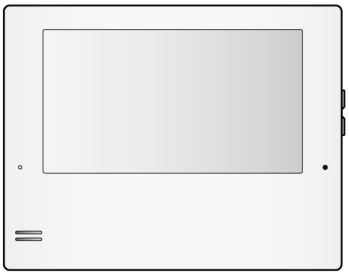
Order No.KMA1911121CE

Service Manual

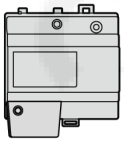
Video Intercom System

VL-SV75



VL-MV75
(Main Monitor)

VL-V524
(Door Station)



VL-PS241
(Power supply unit)

Note:

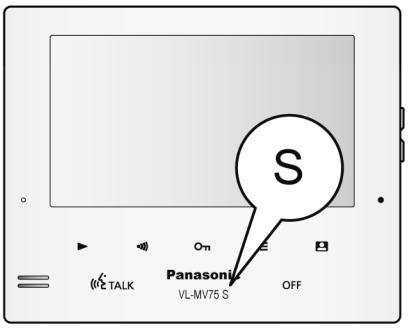
For configured of each VL-SV75 series, please refer to next page.

Model No. VL-SV75AZ
VL-MV75AZ
VL-MV75AZA
VL-MV75BXA
VL-V524LCE
VL-PS241

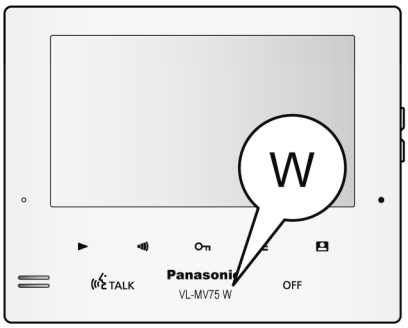
Panasonic®

■Identification of front panel type for Main monitor

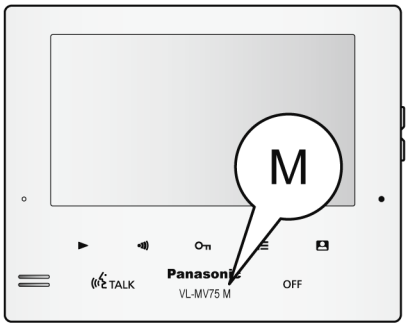
- S : Silver version



- W : White version



- M : Mirror design



■Pre-configured Bundles

		VL-SV75AZ	VL-MV75AZ	VL-MV75AZA	VL-MV75BXA
Color		-S:Silver version -W:White version -M:Mirror design	-S:Silver version -W:White version -M:Mirror design	-S:Silver version -W:White version	-S:Silver version -W:White version -M:Mirror design
Destination		for : Australia NewZealand	for : Australia NewZealand	for : Australia NewZealand	for : Indonesia Philippine Thailand Myanmar Malaysia
Main Monitor Station	VL-MV75AZ	1	1	1	—
	VL-MV75BX	—	—	—	1
Door Station	VL-V524LCE	1	—	—	—
Power Supply unit	VL-PS241	1	1	—	—

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product, the printed circuit boards will be marked PbF. Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

- When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.
- The illustrations in this Service Manual may vary slightly from the actual product.

Table of Contents

1 Safety Precautions

1. Before servicing, unplug the power cord to prevent an electrical shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, make the insulation resistance test to prevent a shock hazard.

1.1 For Service Technicians

- **Repair service shall be provided in accordance with repair technology information such as service manual so as to prevent fires, injury or electric shock, which can be caused by improper repair work**.

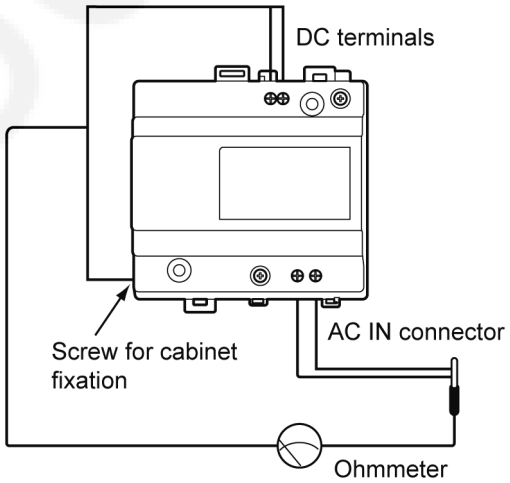
1. When repair services are provided, neither the products nor their parts or members shall be remodeled.
2. If a lead wire assembly is supplied as a repair part, the lead wire assembly shall be replaced.
3. FASTON terminals shall be plugged straight in and unplugged straight out.

- **ICs and LSIs are vulnerable to static electricity.**
  When repairing, the following precautions will help prevent recurring malfunctions.

1. Cover plastic parts boxes with aluminum foil.
2. Ground the soldering irons.
3. Use a conductive mat on worktable.
4. Do not grasp IC or LSI pins with bare fingers.

1.2 Insulation Resistance Test (by Insulation resistance tester)

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal part, such as screw threads, control shafts, handle brackets, etc.
   Note:
   Some exposed parts may be isolated from the chassis by design. These will read infinity.
3. If the measurement is outside the specified limits, there is a possibility of shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.



Resistance = more than 10MΩ
(at DC 500V, for 2 seconds)

1.3 Power Caution

The power socket wall outlet should be located near this equipment and be easily accessible.

2 Warning

2.1 Battery Caution

Risk of explosion if battery is replace by an incorrect type.
Dispose of used batteries according to the instructions.

2.2 About Lead Free Solder (PbF: Pb free)

Note:

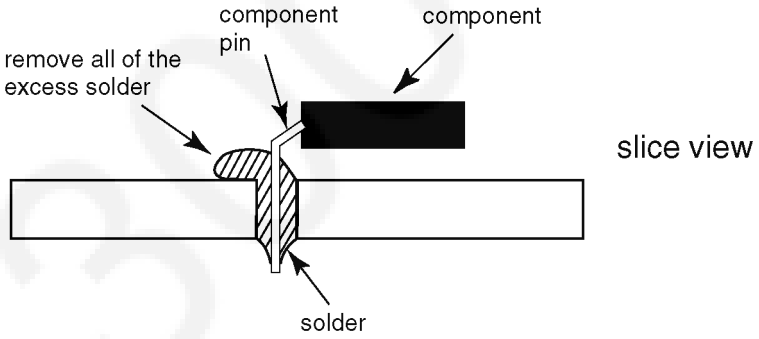
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF solder when discussing the lead free solder used in our manufacturing process which is made from Tin, (Sn), Silver, (Ag), and Copper, (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder although, with some precautions, standard Pb solder can also be used.

Caution

- PbF solder has a melting point that is 50° ~ 70° F, (30° ~ 40°C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700° ± 20° F, (370° ± 10°C). In case of using high temperature soldering iron, please be careful not to heat too long.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100°F, (600°C).
- If you must use Pb solder on a PCB manufactured using PbF solder, remove as much of the original PbF solder as possible and be sure that any remaining is melted prior to applying the Pb solder.
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See figure, below).

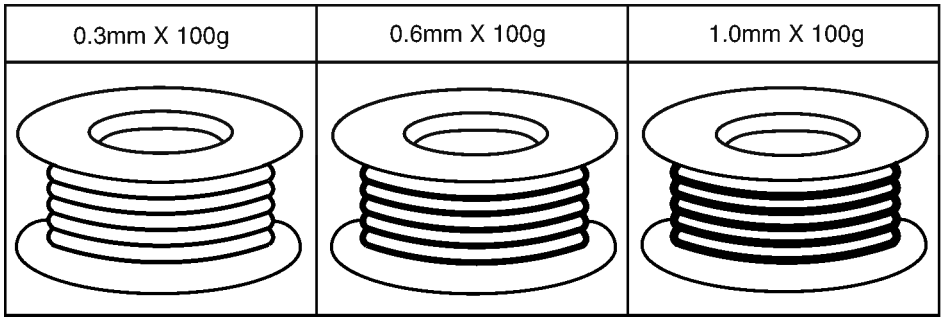


2.2.1 Suggested Pbf Solder

There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper,

(Sn+Ag+Cu), you can also use Tin and Copper, (Sn+Cu), or Tin, Zinc, and Bismuth, (Sn+Zn+Bi). Please check the manufacturer's specific instructions for the melting points of their products and any precautions for using their product with other materials.

The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3mm, 0.6mm and 1.0mm.



2.3 Discarding of P.C. Board

When discarding P. C. Board, delete all personal information such as telephone directory, caller list and recorded images or scrap P. C. Board.

2.4 Note For Repairing

1. Before carrying out repair, inform the user that there is a possibility of the user data inside the equipment becoming lost.
2. There is a possibility that the equipment to be repaired contains personal data or set data, so take adequate care.
3. When we loan you substitute equipment in order to carry out repair, please initialize the user data and setting data of the substitute equipment.

2.5 Disposal of old Equipment

(Only for European Union and countries with recycling systems)

This symbol on the products, packaging, and/or accompanying documents means that used electrical and electronic products must not be mixed with general household waste.
For proper treatment, recovery and recycling of old products, please take them to applicable collection points in accordance with your national legislation.
By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment. For more information about collection and recycling, please contact your local municipality.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

3 Specifications

Design and specifications are subject to change without notice.

3.1 Main monitor station (VL-MV75)

Power source:	Power supply unit (VL-PS241) 24 V DC, 0.5 A
Power consumption:	Standby: 1.9 W During operation: 12.7 W
Dimensions (mm): **(height x width x depth)**	VL-MV75-S VL-MV75-W : approx. 158 x 201 x 25 (excluding protruding sections) VL-MV75-M : approx. 158 x 201 x 26.5 (excluding protruding sections)
Mass (Weight):	VL-MV75-S/-W : approx. 605 g VL-MV75-M : approx. 650 g
Operating environment:	Ambient temperature: approx. 0 °C to +40 °C Relative humidity (non-condensing): up to 90 %
Display:	Approx. 17.8 cm (7.0 inches wide colour display)
Talking method:	Hands-free

3.2 Door phone (VL-V524)

Power source:	Power supplied by the main monitor
Dimensions (mm): **(height x width x depth)**	Approx. 152 x 102 x 35.5 (excluding protruding sections)
Mass (Weight):	Approx. 225 g
Operating environment:	Ambient temperature: approx. -15 °C to +55 °C Relative humidity (non-condensing): up to 90 %
Viewing angle:	Horizontally: approx. 85° Vertically: approx. 54°
Minimum illuminance required:	1 lx (within approx. 50 cm from the camera lens)
Lighting method:	LED lights

3.3 Power supply unit (VL-PS241) (indoor use only)

Power source:	Input: 220-240 V AC, 0.2 A, 50/60 Hz Output: 24 V DC, 0.6 A
Dimensions (mm): **(height x width x depth)**	Approx. 104 x 100 x 54 (excluding protruding sections)
Mass (Weight):	Approx. 215 g
Operating environment:	Ambient temperature: approx. 0 °C to +40 °C Relative humidity (non-condensing): up to 90 %

4 Technical Descriptions

4.1 Block Diagram

The block diagram of Video intercom system is shown in Fig 4.1.

Image signal root:

The image data is converted into NTSC signal by Camera unit, and the NTSC signal is modulated into FM signal.

FM signal is sent to the Monitor station through the interphone cable with ASK signal which modulated from command signal and voice signal. Demodulated NTSC signal is displayed on the LCD of Monitor station.

Route to Extension monitor:

The buffered FM signal is sent to the Extension monitor through the interphone cable with ASK signal which modulated from command signal and voice signal.

Demodulated NTSC signal is displayed on the LCD of Extension monitor.

Voice signal root:

The voice signal from the microphone of Door station is sent through the hybrid circuit(HYB), and interphone cable to the speaker of Monitor station. While the voice from the microphone of Monitor station reaches the speaker of the Door station through the reverse route.

Route to Extension monitor:

The voice signal from Door station is sent through another HYB, and interphone cable to Extension monitor.

In Extension monitor, The voice signal from Monitor station is sent through HYB and Sub CPU to the speaker of Extension monitor.

While the voice from the microphone of Extension monitor reaches the speaker of the Door station through the reverse route.

Command signal route:

The CPU command on Door station is modulated to ASK signal and sent to the Monitor station.This ASK signal is demodulated in Monitor station to pass to the CPU, and vice versa. (2-way communication)

Route to Extension monitor:

The Main CPU command of Monitor station is modulated to ASK signal and sent to Extension monitor.

This ASK signal is demodulated in Extension monitor to pass to Main CPU, and vice versa. (2-way communication)

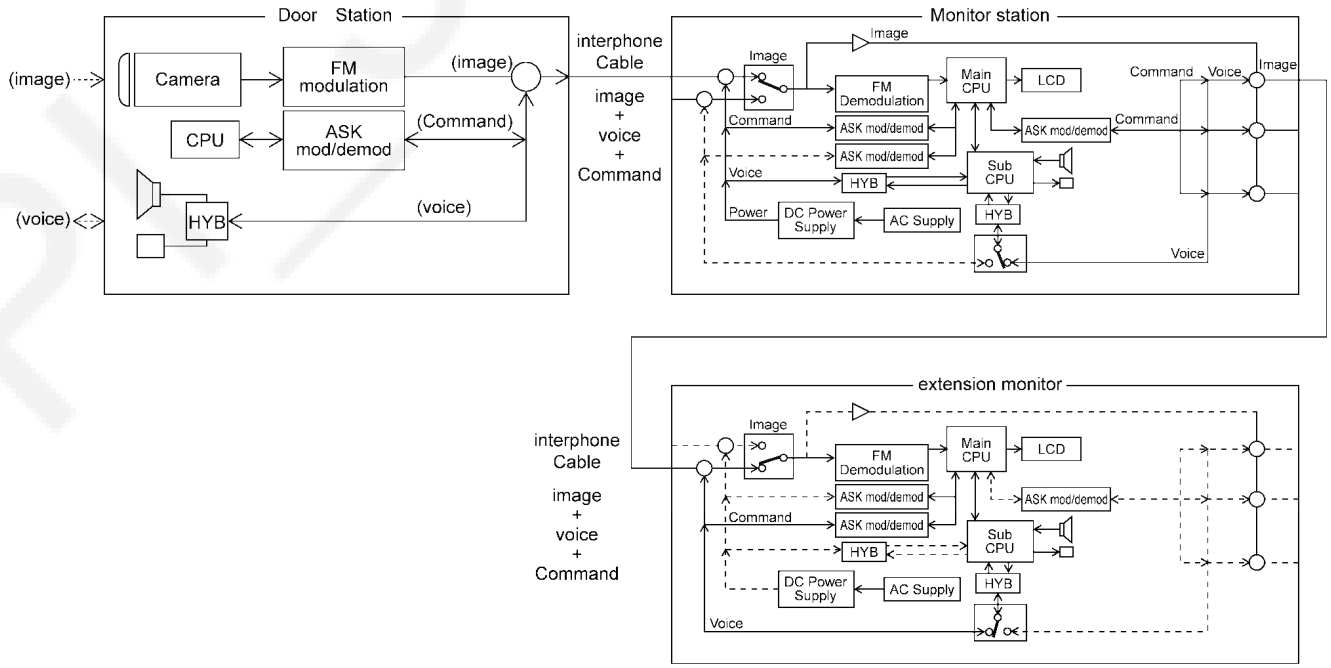


Fig. 4.1. Video intercom system block diagram

Call Signal from Door station:

When the call button is pressed in Stand-by mode, the short between lines causes the DC voltage of the interphone cable to go down. The monitor station detects this voltage reduction and then rings. Then LCD of the Monitor station is turned ON.

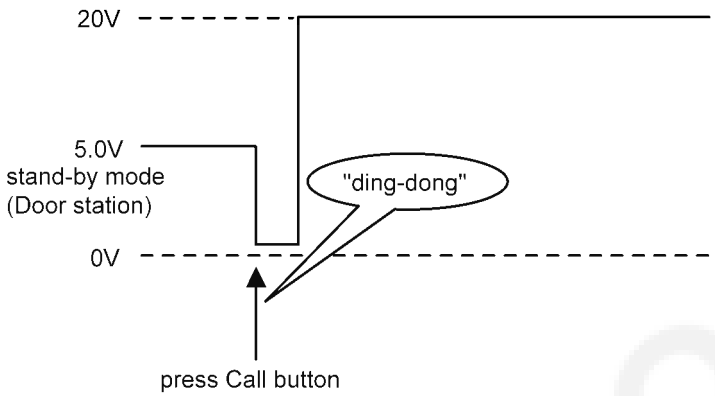


Fig. 4.2. Call signal from Door station

Communication to Extension monitor:

When the call is detected by Monitor station.

The Main CPU command of Monitor station is modulated to ASK signal and sent to Extension monitor.

This ASK signal is demodulated by Extension monitor.

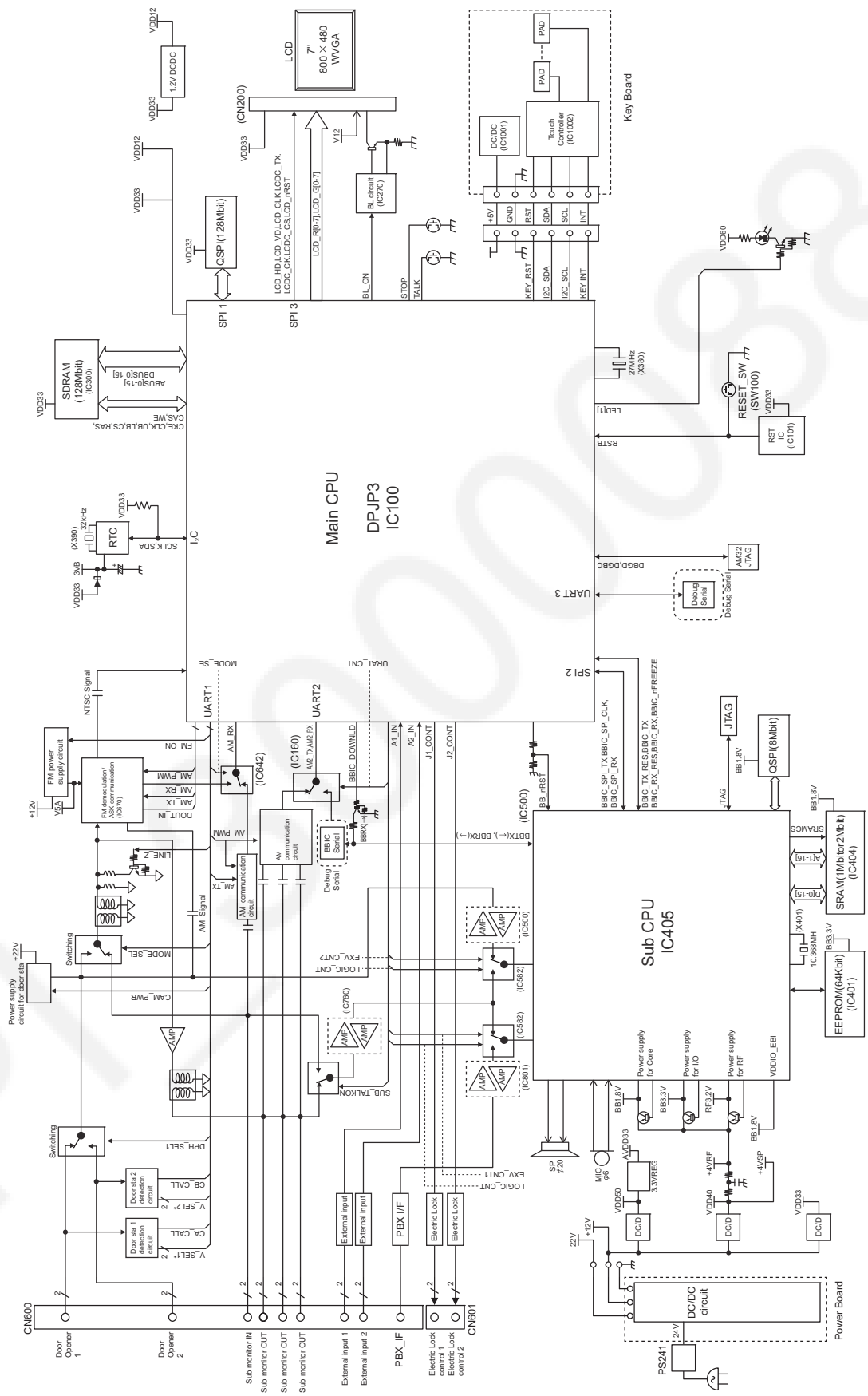
Extension monitor detects this call and then rings.

Then LCD of Extension monitor is turned ON.

4.2 IC Operation

4.2.1 Monitor Station Section

4.2.1.1 Main Monitor station Diagram



VL-MV75 : Main monitor station diagram

4.2.1.2 Main Board

4.2.1.2.1 External Interface Part

Regulator for Power 5V (IC910)

Input voltage: +12V

Output voltage: +5V

Package: 8pin SOP-8

Outline of Operation: It generate from +12V to +5V.

Regulator for BBIC & SP AMP 4V (IC930)

Input voltage: +12V

Output voltage: +4V

Package: 8pin SOP-8

Outline of Operation: It generate from +12V to +4V.

Regulator for 3.3V (IC920)

Input voltage: +12V

Output voltage: +3.3V

Package: 8pin SOP-8

Outline of Operation: It generate from +12V to +3.3V.

FM Demodulation (IC670)

Operating Power Supply : +5V

Package: 24pin SOP

Outline of Operation: The video signal (FM) from the Door Station is demodulated.

Regulator for 5V (IC671)

Input voltage: +12V

Output voltage: +5V

Package: 5pin SOT-25A.

Outline of Operation: It generate from +12V to +5V (FM Demodulation).

OP AMP for Door station (IC500)

Operating Power Supply : +12V

Package: 8pin SSOP-8

Outline of Operation: The sound signal (send & receive) are converted to 2 line from 4 line.

PBX OFF-HOOK detection photo coupler (IC800)

Operating Power Supply : +3.3V

Package: 4pin

Outline of Operation: The off hook signal is detected.

OP AMP for PBX 2/4 conversion (IC801)

Operating Power Supply : +12V

Package: 8pin SSOP-8

Outline of Operation: The sound signal (send & receive) are converted to 2line from 4line.

4.2.1.2.2 Audio Part

Sub CPU (IC405)

Operating Power Supply : +3.3V

Operating Power Supply : +4V (SP AMP)

Operating Power Supply : +3.2V (RF)

Operating Power Supply : +1.8V (Core)

Package: 206pin

Package Size: 15 x 15 mm

Outline of Operation: Baseband signal processing/Sound signal processing/Part of RF and voice control.

System clock frequency: 10.368MHz (X401)

8M FROM (IC402)

Operating Power Supply : +1.8V

Package: 8pin SOIC

Memory capacity: 8Mbit

Outline of Operation: Storing the program of IC405.

EEPROM(IC401)

Operating Power Supply : +3.3V

Package: SOP-J8

Memory capacity: 64kbit

Outline of Operation: Storing the parameter of IC405.

1MSRAM (IC404)

Operating Power Supply : +1.8V

Package: 48-ball VFBGA

Memory capacity: 1Mbit

Outline of Operation: Work area of IC405.

4.2.1.2.3 Video/Timer/LCDIF/TSP Part

OP AMP for LCD_BL Circuit (IC270)

Operating Power Supply : +3.3V

Package: 8pin SSOP-8

Outline of Operation: Control of LCD_BL current.

Timer (IC390)

Operating Power Supply : +3V

Package: 8pin SNT-8A

Outline of Operation: timer of IC100.

System clock frequency: 32.768KHz (X790).

4.2.1.2.4 DPJP3 Part

DPJP3 (IC100)

Operating Power Supply : +1.2V +3.3V

Package: 216pin LQFP216

Package: 26 x 26 mm

Outline of Operation: Video signal processing/Part of LCD and the other control.

System clock frequency: 27MHz

SDRAM(IC300)

Operating Power Supply: +1.2V +3.3V

Package: 54pin TSOP II

Memory capacity: 128Mbit

Outline of Operation: Work area of IC100.

FLASH MEMORY(IC350)

Operating Power Supply: +3.3V

Package: 8pin SOIC

Memory capacity: 128Mbit

Outline of Operation: Storing the program of IC100.

4.2.1.3 Power Board

4.2.1.3.1 Power Supply Part

Regulator for Power 12V (IC1)

Input voltage: +24V

Output voltage: +12V

Package: 6pin SOT-23-6W

Outline of Operation: It generate from +24V to +12V.

4.2.1.4 KEY Board

4.2.1.4.1 Key Part

Regulator for Power 3.3V (IC1001)

Input voltage: +5V

Output voltage: +3.3V

Package: 5pin SOT-89-5

Outline of Operation: It generate from +5V to +3.3V.

Touch Button Controller(IC1002)

Operating Power Supply: +3.3V

Package: 28pin MLPQ-UT28

Outline of Operation: Detect capacitance change caused by touching button.

4.2.1.5 Power Supply Unit (VL-PS241)

Power control IC (IC1)

Input voltage: AC 220V~240V

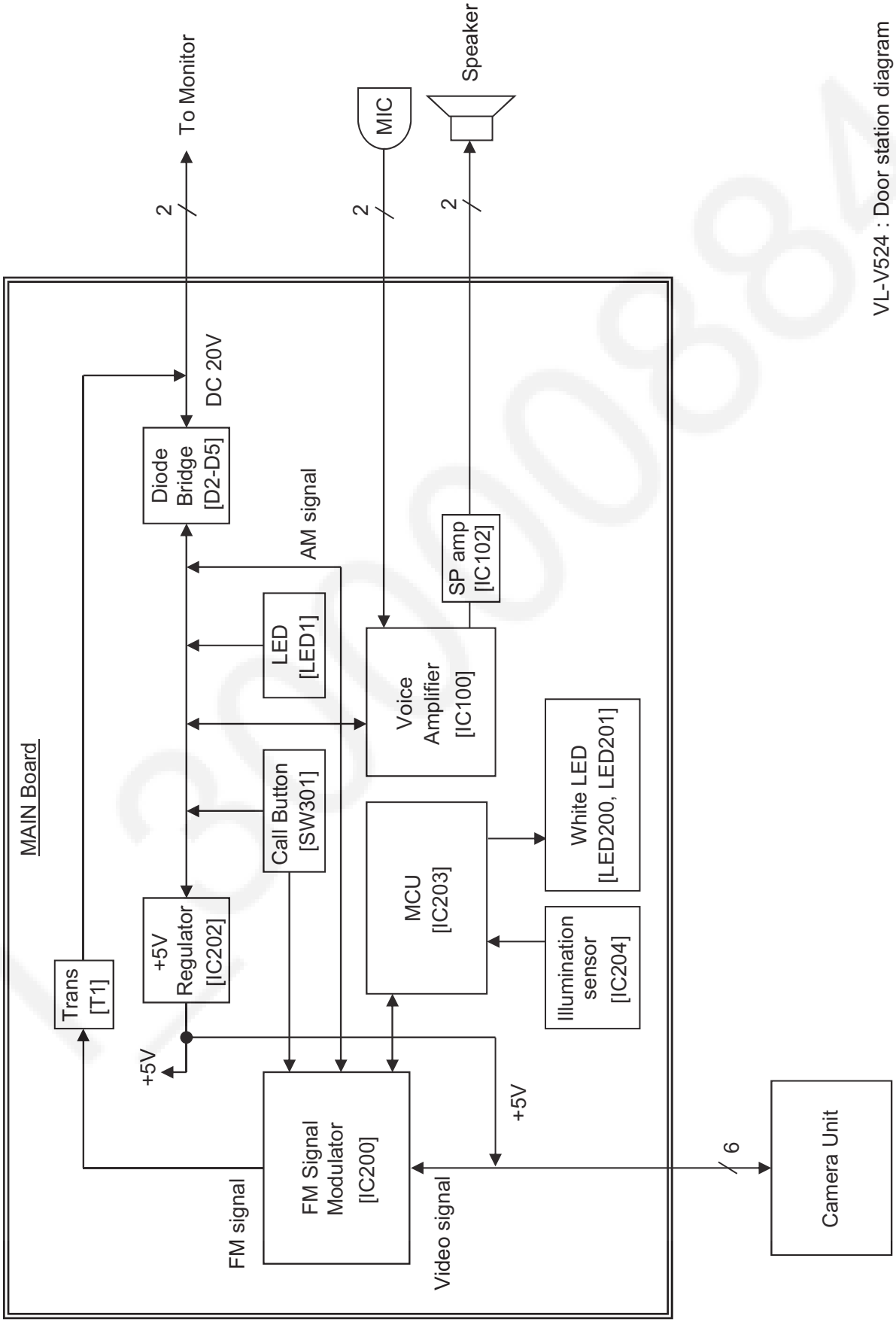
Output voltage: DC 24V

Package: 7pin DIP

Outline of Operation: It generate from AC 220V~240V to DC 24V.

4.2.2 Door Station Section

4.2.2.1 Door station Diagram



VL-V524 : Door station diagram

4.2.2.2 Main Board

Call Button (SW301)

Outline of Operation : When a visitor presses the Call Button, a chime tone will ring at the monitor station.

FM Signal Modulator (IC200)

Operating Power Supply : +5V (+5V : 2, 9pin)

Package : 24pin SOP

Outline of Operation : The frequency modulation of the video signal taken in from Camera Unit is carried out.

+5V Regulator (IC202)

Input Voltage : +20V

Output Voltage : +5V

Package : SOT-23-6W

Outline of Operation : It generate from +20V to +5V.

Voice Amplifier (IC100)

Operating Power Supply : +5V

Package : 8pin SSOP8

Outline of Operation :

- The voice signal from the Microphone is amplified and sent to the Monitor Station.
- The voice signal from the Monitor Station is amplified and sent to the SP amp (IC102).

Speaker Amplifier (IC102)

Operating Power Supply : +5V

Package : VSP-8pin

Outline of Operation : The voice signal from the Voice amp (IC100) is amplified and sent to the Speaker.

MCU (IC203)

Operating Power Supply : +5V

Package : 32pin QFP

Outline of Operation :

- It communicates with the Monitor Station by AM signal through IC200.
- It controls of the camera, the electric lock, and the lighting, by the operation from the Monitor Station.
- Control (zoom processing, backlighting compensation) of a camera is carried out by I2C communication.
- At night, MCU turns on LED200 and LED201 automatically based on the information from IC204.

Illumination sensor (IC204)

Operating Power Supply: +5V

Package: 4pin COB

Outline of Operation: The surrounding brightness is detected and the level is outputted to MCU.

5 Location of Controls and Components

Refer to the Operating Instructions.

Note:

You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

6 Installation Instructions

Refer to the Operating Instructions.

Note:

You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

7 Operating Instructions

Refer to the Operating Instructions.

Note:

You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

8 Service Mode

8.1 Things to do after replacing IC

If repairing FLASH Memory, EEPROM, it is necessary to initialize and adjustment. The set doesn't operate if it is not executed.

8.1.1 Main Monitor Station

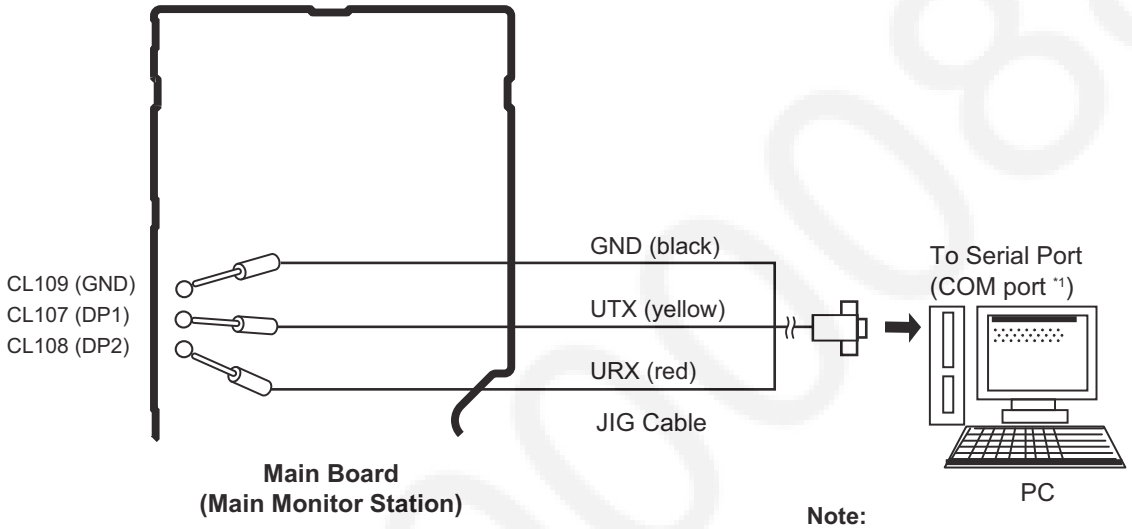
■ Preparation

1. Serial JIG cable: PQZZ1CD300E
2. PC in which "Tera Term (Ver. 4.78 later)" (communication software) is installed
3. Macro file CD-ROM for setting: PNZZN511EX

■ Procedure

1. Connect the AC cord into the power outlet.

2. Connect the PC to the Main monitor using the 3-Wire cable, as shown below.



Note:
*1 COM port names may vary depending on what your PC calls it.
Check COM port number in advance.

3. Start the communication software (Tera Term). The settings are shown below.

① Open "Tera Term", select **"Serial Port: COM□"** at "Tera Term: New connection", then click "**OK**".
② Select **"Terminal"** on the tab of "Setup" to open "Tera Term: Terminal setup".
③ Select "Receive: **CR+LF**" and "Transmit: **CR**" at "New-Line". And then click "**OK**".
④ Select **"Serial port"** on the tab of "Setup" to open "Tera term: Serial port setup". And then select the below items, then click "**OK**".

Baud rate:	**57600**
Data:	**8 bit**
Parity:	**none**
Stop:	**1 bit**
Flow control:	**none**

⑤ Select [Setup] → [Terminal...] It checks to Local echo.
⑥ Select [Control] → [Macro] Attached macro (dp3_term.ttl) is performed.

4. To confirm the connection, type in "**EPD F**", then press the **Enter** key. The response is "**OK**".

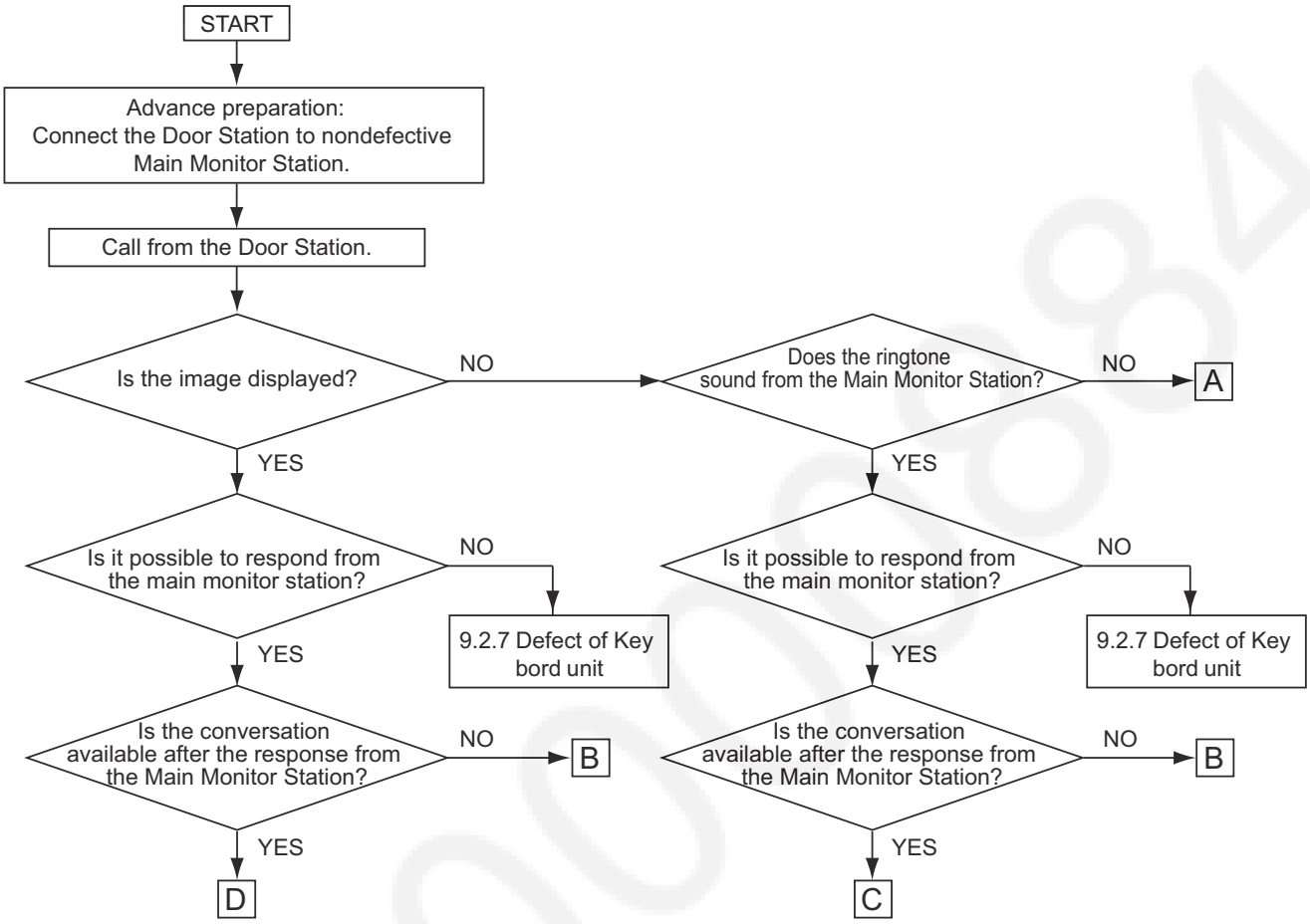
5. In case of silver version and white version(mirror version is not in scope), Type in "PNM 1", then press the Enter key. The response in "OK".
In case of mirror version, Type in "PNM 0", then press the Enter key. The response in "OK".

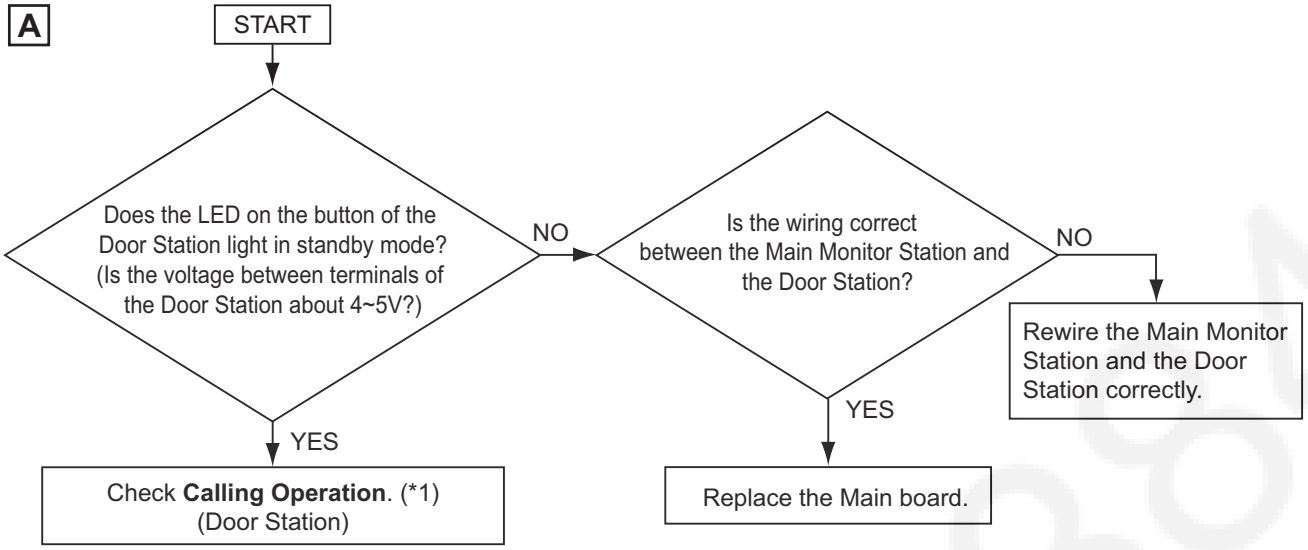
6. Refer to the “Measurements and Adjustments” for adjustment.

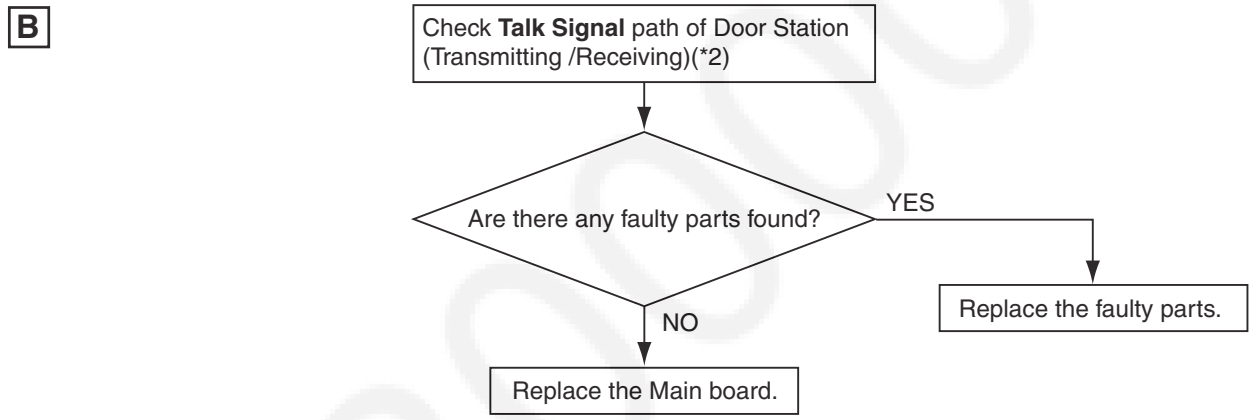
7. Disconnect the AC cord, and disconnect the 3-wire cable.

9 Troubleshooting Guide

9.1 Operation Check of the Door Station







Reference:

(*1) Refer to **Calling Operation (During Standby)** in **[9.3 Signal Route]**.

(*2) Refer to **Talk Signal** in **[9.3 Signal Route]**.

C

No image can be seen by the call from the Door Station.
(The ringer tone and the talking are OK.)

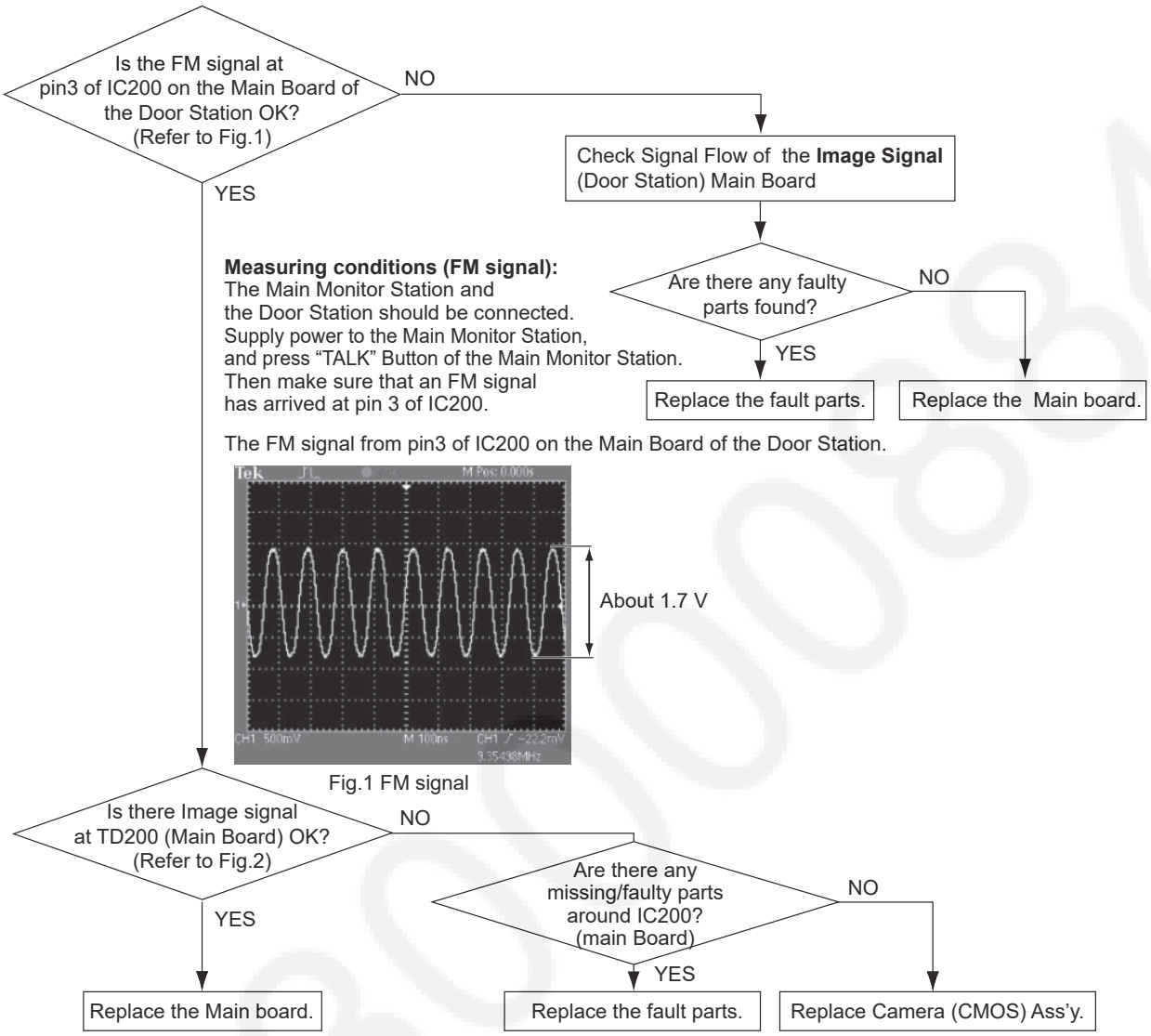


Fig.1 FM signal

Measuring conditions (Image signal):
The Main Monitor Station and the Door Station should be connected.
Supply AC Power to the Main Monitor Station, and press "TALK" Button of the Main Monitor Station.
Then make sure that a signal has arrived at IC200.
* The signal level and waveform can be changed significantly depending on the capturing subject.
It is OK when the same signal shape in the circle is confirmed (No concern with the voltage level.).

The image signal (TD200) from the Camera (CMOS) of the Door Station.

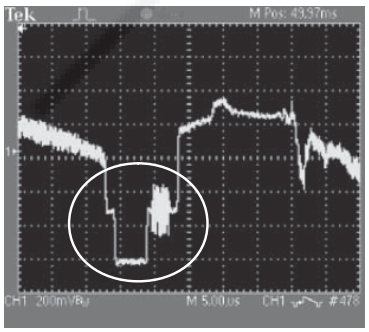
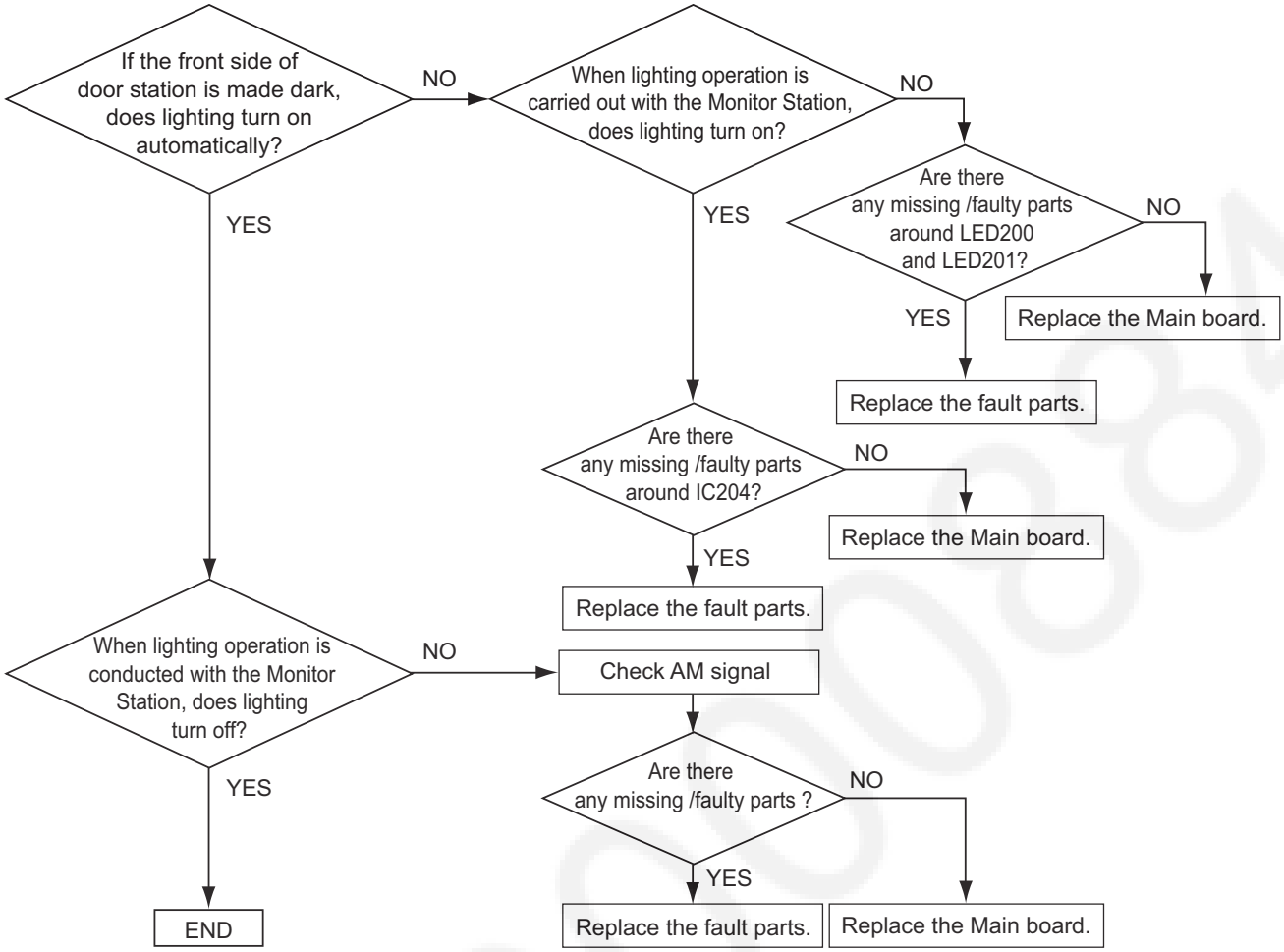


Fig.2 Image signal

Reference:

- Refer to **Image Signal** in **[9.3 Signal Route]**.

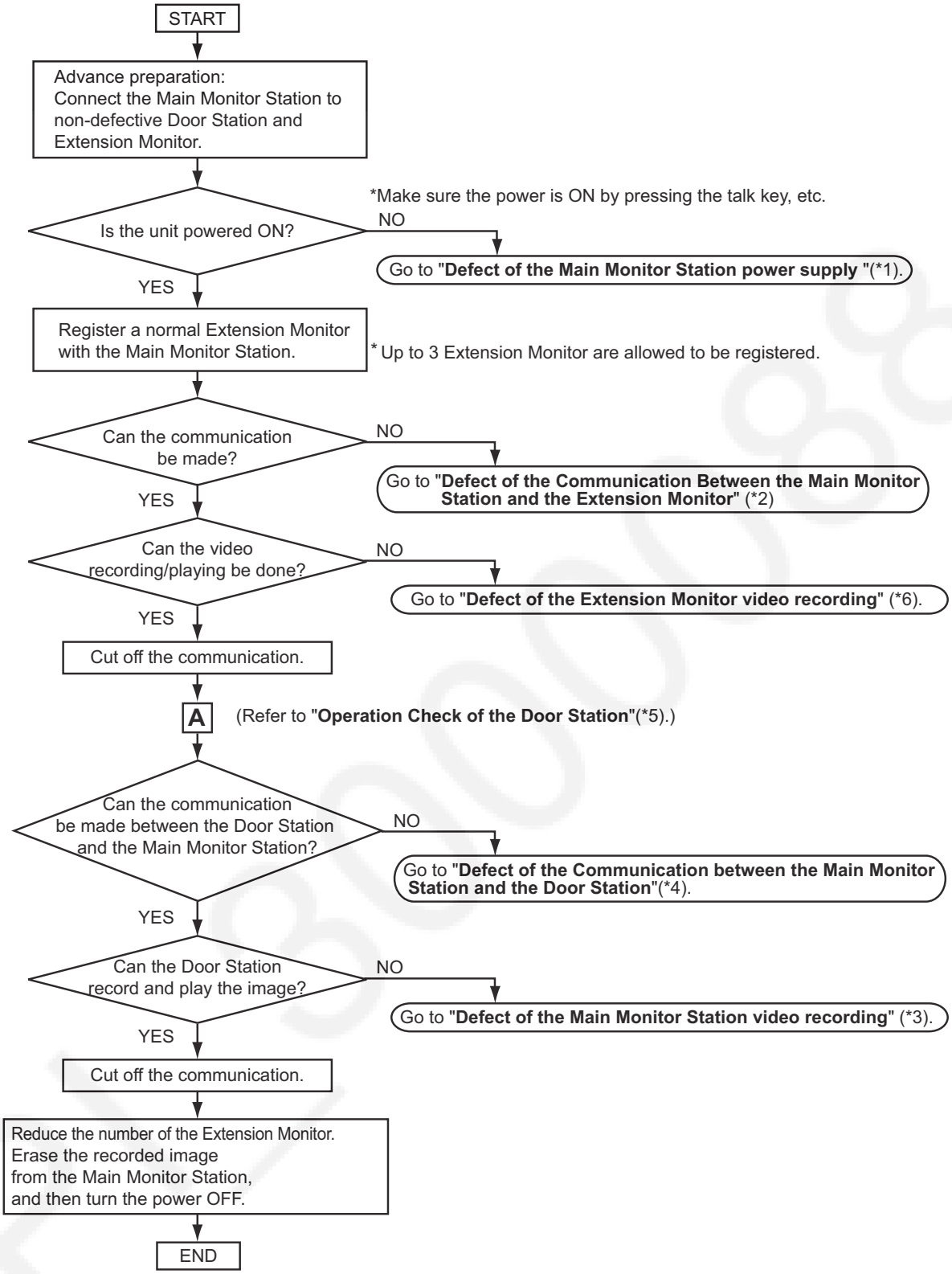
D



Reference:

- Refer to **AM Signal** in **[9.3 Signal Route]**.

9.2 Operation Check of the Main Monitor Station



Reference:

(*1) **[9.2.3 Defect of the Main Monitor Station Power Supply]**.

(*2) **[9.2.1 Defect of the Communication Between the Main Monitor Station and the Extension Monitor]**.

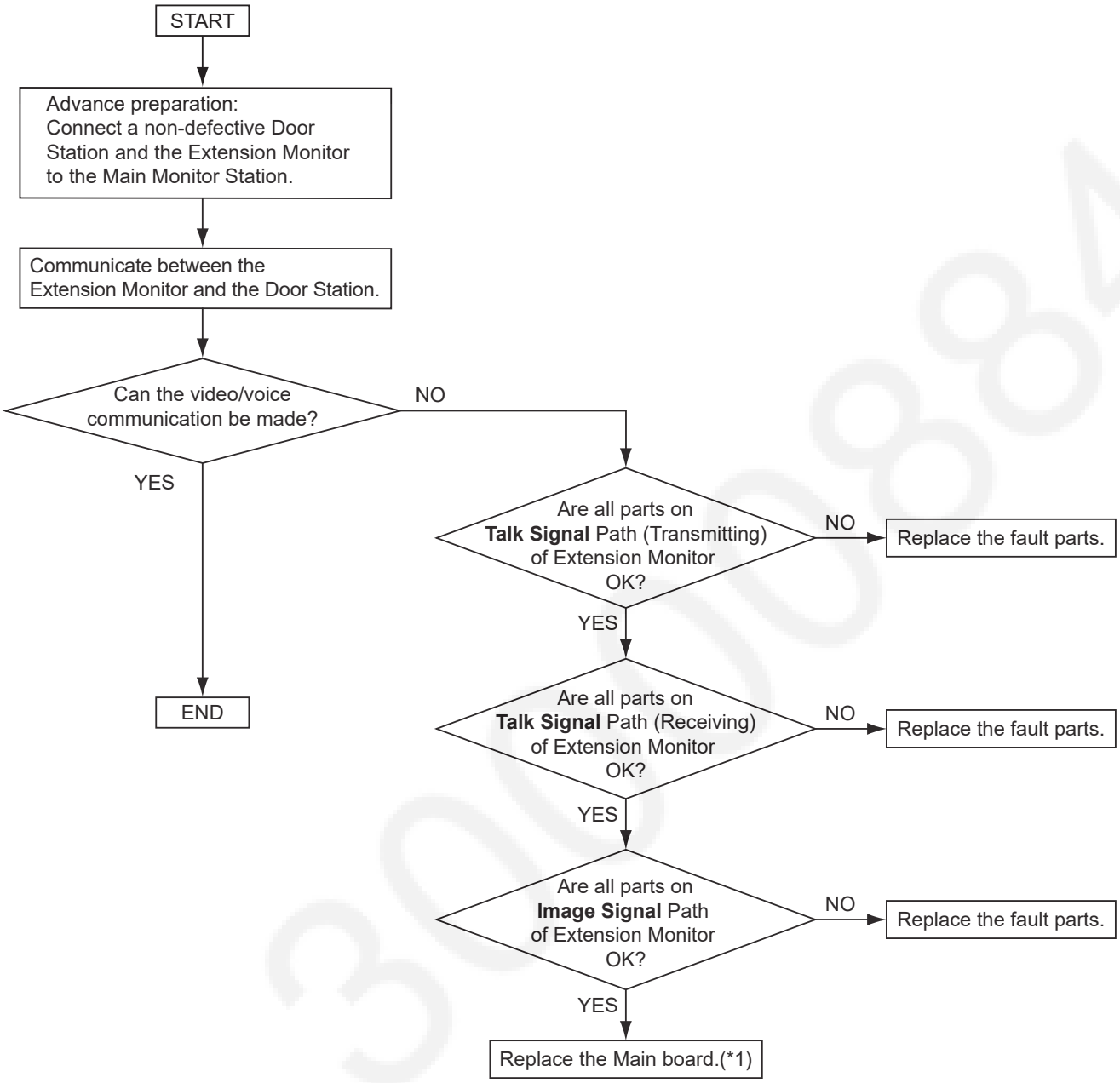
(*3) **[9.2.4 Defect of the Main Monitor Station Video Recording]**.

(*4) **[9.2.5 Defect of the Communication Between the Main Monitor Station and the Door Station]**.

(*5) **[9.1 Operation Check of the Door Station]**.

(*6) **[9.2.2 Defect of the Extension Monitor Video Recording]**.

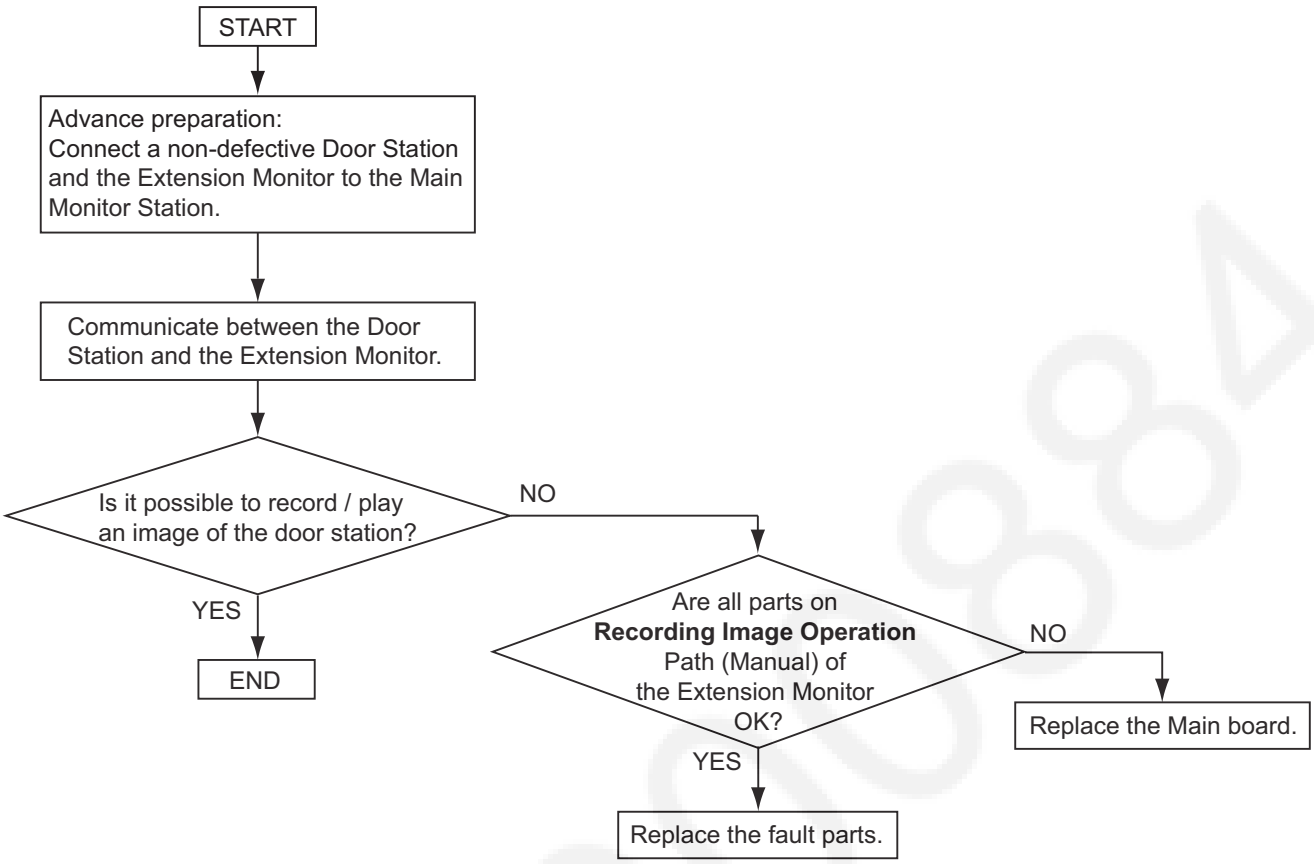
9.2.1 Defect of the Communication Between the Main Monitor Station and the Extension Monitor



Reference:

- Refer to **[9.3 Signal Route]**.
  TALK Signal (Transmitting), TALK Signal (Receiving), Image Signal (Extension Monitor)
- (*1) **[10.1.3 How to Remove the Main Board, Speaker and LCD [No.3]]**

9.2.2 Defect of the Extension Monitor Video Recording

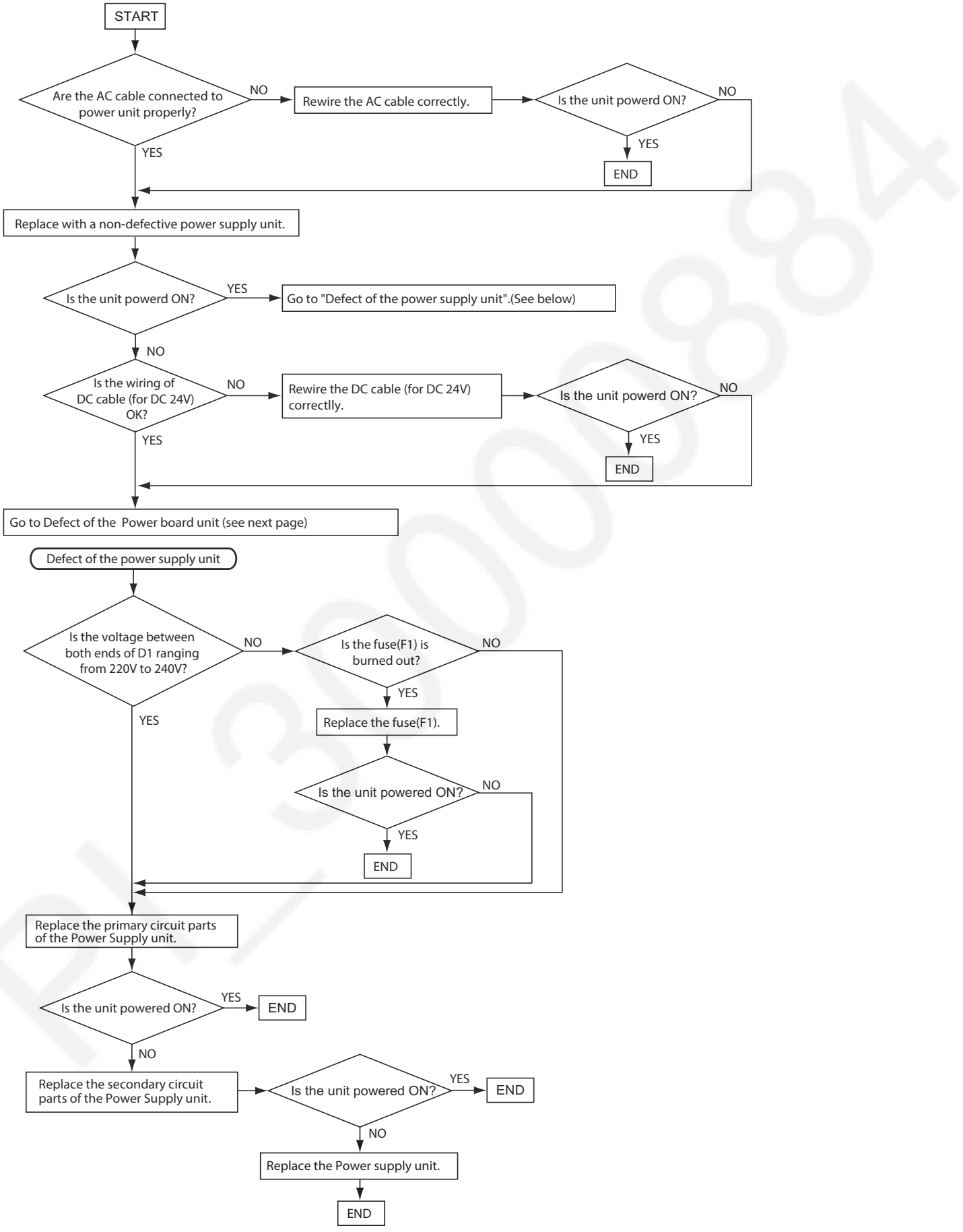


Reference:

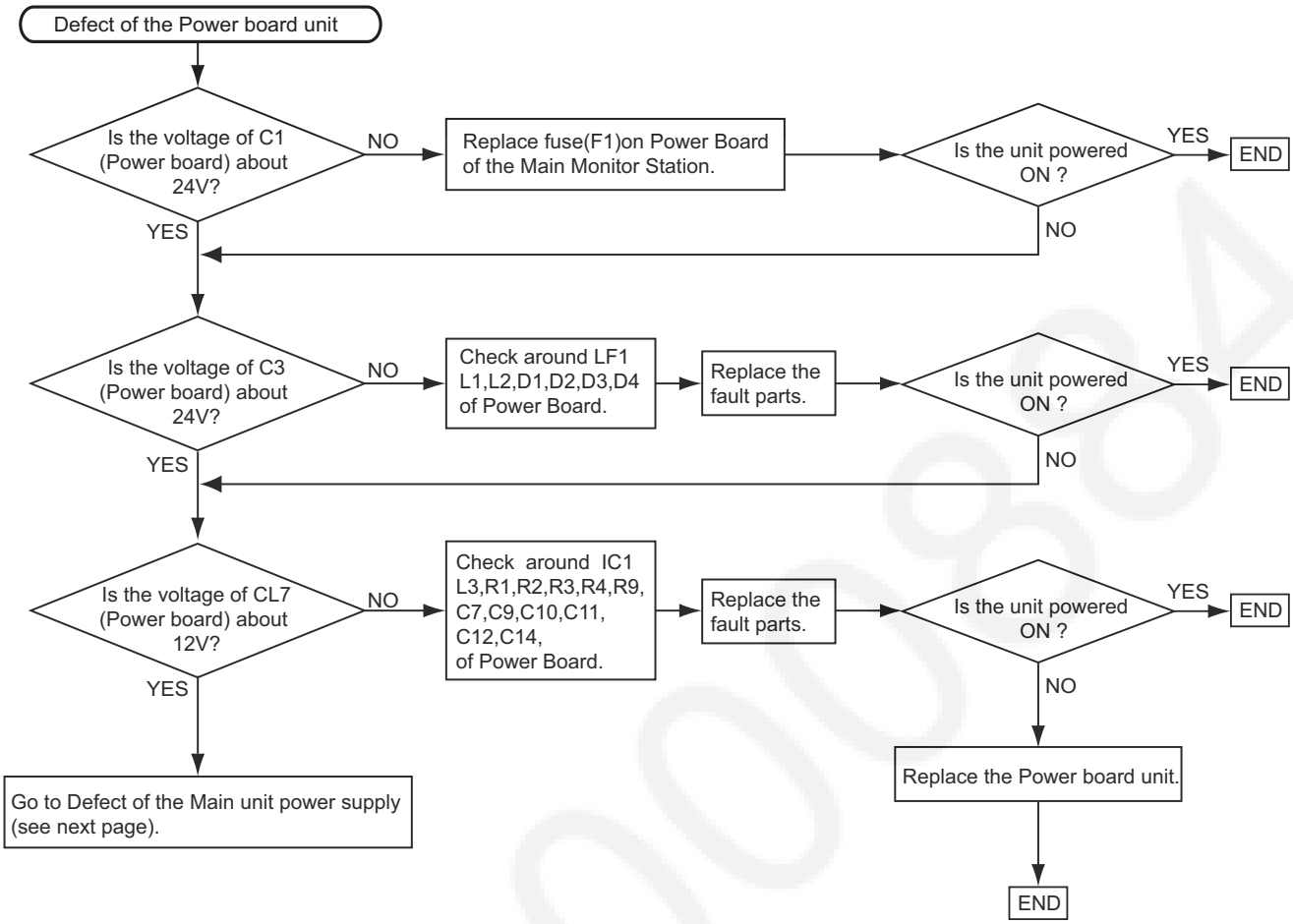
- Refer to **Recording image Operation** in **[9.3 Signal Route]**.

9.2.3 Defect of the Main Monitor Station Power Supply

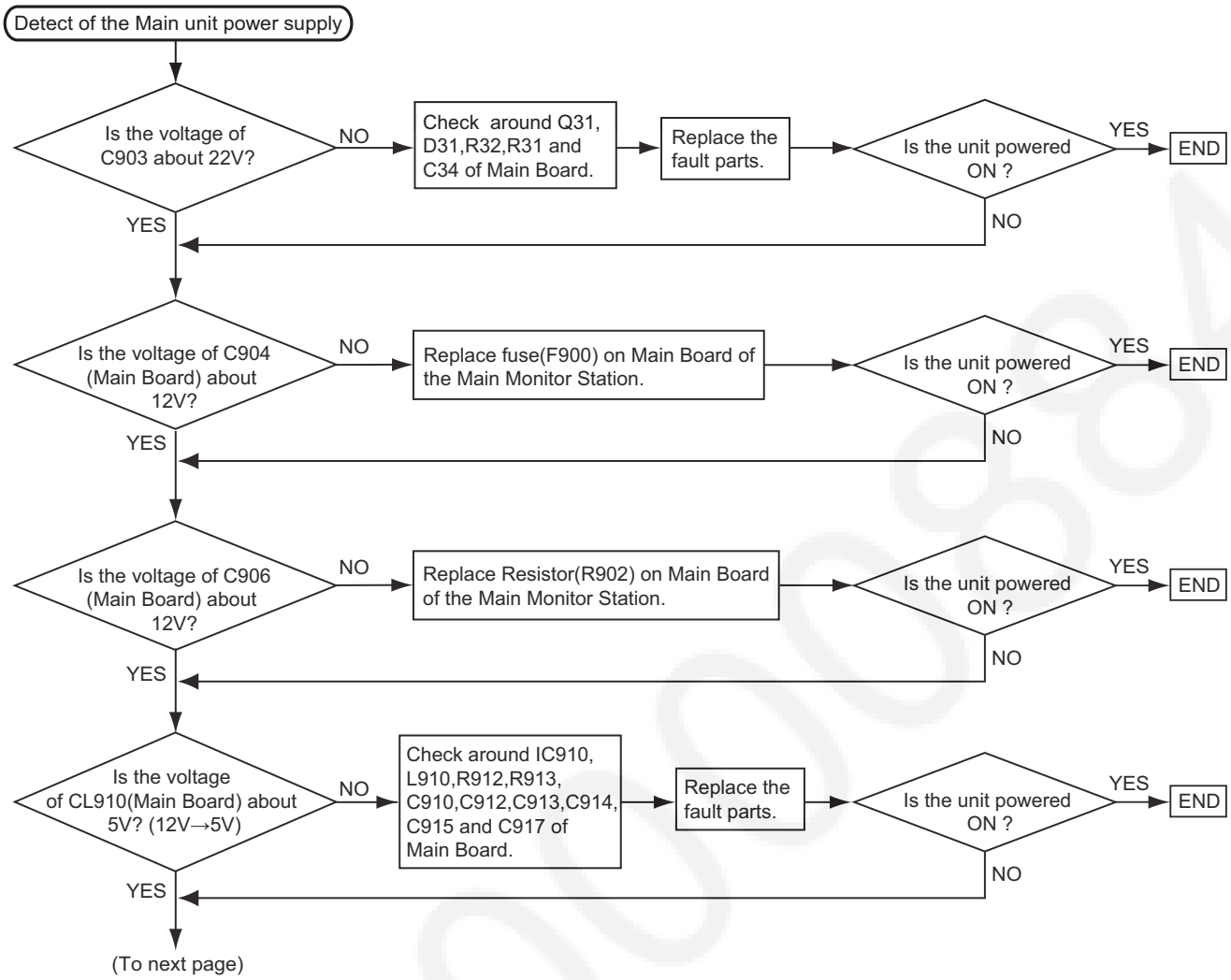
9.2.3.1 Defect of the Power supply unit

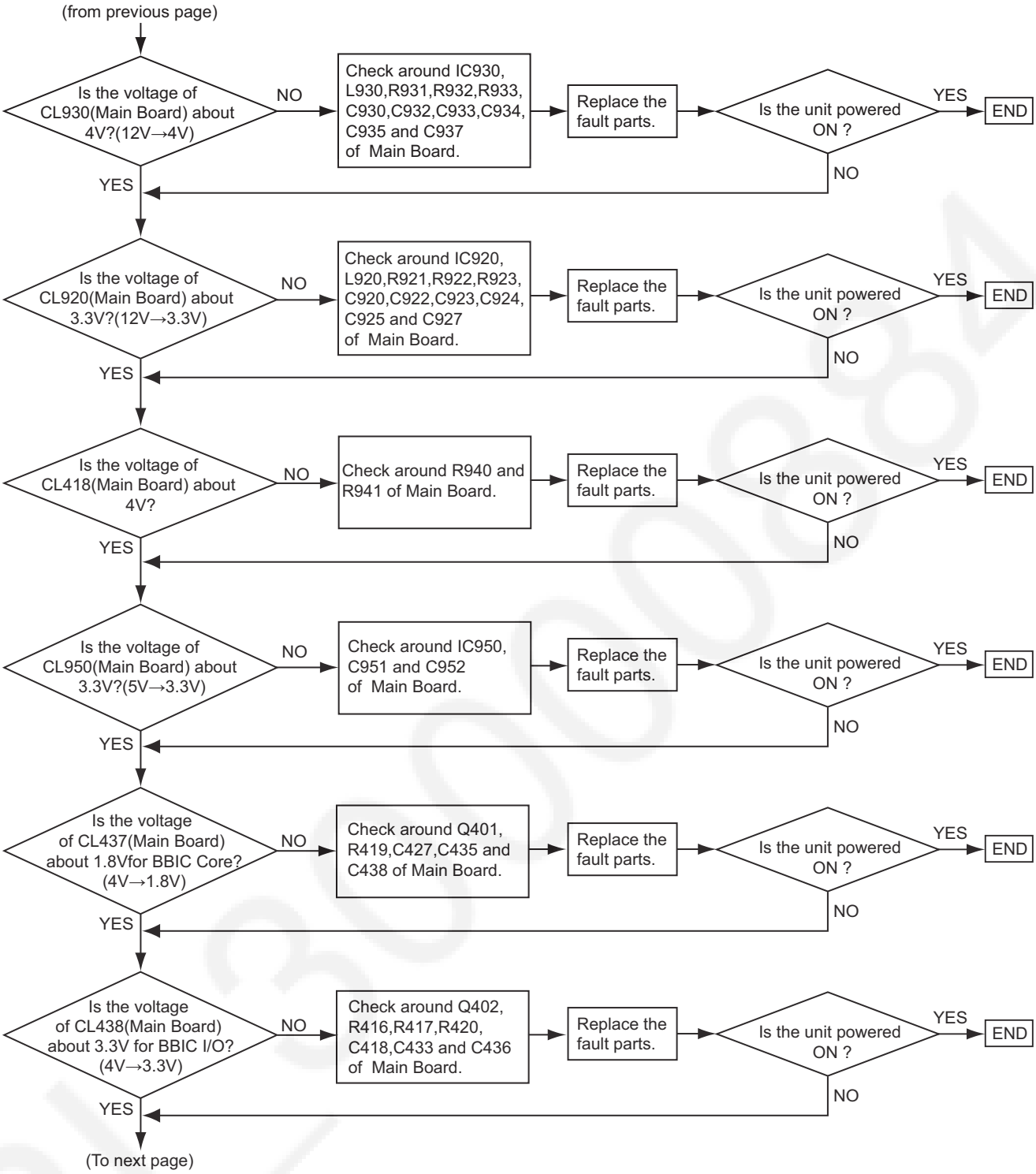


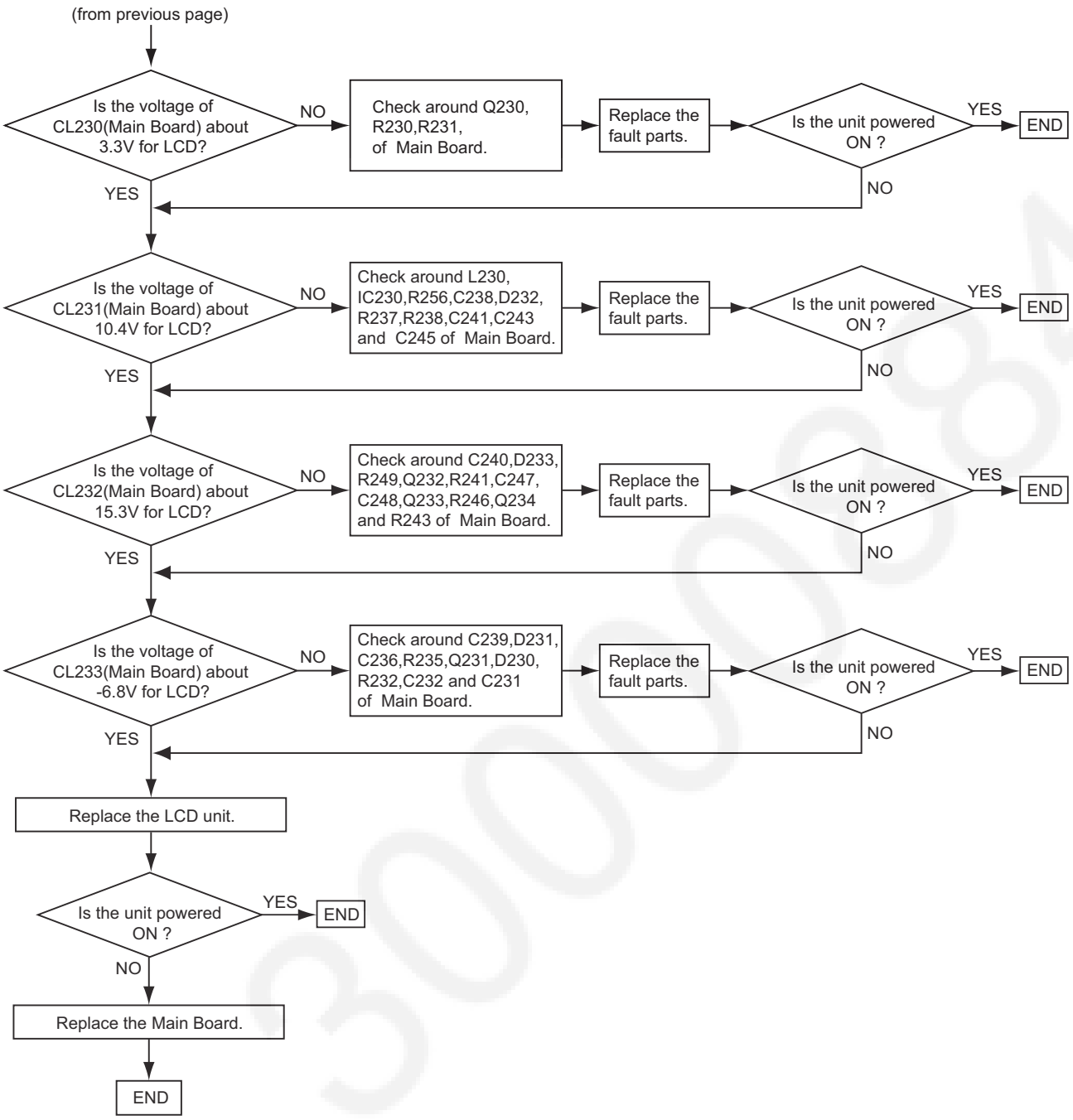
9.2.3.2 Defect of the Power board unit



9.2.3.3 Defect of the Main board unit



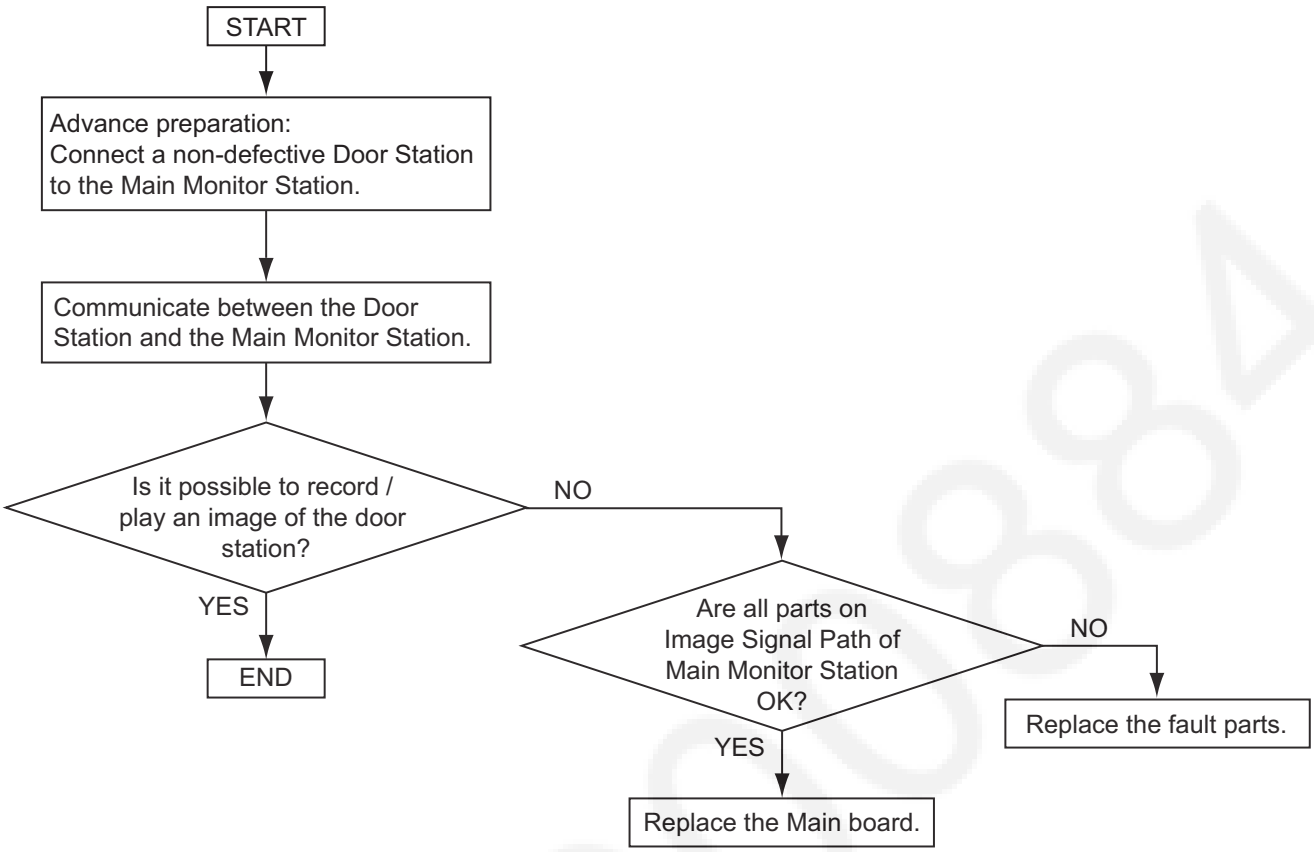

(from previous page)
Is the voltage of CL930(Main Board) about 4V?(12V→4V)
NO
Check around IC930, L930,R931,R932,R933, C930,C932,C933,C934, C935 and C937 of Main Board.
Replace the fault parts.
Is the unit powered ON ?
YES
END
NO
YES
Is the voltage of CL920(Main Board) about 3.3V?(12V→3.3V)
NO
Check around IC920, L920,R921,R922,R923, C920,C922,C923,C924, C925 and C927 of Main Board.
Replace the fault parts.
Is the unit powered ON ?
YES
END
NO
YES
Is the voltage of CL418(Main Board) about 4V?
NO
Check around R940 and R941 of Main Board.
Replace the fault parts.
Is the unit powered ON ?
YES
END
NO
YES
Is the voltage of CL950(Main Board) about 3.3V?(5V→3.3V)
NO
Check around IC950, C951 and C952 of Main Board.
Replace the fault parts.
Is the unit powered ON ?
YES
END
NO
YES
Is the voltage of CL437(Main Board) about 1.8Vfor BBIC Core? (4V→1.8V)
NO
Check around Q401, R419,C427,C435 and C438 of Main Board.
Replace the fault parts.
Is the unit powered ON ?
YES
END
NO
YES
Is the voltage of CL438(Main Board) about 3.3V for BBIC I/O? (4V→3.3V)
NO
Check around Q402, R416,R417,R420, C418,C433 and C436 of Main Board.
Replace the fault parts.
Is the unit powered ON ?
YES
END
NO
YES
(To next page)



Reference:

- Refer to **LCD start up** in **[9.3 Signal Route]**.

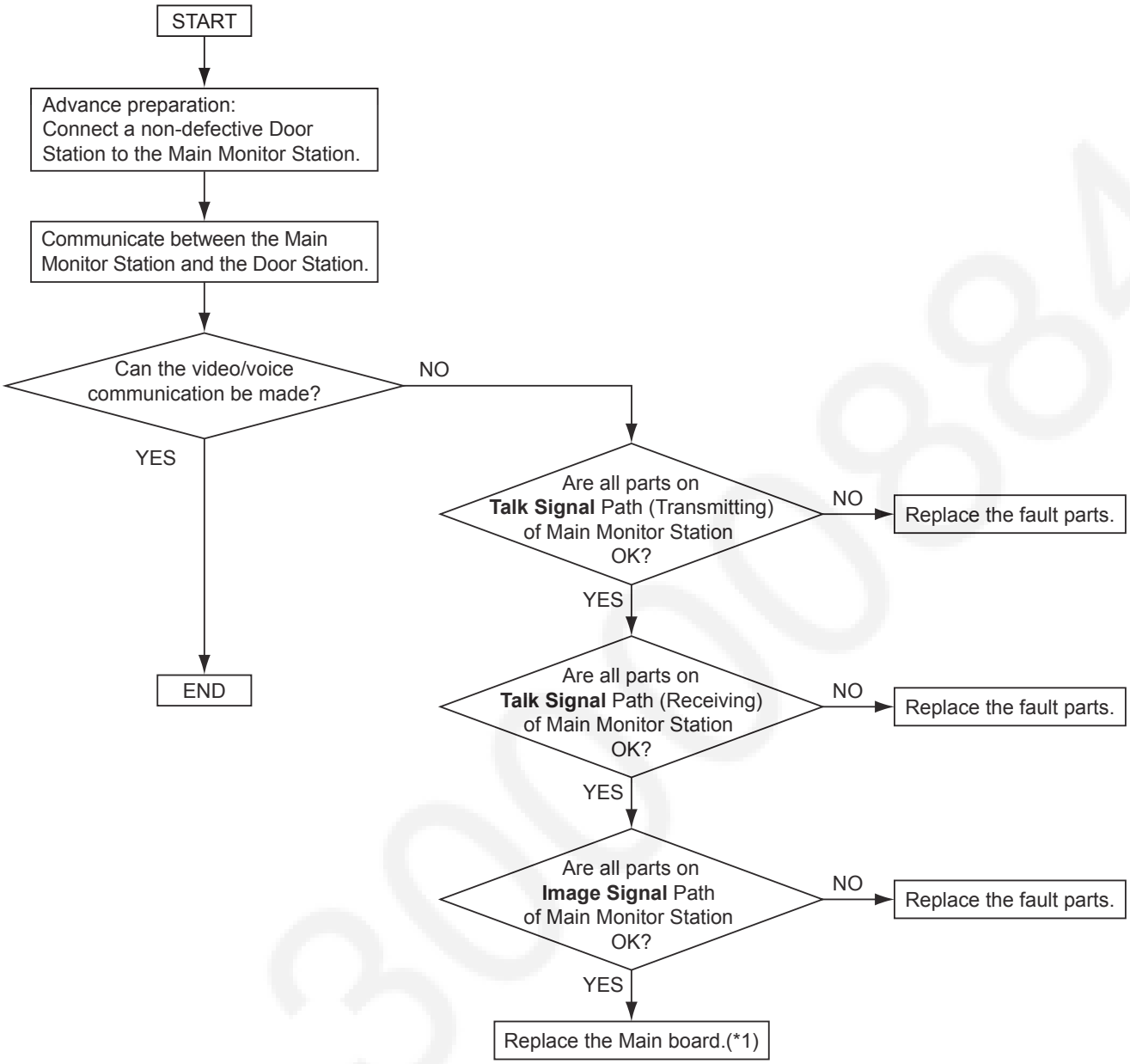
9.2.4 Defect of the Main Monitor Station Video Recording



Reference:

- Refer to **Recording Image Operation** in **[9.3 Signal Route]**.

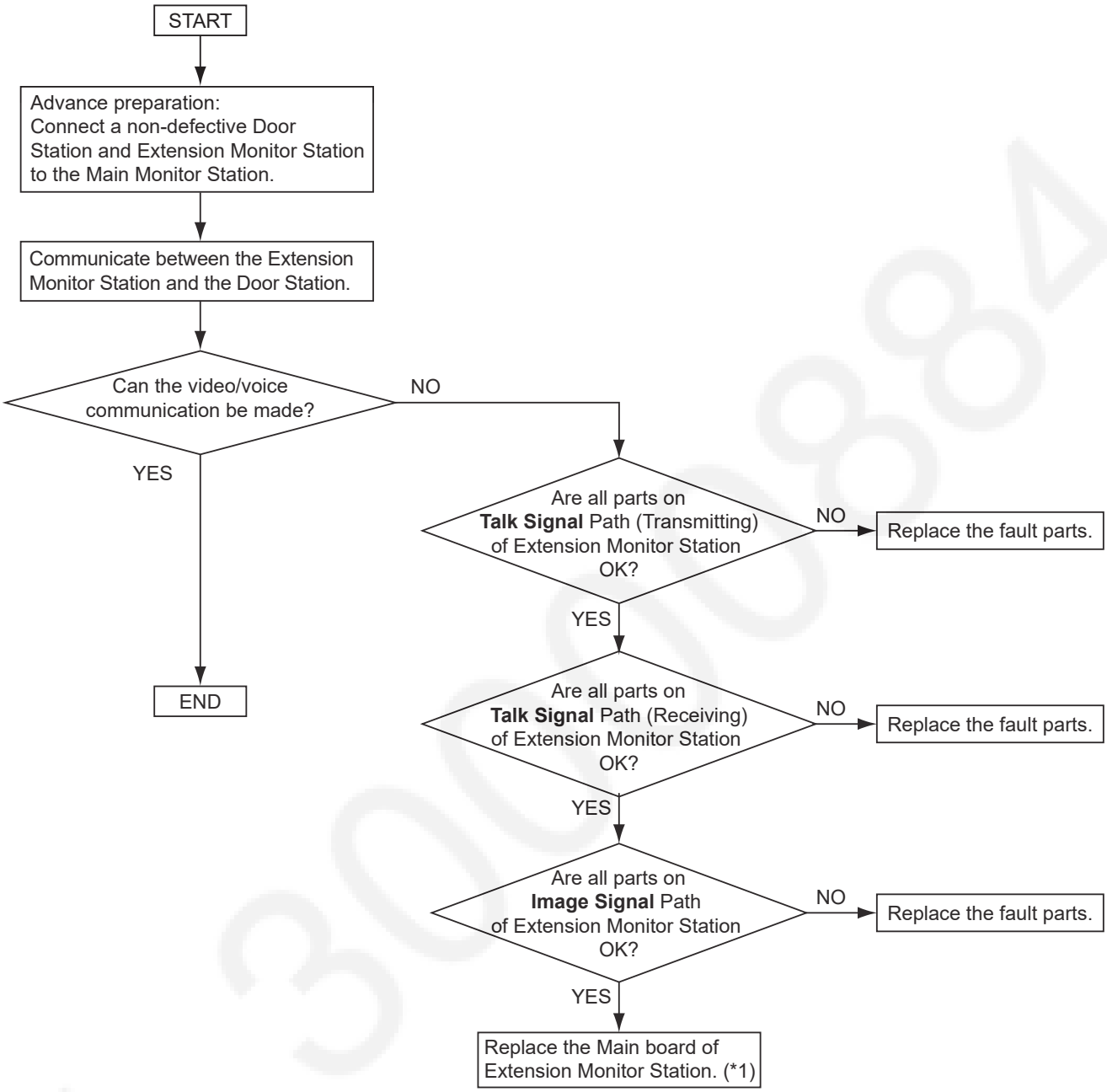
9.2.5 Defect of the Communication Between the Main Monitor Station and the Door Station



Reference:

- Refer to **Talk Signal** in **[9.3 Signal Route]**.
- Refer to **Image Signal** in **[9.3 Signal Route]**.
- (*1) **[10.1.3 How to Remove the Main Board, Speaker and LCD [No.3]]**.

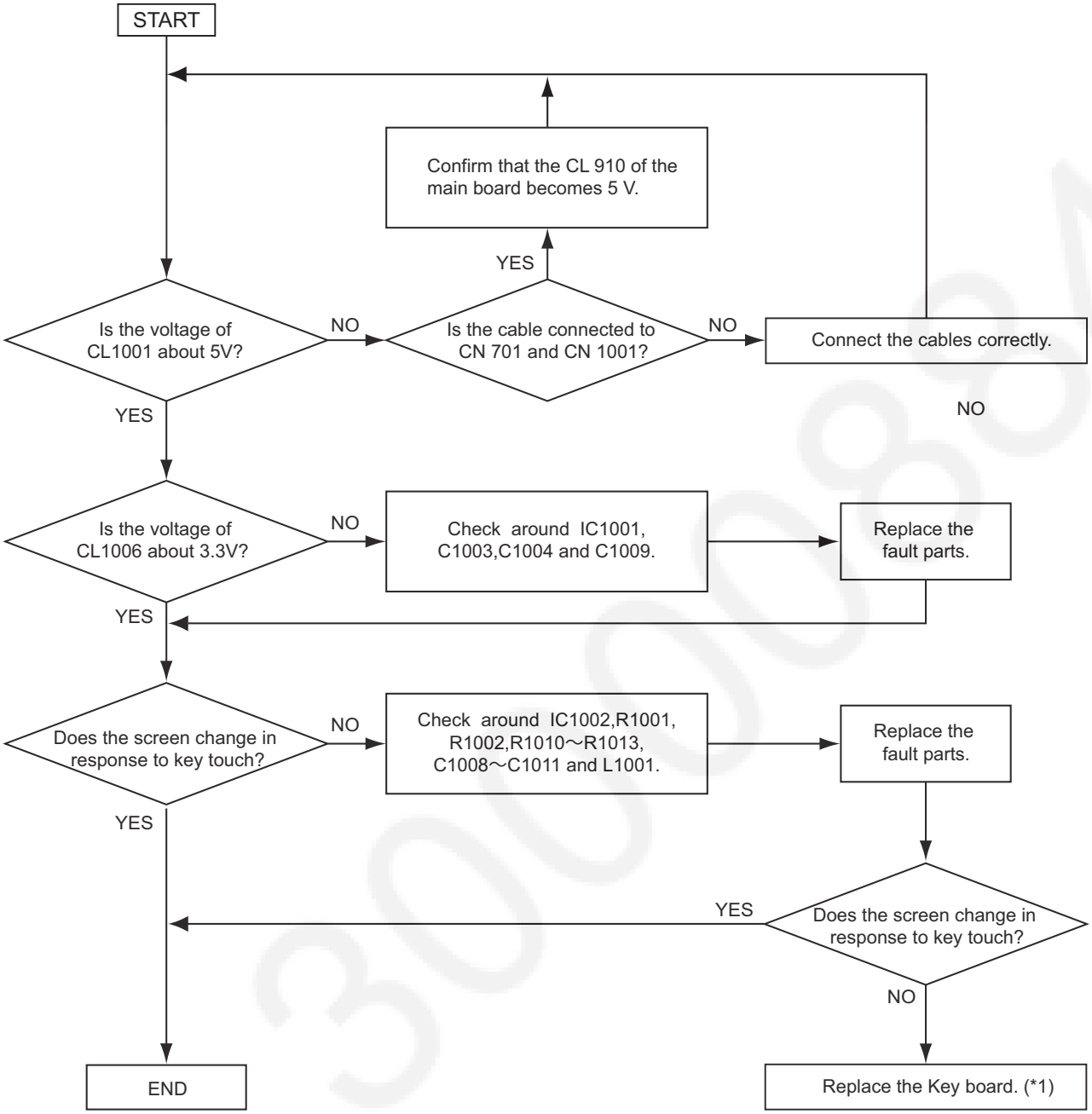
9.2.6 Defect of the Communication Between the Extension Monitor Station and the Door Station



Reference:

- Refer to **Talk Signal** in **[9.3 Signal Route]**.
- Refer to **Image Signal** in **[9.3 Signal Route]**.
- (*1) **[10.1.3 How to Remove the Main Board, Speaker and LCD [No.3]]**.

9.2.7 Defect of the Key board unit



Reference:

- (*1) **[10.1.3 How to Remove the Main Board, Speaker and LCD [No.3]]**.

9.3 Signal Route

This chapter provides the testing procedures required for the P.C.B. parts. A signal route to be tested is determined depending upon purposes. The signal mainly flowing on this route is analog. You can trace the signal with an oscilloscope. The signal flow on each route is shown in the Check Sheet here. If you find a specific problem in the unit, trace that signal route locally with the following Check Sheet and locate the faulty point.

(SYMPTOM) CHECK ITEMS		Signal ROUTE IN → OUT
Calling Operation (During Standby)	Door station 1	Press the call Button (SW301) of Door station 1 SW301 → Q301 → R305 → L4 → D2, D3, D4, D5 → L2, L3 → LF1→
	Main monitor station	L610 → D610 → Q610 → R612 → IC100(Pin50) Detection of an incoming signal
	Extension Monitor station	Send infomation over the AM signal to the Extension Monitor station. Refer to AM Signal (transmitting) in Signal Route
Calling Operation (During Standby)	Door station 2	Press the call Button (SW301) of Door station 2 SW301 → Q301 → R305 → L4 → D2, D3, D4, D5 → L2, L3 →
	Main monitor station	L620 → D620 → Q620 → R612 → IC100(Pin51) Detection of an incoming signal
	Extension Monitor station	Send infomation over the AM signal to the Extension Monitor station. Refer to AM Signal (transmitting) in Signal Route
Ringer tone (Main monitor station)		Creation of the Ringer Tone :Tone generator in IC405. Ringer tone frequency output (850/680Hz): IC405 (PinU6,V6,U9,V9,U7,V7,U8,V8) → Speaker
From the Power supply to the door station	Main monitor station	(The power +22 V is supplied from the Main monitor station to the Door station) IC100(Pin12) → Q654(ON) +22 V → Q653 → R660 → R653 → Q651 → L645 → L640 → L643 →L642 → L641 → RL640
	Door station	LF1 → L2, L3 → D2, D3, D4, D5 → L4 → Q4 → Q2 → R12 → L301 → → IC202(Pin2) → IC202(Pin1) → L5: +5 V is supplied. → L6: +5 VA is supplied. → R11:+5V is supplied.
LCD Start up	Main monitor station	LCD POWER ON1: IC100(Pin71)→R230→Q230 ON:3.3V is supplied→CN200(Pin12,Pin44) LCD POWER ON2: IC100(Pin72)→IC230(Pin3) ON→L230 →D232:10.4V is supplied→CN200(Pin8) →C239→D231→Q231:-6.8V is supplied →CN200(Pin9) →C240→D233→Q232 → LCD POWER ON3: IC100(Pin74)→Q234→R246→Q233 ON:15.3V is supplied→CN200(Pin10)
	Back light	IC100(Pin9) → R140 → Q270 → IC270(Pin2) → Q271 → (Back Light : ON) IC100(Pin4) → R270 → IC270(Pin3) → Q271 → (Back Light : ON)
Image Signal (Door station)	Camera unit	VIDEO →
	MAIN PCB	C211 → IC200(Pin24) → image signal modulation (NTSC to FM signal: from 8.5 to 10MHz) → IC200(Pin3) → R7 → C3 → T1 → R4, R5 → C1, C2 → LF1 → ①
Image Signal (Main monitor station)		①→ RL640 → RL641→ C642, C643 → R641, R642 → T640 → C644 → IC670(Pin5) → Image signal demodulation (FM to NTSC) → IC670(Pin3) → C127 → IC100(Pin62) → (NTSC to Digital data) → ② ②→(Clock) IC100(Pin108) → R111→L225→R201→CN200(Pin14) →(Image digital data) IC100(Pin76-82,84,86-89,91-98,100-103) → R121-R126→L201-L224→CN200(Pin16-39) →(data timing) IC100(Pin105) → R207→CN200(Pin40) →(data timing) IC100(Pin106) → R206→CN200(Pin41)

(SYMPTOM) CHECK ITEMS	Signal ROUTE IN ⟶ OUT
Image Signal (Extension Monitor)	① → RL640 → RL641 → C642,C643 → R641,R642 → T640 → C636→Q631→Q630→R634→C633→T630→C631,C632→ (Extension Monitor 1) L721,C721,L728,C724→CN603(Pin1,2)→③ (Extension Monitor 2) L722,C722,L729,C725→CN603(Pin3,4)→③ (Extension Monitor 3) L723,C723,L730,C729→CN603(Pin5,6)→③ ③→CN601(Pin7,8)→RL641→C642,C643→R641,R642→T640→C644→IC670(Pin5)→ Image signal demodulation (FM to NTSC) → IC670(Pin3) → C127 → IC100(Pin62) → (NTSC to Digital data) → ④ ④→(Clock) IC100(Pin108) → R111→L225→R201→CN200(Pin14) →(Image digital data) IC100(Pin76-82,84,86-89,91-98,100-103) → R121-R126→L201-L224→CN200(Pin16-39) →(data timing) IC100(Pin105) → R207→CN200(Pin40) →(data timing) IC100(Pin106) → R206→CN200(Pin41) inside of Extension Monitor

(SYMPTOM) CHECK ITEMS		Signal IN ROUTE OUT
Calling Operation	Door station	SW301 → IC200(Pin18) → Overlapping the dropout signal on the FM signal → IC200(Pin3) → R7 → C3 → T1 → R4, R5 → C1, C2 → LF1 →
	Main monitor station	RL640→ RL641→ C642, C643 → R641, R642 → T640 → C644 → IC670(Pin5) → IC670(Pin18) → R687 → IC100(Pin44) Detection of the dropout signal
Calling Operation	Door station	SW301 → IC200(Pin18) → Overlapping the dropout signal on the FM signal → IC200(Pin3) → R7 → C3 → T1 → R4, R5 → C1, C2 → LF1 →
	Main monitor station	RL640→ RL641→ C642, C643 → R641, R642 → T640 → C644 → IC670(Pin5) → IC670(Pin18) → R687 → IC100(Pin44) Detection of the dropout signal
While receiving an incoming call	Extension Monitor station	Send information over the AM signal to the Extension Monitor station. Refer to AM Signal(transmitting) in Signal Route
Response to an Incoming Call (Main Monitor station)		Response with the Talk button : SW170 → R170 → IC100(Pin171)
Response to an Incoming Call (Extension Monitor station)		Response with the Talk button : SW170 → R170 → IC100(Pin171) Send information over the AM signal to the Extension Monitor station. Refer to AM Signal(Receiving) in Signal Route
AM Signal (Transmitting)	Main Monitor station	IC100(Pin180) → R143 → IC160(Pin8) → IC160(Pin9) → ┌IC701(Pin10)→R727→C780→L725→L710→L732→CN603 (Pin1,2)[MO-1,2] → ├IC701(Pin4)→R723→C790→L727→L712→L734→CN603 (Pin3,4)[MO-3,4] → └IC701(Pin1)→R717→C709→L700→L716→L736→CN603 (Pin 5,6)[MO-5,6] →
	Extension Monitor station	[MI-1,2] CN601(Pin13,14)→L760,L761→L764,L765→L766→C760→T760→L768→C762→ C480→R480→Q480(B)→Q181(C)→C484→IC480(Pin2)→IC480(Pin1)→IC480(Pin5)→ IC480(Pin7)→IC642(Pin2)→IC642(Pin3)→R104→IC100(Pin54) Detection the signal in IC100
AM Signal (Receiving)	Extension Monitor station	IC100(Pin53)→IC701(Pin13)→R794→C762→L768→T760→C760→L766→L764,L765→ L760,L761→CN601(Pin13,14) [MI1,2]
	Main Monitor station	[MO1,2] CN603(Pin1,2)→L732→L710→C781→R755→Q702(B)→Q703(C)→ C783→IC703(Pin2)→IC703(Pin1)→IC703(Pin5)→IC703(Pin7)→IC705(Pin1) ┐ [MO5,6] CN603(Pin 5,6)→L736→L716→C700→R700→Q700(B)→Q701(C)→C702→ ├→ C702→IC700(Pin2)→IC700(Pin1)→IC700(Pin5)→IC700(Pin7)→IC705(Pin2) ┘ IC705(Pin4)→IC704(Pin1) ┐ [MO3,4] CN603(Pin 3,4)→L734→L712→C791→R781→Q704(B)→Q705(C)→ ├→ C793→IC702(Pin2)→IC702(Pin1)→IC702(Pin5)→IC702(Pin7)→IC704(Pin2) ┘ IC704(Pin4)→IC160(Pin10)→IC160(Pin11)→IC100(Pin179)
Talk Signal (Transmitting)	Main monitor station	Microphone → C576, C577 → R575 → IC405(PinH2, J3) → IC405(PinJ1) → IC405(Pin K1) →C595 →R595 →IC582(Pin15) →IC582(Pin1) →C505 →R504 → IC500(Pin2) → IC500(Pin1) → R505 → C501,C521,C522,C523 → L644 → L640,C640 → L642 → L641 → RL640 ┬→ CN601(Pin11,12) [D1,D2] └→ CN601(Pin 9,10) [D3,D4]
	Door station	LF1 → L2, L3 → D2, D3, D4, D5 → L4, C4 → C101, C118 → R120 → IC100(Pin2) → IC100(Pin1) → C109 → C117 → R125 → IC102(Pin4) → IC102(Pin5) → Speaker
Talk Signal (Receiving)	Door station	Microphone → C107, C125 → R122, R135 → IC100(Pin6) → IC100(Pin7) → R111 → C101, C118 → L4, C4 → D2, D3, D4, D5 → L2, L3 → LF1
	Main monitor station	RL640 → L641 → L642→ L640, C640 → L644 → C501, C521, C522, C523 → C512 → R512 → IC500(Pin6) → IC500(Pin7) → C582 → R581→IC582(Pin13)→ IC582(Pin14)→C596 → R598 → IC405(PinL1) → IC405(PinU7,V7,U8,V8) → Speaker

(SYMPTOM) CHECK ITEMS		Signal ROUTE IN → OUT
Talk Signal (Transmitting)	Extension Monitor station	Microphone → C576,C577 → R575 → IC405(PinH2,J3) → IC405(PinK1) → C595→R595→IC582(Pin15)→IC582(Pin2)→C588→C769→R764→IC760(Pin6)→ IC760(Pin7)→R761→T761→L767,C764→RL759→L764,L765→L760,L761→ CN601(Pin13,14)→
	Main monitor station	[MO1,2] CN603(Pin1,2)→L721,C721,L728,C724 [MO3,4] CN603(Pin 3,4)→L722,C722,L729,C725 [MO5,6] CN603(Pin 5,6)→L723,C723,L730,C729 → L769,L771→L770,L772→RL759→ L767,C764→T761→R760→R766→IC760(Pin2)→IC760(Pin1)→C581→IC582(Pin5)→ IC582(Pin4)→C584→R582→IC405(PinJ2)→IC760(Pin1)→C581→IC582(Pin5)→ IC405(Pin K1)→C595→R595→IC582(Pin15)→IC582(Pin1)→ C505→R504→ IC500(Pin2)→IC500(Pin1) → R505 → C501,C521,C522,C523 → L644 → L640,C640 → L642 → L641 → RL640
	Door station	LF1 → L2, L3 → D2, D3, D4, D5 → L4, C4 → C101, C118 → R120 → IC100(Pin2) → IC100(Pin1) → C109 → C117 → R125 → IC102(Pin4) → IC102(Pin5) → Speaker
Talk Signal (Receiving)	Door station	Microphone → C107,C125 → R122,R135 → IC100(Pin6) → IC100(Pin7) → R111 C101,C118→L4,C4→D2,D3,D4,D5→L2,L3→LF1
	Main monitor station	RL640 → L641 → L642→ L640, C640 → L644 → C501, C521, C522, C523 → C512 → R512 → IC500(Pin6) → IC500(Pin7) → C582 → R581→IC582(Pin13)→ IC582(Pin14) → C596 → R598 → IC405(PinL1) → IC405(PinK2) → C769 → R764→ IC760(Pin6) → IC760(Pin7) → R761 → T761 → L767,C764 → RL759 → L770,L772→ L769,L771 → L721,C721,L728,C724→CN603(Pin1,2) [MO-1,2] L722,C722,L729,C725→CN603(Pin 3,4) [MO-3,4] L723,C723,L730,C729→CN603(Pin 5,6) [MO-5,6]
	Extension Monitor station	[MI-1,2] CN601(Pin7,8)→L760,L761→L764,L765→RL759→L767,C764→T761→R760→ R766→IC760(Pin2)→IC760(Pin1)→C581→IC582(Pin5)→IC582(Pin4)→C584→R582→ IC405(PinJ2)→IC405(PinU7,V7,U8,V8)→Speaker

(SYMPTOM) CHECK ITEMS	Signal	ROUTE IN → OUT
Monitor Operation (Main monitor station)	Main monitor station control signal	Press the Monitor button PAD5[MONITOR] → R1007 → IC1002(Pin4) → IC1002(Pin10,11,12) → CN1001(Pin2,3,4) CN170(Pin2,3,4) → IC100(Pin68,68,43)
	Door station talk signal	Microphone → C107, C125 → R122, R135 → IC100(Pin6) → IC100(Pin7) → R111 → C101, C118 → L4, C4 → D2, D3, D4, D5 → L2, L102, L302, L3, L103, L303 → LF1 to Main monitor
	Main monitor station talk signal	RL640 → L641 → L642 → L643 → L640, C640 → C501, C521, C522, C523 → C512 → R512 → IC500(Pin6) → IC500(Pin7) → C582 → R581 → IC582(Pin13)→IC582(Pin14)→C596→R598→IC405(PinL1)→ IC405(PinV9,U9,V6,U6,V8,U8,V7,U7) → Speaker
Monitor Operation (Extension Monitor station)	Extension Monitor station control signal	Press the Monitor button PAD5[MONITOR] → R1007 → IC1002(Pin4) → IC1002(Pin10,11.12) → CN1001(Pin2,3,4) CN170(Pin2,3,4)→IC100(Pin68,68,43)
	Door station talk signal	Microphone → C107, C125 → R122, R135 → IC100(Pin6) → IC100(Pin7) → R111 → C101, C118 → L4, C4 → D2, D3, D4, D5 → L2, L102, L302, L3, L103, L303 → LF1 to Main monitor
	Main monitor station talk signal	RL640 → L641 → L642→ L643 → L640, C640 → C501, C521, C522, C523 → C512 → R512 → IC500(Pin6) → IC500(Pin7) → C582 → R581 → IC582(Pin13) → IC582(Pin14) → C596 → R598 → IC405(PinL1)→ IC405(PinK2) → C769→R764 → IC760(Pin6) → IC760(Pin7) → R761→ T761→L767,C764→RL759→L770,L772→L769,L771→ L721,C721,L728,C724 → CN603(Pin1,2)[MO-1,2] L722,C722,L729,C725 → CN603(Pin3,4)[MO-3,4] L723,C723,L730,C729 → CN603(Pin5,6)[MO-5,6]
	Extension Monitor station talk sognal	[MI-1,2]CN601(Pin7,8)→L760,L761→L764,L765→RL759→L767,C764→T761→ R760→R766→IC760(Pin2)→IC760(Pin1)→C581→IC582(Pin5)→IC582(Pin4)→ C584→R582→IC405(PinJ2)→IC405(PinV9,U9,V6,U6,V8,U8,V7,U7)→Speaker

(SYMPTOM) CHECK ITEMS		Signal ROUTE IN → OUT
Door Opener Operation	Main monitor station control signal	Press the main monitor KEY button PAD3[KEY] → R1005 → IC1002(Pin2) → IC1002(Pin10,11,12) → CN1001(Pin2,3,4) → CN170(Pin2,3,4)→IC100(Pin68,68,43) [DOOR1] IC100(Pin14) → R141 → Q881 → RL881 → CN601(Pin1,2) [DOOR2] IC100(Pin10) → R140(1-4) → Q880 → RL880 → CN601(Pin3,4)
Recording Image Signal (Auto)		① → RL640 → RL641 → C642, C643 → R641, R642 → T640 → C644 → IC670(Pin5) → Image signal demodulation (FM to NTSC) → IC670(Pin3) → C127 → → IC100(Pin62) → IC100(D-Bus) → IC300(D-Bus) → IC100(D-Bus) → IC350
PBX interface Talk operation	Transmitting	L801,L802 → R804,C805 → T801 → R805 → C814 → R815 → IC801(Pin2) → IC801(Pin1) → C586 → IC582(Pin3) → IC582(Pin4) → C584 → R582 → IC405(Pin K3) → IC405(Pin H3) → C595 → R595 → IC582(Pin15) → IC582(Pin1) → C505 → R504 → IC500(Pin2 → IC500(Pin1) → R505 → C523 → L644 → L640,C640 → L643 → L642 → L641 → RL640
	Receiving	RL640 → L641 → L642 → L643 → L640,C640 → C523 → C512 → R512 → IC500(Pin6) → IC500(Pin7) → C582 → R581 → IC582(Pin13) → IC582(Pin14) → C596 → R598 → IC405(Pin L2) → IC405(Pin K2) → C809 → R818 → IC801(Pin6) → IC801(Pin7) → R806 → T801 → R804,C805 → L801,L802
Recording Image Operation (Manual)	Main monitor station control signal	Press the main monitor PAGE button PAD2[PAGE] → R1004 → IC1002(Pin1) → IC1002(Pin10,11,12) → CN1001(Pin2,3,4) → CN170(Pin2,3,4)→IC100(Pin68,68,43)
	Main monitor station recording image signal	① → RL640 → RL641 → C642,C643 → R641,R642 → T640 → C644 → IC670(Pin5) → Image signal demodulation (FM to NTSC) → IC670(Pin3) → C127 → IC100(Pin62) → IC100(D-Bus) → IC300(D-Bus) → IC100(D-Bus) → IC350

10 Disassembly and Assembly Instructions

10.1 Main Monitor Station

10.1.1 How to Remove the DC cable [No.1]

1. Remove 2 screws (a).
2. Remove the DC cable cover.
3. Keep pressing the terminal by Screwdriver's head and pull out the wires of the DC cable as shown in Fig.1

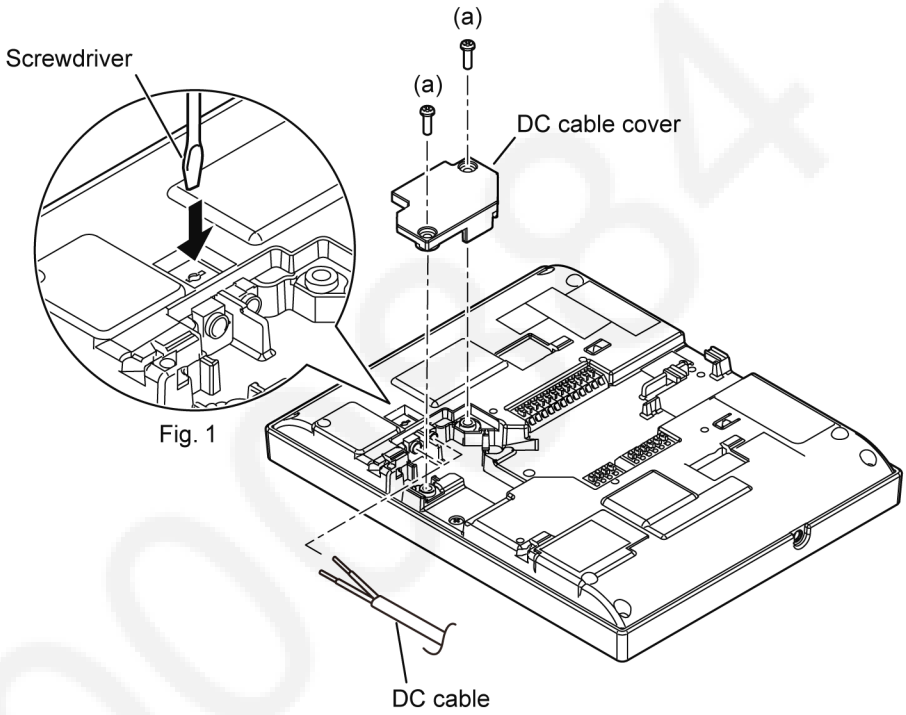
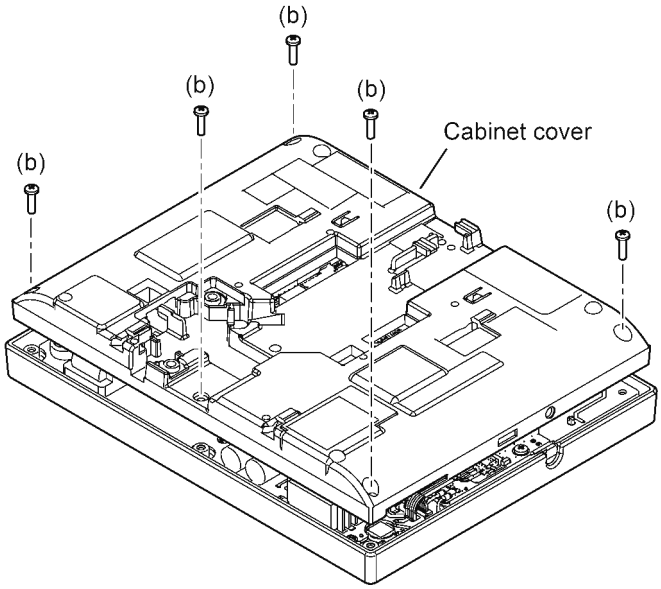


Fig. 1

10.1.2 How to Remove the Cabinet Cover [No.2]

■ **Procedure No.1→No.2**

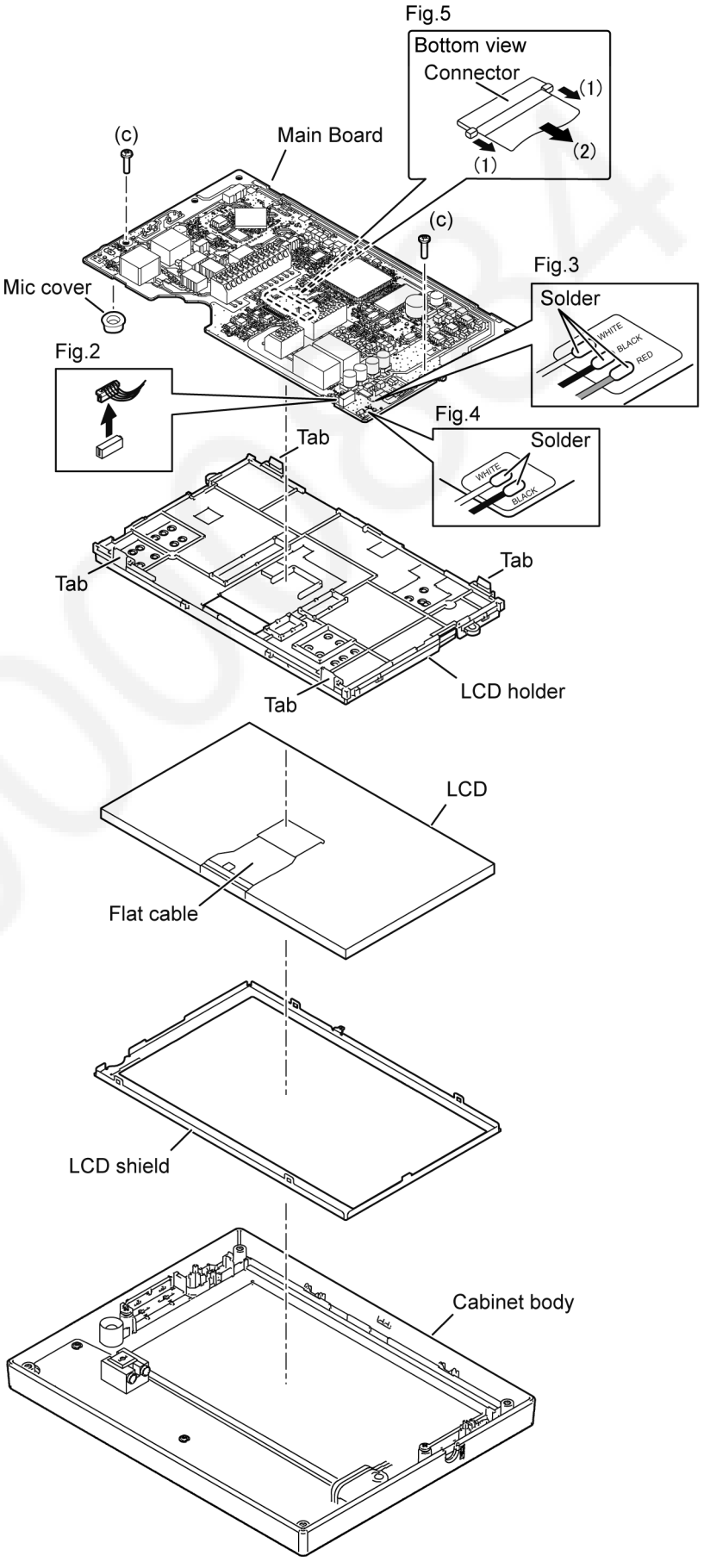
1. Remove 5 screws (b).
2. Remove the cabinet cover.



10.1.3 How to Remove the Main Board, Speaker and LCD [No.3]

■ Procedure No.1→No.2→No.3

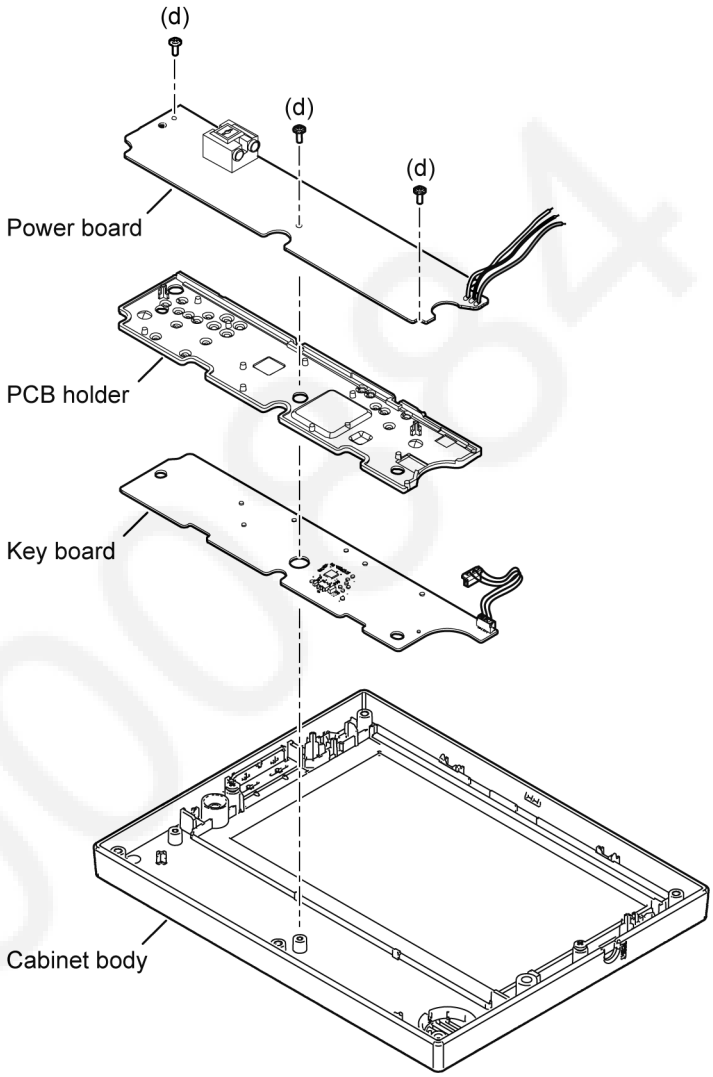
1. Remove connector (Fig.2).
2. Remove the solder of wires (Fig.3, Fig.4).
3. Remove 2 screws (c).
4. Remove the Main board with LCD holder from Cabinet body.
5. Unhook the 4 tabs of the LCD holder.
6. Remove the Flat cable from Main board as shown in Fig.5.



10.1.4 How to Remove the Power board, Key board [No.4]

■ Procedure No.1→No.2→No.3→No.4

1. Remove 3 screws (d).
2. Remove Power board from Cabinet body.
3. Remove PCB holder from Cabinet body.
4. Remove Key board from Cabinet body.



10.2 Door Station

10.2.1 How to Remove the Front Panel [No.1]

1. Unlock the hook by inserting the screw driver (Fig.A).
2. Remove Front panel from Cabinet body.

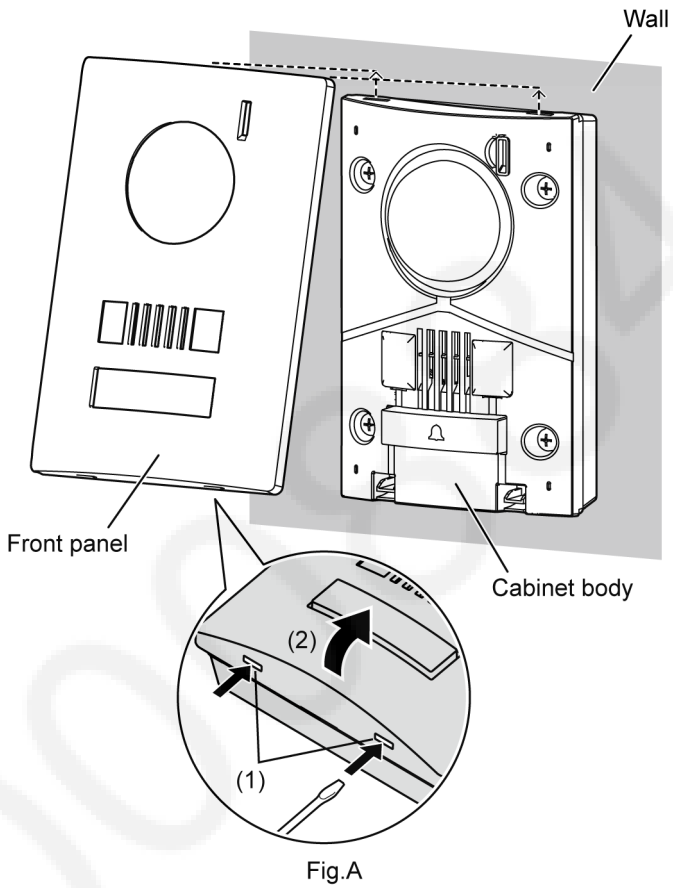


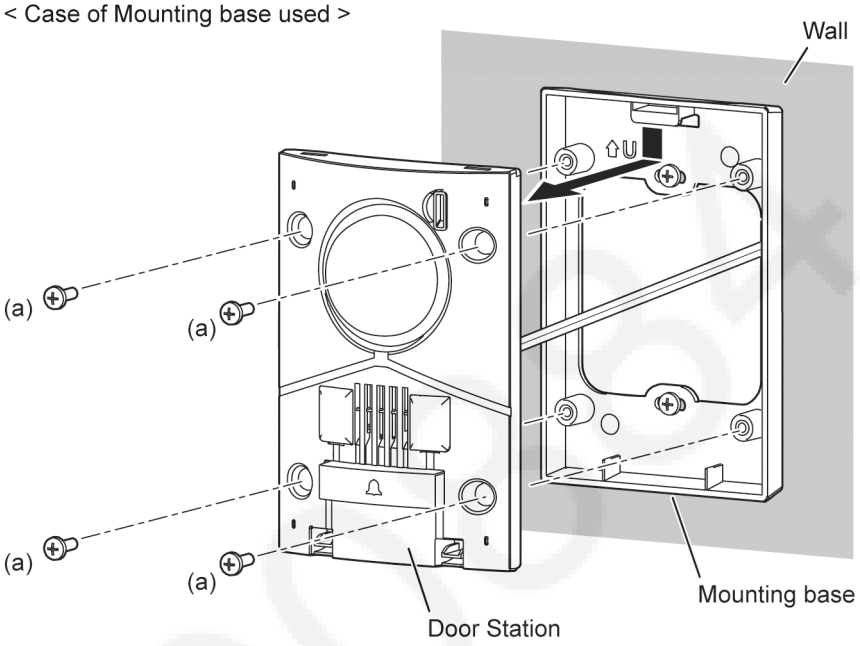
Fig.A

10.2.2 How to Remove the Door Station [No.2]

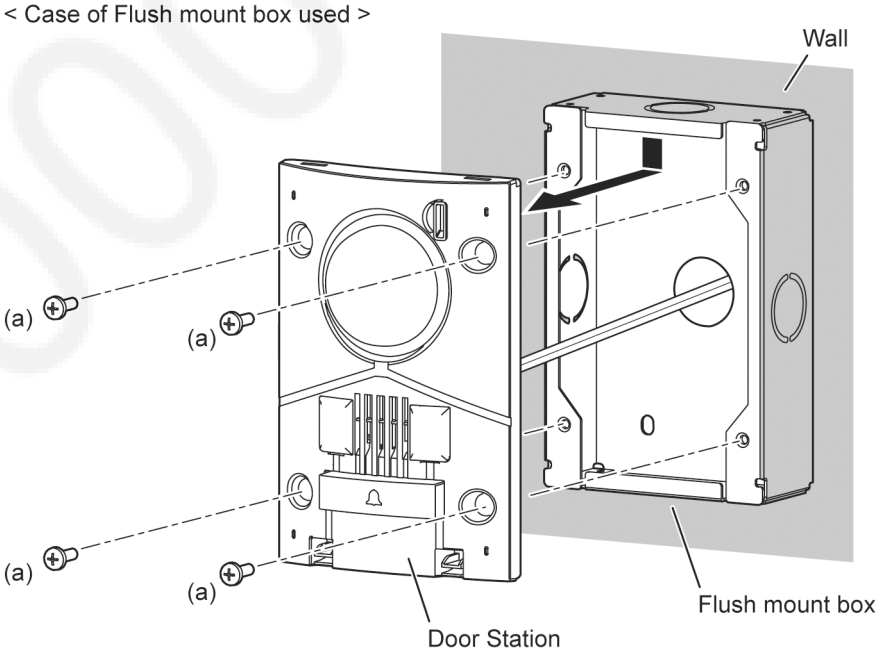
■ Procedure No.1→No.2

1. Remove 4 screws (a).
   Case of Mounting base used
   or
   Case of Flush mount box used

< Case of Mounting base used >



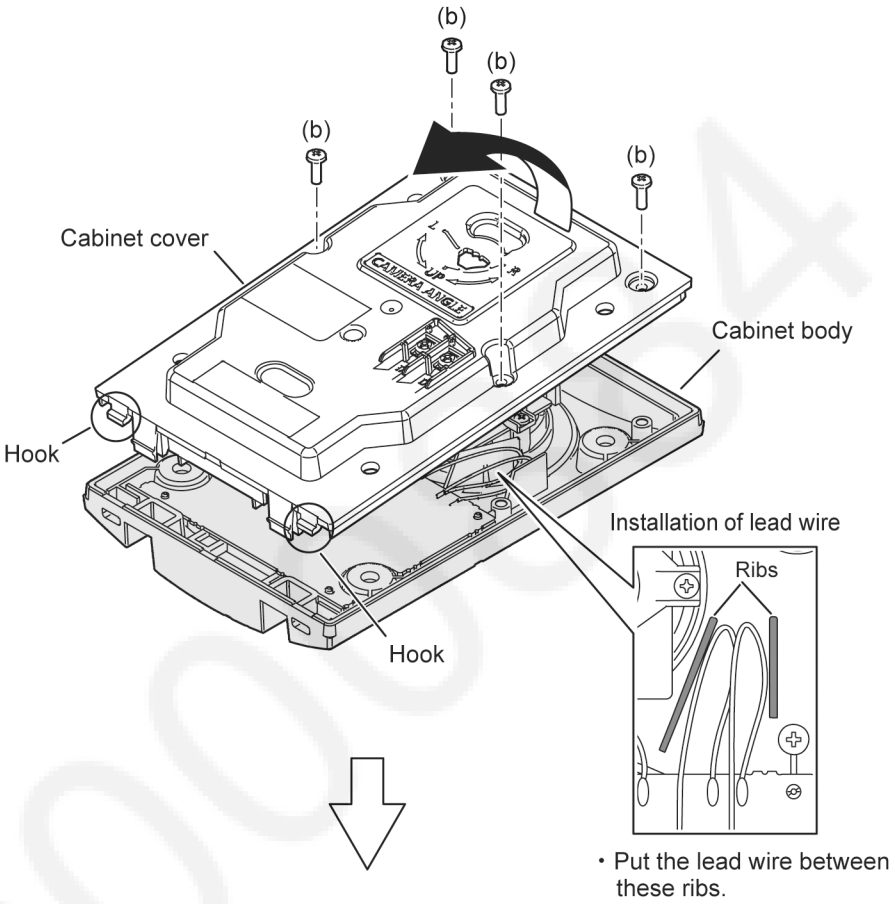
< Case of Flush mount box used >

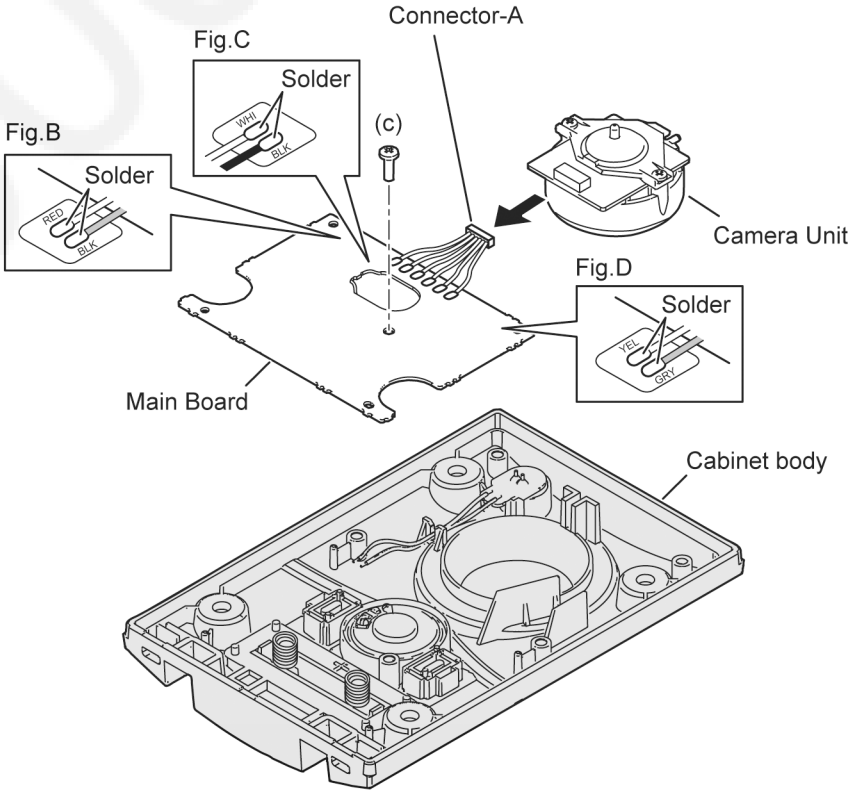


10.2.3 How to Remove the Main Board and Camera Unit [No.3]

■ Procedure No.1→No.2→No.3

1. Remove 4 screws (b).
2. Please remove the cabinet cover from cabinet body with care to the hooks.
3. Remove the solder on the 3 pairs of lead wires (Fig.B, Fig.C, Fig.D).
4. Disconnect the connector-A from the Camera Unit.
5. Remove the screw (c).
6. Remove the Main Board.

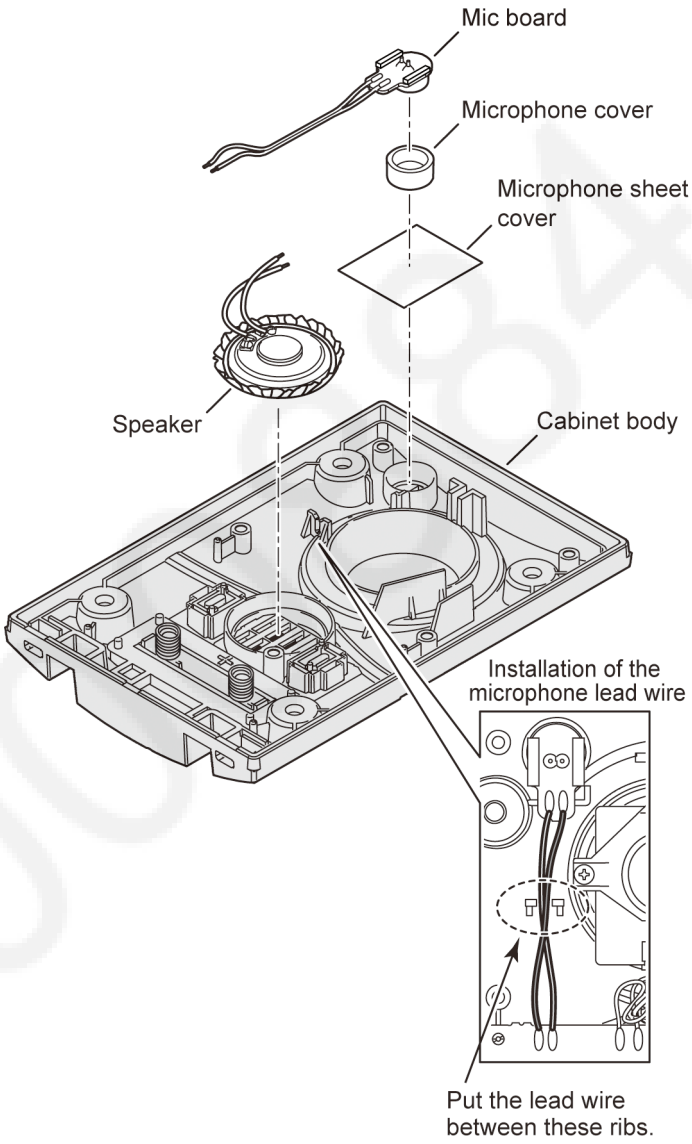




10.2.4 How to Remove the Mic Board and Speaker [No.4]

■ Procedure No.1→No.2→No.3→No.4

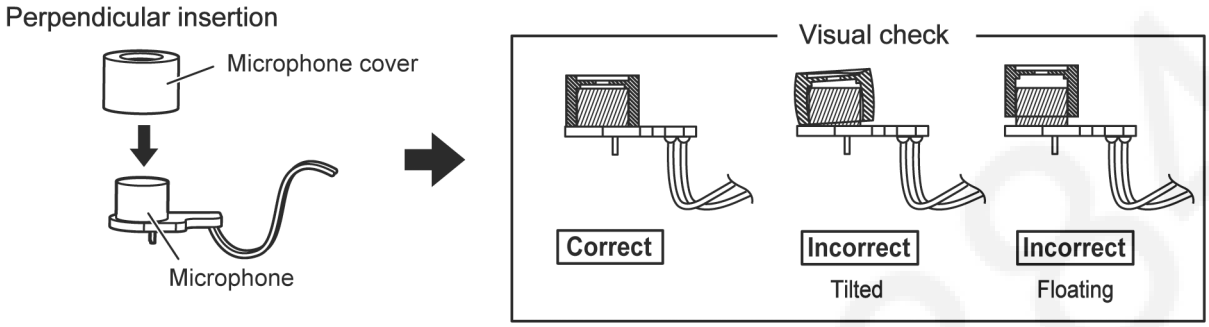
1. Remove the Mic board.
2. Remove the Speaker.



10.2.4.1 Note for Microphone Assembly (for anti-feedback)

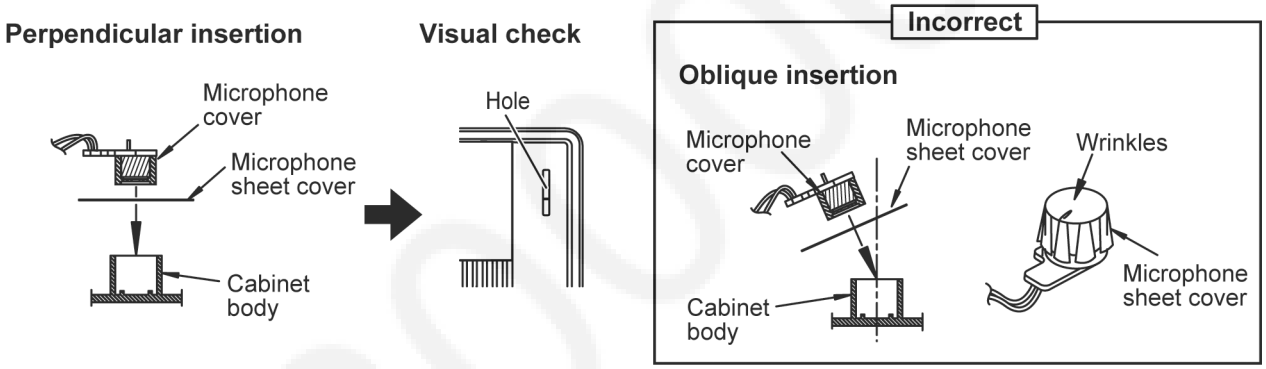
■ **Installation of Microphone rubber**

Insert the microphone perpendicularly into the microphone cover, and visually check to see if it is tilted or floating.



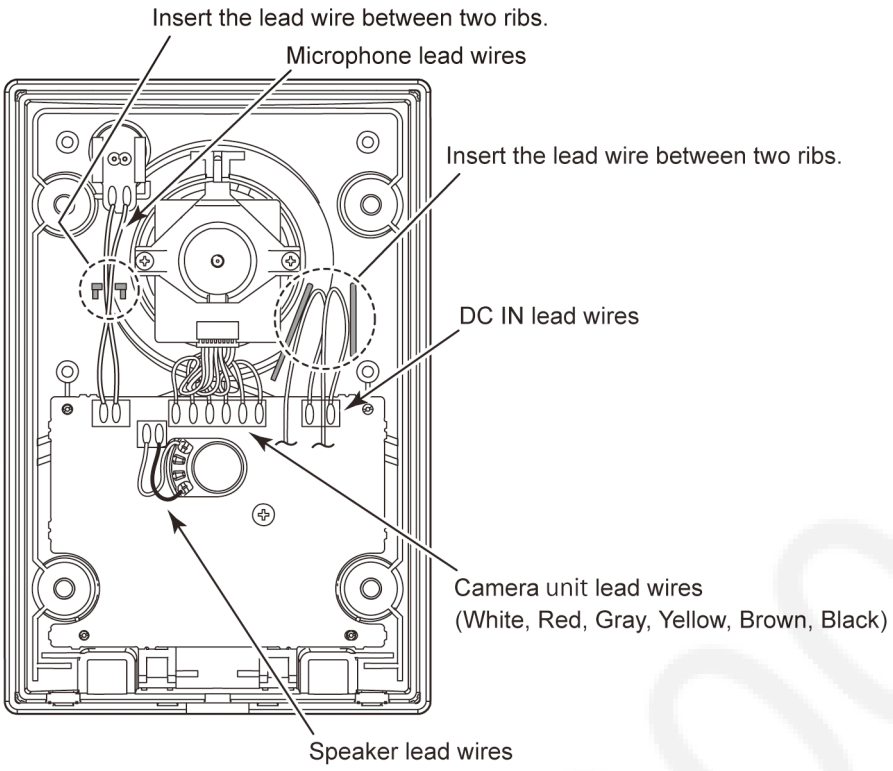
■ **Installation to the front cabinet**

Insert the microphone perpendicularly into the cabinet body, then visually check it from the front direction of the door station and ensure that there are no wrinkles.



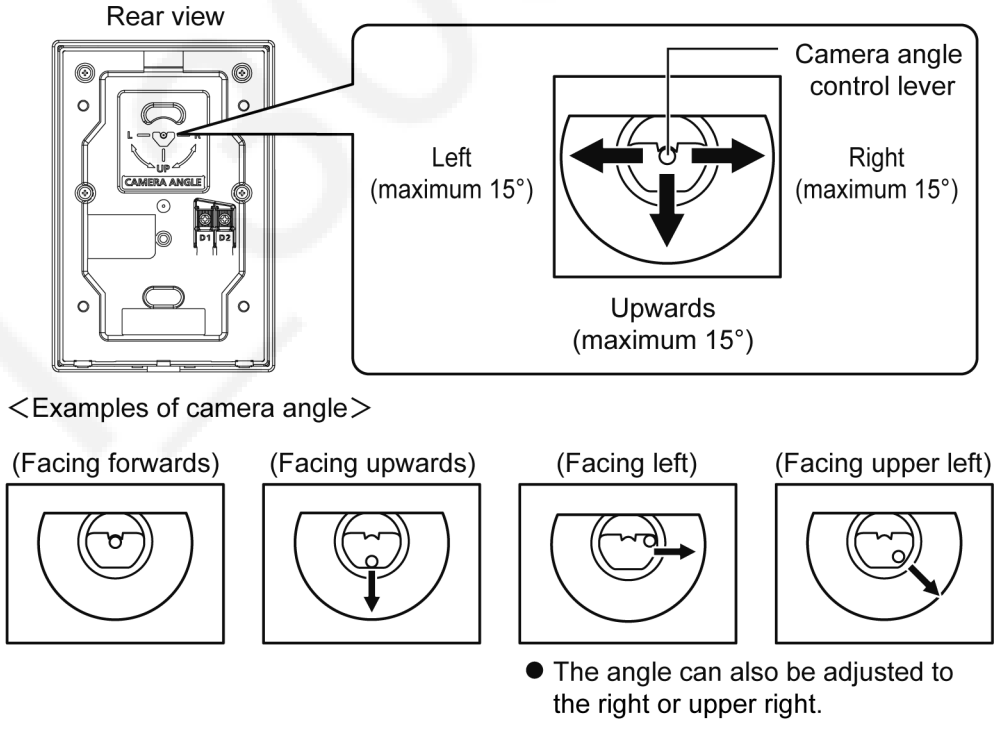
10.2.5 Installation of the lead wires

When assembling the door station, route the lead wires as shown in the figure below, and be careful that they do not get caught.



10.2.6 Item to be checked after completion of assembly (camera lens angle adjustment)

After completing assembly work, move the angle adjustment lever on the rear surface in the left and right directions, and confirm that it moves all the way.

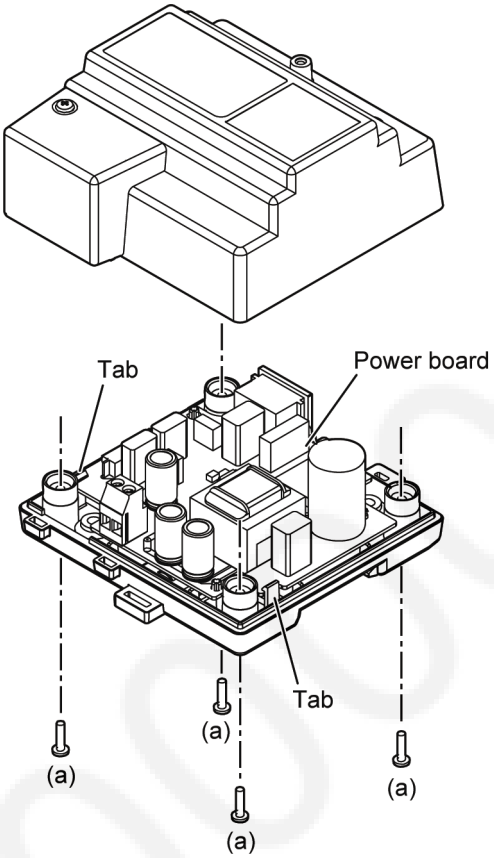


Note:

When the camera angle is adjusted to the upper left and upper right, the image may be slightly distorted.

10.3 Power Supply Unit

1. Remove 4 screws (a).
2. Remove the Power Board by unhooking 2 tabs.



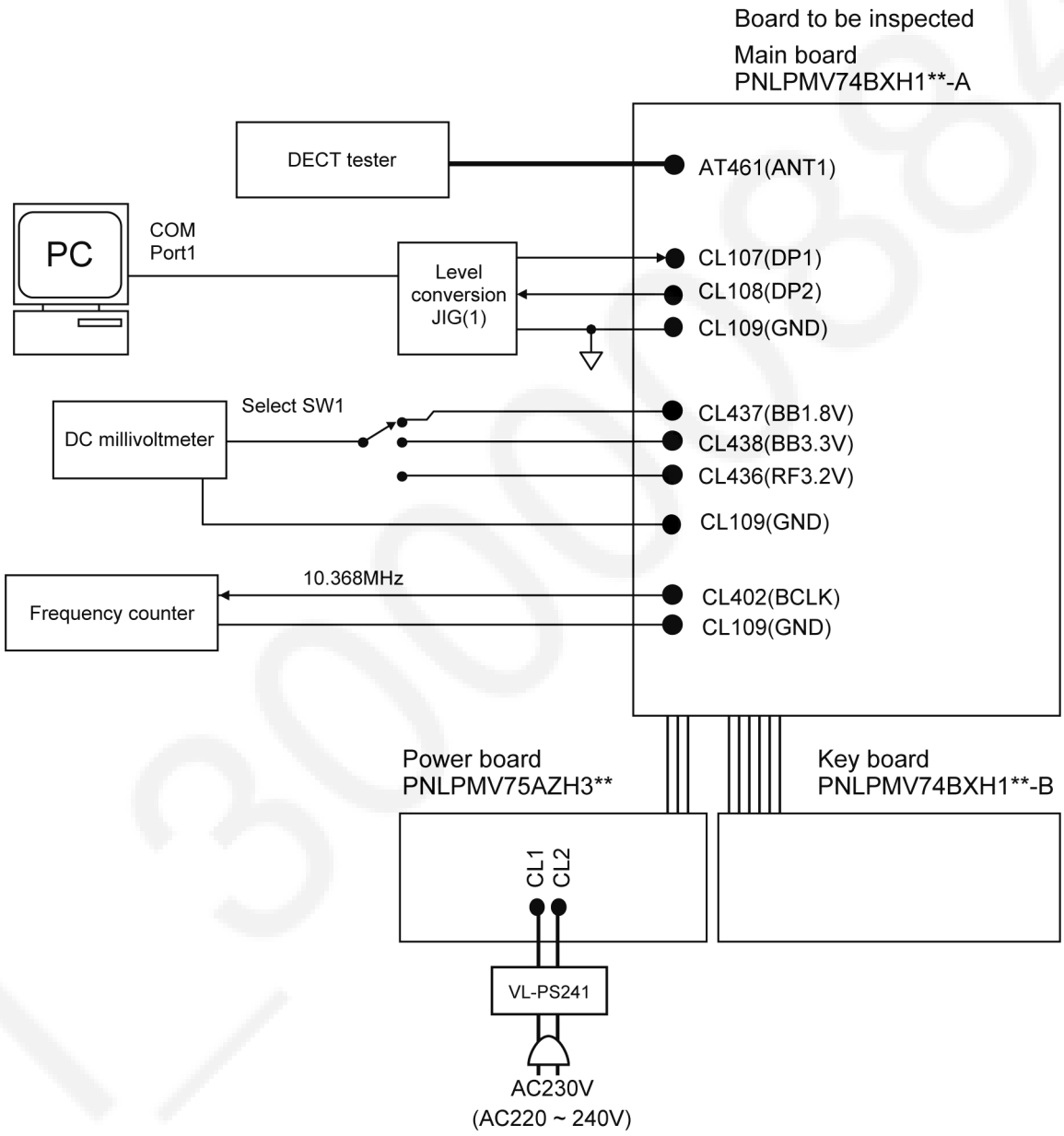
11 Measurements and Adjustments

11.1 Main Monitor Station

11.1.1 Main Board

11.1.1.1 Connections

When replacing the main board (Monitor Station), please refer to the following items for adjusting.



11.1.1.2 When replacing BBIC and X'tal

■ Preparation:

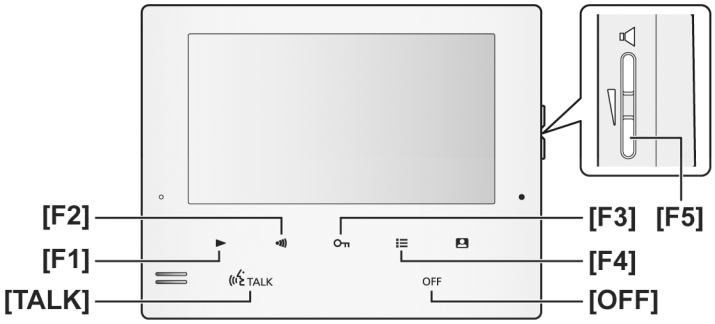
1. PC setting refer to **[8.1.1 Main Monitor Station]**.
2. Supply AC 230V.

Note:

Test points: Refer to **[14.1.2 Main Board (Bottom View)]**.

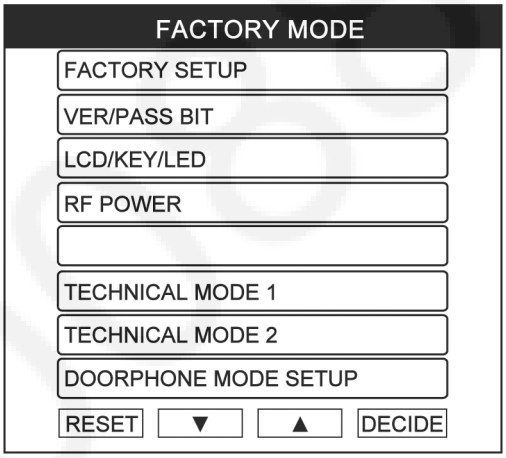
No.	Items	Check Point	Procedure
1	1.8 V Supply Adjustment	CL437(BB1.8V)	1. Confirm that the voltage between test point CL437 and CL109 (GND) is 1.8 V ± 0.02 V. 2. Execute the command “VDD”, then check the current value. 3. Adjust the 1.8V voltage of BB1.8V executing command “VDD XX” (XX is the value).
2	3.3 V Supply Confirmation	CL438(BB3.3V)	1. Confirm that the voltage between test point CL438 and CL109(GND) is 3.3 V ± 0.2 V.
3	RF3.2 V Supply Confirmation	CL436(RF3.2V)	1. Confirm that the voltage between test point CL436 and CL109(GND) is 3.2 V ± 0.2 V.
4	BBIC Clock Adjustment	CL402(BCLK)	1. Confirm frequency between CL402 and CL109(GND). 2. Input Command “sfr”, then you can confirm the current value. 3. Check X’ tal Frequency. (10.368 MHz ± 100 Hz). 4. If the frequency is not 10.368 MHz ± 100 Hz, adjust the frequency of CKM executing the command “sfr xx xx” (where xx xx is the value: d) so that the reading of the frequency counter is 10.368000 MHz ± 5 Hz.

11.1.2 Factory Mode



■ Entering Factory Mode:

1. Turn AC Power “ON”, while pressing **[F5]** button, about 5 seconds or more.
2. Press **[TALK]** , **[OFF]**,**[F4]** key sequentially. (FACTORY MODE screen is displayed.)

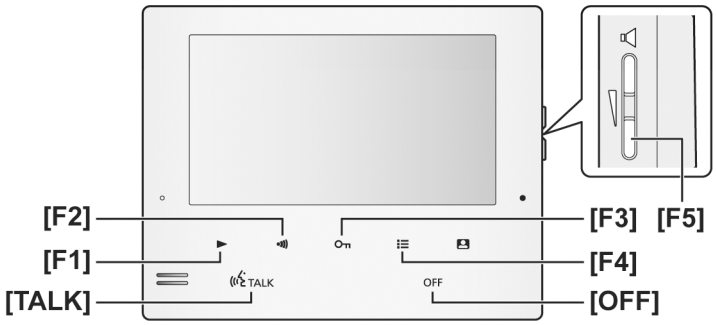


■ In order to exit Factory Mode:

1. Press the **[F1]** button.

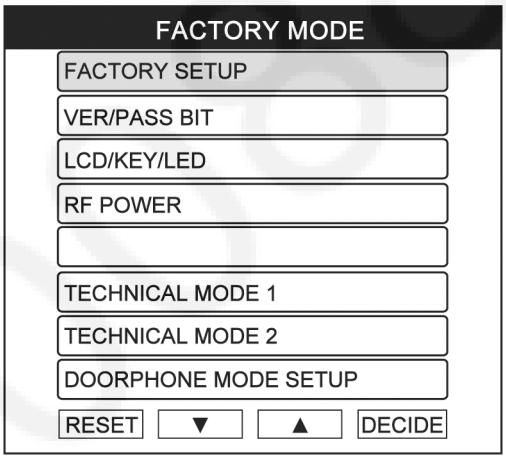
11.1.2.1 Factory Setup

Initialize the logs and the all parameters except for the factory adjusted value, and delete the recorded images.

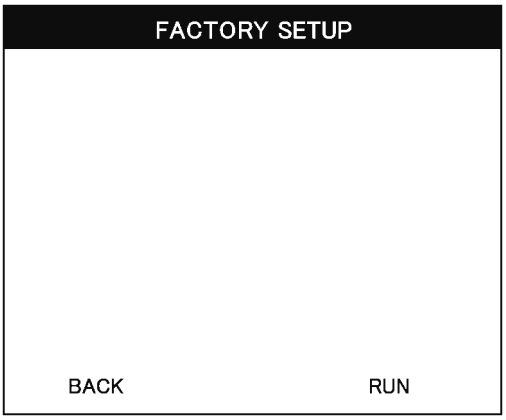


1. Select **"FACTORY SETUP"** by [F2] or [F3].

2. Press **[F4 (DECIDE)]**.



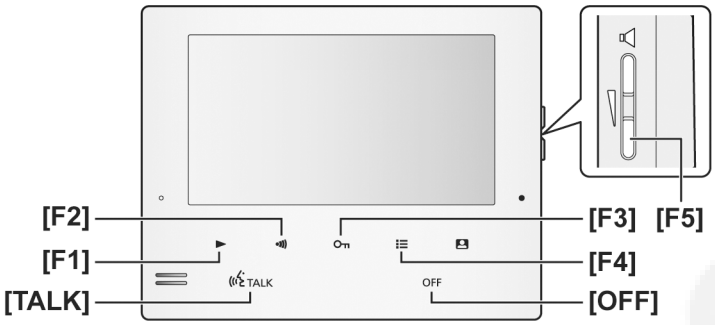
3. Press **[F4 (RUN)]**.



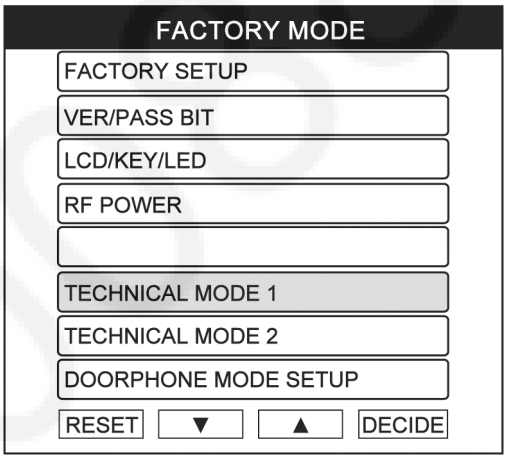
4. Press **[F1 (RESET)]**.

11.1.2.2 White Balance Adjustment

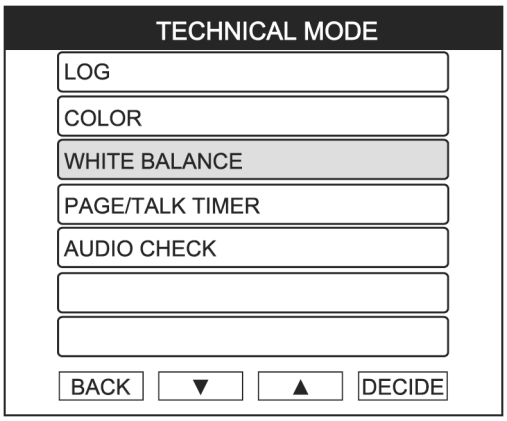
The adjustment is done only when the color of the LCD display has changed after you have replaced the LCD. (Basically, adjustment is unnecessary.)



1. Select **"TECHNICAL MODE 1"** by [F2] or [F3].
   Press **[F4(DECIDE)]**.



2. Select **"WHITE BALANCE"** by [F2] or [F3].
   Press **[F4(DECIDE)]**.

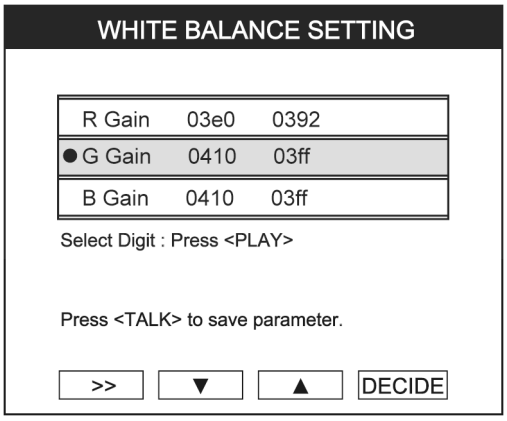


3. Set to default value.

(1) Select the color by [F2] or [F3]
(2) Press **[F4 (DECIDE)]**
(3) Set to default value as below

- [F1] (>>): (Select Digit)
- [F2] (▼), F3 (▲): (Change Value)
  - R Gain: 03e0
  - G Gain: 0410
  - B Gain: 0410

(During the adjustment, the color of the screen will change)



4. Adjust the white balance by R Gain and B Gain.

(1) Select the color to be adjust as below
- [F1] (>>): (Select Digit)
- [F2] (▼), F3 (▲): (Change Value)

(2) Press **[F4 (DECIDE)]**
(3) Adjust the white balance as below
- [F1] (>>): (Select Digit)
- [F2] (▼), F3 (▲): (Change Value)
  - to red: R Gain > 03e0
  - to blue: R Gain < 03e0
  - to yellow: B Gain < 0410
  - to green: R Gain < 03e0 and B Gain < 0410

5. Press **[TALK]**.

6. Press **[F1 (BACK)]**.

7. Press **[F1 (RESET)]**.

11.1.2.3 Apartment mode

This setting is generally the door station to connect, you can decide whether you want to connect to large apartment intercom. Usually, please use remains of House mode.

■ Entering Apartment mode:

1. Turn AC Power “ON”, while pressing **[F5]** button, about 5 seconds or more.

   And touch **[TALK]**, and **[OFF]**, and **[F2]**, sequentially.
   (Apartment mode screen is displayed.).

Function Menu	Settings and Overview
House mode	Selection: Display, [Don't display] Display: Use only when connecting the lobby door phone station in House mode (for example VL-V590).
Apartment mode	It is used when connecting to the “Video Intercom System for Apartment Complexes”. It switches automatically to Apartment mode in the communication settings from the PC tool. Please use when switching manually. For more information, please refer to the large apartment intercom system documentation.

Note: Mode switching cannot be performed on boards where the mode is fixed beforehand.

■ In order to exit Apartment Mode:

1. Press the **[OFF]** button.

11.2 Door Station

When replacing the main board of Door Station, please confirm the following operations.

1. When you push the call button, a call reaches the main monitor station and a picture is displayed on the main monitor station.
2. When you press the button during calling, a second call reaches the main monitor station.
3. When the main monitor station is in call status, you can talk.

12 Miscellaneous

12.1 How to Replace the Flat Package IC

Even if you do not have the special tools (for example, a spot heater) to remove the Flat IC, with some solder (large amount), a soldering iron and a cutter knife, you can easily remove the ICs that have more than 100 pins.

12.1.1 Preparation

- PbF (: Pb free) Solder
- Soldering Iron

  Tip Temperature of 700°F ± 20°F (370°C ± 10°C)

  Note: We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Flux

  Recommended Flux: Specific Gravity → 0.82.

  Type → RMA (lower residue, non-cleaning type)

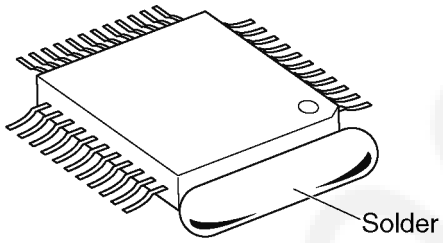
Note: See **[2.2 About Lead Free Solder (PbF: Pb free)]** .

12.1.2 Flat Package IC Removal Procedure

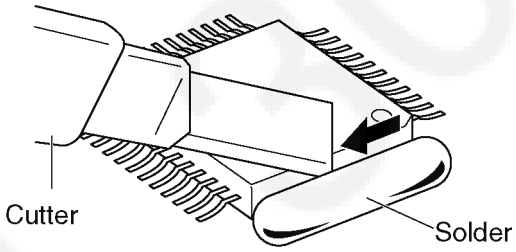
1. Put plenty of solder on the IC pins so that the pins can be completely covered.

   Note:

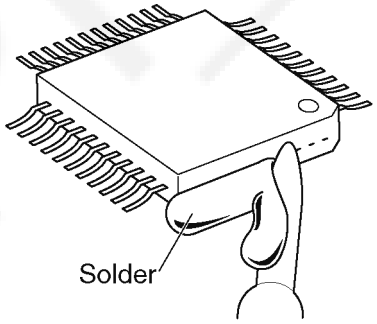
   If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



2. Make a few cuts into the joint (between the IC and its pins) first and then cut off the pins thoroughly.



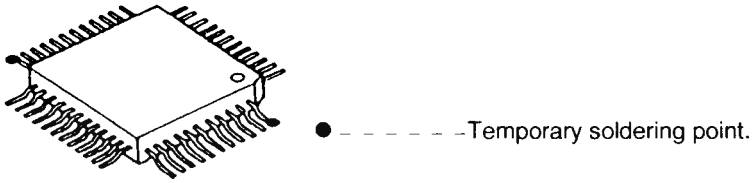
3. While the solder melts, remove it together with the IC pins.



When you attach a new IC to the board, remove all solder left on the land with some tools like a soldering wire. If some solder is left at the joint on the board, the new IC will not be attached properly.

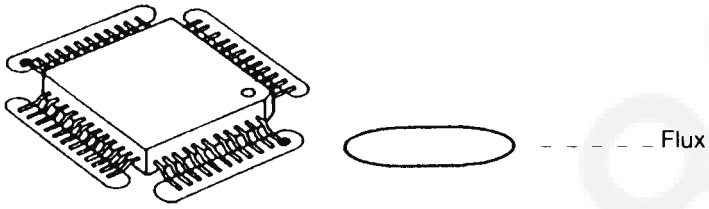
12.1.3 Flat Package IC Installation Procedure

1. Temporarily fix the FLAT PACKAGE IC, soldering the two marked pins.

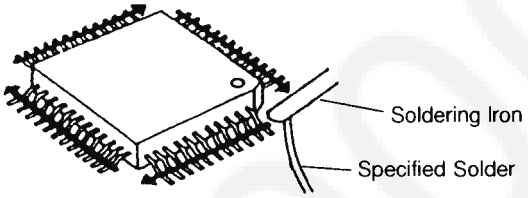


*Check the accuracy of the IC setting with the corresponding soldering foil.

2. Apply flux to all pins of the FLAT PACKAGE IC.

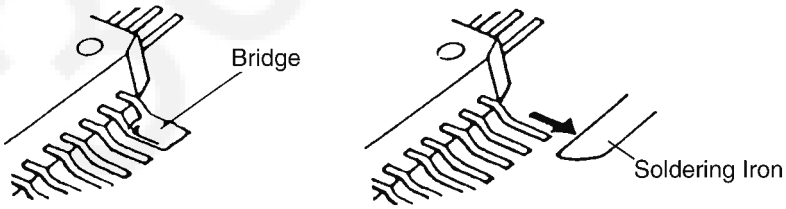


3. Solder the pins, sliding the soldering iron in the direction of the arrow.



12.1.4 Bridge Modification Procedure

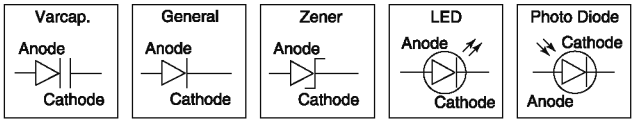
1. Lightly resolder the bridged portion.
2. Remove the remaining solder along the pins using a soldering iron as shown in the figure below.



13 Schematic Diagram

Note:

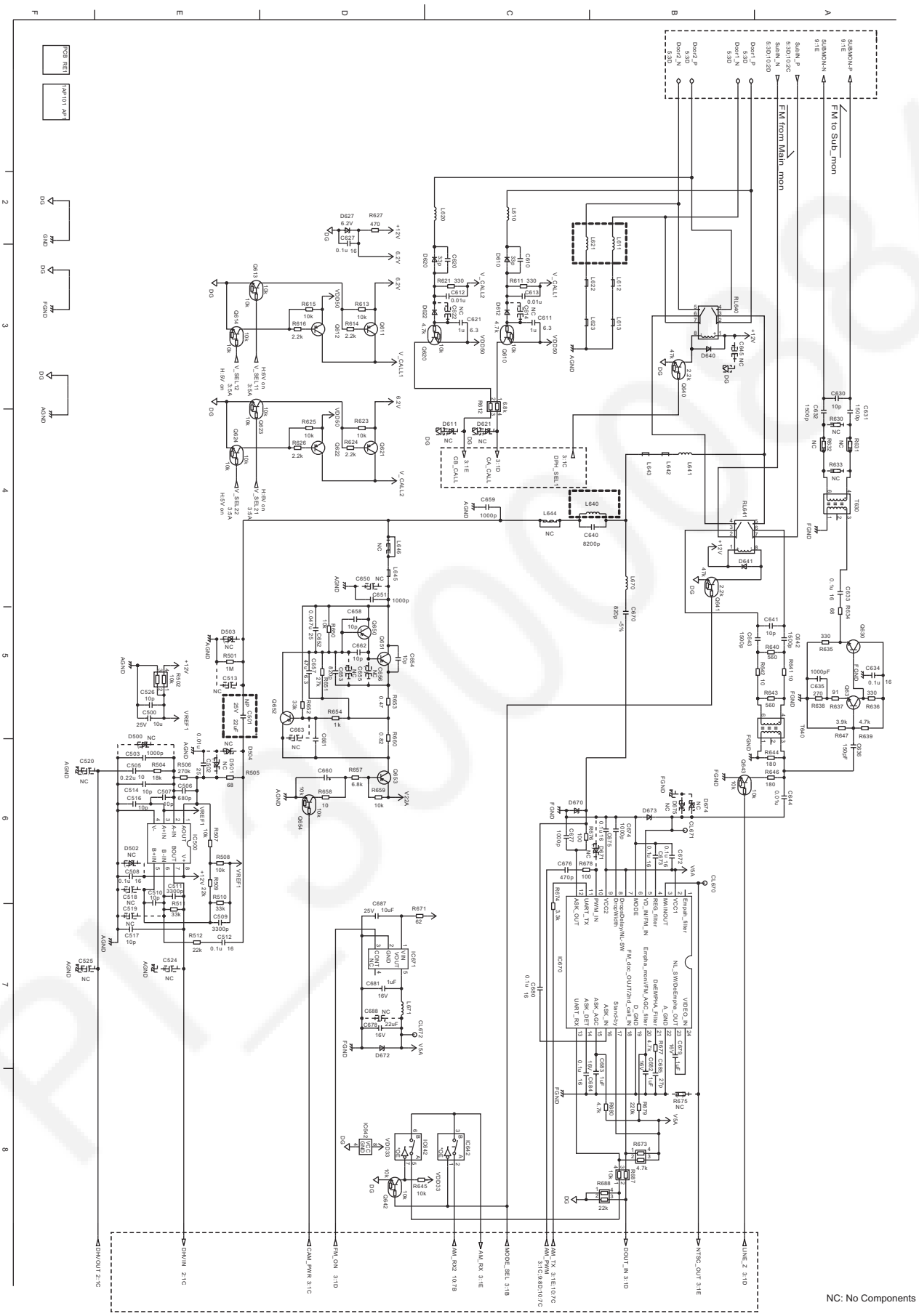
1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.
2. The schematic diagrams and circuit board may be modified at any time with the development of new technology.



Important safety notice
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of there components, use only manufacturer's specified parts.

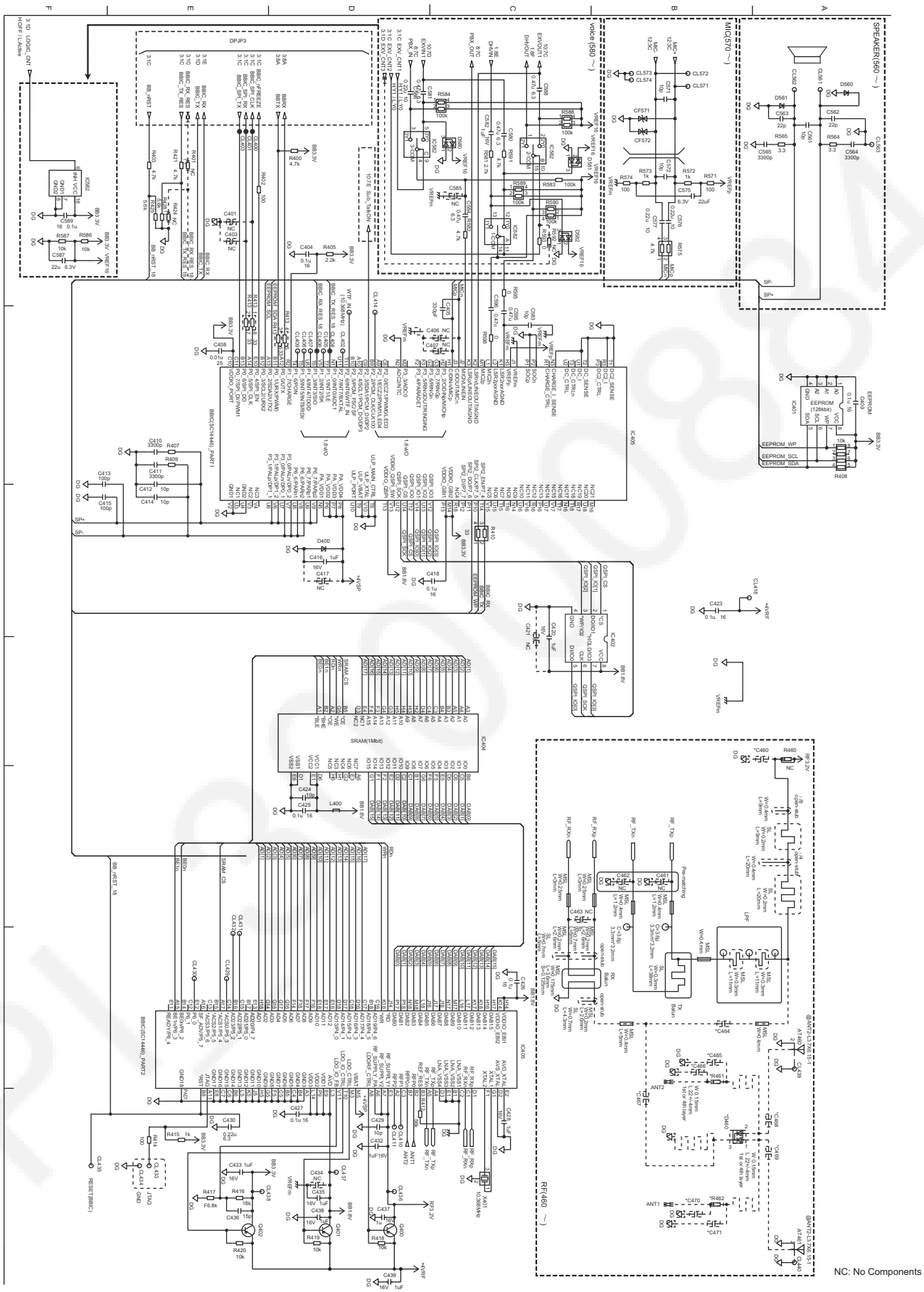
13.1 Main Monitor Station

13.1.1 Main Board (1) / External I/F



VL-MV75: Main Board No.1: External I/F

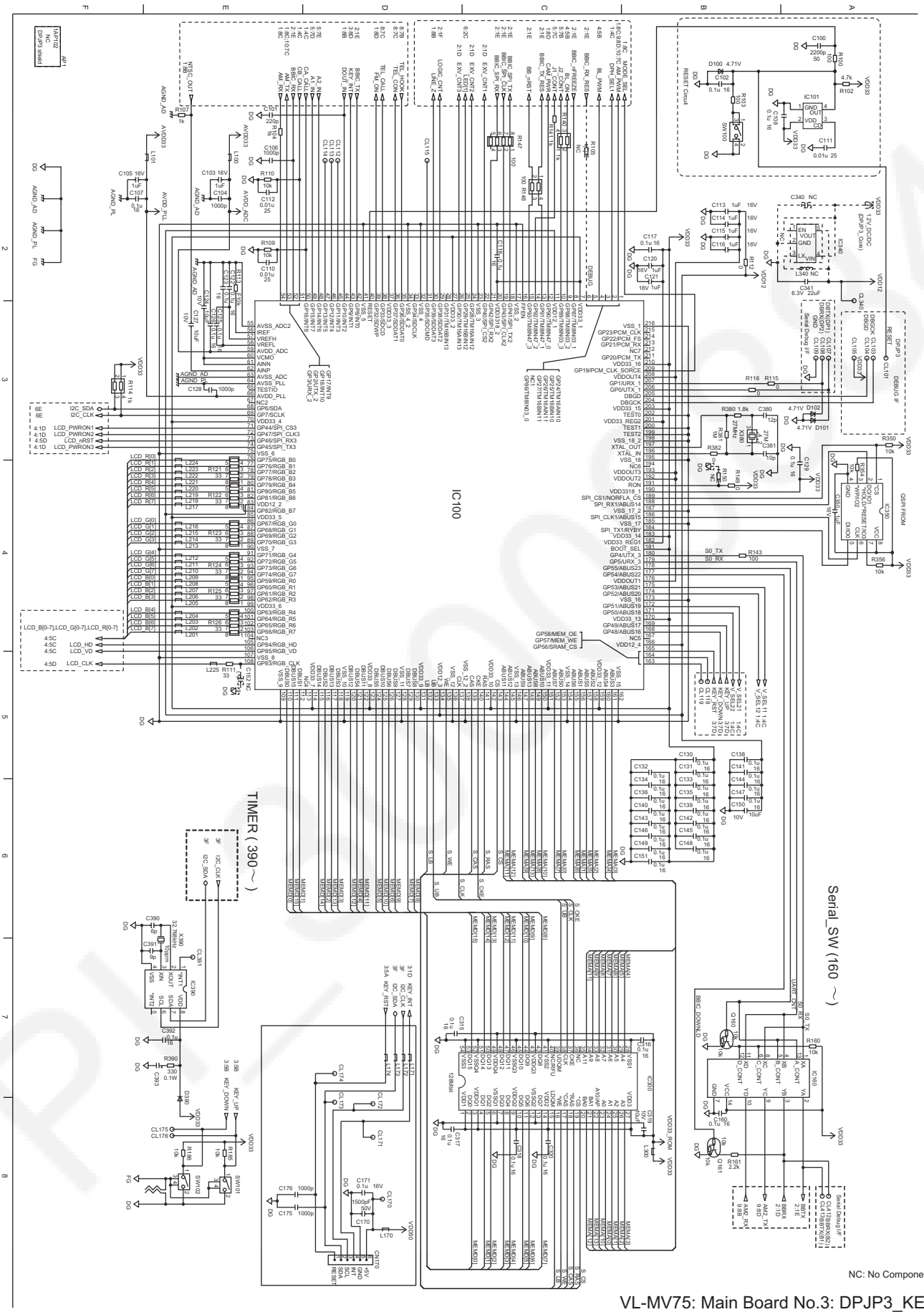
13.1.2 Main Board (2) / BBIC



NC: No Components

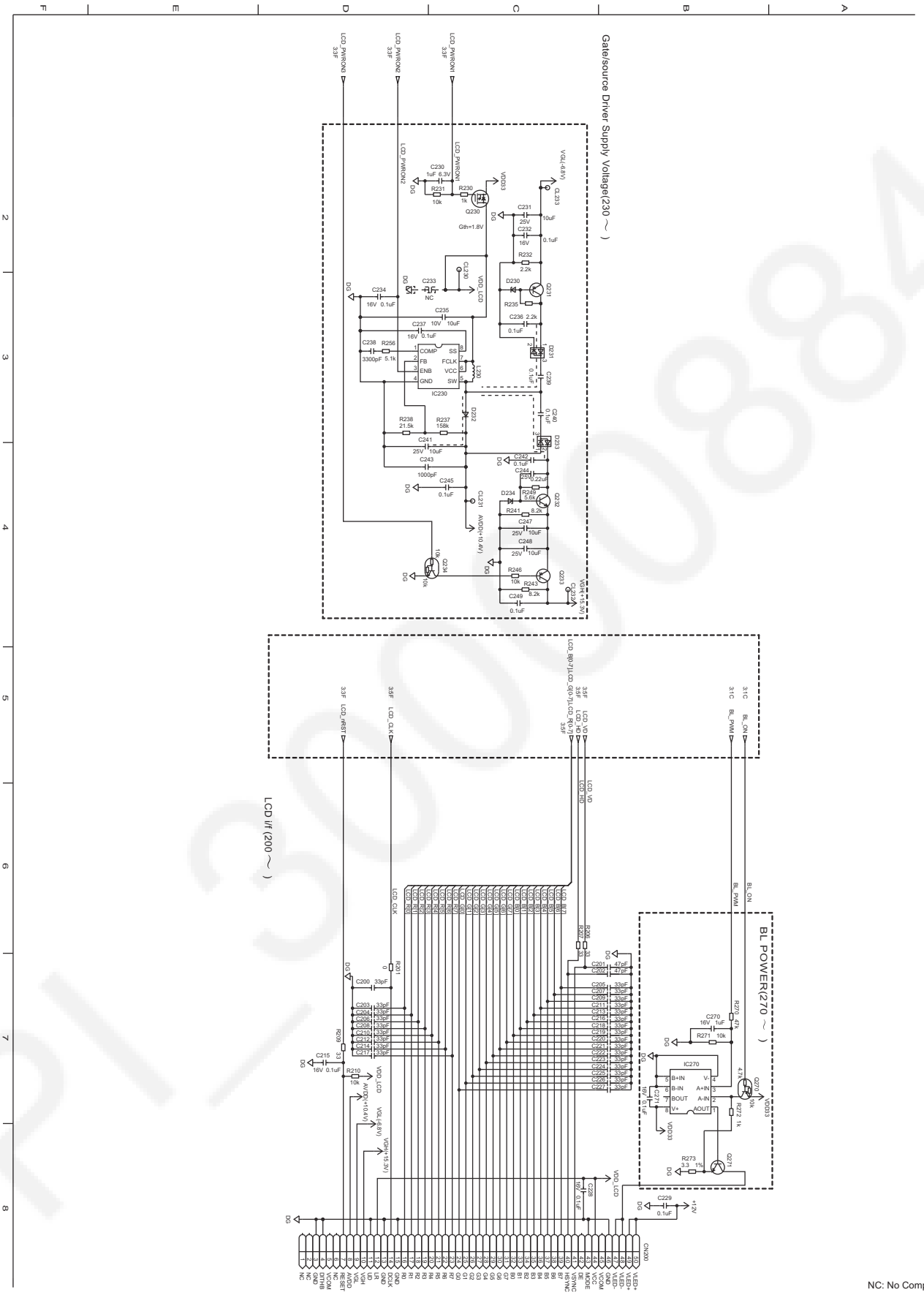
VL-MV75: Main Board No.2: BBIC

13.1.3 Main Board (3) / DPJP3_KEY



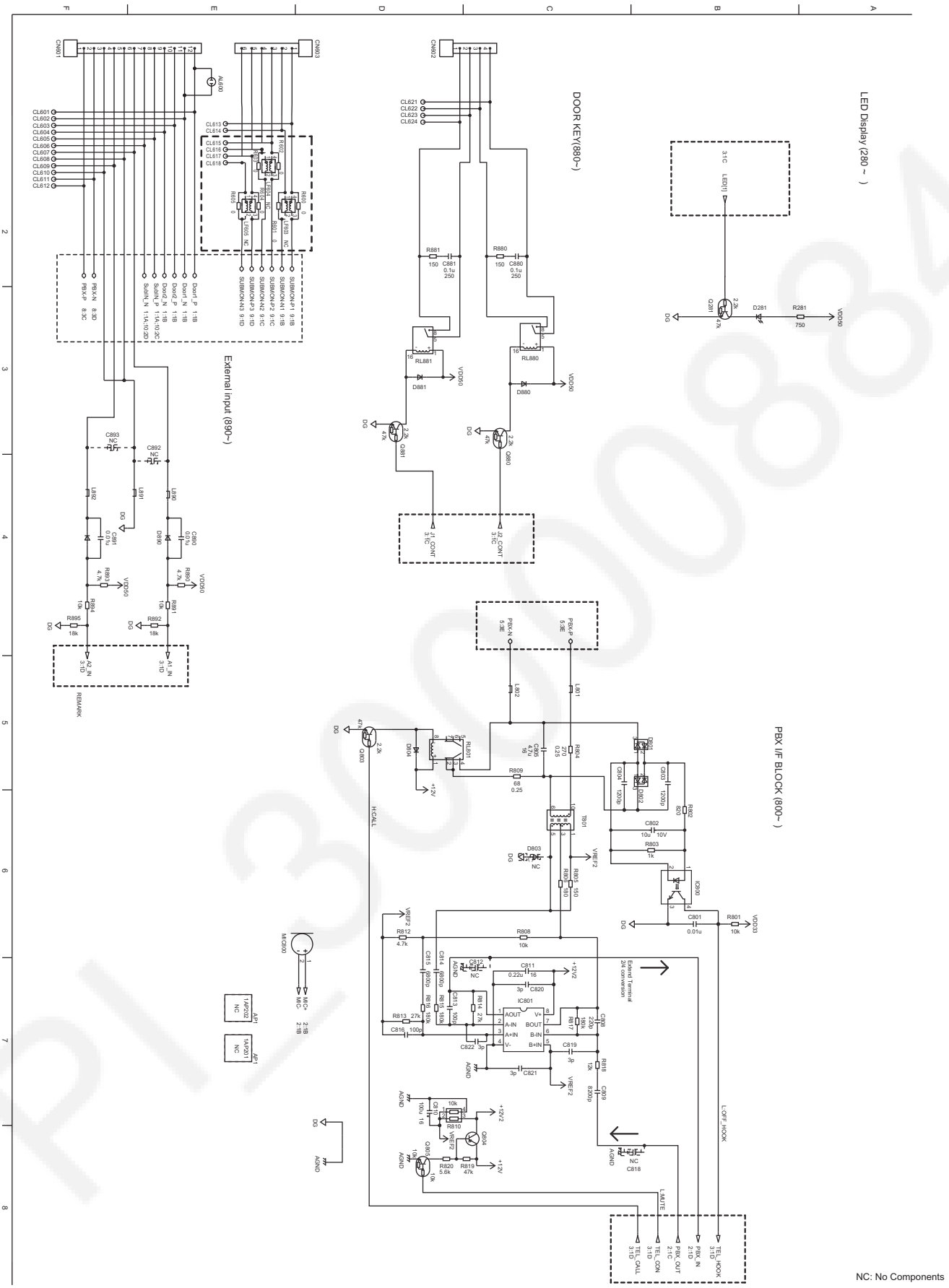
VL-MV75: Main Board No.3: DPJP3_KEY

13.1.4 Main Board (4) / LCD



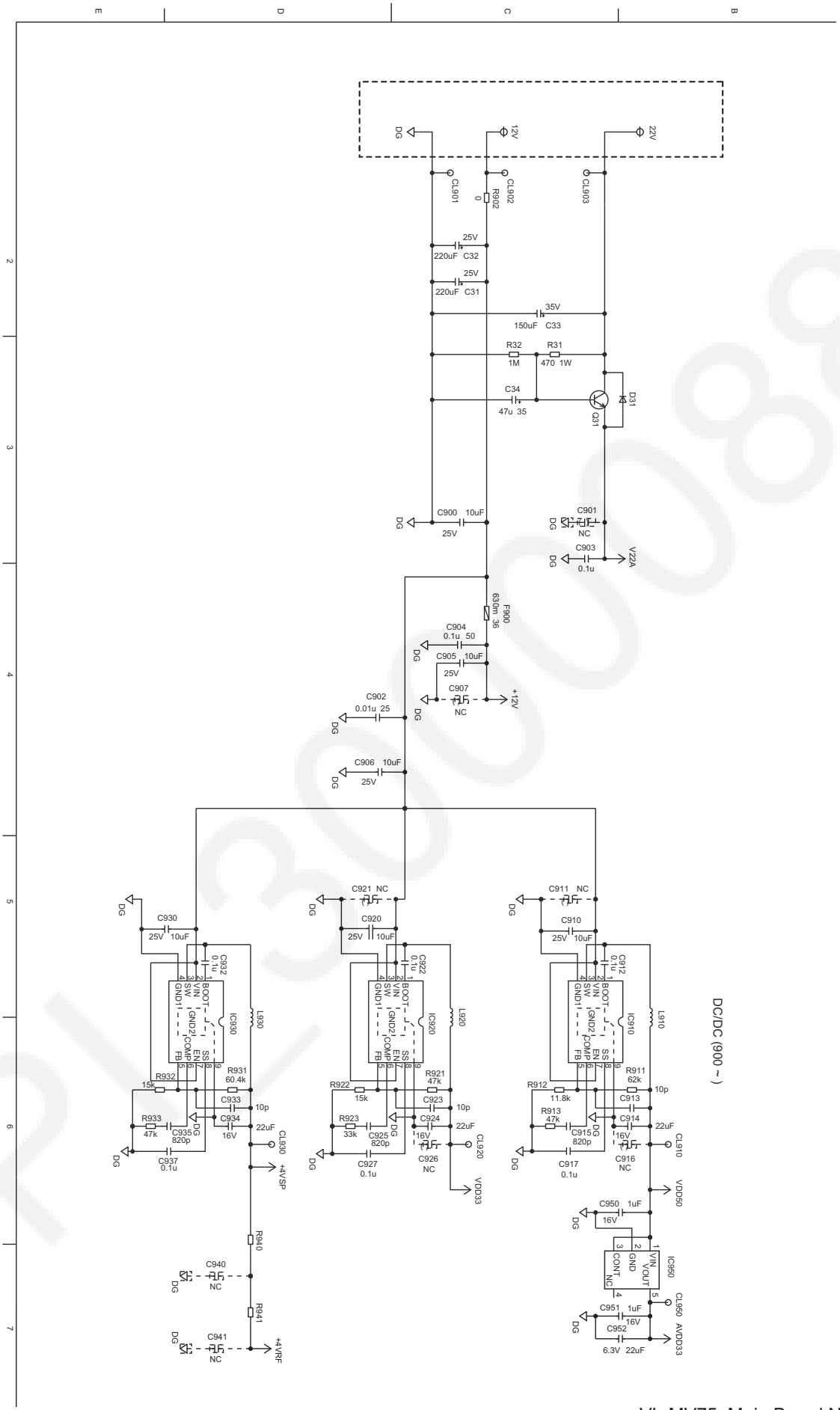
VL-MV75: Main Board No.4: LCD

13.1.5 Main Board (5) / External I/F_Electric lock



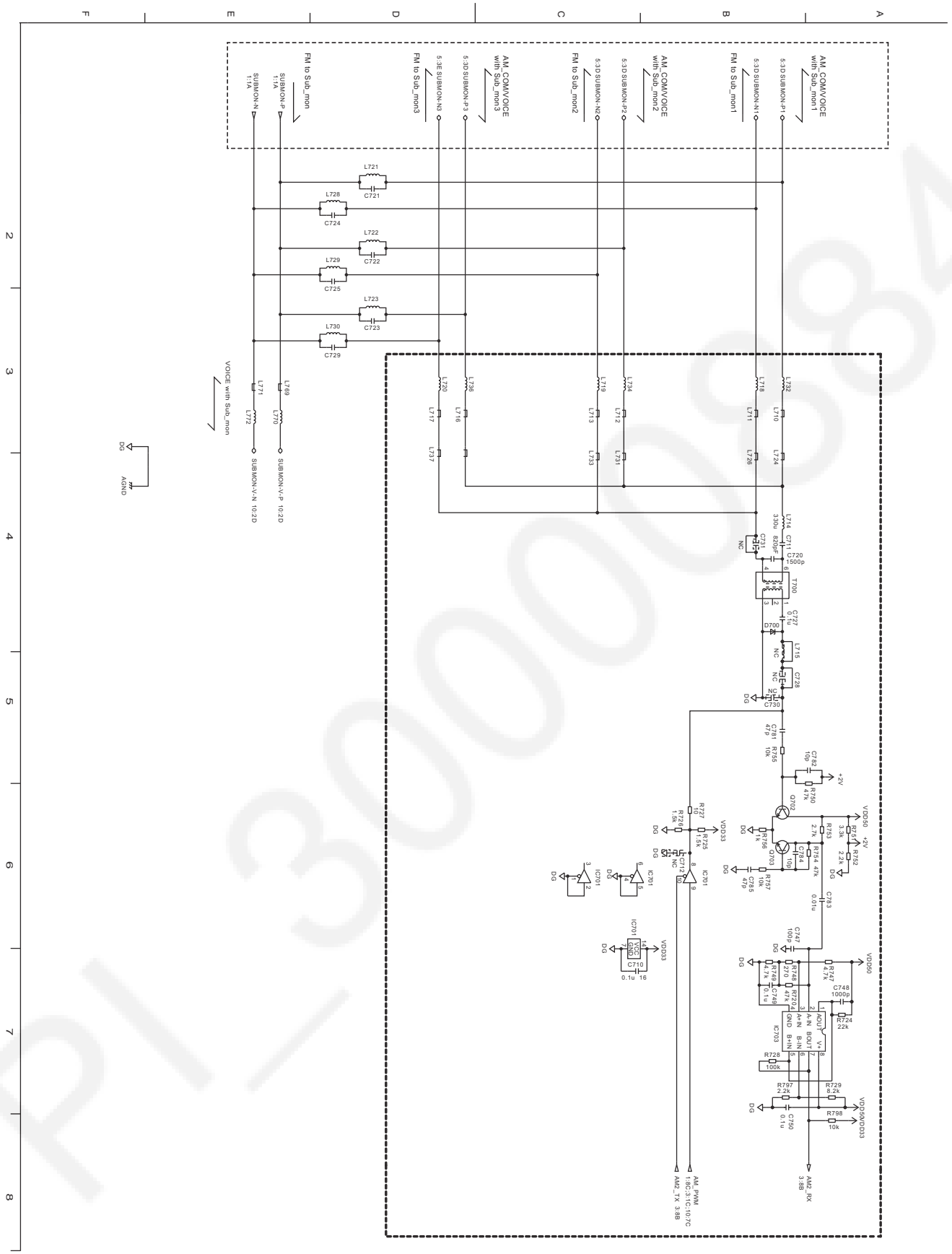
VL-MV75: Main Board No.5: External I/F_Electric lock

13.1.6 Main Board (6) / DCDC



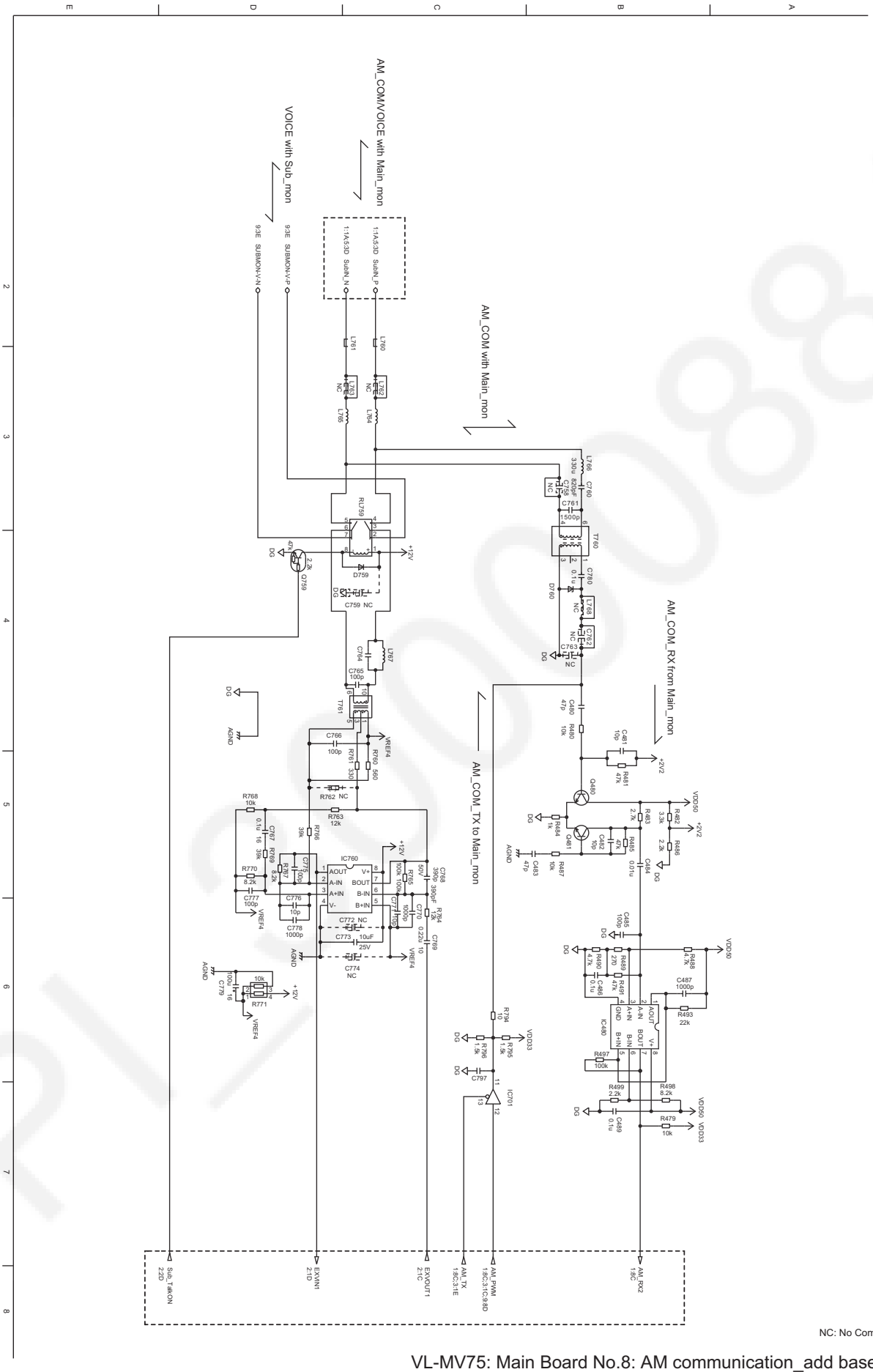
VL-MV75: Main Board No.6: DCDC

13.1.7 Main Board (7) / AM communication_base unit



VL-MV75: Main Board No.7: AM communication_base unit

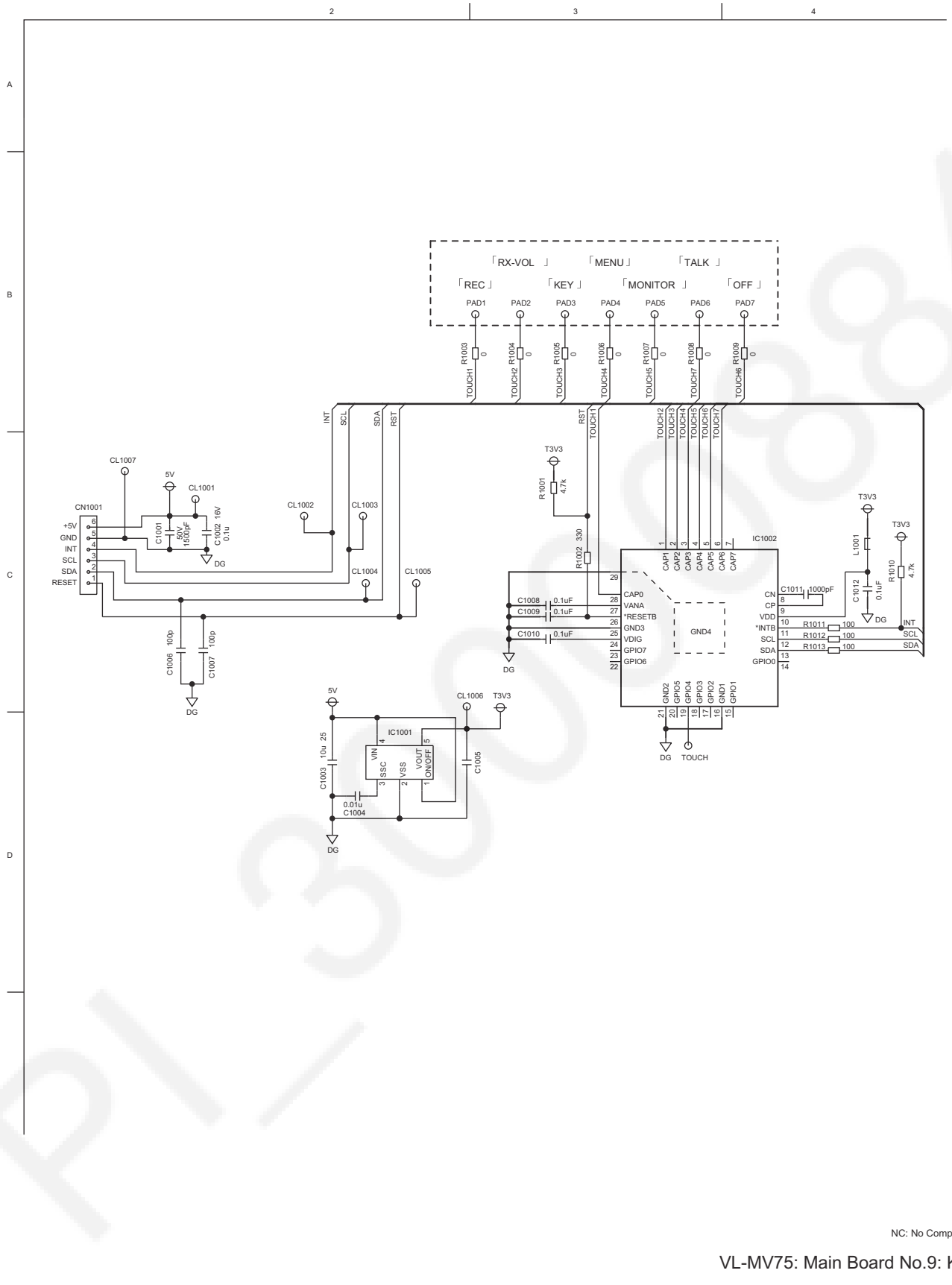
13.1.8 Main Board (8) / AM communication_add base unit



NC: No Components

VL-MV75: Main Board No.8: AM communication_add base unit

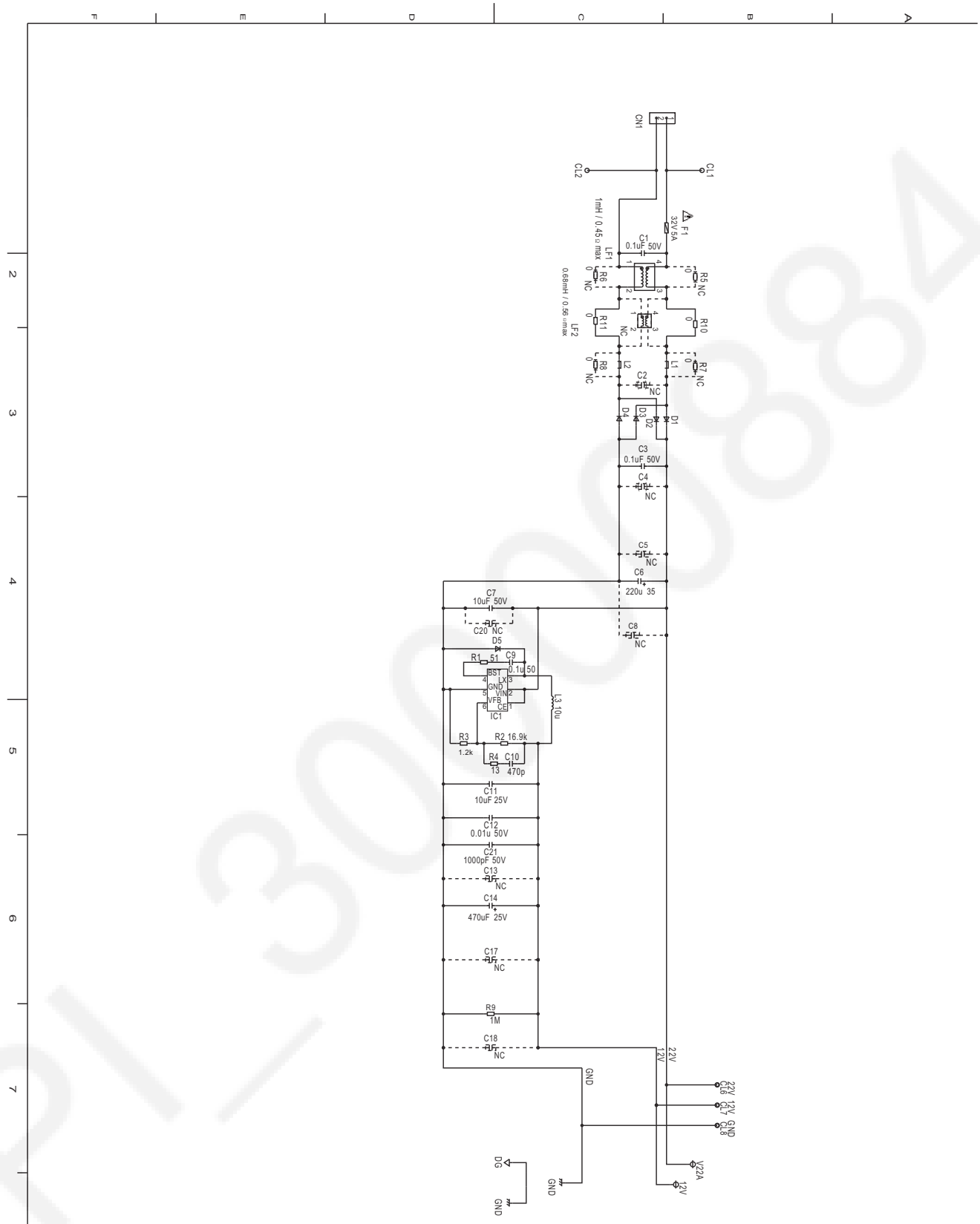
13.1.9 Main Board (9) / KEY



NC: No Components

VL-MV75: Main Board No.9: KEY

13.1.10 Power Board

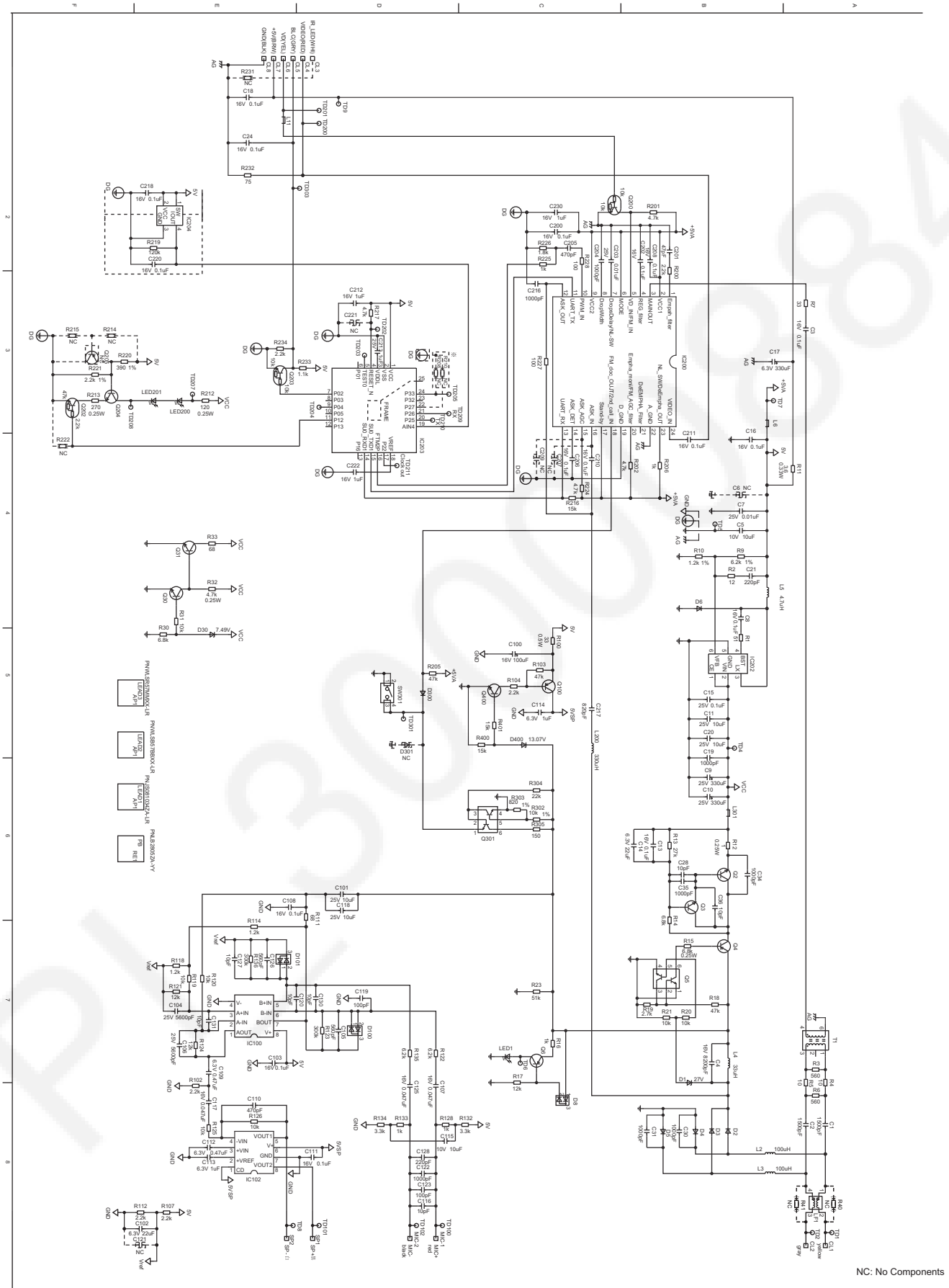


NC: No Components

VL-MV75: Power Board

13.2 Door Station

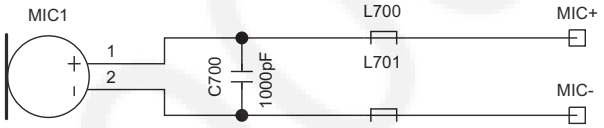
13.2.1 Main Board



NC: No Components

VL-V524: Main Board

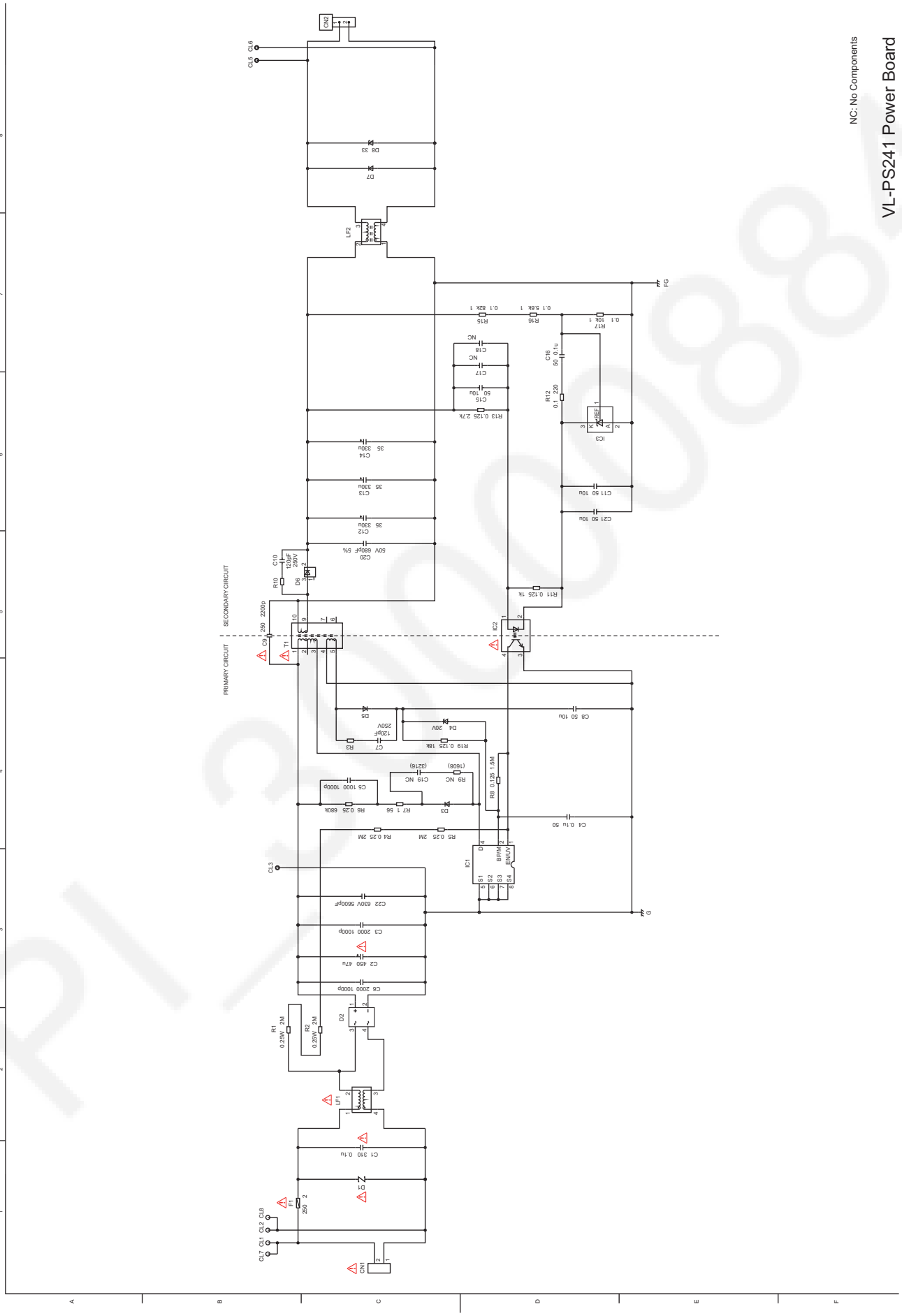
13.2.2 MIC Board



VL-V524: Mic Board

13.3 Power Supply Unit

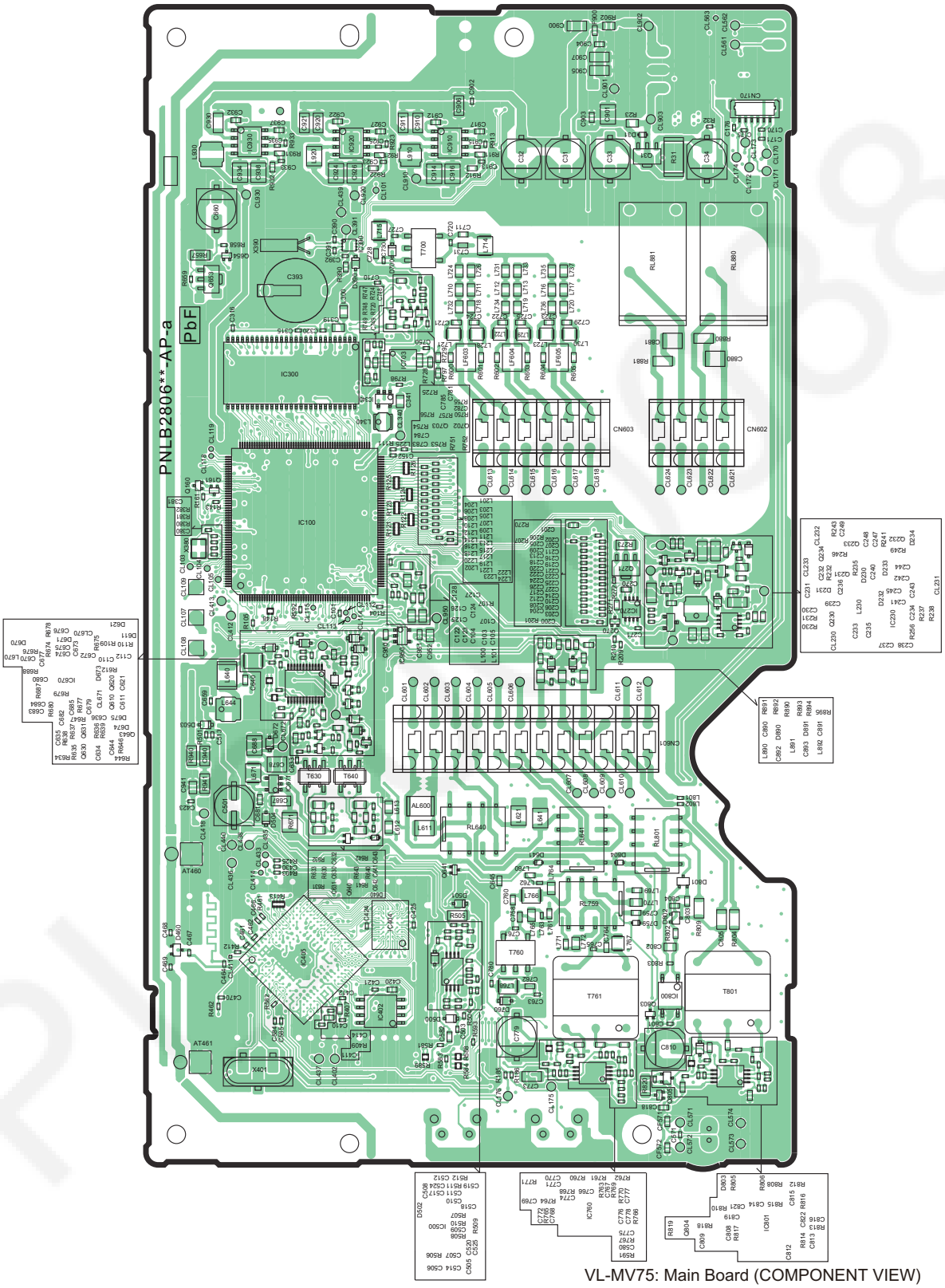
13.3.1 Power Board



14 Printed Circuit Board

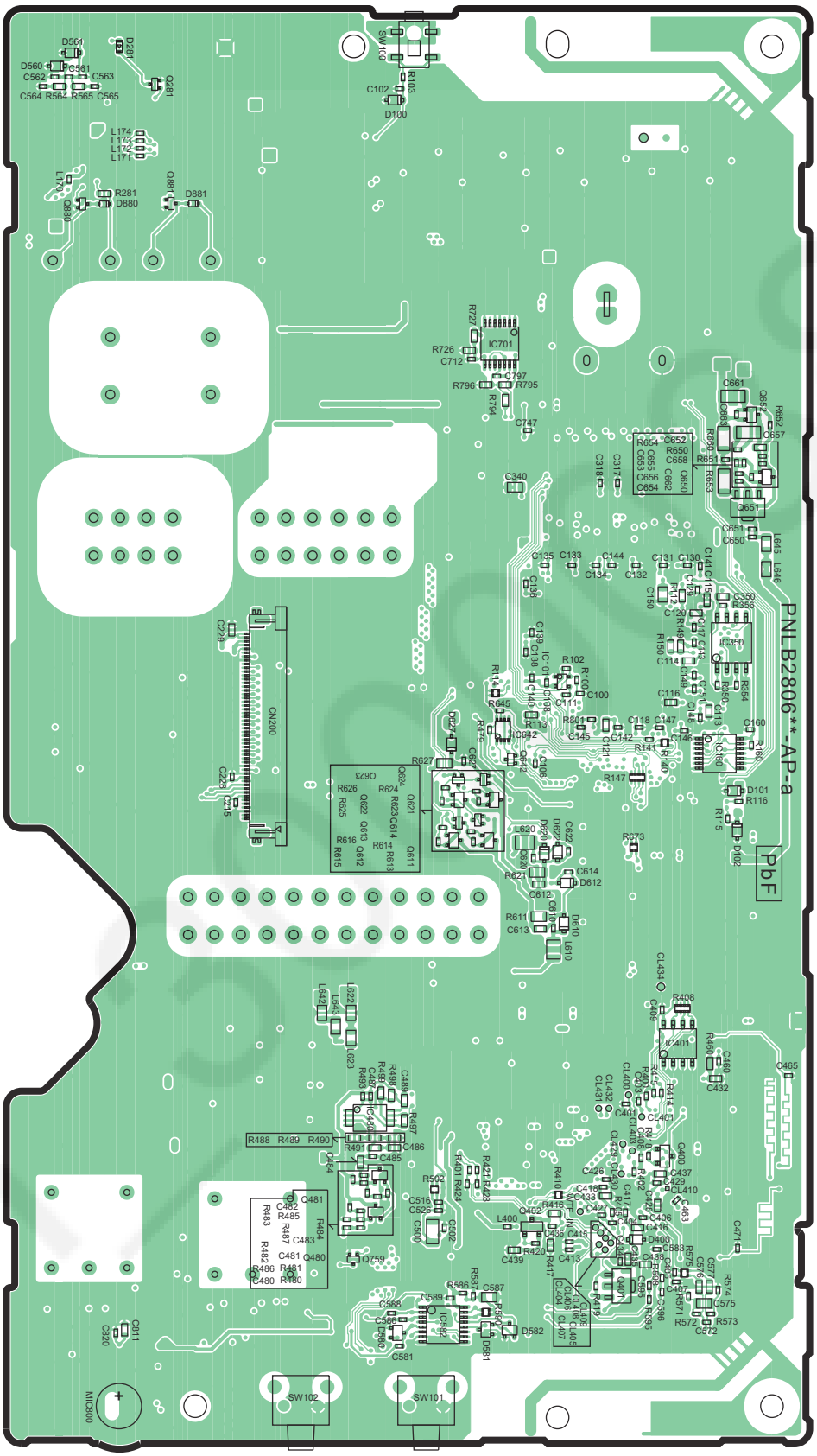
14.1 Main Monitor Station

14.1.1 Main Board (Component View)



VL-MV75: Main Board (COMPONENT VIEW)

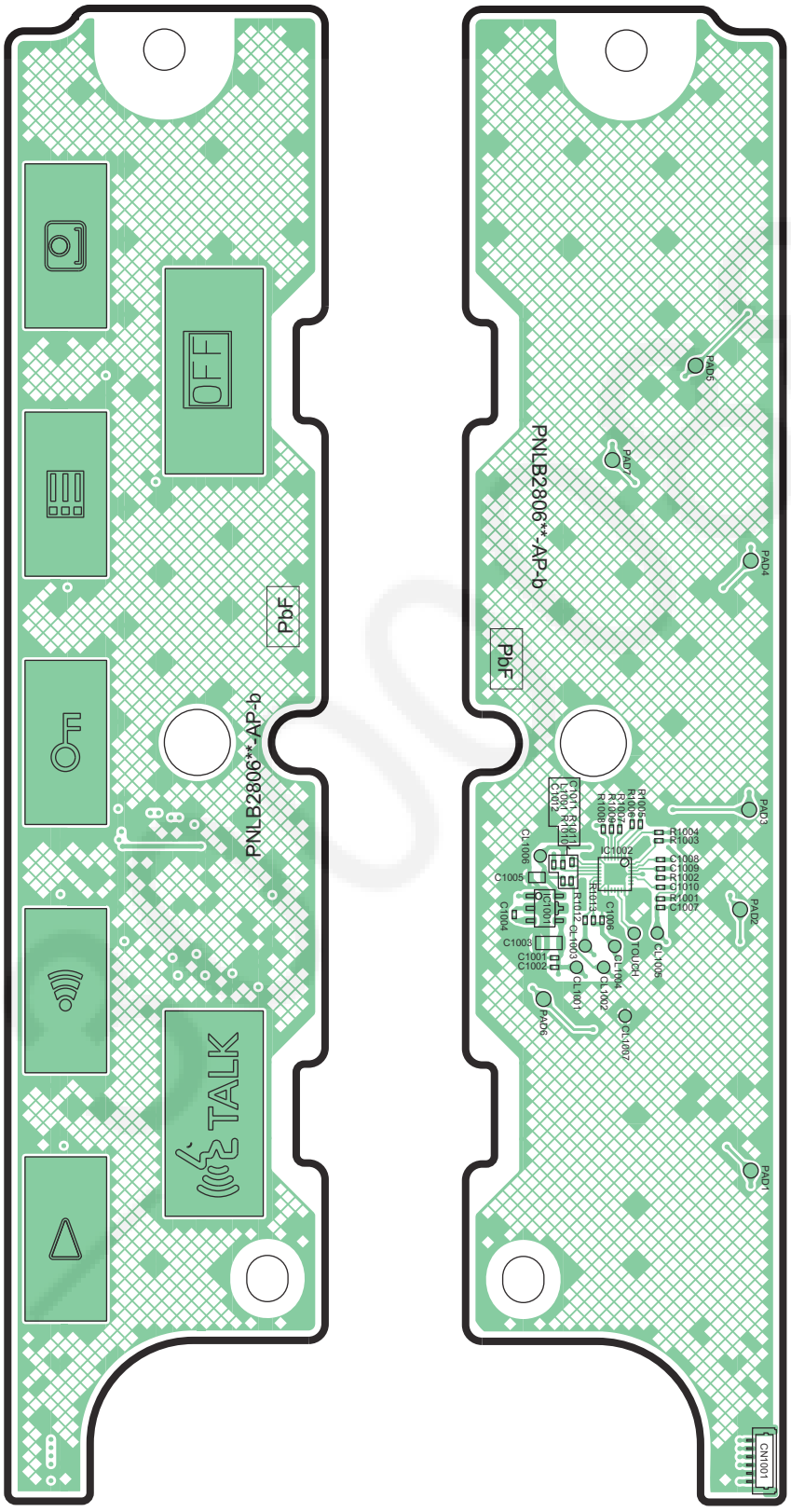
14.1.2 Main Board (Bottom View)



VL-MV75: Main Board (BOTTOM VIEW)

14.1.3 Key Board

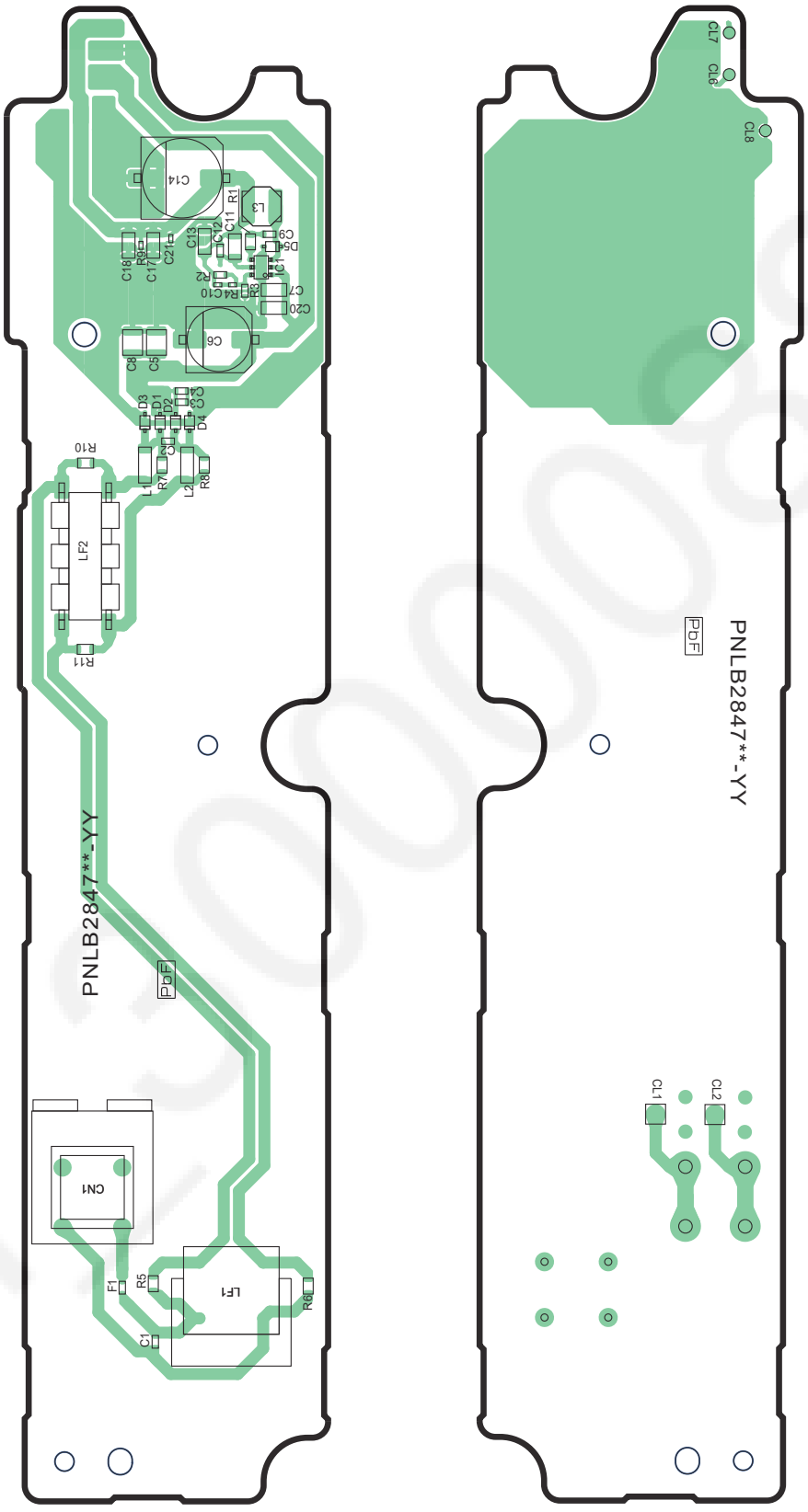
(Component View) (Bottom View)



VL-MV75: Key Board

14.1.4 Power Board

(Component View) (Bottom View)

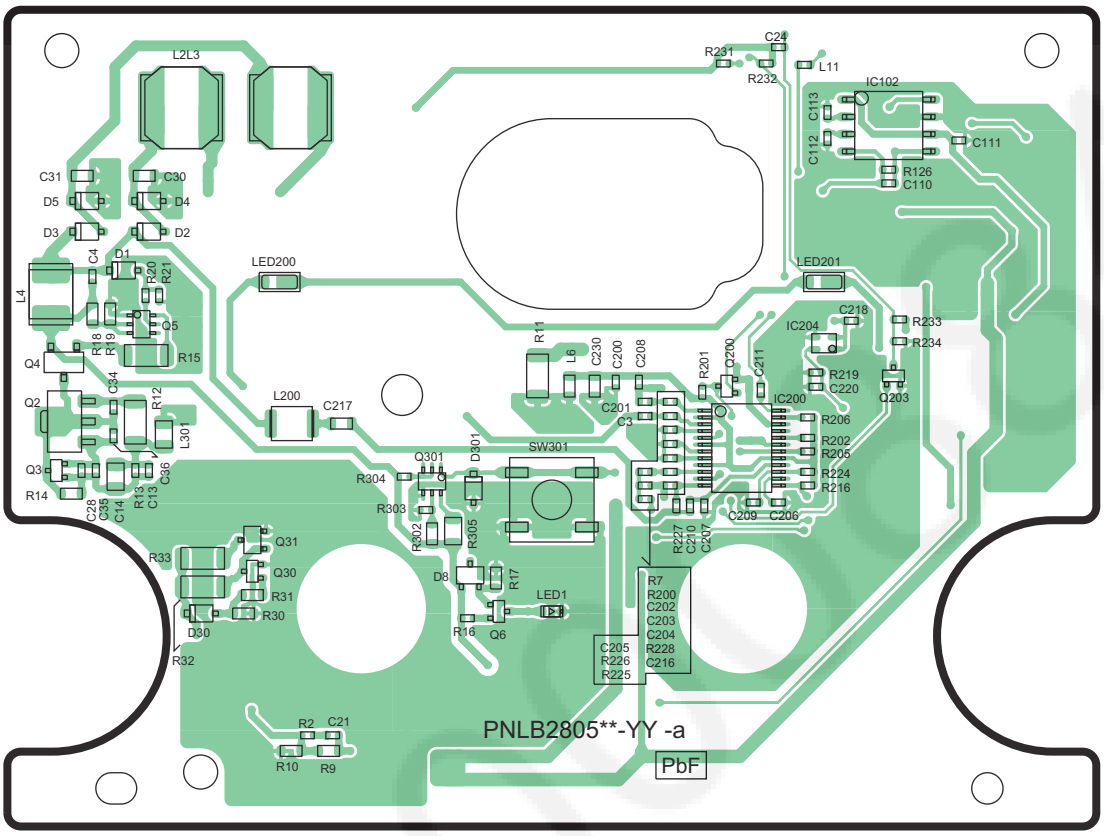


VL-MV75: Power Board

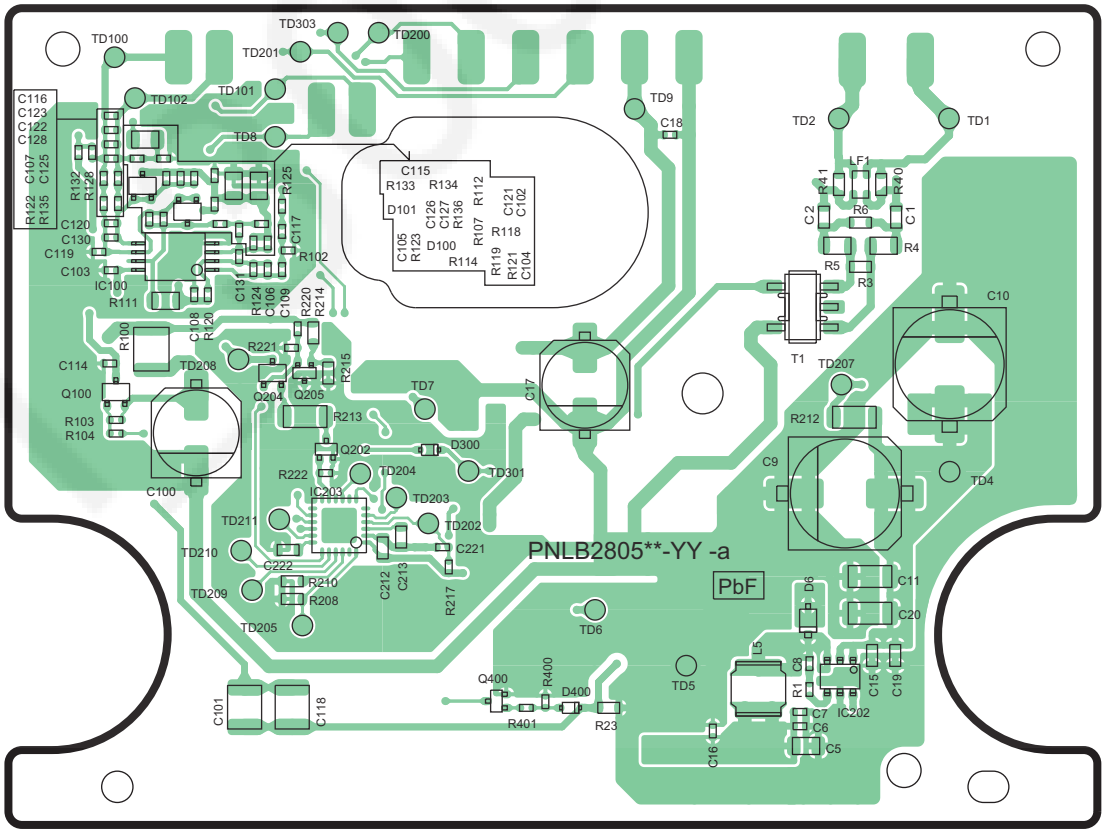
14.2 Door Station Board

14.2.1 Main Board

(Component View)



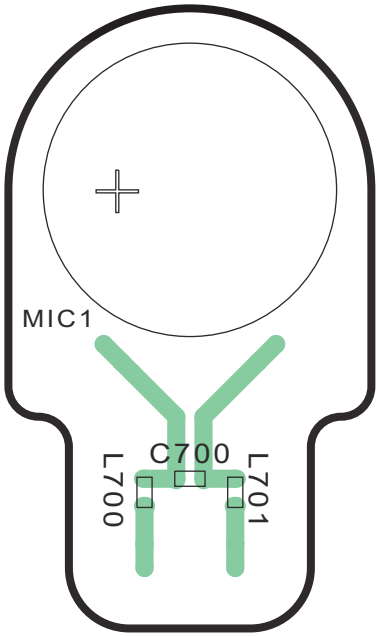
(Bottom View)



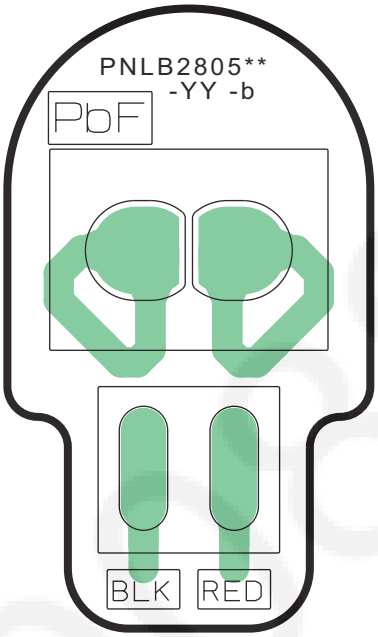
VL-V524: Main Board

14.2.2 MIC Board

(Component View)



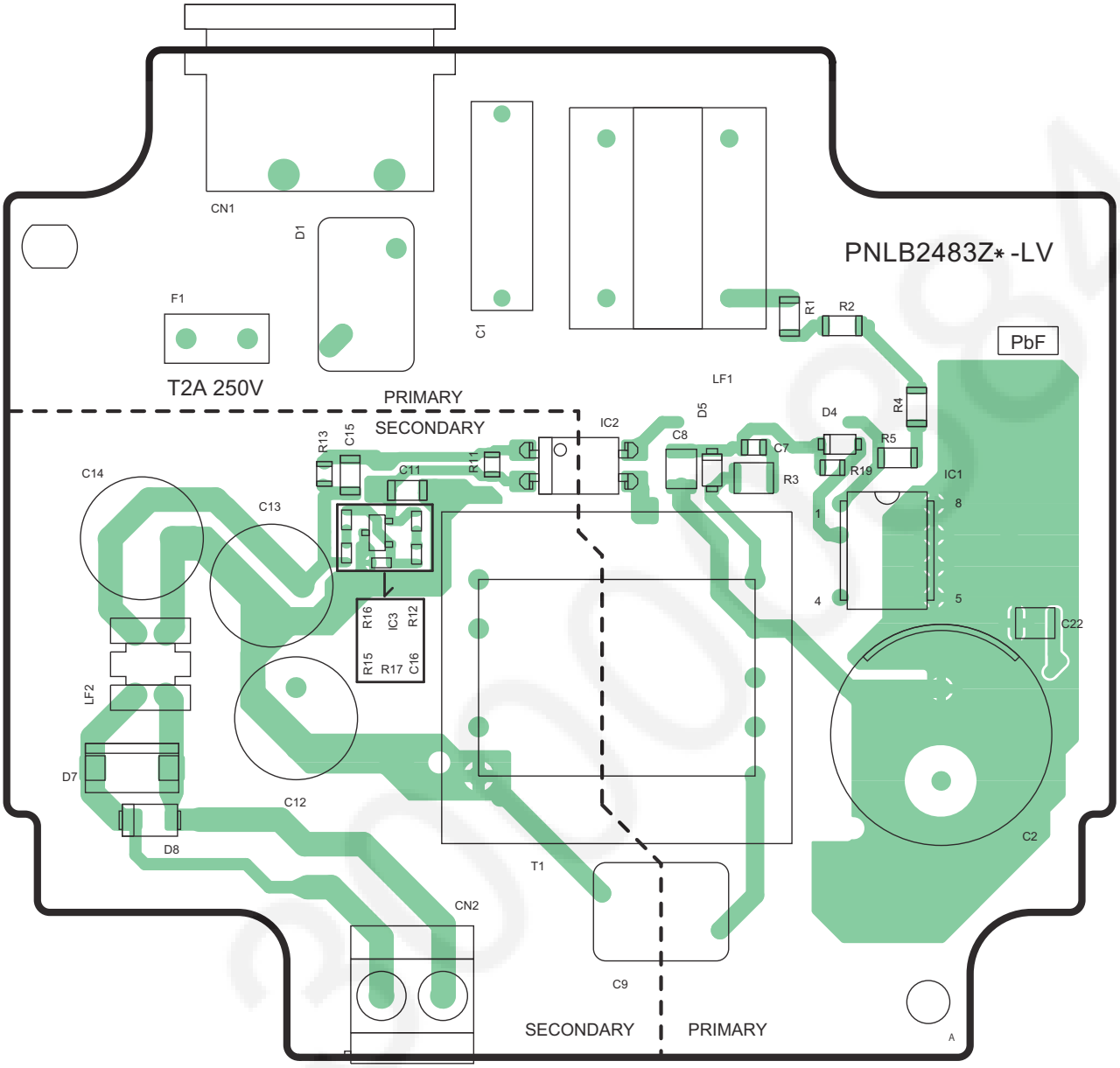
(Bottom View)



VL-V524: Mic Board

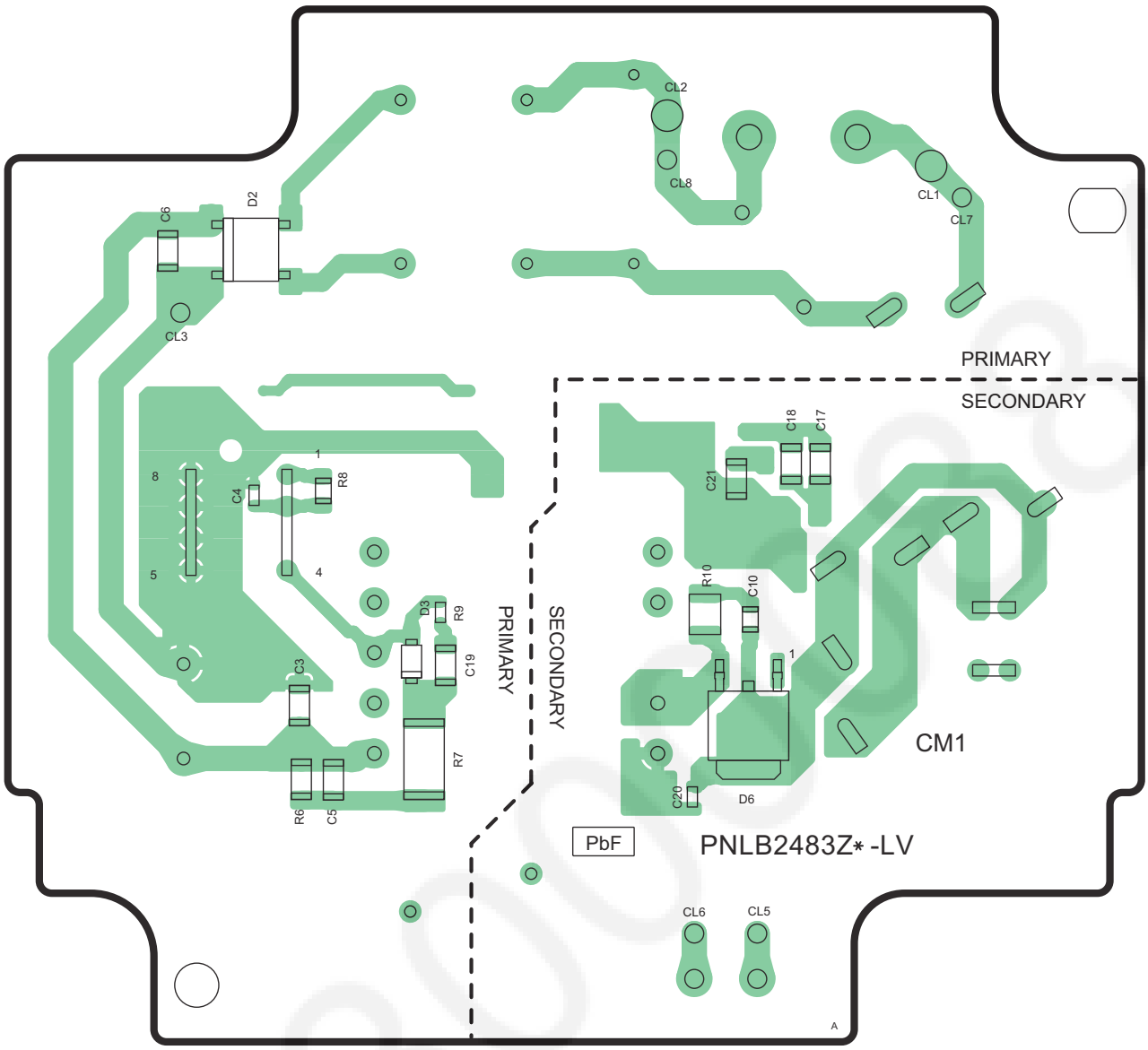
14.3 Power Supply Unit Board

14.3.1 Power Board (Component View)



VL-PS241 (Component View)

14.3.2 Power Board (Bottom View)

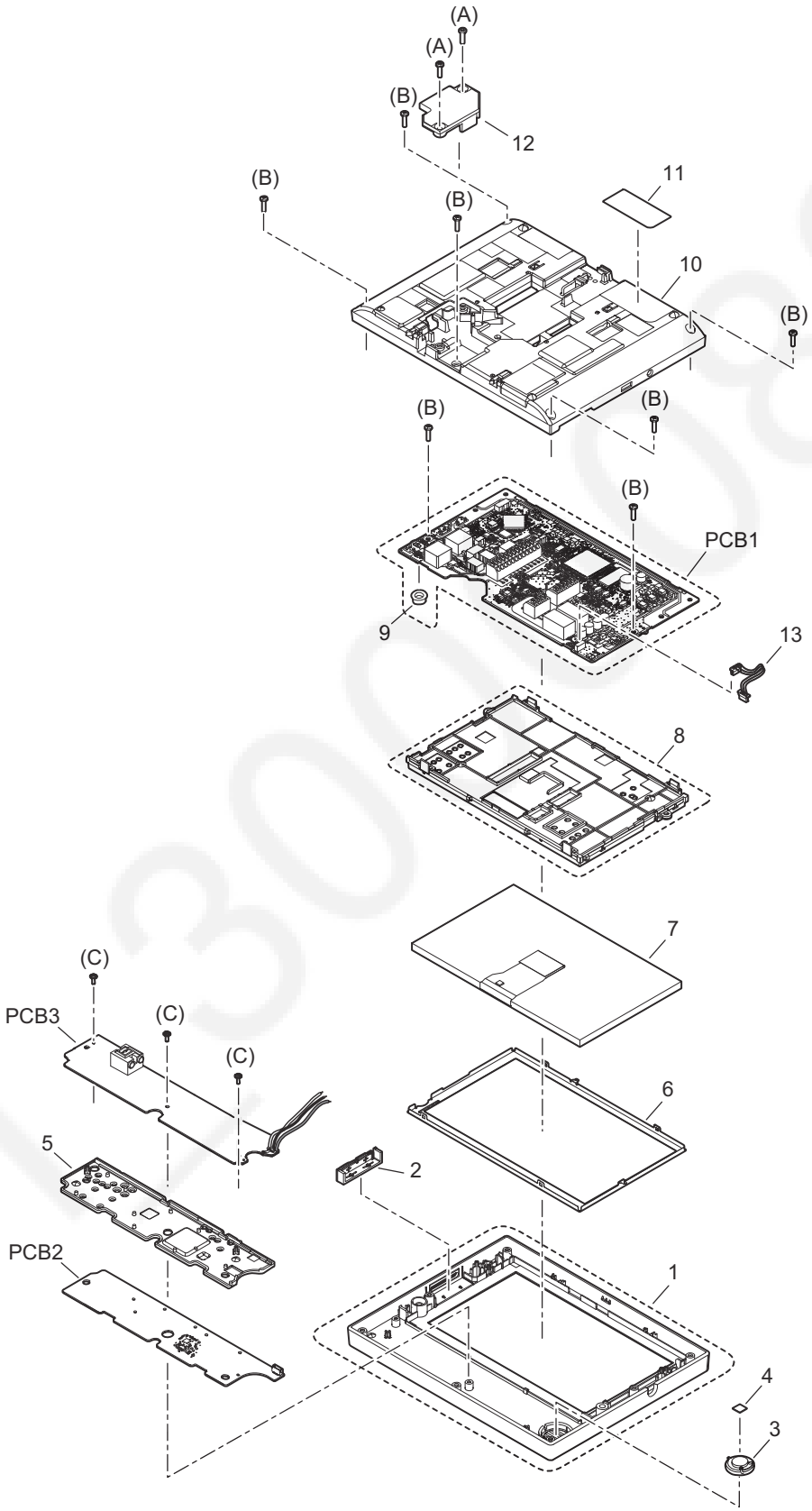


VL-PS241 (Bottom View)

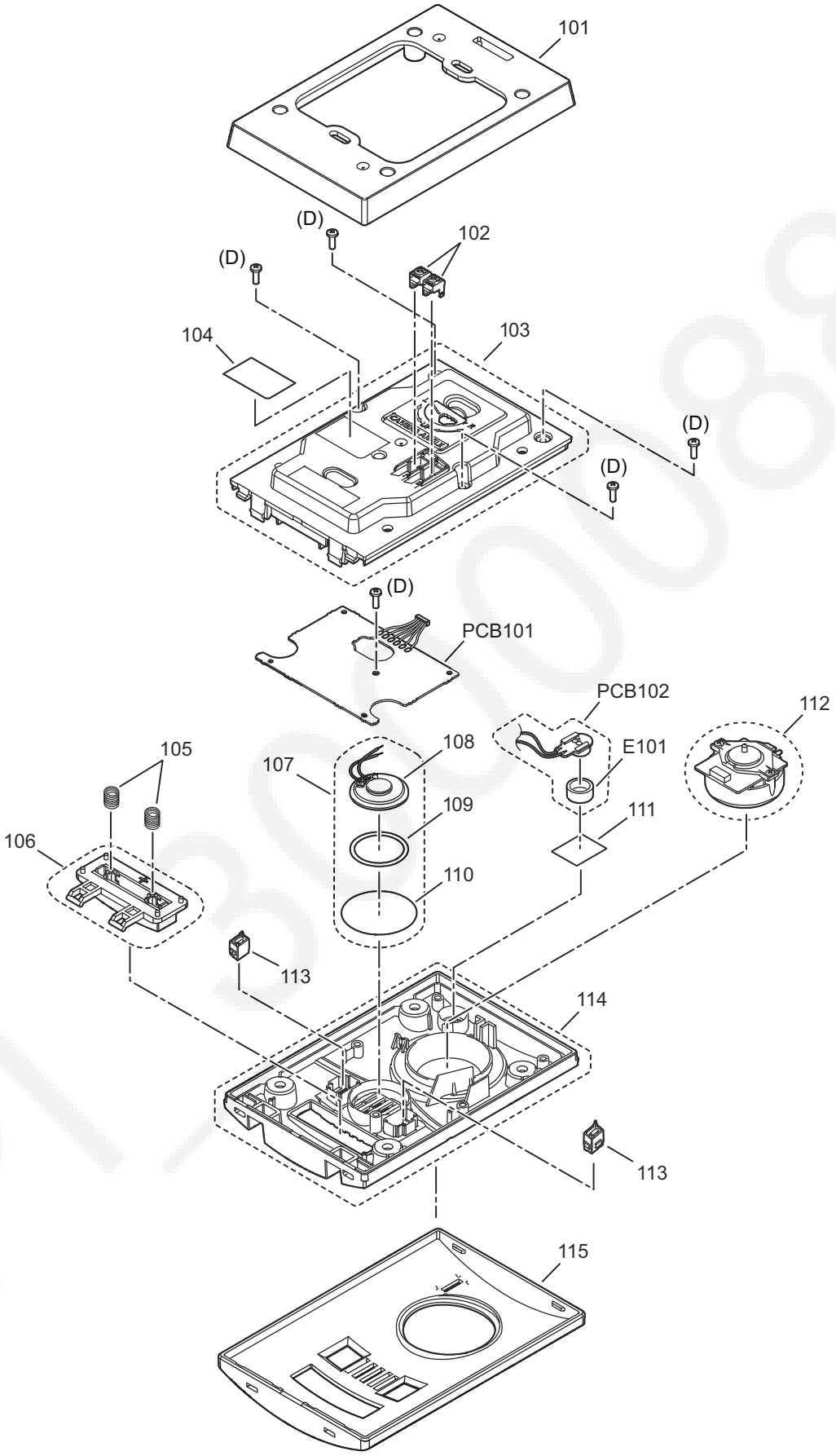
15 Exploded View and Replacement Parts List

15.1 Exploded View

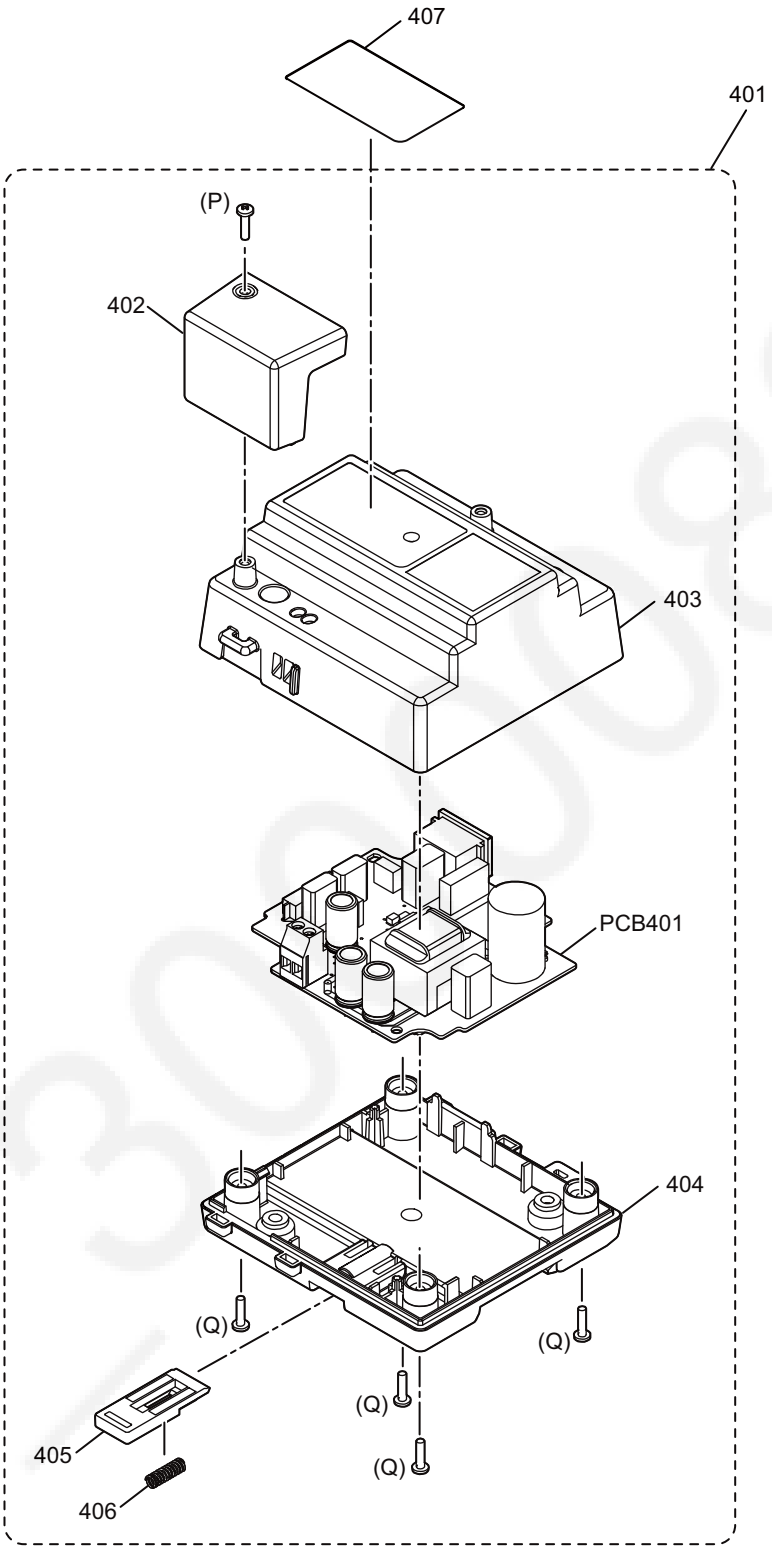
15.1.1 Main Monitor Station



15.1.2 Door Station

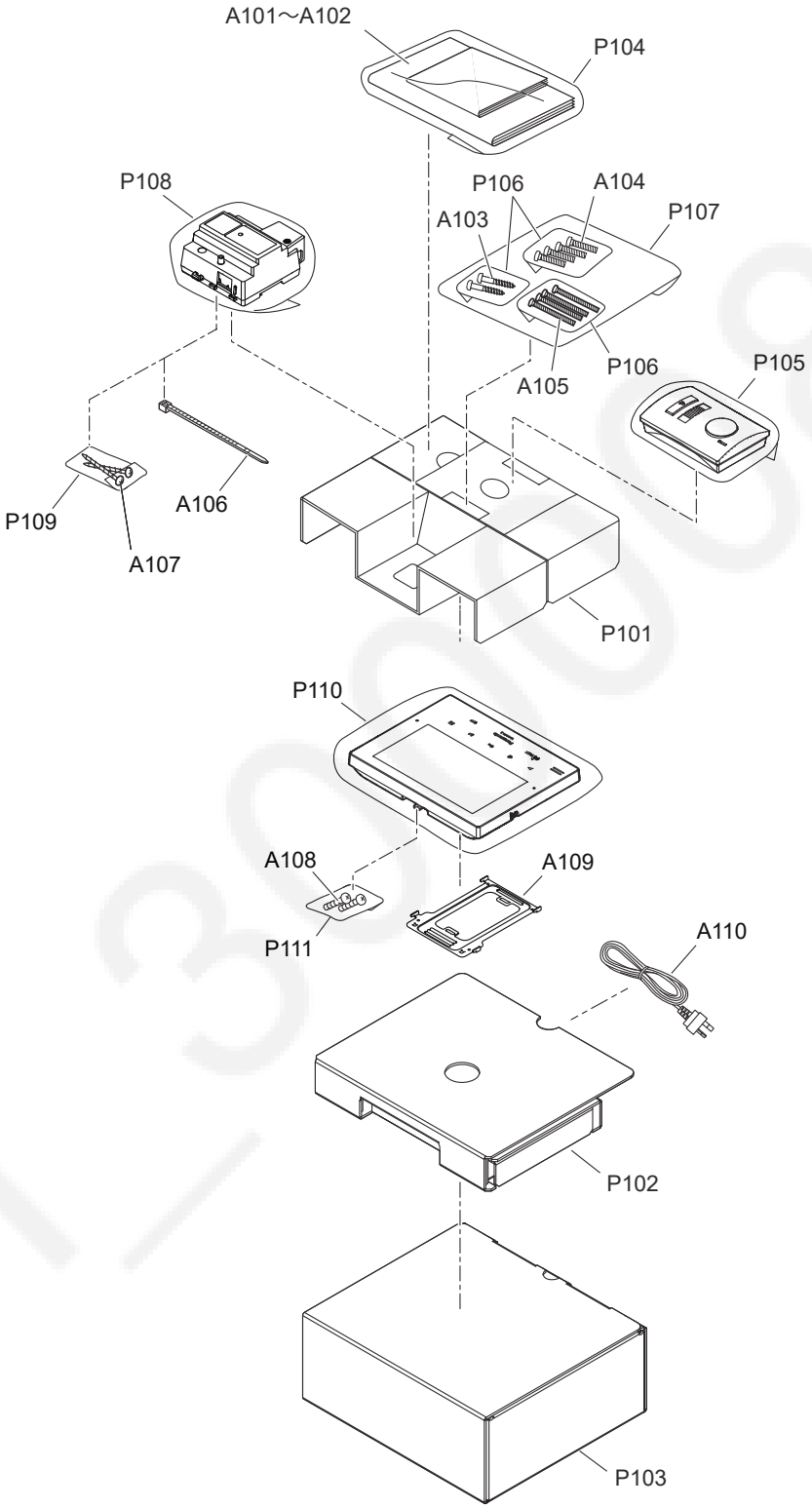


15.1.3 Power Supply Unit

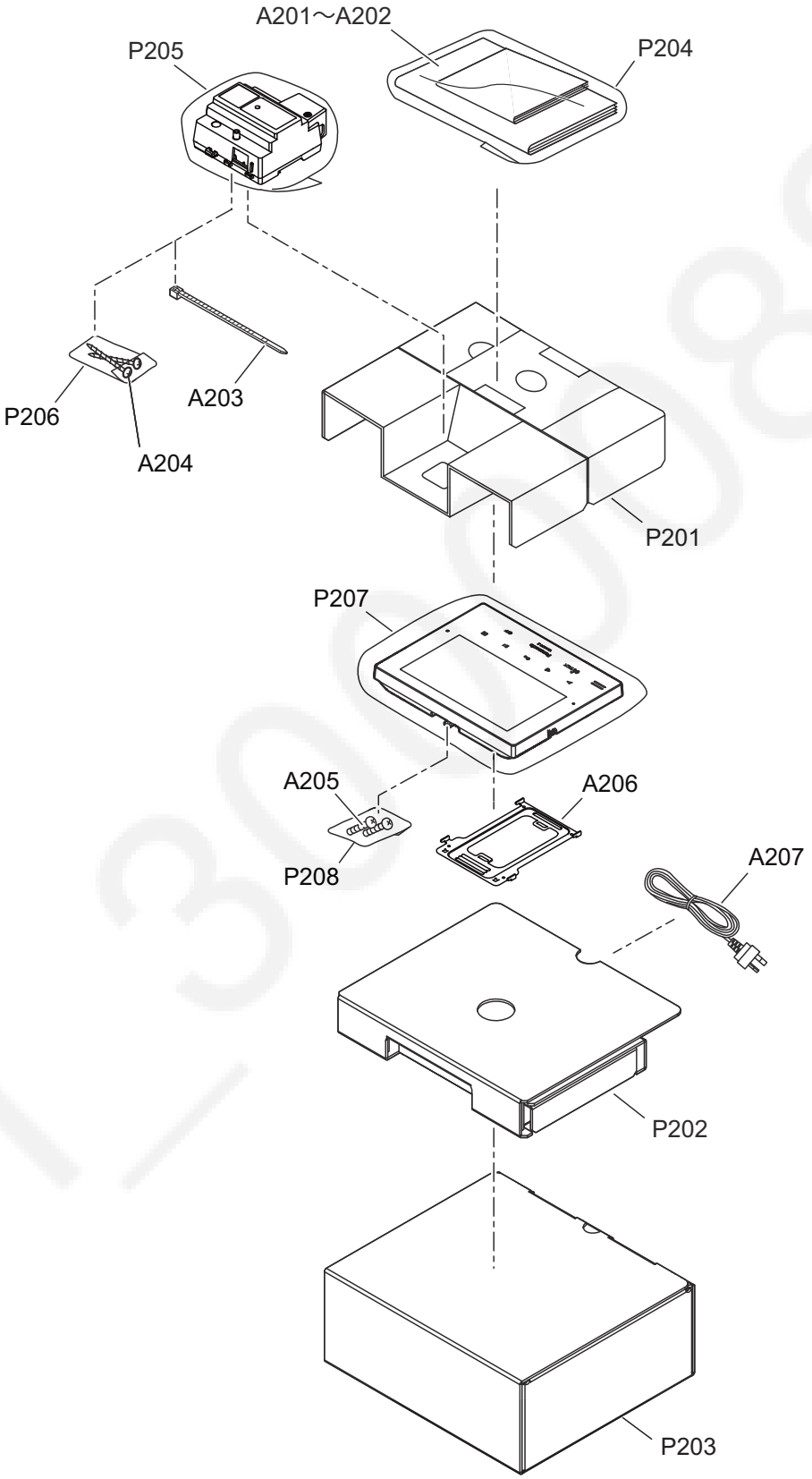


15.1.4 Accessories and Packing Materials Location

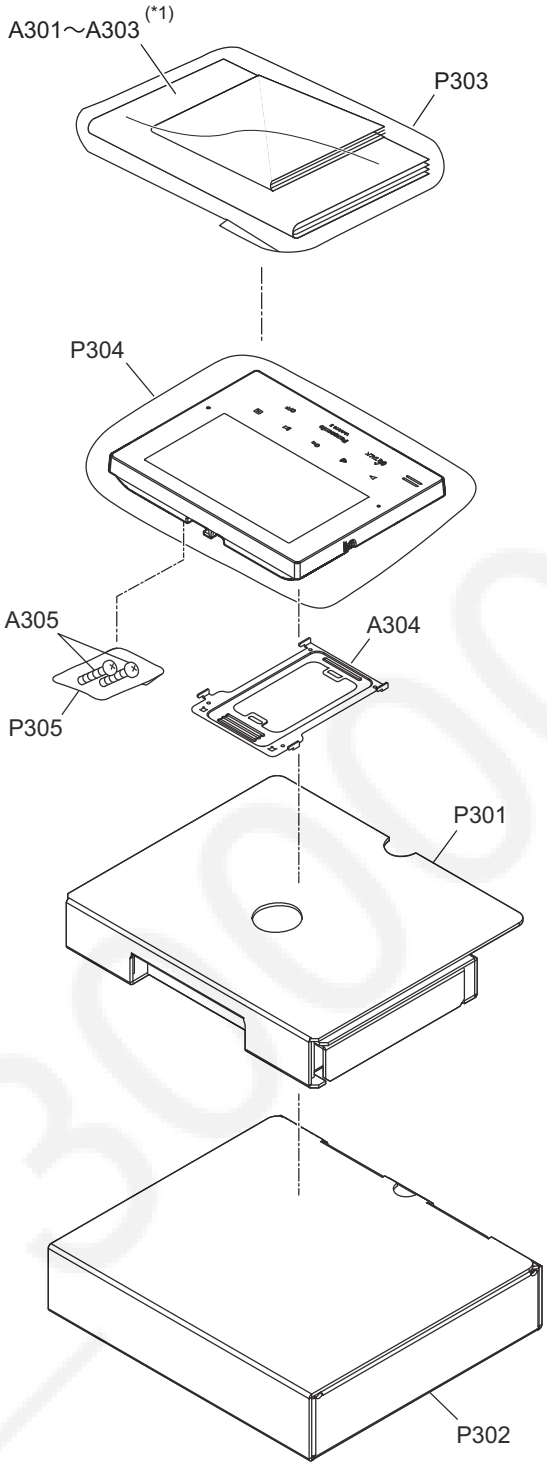
15.1.4.1 VL-SV75AZ



15.1.4.2 VL-MV75AZ



15.1.4.3 VL-MV75AZA,VL-MV75BXA



Note:
(*1) "A303" is VL-MV75BXA only.

15.2 Replacement Parts List

Note:

1. RTL (Retention Time Limited)
   The “RTL” marking indicates that its Retention Time is Limited.
   When production is discontinued, this item will continue to be available only for a specific period of time. This period of time depends on the type of item, and the local laws governing parts and product retention. At the end of this period, the item will no longer be available.
2. Important safety notice
   Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.
3. The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.
4. RESISTORS & CAPACITORS
   Unless otherwise specified;
   All resistors are in ohms (Ω), k=1000Ω, M=1000kΩ
   All capacitors are in MICRO FARADS (μF), p=μ(μF)

■RESISTOR

Type

ERC: Solid ERD: Carbon PQ4R: Chip	ERX: Metal Film ERG: Metal Oxide ERO: Metal Film	PQRD: Carbon PQRQ: Fuse ERF : Wire Wound

Wattage

10,16,18: 1/8W	14,25,S2: 1/4W	12,50,S1: 1/2W	1: 1W	2: 2W	5: 5W

■CAPACITOR

Type

ECFD: Semi-Conductor ECQS: Styrol PQCBX, ECUV: Chip ECMS: Mica	ECCD, ECKD, PQCBC,PQVP: Ceramic ECQM, ECQV, ECQE, ECQU, ECQB: Polyester ECEA, ECSZ, ECOS: Electrolytic ECQP: Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECsz Type	Others	
1H: 50V 2A: 100V 2E: 250V 2H: 500V	05 : 50V 1 : 100V 2 : 200V	OF : 3.15V 1A : 10V 2V : 35V OJ : 6.3V	OJ : 6.3V 1A : 10V 1C : 16V 1E,25 : 25V	1V : 35V 50,1H : 50V 1J : 63V 2A : 100V

15.2.1 Main Monitor Station

15.2.1.1 Cabinet and Electrical Parts

(*1) When replacing LCD, make adjustments in "WHITE BALANCE". (Refer to **[11.1.2.2 White Balance Adjustment]**).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	1	PNYMAMV75AZS	CABINET BODY ASS'Y (-Silver)	
	1	PNYMAMV75AZW	CABINET BODY ASS'Y (-White)	
	1	PNYMAMV75AZM	CABINET BODY ASS'Y (-Mirror)	
	2	PNBX1456Z1	VOLUME BUTTON (-Silver,-Mirror)	S
	2	PNBX1456Z2	VOLUME BUTTON (-White)	S
	3	L0AA02A00129	SPEAKER	
	4	PNHS1913Z	SHEET for SPEAKER	
	5	PNHR2565Z	PCB HOLDER	
	6	PNMH1512Z	LCD SHIELD	
	7	L5EDDYY00882	LCD (*1)	
	8	PNZEAMV74BX	LCD HOLDER ASS'Y	
	9	PNMG1012Z	MIC COVER	
	10	PNKF1507Y1	CABINET COVER	S
	11	PNGTA809Z	NAME PLATE (for AZ)	
	11	PNGTA810Z	NAME PLATE (for BX)	
	12	PNKV1416Z1	DC cable cover	S
	13	PNJS062026Z	LEAD WIRE	
	A	XTN3+10GFJ	SMALL SCREW	
	B	XTB26+10GFJ	SMALL SCREW	
	C	XTW2+R6PFJ	TAPPING SCREW	

15.2.1.2 Main P.C. Board Parts

(*2) When replacing IC405, IC402 or X401, make adjustments. (Refer to **[11.1.1.2 When replacing BBIC and X'tal]**)

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB1	PNWPAMV74BX1	MAIN BOARD ASS'Y (RTL) (-Silver, -White)	
	PCB1	PNWPAMV74M1	MAIN BOARD ASS'Y (RTL) (-Mirror)	
			(ICs & PHOTO ELECTRIC TRANSDUCER)	
	IC100	MN103SW55	IC	
	IC101	C0EBY0000665	IC	
	IC160	C0JBAS000390	IC	
	IC230	C0DBAYY00623	IC	
	IC270	C0ABBA000159	IC	
	IC300	C3ABQY000101	IC	
	IC350	PNWICMV74BX	IC (FLASH MEMORY)	
	IC390	C1ZBZ0005339	IC	
	IC401	C3EBKY000028	IC	
	IC402	PNWIBMV74BX	IC (FLASH MEMORY)(*2)	
	IC404	C3BBHY000070	IC	
	IC405	C1CB00004102	IC (BBIC)(*2)	
	IC480	C0BBBA000024	IC	
	IC500	C0ABBB000179	IC	
	IC582	C0JBAR000282	IC	
	IC642	C0JBAS000438	IC	
	IC670	C1AB00002793	IC	
	IC671	C0DBGYY02061	IC	
	IC701	C0JBAZ003248	IC	
	IC703	C0BBBA000024	IC	
	IC760	C0ABBB000179	IC	
	IC800	B3PBA0000138	PHOTO ELECTRIC TRANSDUCER	
	IC801	C0ABBB000179	IC	
	IC910	C0DBAYY01694	IC	
	IC920	C0DBAYY01694	IC	
	IC930	C0DBAYY01694	IC	
	IC950	C0DBGYY02044	IC	
			(TRANSISTORS)	
	Q160	B1GBCFYY0134	TRANSISTOR(SI)	
	Q161	B1GBCFYY0134	TRANSISTOR(SI)	
	Q230	B1CHPC000014	TRANSISTOR(SI)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	Q231	B1ADCF000231	TRANSISTOR(SI)	
	Q232	B1ABCF000271	TRANSISTOR(SI)	
	Q233	B1ADCF000231	TRANSISTOR(SI)	
	Q234	B1GBCFYY0134	TRANSISTOR(SI)	
	Q270	B1GDCFYY0231	TRANSISTOR(SI)	
	Q271	DSC7003R0L	TRANSISTOR(SI)	
	Q281	B1GBCFYY0014	TRANSISTOR(SI)	
	Q31	B1ABMF000022	TRANSISTOR(SI)	
	Q400	B1ADKE000002	TRANSISTOR(SI)	
	Q401	DSA7003R0L	TRANSISTOR(SI)	
	Q402	B1ADKE000002	TRANSISTOR(SI)	
	Q480	B1ABDF000026	TRANSISTOR(SI)	
	Q481	B1ABDF000026	TRANSISTOR(SI)	
	Q610	B1GDCFYY0231	TRANSISTOR(SI)	
	Q611	B1ADGD000005	TRANSISTOR(SI)	
	Q612	B1ADGD000005	TRANSISTOR(SI)	
	Q613	B1GBCFYY0134	TRANSISTOR(SI)	
	Q614	B1GBCFYY0134	TRANSISTOR(SI)	
	Q620	B1GDCFYY0231	TRANSISTOR(SI)	
	Q621	B1ADGD000005	TRANSISTOR(SI)	
	Q622	B1ADGD000005	TRANSISTOR(SI)	
	Q623	B1GBCFYY0134	TRANSISTOR(SI)	
	Q624	B1GBCFYY0134	TRANSISTOR(SI)	
	Q630	DSC9001R0L	TRANSISTOR(SI)	
	Q631	DSC9001R0L	TRANSISTOR(SI)	
	Q640	B1GBCFYY0014	TRANSISTOR(SI)	
	Q641	B1GBCFYY0014	TRANSISTOR(SI)	
	Q642	B1GBCFYY0134	TRANSISTOR(SI)	
	Q643	B1GBCFYY0134	TRANSISTOR(SI)	
	Q650	B1ADBL000017	TRANSISTOR(SI)	
	Q651	B1ADMJ000003	TRANSISTOR(SI)	
	Q652	B1ADBL000017	TRANSISTOR(SI)	
	Q653	B1ADMJ000003	TRANSISTOR(SI)	
	Q654	B1GBCFYY0134	TRANSISTOR(SI)	
	Q702	B1ABDF000026	TRANSISTOR(SI)	
	Q703	B1ABDF000026	TRANSISTOR(SI)	
	Q759	B1GBCFYY0014	TRANSISTOR(SI)	
	Q803	B1GBCFYY0014	TRANSISTOR(SI)	
	Q804	B1ADGD000005	TRANSISTOR(SI)	
	Q805	B1GBCFYY0134	TRANSISTOR(SI)	
	Q880	B1GBCFYY0014	TRANSISTOR(SI)	
	Q881	B1GBCFYY0014	TRANSISTOR(SI)	
			(DIODES)	
	D100	B0BC4R7A0268	DIODE(SI)	S
	D101	B0BC4R7A0268	DIODE(SI)	S
	D102	B0BC4R7A0268	DIODE(SI)	S
	D230	DZ2J075M0L	DIODE(SI)	
	D231	DA3J101F0L	DIODE(SI)	
	D232	DB2J41100L	DIODE(SI)	
	D233	DA3J101F0L	DIODE(SI)	
	D234	B0BC01600013	DIODE(SI)	
	D281	B3AEB0000146	DIODE(SI)	
	D31	DA2S10100L	DIODE(SI)	
	D390	DA2J10100L	DIODE(SI)	
	D400	DZ2J051M0L	DIODE(SI)	
	D560	DZ2J051M0L	DIODE(SI)	
	D561	DZ2J051M0L	DIODE(SI)	
	D580	DA3J101F0L	DIODE(SI)	
	D581	DA3J101F0L	DIODE(SI)	
	D582	DA3J101F0L	DIODE(SI)	
	D610	DB2J41100L	DIODE(SI)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	D612	B0ACEM000012	DIODE(SI)	
	D620	DB2J41100L	DIODE(SI)	
	D622	B0ACEM000012	DIODE(SI)	
	D627	B0BC6R100010	DIODE(SI)	
	D640	DA2S10100L	DIODE(SI)	
	D641	DA2S10100L	DIODE(SI)	
	D670	B0BC4R7A0268	DIODE(SI)	S
	D672	DZ2J075M0L	DIODE(SI)	
	D673	B0BC4R7A0268	DIODE(SI)	S
	D700	DZ2J056M0L	DIODE(SI)	
	D759	DA2S10100L	DIODE(SI)	
	D760	DZ2J056M0L	DIODE(SI)	
	D801	DA3J101F0L	DIODE(SI)	
	D802	DA3J101F0L	DIODE(SI)	
	D804	DA2S10100L	DIODE(SI)	
	D880	DA2S10100L	DIODE(SI)	
	D881	DA2S10100L	DIODE(SI)	
	D890	B0ACEM000012	DIODE(SI)	
	D891	B0ACEM000012	DIODE(SI)	
			(VARISTORS)	
	AL600	D4EDY201A035	VARISTOR	
	CF571	D4ZZ00000039	VARISTOR	
	CF572	D4ZZ00000039	VARISTOR	
			(CONNECTORS)	
	CN170	K1KA06A00454	CONNECTOR	
	CN200	K1MY50BA0653	CONNECTOR	
	CN601	K4AC12B00023	TERMINAL	
	CN602	K4AC04B00045	TERMINAL	
	CN603	K4AC06B00027	TERMINAL	
			(FUSE)	
	F900	K5H631100003	FUSE	!
			(COILS & IC FILTERS)	
	L100	J0JHC0000027	MECHANICAL FILTER	
	L101	J0JHC0000027	MECHANICAL FILTER	
	L170	J0JCC0000275	IC FILTER	
	L171	J0JCC0000275	IC FILTER	
	L172	J0JCC0000275	IC FILTER	
	L173	J0JCC0000275	IC FILTER	
	L174	J0JCC0000275	IC FILTER	
	L201	J0JCC0000275	IC FILTER	
	L202	J0JCC0000275	IC FILTER	
	L203	J0JCC0000275	IC FILTER	
	L204	J0JCC0000275	IC FILTER	
	L205	J0JCC0000275	IC FILTER	
	L206	J0JCC0000275	IC FILTER	
	L207	J0JCC0000275	IC FILTER	
	L208	J0JCC0000275	IC FILTER	
	L209	J0JCC0000275	IC FILTER	
	L210	J0JCC0000275	IC FILTER	
	L211	J0JCC0000275	IC FILTER	
	L212	J0JCC0000275	IC FILTER	
	L213	J0JCC0000275	IC FILTER	
	L214	J0JCC0000275	IC FILTER	
	L215	J0JCC0000275	IC FILTER	
	L216	J0JCC0000275	IC FILTER	
	L217	J0JCC0000275	IC FILTER	
	L218	J0JCC0000275	IC FILTER	
	L219	J0JCC0000275	IC FILTER	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	L220	J0JCC0000275	IC FILTER	
	L221	J0JCC0000275	IC FILTER	
	L222	J0JCC0000275	IC FILTER	
	L223	J0JCC0000275	IC FILTER	
	L224	J0JCC0000275	IC FILTER	
	L225	J0JCC0000274	IC FILTER	
	L230	G1C100MA0395	COIL	
	L300	J0JCC0000092	IC FILTER	
	L400	J0JDC0000045	IC FILTER	
	L610	G1C681MA0072	COIL	
	L611	G1C470MA0203	COIL	
	L612	J0JCC0000092	IC FILTER	
	L613	J0JCC0000092	IC FILTER	
	L620	G1C681MA0072	COIL	
	L621	G1C470MA0203	COIL	
	L622	J0JCC0000092	IC FILTER	
	L623	J0JCC0000092	IC FILTER	
	L640	G1C330KA0100	COIL	
	L641	G1C470MA0203	COIL	
	L642	J0JCC0000092	IC FILTER	
	L643	J0JCC0000092	IC FILTER	
	L645	J0JCC0000092	IC FILTER	
	L670	G1C331JA0036	COIL	
	L671	G1C330K00022	COIL	
	L710	J0JCC0000092	IC FILTER	
	L711	J0JCC0000092	IC FILTER	
	L712	J0JCC0000092	IC FILTER	
	L713	J0JCC0000092	IC FILTER	
	L714	G1C331JA0036	COIL	
	L716	J0JCC0000092	IC FILTER	
	L717	J0JCC0000092	IC FILTER	
	L718	G1C100MA0274	COIL	
	L719	G1C100MA0274	COIL	
	L720	G1C100MA0274	COIL	
	L721	G1C330JA0041	COIL	
	L722	G1C330JA0041	COIL	
	L723	G1C330JA0041	COIL	
	L724	J0JCC0000092	IC FILTER	
	L726	J0JCC0000092	IC FILTER	
	L728	G1C330JA0041	COIL	
	L729	G1C330JA0041	COIL	
	L730	G1C330JA0041	COIL	
	L731	J0JCC0000092	IC FILTER	
	L732	G1C100MA0274	COIL	
	L733	J0JCC0000092	IC FILTER	
	L734	G1C100MA0274	COIL	
	L735	J0JCC0000092	IC FILTER	
	L736	G1C100MA0274	COIL	
	L737	J0JCC0000092	IC FILTER	
	L760	PQLQR2KA113	COIL	S
	L761	PQLQR2KA113	COIL	S
	L764	G1C100MA0274	COIL	
	L765	G1C100MA0274	COIL	
	L766	G1C331JA0036	COIL	
	L767	G1C330JA0041	COIL	
	L769	PQLQR2KA113	COIL	S
	L770	G1C100MA0274	COIL	
	L771	PQLQR2KA113	COIL	S
	L772	G1C100MA0274	COIL	
	L801	J0JCC0000286	IC FILTER	
	L802	J0JCC0000286	IC FILTER	
	L890	J0JCC0000092	IC FILTER	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	L891	J0JCC0000092	IC FILTER	
	L892	J0JCC0000092	IC FILTER	
	L910	G1C6R8MA0249	COIL	
	L920	G1C3R3MA0203	COIL	
	L930	G1C6R8MA0249	COIL	
			(MICROPHONE)	
	MIC800	L0CBAY000053	MICROPHONE	S
			(RELAYS)	
	RL640	K6B4CGA00010	RELAY	
	RL641	K6B4CGA00010	RELAY	
	RL759	K6B4CGA00010	RELAY	
	RL801	K6B4CGA00010	RELAY	
	RL880	K6B1AYY00244	RELAY	
	RL881	K6B1AYY00244	RELAY	
			(SWITCES)	
	SW100	EVQPSM02K	PUSH SWITCH	
	SW101	K0H1BB000018	SPECIAL SWITCH	
	SW102	K0H1BB000018	SPECIAL SWITCH	
			(TRANSFORMERS)	
	T630	G5ZZ00000110	TRANSFORMER	
	T640	G5ZZ00000110	TRANSFORMER	
	T700	G5BYA0000008	TRANSFORMER	
	T760	G5BYA0000008	TRANSFORMER	
	T761	G4A1A0000176	TRANSFORMER	
	T801	G4A1A0000176	TRANSFORMER	
			(CRYSTAL OSCILLATORS)	
	X380	H0J270500137	CRYSTAL OSCILLATOR	S
	X390	H0A327200192	CRYSTAL OSCILLATOR	
	X401	H0J103500042	CRYSTAL OSCILLATOR(*2)	
			(RESISTORS)	
	R100	ERJ2GEJ101	100	S
	R102	ERJ2GEJ472X	4.7k	S
	R103	ERJ2GEJ101	100	S
	R104	ERJ2GEJ102	1k	S
	R107	ERJ2GEJ102	1k	S
	R109	ERJ2GEJ103	10k	S
	R110	ERJ2GEJ103	10k	S
	R111	ERJ2GEJ330	33	S
	R112	ERJ3GEY0R00	0	S
	R113	ERJ3EKF1002	10k	
	R114	EXB24V102JX	COMPONENTS PARTS,1k	S
	R115	ERJ2GE0R00	0	S
	R116	ERJ2GE0R00	0	S
	R121	D1H83304A042	COMPONENTS PARTS,33	
	R122	D1H83304A042	COMPONENTS PARTS,33	
	R123	D1H83304A042	COMPONENTS PARTS,33	
	R124	D1H83304A042	COMPONENTS PARTS,33	
	R125	D1H83304A042	COMPONENTS PARTS,33	
	R126	D1H83304A042	COMPONENTS PARTS,33	
	R140	EXB24V102JX	COMPONENTS PARTS,1k	S
	R141	ERJ2GEJ102	1k	S
	R143	ERJ2GEJ101	100	S
	R147	D1H81014A042	COMPONENTS PARTS,100	
	R148	D1H41012A014	COMPONENTS PARTS,100	
	R149	ERJ3GEY0R00	0	S
	R160	ERJ2GEJ103	10k	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R161	ERJ2GEJ222	2.2k	S
	R185	ERJ2GEJ103	10k	S
	R186	ERJ2GEJ103	10k	S
	R201	ERJ2GE0R00	0	S
	R206	ERJ2GEJ330	33	S
	R207	ERJ2GEJ330	33	S
	R209	ERJ2GEJ330	33	S
	R210	ERJ2GEJ103	10k	S
	R230	ERJ2GEJ102	1k	S
	R231	ERJ2GEJ103	10k	S
	R232	ERJ2GEJ222	2.2k	S
	R235	ERJ2GEJ222	2.2k	S
	R237	ERJ3EKF1583	158k	
	R238	ERJ3EKF2152	21.5k	
	R241	ERJ3GEYJ822	8.2k	S
	R243	ERJ3GEYJ822	8.2k	S
	R246	ERJ2GEJ103	10k	S
	R249	ERJ2GEJ562X	5.6k	S
	R256	ERJ2GEJ512	5.1k	S
	R270	ERJ3EKF4702	47k	
	R271	ERJ3EKF1002	10k	
	R272	ERJ2GEJ102	1k	S
	R273	ERJ8RQF3R3	3.3	
	R281	ERJ3GEYJ751	750	S
	R31	ERJ1TYJ471U	470	
	R32	ERJ2GEJ105X	1m	S
	R350	ERJ2GEJ103	10k	S
	R354	ERJ2GEJ103	10k	S
	R356	ERJ2GEJ103	10k	S
	R380	ERJ2GEJ182	1.8k	S
	R381	ERJ2GEJ105X	1m	S
	R382	ERJ2GE0R00	0	S
	R390	ERJ3GEYJ331	330	S
	R400	ERJ2GEJ472X	4.7k	S
	R402	ERJ2GEJ101	100	S
	R403	ERJ2GEJ472X	4.7k	S
	R405	ERJ2GEJ222	2.2k	S
	R407	ERJ3BQJ1R0V	1	
	R408	D1H81034A042	COMPONENTS PARTS,10k	
	R409	ERJ3BQJ1R0V	1	
	R410	D1H43302A014	COMPONENTS PARTS,33	
	R412	D0GA563ZA006	56k	
	R413	D1H83304A042	COMPONENTS PARTS,33	
	R414	ERJ2GEJ101	100	S
	R415	ERJ2GEJ102	1k	S
	R416	ERJ3EKF1802	18k	
	R417	ERJ3EKF6801	6.8k	
	R418	ERJ2GEJ103	10k	S
	R419	ERJ2GEJ103	10k	S
	R420	ERJ2GEJ103	10k	S
	R421	ERJ2GEJ472X	4.7k	S
	R425	ERJ2GEJ562X	5.6k	S
	R428	ERJ2GEJ562X	5.6k	S
	R479	ERJ2GEJ103	10k	S
	R480	ERJ2GEJ103	10k	S
	R481	ERJ2GEJ473	47k	S
	R482	D0GA332JA015	3.3k	S
	R483	ERJ2GEJ272	2.7k	S
	R484	ERJ2GEJ102	1k	S
	R485	ERJ2GEJ473	47k	S
	R486	ERJ2GEJ222	2.2k	S
	R487	ERJ2GEJ103	10k	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R488	ERJ3EKF4701	4.7k	
	R489	ERJ3EKF2700	270	
	R490	ERJ3EKF4701	4.7k	
	R491	ERJ3EKF4702	47k	
	R493	ERJ2GEJ223	22k	S
	R497	ERJ3GEYJ104	100k	S
	R498	ERJ3GEYJ822	8.2k	S
	R499	ERJ3GEYJ222	2.2k	S
	R501	ERJ2GEJ105X	1m	S
	R502	D1H41032A014	COMPONENTS PARTS,10k	
	R504	ERJ2GEJ183	18k	S
	R505	ERJ8GEYJ680	68	S
	R506	ERJ2GEJ274	270k	S
	R507	ERJ2GEJ103	10k	S
	R508	ERJ2GEJ103	10k	S
	R509	ERJ2GEJ223	22k	S
	R510	ERJ2GEJ333	33k	S
	R511	ERJ2GEJ333	33k	S
	R512	ERJ2GEJ223	22k	S
	R564	ERJ3BQJ3R3V	3.3	
	R565	ERJ3BQJ3R3V	3.3	
	R571	ERJ2GEJ101	100	S
	R572	ERJ2GEJ102	1k	S
	R573	ERJ2GEJ102	1k	S
	R574	ERJ2GEJ101	100	S
	R575	EXB24V472JX	COMPONENTS PARTS,4.7k	S
	R581	ERJ2GEJ272	2.7k	S
	R582	ERJ2GEJ472X	4.7k	S
	R583	D0GA104JA021	100k	S
	R584	D1H41042A014	COMPONENTS PARTS,100k	
	R586	ERJ2GEJ103	10k	S
	R587	ERJ2GEJ103	10k	S
	R588	D1H41042A014	COMPONENTS PARTS,100k	
	R589	D1H41042A014	COMPONENTS PARTS,100k	
	R590	D1H41042A014	COMPONENTS PARTS,100k	
	R591	ERJ2GEJ472X	4.7k	S
	R593	ERJ2GE0R00	0	S
	R595	ERJ2GE0R00	0	S
	R598	ERJ2GE0R00	0	S
	R600	ERJ3GEY0R00	0	S
	R601	ERJ3GEY0R00	0	S
	R602	ERJ3GEY0R00	0	S
	R603	ERJ3GEY0R00	0	S
	R604	ERJ3GEY0R00	0	S
	R605	ERJ3GEY0R00	0	S
	R611	PQ4R10XJ331	330	S
	R612	D1H46822A014	COMPONENTS PARTS,6.8k	
	R613	ERJ2GEJ103	10k	S
	R614	ERJ2GEJ222	2.2k	S
	R615	ERJ2GEJ103	10k	S
	R616	ERJ2GEJ222	2.2k	S
	R621	PQ4R10XJ331	330	S
	R623	ERJ2GEJ103	10k	S
	R624	ERJ2GEJ222	2.2k	S
	R625	ERJ2GEJ103	10k	S
	R626	ERJ2GEJ222	2.2k	S
	R627	PQ4R10XJ471	470	S
	R634	ERJ2GEJ680	68	S
	R635	ERJ2GEJ331	330	S
	R636	ERJ2GEJ331	330	S
	R637	ERJ2GEJ910	91	S
	R638	ERJ2GEJ271	270	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R639	ERJ2GEJ472X	4.7k	S
	R640	ERJ3GEYJ561	560	S
	R641	PQ4R10XJ100	10	S
	R642	PQ4R10XJ100	10	S
	R643	ERJ3GEYJ561	560	S
	R644	ERJ2GEJ181	180	S
	R645	ERJ2GEJ103	10k	S
	R646	ERJ2GEJ181	180	S
	R647	D0GA392JA015	3.9k	S
	R650	ERJ2GEJ103	10k	S
	R651	ERJ2GEJ273X	27k	S
	R652	ERJ2GEJ333	33k	S
	R653	ERJ8RQJR47V	0.47	
	R654	ERJ2GEJ102	1k	S
	R657	PQ4R18XJ682	6.8k	S
	R658	ERJ2GEJ100	10	S
	R659	ERJ2GEJ103	10k	S
	R660	ERJ8RQJR82V	0.82	
	R671	ERJ14YJ620U	62	
	R673	EXB24V472JX	COMPONENTS PARTS,4.7k	S
	R674	D0GA332JA015	3.3k	S
	R676	ERJ2GEJ101	100	S
	R677	ERJ2GEJ472X	4.7k	S
	R678	ERJ2GEJ101	100	S
	R679	ERJ2GEJ224	220k	S
	R680	ERJ2GEJ472X	4.7k	S
	R687	D1H41032A014	COMPONENTS PARTS,10k	
	R688	D1H42232A014	COMPONENTS PARTS,22k	
	R720	ERJ3EKF4702	47k	
	R724	ERJ2GEJ223	22k	S
	R725	ERJ3GEYJ152	1.5k	S
	R726	ERJ3GEYJ152	1.5k	S
	R727	ERJ3GEYJ100	10	S
	R728	ERJ3GEYJ104	100k	S
	R729	ERJ3GEYJ822	8.2k	S
	R747	ERJ3EKF4701	4.7k	
	R748	ERJ3EKF2700	270	
	R749	ERJ3EKF4701	4.7k	
	R750	ERJ2GEJ473	47k	S
	R751	D0GA332JA015	3.3k	S
	R752	ERJ2GEJ222	2.2k	S
	R753	ERJ2GEJ272	2.7k	S
	R754	ERJ2GEJ473	47k	S
	R755	ERJ2GEJ103	10k	S
	R756	ERJ2GEJ102	1k	S
	R757	ERJ2GEJ103	10k	S
	R760	ERJ3GEYJ561	560	S
	R761	ERJ3GEYJ331	330	S
	R763	ERJ2GEJ123	12k	S
	R764	ERJ2GEJ123	12k	S
	R765	D0GA104JA021	100k	S
	R766	ERJ2GEJ393X	39k	S
	R767	ERJ2GEJ822	8.2k	S
	R768	ERJ2GEJ103	10k	S
	R769	ERJ2GEJ393X	39k	S
	R770	ERJ2GEJ822	8.2k	S
	R771	D1H41032A014	COMPONENTS PARTS,10k	
	R794	ERJ3GEYJ100	10	S
	R795	ERJ3GEYJ152	1.5k	S
	R796	ERJ3GEYJ152	1.5k	S
	R797	ERJ3GEYJ222	2.2k	S
	R798	ERJ2GEJ103	10k	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R801	ERJ2GEJ103	10k	S
	R802	ERJ3GEYJ821	820	S
	R803	ERJ2GEJ102	1k	S
	R804	PQ4R18XJ271	270	S
	R805	ERJ3GEYJ151	150	S
	R806	ERJ3GEYJ181	180	S
	R808	ERJ2GEJ103	10k	S
	R809	ERJ8GEYJ680	68	S
	R810	D1H41032A014	COMPONENTS PARTS,10k	
	R812	ERJ3GEYJ472	4.7k	S
	R813	ERJ2GEJ273X	27k	S
	R814	ERJ2GEJ273X	27k	S
	R815	ERJ2GEJ184	180k	S
	R816	ERJ2GEJ184	180k	S
	R817	ERJ2GEJ184	180k	S
	R818	ERJ2GEJ123	12k	S
	R819	ERJ2GEJ473	47k	S
	R820	PQ4R18XJ562	5.6k	S
	R880	D0GF151KA001	150	
	R881	D0GF151KA001	150	
	R890	ERJ3GEYJ472	4.7k	S
	R891	ERJ3GEYJ103	10k	S
	R892	ERJ3GEYJ183	18k	S
	R893	ERJ3GEYJ472	4.7k	S
	R894	ERJ3GEYJ103	10k	S
	R895	ERJ3GEYJ183	18k	S
	R902	ERJ6GEY0R00	0	S
	R911	ERJ3EKF6202	62k	
	R912	ERJ3EKF1182V	11.8k	
	R913	ERJ2GEJ473	47k	S
	R921	ERJ3EKF4702	47k	
	R922	ERJ3EKF1502	15k	
	R923	ERJ2GEJ333	33k	S
	R931	ERJ3EKF6042V	60.4k	
	R932	ERJ3EKF1502	15k	
	R933	ERJ2GEJ473	47k	S
	R940	ERJ8GEY0R00	0	S
	R941	ERJ8GEY0R00	0	S
			(CAPACITORS)	
	C100	ECUE1H222KBQ	0.0022	
	C101	ECUE1H221JCQ	220p	S
	C102	ECUE1C104KBQ	0.1	
	C103	ECUV1C105KBV	1	
	C104	ECUE1H102KBQ	0.001	
	C105	ECUV1C105KBV	1	
	C106	ECUE1H102KBQ	0.001	
	C107	ECUE1C104KBQ	0.1	
	C108	ECUE1C104KBQ	0.1	
	C110	ECUE1E103KBQ	0.01	
	C111	ECUE1E103KBQ	0.01	
	C112	ECUE1E103KBQ	0.01	
	C113	ECUV1C105KBV	1	
	C114	ECUV1C105KBV	1	
	C115	ECUV1C105KBV	1	
	C116	ECUV1C105KBV	1	
	C117	ECUE1C104KBQ	0.1	
	C118	ECUE1C104KBQ	0.1	
	C120	ECUV1C105KBV	1	
	C121	ECUV1C105KBV	1	
	C122	ECUE1C104KBQ	0.1	
	C123	ECUE1C104KBQ	0.1	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C124	F1J1A106A043	10	
	C125	ECUE1C104KBQ	0.1	
	C126	ECUE1C104KBQ	0.1	
	C127	F1J1A106A043	10	
	C128	ECUE1H102KBQ	0.001	
	C129	ECUE1C104KBQ	0.1	
	C130	ECUE1C104KBQ	0.1	
	C131	ECUE1C104KBQ	0.1	
	C132	ECUE1C104KBQ	0.1	
	C133	ECUE1C104KBQ	0.1	
	C134	ECUE1C104KBQ	0.1	
	C135	ECUE1C104KBQ	0.1	
	C136	ECUE1C104KBQ	0.1	
	C138	ECUE1C104KBQ	0.1	
	C139	ECUE1C104KBQ	0.1	
	C140	ECUE1C104KBQ	0.1	
	C141	ECUE1C104KBQ	0.1	
	C142	ECUE1C104KBQ	0.1	
	C143	ECUE1C104KBQ	0.1	
	C144	ECUE1C104KBQ	0.1	
	C145	ECUE1C104KBQ	0.1	
	C146	ECUE1C104KBQ	0.1	
	C147	ECUE1C104KBQ	0.1	
	C148	ECUE1C104KBQ	0.1	
	C149	ECUE1C104KBQ	0.1	
	C150	F1J1A106A043	10	
	C151	ECUE1C104KBQ	0.1	
	C160	ECUE1C104KBQ	0.1	
	C170	ECUE1H152KBQ	0.0015	
	C171	ECUE1C104KBQ	0.1	
	C175	ECUE1H102KBQ	0.001	
	C176	ECUE1H102KBQ	0.001	
	C200	ECUE1H330JCQ	33p	
	C201	ECUE1H470JCQ	47p	
	C202	ECUE1H470JCQ	47p	
	C203	ECUE1H330JCQ	33p	
	C204	ECUE1H330JCQ	33p	
	C205	ECUE1H330JCQ	33p	
	C206	ECUE1H330JCQ	33p	
	C207	ECUE1H330JCQ	33p	
	C208	ECUE1H330JCQ	33p	
	C209	ECUE1H330JCQ	33p	
	C210	ECUE1H330JCQ	33p	
	C211	ECUE1H330JCQ	33p	
	C212	ECUE1H330JCQ	33p	
	C213	ECUE1H330JCQ	33p	
	C214	ECUE1H330JCQ	33p	
	C215	ECUE1C104KBQ	0.1	
	C216	ECUE1H330JCQ	33p	
	C217	ECUE1H330JCQ	33p	
	C218	ECUE1H330JCQ	33p	
	C219	ECUE1H330JCQ	33p	
	C220	ECUE1H330JCQ	33p	
	C221	ECUE1H330JCQ	33p	
	C222	ECUE1H330JCQ	33p	
	C223	ECUE1H330JCQ	33p	
	C224	ECUE1H330JCQ	33p	
	C225	ECUE1H330JCQ	33p	
	C226	ECUE1H330JCQ	33p	
	C227	ECUE1H330JCQ	33p	
	C228	ECUE1C104KBQ	0.1	
	C229	F1H1H104A913	0.1	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C230	ECUE0J105KBQ	1	
	C231	F1K1E1060009	10	
	C232	ECUE1C104KBQ	0.1	
	C234	ECUE1C104KBQ	0.1	
	C235	F1J1A106A043	10	
	C236	F1H1H104A913	0.1	
	C237	ECUE1C104KBQ	0.1	
	C238	ECUE1H332KBQ	0.0033	
	C239	F1H1H104A913	0.1	
	C240	F1H1H104A913	0.1	
	C241	F1K1E1060009	10	
	C242	F1H1H104A913	0.1	
	C243	ECUE1H102KBQ	0.001	
	C244	PQCUV1E224KB	0.22	
	C245	F1H1H104A913	0.1	
	C247	F1K1E1060009	10	
	C248	F1K1E1060009	10	
	C249	F1H1H104A913	0.1	
	C270	ECUV1C105KBV	1	
	C271	ECUE1C104KBQ	0.1	
	C31	F2G1E221A402	220	
	C315	ECUE1C104KBQ	0.1	
	C316	ECUE1C104KBQ	0.1	
	C317	ECUE1C104KBQ	0.1	
	C318	ECUE1C104KBQ	0.1	
	C319	F1J1A106A043	10	
	C32	F2G1E221A402	220	
	C320	ECUE1C104KBQ	0.1	
	C33	F2G1V1510006	150	
	C34	F2G1V470A281	47	
	C341	F1J0J2260004	22	
	C350	ECUV1C105KBV	1	
	C380	ECUE1H120JCQ	12p	
	C381	ECUE1H100DCQ	10p	
	C390	ECUE1H4R0CCQ	4	
	C391	ECUE1H9R0DCQ	9	
	C392	ECUE1C104KBQ	0.1	
	C393	EECS0HD224H	220000	
	C404	ECUE1C104KBQ	0.1	
	C405	ECUE1H331KBQ	330p	
	C408	ECUE1E103KBQ	0.01	
	C409	ECUE1C104KBQ	0.1	
	C410	ECUE1H332KBQ	0.0033	
	C411	ECUE1H332KBQ	0.0033	
	C412	ECUE1H100DCQ	10p	
	C413	ECUE1H101JCQ	100p	
	C414	ECUE1H100DCQ	10p	
	C415	ECUE1H101JCQ	100p	
	C416	ECUV1C105KBV	1	
	C418	ECUE1C104KBQ	0.1	
	C420	ECUV1C105KBV	1	
	C423	ECUE1C104KBQ	0.1	
	C424	ECUE1H100DCQ	10p	
	C425	ECUE1C104KBQ	0.1	
	C426	ECUE1C104KBQ	0.1	
	C427	ECUE1C104KBQ	0.1	
	C428	ECUV1C105KBV	1	
	C429	ECUE1H100DCQ	10p	
	C430	ECJ0EB0J224K	0.22	S
	C432	ECUV1C105KBV	1	
	C433	ECUV1C105KBV	1	
	C435	ECUV1C105KBV	1	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C436	ECUE1H150JCQ	15p	
	C437	ECUV1C105KBV	1	
	C438	ECUV1C105KBV	1	
	C439	ECUV1C105KBV	1	
	C480	ECUE1H470JCQ	47p	
	C481	ECUE1H100DCQ	10p	
	C482	ECUE1H100DCQ	10p	
	C483	ECUE1H470JCQ	47p	
	C484	ECUV1H103KBV	0.01	
	C485	ECUE1H101JCQ	100p	
	C486	ECUV1H104KBV	0.1	
	C487	ECUE1H102KBQ	0.001	
	C489	ECUV1H104KBV	0.1	
	C500	F1K1E1060009	10	
	C501	F2J1E2200008	10	
	C502	ECUE1E103KBQ	0.01	
	C503	ECUE1H102KBQ	0.001	
	C505	ECUE1A224KBQ	0.22	
	C506	ECUE1H681KBQ	680p	
	C507	ECUE1H100DCQ	10p	
	C508	ECUE1C104KBQ	0.1	
	C509	ECUE1H332KBQ	0.0033	
	C510	ECUE1H100DCQ	10p	
	C511	ECUE1H332KBQ	0.0033	
	C512	ECUE1C104KBQ	0.1	
	C514	ECUE1H100DCQ	10p	
	C516	ECUE1H100DCQ	10p	
	C517	ECUE1H100DCQ	10p	
	C526	ECUE1H100DCQ	10p	
	C561	ECUE1H100DCQ	10p	
	C562	ECUE1H220JCQ	22p	
	C563	ECUE1H220JCQ	22p	
	C564	ECUE1H332KBQ	0.0033	
	C565	ECUE1H332KBQ	0.0033	
	C571	ECUE1H100DCQ	10p	
	C572	ECUE1H100DCQ	10p	
	C575	F1J0J2260004	22	
	C576	ECUV1A224KBV	0.22	
	C577	ECUV1A224KBV	0.22	
	C580	F1G0J4740002	0.47	S
	C581	F1G0J4740002	0.47	S
	C582	ECUV1C105KBV	1	
	C583	ECUE1H100DCQ	10p	
	C584	F1G0J4740002	0.47	S
	C586	ECUE1A224KBQ	0.22	
	C587	F1J0J2260004	22	
	C588	F1G0J4740002	0.47	S
	C589	ECUE1C104KBQ	0.1	
	C595	F1G0J4740002	0.47	S
	C596	F1G0J4740002	0.47	S
	C610	ECUE1H330JCQ	33p	
	C611	ECUE0J105KBQ	1	
	C612	ECUV1H103KBV	0.01	
	C613	ECUV1H103KBV	0.01	
	C620	ECUE1H330JCQ	33p	
	C621	ECUE0J105KBQ	1	
	C627	ECUE1C104KBQ	0.1	
	C630	ECUE1H100DCQ	10p	
	C631	ECUE1H152KBQ	0.0015	
	C632	ECUE1H152KBQ	0.0015	
	C633	ECUE1C104KBQ	0.1	
	C634	ECUE1C104KBQ	0.1	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C635	ECUV1H102KBV	0.001	
	C636	ECUV1H151JCV	150p	
	C640	ECUV1H822KBV	0.0082	
	C641	ECUE1H100DCQ	10p	
	C642	ECUE1H152KBQ	0.0015	
	C643	ECUE1H152KBQ	0.0015	
	C644	ECUV1H103KBV	0.01	
	C651	ECUE1H102KBQ	0.001	
	C652	ECUV1E473KBV	0.047	
	C653	F1G1H821A541	820p	S
	C654	ECUE1H100DCQ	10p	
	C657	F1K0J476A004	47	
	C658	ECUE1H100DCQ	10p	
	C659	ECUE1H102KBQ	0.001	
	C660	F2G1V330A291	33	
	C661	F1K0J107A036	100	
	C662	ECUE1H100DCQ	10p	
	C670	F1G1H821A541	820p	S
	C672	ECUE1C104KBQ	0.1	
	C673	ECUE1C104KBQ	0.1	
	C674	ECUE1H102KBQ	0.001	
	C675	ECUE1C104KBQ	0.1	
	C676	ECUE1H471KBQ	470p	
	C677	ECUE1H102KBQ	0.001	
	C678	F1L1C2260012	22	
	C679	ECUV1C105KBV	1	
	C680	ECUE1C104KBQ	0.1	
	C681	ECUV1C105KBV	1	
	C682	ECUV1C105KBV	1	
	C683	ECUV1C105KBV	1	
	C684	ECUE1C104KBQ	0.1	
	C685	ECUE1H270JCQ	27p	
	C687	F1K1E1060009	10	
	C710	ECUE1C104KBQ	0.1	
	C711	ECUV1H821JCV	820p	
	C720	ECUE1H152KBQ	0.0015	
	C721	ECUV1H822KBV	0.0082	
	C722	ECUV1H822KBV	0.0082	
	C723	ECUV1H822KBV	0.0082	
	C724	ECUV1H822KBV	0.0082	
	C725	ECUV1H822KBV	0.0082	
	C727	ECUE1C104KBQ	0.1	
	C729	ECUV1H822KBV	0.0082	
	C747	ECUE1H101JCQ	100p	
	C748	ECUE1H102KBQ	0.001	
	C749	ECUE1C104KBQ	0.1	
	C750	ECUE1C104KBQ	0.1	
	C760	ECUV1H821JCV	820p	
	C761	ECUE1H152KBQ	0.0015	
	C764	ECUV1H822KBV	0.0082	
	C765	ECUE1H101JCQ	100p	
	C766	ECUE1H101JCQ	100p	
	C767	ECUE1C104KBQ	0.1	
	C768	ECUE1H391KBQ	390p	
	C769	ECUE1A224KBQ	0.22	
	C770	ECUE1H102KBQ	0.001	
	C771	ECUE1H100DCQ	10p	
	C773	F1K1E1060009	10	
	C775	ECUE1H101JCQ	100p	
	C776	ECUE1H100DCQ	10p	
	C777	ECUE1H101JCQ	100p	
	C778	ECUE1H102KBQ	0.001	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C779	F2G1C1010034	100	
	C780	ECUE1C104KBQ	0.1	
	C781	ECUE1H470JCQ	47p	
	C782	ECUE1H100DCQ	10p	
	C783	ECUV1H103KBV	0.01	
	C784	ECUE1H100DCQ	10p	
	C785	ECUE1H470JCQ	47p	
	C797	ECUE1H222KBQ	0.0022	
	C801	ECUE1E103KBQ	0.01	
	C802	F1J1A106A043	10	
	C803	ECUV1H122KBV	0.0012	
	C804	ECUV1H122KBV	0.0012	
	C805	F1K1C4750023	4.7	
	C808	ECUE1H221KBQ	220p	
	C809	ECUV1H822KBV	0.0082	
	C810	F2G1C1010034	100	
	C811	ECUV1C224KBV	0.22	
	C813	ECUE1H101JCQ	100p	
	C814	ECUE1E682KBQ	0.0068	
	C815	ECUE1E682KBQ	0.0068	
	C816	ECUE1H101JCQ	100p	
	C819	ECUE1H3R0CCQ	3	
	C820	ECUE1H3R0CCQ	3	
	C821	ECUE1H3R0CCQ	3	
	C822	ECUE1H3R0CCQ	3	
	C880	PSCUV2EY104K	0.1	S
	C881	PSCUV2EY104K	0.1	S
	C890	ECUV1H103KBV	0.01	
	C891	ECUV1H103KBV	0.01	
	C900	F1K1E1060009	10	
	C902	ECUE1E103KBQ	0.01	
	C903	F1H1H104A913	0.1	
	C904	ECUV1H104KBV	0.1	
	C905	F1K1E1060009	10	
	C906	F1K1E1060009	10	
	C910	F1K1E1060009	10	
	C912	ECUV1H104KBV	0.1	
	C913	ECUE1H100DCQ	10p	
	C914	F1L1C2260012	22	
	C915	F1G1H821A541	820p	S
	C917	ECUV1H104KBV	0.1	
	C920	F1K1E1060009	10	
	C922	ECUV1H104KBV	0.1	
	C923	ECUE1H100DCQ	10p	
	C924	F1L1C2260012	22	
	C925	F1G1H821A541	820p	S
	C927	ECUV1H104KBV	0.1	
	C930	F1K1E1060009	10	
	C932	ECUV1H104KBV	0.1	
	C933	ECUE1H100DCQ	10p	
	C934	F1L1C2260012	22	
	C935	F1G1H821A541	820p	S
	C937	ECUV1H104KBV	0.1	
	C950	ECUV1C105KBV	1	
	C951	ECUV1C105KBV	1	
	C952	F1J0J2260004	22	

15.2.1.3 Key Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB2	PNWPBMV74BX	KEY BOARD ASS'Y (RTL)	
			(ICs)	
	IC1001	C0DBGYY03592	IC	
	IC1002	C0ZBZ0002417	IC	S
			(CONNECTOR)	
	CN1001	K1KA06A00454	CONNECTOR	
			(IC FILTER)	
	L1001	J0JCC0000286	IC FILTER	
			(RESISTORS)	
	R1001	ERJ2GEJ472X	4.7k	S
	R1002	ERJ2GEJ331	330	S
	R1003	ERJ2GE0R00	0	S
	R1004	ERJ2GE0R00	0	S
	R1005	ERJ2GE0R00	0	S
	R1006	ERJ2GE0R00	0	S
	R1007	ERJ2GE0R00	0	S
	R1008	ERJ2GE0R00	0	S
	R1009	ERJ2GE0R00	0	S
	R1010	ERJ2GEJ472X	4.7k	S
	R1011	ERJ2GEJ101	100	S
	R1012	ERJ2GEJ101	100	S
	R1013	ERJ2GEJ101	100	S
			(CAPACITORS)	
	C1001	ECUE1H152KBQ	0.0015	
	C1002	ECUE1C104KBQ	0.1	
	C1003	F1K1E1060009	10	
	C1004	ECUE1E103KBQ	0.01	
	C1005	F1J0J2260004	22	
	C1006	ECUE1H101JCQ	100p	
	C1007	ECUE1H101JCQ	100p	
	C1008	ECUE1A104KBQ	0.1	
	C1009	ECUE1A104KBQ	0.1	
	C1010	ECUE1A104KBQ	0.1	
	C1011	ECUE1H102KBQ	0.001	
	C1012	ECUE1A104KBQ	0.1	

15.2.1.4 Power Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB3	PNWPAMV75AZ	POWER SUPPLY ASS'Y (RTL)	
			(IC)	
	IC1	C0DBAYY00932	IC	
			(DIODES)	
	D1	B0JCME000087	DIODE(SI)	
	D2	B0JCME000087	DIODE(SI)	
	D3	B0JCME000087	DIODE(SI)	
	D4	B0JCME000087	DIODE(SI)	
	D5	B0JCME000087	DIODE(SI)	
			(TERMINAL)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	CN1	K4AC02B00039	TERMINAL	!
			(FUSE)	
⚠	F1	K5H502Y00002	FUSE	!
			(COILS)	
	L1	J0JGC0000016	COIL	
	L2	J0JGC0000016	COIL	
	L3	G1C100MA0426	COIL	
	LF1	G0B102EA0025	COIL	
			(RESISTORS)	
	R1	ERJ6GEYJ510V	51	S
	R2	ERJ3EKF1692V	16.9k	
	R3	ERJ3GEYF122	1.2k	S
	R4	ERJ2GEJ130	13	S
	R9	ERJ2GEJ105X	1m	S
	R10	ERJ6GEY0R00	0	S
	R11	ERJ6GEY0R00	0	S
			(CAPACITORS)	
	C1	F1H1H104A913	470p	
	C3	F1H1H104A913	0.1uF	
	C6	F2G1V2210014	220	
	C7	F1K1H106A208	10uF	
	C9	F1H1H104A913	0.1u	
	C10	F1G1H471A541	470p	S
	C11	F1K1E1060009	10uF	
	C12	ECUV1H103KBV	0.01	
	C14	F2G1E471A331	470	
	C21	ECUE1H102KBQ	0.001	

15.2.2 Door Station

15.2.2.1 Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	101	PNKU1009Z1	CABINET COVER (Mounting Bracket)	S
	102	4F0009ADAK	TERMINAL PLATE	S
	103	PNYFAV524CE	CABINET COVER	
	104	PNGTA747Z	NAME PLATE (for VL-V524LCE)	
	104	PNGTA767Z	NAME PLATE (for VL-V524LSX)	
	104	PNGTA751Z	NAME PLATE (for VL-V524LVN)	
	105	PNUR1035Z	COIL SPRING	
	106	PNYBAV524CE	CALL BUTTON	
	107	PNWHAV524CE	SPEAKER ASS'Y	
	108	L0AD02A00010	SPEAKER	
	109	PFHG1221X	SPEAKER RUBBER	
	110	PNHX1023Z	SHEET COVER for SPEAKER	
	111	PNHX1199Z	SHEET COVER for MIC	
	112	PNWPCV524CE	CAMERA UNIT	
	113	PNHR2561Z1	LED LENS	S
	114	PNYMAV524CE	UPPER CABINET	
	115	PNGP1825Z1	FRONT PANEL	S
	D	XTB26+8GFJ	TAPPING SCREW	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks

15.2.2.2 Main P.C. Board Parts

(*3) When replacing Main board of door station, confirm operation. (Refer to **[11.2 Door Station]**).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB101	PNWPAV524CE	MAIN BOARD ASS'Y(*3)	
			(ICs & PHOTO ELECTRIC TRANSDUCER)	
	IC100	C0ABBB000274	IC	
	IC102	C1BB00001024	IC	
	IC200	C1AB00002793	IC	
	IC202	C0DBAYY00932	IC	
	IC203	It is impossible to supply (IC203) by itself. Therefore, when this part is in need of replacing, please replace the Main Board(PCB101).		
	IC204	B3JB00000223	PHOTO ELECTRIC TRANSDUCER	
			(TRANSISTORS)	
	Q2	DSC7003R0L	TRANSISTOR(SI)	
	Q3	B1ABCF000271	TRANSISTOR(SI)	
	Q4	B1ADMF000022	TRANSISTOR(SI)	
	Q5	B1HBDFA00002	TRANSISTOR(SI)	
	Q6	B1ADCF000231	TRANSISTOR(SI)	
	Q30	B1ABCF000271	TRANSISTOR(SI)	
	Q31	B1ABCF000139	TRANSISTOR(SI)	
	Q100	B1ADGD000005	TRANSISTOR(SI)	
	Q200	B1GBCFYY0134	TRANSISTOR(SI)	
	Q202	B1GBCFYY0176	TRANSISTOR(SI)	
	Q203	B1GBCFYY0134	TRANSISTOR(SI)	
	Q204	B1ABDF000026	TRANSISTOR(SI)	
	Q301	PSVTUMX1NTN	TRANSISTOR(SI)	S
	Q400	B1ABCF000271	TRANSISTOR(SI)	
			(DIODES & LEDs)	
	D1	DZ2J270M0L	DIODE(SI)	
	D2	DB2J41100L	DIODE(SI)	
	D3	DB2J41100L	DIODE(SI)	
	D4	DB2J41100L	DIODE(SI)	
	D5	DB2J41100L	DIODE(SI)	
	D6	DB2J41100L	DIODE(SI)	
	D8	B0ADEJ000026	DIODE(SI)	
	D30	DZ2J075M0L	DIODE(SI)	
	D100	B0ADEJ000026	DIODE(SI)	
	D101	B0ADEJ000026	DIODE(SI)	
	D300	DB2S31100L	DIODE(SI)	
	D400	DZ2S130M0L	DIODE(SI)	
	LED1	B3AFB0000570	DIODE(SI)	
	LED200	B3AFB0000647	DIODE(SI)	
	LED201	B3AFB0000647	DIODE(SI)	
			(COILS & FILTERS)	
	L2	G1C101MA0291	COIL	
	L3	G1C101MA0291	COIL	
	L4	G1C330KA0100	COIL	
	L5	G1C4R7MA0684	COIL	
	L6	PQLQR2KA113	COIL	S
	L11	J0JYC0000101	IC FILTER	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	L200	G1C331JA0036	COIL	
	L301	J0JCC0000092	IC FILTER	
	LF1	G1BYYYC00029	COIL	
			(CONNECTOR & LEAD WIRES)	
	LEAD1	PNJS081034Z	CONNECTOR	
	LEAD2	PNWLSB57BBXX	LEAD WIRE	
	LEAD3	PNWLSR57MMXX	LEAD WIRE	
			(SWITCH)	
	SW301	K0H1BA000573	SPECIAL SWITCH	
			(TRANSFORMER)	
	T1	G5ZZ00000110	TRANSFORMER	
			(RESISTORS)	
	R1	ERJ2GEJ510	51	
	R2	ERJ2GEJ120	12	S
	R3	ERJ3GEYJ561	560	S
	R4	PQ4R10XJ100	10	S
	R5	PQ4R10XJ100	10	S
	R6	ERJ3GEYJ561	560	S
	R7	ERJ2GEJ330	33	S
	R9	ERJ3EKF6201	6.2k	
	R10	ERJ3GEYF122	1.2k	S
	R11	D0GF3R6JA020	3.6	
	R12	ERJ8GEYJ1R0	1	
	R13	ERJ2GEJ273X	27k	S
	R14	ERJ3GEYJ682	6.8k	S
	R15	PQ4R18XJ682	6.8k	S
	R16	ERJ2GEJ102	1k	S
	R17	ERJ3GEYJ123	12k	S
	R18	ERJ3GEYJ473	47k	S
	R19	ERJ3GEYJ272	2.7k	S
	R20	ERJ2GEJ103	10k	S
	R21	ERJ2GEJ103	10k	S
	R23	ERJ3GEYJ513	51k	S
	R30	ERJ3GEYJ682	6.8k	S
	R31	ERJ3GEYJ103	10k	S
	R32	PQ4R18XJ472	4.7k	S
	R33	D0GF680KA001	68	
	R100	ERJ14YJ330H	33	S
	R102	ERJ2GEJ222	2.2k	S
	R103	ERJ2GEJ473	47k	S
	R104	ERJ2GEJ222	2.2k	S
	R107	ERJ2GEJ222	2.2k	S
	R111	PQ4R10XJ680	68	S
	R112	ERJ2GEJ222	2.2k	S
	R114	ERJ2GEJ122	1.2k	S
	R118	ERJ2GEJ122	1.2k	S
	R119	ERJ2GEJ103	10k	S
	R120	ERJ2GEJ103	10k	S
	R121	ERJ2GEJ123	12k	S
	R122	ERJ2GEJ622X	6.2k	S
	R123	ERJ2GEJ304	300k	S
	R124	ERJ2GEJ123	12k	S
	R125	ERJ2GEJ103	10k	S
	R126	ERJ2GEJ103	10k	S
	R128	ERJ2GEJ102	1k	S
	R132	D0GA332JA015	3.3k	S
	R133	ERJ2GEJ102	1k	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R134	D0GA332JA015	3.3k	S
	R135	ERJ2GEJ622X	6.2k	S
	R136	ERJ2GEJ304	300k	S
	R200	ERJ2GEJ222	2.2k	S
	R201	ERJ2GEJ472X	4.7k	S
	R202	ERJ2GEJ472X	4.7k	S
	R205	ERJ2GEJ473	47k	S
	R206	ERJ2GEJ102	1k	S
	R212	PQ4R18XJ121	120	S
	R213	PQ4R18XJ271	270	S
	R216	ERJ2GEJ153	15k	S
	R217	ERJ2GEJ472X	4.7k	S
	R219	D0GA124JA015	120k	S
	R220	ERJ2RKF3900	390	
	R221	ERJ2RKF2201X	2.2k	
	R224	ERJ2GEJ472X	4.7k	S
	R225	ERJ2GEJ102	1k	S
	R226	ERJ2GEJ182	1.8k	S
	R227	ERJ2GEJ101	100	S
	R228	ERJ2GEJ101	100	S
	R232	ERJ2GEJ750	75	S
	R233	ERJ2GEJ112X	1.1k	S
	R234	ERJ2GEJ222	2.2k	S
	R302	ERJ3EKF1002	10k	
	R303	ERJ2RKF8200	820	S
	R304	ERJ2GEJ223	22k	S
	R305	PQ4R10XJ151	150	S
	R400	ERJ2GEJ153	15k	S
	R401	ERJ2GEJ153	15k	S
			(CAPACITORS)	
	C1	ECUV1H152KBV	0.0015	
	C2	ECUV1H152KBV	0.0015	
	C3	ECUE1C104KBQ	0.1	
	C4	ECJ0EB1C822K	0.0082	S
	C5	F1J1A106A043	10	
	C7	ECUE1E103KBQ	0.01	
	C8	ECUE1C104KBQ	0.1	
	C9	F2G1E3310019	330	
	C10	F2G1E3310019	330	
	C11	F1K1E1060009	10	
	C13	ECUE1C104KBQ	0.1	
	C14	F1J0J2260004	22	
	C15	ECUV1E104KBV	0.1	
	C16	ECUE1C104KBQ	0.1	
	C17	F2G0J3310025	330	
	C18	ECUE1C104KBQ	0.1	
	C19	ECJ1VC1H102J	0.001	S
	C20	F1K1E1060009	10	
	C21	ECUE1H221KBQ	220p	
	C24	ECUE1C104KBQ	0.1	
	C28	ECUE1H100DCQ	10p	
	C30	ECUV1H102KBV	0.001	
	C31	ECUV1H102KBV	0.001	
	C34	ECUE1H102KBQ	0.001	
	C35	ECUE1H102KBQ	0.001	
	C36	ECUE1H100DCQ	10p	
	C100	F2G1C1010034	100	
	C101	F1L1E1060021	10	
	C102	F1J0J2260004	22	
	C103	ECUE1C104KBQ	0.1	
	C104	ECUE1E562KBQ	0.0056	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C105	ECUE1H561JCQ	560p	
	C106	ECUE1E562KBQ	0.0056	
	C107	F1G1C473A081	0.047	S
	C108	ECUE1C104KBQ	0.1	
	C109	F1G0J4740002	0.47	S
	C110	ECUE1H471KBQ	470p	
	C111	ECUE1C104KBQ	0.1	
	C112	F1G0J4740002	0.47	S
	C113	ECUE0J105KBQ	1	
	C114	ECUE0J105KBQ	1	
	C115	F1J1A106A043	10	
	C116	ECUE1H100DCQ	10p	
	C117	F1G1C473A081	0.047	S
	C118	F1L1E1060021	10	
	C119	ECUE1H101JCQ	100p	
	C120	ECUE1H100DCQ	10p	
	C122	ECUE1H102KBQ	0.001	
	C123	ECUE1H101JCQ	100p	
	C125	F1G1C473A081	0.047	S
	C126	ECUE1H561JCQ	560p	
	C127	ECUE1H100DCQ	10p	
	C128	ECUE1H221JCQ	220p	
	C130	ECUE1H100DCQ	10p	
	C131	ECUE1H100DCQ	10p	
	C200	ECUE1C104KBQ	0.1	
	C201	ECUE1H470JCQ	47p	
	C202	ECUE1C104KBQ	0.1	
	C203	ECUE1E103KBQ	0.01	
	C204	ECUE1H102KBQ	0.001	
	C205	ECUE1H471KBQ	470p	
	C206	ECUE1C104KBQ	0.1	
	C208	ECUE1C104KBQ	0.1	
	C210	ECUE1C104KBQ	0.1	
	C211	ECUE1C104KBQ	0.1	
	C212	ECUV1C105KBV	1	
	C213	F1H1E1050001	1	
	C216	ECUE1H102KBQ	0.001	
	C217	ECUV1H821JCV	820p	
	C218	ECUE1C104KBQ	0.1	
	C220	ECUE1C104KBQ	0.1	
	C222	ECUV1C105KBV	1	
	C230	ECUV1C105KBV	1	

15.2.2.3 MIC P.C. Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB102	PNWPBV524CE	MIC BOARD ASS'Y (RTL)	
	MIC1	L0CBAY000123	MICROPHONE	
	E101	PNMG1003Z	RUBBER PARTS	
	L700	J0JCC0000277	IC FILTER	
	L701	J0JCC0000277	IC FILTER	
	C700	ECUE1H102KBQ	0.001	

15.2.3 Power Supply Unit

15.2.3.1 Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	401	PNVLPS241A	POWER SUPPLY UNIT ASS'Y	
	402	PNKV1232Z1	TERMINAL COVER	S
	403	PNKM1518Y1	CABINET BODY	S
	404	PNKF1306Y1	CABINET COVER	S
	405	PNKE1308Z1	SLIDE LEVER	S
	406	PNUR1034Z	COIL SPRING	
	407	PNGT8040Y	NAME PLATE	
	P	XTN3+10GFJ	SMALL SCREW	
	Q	XTB26+10GFJ	SMALL SCREW	

15.2.3.2 Power P.C. Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	PCB401	PNWPPS241A	POWER SUPPLY ASS'Y (RTL)	
			(ICs)	
	IC1	B1LAZ0000030	TRANSISTOR(SI)	
⚠	IC2	B3PBA0000485	PHOTO ELECTRIC TRANSDUCER	
	IC3	C0DBAYY00781	IC	
			(DIODES)	
⚠	D1	ERZV10D751	750	
	D2	B0EDKT000007	DIODE(SI)	
	D3	B0ECGT000002	DIODE(SI)	
	D4	DZ2W20000L	DIODE(SI)	
	D5	B0ECKM000038	DIODE(SI)	
	D6	B0ECMM000011	DIODE(SI)	S
	D7	B0ECMR000006	DIODE(SI)	
	D8	B0BC03300002	DIODE(SI)	
			(CONNECTORS)	
⚠	CN1	K2AAYB000001	JACK/SOCKET	
	CN2	K4AA02A00083	TERMINAL-TERMINAL PLATE	
			(FUSES)	
⚠	F1	K5G202Y00006	FUSE	
			(COILS)	
⚠	LF1	G0B363C00001	COIL	
	LF2	G0B150G00004	COIL	
			(TRANSFORMER)	
⚠	T1	G4DYA0000556	TRANSFORMER	
			(RESISTORS)	
	R1	ERJ8GEYJ205V	2m	S
	R2	ERJ8GEYJ205V	2m	S
	R3	ERJ14YJ620U	62	
	R4	ERJ8GEYJ205V	2m	S
	R5	ERJ8GEYJ205V	2m	S

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R6	D0GF684KA001	680k	
	R7	ERJ1TYJ560	56	
	R8	PQ4R10XJ155	1.5m	S
	R10	ERJ14YJ820	82	
	R11	PQ4R10XJ102	1k	S
	R12	ERJ3GEYJ221	220	S
	R13	PQ4R10XJ272	2.7k	S
	R15	ERJ3ENF8202	METAL FILM OXIDE RESISTOR	S
	R16	ERJ3EKF5601	METAL FILM OXIDE RESISTOR	
	R17	ERJ3EKF1002	METAL FILM OXIDE RESISTOR	
	R19	PQ4R10XJ183	18k	S
			(CAPACITORS)	
⚠	C1	F0CAF104A105	PLASTIC FILM CAPACITOR	
⚠	C2	F2A2W470A317	"ELECTROLYTIC CAPACITOR	
	C3	F1K3D1020001	CERAMIC CAPACITOR	
	C4	F1H1H104A913	CERAMIC CAPACITOR	
	C5	F1K3A102A013	CERAMIC CAPACITOR	
	C6	F1K3D1020001	CERAMIC CAPACITOR	
	C7	F1J2E121A025	CERAMIC CAPACITOR	
	C8	F1L1H106A125	CERAMIC CAPACITOR	
⚠	C9	F1B2E222A050	CERAMIC CAPACITOR	
	C10	F1J2E121A025	CERAMIC CAPACITOR	
	C11	F1K1H106A208	CERAMIC CAPACITOR	
	C12	F2A1V3310046	"ELECTROLYTIC CAPACITOR	
	C13	F2A1V3310046	"ELECTROLYTIC CAPACITOR	
	C14	F2A1V3310046	"ELECTROLYTIC CAPACITOR	
	C15	F1K1H106A208	CERAMIC CAPACITOR	
	C16	F1H1H104A913	CERAMIC CAPACITOR	
	C20	ECUV1H681JCV	680p	S
	C21	F1K1H106A208	CERAMIC CAPACITOR	
	C22	F1L2J562A047	CERAMIC CAPACITOR	

15.2.4 Accessories and Packing Materials

(*4) You can download and refer to the “Installation Guide” etc. on TSN Server.

15.2.4.1 VL-SV75AZ

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A101	PNQX8981Z	INSTALLATION GUIDE (*4)	
	A102	PNQW5780Z	IMPORTANT INFORMATION AND QUICK GUIDE (*4)	
	A103	XMM38+20VW	W00D SCREW	
	A104	XSB4+12VWV1	SMALL SCREW	
	A105	XSB4+25VW	SMALL SCREW	
	A106	PQHR945Z	CABLB BINDER	
	A107	XTN4+40AFJV1	SCREW (for VL-PS241)	
	A108	XTN4+16AFJA	SMALL SCREW	S
	A109	PNMH1513Z	MOUNTING BASE	
⚠	A110	PNJA1093Z	POWER CORD	
	P101	PNPN1604Z	CUSHION	
	P102	PNPN1603Z	CUSHION	
	P103	PNPK4269001Z	GIFT BOX	
	P104	XZB20X35A04	PROTECTION COVER for PRINTED MATERIALS	
	P105	XZB18X27A04	PROTECTION COVER for DOOR STATION	
	P106	XZB05X08A04	PROTECTION COVER for SCREW	
	P107	XZB10X15A04	PROTECTION COVER for SCREW	
	P108	XZB18X27A04L	PROTECTION COVER,for POWER SUPPY UNIT	S
	P109	PNPP1199Z	PROTECTION COVER,for SCREW	
	P110	PNPM1027Z	PROTECTION COVER for MAIN MONITOR	
	P111	XZB05X08A04	PROTECTION COVER for SCREW	

15.2.4.2 VL-MV75AZ

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A201	PNQX8981Z	INSTALLATION GUIDE (*4)	
	A202	PNQW5780Z	IMPORTANT INFORMATION AND QUICK GUIDE (*4)	
	A203	PQHR945Z	CABLB BINDER	
	A204	XTN4+40AFJV1	SCREW (for VL-PS241)	
	A205	XTN4+16AFJA	SMALL SCREW	S
	A206	PNMH1513Z	MOUNTING BASE	
⚠	A207	PNJA1093Z	POWER CORD	
	P201	PNPN1604Z	CUSHION	
	P202	PNPN1603Z	CUSHION	
	P203	PNPK4270001Z	GIFT BOX	
	P204	XZB20X35A04	PROTECTION COVER for PRINTED MATERIALS	
	P205	XZB18X27A04L	PROTECTION COVER,for POWER SUPPY UNIT	S
	P206	PNPP1199Z	PROTECTION COVER,for SCREW	
	P207	PNPM1027Z	PROTECTION COVER for MAIN MONITOR	
	P208	XZB05X08A04	PROTECTION COVER for SCREW	

15.2.4.3 VL-MV75AZA/MV75BXA

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A301	PNQX8981Z	INSTALLATION GUIDE (*4)	
	A302	PNQW5780Z	IMPORTANT INFORMATION AND QUICK GUIDE (*4)	
	A303	PNQX8983Z	QUICK REFERENCE GUIDE (for Indonesian and Thai)(*4)	
	A304	PNMH1513Z	MOUNTING BASE	
	A305	XTN4+16AFJA	SMALL SCREW	S
	P301	PNPN1603Z	CUSHION	
	P302	PNPK4088008Z	GIFT BOX	
	P303	XZB20X35A04	PROTECTION COVER for PRINTED MATERIALS	
	P304	PNPM1027Z	PROTECTION COVER for MAIN MONITOR	
	P305	XZB05X08A04	PROTECTION COVER for SCREW	

15.2.5 Fixtures and Tools

(*5) This is used for installing the ID NUMBER into FLASH MEMORY. (Refer to **[8.1 Things to do after replacing IC]**).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
		PQZZ1CD300E	JIG CABLE (*5)	
		PNZZN511EX	Macro file CD-ROM (*5)	