

ORDER NO.OSSD0600201C0

G11

ServiceManual

POS Work Station

Model No.: **JS-790WS-*****

V.1.01 2006/7/5 Addition of Display Sheet Exchange Instruction

V.1.02 2006/7/18 Addition of Parts List (506 ~ 518, 521 ~ 524)

V.1.03 2006/9/7 Correction of Parts No. (P.92 CN1701, JP1201, JP1202, JP1701, E1201, E1701

P.95 IC701

P99 DS201)

Modification of Specifications

Addition of information for A10 and E10

V.1.10 2007/1/11 Addition of Appendix (1. Powered COM setting, 2. Power faulure watching function)

Panasonic

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■ Caution

- (1) High voltage is applied to inverter transformer, cable and capacitor on the backlight PCB and backlight connector shown in below.
Do not touch those parts without switching off JS-790WS, expect for probes of oscilloscope or tester for testing or repairing purpose only.
- (2) High voltage (100V) is applied to on Power Supply Unit.
Do not touch this part without switching off JS-790WS

■ Precautions

[POS Workstation:JS-790WS-***]

1. Avoid Radio Frequency Interference

Do not place the JS-790WS near a television or radio receiver.]

2. Avoid Stacking

Please do not put anything on the JS-790WS.

3. Keep Small Objects Away

Do not insert clips or other small objects into JS-790WS.

There is the risk of heat, fire or explosion.

4. Keep Dry

There is the risk of heat, fire or explosion.

5. Do Not Disassemble the JS-790WS

Only the engineer in whom this apparatus received training is allowed decomposition.

6. Do Not Use With Any Other Battery

Please use the specified battery.

CAUTION: Risk of explosion if battery is replaced by an incorrect type.

Dispose of used batteries according to the instructions and local requirements.

7. Do Not Touch the Plug with Wet Hands.

There is the risk of electric shock.

8. Do Not Touch the Power-cord or Plug During a Storm.

There is the risk of electric shock.

9. Do Not Use a Damaged Power-cord or Plug.

There is the risk of electric shock or fire.

10. Clean the Dust off the Plug, Periodically.

There is the risk of heat or fire.

CONTENTS

1. OVERVIEW ..□	1
1.1 Specification Overview	1
1.2 I/O Panel Layout	3
1.3 Front Panel Layout	3
1.4 I/O Port	4
1.4.1 Serial port COM1,COM2	4
1.4.2 Serial port COM3,COM4 (Optional IO board)	4
1.4.3 Parallel port (Optional IO board)	5
1.4.4 Video	5
1.4.5 Ethernet ..□	5
1.4.6 USB	6
1.4.7 Cash Drawer	6
1.5 Resource map	7
1.5.1 Memory ..□	7
1.5.2 IO	7
1.5.3 IRQ	8
1.6 JS-790WS External Cahrt	9
1.7 JS-790WS-U10 Block Chart	10
2. Circuit Diagram	11
2.1 JS-790 Main	11
2.1.1 JS-790 Main CPU	11
2.1.2 JS-790 Main NORTH	12
2.1.3 JS-790 Main SOUTH	13
2.1.4 JS-790 Main MEMORY SLOT	14
2.1.5 JS-790 Main CLK	15
2.1.6 JS-790 Main LVDS	16
2.1.7 JS-790 Main CRT	17
2.1.8 JS-790 Main IDE & PCI	18
2.1.9 JS-790 Main LAN	19
2.1.10 JS-790 Main USB	20
2.1.11 JS-790 Main SUPER I/O	21
2.1.12 JS-790 Main COM	22
2.1.13 JS-790 Main C/D	23
2.1.14 JS-790 Main POWER 1	24
2.1.15 JS-790 Main POWER 2	25
2.1.16 JS-790 Main POWER 3	26
2.1.17 JS-790 Main BATTERY	27
2.1.18 JS-790 Main RESET	28
2.1.19 JS-790 Main IO I/F	29
2.1.20 JS-790 Main CUSTOMER DISP	30
2.2 JS-790 CF ..□	31
2.3 JS-790 SW ..□	32
2.4 JS-790 INV ..□	33
2.5 JS-790 SURGE	34
2.6 JS-790 TP ...□	35
2.7 JS-790 OP-CB	36
2.7.1 JS-790 OP-CB OP-CB1	36
2.7.2 JS-790 OP-CB OP-CB2	37
2.7.3 JS-790 OP-CB OP-CB3	38
2.7.4 JS-790 OP-CB OP-CB4	39
2.7.5 JS-790 OP-CB OP-CB5	40

3. Adjustment and Inspection JS-790WS	41
3.1 BIOS Setup □	41
3.2 Time Setting	42
3.3 Customer Display (JS-790RD-010) Setup	44
3.4 Test Program	45
3.4.1 Diagnostic program start	46
3.4.2 Execution of diagnostic program	47
3.4.3 Hard Disk test (CF Card)	48
3.4.4 Video test	49
3.4.5 VRAM Test	52
3.4.6 Parallel Port test	53
3.4.7 Serial Port test	55
3.4.8 Speaker test	57
3.4.9 Customer Display test	58
3.4.10 Touch Panel test	59
3.4.11 Magnetic Card test	62
3.4.12 Drawer test	63
3.4.13 Inline test	65
3.4.14 USB test	67
3.4.15 Audio test	68
3.4.16 Heat Run test	69
4. Materials for Reference	70
4.1 Connection diagram of the COM1, COM2, COM5, COM6 (RS-232C) loop-back connectors ...	70
4.2 Connection diagram of the printer cables	70
4.3 Connection diagram of the LAN interface cable	71
4.4 USB Low Speed jig	71
5. Mounting Diagram	72
5.1 JS-790 Main PCB	72
5.1.1 JS-790 Main PCB Surface	72
5.1.2 JS-790 Main PCB Reverswe	73
5.2 JS-790 Peripheral PCB	74
5.3 JS-790 OP-CB PCB	75
6. Reassembly Diagram	76
6.1 Main Body Block Reassembly	76
6.2 LCD Block Reassembly	86
7. Parts List□	92
7.1 Main PCB Parts	92
7.2 Peripheral PCB Parts	99
7.3 Main Body Parts	101
7.4 LCD Unit Parts	102
7.5 Screw□	102
8. Packing□	103
8.1 Packing□	103
8.2 Accessory Replacement Parts List.....	103

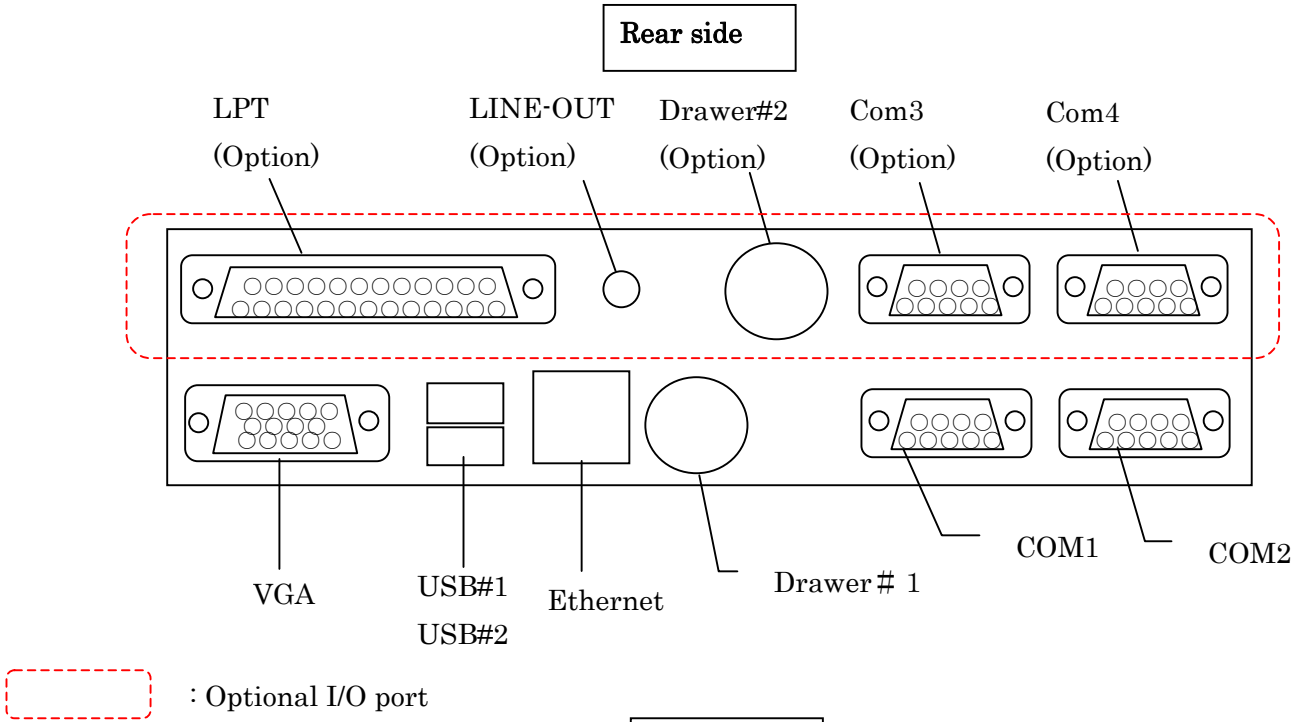
1. OVERVIEW

1.1 Specification Overview

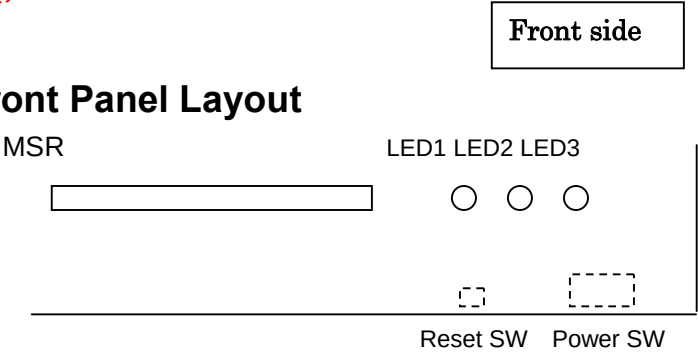
Item		Specification
CPU	Type	VIA Eden
	Frequency	800MHz
Main memory	Capacity	256MB Standard (512MB Max)
	Slot	1slot 200pin SO-DIMM
	Type	DDR 266 SDRAM (PC2100 type)
BIOS ROM	Type	4Mbit Flash Memory
CF memory card I/F	Type	2 slots CF card connector (1 slot is optional) (OS bootable)
	I/F	IDE I/F (Support of only True ATA mode)
Display	Type	TFT type LCD
	Resolution	800 X 600 (SVGA)
	Display size	12.1" type
	Contrast adjust	None
		- The Dual Display function is Supported. (Windows XPe only)
Touch Panel	Type	Resistive
	Size	12.1" type
	Interface	Serial (COM5)
Local Area Network		1 port Ethernet (10BASE-T/100BASE-T) Wake ON LAN is supported.
I/O ports	Serial	2 ports 9pin D-SUB, male: COM1,2 is supported +5V / +12VDC output is supported.(COM1 only)
	Video	1 port 15pin D-SUB, female (VGA)
	LAN	1 port RJ-45
	USB	2 port USB2.0 connector
	Drawer	1 port 6pin DIN
Switch		1 AC power Switch 1 power Switch 1 Reset Switch
LED		1 Power state 1 HDD state 1 LAN state

Power Supply	Input Voltage	JS-790WS-U10: AC100 – AC120 V JS-790WS-A10/E10: AC180 - 240 V	
	Power Consumption	Max. 50 W	
	Frequency	50/60Hz	
	UPS function	Battery Retention time : 2 minutes Note : Only used for shutdown operation. - Registers must be powered on for more than 72 hours for full battery charge. - No display on the LCD during AC off. Battery life : 2years (Need to change every 2 years)	
Operating Condition	Temperature	5°C - 40°C	
	Humidity	20%RH – 85%RH (no dew)	
Dimension			
Material		Plastic (ABS)	
Accessory		AC cable 1pc , 2.5m	
Standard	Safety	c-UL-us	
	EMI & immunity	FCC Part15 Class A	
Supported OS		Windows XP	
BIOS function		ACPI,USB-FDD boot ,USB-Keyboar	
Optional Peripherals	Magnetic Card Reader	Track	Track 1/2/3
		I/F	USB (Internal connector for MSR)
	Rear Display (Customer Display) (I/F: Serial COM6)	Display unit	Fluorescent display tube
		Color	Green
		Number of digits	20 characters X 2 lines
	Optional I/O board	Serial	2 ports 9pin D-SUB ,male :COM3,4 is supported
		Parallel	1 port 25pin D-SUB ,female
		Drawer	1 port 6pin DIN
		Audio	1 port Line-out

1.2 I/O Panel Layout



1.3 Front Panel Layout



LED1	Power State	Shows Power Supply state Green : Power ON Red : Soft Off Orange : Battery Backup
LED2	LAN	Green: The light is on when accessing to LAN
LED3	HDD	Green: The light is on when accessing to HDD

1.4 I/O Port

1.4.1 Serial port COM1,COM2

9 pin D-SUB Male

PIN#	Signal	PIN#	Signal
1	CD	6	DSR
2	RD	7	RTS
3	TD	8	CTS
4	DTR	9	COM1:RI (default) / +5V / +12V COM2:RI
5	GND		

•By changing the setting of jumper pins on the Motherboard, the 9 pin D-SUB can receive either RI(default) or power supply(+5V / +12V , 3W). (COM1 only)

1.4.2 Serial port COM3,COM4 (Optional IO board)

9 pin D-SUB Male

PIN#	Signal	PIN#	Signal
1	CD	6	DSR
2	RD	7	RTS
3	TD	8	CTS
4	DTR	9	RI
5	GND		

1.4.3 Parallel port (Optional IO board)

25 pin D-SUB Female

PIN#	Signal	PIN#	Signal
1	STROBE*	14	AUTO FD XT*
2	Data Bit 0	15	ERROR*
3	Data Bit 1	16	INIT*
4	Data Bit 2	17	SLCT IN*
5	Data Bit 3	18	GND
6	Data Bit 4	19	GND
7	Data Bit 5	20	GND
8	Data Bit 6	21	GND
9	Data Bit 7	22	GND
10	ACK*	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

1.4.4 Video

15 pin D-SUB Female

PIN#	Signal	PIN#	Signal
1	Red	9	NC
2	Green	10	GND
3	Blue	11	ID
4	ID	12	ID
5	GND	13	H-Sync
6	GND	14	V-Sync
7	GND	15	ID
8	GND		

1.4.5 Ethernet

8 pin Modular (RJ-45)

PIN#	Signal	PIN#	Signal
1	TX+	5	NC
2	TX-	6	RX-
3	RX+	7	NC
4	NC	8	NC

1.4.6 USB

USB Connector

PIN#	Signal	PIN#	Signal
1	+5V	3	Data +
2	Data -	4	GND

1.4.7 Cash Drawer

6 pin DIN Female

PIN#	Signal	PIN#	Signal
1	Drawer Open	4	GND
2	GND	5	Drawer Type
3	Drawer Status	6	GND

1.5 Resource map

1.5.1 Memory

00000000-0009FFFF	Main-RAM
000A0000-000BFFFF	Video RAM
000C0000-000CFFFF	Video BIOS
000E0000-000FFFFF	System BIOS
00100000-	External RAM

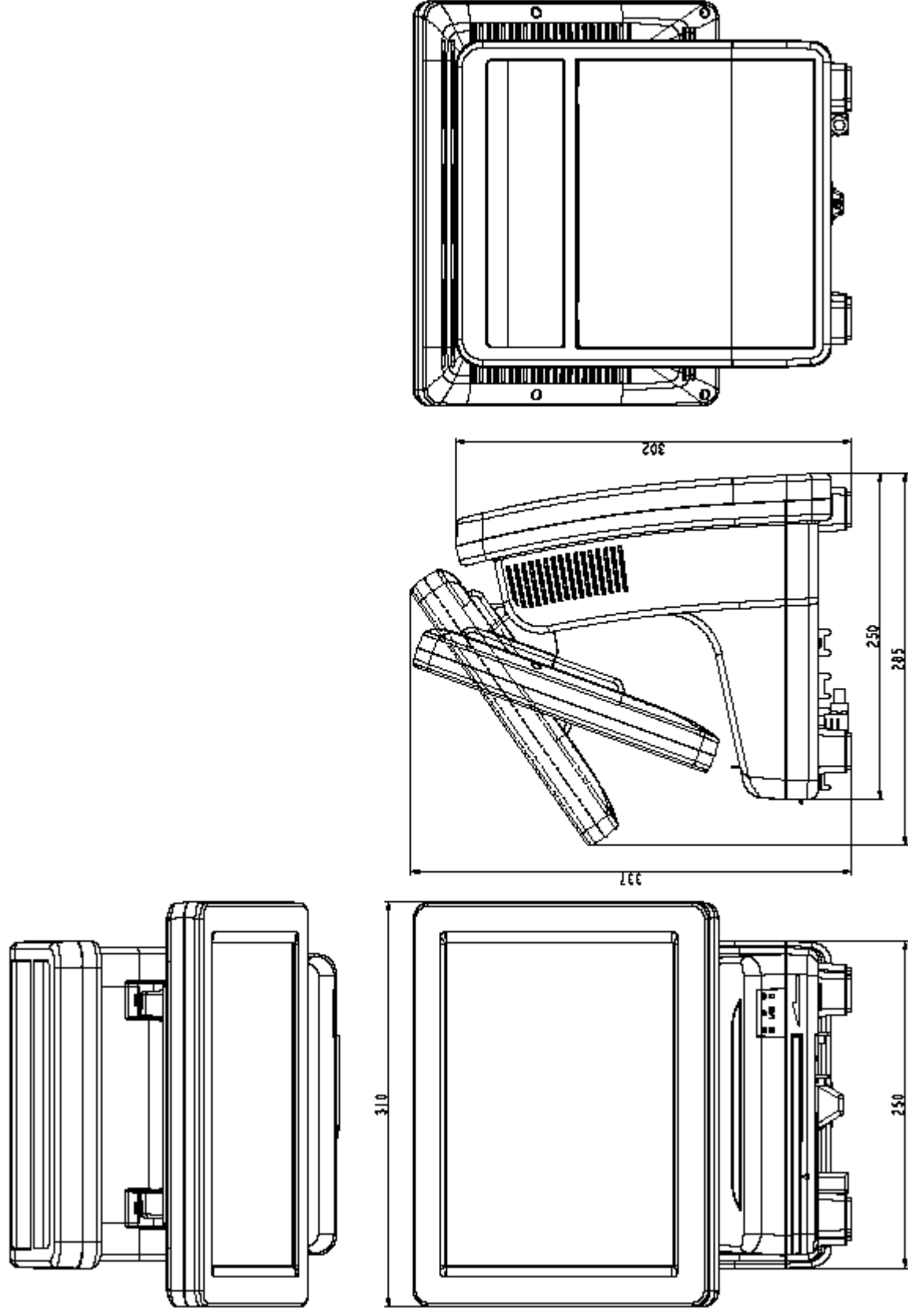
1.5.2 IO

0x0000-0x001F	DMA controller
0x0020-0x0021	Interrupt controller
0x0040-0x0043	System Timer
0x0060-0x0064	Keyboard controller
0x0070-0x0071	System CMOS/Real Time clock
0x0081-0x008F	DMA controller
0x00A1-0x00A1	Interrupt controller
0x00C0-0x00DF	DMA controller
0x01F0-0x01F8	Primary IDE channel
0x0220-0x0227	Serial port (COM5)
0x0228-0x022F	Serial port (COM6)
0x02E8-0x02EF	Serial port (COM4)
0x02F8-0x02FF	Serial port (COM2)
0x0378-0x037F	Parallel port (LPT1)
0x03B0-0x03BB	Graphics Controller
0x03E8-0x03EF	Serial port (COM3)
0x03F8-0x03FF	Serial port (COM1)
0x0800	Super I/O base Address

1.5.3 IRQ

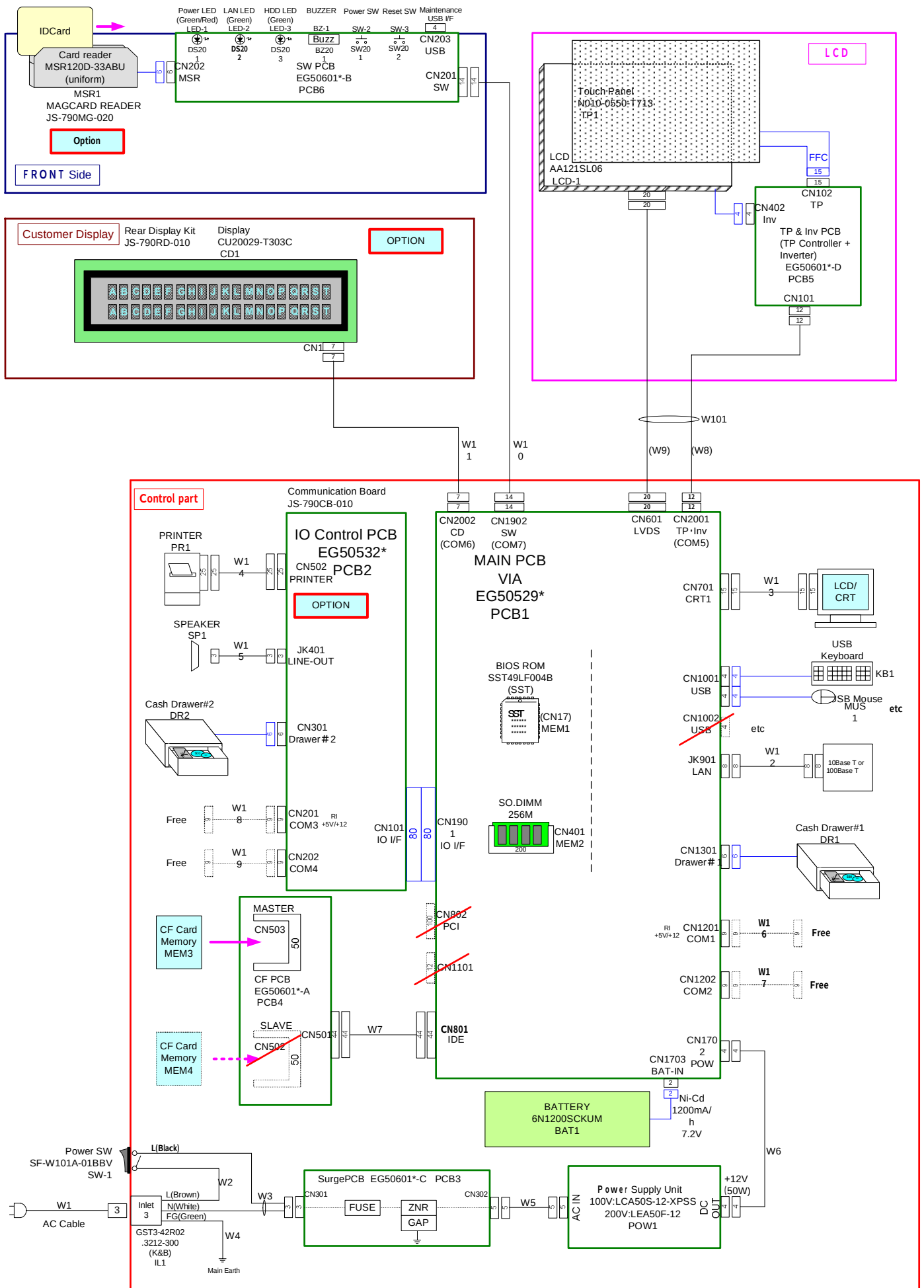
0	System Timer
1	KBD
2	Cascade
3	COM2
4	COM1
5	Parallel Port
6	COM5
7	COM6
8	CMOS/RTC
9	PCI (LAN or other PCI device)
10	COM4
11	COM3
12	Mouse
13	Coprocessor
14	IDE-Primary
15	IDE-Secondary

1.6 JS-790WS External Cahrt



1.7 JS-790WS-U10 Block Chart

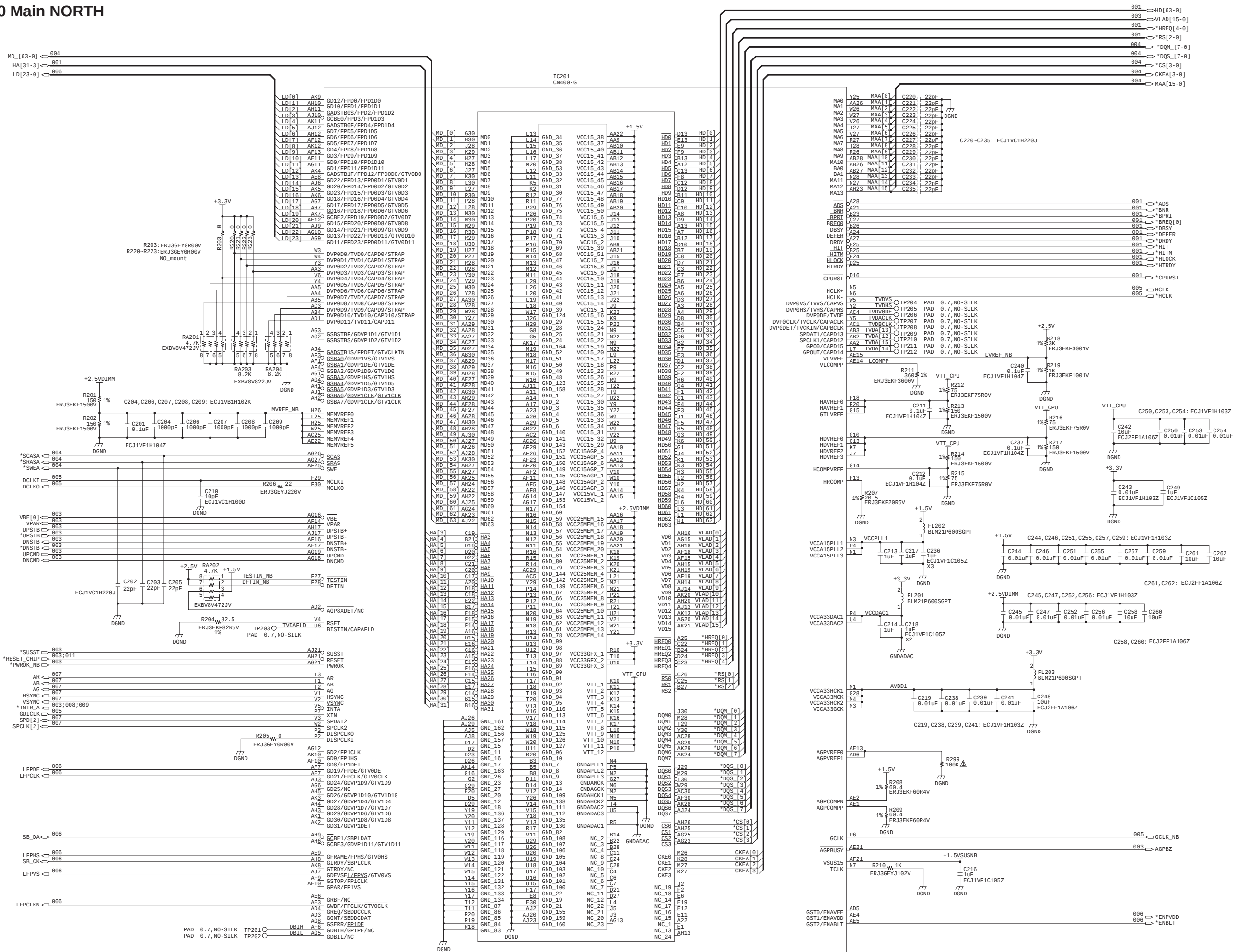
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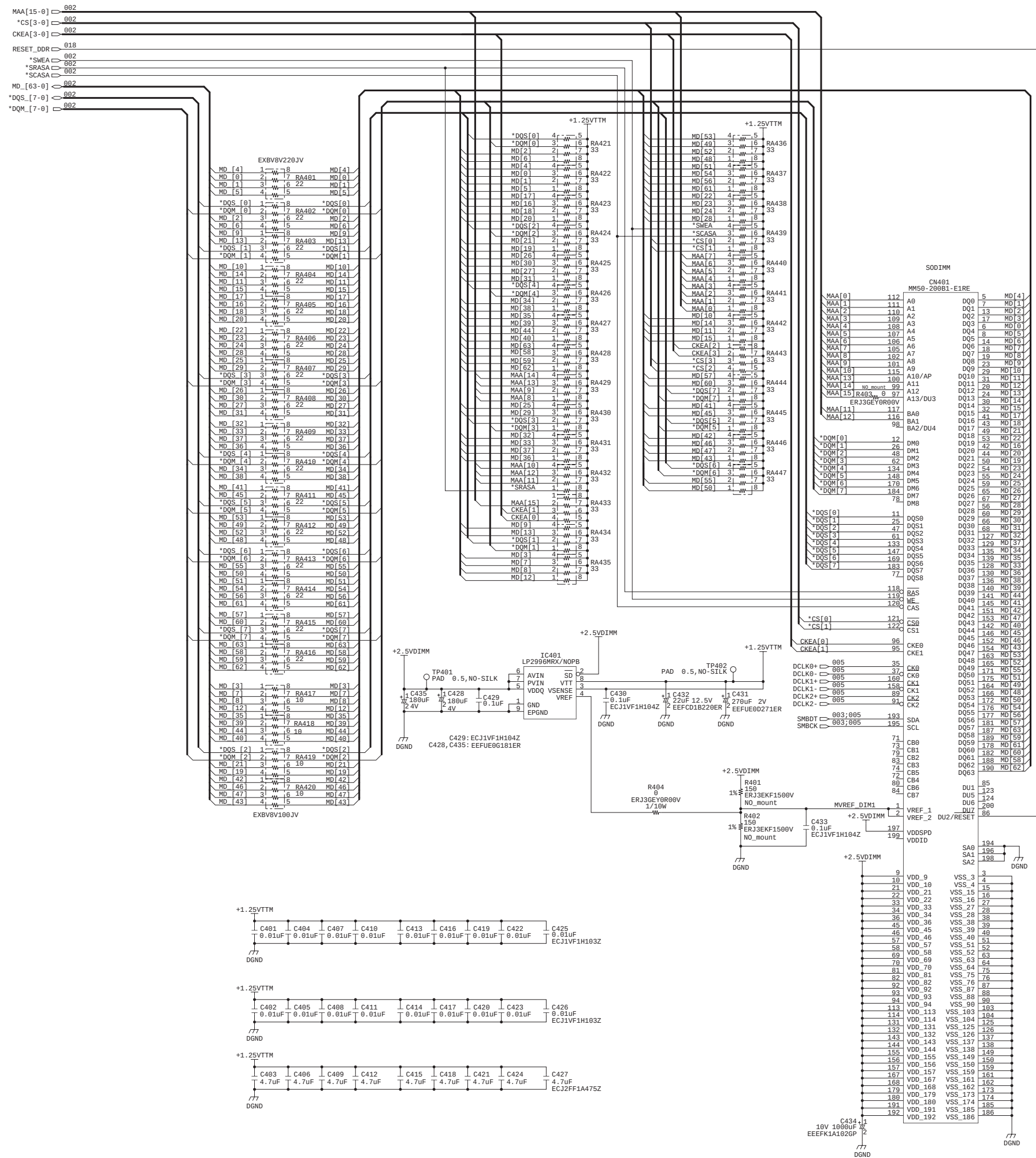
2.1.1 JS-790 Main CPU

ESP8000

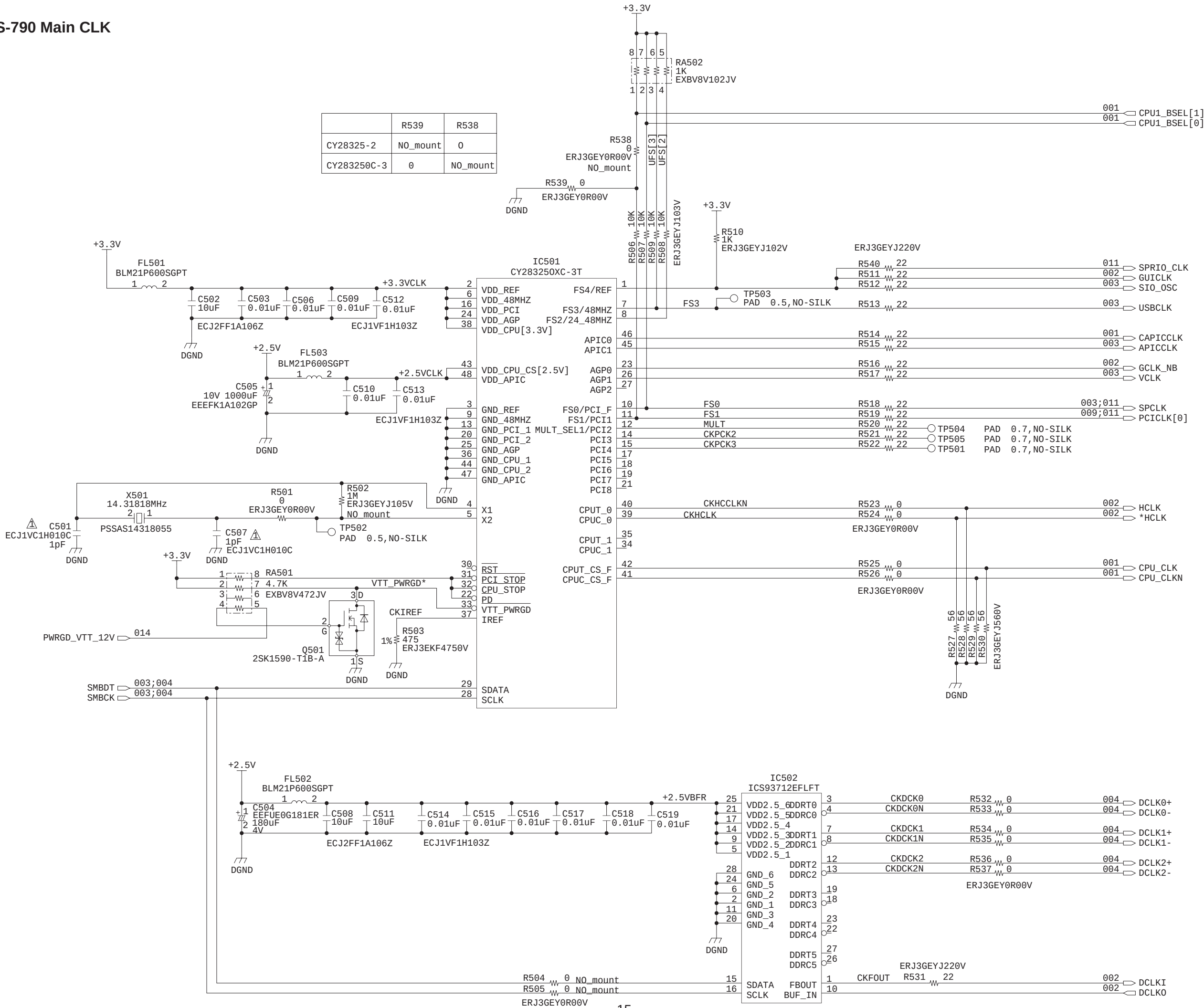
2.1.2 JS-790 Main NORTH



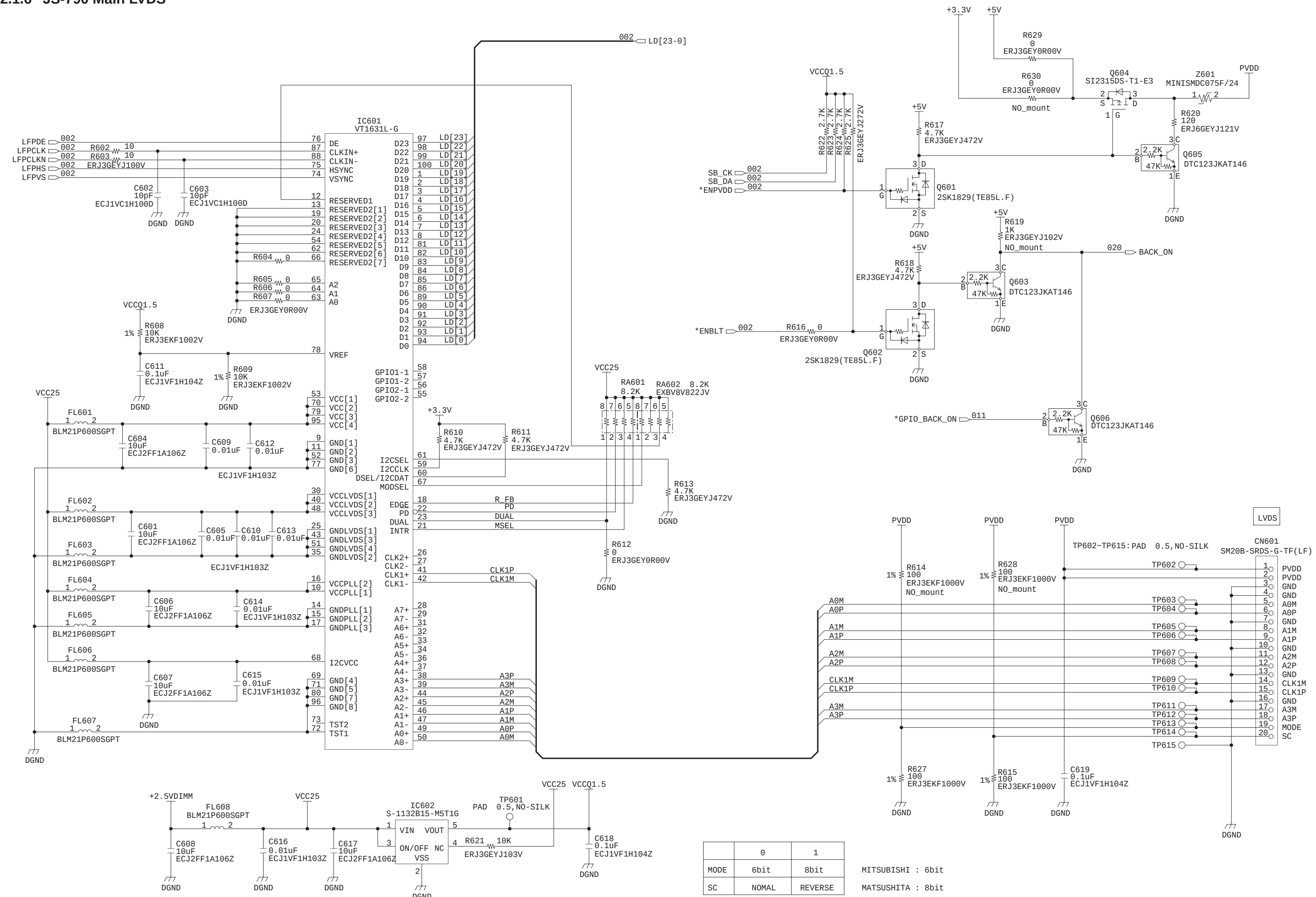
2.1.4 JS-790 Main MEMORY SLOT



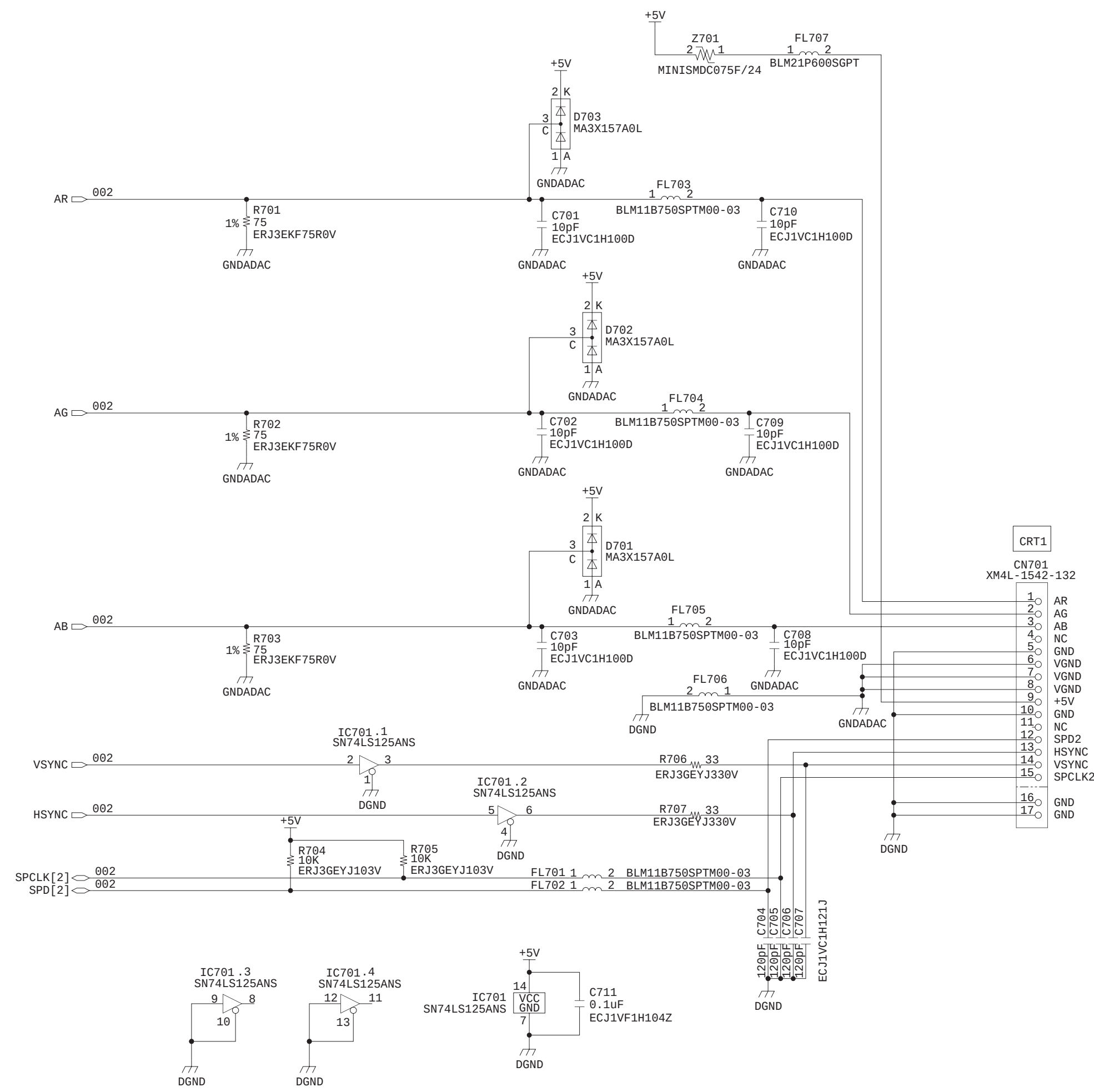
2.1.5 JS-790 Main CLK



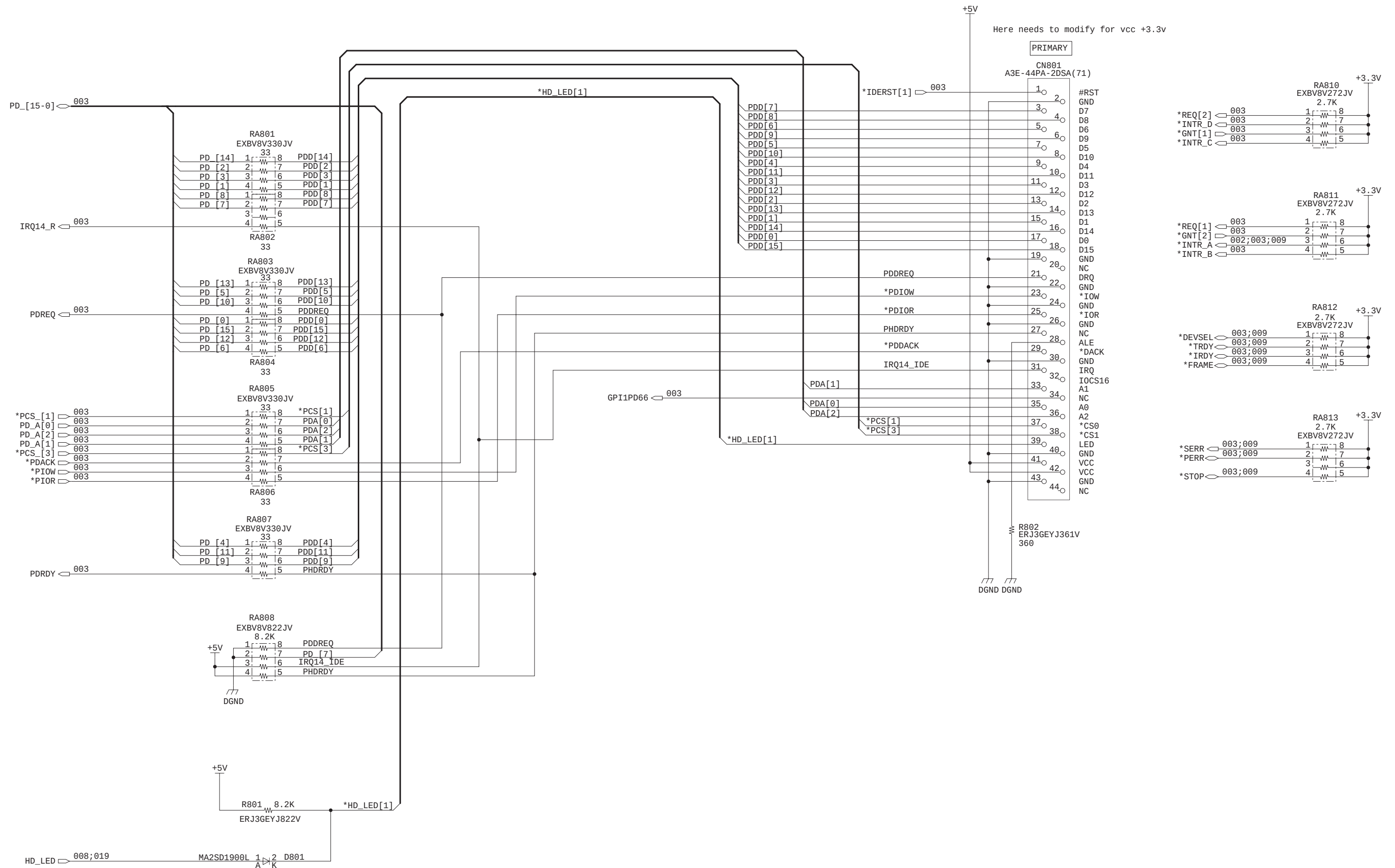
2.1.6 JS-790 Main LVDS



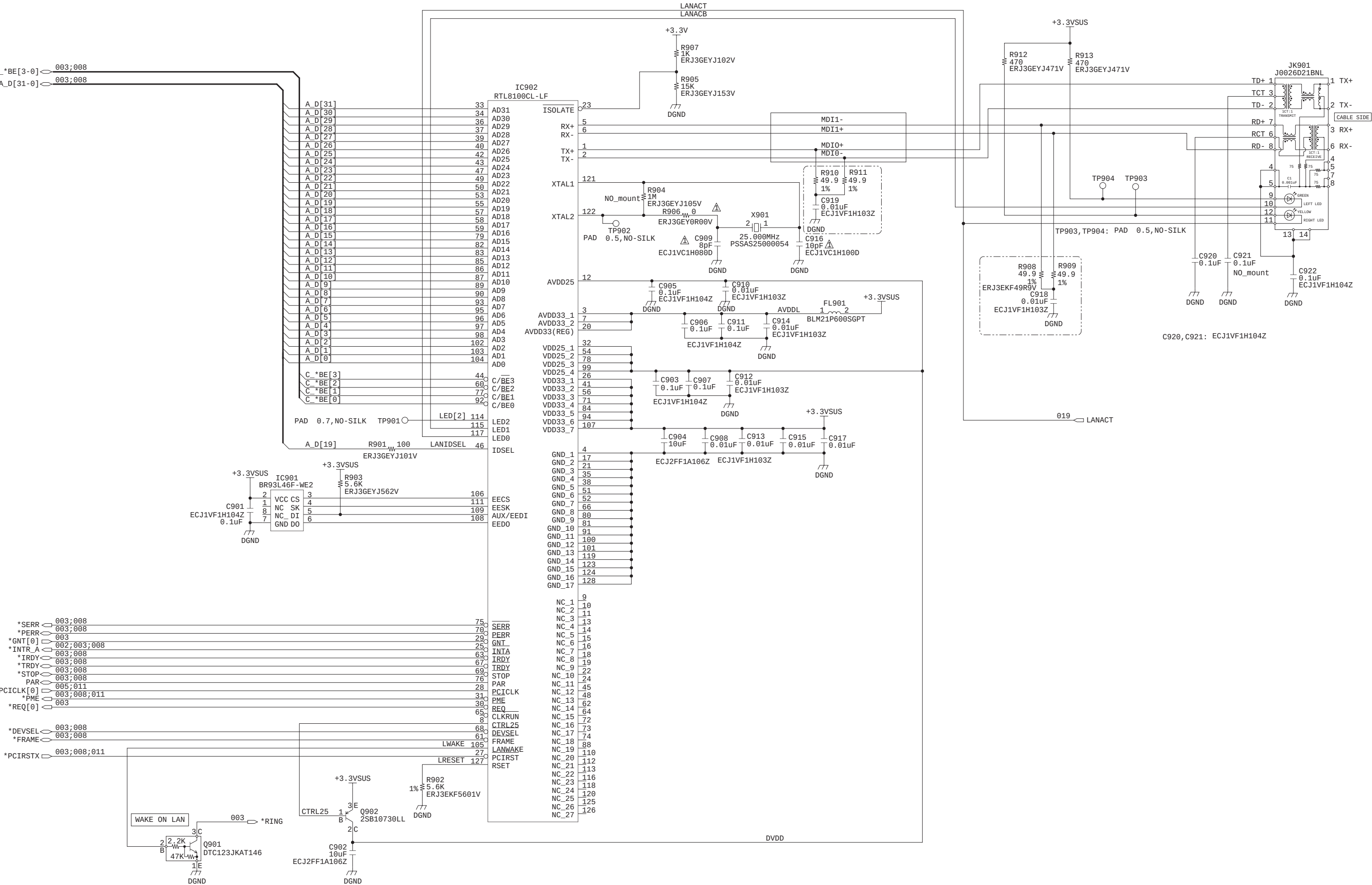
2.1.7 JS-790 Main CRT



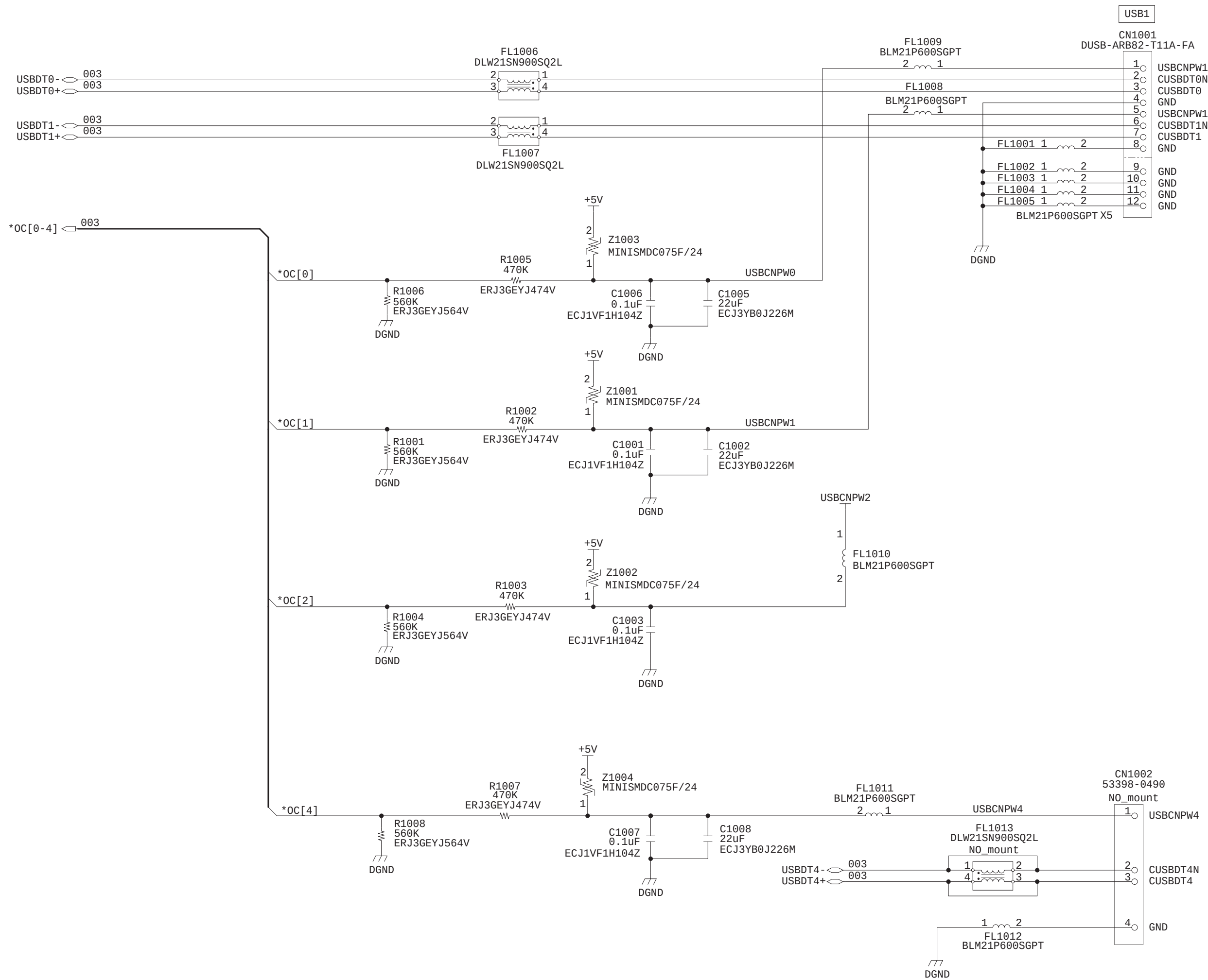
2.1.8 JS-790 Main IDE & PCI



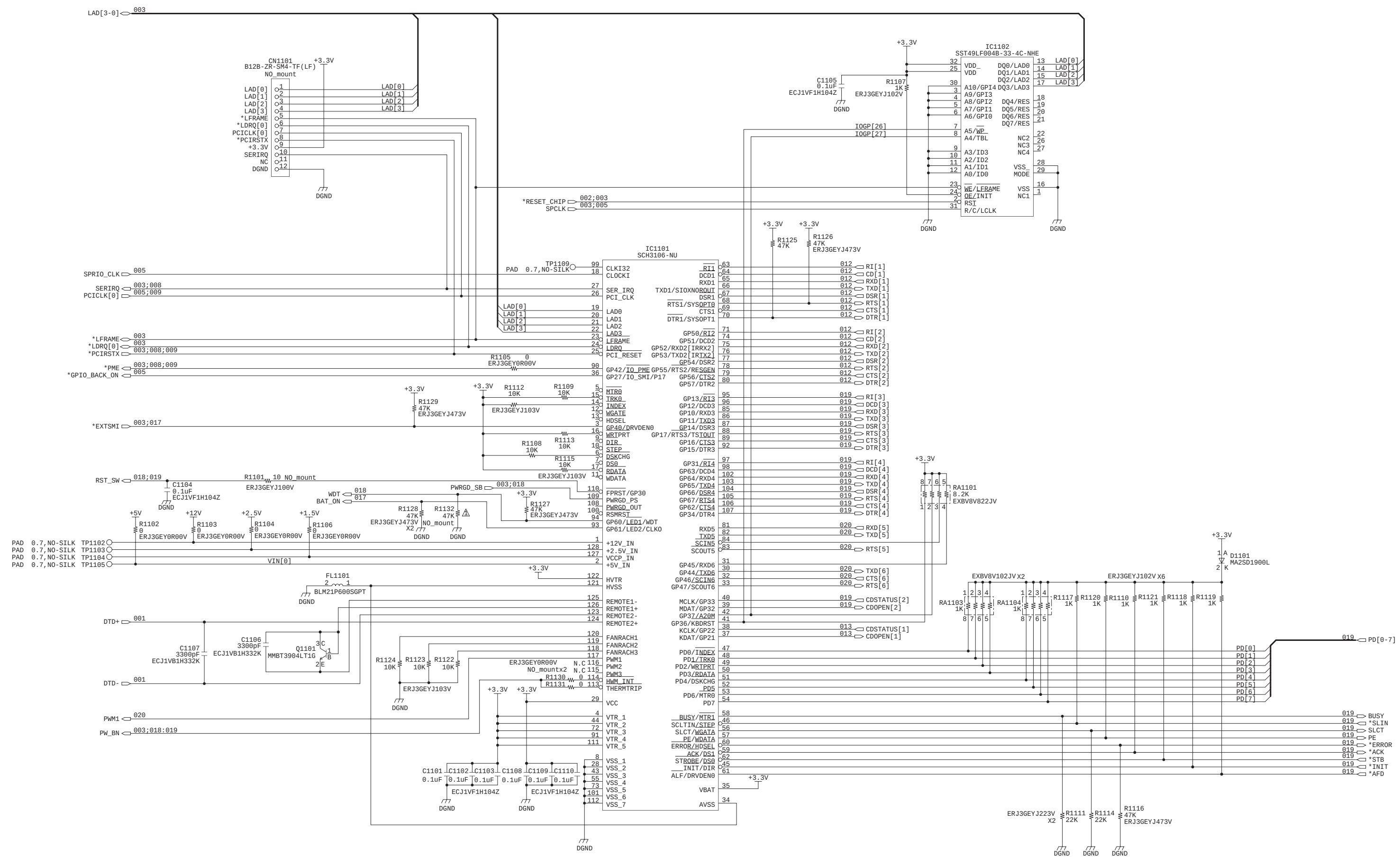
2.1.9 JS-790 Main LAN



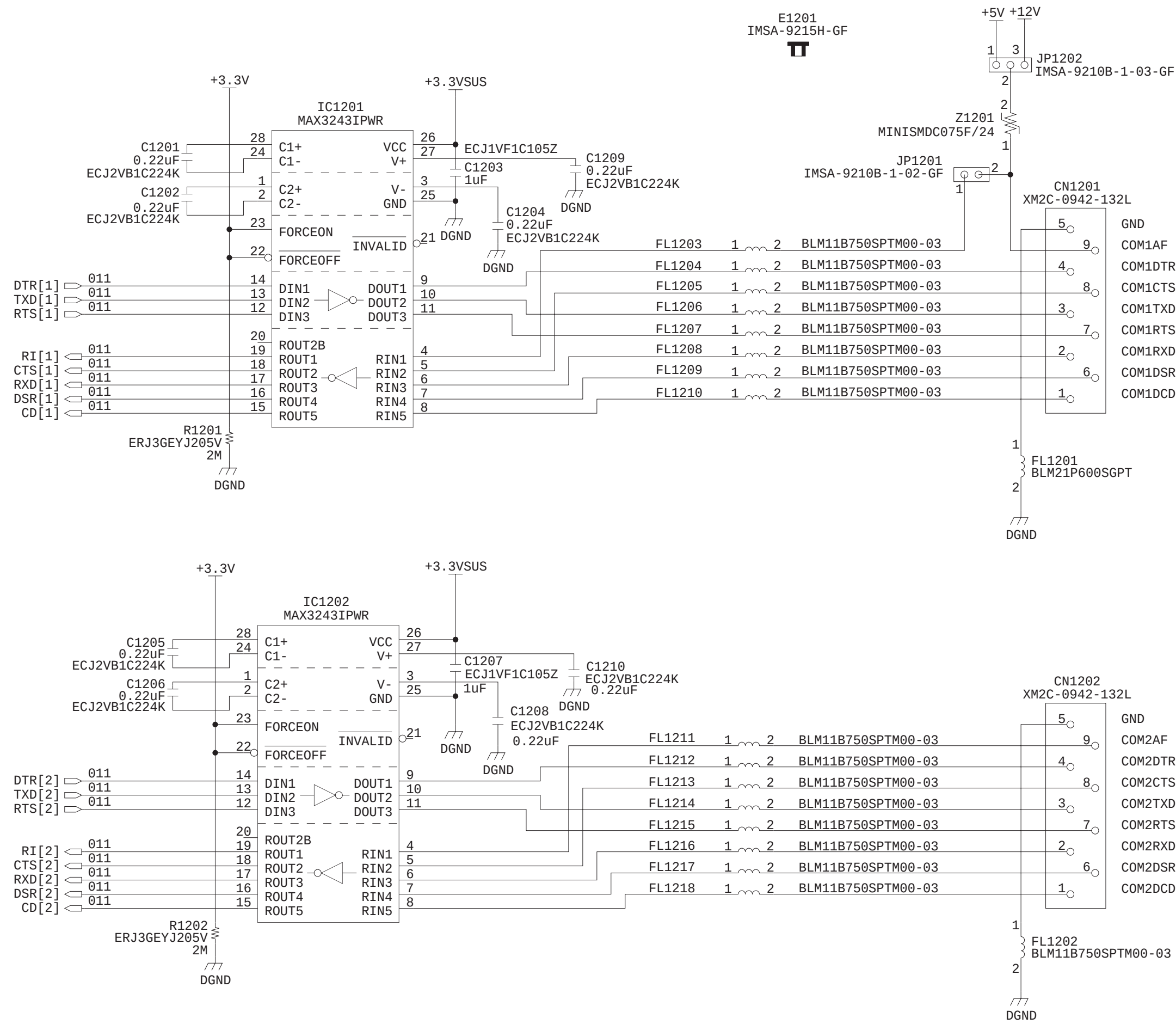
2.1.10 JS-790 Main USB



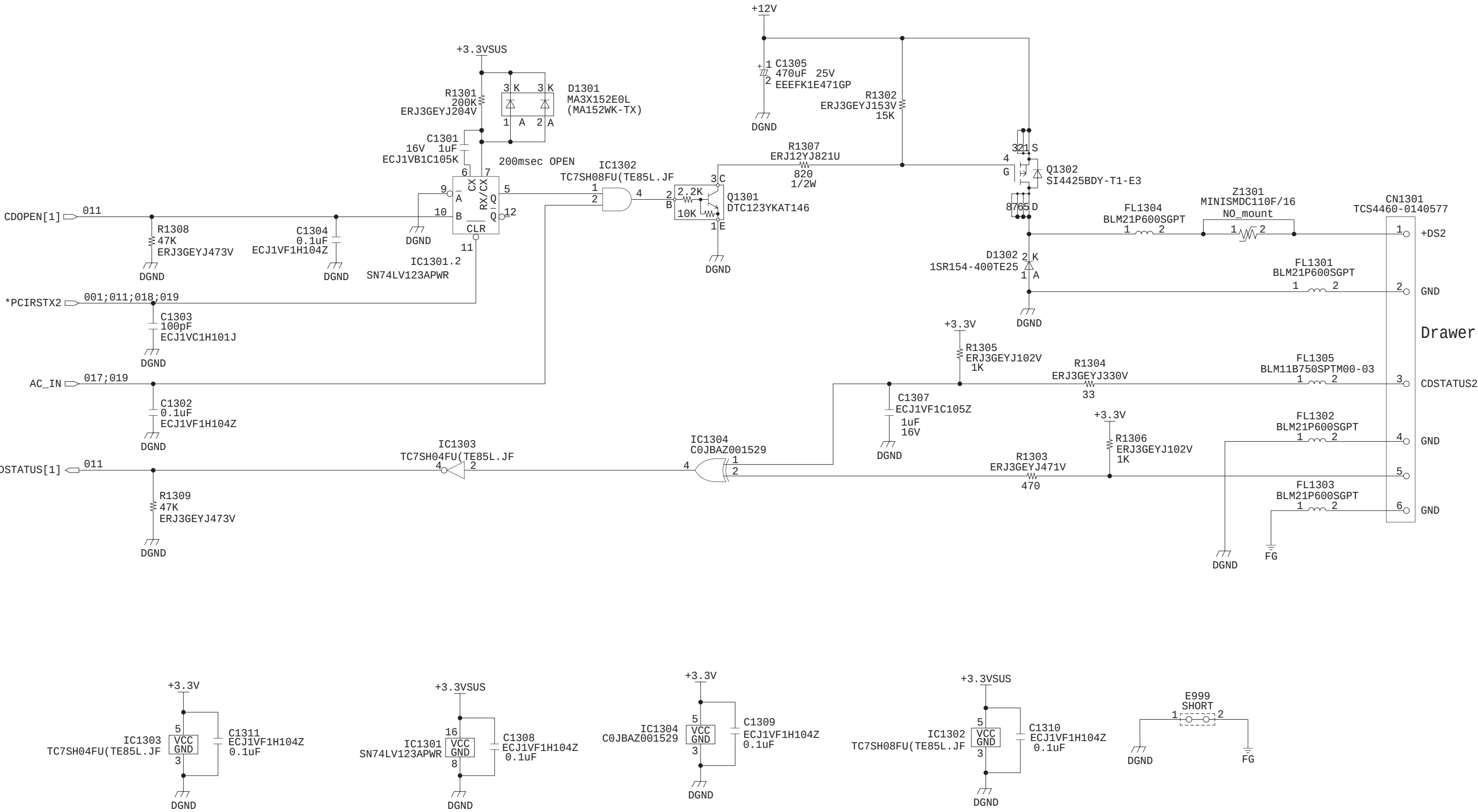
2.1.11 JS-790 Main SUPER I/O



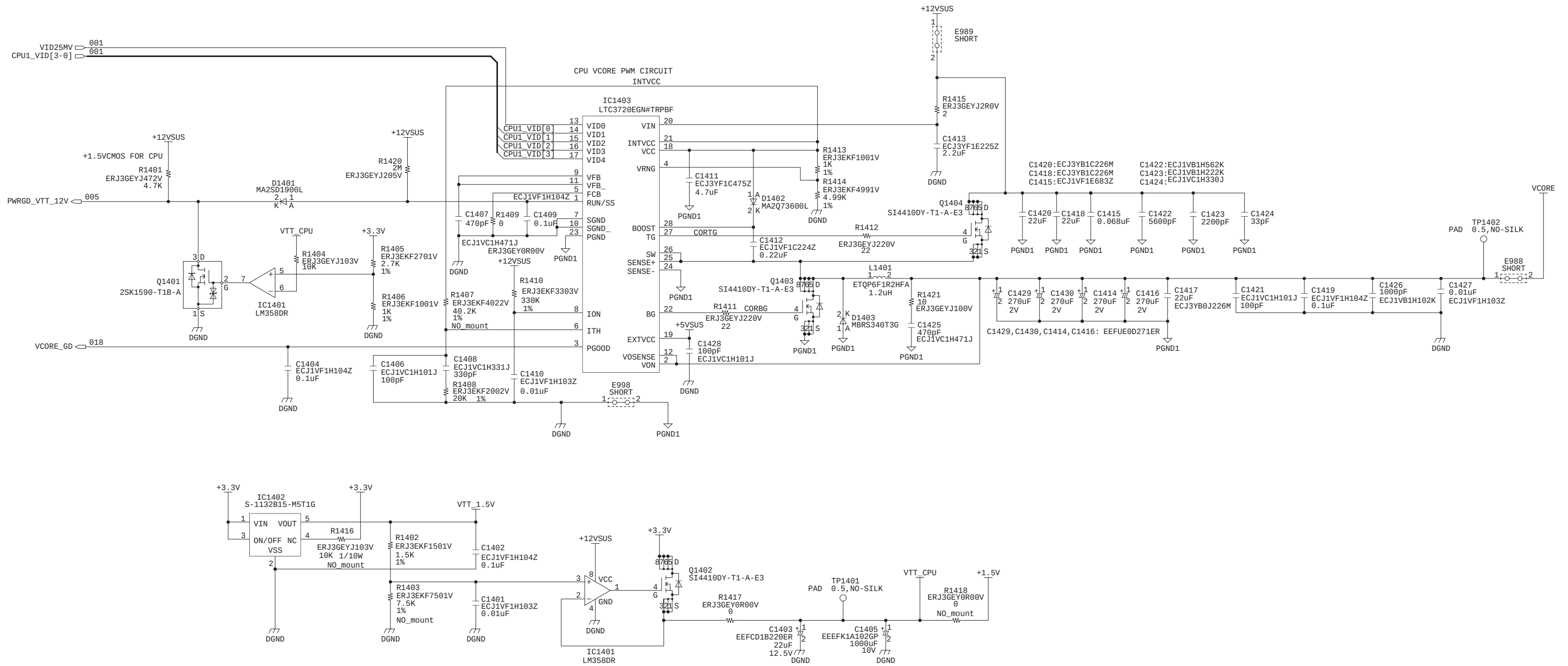
2.1.12 JS-790 Main COM



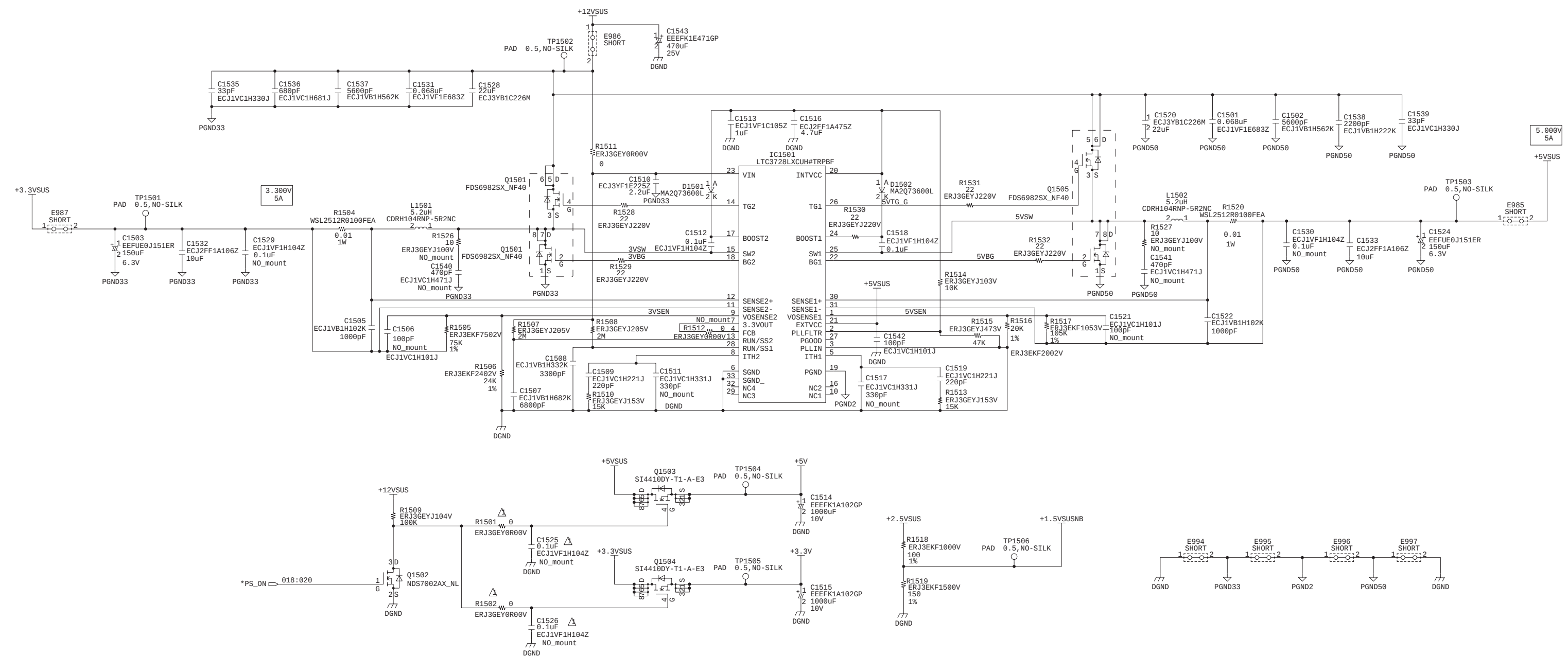
2.1.13 JS-790 Main C/D



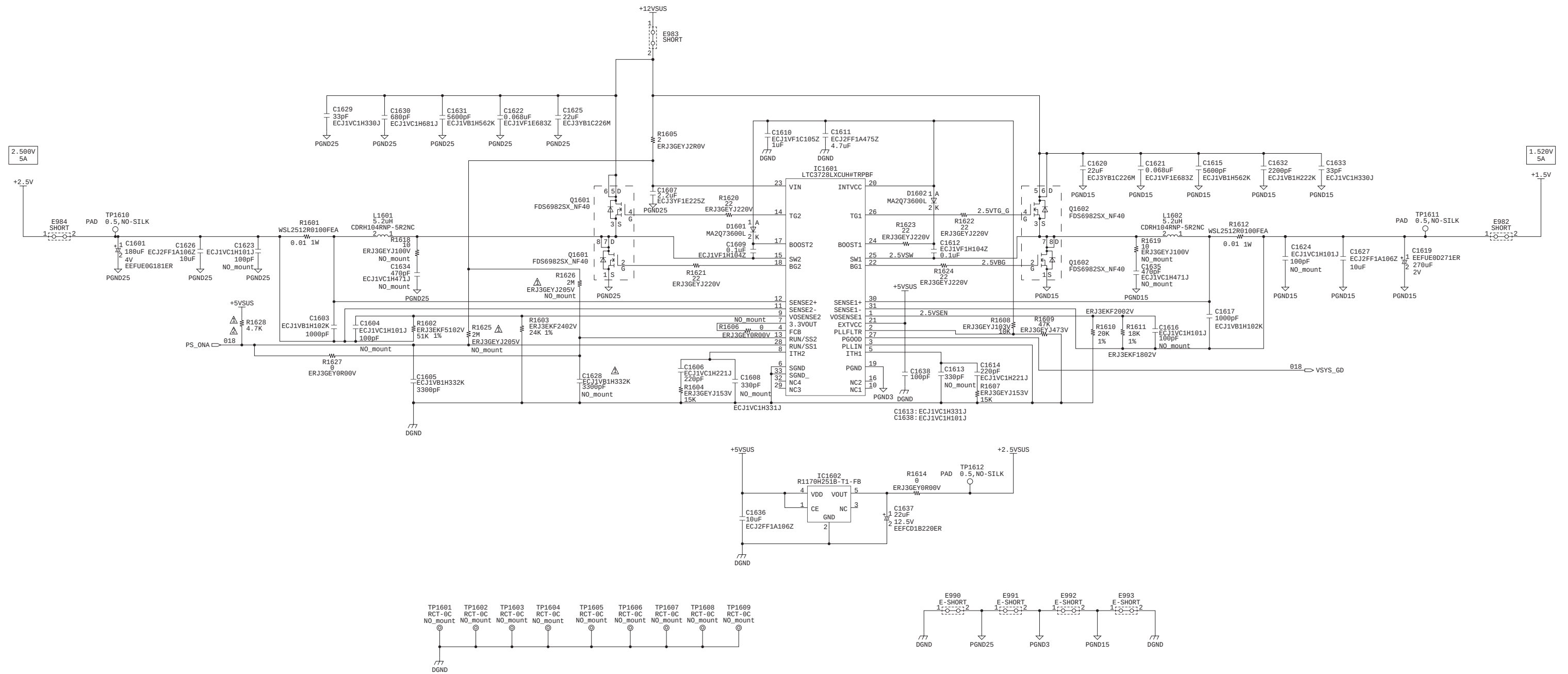
2.1.14 JS-790 Main POWER 1



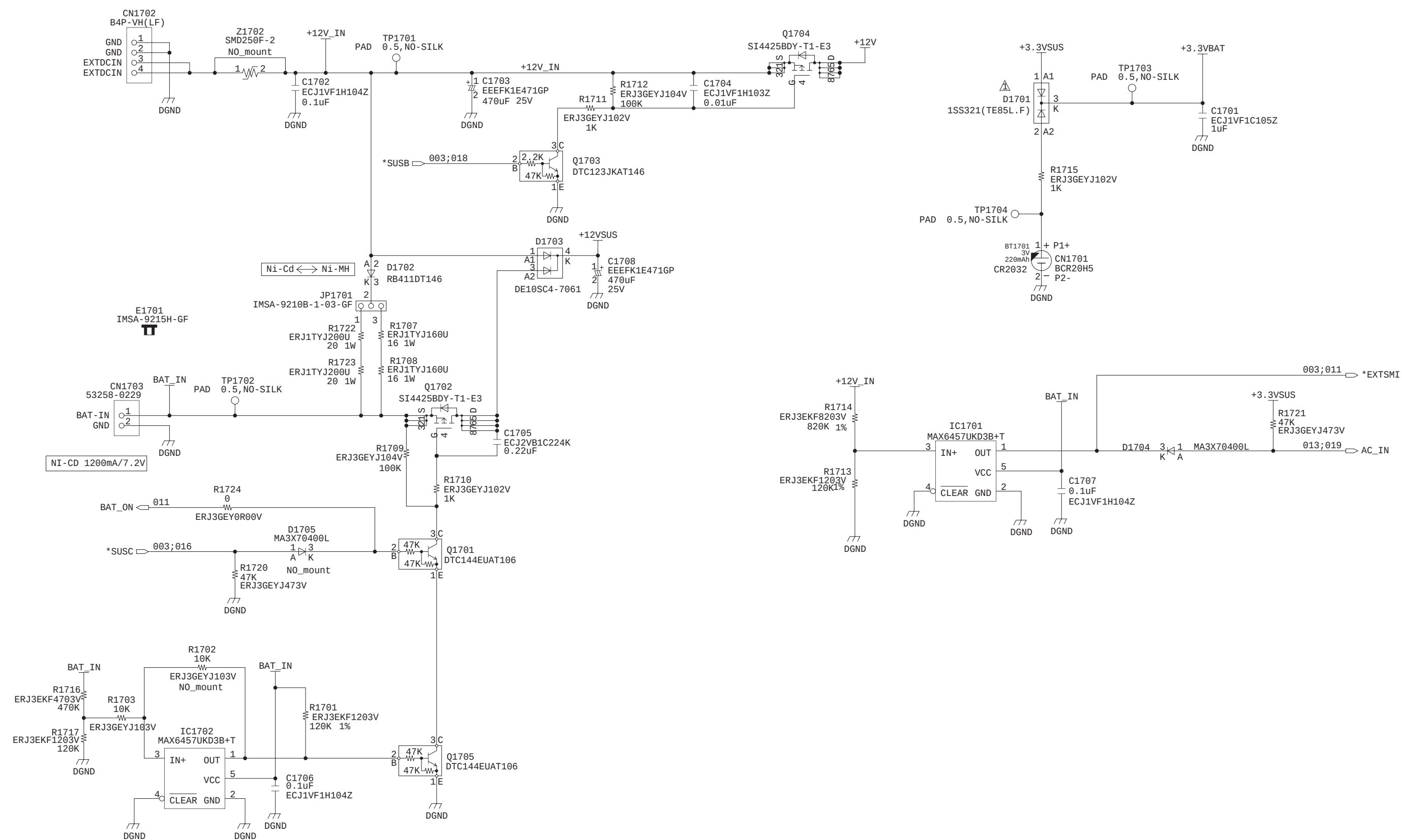
2.1.15 JS-790 Main POWER 2



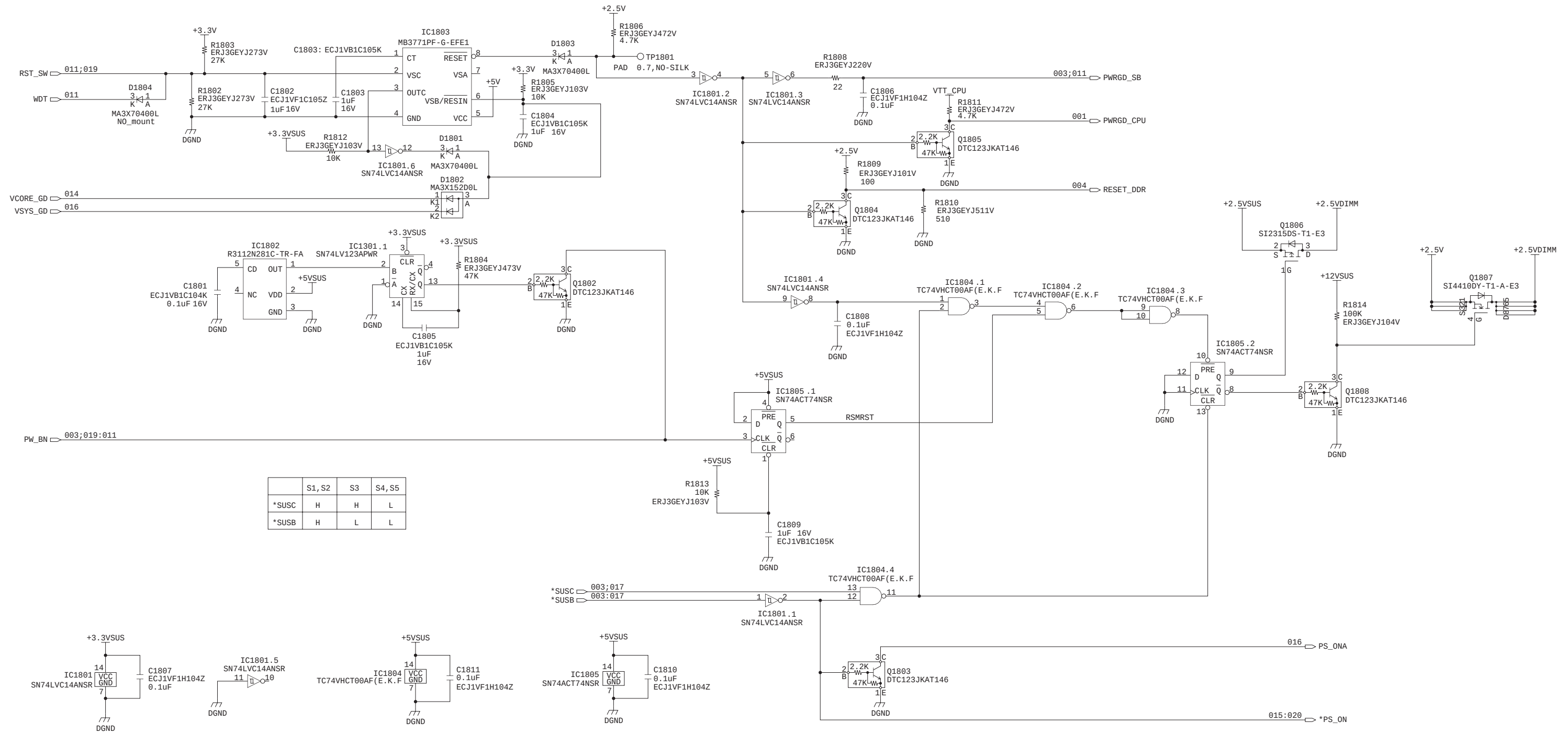
2.1.16 JS-790 Main POWER 3



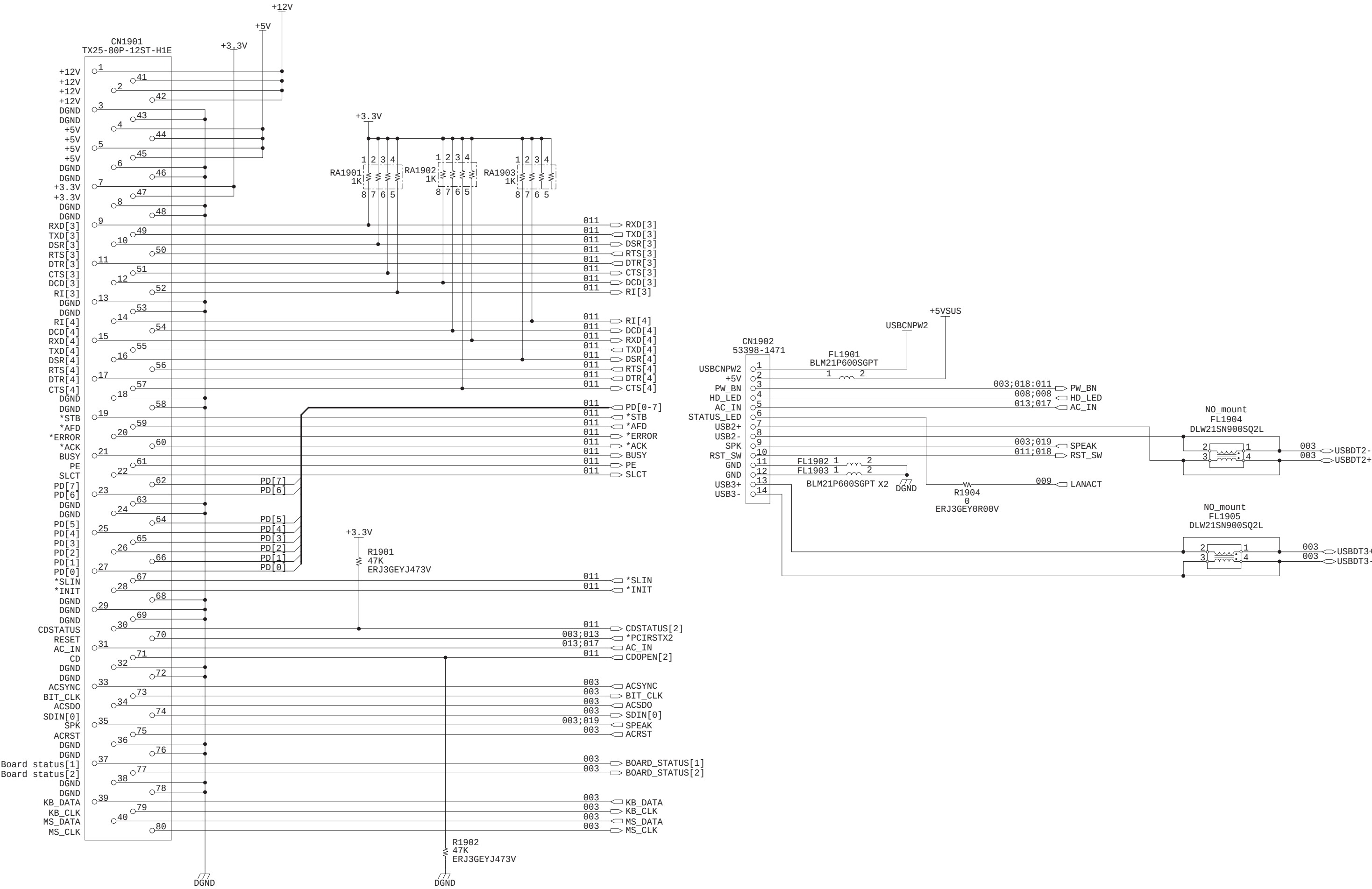
2.1.17 JS-790 Main BATTERY



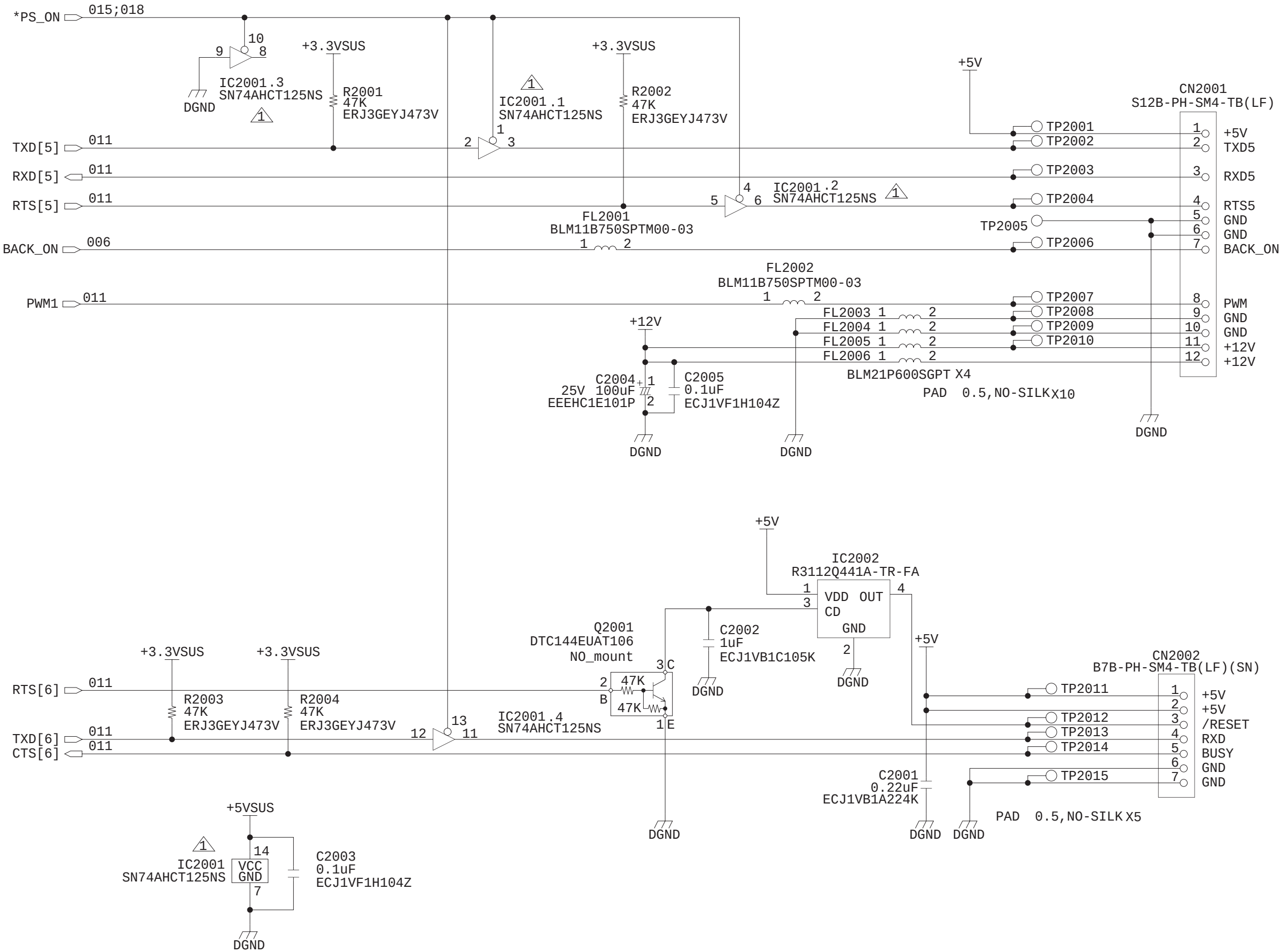
2.1.18 JS-790 Main RESET



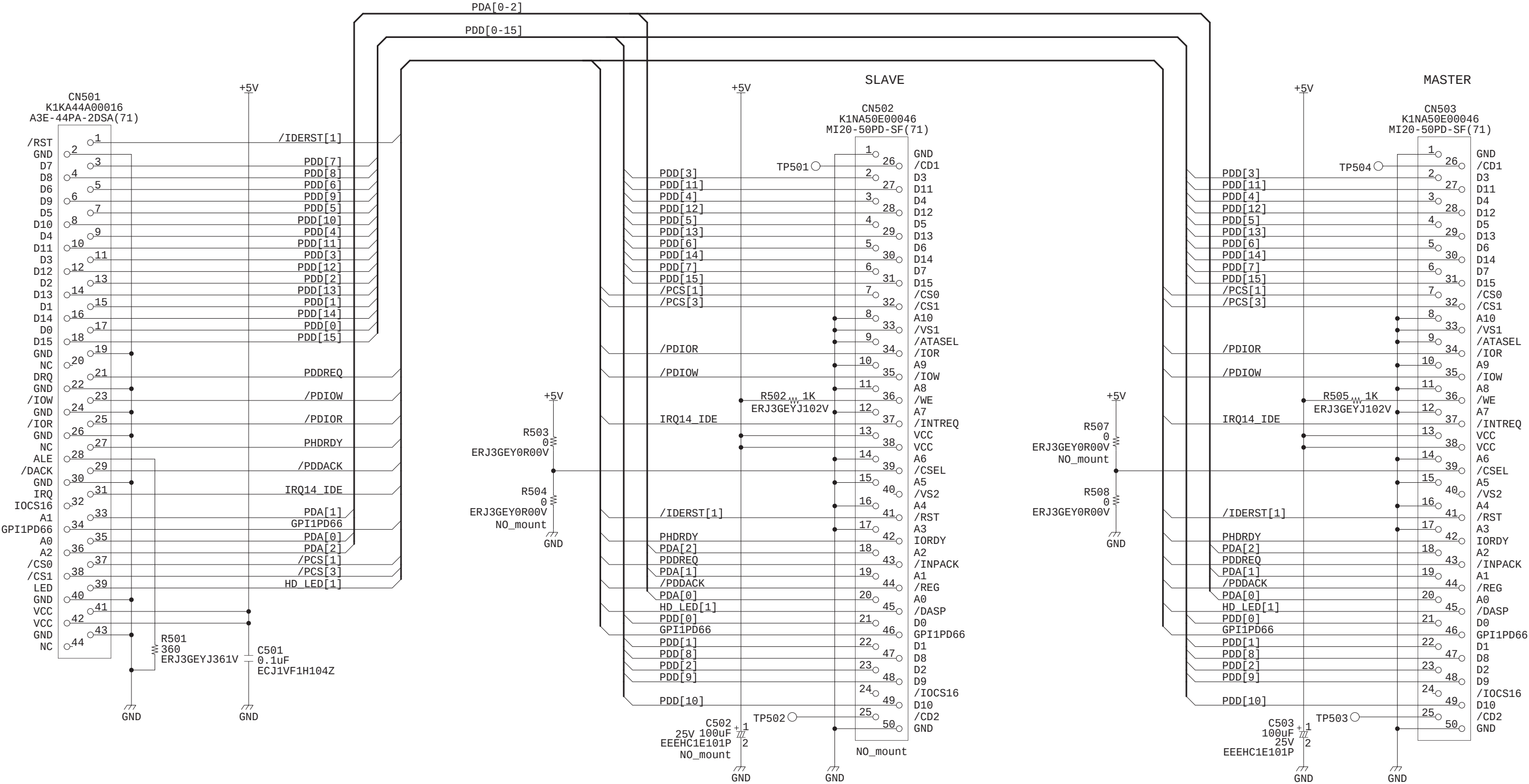
2.1.19 JS-790 Main IO I/F



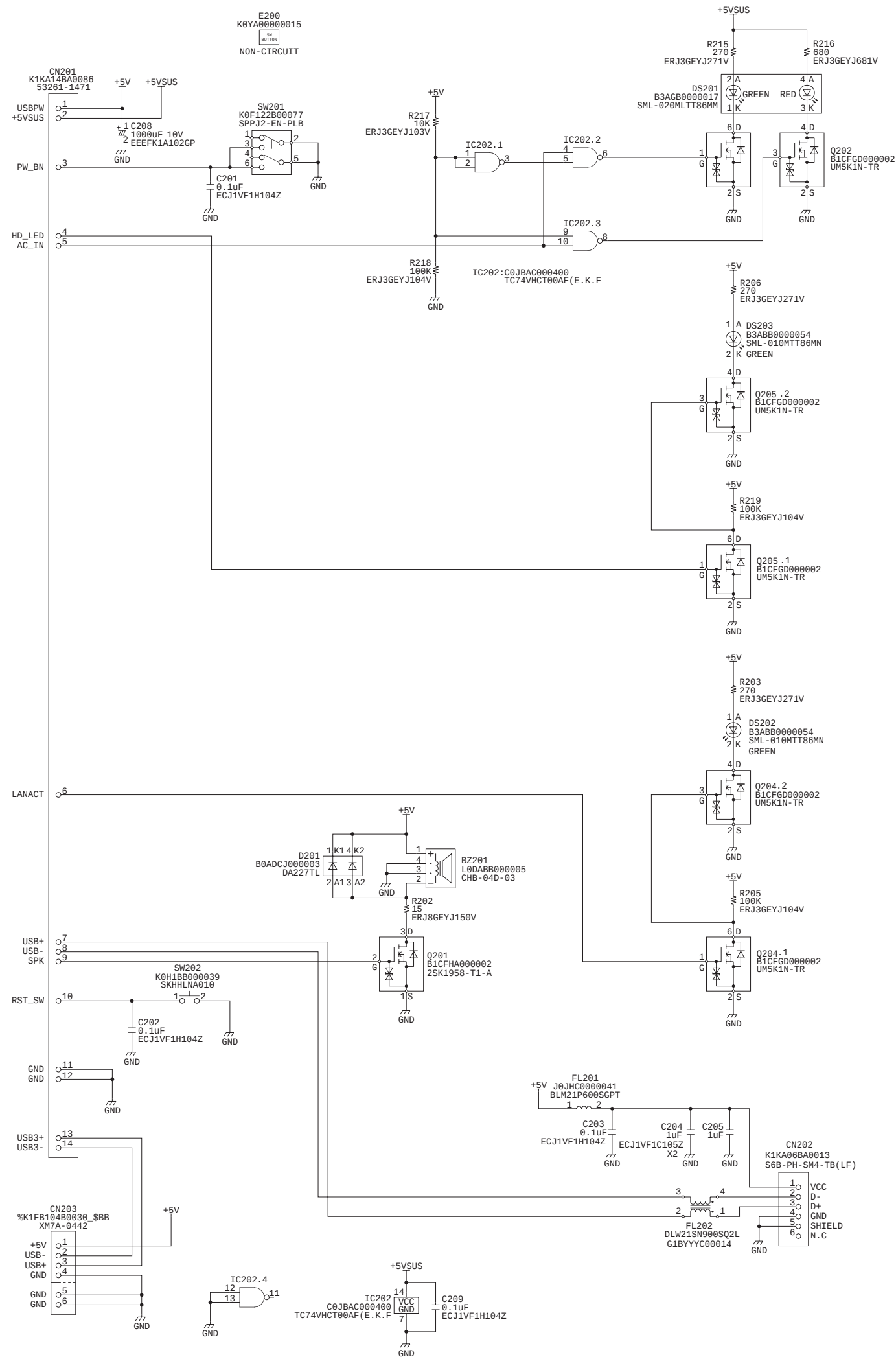
2.1.1.20 JS-790 Main CUSTOMER DISP

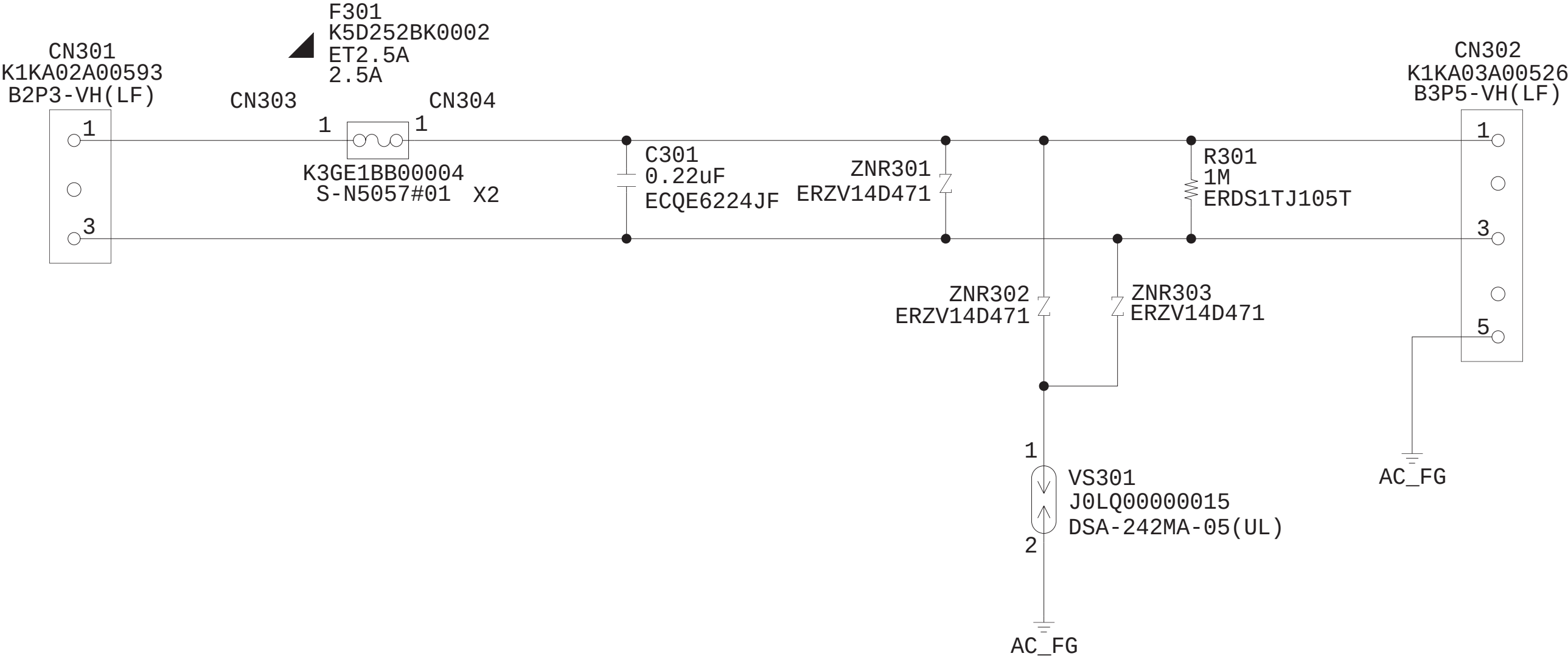


2.2 JS-790 CF

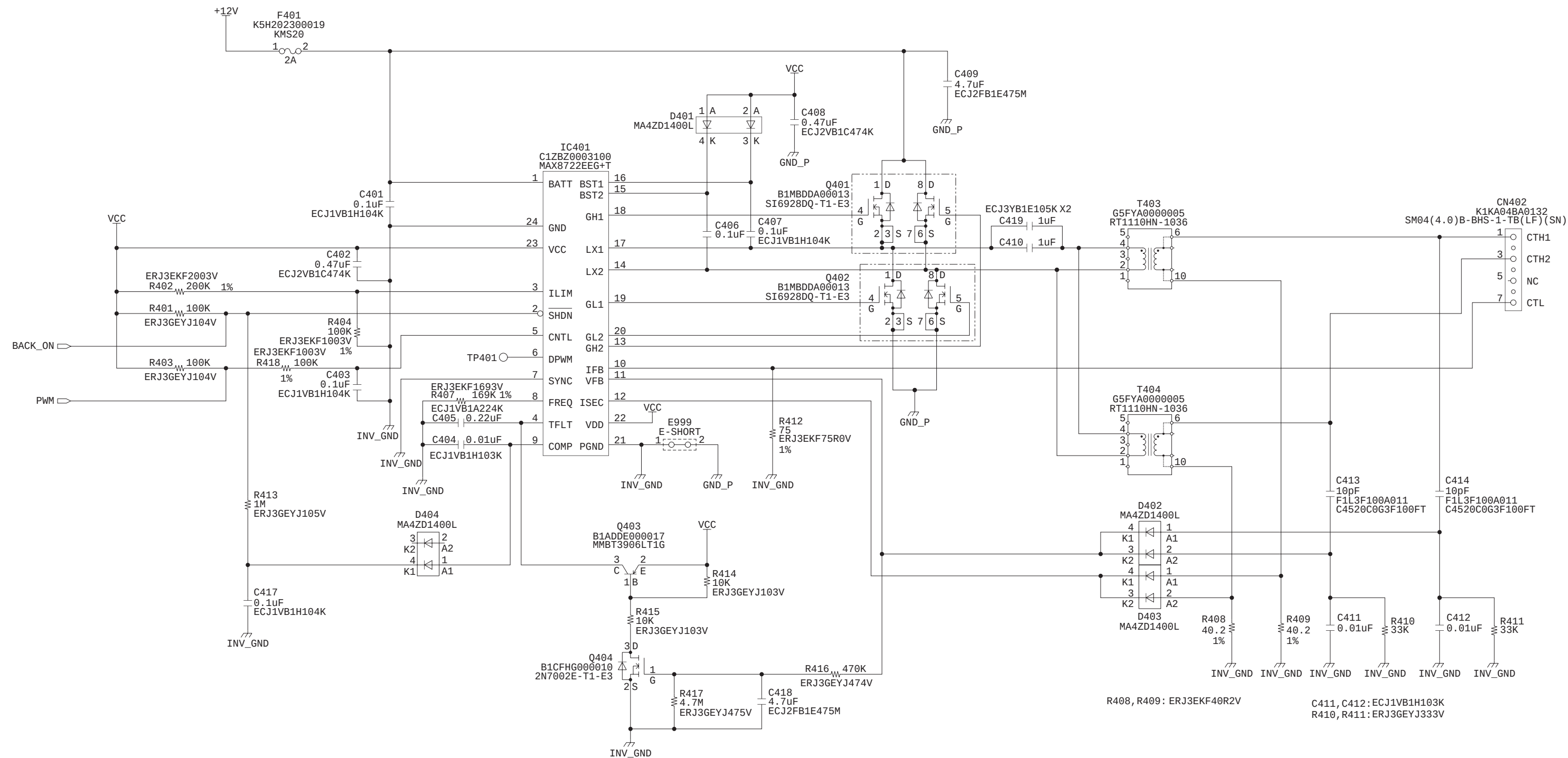


2.3 JS-790 SW

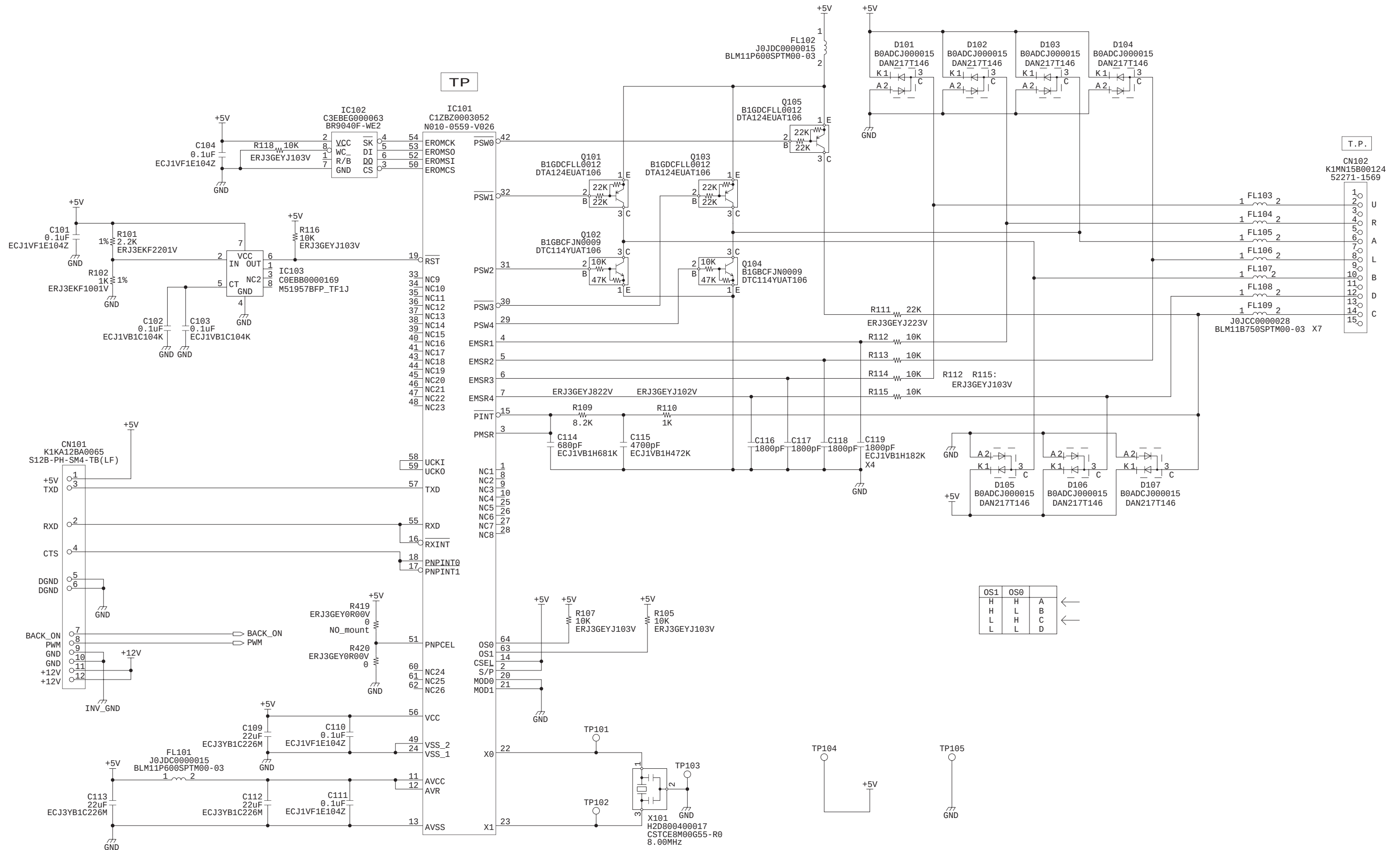




2.5 JS-790 SURGE

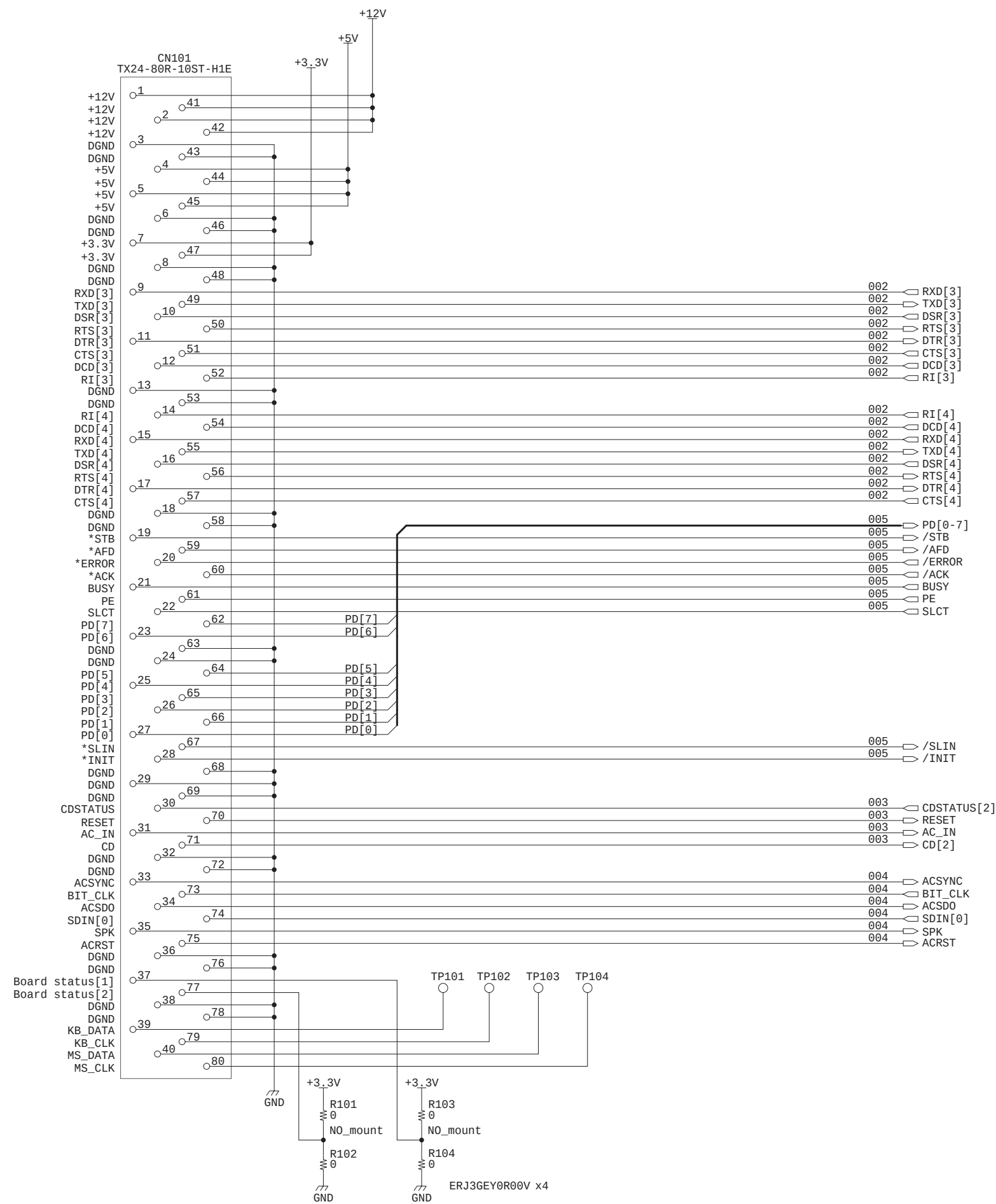


2.6 JS-790 TP

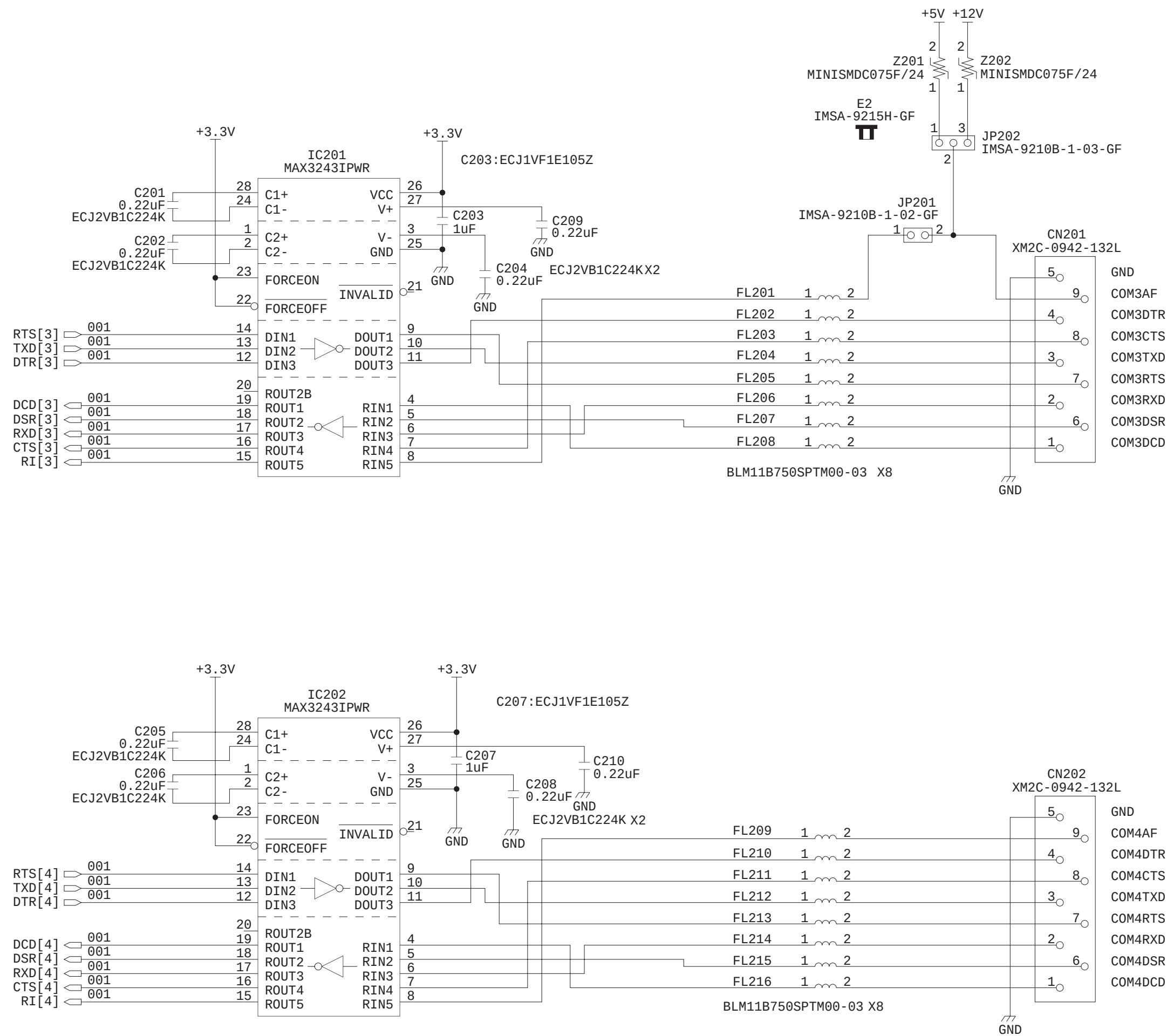


2.7 JS-790 OP-CB

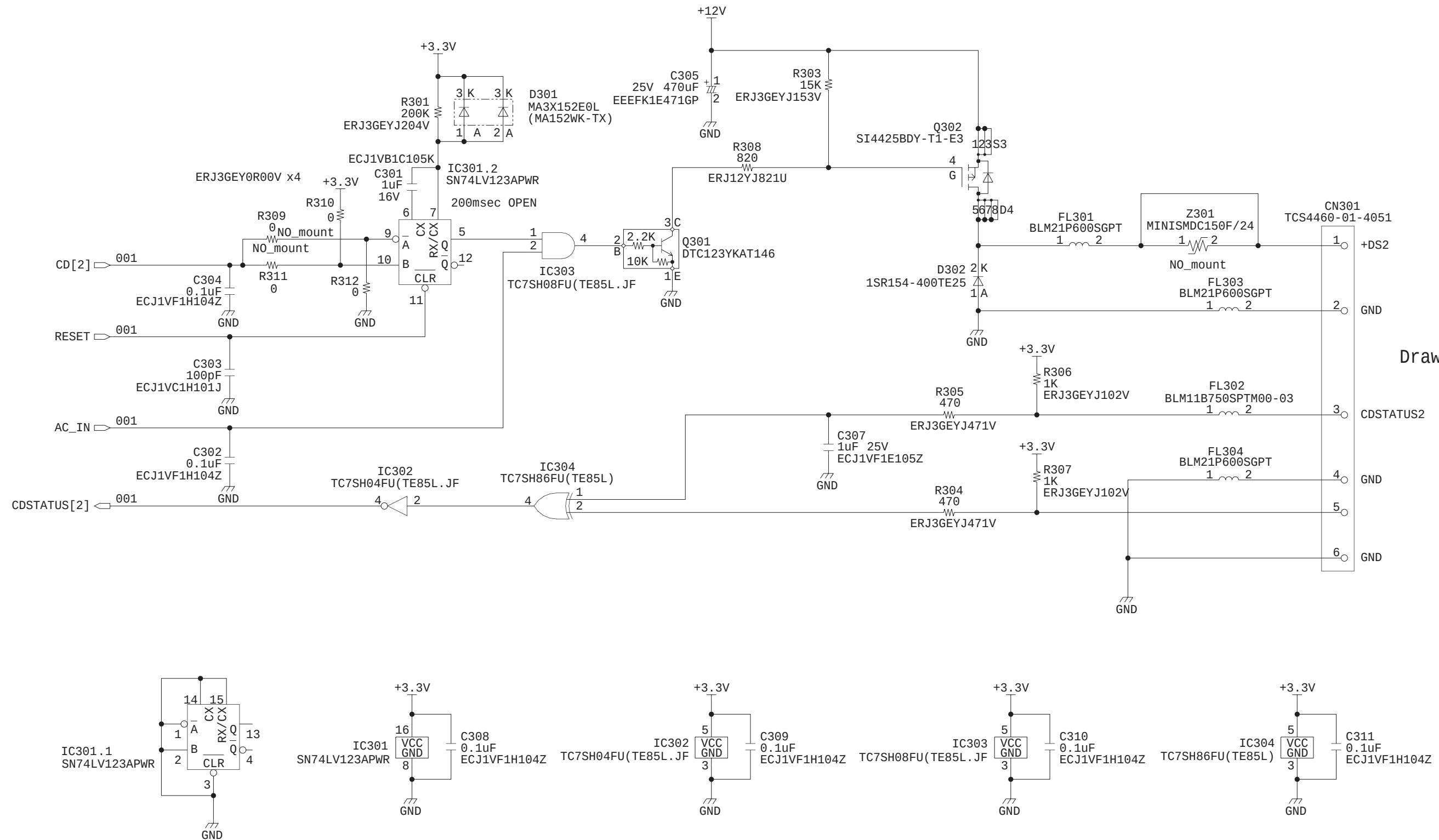
2.7.1 JS-790 OP-CB OP-CB1



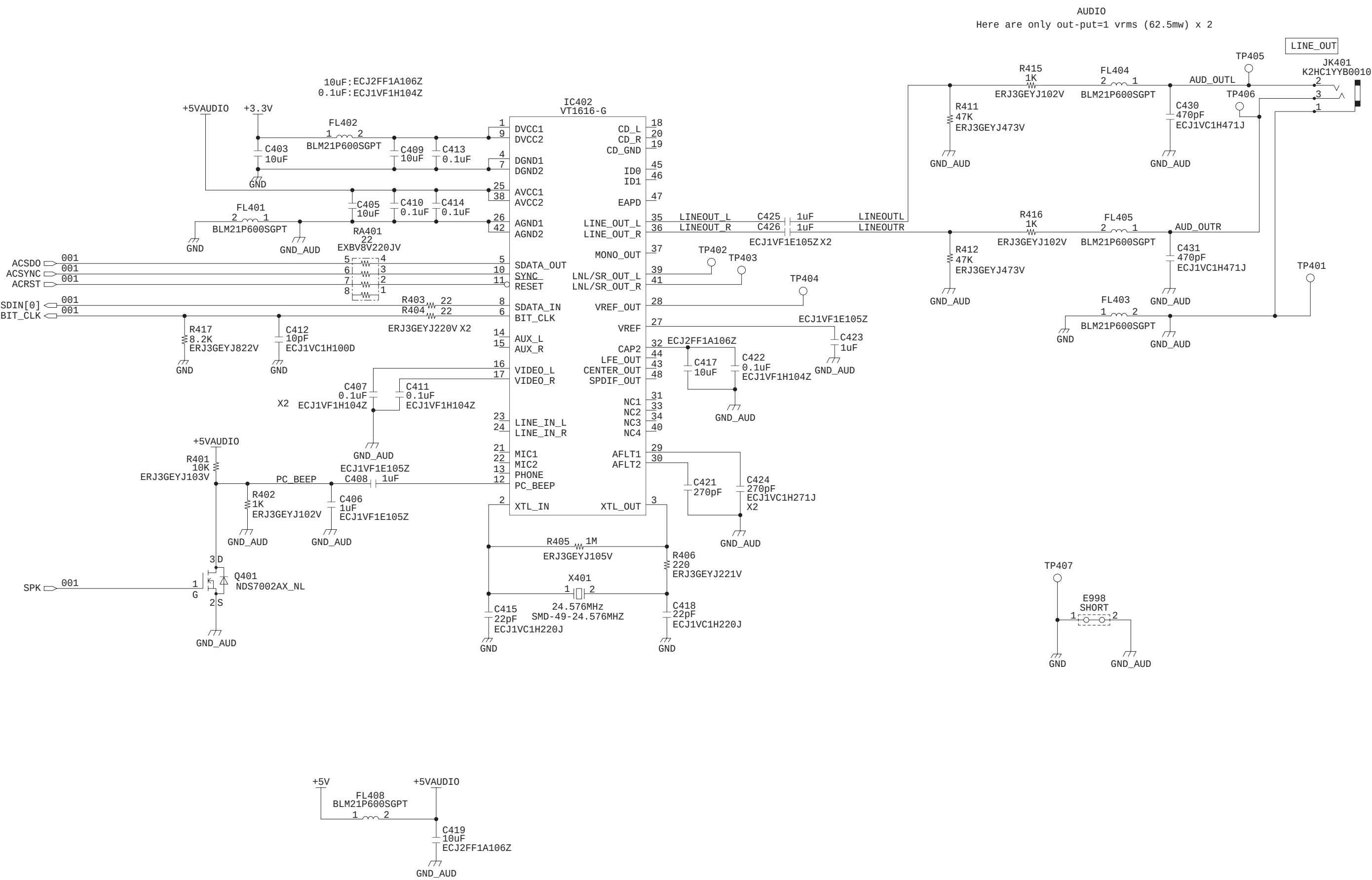
2.7.2 JS-790 OP-CB OP-CB2



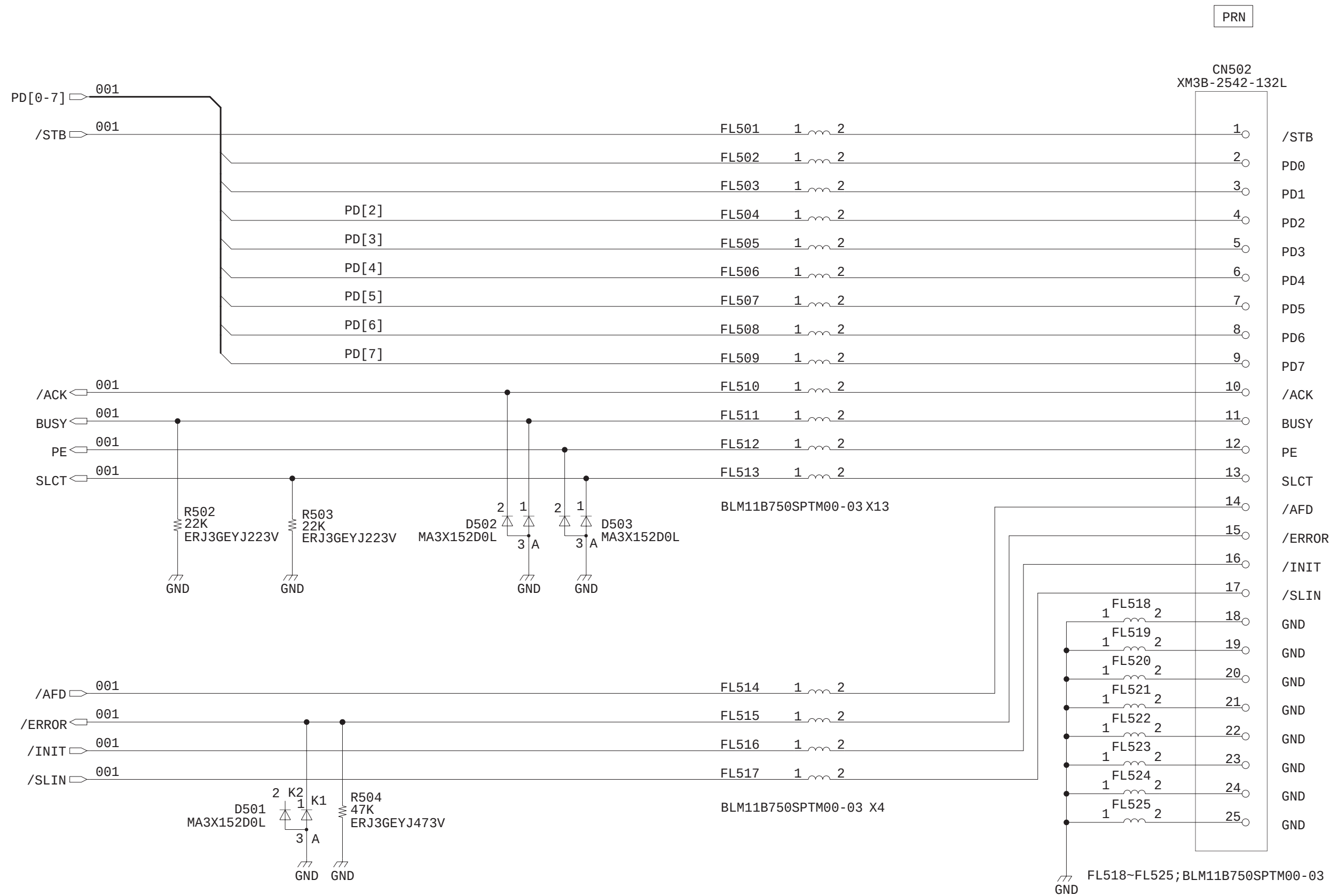
2.7.3 JS-790 OP-CB OP-CB3



2.7.4 JS-790 OP-CB OP-CB4



2.7.5 JS-790 OP-CB OP-CB5



3. Adjustment and Inspection JS-790WS

3.1 BIOS Setup

Input the DEL key when POST starts.

Phoenix – Award BIOS CMOS Setup Utility	
▷Standard CMOS Features	▷Frequency/Voltage Control
▷Advanced BIOS Features	Load Fail-Safe Defaults
▷Advanced Chipset Features	Load Optimized Defaults
▷Integrated Peripherals	Set Supervisor Password
▷Power Management Setup	Set User Password
▷PnP/PCI Configurations	Save & Exit Setup
▷PC Health Status	Exit Without Saving
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time,Date,Hard Disk Type. . .	

3.2 Time setting

Standard CMOS Features is selected and ENTER is input.

It returns to the main screen with ESC.

Phoenix – AwardBIOS CMOS Setup Utility

Standard CMOS Features

Date (mm:dd:yy) Fri, Sep 30 2005		Item Help
Time (hh:mm:ss) 13:42:38		
▷ IDE Channel 0 Master	[None]	Menu Level ▷ Change the day, month, Year and Century
▷ IDE Channel 0 Slave	[None]	
▷ IDE Channel 1 Master	[None]	
▷ IDE Channel 1 Slave	[None]	
Drive A	[None]	It changes when connected.
Drive B	[None]	
Video	[EGA/VGA]	It changes depending on the memory size.
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	242688K	
Total Memory	243712K	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

Initialization

Load Optimized Default is selected, and ENTER is input.

Phoenix – AwardBIOS CMOS Setup Utility

▷ Standard CMOS Features	▷ Frequency/Voltage Control
▷ Advanced BIOS Features	Load Fail-Safe Defaults
▷ Advanced Chipset Features	<u>Load Optimized Defaults</u>
▷ Integrated Peripherals	Set Supervisor Password
▷ Power Management Setup	Set User Password
▷ PnP/PCI Configuration	Load Optimized Defaults (Y/N)? Y
▷ PC Health Status	Exit Without Saving
Esc : Quit ↑↓→← : Select Item F10 : Save & Exit Setup	
Load Optimized Default	

ENTER is input.

Do not do power supply OFF.

Preservation of BIOS setting

Save & EXIT Setup is selected, and ENTER is input.

Phoenix – AwardBIOS CMOS Setup Utility

▷Standard CMOS Features	▷Frequency/Voltage Control
▷Advanced BIOS Features	Load Fail-Safe Defaults
▷Advanced Chipset Features	Load Optimized Defaults
▷Integrated Peripherals	Set Supervisor Password
▷Power Management	Exit Without Saving
▷PnP/PCI Configuration	
▷PC Health Status	

SAVE to CMOS and EXIT (Y/N)? Y

Esc : Quit
F10 : Save & Exit Setup

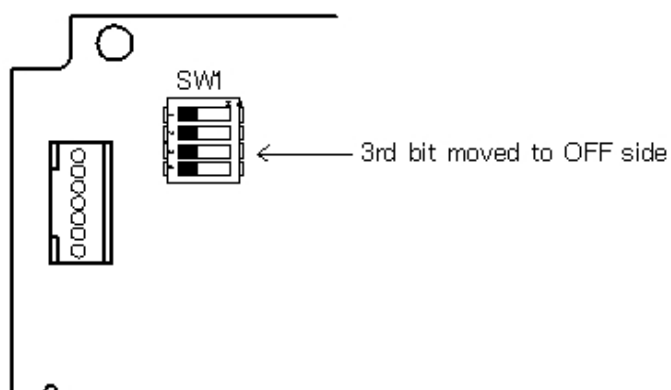
↑↓→← : Select Item

Save Data to CMOS

Input ENTER, and preserve the value.
WS reboots.

3.3 Customer display (JS-790RD-010) setup

For the unit where the customer display is accommodated, the 3rd bit of the dipswitch (SW1) shall be turned OFF in the customer display.



3.4 Test program

Start method

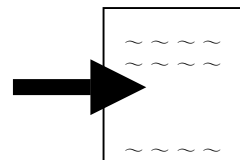
Do with the touch panel or the connected keyboard.

Start with touch panel

Turn on the power supply of JS-790.

It touches a square button on the right of the screen while counting the memory of POST.

Phoenix-AWARD Bios v6.00 PG. An Energy Star Ally
Copyright 1984-2003, Phoenix Technologies, Ltd.



Start with keyboard

Press "F10" in POST.

PANASONIC JS-790WS TEST PROGRAM V*.**

(Option detected)

0 : EXIT

* 1 : Main Board Test.

* 2 : Random Access Memory Test.

* 3 : Hard Disk Test.

* 4 : Video Test.

5 : Parallel port Test.

6 : Serial port Test.

7 : Buzzer Test.

* 8 : Customer Display Test.

9 : Touch Panel Test.

10 : Magnetic Card Reader Test

11 : Drawer Test.

* 12 : Ether Test.

13 : USB Test.

14 : Battery Test.

15 : Audio Test.

16 : Backlight Test

17 : Input PASSWORD

18 : Heat Run Test.

Select and press ENTER key : 0

0	1	2	3	4	5	6
7	8	9	10	11	ENTER	

3.4.1 Diagnostic program start

Execution of the diagnostic program is possible with the touch panel input or the connected keyboard.

LCD Display

PANASONIC JS-790 TEST PROGRAM V*:** (Option detected)

0 : EXIT

11 : Drawer Test.

* **1 : Main Board Test.**

* **2 : Random Access Memory Test.**

* **3 : Hard Disk Test.**

* **4 : Video Test.**

5 : Parallel port Test.

6 : Serial port Test.

7 : Buzzer Test.

* **8 : Customer Display Test.**

9 : Touch Panel Test.

10 : Magnetic Card Reader Test

* **12 : Ether Test.**

13 : USB Test.

14 : Battery Test.

15 : Audio Test.

16 : Backlight Test

17 : Input PASSWORD

18 : Heat Run Test.

Select and press ENTER key : 0

0	1	2	3	4	5	6
7	8	9	10	11	ENTER	

VGA external monitor's confirmation

Connect the monitor with the VGA connector.

Turn on the power supply in WS.

The same display as LCD must appear.

3.4.2 Execution of diagnostic program

Random Access Memory test

(1) Give a key input of 2 –.

LCD Display

***** TEST #2 Random Access Memory Test . *****		
RAM Wite/Read Test. 242688 KB OK. RAM Address is up to 07FFFFFFH		
RAM Refresh Test. 242688 KB OK. RAM Address is up to 07FFFFFFH		
RAM Address Line Test. RAM Address Bit26 OK.		
Test done. Press any key.		
F1=STOP/ CONTINUE	F2=STOP / MENU	
F1=STOP / CONTINUE	F2=STOP / MENU	TEST=RUN

(2) Check the memory capacity and display the OK signs for all diagnostic items to complete this testing.

(3) Press any key to obtain a menu screen of the diagnostic program.

3.4.3 Hard Disk test (CF Card)

(This test is not carried out if the OS or the application software has been installed in the HDD.)

(1) Enter the key input of 3 – ENTER.

LCD Display

****TEST #3 Hard Disk Test.****

***** Warning !!! *****

Reserved cylinder for DIAGNOSTICS will lose its data.

Reserved cylinder number = ***

Hard DISK CONTROLLER Test OK

Hard DISK SEEK Test OK

Hard DISK Read/Write Test OK

Reading : Cylinder =*** Head =XXX Sector =63 Sector count =1

Test done. Press any key.

F1=STOP / CONTINUE

F2=STOP / MENU

F1=STOP / CONTINUEF2=STOP / MENUTEST=RUN

(2) Confirm that the HDD LED [] blinks in green in the front panel during testing.

(3) Complete the test after giving the OK signs to all the diagnostic items.

(4) Press any key to obtain a menu screen of the diagnostic program.

3.4.4 Video test

(1) Enter the key input of 4 – ENTER.

***** TEST #4 Video Test. *****

0 : Return to MAIN MENU.
1 : Display Test.
2 : VRAM Test.

0

1

2

ENTER

Select and press ENTER key : 0_

5-1) Display test

- (1) Enter the key input of 1 – ENTER.
- (2) Confirm that the backlight is turned ON/OFF three times.
- (3) Since the all-white screen is displayed, examine the freedom from dot missing and wrong indications. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2.

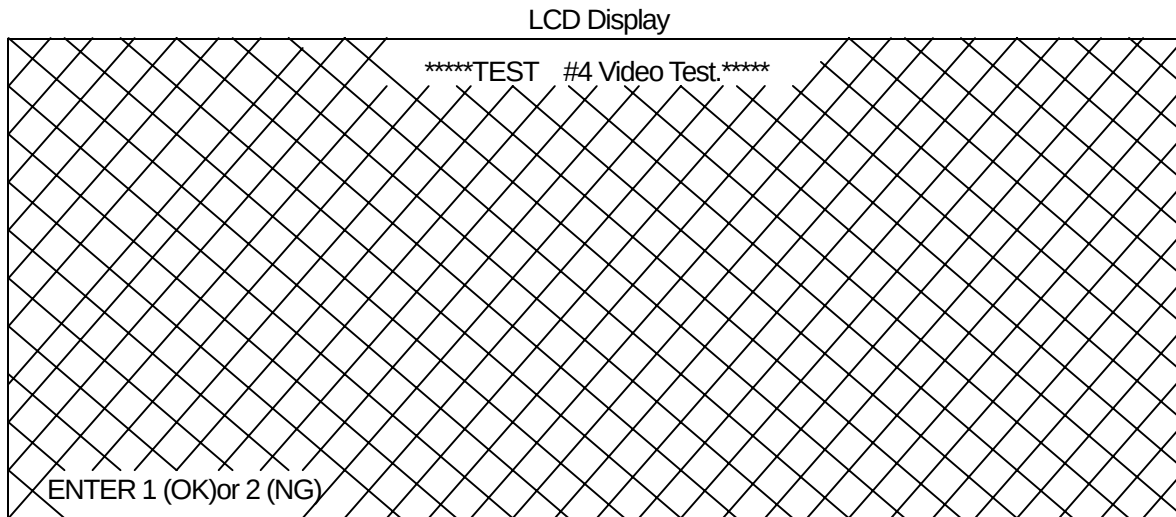
LCD Display

*****TEST #4 Video Test.*****

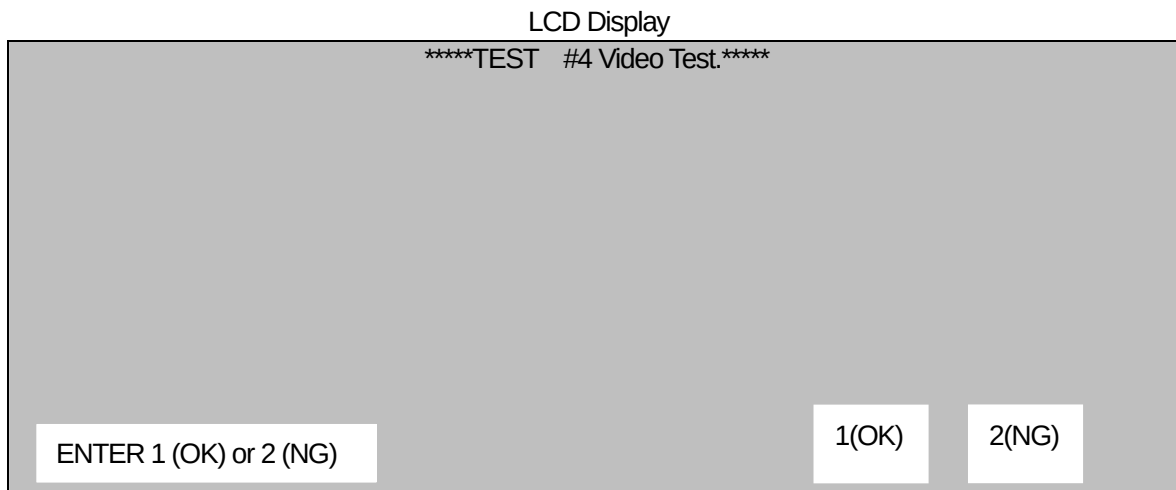
ENTER1 (OK)or 2 (NG)

- (4) Since the all-black screen is displayed, examine the freedom from dot missing and wrong indications. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2.

- (5) Since a crosshatch indication is presented, examine the freedom from distortion, dot missing, and wrong indications. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2.



- (6) Since a checker pattern indication is presented, examine the freedom from dot missing and wrong indications. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2.



- (7) Since the reversed checker pattern of (6) is indicated, examine the freedom from dot missing and wrong indications. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2.

- (8) Since 16 color graphic mode screens, each 640 x 480 in size, are displayed, examine the screen conditions. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2. At that time, confirm if 16 colors are available.

LCD Display

640 × 480 ,16 Color , Graphic Mode			
Black _____	Dark Gray _____	White _____	Int White _____
Red _____	Light Red _____	Magenta _____	Light Magenta _____
Green _____	Light Green _____	Brown _____	Yellow _____
Blue _____	Light Blue _____	Cyan _____	Light Cyan _____

ENTER1 (OK) or 2 (NG)

- (9) Since gradations of green, blue, and red are displayed, confirm that there is no discoloration. If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2. (Return to #5 Test Menu.)

LCD Display

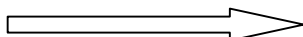
***** TEST # 4 Video Test. *****					
		Green gradation (6 scales)			
		Blue gradation (6 scales)			
		Red gradation (6 scales)			
			1(OK)	2(NG)	

ENTER 1 (OK) or 2 (NG)

Thin

Gradation

Thick



3.4.5 VRAM Test

(1) With #4 Test Menu, enter the key input of 2 – ENTER.

LCD Display

***** TEST #4 Video Test. *****

0 : Return to MAIN MENU.

1 : Display Test.

2 : VRAM Test.

0

1

2

ENTER

Select and press ENTER key : 0_

During the execution of this test, there may be the disturbance of screen or the disappearance of display. However, the beep sound to be heard at the same intervals indicates that testing is being executed.

(2) In the meantime thereafter, confirm that a display shown below is presented.

LCD Display

***** TEST #4 Video Test. *****

***** VRAM TEST *****

VRAM Size

Read/Write test

Address Line test

: 16 MB

: 01000000H

: 23 bit OK

Test done. Press any key.

EXIT

(3) Press any key to recover #6 Test Menu.

(4) Press the 0-ENTER key to recover the main menu.

3.4.6 Parallel Port test

- (1) Connect a printer (TM-300 or TM-T88,) to the printer port.
(The lock screws of the Printer connector shall be capable of being tightened.)
- (2) By the previous method of 9, display the diagnostic menu.
- (3) Enter the key input of 5 – ENTER.

LCD Display

***** TEST #5 Parallel port Test. *****	
0 : Return to MAIN MENU	0
1 : Printer Test	1
2 : Printer Auto-Cut Test	2
Select and press ENTER key : 0_	ENTER

- (4) Enter the key input of 1 – ENTER.

LCD Display

*****TEST #5 Parallel port Test. *****	
Parallel Port Test (I/O Address=0378H)	
Test done. Press any key.	
EXIT	

(The printer begins to print out.)
Confirm that the following conditions are available:

i. For Printer TM-300

```
Parallel Port test (I/O) Address=0378H)
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGH
HIJKLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGH
IJKLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
"#$%&'()*+,-./0123456789;<=>?@ABCDEFGHI
JKLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJ
KLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJK
LMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKL
MNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLM
NOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMN
OPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNO
PQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
)+,-./0123456789;<=>?@ABCDEFGHIJKLMNOP
QRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
```

(5) Press any key to recover #7 Test screen.

(6) Enter the key input of 2 – ENTER. (The printer begins to print out and cuts the paper after the completion of printout.) Confirm that the following conditions are available:

i. For Printer TM-300

```
Parallel Port test (I/O) Address=0378H)
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGH
HIJKLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGH
IJKLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
"#$%&'()*+,-./0123456789;<=>?@ABCDEFGHI
JKLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJ
KLMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJK
LMNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKL
MNOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLM
NOPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMN
OPQRRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
```

→ To be cut here.

?@ABCDEFGHIJKLMN

ii. For Printer TM-T88 or iDP3220

```
Parallel Port test (I/O) Address=0378H)
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGHI
JKLMNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJ
KLMNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
"#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJK
LMNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKL
MNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLM
NOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMN
OPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNO
PQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNOP
QRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNOPQ
RSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
)+,-./0123456789;<=>?@ABCDEFGHIJKLMNOPQR
STUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
```

ii. For Printer TM-T88 or iDP3220

```
Parallel Port test (I/O) Address=0378H)
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGHI
JKLMNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
!#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJ
KLMNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
"#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJK
LMNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
#$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKL
MNOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
$%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLM
NOPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
%&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMN
OPQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
&'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNO
PQRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
'()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNOP
QRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
()*+,-./0123456789;<=>?@ABCDEFGHIJKLMNOPQ
RSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
)+,-./0123456789;<=>?@ABCDEFGHIJKLMNOPQR
STUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz
```

QRSTUVWXYZ[]^`abcdefghijklmnopqrstuvwxyz

Cut

(7) Press any key to recover #7 Test screen.

(8) Press the 0 - ENTER key to obtain a menu screen of the diagnostic program.

3.4.7 Serial Port test

(1) Enter the key input of 6 – ENTER.

LCD Display

***** TEST #6 Serial Port Test. *****

0 : Return to MAIN MENU	0
1 : Test COM1	1
2 : Test COM2	2
3 : Test COM3	3
4 : Test COM4	4

Select and press ENTER key : 0_

(2) No test shall be carried out for the items of 3: Test COM3 and 4: Test COM4.

1) COM1 test

- (1) Connect a loop-back connector to the COM1 port. (The lock screws of the loop-back connector shall be capable of being tightened.)
- (2) Enter the key input of 1 – ENTER.

LCD Display

***** TEST #6 Serial Port Test. *****	
Test COM1 (I/O Address 03F8H)	
RS232C Controller Register R/W Test	OK
INTERNAL LOOPBACK Test	OK
EXTERNAL LOOPBACK Test	OK
Test done. Press any key.	
EXIT	

- (3) Complete the test after giving the OK signs to all the diagnostic items.
- (4) Press any key to obtain a screen of #8 test.
- (5) Disconnect the loop-back connector that has been connected to the COM1 port.
- (6) Enter the key input of 1 – ENTER.

LCD Display

***** TEST # 6 Serial Port Test. *****	
Test COM1 (I/O Address 03F8H)	
RS232C Controller Register R/W Test	OK
INTERNAL LOOPBACK Test	OK
EXTERNAL LOOPBACK Test	
CD Error	
CTS Error	
Test done. Press any key.	
EXIT	

- (7) "External Loop-back Test" shall result in "CD Error" or "CTS Error".
- (8) Press any key to obtain a screen of #8 test.

Do the same test as COM2-4.

3.4.8 Speaker test

(1) Enter the key input of 7 – ENTER.

LCD Display

***** TEST #7 Buzzer Test *****

Buzzer

ENTER 1 (OK) or (NG)

(2) When the buzzer tone is confirmed, enter the key input of 1.

LCD Display

***** TEST #7 Speaker Test. *****

Buzzer

OK

Test done. Press any key.

EXIT

(3) Press any key to obtain a menu screen of the diagnostic program.

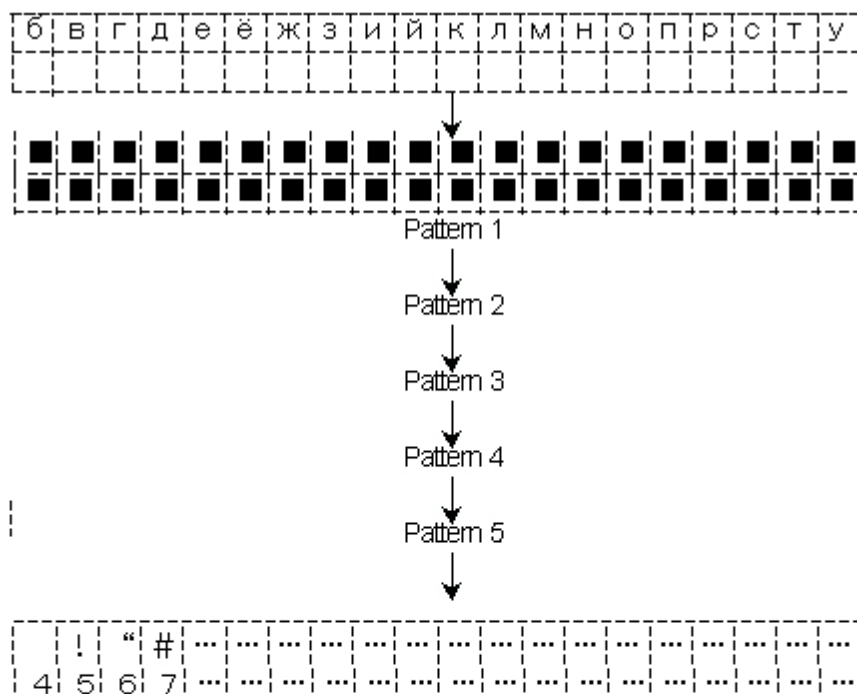
3.4.9 Customer Display test

(1) Enter the key input of 8 – ENTER.

LCD Display

***** TEST #8 Customer Display Test *****	
CUSTOMER DISPLAY (9600bps)	OK
ENTER 1 (OK) or (NG)	
Test done. Press any key.	
F1=STOP/CONTINUE F2=STOP/MENU	TEST=RUN

(2) Confirm that the Customer Display is correctly presented, as shown below. Then, enter the key input of 1.



(3) Press any key to obtain a menu screen of the diagnostic program.

Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5
■ ■ ■ ■ ■	■ ■ ■ ■ ■		■ ■ ■	■ ■
■ ■ ■ ■ ■		■ ■ ■ ■ ■	■ ■ ■	■ ■
■ ■ ■ ■ ■	■ ■ ■ ■ ■		■ ■ ■	■ ■
■ ■ ■ ■ ■		■ ■ ■ ■ ■	■ ■ ■	■ ■
■ ■ ■ ■ ■	■ ■ ■ ■ ■		■ ■ ■	■ ■
■ ■ ■ ■ ■		■ ■ ■ ■ ■	■ ■ ■	■ ■
■ ■ ■ ■ ■	■ ■ ■ ■ ■		■ ■ ■	■ ■

3.4.10 Touch Panel test

(1) Enter the key input of 9 – ENTER.

LCD Display

***** TEST #9 Touch Panel Test. *****	
0 : Return to MAIN MENU	0
1 : CALIBRATION.	1
2 : TOUCH TEST.	2
.	
Select and press ENTER key : 0	
	ENTER

10-1) Touch panel calibration

(1) Enter the key input of 1 – ENTER to perform the Calibration test.

LCD Display

+	+	+
+	+	+
+	+	+

(2) Touch each center of Mark + (9 marks) for the purpose of calibration.

(Mark + disappears from the screen when touched.)

If a wrong point is touched during calibration and this work has to be suspended, touch all the nine marks to stop the calibration work and withdraw from the screen. Retry is possible from Step (2) above.

(3) When calibration is normally finished, the screen shown below is displayed.

***** TEST #9 Touch Panel Test *****	
CALIBRATION	OK
Test done. Press any key.	

If [CALIBRATION NG] is displayed, retry should be performed from Step (2).

(4) Press any key to recover the [***** TEST #11 Touch Panel Test. *****] screen.

Touch panel test

LCD Display

***** TEST #9 Touch Panel Test. *****

0 : Return to MAIN MENU

1 : CALIBRATION.

2 : TOUCH TEST.

Select and press NETER key : 0

0

1

2

ENTER

(1) Enter the key input of 2 – ENTER to carry out Touch Test.

LCD Display

[illegible]

(2) In the all-item touch panel test screen, carry out testing on the following keys (2,2), (2,15), (11,8), (20,2), and (20,15):

The judgment of OK/NG shall conform to the example shown below.

If there is no reaction of “a, b, c, d, f, g, h, i” when inside in the inner frame of the key “e” is touched, [reversal of black/white in the screen] is considered to be OK.

	☐ a	☐ b	☐ c
	☐ d	☒ e	☐ f
	☐ g	☐ h	☐ i

(3) Press (21,16) to recover the [***** TEST #9 Touch Panel Test. *****] screen.

LCD Display

***** TEST #9 Touch Panel Test. *****

2. TOUCH TEST OK

ENTER 1 (OK) or 2 (NG)

Test done. Press any key._

(4) If the result is OK, press Key 1 and then any key to obtain the #9 Test screen.

(5) Enter the key input of 0 – ENTER to a test program screen.

3.4.11 Magnetic Card test

(USB IC Chip Test)

Enter the key input of 10 – ENTER.

LCD Display

***** TEST #10 PS/2 port. *****

IC Chip

OK

F1=STOP / CONTINUE

F2=STOP / MENU

3.4.12 Drawer test

- (1) Connect a cash drawer (JS-170CD, or JS-175CD, or JS-177CD, JS-750CD) to the DRAWER connector.
- (2) Enter the key input of 11 – ENTER.
- (3) Confirm that the following display is presented at the LCD.

LCD Display

***** TEST #11 Drawer Test. *****

0 : Return to MAIN MENU

1 : DRAWER1

2 : DRAWER2

Select and press ENTER key : 0

0

1

2

ENTER

1) Drawer 1 test

- (1) Enter the key input of 1 – ENTER.
- (2) Confirm that the drawer is opened and “OK” is indicated on the screen.

LCD Display

***** TEST #11 Drawer Test. *****

DRAWER1OK

Test done. Press any key.

EXIT

- (3) Press any key to obtain the menu screen of #13 Test.
- (4) Maintain the state of the drawer open.
- (5) Enter the key input of 1 – ENTER.
- (6) Confirm that “Already Open” is displayed on the screen.
- (7) Press any key to obtain the menu screen of #13 Test.
- (8) Assume the condition of the drawer kept shut and hold the front part of the drawer not to let it open.
- (9) Enter the key input of 1 – ENTER.
- (10) Confirm that “Not Open” is displayed on the screen.
- (11) Press any key to obtain the menu screen of #13 Test.

2) Drawer 2 test

- (1) Enter the key input of 2 – ENTER.
- (2) Confirm that the drawer is opened and “OK” is indicated on the screen.

LCD Display

***** TEST #11 Drawer Test. *****

DRAWER2 OK

Test done. Press any key.

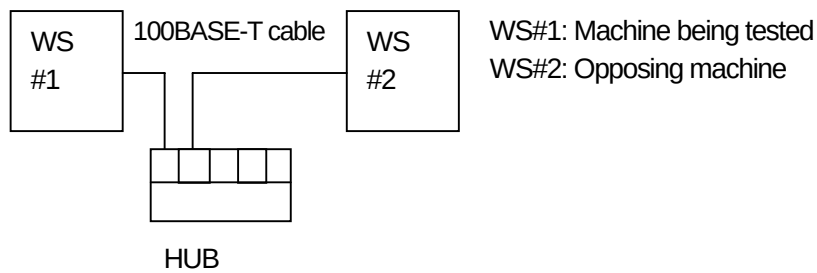
EXIT

- (3) Press any key to obtain the menu screen of #11 Test.
- (4) Maintain the state of the drawer open.
- (5) Enter the key input of 2 – ENTER.
- (6) Confirm that “Already Open” is displayed on the screen.
- (7) Press any key to obtain the menu screen of #11 Test.
- (8) Assume the condition of the drawer kept shut and hold the front part of the drawer not to let it open.
- (9) Enter the key input of 2 – ENTER.
- (10) Confirm that “Not Open” is displayed on the screen.
- (11) Press any key to obtain the menu screen of #11 Test.

3.4.13 Inline test

Execution of the Inline test

(1) Connect the WS with the LAN cable via the hub.



(2) For both WS#1 and WS#2, use the key input of 12 – ENTER.

LCD Display of WS#1 and WS#2

***** TEST #12 Inline Test.*****

0 : Return to MAIN MENU
1 : Set Configuration
2 : Send Data
3 : Receive Data
4 : Self Test

Select and press ENTER key : 1

0

1

2

3

4

ENTER

(3) Enter the key input of 3 – ENTER in WS#2. -> State of data reception standby

LCD Display of WS#2

***** TEST #12 Inline Test.*****

***** Receive Data *****

(4) Enter the key input of 2 – ENTER in WS#1.

LCD Display of WS#1

***** TEST #12 Inline Test. *****

***** Send Data *****

Send Data 1234567890AB >>>> FFFFFFFFFFFFFFFF OK

(5) When data are received from WS#1, WS#2 displays the screen as shown below.

LCD Display of WS#2

***** TEST #12 Inline Test. *****

***** Receive Data *****

Receive Data 1234567890AB >>>> FFFFFFFFFFFFFFFF OK

Send Data ABCDEF123456 >>>> 1234567890AB OK

Test done. Press any key

(6) When data are received from WS#2, WS#1 displays the screen as shown below.

LCD Display

***** TEST #12 Inline Test. *****

***** Send Data *****

Send Data 1234567890AB >>>> FFFFFFFFFFFFFFFF OK

Receive Data ABCDEF123456 >>>> 1234567890AB OK

Test done. Press any key

(7) Confirm the indication of OK and finish the test.

(8) Confirm during the test that the LED of the hub connected through the LAN cable blinks in green.

(9) Confirm the correctness of the MAC address that is indicated during the Inline test and the one that is attached to the PCB.

(In the above case, the Send Data correspond to the MAC address of WS#1 and the Receive Data correspond to that of WS#2.)

(10) For both WS#1 and WS#2, press any key to obtain the #13 Test screen. Furthermore, enter the key input of 0 – ENTER to obtain a menu screen of the diagnostic program.

3.4.14 USB test

(1) Enter the key input of 13 – ENTER.

LCD Display

***** TEST #13 USB Test. *****

0 : Return to MAIN MENU
1 : USB Interface Test.

0

1

Select and press ENTER key : 0_

ENTER

(2) Attach the USB1.1 device / USB Low Speed jig or the USB 2.0 device to the USB port.

(3) Enter the key input of 1 – ENTER.

LCD Display

***** TEST #13 USB Test. *****

USB Interface Test PORT 0	Low speed device connected
USB Interface Test PORT 1	Low speed device connected
USB Interface Test PORT 2	Full speed device connected
USB Interface Test PORT 3	Full speed device connected
USB Interface Test PORT 4	USB device not connected

ENTER 1(OK) or 2 (NG)

1(OK)

2(NG)

(3) The connected device type is displayed in the screen.

USB1.1 device or USB Low Speed jig connection port : “Low speed device connected” is displayed.

USB2.0 device connection port : “High speed device connected” is displayed.

USB device non-connection port : “USB device not connected” is displayed.

(4) If the result is OK, enter the key input of 1. If the result is NG, enter the key input of 2.

(5) Remove the USB1.1 device / Low Speed jig or the USB 2.0 device from the USB slot.

(6) Press any key to obtain the menu screen of #15 Test.

Place of each USB port

USB PORT 0 On the I/O panel

USB PORT 1 On the I/O panel

USB PORT 2 MSR Connector

USB PORT 3Maintenance USB Connector

3.4.15 Audio test

- (1) Connect the audio output devices, such as the AMP built-in speakers, in advance to the Line Out (green jack) on the I/O panel.
- (2) Enter the key input of 13 – ENTER.

LCD Display

***** TEST #13 USB Test. *****

AUDIO TEST.

ENTER 1 (OK) or 2 (NG)

F1=STOP/CONTINUE

F2=STOP/MENU

1(OK)

2(NG)

- (3) If the result is OK, press Key 1 to obtain the menu screen of #13 Test.
- (4) Enter the key input of ENTER to obtain a menu screen of the diagnostic program.

3.4.16 Heat Run test

- (1) Enter the key input of 18 – ENTER.
- (2) For the five items described below, carry out the heat run test for more than 10 hours.
- (3) Enter the F1 key input to stop diagnosis.
- (4) Enter the F2 key input to display the result of heat run. Confirm at that time that all the Error Times are “0”.

LCD Display		
***** TEST	#18 Heat Run Test. *****	TEST COUNT ==**
(ERROR TIMES)		
Random Access Memory Test	0	
Hard Disk Test	0	
Video Test	0	
Customer Display Test	0	
Inline Test.	0	
F1=STOP / CONTINUE	F2=STOP / MENU	TEST= RUN

- (5) Enter the F2 key input to obtain a menu screen of the diagnostic program.

Caution) When the software is preinstalled in the HDD, this test should be carried out after “Hard Disk Test” has been aborted from the heat run test items.

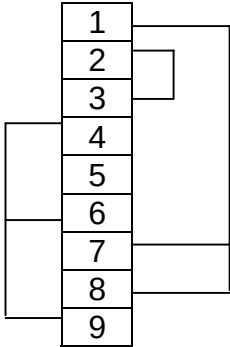
3.4.17. VGA monitor display check

- (1) Connect the VGA monitor to the VGA connector and confirm that the same screen as that for the LCD is displayed.

4. Materials for reference

4.1 Connection diagram of the COM1, COM2, COM5, COM6 (RS-232C) loop-back connectors

D-SUB 9-Pin (Female)



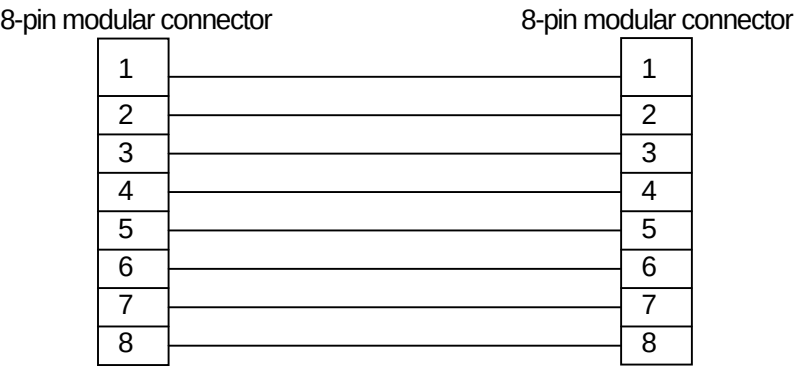
4.2 Connection diagram of the printer cables

Centronix 36-Pin

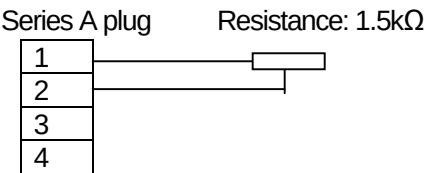
D-SUB 25-Pin (Female)

1		1
19		19
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
14		14
13		13
10		10
28		20
11		11
29		21
12		12
30		22
16		18
31		16
32		15
36		17

4.3 Connection diagram of the LAN interface cable



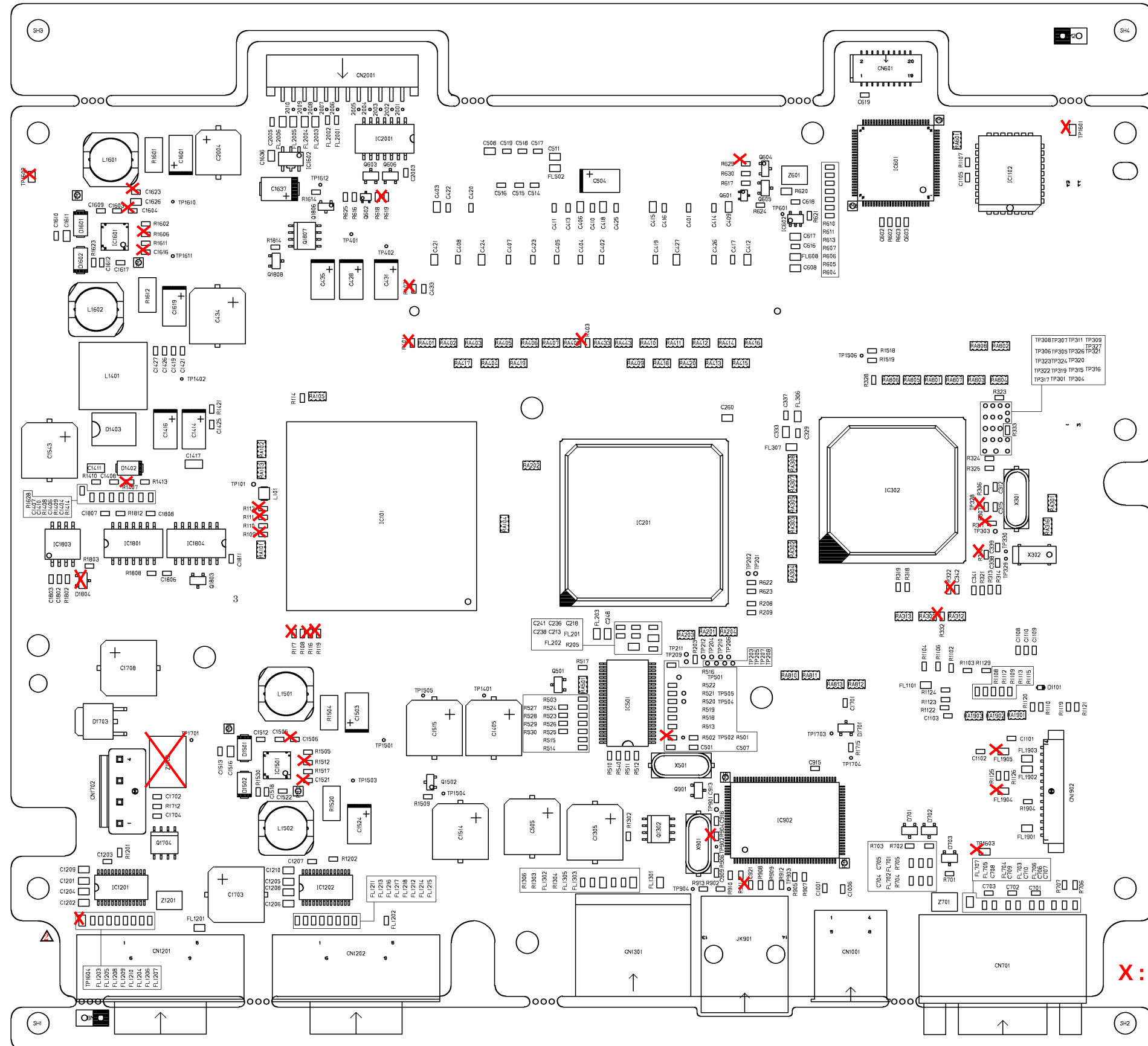
4.4 USB Low Speed jig



5. Mounting Diagram

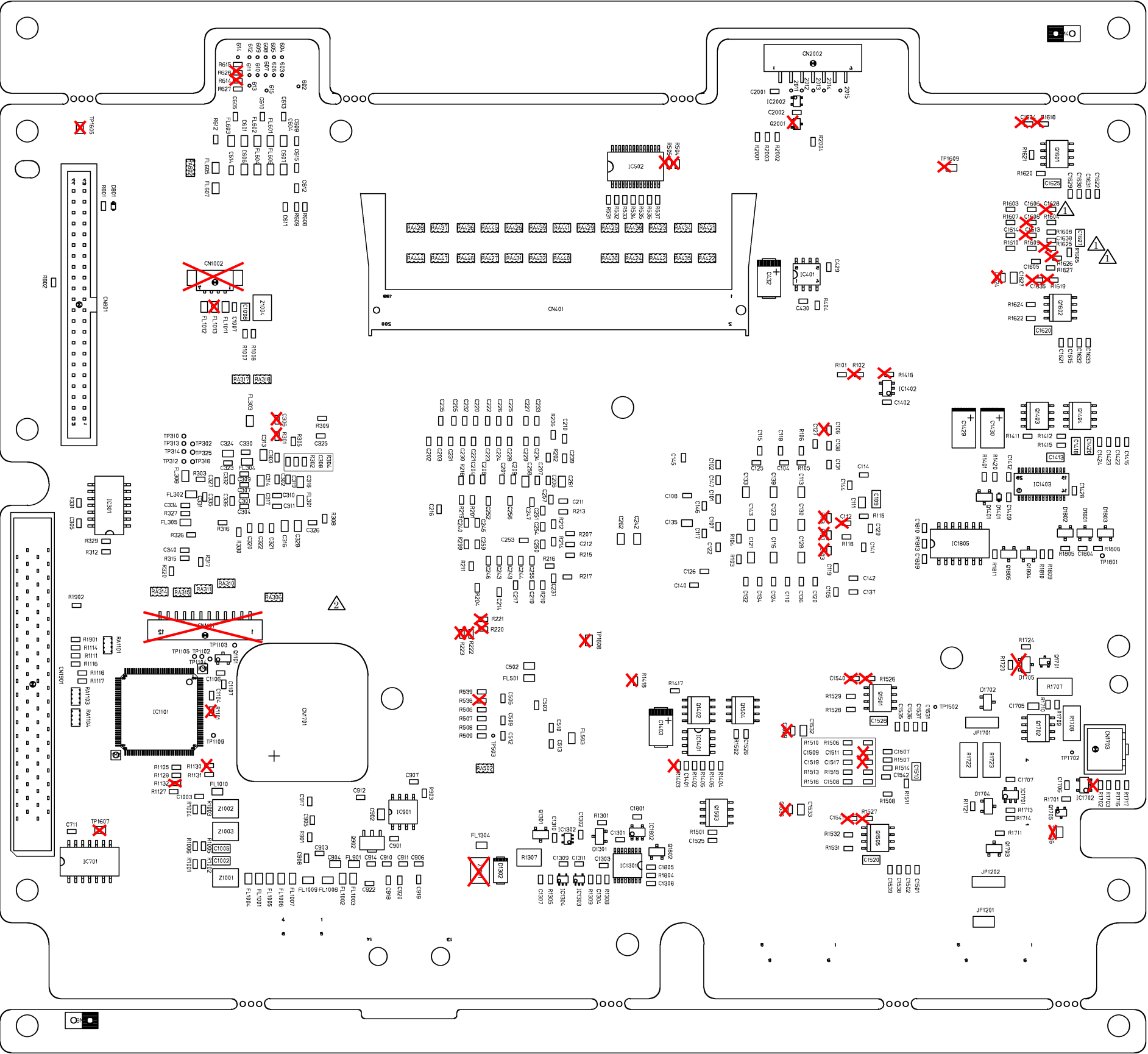
5.1 JS-790 Main PCB

5.1.1 JS-790 Main PCB Surface



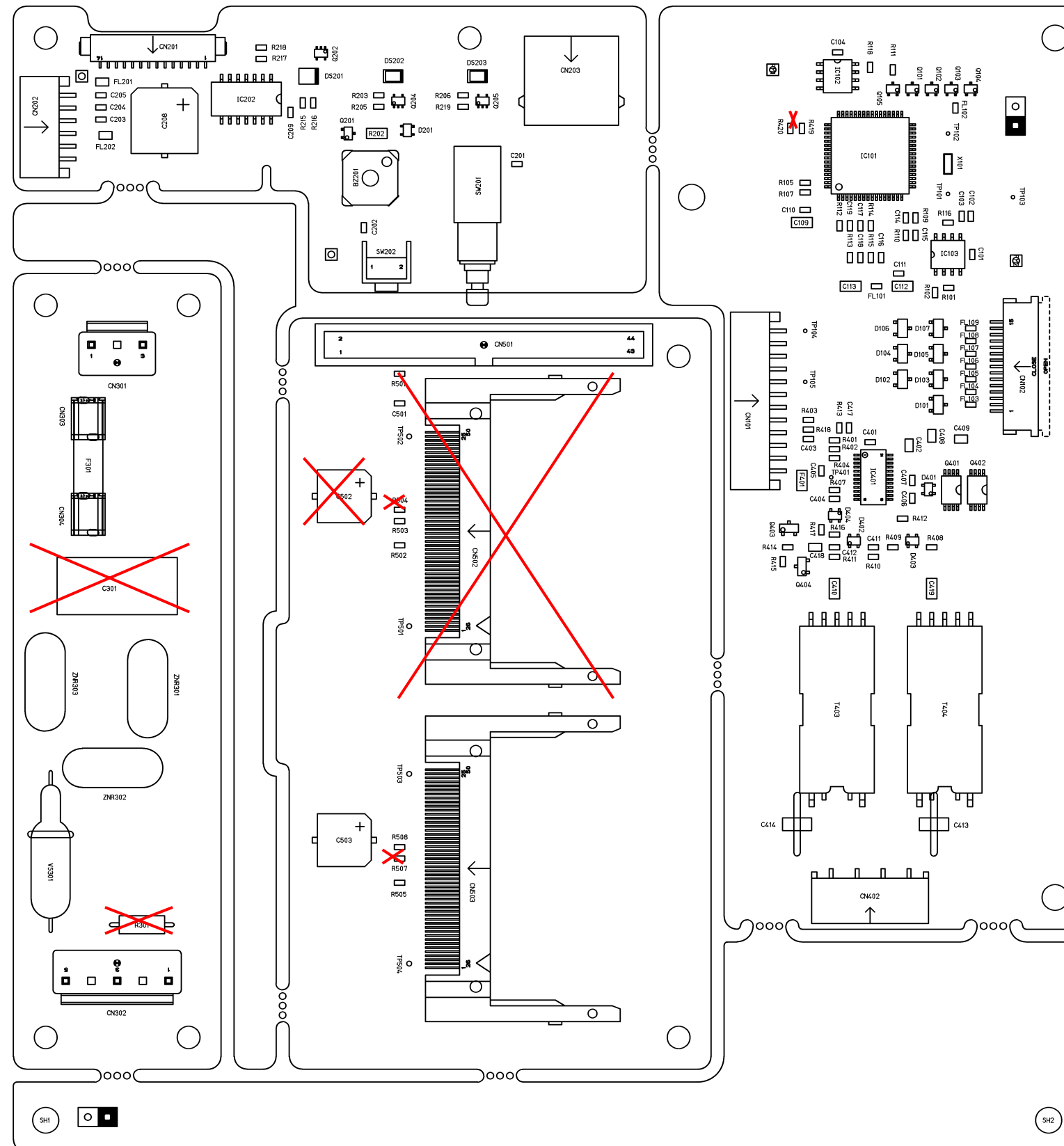
X : No mounting

5.1.2 JS-790 Main PCB Reverse



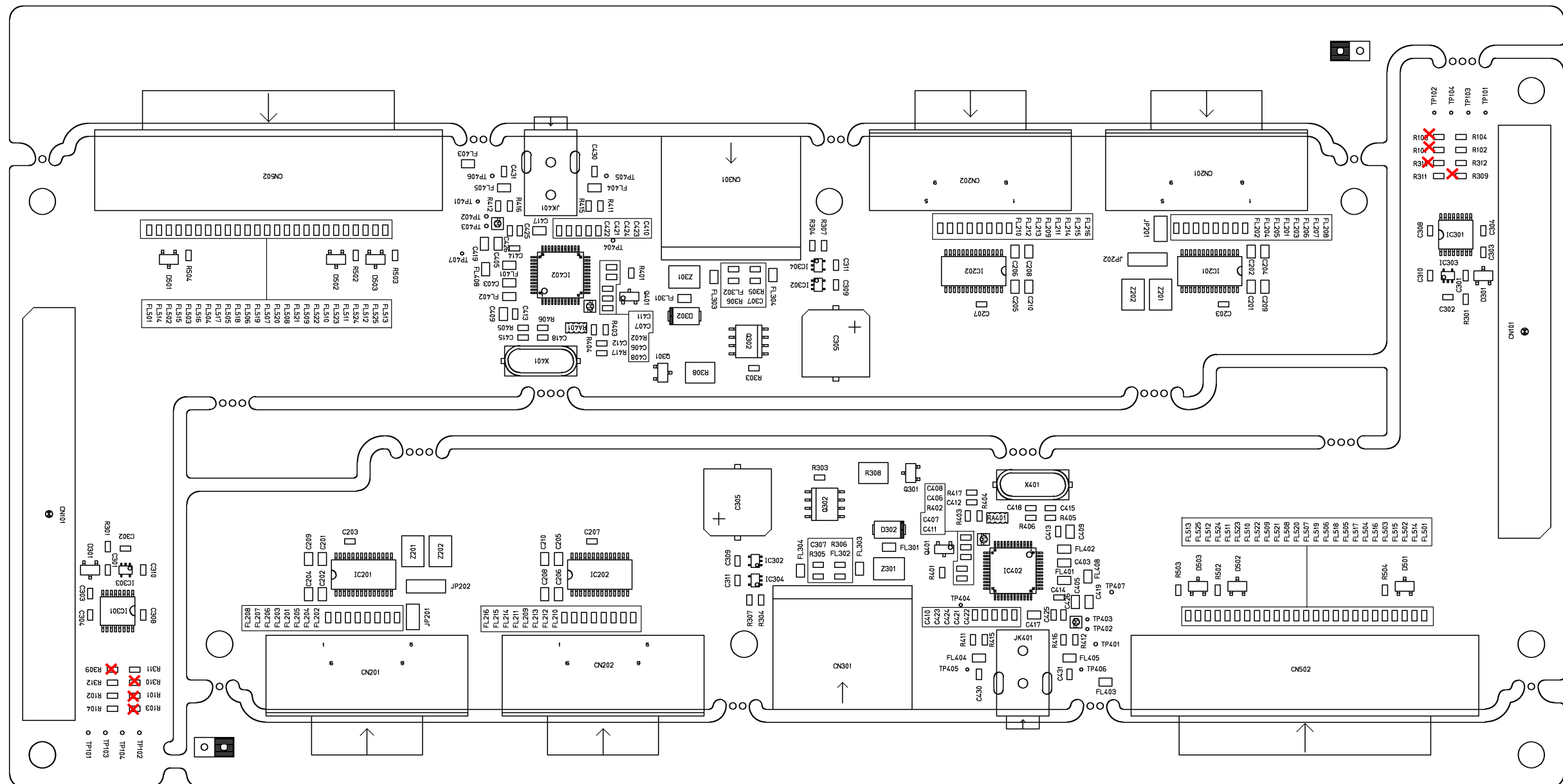
X : No Mounting

5.2 JS-790 Peripheral PCB



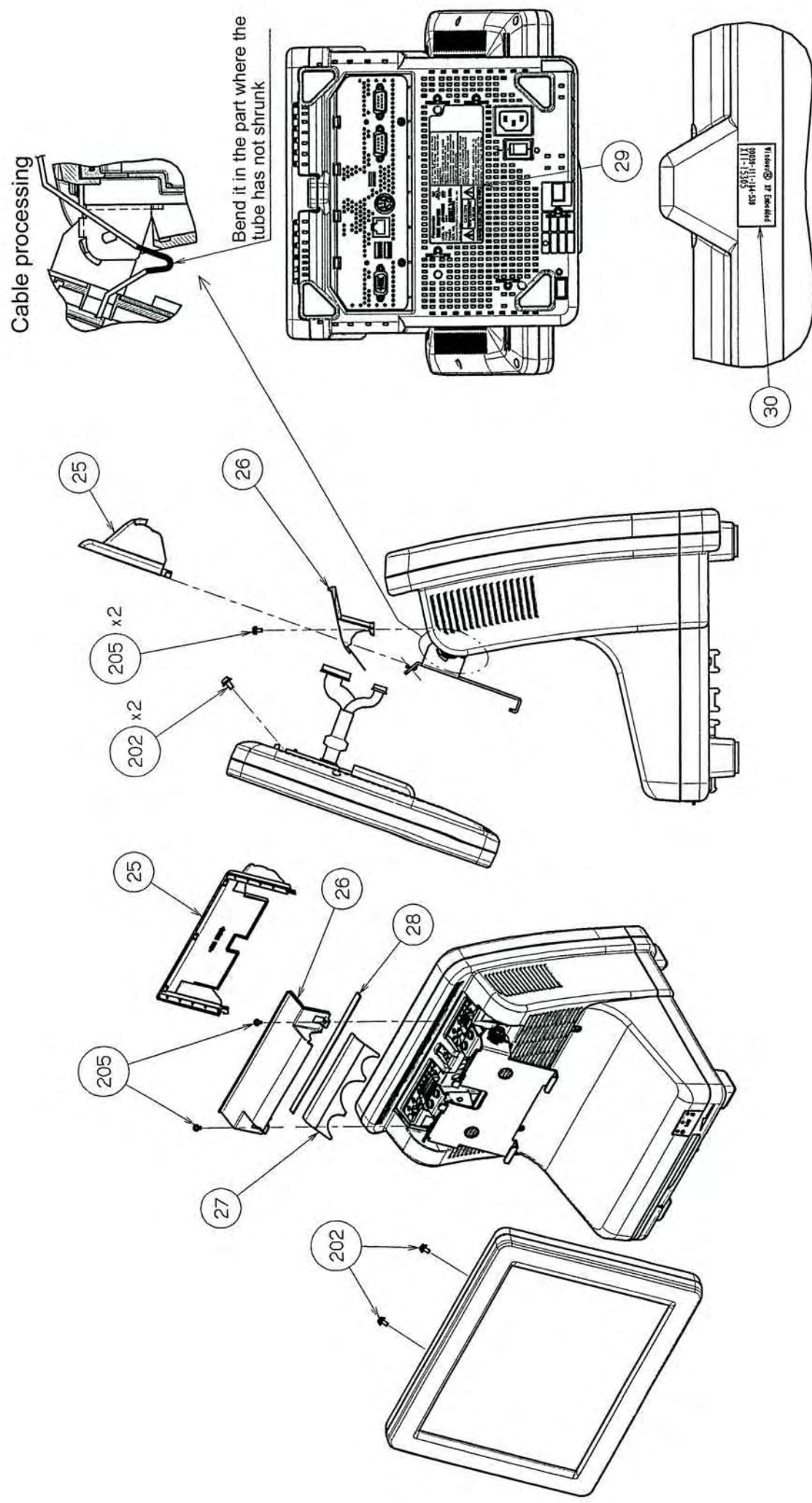
X : No mounting

5.3 JS-790 OP-CB PCB

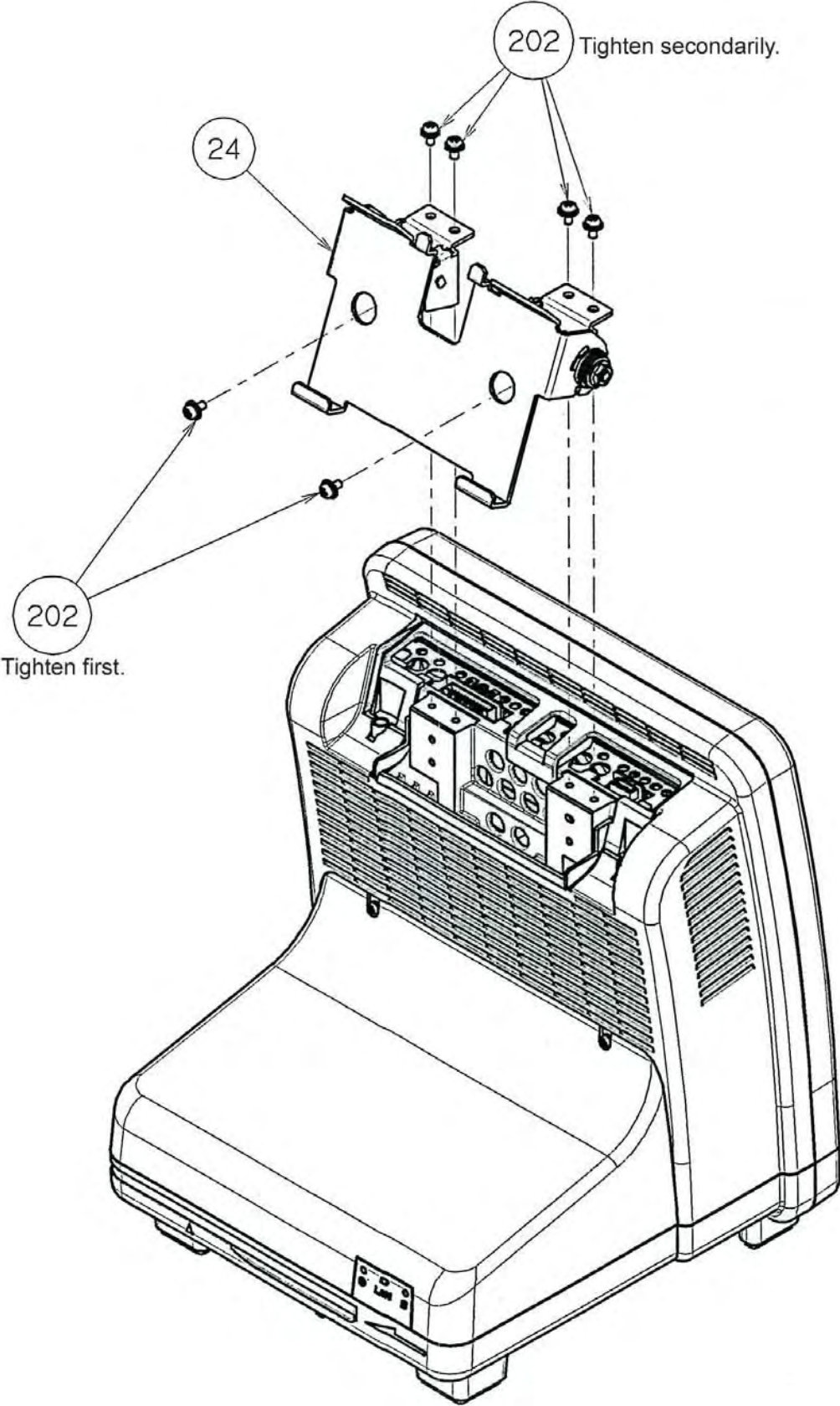


6. Reassembly Diagram

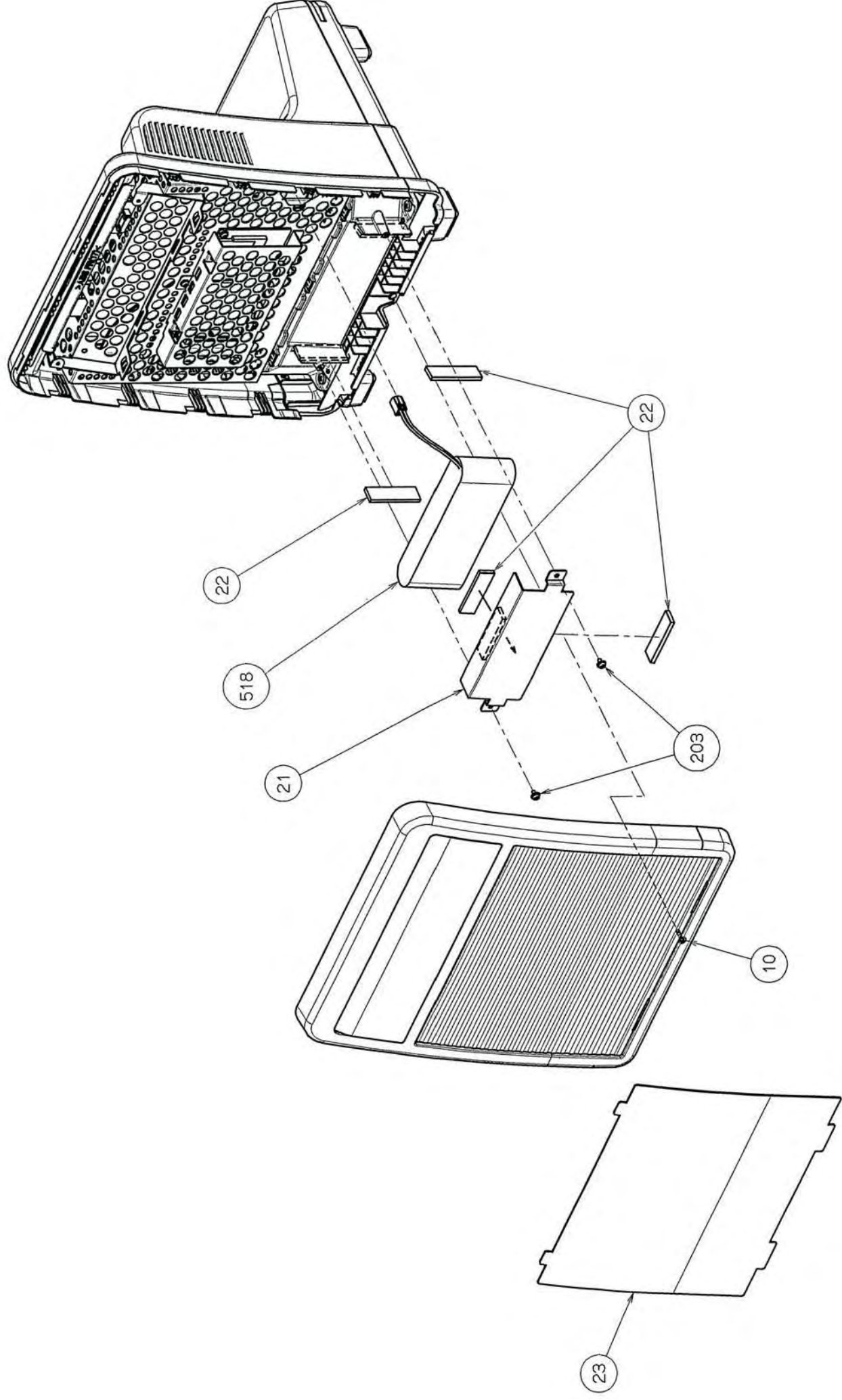
6.1 Main Body Block Reassembly 1



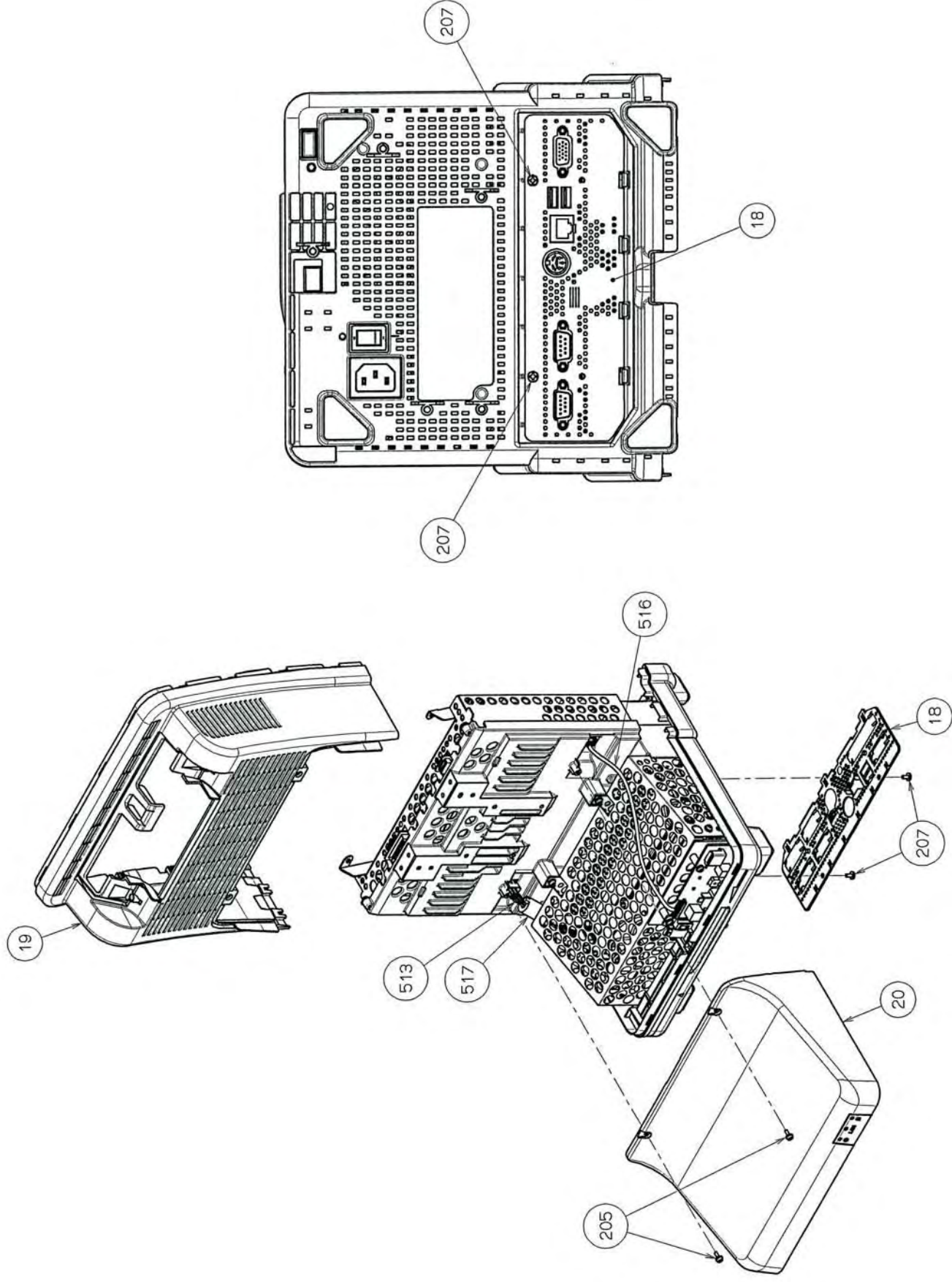
6.1 Main Body Block Reassmebly 2



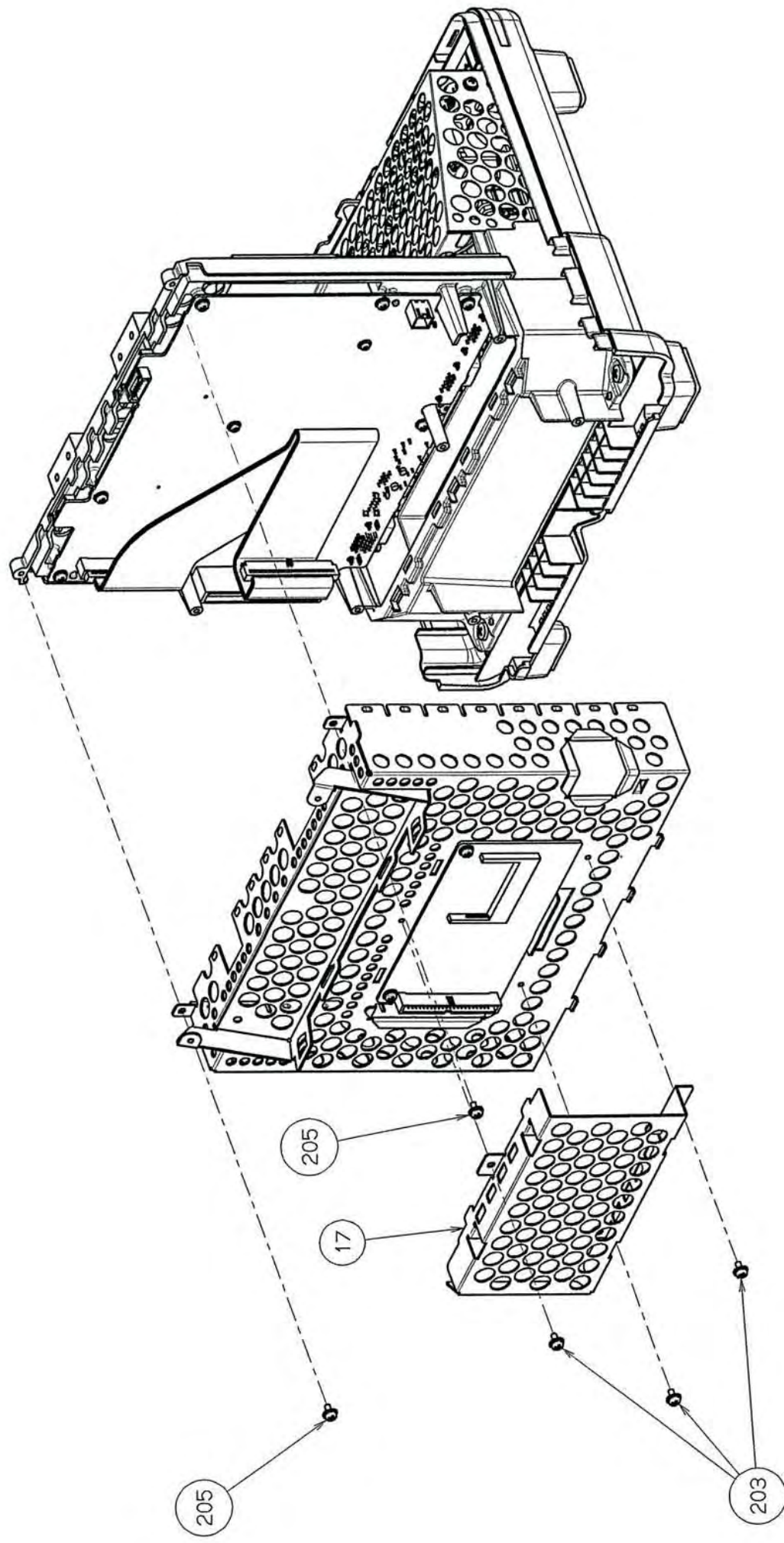
6.1 Main Body Block Reassembly 3



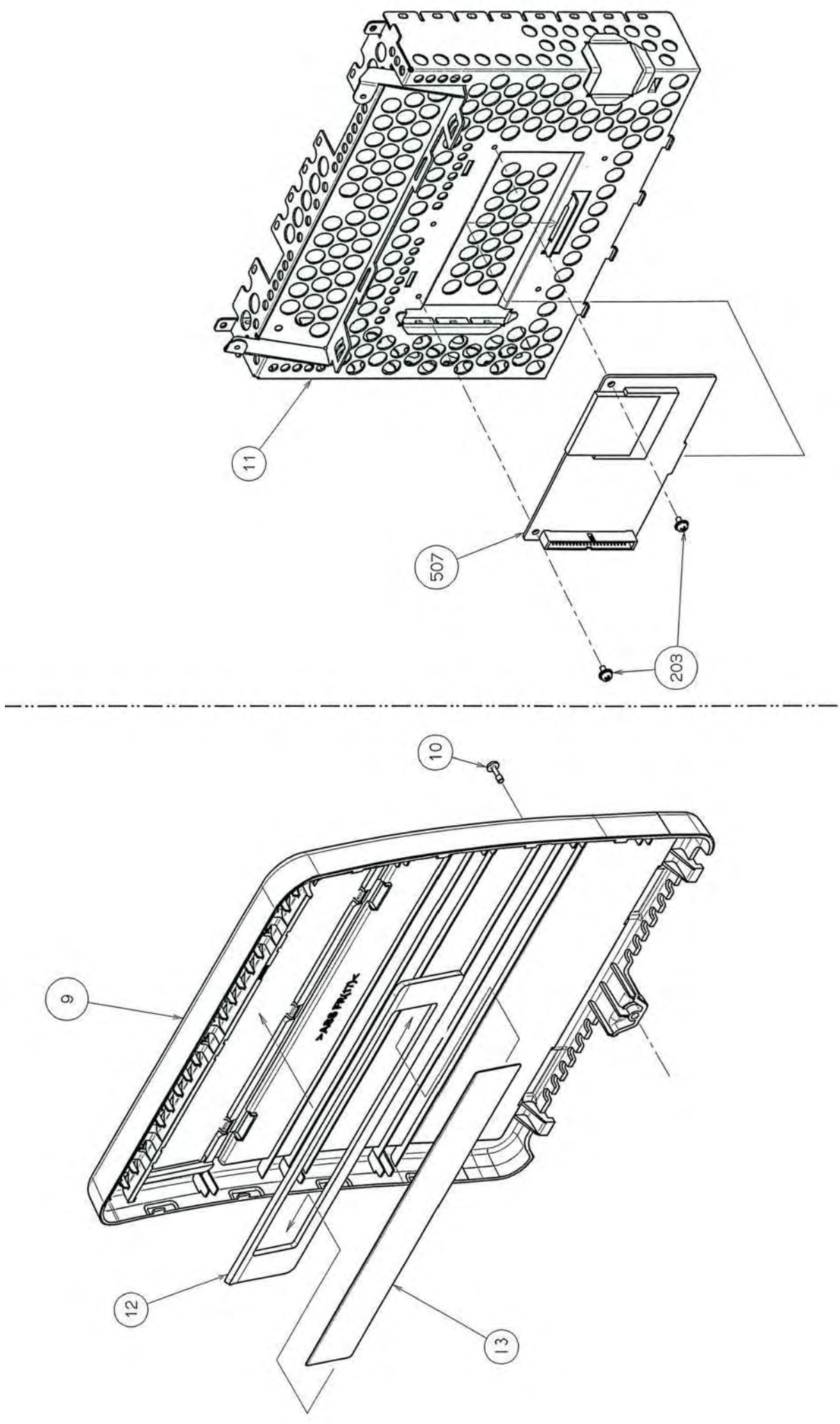
6.1 Main Body Block Reassembly 4



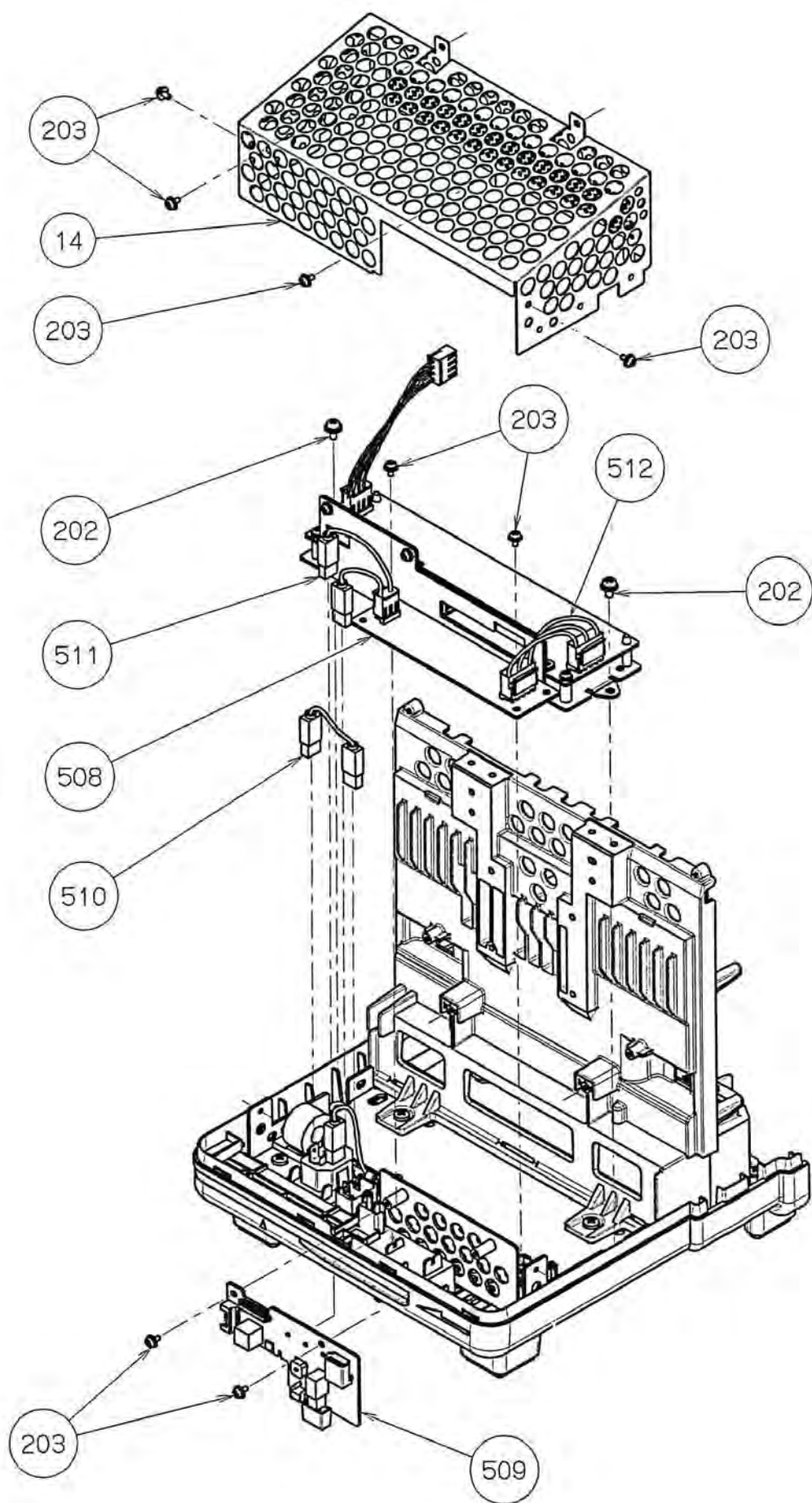
6.1 Main Body Block Reassembly 5



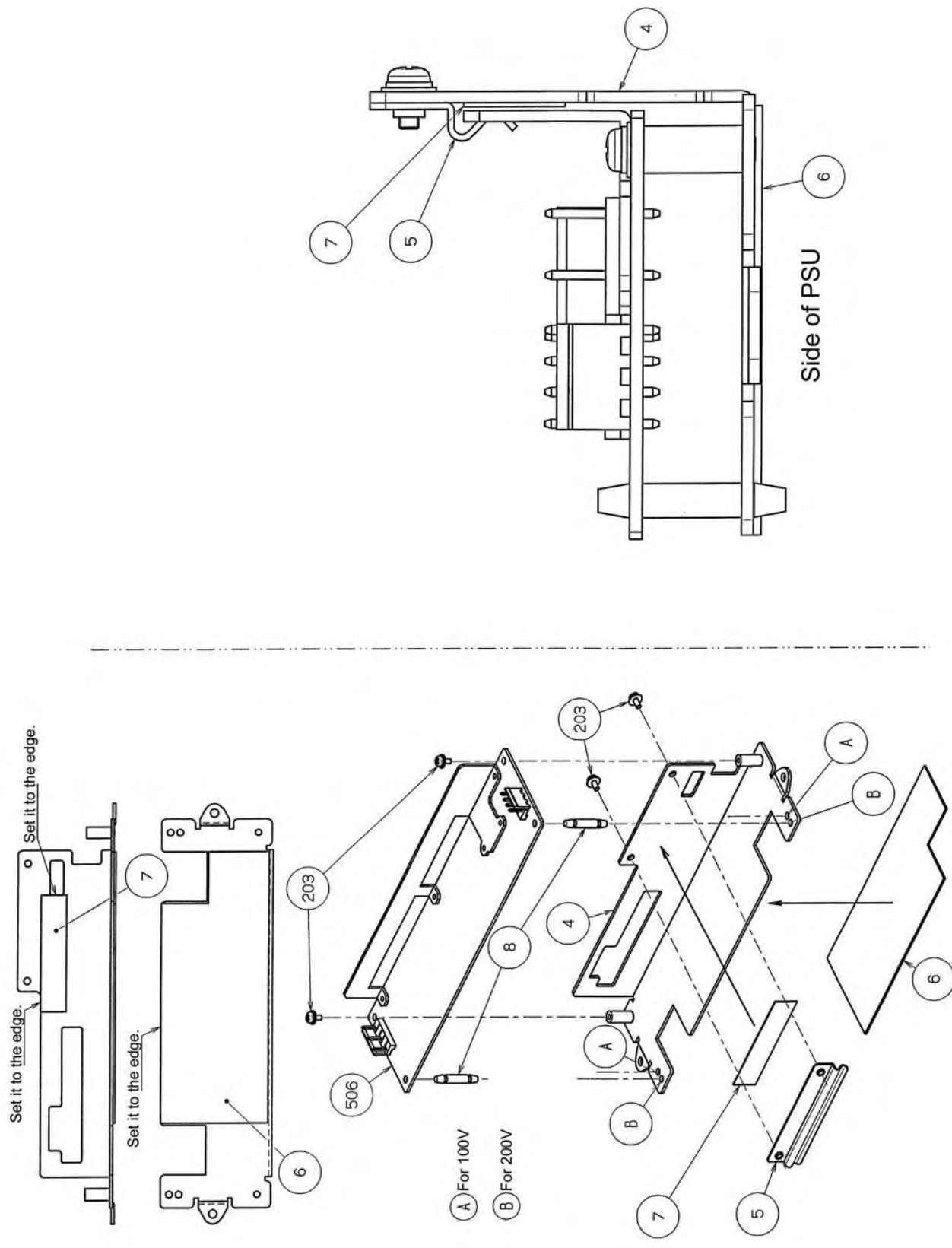
6.1 Main Body Block Reassembly 6



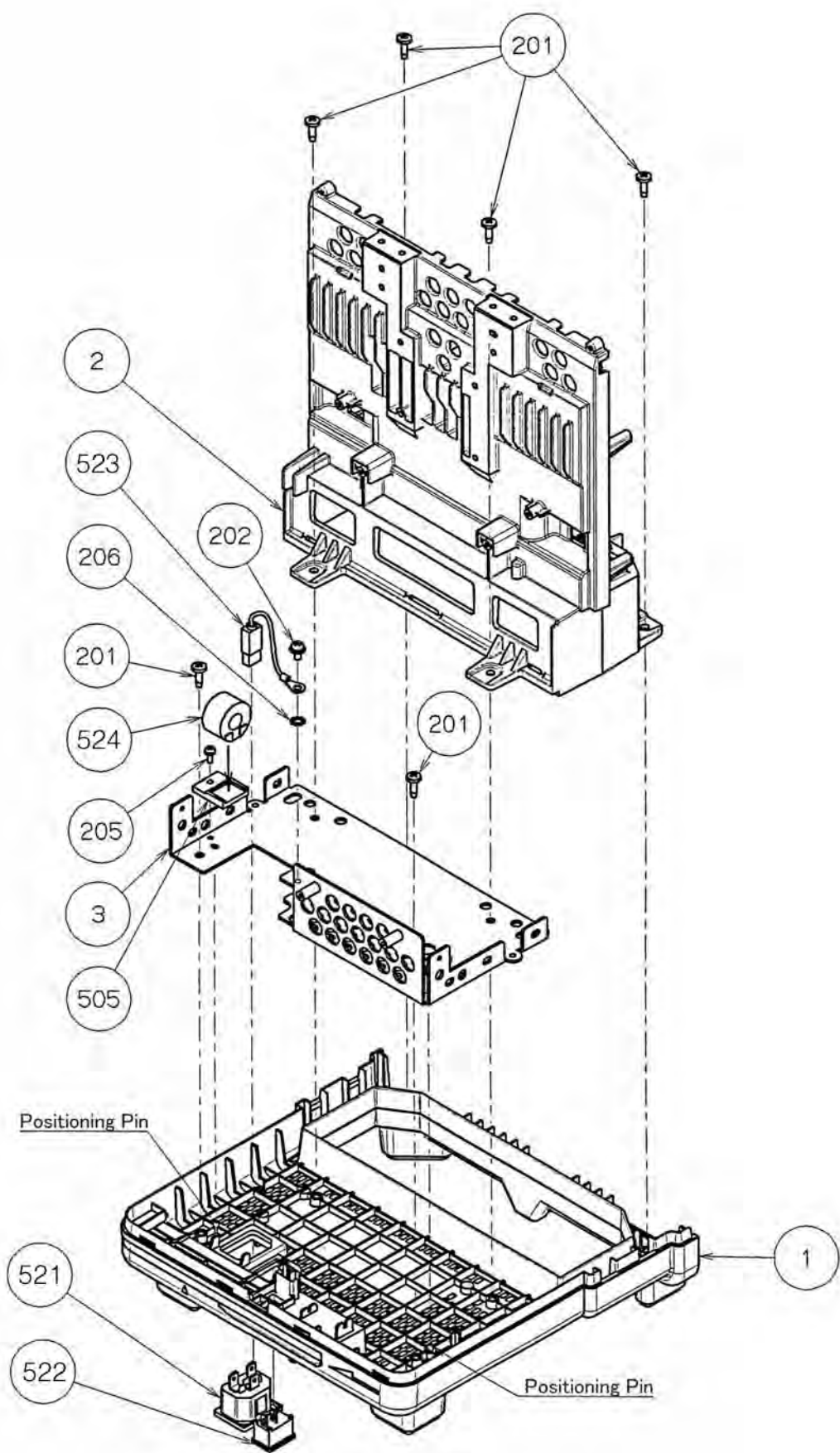
6.1 Main Body Block Reassmebly 8



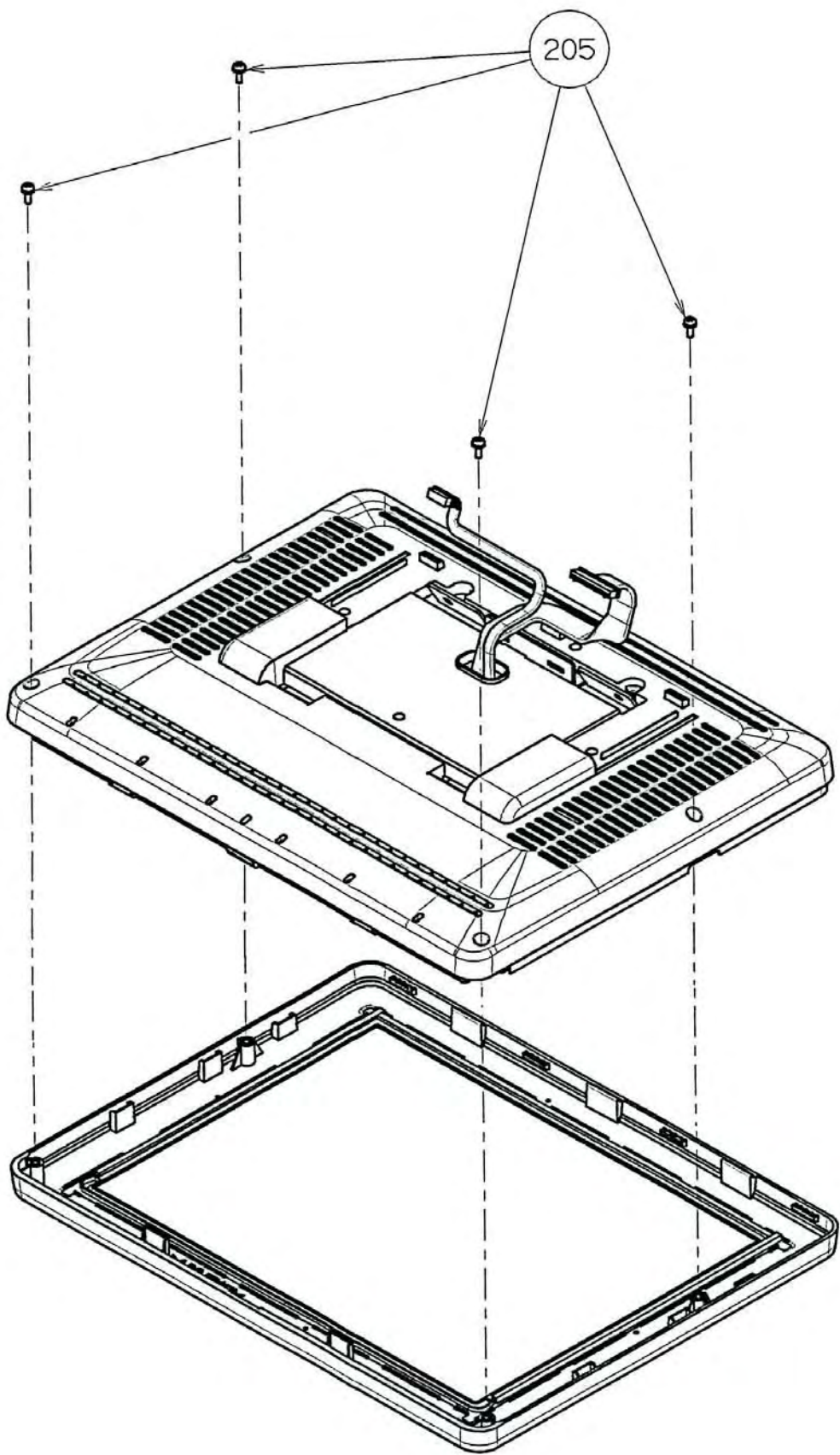
6.1 Main Body Block Reassembly 9



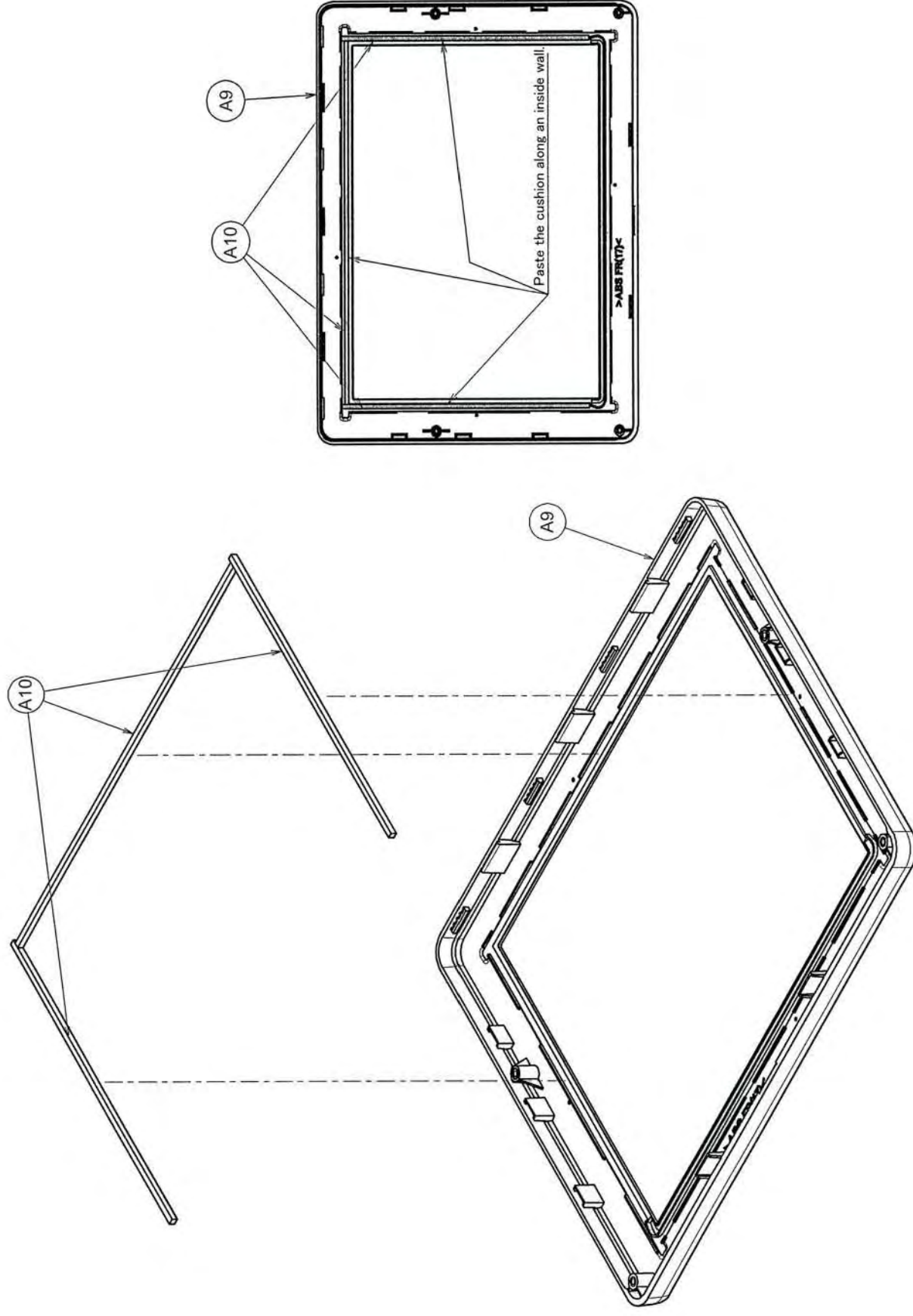
6.1 Main Body Block Reassmebly 10



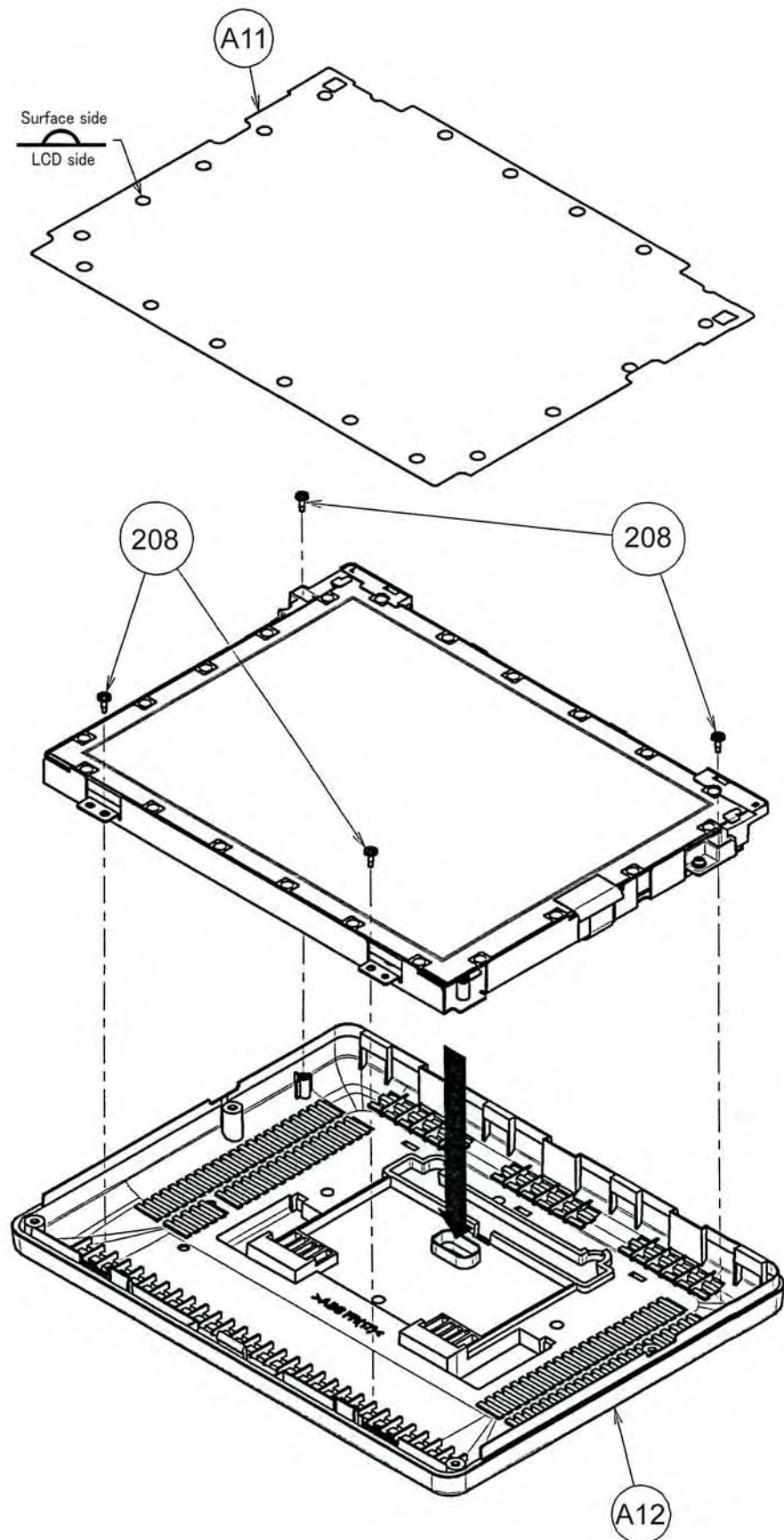
6.2 LCD Block Reassmebly 1



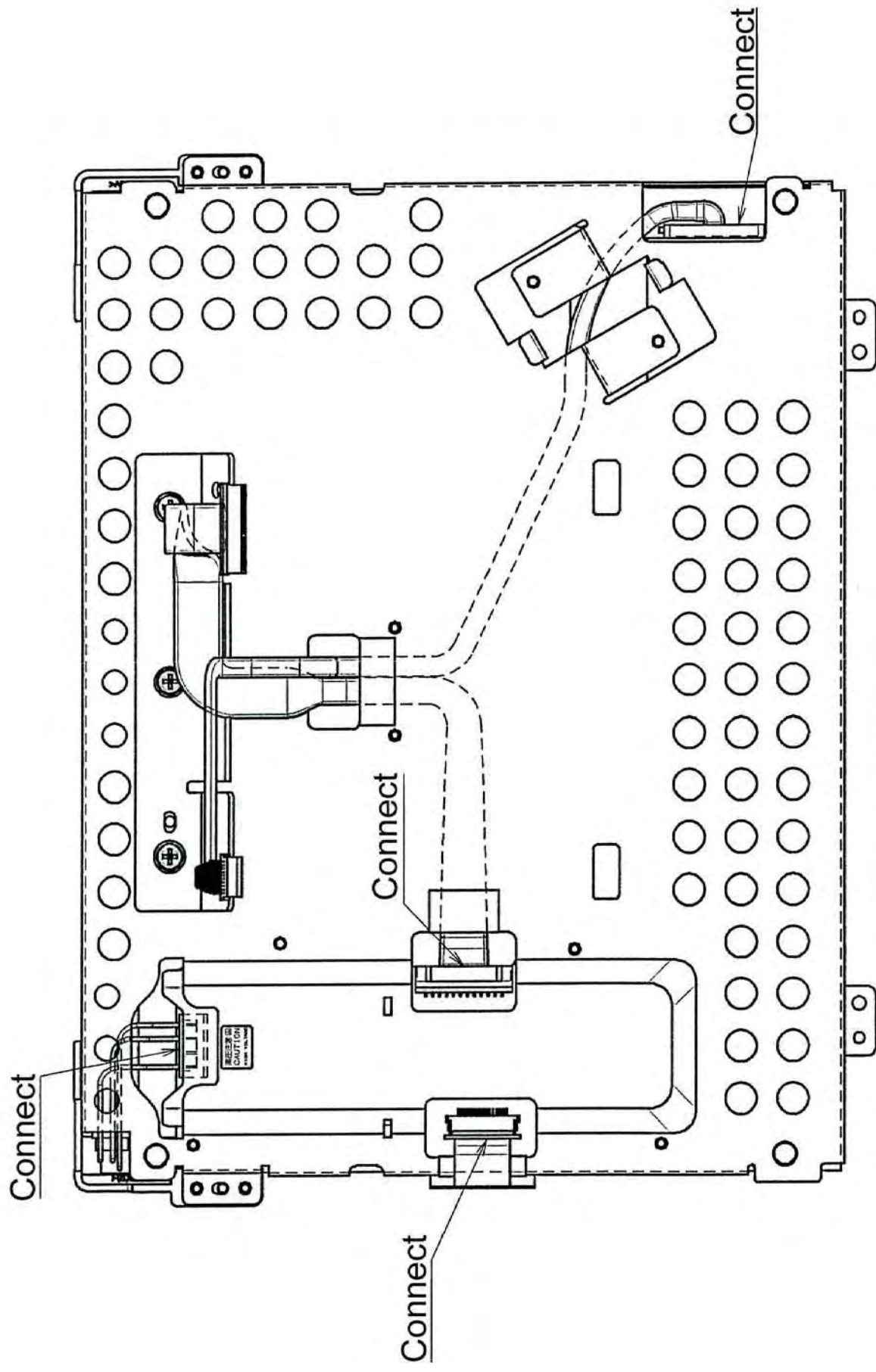
6.2 LCD Block Reassembly 2



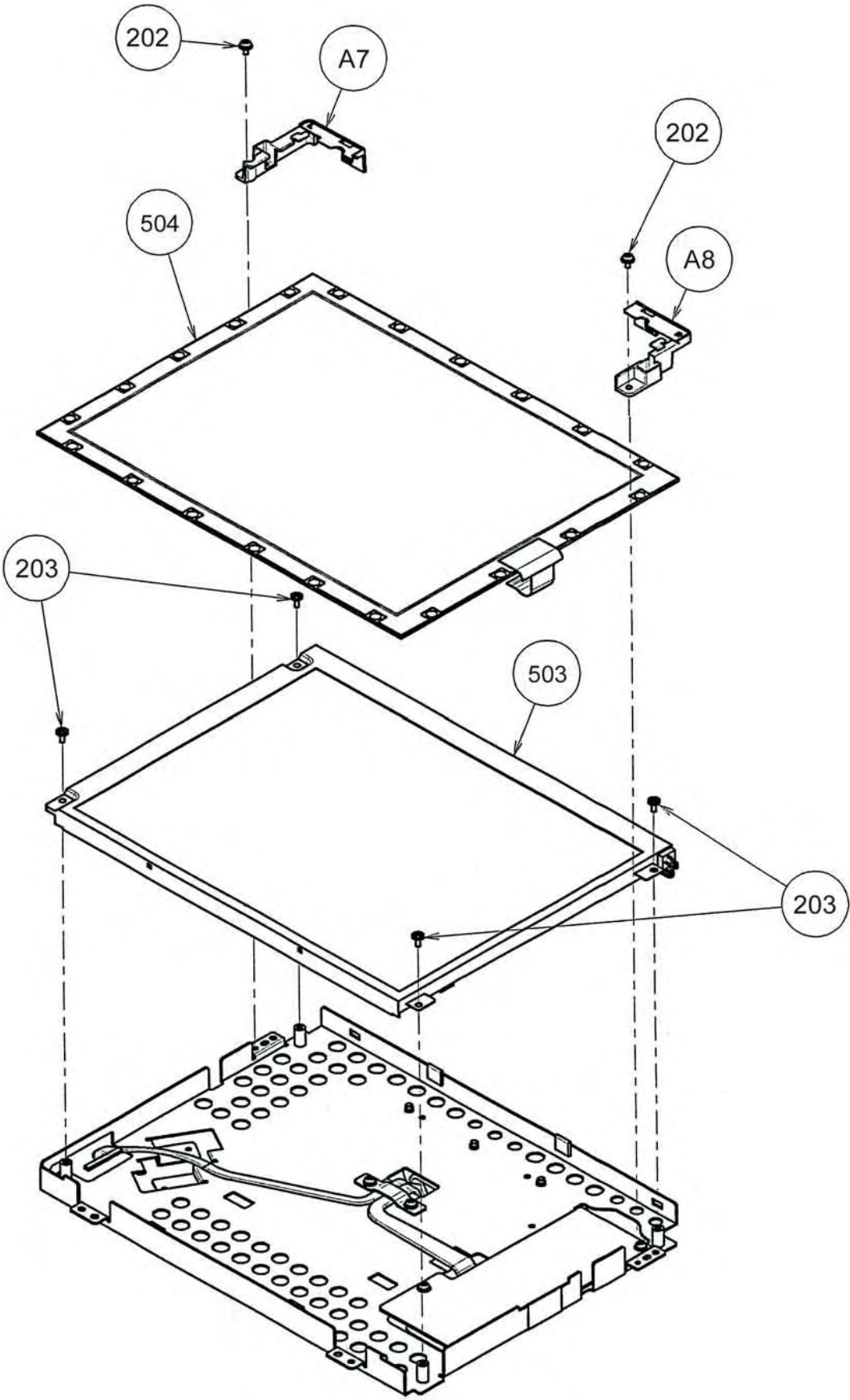
6.2 LCD Block Reassmebly 3



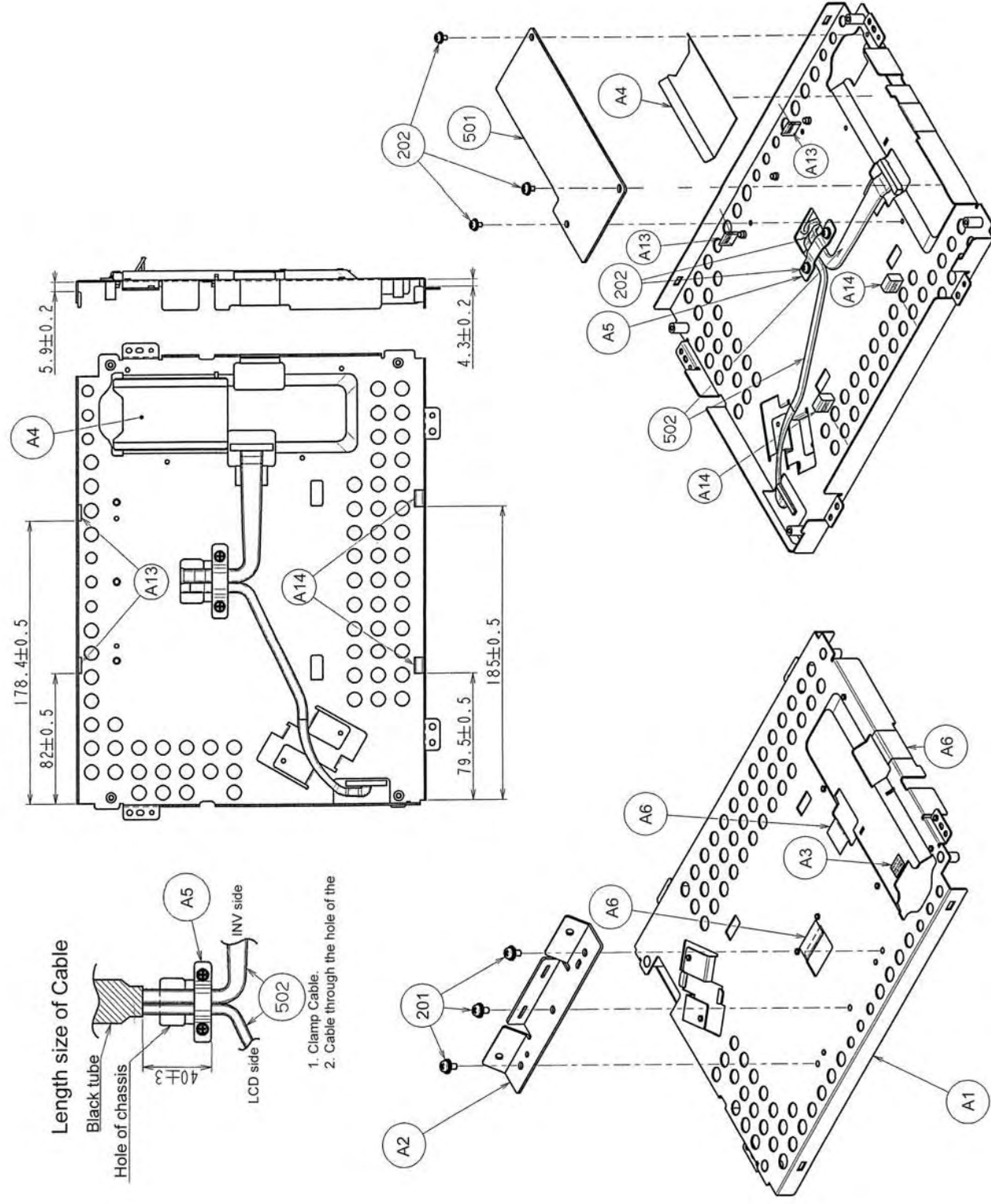
6.2 LCD Block Reassembly 4



6.2 LCD Block Reassmebly 5



6.2 LCD Block Reassembly 6



7. Parts List

7.1 MAIN PCB Parts

Ref.No.		Parts No.	Parts Name	Qty	Note
BT	1701	CR2032	BATTERY	1	
E	1201 1701	IMSA9215HGF	(IMSA-9215H-GF)	2	
CN	1701	YJBCR20H5	BATTERY HOLDER	1	
CN	1301	K1AB106BA002	CONNECTOR	1	
CN	701	K1FB115B0117	CONNECTOR	1	
CN	1001	K1FB208B0002	CONNECTOR	1	
CN	1703	K1KA02A00621	CONNECTOR	1	
CN	1702	K1KA04A00534	CONNECTOR	1	
CN	1201 1202	K1KA09A00137	CONNECTOR	2	
CN	801	K1KA44A00016	CONNECTOR	1	
CN	1901	K1KA80A00137	CONNECTOR	1	
JK	901	N5HBZ0000023		1	
JP	1201	YJ9210B102GF	PLUG	1	
JP	1202 1701	YJ9210B103GF	PLUG	2	
C	2001	ECJ1VB1A224K	CAPACITOR	1	
C	1801	ECJ1VB1C104K	CAPACITOR	1	
C	340 1301 1803 1804 1805 1809 2002	ECJ1VB1C105K	CAPACITOR	7	
C	204 206 207 208 209 1426 1505 1522 1603 1617	ECJ1VB1H102K	CAPACITOR	10	
C	341	ECJ1VB1H104K	CAPACITOR	1	
C	1423 1538 1632	ECJ1VB1H222K	CAPACITOR	3	
C	1106 1107 1508 1605	ECJ1VB1H332K	CAPACITOR	4	
C	1422 1502 1537 1615 1631	ECJ1VB1H562K	CAPACITOR	5	
C	1507	ECJ1VB1H682K	CAPACITOR	1	
C	501 507	ECJ1VC1H010C	CAPACITOR	2	
C	312 315	ECJ1VC1H070D	CAPACITOR	2	
C	909	ECJ1VC1H080D	CAPACITOR	1	
C	210 338 339 602 603 701 702 703 708 709 710 916	ECJ1VC1H100D	CAPACITOR	12	
C	1303 1406 1421 1428 1542 1638	ECJ1VC1H101J	CAPACITOR	6	
C	704 705 706 707	ECJ1VC1H121J	CAPACITOR	4	
C	108	ECJ1VC1H180J	CAPACITOR	1	
C	202 203 205 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235	ECJ1VC1H220J	CAPACITOR	19	
C	1509 1519 1606 1614	ECJ1VC1H221J	CAPACITOR	4	
C	1424 1535 1539 1629 1633	ECJ1VC1H330J	CAPACITOR	5	
C	1408	ECJ1VC1H331J	CAPACITOR	1	
C	1407 1425	ECJ1VC1H471J	CAPACITOR	2	
C	1536 1630	ECJ1VC1H681J	CAPACITOR	2	
C	114 117 120 124 127 213 214 216 217 218 236 249 327 332 1203 1207 1307 1513 1610 1701 1802	ECJ1VF1C105Z	CAPACITOR	21	

Ref.No.						Parts No.	Parts Name	Qty	Note
C	1412					ECJ1VF1C224Z	CAPACITOR	1	
C	1415	1501	1531	1621	1622	ECJ1VF1E683Z	CAPACITOR	5	
C	115	118	119	122	125	ECJ1VF1H103Z	CAPACITOR	105	
	126	129	131	132	134				
	136	137	138	140	141				
	142	144	145	146	147				
	219	238	239	241	243				
	244	245	246	247	250				
	251	252	253	254	255				
	256	257	259	301	302				
	303	304	307	309	310				
	311	319	320	321	322				
	323	329	335	336	401				
	402	404	405	407	408				
	410	411	413	414	416				
	417	419	420	422	423				
	425	426	503	506	509				
	510	512	513	514	515				
	516	517	518	519	605				
	609	610	612	613	614				
	615	616	908	910	912				
	913	914	915	917	918				
	919	1401	1410	1427	1704				
C	101	102	104	105	107	ECJ1VF1H104Z	CAPACITOR	70	
	110	201	211	212	237				
	240	305	308	325	326				
	330	331	334	337	429				
	430	433	611	618	619				
	711	901	903	905	906				
	907	911	920	922	1001				
	1003	1006	1007	1101	1102				
	1103	1104	1105	1108	1109				
	1110	1302	1304	1308	1309				
	1310	1311	1402	1404	1409				
	1419	1512	1518	1609	1612				
	1702	1706	1707	1806	1807				
	1808	1810	1811	2003	2005				
C	111	113	116	121	123	ECJ2FF1A106Z	CAPACITOR	41	
	128	130	133	135	139				
	143	242	248	258	260				
	261	262	313	314	316				
	317	318	324	328	333				
	502	508	511	601	604				
	606	607	608	617	902				
	904	1532	1533	1626	1627				
	1636								
C	403	406	409	412	415	ECJ2FF1A475Z	CAPACITOR	11	
	418	421	424	427	1516				
	1611								
C	1201	1202	1204	1205	1206	ECJ2VB1C224K	CAPACITOR	9	
	1208	1209	1210	1705					

Ref.No.						Parts No.	Parts Name	Qty	Note
C	109	1002	1005	1008	1417	ECJ3YB0J226M	CAPACITOR	5	
C	1418	1420	1520	1528	1620	ECJ3YB1C226M	CAPACITOR	6	
	1625								
C	1411					ECJ3YF1C475Z	CAPACITOR	1	
C	1413	1510	1607			ECJ3YF1E225Z	CAPACITOR	3	
C	434	505	1405	1514	1515	EEEFK1A102GP	CAPACITOR	5	
C	1305	1543	1703	1708		EEEFK1E471GP	CAPACITOR	4	
C	2004					EEHC1E101P	CAPACITOR	1	
C	432	1403	1637			EEFCD1B220ER	CAPACITOR	3	
C	431	1414	1416	1429	1430	EEFUE0D271ER	CAPACITOR	6	
	1619								
C	428	435	504	1601		EEFUE0G181ER	CAPACITOR	4	
C	1503	1524				EEFUE0J151ER	CAPACITOR	2	
CN	2002					K1KA07A00271	CONNECTOR	1	
CN	2001					K1KA12BA0065	CONNECTOR	1	
CN	1902					K1KA14AA0229	CONNECTOR	1	
CN	601					K1KA20B00145	CONNECTOR	1	
CN	401					K1NAL0E00002	CONNECTOR	1	
D	1302					B0ECKP000002	DIODE	1	
D	1702					B0JCGC000003	DIODE	1	
D	1403					B0JCPE000022	DIODE	1	
D	1701					B0JDCB000006	DIODE	1	
D	1703					B0JDSE000011	DIODE	1	
D	1402	1501	1502	1601	1602	MA2Q73600L	DIODE	5	
D	801	1101	1401			MA2SD1900L	DIODE	3	
D	1802					MA3X152D0L	DIODE	1	
D	1301					MA3X152E0L	DIODE	1	
D	701	702	703			MA3X157A0L	DIODE	3	
D	1704	1801	1803			MA3X70400L	DIODE	3	
FL	1006	1007				G1BYYYYC00014	FILTER	2	
FL	701	702	703	704	705	J0JCC0000028	FILTER	26	
	706	1202	1203	1204	1205				
	1206	1207	1208	1209	1210				
	1211	1212	1213	1214	1215				
	1216	1217	1218	1305	2001				
	2002								
FL	201	202	203	301	302	J0JHC0000041	FILTER	47	
	303	304	305	306	307				
	308	501	502	503	601				
	602	603	604	605	606				
	607	608	707	901	1001				
	1002	1003	1004	1005	1008				
	1009	1010	1011	1012	1101				
	1201	1301	1302	1303	1304				
	1901	1902	1903	2003	2004				
	2005	2006							
IC	1401					C0ABBA000188	IC	1	
IC	602	1402				C0CBCAD00077	IC	2	
IC	1602					C0CBCAG00013	IC	1	
IC	401					C0DBAFA00027	IC	1	

Ref.No.		Parts No.	Parts Name	Qty	Note
IC	1403	C0DBAFH00033	IC	1	
IC	1501 1601	C0DBALH00003	IC	2	
IC	1802	C0EBE0000349	IC	1	
IC	1803	C0EBH0000527	IC	1	
IC	2002	C0EBH0000573	IC	1	
IC	1701 1702	C0EBY0000016	IC	2	
IC	601	C0HBZ0000059	IC	1	
IC	1302	C0JBAA000362	IC CMOS 2-5.5V	1	
IC	301 1801	C0JBAB000600	IC	2	
IC	1303	C0JBAB000660	IC CMOS	1	
IC	1804	C0JBAC000400	IC	1	
IC	1805	C0JBAF000617	IC	1	
IC	1301	C0JBAM000052	IC CMOS 3.3V	1	
IC	1304	C0JBAZ001529	ロジック IC	1	
IC	2001	C0JBAZ002757	IC	1	
IC	701	SN74LS125ANS	IC 4		
IC	502	C0ZBZ0001102	IC	1	
IC	1101	C1CB00002212	IC I/O	1	
IC	902	C1DB00001385	IC	1	
IC	302	C1DB00001391	IC	1	
IC	1201 1202	C1DB00001416	IC RS232C	2	
IC	201	C1ZBZ0002835	IC	1	
IC	501	C1ZBZ0002883	IC CMOS 3.3V	1	
IC	101	C2GBZ0000020	IC	1	
IC	901	C3EBCG000099	IC	1	
L	101	ELJFC330KF	COIL	1	
L	1401	ETQP6F1R2HFA	COIL	1	
L	1501 1502 1601 1602	G1A5R2JA0013	COIL	4	
Q	902	2SB10730LL	TRANSISTOR	1	
Q	1101	B1ABDE000015	TRANSISTOR	1	
Q	601 602	B1CFDC000010	TRANSISTOR	2	
Q	501 605 1401	B1CFHG000011	TRANSISTOR	3	
Q	1502	B1CFHG000012	TRANSISTOR	1	
Q	1402 1403 1404 1503 1504	B1DFGD000034	TRANSISTOR	6	
Q	1807				
Q	604 1806	B1DHCB000024	TRANSISTOR	2	
Q	1302 1702 1704	B1DHGD000028	TRANSISTOR	3	
Q	1301	B1GBCFEH0001	TRANSISTOR	1	
Q	603 606 901 1703 1802	B1GBCFEL0002	TRANSISTOR	9	
Q	1803 1804 1805 1808				
Q	1701 1705	B1GBCFNN0009	TRANSISTOR	2	
Q	1501 1505 1601 1602	B1MBFDA00003	TRANSISTOR	4	
R	1504 1520 1601 1612	D1BZR010A018	RESISTOR	4	
R	1307	ERJ12YJ821U	RESISTOR	1	
R	1707 1708	ERJ1TYJ160U	RESISTOR	2	
R	1722 1723	ERJ1TYJ200U	RESISTOR	2	
R	615 627 1518	ERJ3EKF1000V	RESISTOR	3	
R	219 1406 1413	ERJ3EKF1001V	RESISTOR	3	
R	608 609	ERJ3EKF1002V	RESISTOR	2	
R	1517	ERJ3EKF1053V	RESISTOR	1	

Ref.No.						Parts No.	Parts Name	Qty	Note
R	1701	1713	1717			ERJ3EKF1203V	RESISTOR	3	
R	115					ERJ3EKF14R0V	RESISTOR	1	
R	104	106	201	202	213	ERJ3EKF1500V	RESISTOR	8	
	214	217	1519						
R	1402					ERJ3EKF1501V	RESISTOR	1	
R	1611					ERJ3EKF1802V	RESISTOR	1	
R	1408	1516	1610			ERJ3EKF2002V	RESISTOR	3	
R	207					ERJ3EKF20R5V	RESISTOR	1	
R	1506	1603				ERJ3EKF2402V	RESISTOR	2	
R	1405					ERJ3EKF2701V	RESISTOR	1	
R	218	302				ERJ3EKF3001V	RESISTOR	2	
R	1410					ERJ3EKF3303V	RESISTOR	1	
R	211	305				ERJ3EKF3600V	RESISTOR	2	
R	304					ERJ3EKF4120V	RESISTOR	1	
R	303					ERJ3EKF4321V	RESISTOR	1	
R	1716					ERJ3EKF4703V	RESISTOR	1	
R	503					ERJ3EKF4750V	RESISTOR	1	
R	1414					ERJ3EKF4991V	RESISTOR	1	
R	908	909	910	911		ERJ3EKF49R9V	RESISTOR	4	
R	1602					ERJ3EKF5102V	RESISTOR	1	
R	902					ERJ3EKF5601V	RESISTOR	1	
R	309					ERJ3EKF6041V	RESISTOR	1	
R	208	209				ERJ3EKF60R4V	RESISTOR	2	
R	1505					ERJ3EKF7502V	RESISTOR	1	
R	103	105	212	215	216	ERJ3EKF75R0V	RESISTOR	8	
	701	702	703				RESISTOR		
R	1714					ERJ3EKF8203V	RESISTOR	1	
R	204					ERJ3EKF82R5V	RESISTOR	1	
R	101	108	110	203	205	ERJ3GEY0R00V	RESISTOR	40	
	404	501	523	524	525				
	526	532	533	534	535				
	536	537	539	604	605				
	606	607	612	616	630				
	906	1102	1103	1104	1105				
	1106	1409	1417	1501	1502				
	1511	1614	1627	1724	1904				
R	602	603	1421			ERJ3GEYJ100V	RESISTOR	3	
R	901	1809				ERJ3GEYJ101V	RESISTOR	2	
R	210	510	907	1107	1110	ERJ3GEYJ102V	RESISTOR	15	
	1117	1118	1119	1120	1121				
	1305	1306	1710	1711	1715				
R	315	506	507	508	509	ERJ3GEYJ103V	RESISTOR	23	
	621	704	705	1108	1109				
	1112	1113	1115	1122	1123				
	1124	1404	1514	1608	1703				
	1805	1812	1813						
R	299	1509	1709	1712	1814	ERJ3GEYJ104V	RESISTOR	5	
R	905	1302	1510	1513	1604	ERJ3GEYJ153V	RESISTOR	6	
	1607								
R	1301					ERJ3GEYJ204V	RESISTOR	1	

Ref.No.						Parts No.	Parts Name	Qty	Note
R	1201	1202	1420	1507	1508	ERJ3GEYJ205V	RESISTOR	5	
R	206	322	331	511	512	ERJ3GEYJ220V	RESISTOR	30	
	513	514	515	516	517				
	518	519	520	521	522				
	531	540	1411	1412	1528				
	1529	1530	1531	1532	1620				
	1621	1622	1623	1624	1808				
R	1111	1114				ERJ3GEYJ223V	RESISTOR	2	
R	622	623	624	625		ERJ3GEYJ272V	RESISTOR	4	
R	1802	1803				ERJ3GEYJ273V	RESISTOR	2	
R	308	1415	1605			ERJ3GEYJ2R0V	RESISTOR	3	
R	706	707	1304			ERJ3GEYJ330V	RESISTOR	3	
R	802					ERJ3GEYJ361V	RESISTOR	1	
R	306	912	913	1303		ERJ3GEYJ471V	RESISTOR	4	
R	312	313	314	320	610	ERJ3GEYJ472V	RESISTOR	12	
	611	613	617	618	1401				
	1806	1811							
R	323	324	325	1116	1125	ERJ3GEYJ473V	RESISTOR	22	
	1126	1127	1128	1129	1308				
	1309	1515	1609	1720	1721				
	1804	1901	1902	2001	2002				
	2003	2004							
R	1002	1003	1005	1007		ERJ3GEYJ474V	RESISTOR	4	
R	1810					ERJ3GEYJ511V	RESISTOR	1	
R	114	118	321	527	528	ERJ3GEYJ560V	RESISTOR	7	
	529	530							
R	903					ERJ3GEYJ562V	RESISTOR	1	
R	1001	1004	1006	1008		ERJ3GEYJ564V	RESISTOR	4	
R	316	317	318	319	326	ERJ3GEYJ822V	RESISTOR	10	
	327	328	329	330	801				
R	620					ERJ6GEYJ121V	RESISTOR	1	
RA	417	418	419	420		EXBV8V100JV	RESISTOR	4	
RA	105	502	1103	1104	1901	EXBV8V102JV	RESISTOR	7	
	1902	1903							
RA	101	102	103			EXBV8V151JV	RESISTOR	3	
RA	303	305	307	308		EXBV8V153JV	RESISTOR	4	
RA	301	401	402	403	404	EXBV8V220JV	RESISTOR	17	
	405	406	407	408	409				
	410	411	412	413	414				
	415	416							
RA	810	811	812	813		EXBV8V272JV	RESISTOR	4	
RA	421	422	423	424	425	EXBV8V330JV	RESISTOR	34	
	426	427	428	429	430				
	431	432	433	434	435				
	436	437	438	439	440				
	441	442	443	444	445				
	446	447	801	802	803				
	804	805	806	807					
RA	201	202	501			EXBV8V472JV	RESISTOR	3	
RA	104					EXBV8V560JV	RESISTOR	1	

Ref.No.						Parts No.	Parts Name	Qty	Note
RA	203	204	302	304	306	EXBV8V822JV	RESISTOR	19	
	309	310	311	312	313				
	314	315	316	317	318				
	601	602	808	1101					
X	501					H0J143500064		1	
X	301	901				H0J250500060		2	
X	302					H0J327200139	(32.7KHZ)	1	
Z	601	701	1001	1002	1003	D4FBR750A002		7	
	1004	1201							
IC	1102					C3FBKC000137		1	

7.2 Peripheral PCB Parts

Ref.No.	Parts No.	Parts Name	Qty	Note
CN 203	K1FB104B0030	CONNECTOR	1	
CN 301	K1KA02A00593	CONNECTOR	1	
CN 302	K1KA03A00526	CONNECTOR	1	
CN 501	K1KA44A00016	CONNECTOR	1	
JK 303 304	K3GE1BB00012	(AC250V 5A)	2	
SW 201	K0F122B00077	PUSH SWITCH	1	
SW 202	K0H1BB000039	PUSH SWITCH	1	
VS 301	J0LQ00000015 J0LS00000020		1	U version A & E version
ZNR 301 302 303	ERZV14D471 ERZV14D621	ZNR	3	U version A & E version
BZ 201	L0DABB000005		1	
C 405	ECJ1VB1A224K	CAPACITOR	1	
C 102 103	ECJ1VB1C104K	CAPACITOR	2	
C 404 411 412	ECJ1VB1H103K	CAPACITOR	3	
C 401 403 406 407 417	ECJ1VB1H104K	CAPACITOR	5	
C 116 117 118 119	ECJ1VB1H182K	CAPACITOR	4	
C 115	ECJ1VB1H472K	CAPACITOR	1	
C 114	ECJ1VB1H681K	CAPACITOR	1	
C 204 205	ECJ1VF1C105Z	CAPACITOR	2	
C 101 104 110 111	ECJ1VF1E104Z	CAPACITOR	4	
C 201 202 203 209 501	ECJ1VF1H104Z	CAPACITOR	5	
C 402 408	ECJ2FB1C474K	CAPACITOR	2	
C 409 418	ECJ2FB1E475M	CAPACITOR	2	
C 109 112 113	ECJ3YB1C226M	CAPACITOR	3	
C 410 419	ECJ3YB1E105K	CAPACITOR	2	
C 208	EEEFK1A102GP	CAPACITOR	1	
C 503	EEHC1E101P	CAPACITOR	1	
C 413 414	F1L3F100A011	CAPACITOR	2	
CN 402	K1KA04BA0132	CONNECTOR	1	
CN 202	K1KA06BA0013	CONNECTOR	1	
CN 101	K1KA12BA0065	CONNECTOR	1	
CN 201	K1KA14BA0086	CONNECTOR	1	
CN 102	K1MN15B00124	CONNECTOR	1	
CN 503	K1NA50E00046	CONNECTOR	1	
D 201	B0ADCJ000003	DIODE	1	
D 101 102 103 104 105 D 106 107	B0ADCJ000015	DIODE	7	
D 401 402 403 404	MA4ZD1400L	DIODE	4	
DS 202 203	B3ABB0000054	LED	2	
DS 201	SML-020MLT	LED	1	
F 401	K5H202300019	FILTER	1	
FL 202	G1BYYC00014	FILTER	1	
FL 103 104 105 106 107 FL 108 109	J0JCC0000028	FILTER	7	
FL 101 102	J0JDC0000015	FILTER	2	
FL 201	J0JHC0000041	FILTER	1	
IC 103	C0EBB0000169	IC	1	
IC 202	C0JBAC000400	IC	1	

Ref.No.		Parts No.	Parts Name	Qty	Note
IC	101	C1ZBZ0003052	IC	1	
IC	401	C1ZBZ0003100	IC	1	
IC	102	C3EBEG000063	IC(EEPROM)	1	
Q	403	B1ADDE000017	TRANSISTOR	1	
Q	202 204 205	B1CFGD000002	TRANSISTOR	3	
Q	201	B1CFHA000002	TRANSISTOR	1	
Q	404	B1CFHG000010	TRANSISTOR	1	
Q	102 104	B1GBCFJN0009	TRANSISTOR	2	
Q	101 103 105	B1GDCFLL0012	TRANSISTOR	3	
Q	401 402	B1MBDDA00013	TRANSISTOR	2	
R	102	ERJ3EKF1001V	RESISTOR	1	
R	404 418	ERJ3EKF1003V	RESISTOR	2	
R	407	ERJ3EKF1693V	RESISTOR	1	
R	402	ERJ3EKF2003V	RESISTOR	1	
R	101	ERJ3EKF2201V	RESISTOR	1	
R	408 409	ERJ3EKF40R2V	RESISTOR	2	
R	412	ERJ3EKF75R0V	RESISTOR	1	
R	420 503 508	ERJ3GEY0R00V	RESISTOR	3	
R	110 502 505	ERJ3GEYJ102V	RESISTOR	3	
R	105 107 112 113 114 115 116 118 217 414 415	ERJ3GEYJ103V	RESISTOR	11	
R	205 218 219 401 403	ERJ3GEYJ104V	RESISTOR	5	
R	413	ERJ3GEYJ105V	RESISTOR	1	
R	111	ERJ3GEYJ223V	RESISTOR	1	
R	203 206 215	ERJ3GEYJ271V	RESISTOR	3	
R	410 411	ERJ3GEYJ333V	RESISTOR	2	
R	501	ERJ3GEYJ361V	RESISTOR	1	
R	416	ERJ3GEYJ474V	RESISTOR	1	
R	417	ERJ3GEYJ475V	RESISTOR	1	
R	216	ERJ3GEYJ681V	RESISTOR	1	
R	109	ERJ3GEYJ822V	RESISTOR	1	
R	202	ERJ8GEYJ150V	RESISTOR	1	
T	403 404	G5FYA0000005		2	
X	101	H2D800400017		1	

7.3 Main Body Parts

Ref.No.	Parts No.	Parts Name	Qty	Note
1	3VA002201BAA	LOWER CASE ASSY	1	
2	3CD001669AAA	FRAME	1	
3	3CC001499BAA	BASE PLT	1	
4	3KA001227CAA	POW HEAT SINK	1	
5	3CA004146AAA	HEAT SINK ANGLE	1	
6	3KB001169AAA	POWER THERMAL PAD	1	
7	3KB001171AAA	HEAT SINK PAD	1	
8	1CK001022AAA	DABURU MINI PCB POST	2	
9	3VA002203BAA	REAR COVER ASSY	1	
10	3AA001115AAA	COVER SCREW	1	
11	3DH001705AAA	MAIN SHIELD ASSY	1	
12	3CV002042AAA	CUSTOMER DISP PACKING	1	
14	3DH001630AAA	PW PCB SHIELD	1	
15	3KB001168AAA	CPU PAD	2	
16	3CJ001439AAA	PCB STOPPER	1	
17	3CA003798AAA	HDD BRACKET	1	
18	3CF002991AAB	IO PANEL ASSY	1	
19	3DA002296BAA	FRAME COVER	1	
20	3VA002202BAA	FRONT COVER ASSY	1	
21	3CA003799AAA	BATT BRACKET	1	
22	3CV002065BAA	BATT CUSHION	4	
23	3DA002421BAA	POP HOLDER	1	
24	3EZ001256BAA	HINGE	1	
25	3DA002300AAA	DISP HINGE COVE	1	
26	3DA002298CAA	HINGE COVER	1	
27	3CX001631BAA	HINGE COVER SHEET	1	
28	3CV002071AAA	HINGE COVER PACKING	1	
505	1CC001002AAA	TFB-2024M3	1	
506	N0AB1EF00007 N0AZ1EF00001	POWER SUPPLY PCB UNIT	1	U version A & E version
507	YJS79WU104WH S79WE10PWH	CF PCB UNIT (A part of S79WU10PWH)	1	U version A & E version
508	YJS79WU103WH S79WE10PWH	SURGE PCB UNIT (A part of S79WU10PWH)	1	U version A & E version
509	YJS79WU102WH S79WE10PWH	FRONT PCB UNIT (A part of S79WU10PWH)	1	U version A & E version
510	WC50685B	AC IN CABLE	1	
511	WC50686B	AC SW CABLE	1	
512	WC50688B	PSU CABLE	1	
513	EC50689B	CD CABLE	1	
514	S79W010P1H	MAIN PCB UNIT	1	
515	WC50690B	CF CABLE	1	
516	WC50693B	SW CABLE	1	
517	J0KG00000050	FILTER	1	
518	N4HKLNB00004	Ni-Cd BATTERY	1	

Ref.No.	Parts No.	Parts Name	Qty	Note
521	K2AH3H000002	AC INLET	1	
522	K0AABE000047	AC SWITCH	1	
523	WC50687B	INLET FG CABLE	1	
524	J0KG00000078	FILTER	1	

7.4 LCD Unit Parts

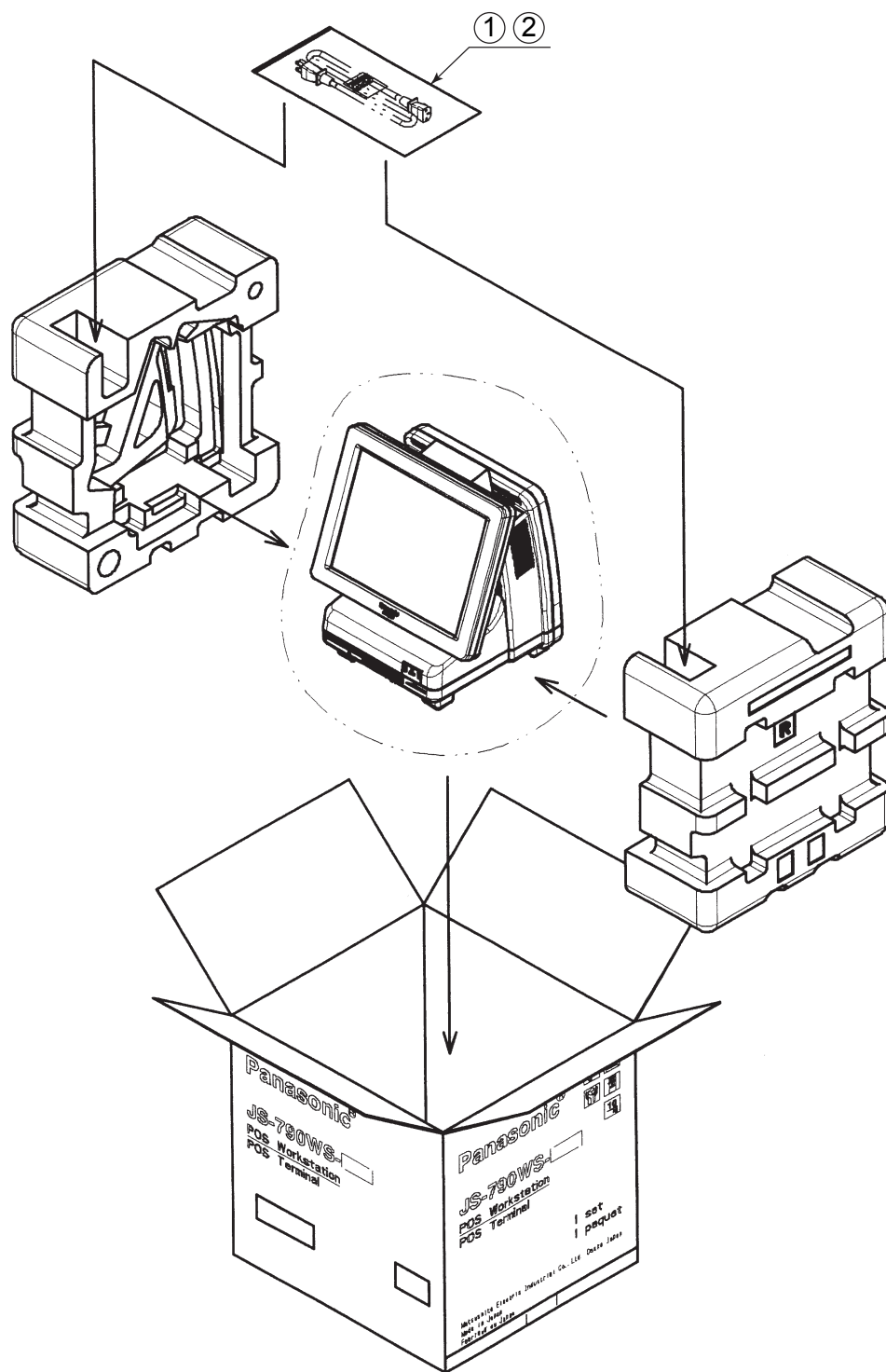
Ref.No.	Parts No.	Parts Name	Qty	Note
A1	3DH001632BAA	DISPLAY LCD CHASSIS	1	
A2	3CA004062AAA	DISPLAY BRACKET	1	
A3	J7S49510B4	CAUTION LABEL	1	
A4	3CZ001131BAA	INSULATOR	1	
A5	3CL001188AAA	CABLE CLAMP	1	
A6	SUPER10W25	TAPE	3	
A7	3CH001369AAA	TP HOLDER(L)	1	
A8	3CH001390AAA	TP HOLDER(R)	1	
A9	3CE001863BAA	DISPLAY CASE FRONT	1	
A10	3CV002044BAA	DISPLAY PACKING	1	
A11	3CZ001129AAA	TP PROTECT SHEET	1	
A12	3CE001864BAA	DISPLAY REAR CASE	1	
A13	3DH001728AAA	LCD GASKET 1	2	
A14	3DH001729AAA	LCD GASKET 2	2	
501	YJS79WU101WH S79WE10PWH	TP & INV PCB UNIT (A part of S79WU10PWH)	1	U version A & E version
502	WC50691C	LCD CABLE	1	
503	L5EDD3N00003	LCD Unit	1	
504	N2BAANK00014	TP Unit	1	

7.5 Screw

Ref.No.	Parts No.	Parts Name	Qty	Note
201	XTB4+12GFJK	SCREW	6	
202	XYN4+F8FJ	SCREW	14	
203	XYN3+F6FJ	SCREW	34	
204	XYN26+F6FJ	SCREW	3	
205	XYN3+J8FJK	SCREW	9	
205	XYN3+J8FJK	SCREW	4	
206	XWC4BFN	SCREW	1	
207	XSB3+6FJ	SCREW	6	
208	XTB3+8GFJ	SCREW	7	

8. Packing

8.1 Packing



8.2 Accessory Replacement Parts List

Ref.No.	Parts No.	Parts Name	Qty	Note
1	YJKPSV2516Y K2CG3EW00001 YJKP30EPHA	AC CABLE	1	U version A version E version
2	YJNK-4N YJNK-5N	CLAMP	1	U version A & E version

Attachment A

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- **AUTOMATIC INTERNET-BASED SERVICES.** The SOFTWARE features described below are enabled by default to connect via the Internet to Microsoft computer systems automatically, without separate notice to you. You consent to the operation of these features, unless you choose to switch them off or not use them. Microsoft does not use these features to collect any information that will be used to identify you or contact you. For more information about these features, please see the privacy statement at <http://go.microsoft.com/fwlink/?LinkId=25243>

- **Web Content Features.** Under the SOFTWARE's default configuration, if you are connected to the Internet, several features of the SOFTWARE are enabled by default to retrieve content from Microsoft computer systems and display it to you. When you activate such a feature, it uses standard Internet protocols, which transmit the type of operating system, browser and language code of your DEVICE to the Microsoft computer system so that the content can be viewed properly from your DEVICE. These features only operate when you activate them, and you may choose to switch them off or not use them. Examples of these features include Windows Catalog, Search Assistant, and the Headlines and Search features of Help and Support Center.

- **Digital Certificates.** The SOFTWARE uses digital certificates based on the x.509 standard. These digital certificates confirm the identity of Internet users sending x.509 standard encrypted information. The SOFTWARE retrieves certificates and updates certificate revocation lists. These security features operate only when you use the Internet.

- **Auto Root Update.** The Auto Root Update feature updates the list of trusted certificate authorities. You can switch off the Auto Root Update feature.

- **Windows Media Player.** Some features of Windows Media Player automatically contact Microsoft computer systems if you use Windows Media Player or specific features of it: features that (A) check for new codecs if your DEVICE does not have the correct ones for content you attempt to play (this feature may be switched off), and (B) check for new versions of Windows Media Player (this feature will operate only when you are using Windows Media Player).

- **Windows Media Digital Rights Management.** Content providers are using the digital rights management technology for Windows Media contained in this SOFTWARE ("WM-DRM") to protect the integrity of their content ("Secure Content") so that their intellectual property, including copyright, in such content is not misappropriated. Portions of this SOFTWARE and third party applications such as media players use WM-DRM to play Secure Content ("WM-DRM Software"). If the WM-DRM Software's security has been compromised, owners of Secure Content ("Secure Content Owners") may request that Microsoft revoke the WM-DRM Software's right to copy, display and/or play Secure Content. Revocation does not alter the WM-DRM Software's ability to play unprotected content. A list of revoked WM-DRM Software is sent to your DEVICE whenever you download a license for Secure Content from the Internet. Microsoft may, in conjunction with such license, also download revocation lists onto your DEVICE on behalf of Secure Content Owners. Secure Content Owners may also require you to upgrade some of the WM-DRM components in this SOFTWARE ("WM-DRM Upgrades") before accessing their content. When you attempt to play such content, WM-DRM Software built by Microsoft will notify you that a WM-DRM Upgrade is required and then ask for your consent before the WM-DRM Upgrade is downloaded. WM-DRM Software built by third parties may do the same. If you decline the upgrade, you will not be able to access content that requires the WM-DRM Upgrade; however, you will still be able to access unprotected content and Secure Content that does not require the upgrade. WM-DRM features that access the Internet, such as acquiring new licenses and/or performing a required WM-DRM Upgrade, can be switched off. When these features are switched off, you will still be able to play Secure Content if you have a valid license for such content already stored on your DEVICE.

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- In addition, you acknowledge and accept that (i) Windows Updates may not be necessary or suitable for installation on or use with your DEVICE or the SOFTWARE, and (ii) if installed or attempted to be installed on your DEVICE, Windows Updates may not function on the DEVICE or may malfunction and/or cause harm to the DEVICE, to operators of the DEVICE or to other persons or property. If you connect to a server that installs a Windows Update, you agree that you assume all risk and liability with regard to any Windows Update that you install or attempt to install on your DEVICE using functionality provided by SOFTWARE. You further agree that neither MS, Microsoft Corporation nor their affiliates have any liability to you with respect to any Windows Update that you install or attempt to install on your DEVICE; and

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• **ADDITIONAL SOFTWARE/SERVICES.** This EULA applies to updates, supplements, add on components, product support services, or Internet-based services components (“Supplemental Components”), of the SOFTWARE that you may obtain from Matsushita Electric Industrial Co., Ltd., MS, Microsoft Corporation or their affiliates after the date you obtain your initial copy of the SOFTWARE, unless you accept updated terms or another agreement governs. If other terms are not provided along with such Supplemental Components and the Supplemental Components are provided to you by MS, Microsoft Corporation or their affiliates then you will be licensed by such entity under the same terms and conditions of this EULA, except that (i) MS, Microsoft Corporation or their affiliates providing the Supplemental Components will be the licensor with respect to such Supplemental Components in lieu of the “COMPANY” for the purposes of the EULA, and (ii) TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE SUPPLEMENTAL COMPONENTS AND ANY (IF ANY) SUPPORT SERVICES RELATED TO THE SUPPLEMENTAL COMPONENTS ARE PROVIDED AS IS AND WITH ALL FAULTS. ALL OTHER DISCLAIMERS, LIMITATION OF DAMAGES, AND SPECIAL PROVISIONS PROVIDED HEREIN AND/OR OTHERWISE WITH THE SOFTWARE SHALL APPLY TO SUCH SUPPLEMENTAL COMPONENTS. MS, Microsoft Corporation or their affiliates reserve the right to discontinue any Internet-based services provided to you or made available to you through the use of the SOFTWARE.

• **RECOVERY MEDIA.** If SOFTWARE is provided by Matsushita Electric Industrial Co., Ltd. on separate media and labeled “Recovery Media” you may use the Recovery Media solely to restore or reinstall the SOFTWARE originally installed on the DEVICE.

• **TERMINATION.** Without prejudice to any other rights, Matsushita Electric Industrial Co., Ltd. or MS may terminate this EULA if you fail to comply with the terms and conditions of this EULA. In such event, you must destroy all copies of the SOFTWARE and all of its component parts.

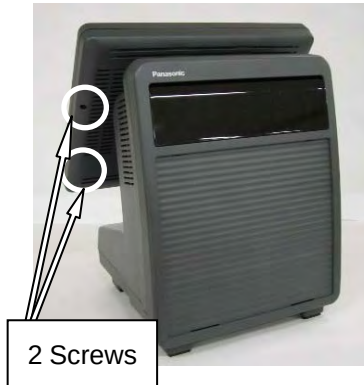
• **NOTICE REGARDING SECURITY.** To help protect against breaches of security and malicious software, periodically back up your data and system information, use security features such as firewalls, and install and use security updates.

Display Sheet Exchange Instructions

1. This manual is applied to the Display Sheet of JS790WS.



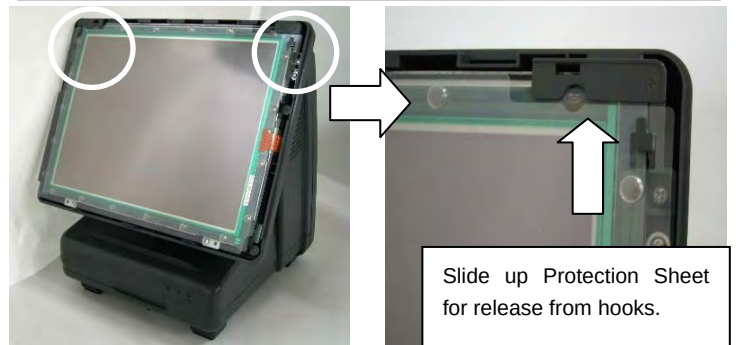
2. Remove four (4) screws on the back of the Display on bottom left, and right corners.



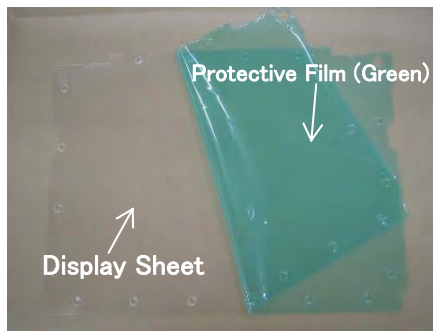
3. Display Front Case can be removed by pushing a point as shown in left picture of Display Rear Case.



4. Remove Display Sheet by sliding it up to release from two (2) hooks.



5. Peel off protective films from new Display Sheet.



6. Mount new Display Sheet, and mount the Display front case.



7. Mount four (4) screws on the back of the Display on the bottom left, and right corners.



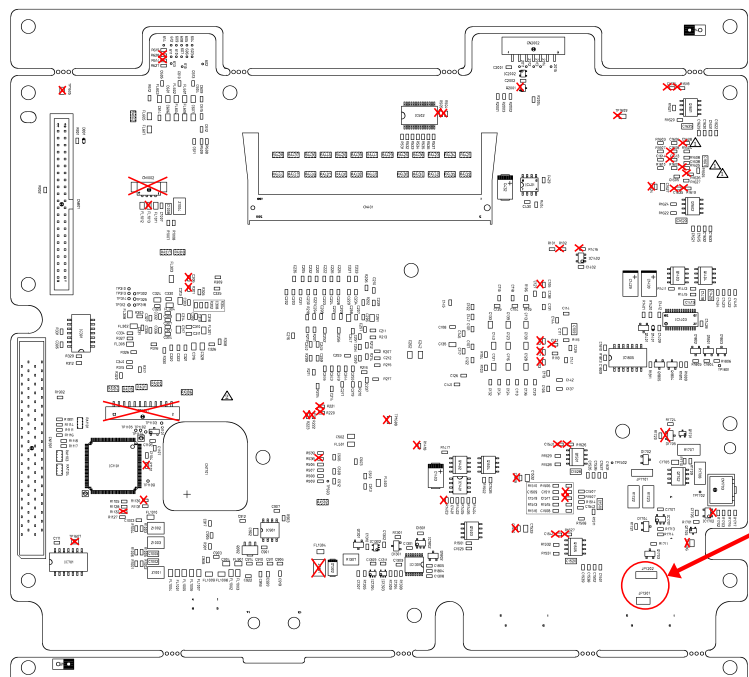
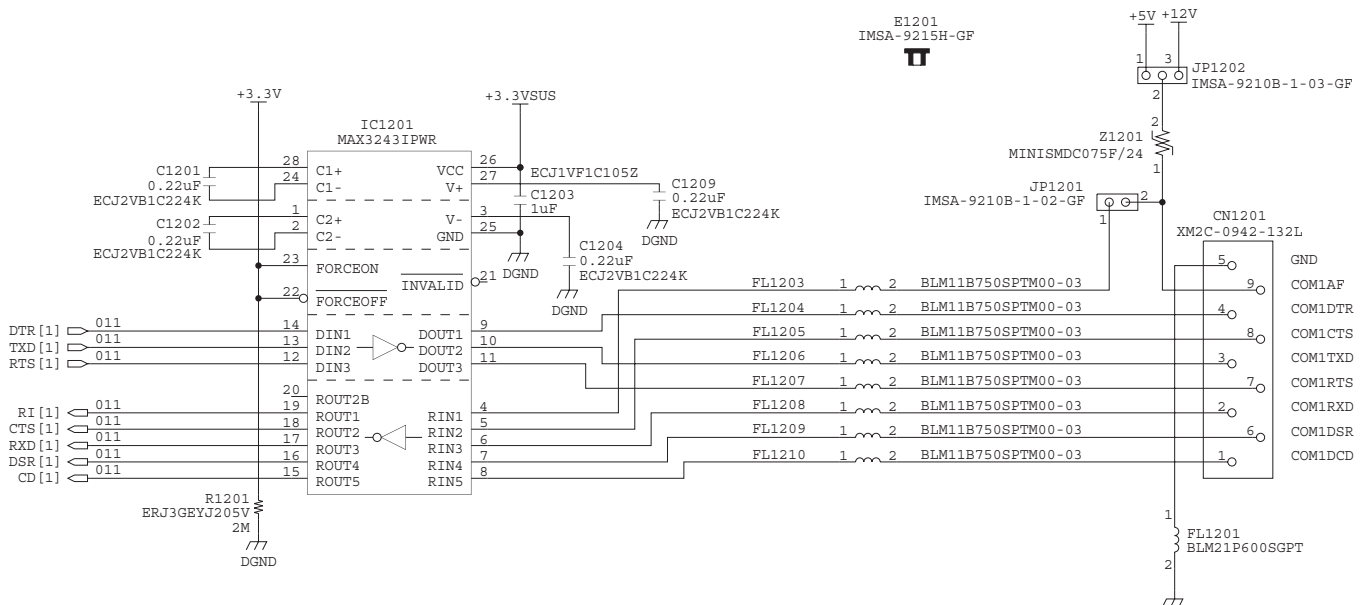
1. Powered COM setting (only COM1)

COM1 is able to switch output voltage +5V or +12V on #9 pin.

Jumper		Setting	#9 pin of COM1
1202	+5V	O	+5V output
	+12V	-	
1201		-	

Jumper		Setting	#9 pin of COM1
1202	+5V	-	+12V output
	+12V	O	
1201		-	

Jumper		Setting	#9 pin of COM1
1202	+5V	-	RI
	+12V	-	
1201		O	



X : No Mounting

2. Power failure watching function

JS-790WS is watching Power failure.

If JS-790WS found Power failure, Battery supplies Power in place of Power Supply Unit.

In this case, +12V is off. (Backlight of LCD, Cash Drawer and Powered COM are off.)

If Power is recovered within 5 seconds, you can operate it continuously.

If Power is not recovered till *5 seconds, JS-790WS does Windows shutdown safely automatically.

* 5 seconds is fixed.

JS-790WS does not have Low Battery indicator.