

# SONY D-FJ210 SERVICE MANUAL



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# D-FJ210/FJ215

## SERVICE MANUAL

Ver 1.0 2003.02

US Model

D-FJ210

E Model

Australian Model

Chinese Model

D-FJ215



Photo : D-FJ210

Model Name Using Similar Mechanism	D-EJ360
CD Mechanism Type	CDM-3325ER
Optical Pick-up Type	DAX-25E

### SPECIFICATIONS

#### System

Compact disc digital audio system

#### Laser diode properties

Material: GaAlAs

Wavelength:  $\lambda = 780 \text{ nm}$

Emission duration: Continuous

Laser output: Less than  $44.6 \mu\text{W}$  (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-FJ210 :

##### Frequency range (10k/9k switch)

10 kHz step:

TV: 2 - 13 ch

WB (weather band): 1 - 7 ch

FM: 87.5 - 108.0 MHz

AM: 530 - 1710 kHz

9 kHz step:

TV: 2 - 13 ch

WB (weather band): 1 - 7 ch

FM: 87.5 - 108.0 MHz

AM: 531 - 1710 kHz

#### D-FJ215 :

##### Frequency range (Chinese model)

FM: 87.5 - 108.0 MHz

AM: 531 - 1602 kHz

##### Frequency range (10k/9k switch) (except Chinese model)

• 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

#### Power requirements

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

• Two Sony NH-7WMAA rechargeable batteries: 1.2 V DC x 2

• Sony NH-WM2AA rechargeable batteries: 1.2 V DC x 2

• Two LR6 (size AA) batteries: 1.5 V x 2 DC

• AC power adaptor (DC IN 4.5 V jack):

US model: 120 V, 60 Hz

E13 model: 220 - 230 V, 50/60 Hz

Australian model: 240 V, 50 Hz

Hong Kong model: 230 V, 50 Hz

Chinese model: 220 V, 50 Hz

#### Dimensions (w/h/d) (without projecting parts and controls)

Approx. 136 x 26 x 150 mm ( $5 \frac{3}{8} \times 1 \frac{1}{16} \times 6 \text{ in.}$ )

#### Mass (excluding accessories)

Approx. 205 g (7.3 oz)

#### Operating temperature

5°C - 35°C (41°F - 95°F)

Design and specifications are subject to change without notice.

### Supplied Accessories

#### FJ-210 :

Headphones/earphones with the remote control (1)

TV/WB/FM/AM PORTABLE CD PLAYER D-FJ210  
FM/AM PORTABLE CD PLAYER D-FJ215

9-877-064-01

2003B0200-1

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Sony Corporation

Personal Audio Company

Published by Sony Engineering Corporation

SONY®

## D-FJ210/FJ215

### FJ-215 :

AC power adaptor (1)  
Headphones/earphones with remote control (1)  
Rechargeable batteries (2)  
Battery carrying case (1)

### DANGER

Invisible laser radiation when open and interlock failed or defeated.  
Avoid direct exposure to beam.

### CAUTION

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

### Flexible Circuit Board Repairing

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

### Notes on chip component replacement

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

### ● 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 viscous (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.

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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.**

## 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 breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown 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 30cm away from the objective lens.

#### Before Replacing the Optical pick-up Block

Please be sure to check thoroughly the parameters as per the "Optical pick-up Block Checking Procedure" (Part No. : 9-960-027-11) issued separately before replacing the optical Pick-up block.

Note and specifications required to check are given below.

- FOK output : IC601 ⑥ pin  
When checking FOK, remove the lead wire to disc motor.
- RF signal P-to-P value : 0.45 to 0.75Vp-p

#### Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper panel is closed while turning ON the S809 (push switch type).

The following two checking methods for the laser diode are operable.

#### Method :

##### Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S809 as shown in Fig. 1 .
3. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up. During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

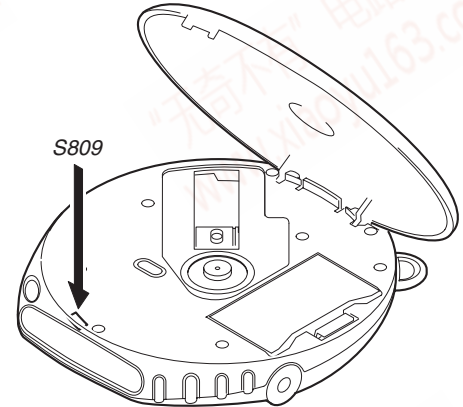


Fig.1 Method to push S809

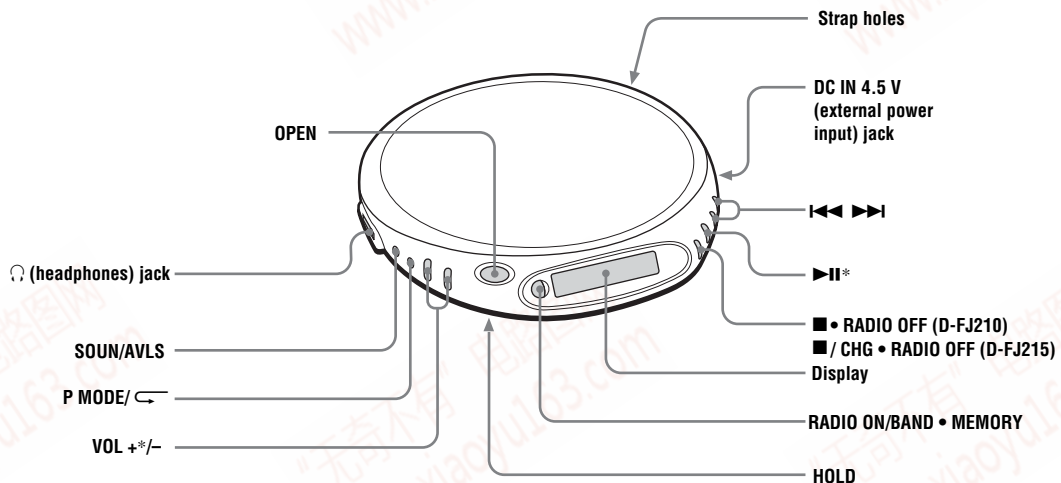
## SECTION 2

### GENERAL

#### LOCATING THE CONTROLS

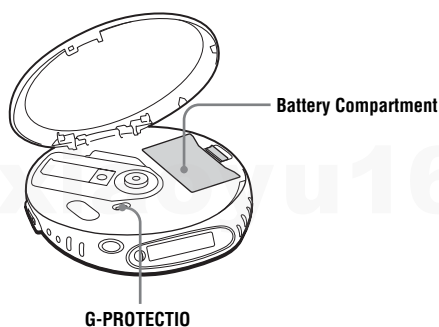
This section is extracted from instruction manual.

#### CD player (front)



\*The button has a tactile dot.

#### CD player (inside)

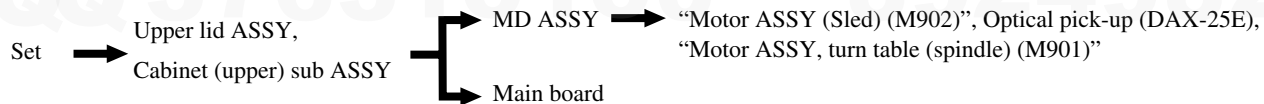




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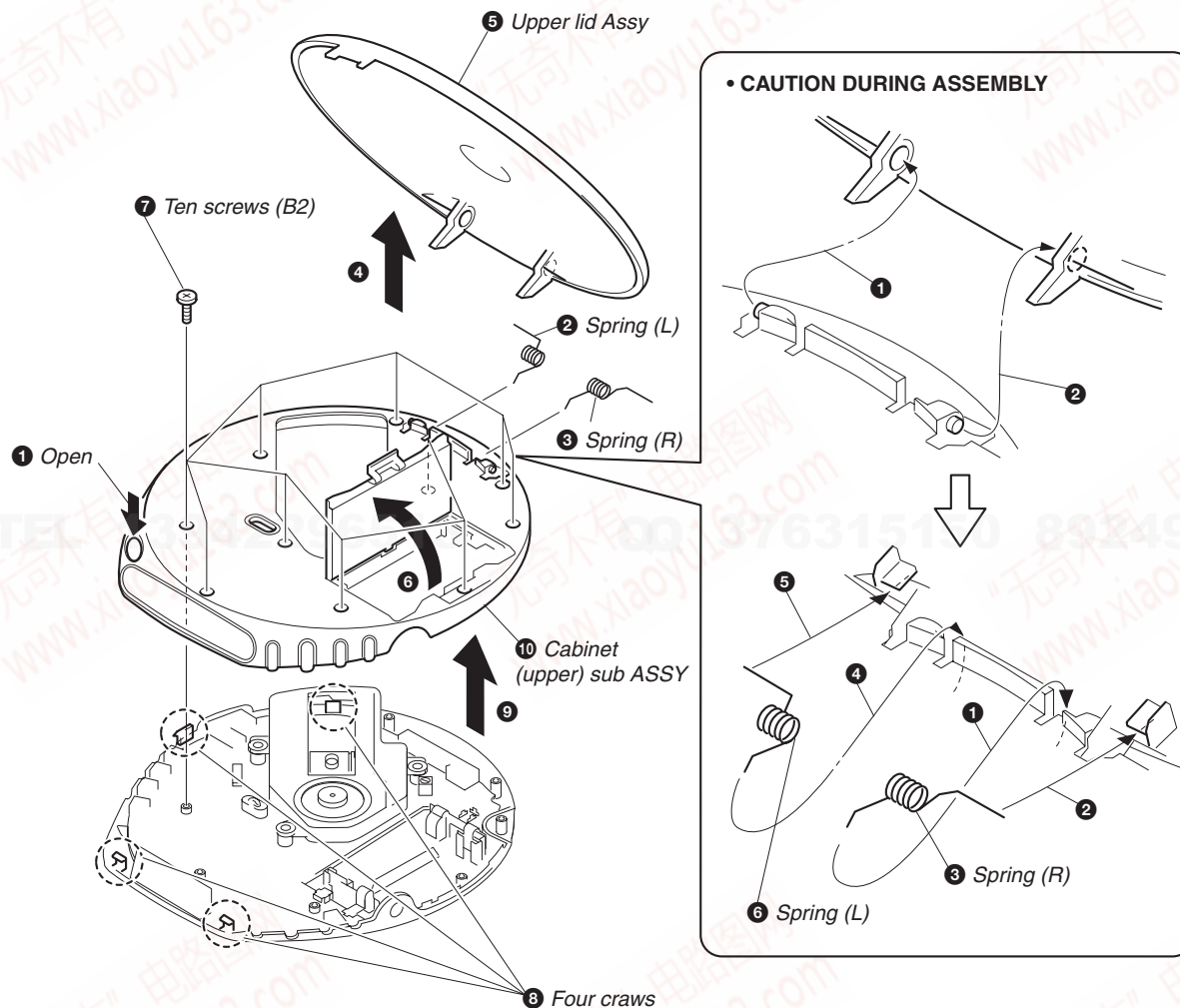
## SECTION 3 DISASSEMBLY

- The equipment can be removed using the following procedure.

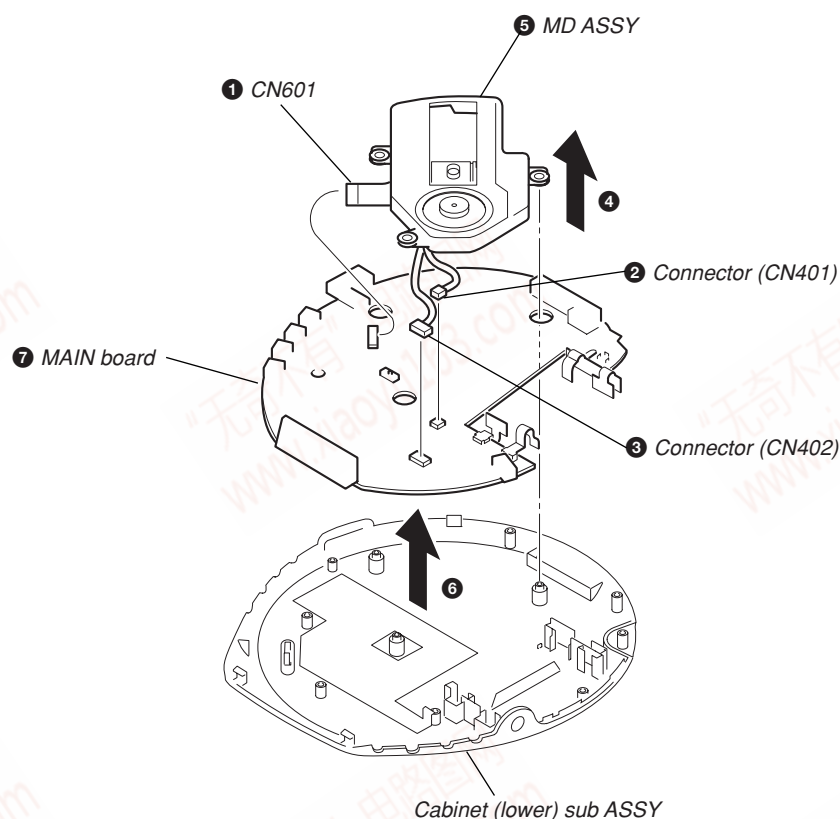


**Note :** Follow the disassembly procedure in the numerical order given.

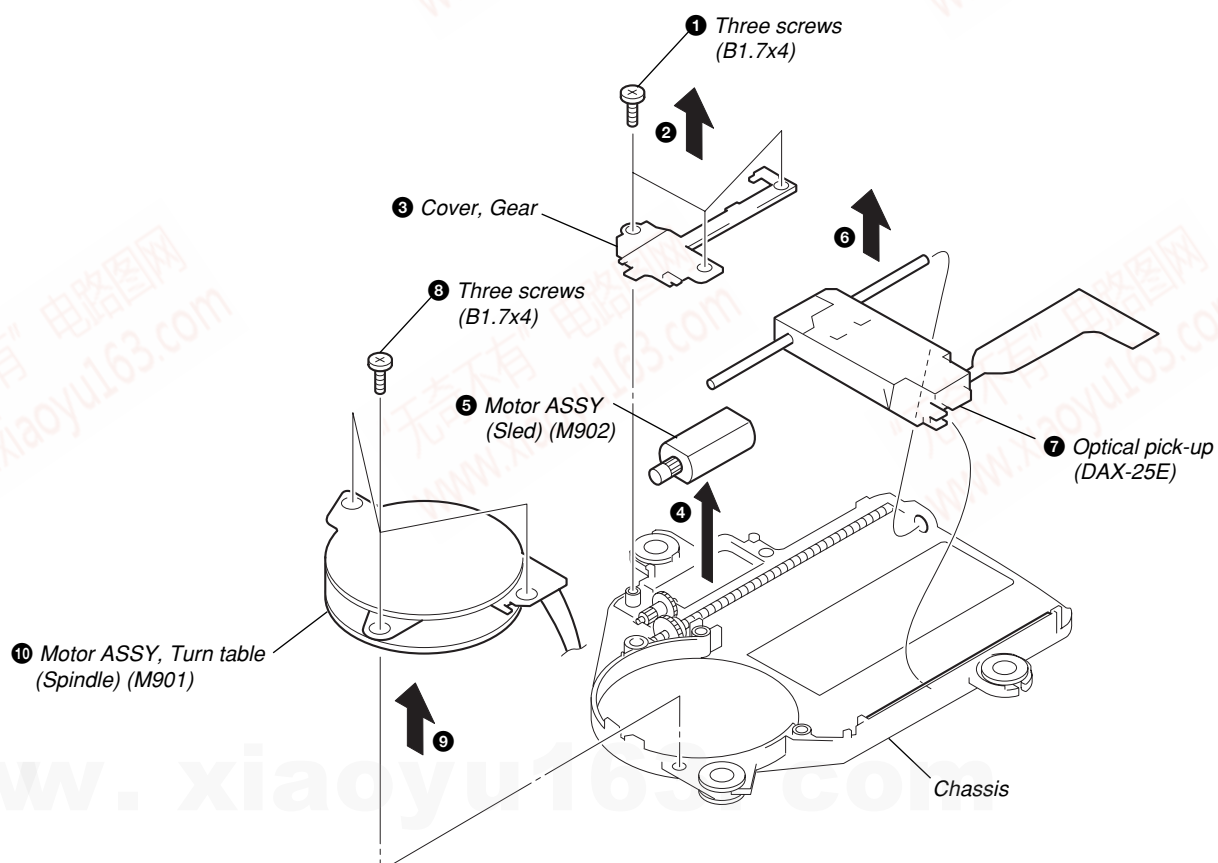
### 3-1. UPPER LID ASSY, CABINET (UPPER) SUB ASSY



### 3-2. MD ASSY, MAIN BOARD



### 3-3. “MOTOR ASSY (SLED) (M902)”, OPTICAL PICK-UP (DAX-25E), “MOTOR ASSY, TURN TABLE (SPINDLE) (M901)”



# D-FJ210/FJ215

## SECTION 4 ELECTRICAL ADJUSTMENTS

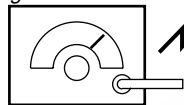
### TUNER SECTION

0 dB = 1μV

### AM section

BAND : AM

AM RF signal generator



Put the lead-wire antenna close to the set.

30% amplitude modulation by 400Hz signal.

Output level : as low as possible

### FM section

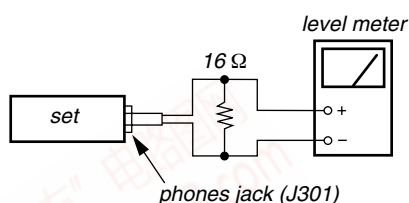
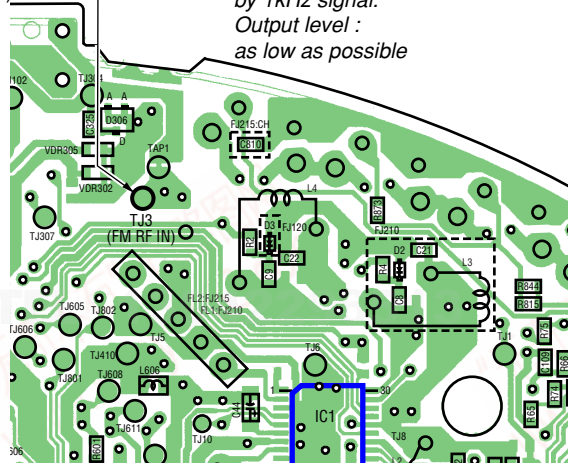
BAND :FM

FM RF signal generator

TJ3 (FM RF IN) 0.01μF

33.75kHz frequency deviation by 1kHz signal.  
Output level : as low as possible

[MAIN BOARD]  
(Side A)



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

< > : 9kHz step

### AM FREQUENCY COVERAGE ADJUSTMENT

Adjust parts	Frequency display	Reading on digital voltmeter
L5	530kHz <531kHz>	Adjustment value : 0.7V Standard value : 0.2–1.4V
Confirmation	1,710kHz <1,602kHz>	Adjustment value : 5.0V <4.4V> Standard value : 4.3–5.7V <3.7–5.2V>

### AM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L1	620kHz <621kHz>
CT1	1,400kHz <1,395kHz>

### FM FREQUENCY COVERAGE ADJUSTMENT

	Frequency display	Reading on digital voltmeter
Confirmation	87.5MHz	Standard value : 4.3–5.7V
L2	108MHz	Adjustment value : 9.5V Standard value : 9.0–10.0V

### FM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L4	87.5MHz
Confirmation	108MHz

FJ210 only

### TV/WB FREQUENCY COVERAGE ADJUSTMENT

	Frequency display	Reading on digital voltmeter
Confirmation	TV : 2ch	Standard value : 0.46–0.54V

FJ210 only

### TV/WB TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

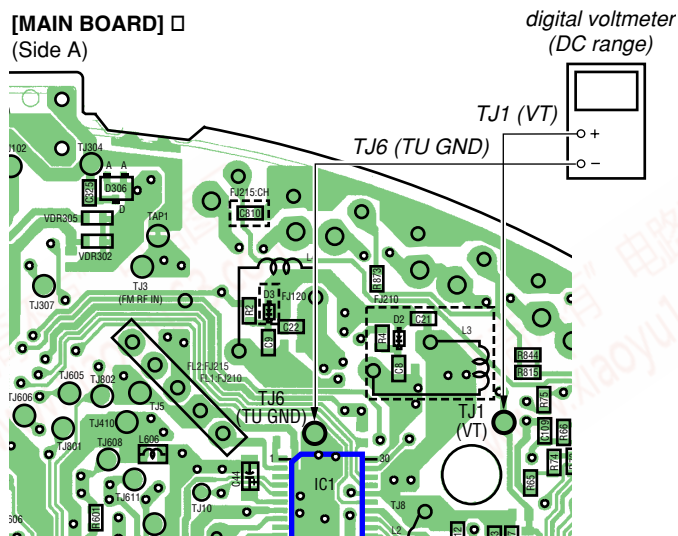
L3	162.55MHz [WB : 1ch]
CT2	215.75MHz [TV : 13ch]

Adjustment Location : Main board

Frequency Coverage Adjustment

Setting :

[MAIN BOARD] □  
(Side A)



Adjustment Location :

[MAIN BOARD] (SIDE B)

\*L3 : TV/WB Traking Adjustment

L4 : FM Traking Adjustment

L2 : FM Frequency Coverage Adjustment

\*CT2 : TV/WB Traking Adjustment

L1 : AM Tracking Adjustment

CT1 : AM Tracking Adjustment

L5 : AM Frequency Coverage Adjustment

\* : FJ210 only



**CD SECTION**

The CD section adjustments are done automatically in this set.

### Precautions for Check

1. Perform check in the order given.
2. Use YEDS-18 disc (Part No.: 3-702-101-01) unless otherwise indicated.
3. Power supply voltage requirement : DC4.5 V in DC IN jack.

VOLUME button : Minimum

HOLD switch : OFF

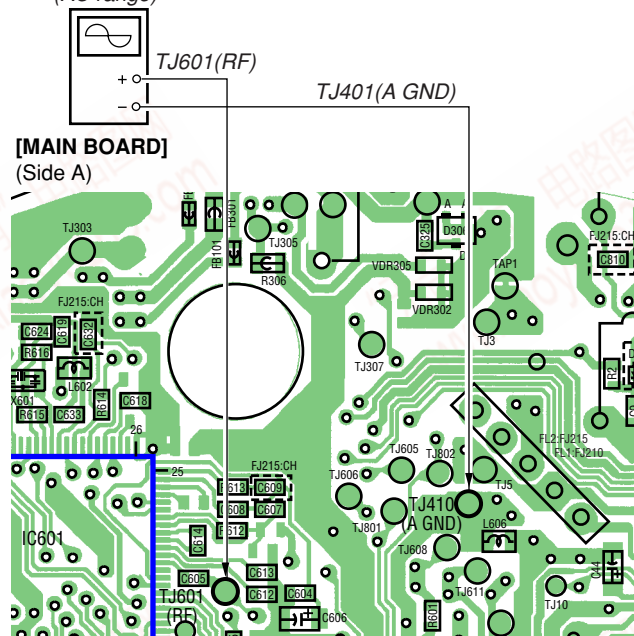
## RF Level Check

**Condition:**


- Hold the set in horizontal state.

**Connection:**

oscilloscope  
(AC range)



### Procedure:

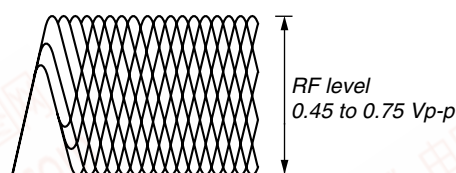
1. Connect the oscilloscope to the test point TJ601(RF) on the MAIN board.
2. Set a disc. (YEDS-18)
3. Press the  button.
4. Check the oscilloscope waveform is as shown below.

A good eye pattern means that the diamond shape ( $\diamond$ ) in the center of the waveform can be clearly distinguished.

**RF Signal reference Waveform (Eye Pattern)**

VOLT/DIV : 100 mV (With the 10 : 1 probe in use)

TIME/DIV : 500ns

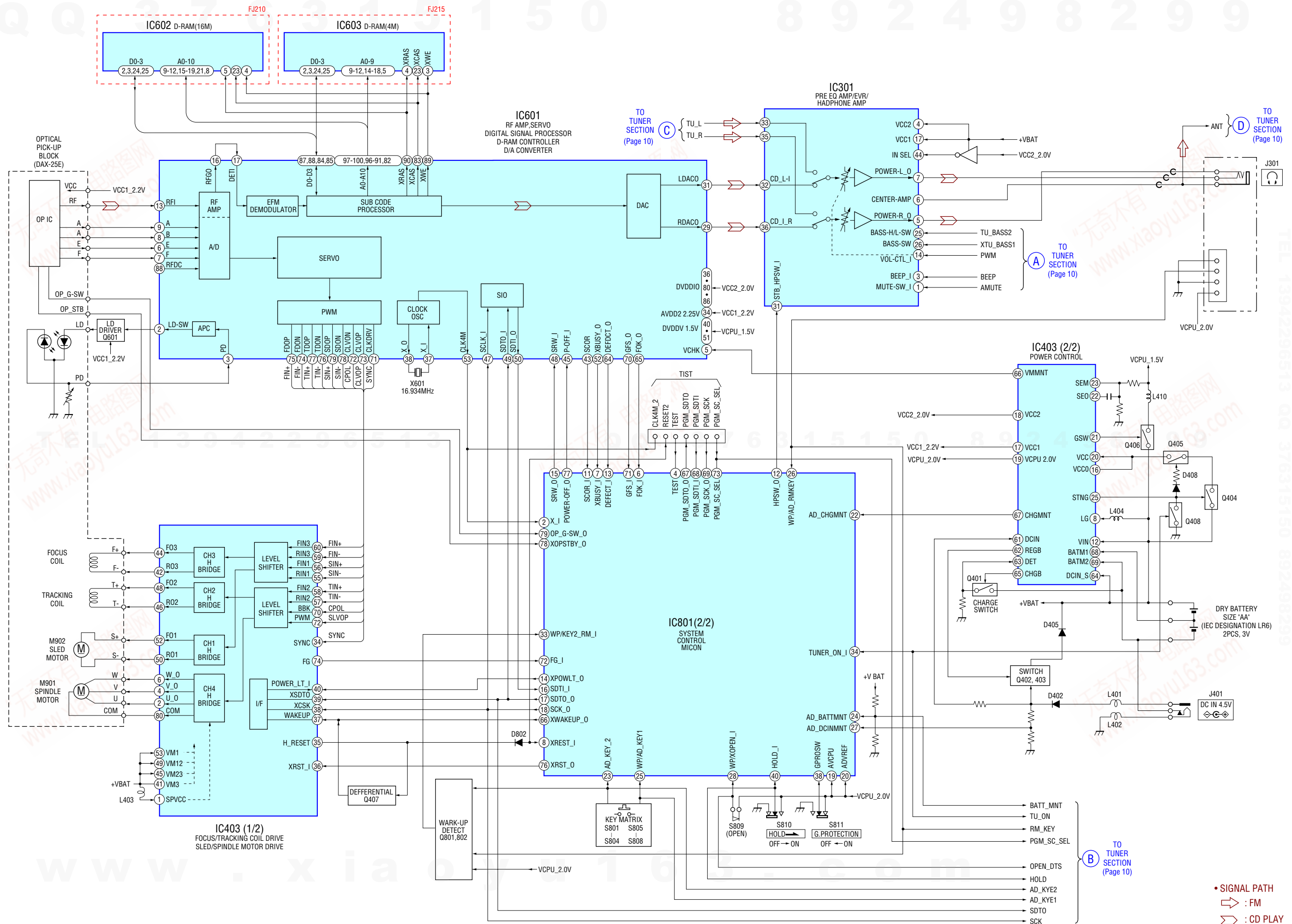


*To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watch-ing.*

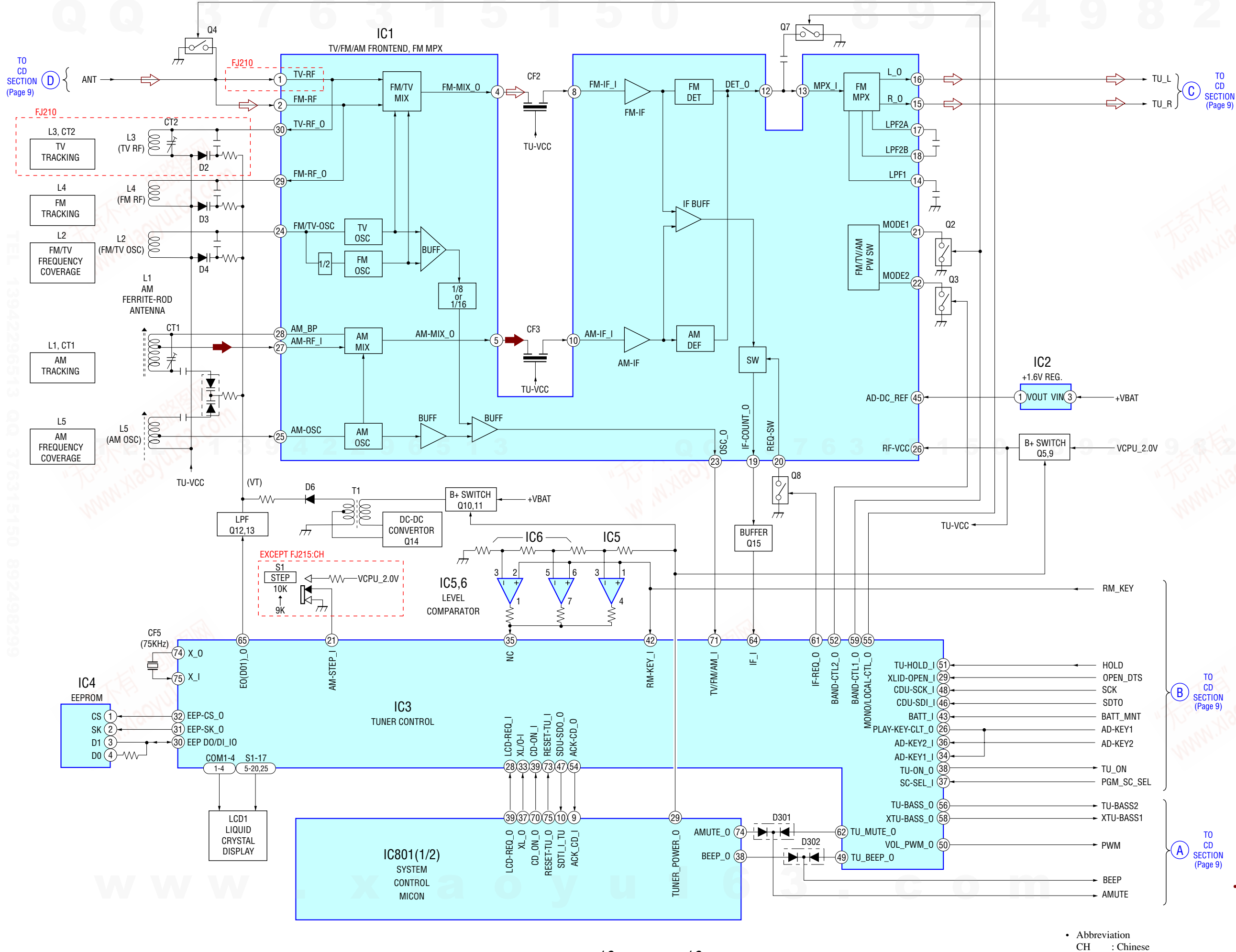
5. Stop revolving of the disc motor by pressing the  button.

# SECTION 5 DIAGRAMS

## 5-1. BLOCK DIAGRAM -CD SECTION-



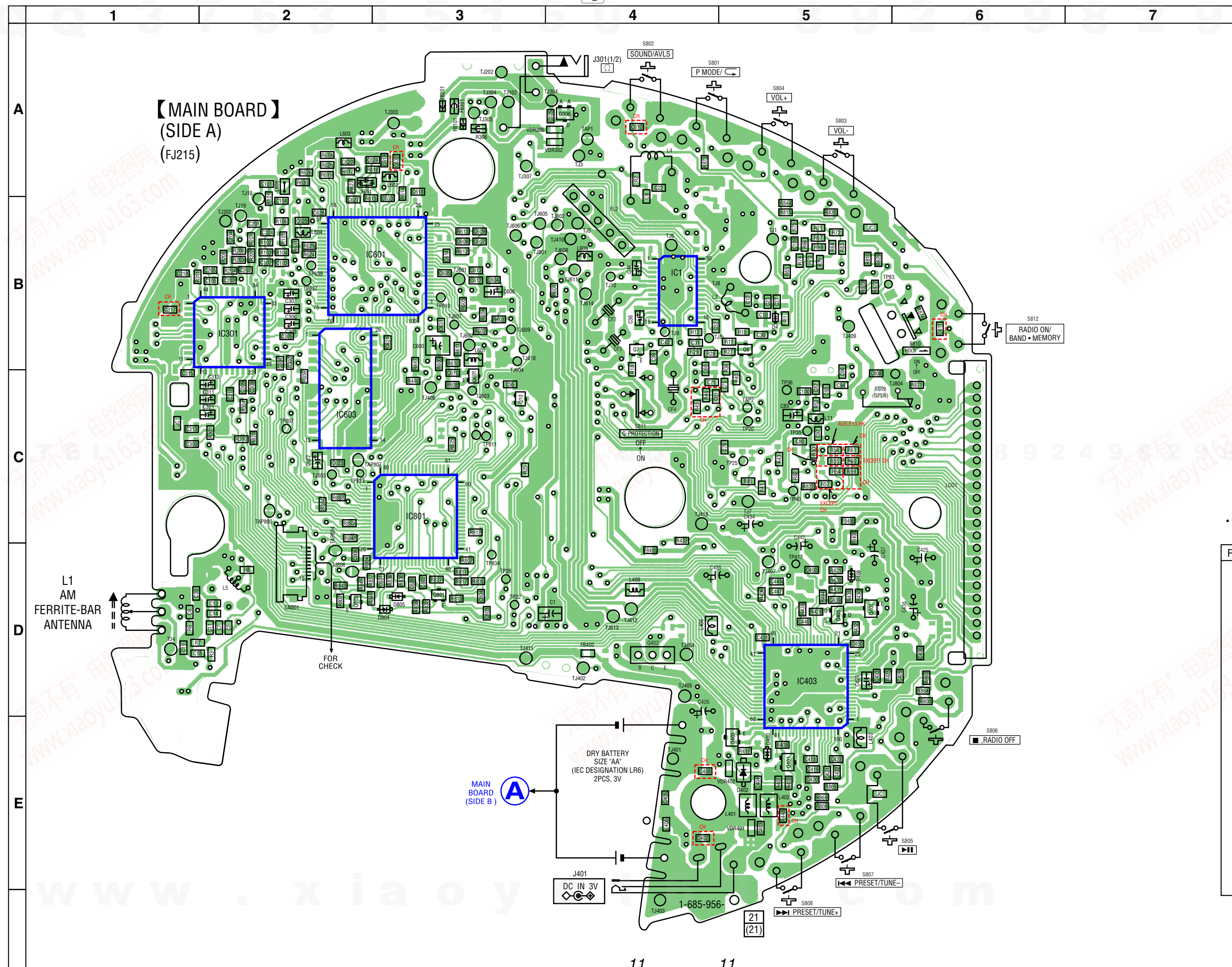
5-2. BLOCK DIAGRAM -TUNER SECTION-





5-3. PRINTED WIRING BOARDS -SIDE A- (FJ215 ONLY) • Refer to page 19 for Notes.

 : USES UNLEADED SOLDER.



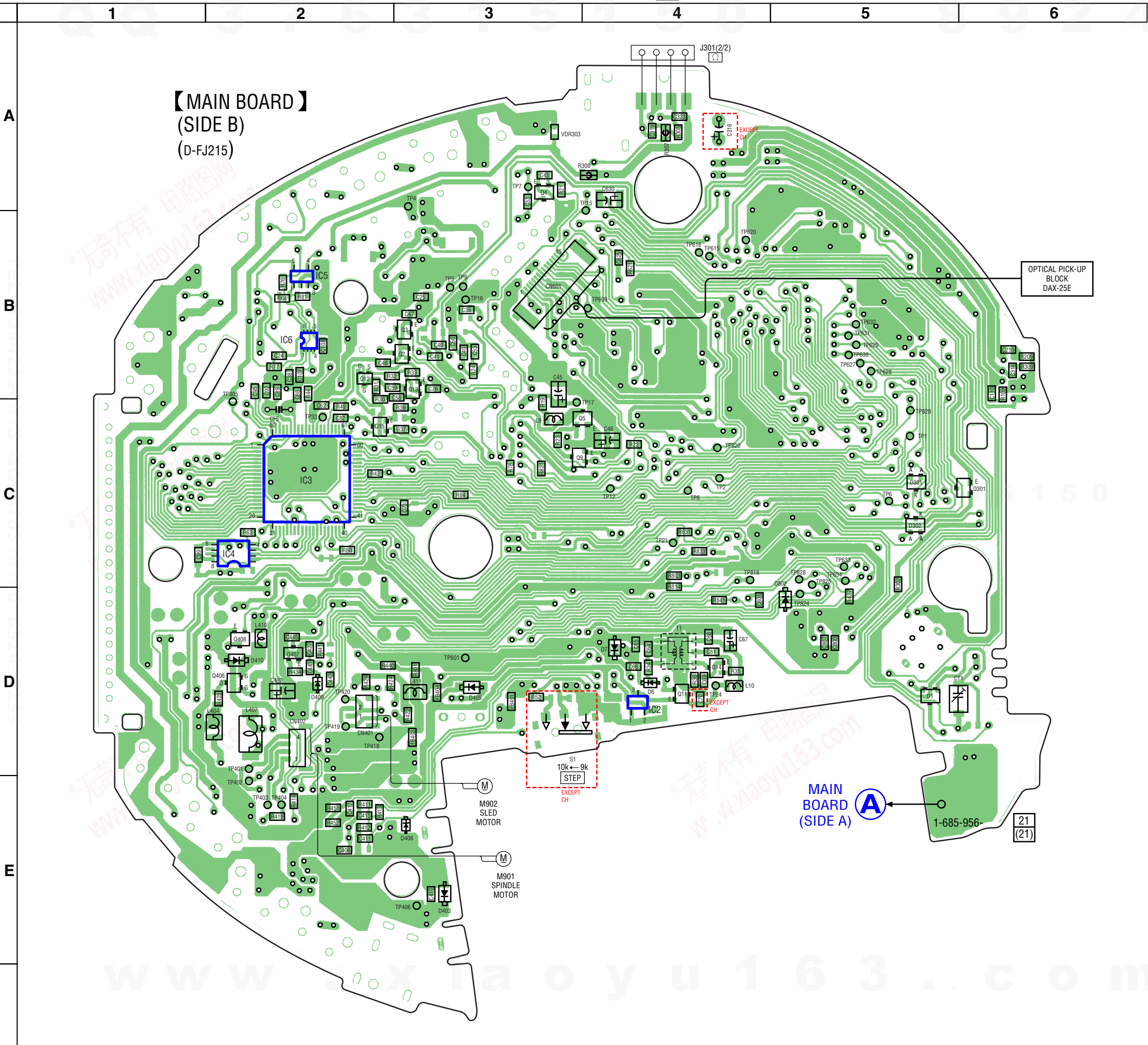
• Semiconductor Location

Ref. No.	Location
D3	A-4
D4	B-5
D306	A-4
D400	E-5
D402	E-5
D408	D-5
D804	D-3
D805	D-3
IC1	B-4
IC301	B-2
IC403	D-5
IC601	B-3
IC603	C-2
IC801	C-3
Q7	B-4
Q8	B-5
Q10	C-3
Q401	E-5
Q402	D-4
Q403	E-5
Q404	D-5
Q405	D-5
Q601	C-3
Q801	D-3
Q802	D-2



PRINTED WIRING BOARDS –SIDE B– (FJ215 ONLY) • Refer to page 19 for Notes.

 : USES UNLEADED SOLDER.



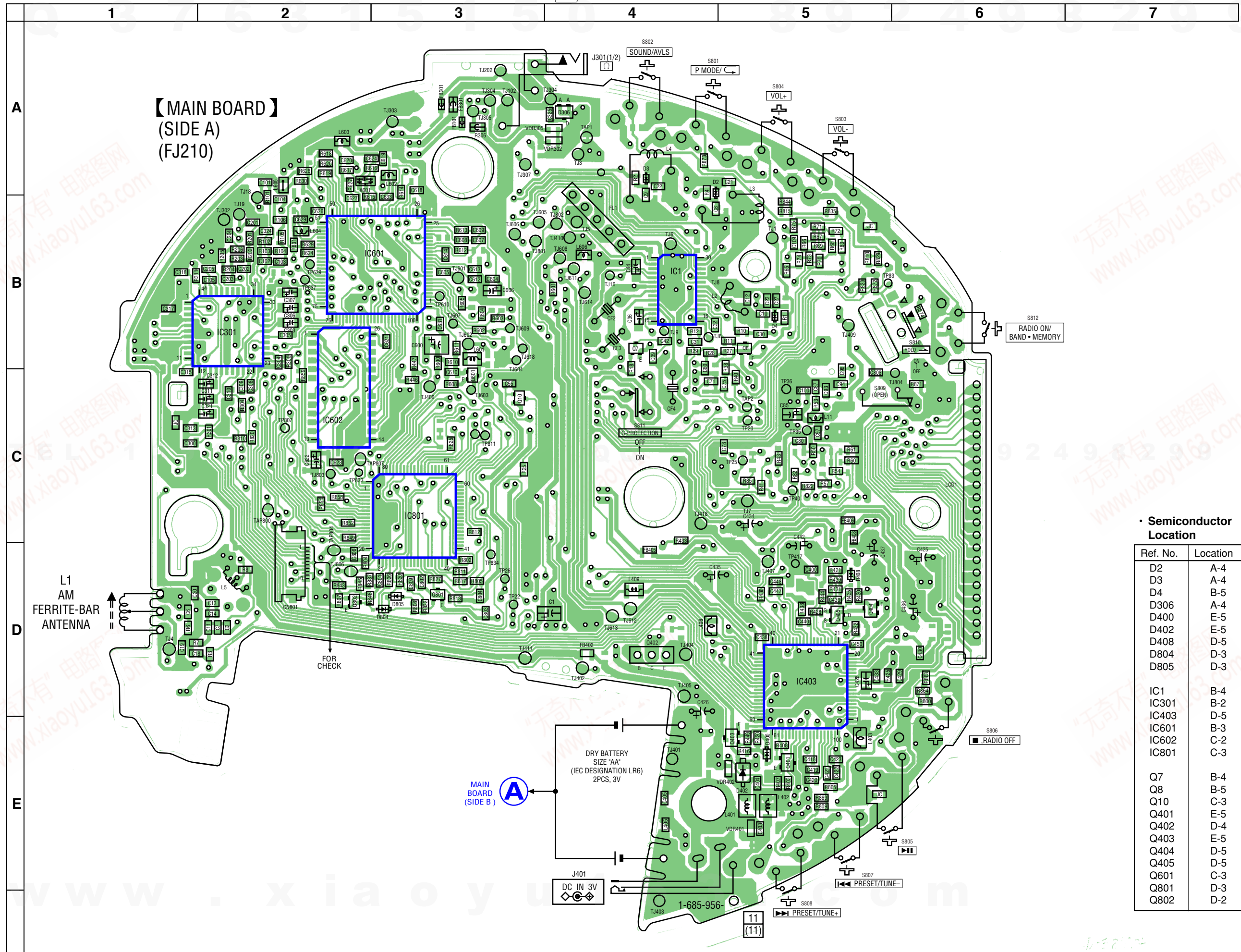
• Semiconductor Location

Ref. No.	Location
D1	D-5
D6	D-4
D7	D-4
D301	C-5
D302	C-5
D403	E-3
D405	D-3
D406	E-3
D409	D-2
D410	D-2
D802	D-5
IC2	D-4
IC3	C-2
IC4	C-2
IC5	B-2
IC6	B-2
Q2	B-3
Q3	B-3
Q5	C-4
Q9	C-3
Q11	D-4
Q12	B-2
Q13	B-3
Q14	D-4
Q15	C-2
Q301	C-6
Q406	D-2
Q407	D-2
Q408	D-2



**5-4. PRINTED WIRING BOARDS –SIDE A– (FJ210 ONLY) • Refer to page 19 for Notes.**

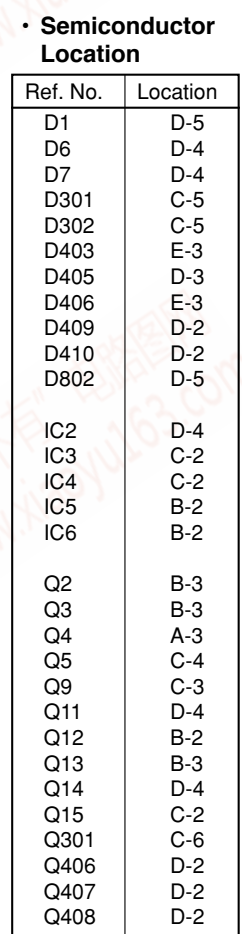
**4F : USES UNLEADED SOLDER.**



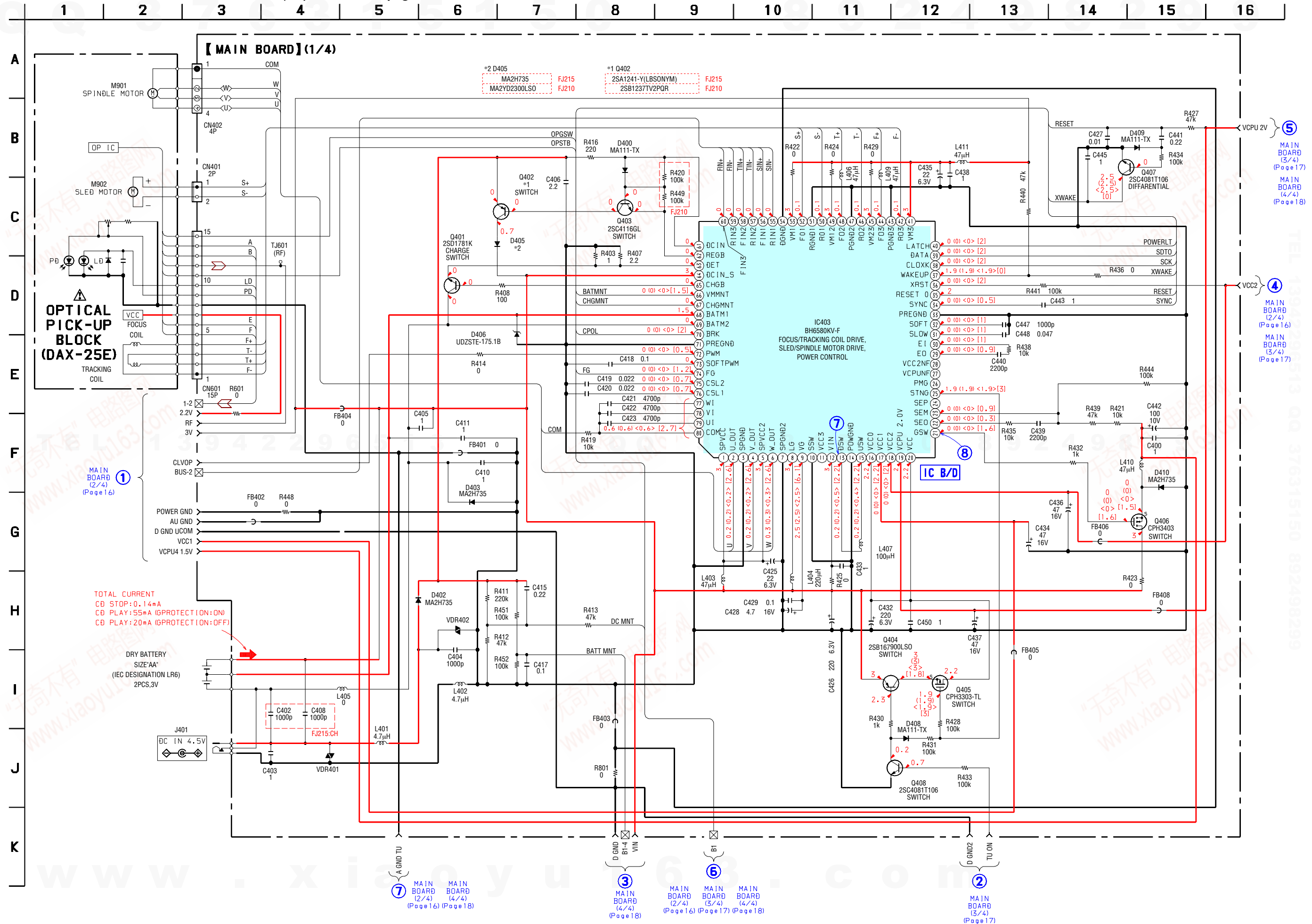
Ref. No.	Location
D2	A-4
D3	A-4
D4	B-5
D306	A-4
D400	E-5
D402	E-5
D408	D-5
D804	D-3
D805	D-3
IC1	B-4
IC301	B-2
IC403	D-5
IC601	B-3
IC602	C-2
IC801	C-3
Q7	B-4
Q8	B-5
Q10	C-3
Q401	E-5
Q402	D-4
Q403	E-5
Q404	D-5
Q405	D-5
Q601	C-3
Q801	D-3
Q802	D-2



**LF : USES UNLEADED SOLDER.**



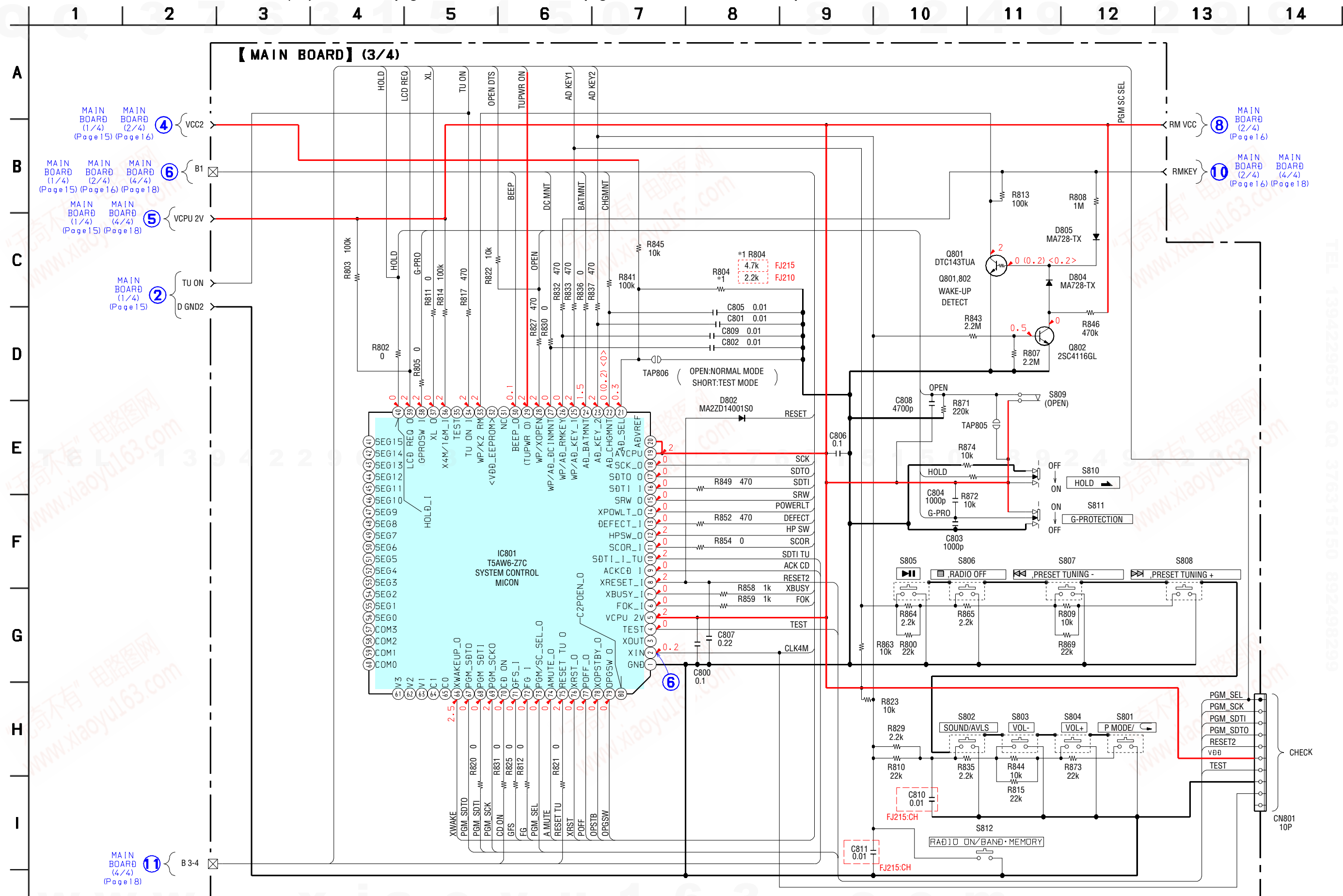
## 5-5. SCHEMATIC DIAGRAM – MAIN SECTION (1/4) – Refer to page 19 for Notes.



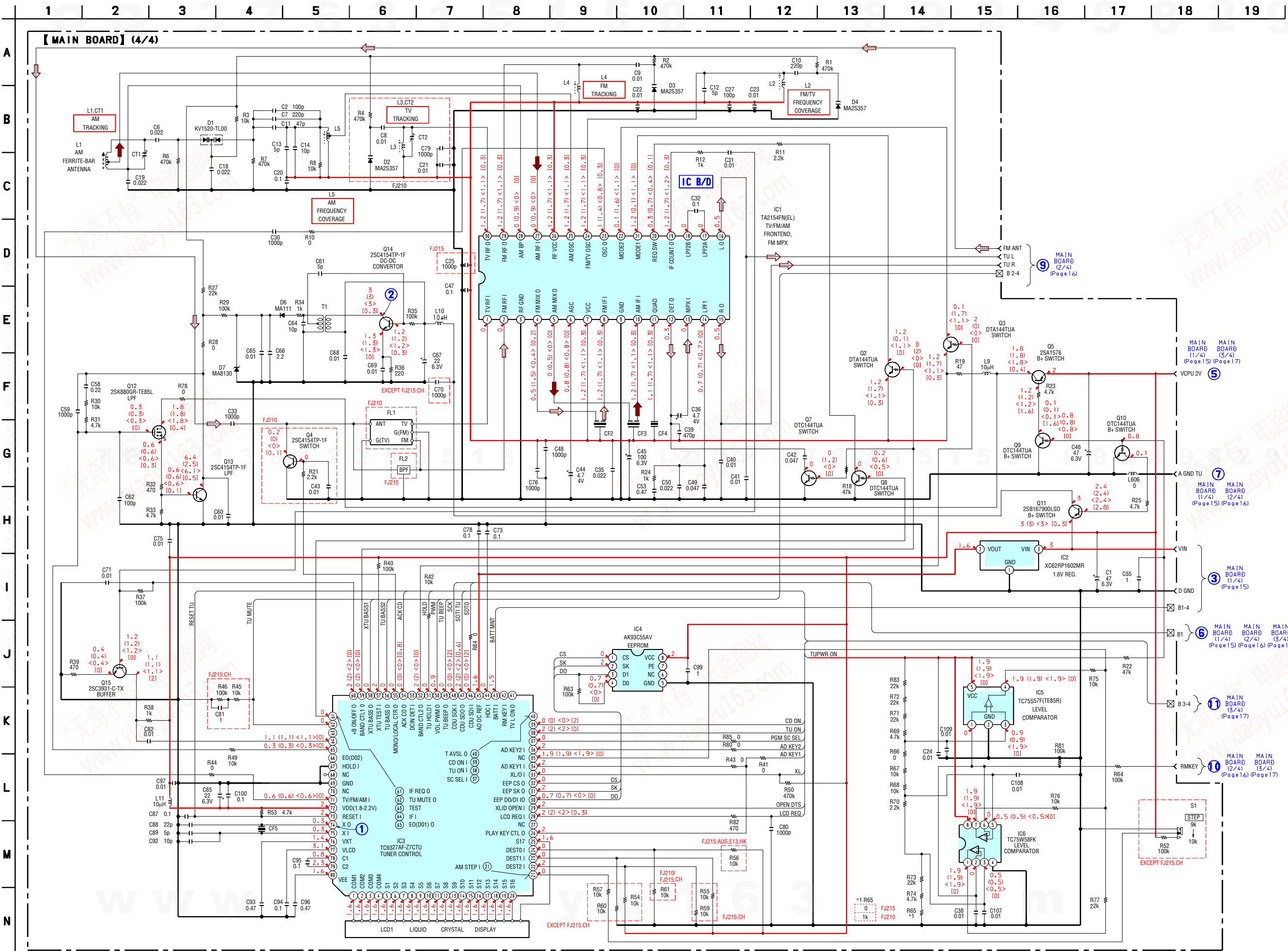


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----

**5-7. SCHEMATIC DIAGRAM – MAIN SECTION (3/4) – • Refer to page 19 for Notes. • Refer to page 22 for IC Pin Function Description.**



5-8. SCHEMATIC DIAGRAM – MAIN SECTION (4/4) – Refer to page 19 for Notes.





**Note on schematic diagrams.**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}$  W or less unless otherwise specified.
- : panel designation.

**Note:** The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

- — : B+ Line.
- : adjustment for repair.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal(detuned) conditions.  
no mark : FM  
( ) : AM  
< > : TV (FJ210)  
[ ] : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ).  
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  
▶ : AM
- Abbreviation  
AUS : Australian  
CH : Chinese  
HK : Hong Kong  
E13 : AC220–230V Area model

**Note on Printed Wiring Boards:**

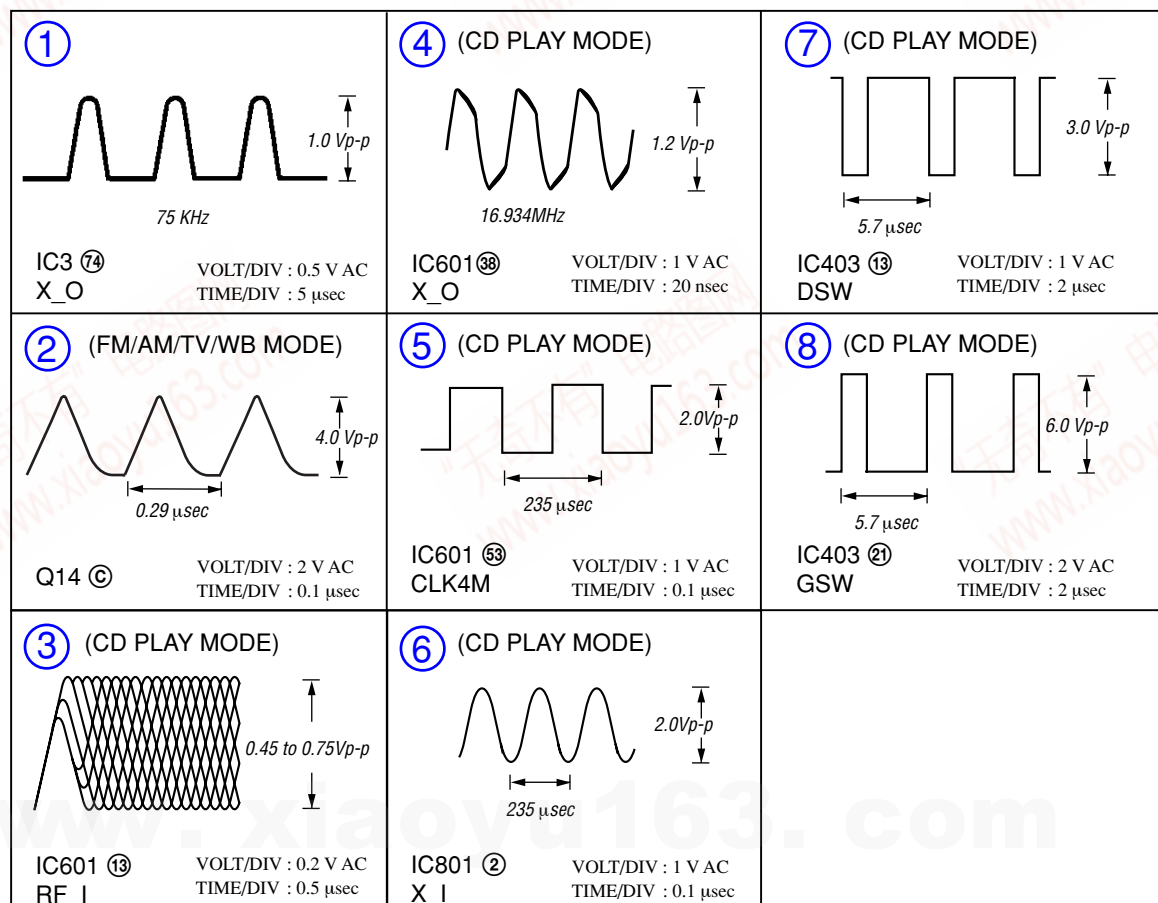
- : parts extracted from the component side.
- : Through hole.
- : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)

**Caution:**

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

**• Abbreviation**

AUS : Australian  
CH : Chinese  
HK : Hong Kong  
E13 : AC220–230V Area model

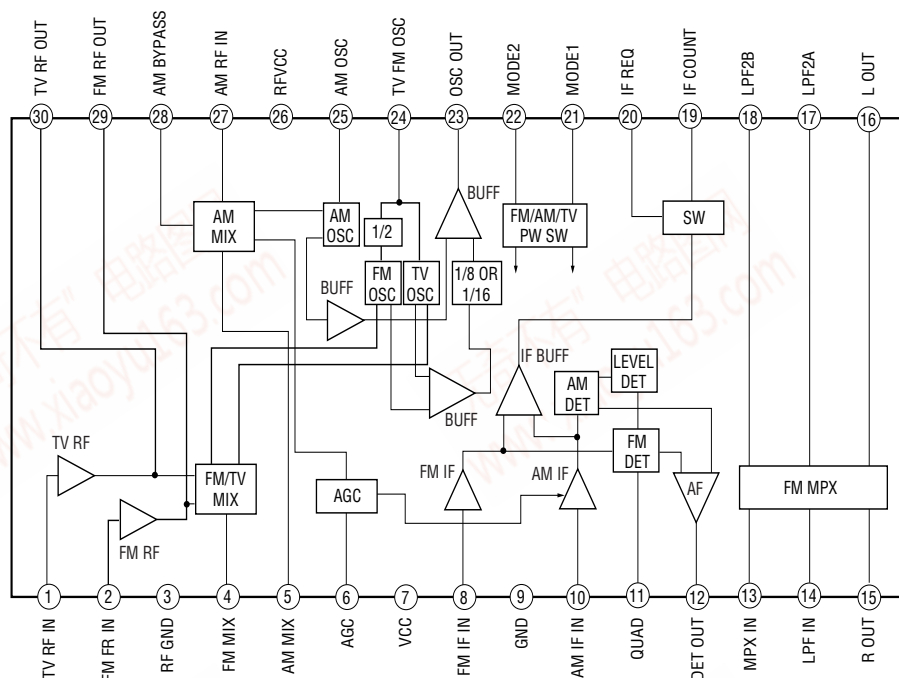
**• Waveforms**




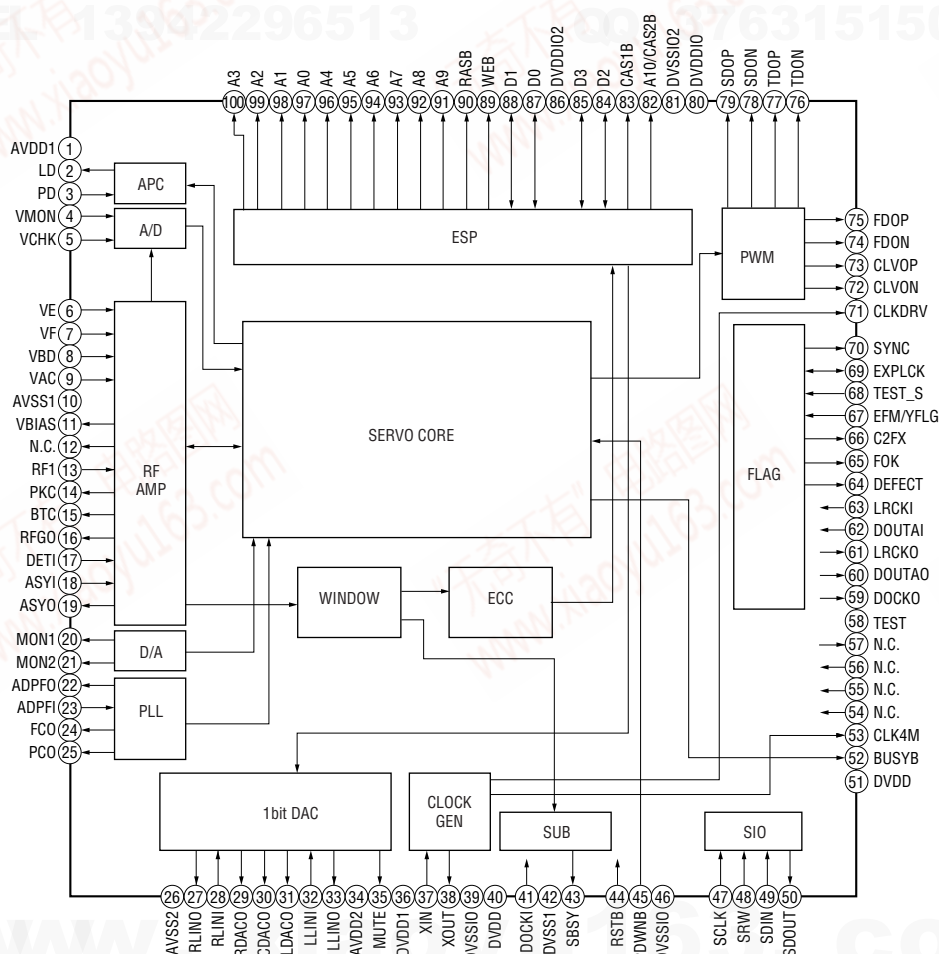
# D-FJ210/FJ215

## • IC BLOCK DIAGRAM

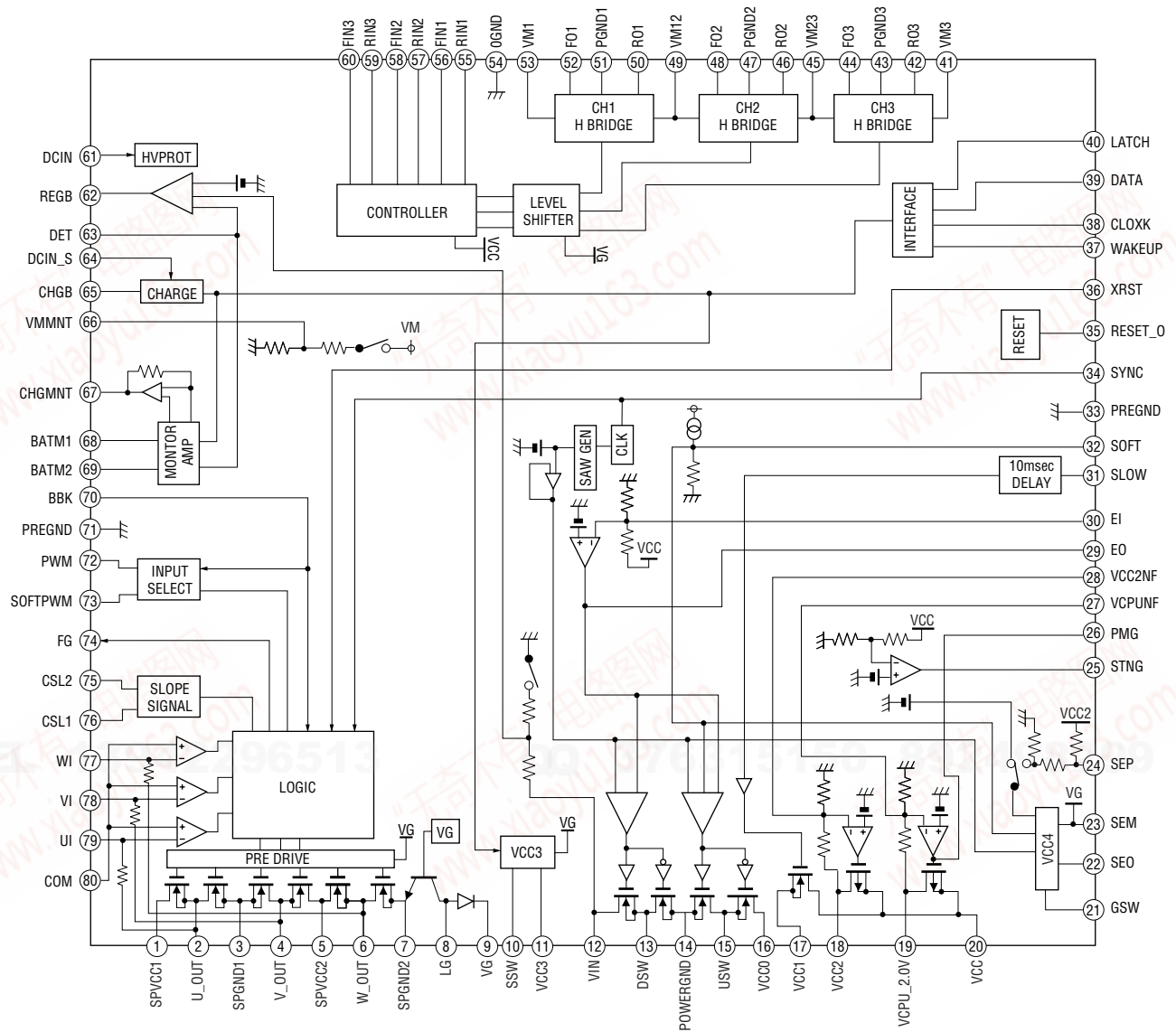
IC1 TA2154FN (EL)



IC601 BU9354KV



IC403 BH6580KV



**D-FJ210/FJ215****5-9. IC PIN FUNCTION DESCRINTION****IC801 (SYSTEM CONTROL) T5AW6-Z7C**

Pin No.	Pin name	I/O	Description
1	GND	–	Ground terminal
2	XIN	I	System clock input
3	XOUT	O	Not used (OPEN)
4	TEST	I	Test mode terminal
5	VCPU_2.0V	–	Power supply for CPU & I/O
6	FOK_I	I	Focus OK signal input
7	XBUSY_I	I	DSP's auto sequencer status
8	RESET_I	I/O	Micon reset terminal
9	ACKCD_I	I	ACK signal input
10	SDTI_I_TU	I	Signal data input from TC9327AF-641
11	SCOR_I	I	SCOR pulse input
12	HPSW_O	O	Headphone IC power switch
13	DEFECT_I	I	DEFECT signal input
14	XPOWLT_O	O	Power IC's serial interface latch output
15	SRW_O	O	DSP's serial interface Read/Write signal output
16	SDTI_I	I	Serial interface input
17	SDTO_O	O	Serial interface output
18	SCK_O	O	Serial interface clock output
19	AVCPU	–	Power supply for CPU and I/O
20	ADVREF	–	Analog reference voltage for A/D converter
21	AD_SEL	I	Test mode detection input
22	AD_CHGMNT	I	Charging monitor input
23	AD_KEY2	I	Key input
24	AD_BATMNT	I	Battery voltage monitor input
25	WP/AD_KEY1	I	Set's key detection input
26	WP/AD_RMKEY	I	Remocon's key detection input
27	AD_DCINMNT	I	DC voltage monitoring input
28	WP/XOPEN	I	OPEN switch status detection input
29	TUPWR	O	Power supply for tuner
30	BEEP_O	O	BEEP sound
31	NC	O	Not used (OPEN)
32	VDD_EEPROM	–	Power supply for EEPROM (OPEN)
33	WP/K2_RM	I	Wake-up signal input
34	TU_ON_I	I	Tuner ON signal input
35	TEST	O	Not used (OPEN)
36	X4M/16M_I	I	DRAM size selection terminal (fixed at H)
37	XL_O	O	Line out detection signal output
38	GPROSW_I	I	ESP switch status detection input
39	LCD_REQ_O	O	LCD request signal output
40	HOLD_I	I	HOLD switch status detection input
41 to 56	SEG0-15	O	Not used (OPEN)
57-60	COM0-3	O	Not used (OPEN)
61-63	V1-3	–	Not used (OPEN)
64	C1	–	Not used (OPEN)
65	C0	–	Not used (OPEN)
66	XWAKEUP_O	O	Wake-up signal output
67	PGM_SDTO	–	Not used (OPEN)

Pin No.	Pin name	I/O	Description
68	PGM_SDTI	–	Not used (OPEN)
69	PGM_SCK_O	–	Not used (OPEN)
70	CD_ON	O	CD ON signal output
71	GFS_I	I	Guard Frame Synchronous signal input
72	FG_I	I	FG signal input
73	PGMSEL_O	–	Not used (OPEN)
74	AMUTE_O	O	Mute ON/OFF control output
75	RESET_TU_O	O	Reset signal output
76	XREST_O	O	System reset output
77	POFF_O	O	DSP's power off output
78	XOPSTBY_O	O	Pick-up's power supply ON/OFF control
79	OPGSW_O	O	RF IC's gain control
80	C2POEN_O	O	Not used (OPEN)



# D-FJ210/FJ215

## SECTION 6 EXPLODED VIEWS

### NOTE :

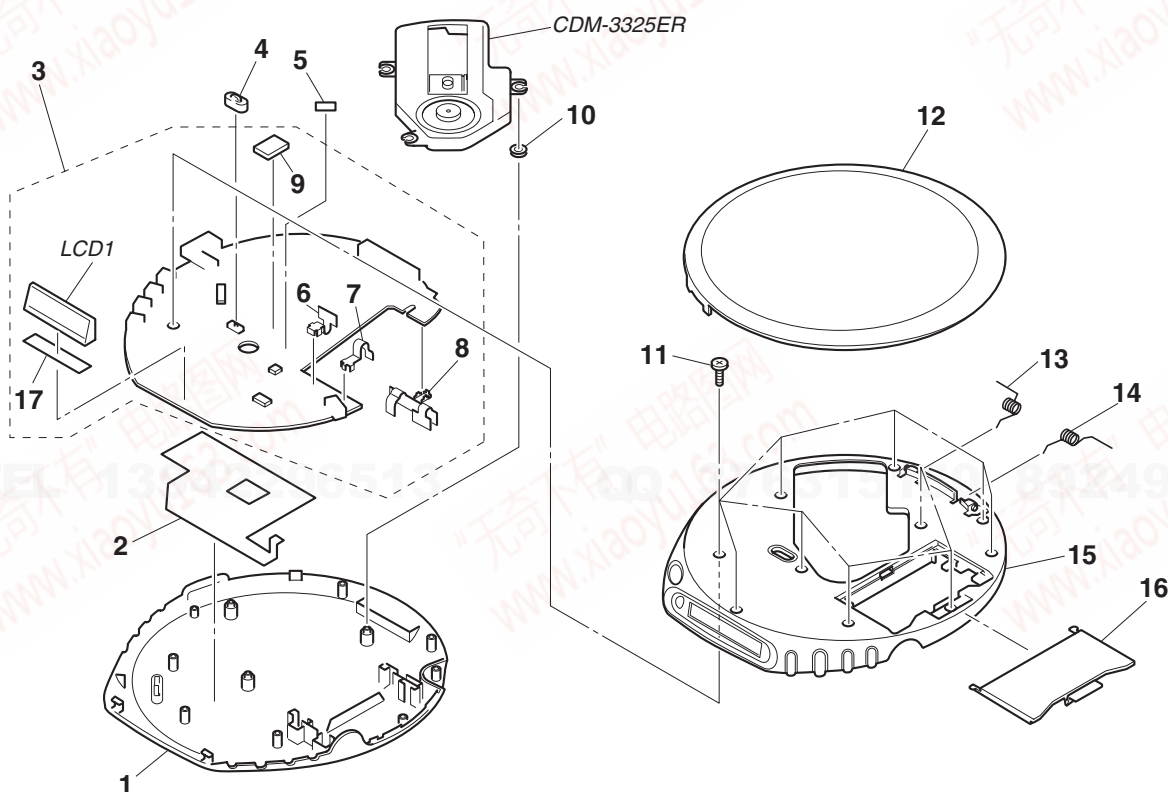
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation  
AUS : Australian  
CH : Chinese  
HK : Hong Kong  
E13 : AC220-230V Area model

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

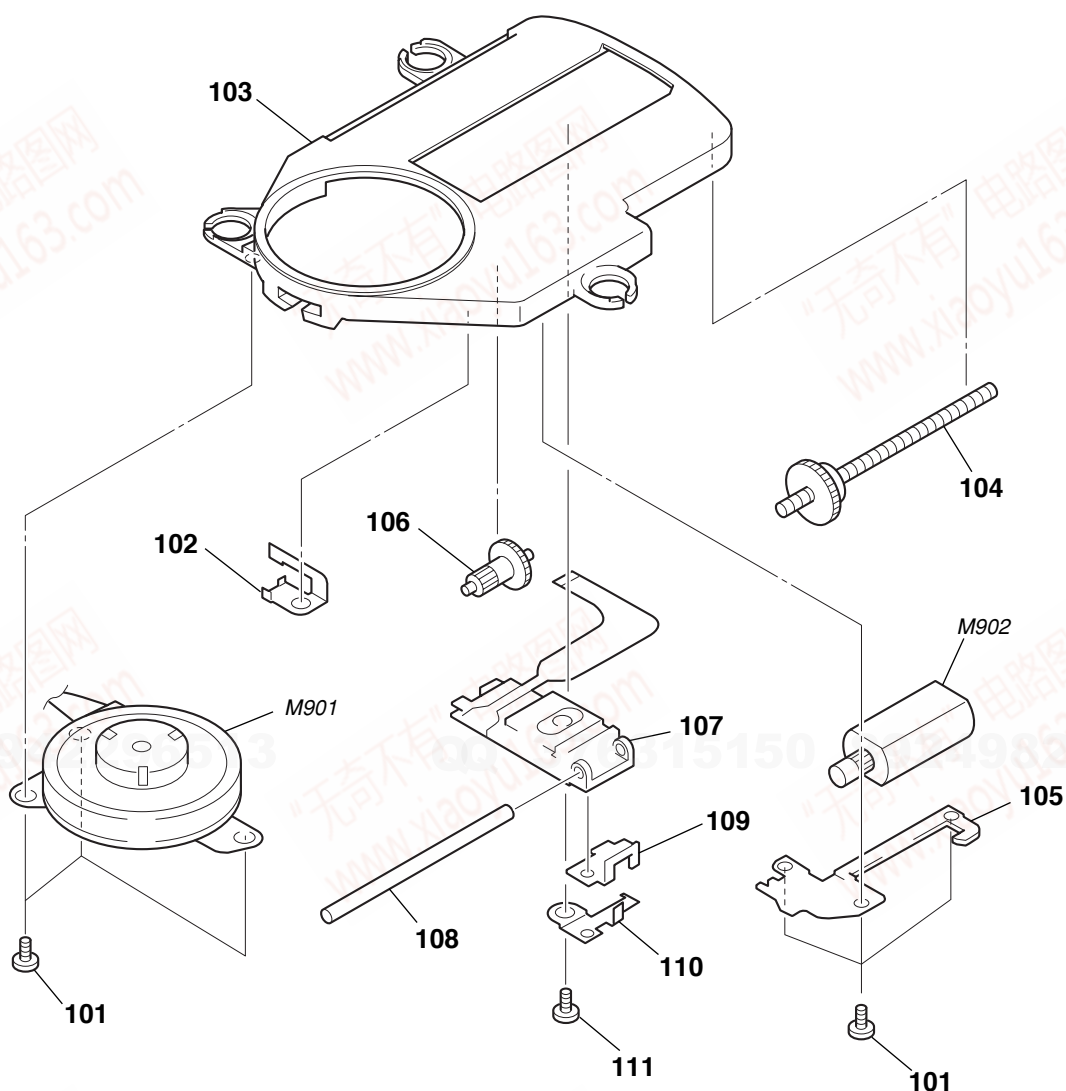
- The mechanical parts with no reference number in the exploded views are not supplied.

### 6-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3383-192-1	CABINET (LOWER) SUB ASSY		10	3-245-331-01	INSULATOR	
2	3-248-574-01	SHEET, SHIELD		11	4-908-792-61	SCREW (B2)	
* 3	A-3347-639-A	MAIN PC BOARD ASSY (FJ210)		12	X-3383-194-1	LID ASSY, UPPER (FJ210)	
* 3	A-3347-670-A	MAIN PC BOARD ASSY (FJ215:AUS,E13,HK)		12	X-3383-197-1	LID ASSY, UPPER (FJ215)	
* 3	A-3347-674-A	MAIN PC BOARD ASSY (FJ215:CH)		13	3-248-061-01	SPRING (L)	
4	3-249-578-01	KNOB (GPRO)		14	3-248-062-01	SPRING (R)	
5	3-842-929-01	SPACER, KNOB		15	X-3383-289-1	CABINET (UPPER) SUB ASSY (FJ210)	
6	3-246-653-01	TERMINAL BOARD (+), BATTERY		15	X-3383-290-1	CABINET (UPPER) SUB ASSY (FJ215)	
7	3-246-654-01	TERMINAL BOARD (-), BATTERY		16	3-246-595-01	LID, BATTERY CASE	
8	3-247-456-01	BOARD (RELAY), TERMINAL, BATTERY		17	3-254-514-01	SHEET (LCD), SHIELD	
9	3-252-360-01	CUSHION (MD)		LCD1	1-804-997-11	DISPLAY PANEL, LIQUID CRYSTAL	

## 6-2. OPTICAL PICK-UP SECTION (CDM-3325ER)



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-318-203-61	SCREW (B1.7X4), TAPPING		108	3-221-475-01	SHAFT, STANDARD	
102	3-221-474-01	SPRING, SLED		109	3-222-298-01	RACK	
103	3-221-472-02	CHASSIS		110	3-222-299-01	SPRING, RACK RETAINER	
104	A-3180-952-A	FEED ASSY, SCREW		111	3-348-998-31	SCREW (M1.4X2.5), TAPPING, PAN	
105	3-221-473-01	COVER, GEAR		M901	A-3180-953-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
106	3-221-268-01	GEAR (B)		M902	A-3180-951-A	MOTOR ASSY, SLED (including GEAR)	
$\triangle$ 107	X-3380-950-1	OPTICAL PICK-UP ASSY (DAX-25E RP)					

# D-FJ210/FJ215

## MAIN

## 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, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL : Metal-film resistor  
METAL OXIDE :Metal oxide-film resistor  
F : nonflammable
- Items marked " \* "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS  
In each case, u :  $\mu$  , for example :  
uA.... :  $\mu$  A.... , uPA.... :  $\mu$  PA....  
uPB.... :  $\mu$  PB.... , uPC.... :  $\mu$  PC....  
uPD.... :  $\mu$  PD....
- CAPACITORS  
uF :  $\mu$  F
- COILS  
uH :  $\mu$  H
- Abbreviation  
AUS : Australian  
CH : Chinese  
HK : Hong Kong  
E13 : AC220-230V Area model

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

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

Ref. No.	Part No.	Description	Remark
*	A-3347-639-A	MAIN BOARD, COMPLETE (FJ210)	
*	A-3347-670-A	MAIN BOARD, COMPLETE (FJ215:AUS,E13,HK)	
*	A-3347-674-A	MAIN BOARD, COMPLETE (FJ215:CH)	
		*****	
	3-246-653-01	TERMINAL BOARD (+), BATTERY	
	3-246-654-01	TERMINAL BOARD (-), BATTERY	
	3-247-456-01	BOARD (RELAY),TERMINAL,BATTERY	
	3-252-360-01	CUSHION (MD)	
		< CAPACITOR >	
C1	1-110-569-11	TANTAL. CHIP 47uF 20%	6.3V
C2	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C6	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C7	1-164-230-11	CERAMIC CHIP 220PF 5%	50V
C8	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V (FJ210)
C9	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C10	1-164-230-11	CERAMIC CHIP 220PF 5%	50V
C11	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C12	1-162-910-11	CERAMIC CHIP 5PF 0.25PF	50V
C13	1-162-910-11	CERAMIC CHIP 5PF 0.25PF	50V
C14	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C18	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C19	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C20	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C21	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V (FJ210)
C22	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C23	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C24	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C25	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (FJ215)
C27	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C30	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C31	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C32	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C33	1-115-416-11	CERAMIC CHIP 0.001uF 5%	25V
C35	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C36	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V
C38	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C39	1-164-315-11	CERAMIC CHIP 470PF 5%	50V
C40	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V

Ref. No.	Part No.	Description	Remark
C41	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C42	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C43	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V (FJ210)
C44	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V
C45	1-128-964-91	TANTAL. CHIP 100uF 20%	6.3V
C46	1-110-569-11	TANTAL. CHIP 47uF 20%	6.3V
C47	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C48	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C49	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C50	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
C53	1-117-863-11	CERAMIC CHIP 0.47uF 10%	6.3V
C55	1-115-156-11	CERAMIC CHIP 1uF	10V
C58	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V
C59	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C60	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C61	1-162-910-11	CERAMIC CHIP 5PF 0.25PF	50V
C62	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C64	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C65	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C66	1-135-834-91	CERAMIC CHIP 2.2uF	6.3V
C67	1-119-750-11	TANTAL. CHIP 22uF 20%	6.3V
C68	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C69	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C70	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (EXCEPT FJ215:CH)
C71	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C73	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C75	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C76	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C78	1-115-156-11	CERAMIC CHIP 1uF	10V
C79	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V (FJ210)
C80	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C81	1-125-837-91	CERAMIC CHIP 1uF 10%	6.3V (FJ215:CH)
C82	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C85	1-119-750-11	TANTAL. CHIP 22uF 20%	6.3V
C87	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C88	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C89	1-162-910-11	CERAMIC CHIP 5PF 0.25PF	50V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C92	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V	C318	1-115-467-11	CERAMIC CHIP	0.22uF 10% 10V
C93	1-117-863-11	CERAMIC CHIP	0.47uF 10% 6.3V	C319	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C94	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C321	1-119-750-11	TANTAL. CHIP	22uF 20% 6.3V
C95	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V				
C96	1-117-863-11	CERAMIC CHIP	0.47uF 10% 6.3V	C323	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C97	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C324	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C99	1-115-156-11	CERAMIC CHIP	1uF 10V	C325	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C100	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C328	1-135-856-91	TANTAL. CHIP	100uF 20% 10V
C101	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C400	1-115-156-11	CERAMIC CHIP	1uF 10V
C102	1-162-962-11	CERAMIC CHIP	470PF 10% 50V	C402	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C103	1-162-962-11	CERAMIC CHIP	470PF 10% 50V				(FJ215:CH)
C104	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C403	1-115-156-11	CERAMIC CHIP	1uF 10V
C105	1-135-834-91	CERAMIC CHIP	2.2uF 6.3V	C404	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C107	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C405	1-115-156-11	CERAMIC CHIP	1uF 10V
C108	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C406	1-135-834-91	CERAMIC CHIP	2.2uF 6.3V
C109	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C408	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C110	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V				(FJ215:CH)
C110	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C410	1-115-156-11	CERAMIC CHIP	1uF 10V
			(FJ210)	C411	1-115-156-11	CERAMIC CHIP	1uF 10V
C201	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C415	1-115-467-11	CERAMIC CHIP	0.22uF 10% 10V
C202	1-162-962-11	CERAMIC CHIP	470PF 10% 50V	C417	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C203	1-162-962-11	CERAMIC CHIP	470PF 10% 50V	C418	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C204	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C419	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C205	1-135-834-91	CERAMIC CHIP	2.2uF 6.3V	C420	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C210	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C421	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
			(FJ215)	C422	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C210	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C423	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
			(FJ210)	C425	1-126-153-11	ELECT	22uF 20% 6.3V
C300	1-127-760-11	CERAMIC CHIP	4.7uF 10% 6.3V	C426	1-126-369-11	ELECT	220uF 20% 6.3V
C301	1-216-864-11	METAL CHIP	0 5% 1/10W	C427	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
			(FJ210)	C428	1-107-686-11	TANTAL. CHIP	4.7uF 20% 16V
C302	1-216-864-11	METAL CHIP	0 5% 1/10W	C429	1-164-156-11	CERAMIC CHIP	0.1uF 25V
			(FJ210)	C432	1-128-829-91	TANTAL. CHIP	220uF 20% 6.3V
C303	1-119-750-11	TANTAL. CHIP	22uF 20% 6.3V	C433	1-115-156-11	CERAMIC CHIP	1uF 10V
C304	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	C434	1-124-589-11	ELECT	47uF 20% 16V
C305	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C435	1-126-153-11	ELECT	22uF 20% 6.3V
			(FJ215:CH)	C436	1-124-589-11	ELECT	47uF 20% 16V
C305	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C437	1-124-589-11	ELECT	47uF 20% 16V
			(EXCEPT FJ215:CH)	C438	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V
C306	1-119-750-11	TANTAL. CHIP	22uF 20% 6.3V	C439	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V
C307	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C440	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V
C308	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C441	1-115-467-11	CERAMIC CHIP	0.22uF 10% 10V
C309	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	C442	1-124-584-00	ELECT	100uF 20% 10V
C310	1-135-834-91	CERAMIC CHIP	2.2uF 6.3V	C443	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V
			(FJ215:CH)	C445	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V
C310	1-119-750-11	TANTAL. CHIP	22uF 20% 6.3V	C447	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
			(EXCEPT FJ215:CH)	C448	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V
C311	1-119-750-11	TANTAL. CHIP	22uF 20% 6.3V	C450	1-115-156-11	CERAMIC CHIP	1uF 10V
C312	1-119-750-11	TANTAL. CHIP	22uF 20% 6.3V	C600	1-110-569-11	TANTAL. CHIP	47uF 20% 6.3V
C313	1-127-760-11	CERAMIC CHIP	4.7uF 10% 6.3V	C604	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C314	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C605	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
			(FJ215)	C606	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C314	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C607	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
			(FJ210)	C608	1-115-467-11	CERAMIC CHIP	0.22uF 10% 10V
C315	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C609	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V
C316	1-126-369-11	ELECT	220uF 20% 6.3V	C610	1-127-760-11	CERAMIC CHIP	4.7uF 10% 6.3V
			(EXCEPT FJ215:CH)				(FJ215:CH)
C317	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C610	1-135-834-91	CERAMIC CHIP	2.2uF 6.3V
			(FJ215:CH)				(EXCEPT FJ215:CH)



# D-FJ210/FJ215

## MAIN

Ref. No.	Part No.	Description	Remark
C612	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C613	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C614	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C618	1-135-834-91	CERAMIC CHIP 2.2uF	6.3V
C619	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C620	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C621	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C622	1-119-750-11	TANTAL. CHIP 22uF 20%	6.3V
C623	1-115-156-11	CERAMIC CHIP 1uF	10V
C624	1-162-915-11	CERAMIC CHIP 10PF 0.5PF	50V
C625	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C626	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C627	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C629	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C630	1-128-964-91	TANTAL. CHIP 100uF 20%	6.3V
C631	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C632	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V (FJ215:CH)
C633	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C800	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C801	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C802	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C803	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C804	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C805	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C806	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C807	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V
C808	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C809	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C810	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V (FJ215:CH)
C811	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V (FJ215:CH)
< CERAMIC FILTER >			
CF2	1-795-035-11	FILTER, CERAMIC	
CF3	1-781-271-11	FILTER, CERAMIC	
CF4	1-795-845-21	DISCRIMINATOR, CERAMIC	
CF5	1-760-130-11	VIBRATOR, CRYSTAL	
< CONNECTOR >			
CN401	1-784-342-21	HOUSING, CONNECTOR 2P	
* CN402	1-785-877-21	HOUSING, CONNECTOR 4P	
* CN601	1-816-237-21	CONNECTOR, FFC/FPC (ZIF) 15P	
< TRIMMER CAPACITOR >			
CT1	1-141-374-11	CAP, TRIMMER 20PF (AM TRACKING)	
CT2	1-141-373-11	CAP, TRIMMER 10PF (TV/WB TRACKING)	(FJ210)
< DIODE >			
D1	8-719-076-70	DIODE KV1520TL	
D2	8-719-080-77	DIODE MA2S357(E)-(TX).SO (FJ210)	
D3	8-719-080-77	DIODE MA2S357(E)-(TX).SO	
D4	8-719-080-77	DIODE MA2S357(E)-(TX).SO	
D6	8-719-404-50	DIODE MA111-TX	
D7	8-719-420-87	DIODE MA8130	
D301	8-719-044-74	DIODE MA792WK-TX	

Ref. No.	Part No.	Description	Remark
D302	8-719-044-74	DIODE MA792WK-TX (FJ210)	
D306	8-719-059-53	DIODE MA3J14700LSO	
D400	8-719-404-50	DIODE MA111-TX	
D402	8-719-067-42	DIODE MA2H735-(TX).SO	
D403	8-719-067-42	DIODE MA2H735-(TX).SO	
D405	8-719-067-42	DIODE MA2H735-(TX).SO (FJ215)	
D405	8-719-085-43	DIODE MA2YD2300LSO (FJ210)	
D406	8-719-069-54	DIODE UDZSTE-175.1B	
D408	8-719-404-50	DIODE MA111-TX	
D409	8-719-404-50	DIODE MA111-TX	
D410	8-719-067-42	DIODE MA2H735-(TX).SO	
D802	8-719-072-70	DIODE MA2ZD14001SO	
D804	8-719-421-27	DIODE MA728	
D805	8-719-421-27	DIODE MA728	
< FERRITE BEAD >			
FB101	1-414-760-21	FERRITE	0UH
FB201	1-414-760-21	FERRITE	0UH
FB301	1-414-813-11	FERRITE	0UH
FB401	1-216-295-91	SHORT CHIP	0
FB402	1-216-295-91	SHORT CHIP	0
FB403	1-216-295-91	SHORT CHIP	0
FB404	1-216-295-91	SHORT CHIP	0
FB405	1-216-295-91	SHORT CHIP	0
FB406	1-216-295-91	SHORT CHIP	0
FB408	1-216-295-91	SHORT CHIP	0
< FILTER >			
FL1	1-781-765-11	FILTER, BAND PASS (FJ210)	
FL2	1-236-711-21	FILTER, BAND PASS (FJ215)	
< IC >			
IC1	6-701-310-01	IC TA2154FN(EL)	
IC2	8-759-457-70	IC XC62RP1602MR	
IC3	6-802-330-01	IC TC9327AF-Z7CTU	
IC4	8-759-449-23	IC AK93C55AV-L	
IC5	8-759-594-55	IC TC75S57F(TE85R)	
IC6	8-759-598-39	IC TC75W58FK(TE85R)	
IC301	6-703-718-01	IC AN17882A-E1	
IC403	6-703-034-01	IC BH6580KV	
IC601	6-703-033-01	IC BU9354KV	
IC602	6-702-737-01	IC MSM51X17400F-10TFSR1 (FJ210)	
IC603	8-759-671-27	IC MSM51V4400E-70TS-K (FJ215)	
IC801	6-802-331-01	IC T5AW6-Z7C	
< JACK >			
J301	1-815-088-41	JACK, HEADPHONE (⌚)	
J401	1-778-153-51	JACK,DC(POLARITY UNIFIED TYPE)	(DC IN 4.5V)
< COIL >			
L1	1-424-851-31	COIL, FERRITE-ROD ANTENA (MW)	(AM TRACKING)
L2	1-419-542-11	COIL, AIR-CORE (FM FREQUENCY COVERAGE)	
L3	1-419-542-11	COIL, AIR-CORE (TV/WB TRACKING) (FJ210)	
L4	1-456-313-11	COIL, AIR-CORE (FM TRACKING)	
L5	1-424-883-11	COIL (AM OSC) (AM FREQUENCY COVERAGE)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L9	1-414-398-11	INDUCTOR	10uH	R7	1-216-853-11	METAL CHIP	470K 5% 1/10W
L10	1-412-006-31	INDUCTOR	10uH	R8	1-216-833-11	METAL CHIP	10K 5% 1/10W
L11	1-412-006-31	INDUCTOR	10uH	R10	1-216-864-11	METAL CHIP	0 5% 1/10W
L401	1-412-056-11	INDUCTOR	4.7uH	R11	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
L402	1-412-056-11	INDUCTOR	4.7uH	R12	1-216-821-11	METAL CHIP	1K 5% 1/10W
L403	1-400-145-21	INDUCTOR	47uH	R18	1-216-841-11	METAL CHIP	47K 5% 1/10W
L404	1-414-406-41	INDUCTOR	220uH	R19	1-216-805-11	METAL CHIP	47 5% 1/10W
L405	1-216-295-91	SHORT CHIP	0	R21	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
L406	1-400-145-21	INDUCTOR	47uH				(FJ210)
L407	1-419-387-21	INDUCTOR	100uH	R22	1-216-841-11	METAL CHIP	47K 5% 1/10W
L409	1-400-145-21	INDUCTOR	47uH	R23	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
L410	1-400-145-21	INDUCTOR	47uH	R24	1-216-821-11	METAL CHIP	1K 5% 1/10W
L411	1-410-389-31	INDUCTOR CHIP	47uH	R25	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
L601	1-469-967-21	INDUCTOR	10uH	R27	1-216-837-11	METAL CHIP	22K 5% 1/10W
L602	1-216-295-91	SHORT CHIP	0	R28	1-216-864-11	METAL CHIP	0 5% 1/10W
L603	1-412-006-31	INDUCTOR	10uH	R29	1-216-845-11	METAL CHIP	100K 5% 1/10W
L604	1-412-006-31	INDUCTOR	10uH	R30	1-216-833-11	METAL CHIP	10K 5% 1/10W
L605	1-216-295-91	SHORT CHIP	0	R31	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
L606	1-216-295-91	SHORT CHIP	0	R32	1-216-817-11	METAL CHIP	470 5% 1/10W
< LIQUID CRYSTAL DISPLAY >				R33	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
LCD1	1-804-997-11	DISPLAY PANEL, LIQUID CRYSTAL		R34	1-216-821-11	METAL CHIP	1K 5% 1/10W
< TRANSISTOR >				R35	1-216-845-11	METAL CHIP	100K 5% 1/10W
Q2	8-729-028-92	TRANSISTOR	DTA144TUA-T106	R36	1-216-813-11	METAL CHIP	220 5% 1/10W
Q3	8-729-028-92	TRANSISTOR	DTA144TUA-T106	R37	1-216-845-11	METAL CHIP	100K 5% 1/10W
Q4	8-729-602-21	TRANSISTOR	2SC4154-F (FJ210)	R38	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q5	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR	R39	1-216-817-11	METAL CHIP	470 5% 1/10W
Q7	8-729-029-15	TRANSISTOR	DTC144TUA-T106	R40	1-216-845-11	METAL CHIP	100K 5% 1/10W
Q8	8-729-028-97	TRANSISTOR	DTC114TUA-T106	R41	1-216-864-11	METAL CHIP	0 5% 1/10W
Q9	8-729-028-97	TRANSISTOR	DTC114TUA-T106	R42	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q10	8-729-028-97	TRANSISTOR	DTC114TUA-T106	R43	1-216-864-11	METAL CHIP	0 5% 1/10W
Q11	8-729-054-79	TRANSISTOR	2SB167900LSO	R44	1-216-864-11	METAL CHIP	0 5% 1/10W
Q12	8-729-053-44	TRANSISTOR	2SK880-Y-TE85R	R45	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q13	8-729-602-21	TRANSISTOR	2SC4154-F				(FJ215:CH)
Q14	8-729-602-21	TRANSISTOR	2SC4154-F	R46	1-216-845-11	METAL CHIP	100K 5% 1/10W
Q15	8-729-423-52	TRANSISTOR	2SC3931-C				(FJ215:CH)
Q301	8-729-029-10	TRANSISTOR	DTC143TUA-T106	R49	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q401	8-729-921-73	TRANSISTOR	2SD1781K-QR	R50	1-216-853-11	METAL CHIP	470K 5% 1/10W
Q402	8-729-050-17	TRANSISTOR	2SA1241-Y(LBSONYM)(FJ215)	R52	1-216-845-11	METAL CHIP	100K 5% 1/10W
Q402	6-550-070-01	TRANSISTOR	2SB1237TV2PQR (FJ210)				(EXCEPT FJ215:CH)
Q403	8-729-231-74	TRANSISTOR	2SC4116-GL	R53	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
Q404	8-729-054-79	TRANSISTOR	2SB167900LSO	R54	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q405	8-729-047-36	TRANSISTOR	CPH3303-TL				(EXCEPT FJ215:CH)
Q406	8-729-044-84	TRANSISTOR	CPH3403-TL-E	R55	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q407	8-729-905-40	TRANSISTOR	2SC4081T106				(FJ215:CH)
Q408	8-729-905-40	TRANSISTOR	2SC4081T106	R56	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q601	8-729-054-79	TRANSISTOR	2SB167900LSO				(FJ215:AUS,E13,HK)
Q801	8-729-029-10	TRANSISTOR	DTC143TUA-T106	R57	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q802	8-729-231-74	TRANSISTOR	2SC4116-GL				(EXCEPT FJ215:CH)
< RESISTOR >				R59	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1	1-216-853-11	METAL CHIP	470K 5% 1/10W				(FJ215:CH)
R2	1-216-853-11	METAL CHIP	470K 5% 1/10W	R60	1-216-833-11	METAL CHIP	10K 5% 1/10W
R3	1-216-833-11	METAL CHIP	10K 5% 1/10W				(EXCEPT FJ215:CH)
R4	1-216-853-11	METAL CHIP	470K 5% 1/10W	R61	1-216-833-11	METAL CHIP	10K 5% 1/10W
							(FJ210,FJ215:CH)
R6	1-216-853-11	METAL CHIP	470K 5% 1/10W	R63	1-216-845-11	METAL CHIP	100K 5% 1/10W
				R64	1-218-895-11	METAL CHIP	100K 0.5% 1/10W
				R65	1-216-864-11	METAL CHIP	0 5% 1/10W
							(FJ215)
				R65	1-218-847-11	METAL CHIP	1K 0.5% 1/10W
							(FJ210)

**D-FJ210/FJ215****MAIN**

Ref. No.	Part No.	Description	Remark
R66	1-216-864-11	METAL CHIP 0	5% 1/10W
R67	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R68	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R69	1-218-863-11	METAL CHIP 4.7K	0.5% 1/10W
R70	1-218-855-11	METAL CHIP 2.2K	0.5% 1/10W
R71	1-218-879-11	METAL CHIP 22K	0.5% 1/10W
R72	1-218-879-11	METAL CHIP 22K	0.5% 1/10W
R73	1-218-879-11	METAL CHIP 22K	0.5% 1/10W
R74	1-218-863-11	METAL CHIP 4.7K	0.5% 1/10W
R75	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R76	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R77	1-218-879-11	METAL CHIP 22K	0.5% 1/10W
R78	1-216-864-11	METAL CHIP 0	5% 1/10W
R80	1-216-864-11	METAL CHIP 0	5% 1/10W
R81	1-218-895-11	METAL CHIP 100K	0.5% 1/10W
R82	1-216-864-11	METAL CHIP 0	5% 1/10W
R83	1-218-879-11	METAL CHIP 22K	0.5% 1/10W
R84	1-216-864-11	METAL CHIP 0	5% 1/10W
R85	1-216-864-11	METAL CHIP 0	5% 1/10W
R101	1-216-864-11	METAL CHIP 0	5% 1/10W
R102	1-216-837-11	METAL CHIP 22K	5% 1/10W
R103	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R104	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R105	1-216-833-11	METAL CHIP 10K	5% 1/10W
R106	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R109	1-216-864-11	METAL CHIP 0	5% 1/10W (FJ215)
R109	1-216-789-11	METAL CHIP 2.2	5% 1/10W (FJ210)
R201	1-216-864-11	METAL CHIP 0	5% 1/10W
R202	1-216-837-11	METAL CHIP 22K	5% 1/10W
R203	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R204	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R205	1-216-833-11	METAL CHIP 10K	5% 1/10W
R206	1-216-829-11	METAL CHIP 4.7K	5% 1/10W
R209	1-216-864-11	METAL CHIP 0	5% 1/10W (FJ215)
R209	1-216-789-11	METAL CHIP 2.2	5% 1/10W (FJ210)
R300	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R301	1-216-837-11	METAL CHIP 22K	5% 1/10W
R302	1-216-793-11	METAL CHIP 4.7	5% 1/10W
R304	1-216-864-11	METAL CHIP 0	5% 1/10W
R305	1-218-871-11	METAL CHIP 10K	0.5% 1/10W
R306	1-469-152-11	FERRITE 0UH	
R307	1-469-152-11	FERRITE 0UH	
R308	1-469-152-11	FERRITE 0UH	
R309	1-216-864-11	METAL CHIP 0	5% 1/10W (FJ215)
R309	1-216-789-11	METAL CHIP 2.2	5% 1/10W (FJ210)
R310	1-216-837-11	METAL CHIP 22K	5% 1/10W
R311	1-216-845-11	METAL CHIP 100K	5% 1/10W
R403	1-218-446-11	METAL CHIP 1	5% 1/10W
R407	1-216-789-11	METAL CHIP 2.2	5% 1/10W
R408	1-216-809-11	METAL CHIP 100	5% 1/10W
R411	1-218-903-11	METAL CHIP 220K	0.5% 1/10W
R412	1-218-887-11	METAL CHIP 47K	0.5% 1/10W
R413	1-216-841-11	METAL CHIP 47K	5% 1/10W

Ref. No.	Part No.	Description	Remark
R414	1-216-864-11	METAL CHIP 0	5% 1/10W
R416	1-216-813-11	METAL CHIP 220	5% 1/10W
R419	1-216-833-11	METAL CHIP 10K	5% 1/10W
R420	1-216-845-11	METAL CHIP 100K	5% 1/10W (FJ210)
R421	1-216-833-11	METAL CHIP 10K	5% 1/10W
R422	1-216-295-91	SHORT CHIP 0	
R423	1-216-295-91	SHORT CHIP 0	
R424	1-216-295-91	SHORT CHIP 0	
R425	1-216-295-91	SHORT CHIP 0	
R427	1-216-841-11	METAL CHIP 47K	5% 1/10W
R428	1-216-845-11	METAL CHIP 100K	5% 1/10W
R429	1-216-295-91	SHORT CHIP 0	
R430	1-216-821-11	METAL CHIP 1K	5% 1/10W
R431	1-216-845-11	METAL CHIP 100K	5% 1/10W
R432	1-216-821-11	METAL CHIP 1K	5% 1/10W
R433	1-216-845-11	METAL CHIP 100K	5% 1/10W
R434	1-216-845-11	METAL CHIP 100K	5% 1/10W
R435	1-216-833-11	METAL CHIP 10K	5% 1/10W
R436	1-216-864-11	METAL CHIP 0	5% 1/10W
R438	1-216-833-11	METAL CHIP 10K	5% 1/10W
R439	1-216-841-11	METAL CHIP 47K	5% 1/10W
R440	1-216-841-11	METAL CHIP 47K	5% 1/10W
R441	1-216-845-11	METAL CHIP 100K	5% 1/10W
R444	1-216-845-11	METAL CHIP 100K	5% 1/10W
R446	1-216-864-11	METAL CHIP 0	5% 1/10W
R447	1-216-864-11	METAL CHIP 0	5% 1/10W
R448	1-216-864-11	METAL CHIP 0	5% 1/10W
R449	1-216-845-11	METAL CHIP 100K	5% 1/10W (FJ210)
R451	1-218-895-11	METAL CHIP 100K	0.5% 1/10W
R452	1-218-895-11	METAL CHIP 100K	0.5% 1/10W
R600	1-216-789-11	METAL CHIP 2.2	5% 1/10W
R601	1-216-864-11	METAL CHIP 0	5% 1/10W
R602	1-216-845-11	METAL CHIP 100K	5% 1/10W
R603	1-216-845-11	METAL CHIP 100K	5% 1/10W
R604	1-216-845-11	METAL CHIP 100K	5% 1/10W
R605	1-216-845-11	METAL CHIP 100K	5% 1/10W
R608	1-216-789-11	METAL CHIP 2.2	5% 1/10W
R610	1-216-845-11	METAL CHIP 100K	5% 1/10W
R611	1-216-817-11	METAL CHIP 470	5% 1/10W
R612	1-216-864-11	METAL CHIP 0	5% 1/10W
R613	1-216-817-11	METAL CHIP 470	5% 1/10W
R614	1-216-805-11	METAL CHIP 47	5% 1/10W
R615	1-216-864-11	METAL CHIP 0	5% 1/10W
R616	1-216-857-11	METAL CHIP 1M	5% 1/10W
R617	1-216-864-11	METAL CHIP 0	5% 1/10W
R618	1-216-817-11	METAL CHIP 470	5% 1/10W
R619	1-216-817-11	METAL CHIP 470	5% 1/10W
R620	1-216-817-11	METAL CHIP 470	5% 1/10W
R621	1-216-864-11	METAL CHIP 0	5% 1/10W
R624	1-216-833-11	METAL CHIP 10K	5% 1/10W
R626	1-216-864-11	METAL CHIP 0	5% 1/10W
R627	1-216-833-11	METAL CHIP 10K	5% 1/10W
R629	1-216-864-11	METAL CHIP 0	5% 1/10W
R630	1-216-864-11	METAL CHIP 0	5% 1/10W
R631	1-216-825-11	METAL CHIP 2.2K	5% 1/10W
R800	1-216-837-11	METAL CHIP 22K	5% 1/10W



Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark
R801	1-216-295-91	SHORT CHIP	0			S806	1-786-211-21	SWITCH, KEYBOARD (■, RADIO OFF)	
R802	1-216-864-11	METAL CHIP	0	5%	1/10W	S807	1-786-211-21	SWITCH, KEYBOARD (◀, PRESET/TUNE -)	
R803	1-216-845-11	METAL CHIP	100K	5%	1/10W	S808	1-786-211-21	SWITCH, KEYBOARD (▶, PRESET/TUNE +)	
R804	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (FJ215)	S809	1-762-003-11	SWITCH, PUSH (OPEN)	
R804	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (FJ210)	S810	1-762-078-11	SWITCH, SLIDE (HOLD —▶)	
R805	1-216-864-11	METAL CHIP	0	5%	1/10W	S811	1-553-977-81	SWITCH, SLIDE (G-PROTECTION)	
R807	1-216-861-11	METAL CHIP	2.2M	5%	1/10W	S812	1-786-211-21	SWITCH, KEYBOARD (RADIO ON/BAND.MEMORY)	
R808	1-216-857-11	METAL CHIP	1M	5%	1/10W			< TRANSFORMER >	
R809	1-216-833-11	METAL CHIP	10K	5%	1/10W	T1	1-449-021-21	TRANSFORMER, DC/DC CONVERTER	
R810	1-216-837-11	METAL CHIP	22K	5%	1/10W			< VARISTOR >	
R811	1-216-864-11	METAL CHIP	0	5%	1/10W	VDR302	1-801-862-11	VARISTOR, CHIP	
R812	1-216-864-11	METAL CHIP	0	5%	1/10W	VDR303	1-801-862-11	VARISTOR, CHIP	
R813	1-216-845-11	METAL CHIP	100K	5%	1/10W	VDR305	1-801-862-11	VARISTOR, CHIP	
R814	1-216-845-11	METAL CHIP	100K	5%	1/10W	VDR401	1-801-864-21	VARISTOR, CHIP	
R815	1-216-837-11	METAL CHIP	22K	5%	1/10W	VDR402	1-801-864-21	VARISTOR, CHIP	
R817	1-216-817-11	METAL CHIP	470	5%	1/10W			< VIBRATOR >	
R820	1-216-864-11	METAL CHIP	0	5%	1/10W	X601	1-795-561-21	VIBRATOR, CERAMIC (16.934MHz)	
R821	1-216-864-11	METAL CHIP	0	5%	1/10W			*****	
R822	1-216-833-11	METAL CHIP	10K	5%	1/10W			MISCELLANEOUS	
R823	1-218-871-11	METAL CHIP	10K	0.5%	1/10W			*****	
R825	1-216-864-11	METAL CHIP	0	5%	1/10W	△ 107	X-3380-950-1	OPTICAL PICK-UP ASSY (DAX-25E RP)	
R827	1-216-817-11	METAL CHIP	470	5%	1/10W	LCD1	1-804-997-11	DISPLAY PANEL, LIQUID CRYSTAL	
R829	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W	M901	A-3180-953-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
R830	1-216-864-11	METAL CHIP	0	5%	1/10W	M902	A-3180-951-A	MOTOR ASSY, SLED (including GEAR)	
R831	1-216-864-11	METAL CHIP	0	5%	1/10W			*****	
R832	1-216-817-11	METAL CHIP	470	5%	1/10W			ACCESSORIES	
R833	1-216-817-11	METAL CHIP	470	5%	1/10W			*****	
R835	1-216-825-11	METAL CHIP	2.2K	5%	1/10W				
R836	1-216-864-11	METAL CHIP	0	5%	1/10W				
R837	1-216-817-11	METAL CHIP	470	5%	1/10W				
R841	1-216-845-11	METAL CHIP	100K	5%	1/10W				
R843	1-216-861-11	METAL CHIP	2.2M	5%	1/10W	△	1-477-627-11	REMOTE COMMANDER (RM-MC22F)	
R844	1-216-833-11	METAL CHIP	10K	5%	1/10W	△	1-477-662-11	ADAPTOR, AC (AC-ET455K) (FJ215:E13)	
R845	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	△	1-477-663-11	ADAPTOR, AC (AC-ET455K) (FJ215:HK)	
R846	1-216-853-11	METAL CHIP	470K	5%	1/10W	△	1-477-664-11	ADAPTOR, AC (AC-ET455K) (FJ215:AUS)	
R849	1-216-817-11	METAL CHIP	470	5%	1/10W	△	1-477-665-11	ADAPTOR, AC (AC-ET455K) (FJ215:CH)	
R852	1-216-817-11	METAL CHIP	470	5%	1/10W				
R854	1-216-864-11	METAL CHIP	0	5%	1/10W				
R858	1-216-821-11	METAL CHIP	1K	5%	1/10W				
R859	1-216-821-11	METAL CHIP	1K	5%	1/10W				
R863	1-218-871-11	METAL CHIP	10K	0.5%	1/10W				
R864	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W				
R865	1-216-825-11	METAL CHIP	2.2K	5%	1/10W				
R869	1-216-837-11	METAL CHIP	22K	5%	1/10W				
R871	1-216-849-11	METAL CHIP	220K	5%	1/10W				
R872	1-218-871-11	METAL CHIP	10K	0.5%	1/10W				
R873	1-216-837-11	METAL CHIP	22K	5%	1/10W				
R874	1-216-833-11	METAL CHIP	10K	5%	1/10W				
		< SWITCH >							
S1	1-762-078-11	SWITCH, SLIDE (9K/10K) (EXCEPT FJ215:CH)							
S801	1-786-211-21	SWITCH, KEYBOARD (P MODE/⏮)							
S802	1-786-211-21	SWITCH, KEYBOARD (SOUND/AVLS)							
S803	1-786-211-21	SWITCH, KEYBOARD (VOL -)							
S804	1-786-211-21	SWITCH, KEYBOARD (VOL +)							
S805	1-786-211-21	SWITCH, KEYBOARD (▶  )							

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




## REVISION HISTORY


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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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