D-NF420/NF421

SERVICE MANUAL

Ver. 1.3 2005.03

Photo: D-NF420

US Model
Canadian Model
UK Model
Australian Model
D-NF420
AEP Model
E Model
D-NF420/NF421

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-3325ERV2
Optical Pick-up Name	DAX-25EV

SPECIFICATIONS

CD player

System
Compact disc digital audio system

Laser diode properties
Material: GaAlAs
Wavelength: λ = 770 - 800 nm
Emission duration: Continuous
Laser output: Less than 44.6 μW
(This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

D-A conversion
1-bit quartz time-axis control

Frequency response
20 - 20 000 Hz $^{+1}_{-2}$ dB (measured by JEITA)

Output (at 3 V input level)
Headphones (stereo minijack)
Approx. 5 mW + Approx. 5 mW at 16 Ω
(Approx. 1.5 mW + Approx. 1.5 mW at 16 Ω)*
*For the customers in AEP, UK, EE, RU models

– Continued on next page –

PORTABLE CD PLAYER

9-879-393-04
2005C05-1

Sony Corporation
Personal Audio Group
Published by Sony Engineering Corporation

SONY®

Radio

Frequency range

• AEP, UK, EE, RU* models

FM: 87.5 - 108.0 MHz
AM: 531 - 1 602 kHz

• E19/2, E92, MX, E/4* models

9 kHz step:
FM: 87.5 - 108.0 MHz
AM: 531 - 1 710 kHz
10 kHz step:
FM: 87.5 - 108.0 MHz
AM: 530 - 1 710 kHz

• AUS, E19, E19/1* models

9 kHz step:
FM: 87.5 - 108.0 MHz
AM: 531 - 1 602 kHz
10 kHz step:
FM 87.5 - 108.0 MHz
AM: 530 - 1 710 kHz

• US, CND* models

9 kHz step:
TV: 2 - 13 ch
WB (weather band): 1 - 7 ch
FM: 87.5 - 108.0 MHz
AM: 531 - 1 710 kHz
10 kHz step:
TV: 2 - 13 ch
WB (weather band): 1 - 7 ch
FM: 87.5 - 108.0 MHz
AM: 530 - 1 710 kHz

* For the area code of the model you purchased, check the upper left side of the bar code on the package.

Antenna

FM: Earphones cord antenna
AM: Built-in ferrite bar antenna

General

Power requirements

- LR6 (size AA) battery: 1.5 V DC × 1
- AC power adaptor (DC IN 3 V jack):
  120 V, 60 Hz (US, CND, E92, MX models)
  220 V, 50 Hz (E/4 model)
  230 V, 50 Hz (E19, E19/1, E19/2, RU models)
  240 V, 50 Hz (AUS model)
  100 - 240 V, 50/60 Hz (other models)

Battery life 1)

When using a Sony alkaline battery LR6 (SG) (produced in Japan)

	G-PROTECTION	
	"1"	"2"
Audio CD	22	20
ATRAC CD 2)	41	38
MP3 CD 3)	26	24
RADIO ON	30	

1)Measured value using the JEITA standard (Japan Electronics and Information Technology Industries Association)
Playing time shown is approximate hours, when you use the player on a flat and stable surface and "POWER SAVE" is set to "ON".
This value varies depending on how the player is used.

2)Recorded at 48 kbps

3)Recorded at 128 kbps

Operating temperature

5°C - 35°C (41°F - 95°F)

Dimensions (w/h/d) (excluding projecting parts and controls)

Approx. 137.8 × 30.9 × 137.8 mm (5 1/2 × 1 1/4 × 5 1/2 in.)

Mass (excluding accessories)

Approx. 196 g (6.9 oz.)

Supplied Accessories

Earphones
Remote
CD-ROM (SonicStage)
AC power adaptor (Except US, Canadian models)
Operating instructions
Installation/Operating Guide

Design and specifications are subject to change without notice.

- Abbreviation
  AUS : Australian model
  CND : Canadian model
  E/4 : Argentina model
  E19 : South African, Singapore, Malaysia, Vietnam and Indian model
  E19/1: Singapore, Malaysia and Thai model
  E19/2: Chilean and Peruvian model
  E92 : Panama, Venezuelan and Caribbian Can model
  EE : East European and Russian model
  MX : Mexican model
  RU : Russian model

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COM- POSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

Notes on the AC power adaptor

- Disconnect all power sources when the player is not to be used for a long time.
- Use only the AC power adaptor supplied. If your player is not supplied with the one, use an AC-E30HG AC power adaptor (not available in Australian and Argentina). If you use any other AC power adaptor, malfunction may occur.

- Do not touch the AC power adaptor with wet hands.
- Connect the AC power adaptor to an easily accessible AC outlet. Should you notice an abnormality in the AC power adaptor, disconnect it from the AC outlet immediately.

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 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.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

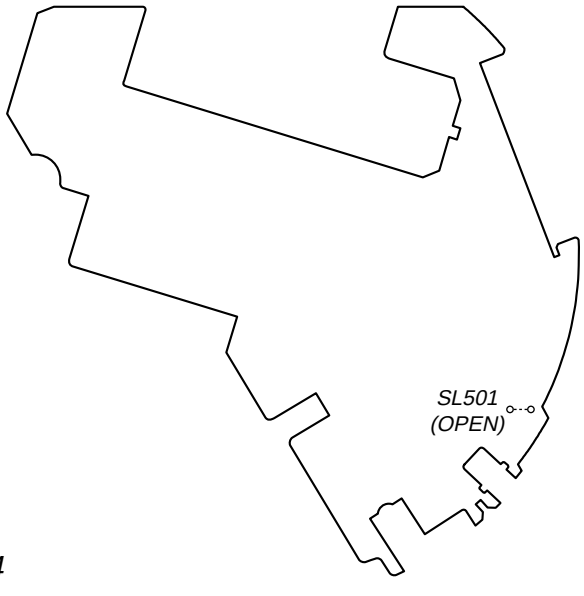
Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscou-s (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

OPERATION CHECK WHEN THE LID IS OPEN

In performing the repair with the power supplied to the set, removing the JACK board causes the set to be disabled.
In such a case, make a solder bridge to short SL501 (OPEN) on the JACK board in advance.

– JACK Board (Component Side) –



LASER DIODE AND FOCUS SEARCH OPERATION CHECK

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper lid is closed while turning ON the S531. (push switch type)
The following checking method for the laser diode is operable.

- **Method:**
  Emission of the laser diode is visually checked.
  1. Open the upper lid.
  2. With a disc not set, turn on the S531 with a screwdriver having a thin tip as shown in Fig.1.
  3. Press the ▶II ENTER button.
  4. Observing the objective lens, check that the laser diode emits light.
     When the laser diode does not emit light, automatic power control circuit or optical pick-up is faulty.
     In this operation, the objective lens will move up and down 2 times along with inward motion for the focus search.

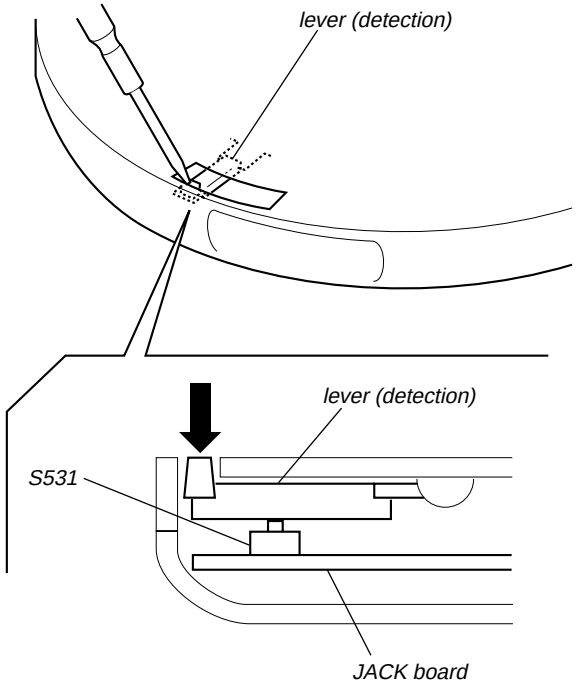


Fig. 1 Method to push the S531

NOTES ON REPLACEMENT OF CSP (CHIP SIZE PACKAGE) IC

Replacement of CXR711260-214H2 (IC603) used in this set requires a special tool.

Providing the required system environment

System requirements

The following system environment is required in order to use the SonicStage Ver. 2.3.

Computer	IBM PC/AT or Compatible
	• CPU: Pentium II 400 MHz or higher (Pentium III 450 MHz or higher is recommended.) • Hard disk drive space: 200 MB or more (1.5 GB or more is recommended) (The amount space will vary according to Windows version and the number of music files stored on the hard disk.) • RAM: 64 MB or more (128 MB or more is recommended)
	Others • CD drive (capable of digital playback by WDM) • Sound Board • USB port (supports USB (previously USB 1.1))
Operating System	Factory installed: Windows XP Media Center Edition 2005/Windows XP Media Center Edition 2004/Windows XP Media Center Edition/Windows XP Professional/Windows XP Home Edition/Windows 2000 Professional/ Windows Millennium Edition/Windows 98 Second Edition
Display	High Color (16 bit) or higher, 800 × 600 dots or better (1024 × 768 dots or better is recommended)
Others	• Internet access: for Web registration, EMD services and CDDB • Windows Media Player (version 7.0 or higher) installed for playing WMA files

This software is not supported by the following environments:

- OSs other than the indicated above
- Personally constructed PCs or operating systems
- An environment that is an upgrade of the original manufacturer-installed operating system
- Multi-boot environment
- Multi-monitor environment
- Macintosh

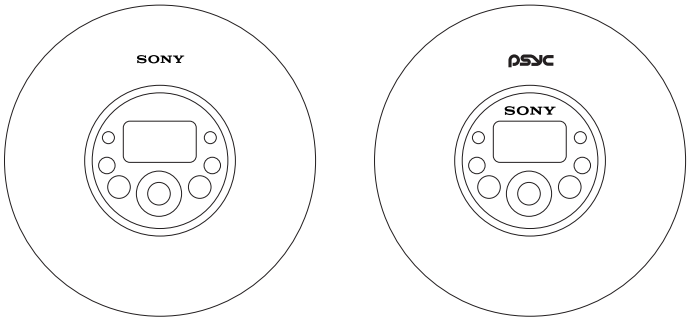
Notes

- We do not ensure trouble-free operation on all computers that satisfy the system requirements.
- The NTFS format of Windows XP/Windows 2000 Professional can be used only with the standard (factory) settings.
- We do not ensure trouble-free operation of the system suspend, sleep, or hibernation function on all computers.
- For Windows 2000 Professional users, install Service Pack 3 or later before using the software.

DISCRIMINATION OF ORIGINAL AND PSYC MODEL

There are two types of D-NF420.
Refer to following.

– COVER (UPPER LID) Top View –



ORIGINAL MODEL *PSYC MODEL*

COLOR VARIATION

Model	Destination	SILVER	BLUE (PSYC)
D-NF420	US		●
	CND		●
	AEP	●	
	UK	●	
	E/4	●	
	E19	●	
	EE	●	
	AUS	●	
D-NF421	RU	●	
	E19/1	●	
	E19/2	●	
	E92	●	
	MX	●	

- Abbreviation
  AUS : Australian model
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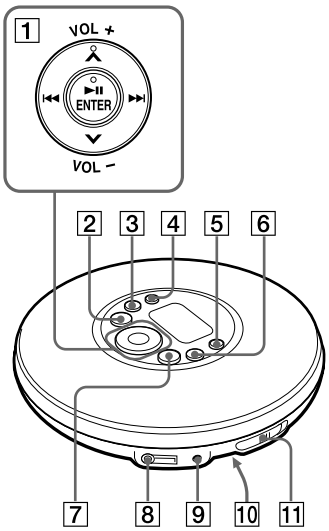
  E19 : South African, Singapore, Malaysia, Vietnam and Indian model
  E19/1 : Singapore, Malaysia, and Thai model
  E19/2 : Chilean and Peruvian model
  E92 : Panama, Venezuelan and Caribbian Can model
  EE : East European and Russian model
  MX : Mexican model
  RU : Russian model

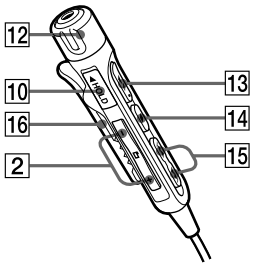
SECTION 2
GENERAL

This section is extracted from instruction manual.

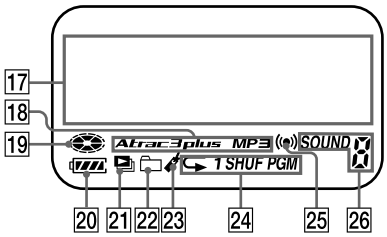
Guide to Parts and Controls



Remote (NF421: RU, E19/1 models only)



Display



- Abbreviation
  E19/1: Singapore, Malaysia and Thai model
  RU : Russian model

1 Operation button
►II (play/pause)*/ENTER
I◄◄ /►►I
∧*/∨
VOL +/–

2 CD player:
🗀 –•TUNE – button
Remote:
🗀 +/–•tune +/– buttons

3 ■•RADIO OFF button

4 SEARCH button

5 RADIO ON/BAND•MEMORY button

6 DISPLAY/MENU button

7 🗀 +•TUNE + button

8 ∩ (headphones) jack

9 DC IN 3 V jack

10 HOLD switch (on the back of the CD player)

11 OPEN switch

12 VOL +/– control

13 ►II (play/pause)* button

14 ■ (stop)•RADIO ON/BAND•RADIO OFF button

15 I◄◄ /►►I•PRESET –/+ buttons

16 Clip

17 Character information display

18 Atrac3plus/MP3 indicator

19 Disc indicator

20 Battery indicator

21 Play list indicator

22 Group indicator

23 Bookmark indicator

24 Play mode indicator

25 Timer indicator

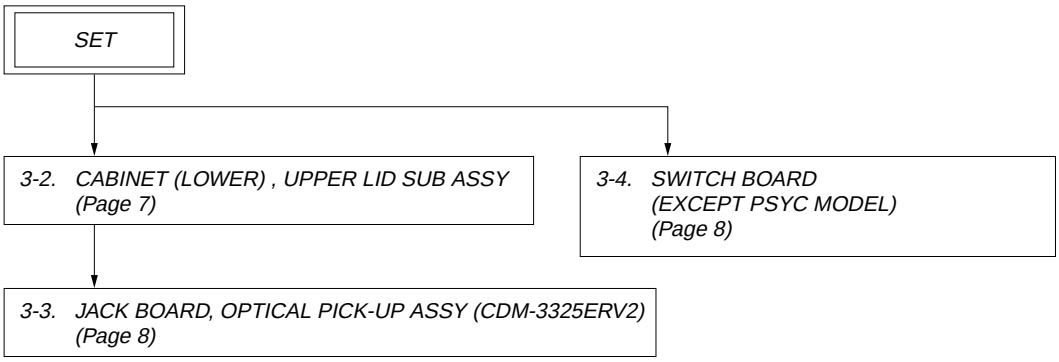
26 Sound indicator

* This button has a tactile dot.

SECTION 3
DISASSEMBLY

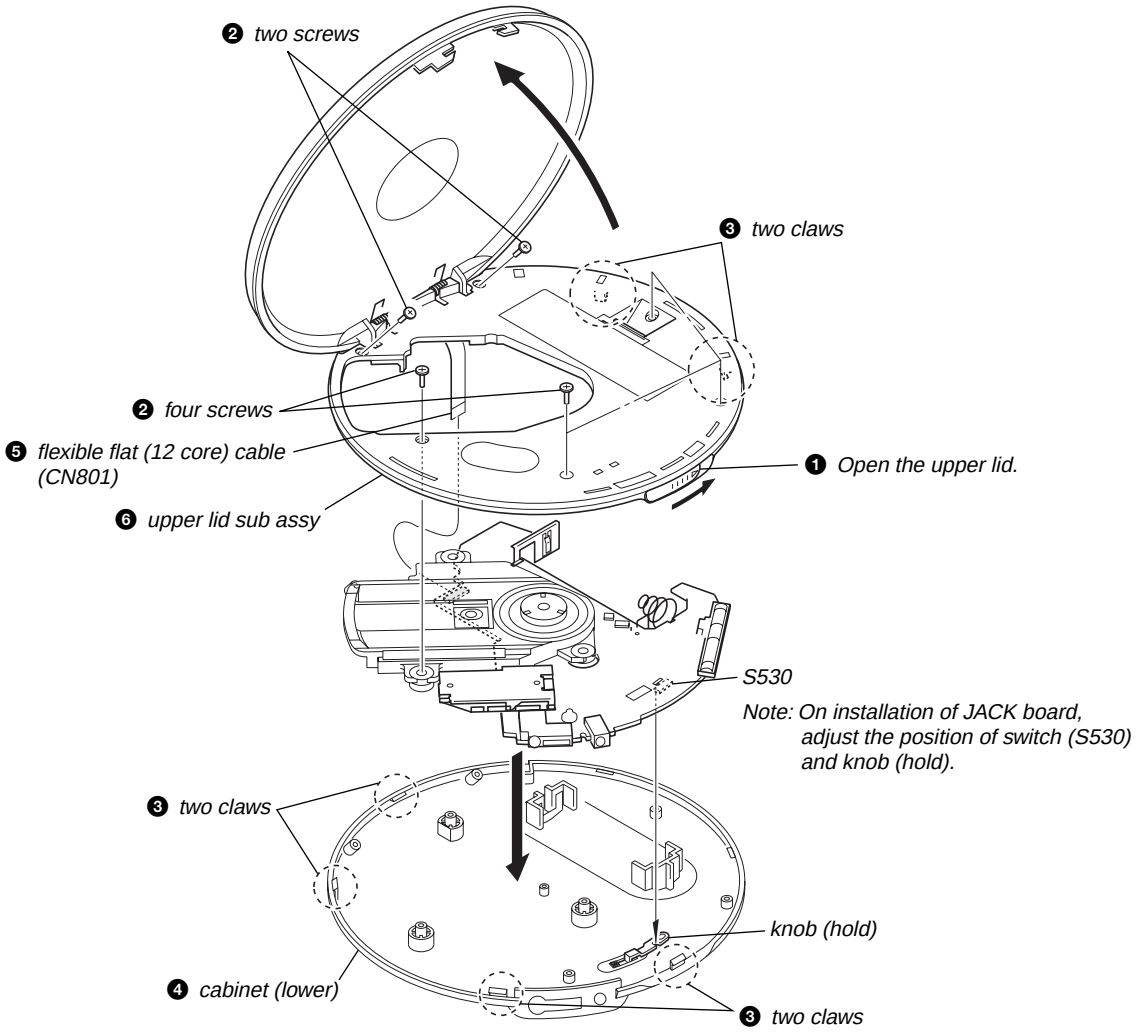
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

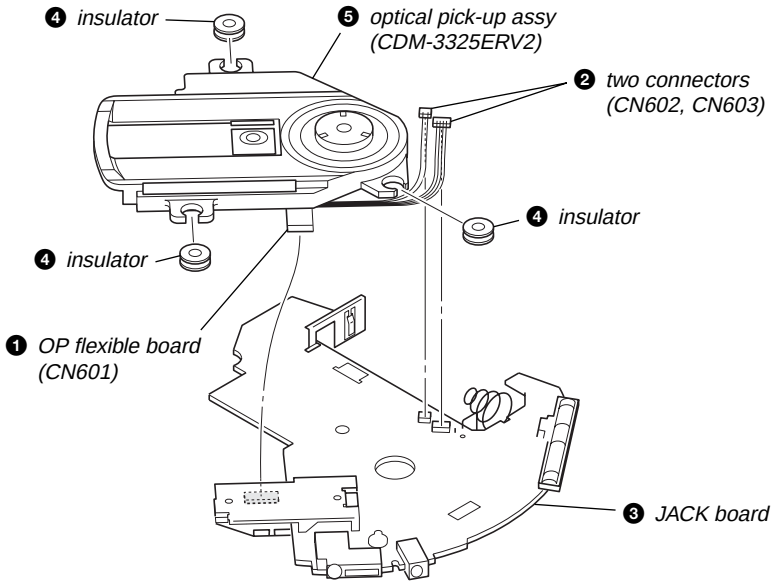


Note: Follow the disassembly procedure in the numerical order given.

3-2. CABINET (LOWER), UPPER LID SUB ASSY

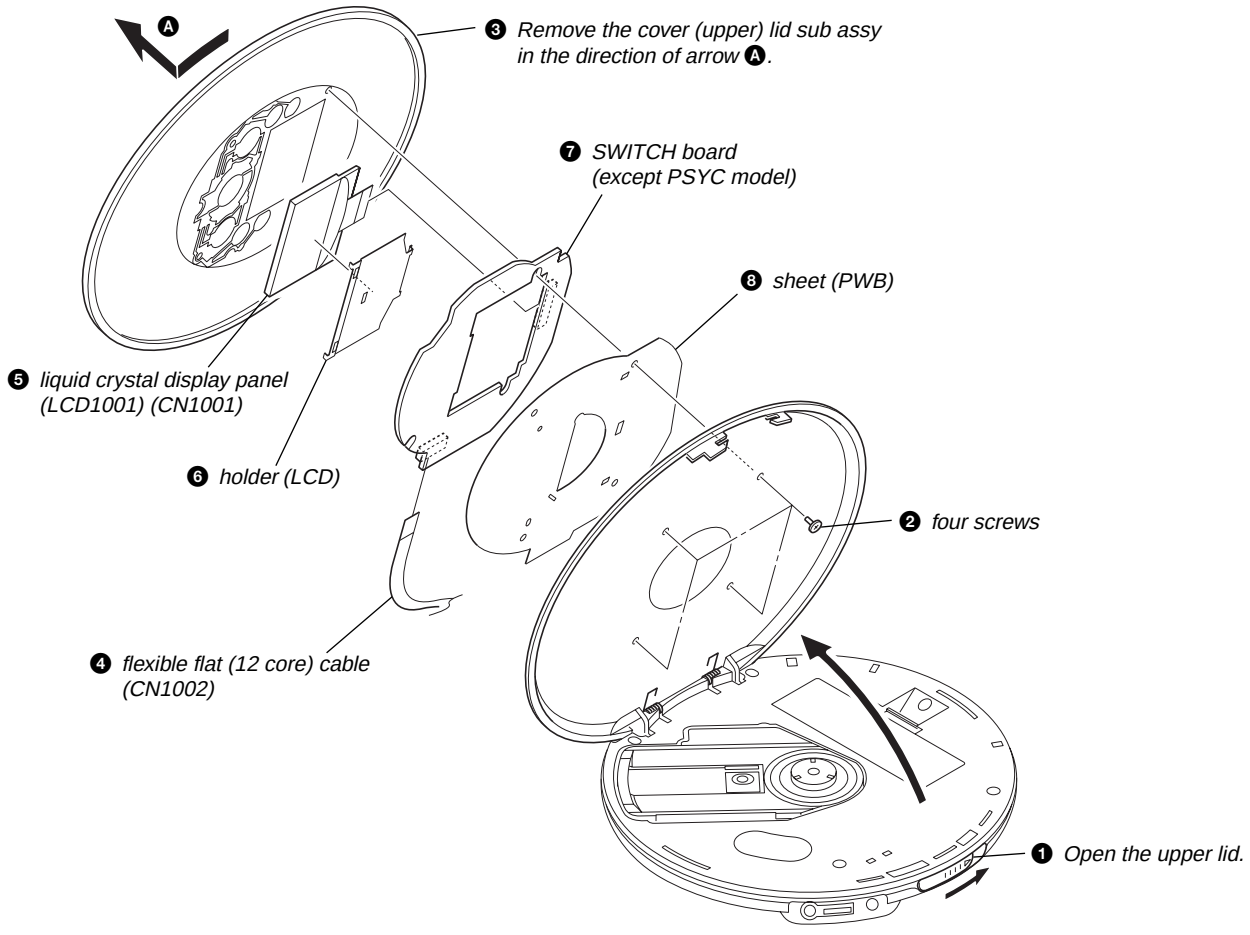


3-3. JACK BOARD, OPTICAL PICK-UP ASSY (CDM-3325ERV2)



3-4. SWITCH BOARD (EXCEPT PSYC MODEL)

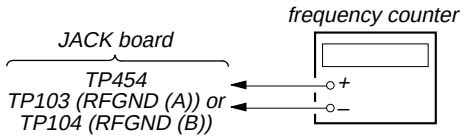
Note: Refer to “DISCRIMINATION OF ORIGINAL AND PSYC MODEL” in the SERVICING NOTES (page 5) about PSYC model.



SECTION 4
ELECTRICAL ADJUSTMENTS

BEFOREHAND ADJUSTMENT

Connection:



Adjusting Procedure:

1. Connect the frequency counter to TP454 and TP103 (RFGND (A)) or TP104 (RFGND (B)) on the JACK board.
2. Set the AM 531 kHz (except AEP, UK, East European, Russian models) or AM 530 kHz (AEP, UK, East European, Russian models)
3. Adjust the RV401 so that the reading of frequency counter is 300 ± 3 kHz.

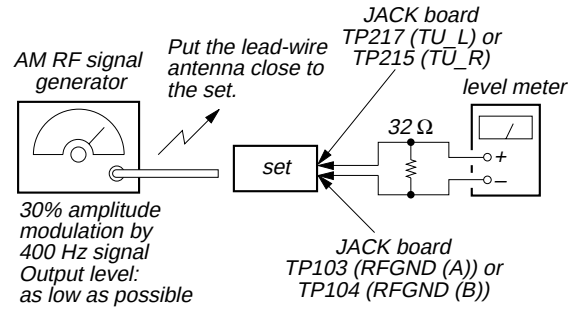
0 dB=1 µV

[AM]

Setting:

Function: RADIO

Band: AM

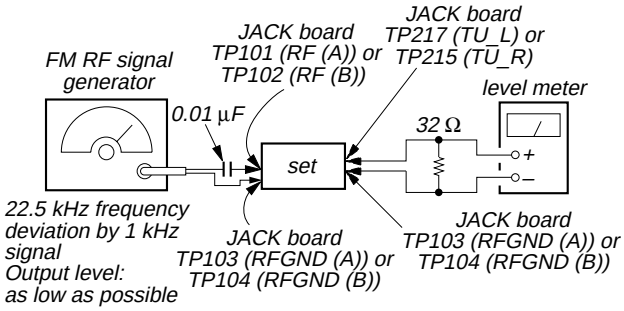


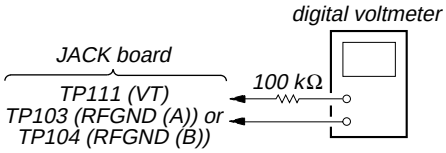
[FM/TV/WB]

Setting:

Function: RADIO

Band: FM (Except US, Canadian models)
FM/TV/WB (US, Canadian models)





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

( ): AEP, UK, East European, Russian models

AM IF ADJUSTMENT	
Adjust for a maximum reading on level meter	
T102	620 (621) kHz

( ): AEP, UK, East European, Russian models

AM FREQUENCY COVERAGE CONFIRMATION		
Adjustment Part	Frequency Display	Reading in Digital Voltmeter
Confirmation	531 (530) kHz	1.2 ± 0.8 V
Confirmation	1,710 (1,602) kHz	7.2 (6.7) ± 1.0 V

( ): AEP, UK, East European, Russian models

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
T101	620 (621) kHz
CT101	1,400 (1,404) kHz

FM FREQUENCY COVERAGE CONFIRMATION		
Adjustment Part	Frequency Display	Reading in Digital Voltmeter
Confirmation	87.5 MHz	5.2 ± 0.8 V
Confirmation	108 MHz	9.1 ± 1.0 V

TV (2 – 6 ch) FREQUENCY COVERAGE CONFIRMATION		
Adjustment Part	Frequency Display	Reading in Digital Voltmeter
Confirmation	2 ch	0.9 ± 0.8 V
Confirmation	6 ch	5.2 ± 1.0 V

(US, Canadian models only)

FM/TV (2 – 6 ch) TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L104	98 MHz

TV (7 – 13 ch) FREQUENCY COVERAGE CONFIRMATION		
Adjustment Part	Frequency Display	Reading in Digital Voltmeter
Confirmation	7 ch	4.7 ± 0.8 V
Confirmation	13 ch	8.0 ± 1.0 V

(US, Canadian models only)

WB FREQUENCY COVERAGE CONFIRMATION		
Adjustment Part	Frequency Display	Reading in Digital Voltmeter
Confirmation	1 ch	3.3 ± 0.8 V

(US, Canadian models only)

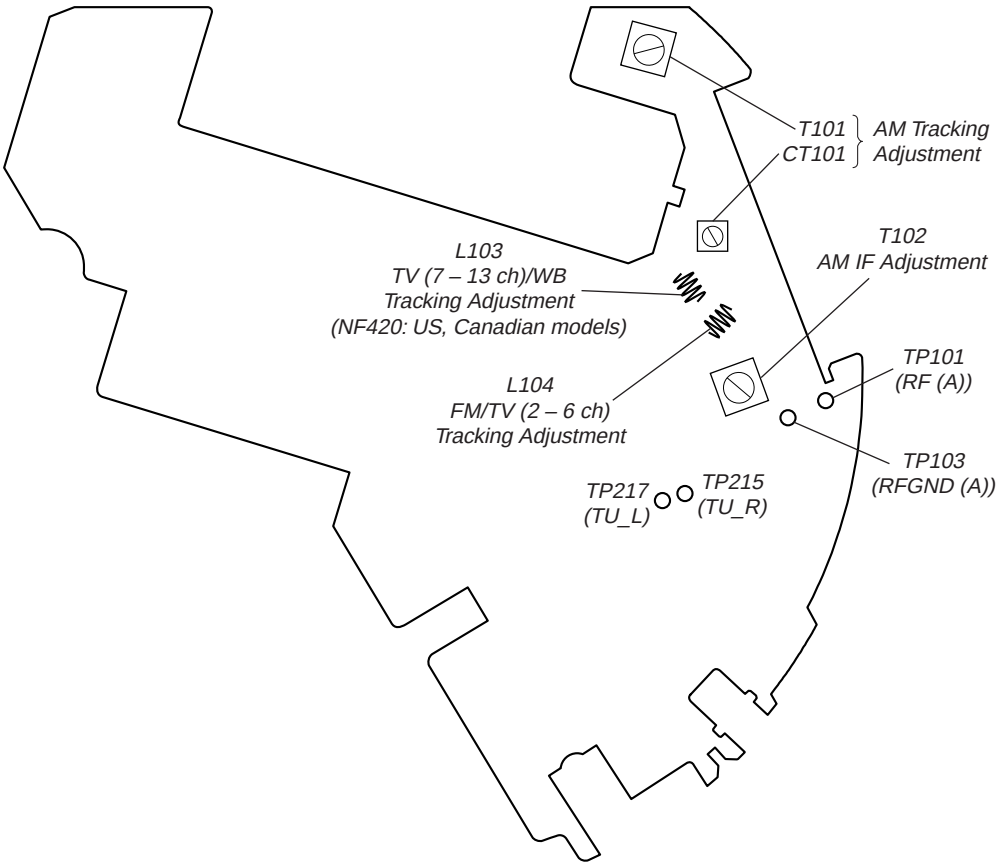
TV (7 – 13 ch)/WB TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L103	10 ch (197.75 MHz)

(US, Canadian models only)

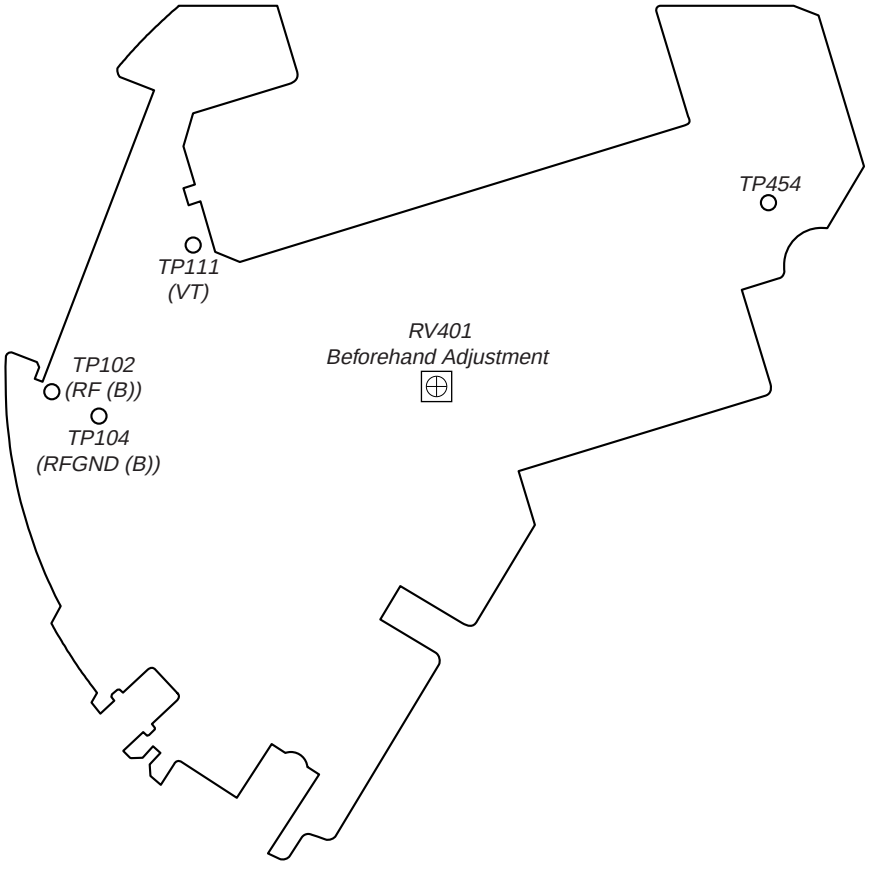
Adjustment and Connecting Location: JACK board
(See page 10)

Adjustment and Connecting Location:

– JACK Board (Component Side) –



– JACK Board (Conductor Side) –



SECTION 5
DIAGRAMS

• Note for Printed Wiring Boards and Schematic Diagrams

Note on Printed Wiring Boards.

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- : indicates side identified with part number.
- △ : internal component
- : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

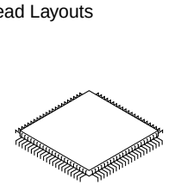
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

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

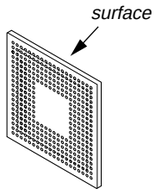
- EGL board is multi-layer printed board. However, the patterns of intermediate-layer have not been included in the diagram.

* Replacement of IC603 used in this set requires a special tool.

- Lead Layouts



Lead layout of conventional IC



CSP (chip size package)

Note on Schematic Diagrams.

- All capacitors are in µF unless otherwise noted. (p: pF) 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.
- △ : internal tolerance.
- : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- : B+ Line.
- : 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 : CD PLAY
  ( ) : FM
  [ ] : AM
- Voltages are taken with a VOM (Input impedance 10 MΩ). 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.
- Circled numbers refer to waveforms.
- Signal path.
  : CD PLAY
  : FM/TV (2 – 6 ch)
  : AM
  : TV (7 – 13 ch)/WB

* Replacement of IC603 used in this set requires a special tool.

- The voltage and waveform of CSP (chip size package) cannot be measured, because its lead layout is different from that conventional IC.
- Abbreviation

AUS	: Australian model
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E/4	: Argentina model
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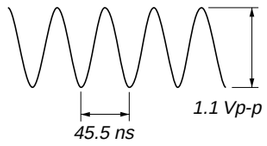
E19/1	: Singapore, Malaysia and Thai model
E19/2	: Chilean and Peruvian model
E92	: Panama, Venezuelan and Caribbian Can model
EE	: East European and Russian model
MX	: Mexican model
RU	: Russian model

• Waveforms

– EGL Board –

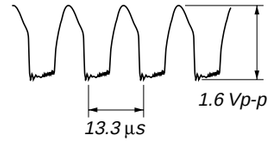
① X602



500 mV/DIV, 20 ns/DIV

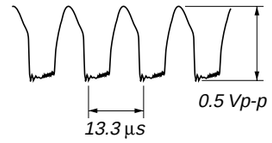
– JACK Board –

⑪ IC101 ⑮ (X_0) (FM mode)



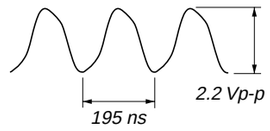
1 V/DIV, 5 µs/DIV

⑪ IC101 ⑮ (X_0) (AM mode)



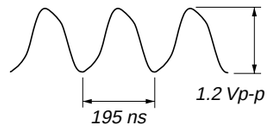
200 mV/DIV, 5 µs/DIV

⑫ Q104 (Collector) (FM mode)



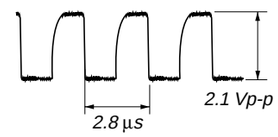
1 V/DIV, 50 ns/DIV

⑫ Q104 (Collector) (AM mode)



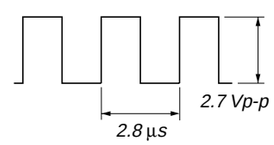
500 mV/DIV, 50 ns/DIV

⑬ IC401 ㉓ (SYNC) (CD play mode)



1 V/DIV, 1 µs/DIV

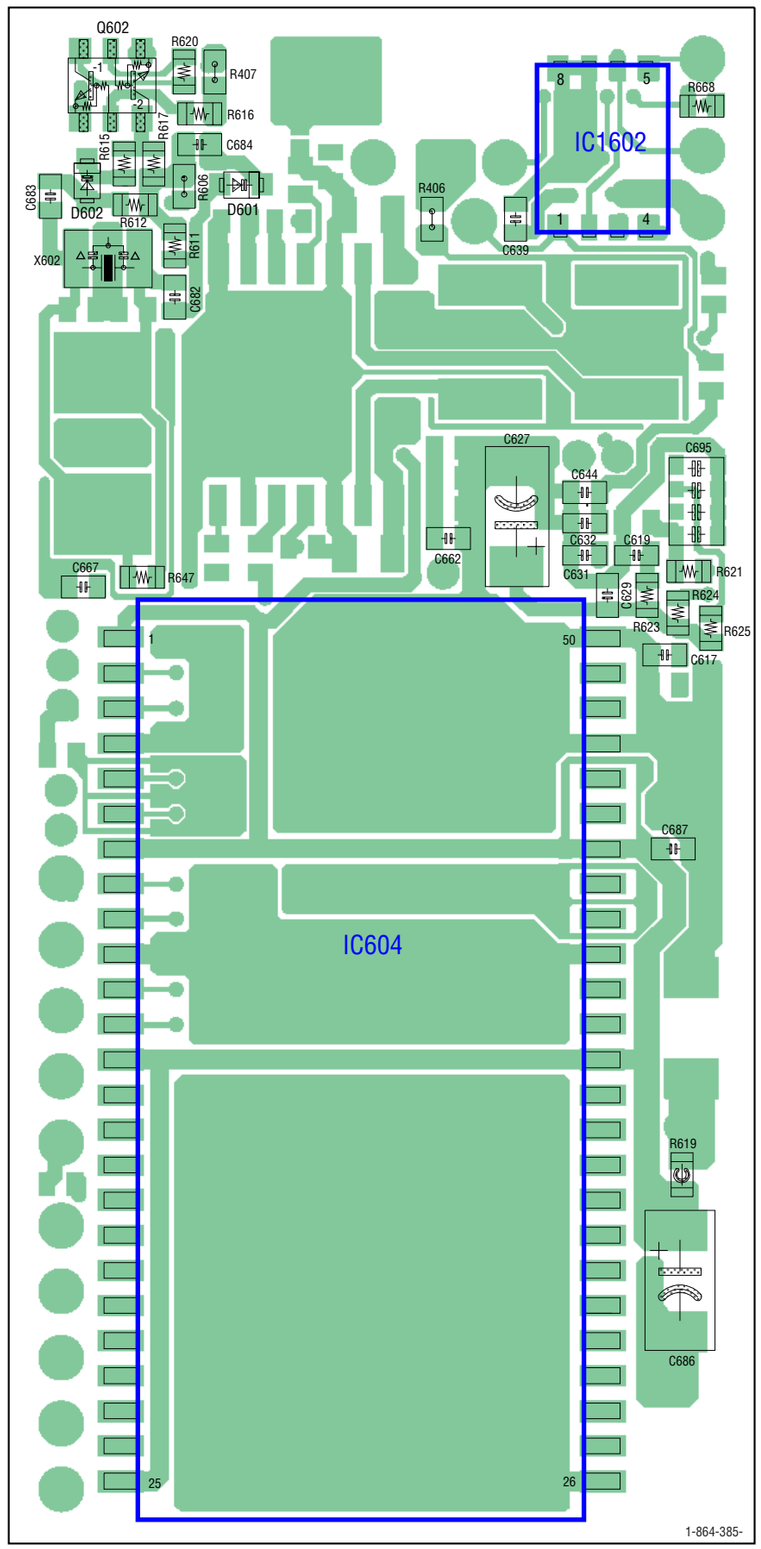
⑭ IC401 ㊶ (LO_2), ㊷ (LO_1)



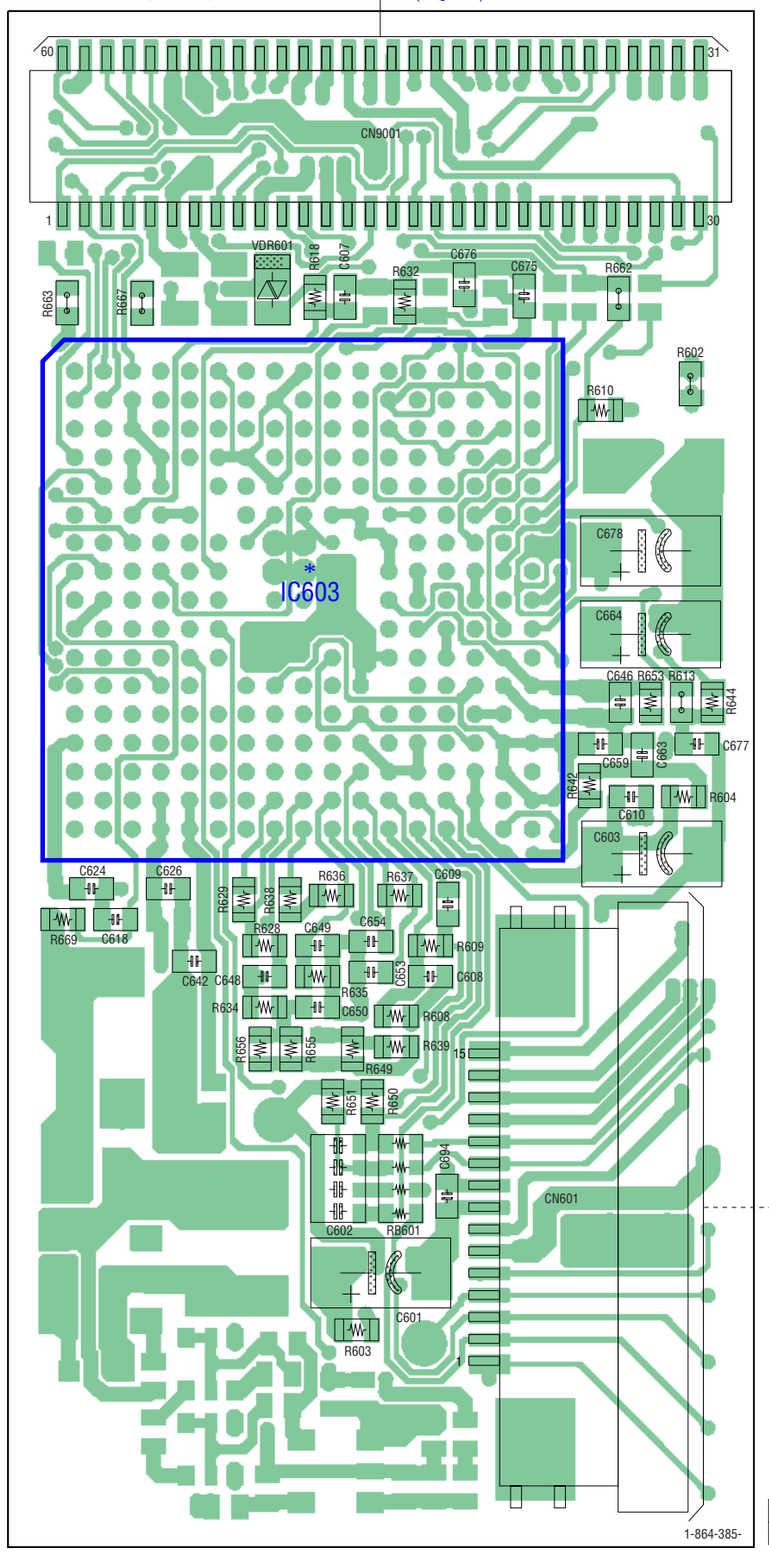
1 V/DIV, 1 µs/DIV

5-1. PRINTED WIRING BOARD – EGL BOARD – :Uses unleaded solder.

【EGL BOARD】(SIDE A)



【EGL BOARD】(SIDE B)

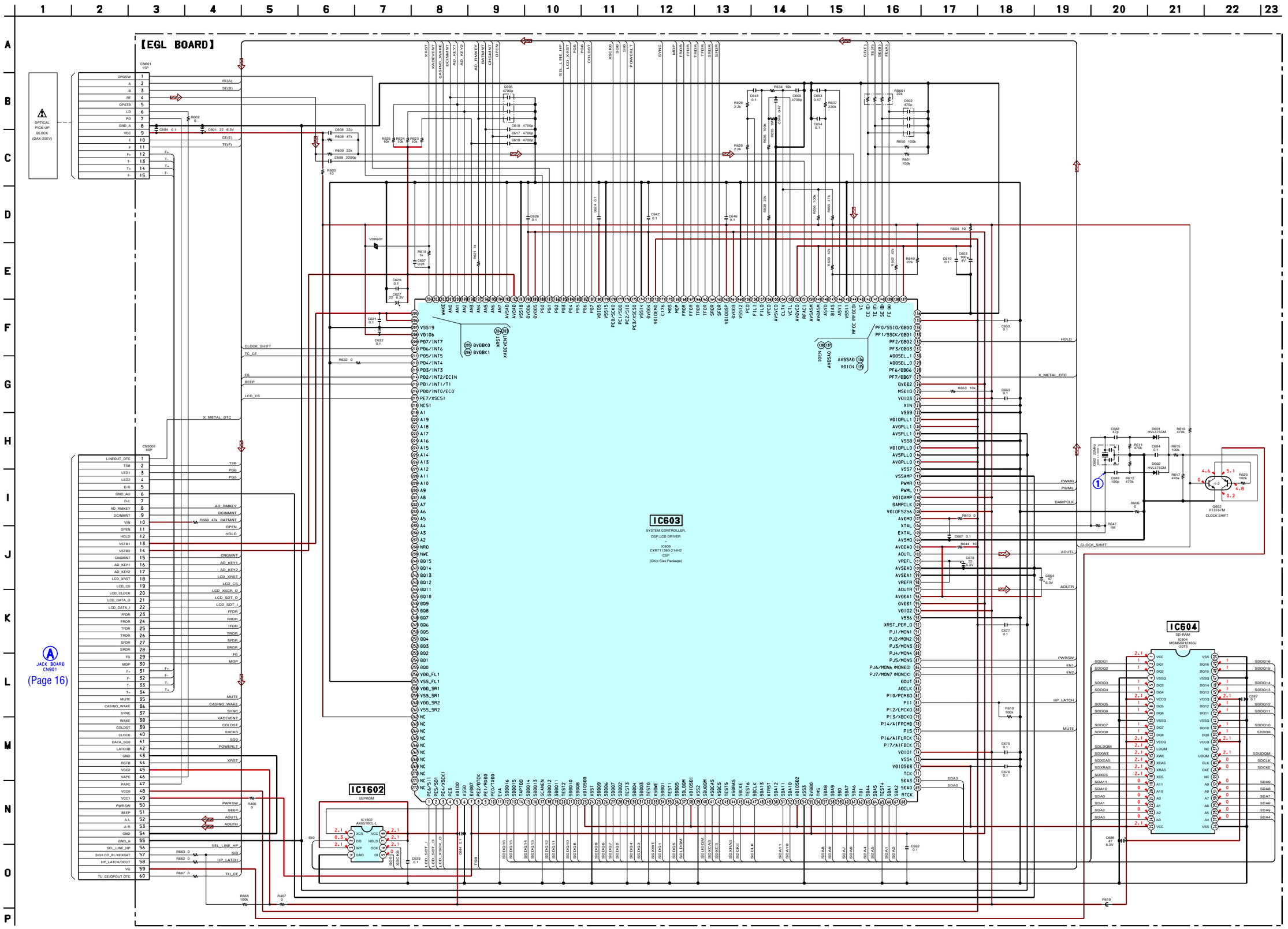


- **Semiconductor Location**

Ref. No.	Location
D601	B-2
D602	B-1
IC603	D-7
IC604	G-3
IC1602	B-4
Q602	A-1

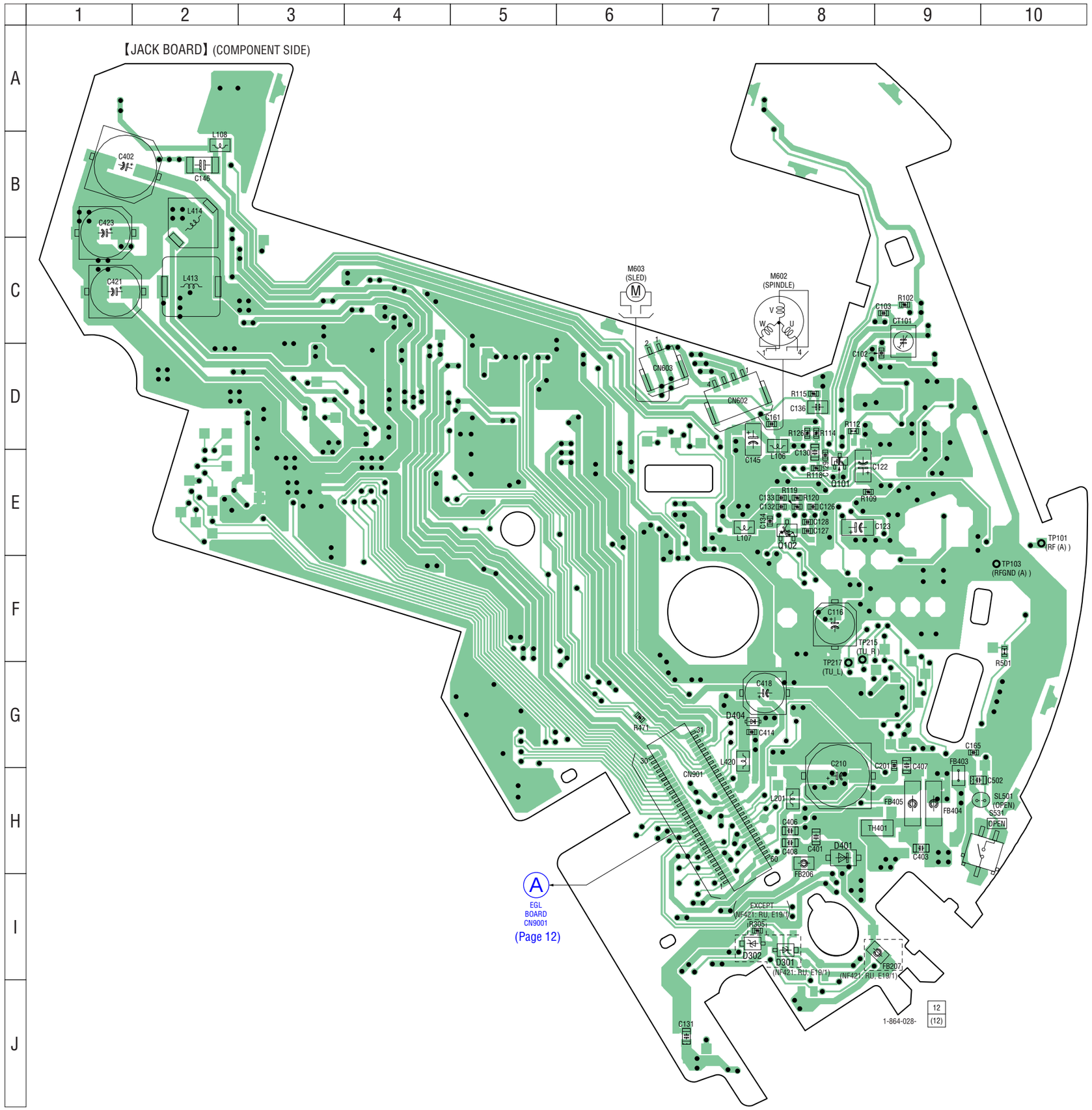
5-2. SCHEMATIC DIAGRAM – EGL BOARD –

• See page 11 for Waveforms. • See page 20 for IC Pin Function Description.



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

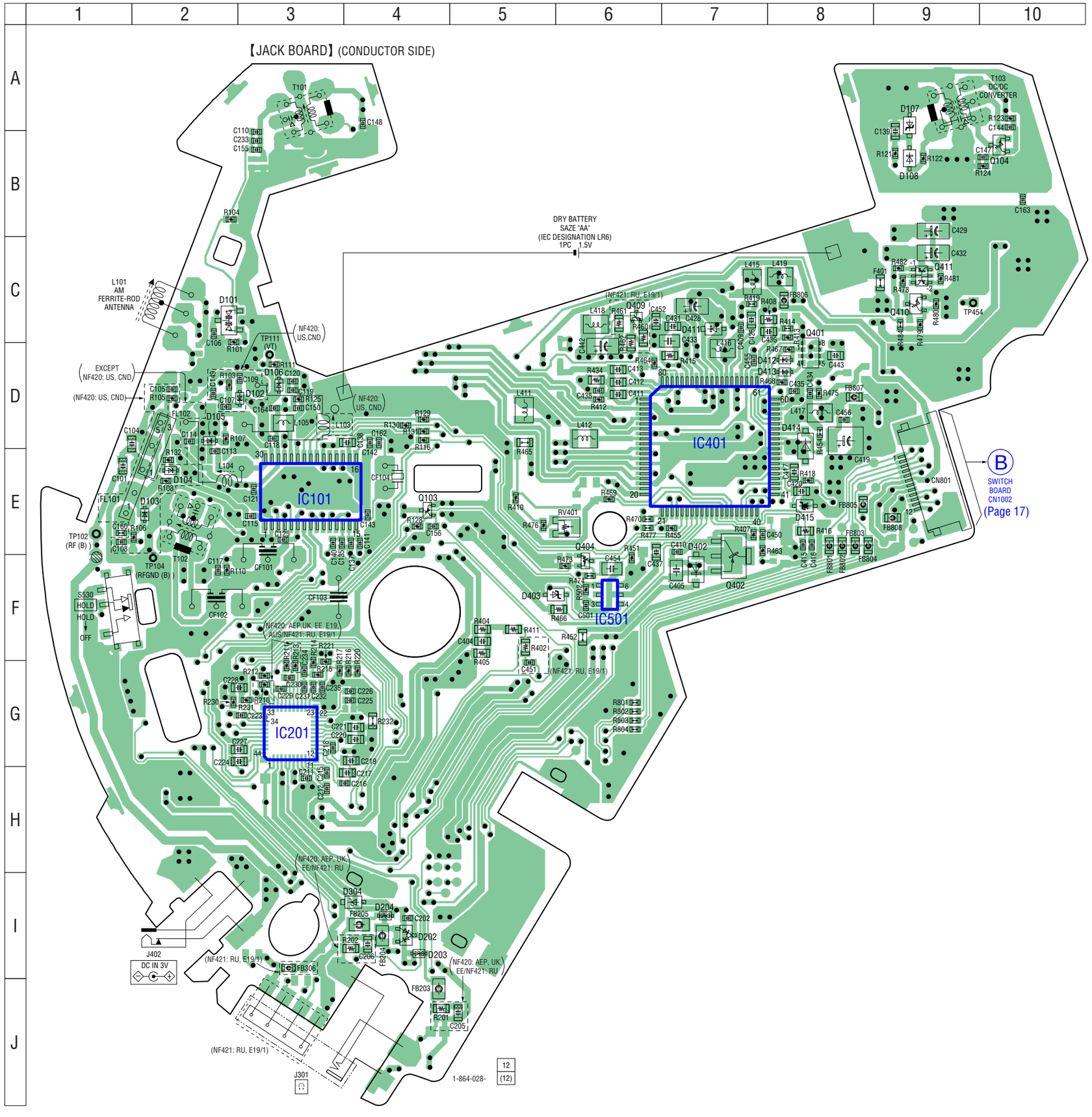
5-3. PRINTED WIRING BOARD – JACK BOARD (COMPONENT SIDE) – :Uses unleaded solder.



- **Semiconductor Location**

Ref. No.	Location
D301	I-8
D302	I-7
D401	H-8
D404	G-7
Q101	E-8
Q102	E-8

5-4. PRINTED WIRING BOARD – JACK BOARD (CONDUCTOR SIDE) – :Uses unleaded solder.



- **Semiconductor Location**

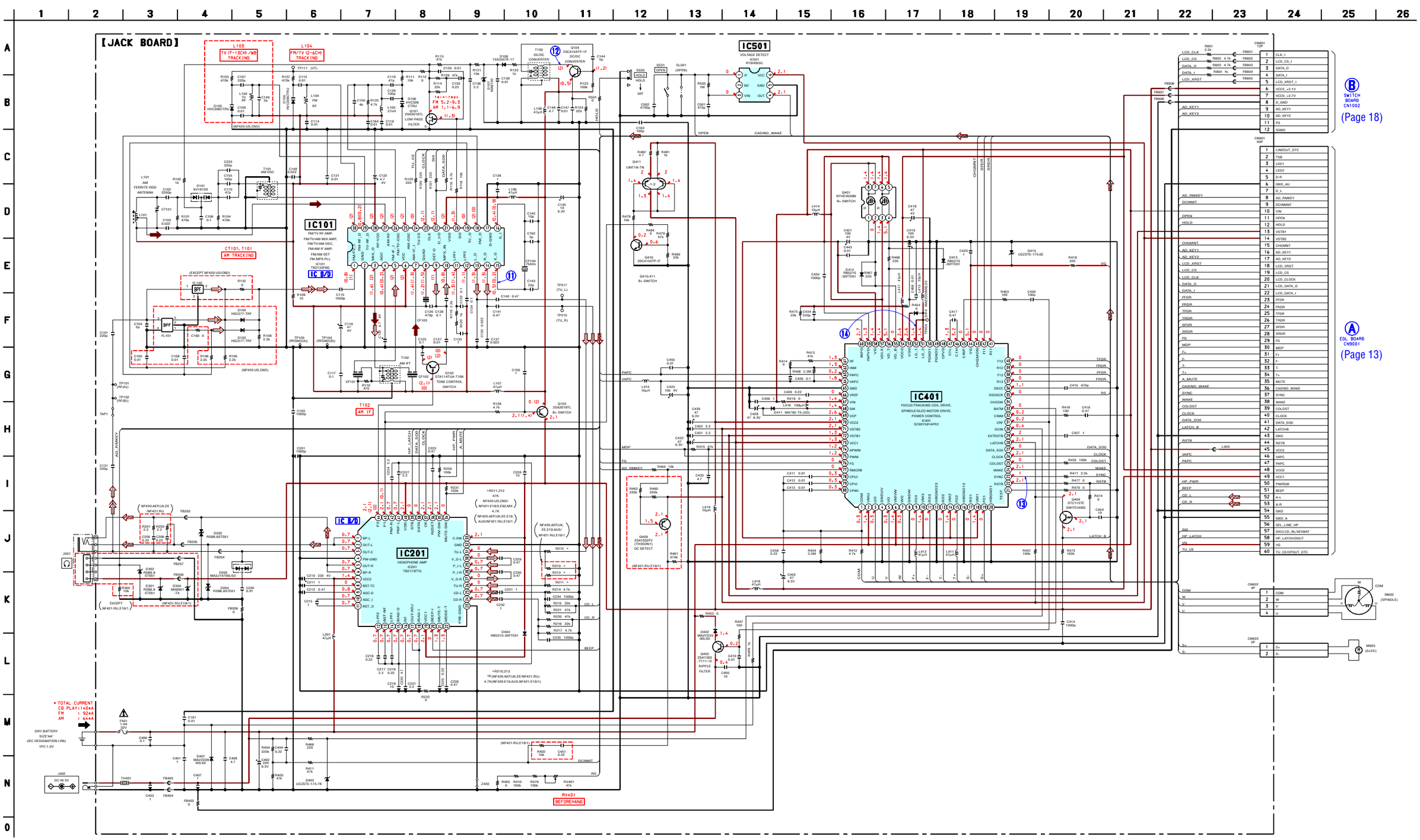
Ref. No.	Location
D101	C-2
D102	D-3
D103	E-2
D104	E-2
D105	D-2
D106	D-3
D107	A-9
D108	B-9
D202	I-4
D203	I-4
D204	I-4
D304	I-4
D402	F-7
D403	F-5
D411	C-7
D412	D-8
D413	D-8
D414	D-8
D415	E-8
IC101	E-3
IC201	G-3
IC401	D-7
IC501	F-6
Q103	E-4
Q104	B-10
Q401	D-8
Q402	F-7
Q404	F-6
Q409	C-6
Q410	C-9
Q411	C-9

D-NF420/NF421

Ver. 1.3

5-5. SCHEMATIC DIAGRAM – JACK BOARD –

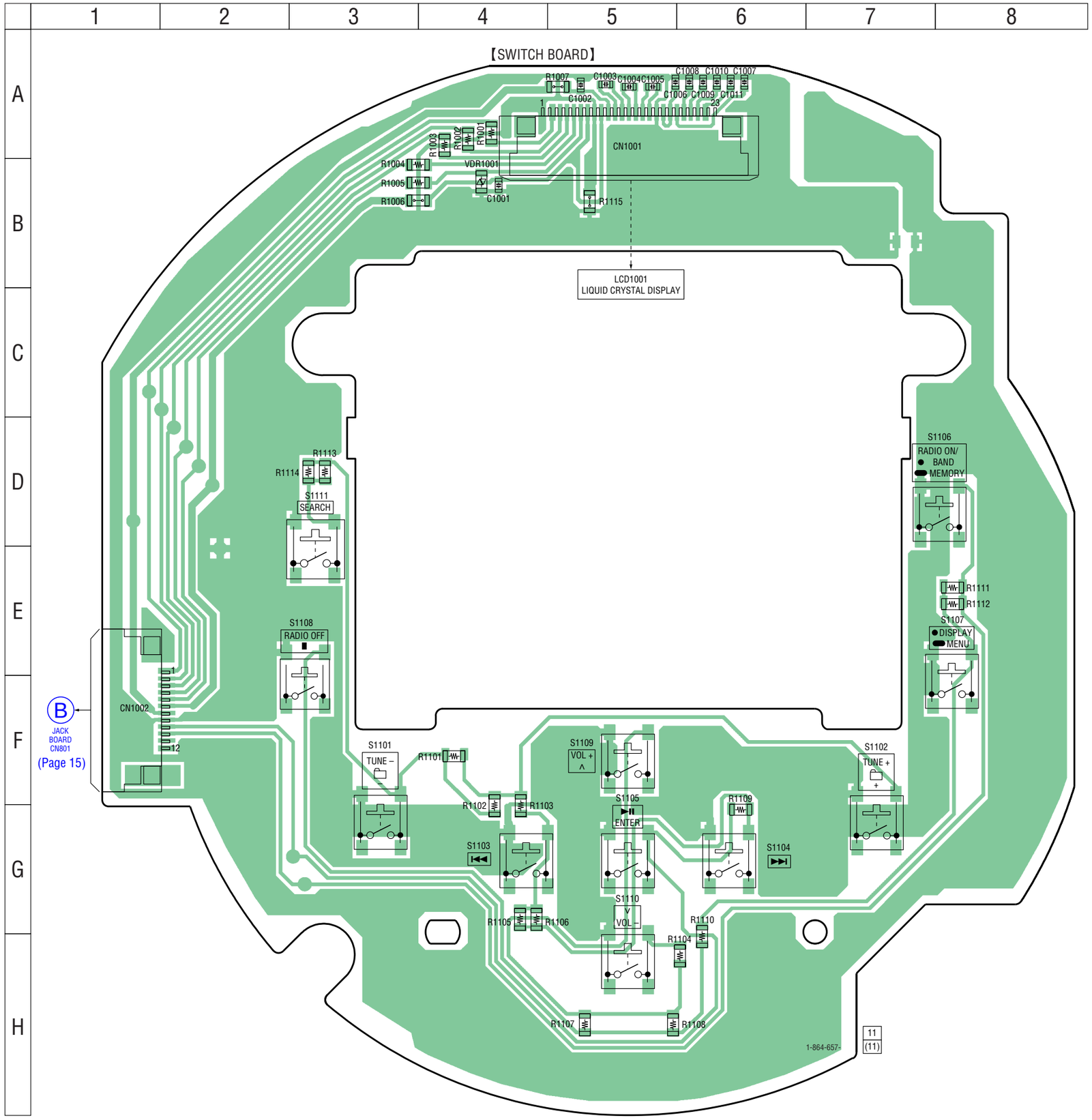
• See page 11 for Waveforms. • See page 19 for IC Block Diagrams. • See page 20 for IC Pin Function Description.



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

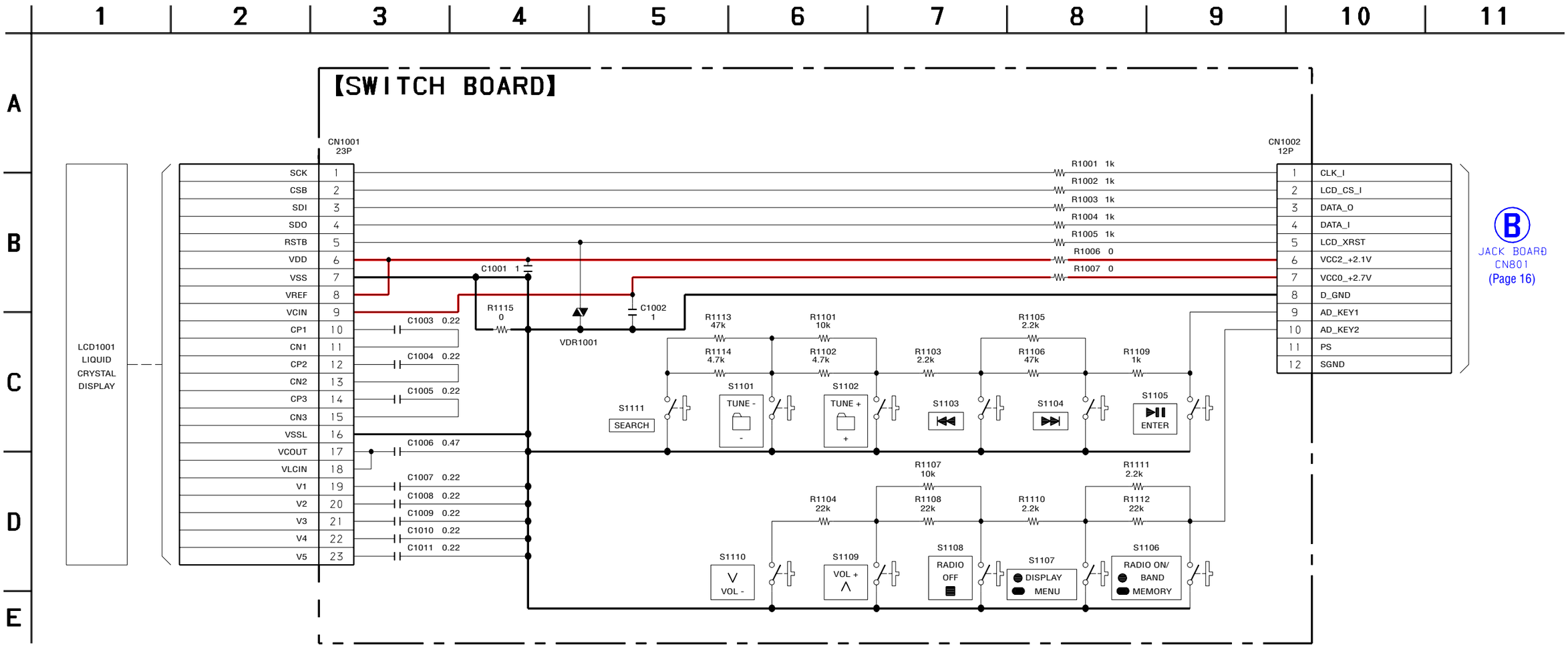
5-6. PRINTED WIRING BOARD – SWITCH BOARD (EXCEPT PSYC MODEL) – :Uses unleaded solder.

• Refer to “DISCRIMINATION OF ORIGINAL AND PSYC MODEL” in the SERVICING NOTES (page 5) about PSYC model.



5-7. SCHEMATIC DIAGRAM – SWITCH BOARD (EXCEPT PSYC MODEL) –

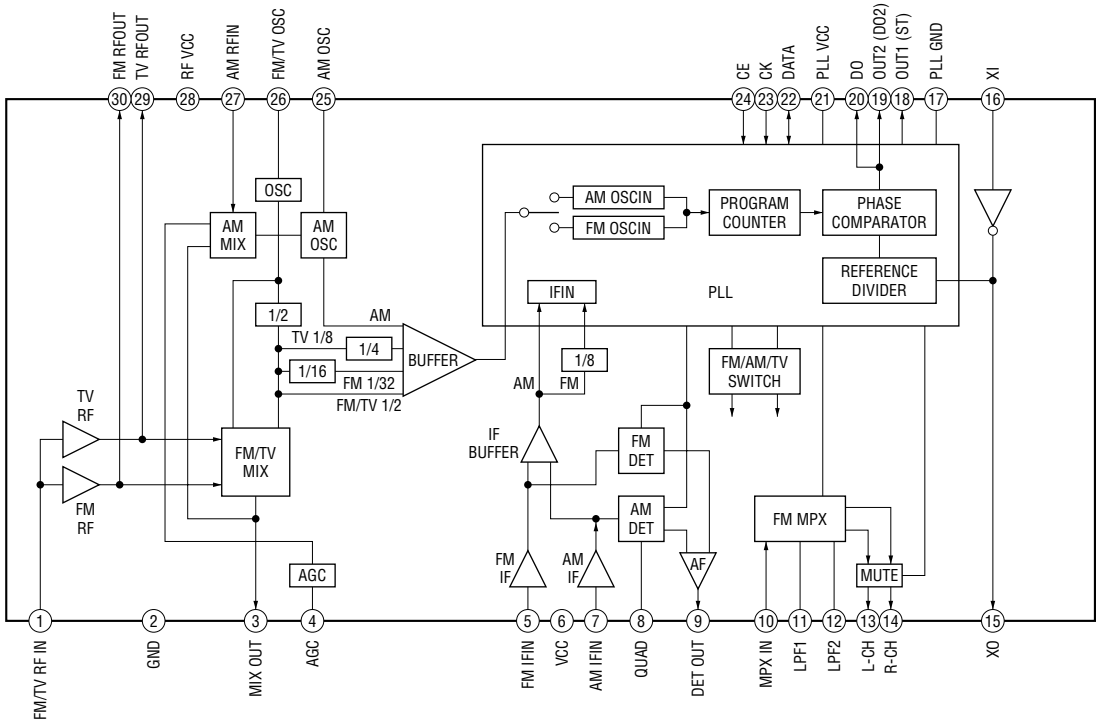
- **Refer to "DISCRIMINATION OF ORIGINAL AND PSYC MODEL" in the SERVICING NOTES (page 5) about PSYC model.**



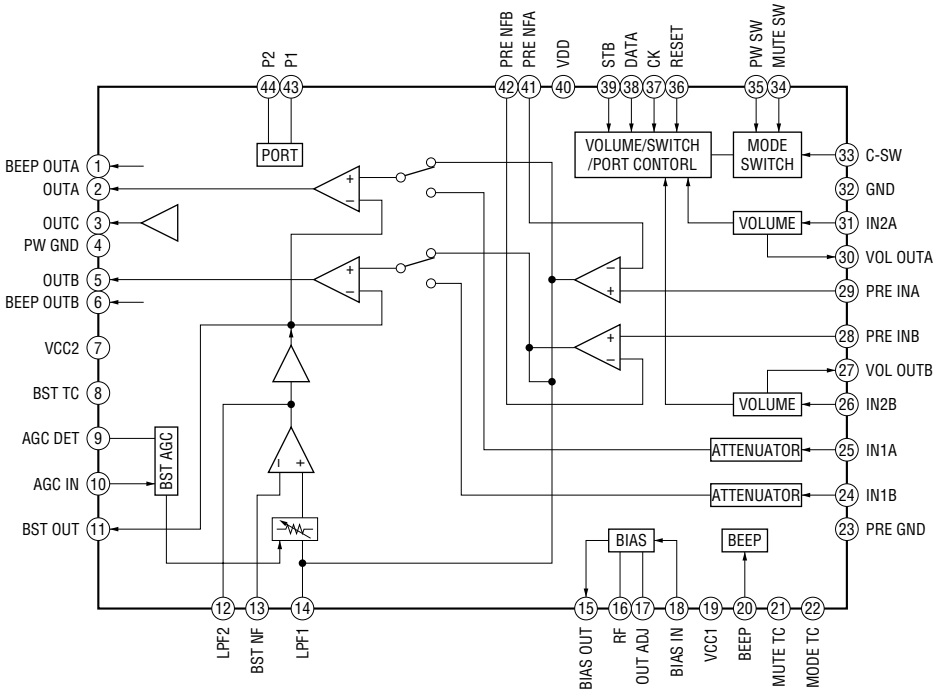
- **IC Block Diagrams**

– JACK Board –

IC101 TB2132FNG



IC201 TB2173FTG



• **IC Pin Function Description**

EGL BOARD IC603 CXR711260-214H2 (SYSTEM CONTROLLER, DSP, LCD DRIVER)

Pin No.	Pin Name	I/O	Description
1	PE6/SI1	I	Serial data input from the liquid crystal display
2	PE5/SO1	O	Serial data output to the liquid crystal display
3	PE4/XSCK1	O	Serial clock signal output to the liquid crystal display
4	PE3	O	Chip select signal output to the EEPROM
5	VDIO0	-	Power supply terminal (+2.1V)
6	VSS0	-	Ground terminal
7	DVDD7	-	Power supply terminal (+1.3V)
8	PE2/DTCK	I/O	Not used
9	PE1/RXD0	I	Not used
10	PE0/TXD0	O	Not used
11	EVA	-	Not used
12, 13	SDDQ16, SDDQ15	I/O	Two-way data bus with the SD-RAM
14	TAPTDO	-	Not used
15, 16	SDDQ14, SDDQ13	I/O	Two-way data bus with the SD-RAM
17	SCANEN	-	Not used
18, 19	SDDQ12, SDDQ11	I/O	Two-way data bus with the SD-RAM
20	TEST2	-	Not used
21, 22	SDDQ10, SDDQ8	I/O	Two-way data bus with the SD-RAM
23	VDIOSD0	-	Power supply terminal (+2.7V)
24	VSS1	-	Ground terminal
25 to 28	SDDQ9, SDDQ6, SDDQ7, SDDQ2	I/O	Two-way data bus with the SD-RAM
29	TEST3	-	Not used
30, 31	SDDQ4, SDDQ3	I/O	Two-way data bus with the SD-RAM
32	TEST0	-	Not used
33	XSDWE	O	Write enable signal output to the SD-RAM
34	SDDQ1	I/O	Two-way data bus with the SD-RAM
35	TEST1	-	Not used
36	SDDQ5	I/O	Two-way data bus with the SD-RAM
37	SDLDQM	O	Lower byte input/output mask signal output to the SD-RAM
38	VDIOSD1	-	Power supply terminal (+2.7V)
39	VSS2	-	Ground terminal
40	SDUDQM	O	Upper byte input/output mask signal output to the SD-RAM
41	XSDCAS	O	Column address strobe signal output to the SD-RAM
42	XSDCS	O	Chip select signal output to the SD-RAM
43	TEST5	-	Not used
44	XSDRAS	O	Row address strobe signal output to the SD-RAM
45	SDCKE	O	Clock enable signal output to the SD-RAM
46	TEST6	-	Not used
47	SDCLK	O	Clock signal output to the SD-RAM
48	SDA13	O	Address signal output to the SD-RAM
49	XTRST	-	Not used
50 to 52	SDA12 to SDA10	O	Address signal output to the SD-RAM
53	VDIOSD2	-	Power supply terminal (+2.7V)
54	VSS3	-	Ground terminal
55	DVDD0	-	Power supply terminal (+1.3V)

Pin No.	Pin Name	I/O	Description
56	TMS	-	Not used
57, 58	SDA8, SDA9	O	Address signal output to the SD-RAM
59	TDO	-	Not used
60, 61	SDA7, SDA6	O	Address signal output to the SD-RAM
62	TDI	-	Not used
63, 64	SDA5, SDA4	O	Address signal output to the SD-RAM
65	TEST4	-	Not used
66, 67	SDA1, SDA2	O	Address signal output to the SD-RAM
68	RTCK	-	Not used
69, 70	SDA0, SDA3	O	Address signal output to the SD-RAM
71	TCK	-	Not used
72	VDIOSD3	-	Power supply terminal (+2.7V)
73	VSS4	-	Ground terminal
74	VDIO1	-	Power supply terminal (+2.1V)
75	PI7/AIFBCK	-	Not used
76	PI6/AIFLRCK	-	Not used
77	PI5	O	Muting on/off control signal output to the headphone amplifier "H": muting on
78	PI4/AIFPCMD	-	Not used
79	PI3/XBCKO	-	Not used
80	PI2/LRCKO	-	Not used
81	PI1	O	Command latch signal output to the headphone amplifier
82	PI0/PCMDO	-	Not used
83	ADCLK	-	Not used
84	DOUT	-	Not used
85	PJ7/MON7 (MONCK)	-	Not used
86	PJ6/MON6 (MONDO)	-	Not used
87	PJ5/MON5	O	Amplifier power on/off control signal output to the headphone amplifier "H": amplifier power on
88 to 91	PJ4/MON4 to PJ1/MON1	-	Not used
92	XRST_PWR_O	-	Not used
93	VSS6	-	Ground terminal
94	VDIO2	-	Power supply terminal (+2.1V)
95	DVDD1	-	Power supply terminal (+1.3V)
96	AVDDA1	-	Power supply terminal (+2.7V)
97	AOUTR	O	Analog audio signal output to the headphone amplifier (R-ch)
98	VREFR	O	Reference voltage output terminal (R-ch)
99, 100	AVSDA1, AVSDA0	-	Ground terminal
101	VREFL	O	Reference voltage output terminal (L-ch)
102	AOUTL	O	Analog audio signal output to the headphone amplifier (L-ch)
103	AVDDA0	-	Power supply terminal (+2.7V)
104	AVSMO	-	Ground terminal
105	EXTAL	O	System clock output terminal (22 MHz)
106	XTAL	I	System clock input terminal (22 MHz)
107	AVDMO	-	Power supply terminal (+2.7V)
108	VDIOFS256	-	Power supply terminal (+2.1V)

Pin No.	Pin Name	I/O	Description
109	DAMPCLK	-	Not used
110	VDIOAMP	-	Power supply terminal (+2.1V)
111	PWML	-	Not used
112	PWMR	-	Not used
113	VSSAMP	-	Ground terminal
114	VSS7	-	Ground terminal
115	AVDPLL0	-	Power supply terminal (+2.7V)
116	AVSPLL0	-	Ground terminal
117	VDIOPLL0	-	Power supply terminal (+2V)
118	VSS8	-	Ground terminal
119	AVSPLL1	-	Ground terminal
120	AVDPLL1	-	Power supply terminal (+2.7V)
121	VDIOPLL1	-	Power supply terminal (+2V)
122	VSS9	-	Ground terminal
123	XIN	-	Not used
124	VDIO3	-	Power supply terminal (+2.1V)
125	MSDIO	-	Not used
126	DVDD2	-	Power supply terminal (+1.3V)
127, 128	PF7/DBG7, PF6/DBG6	-	Not used
129, 130	ADDSEL_0, ADDSEL_1	-	Not used
131	PF3/DBG3	-	Not used
132	PF2/DBG2	I	HOLD switch input terminal "L": hold on
133	PF1/SSCK/DBG1	-	Not used
134	PF0/SSIO/DBG0	-	Not used
135	VDIO4	-	Power supply terminal (+2V)
136	AVSSAD	-	Ground terminal
137	AVDSAD	-	Power supply terminal (+2.1V)
138	IGEN	I	Stabilized current input for operational amplifiers
139	FE (A)	I	A signal input from the optical pick-up block
140	SE (B)	I	B signal input from the optical pick-up block
141	TE (F)	I	F signal input from the optical pick-up block
142	CE (E)	I	E signal input from the optical pick-up block
143	VC	I	Middle point voltage input terminal Not used
144	RFDC (RFDCO)	I	RF signal input from the optical pick-up block
145	VSS11	-	Ground terminal
146	ASYI	I	Asymmetry comparator voltage input terminal
147	BIAS	I	Asymmetry circuit constant current input terminal
148	ASYO	O	EFM full-swing output terminal
149	AVDASM	-	Power supply terminal (+2.1V)
150	AVSASM	-	Ground terminal
151	RFACI	I	EFM signal input from the optical pick-up
152	AVDVCO	-	Power supply terminal (+2.1V)
153	VCTL	I	VCO control voltage input terminal for the wideband EFM PLL
154	CLTV	I	Internal VCO control voltage input terminal
155	AVSVCO	-	Ground terminal
156	VPCO	O	Charge pump output terminal for the wideband EFM PLL

Pin No.	Pin Name	I/O	Description
157	FILO	O	Filter output terminal for master PLL
158	FILI	I	Filter input terminal for master PLL
159	PCO	O	Charge pump output terminal for master PLL
160	VSS12	-	Ground terminal
161	DVDD3	-	Power supply terminal (+1.3V)
162	VDIODSP	-	Power supply terminal (+2V)
163	SFDR	O	Sled servo drive signal (+) output to the motor/coil drive
164	SRDR	O	Sled servo drive signal (-) output to the motor/coil drive
165	TFDR	O	Tracking servo drive signal (+) output to the motor/coil drive
166	TRDR	O	Tracking servo drive signal (-) output to the motor/coil drive
167	FFDR	O	Focus servo drive signal (+) output to the motor/coil drive
168	FRDR	O	Focus servo drive signal (-) output to the motor/coil drive
169	MDP	O	Spindle motor servo drive signal output to the motor/coil drive
170	MDS	-	Not used
171	C176	O	176.4 kHz clock signal output to the motor/coil drive
172	VDIOEM0	-	Power supply terminal (+2V)
173	DVDD4	-	Power supply terminal (+1.3V)
174	VSS14	-	Ground terminal
175	PC3/XSCS0	O	Command latch signal output to the power control
176	PC2/SI0	I	Serial data input from the FM/AM/TV tuner and EEPROM
177	PC1/SO0	O	Serial data output to the power control and EEPROM
178	PC0/SCK0	O	Serial clock signal output to the power control and EEPROM
179	VSS15	-	Ground terminal
180	VDIO5	-	Power supply terminal (+2V)
181	PG7	I	Cold start flag input from the power control
182, 183	PG6, PG5	-	Not used
184	PG4	O	Reset signal output to the liquid crystal display
185, 186	PG3, PG2	-	Not used
187	PG1	O	Standby signal output to the optical pick-up block
188	PG0	O	RF gain-up signal output for CD-RW to the optical pick-up block
189, 190	DVDD5, DVDD6	-	Power supply terminal (+1.3V)
191	VSS18	-	Ground terminal
192	AVDAD	-	Power supply terminal (+2V)
193	AVSAD	-	Ground terminal
194	AN7	I	CD lid open/close switch input terminal "L": close, "H": open
195	AN6	I	Charge voltage monitor input from the power control
196	AN5	I	Battery voltage monitor input terminal
197	AN4	I	Wake up signal input from the power control Remote commander key input terminal (NF421: Russian, Singapore, Malaysia and Thai models only)
198	AN3	-	Not used
199, 200	AN2, AN1	I	Top panel key input terminal (A/D input)
201	AN0	I	DCIN voltage monitor input terminal
202	WAKE	I	Wake up signal input terminal
203	XADEVENT	O	Wake up signal output to the power control
204	XRST	I	System reset signal input from the power control
205, 206	DVDBK0, DVDBK1	-	Power supply terminal (+1.2V)
207	VSS19	-	Ground terminal

Pin No.	Pin Name	I/O	Description
208	VDIO6	-	Power supply terminal (+2V)
209	PD7/INT7	-	Not used
210	PD6/INT6	O	Tuner clock shift signal output terminal
211	PD5/INT5	O	Chip enable signal output to the FM/AM/TV tuner
212, 213	PD4/INT4, PD3/INT3	-	Not used
214	PD2/INT2/ECIN	I	FG signal input from the motor/coil drive
215	PD1/INT1/T1	O	Beep signal output to the headphone amplifier
216	PD0/INT0/EC0	-	Not used
217	PE7/XSCS1	O	Command latch signal output to the liquid crystal display
218	NCS1	-	Not used
219 to 237	A0, A19 to A1	-	Not used
238	NRD	-	Not used
239	NWE	-	Not used
240 to 255	DQ15 to DQ0	-	Not used
256	VDD_FL1	-	Power supply terminal Not used
257	VSS_FL1	-	Ground terminal
258	VDD_SR1	-	Power supply terminal Not used
259	VSS_SR1	-	Ground terminal
260	VDD_SR2	-	Power supply terminal Not used
261	VSS_SR2	-	Ground terminal
262 to 272	NC	-	Not used

JACK BOARD IC401 SC901591AFR2
(FOCUS/TRACKING COIL DRIVE, SPINDLE/SLED MOTOR DRIVE, POWER CONTROL)

Pin No.	Pin Name	I/O	Description
1	COM	I	Comparator (U/V/W) negative pole input terminal
2	VMU	-	Power supply terminal (for spindle motor drive U phase)
3	UO	O	Spindle motor drive U phase output terminal
4	GNDUV	-	Ground terminal (for spindle motor drive U/V phase)
5	VO	O	Spindle motor drive V phase output terminal
6	VMVW	-	Power supply terminal (for spindle motor drive V/W phase)
7	WO	O	Spindle motor drive V phase output terminal
8	GNDW	-	Ground terminal (for spindle motor drive W phase)
9	FO3	O	Focus coil drive signal (+) output terminal
10	VM3	-	Power supply terminal (for focus coil drive)
11	RO3	O	Focus coil drive signal (-) output terminal
12	HBGND23	-	Ground terminal (for focus/tracking coil drive)
13	RO2	O	Tracking coil drive signal (-) output terminal
14	VM2	-	Power supply terminal (for tracking coil drive)
15	FO2	O	Tracking coil drive signal (+) output terminal
16	HBGND12	-	Ground terminal (for tracking coil drive and sled motor drive)
17	RO1	O	Sled motor drive signal (-) output terminal
18	VM1	-	Power supply terminal (for sled motor drive)
19	FO1	O	Sled motor drive signal (+) output terminal
20	HBGND1	-	Ground terminal (for sled motor drive)
21	TEST	-	Test mode terminal
22	RSTB	O	System reset signal output to the system controller
23	SYNC	I	176.4 kHz clock signal input from the system controller
24	WAKE	I	Wake up signal input from the system controller
25	COLDST	O	Cold start flag output to the system controller
26	CLOCK	I	Serial clock signal input from the system controller
27	DATA	I	Serial data input from the system controller
28	LATCHB	I	Command latch signal input from the system controller
29	EXTRSTB	I	External reset signal input terminal Not used
30	DCIN	-	AC adapter power supply connection terminal
31	CRF	O	Battery charge circuit error amplifier output for rechargeable battery
32	CINM	I	Battery charge circuit error amplifier invert input for rechargeable battery
33	BATM	-	Battery minus terminal
34	CHGSW	O	Battery charge control transistor drive signal output for rechargeable battery Not used
35	RSOSCR	-	Connection terminal of sense resistor and external resistor for internal oscillation circuit
36	OSCC	-	External capacitor connection terminal for internal oscillation circuit
37	RI3	I	Focus servo drive signal (-) input from the system controller
38	FI3	I	Focus servo drive signal (+) input from the system controller
39	RI2	I	Tracking servo drive signal (-) input from the system controller
40	FI2	I	Tracking servo drive signal (+) input from the system controller
41	RI1	I	Sled servo drive signal (-) input from the system controller
42	FI1	I	Sled servo drive signal (+) input from the system controller
43	CHGMON	O	Charge voltage monitor output to the system controller
44	VG	O	VG power supply output terminal (+5V)
45	CINP	I	Battery charge circuit error amplifier non-invert input for rechargeable battery

Pin No.	Pin Name	I/O	Description
46	C1H	-	Capacitor connection terminal for charge pump (high side) of VG power supply circuit
47	C1L	-	Capacitor connection terminal for charge pump (low side) of VG power supply circuit
48	CPVO	I	Check terminal for phase compensation VCC0 power supply phase
49, 50	PGND2, PGND1	-	Ground terminal (for VCC0 switching power supply circuit)
51, 52	LO_2, LO_1	-	Coil connection terminal for VCC0 switching power supply circuit
53	VO0	O	VO0 voltage output terminal of switching power supply circuit Not used
54	VCC0	O	VCC0 power supply voltage output terminal (+2.7V)
55	VD_B	O	FET (bottom side) drive signal output for VD switching power supply circuit
56	VD_T	O	FET (top side) drive signal output for VD switching power supply circuit
57	VDLX	-	Coil connection terminal for VD switching power supply circuit
58	VD	I	Feed back voltage input terminal of VD switching power supply circuit
59	INPVD	I	Error amplifier non-invert input of VD switching power supply circuit
60	INP0	I	Error amplifier non-invert input of VCC0 switching power supply circuit
61	RF	-	Error amplifier connection terminal of APC circuit
62	INM	O	Error amplifier output terminal of APC circuit
63	PAPC	I	Feed back voltage input terminal of APC circuit
64	VAPC	O	Voltage output terminal of APC circuit
65	GND	-	Ground terminal
66	VREF	O	Reference voltage output terminal
67	VIN	-	Dry battery connection terminal
68	SW	-	Coil connection terminal for VCP power supply circuit
69	VCP	O	Voltage output terminal of VCP power supply circuit
70	VCC2	O	VCC2 power supply voltage output terminal (+2.1V)
71	VSTB2	O	Standby power supply (2) output terminal (+2V)
72	VSTB1	O	Standby power supply (1) output terminal (+1.2V)
73	VCC1	O	VCC1 power supply voltage output terminal (+1.3V)
74, 75	APWM, PWM	I	Spindle motor servo drive signal input from the system controller
76	FG	O	FG signal output to the system controller
77	RMCRB	O	Wake up signal output to the systerm controller
78	CPUI	I	Comparator (U) positive pole input terminal
79	CPVI	I	Comparator (V) positive pole input terminal
80	CPWI	I	Comparator (W) positive pole input terminal

SECTION 6
EXPLODED VIEWS

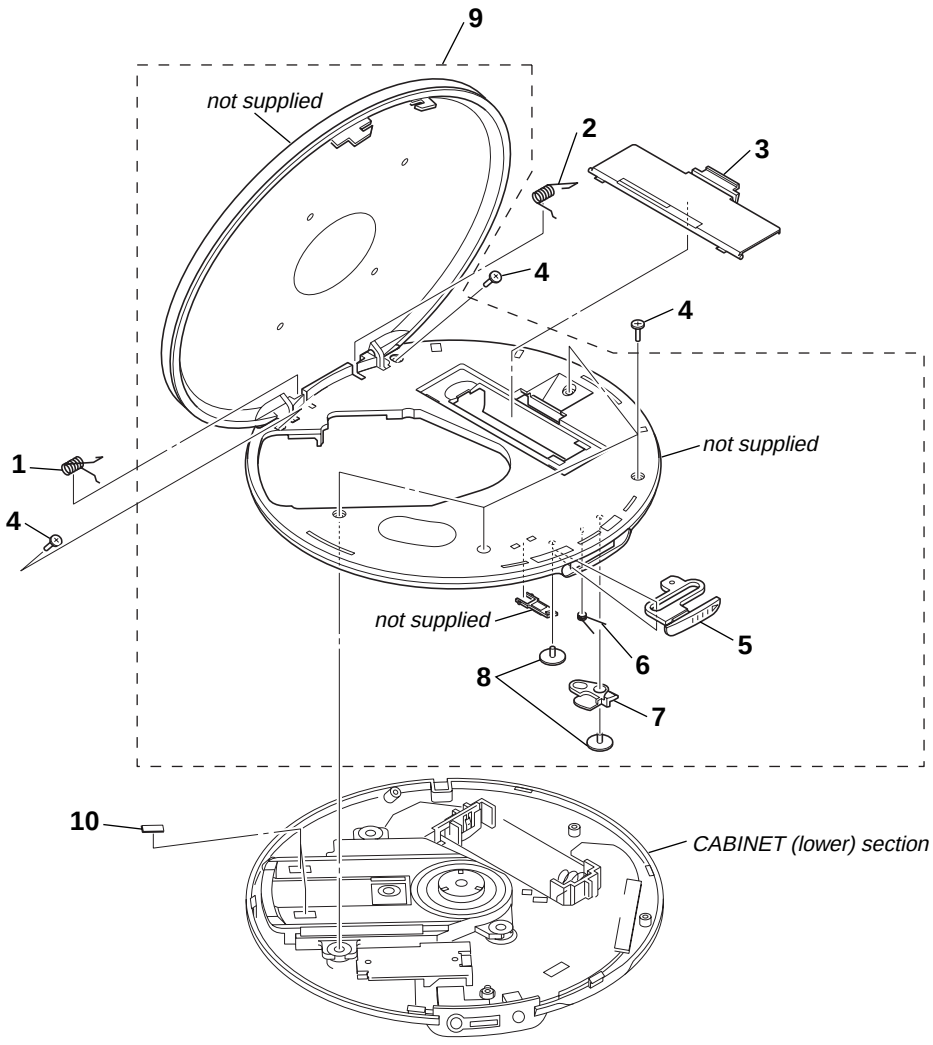
NOTE:

- -XX and -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.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts of Color Cabinet's Color
- Accessories are given in the last of the electrical parts list.
- Refer to "DISCRIMINATION OF ORIGINAL AND PSYC MODEL" in the SERVICING NOTES (page 5) about PSYC model.
- Refer to "COLOR VARIATION" in the "SERVICING NOTES" (page 5) about color variation of model and destination.
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  E/4 : Argentina model
  E19 : South African, Singapore, Malaysia, Vietnam and Indian model
  E19/1 : Singapore, Malaysia and Thai model
  E19/2 : Chilean and Peruvian model
  E92 : Panama, Venezuelan and Caribbian Can model
  EE : East European and Russian model
  MX : Mexican model
  RU : Russian model

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

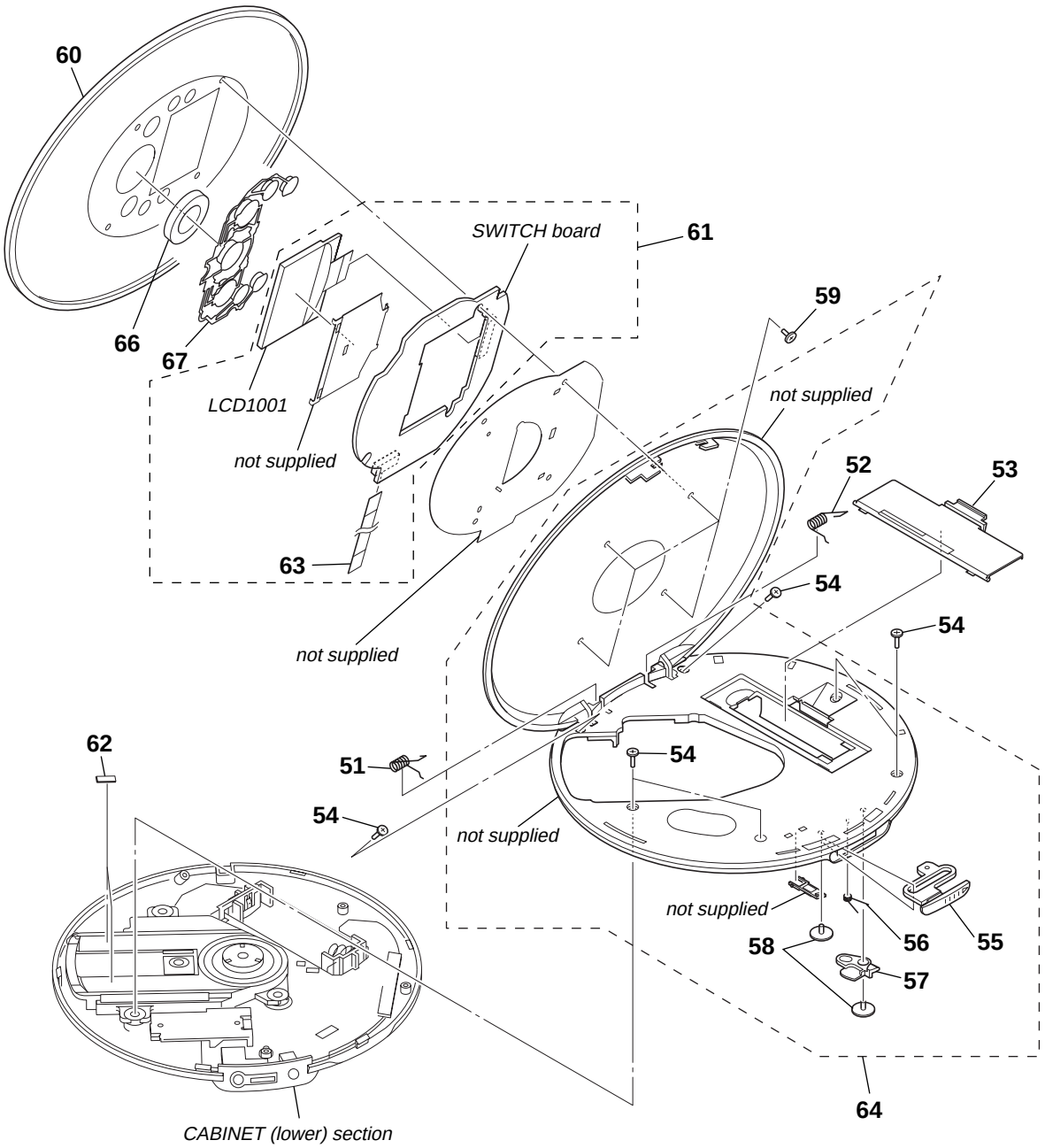
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. UPPER LID SUB ASSY SECTION (PSYC model)



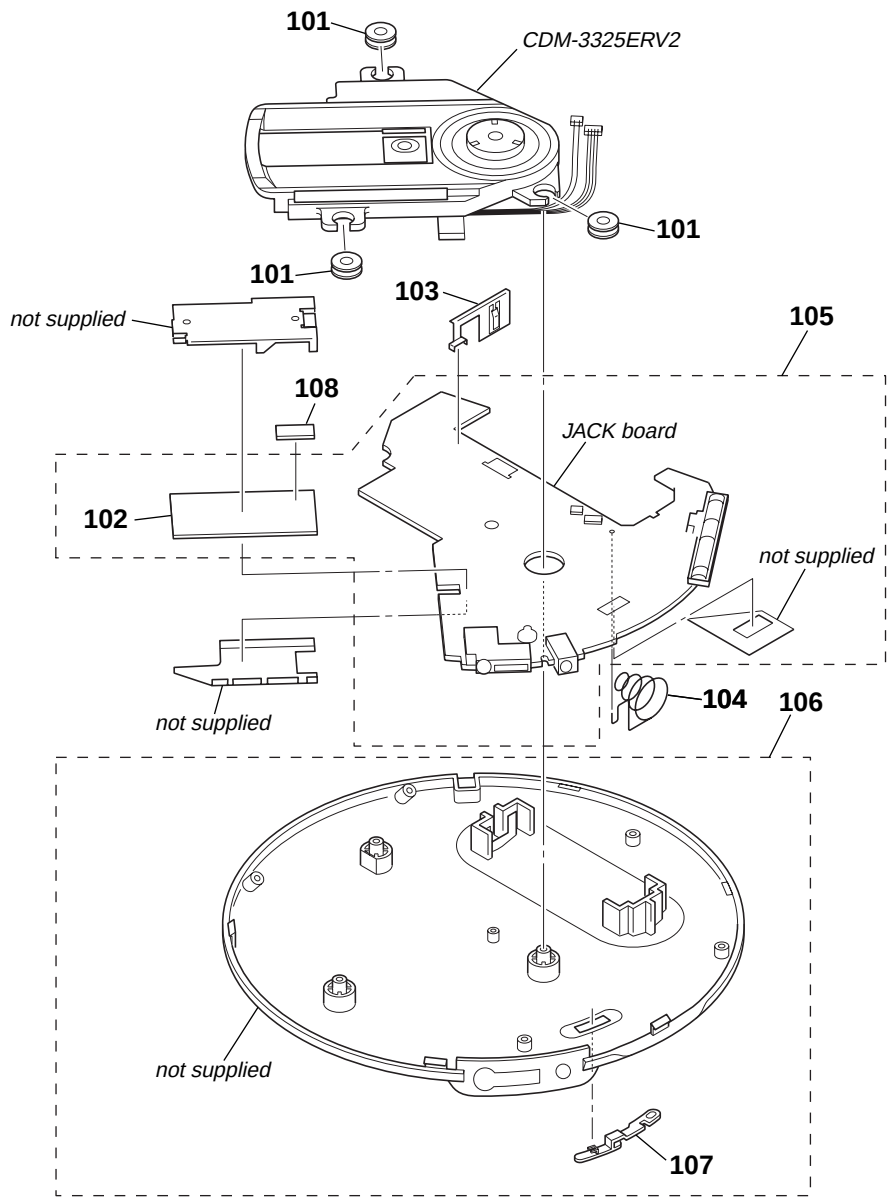
Ref. No.	Part No.	Description	Remark
1	2-187-934-01	SPRING (LEFT)	
2	2-187-935-01	SPRING (RIGHT)	
3	2-541-612-71	LID, BATTERY (BLUE)	
4	3-254-058-11	SCREW	
5	2-187-928-11	KNOB (OPEN) (BLUE)	
6	2-187-930-01	SPRING (OPEN)	
7	2-187-929-01	LEVER (OPEN)	
8	3-034-792-11	SCREW, TAPPING (B2.0)	
9	X-2048-622-1	LID SUB ASSY, UPPER	
10	3-252-725-01	SPACER, CDM	

6-2. UPPER LID SECTION (EXCEPT PSYC model)



Ref. No.	Part No.	Description	Remark
51	2-187-934-01	SPRING (LEFT)	
52	2-187-935-01	SPRING (RIGHT)	
53	2-541-612-61	LID, BATTERY	
54	3-254-058-11	SCREW	
55	2-187-928-01	KNOB (OPEN)	
56	2-187-930-01	SPRING (OPEN)	
57	2-187-929-01	LEVER (OPEN)	
58	3-034-792-11	SCREW, TAPPING (B2.0)	
59	3-254-082-01	SCREW	
60	X-2048-624-1	LID SUB ASSY, COVER (UPPER) (SILVER)	(NF420)
60	X-2048-625-1	LID SUB ASSY, COVER (UPPER) (SILVER)	(NF421)
61	A-1081-774-A	SWITCH BOARD, COMPLETE	
62	3-252-725-01	SPACER, CDM	
63	1-829-981-11	CABLE, FLEXIBLE FLAT (12 CORE)	
64	X-2050-418-1	LID (S) SUB ASSY, UPPER (SILVER)	
66	2-187-924-01	BUTTON (SCROLL)(∧ ▶▶I ∨ I◀◀)	
67	2-187-925-01	BUTTON (CONTROL) (RADIO ON/BAND MEMORY, DISPLAY MENU, GROUP +, ▶II ENTER, GROUP –, ■, SEARCH)	
LCD1001	1-805-689-21	DISPLAY PANEL, LIQUID CRYSTAL	

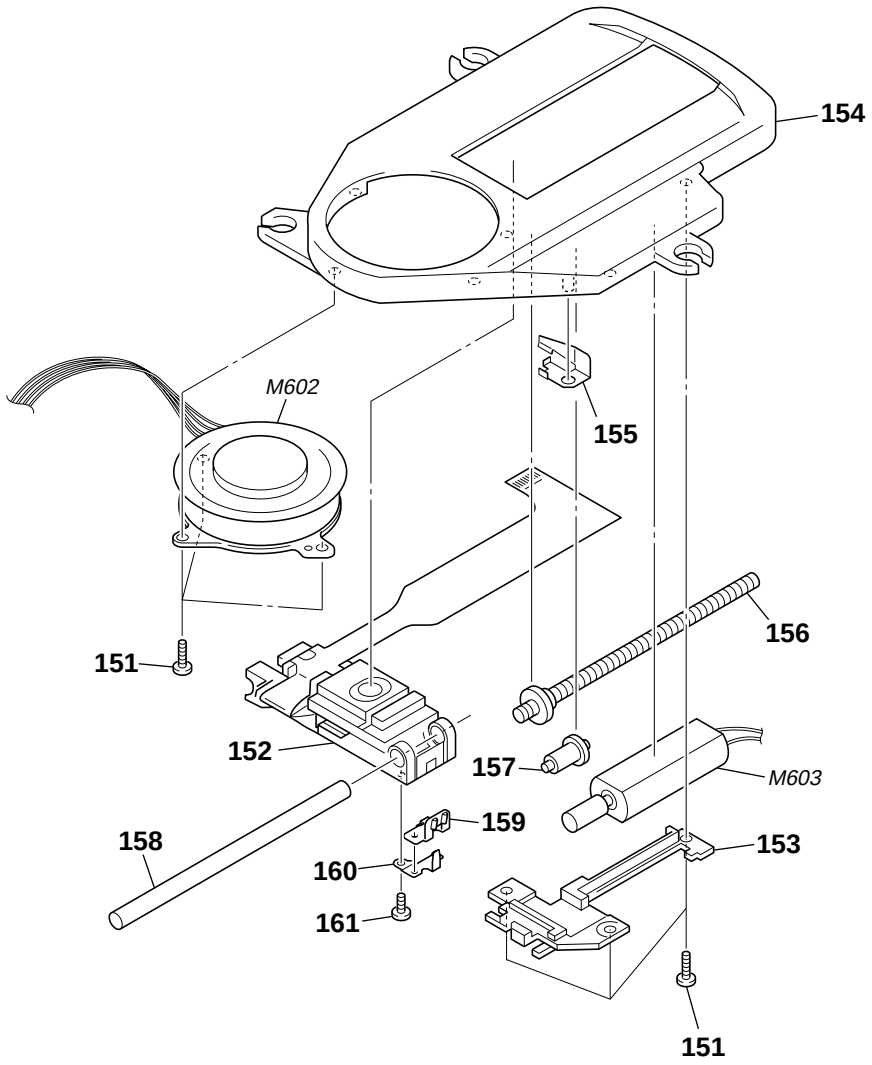
6-3. CABINET (LOWER) SECTION



Ref. No.	Part No.	Description	Remark
101	3-245-331-02	INSULATOR	
102	A-1081-778-B	EGL BOARD, COMPLETE (NF420: US, CND, E/4, E19, AUS/NF421: E19/1, E19/2, E92, MX)	
102	A-1094-414-B	EGL BOARD, COMPLETE (NF420: AEP, UK, EE/NF421: RU)	
103	2-187-932-01	TERMINAL BOARD (+) (NF421: E19/1)	
103	2-187-932-11	TERMINAL BOARD (+) (EXCEPT NF421: E19/1)	
104	2-187-933-01	SPRING (–), COIL (NF421: E19/1)	
104	2-187-933-11	SPRING (–), COIL (EXCEPT NF421: E19/1)	
105	A-1081-743-A	JACK BOARD, COMPLETE (NF420: US, CND)	
105	A-1081-776-A	JACK BOARD, COMPLETE (NF420: AEP, UK, EE)	

Ref. No.	Part No.	Description	Remark
105	A-1081-790-A	JACK BOARD, COMPLETE (NF420: E/4/NF421: E19/2, E92, MX)	
105	A-1081-791-A	JACK BOARD, COMPLETE (NF420: E19, AUS)	
105	A-1118-201-A	JACK BOARD, COMPLETE (NF421: RU)	
105	A-1122-801-A	JACK BOARD, COMPLETE (NF421: E19/1)	
106	X-2048-761-1	CABINET (LOWER) ASSY (NF420: US, CND)	
106	X-2048-763-1	CABINET (LOWER) ASSY (EXCEPT NF420: US, CND)	
107	2-178-877-31	KNOB, HOLD (SILVER) (EXCEPT NF420: US, CND)	
107	2-178-877-41	KNOB, HOLD (BLUE) (NF420: US, CND)	
108	4-225-396-01	SPACER (C)	

6-4. OPTICAL PICK-UP SECTION (CDM-3325ERV2)



Ref. No.	Part No.	Description	Remark
151	3-318-203-61	SCREW (B1.7X4), TAPPING	
⚠152	X-3383-995-1	OPTICAL PICK-UP (DAX-25EV)	
153	3-221-473-01	COVER, GEAR	
154	3-221-472-02	CHASSIS	
155	3-221-474-01	SPRING, SLED	
156	A-3331-663-A	SCREW (FEED) ASSY	
157	3-221-268-01	GEAR (B)	

Ref. No.	Part No.	Description	Remark
158	3-221-475-01	SHAFT, STANDARD	
159	3-222-298-01	RACK	
160	3-222-299-01	SPRING, RACK RETAINER	
161	3-348-998-31	SCREW (M1.4X2.5), TAPPING, PAN	
M602	A-3608-777-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
M603	A-3174-850-A	MOTOR ASSY, SLED	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 7
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 and -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
- Abbreviation
  AUS : Australian model
  CND : Canadian model
  E/4 : Argentina model
  E19 : South African, Singapore, Malaysia, Vietnam and Indian model
  E19/1 : Singapore, Malaysia and Thai model
  E19/2 : Chilean and Peruvian model
  E92 : Panama, Venezuelan and Caribbian Can model
  EE : East European and Russian model
  MX : Mexican model
  RU : Russian model
- 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... : µA... uPA... : µPA...
  uPB... : µPB... uPC... : µPC...
  uPD... : µPD...
- CAPACITORS
  uF: µF
- COILS
  uH: µH

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

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

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

- Refer to "DISCRIMINATION OF ORIGINAL AND PSYC MODEL" in the SERVICING NOTES (page 4) about PSYC model.

Ref. No.	Part No.	Description			Remark
	A-1081-778-B	EGL BOARD, COMPLETE (NF420: US, CND, E/4, E19, AUS/NF421: E19/1, E19/2, E92, MX)			
	A-1094-414-B	EGL BOARD, COMPLETE (NF420: AEP, UK, EE/NF421: RU)			
		********** (Included in JACK BOARD, COMPLETE)			
		< CAPACITOR >			
C601	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C602	1-112-063-11	CERAMIC CHIP	470PF	10%	50V
C603	1-100-661-11	TANTALUM CHIP	100uF	20%	4V
C607	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C608	1-164-858-11	CERAMIC CHIP	22PF	5%	50V
C609	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C610	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C617	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C618	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C619	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C624	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C626	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C627	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C629	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C631	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C632	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C639	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C642	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C644	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C646	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C648	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C649	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C650	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C653	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C654	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C659	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C662	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C663	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C664	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C667	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C675	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C676	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C677	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C678	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C682	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C683	1-164-931-11	CERAMIC CHIP	100PF	10%	50V
C684	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C686	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C687	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C694	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C695	1-100-945-11	CERAMIC CHIP	4700PF	10%	25V
		< CONNECTOR >			
CN601	1-818-130-11	CONNECTOR, FFC/FPC (ZIF) 15P			
CN9001	1-818-894-11	CONNECTOR, BOARD TO BOARD 60P			
		< DIODE >			
D601	6-501-065-01	DIODE HVL375CMKRF-E			
D602	6-501-065-01	DIODE HVL375CMKRF-E			
		< IC >			
@ IC603	1-789-071-31	MOUNTED PC BOARD (CXR711260-214H2)			
IC604	6-707-964-01	IC MSM56X16160J-20T3			
IC1602	6-702-355-01	IC AK6510CL-L			
		< TRANSISTOR >			
Q602	6-550-875-01	TRANSISTOR	RT3T67M		
		< RESISTOR/FERRITE BEAD >			
R406	1-218-990-11	SHORT CHIP	0		
R407	1-218-990-11	SHORT CHIP	0		
R602	1-218-990-11	SHORT CHIP	0		
R603	1-218-929-11	RES-CHIP	10	5%	1/16W
R604	1-218-929-11	RES-CHIP	10	5%	1/16W
R606	1-218-990-11	SHORT CHIP	0		
R608	1-218-973-11	RES-CHIP	47K	5%	1/16W
R609	1-218-969-11	RES-CHIP	22K	5%	1/16W
R610	1-218-977-11	RES-CHIP	100K	5%	1/16W
R611	1-218-985-11	RES-CHIP	470K	5%	1/16W
R612	1-218-985-11	RES-CHIP	470K	5%	1/16W
R613	1-218-990-11	SHORT CHIP	0		
R615	1-218-977-11	RES-CHIP	100K	5%	1/16W
R616	1-218-985-11	RES-CHIP	470K	5%	1/16W
R617	1-218-985-11	RES-CHIP	470K	5%	1/16W

@ Replacement of IC603 used in this set requires a special tool.

Ref. No.	Part No.	Description			Remark
R618	1-218-953-11	RES-CHIP	1K	5%	1/16W
R619	1-400-461-21	FERRITE, EMI (SMD) (1005)			
R620	1-218-977-11	RES-CHIP	100K	5%	1/16W
R621	1-218-953-11	RES-CHIP	1K	5%	1/16W
R623	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R624	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R625	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R628	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R629	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R632	1-218-990-11	SHORT CHIP	0		
R634	1-218-965-11	RES-CHIP	10K	5%	1/16W
R635	1-218-989-11	RES-CHIP	1M	5%	1/16W
R636	1-218-977-11	RES-CHIP	100K	5%	1/16W
R637	1-208-943-11	RES-CHIP	220K	0.5%	1/16W
R638	1-218-969-11	RES-CHIP	22K	5%	1/16W
R639	1-218-973-11	RES-CHIP	47K	5%	1/16W
R642	1-218-973-11	RES-CHIP	47K	5%	1/16W
R644	1-218-929-11	RES-CHIP	10	5%	1/16W
R647	1-218-989-11	RES-CHIP	1M	5%	1/16W
R649	1-218-969-11	RES-CHIP	22K	5%	1/16W
R650	1-218-977-11	RES-CHIP	100K	5%	1/16W
R651	1-218-977-11	RES-CHIP	100K	5%	1/16W
R653	1-218-965-11	RES-CHIP	10K	5%	1/16W
R655	1-218-973-11	RES-CHIP	47K	5%	1/16W
R656	1-218-977-11	RES-CHIP	100K	5%	1/16W
R662	1-218-990-11	SHORT CHIP	0		
R663	1-218-990-11	SHORT CHIP	0		
R667	1-218-990-11	SHORT CHIP	0		
R668	1-218-977-11	RES-CHIP	100K	5%	1/16W
R669	1-218-973-11	RES-CHIP	47K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB601	1-233-969-11	RES, NETWORK (CHIP TYPE) 22K			
		< VARISTOR >			
VDR601	1-801-862-11	VARISTOR, CHIP (1608)			
		< VIBRATOR >			
X602	1-813-421-21	VIBRATOR, CERAMIC (22MHz)			
**********					
	A-1081-743-A	JACK BOARD, COMPLETE (NF420: US, CND)			
	A-1081-776-A	JACK BOARD, COMPLETE (NF420: AEP, UK, EE)			
	A-1081-790-A	JACK BOARD, COMPLETE (NF420: E/4 /NF421: E19/2, E92, MX)			
	A-1081-791-A	JACK BOARD, COMPLETE (NF420: E19, AUS)			
	A-1118-201-A	JACK BOARD, COMPLETE (NF421: RU)			
	A-1122-801-A	JACK BOARD, COMPLETE (NF421: E19/1)			
		********** (Including EGL BOARD, COMPLETE)			
		< CAPACITOR/SHORT >			
C101	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C102	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C103	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C104	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (NF420: US, CND)
C106	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C107	1-164-882-11	CERAMIC CHIP	220PF	5%	16V (NF420: US, CND)
C108	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (NF420: US, CND)
C109	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (NF420: US, CND)
C110	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C113	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C114	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C115	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C116	1-126-208-21	ELECT CHIP	47uF	20%	4V
C117	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C118	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C119	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C120	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C121	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C122	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C123	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C125	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C126	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C127	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C128	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C129	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C130	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C131	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C132	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C133	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C134	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C135	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C136	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C137	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C138	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C139	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C140	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C141	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C142	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C143	1-164-858-11	CERAMIC CHIP	22PF	5%	50V
C144	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	50V
C145	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C146	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C147	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C148	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C149	1-164-842-11	CERAMIC CHIP	2PF	0.25PF	50V (NF420: US, CND)
C150	1-164-844-11	CERAMIC CHIP	4PF	0.25PF	50V
C155	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C156	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C160	1-218-990-11	SHORT CHIP	0		
C161	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C162	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	50V
C163	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C164	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C165	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C205	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (NF420: AEP, UK, EE/NF421: RU)

Ref. No.	Part No.	Description			Remark
C206	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
		(NF420: AEP, UK, EE/NF421: RU)			
C210	1-126-246-11	ELECT CHIP	220uF	20%	4V
C211	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C212	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C215	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C216	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C217	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C218	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C219	1-100-735-11	CERAMIC CHIP	10uF	20%	4V
C220	1-100-507-91	CERAMIC CHIP	4.7uF	20%	6.3V
C221	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C223	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C224	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C225	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C226	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C227	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C228	1-100-735-11	CERAMIC CHIP	10uF	20%	4V
C229	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C230	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C231	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C232	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C233	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C234	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C235	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C401	1-115-156-11	CERAMIC CHIP	1uF		10V
C402	1-128-829-11	TANTALUM CHIP	220uF	20%	6.3V
C403	1-115-156-11	CERAMIC CHIP	1uF		10V
C404	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C405	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C406	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C407	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C408	1-100-507-91	CERAMIC CHIP	4.7uF	20%	6.3V
C409	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C410	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C411	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C412	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C413	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C414	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C415	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C416	1-100-415-11	CERAMIC CHIP	0.47uF	10%	6.3V
C417	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C418	1-126-208-21	ELECT CHIP	47uF	20%	4V
C419	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C420	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C421	1-113-689-11	ELECT CHIP	100uF	20%	4V
C423	1-126-209-11	ELECT CHIP	100uF	20%	4V
C426	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C428	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C429	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C431	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C432	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C433	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C434	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C435	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C436	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C437	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C438	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C442	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C443	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C450	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C451	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
					(NF421: RU, E19/1)
C452	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C454	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C455	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C456	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C501	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C502	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
		< FILTER/DISCRIMINATOR/VIBRATOR >			
CF101	1-760-738-61	FILTER, CERAMIC (EXCEPT NF421: RU)			
CF101	1-767-021-11	FILTER, CERAMIC (NF421: RU)			
CF102	1-795-323-11	FILTER, CERAMIC			
CF103	1-813-422-11	DISCRIMINATOR, CERAMIC			
CF104	1-577-262-11	VIBRATOR, CRYSTAL (75kHz)			
		< CONNECTOR >			
CN602	1-785-877-21	HOUSING, CONNECTOR 4P			
CN603	1-784-342-21	HOUSING, CONNECTOR 2P			
CN801	1-573-352-11	CONNECTOR, FFC/FPC 12P			
CN901	1-818-895-11	CONNECTOR, BOARD TO BOARD 60P			
		< TRIMMER >			
CT101	1-141-615-21	CAP, ADJ			
		< DIODE >			
D101	6-500-338-01	DIODE KV1610S			
D102	6-501-063-01	DIODE HV306CTRU-E (NF420: US, CND)			
D103	8-719-066-14	DIODE HSC277-TRF (NF420: US, CND)			
D104	8-719-066-14	DIODE HSC277-TRF (NF420: US, CND)			
D105	6-501-063-01	DIODE HV306CTRU-E			
D106	6-501-063-01	DIODE HV306CTRU-E			
D107	8-719-420-87	DIODE MA8130			
D108	8-719-988-61	DIODE 1SS355TE-17			
D202	8-719-059-53	DIODE MA3J14700LSO			
D203	8-719-083-04	DIODE RSB6.8STE61			
D204	8-719-083-04	DIODE RSB6.8STE61			
D301	8-719-083-04	DIODE RSB6.8STE61 (NF421: RU, E19/1)			
D302	8-719-083-04	DIODE RSB6.8STE61 (NF421: RU, E19/1)			
D304	8-719-422-37	DIODE MA8051 (NF421: RU, E19/1)			
D401	6-500-483-01	DIODE MA22D2800LS0			
D402	8-719-085-43	DIODE MA2YD2300LS0			
D403	8-719-083-60	DIODE UDZSTE-174.7B			
D404	6-500-540-01	DIODE RB521S-30FTE61			
D411	8-719-071-87	DIODE MA785- (TX), SO			
D412	6-500-540-01	DIODE RB521S-30FTE61			
D413	6-500-540-01	DIODE RB521S-30FTE61			
D414	6-500-483-01	DIODE MA22D2800LS0			
D415	8-719-069-55	DIODE UDZSTE-175.6B			
		< FUSE >			
⚠F401	1-576-406-21	FUSE, MICRO (1.4A/32V)			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		< FERRITE BEAD/JUMPER RESISTOR >	
FB203	1-414-813-11	FERRITE, EMI (SMD) (2012)	
FB204	1-414-813-11	FERRITE, EMI (SMD) (2012)	
FB205	1-414-813-11	FERRITE, EMI (SMD) (2012)	
FB206	1-216-295-00	SHORT CHIP 0	
FB207	1-414-553-11	FERRITE, EMI (SMD) (2012)	(NF421: RU, E19/1)
FB306	1-500-234-22	BEAD, FERRITE (CHIP) (1608)	(NF421: RU, E19/1)
FB403	1-216-295-00	SHORT CHIP 0	
FB404	1-500-451-11	FERRITE, EMI (SMD) (4516)	
FB405	1-500-451-11	FERRITE, EMI (SMD) (4516)	
FB801	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB802	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB803	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB804	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB805	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB806	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB807	1-414-760-21	FERRITE, EMI (SMD) (1608)	
FB808	1-414-760-21	FERRITE, EMI (SMD) (1608)	
		< FILTER >	
FL101	1-781-765-31	FILTER, BAND PASS (NF420: US, CND)	
FL102	1-236-711-21	FILTER, BAND PASS (EXCEPT NF420: US, CND)	
		< IC >	
IC101	6-706-435-01	IC TB2132FNG	
IC201	6-707-074-01	IC TB2173FTG	
IC401	6-707-304-01	IC SC901591AFR2	
IC501	6-707-315-01	IC RT8H055C-T1	
		< JACK >	
J301	1-818-805-11	JACK (🎧) (NF421: RU, E19/1)	
J301	1-818-810-11	JACK (🎧) (EXCEPT NF421: RU, E19/1)	
J402	1-816-936-41	JACK, DC (DC IN 3V)	
		< COIL >	
L101	1-456-896-11	COIL, AM FERRITE-ROD ANTENNA	
L103	1-456-899-11	COIL, AIR-CORE (NF420: US, CND)	
L104	1-456-898-11	COIL, AIR-CORE	
L105	1-419-135-21	INDUCTOR 27nH	
L106	1-469-846-11	INDUCTOR 47uH	
L107	1-469-846-11	INDUCTOR 47uH	
L108	1-469-846-11	INDUCTOR 47uH	
L201	1-469-846-11	INDUCTOR 47uH	
L411	1-400-145-21	INDUCTOR 47uH	
L412	1-400-145-21	INDUCTOR 47uH	
L413	1-419-354-21	INDUCTOR 22uH	
L414	1-428-912-21	INDUCTOR 10uH	
L415	1-469-967-21	INDUCTOR 10uH	
L416	1-400-317-21	INDUCTOR 100uH	
L417	1-400-145-21	INDUCTOR 47uH	
L418	1-400-145-21	INDUCTOR 47uH	
L419	1-469-967-21	INDUCTOR 10uH	
L420	1-414-235-22	INDUCTOR, FERRITE BEAD	
		< TRANSISTOR >	
Q101	8-729-044-37	FET 2SK3019TL	
Q102	8-729-028-74	TRANSISTOR DTA114TUA-T106	
Q103	8-729-051-23	TRANSISTOR 2SA2018TL	
Q104	8-729-602-21	TRANSISTOR 2SC4154-F	
Q401	6-550-859-01	TRANSISTOR NTHD4508NT1G	
Q402	6-550-760-01	TRANSISTOR 2SA1363-T111-1E	
Q404	6-551-139-01	TRANSISTOR DTC115TE-TL	
Q409	6-550-232-01	TRANSISTOR 2SA2029T2LQ/R	(NF421: RU, E19/1)
Q410	8-729-602-21	TRANSISTOR 2SC4154-F	
Q411	8-729-055-85	TRANSISTOR UMT1N-TN	
		< RESISTOR >	
R101	1-218-985-11	RES-CHIP 470K 5% 1/16W	
R102	1-218-953-11	RES-CHIP 1K 5% 1/16W	
R103	1-218-985-11	RES-CHIP 470K 5% 1/16W	(NF420: US, CND)
R104	1-218-985-11	RES-CHIP 470K 5% 1/16W	
R105	1-218-957-11	RES-CHIP 2.2K 5% 1/16W	(NF420: US, CND)
R106	1-218-957-11	RES-CHIP 2.2K 5% 1/16W	(NF420: US, CND)
R107	1-218-985-11	RES-CHIP 470K 5% 1/16W	
R108	1-218-957-11	RES-CHIP 2.2K 5% 1/16W	(NF420: US, CND)
R109	1-218-929-11	RES-CHIP 10 5% 1/16W	
R110	1-218-949-11	RES-CHIP 470 5% 1/16W	
R111	1-218-965-11	RES-CHIP 10K 5% 1/16W	
R112	1-218-990-11	SHORT CHIP 0	
R114	1-218-969-11	RES-CHIP 22K 5% 1/16W	
R115	1-218-973-11	RES-CHIP 47K 5% 1/16W	
R116	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	
R118	1-218-965-11	RES-CHIP 10K 5% 1/16W	
R119	1-218-957-11	RES-CHIP 2.2K 5% 1/16W	
R120	1-218-953-11	RES-CHIP 1K 5% 1/16W	
R121	1-218-965-11	RES-CHIP 10K 5% 1/16W	
R122	1-218-953-11	RES-CHIP 1K 5% 1/16W	
R123	1-218-977-11	RES-CHIP 100K 5% 1/16W	
R124	1-218-945-11	RES-CHIP 220 5% 1/16W	
R125	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	
R126	1-218-973-11	RES-CHIP 47K 5% 1/16W	
R128	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	
R129	1-218-945-11	RES-CHIP 220 5% 1/16W	
R130	1-218-945-11	RES-CHIP 220 5% 1/16W	
R131	1-218-945-11	RES-CHIP 220 5% 1/16W	
R132	1-218-990-11	SHORT CHIP 0	(EXCEPT NF420: US, CND)
R201	1-216-789-11	METAL CHIP 2.2 5% 1/10W	(NF420: AEP, UK, EE/NF421: RU)
R202	1-216-789-11	METAL CHIP 2.2 5% 1/10W	(NF420: AEP, UK, EE/NF421: RU)
R210	1-218-953-11	RES-CHIP 1K 5% 1/16W	(NF420: AEP, UK, EE/NF421: RU)
R210	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	(NF420: E19, AUS/NF421: E19/1)
R211	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	(NF420: AEP, UK, EE, E19, AUS/NF421: RU, E19/1)
R211	1-218-973-11	RES-CHIP 47K 5% 1/16W	(NF420: US, CND, E/4/NF421: E19/2, E92, MX)
R212	1-218-961-11	RES-CHIP 4.7K 5% 1/16W	(NF420: AEP, UK, EE, E19, AUS/NF421: RU, E19/1)

Ref. No.	Part No.	Description			Remark
R212	1-218-973-11	RES-CHIP	47K	5%	1/16W
		(NF420: US, CND, E/4/NF421: E19/2, E92, MX)			
R213	1-218-953-11	RES-CHIP	1K	5%	1/16W
		(NF420: AEP, UK, EE/NF421: RU)			
R213	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
		(NF420: E19, AUS/NF421: E19/1)			
R214	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R215	1-218-969-11	RES-CHIP	22K	5%	1/16W
R216	1-218-969-11	RES-CHIP	22K	5%	1/16W
R217	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R220	1-218-973-11	RES-CHIP	47K	5%	1/16W
R221	1-218-973-11	RES-CHIP	47K	5%	1/16W
R230	1-218-977-11	RES-CHIP	100K	5%	1/16W
R231	1-218-977-11	RES-CHIP	100K	5%	1/16W
R232	1-216-864-11	SHORT CHIP	0		
R305	1-218-965-11	RES-CHIP	10K	5%	1/16W
		(EXCEPT NF421: RU, E19/1)			
R402	1-216-833-11	METAL CHIP	10K	5%	1/10W
				(NF421: RU, E19/1)	
R404	1-216-849-11	METAL CHIP	220K	5%	1/10W
R405	1-216-841-11	METAL CHIP	47K	5%	1/10W
R407	1-218-941-11	RES-CHIP	100	5%	1/16W
R408	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R410	1-218-977-11	RES-CHIP	100K	5%	1/16W
R411	1-216-841-11	METAL CHIP	47K	5%	1/10W
R412	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R413	1-218-973-11	RES-CHIP	47K	5%	1/16W
R414	1-218-990-11	SHORT CHIP	0		
R415	1-216-841-11	METAL CHIP	47K	5%	1/10W
R416	1-216-809-11	METAL CHIP	100	5%	1/10W
R418	1-218-945-11	RES-CHIP	220	5%	1/16W
R419	1-218-990-11	SHORT CHIP	0		
R434	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R451	1-218-977-11	RES-CHIP	100K	5%	1/16W
R452	1-216-864-11	SHORT CHIP	0		
R454	1-218-990-11	SHORT CHIP	0		
R455	1-218-977-11	RES-CHIP	100K	5%	1/16W
R460	1-216-849-11	METAL CHIP	220K	5%	1/10W
				(NF421: RU), E19/1	
R461	1-216-853-11	METAL CHIP	470K	5%	1/10W
				(NF421: RU, E19/1)	
R462	1-216-849-11	METAL CHIP	220K	5%	1/10W
				(NF421: RU, E19/1)	
R463	1-218-941-11	RES-CHIP	100	5%	1/16W
R464	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R465	1-216-864-11	SHORT CHIP	0		
R466	1-216-813-11	METAL CHIP	220	5%	1/10W
R467	1-218-945-11	RES-CHIP	220	5%	1/16W
R468	1-218-945-11	RES-CHIP	220	5%	1/16W
R469	1-218-953-11	RES-CHIP	1K	5%	1/16W
R470	1-218-990-11	SHORT CHIP	0		
R471	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R473	1-218-977-11	RES-CHIP	100K	5%	1/16W
R474	1-218-990-11	SHORT CHIP	0		
R475	1-218-969-11	RES-CHIP	22K	5%	1/16W
R476	1-218-977-11	RES-CHIP	100K	5%	1/16W
R477	1-218-990-11	SHORT CHIP	0		
R478	1-218-965-11	RES-CHIP	10K	5%	1/16W
R479	1-218-969-11	RES-CHIP	47K	5%	1/16W
R480	1-218-981-11	RES-CHIP	22K	5%	1/16W
R481	1-218-953-11	RES-CHIP	1K	5%	1/16W
R482	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R484	1-218-990-11	SHORT CHIP	0		
R501	1-218-990-11	SHORT CHIP	0		
R502	1-218-989-11	RES-CHIP	1M	5%	1/16W
R801	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R802	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R803	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R804	1-218-953-11	RES-CHIP	1K	5%	1/16W
		< VARIABLE RESISTOR >			
RV401	1-227-412-21	RES, ADJ, CERMET 47K			
		< SWITCH >			
S530	1-572-922-11	SWITCH, SLIDE (HOLD)			
S531	1-762-805-41	SWITCH, PUSH (1 KEY) (OPEN)			
		< COIL/TRANSFORMER >			
T101	1-456-985-11	COIL, AM OSC			
T102	1-443-490-11	TRANSFORMER, IF (AM IFT)			
T103	1-443-599-11	TRANSFORMER, DC/DC CONVERTER			
		< THERMISTOR >			
TH401	1-805-719-11	THERMISTOR, POSITIVE			
**********					
	A-1081-774-A	SWITCH BOARD, COMPLETE			
					(EXCEPT PSYC model)
		**********			
	1-829-981-11	CABLE, FLEXIBLE FLAT (12 CORE)			
		< CAPACITOR >			
C1001	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C1002	1-100-506-11	CERAMIC CHIP	1uF	20%	6.3V
C1003	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1004	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1005	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1006	1-112-324-11	CERAMIC CHIP	0.47uF	20%	10V
C1007	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1008	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1009	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1010	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
C1011	1-165-887-11	CERAMIC CHIP	0.22uF	10%	6.3V
		< CONNECTOR >			
CN1001	1-778-171-21	CONNECTOR, FFC/FPC (ZIF) 23P			
CN1002	1-778-160-11	CONNECTOR, FFC/FPC (ZIF) 12P			
		< LIQUID CRYSTAL DISPLAY >			
LCD1001	1-805-689-21	DISPLAY PANEL, LIQUID CRYSTAL			
		< RESISTOR >			
R1001	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1002	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1003	1-216-821-11	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R1004	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1005	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1006	1-216-864-11	SHORT CHIP	0		
R1007	1-216-864-11	SHORT CHIP	0		
R1101	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1102	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1103	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1104	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1105	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1106	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1107	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1108	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1109	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1110	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1111	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1112	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1113	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1114	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1115	1-216-864-11	SHORT CHIP	0		
		< SWITCH >			
S1101	1-786-650-21	SWITCH, TACTILE (TUNE –, GROUP –)			
S1102	1-786-650-21	SWITCH, TACTILE (TUNE +, GROUP +)			
S1103	1-786-650-21	SWITCH, TACTILE (I◀◀)			
S1104	1-786-650-21	SWITCH, TACTILE (▶▶I)			
S1105	1-786-650-21	SWITCH, TACTILE (▶II, ENTER)			
S1106	1-786-650-21	SWITCH, TACTILE(RADIO ON/BAND, MEMORY)			
S1107	1-786-650-21	SWITCH, TACTILE (DISPLAY, MENU)			
S1108	1-786-650-21	SWITCH, TACTILE (RADIO OFF, ■)			
S1109	1-786-650-21	SWITCH, TACTILE (VOL +, ∧)			
S1110	1-786-650-21	SWITCH, TACTILE (∨, VOL –)			
S1111	1-786-650-21	SWITCH, TACTILE (SEARCH)			
		< VARISTOR >			
VDR1001	1-801-862-11	VARISTOR, CHIP (1608)			
**********					
		MISCELLANEOUS			
		**********			
⚠152	X-3383-995-1	OPTICAL PICK-UP (DAX-25EV)			
M602	A-3608-777-A	MOTOR ASSY, TURN TABLE (SPINDLE)			
M603	A-3174-850-A	MOTOR ASSY, SLED			
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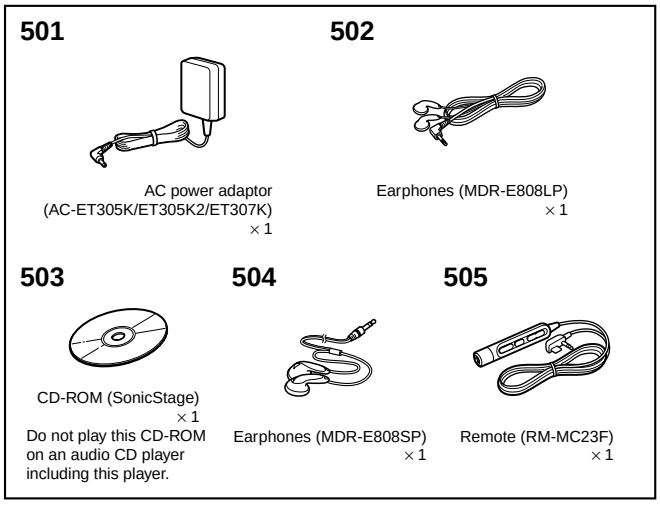
Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		**********	
	2-318-768-12	MANUAL, INSTRUCTION (ENGLISH) (EXCEPT NF420: E/4/NF421: RU, E19/1, MX)	
	2-318-768-22	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE, FRENCH) (NF420: CND, AEP, E/4/NF421: E19/2, E92, MX)	
	2-318-768-31	MANUAL, INSTRUCTION (DUTCH, GERMAN, ITALIAN) (NF420: AEP)	
	2-318-768-41	MANUAL, INSTRUCTION (SWEDISH, FINNISH) (NF420: AEP)	
	2-318-768-52	MANUAL, INSTRUCTION (HUNGARIAN, RUSSIAN, POLISH) (NF420: EE)	
	2-318-768-62	MANUAL, INSTRUCTION (CZECH, SLOVAKIAN) (NF420: EE)	
	2-318-768-72	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (NF420: E19)	
	2-318-768-81	MANUAL, INSTRUCTION (ENGLISH) (NF421: RU, E19/1)	
	2-318-768-91	MANUAL, INSTRUCTION (RUSSIAN) (NF421: RU)	
	2-590-334-11	MANUAL, INSTRUCTION (Installation/operation guide) (ENGLISH) (EXCEPT NF420: E/4, NF421: RU, E19/1, E19/2, MX)	
	2-590-334-21	MANUAL, INSTRUCTION (Installation/operation guide) (SPANISH) (NF420: AEP, E/4/NF421: E19/2, E92, MX)	
	2-590-334-31	MANUAL, INSTRUCTION (Installation/operation guide) (PORTUGUESE) (NF420: AEP/NF421: E92)	
	2-590-334-41	MANUAL, INSTRUCTION (Installation/operation guide) (FRENCH) (NF420: CND, AEP)	
	2-590-334-51	MANUAL, INSTRUCTION (Installation/operation guide) (DUTCH, GERMAN, ITALIAN) (NF420: AEP)	
	2-590-334-61	MANUAL, INSTRUCTION (Installation/operation guide) (SWEDISH, FINNISH) (NF420: AEP)	
	2-590-334-71	MANUAL, INSTRUCTION (Installation/operation guide) (HUNGARIAN, RUSSIAN, POLISH) (NF420: EE)	
	2-590-334-81	MANUAL, INSTRUCTION (Installation/operation guide) (CZECH, SLOVAKIAN) (NF420: EE)	
	2-590-335-31	MANUAL, INSTRUCTION (Installation/operation guide) (SIMPLIFIED CHINESE) (NF420: E19)	
	2-590-336-11	MANUAL, INSTRUCTION (Installation/operation guide) (ENGLISH) (NF421: RU, E19/1)	
	2-590-336-71	MANUAL, INSTRUCTION (Installation/operation guide) (HUNGARIAN, POLISH, RUSSIAN) (NF421: RU)	
	2-590-337-31	MANUAL, INSTRUCTION (Installation/operation guide) (SIMPLIFIED CHINESE) (NF421: E19/1)	
	2-630-501-11	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (NF421: E19/1)	
	3-235-711-21	ATTACHMENT (EAR PAD) (BLUE) (NF420: US, CND)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠501	1-477-732-12	ADAPTOR, AC (AC-ET305K) (NF420: UK)	
⚠501	1-477-737-12	ADAPTOR, AC (AC-ET305K) (NF421: E92, MX)	
⚠501	1-477-738-22	ADAPTOR, AC (AC-ET305K2) (NF420: AEP, E19, EE/NF421: RU, E19/1, E19/2)	
⚠501	1-478-374-11	ADAPTOR, AC (AC-ET307K) (NF420: AUS)	
502	8-912-744-90	EARPHONES MDR-E808LPB19 SET	(NF420: AEP, UK, E/4, EE/ NF421: E19/2, E92, MX)
502	8-912-744-92	EARPHONES MDR-E808LPL19 SET	(NF420: US, CND)
502	8-954-008-93	RECEIVER, EAR MDR-E808LP/C1 SET	(NF420: E19, AUS)
503	X-2050-857-1	CD-ROM (APPLICATION) ASSY (SS2.3)	(SonicStage)
504	8-912-743-90	EARPHONES MDR-E808SPB19 SET	(NF421: RU)
504	8-954-008-90	RECEIVER, EAR MDR-E808SP/C SET	(NF421: E19/1)
505	1-478-401-11	REMOTE CONTROL UNIT (RM-MC23F)	(NF421: RU, E19/1)



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REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2005.01	New
1.1	2005.02	Addition of South African Singapore, Malaysia, Vietnam and Indian models to D-NF420 Replacement of JACK board (Suffix-12) (ECN-ECA71211)
1.2	2005.03	Addition of Australian model to D-NF420 Addition of Russian model to D-NF421
1.3	2005.03	Addition of Argentina model to D-NF420 Addition of Singapore, Malaysia and Thai models to D-NF421