

WM-GX670/GX674

SERVICE MANUAL


Ver 1.2 2002. 01



Photo: WM-GX670

US Model
AEP Model
UK Model
Australian Model
WM-GX670
Chinese Model
E Model
WM-GX670/GX674

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Model Name Using Similar Mechanism	WM-EX677
Tape Transport Mechanism Type	MT-WMGX670-162

SPECIFICATIONS

Radio section

Frequency range	FM: 65 – 74/87.5 – 108MHz (Eastern Europe) 87.5 – 108MHz (other countries) AM: 530 – 1,710kHz (North, Central, and South America) 531 – 1,602kHz (other countries)
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Dimensions (w/h/d)

Approx. 108.4 × 77.7 × 23.8 mm
(4³/₈ × 3¹/₈ × ¹⁵/₁₆ inches), incl.
projecting parts and controls


Mass

Approx. 250g (8.9oz)
Approx. 315g (11.2oz) incl.
rechargeable battery and a cassette

Supplied accessories

Battery case (1)
Stereo earphones with remote control (1)
Battery charge (1)
AC plug adaptor (1) (except for European, Australian, Saudi Arabian, Chinese, Hong Kong, U.S.A., Canadian, and Korean model)
Rechargeable battery (NC-6WM, 1.2V, 600mAh, Ni-Cb) (1)
Rechargeable battery carrying case (1)
Carrying pouch (1)
Stereo microphone (1)

Tape section

Frequency response (Dolby NR off)	Playback: 40 – 15,000Hz Recording/playback: 100 – 8,000Hz
Output	Headphones ( REMOTE) jack Load impedance 8 – 300Ω
Input	Microphone (MIC) jack

General

Power requirements	1.5V Rechargeable battery One R6 (size AA) battery
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Design and specifications are subject to change without notice

RADIO CASSETTE CORDER

9-926-924-12
2002A1600-1
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Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

SONY®

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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.

Flexible Circuit Board Repairing

- Keep the temperature of 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.

SECTION 1 SERVICE NOTE

[Service Mode]

The service mode enables to operate the mechanism of WM-GX670/GX674 while the MAIN board is opened.

Rotation of the idler gear (A) (S side) is detected using the photo-reflector (PH1) in the WM-GX670/GX674. PH1 is located on the MAIN board, therefore the rotation of the idler gear (A) (S side) cannot be detected by PH1 when the MAIN board is removed. As a result, the motor cannot be controlled and cannot run correctly.

To repair the machine after the MAIN board is removed while the main power is turned on, follow the procedures as described below.

1. Setting




- 1) Remove the cabinets referring to section "3. DISASSEMBLY". Open the MAIN board.
- 2) Connect the motor (M601) and the plunger solenoid (PM901) to the MAIN board using the jumper wires. When the extension jig (1-769-143-11) (10 wires as a set) is used, they can be connected easily.
- 3) Short the TAPE DETECT switch (S901-2), R TUME switch (S901-1), F TUME switch (S902-1) and ATS switch (S902-2).
- 4) Connect an AF oscillator to resistor (R43).
- 5) Connect DC 1.3 V from external regulated power supply to ⊕ and ⊖ terminals of the battery.

2. PRE-SET status



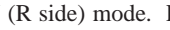
The PLAY, FF and REW modes can be entered only from the PRE-SET status.

- 1) Check that the slider (NR) is in the center position (S1), and the FWD/REV switch is also in the center position. When these switches are not in the center position, set them to the PRE-SET status as follows.
- 2) Move the FWD/REV switch (S1) to the same position as the slider (NR) is set.
- 3) The slider (NR) can be moved when the main power of the regulated power supply is turned OFF once then back ON. Move the FWD/REV switch (S1) to the center position in synchronism with the timing when the slider (NR) is moved.


3. FF, REW modes

- 1) Check that the PRE-SET status is set.
- 2) Connect square wave or sine wave to resistor (R43). (See illustration below.)
- 3) Press the  switch (S3) to enter the STOP mode.
- 4) Press the  switch (S4) and the  switch (S5).

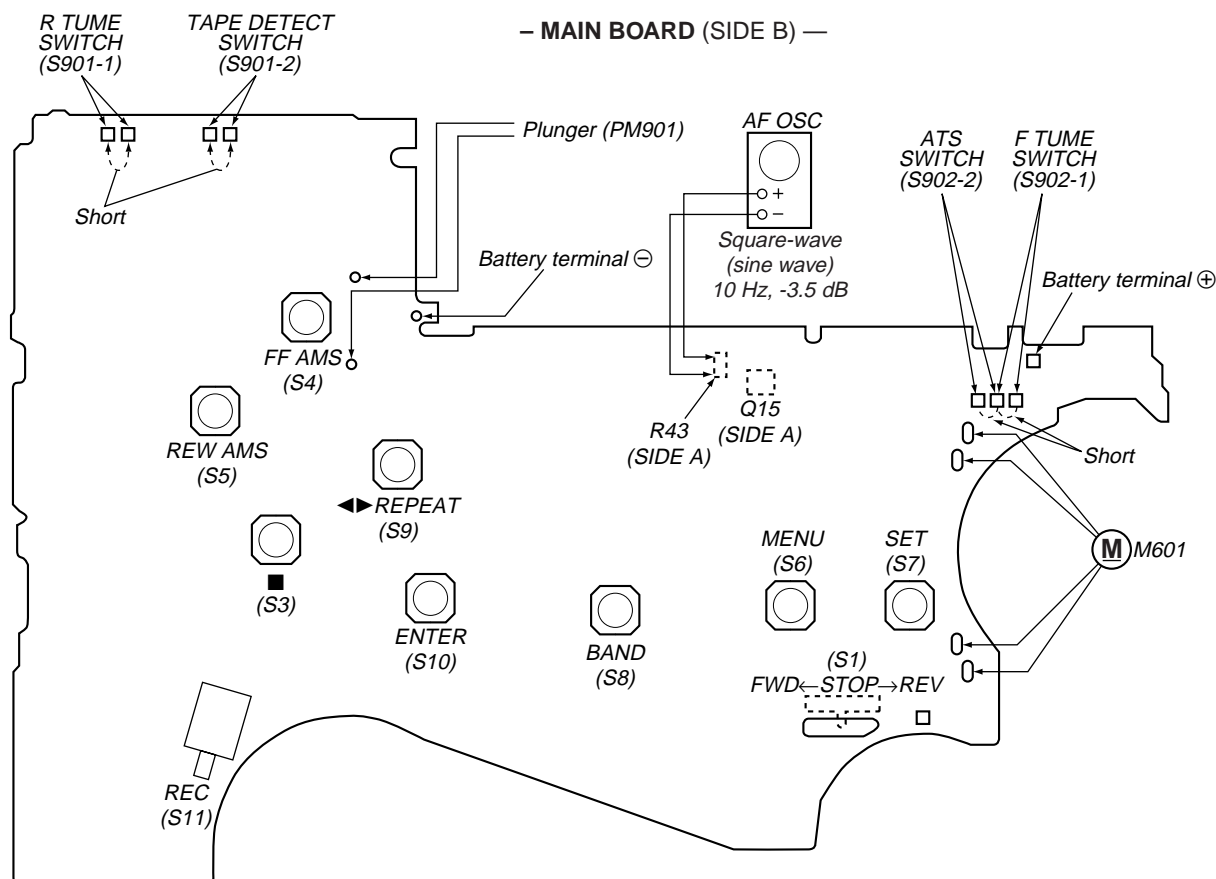
4. PLAY mode

- 1) Check that the PRE-SET status is set.
- 2) Connect square wave or sine wave to resistor (R43). (See illustration below.)
- 3) Press the  switch (S3) to enter the stop mode.
- 4) When the  switch (S9) of the MAIN board is pressed, the slider (N/R) moves once to the F side then moves to the R side. When the FWD/REV switch (S1) is pressed in the synchronism with the above timing, the machine can enter the PLAY (R side) mode. Press the  switch (S9) again, and move the FWD/REV switch (S1) in the synchronism with the motion of slider (NR). It enables the machine to enter into the PLAY (F side) mode.

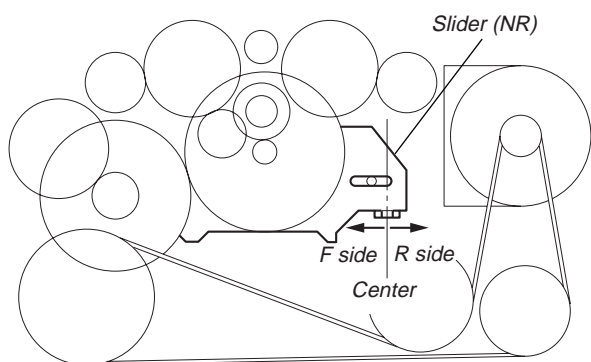
Note 1: When you fail to enter the PLAY mode, re-start from step 1) PRE-SET status.

Note 2: Regarding the  (S9),  (S3),  (S4), and  (S5) switches, use these switches of the remote control unit as much as possible.

Note 3: If a headphones are used, the beep sound shows the timing of the FWD/REV switch (S1).

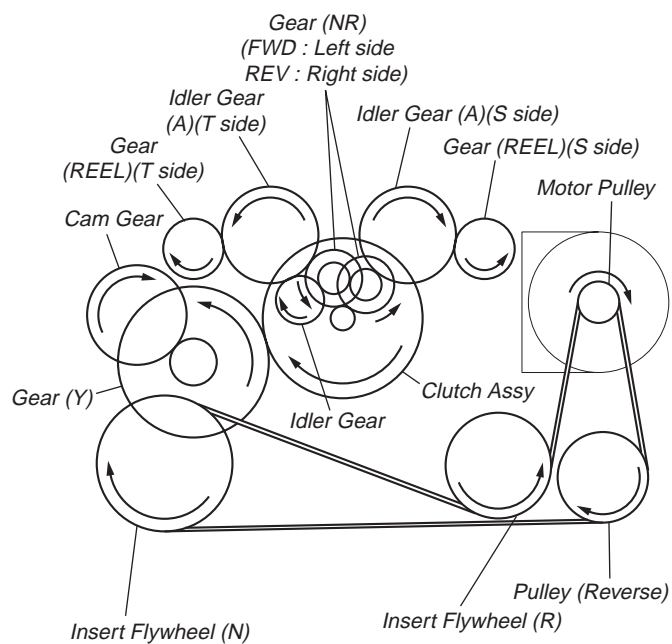


[Slider (NR)]

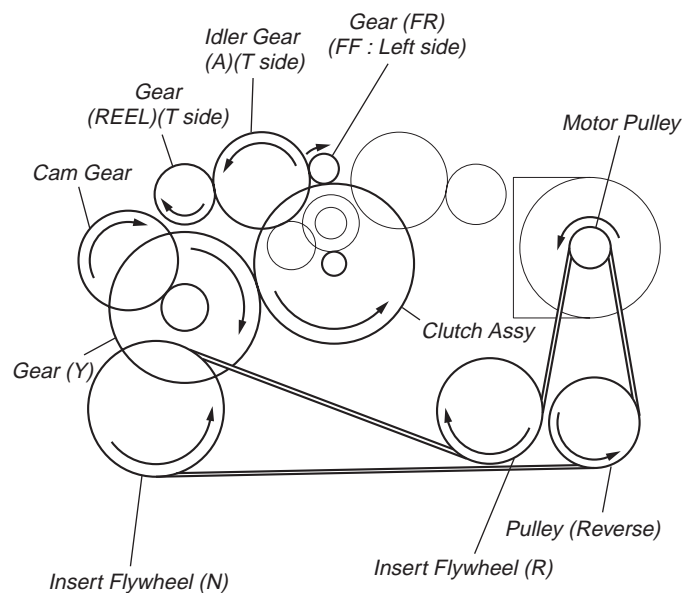


[Tape drive mechanism]

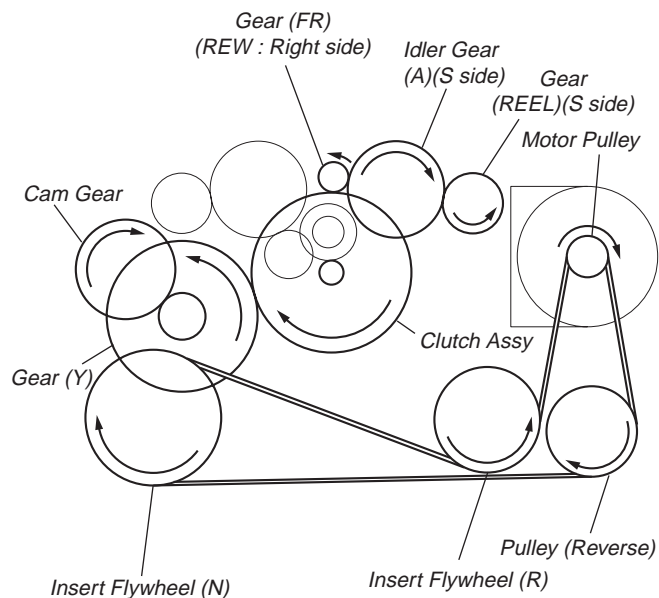
Tape drive mechanism in PLAY mode



Tape drive mechanism in FF mode

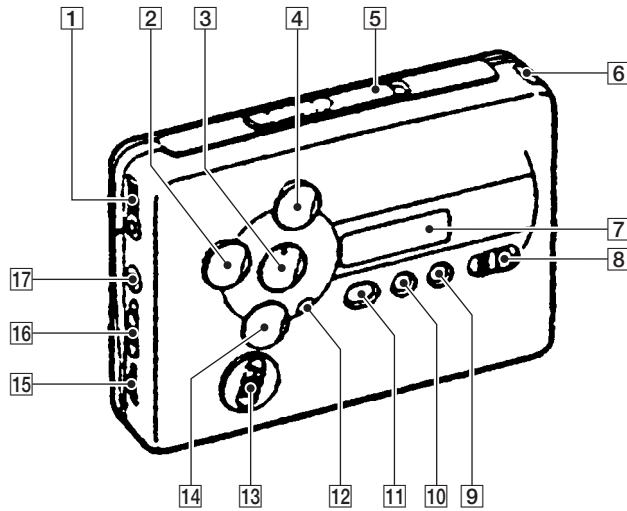


Tape drive mechanism in REW mode



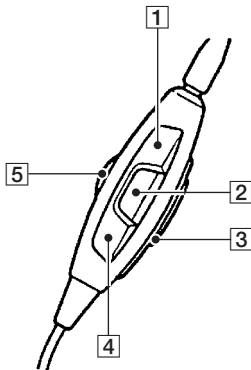
SECTION 2 GENERAL

• LOCATION OF CONTROLS



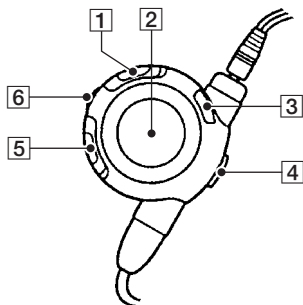
- 1** ⏮ REMOTE jack
- 2** REW, AMS button
- 3** ◀▶, REPEAT button
- 4** FF, AMS button
- 5** OPEN knob
- 6** Battery case
- 7** Display window
- 8** HOLD — knob
- 9** SET button
- 10** MENU button
- 11** BAND, RADIO ON button
- 12** ENTER, COUNTER RESET button
- 13** REC button
- 14** ■, RADIO OFF button
- 15** ▲ VOL knob
- 16** ISS (1, 2, 3) knob
- 17** MIC (PLUG IN POWER) jack

• LOCATION OF REMOTE CONTROL (WM-GX670 model)



- 1** FF, PRESET+ button
- 2** ◀▶ • ■, RADIO ON/BAND OFF button
- 3** HOLD knob
- 4** REW, PRESET- button
- 5** VOL knob

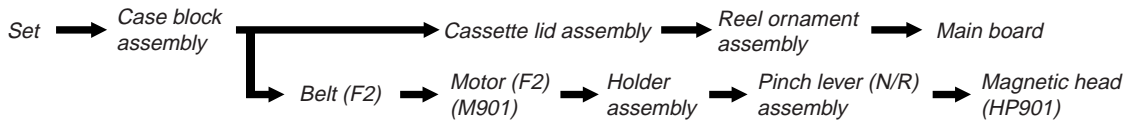
• LOCATION OF REMOTE CONTROL (WM-GX674 model)



- 1** HOLD button
- 2** DISPLAY window
- 3** MENU button
- 4** JOG lever
- 5** REC button
- 6** VOL knob

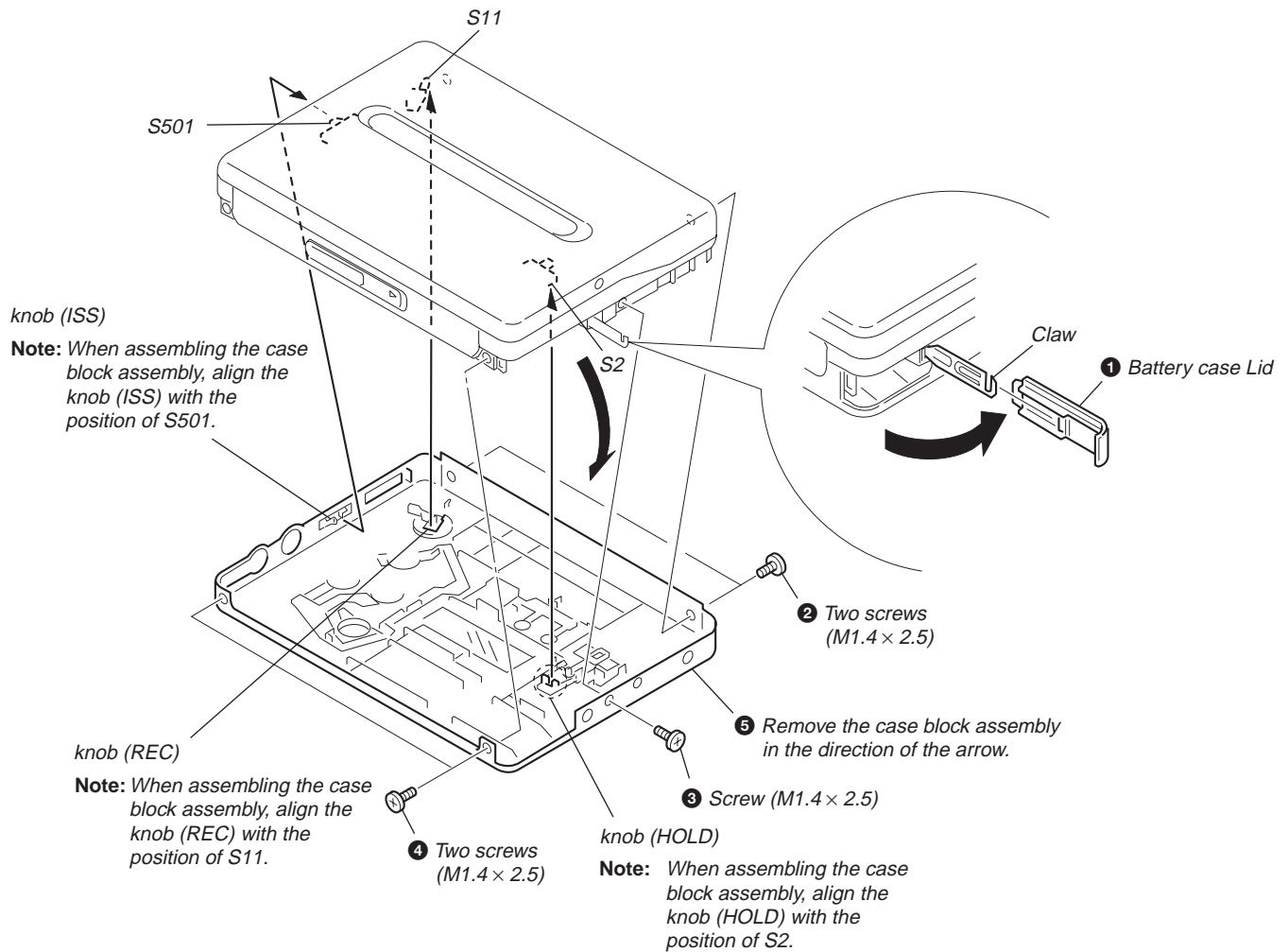
SECTION 3 DISASSEMBLY

Note : Disassemble the unit in the order as shown below.

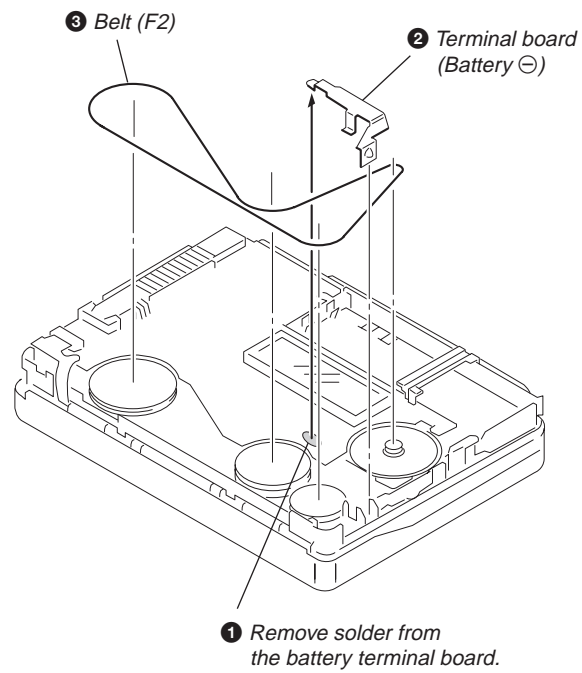


Note : Follow the disassembly procedure in the numerical order given.

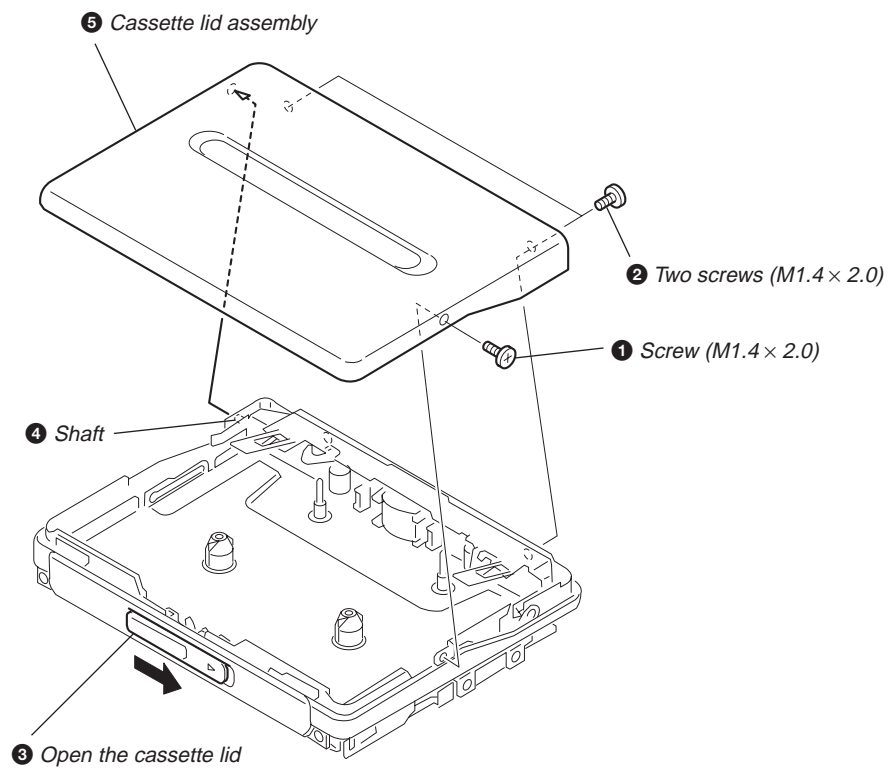
3-1. CASE BLOCK ASSEMBLY



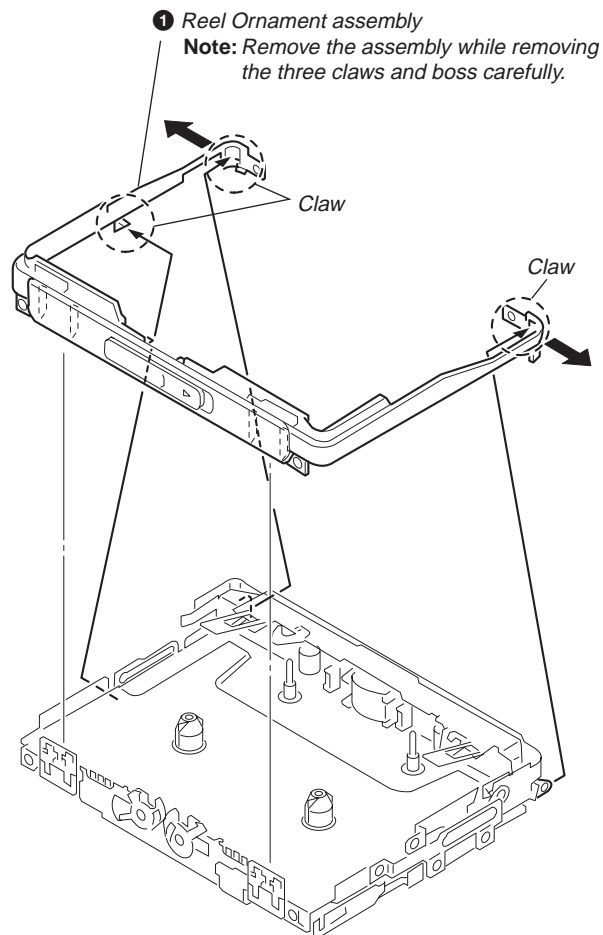
3-2. BELT (F2)



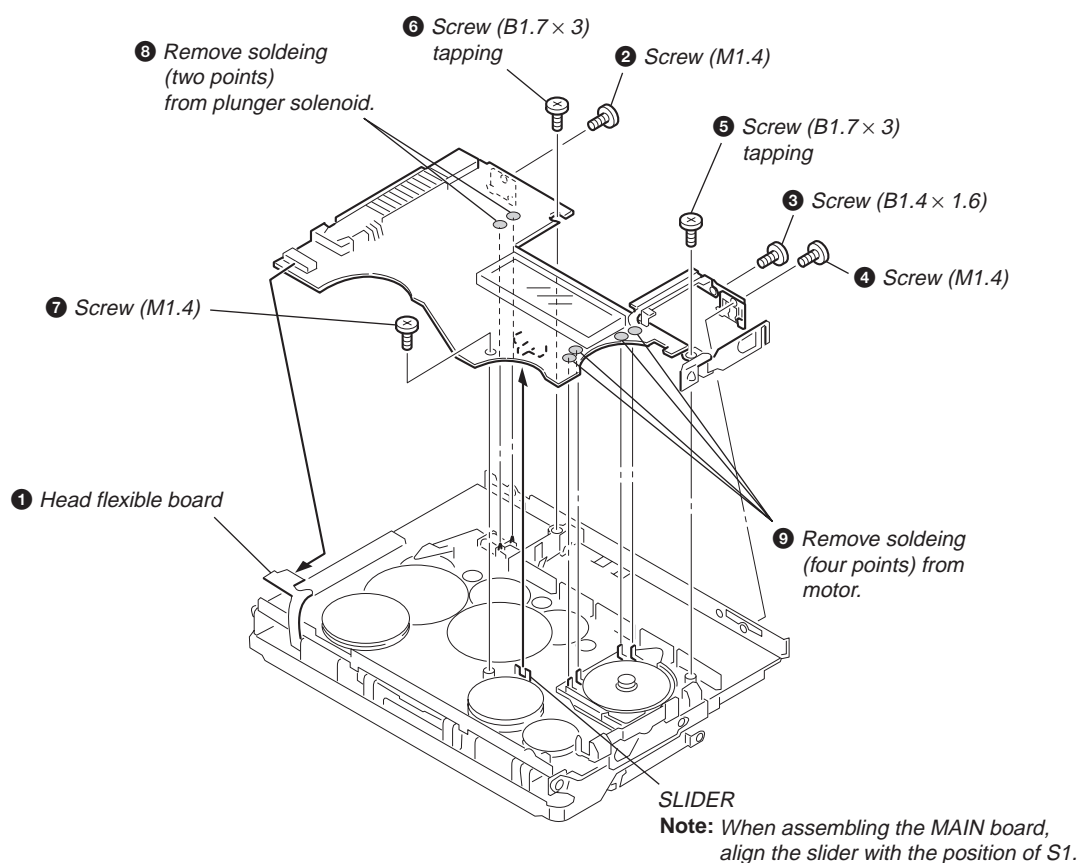
3-3. CASSETTE LID ASSEMBLY



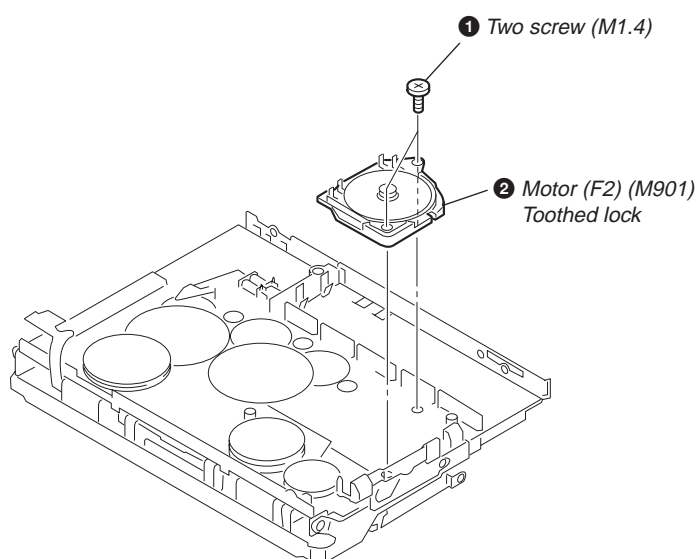
3-4. REEL ORNAMENT ASSEMBLY



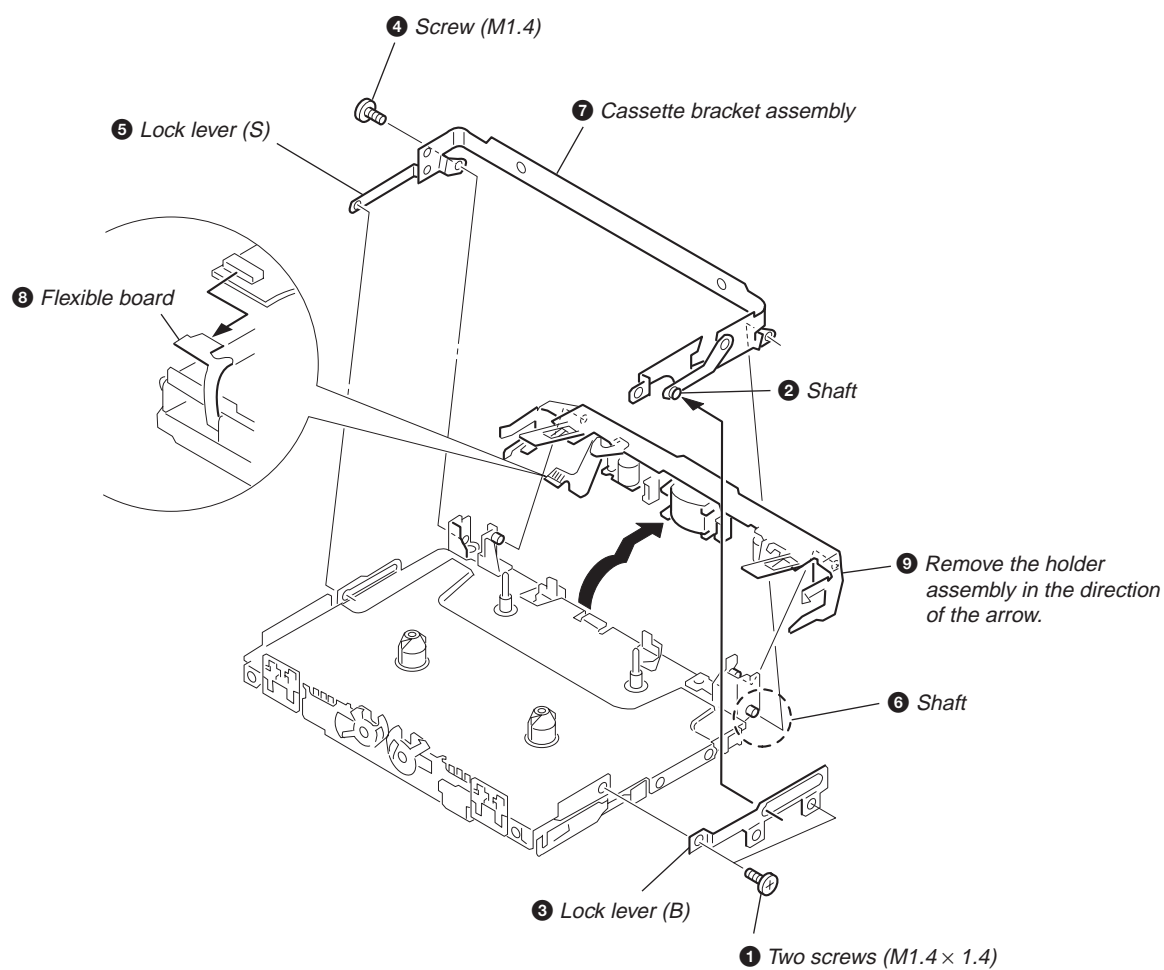
3-5. MAIN BOARD



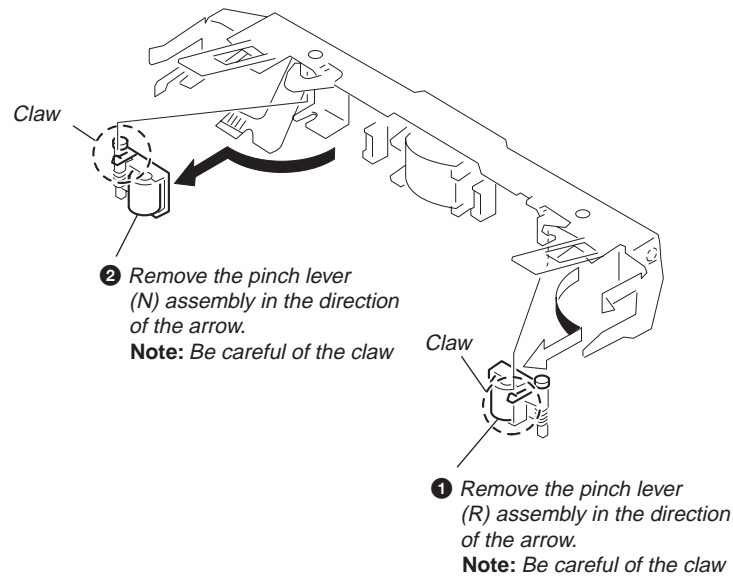
3-6. MOTOR (F2) (M901)



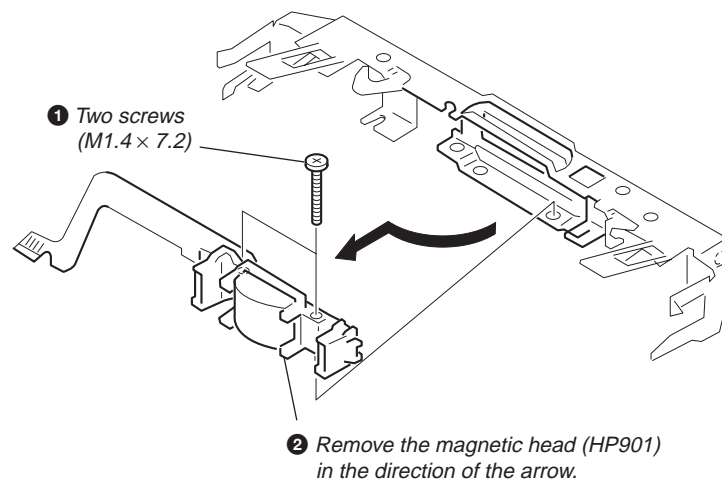
3-7. HOLDER ASSEMBLY



3-8. PINCH LEVER (N) / (R) ASSEMBLY



3-9. MAGNETIC HEAD (HP901)



SECTION 4 MECHANICAL ADJUSTMENT

PRECAUTION

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

record/playback/erase head	pinch roller
rubber belts	capstan
- Demagnetize the record/playback/erase head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

•Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	15 to 25 g•cm (0.21 to 0.34 oz•inch)
FWD Back Tension	CQ-102C	Less than 2.0g•cm (Less than 0.028 oz•inch)
REV	CQ-102RC	15 to 25 g•cm (0.21 to 0.34 oz•inch)
REV Back Tension	CQ-102RC	Less than 2.0g•cm (Less than 0.028 oz•inch)
FF, REW	CQ-201B	More than 50 g•cm (More than 0.69 oz•inch)

SECTION 5 ELECTRICAL ADJUSTMENT

PRECAUTION

- Specified voltage: 1.3 V (DC)
- Switch and control position
MENU switch

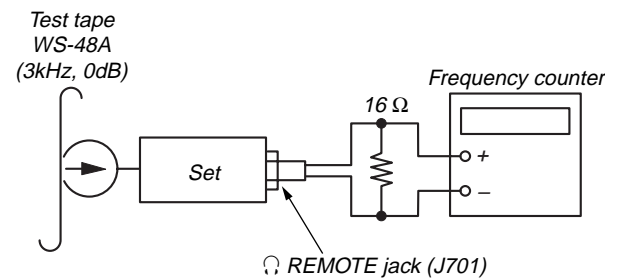
□□NR	: OFF
AVLS	: OFF
SOUND	: OFF
HOLD	: OFF
VOL	: MAX
ISS	: 1

Test Tape

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

Tape Speed Adjustment

Procedure:

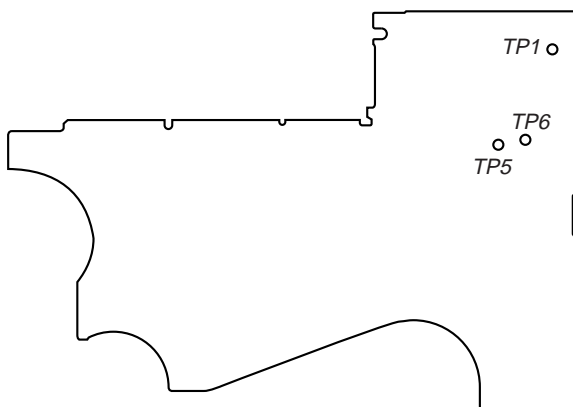


- Enter the FWD playback mode.
- Adjust RV601 so that the value of the frequency counter reading becomes 3,000 Hz.
Specification value:

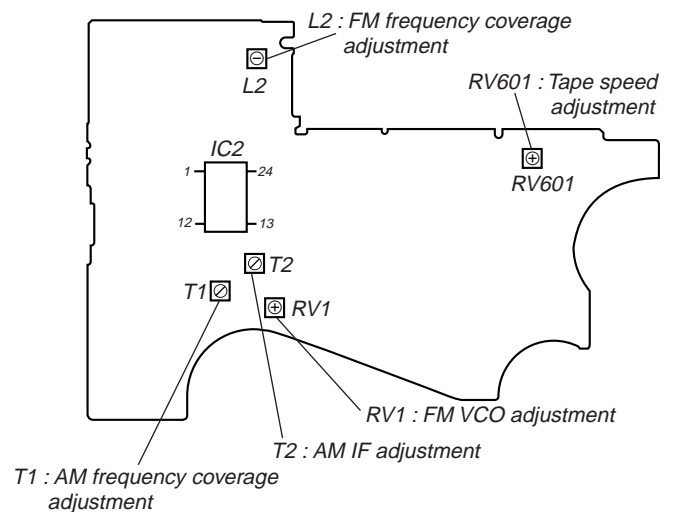
Frequency counter
2,955 Hz – 3,060 Hz
- Check that the frequency deviation at the beginning and ending of a tape is within 1.5 % (45 Hz).

Adjustment Parts Location :

[MAIN BOARD] — SIDE A —



[MAIN BOARD] — SIDE B —

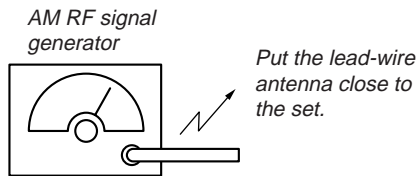


TUNER SECTION

0dB=1μV

[AM]

BAND switch : AM

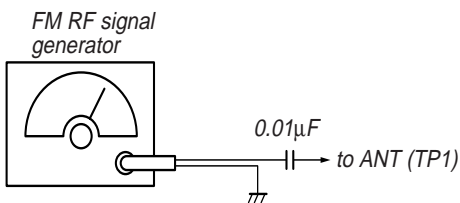


30% amplitude modulation by 400Hz signal.

Output level : as low as possible

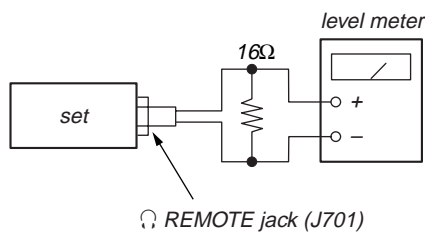
[FM]

BAND : FM



22.5kHz frequency deviation by 400Hz signal.

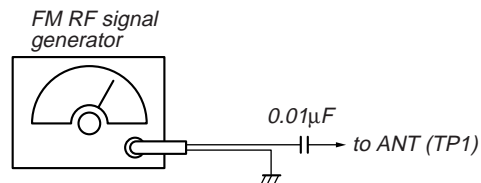
Output level : as low as possible



- Repeat the procedures in each adjustment several times.

FM VCO Adjustment

Procedure :

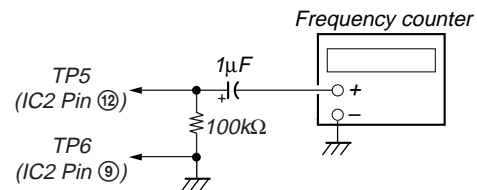


Carrier frequency : 98MHz

Modulation : no modulation

Output level : 0.1V (100dB)

1. Connect frequency counter to the positions shown below.
2. Tune the set to 98 MHz.
3. Adjust RV1 so that the value of the frequency counter reading becomes 19 kHz.



Specification Value :

Frequency counter
18,900 – 19,100 Hz

Adjustment Location: MAIN board (See page 11)

AM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on level meter.

T1	531 kHz
----	---------

AM IF ADJUSTMENT

Adjust for a maximum reading on level meter.

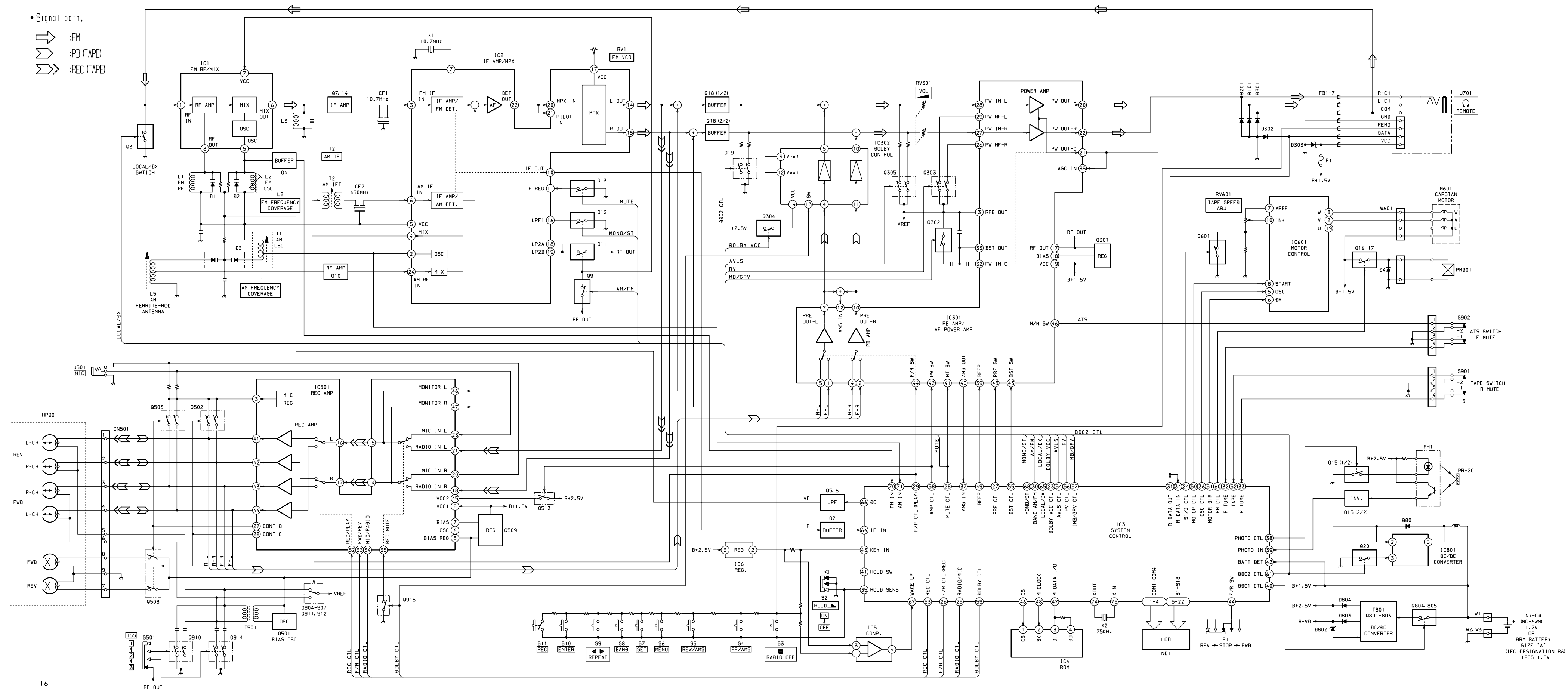
T2	450 kHz
----	---------

FM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on level meter.





L2	76 MHz
----	--------

- Signal path.

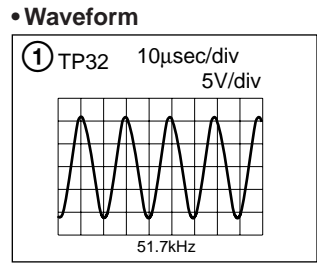




Note on Printed Wiring Board:

-  : parts extracted from the component side.
-  : parts extracted from the conductor side.
-  : Through hole.
-  : Pattern from the side which enables seeing.

Caution:
 Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
 (SIDE B)
 Parts face side: Parts on the parts face side seen from the parts face are indicated.
 (SIDE A)

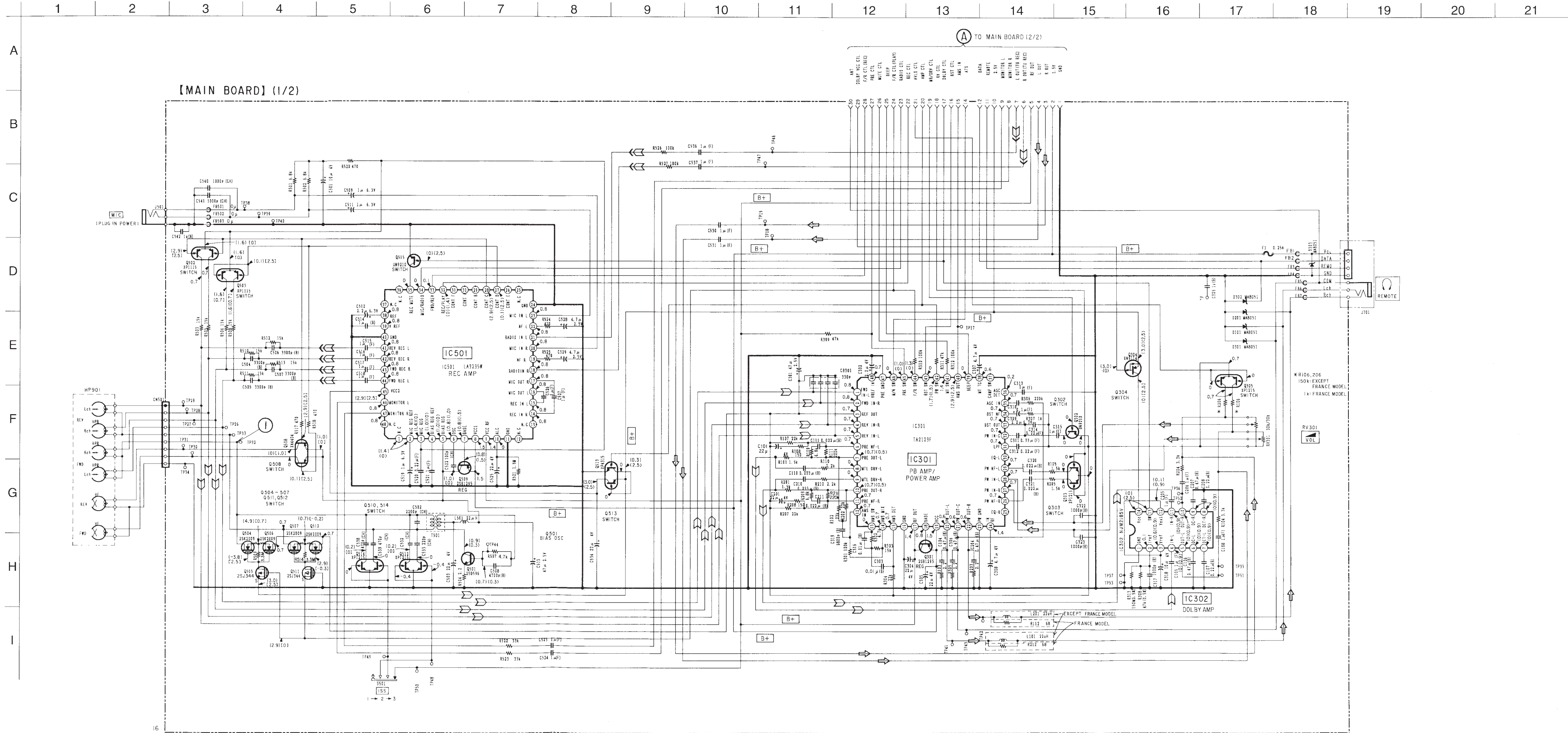


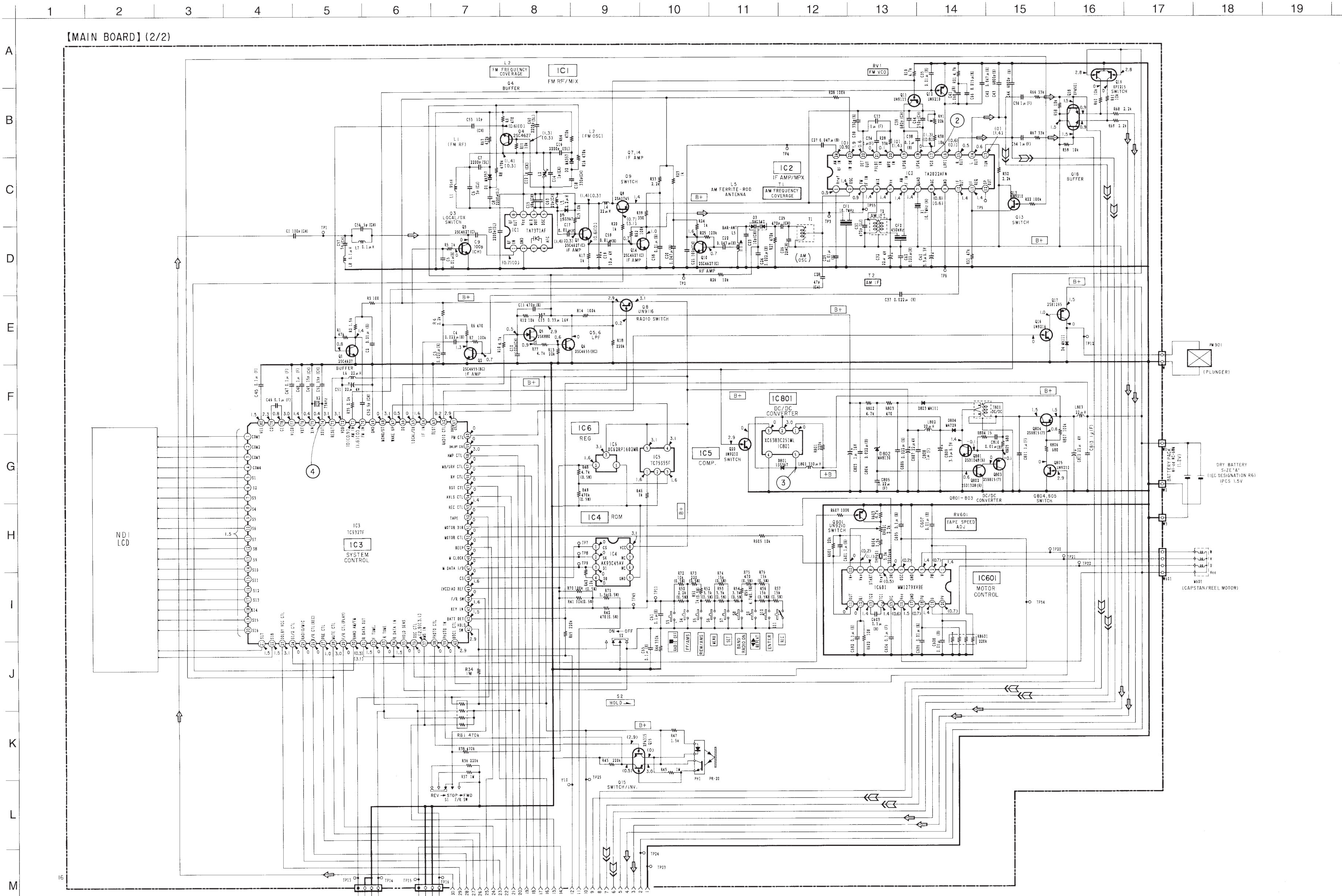
Note

- All capacitors are in μF unless otherwise noted. pF: pμF
- 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line.
- : panel designation.
- : adjustment for repair.
- Power voltage is dc 1.5 V 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, STOP (TAPE)

- () : FM
- [] : AM
- < : PLAY (TAPE)
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- ⇒ : FM
- ⇒ : PLAY (TAPE)
- ⇒ : REC (TAPE)

6-3. SCHEMATIC DIAGRAM (1/2)





Waveform

② IC2 @ VCO 5μsec/div 50mV/div

③ IC801 ⑤ PLAY 5μsec/div 1V/div

④ IC3 ⑧ XOUT 5μsec/div 0.5V/div

Note

- All capacitors are in μF unless otherwise noted. pF: pμF
- 50 W/V or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4-W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line.
- : panel designation.
- : adjustment for repair.
- Power voltage is dc 1.5 V 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 : REC/PLAY

() : REC (TAPE)

[] : PLAY (TAPE)

• Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

• Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.

• Circled numbers refer to waveforms.

• Signal path.

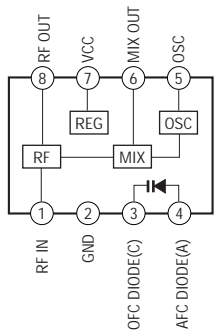
⇒ : FM

⇒ : PLAY (TAPE)

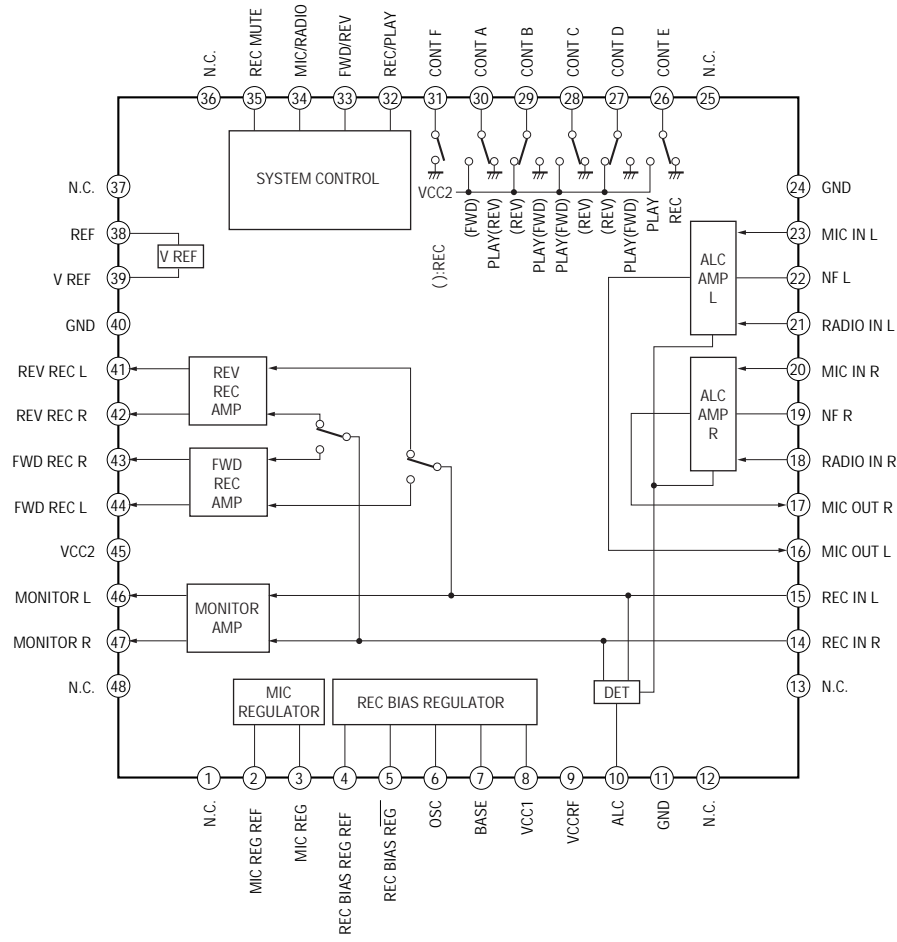
⇒ : REC (TAPE)

6-5. IC BLOCK DIAGRAMS

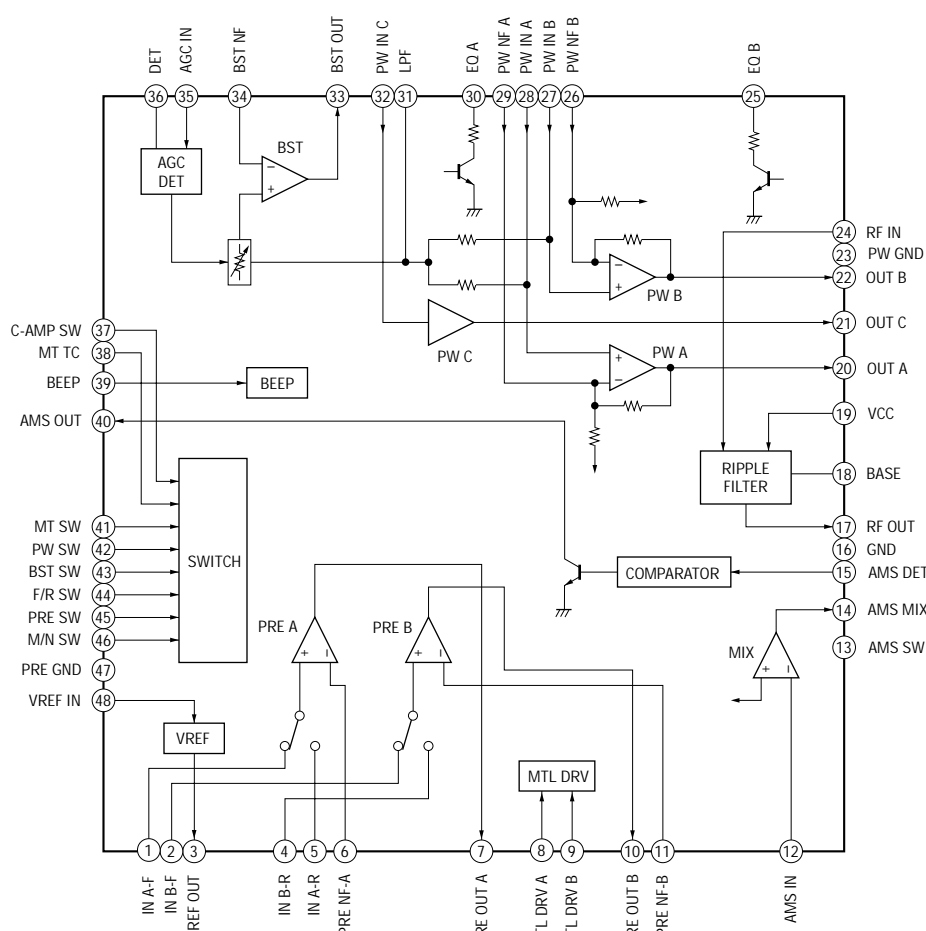
IC1 TA7371AF-EL



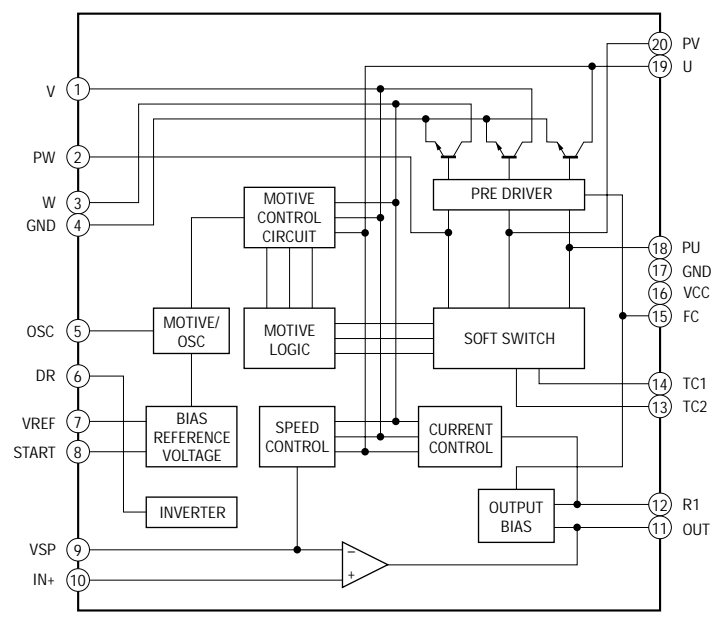
IC2 TA2022AFN-EL



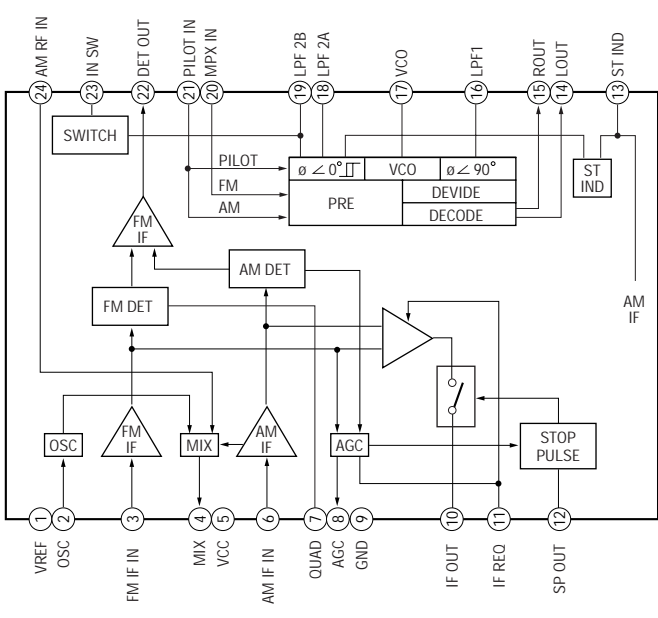
IC301 TA2123F (EL)



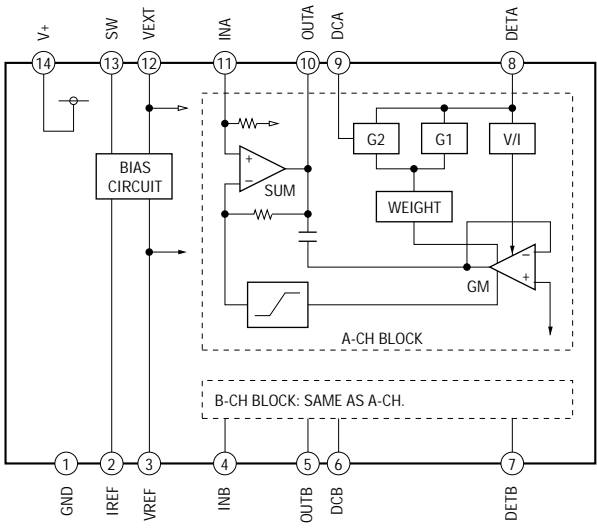
IC302 NJM2185AV-TE2



IC501 LA3235W



IC601 MM1279XVBE



6-6. IC PIN FUNCTION DESCRIPTION

• IC3 TC9327AF-604

Pin No.	Pin Name	I/O	Description
1 to 4	COM 1 to COM 4	O	Common terminal.
5 to 22	S1 to S18	O	Segment output terminal.
23	DOLBY VCC CTL	O	Dolby control terminal. (L: ON, Hi-imp: OFF)
24	S1/2 CTL	O	Motor speed control terminal.
25	RADIO/MIC	O	Rec input select terminal.(L: normal, Hi-imp: MIC)
26	F/R CTR (REC)	O	HEAD select terminal (PLAY mode) (L: REV, Hi-imp: FWD)
27	PRE CTL	O	PRE AMP control terminal.
28	MUTE CTL	O	MUTE control terminal (L: MUTE ON).
29	F/R CTL PLAY	O	HEAD select terminal (PLAY mode) (L: FWD, H: REW).
30	BAND AM/FM	O	BAND control output (L: FM, H: AM).
31	R DATA OUT	O	Remote control data output.
32	F TUME	I	TAPE error erase detect terminal. (FWD).
33	R TUME	I	TAPE error erase detect terminal. (REV).
34	R DATA IN	I	Remote control data input.
35	HOLD SENS	I	Input when the key is pressed during HOLD (H= AD Vref).
36	OSC CTL	I	Tape end Locking detect input terminal.
37	AMS IN	I	Tape sound existing or not-exiting detect (L: Music exists; H: Music does not exist).
38	PHOTO CTL	O	Terminal for controlling the rotation detect circuit.
39	PHOTO IN	I	Rotation detect input.
40	DDC1 CTL	O	DDC control terminal (H: DDC ON).
41	HOLD SW	I	HOLD detect input (L: HOLD ON).
42	BATT DET	I	Voltage detect input.
43	KEY IN	I	KEY input terminal.
44	F/R SW	I	TAPE rotating direction detect terminal.
45	(VCC)AD REF	I	AD IN 1, 2, 3 reference viltage interrupt terminal.
46	CS	O	E ² PROM CS control terminal.
47	M DATA I/O	I/O	E ² PROM DATA I/O.
48	M CLOCK	O	E ² PROM CLOCK terminal.
49	BEEP	O	BEEP (when TC: 1.6kHz, when CF: 3.0kHz).
50	MOTOR CTL	O	MOTOR control terminal.

Pin No.	Pin Name	I/O	Description
51	MOTOR DIR	O	MOTOR control terminal.
52	TAPE	I	TAPE detect terminal. (L: ON, H: OFF)
53	REC CTL	O	REC circuit control output.
54	AVLS CTL	O	Terminal for controlling AVLS (when ON=H).
55	BST CTL	O	Tone control terminal (L: normal, Hi-imp: MEGA BASS).
56	RV CTL	O	Revive control terminal.
57	MB/GRV CTL	O	Tone control terminal (L: GRV, H: MB).
58	AMP CTL	O	AMP control output (H: AMP ON).
59	DOLBY CTL	O	Terminal for controlling DOLBY circuit (L: OFF, Hi-imp: ON).
60	PM CTL	O	PL control terminal.
61	DDC2 CTL	O	DDC control terminal (L: OFF, Hi-imp: ON).
62	RADIO CTL	O	RADIO system control terminal (L: RADIO ON).
63	TEST	I	TEST terminal (Normal operation at L or NC).
64	IF IN	I	IF input.
65	LOCAL/DX	O	TUNER sensitivity select terminal (H: LOCAL, L: DX).
66	DO	O	Phase comparator output.
67	WAKE UP	I	External interrupt terminal (Interrupt by key input).
68	MONO/ST	O	FM MONO/STEREO select terminal (H: MONO, L: ST).
69	GND	—	Power supply Ground terminal.
70	FM IN	I	FM local oscillator input.
71	AM IN	I	AM local oscillator input.
72	VDD	—	Power supply voltage.
73	RESET	I	RESET terminal (H during operation).
74	XOUT	O	Terminal to which external oscillator is connected.
75	XIN	I	
76	VXT	—	Terminal to which external capacitor is connected to stabilize crystal oscillator power supply.
77	VLCD	—	Terminal to step-up power supply voltage for LCD drive. (3V)
78	C1	—	Terminal to step-up power supply voltage for LCD drive.
79	C2	—	
80	VEE	—	Terminal for 1.5V constant voltage power supply of LCD drive.

SECTION 7 EXPLODED VIEWS

NOTE:

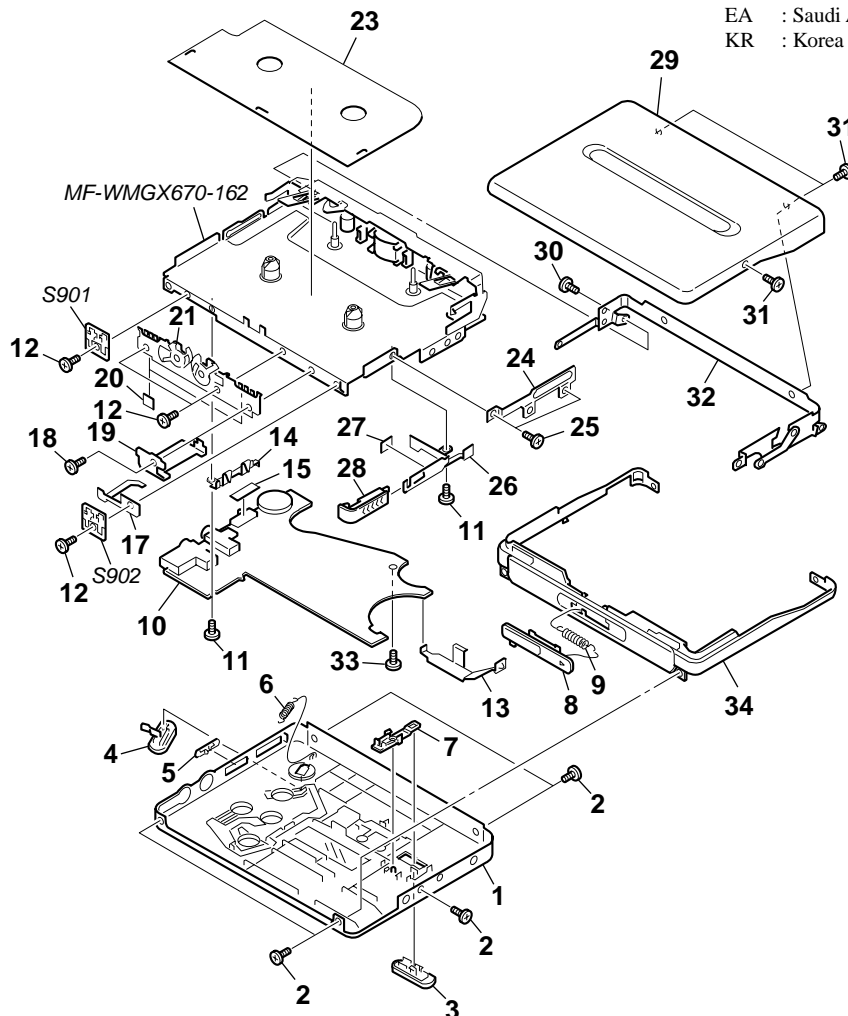
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- 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.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

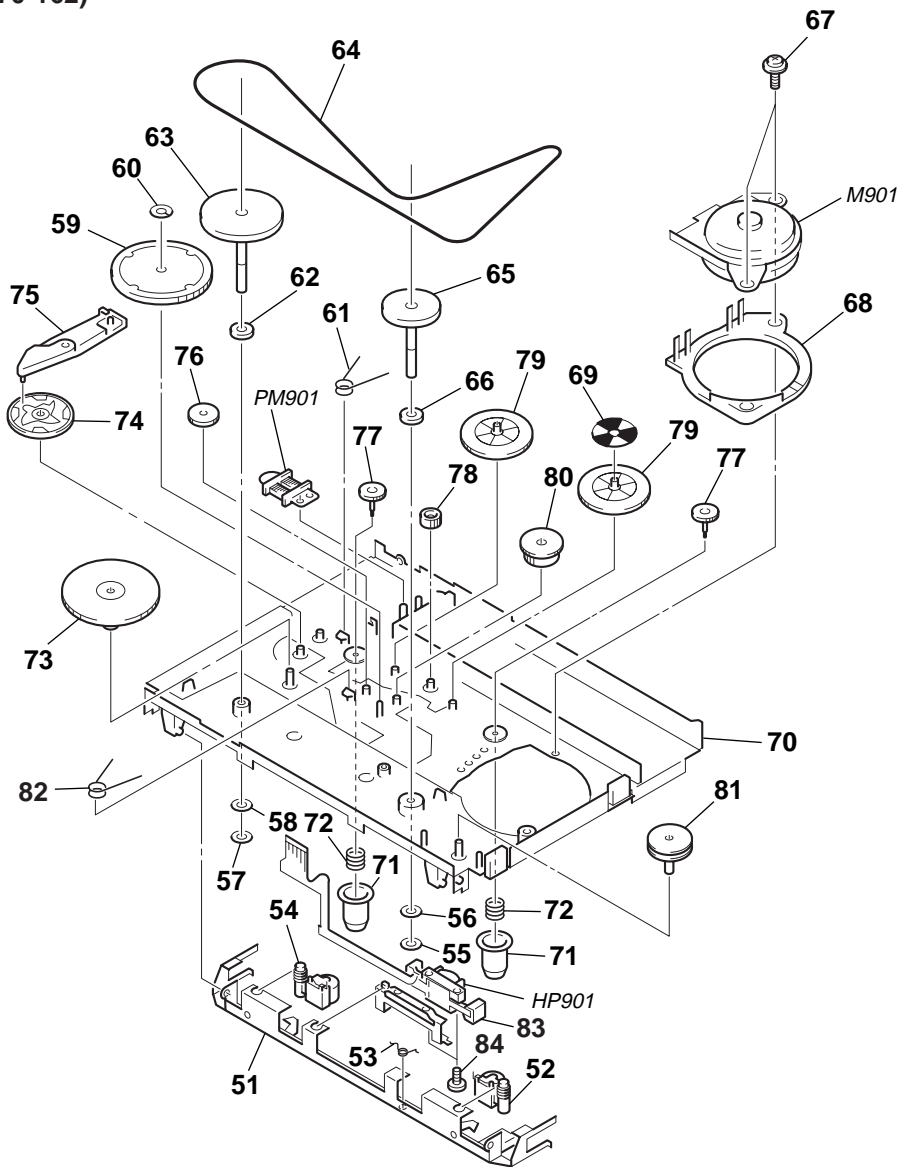
- Abbreviation
AUS : Australian
CH : Chinese
FR : French
EA : Saudi Arabia
KR : Korea

7-1. CABINET BLOCK, MAIN BOARD



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	X-3377-063-1	CASE (GX-BS0) ASSY (GX670/GX674:E)		19	3-034-074-01	RETAINER, FLEXIBLE	
1	X-3377-068-1	CASE (GX-BS4) ASSY (GX674:CH,EA,HK,KR)		20	3-328-483-11	SHEET (EXCEPT GX670: FR)	
2	3-704-197-21	SCREW (M1.4X2.5), LOCKING		21	X-3376-277-1	BRACKET ASSY	
3	3-034-067-01	KNOB (HOLD-B)		23	3-029-205-11	MD COVER (GX670: AEP, FR, UK)	
4	3-034-061-01	KNOB (REC-B)		23	3-029-205-21	MD COVER (GX670: US, AUS, CH, E, EA, KR/ GX674)	
5	3-034-066-01	KNOB (ISS)		24	3-029-217-01	LEVER (B), LOCK	
6	3-034-062-01	SPRING, TENSION		25	3-366-892-11	SCREW (M1.4 × 1.4) (EXCEPT GX670: FR)	
7	3-034-075-01	LEVER (HOLD)		26	X-3376-278-1	TERMINAL BOARD ASSY, BATTERY	
8	3-029-219-01	KNOB (OPEN)		27	3-031-460-01	SHEET (BT) (EXCEPT GX670: FR)	
9	3-029-220-01	SPRING, TENSION		28	3-034-068-01	LID, BATTERY	
10	A-3021-205-A	MAIN BOARD, COMPLETE (EXCEPT GX670: FR)		29	A-3050-930-A	LID BLOCK ASSY, CASSETTE	
10	A-3021-224-A	MAIN BOARD, COMPLETE (GX670:FR)		30	3-365-630-41	SCREW (M1.4)	
11	3-893-942-11	SCREW (1.7 × 3), TAPPING (B)		31	3-704-197-11	SCREW (M1.4 × 2.0), LOCKING	
12	3-366-892-01	SCREW (M1.4)		32	X-3376-279-1	BRACKET (CASSETTE) ASSY	
13	3-029-213-01	TERMINAL BOARD		33	3-345-648-71	SCREW (M1.4), TOOTHED LOCK (EXCEPT GX670: FR)	
14	3-029-210-01	TERMINAL BOARD (MINUS)		33	3-366-892-01	SCREW (M1.4) (GX670: FR)	
15	3-035-199-01	SHEET (GR3) (EXCEPT GX670: FR)		34	3-034-072-11	ORNAMENT, REEL	
17	1-672-579-11	FLEXIBLE (ATS) BOARD					
18	3-704-197-03	SCREW (M1.4 × 1.6), LOCKING (EXCEPT GX670: FR)		S901	1-692-101-11	SWITCH, LEAF (TAPE/R TUNE)	
				S902	1-692-100-11	SWITCH, LEAF (ATS/F TUNE)	

7-2. MECHANISM DECK BLOCK (MT-WMGX670-162)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	X-3376-293-1	HOLDER (F) ASSY		69	3-007-433-01	SHEET (N), REFLECTION	
52	X-3377-228-1	LEVER (R) ASSY, PINCH		70	X-3376-291-1	CHASSIS ASSY (F)	
53	3-029-271-01	SPRING (HD)		71	3-010-274-02	TABLE, REEL	
54	X-3377-227-1	LEVER (N) ASSY, PINCH		72	3-010-954-01	SPRING (BT), COMPRESSION	
55	3-029-276-01	WASHER (STOPPER R)		73	3-029-282-01	GEAR (Y)	
56	3-029-289-01	WASHER		74	3-029-285-01	GEAR, CAM	
57	3-029-275-01	WASHER (STOPPER N)		75	3-029-284-01	LEVER, TRIGGER	
58	3-029-278-01	WASHER		76	3-029-281-01	GEAR, IDLER (B)	
59	X-3376-813-1	CLUTCH ASSY (F)		77	3-010-273-02	GEAR (REEL)	
60	3-932-724-21	WASHER		78	3-029-273-01	GEAR (FR)	
61	3-029-287-01	SPRING (TG), TORSION		79	3-029-283-01	GEAR, IDLER (A)	
62	3-386-694-01	WASHER		80	3-029-286-01	GEAR (NR)	
63	3-029-306-01	FLYWHEEL (N), INSERT		81	3-029-288-01	PULLEY, REVERSE	
64	3-032-576-01	BELT		83	3-032-575-01	LEVER, HEAD	
65	3-029-268-01	FLYWHEEL (R), INSERT		84	3-704-413-31	SCREW (M1.4 × 7.2)	
66	3-007-428-01	WASHER (R)		HP901	1-500-355-21	HEAD, MAGNETIC (REC/PB/ERASE)	
67	3-029-765-01	SCREW (M1.4), TOOTHED LOCK		M901	1-763-166-11	MOTOR (CAPSTAN/REEL) (WITH PULLEY)	
68	3-029-274-01	RETAINER (F2), MOTOR		PM901	1-454-674-31	SOLENOID, PLUNGER	

SECTION 8 ELECTRICAL PARTS LIST

MAIN

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.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- CAPACITORS:
uF: μ F
- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- COILS
uH: μ H
- Abbreviation
AUS : Australian
CH : Chinese
FR : French
EA : Saudi Arabia
KR : Korea

- SEMICONDUCTORS
In each case, u: μ , for example:
uA..., μ A..., uPA..., μ PA...,
uPB..., μ PB..., uPC..., μ PC...,
uPD..., μ PD...

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

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
	A-3021-205-A	MAIN BOARD, COMPLETE (EXCEPT GX670: FR) *****		C36	1-115-156-11	CERAMIC CHIP 1uF	10V
	A-3021-224-A	MAIN BOARD, COMPLETE (GX670: FR) *****		C37	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
	1-694-502-11	CONDUCTIVE BOARD, CONNECTION		C38	1-107-826-91	CERAMIC CHIP 0.1uF	10% 16V
	3-034-073-01	HOLDER (LCD)		C39	1-115-412-11	CERAMIC CHIP 680PF	5% 25V
		< CAPACITOR >		C40	1-127-578-91	TANTAL. CHIP 3.3uF	20% 6.3V
C1	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	C41	1-110-563-11	CERAMIC CHIP 0.068uF	10% 16V
C2	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C42	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V
C3	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	C43	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V
C4	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	C44	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V
C5	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C45	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C6	1-162-908-11	CERAMIC CHIP 3PF	0.25PF 50V	C46	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C7	1-164-676-11	CERAMIC CHIP 2200PF	5% 16V	C47	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C8	1-164-676-11	CERAMIC CHIP 2200PF	5% 16V	C48	1-115-156-11	CERAMIC CHIP 1uF	10V
C9	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	C49	1-162-917-11	CERAMIC CHIP 15PF	5% 50V
C10	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	C50	1-162-917-11	CERAMIC CHIP 15PF	5% 50V
C11	1-162-962-11	CERAMIC CHIP 470PF	10% 50V	C51	1-125-984-21	TANTAL. CHIP 22uF	20% 4V
C12	1-162-905-11	CERAMIC CHIP 1PF	0.25PF 50V	C52	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V
C13	1-107-817-11	TANTAL. CHIP 0.33uF	10% 16V	C53	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V
C14	1-162-905-11	CERAMIC CHIP 1PF	0.25PF 50V	C54	1-115-156-11	CERAMIC CHIP 1uF	10V
C15	1-162-925-11	CERAMIC CHIP 68PF	5% 50V	C55	1-164-676-11	CERAMIC CHIP 2200PF	5% 16V
C16	1-164-676-11	CERAMIC CHIP 2200PF	5% 16V	C56	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V
C17	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C57	1-162-910-11	CERAMIC CHIP 5PF	0.25PF 50V
C18	1-162-959-11	CERAMIC CHIP 330PF	5% 50V	C58	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C19	1-135-201-11	TANTALUM CHIP 10uF	20% 4V	C59	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C20	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V	C60	1-164-676-11	CERAMIC CHIP 2200PF	5% 16V
C21	1-162-927-11	CERAMIC CHIP 100PF	5% 50V	C61	1-107-826-91	CERAMIC CHIP 0.1uF	10% 16V
C22	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V	C62	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C23	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V	C63	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C24	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V	C64	1-164-217-11	CERAMIC CHIP 150PF	5% 50V
C25	1-164-315-11	CERAMIC CHIP 470PF	5% 50V	C65	1-107-826-91	CERAMIC CHIP 0.1uF	10% 16V
C26	1-162-919-11	CERAMIC CHIP 22PF	5% 50V	C66	1-164-245-11	CERAMIC CHIP 0.015uF	10% 25V
C27	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V	C101	1-125-984-21	TANTAL. CHIP 22uF	20% 4V
C28	1-162-923-11	CERAMIC CHIP 47PF	5% 50V	C104	1-113-619-11	CERAMIC CHIP 0.47uF	10% 6.3V
C29	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C105	1-115-156-11	CERAMIC CHIP 1uF	10V
C30	1-162-961-11	CERAMIC CHIP 330PF	10% 50V	C106	1-113-619-11	CERAMIC CHIP 0.47uF	10% 6.3V
C31	1-164-362-11	CERAMIC CHIP 470PF	5% 50V	C107	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V
C32	1-125-984-21	TANTAL. CHIP 22uF	20% 4V	C108	1-115-156-11	CERAMIC CHIP 1uF	10V
C33	1-115-156-11	CERAMIC CHIP 1uF	10V	C110	1-164-677-11	CERAMIC CHIP 0.033uF	10% 16V
C34	1-115-156-11	CERAMIC CHIP 1uF	10V	C111	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C35	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C201	1-125-984-21	TANTAL. CHIP 22uF	20% 4V
				C204	1-113-619-11	CERAMIC CHIP 0.47uF	10% 6.3V
				C205	1-115-156-11	CERAMIC CHIP 1uF	10V
				C206	1-115-156-11	CERAMIC CHIP 1uF	10V
				C207	1-113-619-11	CERAMIC CHIP 0.47uF	10% 6.3V
				C208	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V

MAIN

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
C210	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V	C531	1-115-156-11	CERAMIC CHIP	1uF	10V	
C211	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V					(EXCEPT GX670: FR)	
C301	1-119-663-11	TANTAL. CHIP	47uF	20%	2.5V	C532	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C302	1-107-815-11	TANTAL. CHIP	2.2uF	20%	4V	C533	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C534	1-125-984-21	TANTAL. CHIP	22uF	20%	4V
			(EXCEPT GX670: FR)			C536	1-115-156-11	CERAMIC CHIP	1uF	10V	
C304	1-125-984-21	TANTAL. CHIP	22uF	20%	4V	C537	1-115-156-11	CERAMIC CHIP	1uF	10V	
C305	1-125-984-21	TANTAL. CHIP	22uF	20%	4V	C538	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C306	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V	C539	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C307	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V	C540	1-115-416-11	CERAMIC CHIP	1000PF	5%	25V
C308	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V	C541	1-115-416-11	CERAMIC CHIP	1000PF	5%	25V
C309	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	C542	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C310	1-164-360-11	CERAMIC CHIP	0.1uF		16V					(EXCEPT GX670: FR)	
C311	1-165-112-11	CERAMIC CHIP	0.33uF		16V	C601	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C312	1-165-128-11	CERAMIC CHIP	0.22uF		16V	C602	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C313	1-115-156-11	CERAMIC CHIP	1uF		10V	C603	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C314	1-165-128-11	CERAMIC CHIP	0.22uF		16V	C604	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C315	1-115-156-11	CERAMIC CHIP	1uF		10V	C605	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C316	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C606	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C317	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C607	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C318	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	C608	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C319	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	C609	1-117-181-11	TANTAL. CHIP	4.7uF	20%	2.5V
C320	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V					(GX670: FR)	
C321	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	C803	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C322	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C804	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C323	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C805	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C325	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V	C806	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
			(EXCEPT GX670: FR)			C807	1-125-984-21	TANTAL. CHIP	22uF	20%	4V
C501	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	C808	1-115-156-11	CERAMIC CHIP	1uF		10V
C502	1-164-690-91	CERAMIC CHIP	0.0022uF	5%	50V	C809	1-127-578-91	TANTAL. CHIP	3.3uF	20%	6.3V
C503	1-125-984-21	TANTAL. CHIP	22uF	20%	4V	C810	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	C811	1-115-156-11	CERAMIC CHIP	1uF		10V
C505	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	C812	1-125-984-21	TANTAL. CHIP	22uF	20%	4V
C506	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	C813	1-115-156-11	CERAMIC CHIP	1uF		10V
C507	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V				< COMPOSITION CIRCUIT BLOCK >		
C508	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	CB301	1-127-678-21	CERAMIC CHIP 330PF	0	50V	
C509	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V				< CERAMIC FILTER >		
C511	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V	CF1	1-767-362-11	FILTER, CERAMIC (FM) (10.7MHz)			
C512	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	CF2	1-767-480-11	FILTER, CERAMIC (AM) (455KHz)			
C513	1-119-663-11	TANTAL. CHIP	47uF	20%	2.5V				< CONNECTOR >		
C514	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V	CN501	1-766-339-21	CONNECTOR, FFC/FPC 9P			
C515	1-115-156-11	CERAMIC CHIP	1uF		10V				< DIODE >		
C516	1-115-156-11	CERAMIC CHIP	1uF		10V	D1	8-719-053-30	DIODE MA2S357-(TX). SO			
C517	1-115-156-11	CERAMIC CHIP	1uF		10V	D2	8-719-053-30	DIODE MA2S357-(TX). SO			
C518	1-115-156-11	CERAMIC CHIP	1uF		10V	D3	8-719-072-58	DIODE SVC347-TL			
C519	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V	D4	8-719-404-50	DIODE MA111-TX			
C520	1-165-128-11	CERAMIC CHIP	0.22uF		16V	D5	8-719-049-09	DIODE 1SS367-T3SONY			
C521	1-115-156-11	CERAMIC CHIP	1uF		10V	D101	8-719-422-37	DIODE MA8051			
C522	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D201	8-719-422-37	DIODE MA8051			
C523	1-115-156-11	CERAMIC CHIP	1uF		10V	D301	8-719-422-37	DIODE MA8051			
C524	1-115-156-11	CERAMIC CHIP	1uF		10V	D302	8-719-422-37	DIODE MA8051			
C525	1-125-984-21	TANTAL. CHIP	22uF	20%	4V	D303	8-719-422-37	DIODE MA8051			
C526	1-115-156-11	CERAMIC CHIP	1uF		10V	D801	8-719-049-09	DIODE 1SS367-T3SONY			
C527	1-115-156-11	CERAMIC CHIP	1uF		10V	D802	8-719-420-87	DIODE MA8130			
C528	1-117-181-11	TANTAL. CHIP	4.7uF	20%	2.5V	D803	8-719-404-50	DIODE MA111-TX			
C529	1-117-181-11	TANTAL. CHIP	4.7uF	20%	2.5V	D804	8-719-420-51	DIODE MA729			
C530	1-115-156-11	CERAMIC CHIP	1uF		10V				(EXCEPT GX670: FR)		

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< FUSE >				< TRANSISTOR >			
F1	1-533-792-11	FUSE (SMD) (0.25A/125V)		Q1	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
< FERRITE BEAD >				Q2	8-729-028-69	TRANSISTOR 2SC4655-BC (TX)	
FB1	1-500-445-21	FERRITE	0uH	Q3	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
FB2	1-500-445-21	FERRITE	0uH	Q4	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
FB3	1-500-445-21	FERRITE	0uH	Q5	8-729-231-96	TRANSISTOR 2SK880GR-TE85L	
FB4	1-500-245-11	FERRITE	0uH	Q6	8-729-028-69	TRANSISTOR 2SC4655-BC (TX)	
FB5	1-500-245-11	FERRITE	0uH	Q7	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
FB6	1-500-245-11	FERRITE	0uH	Q8	8-729-037-64	TRANSISTOR UN9116J- (TX).SO	
FB7	1-500-245-11	FERRITE	0uH	Q9	8-729-823-86	TRANSISTOR 2SA1745	
FB501	1-414-760-21	INDUCTOR CHIP	0uH	Q10	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
FB502	1-414-760-21	INDUCTOR CHIP	0uH	Q11	8-729-037-63	TRANSISTOR UN9115J- (TX).SO	
FB503	1-414-760-21	INDUCTOR CHIP	0uH	Q12	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
< IC >				Q13	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
IC1	8-759-362-23	IC TA7371AF-EL		Q14	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
IC2	8-759-362-25	IC TA2022AFN-EL		Q15	8-729-425-46	TRANSISTOR XP4315-TXE	
IC3	8-759-574-08	IC TC9327AF-604		Q16	8-729-013-60	TRANSISTOR RN1110-TE85L	
IC4	6-701-943-01	IC AK93C45-SGU670(US)		Q17	8-729-800-71	TRANSISTOR 2SB815B7-TB	
IC4	6-701-944-01	IC AK93C45-SGE670(AUS,E,HK,KR)		Q18	8-729-427-72	TRANSISTOR XP4501	
IC4	6-701-945-01	IC AK93C45-SGNE670(EXCEPT US,AUS,E,HK,KR)		Q19	8-729-426-36	TRANSISTOR XP1215-TXE	
IC5	8-759-387-31	IC TC75S55F(TE85R)		Q20	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
IC6	8-759-457-70	IC XC62RP1602MR		Q301	8-729-800-71	TRANSISTOR 2SB815B7-TB	
IC301	8-759-579-12	IC TA2123AF(EL)		Q302	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
IC302	8-759-488-80	IC NJM2185AV-TE2		Q303	8-729-426-36	TRANSISTOR XP1215-TXE	
IC501	8-759-428-23	IC LA3235W		Q304	8-729-037-62	TRANSISTOR UN9114J-(TX).SO	
IC601	8-759-356-46	IC MM1279XVBE		Q305	8-729-426-36	TRANSISTOR XP1215-TXE	
IC801	8-759-553-28	IC XC6383C251ML		Q501	8-729-400-55	TRANSISTOR 2SD1328-S	
< JACK >				Q502	8-729-425-89	TRANSISTOR XP1115	
J501	1-766-907-31	JACK 3P (MIC (PLUG IN POWER))		Q503	8-729-425-89	TRANSISTOR XP1115	
J701	1-779-867-81	JACK (C)/REMOTE		Q504	8-729-028-27	TRANSISTOR 2SK2009 (TE85L)	
< COIL >				Q505	8-729-028-23	TRANSISTOR 2SJ344 (TE85L)	
L1	1-469-373-21	INDUCTOR	0uH	Q506	8-729-028-27	TRANSISTOR 2SK2009 (TE85L)	
L2	1-416-941-21	COIL (FM OSC)		Q507	8-729-028-27	TRANSISTOR 2SK2009 (TE85L)	
L3	1-410-997-42	INDUCTOR CHIP	2.2uH	Q508	8-729-422-39	TRANSISTOR XN4404	
L4	1-412-995-21	INDUCTOR	22uH	Q509	8-729-800-71	TRANSISTOR 2SB815B7-TB	
L5	1-754-046-11	ANTENNA, FERRITE-ROD		Q510	8-729-426-36	TRANSISTOR XP1215-TXE	
L6	1-412-995-21	INDUCTOR	22uH	Q511	8-729-028-23	TRANSISTOR 2SJ344 (TE85L)	
L7	1-412-967-31	INDUCTOR	0.1uH	Q512	8-729-028-27	TRANSISTOR 2SK2009 (TE85L)	
L8	1-412-967-31	INDUCTOR	0.1uH	Q513	8-729-425-46	TRANSISTOR XP4315-TXE	
L101	1-412-995-21	INDUCTOR	22uH (EXCEPT GX670: FR)	Q514	8-729-426-36	TRANSISTOR XP1215-TXE	
L201	1-412-995-21	INDUCTOR	22uH (EXCEPT GX670: FR)	Q515	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
L501	1-412-010-41	INDUCTOR CHIP	22uH	Q601	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
L801	1-412-034-11	INDUCTOR CHIP	330uH	Q602	8-729-037-71	TRANSISTOR UN9210J- (TX).SO (GX670:FR)	
L802	1-412-995-21	INDUCTOR	22uH	Q801	8-729-800-37	TRANSISTOR 2SD1048-X7	
L803	1-412-010-41	INDUCTOR CHIP	22uH	Q802	8-729-400-55	TRANSISTOR 2SD1328-S	
< LIQUID CRYSTAL DISPLAY>				Q803	8-729-800-71	TRANSISTOR 2SB815B7-TB	
ND1	1-803-469-11	DISPLAY PANEL, LIQUID CRYSTAL		Q804	8-729-800-71	TRANSISTOR 2SB815B7-TB	
< PHOTO TRANSISTOR >				Q805	8-729-037-71	TRANSISTOR UN9210J- (TX).SO	
PH1	8-749-014-43	PHOTO PR-20-T		< RESISTOR >			
				R1	1-216-841-11	METAL CHIP	47K 5% 1/16W
				R2	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
				R3	1-216-809-11	METAL CHIP	100 5% 1/16W
				R4	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
				R5	1-216-821-11	METAL CHIP	1K 5% 1/16W

MAIN

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R6	1-216-817-11	METAL CHIP	470	5%	1/16W	R60	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7	1-216-845-11	METAL CHIP	100K	5%	1/16W	R61	1-216-833-11	METAL CHIP	10K	5%	1/16W
R8	1-216-853-11	METAL CHIP	470K	5%	1/16W	R62	1-216-845-11	METAL CHIP	100K	5%	1/16W
R9	1-216-817-11	METAL CHIP	470	5%	1/16W	R63	1-216-853-11	METAL CHIP	470K	5%	1/16W
R10	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R64	1-216-853-11	METAL CHIP	470K	5%	1/16W
R11	1-216-833-11	METAL CHIP	10K	5%	1/16W	R65	1-216-849-11	METAL CHIP	220K	5%	1/16W
R12	1-216-833-11	METAL CHIP	10K	5%	1/16W	R66	1-216-839-11	METAL CHIP	33K	5%	1/16W
R13	1-216-837-11	METAL CHIP	22K	5%	1/16W	R67	1-216-839-11	METAL CHIP	33K	5%	1/16W
R13	1-216-841-11	METAL CHIP	47K	5%	(EXCEPT GX670: FR) 1/16W	R68	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R14	1-216-845-11	METAL CHIP	100K	5%	(GX670: FR) 1/16W	R69	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R15	1-216-833-11	METAL CHIP	10K	5%	1/16W	R70	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R16	1-216-853-11	METAL CHIP	470K	5%	1/16W	R71	1-218-851-11	RES,CHIP	1.5K	0.50%	1/16W
R17	1-216-821-11	METAL CHIP	1K	5%	1/16W	R72	1-218-871-11	RES,CHIP	10K	0.50%	1/16W
R18	1-216-849-11	METAL CHIP	220K	5%	1/16W	R73	1-218-831-11	RES,CHIP	220	0.50%	1/16W
R19	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R74	1-218-875-11	RES,CHIP	15K	0.50%	1/16W
R20	1-216-821-11	METAL CHIP	1K	5%	1/16W	R75	1-218-839-11	RES,CHIP	470	0.50%	1/16W
R21	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R76	1-218-875-11	RES,CHIP	15K	0.50%	1/16W
R22	1-216-845-11	METAL CHIP	100K	5%	1/16W	R77	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R23	1-216-821-11	METAL CHIP	1K	5%	1/16W	R101	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R24	1-216-821-11	METAL CHIP	1K	5%	1/16W	R102	1-216-837-11	METAL CHIP	22K	5%	1/16W
R25	1-216-845-11	METAL CHIP	100K	5%	1/16W	R103	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R26	1-216-833-11	METAL CHIP	10K	5%	1/16W	R104	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R27	1-216-853-11	METAL CHIP	470K	5%	1/16W	R105	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R28	1-216-845-11	METAL CHIP	100K	5%	1/16W	R106	1-216-811-11	METAL CHIP	150	5%	1/16W
R29	1-216-839-11	METAL CHIP	33K	5%	1/16W	R106	1-216-821-11	METAL CHIP	1K	5%	(EXCEPT GX670: FR) 1/16W
R30	1-216-833-11	METAL CHIP	10K	5%	1/16W						(GX670: FR)
R31	1-216-841-11	METAL CHIP	47K	5%	1/16W	R107	1-216-837-11	METAL CHIP	22K	5%	1/16W
R32	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R108	1-216-811-11	METAL CHIP	150	5%	1/16W
R33	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R109	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R34	1-216-857-11	METAL CHIP	1M	5%	1/16W	R110	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R35	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R111	1-216-849-11	METAL CHIP	220K	5%	1/16W
R36	1-216-849-11	METAL CHIP	220K	5%	1/16W	R112	1-216-807-11	METAL CHIP	68	5%	1/16W
R37	1-216-857-11	METAL CHIP	1M	5%	1/16W	R201	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R38	1-216-853-11	METAL CHIP	470K	5%	1/16W	R202	1-216-837-11	METAL CHIP	22K	5%	1/16W
R39	1-216-815-11	METAL CHIP	330	5%	1/16W	R203	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R40	1-216-833-11	METAL CHIP	10K	5%	1/16W	R204	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R41	1-218-871-11	RES,CHIP	10K	0.50%	1/16W	R205	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R42	1-218-839-11	RES,CHIP	470	0.50%	1/16W	R206	1-216-811-11	METAL CHIP	150	5%	1/16W
R43	1-216-849-11	METAL CHIP	220K	5%	1/16W	R206	1-216-821-11	METAL CHIP	1K	5%	(EXCEPT GX670: FR) 1/16W
R44	1-216-851-11	METAL CHIP	330K	5%	1/16W						(GX670: FR)
R45	1-216-857-11	METAL CHIP	1M	5%	1/16W	R207	1-216-837-11	METAL CHIP	22K	5%	1/16W
R46	1-216-821-11	METAL CHIP	1K	5%	1/16W	R208	1-216-811-11	METAL CHIP	150	5%	1/16W
R47	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R209	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R48	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W	R210	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R49	1-218-911-11	RES,CHIP	470K	0.50%	1/16W	R211	1-216-849-11	METAL CHIP	220K	5%	1/16W
R50	1-218-855-11	RES,CHIP	2.2K	0.50%	1/16W	R301	1-216-845-11	METAL CHIP	100K	5%	1/16W
R51	1-218-847-11	RES,CHIP	1K	0.50%	1/16W	R302	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R52	1-218-859-11	RES,CHIP	3.3K	0.50%	1/16W	R303	1-216-835-11	METAL CHIP	15K	5%	1/16W
R53	1-218-859-11	RES,CHIP	3.3K	0.50%	1/16W	R304	1-216-837-11	METAL CHIP	22K	5%	1/16W
R54	1-218-859-11	RES,CHIP	3.3K	0.50%	1/16W	R305	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R55	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W	R306	1-216-849-11	METAL CHIP	220K	5%	1/16W
R56	1-218-875-11	RES,CHIP	15K	0.50%	1/16W	R307	1-216-821-11	METAL CHIP	1K	5%	1/16W
R57	1-218-875-11	RES,CHIP	15K	0.50%	1/16W	R308	1-218-887-11	RES,CHIP	47K	0.50%	1/16W
R58	1-216-833-11	METAL CHIP	10K	5%	1/16W						
R59	1-216-833-11	METAL CHIP	10K	5%	1/16W						

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R309	1-216-841-11	METAL CHIP	47K 5% 1/16W			< COMPOSITION CIRCUIT BLOCK >	
R310	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R311	1-216-841-11	METAL CHIP	47K 5% 1/16W	RB1	1-233-811-21	RES, NETWORK 470K (3216)	(EXCEPT GX670: FR)
R312	1-216-845-11	METAL CHIP	100K 5% 1/16W	RB1	1-233-873-21	RES, NETWORK (CHIP TYPE) (3216)	(GX670: FR)
R313	1-218-899-11	RES,CHIP	150K 0.50% 1/16W	RB601	1-233-873-21	RES, NETWORK (CHIP TYPE) (3216)	
R501	1-216-831-11	METAL CHIP	6.8K 5% 1/16W			< VARIABLE RESISTOR >	
R502	1-216-831-11	METAL CHIP	6.8K 5% 1/16W	RV1	1-223-587-11	RES, ADJ, CARBON 22K	
R503	1-216-835-11	METAL CHIP	15K 5% 1/16W	RV301	1-225-684-21	RES, VAR, CARBON 30K/30K (VOL ▲)	
R504	1-216-789-11	METAL CHIP	2.2 5% 1/16W	RV601	1-223-584-11	RES, ADJ, CARBON 2.2K	
R505	1-216-835-11	METAL CHIP	15K 5% 1/16W			< SWITCH >	
R506	1-216-835-11	METAL CHIP	15K 5% 1/16W	S1	1-771-475-21	SWITCH, SLIDE (REV-STOP-FWD)	
R507	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	S2	1-572-922-11	SWITCH, SLIDE (HOLD)	
R508	1-216-835-11	METAL CHIP	15K 5% 1/16W	S3	1-771-053-21	SWITCH, KEY BOARD (■/RADIO OFF)	
R509	1-216-857-11	METAL CHIP	1M 5% 1/16W	S4	1-771-053-21	SWITCH, KEY BOARD (FF/AMS/PRESET -)	
			(GX670: FR)	S5	1-771-053-21	SWITCH, KEY BOARD (REW/AMS)	
R509	1-216-863-11	RES,CHIP	3.3M 5% 1/16W				
			(EXCEPT GX670: FR)	S6	1-771-053-21	SWITCH, KEY BOARD (MENU)	
R510	1-216-835-11	METAL CHIP	15K 5% 1/16W	S7	1-771-053-21	SWITCH, KEY BOARD (SET)	
R511	1-216-835-11	METAL CHIP	15K 5% 1/16W	S8	1-771-053-21	SWITCH, KEY BOARD (BAND)	
R512	1-216-835-11	METAL CHIP	15K 5% 1/16W	S9	1-771-053-21	SWITCH, KEY BOARD (◀▶/REPEAT)	
R513	1-216-835-11	METAL CHIP	15K 5% 1/16W	S10	1-771-053-21	SWITCH, KEY BOARD (ENTER)	
R514	1-216-857-11	METAL CHIP	1M 5% 1/16W				
			(GX670: FR)	S11	1-572-467-21	SWITCH, PUSH (1 KEY)(REC)	
R514	1-216-863-11	RES,CHIP	3.3M 5% 1/16W	S501	1-692-605-51	SWITCH, SLIDE (ISS 1-2-3)	
			(EXCEPT GX670: FR)			< TRANSFORMER >	
R517	1-216-817-11	METAL CHIP	470 5% 1/16W	T1	1-416-943-21	COIL (AM OSC)	
R518	1-216-817-11	METAL CHIP	470 5% 1/16W	T2	1-416-942-21	COIL (AM MIX)	
R520	1-216-817-11	METAL CHIP	470 5% 1/16W	T501	1-429-374-11	TRANSFORMER, BIAS OSCILLATION	
R521	1-216-859-11	RES,CHIP	1.5M 5% 1/16W	T801	1-423-745-11	TRANSFORMER, DC-DC CONVERTER	
R522	1-216-839-11	METAL CHIP	33K 5% 1/16W			< POSITIVE THERMISTOR >	
R523	1-216-839-11	METAL CHIP	33K 5% 1/16W	THP601	1-810-794-11	THERMISTOR, POSITIVE	
R524	1-216-817-11	METAL CHIP	470 5% 1/16W			< VIBRATOR >	
R525	1-216-817-11	METAL CHIP	470 5% 1/16W	X1	1-767-357-11	FILTER, CERAMIC (10.7MHz)	
R526	1-216-845-11	METAL CHIP	100K 5% 1/16W	X2	1-579-615-11	VIBRATOR, CRYSTAL (75 kHz)	
R527	1-216-845-11	METAL CHIP	100K 5% 1/16W			*****	
R601	1-216-837-11	METAL CHIP	22K 5% 1/16W			MISCELLANEOUS	
R602	1-216-809-11	METAL CHIP	100 5% 1/16W			*****	
R603	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	17	1-672-579-11	FLEXIBLE (ATS) BOARD	
R604	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	S901	1-692-101-11	SWITCH, LEAF (TAPE/R TUNE)	
R605	1-216-833-11	METAL CHIP	10K 5% 1/16W	S902	1-692-100-11	SWITCH, LEAF (ATS/F TUNE)	
R607	1-216-845-11	METAL CHIP	100K 5% 1/16W	HP901	1-500-355-21	HEAD, MAGNETIC (REC/PB/ERASE)	
R801	1-216-849-11	METAL CHIP	220K 5% 1/16W	M901	1-763-166-11	MOTOR (CAPSTAN/REEL) (WITH PULLEY)	
R802	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R803	1-216-817-11	METAL CHIP	470 5% 1/16W	PM901	1-454-674-31	SOLENOID, PLUNGER	
R804	1-216-799-11	METAL CHIP	15 5% 1/16W			*****	
R805	1-216-819-11	METAL CHIP	680 5% 1/16W				
R806	1-216-819-11	METAL CHIP	680 5% 1/16W				
R807	1-216-845-11	METAL CHIP	100K 5% 1/16W				

WM-GX670/GX674

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS *****	
	1-418-019-11	REMOTE CONTROL UNIT (EXCEPT GX670: FR)	
	1-418-022-11	REMOTE CONTROL UNIT(GX674:CH,EA,HK,KR)	
⚠	1-528-252-21	BATTERY CHARGER (BC-7S) (GX670: UK/GX674: HK)	
	1-528-299-41	BATTERY, NI-CD (NC-6WM) (GX670: US)	
⚠	1-528-434-11	BATTERY CHARGER (BC-7SG) (GX670: AUS)	
	1-528-543-11	BATTERY, NICKEL CADMIUM (NC-6WM) (GX670: AUS, CH, E, EA, KR/GX674)	
	1-528-543-22	BATTERY,NICKEL CADMIUM (NC-6WM) (EXCEPT GX670: FR)	
⚠	1-528-644-11	BATTERY CHARGER (BC-7DT2) (GX670: E/GX674:E)	
⚠	1-528-661-11	BATTERY CHARGER (BC-7DR) (GX670: KR/GX674: KR)	
⚠	1-528-713-21	BATTERY CHARGER (BC-7DC) (GX670: US)	
⚠	1-528-744-21	BATTERY CHARGER (BC-7DY) (GX670: AEP, FR, EA/GX674: EA)	
⚠	1-528-822-11	BATTERY CHARGER (BC-7DN) (GX670: CH/GX674: CH)	
	1-542-116-11	MICROPHONE	
	1-569-007-11	ADAPTOR, CONVERSION 2P (GX670: E/GX674: E)	
	1-759-213-11	CASE, BATTERY	
	3-008-521-01	CASE, BATTERY CHARGE	
	3-029-488-01	POUCH, CARRYING	

Ref. No.	Part No.	Description	Remarks
	3-864-892-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH) (GX670: AEP, FR, UK, AUS, CH, EA)	
	3-864-892-21	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (GX670: AEP, E/GX674: E)	
	3-864-892-31	MANUAL, INSTRUCTION (GERMAN/ITALIAN) (GX670: AEP)	
	3-864-892-41	MANUAL, INSTRUCTION (DUTCH/SWEDISH) (GX670: AEP)	
	3-864-892-51	MANUAL, INSTRUCTION (FINNISH/RUSSIAN) (GX670: AEP)	
	3-864-892-61	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE/ARABIC) (GX670: CH, EA)	
	3-864-892-71	MANUAL, INSTRUCTION (ENGLISH/TRADITIONAL CHINESE) (GX670: E/GX674: E)	
	3-864-892-81	MANUAL, INSTRUCTION (ENGLISH/KOREAN) (GX670: US, KR)	
	3-864-893-11	MANUAL, INSTRUCTION (ENGLISH/TRADITIONAL CHINESE) (GX674: CH, EA, HK, KR)	
	3-864-893-21	MANUAL, INSTRUCTION (SPANISH/KOREAN) (GX674: KR)	
	3-864-893-31	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE/ARABIC) (GX674: CH, EA)	
	8-953-304-90	RECEIVER MDR-E805SP SET (EXCEPT GX670: FR)	
	8-953-735-90	HEADPHONE MDR-W034LP/O SET (GX670: US)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MEMO

REVISION HISTORY

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