cloth to release the claw.
 Be careful not to damage claws.



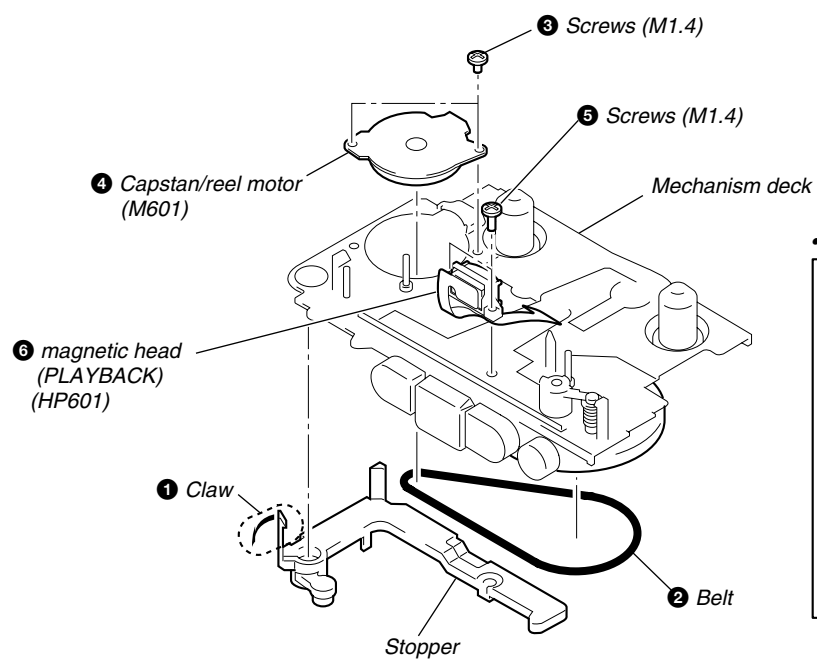
2-2. MAIN BOARD



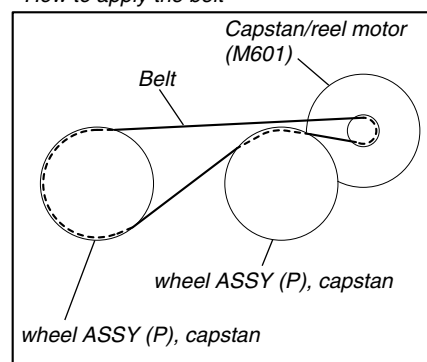
2-3. MECHANISM DECK



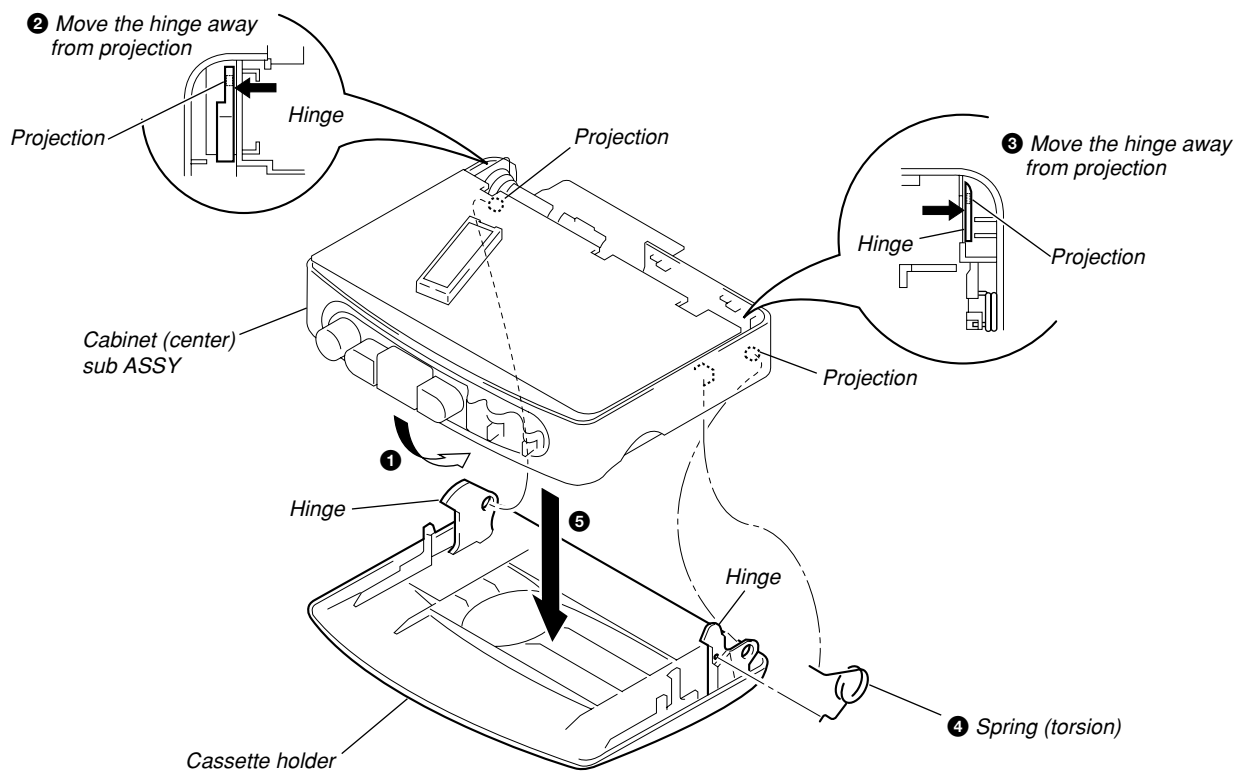
2-4. BELT, CAPSTAN/REEL MOTOR (M601), MAGNETIC HEAD (PLAYBACK) (HP601)



• How to apply the belt

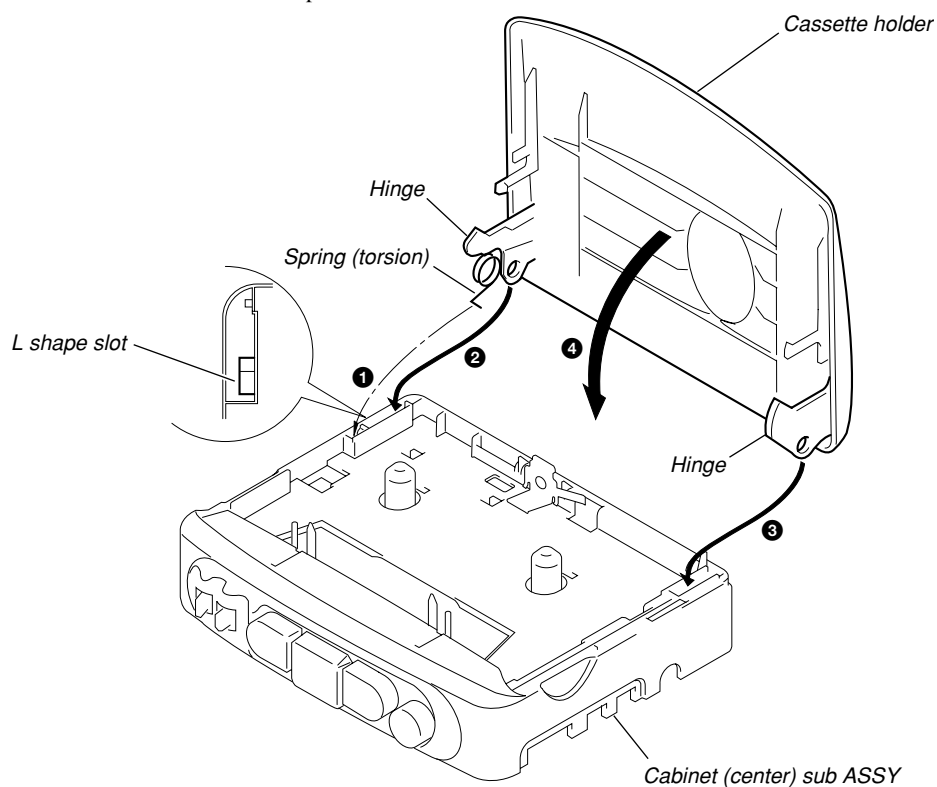


2-5. CASSETTE HOLDER



● CAUTIONS DURING ASSEMBLY

- 1** Insert the spring (torsion) to the L shape slot as shown in the figure.
- 2, 3** Insert the hinge of the "Cassette holder".
- 4** Close the "Cassette holder" then press it.



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :

playback head	pinch roller
capstan	rubber belt
- Demagnetize the playback head with a head demagnetizer.
Do not use a magnetized screwdriver for the adjustments.
- These measurement and adjustment should be performed with the rated power supply voltage (2.5 V) unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	1.97 – 4.11 mN • m 20 – 42 g • cm (0.28 – 0.58 oz • inch)
FWD back tension		less than 0.19 mN • m less than 2 g • cm (less than 0.027 oz • inch)
REV	CQ-102RC	1.97 – 4.11 mN • m 20 – 42 g • cm (0.28 – 0.58 oz • inch)
REV back tension		less than 0.19 mN • m less than 2 g • cm (less than 0.027 oz • inch)
FF, REW	CQ-201B	more than 5.89 mN • m more than 60 g • cm (more than 0.84 oz • inch)

3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

- Supplied voltage : 2.5V.
- Switch and control position (MENU display)
MEGA BASS : OFF
VOLUME control (RV301) : maximum
AVLS : OFF (No indicated)
FM MODE : 5E, 6E : DX (No indicated)
9E, CH : STEREO (No indicated)
- Abbreviation
CH : Chinese
9E : No Indication of country of origin
5E, 6E: Indication of country of origin

TAPE SECTION

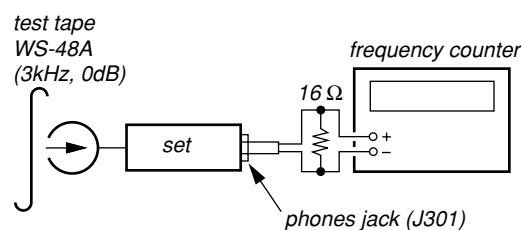
0 dB = 0.775V

Test Tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	Tape Speed Adjustment

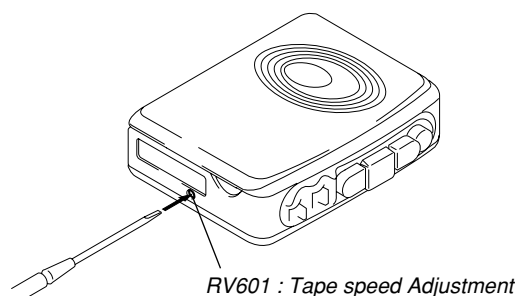
Tape Speed Adjustment

Procedure :



- Playback WS-48A (tape center part) in the FWD state and adjust RV601 so that the frequency counter reading becomes 3,000Hz.
Standard value : 2,985–3,015Hz
- Playback WS-48A (tape center part) in the REV state.
Check that frequency counter reading is within $\pm 1.0\%$ of the reading of step 1.

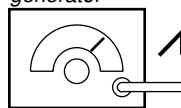
Adjustment Location :



TUNER SECTION 0 dB = 1 μ V**AM Section**

BAND : AM

AM RF signal generator
Put the lead-wire antenna close to the set.



30% amplitude modulation by 400Hz signal.
Output level : as low as possible

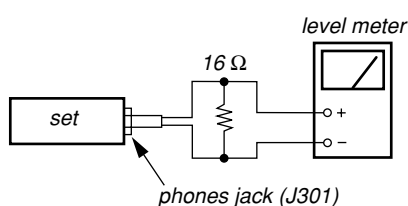
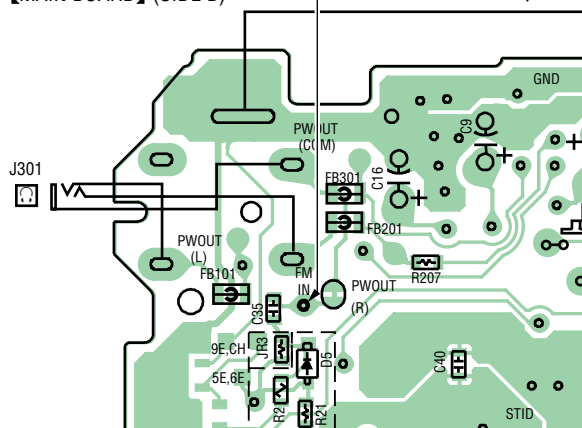
FM Section

BAND : FM

FM RF signal generator

TP (FM IN) 0.01 μ F
33.75kHz frequency deviation by 1kHz signal.
Output level : as low as possible

【MAIN BOARD】(SIDE B)



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

no mark : 10kHz step

< : 9kHz step

AM IF ADJUSTMENT

Adjust for a maximum reading on level meter.

RV2	1,000kHz <999kHz>
-----	-------------------

AM FREQUENCY COVERAGE ADJUSTMENT

Adjust parts	Frequency display	Reading on digital voltmeter
Confirmation	530kHz	Standard value : 3V or less
L7	1,710kHz <1,602kHz>	Adjustment value : 10.0V<9.0V> Standard value : 9.9-10.1V <8.9 - 9.1V>

AM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L3	620kHz <621kHz>
CT1	1,400kHz <1,395kHz>

FM FREQUENCY COVERAGE CONFIRMATION

	Frequency display	Reading on digital voltmeter
Confirmation	87.5MHz	Standard value : 6.5V or less

FM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L4	98MHz
Confirmation	108MHz

Adjustment Location : Main board (See page 8)

Frequency Coverage Adjustment

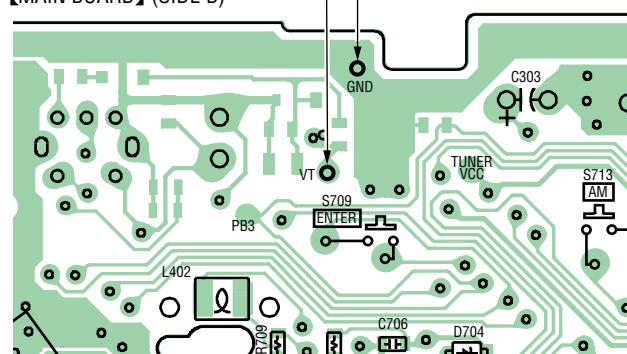
Setting :

digital voltmeter
(DC range)

TP (VT)

TP (GND)

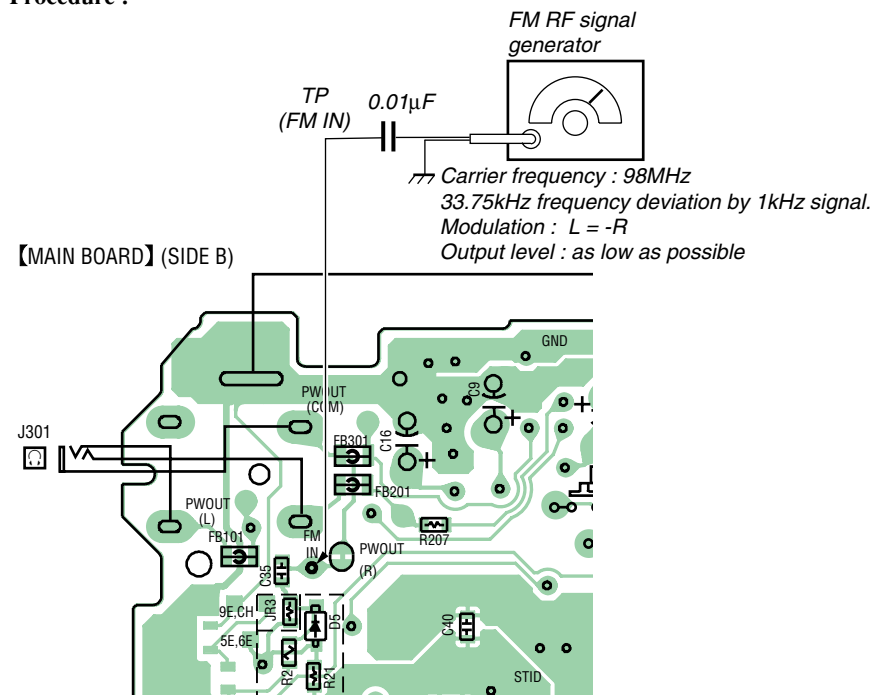
【MAIN BOARD】(SIDE B)



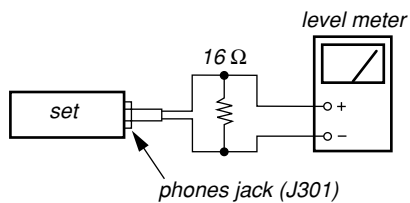
WM-FX481

FM VCO Adjustment

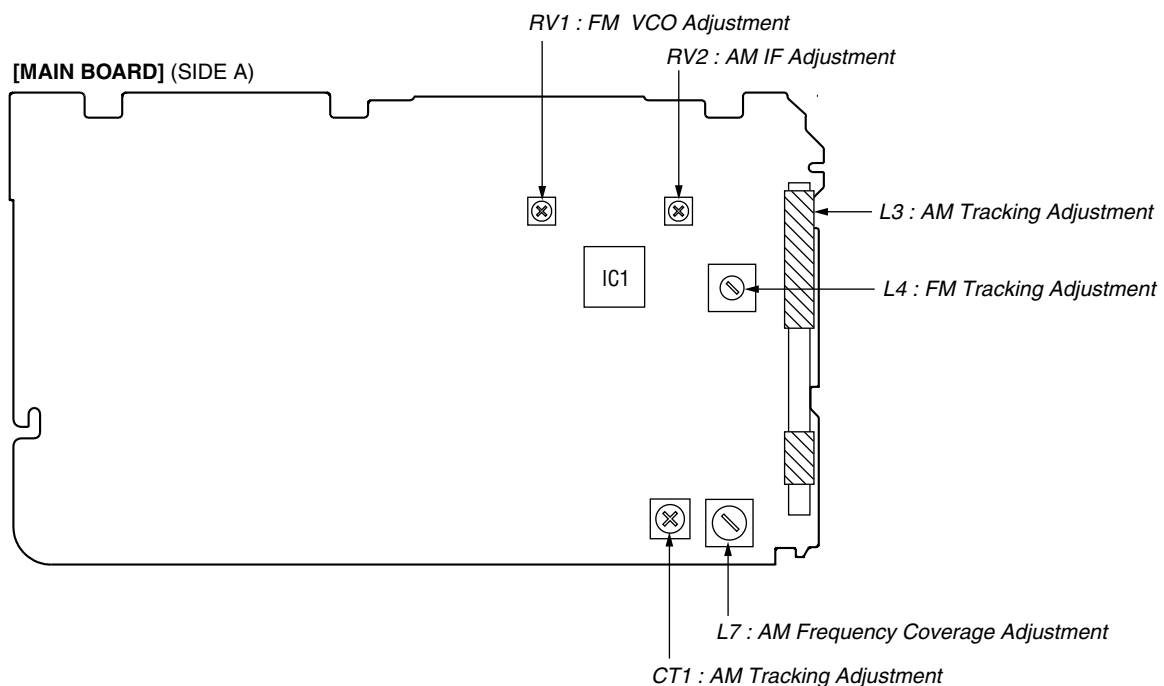
Procedure :



1. Connect the level meter as shown in the figure.
2. Turn the set to 98MHz.
3. Adjust RV1 so that the wave form to be maximum.
Stereo operation shall be normal.



Adjustment Location :



SECTION 4
DIAGRAMS

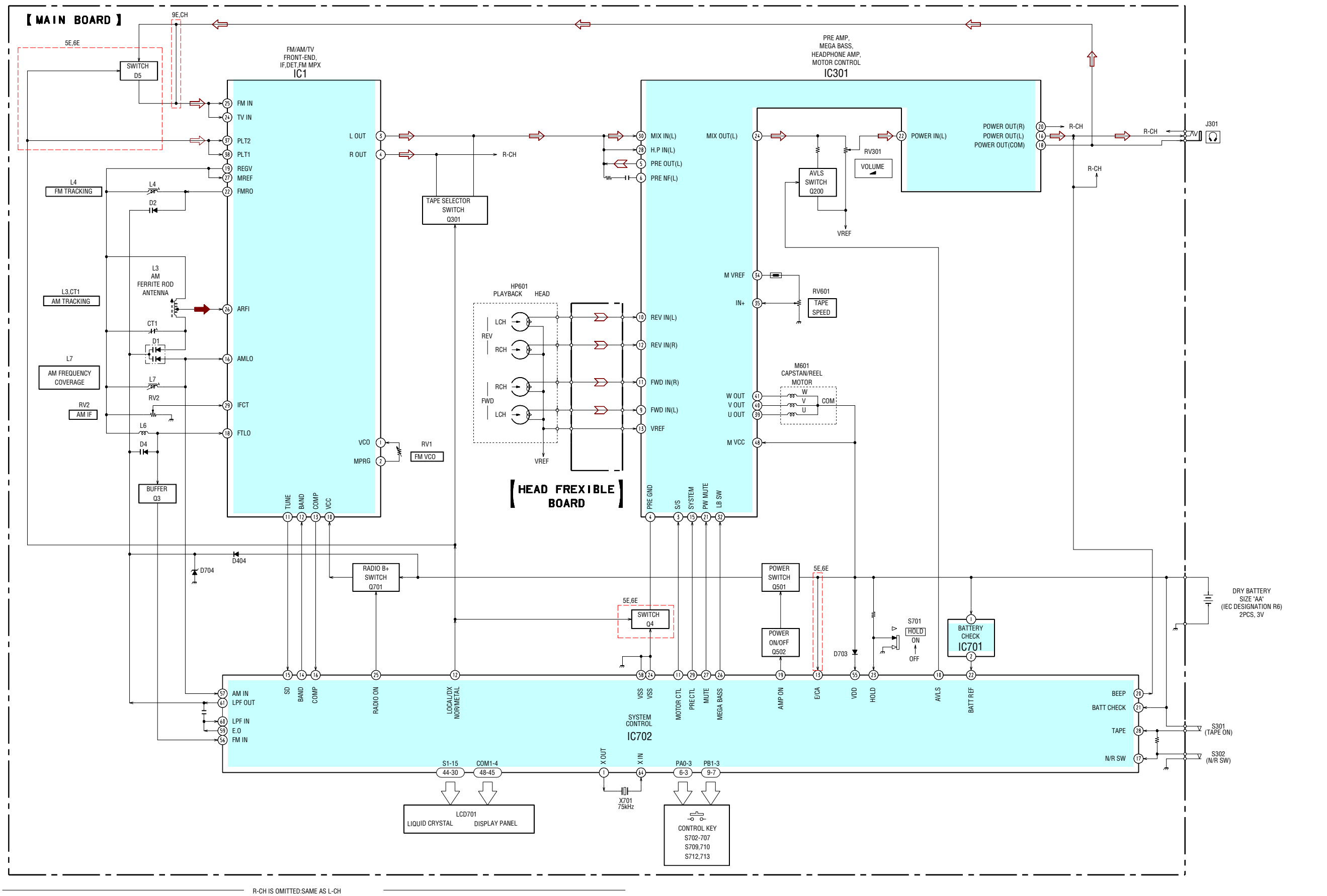
4-1. EXPLANATION OF IC TERMINALS

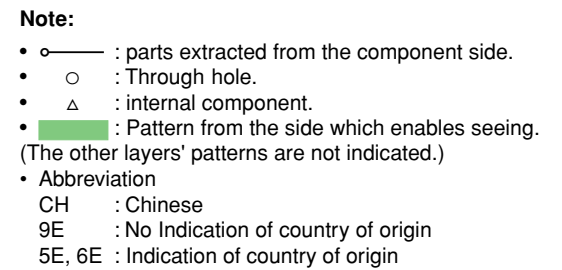
IC702 LC72348W-CFX1721(5E, 6E) SYSTEM CONTROL
IC702 LC72348W-CFX1726(9E, CH) SYSTEM CONTROL

- Abbreviation
CH : Chinese
9E : No Indication of country of origin
5E, 6E : Indication of country of origin

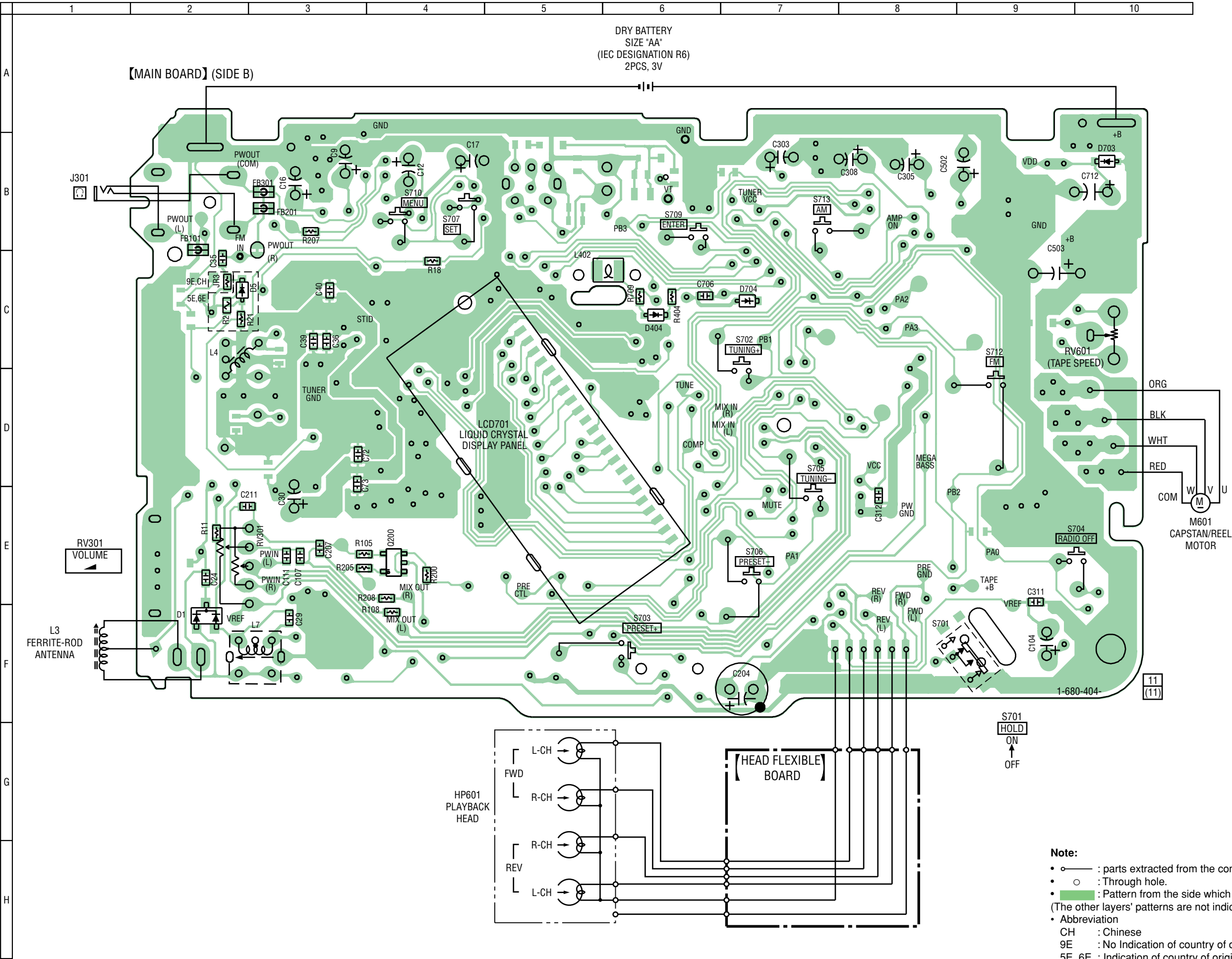
Pin No.	Pin name	I/O	Desclption
1	XOUT	O	Crystal oscillator output (75kHz).
2	TEST2	–	Not used (Ground).
3	PA3	I	Key input.
4	PA2	I	Key input.
5	PA1	I	Key input.
6	PA0	I	Key input.
7	PB3	O	Key output.
8	PB2	O	Key output.
9	PB1	O	Key output.
10	AVLS	O	AVLS signal output.
11	MOTOR CTL	O	Motor control output.
12	METAL/NOR DX/LOCAL	O	METAL/NORMAL type tape and DX/LOCAL select signal output.
13	E/CA	I	Destination select.
14	BAND	O	Tuner band select signal output.
15	SD	I	Tuning signal detect input.
16	COMP	I	Compalator input.
17	N/R SW	I	FWD/REV mode signal input.
18	BACK UP	I	Back up voltage input.
19	AMP ON	O	Power ON/OFF signal output.
20	BEEP	O	Beep signal output.
21	BATT CHECK	I	Back up cancel input.
22	BATT REF	I	A/D reference voltage input.
23	HOLD	I	HOLD switch input. “H” :ON, “L” :OFF
24	VSS	–	Ground terminal.
25	RADIO ON	O	Radio ON signal output.
26	MEGA BASS	O	MEGA BASS ON signal output.
27	MUTE	O	Mute ON signal output.
28	TAPE	I	Tape ON input.
29	PRE CTL	O	Preamplifier control output.
30-44	S1-15	O	LCD segment output.
45-48	COM1-4	O	LCD common output.
49-52	DBR1-4	–	LCD power supply.
53	RESET	I	Reset input (Fixed “H”).
54	TU VCC	–	Power supply.
55	VDD	–	Power supply.
56	FM IN	I	FM osc frequency input.
57	AM IN	I	AM osc frequency input.
58	VSS	–	Ground terminal.
59	E.O	O	Error (PWM) signal output.
60	LPF IN	I	LPF input.
61	LPF OUT	O	LPF output.
62	LPF GND	–	Ground terminal.
63	TEST 1	–	Not used (Ground).
64	X IN	I	Crystal oscillator input (75kHz).

4-2. BLOCK DIAGRAMS





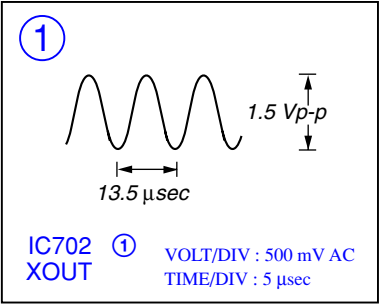
4-5. PRINTED WIRING BOARDS – MAIN SECTION (SIDE B) –



Note on Schematic Diagram: MAIN SECTION

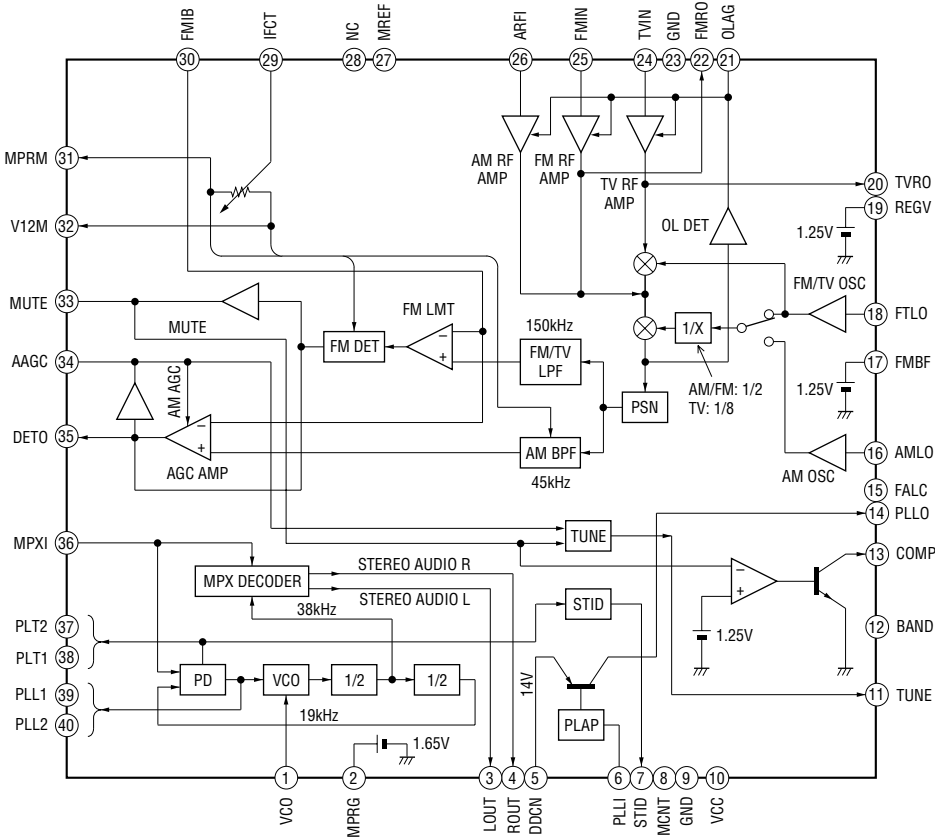
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- $\square$: panel designation.
- --- : B+ Line.
- --- : adjustment for repair.
- Power voltage is dc 3V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- () : AM
- < > : PLAY(TAPE)
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - $\Rightarrow$: FM
 - $\Rightarrow$: AM
 - $\Rightarrow$: PB
- Abbreviation
 - CH : Chinese
 - 9E : No Indication of country of origin
 - 5E, 6E : Indication of country of origin

Waveforms

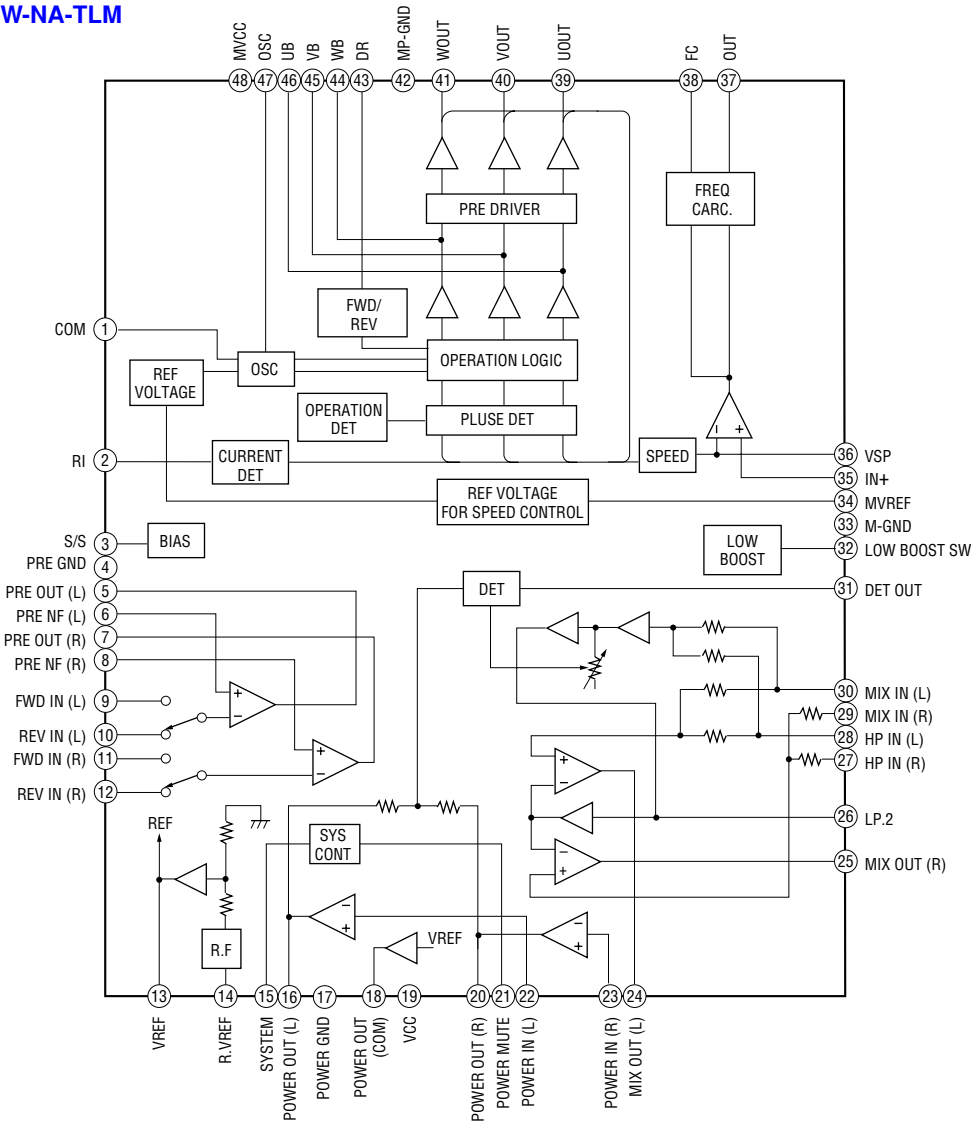


IC BLOCK DIAGRAMS

IC1 CXA1960Q



IC301 LB8115W-NA-TLM

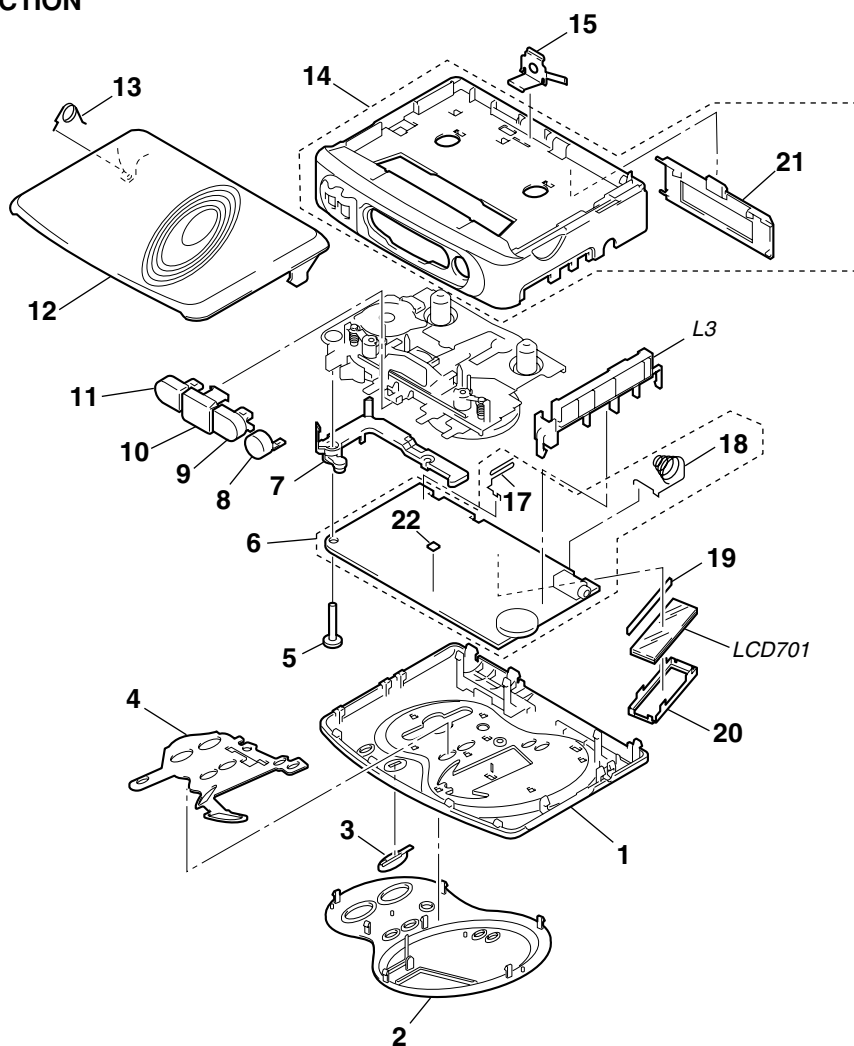


SECTION 5 EXPLODED VIEWS

NOTE :

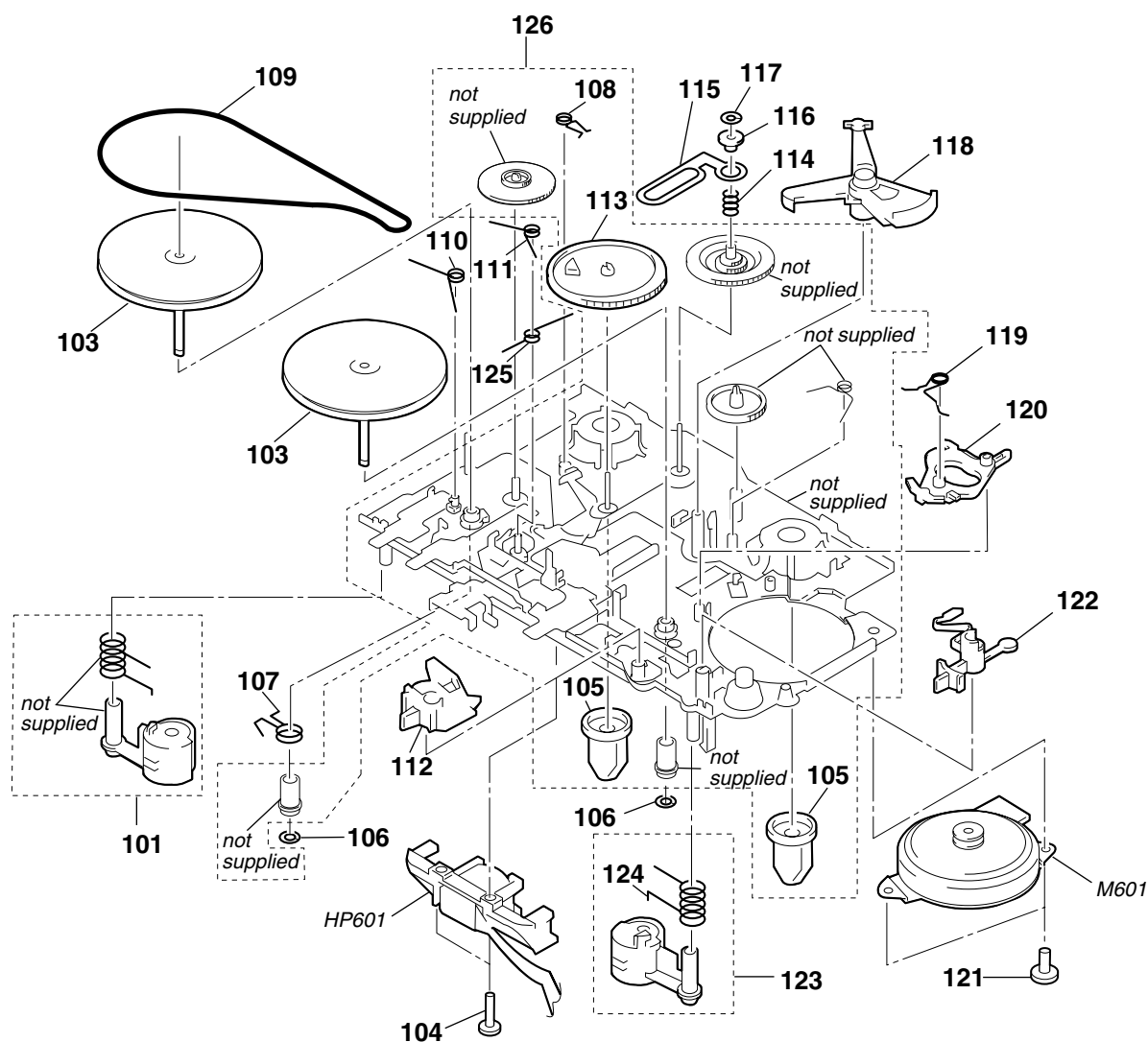
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
CH :Chinese
9E :No Indication of country of origin
5E, 6E :Indication of country of origin

5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-226-667-11	CABINET (FRONT)		13	3-007-012-01	SPRING (TORSION)	
2	3-226-861-01	WINDOW (2) (LCD)		14	X-3380-184-1	CABINET (CENTER) SUB ASSY(5E,6E,CH)	
3	3-044-869-01	KNOB (HOLD)		14	X-3380-185-1	CABINET (CENTER) SUB ASSY (9E)	
4	3-227-268-01	BUTTON (PRESET)		15	3-007-011-01	SPRING (CASSETTE)	
5	3-015-285-01	SCREW (M1.4),TOOTHED LOCK (WH)		17	3-030-055-01	TERMINAL (+), BATTERY	
* 6	A-3021-379-A	MAIN BOARD,COMPLETE (9E,CH)		18	3-007-010-01	TERMINAL (-), BATTERY	
* 6	A-3021-418-A	MAIN BOARD,COMPLETE (5E,6E)		19	3-226-672-01	RUBBER, CONDUCTIVE	
7	3-044-865-01	STOPPER		20	3-226-671-01	HOLDER (LCD)	
8	3-007-006-21	BUTTON (STOP)		21	3-030-062-21	LID, BATTERY	
9	3-007-004-21	BUTTON (FF)		22	3-231-437-01	RUBBER, HARD	
10	3-030-054-01	BUTTON (PLAY)		L3	1-754-124-21	ANTENNA, FERRITE-ROD (AM TRCKING)	
11	3-007-005-21	BUTTON (REW)		LCD701	1-804-256-21	LIQUID CRYSTAL DISPLAY	
12	3-228-508-31	CASSETTE, HOLDER					

5-2. MECHANISM DECK SECTION
(MF-WMFX467-114 : CH
MF-WMFX281-114 : 5E, 6E, 9E)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3369-749-1	PINCH LEVER (N) ASSY		117	3-728-091-01	WASHER, STOPPER	
103	X-3372-619-1	WHEEL ASSY (NP), CAPSTAN		118	3-921-052-11	LEVER (A), DETECTION	
104	3-704-197-71	SCREW (M1.4)		119	3-920-994-11	SPRING (D SELECTION)	
105	3-024-223-01	GEAR (REEL-2)		120	3-929-419-01	LEVER (BR), DETECTION	
106	3-921-797-01	WASHER		121	3-704-197-01	SCREW (M1.4), SPECIAL HEAD	
107	3-920-993-01	SPRING (NR)		122	3-921-023-01	LEVER, M SELECTION	
108	3-333-324-01	SPRING (FR LEVER)		123	X-3369-748-1	PINCH LEVER (R) ASSY	
109	3-938-657-01	BELT		124	3-920-997-01	SPRING (PINCH R)	
110	3-015-436-01	SPRING (STOP)		125	3-016-989-01	SPRING (SW-CP)	
111	3-013-142-01	SPRING (FR-CP)		126	X-3372-960-1	CHASSIS COMP ASSY (GL-L)	
112	3-921-053-01	LEVER, D SELECTION		HP601	1-500-648-11	HEAD, MAGNETIC (PLAYBACK)(5E,6E,9E)	
113	X-3376-169-1	CLUTCH ASSY		HP601	1-500-648-12	HEAD, MAGNETIC (PLAYBACK)(CH)	
114	3-920-990-21	SPRING (UD), COMPRESSION		M601	1-763-073-11	MOTOR (CAPSTAN/REEL) (INCLUDING PULLEY)	
115	3-921-335-01	WASHER, LEVER				(CH)	
116	3-923-530-11	SLEEVE (M)		M601	1-763-683-11	MOTOR (CAPSTAN/REEL) (INCLUDING PULLEY)	
						(5E,6E,9E)	

MAIN

SECTION 6
ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A.... , uPA.... : μ PA....
uPB.... : μ PB.... , uPC.... : μ PC....
uPD.... : μ PD....
- CAPACITORS
uF : μ F
- COILS
uH : μ H

When indicating parts by reference number, please include the board.

- Abbreviation
CH :Chinese
9E :No Indication of country of origin
5E, 6E :Indication of country of origin

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
*	A-3021-418-A	MAIN BOARD, COMPLETE	(5E,6E)			C32	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
*	A-3021-379-A	MAIN BOARD, COMPLETE	(9E,CH)			C33	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		*****				C34	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
	3-007-010-01	TERMINAL (-), BATTERY				C35	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
	3-030-055-01	TERMINAL (+), BATTERY				C36	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
	3-231-437-01	RUBBER, HARD				C39	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		<CAPACITOR>				C40	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C3	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C72	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C4	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C73	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C5	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C74	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C6	1-115-156-11	CERAMIC CHIP	1uF		10V	C75	1-216-864-11	METAL CHIP	0	5%	1/16W
C7	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	C101	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C8	1-113-619-11	CERAMIC CHIP	0.47uF		10V	C102	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C9	1-126-514-11	ELECT	22uF	20%	6.3V	C103	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C10	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C104	1-126-514-11	ELECT	22uF	20%	6.3V
				(5E,6E)		C105	1-115-156-11	CERAMIC CHIP	1uF		10V
C10	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V	C106	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
				(9E,CH)		C107	1-115-156-11	CERAMIC CHIP	1uF		10V
C11	1-115-156-11	CERAMIC CHIP	1uF		10V	C108	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C12	1-126-794-11	ELECT	4.7uF	20%	25V	C111	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C13	1-115-156-11	CERAMIC CHIP	1uF		10V	C201	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C14	1-115-156-11	CERAMIC CHIP	1uF		10V	C202	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C15	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	C203	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C16	1-126-794-11	ELECT	4.7uF	20%	25V	C204	1-126-514-11	ELECT	22uF	20%	6.3V
C17	1-126-791-11	ELECT	10uF	20%	16V	C205	1-115-156-11	CERAMIC CHIP	1uF		10V
C18	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	C206	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
				(5E,6E)		C207	1-115-156-11	CERAMIC CHIP	1uF		10V
C18	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	C208	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
				(9E,CH)		C211	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C19	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	C301	1-115-156-11	CERAMIC CHIP	1uF		10V
				(5E,6E)		C302	1-115-156-11	CERAMIC CHIP	1uF		10V
C19	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	C303	1-126-514-11	ELECT	22uF	20%	6.3V
				(9E,CH)		C304	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C20	1-115-156-11	CERAMIC CHIP	1uF		10V	C305	1-124-589-11	ELECT	47uF	20%	16V
C21	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C306	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C22	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C307	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C23	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	C308	1-115-873-11	ELECT	3.3uF	20%	50V
C24	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C309	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C25	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V	C311	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C26	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C312	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C28	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C501	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C29	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C502	1-126-514-11	ELECT	22uF	20%	6.3V
C30	1-126-791-11	ELECT	10uF	20%	16V	C503	1-128-110-11	ELECT	470uF	20%	4V
C31	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C601	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description	Remark			
C602	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	
C603	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C604	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C605	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C606	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V	
C607	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V	
C701	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C702	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C703	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	
C704	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	
C705	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C706	1-165-112-11	CERAMIC CHIP	0.33uF		16V	
C707	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C708	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C709	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C710	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V	
C711	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	
C712	1-126-916-11	ELECT	1000uF	20%	6.3V	
C714	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C721	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	

<TRIMMER>

CT1	1-141-422-11	CAP, ADJ 10PF (AM TRACKING)				
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<DIODE>

D1	8-719-072-60	DIODE SVC347T-TL				
D2	8-719-050-97	DIODE MA357(E)-(TX).SO				
D4	8-719-050-97	DIODE MA357(E)-(TX).SO				
D5	8-719-038-20	DIODE 1SS314 (5E,6E)				
D404	8-719-404-50	DIODE MA111-TX				
D703	8-719-049-09	DIODE 1SS367-T3SONY				
D704	8-719-420-87	DIODE MA8130				

<FERRITE BEAD>

FB101	1-500-245-11	FERRITE	0UH			
FB201	1-500-245-11	FERRITE	0UH			
FB301	1-500-245-11	FERRITE	0UH			
FB302	1-216-864-11	METAL CHIP	0	5%	1/16W	

<IC>

IC1	8-752-073-35	IC CXA1960Q				
IC301	8-759-665-91	IC LB8115W-NA-TLM				
IC701	8-759-457-70	IC XC62RP1602MR				
IC702	8-759-829-36	IC LC72348W-CFX1721 (5E,6E)				
IC702	8-759-829-35	IC LC72348W-CFX1726 (9E,CH)				

<JACK>

J301	1-565-287-11	JACK (♂)				
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<JUMPER RESISTOR>

JC1	1-216-821-11	METAL CHIP	1K	5%	1/16W (9E,CH)	
JR3	1-216-864-11	METAL CHIP	0	5%	1/16W (9E,CH)	
JC5	1-216-864-11	METAL CHIP	0	5%	1/16W (5E,6E)	

Ref. No.	Part No.	Description	Remark			
		<COIL>				
L1	1-412-967-31	INDUCTOR	0.1uH			
L2	1-412-967-31	INDUCTOR	0.1uH			
L3	1-754-124-21	ANTENNA, FERRITE-ROD (AM TRACKING)				
L4	1-424-763-11	COIL, RF (FM) (FM TRACKING)				
L6	1-469-781-21	INDUCTOR	30nH			
L7	1-419-540-11	COIL, OSCILLATION (AM) (AM FREQUENCY COVERAGE)				
L402	1-412-033-11	INDUCTOR CHIP	220uH			
L702	1-412-995-21	INDUCTOR	22uH			
		<TRANSISTOR>				
Q3	8-729-423-52	TRANSISTOR 2SC3931-C				
Q4	8-729-602-21	TRANSISTOR 2SC4154-F (5E,6E)				
Q200	8-729-402-13	TRANSISTOR XN1501				
Q301	8-729-422-54	TRANSISTOR XN4215				
Q501	8-729-046-90	TRANSISTOR 2SB970-(TX).SO				
Q502	8-729-402-13	TRANSISTOR XN1501				
Q701	8-729-046-90	TRANSISTOR 2SB970-(TX).SO				

<RESISTOR>

R2	1-216-821-11	METAL CHIP	1K	5%	1/16W (5E,6E)	
R3	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R4	1-216-817-11	METAL CHIP	470	5%	1/16W	
R5	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R6	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R7	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R8	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R9	1-216-864-11	METAL CHIP	0	5%	1/16W	
R10	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R11	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R12	1-216-803-11	METAL CHIP	33	5%	1/16W	
R13	1-216-813-11	METAL CHIP	220	5%	1/16W	
R14	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R15	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R17	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R18	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R20	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R21	1-216-821-11	METAL CHIP	1K	5%	1/16W (5E,6E)	
R22	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R40	1-216-821-11	METAL CHIP	1K	5%	1/16W (5E,6E)	
R101	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R102	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R103	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R104	1-216-819-11	METAL CHIP	680	5%	1/16W	
R105	1-216-815-11	METAL CHIP	330	5%	1/16W	
R106	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R107	1-216-864-11	METAL CHIP	0	5%	1/16W	
R108	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R200	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R201	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R202	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R203	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R204	1-216-819-11	METAL CHIP	680	5%	1/16W	

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R205	1-216-815-11	METAL CHIP	330 5% 1/16W			<VIBRATOR>	
R206	1-216-831-11	METAL CHIP	6.8K 5% 1/16W				
R207	1-216-864-11	METAL CHIP	0 5% 1/16W	X701	1-579-615-11	VIBRATOR, CRYSTAL (75kHz)	
R208	1-216-833-11	METAL CHIP	10K 5% 1/16W			*****	
R301	1-216-829-11	METAL CHIP	4.7K 5% 1/16W			MISCELLANEOUS	
R302	1-216-789-11	METAL CHIP	2.2 5% 1/16W			*****	
R303	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R304	1-216-821-11	METAL CHIP	1K 5% 1/16W	HP601	1-500-648-11	HEAD, MAGNETIC (PLAYBACK) (5E,6E,9E)	
R305	1-216-849-11	METAL CHIP	220K 5% 1/16W	HP601	1-500-648-12	HEAD, MAGNETIC (PLAYBACK) (CH)	
R404	1-216-821-11	METAL CHIP	1K 5% 1/16W	L3	1-754-124-21	ANTENNA, FERRITE-ROD (AM TRACKING)	
R501	1-216-819-11	METAL CHIP	680 5% 1/16W	LCD701	1-804-256-21	LIQUID CRYSTAL DISPLAY	
R502	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	M601	1-763-073-11	MOTOR (CAPSTAN/REEL) (INCLUDING PULLY)	(CH)
R503	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R504	1-216-847-11	METAL CHIP	150K 5% 1/16W	M601	1-763-683-11	MOTOR (CAPSTAN/REEL) (INCLUDING PULLY)	(5E,6E,9E)
R601	1-216-821-11	METAL CHIP	1K 5% 1/16W			*****	
R602	1-216-835-11	METAL CHIP	15K 5% 1/16W			ACCESSORIES & PACKING MATERIALS	
R603	1-216-821-11	METAL CHIP	1K 5% 1/16W			*****	
R604	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R605	1-216-821-11	METAL CHIP	1K 5% 1/16W	3-228-593-01		CASE, CARRYING	
R606	1-216-821-11	METAL CHIP	1K 5% 1/16W	3-228-752-22		MANUAL, INSTRUCTION	
R607	1-216-833-11	METAL CHIP	10K 5% 1/16W			(ENGLISH,FRENCH,SIMPLIFIED CHINESE)(CH)	
R701	1-216-845-11	METAL CHIP	100K 5% 1/16W	3-228-752-32		MANUAL, INSTRUCTION	
R702	1-216-829-11	METAL CHIP	4.7K 5% 1/16W			(SPANISH,PORTUGUESE,GERMAN,ITALIAN)	
R703	1-216-845-11	METAL CHIP	100K 5% 1/16W			(5E,6E)	
R704	1-216-864-11	METAL CHIP	0 5% 1/16W	3-228-752-52		MANUAL, INSTRUCTION	
R706	1-216-845-11	METAL CHIP	100K 5% 1/16W			(ENGLISH,TRADITIONAL CHINESE)(9E)	
R707	1-216-845-11	METAL CHIP	100K 5% 1/16W	8-953-130-90		HEADPHONE MDR-E805LP	
R708	1-216-849-11	METAL CHIP	220K 5% 1/16W				
R709	1-216-809-11	METAL CHIP	100 5% 1/16W				
R710	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R711	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R712	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R713	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R714	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R715	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R716	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R717	1-216-857-11	METAL CHIP	1M 5% 1/16W				
R718	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R720	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R721	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R722	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R731	1-216-821-11	METAL CHIP	1K 5% 1/16W				
		<VARIABLE RESISTOR>					
RV1	1-223-258-11	RES, CARBON ADJ VAR 4.7K (FM VCO)					
RV2	1-223-998-21	RES, CARBON ADJ VAR 100K (AM IF)					
RV301	1-225-953-11	RES, VAR, MAIN CARBON 10K/10K (VOLUME)					
RV601	1-241-784-11	RES, ADJ, CARBON 5K (TAPE SPEED)					
		<SWITCH>					
S301	1-762-742-61	SWITCH, DETECTION (SMALL TYPE) (TAPE ON)					
S302	1-762-742-61	SWITCH, DETECTION (SMALL TYPE) (N/R SW)					
S701	1-572-922-11	SWITCH, SLIDE (HOLD)					
		<THERMISTOR>					
TH601	1-803-751-21	THERMISTOR, POSITIVE					

REVISION HISTORY

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