

MODELS LC32LE600E LC40LE600E LC46LE600E LC52LE600E

REASON Changes in LCD panel assembly and Main PWB during production.

ACTION When servicing please check the rear rating plate to ensure the correct circuit and parts list is being used as there are currently 3 versions including A and B variants.



Figure 1: Original Version Model Number only. Figure 2: Indication of “A” Version chassis.

SAFETY PRECAUTION

IMPORTANT SERVICE SAFETY PRECAUTION

- Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and the servicing guidelines which follow:

■ WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.

CAUTION:

FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE REPLACE ONLY WITH SAME TYPE FUSE.

LC-32LE600E/RU/S: F7001, F7002 (2.5A/250V)

LC-40LE600E/RU/S: F7001, F7002 (5A/250V)

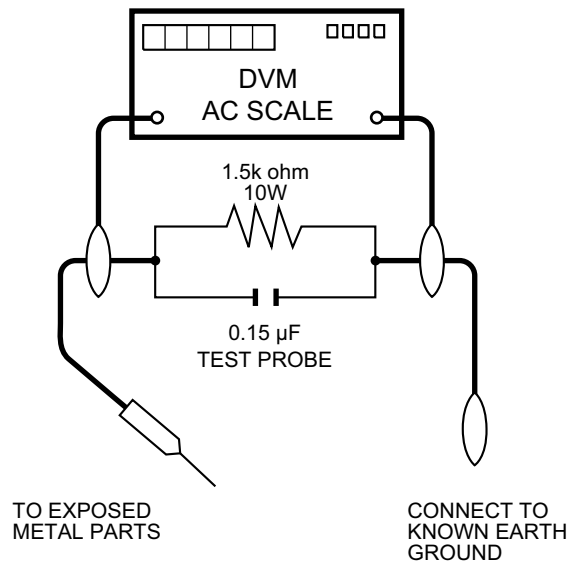
LC-46LE600E/RU/S: F7001, F7002 (6.3A/250V)

■ BEFORE RETURNING THE RECEIVER (Fire & Shock Hazard)

Before returning the receiver to the user, perform the following safety checks:

3. Inspect all lead dress to make certain that leads are not pinched, and check that hardware is not lodged between the chassis and other metal parts in the receiver.
 4. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
 5. To be sure that no shock hazard exists, check for leakage current in the following manner.
- Plug the AC cord directly into a 220~240 volt AC outlet.

- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to an earth ground.
 - Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor.
 - Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.
- All checks must be repeated with the AC cord plug connection reversed. (If necessary, a nonpolarized adaptor plug must be used only for the purpose of completing these checks.)
- Any reading of 1.05 V peak (this corresponds to 0.7 mA peak AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the monitor to the owner.



SAFETY NOTICE

Many electrical and mechanical parts in LCD color television have special safety-related characteristics.

These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "△" and shaded areas in the Replacement Parts List and Schematic Diagrams.

For continued protection, replacement parts must be identical to those used in the original circuit.

The use of a substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire or other hazards.

Precautions for using lead-free solder**■Employing lead-free solder**

- “PWBs” of this model employs lead-free solder. The LF symbol indicates lead-free solder, and is attached on the PWBs and service manuals. The alphabetical character following LF shows the type of lead-free solder.

Example:

LFa

Sn-Ag-Cu

Indicates lead-free solder of tin, silver and copper.

LFa/a

Sn-Ag-Cu

Indicates lead-free solder of tin, silver and copper.

■Using lead-free wire solder

- When fixing the PWB soldered with the lead-free solder, apply lead-free wire solder. Repairing with conventional lead wire solder may cause damage or accident due to cracks.

As the melting point of lead-free solder (Sn-Ag-Cu) is higher than the lead wire solder by 40 °C, we recommend you to use a dedicated soldering bit, if you are not familiar with how to obtain lead-free wire solder or soldering bit, contact our service station or service branch in your area.

■Soldering

- As the melting point of lead-free solder (Sn-Ag-Cu) is about 220 °C which is higher than the conventional lead solder by 40 °C, and as it has poor solder wettability, you may be apt to keep the soldering bit in contact with the PWB for extended period of time. However, Since the land may be peeled off or the maximum heat-resistance temperature of parts may be exceeded, remove the bit from the PWB as soon as you confirm the steady soldering condition.

Lead-free solder contains more tin, and the end of the soldering bit may be easily corroded. Make sure to turn on and off the power of the bit as required.

If a different type of solder stays on the tip of the soldering bit, it is alloyed with lead-free solder. Clean the bit after every use of it.

When the tip of the soldering bit is blackened during use, file it with steel wool or fine sandpaper.

- Be careful when replacing parts with polarity indication on the PWB silk.

Lead-free wire solder for servicing

Part No.	★	Description	Code
ZHNDai123250E	J	φ0.3mm 250g (1roll)	BL
ZHNDai126500E	J	φ0.6mm 500g (1roll)	BK
ZHNDai12801KE	J	φ1.0mm 1kg (1roll)	BM

End of life disposal

End of life disposal



Attention: Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

A. Information on Disposal for Users (private households)

1. In the European Union

Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!

Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.

Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.

*) Please contact your local authority for further details.

If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

For Switzerland: Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don't purchase a new product. Further collection facilities are listed on the homepage of www.swico.ch or www.sens.ch.

B. Information on Disposal for Business Users

1. In the European Union

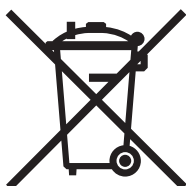
If the product is used for business purposes and you want to discard it:

Please contact your SHARP dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.

For Spain: Please contact the established collection system or your local authority for take-back of your used products.

2. In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.



Pb

The battery supplied with this product contains traces of Lead.

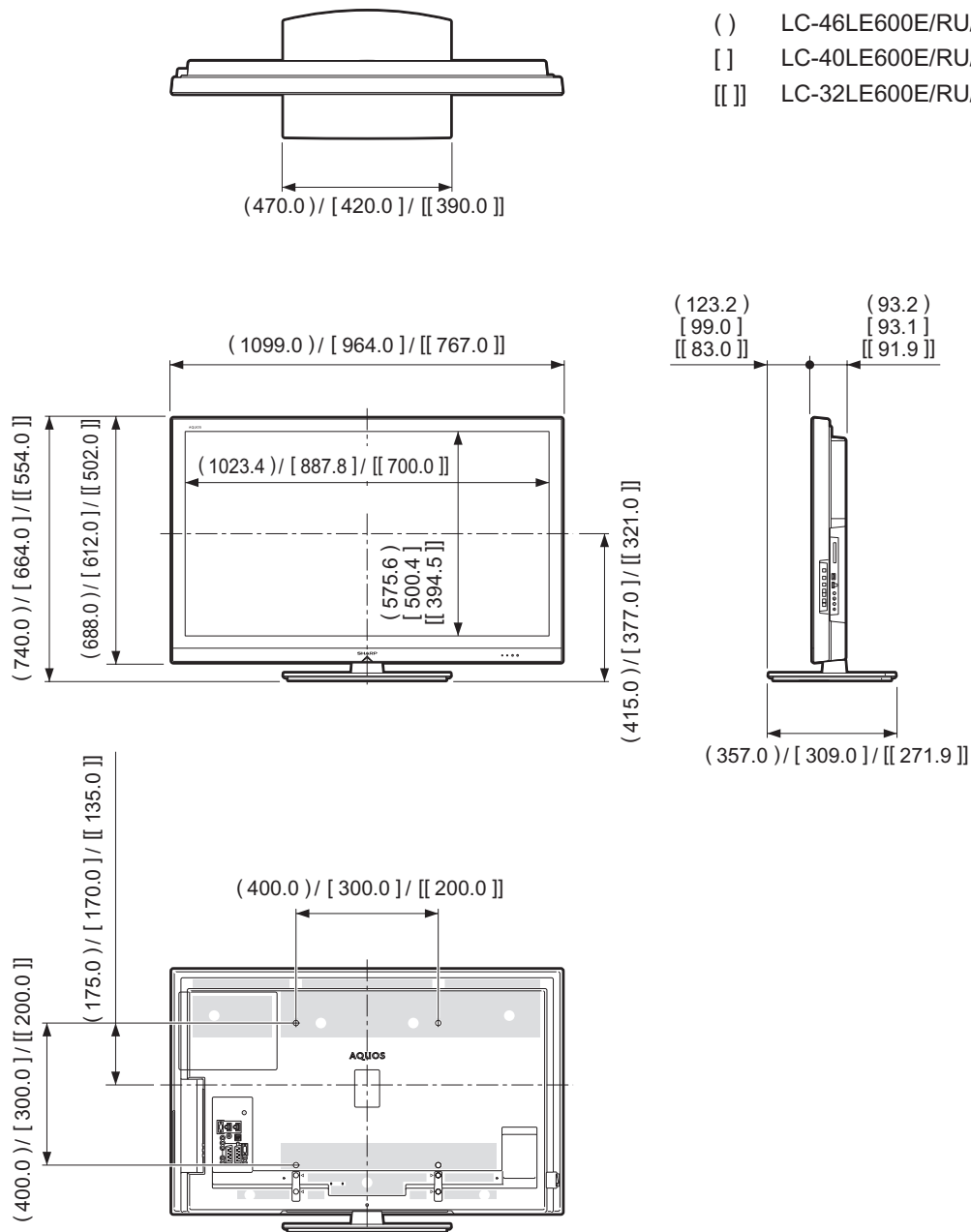
For EU: The crossed-out wheeled bin implies that used batteries should not be put to the general household waste! There is a separate collection system for used batteries, to allow proper treatment and recycling in accordance with legislation. Please contact your local authority for details on the collection and recycling schemes.

For Switzerland: The used battery is to be returned to the selling point.

For other non-EU countries: Please contact your local authority for correct method of disposal of the used battery.

CHAPTER 3. DIMENSIONS

[1] DIMENSIONS

46"/40"/32"


CHAPTER 4. ADJUSTMENT PROCEDURE

[1] ADJUSTMENT PROCEDURE

1. Adjustment method after PWB and/or IC replacement due to repair

The unit is set to the optimum at the time of shipment from the factory. If any value should become improper or any adjustment is necessary due to the part replacement, make an adjustment according to the following procedure.

1. Procure the following units in order to replace the main unit, E2PROM (IC8455).

MAIN UNIT: DUNTKF111FM11

NOTE: [Caution when replacing ICs in the main unit (IC501)]

The above ICs are EEPROMs storing the EDID data of PC data.

Before replacing the relevant part, procure the following parts in which the data have been rewritten.

IC501 RH-iXC206WJQZS EDID (PC) ANALOG-RGB

2. Entering and exiting the adjustment process mode

1. Press the "MAIN POWER" key on the set of running TV set to force power off.
(Or, unplug the AC power cord of running TV set to force power off.)
2. While holding down the " $\triangleleft$ (-)" and "INPUT" keys on the set at once, press the "MAIN POWER" key on the set to turn on the power.
The letter "K" appears on the screen.
3. Next, hold down the " $\triangleleft$ (-)" and "P ($\vee$)" keys on the set at once.
Multiple lines of orange characters appearing on the screen indicate that the set is now in the adjustment process mode.
If you fail to enter the adjustment process mode (the display is the same as normal start up), retry the procedure.
4. To exit the adjustment process mode after the adjustment is done, press the MAIN POWER key and turn off a power supply. or unplug the AC power cord to force power off.
(When the power is turned off with the remote controller, once unplug the AC power cord and wait for 10 seconds before plug it in again.)

CAUTION: Use due care in handling the information described here lest the users should know how to enter the adjustment process mode.
If the settings are tampered with in this mode, unrecoverable system damage may result.

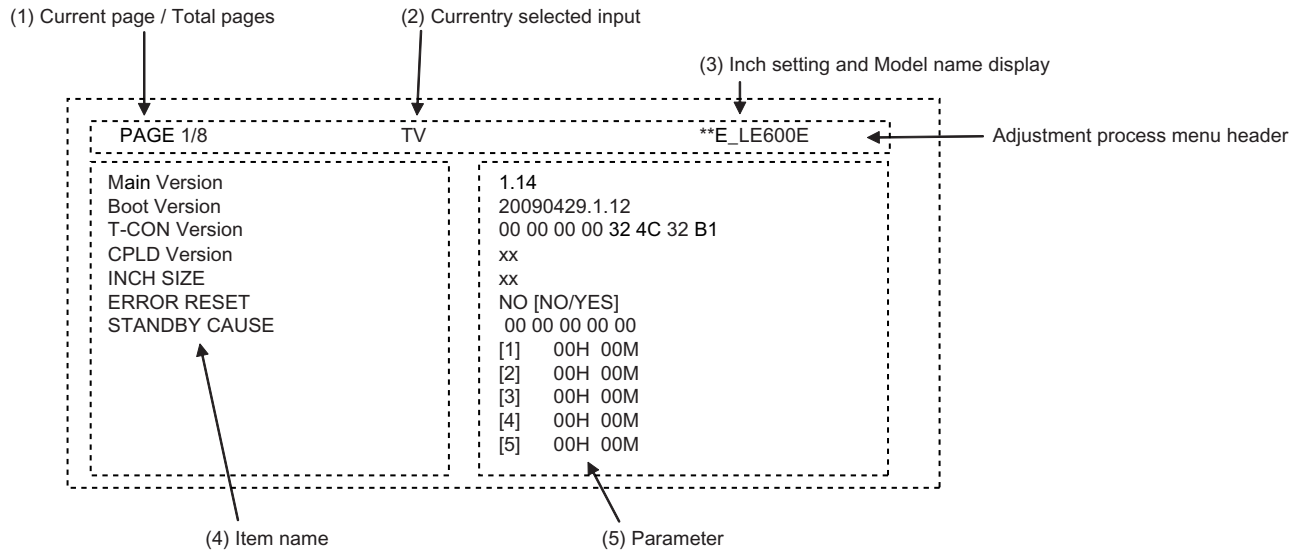
3. Remote controller key operation in adjustment process mode.

1. key operation

Remote controller key	Main unit key	Remote controller key Main unit key Function
P ($\wedge$ / $\vee$)	P ($\wedge$ / $\vee$)	Moving an item (line) by one (UP/DOWN)
$\triangleleft$ (+/-)	$\triangleleft$ (+/-)	Changing a selected item setting (+1/-1)
Cursor ($\blacktriangle$ / $\blacktriangledown$)	—	Turning a page (PREVIOUS/NEXT)
Cursor ($\blacktriangleleft$ / $\blacktriangleright$)	—	Changing a selected line setting (+10/-10)
$\square$ Input button	$\square$ Input button	Input source switching (toggle switching) (TV→EXT1→EXT2→EXT3→EXT4→HDMI1→HDMI2→HDMI3→EXT8)
OK	—	Executing a function

Input mode is switched automatically when relevant adjustment is started so far as the necessary input signal is available.

4. Description of display



No.	Description	Display specification
(1)	Current page/total pages	2char/2char Decimal Number mark.
(2)	Currently selected input	TV→EXT1→EXT2→EXT3→EXT4→HDMI1→HDMI2→HDMI3→EXT8
(3)	Inch setting and destination display	32/40/46
(4)	Item name	Max. 30 char
(5)	Parameter table	Max. 60 char (Preset value of each item)

5. Adjustment process mode menu

The character string in brackets [] will appear as a page title in the adjustment process menu header.

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
1/8				
	1	Main Version	1.14	Main microprocessor version
	2	Boot Version	20090429.1.12	Boot version of the main microprocessor
	3	T-CON Version	00 00 00 00 32 4C 32 B1	T-CON microprocessor version
	4	CPLD Version	xx	CPLD Version for Backlight controller
	5	INCH SIZE	32/40/46	Initial Setting of panel size
	6	ERROR RESET	NO [NO/YES]	Lamp error reset. (Select "YES" and press "OK" key.)
	7	STANDBY CAUSE	00 00 00 00 00 1) 00H 00M 2) 00H 00M 3) 00H 00M 4) 00H 00M 5) 00H 00M	Error standby cause. Total operating time before error. (5 times histories)
2/8				
	1	INDUSTRY INIT	[NO/YES(E)/YES(I)/YES(F)/YES(R)]	Initialization to factory settings execution.
	2	PUBLIC MODE	OFF [OFF/ON]	ON/OFF setting of hotel mode
	3	I2C DATA	000000000000	Write and read of data in I2C BUS control IC.
	4	I2C STATE	WAIT [STANDBY/WAIT]	Execution of write and read of I2C DATA
3/8				
	1	INSPECT USB TERM	ENTER	Reading inspection of USB memory terminal
	2	HDMI CEC TEST	ENTER	HDMI CEC test
4/8				
	1	TUNER ADJ	ENTER	VIDEO level adjustment execution
	2	CHANNEL	E-12/E-9(SMPTE)/E-12(SMPTE)	
	3	GAIN	31	Gain adjustment
	4	ADJ RESET	NO [NO/YES]	Reset of adjustment
5/8				
	1	VIDEO ADJ	ENTER	VIDEO level adjustment execution
	2	GAIN	31	
6/8				
	1	COM-ADJ	ENTER	COMPONENT level adjustment execution
	2	Y OFF SET	70	Y CUTOFF adjustment value
	3	PB OFF SET	128	PB CUTOFF adjustment value
	4	PR OFF SET	128	PR CUTOFF adjustment value
	5	Y GAIN	140	Y GAIN adjustment value
	6	PB GAIN	140	PB GAIN adjustment value
	7	PR GAIN	140	PR GAIN adjustment value
	8	ADJ RESET	NO [NO/YES]	Reset of adjustment
7/8				
	1	RGB-ADJ	ENTER	SCART RGB level adjustment execution
	2	R OFF SET	128	R OFF SET adjustment value
	3	G OFF SET	128	G OFF SET adjustment value
	4	B OFF SET	128	B OFF SET adjustment value
	5	R GAIN	80	R DRIVE adjustment value
	6	G GAIN	80	G DRIVE adjustment value
	7	B GAIN	80	B DRIVE adjustment value
	8	ADJ RESET	NO [NO/YES]	Reset of adjustment
8/8				
	1	COM BIAS	67	Common Bias auto adjustment execution
	2	LCD TEST PATTERN	0	Pattern with built-in LCD controller display
	3	WB Point A	1280	W/B adjustment, gradation Point A input setting
	4	Point B	3712	W/B adjustment, gradation Point B input setting
	5	Point A ADJ R	1280	W/B adjustment, gradation Point A R_adjustment value
	6	ADJ G	1280	W/B adjustment, gradation Point A G_adjustment value
	7	ADJ B	1280	W/B adjustment, gradation Point A B_adjustment value
	8	Point B ADJ R	3712	W/B adjustment, gradation Point B R_adjustment value
	9	ADJ G	3712	W/B adjustment, gradation Point B G_adjustment value
	10	ADJ B	3712	W/B adjustment, gradation Point B B_adjustment value
	11	WB WRITE	NO [NO/YES]	W/B writing of adjustment values
	12	WB RESET	NO [NO/YES]	Reset of W/B adjustment value

6. Special features

1. STANDBY CAUSE (Page 1/8)

Display of a cause (code) of the last standby.

The cause of the last standby is recorded in EEPROM whenever possible.

Checking this code will be useful in finding a problem when you repair the troubled set.

7. ROM Writing (HDMI_EDID)

1. EDID writing

1) Get ready the PC with COM port (RS-232C) running on Windows 95/98/ME/2000/XP operating system, as well as the RS-232C cross cable.

2) Start the set with the set connected with the personal computer with the RS232C cross cable.

3) Start the terminal software. (The free ware readily available on the Internet will do.)

4) Make the following settings.

Baud rate	: 9600 bps
Data LENGTH	: 8bit
Parity bit	: none
Stop bit	: 1 bit
Flow control	: none

5) Input following commands to terminal software.

"KRSW0001"

PC replies "ERR" (you should ignore this replay)

"KKT10037"

PC replies "OK"

"WRED0000"

PC replies "OK"... At that time, EDID writing finish with success.

6) It usually returns to a state by AC-OFF/ON.

Disconnect and connect AC cable, then TV wakes up with normal mode.

2. Software version

(1) Mainmicon Software	Ver. 1.14	*1
(2) Boot version of mainmicon Software	Ver. 1.12	*1
(3) T-CON Monitor micon Software	Ver. 1.0	*1
(4) CPLD Version	XX	*1

*1 Please refer to the change report document for the latest version (Issued it to SEES).

8. Adjustment procedure

1. Inch Setting

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Inch Setting	Adjustment process mode Adjustment process "INCH SIZE" menu page 1/8	1) Inch Setting with adjustment process mode. 2) Enter the adjustment process mode, referring to the 2nd item. 3) By using P ($\wedge$ / $\vee$) key of R/C, Move the cursor to "INCH SIZE" on page 1/8. 4) Select inch size 32/40/46 with the Volume (+)/(-) key of remote control. 5) Press the "OK" key of remote control. 6) After a while, If "**** OK ****" is displayed, the setting is completed.

2. COMB-BIAS Adjustment

	Adjustment point	Adjustment conditions	Adjustment procedure
1	COM-BIAS Adjustment	A visual check Adjustment process "COM BIAS" menu page 8/8	1) COM-BIAS Adjustment with adjustment process mode. 2) Enter to the adjustment process mode, referring to the 2nd item. 3) By using $\blacktriangle$ / $\blacktriangledown$ key and P ($\wedge$ / $\vee$) key of R/C, Move the cursor to "COM-BIAS" on page 8/8. 4) Press the "OK" key. then, you can check that the pattern for adjustment is displayed. 5) Adjust so that the flicker for the central part of a screen becomes the minimum using the volume (+)/(-) key of R/C. 6) In order to exit from this process, press the "OK" key of remote control again.

9. Video signal adjustment procedure

* The adjustment process mode menu is listed in 5th item.

Signal generator level adjustment check (Adjustment to the specified level)

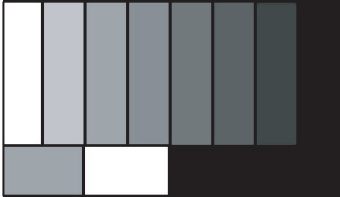
- Composite signal PAL/SECAM : 0.7Vp-p $\pm$ 0.02Vp-p (White level from pedestal)
- PC (Analog D_sub15pin) signal : 0.7Vp-p $\pm$ 0.02Vp-p (White level from pedestal)
- 33K component signal : Y level 0.7Vp-p $\pm$ 0.02Vp-p (White level from pedestal)
: PB,PR level 0.7Vp-p $\pm$ 0.02Vp-p

1. Picture Adjustment

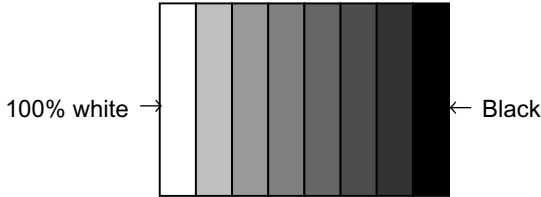
1) Entering the adjustment process mode

Adjustment point	Adjustment conditions	Adjustment procedure
		Enter to the adjustment process mode, referring to the 2nd item.

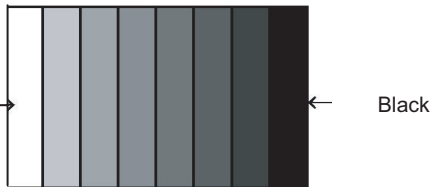
2) TUNER adjustment

Adjustment point	Adjustment conditions	Adjustment procedure
1 Setting	[Signal] PAL split colour Bar In-house UV [Terminal] TUNER	• Feed the In-house signal (PAL color bar) to TUNER. • Make sure the PAL colour bar pattern has the sync level of 7:3 with the picture level. • Feed the SMPTE color bar signal to TUNER. JABIL: 203.25MHz [SMPTE pattern] 
2 Auto adjustment performance	Adjustment process [VIDEO ADJ] menu page 4/8	Bring the cursor on [VIDEO ADJ] and press OK key [*** OK ***] appears when finished.

3) PAL signal adjustment

Adjustment point	Adjustment conditions	Adjustment procedure
1 Setting	[Signal] PAL full colour Bar [Terminal] EXT1 SCART Video input	• Feed the PAL full field colour bar (color saturation level 100%) signal to the SCART video input of EXT1. [VIDEO input signal] 
2 Auto adjustment performance	Adjustment process [VIDEO ADJ] menu page 5/8	Bring the cursor on [VIDEO ADJ] and press OK key [*** OK ***] appears when finished.

4) ADC adjustment (Component 33K)

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Setting	[Signal] COMP 33K 50Hz 100% Full field colour bar [Terminal] EXT3 COMPONENT input	Feed the COMPONENT 33K 100% Full field colour bar (colour saturation level 100%) signal to the COMPONENT video input of EXT3. 
2	Auto adjustment performance	Adjustment process [COM ADJ] menu page 6/8	Bring the cursor on [COM ADJ] and press OK key [*** OK ***] appears when finished.

5) PC signal adjustment (Analog D-SUB15pin)

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Setting	[Signal] XGA 60 Hz 100% Full field colour bar [Terminal] EXT4 PC input	Feed the XGA 60Hz 100% Full field colour bar (colour saturation level 100%) signal to the EXT4 PC input. 
2	Auto adjustment performance	Adjustment process [RGB ADJ] menu page 7/8	Bring the cursor on [RGB ADJ] and press OK key [*** OK ***] appears when finished.

10. White Balance Adjustment

Adjustment gradation values (INFO) appear on page 8/8 3-4 lines of process adjustment, and adjustment initial values (offset value) appear on pages 8/8 5-10 lines. For white balance adjustment, adjust the offset values on pages 8/8 5-10 lines.

1. Preparation

- 1) Luminance meter reference device :Minolta CA-210
- 2) Condition of the unit for adjustment and inspection: Modulated light: MAX (+16)

2. Setting

- 1) The luminance meter is set to the center of the screen of the set.
- 2) In "INCH SIZE" on the process adjustment page 1/8, sets it to the size of each panel with the ◀/▶ key to R/C.

3. Adjustment method

Check that the values of point A and B on page 8/8 of process adjustment are set as below. If not, change them accordingly.

WB Point A	1280	WB Point B	3712
------------	------	------------	------

- 1) Display the current adjustment status at point B. (Page 8/8 of process adjustment)

The display for checking the adjustment status is toggled by pressing the "OK" button on the remote control.

(Normal OSD display → "B" → display for check (OSD disappears) → "B" → normal OSD display → ...)

- 2) Read the value of the luminance meter.

- 3) Change Point B ADJ R/Point B ADJ B (Adjustment offset value) on page 8/8 of process adjustment so that the values of the luminance meter approach $x = 0.272$ and $y = 0.277$.

(Basically, Point B ADJ G is not changed.)

- 4) Follow Point A as well as item 3).

Change Point A ADJ R/Point A ADJ B (Adjustment offset value) on page 8/8 of process adjustment so that the values of the luminance meter approach $x = 0.272$ and $y = 0.277$.

- 5) Select "WB WRITE" on page 8/8 in the process, set "YES", and press the OK key of remote control.

The adjustment value is written. and then shut down the AC power.

* Initial value of RGB of point B: 3712

* Initial value of RGB of point A: based on calculated of each G point

- 6) [Adjustment value]

* Teaching set send by engineering dept is set as reference

4. Adjustment reference standard value

	Level	Spec Data	Adjustment Spec	Inspection Spec
Point A ref. value	1280	$x=0.272$ $y=0.277$	± 0.001	± 0.002
Point B ref. value	3712	$x=0.272$ $y=0.277$	± 0.002	± 0.004

Adjustment spec ± 0.004 Inspection spec ± 0.006 (point 1)

Adjustment spec ± 0.002 Inspection spec ± 0.004 (Excluding the above-mentioned)

11. QS Temperature NVM Data Confirmation

During servicing of the LCD TV set, by software upgrading or by any cleaning NVM, it's mandatory select the "INCH SIZE" in Service Mode, Page 1, according to the size of the TV set.

PAGE1/8	TV	32E_LE600E
Main Version	-	
Boot Version	-	
T-CON Version	-	
CPLD Version	-	
INCH SIZE	-	
ERROR RESET	NO	
STANDBY CAUSE	00 00 00 00 00	
	1) 00H 00M	

Default picture after cleaning NVM.

PAGE1/8	TV	32E_LE600E
Main Version	-	
Boot Version	-	
T-CON Version	-	
CPLD Version	-	
INCH SIZE	32	
ERROR RESET	NO	
STANDBY CAUSE	00 00 00 00 00	
	1) 00H 00M	

Picture with [Inch Setting] to 32. (It is actually set as each inch.)

12. Initialization to factory settings

After a factory setting, It ends with the AC power supply OFF.

After a factory settings, Do not turn on the power supply. If you turn on the power supply. execute the factory settings again.

Do not do power supply OFF by remote control.

CAUTION: When the factory settings have been made, all user setting data, including the channel settings, are initialized.
(The adjustments done in the adjustment process mode are not initialized.) Keep this in mind when initializing these settings.

	Adjustment item	Adjustment conditions	Adjustment procedure
1	Factory settings	Ends in AC power supply OFF. (See to below caution)	[Factory setting with adjustment process mode] - Enter the adjustment process mode. - Move the cursor to "INDUSTRY INIT" on page 2/8. - Use the ◀/▶ key of R/C to select a region from "YES (E)/YES (I)/YES (F)/YES (R)" and press the [OK] key. "EXECUTING" display appears and initialization starts. - After a while, "OK" display appears, the setting is completed. When succeeding: The background color becomes green. When failing: The background color becomes red. NOTE: Never turn the power off during initialization. When performing factory settings (while displaying page 2 of adjustment process), confirm that the item "INCH SIZE" or the panel size displayed in the upper right corner corresponds to each panel size. The following items are initialized in the factory setting. 1) User settings 2) Channel data (e.g. broadcast frequencies) 3) Manufacturer option setting 4) Password data

After adjustments, exit the adjustment process mode.

To exit the adjustment process mode, turn off the MAIN power key.

When the power is turned off with the remote control, unplug the AC power cord and plug it back in.

(wait approximately 10 seconds before plugging in the AC power cord)

13. Functional explanation of STANDBY CAUSE

13.1. [display method]

It is displayed in the top page of the process adjustment mode. (Page displayed first when entering process mode)

13.2. [Content of display]

1. NORMAL STANDBY CAUSE

The reason that became a power-off by the specification of usual use and the main body is displayed.

(Only the one latest) It is not displayed when power supply OFF is carried out with remote control.

Display code	Display character string	Reason
00	00 00 00 00 00	When based on No error
0x01	1 RC_STANDBY	When based on RC Standby OFF
0x05	5 PC_OUT_OF_RANGE	When based on out of range for pc OFF
0x06	6 NO_OPERATION	When based on non-operated OFF
0x07	7 NO_SIGNAL	When based on non-signal OFF
0x0A	a SLEEP_TIMER	When based on an sleep-timer OFF
0x0C	c RS232C	When based on the command from RS232C (standby)
0x18	18 AV_LINK	When based on the command from AV-LINK (standby)

2. ERROR STANDBY CAUSE

When main CPU becomes a power-off detecting some abnormalities, the use time of the set at the time of the reason and the power-off is displayed five times.

When time information can be acquired from digital broadcasting, the date and time when the error occurs at the same time is recorded, displayed and when time information cannot be acquired, it becomes the above-mentioned display.

"00" is displayed when abnormality has not been detected even once.

Display error code	Display character string	Reason
0x1A	1a TEMP_ERROR	When temperature (high temperature) is abnormal.
0x1B	1b LAMP_ERROR	When lamp is abnormal
0x1C	1c POWER_ERROR	When power module is abnormal status.

14. Lamp error detection

1. Function description

This LCD colour television has a function (lamp error detection) to be turned OFF automatically for safety when the lamp or lamp circuit is abnormal.

If the lamp or lamp circuit is abnormal, or some other errors happen, and the lamp error detection is executed, the following occur.

- 1) The main unit of television is turned OFF about 5 seconds after it is turned ON.

(The power LED on the front side of TV turns from green to red.)

- 2) If the situation "1" happens 5 times sequentially, the power is turned on (relay is turned ON).

However, the backlight is not turned on, and then the relay is turned OFF after 5 to 6 seconds. (The power LED remains red.)

2. Countermeasures

When television is turned OFF by the lamp error detection mentioned above, it enters the adjustment process with the power LED red.

Entering the adjustment process, turns OFF the error detection and turns ON TV.

This enables the operation check to detect errors in the lamp or lamp circuit.

Check whether "STANDBY CAUSE" on line 7, page 1/8 of the adjustment process is "1B". it indicates the lamp error detection was executed.

After confirming that the lamp or lamp circuit is normal, reset the lamp error counter pushing "OK" in the R/C.

After resetting counter the green bar appears on Screen.

3. Reset standby cause error list

After confirming that the lamp error counter has been erased, select "ERROR RESET", page 1/8 of the adjustment process and select YES using the right cursor. For execute press "OK" in the R/C and the label "****OK****" appears on Screen.

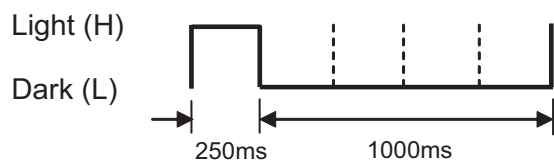
15. Blinking display when error is detected

When system received error report, Standby LED (red) blinks as follows.

POWER LED should keep dark while error indication.

1) Lamp error

Blink timing (1 blink/1 period)



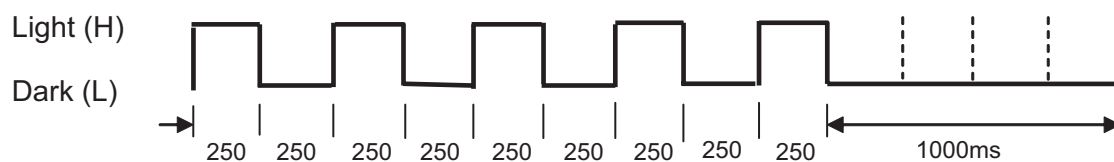
2) Power module error

Blink timing (2 blink/1 period)



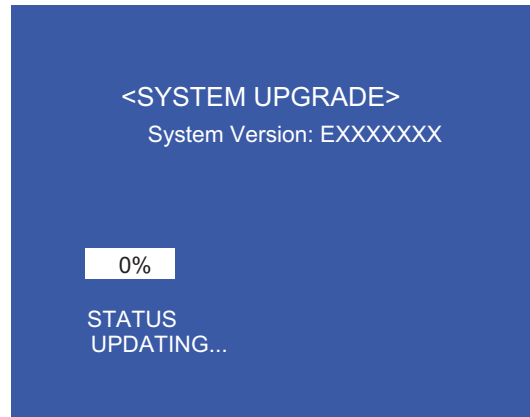
3) High temperature

Blink timing (5 blink/1 period)

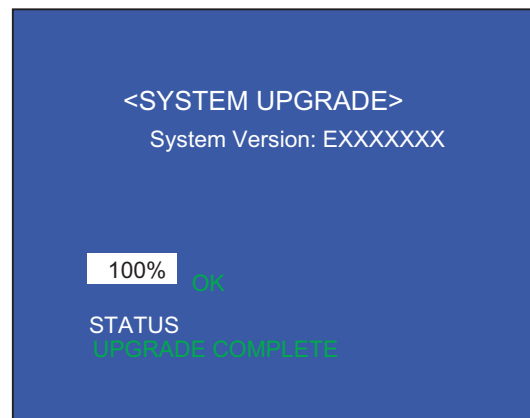


16. Upgrading the software

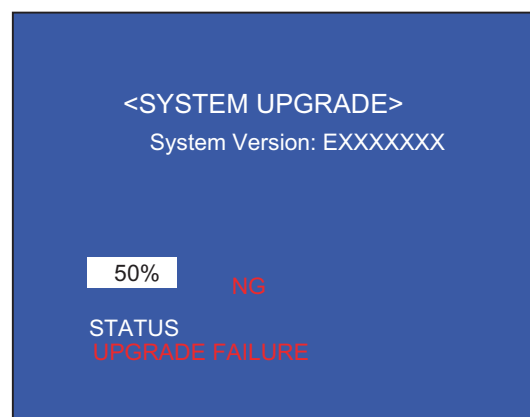
1. Unplug AC cable from outlet.
2. Insert an USB memory that is written a new software to USB port.
3. Keep pressing POWER button on LCD panel and plug AC cable to outlet.
4. POWER LED on panel automatically start blinking.
(POWER LED: Both red and green light blinking with sync. In other word, it looks, /blinking period is short ... 2 cycle - light - out - light - out / 1 sec.)
5. After a while (about 2 min.) following screen appears. Indicated percentage means progress of version up.



6. After the progress becomes 100%, then STATUS area changes "UPGRADE COMPLETE" as followings (POWER LED: Only green blinks slowly ... 2 sec./time).



- * If above screen is not appeared and "UPGRADE FAILURE" is indicated in STATUS area, at that time update failure. Please repeat from step 1.
(POWER LED: Only red blinks slowly ... 2 sec./time).



7. Unplug AC cable from outlet.
8. Remove USB memory from USB port.

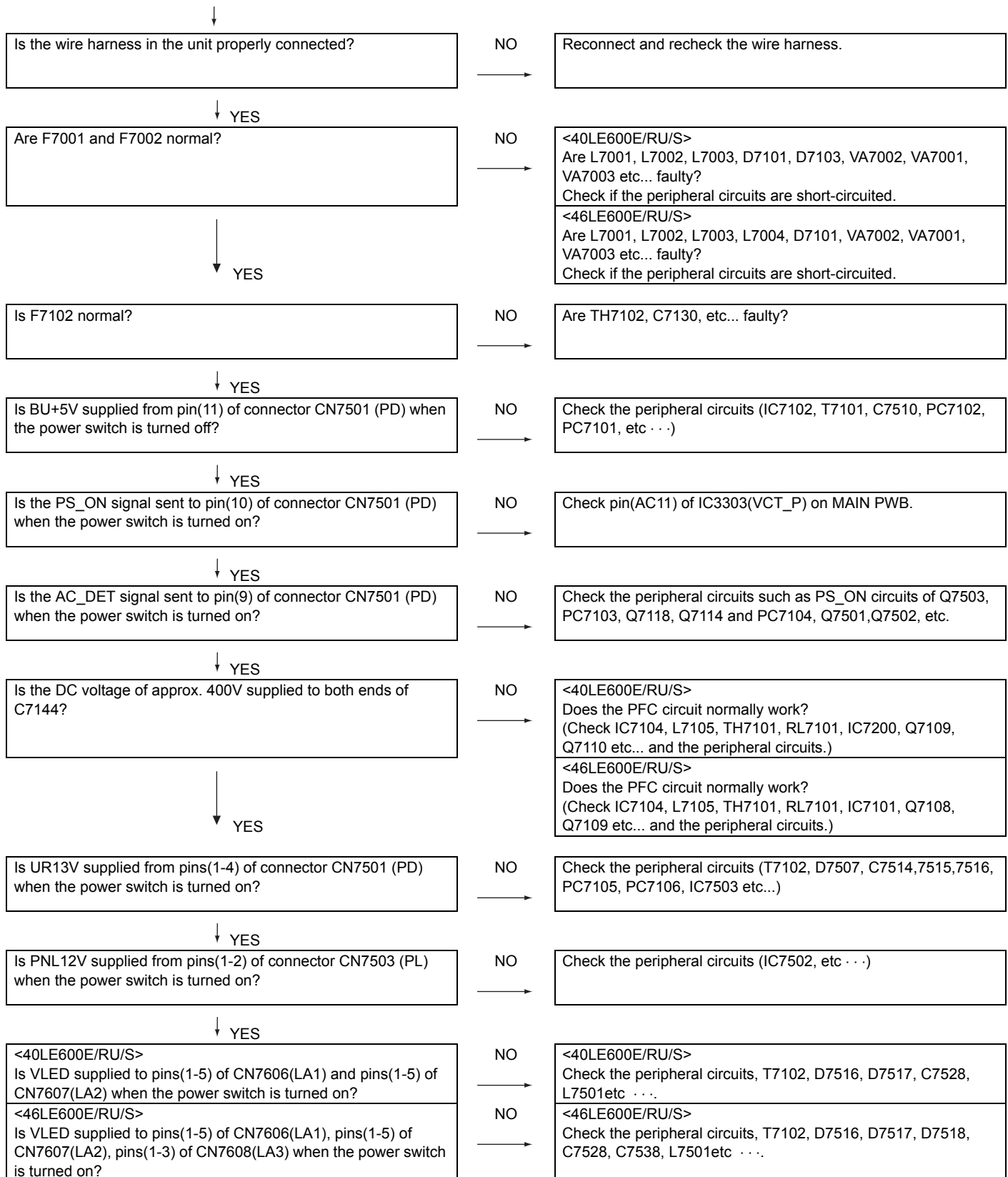
CHAPTER 5. TROUBLESHOOTING TABLE

[1] TROUBLESHOOTING TABLE

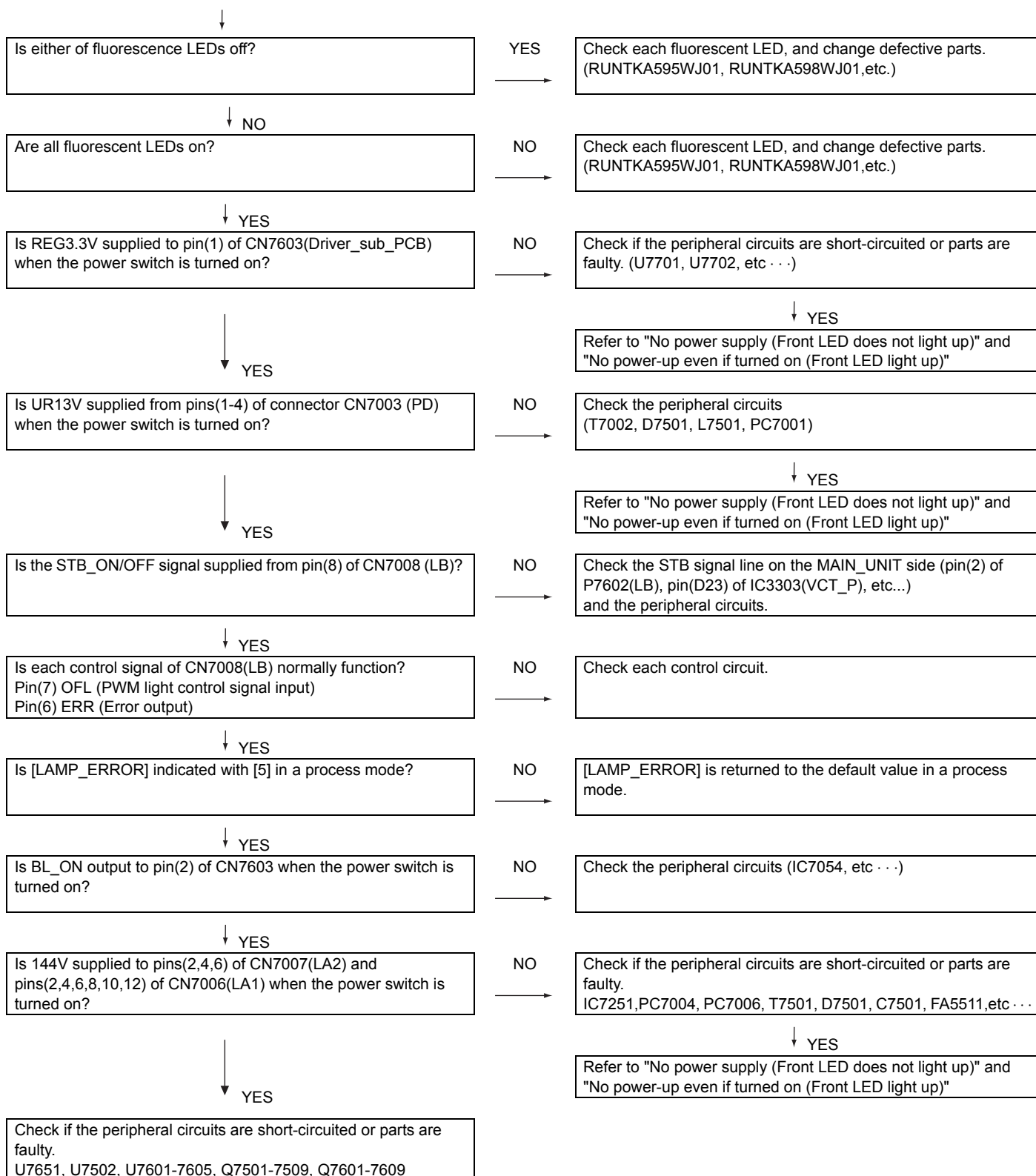
<POWER BLOCK: LC-32LE600E/RU/S>

No power supply (Front LED does not light up) and no power-up even if turned on (Front LED light up).		
↓		
Is the wire harness in the unit properly connected?	NO →	Reconnect and recheck the wire harness.
↓ YES		
Are F7001 and F7002 normal?	NO →	Are L7004, L7001, L7002, BD7001 etc. faulty? Check if the peripheral circuits are short-circuited.
↓ YES		
Is BU+5V supplied from pin(11) of connector CN7003 (PD) when the power switch is turned off?	NO →	Check the peripheral circuits, IC7101, T101, C7401, C7403, PC7008, etc . . .
↓ YES		
Is the PS_ON signal sent to pin(10) of connector CN7003 (PD) when the power switch is turned on	NO →	Check pin(AC11) of IC3303(VCT_P) on MAIN PWB.
↓ YES		
Is the AC_DET signal sent to pin(9) of connector CN7003 (PD) when the power switch is turned on?	NO →	Check the peripheral circuits, PC7007, Q7004, PC7002, etc.
↓ YES		
Is the DC voltage of approx. 400V supplied to both ends of C7015?	NO →	Does the PFC circuit normally work? (Check IC7002, L7003, TH7001, IC7001, Q7005, Q7006 etc. and the peripheral circuits.)
↓ YES		
Is UR13V supplied from pins(1-4) of connector CN7003 (PD) when the power switch is turned on?	NO →	Check the peripheral circuits (T7002, D7051, L7051, PC7001)
↓ YES		
Is PNL12V supplied from pins(1-2) of connector CN7004 (PL) when the power switch is turned on?	NO →	Check the peripheral circuits (U7053, etc . . .)
↓ YES		
Is 144V supplied from pins(2,4,6) of CN7007(LA2) and pins(2,4,6,8,10,12) of CN7006 (LA1) when the power switch is turned on?	NO →	Check the peripheral circuits, T7501, D7501, C7501, FA5511, etc . . .

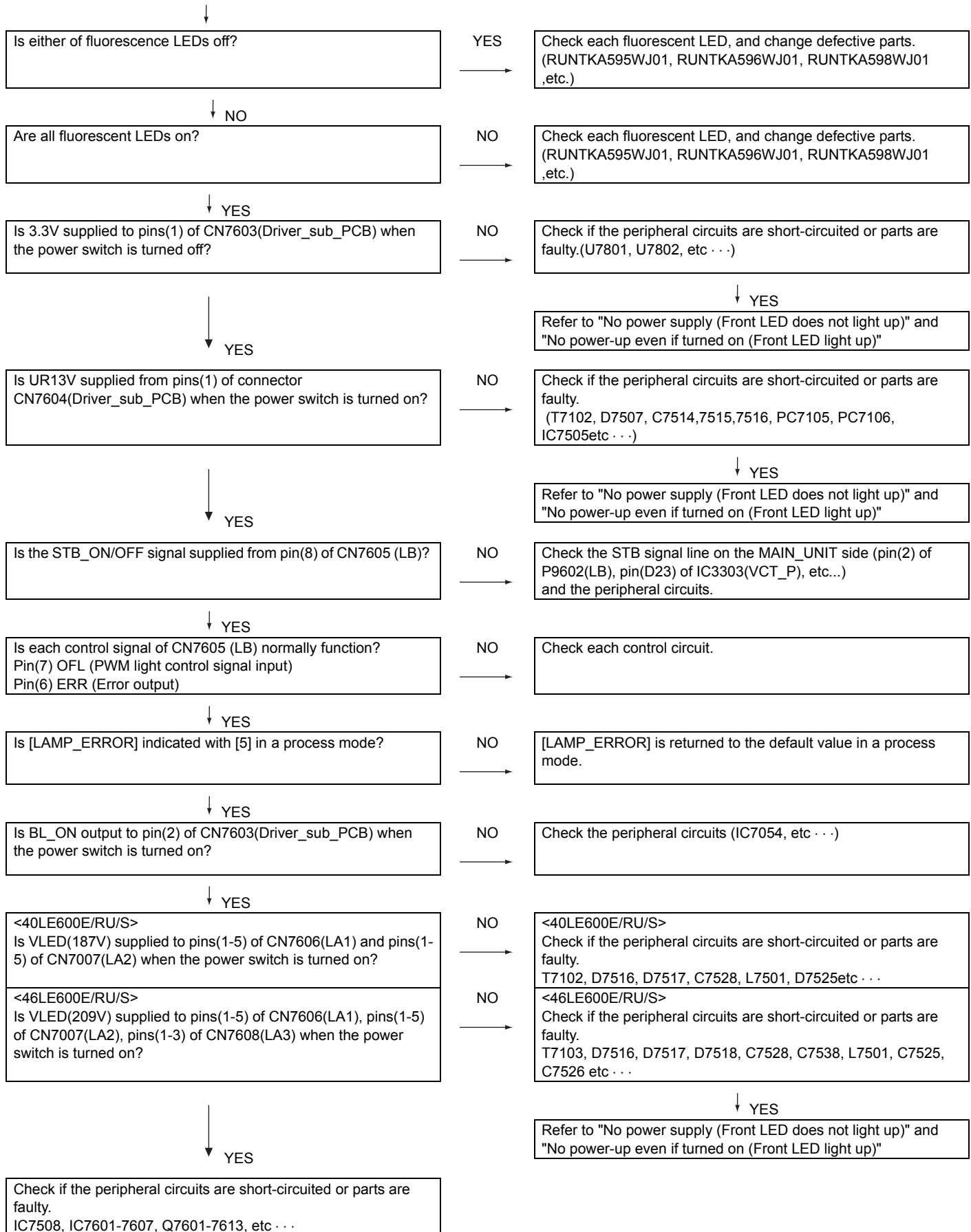
No power supply (Front LED does not light up) and no power-up even if turned on (Front LED light up).



<Backlight BLOCK: LC-32LE600E/RU/S>

The backlight does not light

The backlight does not light



No sound (1-1) (during the reception of TV broadcasting)

No audio output during UHF/
VHF reception

Checklist:

- 1) Is the volume set to MIN or MUTE on the remote control? ●●● Set the desired volume.
- 2) Is ANT-CABLE disconnected or connected improperly? ●●● Connect it correctly as per the operation manual.
- 3) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

(MAIN-UNIT) ↓

Is the audio signal
(AOUT_SP_L/R) output from
pins (H26) and (H25) of
IC3303 (VCT)?

NO

(TUNER SIDE) ↓

Is the audio signal (SIF)
input to pin (AB25) of
IC3303 (VCT)?

YES

Check whether there are a
power supply of IC3303
(VCT), the short circuit,
and other abnormalities.

(MAIN-UNIT) ↓ YES

Is the audio signal
(SPKOUT_L/R) output from
pins (17) and (18) of
IC1302 (A-SW) normally?

NO

Check S9V power supply
(10) (15) pin, D3.3V
power supply (3) (36)
pin, and AUSW-MUTE
signal (29) pin of IC1302
(A-SW) or the peripheral
circuits.

↓ YES

Is the audio signal (LCH±/
RCH±) output from pins
(31)/(27) and (11)/(14) of
IC2701 (A-AMP) normally?

NO

Check AMP12.5V power
supply (1) (10) pin, AMP-
STBY input signal (17)
pin, and audio-mute signal
pin (19) of IC2701 (A-
AMP) or the peripheral
circuits.

↓ YES

Is the audio output signal
outputted to pins (1)-(4) of
SP-Connector (P2701) nor-
mally?

NO

Check SP- Connector
(P2701) and peripheral
circuits.

↓ YES

Is the SP-Wire harness
connected and operated
orthopedically normally?

NO

Correct an abnormal part
of SP- harness.

↓ YES

Check right and left SP-
BOX, and exchange defec-
tive SP-BOX
(R: RSP-ZA392WJZZ/
L: RSP-ZA391WJZZ)

A-BLOCK

↓ NO

Is the SIF signal output
from pin (4) of tuner
(TU1102)?

YES

Check whether there are
open-circuit or short-cir-
cuit between tuner
(TU1102) and IC3303.

↓ NO

Check whether IF5V
power supply is sup-
plied to pin (3) of tuner
(TU1102), and ANT5V
power supply is sup-
plied to pin (1) of tuner
(TU1102)?

NO

Check whether there are
open-circuit or short-cir-
cuit between tuner
(TU1102) and Q1105 (5V-
REG) or between tuner
and IC1101.

↓ YES

Check whether the I2C
signal (SDA/SCL) is
functioning by (9) (8)
pin of tuner (TU1102).

NO

Pursue an I2C line and
look for the part of an
open circuit or the short
circuit.

↓ YES

Check whether IF_AGC
is functioning between
pin (E24) of IC3303 and
pin (15) of tuner
(TU1102)

NO

Check whether there is an
open circuit or the short
circuit in an IF_AGC sig-
nal line.

↓ YES

Replace tuner
(TU1102).

No sound (1-2) (during the reception of DTV broadcasting)

No audio output during DTV reception

Checklist:

- 1) Is the volume set to MIN or MUTE on the remote control? ●●● Set the desired volume.
- 2) Is ANT-CABLE disconnected or connected improperly? ●●● Connect it correctly as per the operation manual.
- 3) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

(MAIN-UNIT) ↓

Is the audio signal (AOUT_SP_L/R) output from pins (H26) and (H25) of IC3303 (VCT)?

NO

(TUNER SIDE)

Is the digital IF signal (D_IF±) input to pins (T25) (R25) of IC3303 (VCT)?

YES

Check whether there are a power supply of IC3303 (VCT), the short circuit, and other abnormalities.

(MAIN-UNIT) ↓ YES (OUTPUT SIDE)

Is the audio signal (SPKOUT_L/R) output from pins (17) and (18) of IC1302 (A-SW) normally?

NO

Check S9V power supply (10) (15) pin, D3.3V power supply (3) (36) pin, and AUSW-mute signal (29) pin of IC1302 (A-SW) or the peripheral circuits.

↓ YES

Is the audio signal (LCH±/RCH±) output from pins (31) (27) and (11) (14) of IC2701 (A-AMP) properly?

NO

Check AMP12.5V power supply (1) (10) pin, AMP-STBY input signal (17) pin, and audio-mute signal pin (19) of IC2701 (A-AMP) or the peripheral circuits.

↓ YES

Is the audio output signal outputted to pins (1)-(4) of SP-Connector (P2701) normally?

NO

Check SP-Connector (P2701) and peripheral circuits.

↓ YES

Is the SP-Wire harness (SP) connected and operated orthopedically normally?

NO

Correct an abnormal part of SP- harness.

↓ YES

Check right and left SP-BOX, and exchange defective SP-BOX (R: RSP-ZA392WJZZ/ L: RSP-ZA391WJZZ)

A-BLOCK

↓ NO

Is the digital IF signal (D_IF±) output from pins (17) (16) of tuner (TU1102)?

YES

Check whether there are open-circuit or short-circuit between tuner (TU1102) and IC3303.

↓ NO

Check whether the IF5V power supply is supplied to pin (3) of tuner (TU1102).

NO

Check whether there are open-circuit or short-circuit between Q1105 (5V-REG) and tuner (TU1102).

↓ YES

Check whether the I2C signal (SDA/SCL) is functioning by pin (9) (8) of tuner (TU1102).

NO

Pursue an I2C line and look for the part of an open circuit or the short circuit.

↓ YES

Check whether IF_AGC is functioning between pin (E24) of IC3303 and pin (15) of tuner (TU1102)

NO

Check whether there is an open circuit or the short circuit in an IF_AGC signal line.

↓ YES

Replace tuner (TU1102).

No sound from external input devices (2-1)-1

No sound from EXT1 (SCART1) connecting an external input device.

<EXT1>
Is the SC1_IN_L (SCART1-L-IN) audio signal input from pin (6) of SCART1 terminal (SC503) to pin (44) of IC1302 (A-SW)?
Is the SC1_IN_R (SCART1-R-IN) audio signal input from pin (2) of SCART1 terminal (SC503) to pin (43) of IC1302 (A-SW)?

NO

Check pins (6) (2) of SCART1 and connection of an external input device.

↓ YES

Is the audio signal (A_IN_L/R) properly output from pins (6) and (7) of IC1302 (A-SW)?

NO

Check S9V power supply (10) (15) pin, D3.3V power supply (3) (36) pin, and SDA0/SCL0 signal (28) (27) pin of IC1302 (A-SW) or the peripheral circuit.

↓ YES

Is the audio signal (A_OUT_SP_L/R) properly output from pins (H26) and (H25) of IC3303 (VCT)?

NO

Check D3.3V power supply pin (F18) of IC3303 (VCT) and the soldering confirmation or the peripheral circuit.

↓ YES

It is the same as the above-mentioned A-BLOCK.

No sound from external input devices (2-1)-2

No sound from EXT2 (SCART2) connecting an external input device.

<EXT2>
Is the SC2_IN_L (SCART2-L-IN) audio signal input from pin (6) of SCART2 terminal (SC502) to pin (46) of IC1302 (A-SW)?
Is the SC2_IN_R (SCART2-R-IN) audio signal input from pin (2) of SCART2 terminal (SC502) to pin (45) of IC1302 (A-SW)?

NO

Check pins (6) (2) of SCART2 and connection of an external input device.

↓ YES

Is the audio signal (A_IN_L/R) properly output from pins (6) and (7) of IC1302 (A-SW)?

NO

Check S9V power supply (10) (15) pin, D3.3V power supply (3) (36) pin, and SDA0/SCL0 signal (28) (27) pin of IC1302 (A-SW) or the peripheral circuit.

↓ YES

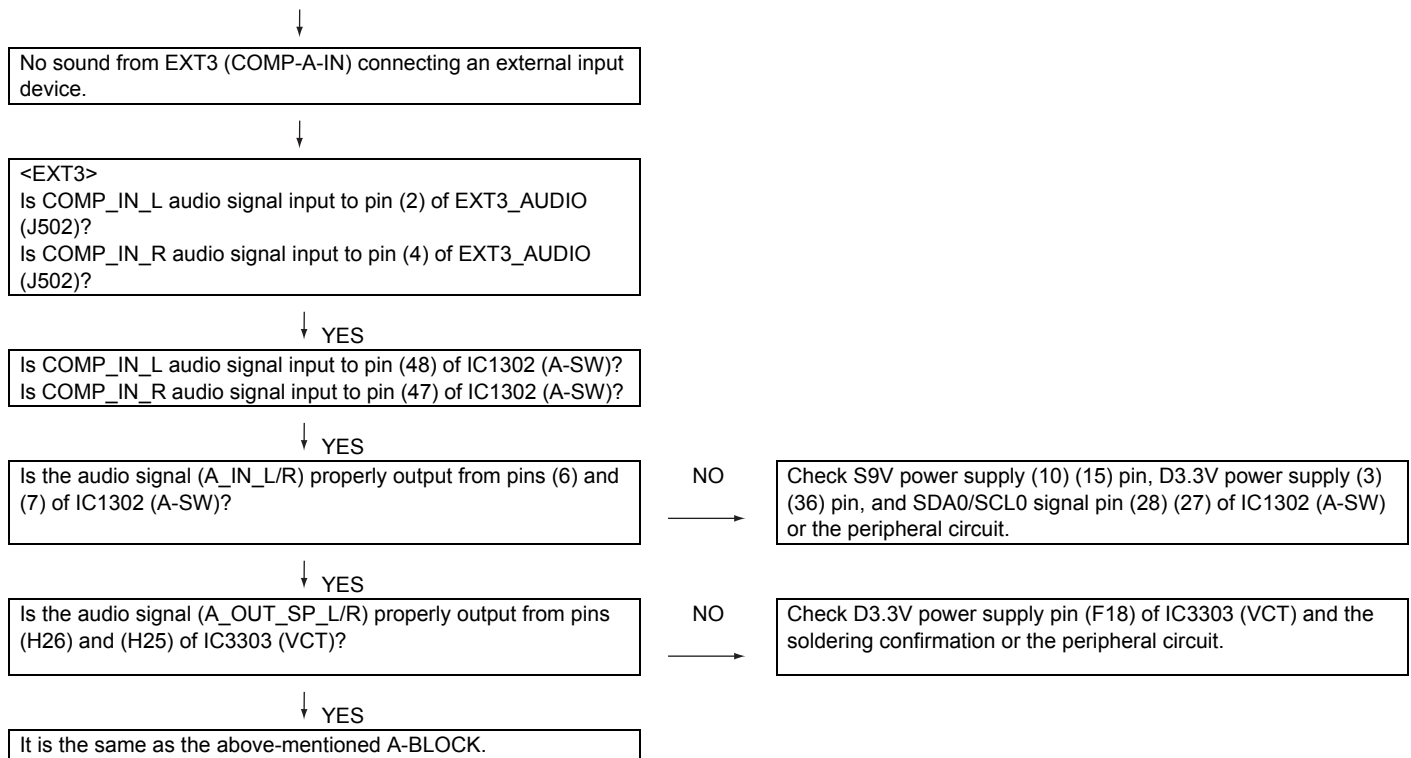
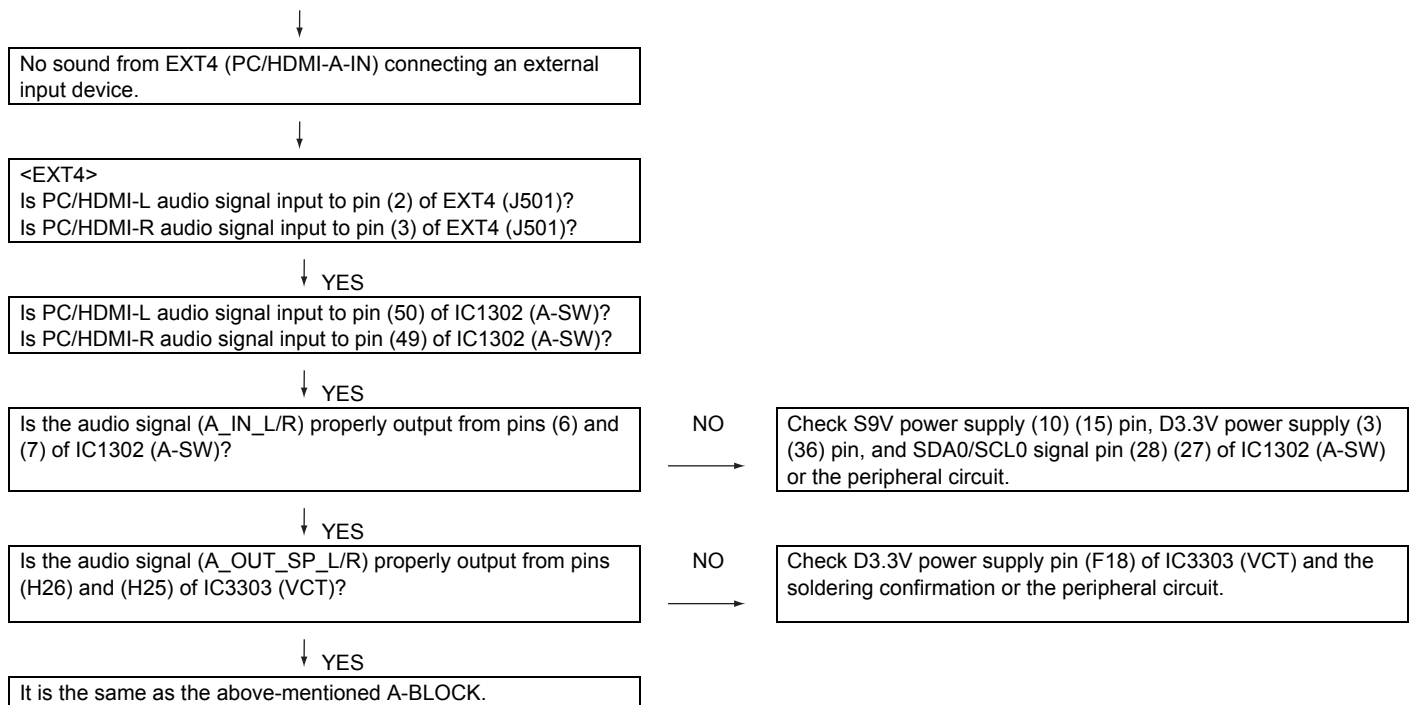
Is the audio signal (A_OUT_SP_L/R) properly output from pins (H26) and (H24) of IC3303 (VCT)?

NO

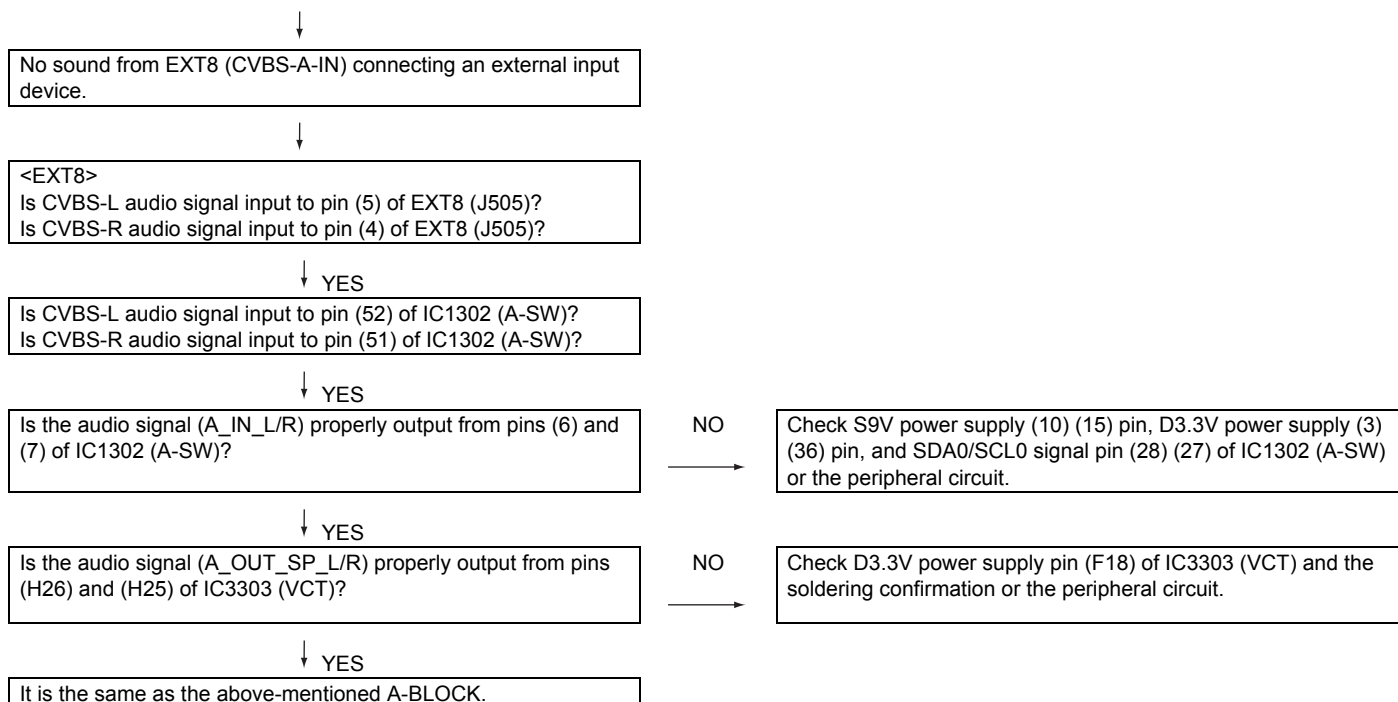
Check D3.3V power supply pin (F18) of IC3303 (VCT) and the soldering confirmation or the peripheral circuit.

↓ YES

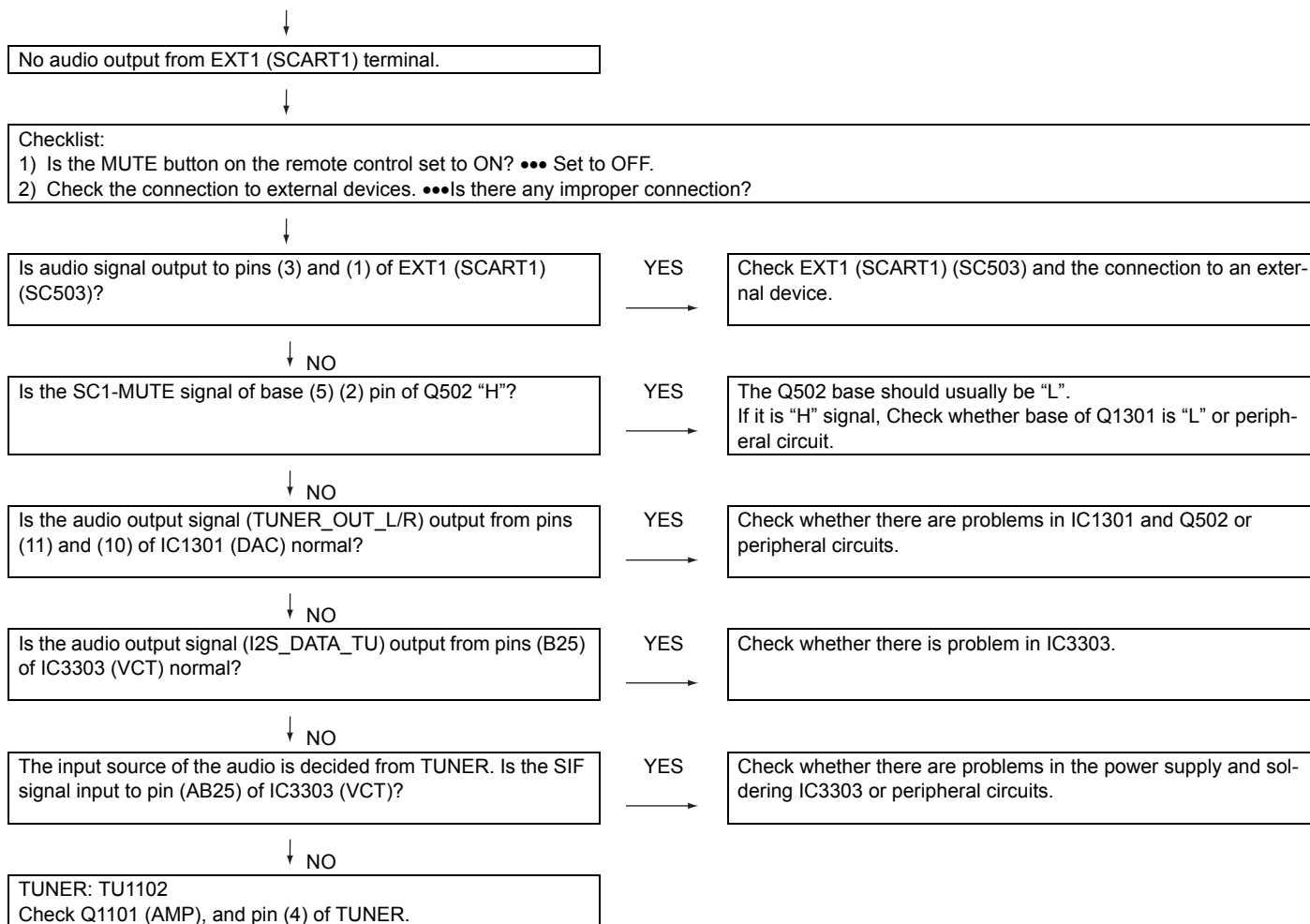
It is the same as the above-mentioned A-BLOCK.

No sound from external input devices (2-2)-1**No sound from external input devices (2-2)-2**

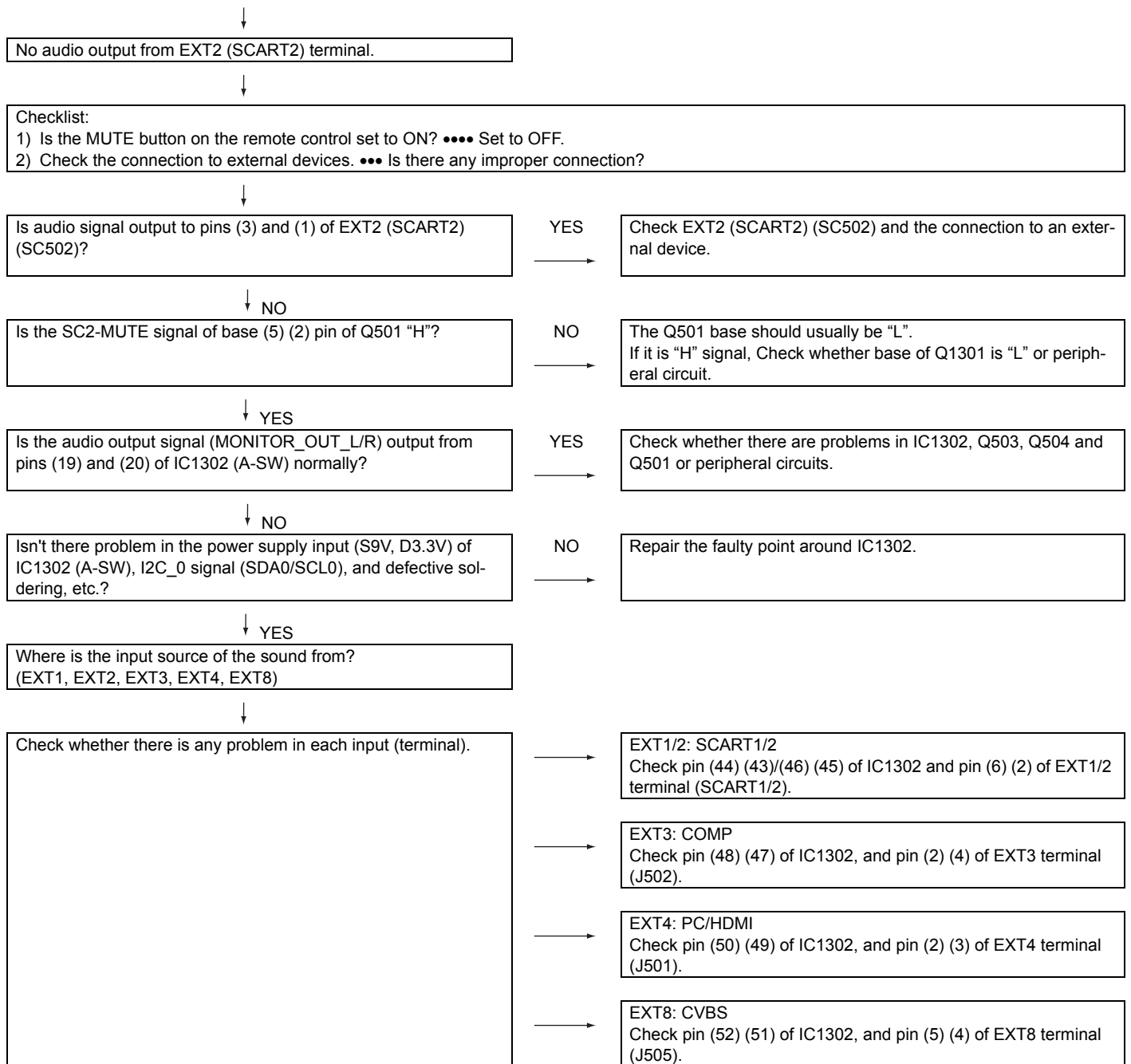
No sound from external input devices (2-2)-3



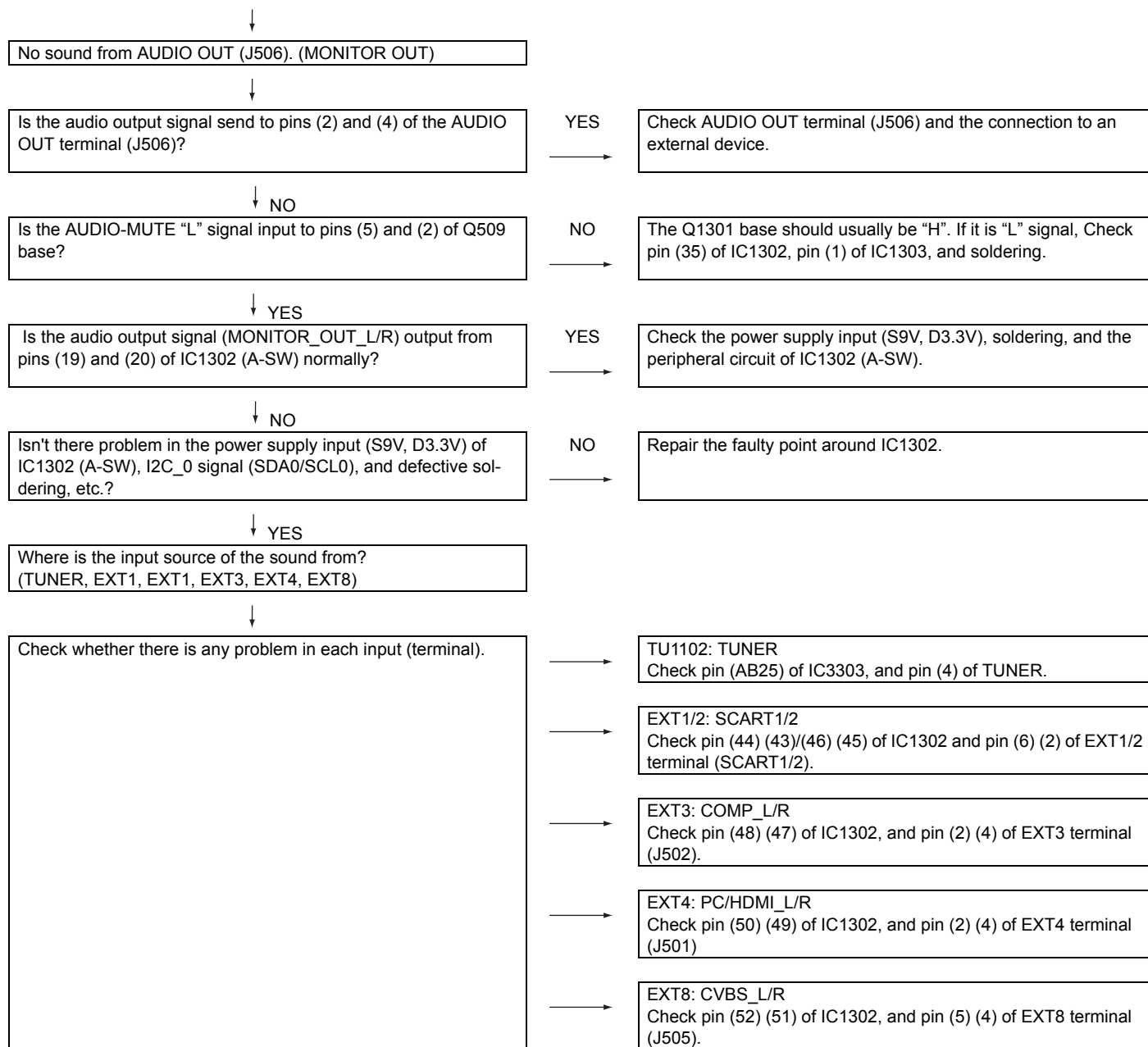
No sound of external device (3-1)-1



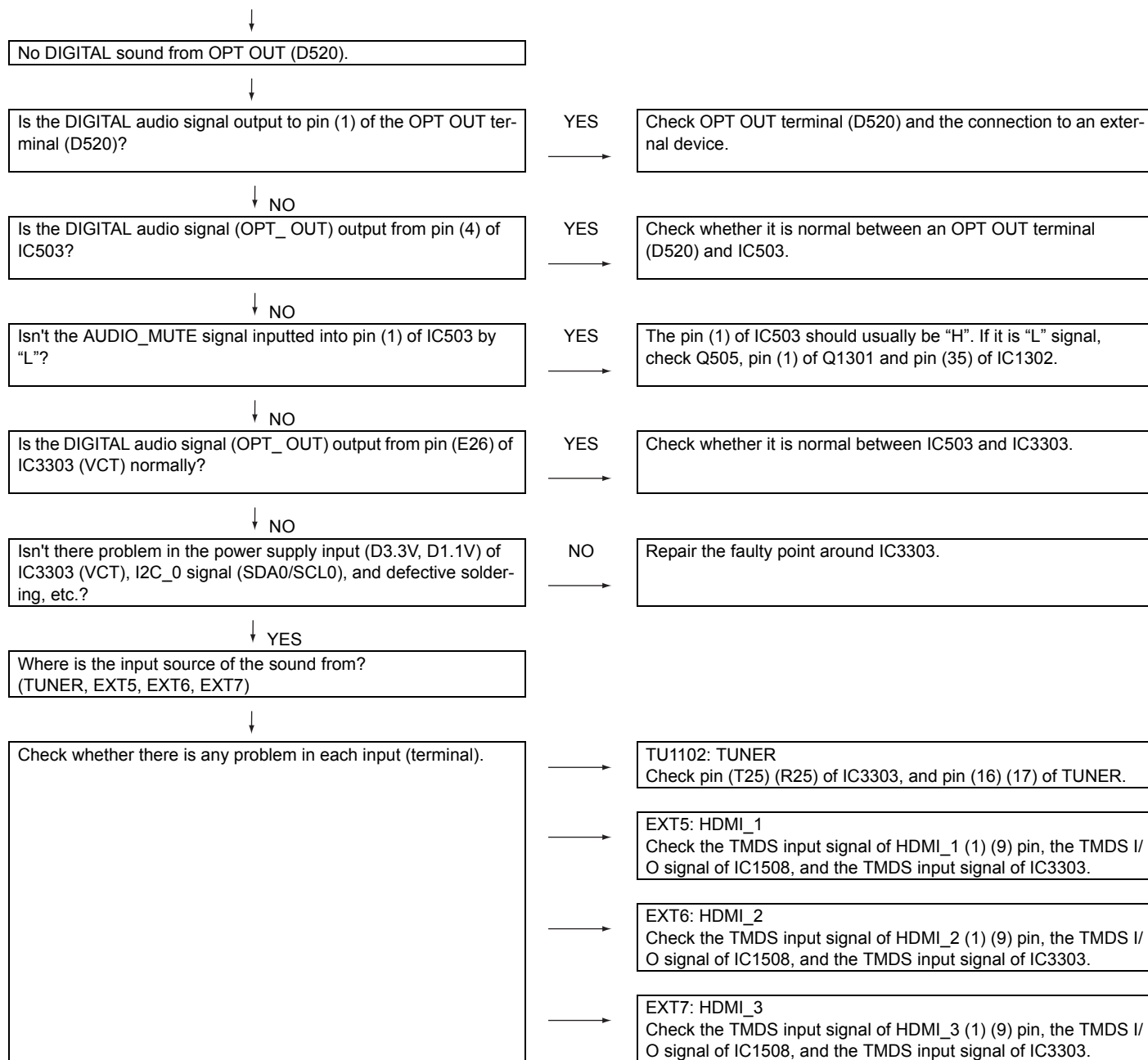
No sound of external device (3-1)-2



No sound of external device (3-2)



No sound of external device (3-3)



<When tuner (U/V, DTV) is received>**No picture on the display (1)-1**

No picture appears on LCD during the tuner (U/V) reception.

**Checklist:**

- 1) Is "INPUT SOURCE" button on the remote control set up correctly? ●●● set it as "TV" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Is ANT-CABLE disconnected or connected improperly? ●●● Connect it correctly as per the operation manual.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

↓ YES

Is the level of pins (9) and (8) of tuner (TU1102) at "H"?

NO

These are communications lines for control (I2C). Follow the path and check whether they are forced to L (PULL_DOWN). (IC3303 (F25) (F24) pin)

↓ YES

Is the video signal (VIDEO) output from pin (6) of tuner (TU1102)?

NO

Check the tuner (TU1102) and peripheral circuits.

↓ YES

Is the video signal (TUNER_CVBS) input to pin (AD25) of IC3303 (VCT)?

NO

Isn't there any part with short-circuits at IC3303 (VCT)? or Check peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) output from pin [A6:A11], [B6:B11] of IC3303 (VCT)?

NO

Check IC3303 (VCT), and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When tuner (U/V, DTV) is received>**No picture on the display (1)-2**

No picture appears on LCD during the tuner (DTV) reception.



Checklist:

- 1) Is "INPUT SOURCE" button on the remote control set up correctly? ●●● set it as "TV" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Is ANT-CABLE disconnected or connected improperly? ●●● Connect it correctly as per the operation manual.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.



YES

Is the level of pins (9) and (8) of tuner (TU1102) at "H"?

NO

These are communications lines for control (I2C). Follow the path and check whether they are forced to L(PULL_DOWN). (IC3303 (F25) (F24) pin)



YES

Is the digital video signal (DIFP/N) output from pin (16) (17) of tuner (TU1102)?

NO

Check the tuner (TU1102) and peripheral circuits.



YES

Is the digital video signal (DIFP/N) input to pin (T25) (R25) of IC3303 (VCT)?

NO

Isn't there any part with short-circuits at IC3303 (VCT)? or Check peripheral circuits.



YES

Is the LVDS video signal (LVDS0_D [0:4] ±) output from pin [A6:A11], [B6:B11] of IC3303 (VCT)?

NO

Check IC3303 (VCT), and peripheral circuits.



YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.



YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.



YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).



YES

Exchange LCD-CONT-UNIT and do it operate normally?



NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT1 is used for external input>

No picture on the display (2)-1

↓

No Composite video output when the EXT1 external input is used.

↓

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT1" with the INPUT SOURCE button on the remote control.
 - 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
 - 3) Check the connection to the external device ●●●Connect it correctly as per the operation manual for the device.
 - 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.
- ↓

Is the CVBS video signal (SC1_CVBS/Y) sent to pin (20) of SCART1 (SC503)?

NO

→ Check external connection, input setting, SCART1 (SC503) and peripheral circuits.

↓ YES

Is the CVBS video signal (SC1_CVBS/Y) sent to input terminal pin (AE24) of IC3303 (VCT)?

NO

→ IC3303 (VCT), I2C_0signal (SDA0/SCL0), and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4]±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

→ Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

→ Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

→ Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT1 is used for external input>

No picture on the display (2)-2

No RGB output when the EXT1 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT1" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●●Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the RGB signal sent to pins (15), (11) and (7) of SCART1 (SC503)? (RED1, GREEN1, BLUE1)

NO

Check external connection, input setting, SCART1 (SC503) and peripheral circuits.

Is the RGB signal (RED1, GREEN1, BLUE1) sent to input terminal pins (AF24), (AD24) and (AD23) of IC3303 (VCT)?

NO

Check between pins (15) (11) (7) of SCART1 (SC503) and pins (AF24) (AD24) (AD23) of IC3303 (VCT) and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL 12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT1 is used for external input>**No picture on the display (2)-3**

↓

No Y/C output when the EXT1 external input is used.

↓

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT1" with the INPUT SOURCE button on the remote control.
 - 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
 - 3) Check the connection to the external device ●●●Connect it correctly as per the operation manual for the device.
 - 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.
- ↓

Is the Y/C signal sent to pins (20) and (15) of SCART1 (SC503)? (Y/C1)

NO

→ Check external connection, input setting, SCART1 (SC503) and peripheral circuits.

↓ YES

Is the Y/C signal (Y/C1) sent to input terminal pins (AE24) and (AF24) of IC3303 (VCT)?

NO

→ Check between pins (20) (15) of SCART1 (SC503) and pins (AE24) (AF24) of IC3303 (VCT), and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

→ Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

→ Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

→ Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT2 is used for external input>

No picture on the display (3)-1

No composite video output when the EXT2 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT2" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the CVBS video signal sent to pin (20) of SCART2 (SC502)?

NO

Check external connection, input setting, SCART2 (SC502) and peripheral circuits.

↓ YES

Is the CVBS video signal (SC2_CVBS/Y) sent to input terminal pin (AD26) of IC3303 (VCT)?

NO

Check IC3303 (VCT), I2C_0 signal (SDA0/SCL0), and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) sent to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT2 is used for external input>

No picture on the display (3)-2

No Y/C output when the EXT2 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT2" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the Y/C signal sent to pins (20) and (15) of SCART2 (SC502)? (SC2_Y/C2)

NO

Check external connection, input setting, SCART2 (SC502) and peripheral circuits.

↓ YES

Is the Y/C signal (SC2_Y/C2) sent to input terminal pins (AD26) and (AF25) of IC3303 (VCT)?

NO

Check between pins (20) (15) of SCART2 (SC502) and pins (AD26) (AF25) of IC3303 (VCT) and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT3/4/8 is used for external input>

No picture on the display (4)-1

No Component video output when the EXT3 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT3"/"EXT4"/"EXT8" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the component video signal sent to pin (3) (5) (7) of EXT3 terminal (J503)? (Y, Pb, Pr)

NO

Check external connection, input setting, EXT3 terminal (J503) and peripheral circuits.

↓ YES

Is the component video signal (COMP_Y/Pb/Pr) sent to input terminal pin (AE21) (AD22) (AF22) of IC3303 (VCT)?

NO

Check between pins (3) (5) (7) of EXT3 terminal (J503) and pins (AE21) (AD22) (AF22) of IC3303 (VCT) and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT3/4/8 is used for external input>

No picture on the display (4)-2

No PC output when the EXT4 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT3"/"EXT4"/"EXT8" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the RGB signal sent to pins (1), (2) and (3) of EXT4 terminal (PC_IN) (SC501)? (PC_R/G/B)

NO

Check external connection, input setting, EXT4 terminal (PC_IN) (SC501) and peripheral circuits.

↓ YES

Is the RGB signal (PC_R/G/B) sent to input terminal pins (AE20) (AE19) and (AD19) of IC3303 (VCT)?

NO

Check between pins (1) (2) (3) of EXT4 terminal (PC_IN) (SC501) and pins (AE20) (AE19) (AD19) of IC3303 (VCT).

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT3/4/8 is used for external input>

No picture on the display (4)-3

No Composite video output when the EXT8 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT3"/"EXT4"/"EXT8" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the Composite video signal sent to pin (6) of EXT8 terminal (J505)? (CVBS_IN)

NO

Check external connection, input setting, EXT8 terminal (J505) and peripheral circuits.

↓ YES

Is the Composite video signal (CVBS_IN) sent to input terminal pin (AC24) of IC3303 (VCT)?

NO

Check between pin (6) of EXT8 terminal (J505) and pin (AC24) of IC3303 (VCT) and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT5/6/7(HDMI) is used for external input> No picture on the display (5)-1

No HDMI0 digital video output when the EXT5 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT5"/"EXT6"/"EXT7" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the HDMI Digital video signal sent to pin (1)-(9) of EXT5 terminal (SC1501)? (HDMI0_D [0:2] _P/N)

NO

Check external connection, input setting, EXT5 terminal (SC1501) and peripheral circuits.

↓ YES

Is the HDMI Digital video signal sent to pin (21)-(26) of IC1508 (HDMI-receiver)? (HDMI0_D [0:2] _P/N)

NO

Check short circuit of EXT5 terminal (SC1501), and peripheral circuits.

↓ YES

Is HDMI_SW_Digital Video signal sent to pin (AF16) (AE16)-(AF18) (AE18) of input terminal of IC3303 (VCT)? (HDMI_SW_D [0:2] P/N)

NO

Check short circuit of IC1508 (HDMI_receiver), power source and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT5/6/7(HDMI) is used for external input> No picture on the display (5)-2

No HDMI1 digital video output when the EXT6 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT5"/"EXT6"/"EXT7" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the HDMI Digital video signal sent to pin (1)-(9) of EXT6 terminal (SC1502)? (HDMI1_D [0:2] _P/N)

NO

Check external connection, input setting, EXT6 terminal (SC1502) and peripheral circuits.

↓ YES

Is the HDMI Digital video signal sent to pin (13)-(18) of IC1508 (HDMI-receiver)? (HDMI1_D [0:2] _P/N)

NO

Check short circuit of EXT6 terminal (SC1502), and peripheral circuits.

↓ YES

Is HDMI_SW_Digital Video signal sent to pin (AF16) (AE16)-(AF18) (AE18) of input terminal of IC3303 (VCT)? (HDMI_SW_D [0:2] P/N)

NO

Check short circuit of IC1508 (HDMI_receiver), power source and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When EXT5/6/7 (HDMI) is used for external input> No picture on the display (5)-3

No HDMI2 digital video output when the EXT7 external input is used.

Checklist:

- 1) Is "INPUT SOURCE" button  on the remote control set up correctly? ●●● set it as "EXT5"/"EXT6"/"EXT7" with the INPUT SOURCE button on the remote control.
- 2) Is MENU-Picture-Backlight/Contrast/Brightness set to "MIN"? ●●● Set it to an appropriate level.
- 3) Check the connection to the external device ●●● Connect it correctly as per the operation manual for the device.
- 4) Attention: The terminal of IC3303 (VCT) cannot be actually checked by hiding oneself, and check it with another terminal of the same line, please.

Is the HDMI Digital video signal sent to pin (1)-(9) of EXT7 terminal (SC1503)? (HDMI2_D [0:2] _P/N)

NO

Check external connection, input setting, EXT7 terminal (SC1503) and peripheral circuits.

↓ YES

Is the HDMI Digital video signal sent to pin (3)-(8) of IC1508 (HDMI-receiver)? (HDMI2_D [0:2] _P/N)

NO

Check short circuit of EXT7 terminal (SC1503), and peripheral circuits.

↓ YES

Is HDMI_SW_Digital Video signal sent to pin (AF16) (AE16)-(AF18) (AE18) of input terminal of IC3303 (VCT)? (HDMI_SW_D [0:2] P/N)

NO

Check short circuit of IC1508 (HDMI_receiver), power source and peripheral circuits.

↓ YES

Is the LVDS video signal (LVDS0_D [0:4] ±) input to pins (40)-(28) of LW Connector (P2601), and is CLK signal (TCLK±) input to pins (32)/(33)?

NO

Check whether there is short circuit between [A6:A11], [B6:B11] pin of IC3303 (VCT) and (40)-(28) pin of LW Connector (P2601), and peripheral circuits.

↓ YES

Is the I2C signal (VCOM_SDA/SCL) send to pin(12)/(13) of LP Connector (P2602)?

NO

Check the I2C signal of IC2602 and peripheral circuit.

↓ YES

Is the PNL12V output to pin (1)/(2) of PL Connector (CN7004(32 inch)/CN7503(40/46 inch)) of POWER UNIT?

NO

Check PL connector of POWER UNIT and U7053(32inch)/IC7502(40/46inch).

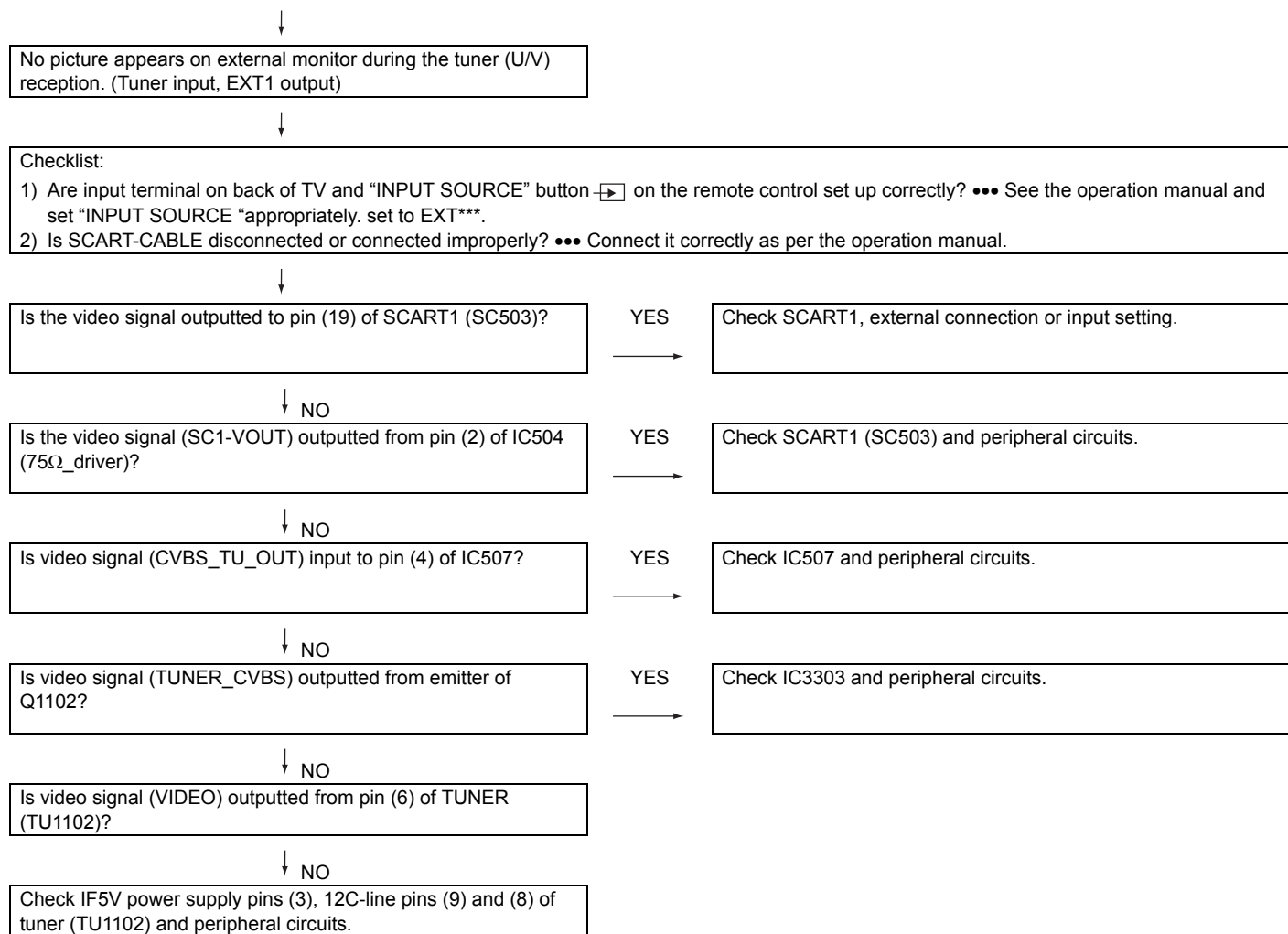
↓ YES

Exchange LCD-CONT-UNIT and do it operate normally?

↓ NO

Check the contact of the LCD-CONT-UNIT connection harness (LW/LP/PL).
Exchange LCD-PANEL if it is useless even if it exchanges it.

<When an external monitor is connected>	No picture on the external monitor (6)-1
--	---



<When an external monitor is connected> No picture on the external monitor (6)-2

No picture appears on external monitor during the EXT8 input (COMPOSITE).
(EXT8 COMP input, EXT2 output)

Checklist:

- 1) Are input terminal on back of TV and "INPUT SOURCE" button  on the remote control set up correctly? ●● See the operation manual and set "INPUT SOURCE" appropriately. set to EXT***.
- 2) Is SCART-CABLE disconnected or connected improperly? ●● Connect it correctly as per the operation manual.

Is the video signal outputted to pin (19) of SCART2 (SC502)?

YES

Check SCART2, external connection or input setting.

↓ NO

Is the video signal (SC2-VOUT) outputted from pin (4) of IC508 (75Ω_driver)?

YES

Check IC508 and peripheral circuits.

↓ NO

Is the Composite Video signal (CVBS_MON_OUT) outputted from the pin (B13) of IC3303 (VCT)?

YES

Check between IC508 and IC3303 and the peripheral circuitry.

↓ NO

Is the Composite signal (CVBS_IN) inputted to pins (6) of EXT8 terminal normally?

YES

Check a short circuit etc. between the EXT8 input terminal (pin (6)) and IC3303 (VCT).

↓ NO

Check whether the terminal of EXT8 is faulty, or there is not any error in external connection.

<When an external monitor is connected>	No picture on the external monitor (6)-3
--	---

↓

No picture appears on external monitor during the EXT5/6/7 inputs (HDMI). (EXT5 HDMI input, EXT2 output)

↓

Checklist:

- 1) Are input terminal on back of TV and "INPUT SOURCE" button on the remote control set up correctly? ●●● See the operation manual and set "INPUT SOURCE" appropriately. set to EXT***.
- 2) Is SCART-CABLE disconnected or connected improperly? ●●● Connect it correctly as per the operation manual.

↓

Is the video signal outputted to pin (19) of SCART2 (SC502)?

YES

→ Check SCART2, external connection or input setting.

↓ NO

Is the video signal (SC2-VOU) outputted from pin (4) of IC508 (75Ω_driver)?

YES

→ Check IC508 and peripheral circuits.

↓ NO

Is the Composite Video signal (CVBS_MON_OUT) outputted from the pin (B13) of IC3303 (VCT)?

YES

→ Check between IC508 and IC3303 and the peripheral circuitry.

↓ NO

Is the HDMI output signal (HDMI_SW_D [0:2] P/N) input to the pin [AF16-AE18] of IC3303 (VCT) normally?

YES

→ Check a short circuit, HDMI_H/V signal, HDMI_PLG signal, and other abnormality, etc. with IC3303.

↓ NO

Is the HDMI input signal (HDMI0/1/2_D [0:2] P/N) input to IC1508 (HDMI-receiver) normally?

YES

→ Check a short circuit, HDMI_I2C signal, and other abnormality, etc. with IC1508.

↓ NO

Are the pin (43) (44)/(39) (40)/(33) (34) of I2C signal (HDMI [0:2] _SDA/SCL) accessed normally?

NO

→ Exchange HDMI-Receiver (IC1508) Or check short circuit.

↓ YES

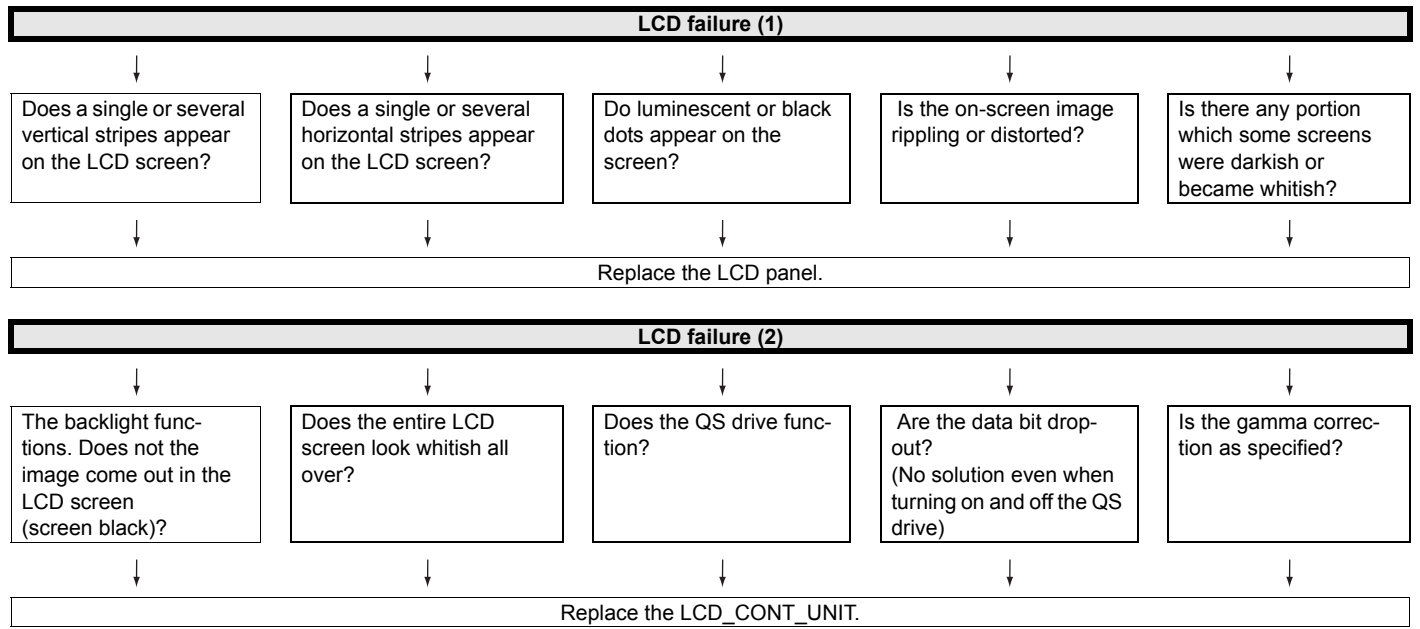
Is the TMDS signal (1-12) pin inputted to HDMI1/2/3 (EXT5/6/7) terminal normally?

YES

→ Check a short circuit etc. between HDMI1/2/3 and IC1508 (HDMI-receiver).

↓ NO

Check whether the terminal of HDMI1/2/3 (EXT5/6/7) is faulty, or there is not any error in external connection.



CHAPTER 6. MAJOR IC INFORMATIONS

[1] MAJOR IC INFORMATIONS

1. DESCRIPTION OF MAJOR ICs

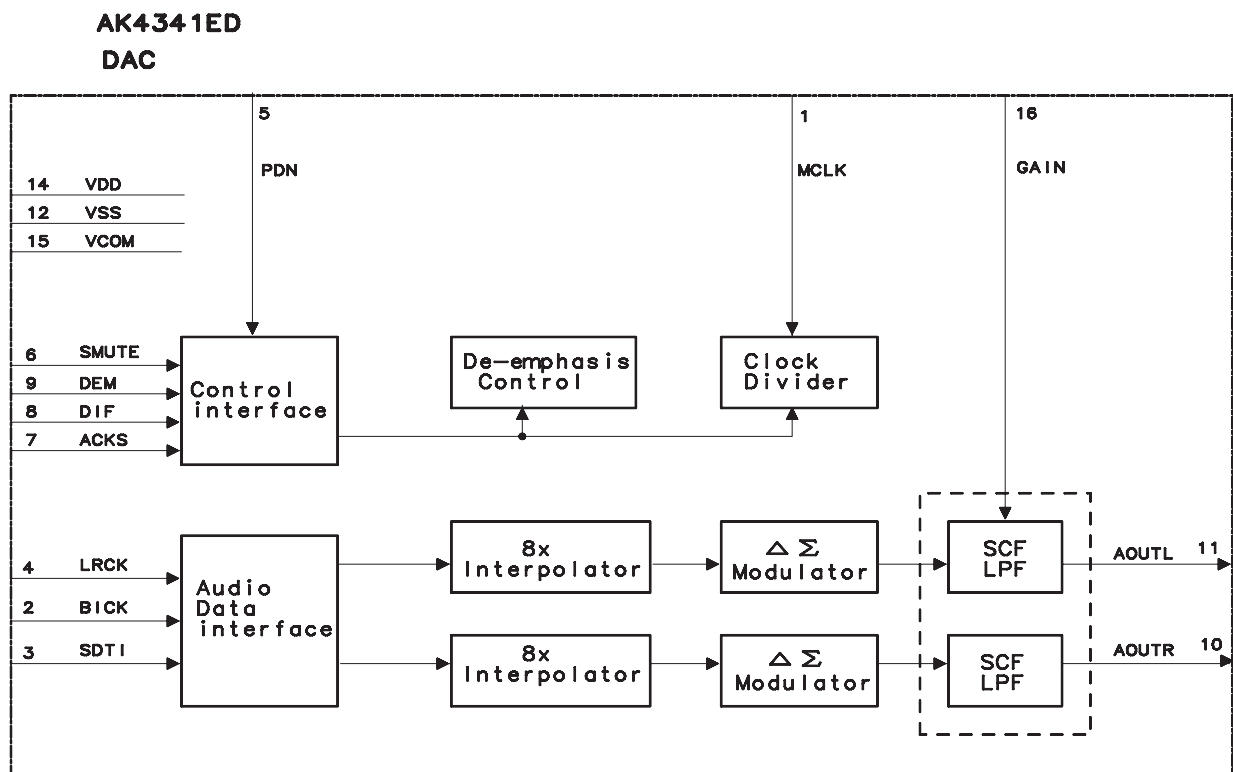
Ref No.	Name	Part Code	Description
[MAIN UNIT]			
IC1301	VHiAK4341ED-1Y	DAC	AK4341 is 24 bits DAC of 2Vrms output. A newly developed advanced multiple bit system is adopted in the $\Delta\Sigma$ modulator. In this model, this IC is used to use the audio signal from a digital tuner as an audio output signal of SCART1.
IC1302	VHiMT8292N+-1Q	Audio multiplexer	The MediaTek MT8292 introduces the advantages of an input multiplexer, the headphone driver and the PGA outputs. The analog input pins can either independently support GPIO function or provide extra GPIO pins to use. The analog input pins can either independently support GPIO function or provide extra GPIO pins to use.
IC1303	VHiS80944NM-1Y	Voltage detector with built-in delay circuit	This IC is a highly precision voltage detector (4.4V) with built-in delay circuit. In this model, It used as voltage detector of MUTE signal.
IC1104	VHiPQ1LA505-1Y	ANT5V-REG	PQ1LA505 is series regulator with an on/off function and the over current protection function. In this model, it generate 5V.
IC501	VHi2BR24C21F-1Y for service (RH-iXC206WJQZS)	1K E2PROM	This IC is a 1Kbit-2-wire (I2C bus type) serial EEPROM that can be programmed electrically. The EEPROM chip stores the EDID data of PC input. This data is controlled through I2C signals.
IC506	VHiM3221EiP-1Y	RS232C-DRIVER	The MAX3221E is a single driver, single receiver RS-232 solution operating from a single Vcc supply. The RS-232 pins provide IEC G1000-4-2 ESD Protection. The device meets the requirements of TIA/EIA-232-F and provides the electrical interface between an asynchronous communication controller and the serial-port connector. The charge pump and four small external capacitors allow operation from a single 3V to 5.5V supply.
IC1508	VHiSi91873-1Q	HDMI_Port_Processor	The Si91873 HDMI port processor is the second generation of HDMI devices that support revision 1.3 of the HDMI specification. The main feature is as follows. 1) 4-input, 1-output HDMI port processor. 2) Integrated TMDS receiver and transmitter cores capable of receiving and transmitting at 2.25Gbps. 3) Supports video resolutions up to 1080p, 60Hz, 12bit or 720p/1080i, 120Hz, 12bit. 4) Receiver fully comply with DV11.0, HDCP1.1 and HDMI1.3 specifications.
IC3302	VHiBD6538G+-1Y	USB high side SW	BD6538G is single channel high side powers switch with low ON resistance Nch power MOSFET. Rich safety functions such as over current detection, Thermal shutdown (TSD), under voltage lock out (UVLO) and soft start function which are required for the power supply port protection are integrated into 1chip.
IC3303	RH-iXC758WJQZQ	VCT & Main CPU	This IC is Video Processor & MAIN CPU. In this IC, the decode processing and the video signal processing are done. Moreover, OSD is generated here and added to a picture signal.
IC3304	VHiS80928NM-1Y	Voltage detector with built-in delay circuit	This IC is a highly precision voltage detector (2.8V) with built-in delay circuit. In this model, It uses as RESET signal of IC3303.
IC3305	VHiS80920NM-1Y	Voltage detector with built-in delay circuit	This IC is a highly precision voltage detector (2.0V) with built-in delay circuit. In this model, It used as a D-POW signal generator.
IC3501/2	RH-iXC505WJQZQ	512Mb-DDR2-SDRAM	This IC is 512Mb DDR2 SDRAM. This IC operates as a memory of IC3303 (Video Processor). ***
IC8403	RH-iXC788WJN2Y	2Mb-Serial-FLASH	This IC is 2Mbit CMOS 3.0 Volt Flash Memory with 50-MHz SPI (Serial Peripheral Interface) Bus and Small Sector for Boot and Parameter Storage.
IC8401	RH-iXC721WJQZQ	512Mb-NAND-FLASH	This IC is 512Mb NAND flash memory. This IC stores the software data that processes the system of TV such as the graphic processing, the LCD controls, and backlights etc.
IC8455	VHiBR24S64F-1Y	I2C bus type-64K E2PROM	The BR24S64F is a 64Kbit-2-wire (I2C bus type) serial EEPROM that can be programmed electrically. This IC stores the menu data and the adjustment value data of adjustment process mode etc. The data is given out by commands from the main microprocessor.
IC4402	VHiAOZ1320C-1Y	SMART LOAD SW	The AOZ1320 is a P-channel high-side load switch with controlled slew rate. AOZ1320-04 have a slew rate of 1ms.

Ref No.	Name	Part Code	Description
IC4401	VHIMT8295AE-1Q	CI_controller	This is a control IC for PCMCIA cards. This controls information on IC cards inserted into the PCMCIA card slot (SC4401) or information on software version upgrade cards saved on flash memories to transfer the data to CPUs and memories.
IC2701	VHIYDA148QZ-1Y	A-AMP	This IC is a digital audio power amplifier. It is mounted by 32QFN small package with 15W or less stereo. it drives by 10W in 26, and 32 types.
IC9612	VHITCR5SB33-1Y	1CH-SW-REG BU3.3V-REG	The TCR5SB33 is CMOS general-purpose single-output voltage regulators with an on/off control input, featuring low dropout voltage and low quiescent bias current. The output current is possible up to 200mA or less. In this model, it generate BU3.3V.
IC9614	VHIS80928NM-1Y	Voltage detector with built-in delay circuit	This IC is a highly precision voltage detector(2.8V) with built-in delay circuit. In this model, It used as enable signal of BU3.3V_REG.
IC9605	VHiLV5893M+-1Y	1CH-SW-REG D3.3V-REG	LV5893M is 1.8A 1ch step down switching regulator. In this model, it generate D3.3V.
IC9611	VHITCR5SB25-1Y	1CH-SW-REG 2.5V-REG	The TCR5SB25 is CMOS general-purpose single-output voltage regulators with an on/off control input, featuring low dropout voltage and low quiescent bias current. The output current is possible up to 200mA or less. In this model, it generate CPU2.5V.
IC9608	VHiLV5893M+-1Y	1CH-SW-REG D5V-REG	LV5893M is 1.8A 1ch step down switching regulator. In this model, it generate D5V.
IC9604	VHiLV58072M-1Y	1CH-SW-REG D1.1V-REG	LV58072M is 3A 1ch step down switching regulator. In this model, it generate D1.1V.
IC9606	VHiLV5805M+-1Y	1CH-SW-REG D1.8V-REG	LV5805M is 2A 1ch step down switching regulator. In this model, it generate D1.8V.
IC9603	VHiMM3141YN-1Y	CPU1.25V-REG	MM3141 is single-output voltage regulators with an on/off control input. In this model, it generate CPU1.25V.
IC9610	VHiPQ1LAX95-1Y	S9V-REG	PQ1LAX95 is the low power loss regulator equipped with the on/off function and the over current protection function. In this model, it generate S9V.
IC2602 IC9601 IC9613	VHiHC2G66DP-1Y	Bilateral Switch	This IC is provides a dual analog switch. Each switch has two pins for input or output and an active HIGH enable input.
[POWER UNIT]			
IC7102	TNY274PN	BU5V SW-REG-CTL for 40"/46"	This IC is IC for the switching regulator with Enhanced Flexibility and Extended Power Range In this model, non-reg BU5V power supply is generated.
IC7101	UCC28061	UR13V P-FACTOR for 46"	This IC is IC that improves Power-Factor in 13V_Regulator circuit of 46 type power supply circuit. The protection functions such as UVLO, Brounout, OVP and AOC are built into in this IC.
IC7200	NCP1606B	UR13V P-FACTOR for 40"	This IC is IC that improves Power-Factor in 13V_Regulator circuit of 40 type power supply circuit. The protection functions such as UVLO, Brounout, OVP and AOC are built into in this IC.
IC7104	SSC9502S	UR13V SW-REG-CTL for 40"/46"	This IC is switching power supply IC of a monolithic type. In this model, non-reg UR13V power supply is generated.
IC7505	FA5573	VLCD LOW-STANDBY for 40"/46"	This IC is IC for the low standby power requirement type switching power supply control. In this model, backlight LED power supply (VLED=187/209V) is generated.
IC7101	VIPER17	BU5V SW-REG-CTL for 32"	This IC is switching power supply IC of the off-line converter type with a PWM control. In this model, non-reg BU5V power supply is generated.
IC7001	L6562A	UR13V P-FACTOR for 32"	This IC is IC that improves Power-Factor in 13V_Regulator circuit of 32 type power supply circuit. The protection functions such as UVLO, Brounout, OVP and AOC are built into in this IC.
IC7002	FA5538	UR13V SW-REG-CTL for 32"	This IC is switching-power-supply control IC of the current mode system where power MOSFET drives directly. In this model, UR13V (32 types) is generated.
IC7251	FA5511	VLCD SW-REG-CTL for 32"	This IC is IC for the PWM type switching power supply control. In this model, backlight LED power supply (VLED=144V) is generated.

2. Detailed ICs Information

2.1. IC1301 (VHiAK4341ED-1Y)

2.1.1 Block Diagram



2.1.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	MCLK	I	Master clock input pin. An external TTL clock should be input on this pin.
2	BICK	I	Audio serial data clock pin.
3	SDTI	I	Audio serial data input pin.
4	LRCK	I	L/R clock pin.
5	RDN	I	Power-down mode pin. When at "L", the AK4341 is in the power-down mode, held in reset and AOUTL/R are held in VCOM. The AK4341 must be reset once upon power-up.
6	SMUTE	I	Soft mute pin in parallel control mode. "H": Enable, "L": Disable
7	ACKS	I	Auto setting mode pin. "L": Manual setting mode, "H": Auto setting mode.
8	DIF	I	Audio data interface format pin. "L": 24bit MSB justified, "H": I2S.
9	DEM	I	De-emphasis enable pin. "H": Enable, "L": Disable
10	AOUTR	O	Rch analog output pin. When PDN pin = "L", outputs VCOM voltage.
11	AOUTL	O	Lch analog output pin. When PDN pin = "L", outputs VCOM voltage.
12	HVDD	I	Output buffer power supply pin. Normally connected to VSS with a 0.1μF ceramic capacitor in parallel with a 10μF electrolytic cap.
13	VSS	—	Ground pin.
14	VDD	—	DAC power supply pin.
15	VCOM	O	DAC common voltage pin. Normally connected to VSS with a 10μF electrolytic cap. Outputs VCOM VDD voltage either PDN pin = "L" or "H".
16	GAIN	I	Gain control pin. "H": +6dB, "L": 0dB, open: +12dB. When PDN = "H", the gain pin is connected to VDD and VSS with 50kΩ resistor and held to VDD/2 when open. When PDN = "L", connected to VSS with 50kΩ resistor.

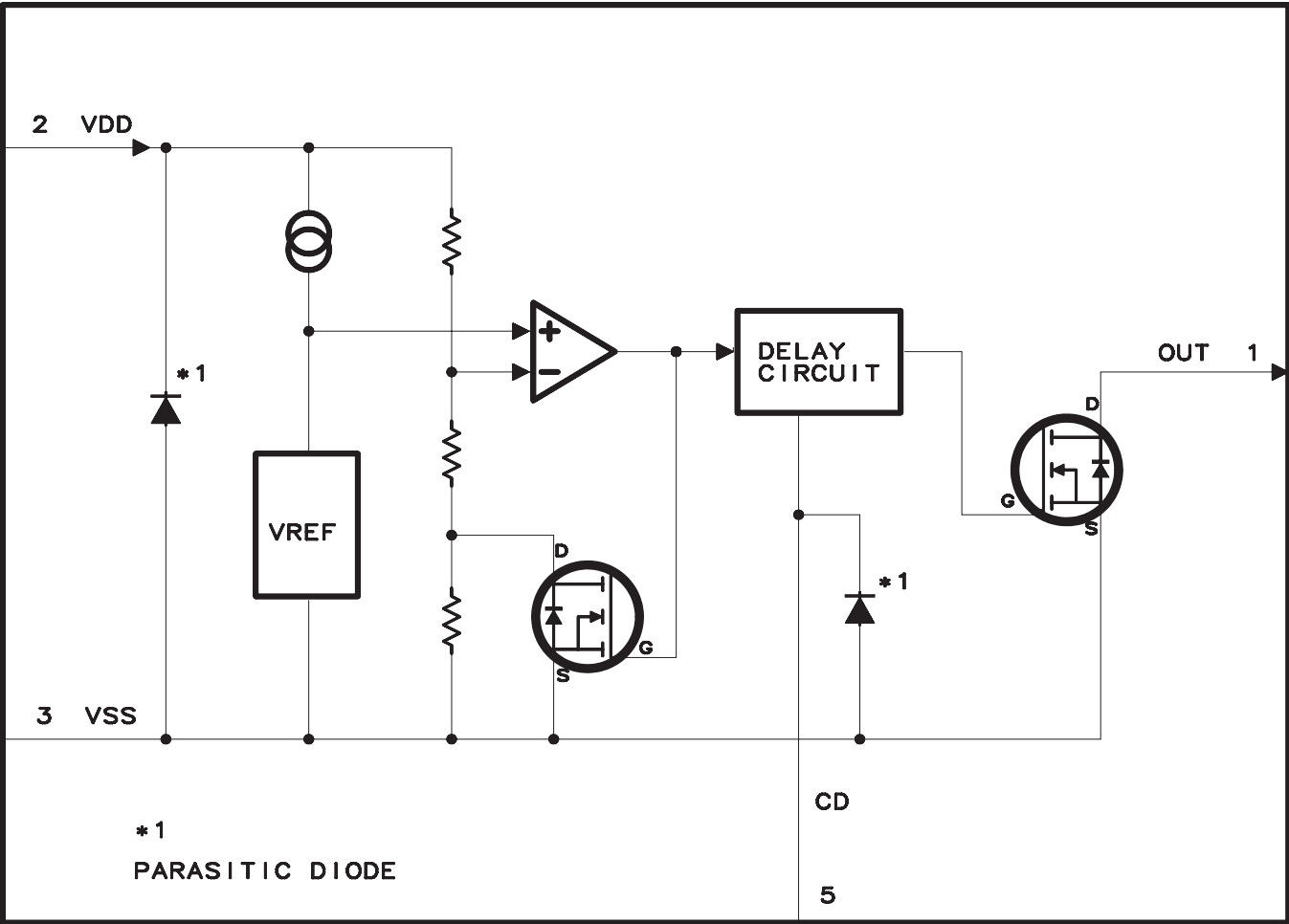
2.2.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function	sheet name
1	AIN8R	I	Channel 8 right input.	open
2	AIN8L	I	Channel 8 left input.	open
3	MVDD33	—	Multiplexer positive supply 3.3 voltage.	—
4	VCM33	O	Multiplexer midrail divider de coupling pin.	C-GND
5	MGND33	—	Multiplexer negative supply.	GND
6	ADCOU TL	O	Analog multiplexer left output.	AUDIO_IN_L
7	ADCOU TR	O	Analog multiplexer right output.	AUDIO_IN_R
8	HPOU TL	O	Headphone right channel output.	HP_L
9	HPGND	—	Headphone ground supply pin.	GND
10	HPVDD	—	Headphone power supply pin.	S9V
11	HPOU TR	O	Headphone right channel output.	HP_R
12	AGND	—	Analog negative supply.	GND
13	PGA0OU TL	O	PGA channel 0 left output.	open
14	PGA0OU TR	O	PGA channel 0 right output.	open
15	AVDD	—	Analog positive supply 12 voltage or 9 voltage.	S9V
16	VCMPGA	O	PGA midrail divider de coupling pin.	C-GND
17	PGA2OU TL	O	PGA channel 2 left output.	SPK_OUT_L
18	PGA2OU TR	O	PGA channel 2 right output.	SPK_OUT_R
19	PGA1OU TL	O	PGA channel 1 left output.	MONITOR_L
20	PGA1OU TR	O	PGA channel 1 right output.	MONITOR_R
21	INPUT2R	I	Channel 2 right input to PGA gain module.	AOUT_SP_R
22	INPUT2L	I	Channel 2 left input to PGA gain module.	AOUT_SP_L
23	INPUT0R	I	Channel 0 right input to PGA gain module.	AOUT_HP_R
24	INPUT0L	I	Channel 0 left input to PGA gain module.	AOUT_HP_L
25	INPUT1R	I	Channel 1 right input to PGA gain module.	AOUT_MONI_R
26	INPUT1L	I	Channel 1 left input to PGA gain module.	AOUT_MONI_L
27	CL	I	Control clock pin in serial mode.	SCLO_400K
28	DI	I/O	Control data pin in serial mode.	SDAO_400K
29	MUTE#	I	Hardware mute function when this pin is driven low.	AUSW_MUTE
30	RESET#	I	The device enters a low power mode when this pin is driven low.	AUSW_RST
31	GPIO0	I	General Purpose I/O 0 and also shares hardware trapped function.	R-GND
32	GPIO1	I	General Purpose I/O 1.	open
33	GPIO2	I	General Purpose I/O 2.	open
34	GPIO3	I	General Purpose I/O 3.	COMP_PLUG
35	GPIO4	I	General Purpose I/O 4.	MUTE_A_ALL
36	DVDD	—	Digital positive supply 3.3 voltage.	D3.3V
37	DGND	—	Digital negative supply.	ground
38	GPIO5	I	General Purpose I/O 5.	open
39	GPIO6	I	General Purpose I/O 6.	open
40	GPIO7	I	General Purpose I/O 7.	TUNER_OUT_SEL
41	GPIO8	I	General Purpose I/O 8.	TUNER_OUT_CVBS_MUTE
42	GPI	I	Only General Purpose Input and support internal digital scan mode.	CVBS_PLUG
43	AIN1R	I	Channel 1 right input (default).	SC1_IN_R
44	AIN1L	I	Channel 1 left input (default).	SC1_IN_L
45	AIN2R	I	Channel 2 right input.	SC2_IN_R
46	AIN2L	I	Channel 2 left input.	SC2_IN_L
47	AIN3R	I	Channel 3 right input.	COMP_IN_R
48	AIN3L	I	Channel 3 left input.	COMP_IN_L
49	AIN4R	I	Channel 4 right input.	RC/HDMI_IN_R
50	AIN4L	I	Channel 4 left input.	RC/HDMI_IN_L
51	AIN5R	I	Channel 5 right input.	CVBS_IN_R
52	AIN5L	I	Channel 5 left input.	CVBS_IN_L
53	AIN6R	I	Channel 6 right input.	open
54	AIN6L	I	Channel 6 left input.	open
55	AIN7R	I	Channel 7 right input.	open
56	AIN7L	I	Channel 7 left input.	open

2.3. IC1303, IC9607 (VHiS80944NM-1Y)

2.3.1 Block Diagram

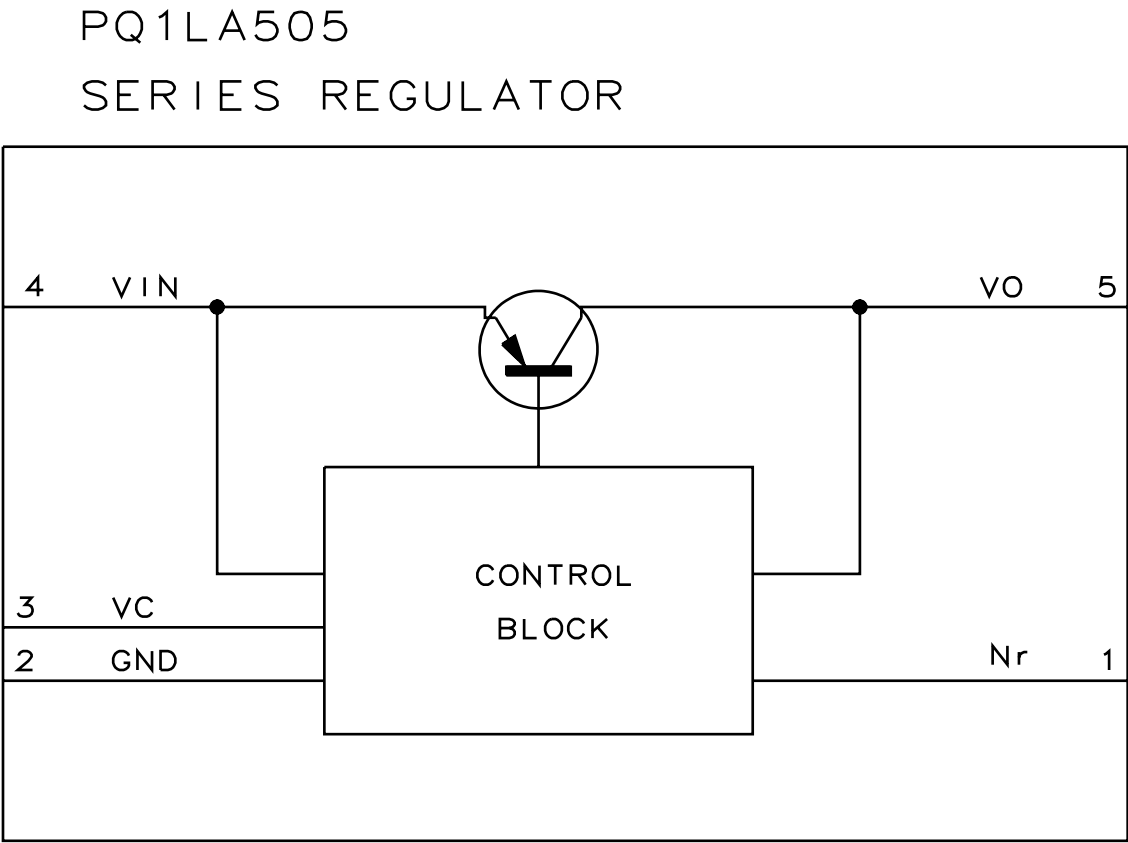
S80944NM
VOLTAGE DETECTOR(4.4V)



2.3.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	OUT	O	Voltage detection output terminal (RESET detecting voltage).
2	VDD	—	Voltage input terminal.
3	VSS	—	Ground terminal.
4	NC	—	No connection (It is an opening electrically.)
5	CD	I	External capacitor connection terminal for delay.

2.4.1 Block Diagram



2.4.2 Pin Connections and short description

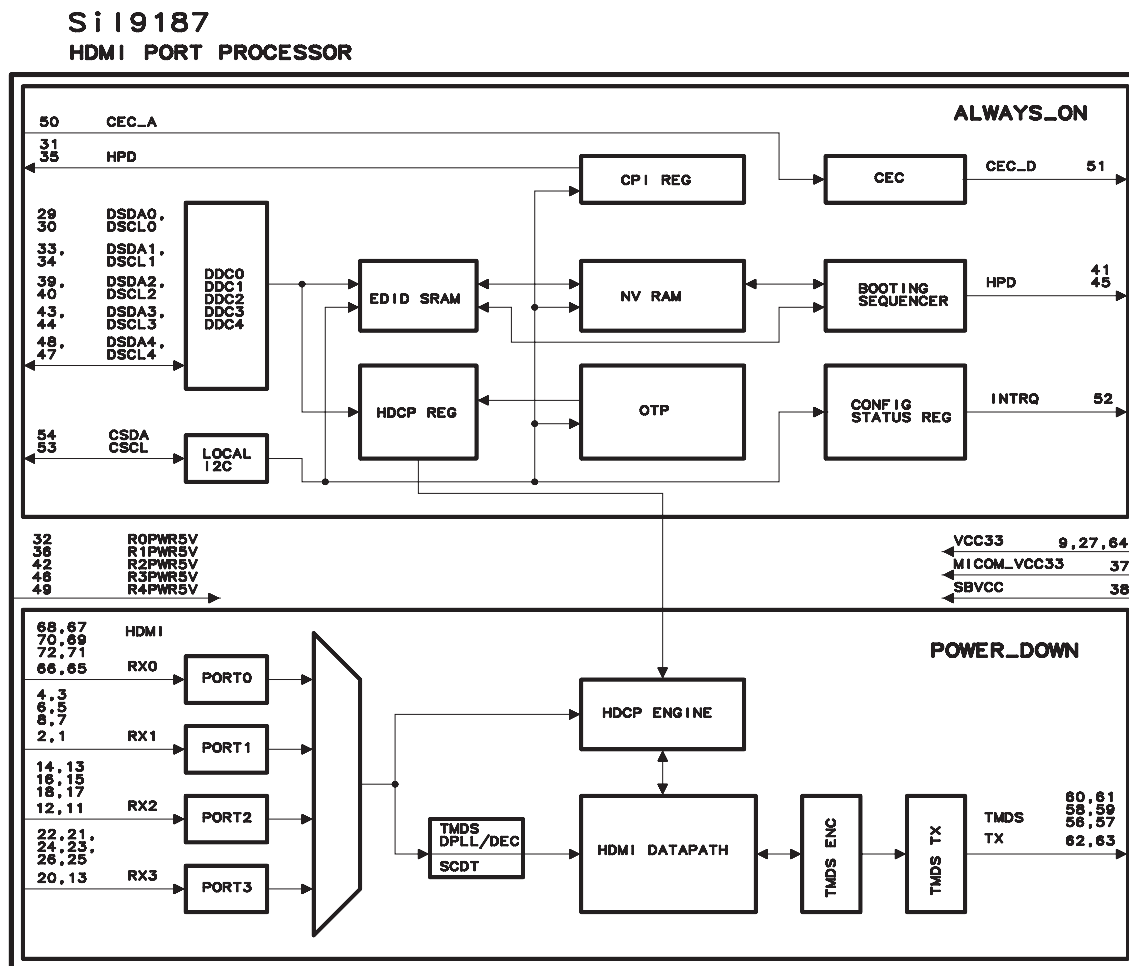
Pin No.	Pin Name	I/O	Pin Function
1	Nr	I	Noise Control
2	GND	-	Ground pin
3	Vc	I	ON/OFF Control
4	Vin	I	DC input
5	Vo	O	DC Output

2.5. IC501 (VHiBR24C21F-1Y)

This IC is a block diagram and description LC-32/40/46LE700E (S89B4LC32L700) please see the service manual.

2.6. IC506 (VHiM3221EiP-1Y)

This IC is a block diagram and description LC-32/40/46LE700E (S89B4LC32L700) please see the service manual.

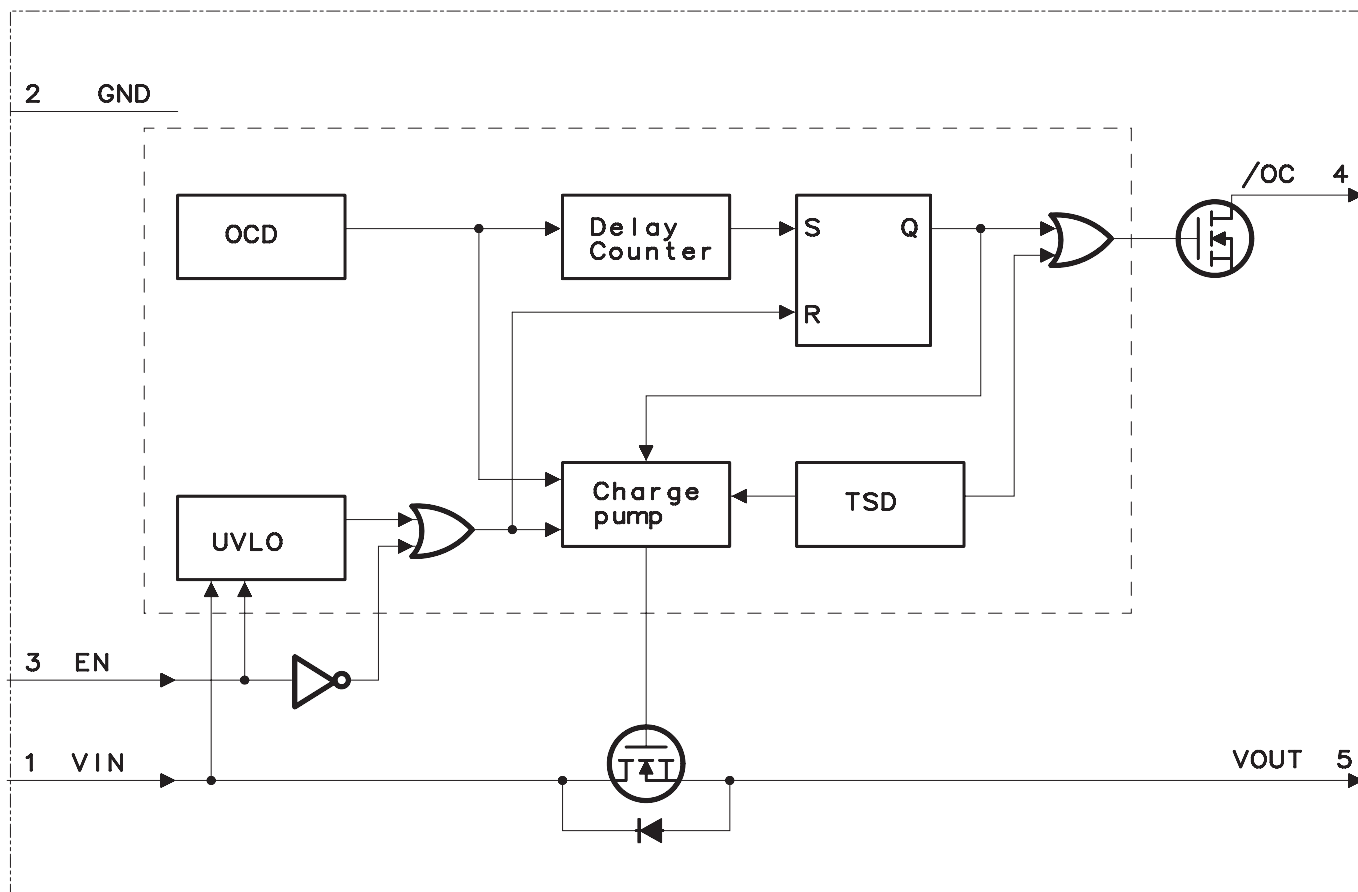
2.7. IC1508 (VHiSii91873-1Q)**2.7.1 Block Diagram**

2.7.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
HDMI RX Port Pins			
68	R0X0P	I	TMDS input port 0 data pairs.
67	R0X0N	I	
70	R0X1P	I	
69	R0X1N	I	
72	R0X2P	I	
71	R0X2N	I	
66	R0XCP	I	TMDS input port 0 clock pair.
65	R0XCN	I	
4	R1X0P	I	TMDS input port 1 data pairs.
3	R1X0N	I	
6	R1X1P	I	
5	R1X1N	I	
8	R1X2P	I	
7	R1X2N	I	
2	R1XCP	I	TMDS input port 1 clock pair
1	R1XCN	I	
14	R2X0P	I	TMDS input port 2 data pairs.
13	R2X0N	I	
16	R2X1P	I	
15	R2X1N	I	
18	R2X2P	I	
17	R2X2N	I	
12	R2XCP	I	TMDS input port 2 clock pair.
11	R2XCN	I	
22	R3X0P	I	TMDS input port 3 data pairs.
21	R3X0N	I	
24	R3X1P	I	
23	R3X1N	I	
26	R3X2P	I	
25	R3X2N	I	
20	R3XCP	I	TMDS input port 3 clock pair
19	R3XCN	I	
HDMI Tx Port Pins			
60	TX0P	O	HDMI Tx Output port data.
61	TX0N	O	TMDS Low Voltage Differential Signal output data pairs.
58	TX1P	O	
59	TX1N	O	
56	TX2P	O	
57	TX2N	O	
62	TXCP	O	
63	TXCN	O	
System Switching Pins			
29	DSDA0	I/O	DDC I2C Data for respective port. These signals are true open drain, and do not pull-down to ground when power is not applied to the device. These pins require an external pull-up resistor.
33	DSDA1	I/O	
39	DSDA2	I/O	
43	DSDA3	I/O	
30	DSCL0	I	DDC I2C Clock for respective port. These signals are true open drain, and do not pull-down to ground when power is not applied to the device. These pins require an external pull-up resistor.
34	DSCL1	I	
40	DSCL2	I	
44	DSCL3	I	
32	R0PWR5V	—	5-V Port detection input for respective port. Connect to 5-V signal from HDMI input connector.
36	R1PWR5V	—	
42	R2PWR5V	—	
46	R3PWR5V	—	
31	HPD0	O	Hot Plug Detect Output for respective port. Connect to HOTPLUG of HDMI input connector.
35	HPD1	O	
41	HPD2	O	
45	HPD3	O	
49	R4PWR5V	—	5V power from 5th Rx port.

Pin No.	Pin Name	I/O	Pin Function
Control Pins			
54	CSCL	I	Local Configuration/Status I2C Clock. Chip configuration/status is accessed via this I2C port. This pin is a true open drain, so it does not pull to ground if power is not applied.
53	CSDA	I/O	Local Configuration/Status I2C Data. Chip configuration/status is accessed via this I2C port. This pin is a true open drain, so it does not pull to ground if power is not applied.
48	DSCL4	I	DDC I2C Clock for VGA port. HDCP KSV, Aa, and Ri values are exchanged over this I2C port during authentication. This pin is a true open drain, so it does not pull to ground if power is not applied. The R4PWR5V (VREF) pad will provide a reference voltage for the PROT input pin.
47	DSDA4	I/O	DDC I2C Data for VGA port. HDCP KSV, Aa, and Ri values are exchanged over this I2C port during authentication. This pin is a true open drain, so it does not pull to ground if power is not applied. The R4PWR5V (VREF) pad will provide a reference voltage for the PROT input pin.
Configuration Pins			
55	TPWR_CI2CA	I/O	I2C Slave Address input/Transmit Power Sense Output. When RESET# is LOW, this pin is used as an input to latch the I2C sub_address. The level on this pin is latched when the RESET# pin transition from LOW to HIGH. When RESET# is HIGH, this pin is used as the TPWR output, indicating that the receive port has 5V present.
52	INT	O	Interrupt Output. This is an open_drain output and requires an external pull_up resistor.
10	RSVD	—	When SBVCC (pin38) = 5V, RSVD pin #10 must be tied to GND with less than 10K resistor. When SBVCC (pin38) = 3.3V, RSVD pin #10 must be tied to GND with 1M ohm resistor.
28	RSVD	—	These pins must be tied to GND during normal operation.
CEC Pins			
50	CEC_A	I/O	HDMI compliant CEC I/O used for interfacing to CEC devices. The signal is electrically compliant with CEC specification. This pin connects to the CEC signal of all HDMI connectors in the system. As an input, the pin acts as a LVTTTL, Schmitt triggered input and is 5V tolerant. As an output, the pin acts as an NMOS driver with resistive pull-up. This pin has an internal pull-up resistor.
51	CEC_D	I/O	This pin is configurable through NVRAM. For CEC_D use, this pin interfaces to the CEC master. Usually connected to Micro-controller.
Power and Ground Pins			
9,27,64	VCC33	—	TMDS Core VCC. Must be supplied at 3.3V
37	MICOM_VCC33	—	During normal mode, this pin provides 3.3V power to external micro-controller. Maximum output current is 30mA.
38	SBVCC	—	Local Power from TV. When SBVCC (pin38) = 5V, RSVD pin #10 must be tied to GND with less than 10K resistor. When SBVCC (pin38) = 3.3V, RSVD pin #10 must be tied to GND with 1M ohm resistor.
ePad	Epad	—	ePad must be connected to ground. All ground planes, analog and digital, must be tied together to the ePad, which must be connected to ground.

USB highside switch

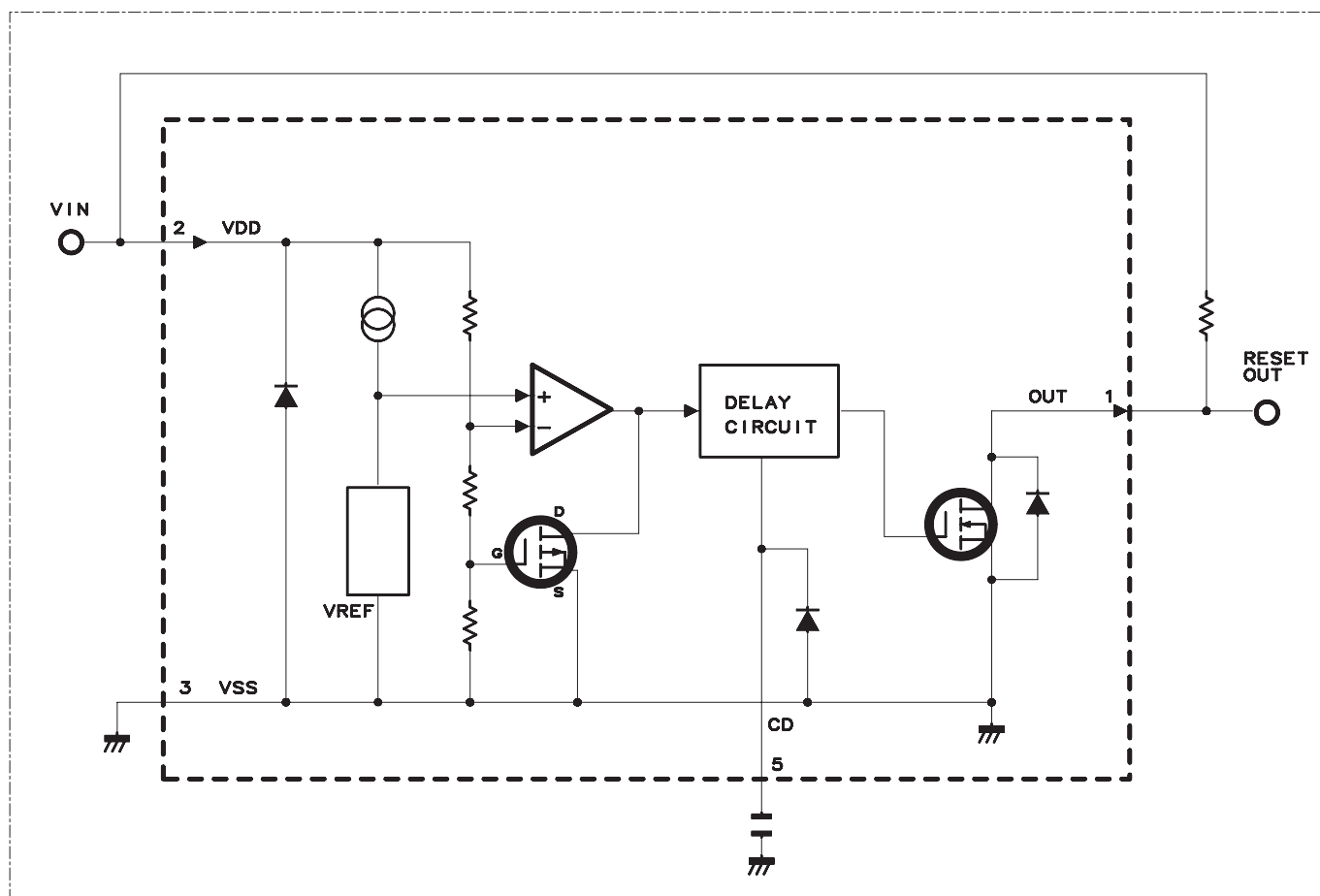


Pin No.	Pin Name	I/O	Pin Function
1	VIN	I	Power supply input terminal. It is an input terminal to the switch and a power supply input terminal of an internal circuit.
2	GND	—	Ground
3	EN	I	Switch enable input terminal. The switch is turned on by inputting the high level.
4	/OC	O	Over current notification terminal. When the over current is detected, it becomes a low level. Open drain output.
5	VOUT	O	Switch output terminal.

2.9. IC3304 (VHiS80928NM-1Y), IC3305 (VHiS80920NM-1Y)

2.9.1 Block Diagram

S80920NM 2.0V
S80928NM 2.8V
VOLTAGE-DETECTOR

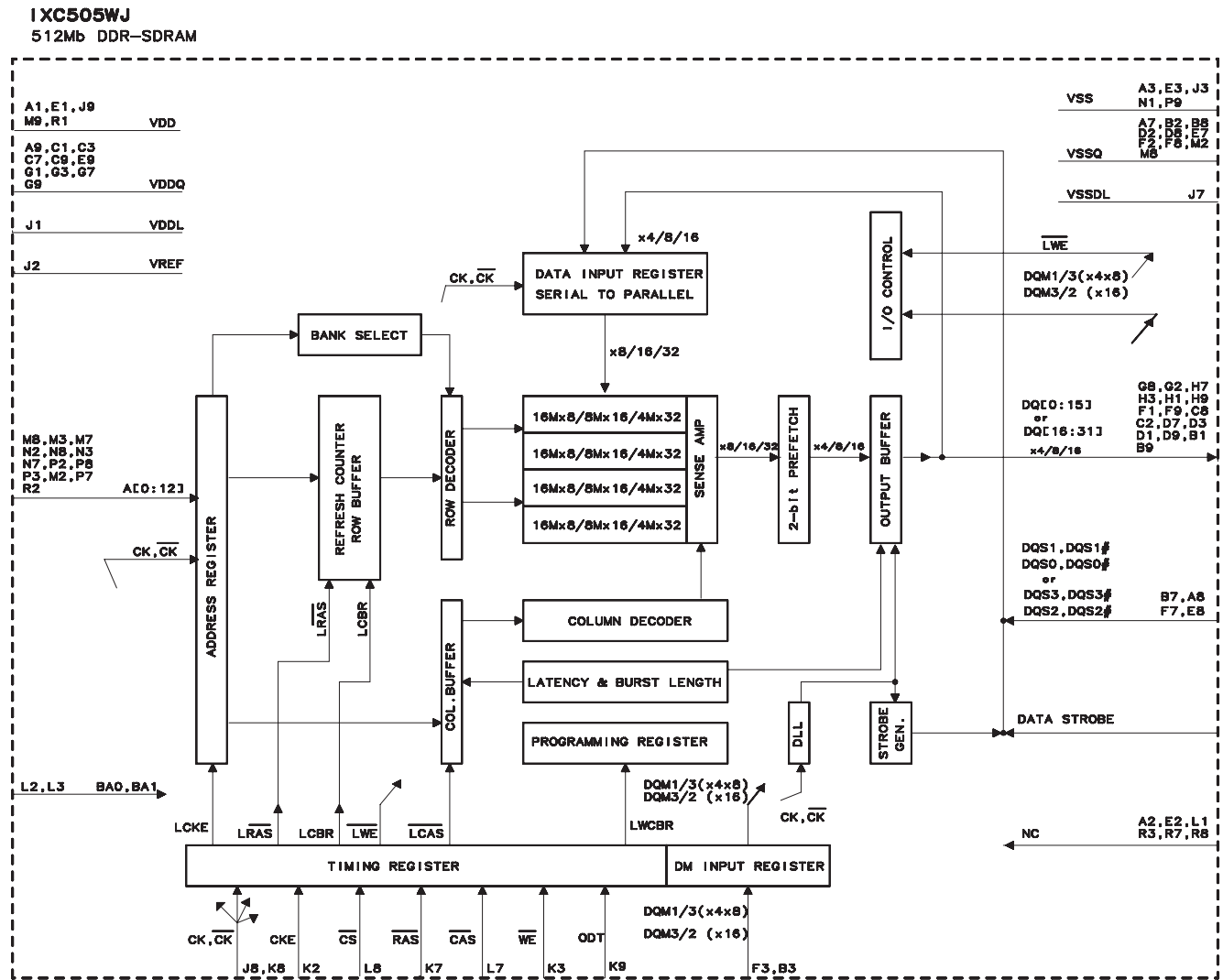


2.9.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	OUT	O	Voltage detection output terminal. (RESET detecting voltage)
2	VDD	—	Voltage input terminal.
3	VSS	—	Ground terminal.
4	NC	—	No connection (It is an opening electrically.)
5	CD	I	External capacitor connection terminal for delay.

2.10. IC3501, IC3502 (RH-iXC505WJQZQ)

2.10.1 Block Diagram



IXC505WJ-512M-SDRAM

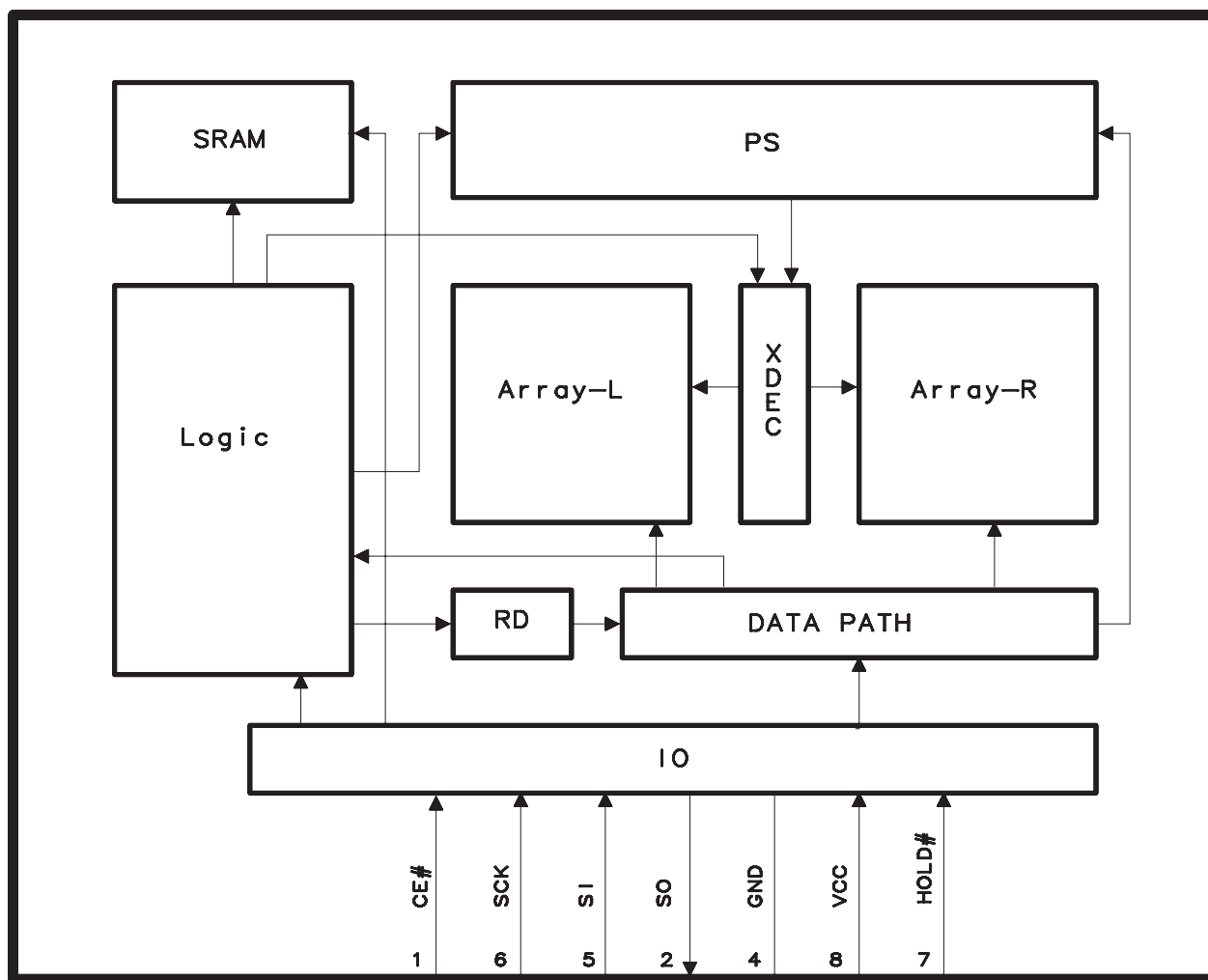
2.10.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
J8, K8	CK, CK#	I	Clock: CK and CK# are differential clock inputs. All address and control input signals are sampled on the crossing of the positive edge of CK and negative edge of CK#. Output (read) data is referenced to the crossings of CK and CK# (both directions of crossing).
K2	CKE	I	Clock Enable: CKE HIGH activates, and CKE Low deactivates, internal clock signals and device input buffers and output drivers. Taking CKE Low provides Pre charge Power-Down and Self Refresh operation (all bank idle), or Active Power-Down (row Active in any bank). CKE is synchronous for power down entry and exit, and for self refresh entry. CKE is asynchronous for self refresh exit. After VREF has become stable during the power on and initialization sequence, it must be maintained for proper operation of the CKE receiver. For proper self-refresh entry and exit, VREF must be maintained to this input. CKE must be maintained high throughout read and write accesses. Input buffers, excluding CK, CK#, ODT and CKE are disabled during power-down. Input buffers, excluding CKE are disabled during self refresh.
L8	CS#	I	Chip Select: All commands are masked when CS# is registered HIGH. CS# provides for external bank selection on systems with multiple banks. CS# is considered part of the command code.

Pin No.	Pin Name	I/O	Pin Function
K9	ODT	I	On Die Termination: ODT (registered HIGH) enables termination resistance internal to the DDR2 SDRAM. When enabled, ODT is only applied to each DQ, DQS, DQS#, RDQS, RDQS#, and DM signal for x4/x8 configuration. For x16 configuration, ODT is applied to each DQ, UDQS/UDQS#. LDQS/LDQS#, UDM and LDM signal. The ODT pin will be ignored if the Extended Mode Register Set (EMRS) is programmed to disable ODT.
K7, L7, K3	RAS#, CAS#, WE#	I	Command Inputs: RAS#, CAS# and WE# (along with CS#) define the command being entered.
F3, B3	DM (UQM3) (DQM1) or (UQM2) (DQM3)	I	Input Data Mask: DM is an input mask signal for write data. Input data is masked when DM is sampled HIGH coincident with that input data during a Write access. DM is sampled on both edges of DQS. Although DM pins are input only, the DM loading matches the DQ and DQS loading. For x8 device, the function of DM or RDQS/RDQS# is enabled by EMRS command.
L2, L3	BA0, BA1	I	Bank Address Inputs: BA0 and BA1 define to which bank an Active, Read, Write or Pre charge command is being applied. Bank address also determines if the mode register or extended mode register is to be accessed during a MRS or EMRS cycle.
M8, M3, M7, N2, N8, N3, N7, P2, P8, P3, M2, P7, R2	A [0:12]	I	Address Inputs: Provide the row address for Active commands, and the column address and Auto Pre charge bit for Read/Write commands to select one location out of the memory array in the respective bank. A10 is sampled during a pre charge command to determine whether the PRECHARGE applies to one bank (A10 LOW) or all banks (A10 HIGH). If only one bank is to be pre charged, the bank is selected by BA0, BA1. The address inputs also provide the op-code during a Mode Register Set command.
G8, G2, H7, H3, H1, H9, F1, F9, C8, C2, D7, D3, D1, D9, B1, B9	DQ [0:15] or DQ [16:31]	I/O	Data Input/Output: Bi-directional data bus.
B7, A8, F7, E8	(DQS1), (DQS1#) (DQS0), (DQS0#) or (DQS3), (DQS3#) (DQS2), (DQS2#)	I/O	Data Strobe: Output with read data, input with write data. Edge-aligned with read data, centered in write data. For the x16, DQS1 corresponds to the data on DQ0>DQ7; DQS0 corresponds to the data on DQ8>DQ15. For the x8, an DQS2 option using DM pin can be enabled via the EMRS (1) to simply read timing. The data strobes DQS1, DQS0, DQS3, and DQS2 may be used in single ended mode or paired with optional complementary signals DQS1#, DQS0#, DQS3# and DQS2# to provide differential pair signaling to the system during both reads and writes. A control bit at EMRS (1) [A10] enables or disables all complementary data strobe signals. In this data sheet, "differential DQS signals" refers to any of the following with A10=0 of EMRS (1) x4 DQS1/DQS1# x8 DQS1/DQS1# if EMRS (1) [A11] =0 x8 DQS1/DQS1#, DQS2/DQS2# x16 DQS0/DQS0# and DQS3/DQS3#
A2, E2, L1, R3, R7, R8	NC	—	No Connect: No internal electrical connection is present.
A1, E1, J9, M9, R1	VDD	—	Power Supply: +1.8V $\pm$ 0.1V.
A9, C1, C3, C7, C9, E9, G1, G3, G7, G9	VDDQ	—	DQ Power Supply: +1.8V $\pm$ 0.1V.
A3, E3, J3, N1, P9	VSS	—	Ground.
A7, B2, B8, D2, D8, E7, F2, F8, H2, H8	VSSQ	—	Ground. DQ Ground.
J1	VDDL	—	DLL Power Supply: +1.8V $\pm$ 0.1V.
J7	VSSDL	—	DLL Ground.
J2	VREF	I	Reference voltage for inputs for SSTL interface.

2.11.1 Block Diagram

I XC788WJ 2M FLASH MEMORY



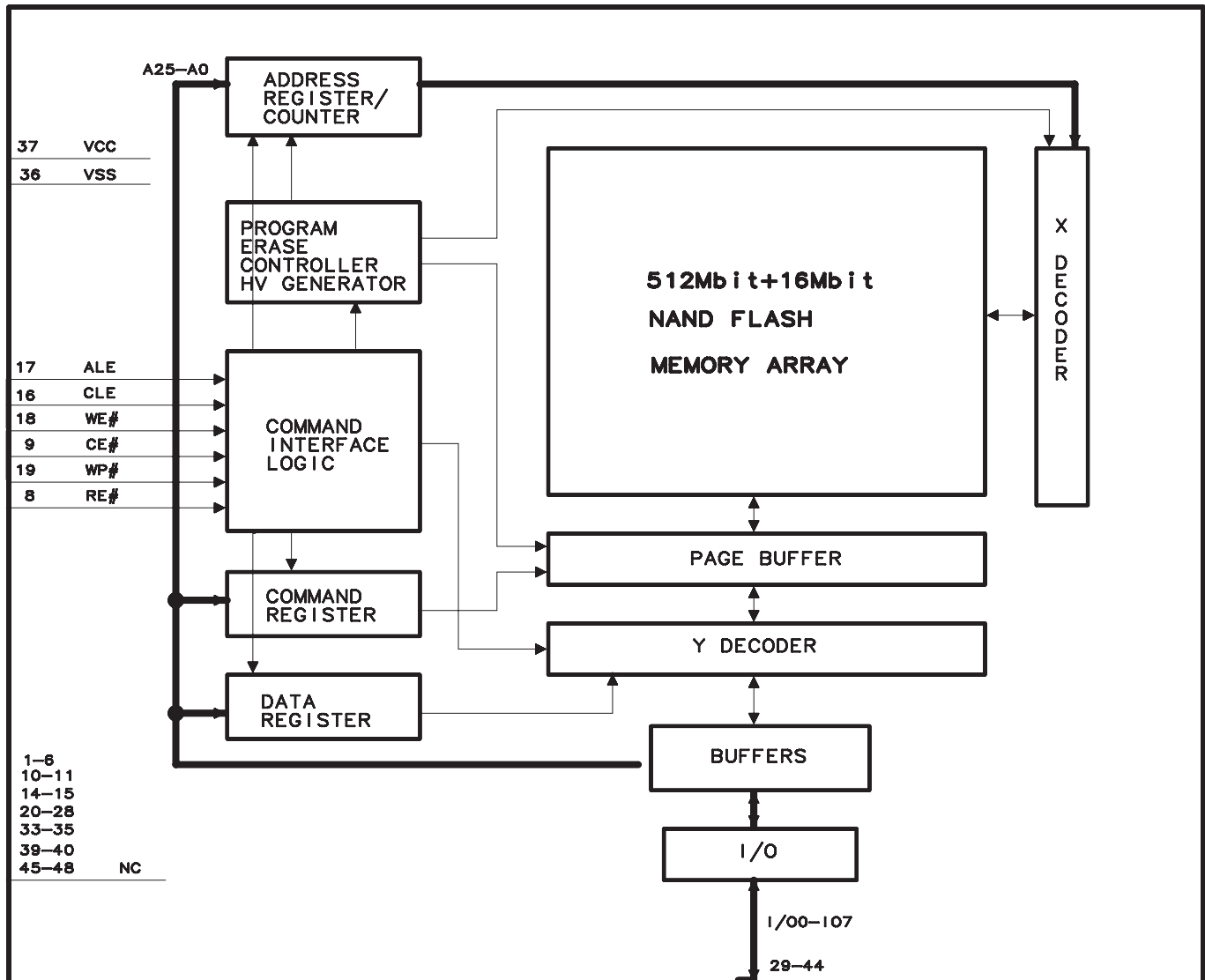
2.11.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	CS# (Chip Select)	I	Places device in active power mode when driven low. Deselects device and places SO at high impedance when high. After power-up, device requires a falling edge on CS# before any command is written. Device is in standby mode when a program, erase, or Write Status Register operation is not in progress.
2	SO (Signal data Output)	O	Transfers data serially out of the device on the falling edge of SCK.
3	W# (Write Protect)	I	Protects the memory area specified by Status Register bits BP2:BP0. When driven low, prevents any program or erase command from altering the data in the protected memory area.
4	GND	—	Ground
5	SI (Serial Data Input)	I	Transfers data serially into the device. Device latches commands, addresses, and program data on SI on the rising edge of SCK.
6	SCK (Serial Clock)	I	Provides serial interface timing. Latches commands, addresses, and data on SI on rising edge of SCK. Triggers output on SO after the falling edge of SCK.
7	HOLD#	I	Pauses any serial communication with the device without deselecting it. When driven low, SO is at high impedance, and all input at SI and SCK are ignored. Requires that CS# also be driven low.
8	VCC	—	Supply Voltage

2.12. IC8401 (RH-iXC721WJQZQ)

2.12.1 Block Diagram

IXC721WJ 512Mb FLASH



2.12.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
29-44	IO0-IO7	I/O	DATA INPUTS/OUTPUTS The IO pins allow to input command, address and data and to output data during read/program operations. The inputs are latched on the rising edge of Write Enable (WE#). The I/O buffer float to High-Z when the device is deselected or the outputs are disabled.
16	CLE	I	COMMAND LATCH ENABLE This input activates the latching of the IO inputs inside the Command Register on the Rising edge of Write Enable (WE#).
17	ALE	I	ADDRESS LATCH ENABLE This input activates the latching of the IO inputs inside the Address Register on the Rising edge of Write Enable (WE#).
9	CE#	I	CHIP ENABLE This input controls the selection of the device. When the device is busy CE# low does not deselect the memory.
18	WE#	I	WRITE ENABLE This input acts as clock to latch Command, Address and Data. The IO inputs are latched on the rise edge of WE#.
8	RE#	I	READ ENABLE The RE# input is the serial data-out control, and when active drives the data onto the I/O bus. Data is valid REA after the falling edge of RE# which also increments the internal column address counter by one.
19	WP#	I	WRITE PROTECT The WP# pin, when Low, provides an Hardware protection against undesired modify (program/erase) operations.
7	A/B#	I	READY BUSY The Ready/Busy output is an Open Drain pin that signals the state of the memory.
37	VCC	—	SUPPLY VOLTAGE The VCC supplies the power for all the operations (Read, Write, Erase).
36	VSS	—	GROUND
1-6, 10-11, 14-15, 20-28, 33-35, 39-40, 45-48	NC	—	NO CONNECTION

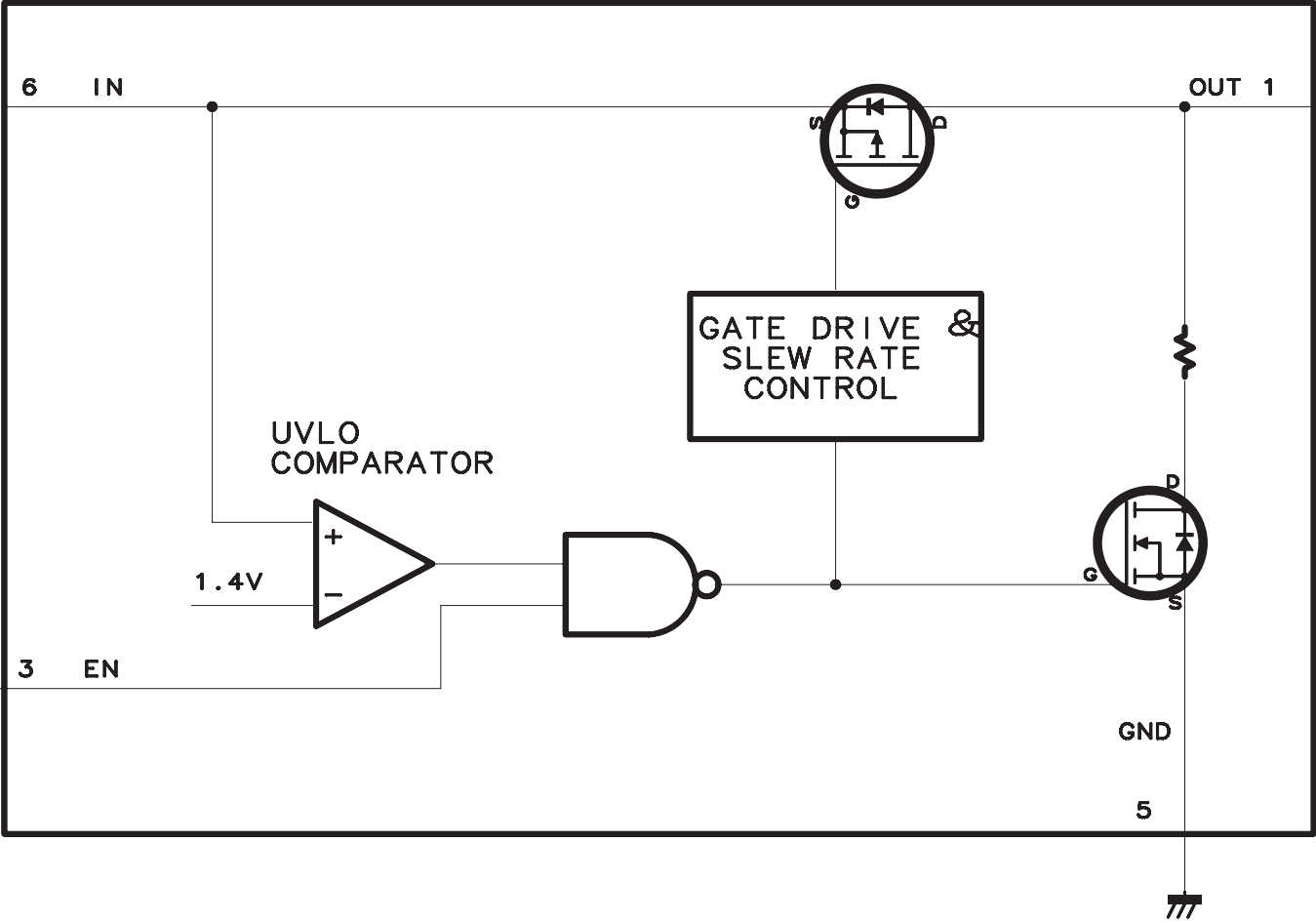
2.13. IC8455 (VHiBR24S64F-1Y)

This IC is a block diagram and description LC-32A47E/RU/V (S59Z4LC32A47E) please see the service manual.

2.14. IC4402 (VHiAOZ1320C-1Y)

2.14.1 Block Diagram

AOZ1320C
SW

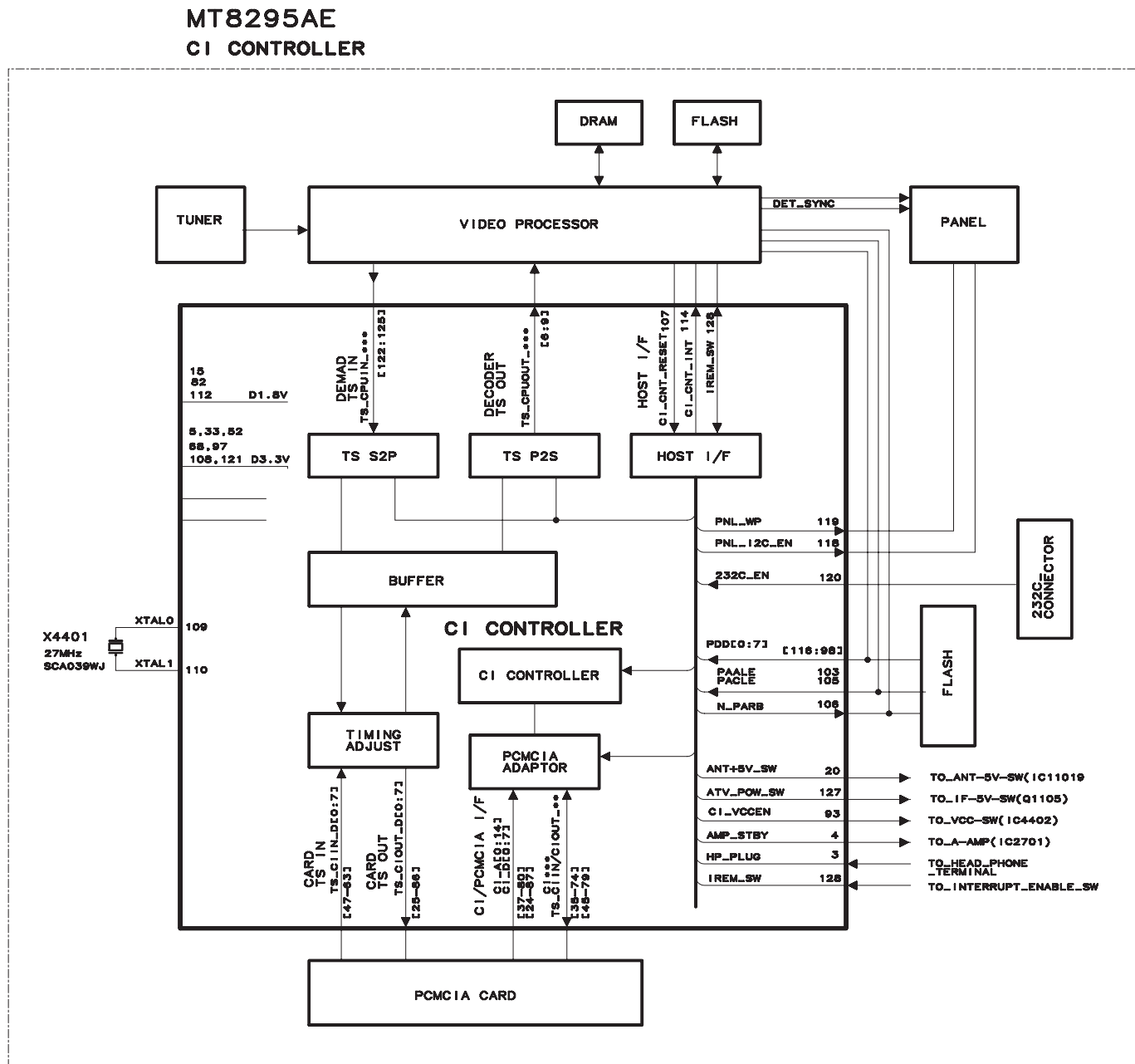


2.14.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	OUT	O	Output. OUT is the source of the P-channel MOSFET.
2	GND	—	Ground
3	EN	I	Enable. The P-channel MOSFET turns on when EN is logic HIGH.
4	NC	—	No connect. This pin is not internally connected.
5	GND	—	Ground
6	IN	I	Input. IN is the drain of the P-channel MOS FET. It is the supply input of the IC.

2.15. IC4401 (VHiMT8295AE-1Q)

2.15.1 Block Diagram



2.15.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function	Sheet Name
Miscellaneous				
107	RESETB	I	Chip reset.	CI_CNT_RESET
114	CI_INT	O	interrupt.	CI_CNT_INT
NAND flash				
116	CI_DATA0	I/O	NAND Flash Data bit 0.	PDD0_
115	CI_DATA1	I/O	NAND Flash Data bit 1.	PDD1_
95	CI_DATA2	I/O	NAND Flash Data bit 2.	PDD2_
102	CI_DATA3	I/O	NAND Flash Data bit 3.	PDD3_
101	CI_DATA4	I/O	NAND Flash Data bit 4.	PDD4_
100	CI_DATA5	I/O	NAND Flash Data bit 5.	PDD5_
99	CI_DATA6	I/O	NAND Flash Data bit 6.	PDD6_
98	CI_DATA7	I/O	NAND Flash Data bit 7.	PDD7_
94	CI_CEB	I	NAND Flash Chip enable.	CI_CE#

Pin No.	Pin Name	I/O	Pin Function	Sheet Name
106	CI_RB	O	NAND Flash Ready.	N_PARB_
96	CI_WEB	I	NAND Flash Write enable.	XEWE_
103	CI_ALE	I	NAND Flash Address Latch enable.	PAALE_
105	CI_CLE	I	NAND Flash Command Latch enable.	PACLE_
117	CI_OEB	I	NAND Flash Output enable.	XERE_
CLK/Crystal				
109	XTALO	O	Crystal output.	XTAL_O
110	XTALI	I	Crystal input.	XTAL_I
Transport stream (TS)				
6	TOCLK	I	Transport stream 1 input clock.	TS_CPUOUT_CLK
7	TOSYNC	I	Transport stream 1 input sync.	TS_CPUOUT_SYNC
8	TOVALID	I	Transport stream 1 input valid.	TS_CPUOUT_VAL
9	TODATA0	I	Transport stream 1 input data bit 0.	TS_CPUOUT_DO
11	TODATA1	I	Transport stream 1 input data bit 1. Transport stream 2 input clock.	open
12	TODATA2	I	Transport stream 1 input data bit 2. Transport stream 2 input sync.	open
13	TODATA3	I	Transport stream 1 input data bit 3. Transport stream 2 input valid.	open
14	TODATA4	I	Transport stream 1 input data bit 4. Transport stream 2 input data.	open
16	TODATA5	I	Transport stream 1 input data bit 5.	open
17	TODATA6	I	Transport stream 1 input data bit 6.	open
18	TODATA7	I	Transport stream 1 input data bit 7.	open
123	TS_CKO	O	Transport stream output clock.	TS_CPUIN_CLK
125	TS_SYNCO	O	Transport stream output sync.	TS_CPUIN_SYNC
122	TS_VALIDO	O	Transport stream output valid.	TS_CPUIN_VAL
124	TS_DATAO	O	Transport stream output data.	TS_CPUIN_DO
General Purpose Input and Output (GPIO)				
1	GPIO0	I/O	General purpose I/O bit 0. (Resister-Ground)	R-G
2	GPIO1	I/O	General purpose I/O bit 1. (Resister-Ground)	R-G
3	GPIO2	I	General purpose I/O bit 2. (Head Phone Plug)	HP_PLUG
4	GPIO3	O	General purpose I/O bit 3. (Amp Standby)	AMP_STBY
19	GPIO4	I/O	General purpose I/O bit 4.	open
20	GPIO5	O	General purpose I/O bit 5. (Antena_5V_SW)	ANT_5V_SW
21	GPIO6	I/O	General purpose I/O bit 6.	open
91	GPIO7	I/O	General purpose I/O bit 7.	open
92	GPIO8	I/O	General purpose I/O bit 8.	open
93	GPIO9	O	General purpose I/O bit 9. (Common Interface VCC Enable)	CI_VCCEN
118	GPIO10	O	General purpose I/O bit 10. (Panel I2C Enable)	PNL_I2C_EN
119	GPIO11	O	General purpose I/O bit 11. (Panel Write Protect)	PNL_WP
120	GPIO12	I	General purpose I/O bit 12. (232C_Eable)	232C_EN
127	GPIO13	O	General purpose I/O bit 13. (ATV_Power_SW)	ATV_POW_SW
128	GPIO14	I	General purpose I/O bit 14. (Interrupt enable_SW)	IREM_SW
PCMCIA/CI				
83	D0	I/O	PCMCIA data bit 0.	C_D0
85	D1	I/O	PCMCIA data bit 1.	C_D1
87	D2	I/O	PCMCIA data bit 2.	C_D2
24	D3	I/O	PCMCIA data bit 3.	C_D3
26	D4	I/O	PCMCIA data bit 4.	C_D4
28	D5	I/O	PCMCIA data bit 5.	C_D5
30	D6	I/O	PCMCIA data bit 6.	C_D6
32	D7	I/O	PCMCIA data bit 7.	C_D7
81	D8	I/O	PCMCIA data bit 8.	TS_CIOUT_D0
84	D9	I/O	PCMCIA data bit 9.	TS_CIOUT_D1
86	D10	I/O	PCMCIA data bit 10.	TS_CIOUT_D2
25	D11	I/O	PCMCIA data bit 11.	TS_CIOUT_D3
27	D12	I/O	PCMCIA data bit 12.	TS_CIOUT_D4
29	D13	I/O	PCMCIA data bit 13.	TS_CIOUT_D5
31	D14	I/O	PCMCIA data bit 14.	TS_CIOUT_D6
34	D15	I/O	PCMCIA data bit 15.	TS_CIOUT_D7
80	A0	O	PCMCIA address bit 0.	CI_A0
78	A1	O	PCMCIA address bit 1.	CI_A1
75	A2	O	PCMCIA address bit 2.	CI_A2
73	A3	O	PCMCIA address bit 3.	CI_A3

Pin No.	Pin Name	I/O	Pin Function	Sheet Name
71	A4	O	PCMCIA address bit 4.	CI_A4
69	A5	O	PCMCIA address bit 5.	CI_A5
66	A6	O	PCMCIA address bit 6.	CI_A6
64	A7	O	PCMCIA address bit 7.	CI_A7
46	A8	O	PCMCIA address bit 8.	CI_A8
44	A9	O	PCMCIA address bit 9.	CI_A9
37	A10	O	PCMCIA address bit 10.	CI_A10
41	A11	O	PCMCIA address bit 11.	CI_A11
62	A12	O	PCMCIA address bit 12.	CI_A12
48	A13	O	PCMCIA address bit 13.	CI_A13
50	A14	O	PCMCIA address bit 14.	CI_A14
59	A15	O	PCMCIA address bit 15.	TS_CIIIN_CLK
57	A16	O	PCMCIA address bit 16.	TS_CIIIN_VAL
45	A17	O	PCMCIA address bit 17.	TS_CIIIN_SYNC
47	A18	O	PCMCIA address bit 18.	TS_CIIIN_D0
49	A19	O	PCMCIA address bit 19.	TS_CIIIN_D1
51	A20	O	PCMCIA address bit 20.	TS_CIIIN_D2
54	A21	O	PCMCIA address bit 21.	TS_CIIIN_D3
56	A22	O	PCMCIA address bit 22.	TS_CIIIN_D4
58	A23	O	PCMCIA address bit 23.	TS_CIIIN_D5
61	A24	O	PCMCIA address bit 24.	TS_CIIIN_D6
63	A25	O	PCMCIA address bit 25.	TS_CIIIN_D7
67	RESET	O	PCMCIA reset.	CI_RESET
35	CE1	O	PCMCIA card enable 1.	CI_EN1
36	CE2	O	PCMCIA card enable 2.	CI_EN2
23	CD1	I	PCMCIA card detection 1.	CI_CARDDDET1
88	CD2	I	PCMCIA card detection 2.	CI_CARDDDET2
38	VS1	I	PCMCIA voltage sense 1.	C_VS1
65	VS2	I	PCMCIA voltage sense 2.	TS_CIOOUT_CLK
79	BVD1	I	PCMCIA battery voltage detection 1.	TS_CIOOUT_SYNC
77	BVD2	I	PCMCIA battery voltage detection 2.	TS_CIOOUT_VAL
72	INPACK	I	PCMCIA input port acknowledge.	CI_INP_ACK
70	WAIT	I	PCMCIA wait.	CI_WAIT
40	IORD	O	PCMCIA IO read strobe.	CI_RD
42	IOWR	O	PCMCIA IO write strobe.	CI_WR
74	REG	O	PCMCIA register selection.	CI_REG
39	OE	O	PCMCIA output enable.	CI_OE
53	WE	O	PCMCIA write enable.	CI_WE
55	READY	I	PCMCIA ready.	CI_IREQ
89	WP	I	PCMCIA write protect.	CI_IOSIS16
General Purpose Input and Output (GPIO)				
5	VCC33	—	I/O power 3.3V	D3.3V
33	VCC33	—	I/O power 3.3V	D3.3V
52	VCC33	—	I/O power 3.3V	D3.3V
68	VCC33	—	I/O power 3.3V	D3.3V
97	VCC33	—	I/O power 3.3V	D3.3V
121	VCC33	—	I/O power 3.3V	D3.3V
10	GND33	—	Ground	G
43	GND33	—	Ground	G
60	GND33	—	Ground	G
76	GND33	—	Ground	G
104	GND33	—	Ground	G
126	GND33	—	Ground	G
15	VCC18	—	Core power 1.8V	D1.8V
82	VCC18	—	Core power 1.8V	D1.8V
22	GND18	—	Ground	G
90	GND18	—	Ground	G
108	AVDD33_XTAL	—	Analog crystal power 3.3V	D3.3V
111	AVSS33_XTAL	—	Analog crystal ground	G
112	AVDD18_PLL	—	Analog PLL power 1.8V	D1.8V
113	AVSS18_PLL	—	Analog PLL ground	G

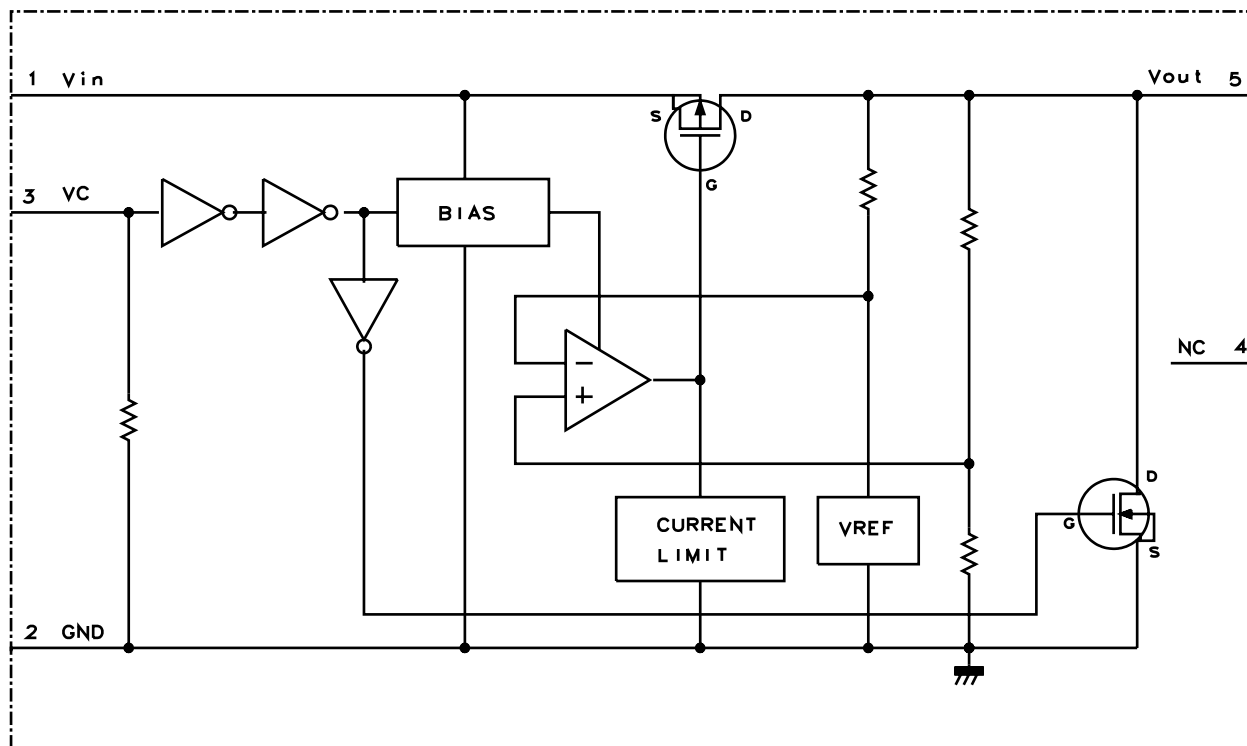
2.16. IC2701 (VHiYDA148QZ-1Y)

This IC is a block diagram and description LC-32/40/46LE700E (S89B4LC32L700) please see the service manual.

2.17. IC9612 (VHiTCR5SB33-1Y)**2.17.1 Block Diagram**

TCR5SB25/33

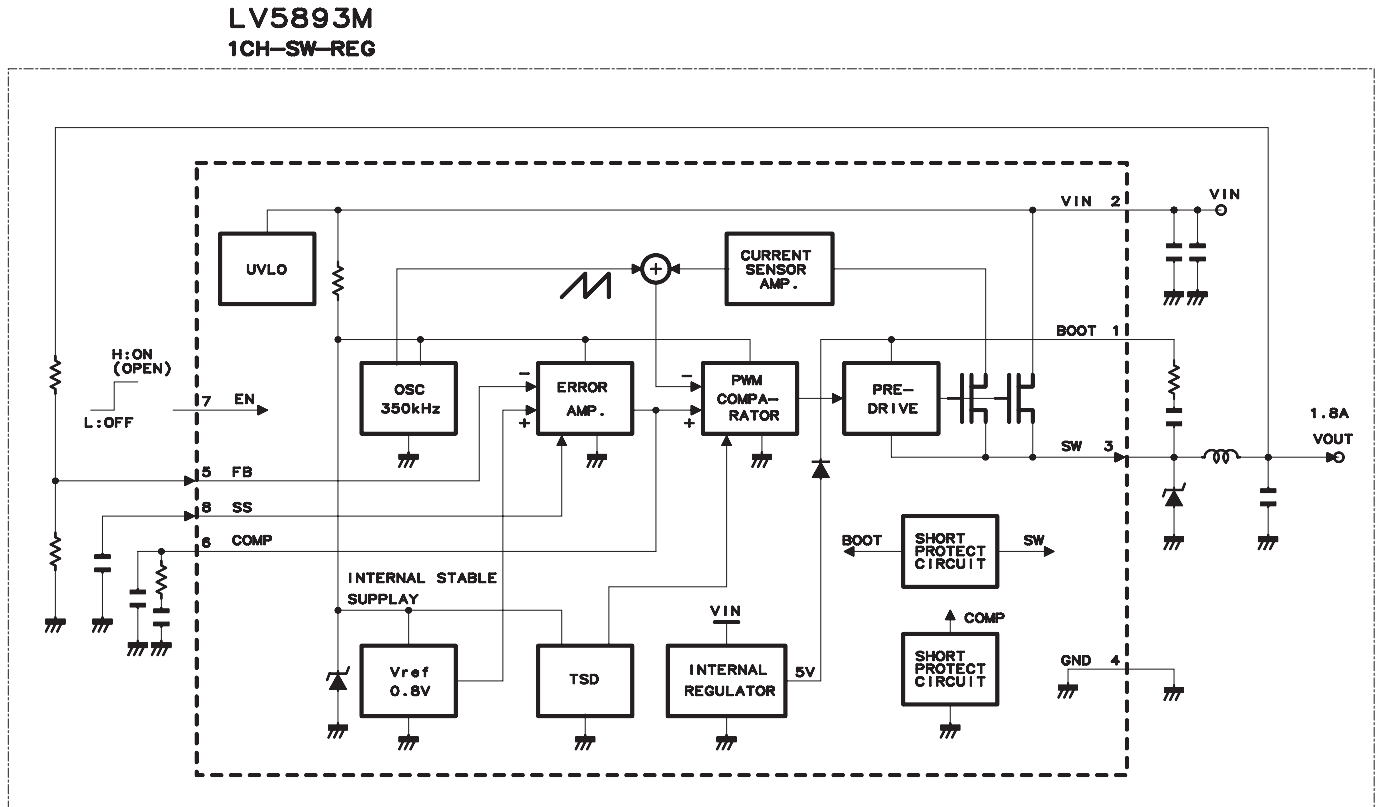
C-MOS Low_dropout REGULATOR

**2.17.2 Pin Connections and short description**

Pin No.	Pin Name	I/O	Pin Function
1	VIN	-	Voltage supply pin.
2	Ground	-	Ground pin
3	Control	I	Control signal pin
4	NC	-	No connection
5	Vout	O	Output pin

2.18. IC9605/IC9608 (VHiLV5893M+-1Y)

2.18.1 Block Diagram



2.18.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	BOOT	I	Upper part MOS transistor boot strap capacity connection terminal. Connect the boot capacity of about 0.022 μ F between SW terminals. The boot capacity series resistance (about 100 Ω) is effective for stable operation.
2	VIN	I	Input power source terminal. Connect very big capacity (10 μ F 2 or more) between GND.
3	SW	I	Power switch terminal. Connect the output LC filter. Connect the above-mentioned capacity between BOOT terminals.
4	GND	—	Ground
5	FB	I	Feedback terminal. The output voltage is set by the division resistance of output voltage (Vout-FB-GND).
6	COMP	I	Phase compensation terminal. Connect external capacity and resistance for the phase compensation of the DC/DC converter close loop.
7	EN	I	Enable terminal It operates the converter by a high voltage or the opening. It stops with GND the converter operation.
8	SS	—	Soft start terminal. The soft start time is set by built-in 10 μ A source voltage and external soft start capacity.

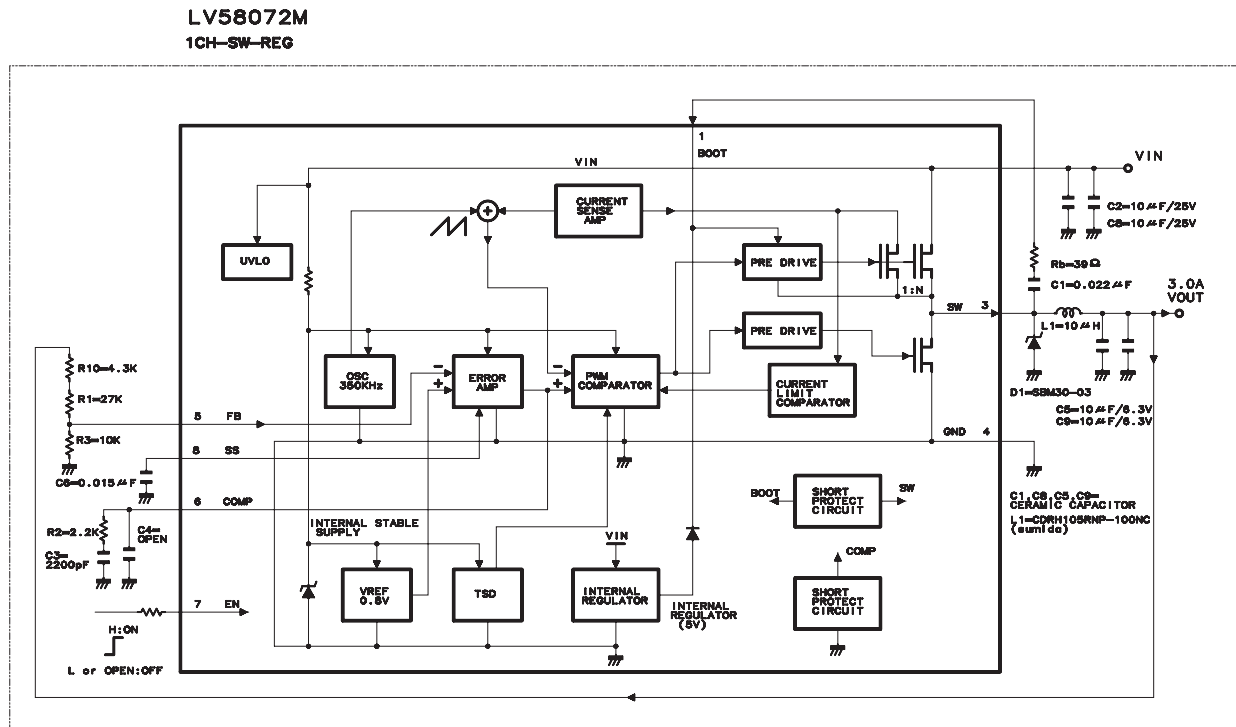
2.19. IC9611 (VHiTCR5SB25-1Y)

2.19.1 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function						
1	VIN	I	Input power source terminal. A small, ceramic type can be used for the input capacitor (0.1μF).						
2	GND	—	Ground						
3	CONTROL	I	Control terminal. In control voltage ON, it is 1.5-6V, and turning off is 0.25V or less. <table><tr><th>Control voltage</th><th>Output voltage</th></tr><tr><td>HIGH</td><td>ON</td></tr><tr><td>LOW</td><td>OFF</td></tr></table>	Control voltage	Output voltage	HIGH	ON	LOW	OFF
Control voltage	Output voltage								
HIGH	ON								
LOW	OFF								
4	NC	—	No connection						
5	VOUT	O	Output voltage terminal. The output voltage of TCR5SB25 is 2.5V±0.05V. A small, ceramic type can be used for the output capacitor (1.0μF).						

2.20. IC9604 (VHiLV58072M-1Y)

2.20.1 Block Diagram



2.20.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	BOOT	I	Bootstrap Terminal Connect the boost capacity of about 0.022μF between SW terminals.
2	VIN	I	Input Voltage Terminal Connect very big capacity between GND.
3	SW	O	Power Switch Terminal Connect output LC filter. Moreover connect the above-mentioned capacity between BOOT terminals.
4	GND	—	Ground
5	FB	I	Feed Back Terminal The output voltage is set by the division resistance between the output voltages.
6	COMP	I	Phase Compensation Terminal The phase amends external capacity and the resistance of the DC/DC converter close loop are connected.
7	EN	I	Enable Terminal The converter works by the High voltage impression.
8	SS	—	Softstart Terminal The soft start time is set by built-in 10μA source voltage and external soft start capacity.

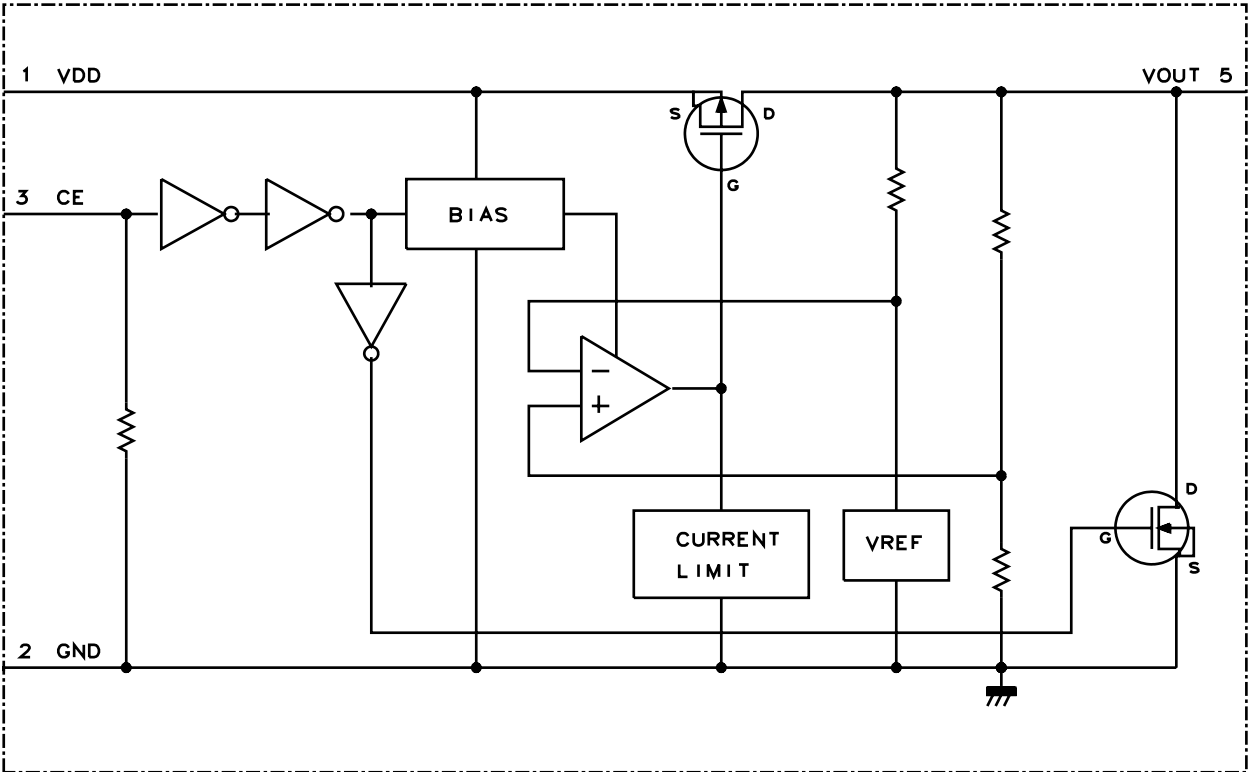
2.21. IC9606 (VHiLV5805M+-1Y)

This IC is a block diagram and description LC-19D1E (S58J9LC19D1ES) please see the service manual.

2.22. IC9603 (VHiMM3141YN-1Y)

2.22.1 Block Diagram

MM3141
C-MOS REGULATOR (150mA)

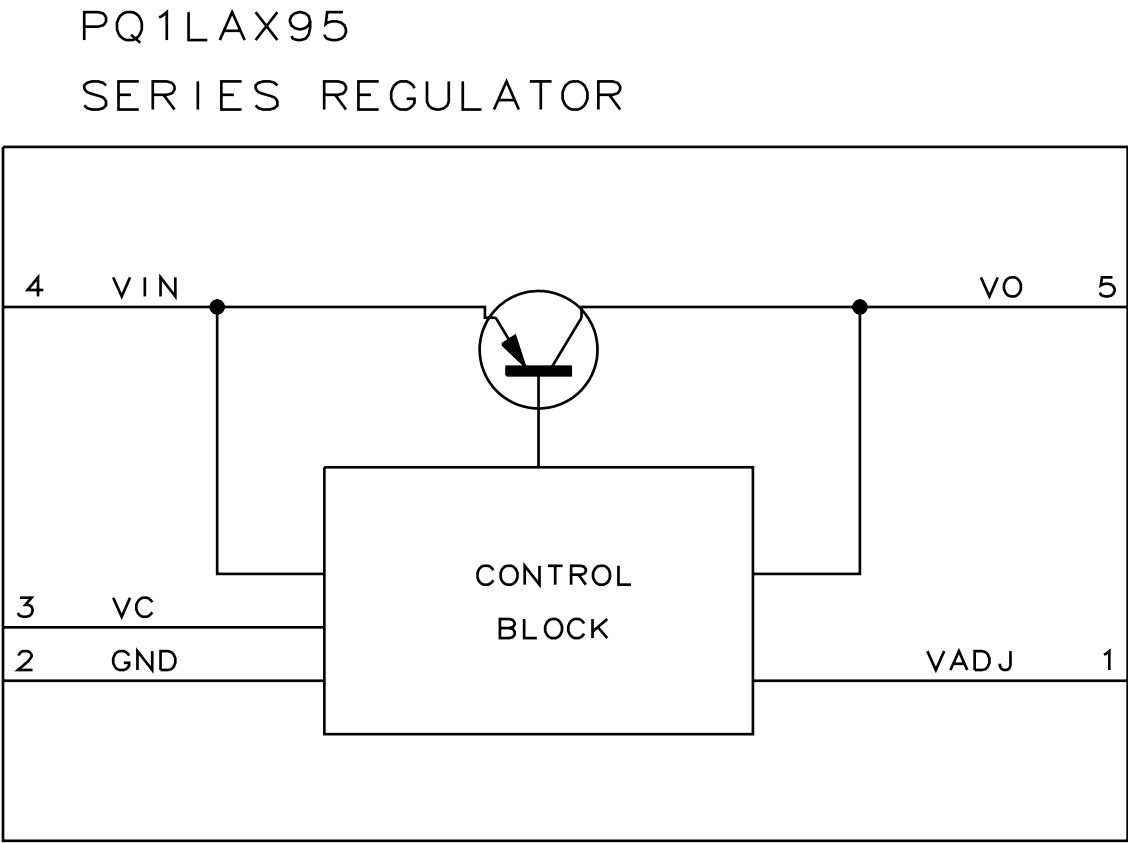


2.22.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function						
1	VDD	-	Voltage supply pin.						
4	NC	-	No connection						
5	Vout	O	Output pin						
-	NC	-	No connection						
2	GND	-	Ground pin						
3	CE	I	ON/OFF control pin						
			<table><tr><td>CE</td><td>Vout</td></tr><tr><td>L</td><td>OFF</td></tr><tr><td>H</td><td>ON</td></tr></table>	CE	Vout	L	OFF	H	ON
			CE	Vout					
			L	OFF					
H	ON								
Connect CE pin with VDD pin, when it is not used.									

2.23. IC9610 (VHiPQ1LAX95-1Y)

2.23.1 Block Diagram



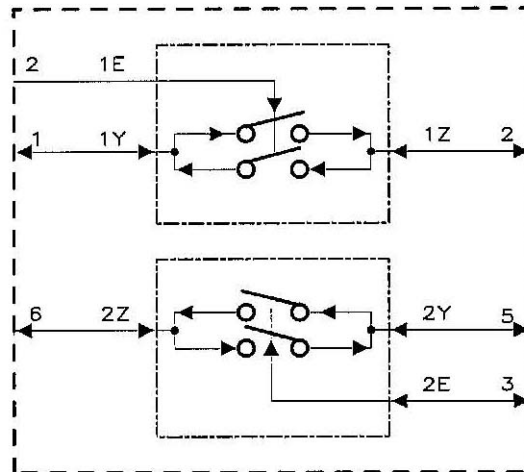
2.23.2 Pin Connections and short description

Pin No.	Pin Name	I/O	Pin Function
1	Vadj	I	Output Voltage Control
2	GND	-	Ground pin
3	Vc	I	ON/OFF Control
4	Vin	I	DC input
5	Vo	O	DC Output

2.24. IC2602, IC9601, IC9613 (VHiHC2G66DP-1Y)

2.24.1 Block Diagram

74HC2G66 BILATERAL SWITCH



TRUTH TABLE

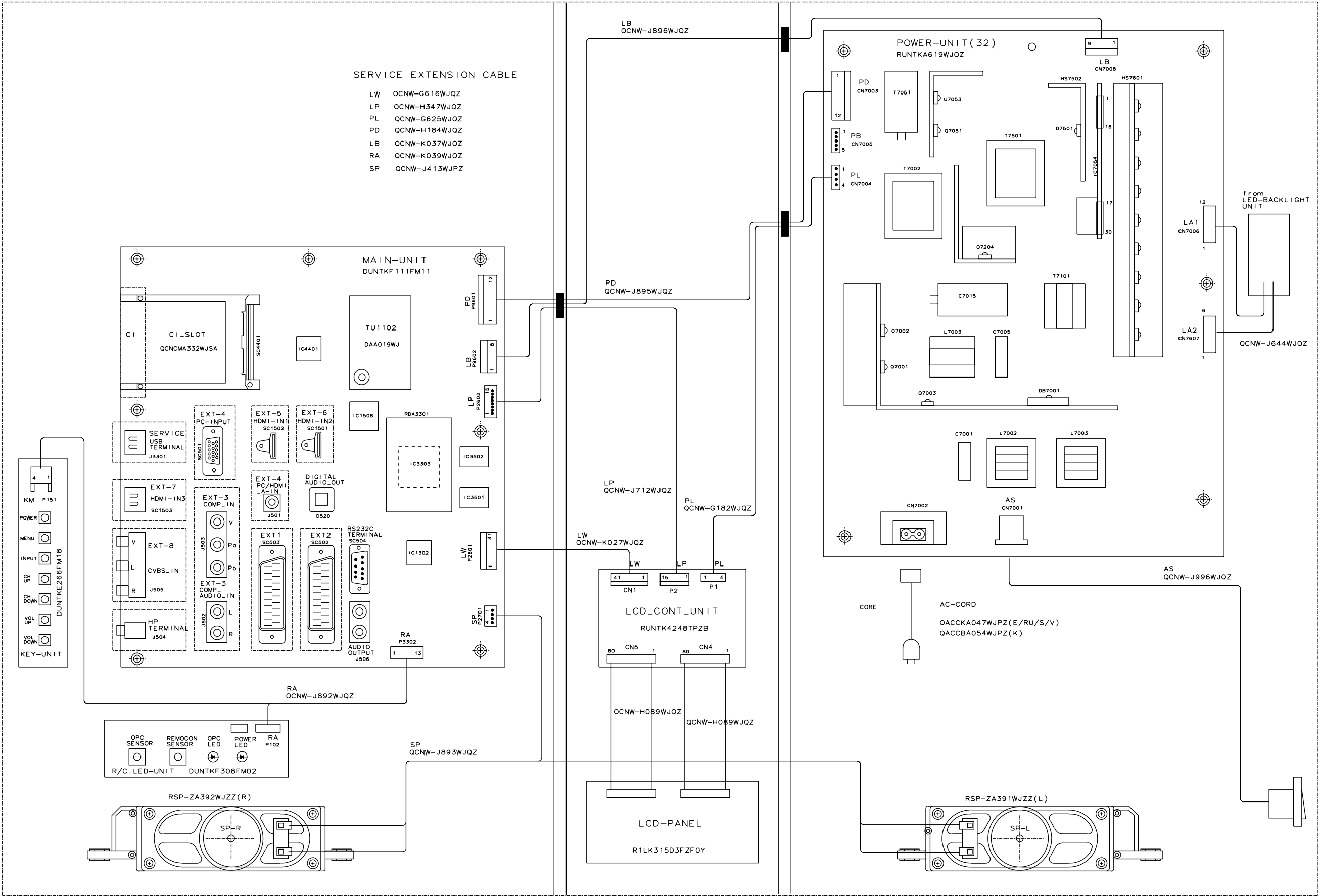
	1E		2E	
	H	L	H	L
1Y	IN	OUT	—	—
1Z	OUT	IN	—	—
2Y	—	—	IN	OUT
2Z	—	—	OUT	IN

2.24.2 Pin Connections and short description

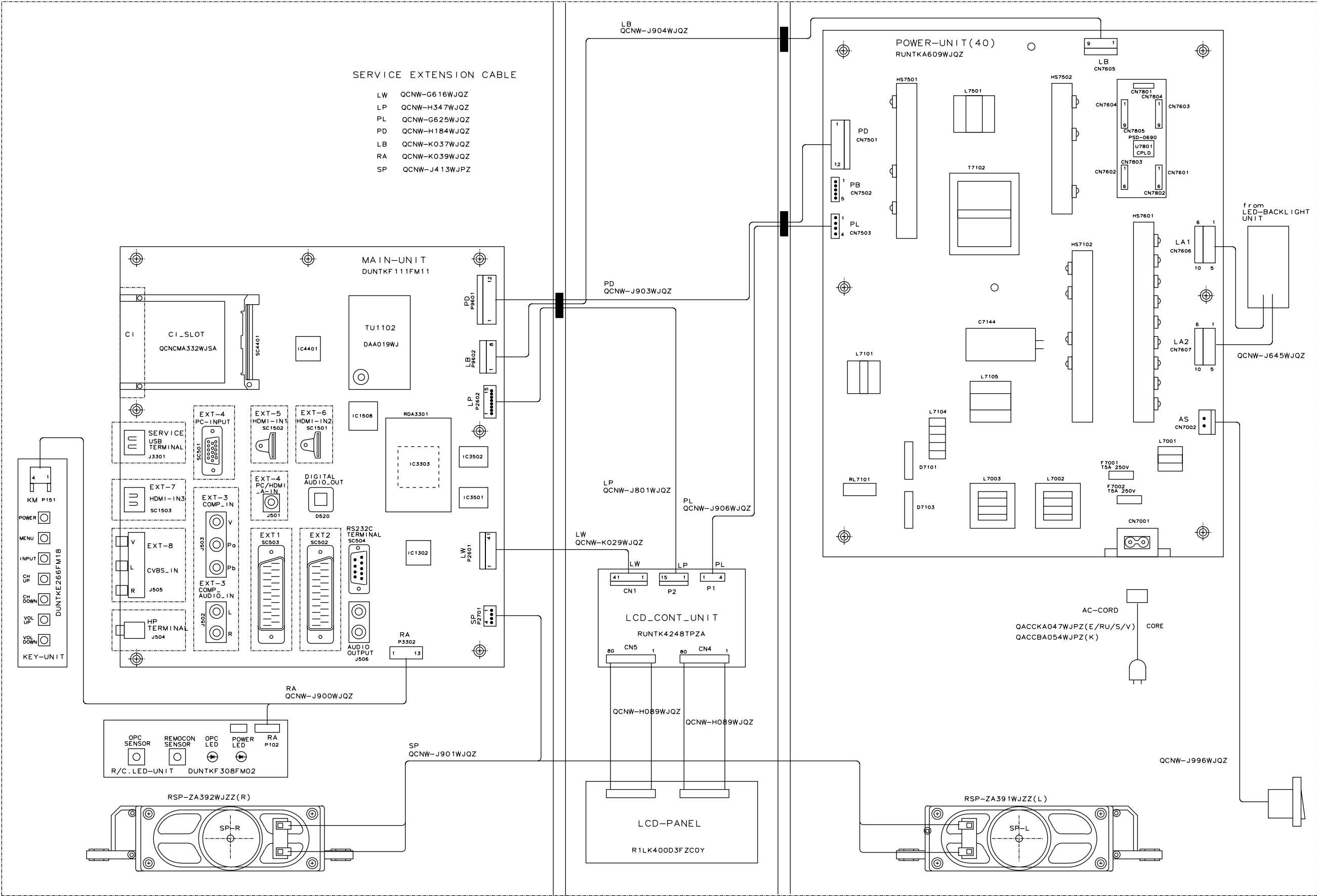
Pin No.	Pin Name	I/O	Pin Function
1	1Y	I/O	Independent input or output.
2	1Z	I/O	Independent input or output.
3	2E	I	Enable input (active HIGH).
4	GND	—	Ground
5	2Y	I/O	Independent input or output.
6	2Z	I/O	Independent input or output.
7	1E	I	Enable input (active HIGH).
8	VCC	—	Supply voltage.

CHAPTER 7. OVERALL WIRING/SYSTEM BLOCK DIAGRAM

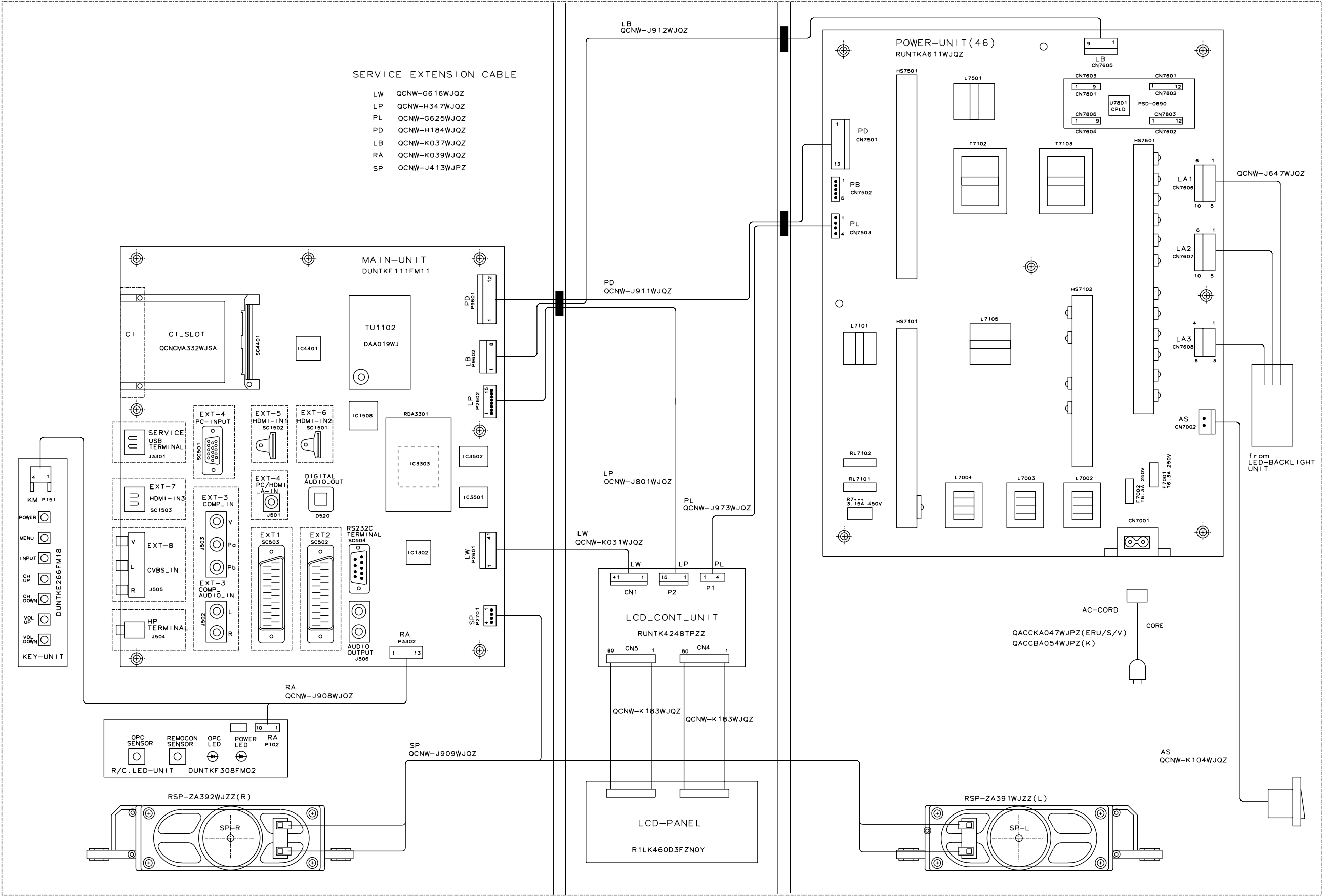
[1] OVERALL WIRING DIAGRAM (LC-32LE600E/RU/S)



[2] OVERALL WIRING DIAGRAM (LC-40LE600E/RU/S)



[3] OVERALL WIRING DIAGRAM (LC-46LE600E/RU/S)



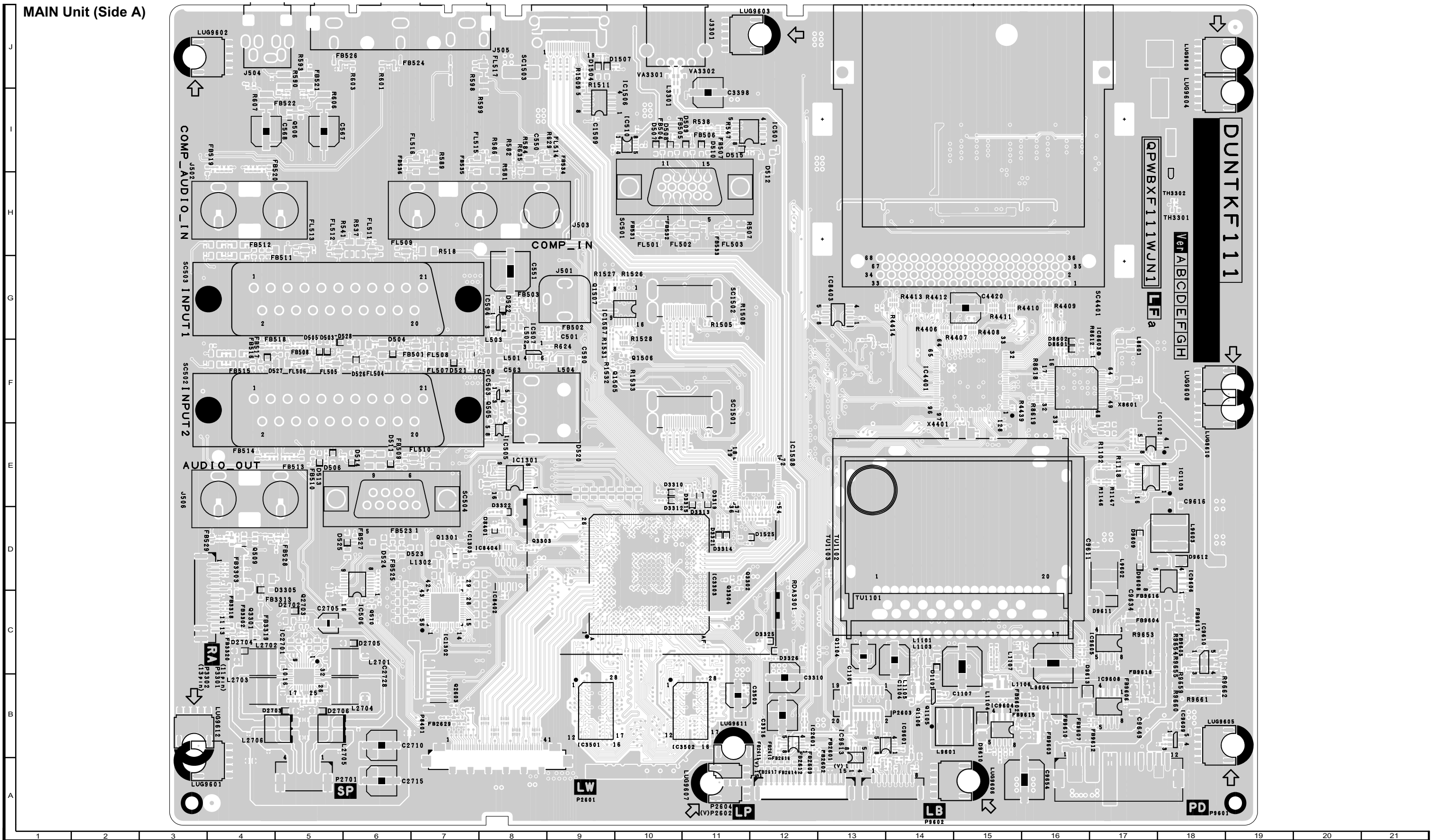


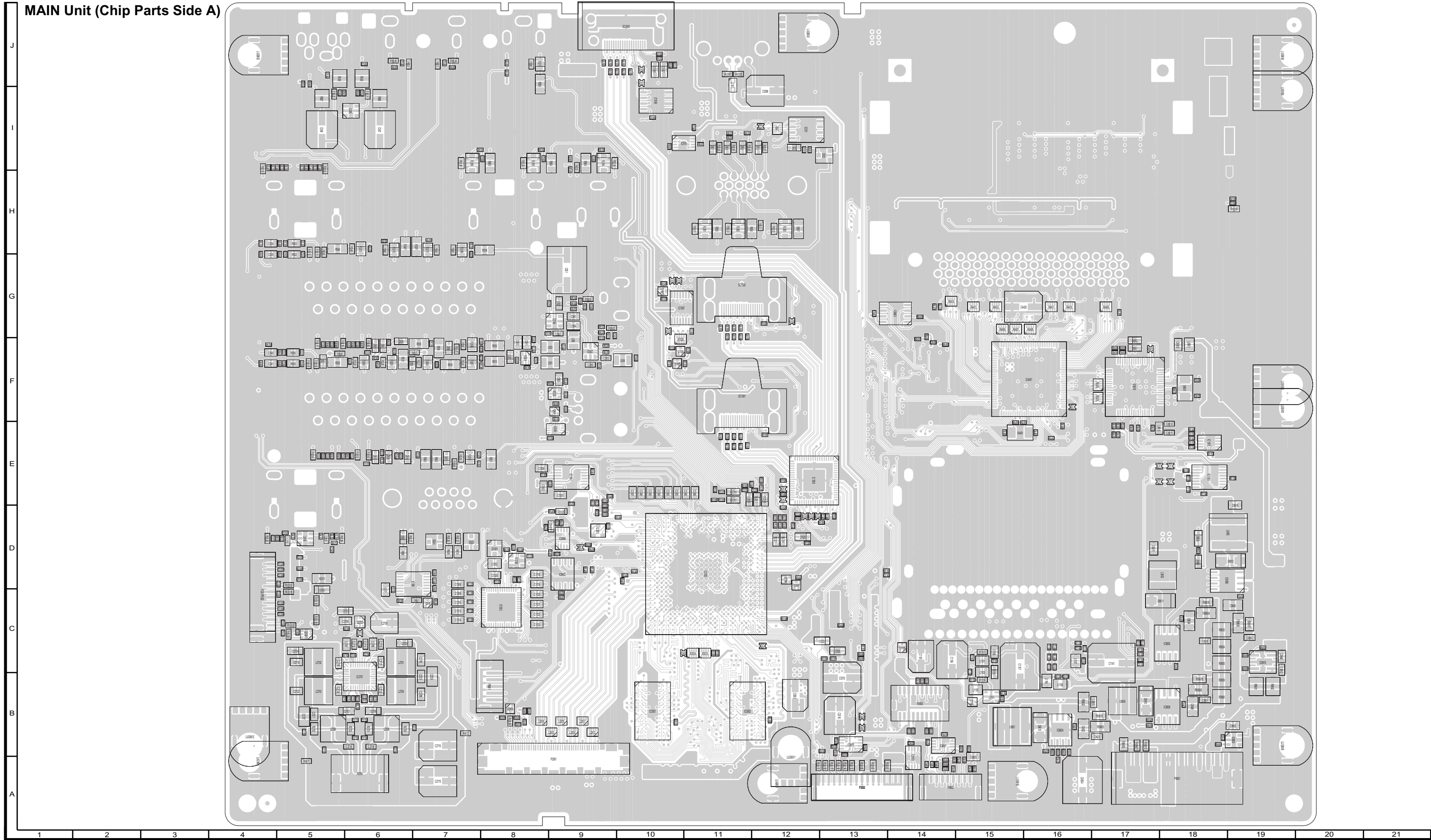




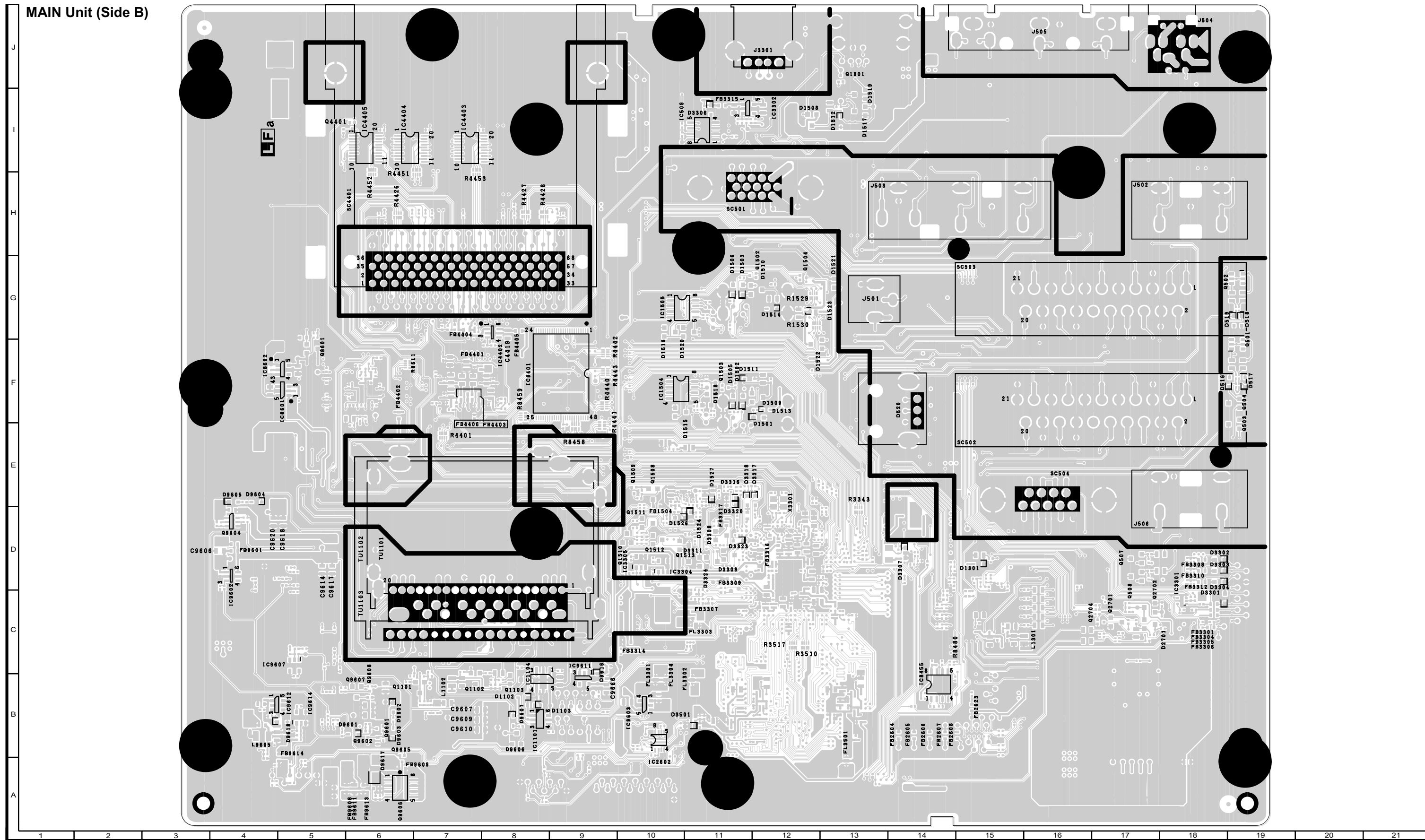
[1] MAIN UNIT

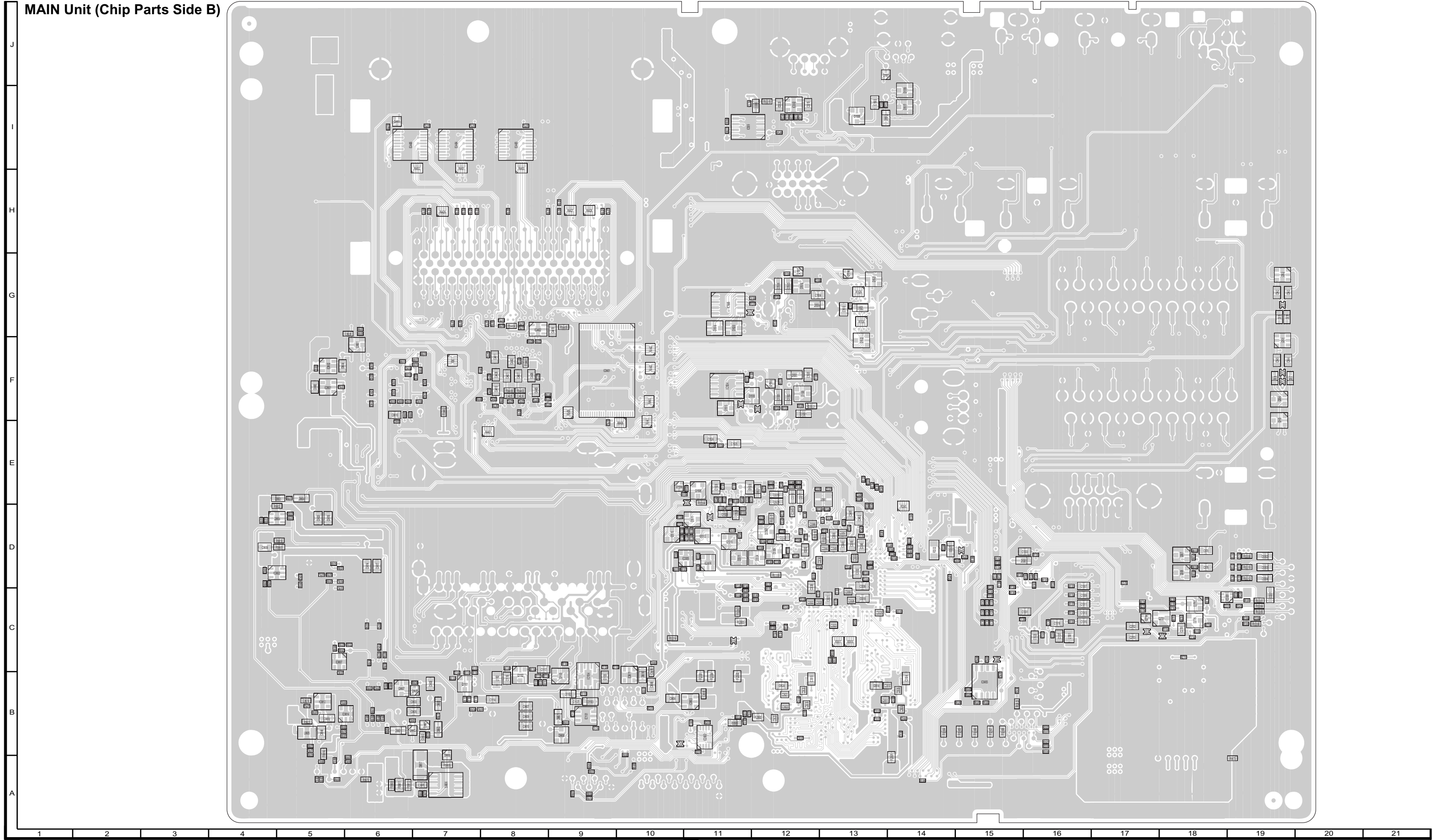
MAIN Unit (Side A)





MAIN Unit (Side B)





CHAPTER 9. SCHEMATIC DIAGRAM

[1] DESCRIPTION OF SCHEMATIC DIAGRAM

1. VOLTAGE MEASUREMENT CONDITION:

- 1) The voltages at test points are measured on exclusive AC adaptor and the stable supply voltage of AC 220-240V. Signals are fed by a color bar signal generator for servicing purpose and the above voltages are measured with a 20k ohm/V tester.

2. INDICATION OF RESISTOR & CAPACITOR:

RESISTOR

- 1) The unit of resistance "Ω" is omitted.
(K=kΩ=1000Ω, M=MΩ).
- 2) All resistors are ± 5%, unless otherwise noted.
(K= ± 10%, F= ± 1%, D= ± 0.5%)
- 3) All resistors are 1/16W, unless otherwise noted.

CAPACITOR

- 1) All capacitors are μF, unless otherwise noted.
(P=pF=μμF).
- 2) All capacitors are 50V, unless otherwise noted.

CAUTION:
This circuit diagram is original one, therefore there may be a slight difference from yours.

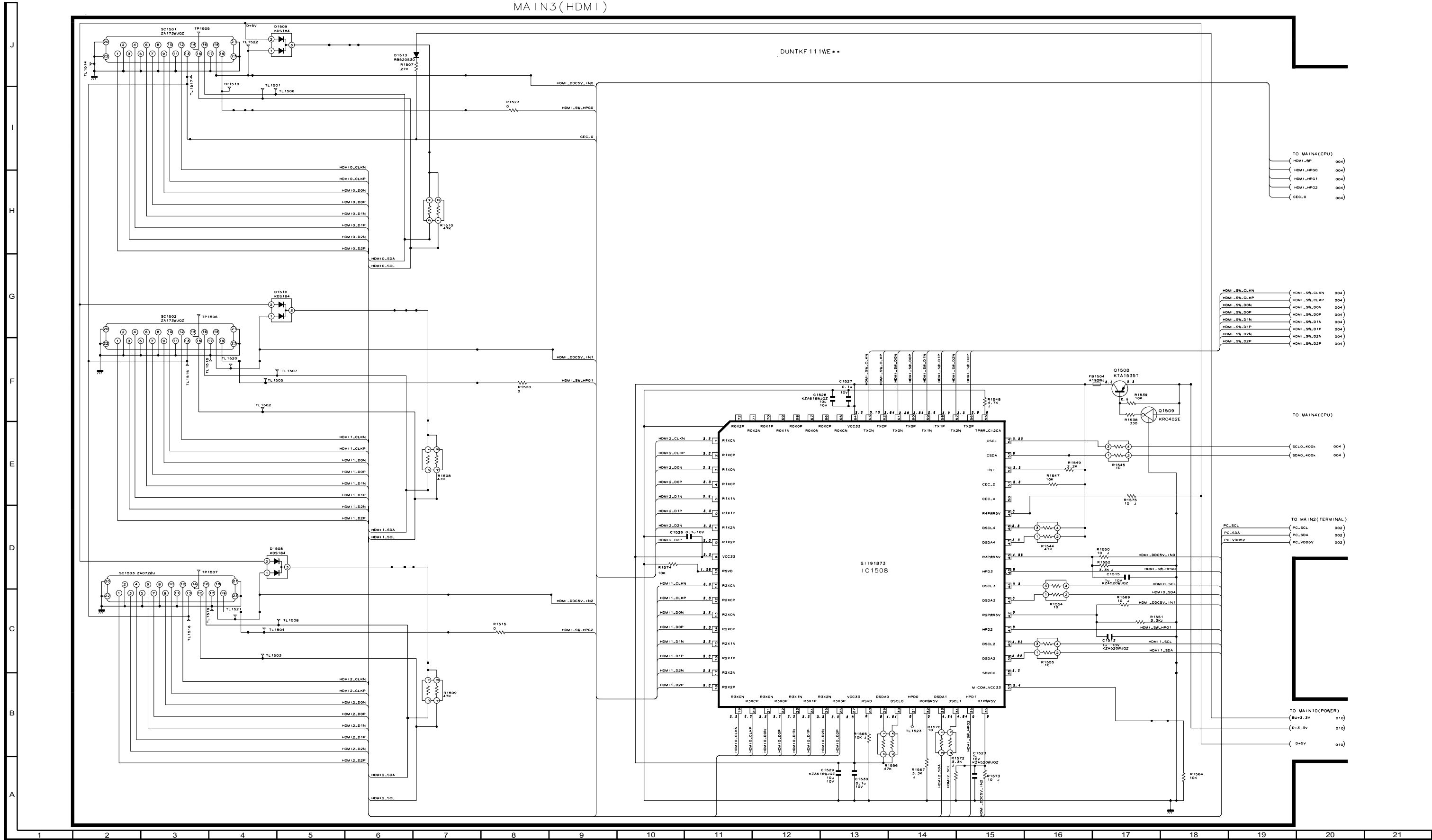
SAFETY NOTES:
1) DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2) SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:
PARTS MARKED WITH " ⚠ " () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.



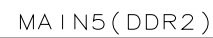


3. MAIN Unit-3

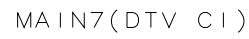




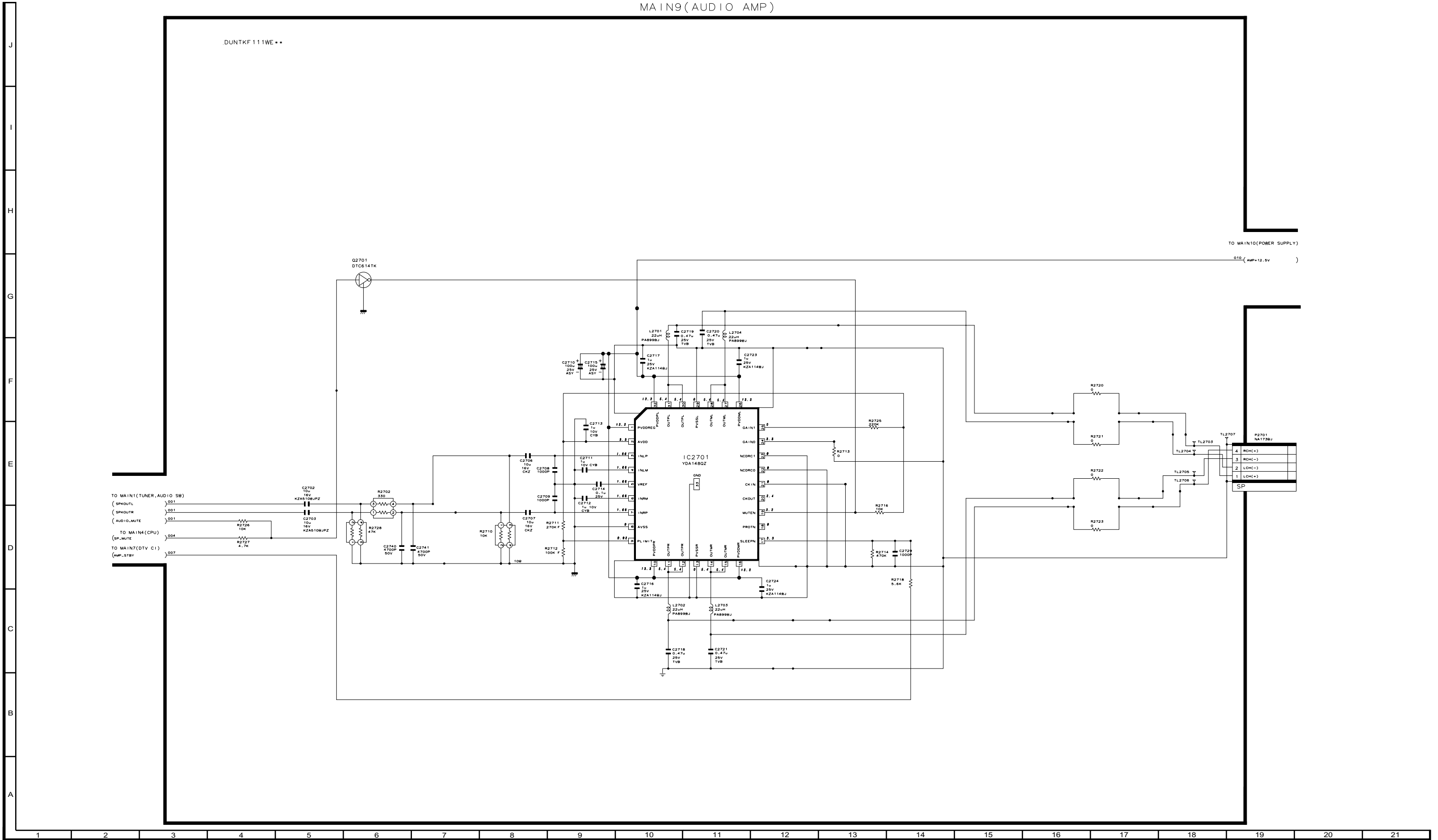
5. MAIN Unit-5



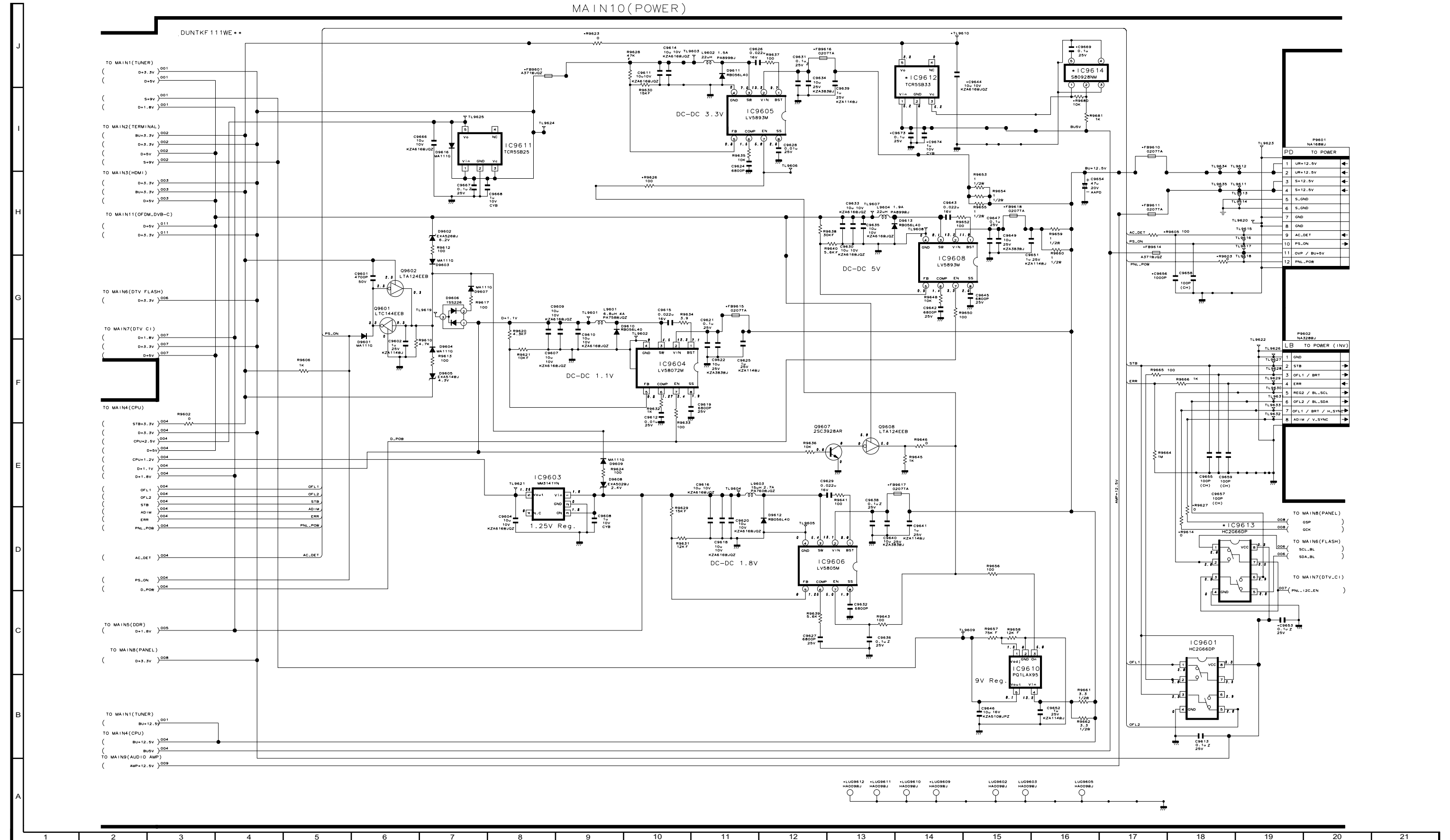








10. MAIN Unit-10



OUTLINE AND DIFFERENCES FROM BASE MODEL

OUTLINE

This model is based on the LC-32LE700E/RU/S, LC-40LE700E/RU/S, LC-46LE700E/RU/S and is changed some parts. This Service Manual covers the modifications alone. For the other points, refer to the LC-32LE700E/RU/S, LC-40LE700E/RU/S and LC-46LE700E/RU/S (No. S89B4LC32L700) Service Manual.

DIFFERENCES FROM BASE MODEL

■LIST OF CHANGED PARTS (LC-32LE600E/RU/S)

Ref. No.	Description	LC-32LE700E/RU/S (No. S89B4LC32L700)	LC-32LE600E/RU/S (No. S89B5LC32L600)	Interchange-ability	Note
PRINTED WIRING BOARD ASSEMBLIES					
	KEY Unit	DUNTKE266FM18	←	—	—
	MAIN Unit	DUNTKE306FM01	DUNTKE311FM11	D	Changed
	R/C, LED Unit	DUNTKE308FM02	←	—	—
	ICON Unit	DUNTKE314FM02	—	—	Abolish
	POWER Unit	RUNTKA619WJQZ	←	—	—
	LCD Control Unit	RUNTK4225TPZE	RUNTK4248TPZB	D	Changed
	LED5 PWB1 Unit	RUNTKA595WJ01	←	—	—
	LED5 PWB2 Unit	RUNTKA595WJ02	←	—	—
	LED8 PWB1 Unit	RUNTKA598WJ01	←	—	—
	LED8 PWB2 Unit	RUNTKA598WJ02	←	—	—
LCD PANEL					
	32" LCD Panel Module Unit	DLCUCA001FM03	DLCUCA001FM02	D	Some parts changed
CABINET AND MECHANICAL PARTS					
1	Front Cabinet Ass'y	CCABAC371WJ11	CCABAC371WJ12	D	Changed
1-4	Diffusion Sheet	PSHEPB007WJKZ	—	—	Abolish
2	Rear Cabinet Ass'y	CCABBB619WJ11	CCABBB619WJ12	D	Changed
2-2	Terminal Label	HINDPD390WJSA	HINDPD391WJSA	D	Changed
4	Bottom Cover Ass'y	CCOVAD472WJ11	—	—	Abolish
5	Side Terminal Angle Ass'y	CANGKC375WJ01	CANGKC375WJ02	D	Changed
5-1	Side Terminal Label	HINDPD408WJSA	HINDPD470WJSA	D	Changed
8	Wire Holder	LHLDWA289WJKZ, x3	LHLDWA289WJKZ, x2	—	Abolish (3→2)
18	Connecting Cord Main-Power(LB)	QCNW-J915WJQZ	QCNW-J896WJQZ	D	Changed
19	Connecting Cord Main-Key(KM)	QCNW-J977WJQZ	—	—	Abolish
20	Connecting Cord Main-R/C, LED(RA)	QCNW-J976WJQZ	—	—	Abolish
21	Connecting Cord Main-Power(PL)	QCNW-J898WJQZ	QCNW-G182WJQZ	D	Changed
22	Connecting Cord Main-LCD Control(LW)	QCNW-J894WJQZ	QCNW-K027WJQZ	D	Changed
24	Connecting Cord Main-LCD Control(LP)	QCNW-J897WJQZ	QCNW-J712WJQZ	D	Changed
25	Connecting Cord R/C, LED-ICON(IM)	QCNW-J916WJQZ	—	—	Abolish
33	POP Label (except for Russia)	TLABZC319WJZZ	TLABZC352WJZZ	D	Changed
33	POP Label (for Russia)	TLABZC320WJZZ	TLABZC353WJZZ	D	Changed
35	Screw (for HDMI)	XBPS730P06000, x4	XBPS730P06000, x3	—	Abolish (4→3)
N	Bottom Cover	—	GCOVAD472WJ1A	—	Addition
N	Connecting Cord Main-R/C, LED-Key(RA/KM)	—	QCNW-J892WJQZ	—	Addition
LCD PANEL MODULE UNIT					
1	32" LCD Panel Module Unit	DLCUCA001FM03	DLCUCA001FM02	D	Some parts changed
1-4	LCD Control Unit	RUNTK4225TPZE	RUNTK4248TPZB	D	Changed
1-5	Screw	XHPS730P06WS0, x6	XHPS730P06WS0, x4	—	Abolish (6→4)
1-22	32" LCD Panel	R1LK315D3FZE0Y	R1LK315D3FZF0Y	D	Changed
1-28	Screw	LX-HZA039WJF7, x10	LX-HZA039WJF7, x8	—	Abolish (10→8)
N	Washer Screw	—	LX-HZA064WJF7	—	Addition
SUPPLIED ACCESSORIES					
X4	Stand Unit	CDAI-A595WJ02	CDAI-A584WJ02	D	Changed
X5	Operation Manual (for Europe except E-Europe)	TINS-E281WJZZ	TINS-E285WJZZ	D	Changed
X5	Operation Manual (for Sweden)	TINS-E282WJZZ	TINS-E286WJZZ	D	Changed
X5	Operation Manual (for East Europe)	TINS-E283WJZZ	TINS-E287WJZZ	D	Changed
X5	Operation Manual (for Russia)	TINS-E284WJZZ	TINS-E288WJZZ	D	Changed
SERVICE JIGS (USE FOR SERVICING)					
	Main+LCD Control-Power(LB)	QCNW-K036WJQZ	QCNW-K037WJQZ	D	Changed
	Main-Key(KM)	QCNW-G440WJQZ	—	—	Abolish
	Main-R/C, LED(RA)	QCNW-H184WJQZ	—	—	Abolish
	Main-R/C, LED-Key(RA/KM)	—	QCNW-K039WJQZ	—	Addition
	R/C, LED-ICON(IM)	QCNW-G442WJPZ	—	—	Abolish
MAIN Unit: Please refer to a Parts list.					

■LIST OF CHANGED PARTS (LC-40LE600E/RU/S)

Ref. No.	Description	LC-40LE700E/RU/S (No. S89B4LC32L700)	LC-40LE600E/RU/S (No. S89B5LC32L600)	Interchange-ability	Note
PRINTED WIRING BOARD ASSEMBLIES					
	KEY Unit	DUNTKE266FM18	←	—	—
	MAIN Unit	DUNTKE306FM01	DUNTKE311FM11	D	Changed
	R/C, LED Unit	DUNTKE308FM02	←	—	—
	ICON Unit	DUNTKE314FM02	—	—	Abolish
	POWER Unit	RUNTKA609WJQZ	←	—	—
	LCD Control Unit	RUNTK4225TPZE	RUNTK4248TPZA	D	Changed
	LED5 PWB1 Unit	RUNTKA595WJ01	←	—	—
	LED5 PWB2 Unit	RUNTKA595WJ02	←	—	—
	LED6 PWB1 Unit	RUNTKA596WJ01	←	—	—
	LED6 PWB2 Unit	RUNTKA596WJ02	←	—	—
LCD PANEL					
	40" LCD Panel Module Unit	DLCUCA002FM03	DLCUCA002FM02	D	Some parts changed
CABINET AND MECHANICAL PARTS					
1	Front Cabinet Ass'y	CCABAC372WJ11	CCABAC372WJ12	D	Changed
1-2	Front Decoration Ass'y	CDECQB299WJ11	CDECQB299WJ12	D	Changed
1-4	Diffusion Sheet	PSHEPB007WJKZ	—	—	Abolish
2	Rear Cabinet Ass'y	CCABBB618WJ11	CCABBB618WJ12	D	Changed
2-2	Terminal Label	HiNDPD390WJSA	HiNDPD391WJSA	D	Changed
4	Bottom Cover Ass'y	CCOVAD464WJ11	—	—	Abolish
5	Side Terminal Angle Ass'y	CANGKC375WJ01	CANGKC375WJ02	D	Changed
5-1	Side Terminal Label	HiNDPD408WJSA	HiNDPD470WJSA	D	Changed
18	Connecting Cord Main-Power(LB)	QCNW-J917WJQZ	QCNW-J904WJQZ	D	Changed
19	Connecting Cord Main-Key(KM)	QCNW-J979WJQZ	—	—	Abolish
20	Connecting Cord Main-R/C, LED(RA)	QCNW-J978WJQZ	—	—	Abolish
21	Connecting Cord Main-Power(PL)	QCNW-G178WJQZ	QCNW-J906WJQZ	D	Changed
22	Connecting Cord Main-LCD Control(LW)	QCNW-J902WJQZ	QCNW-K029WJQZ	D	Changed
24	Connecting Cord Main-LCD Control(LP)	QCNW-J905WJQZ	QCNW-J801WJQZ	D	Changed
25	Connecting Cord R/C, LED-ICON(IM)	QCNW-J918WJQZ	—	—	Abolish
33	POP Label (except for Russia)	TLABZC319WJZZ	TLABZC322WJZZ	D	Changed
33	POP Label (for Russia)	TLABZC320WJZZ	TLABZC323WJZZ	D	Changed
35	Screw (for HDMI)	XBPS730P06000, x4	XBPS730P06000, x3	—	Abolish (4→3)
N	Bottom Cover	—	GCOVAD464WJ1A	—	Addition
N	Connecting Cord Main-R/C, LED-Key(RA/KM)	—	QCNW-J900WJQZ	—	Addition
N	Wire Holder	—	LHLDW1033CE00	—	Addition
N	Conductor-10x60	—	PSLDMB651WJZZ	—	Addition
LCD PANEL MODULE UNIT					
1	40" LCD Panel Module Unit	DLCUCA002FM03	DLCUCA002FM02	D	Some parts changed
1-3	LCD Control Unit	RUNTK4225TPZE	RUNTK4248TPZA	D	Changed
1-4	Screw	XHPS730P06WS0, x6	XHPS730P06WS0, x4	—	Abolish (6→4)
1-24	40" LCD Panel	R1LK400D3FZB0Y	R1LK400D3FZC0Y	D	Changed
1-31	Screw	LX-BZA213WJF7, x14	LX-BZA213WJF7, x10	—	Abolish (14→10)
N	Washer Screw	—	LX-BZA348WJF7	—	Addition
SUPPLIED ACCESSORIES					
X4	Stand Unit	CDAi-A600WJ02	CDAi-A586WJ02	D	Changed
X5	Operation Manual (for Europe except E-Europe)	TiNS-E281WJZZ	TiNS-E285WJZZ	D	Changed
X5	Operation Manual (for Sweden)	TiNS-E282WJZZ	TiNS-E286WJZZ	D	Changed
X5	Operation Manual (for East Europe)	TiNS-E283WJZZ	TiNS-E287WJZZ	D	Changed
X5	Operation Manual (for Russia)	TiNS-E284WJZZ	TiNS-E288WJZZ	D	Changed
SERVICE JIGS (USE FOR SERVICING)					
	Main+LCD Control-Power(LB)	QCNW-K036WJQZ	QCNW-K037WJQZ	D	Changed
	Main-Key(KM)	QCNW-G440WJQZ	—	—	Abolish
	Main-R/C, LED(RA)	QCNW-H184WJQZ	—	—	Abolish
	Main-R/C, LED-Key(RA/KM)	—	QCNW-K039WJQZ	—	Addition
	R/C, LED-ICON(IM)	QCNW-G442WJPZ	—	—	Abolish
MAIN Unit: Please refer to a Parts list.					

■LIST OF CHANGED PARTS (LC-46LE600E/RU/S)

Ref. No.	Description	LC-46LE700E/RU/S (No. S89B4LC32L700)	LC-46LE600E/RU/S (No. S89B5LC32L600)	Interchange-ability	Note
PRINTED WIRING BOARD ASSEMBLIES					
	KEY Unit	DUNTKE266FM18	←	—	—
	MAIN Unit	DUNTKE306FM01	DUNTKF111FM11	D	Changed
	R/C, LED Unit	DUNTKE308FM02	←	—	—
	ICON Unit	DUNTKF314FM02	—	—	Abolish
	POWER Unit	RUNTKA611WJQZ	←	—	—
	LCD Control Unit	RUNTK4225TPZE	RUNTK4248TPZZ	D	Changed
	LED5 PWB1 Unit	RUNTKA595WJ01	←	—	—
	LED5 PWB2 Unit	RUNTKA595WJ02	←	—	—
	LED6 PWB1 Unit	RUNTKA596WJ01	←	—	—
	LED6 PWB2 Unit	RUNTKA596WJ02	←	—	—
	LED8 PWB1 Unit	RUNTKA598WJ01	←	—	—
	LED8 PWB2 Unit	RUNTKA598WJ02	←	—	—
LCD PANEL					
	46" LCD Panel Module Unit	DLCUCA003FM03	DLCUCA003FM02	D	Some parts changed
CABINET AND MECHANICAL PARTS					
1	Front Cabinet Ass'y	CCABAC378WJ11	CCABAC378WJ12	D	Changed
1-2	Front Decoration Ass'y	CDECQB309WJ11	CDECQB309WJ12	D	Changed
1-4	Diffusion Sheet	PSHEPB007WJKZ	—	—	Abolish
2	Rear Cabinet Ass'y	CCABBB617WJ11	CCABBB617WJ12	D	Changed
2-2	Terminal Label	HiNDPD390WJSA	HiNDPD391WJSA	D	Changed
4	Bottom Cover Ass'y	CCOVAD479WJ11	—	—	Abolish
5	Side Terminal Angle Ass'y	CANGKC375WJ01	CANGKC375WJ02	D	Changed
5-1	Side Terminal Label	HiNDPD408WJSA	HiNDPD470WJSA	D	Changed
17	Conductor-10x60	PSLDMB651WJZZ, x1	PSLDMB651WJZZ, x2	—	Addition (1→2)
19	Connecting Cord Main-Key(KM)	QCNW-J981WJQZ	—	—	Abolish
20	Connecting Cord Main-Power(PL)	QCNW-J914WJQZ	QCNW-H973WJQZ	D	Changed
22	Connecting Cord Main-Power(LB)	QCNW-J919WJQZ	QCNW-J912WJQZ	D	Changed
23	Connecting Cord Main-R/C, LED(RA)	QCNW-J980WJQZ	—	—	Abolish
24	Connecting Cord Main-LCD Control(LW)	QCNW-J910WJQZ	QCNW-K031WJQZ	D	Changed
26	Connecting Cord Main-LCD Control(LP)	QCNW-J913WJQZ	QCNW-J801WJQZ	D	Changed
27	Connecting Cord R/C, LED-ICON(IM)	QCNW-J920WJQZ	—	—	Abolish
28	Connecting Cord Power(AS)	QCNW-J966WJQZ	QCNW-K104WJQZ	D	Changed
34	POP Label (except for Russia)	TLABZC319WJZZ	TLABZC322WJZZ	D	Changed
34	POP Label (for Russia)	TLABZC320WJZZ	TLABZC323WJZZ	D	Changed
36	Screw (for HDMI)	XBPS730P06000, x4	XBPS730P06000, x3	—	Abolish (4→3)
N	Bottom Cover	—	GCOVAD479WJ1A	—	Addition
N	Connecting Cord Main-R/C, LED-Key(RA/KM)	—	QCNW-J908WJQZ	—	Addition
N	Wire Holder	—	LHLDW1033CE00	—	Addition
N	Ferrite Core	—	RCORFA038WJZZ	—	Addition
LCD PANEL MODULE UNIT					
1	46" LCD Panel Module Unit	DLCUCA003FM03	DLCUCA003FM02	D	Some parts changed
1-3	LCD Control Unit	RUNTK4225TPZE	RUNTK4248TPZZ	D	Changed
1-4	Screw	XHPS730P06WS0, x6	XHPS730P06WS0, x4	—	Abolish (6→4)
1-5	Connecting Cord	QCNW-H089WJQZ	QCNW-K183WJQZ	D	Changed
1-6	Ferrite Core	RCORFA061WJZZ	—	—	Abolish
1-26	46" LCD Panel	R1LK460D3FZL0Y	R1LK460D3FZN0Y	D	Changed
N	Washer Screw	—	LX-HZA064WJF7	—	Addition
SUPPLIED ACCESSORIES					
X4	Stand Unit	CDAi-A593WJ02	CDAi-A588WJ02	D	Changed
X5	Operation Manual (for Europe except E-Europe)	TiNS-E281WJZZ	TiNS-E285WJZZ	D	Changed
X5	Operation Manual (for Sweden)	TiNS-E282WJZZ	TiNS-E286WJZZ	D	Changed
X5	Operation Manual (for East Europe)	TiNS-E283WJZZ	TiNS-E287WJZZ	D	Changed
X5	Operation Manual (for Russia)	TiNS-E284WJZZ	TiNS-E288WJZZ	D	Changed
SERVICE JIGS (USE FOR SERVICING)					
	Main+LCD Control-Power(LB)	QCNW-K036WJQZ	QCNW-K037WJQZ	D	Changed
	Main-Key(KM)	QCNW-G440WJQZ	—	—	Abolish
	Main-R/C, LED(RA)	QCNW-H184WJQZ	—	—	Abolish
	Main-R/C, LED-Key(RA/KM)	—	QCNW-K039WJQZ	—	Addition
	R/C-ICON(IM)	QCNW-G442WJPZ	—	—	Abolish
MAIN Unit: Please refer to a Parts list.					

Interchangeability	
A: Completely interchangeable $\boxed{\text{OLD}} = \boxed{\text{NEW}}$	C: Interchangeable from NEW to OLD $\boxed{\text{NEW}} \rightarrow \boxed{\text{OLD}}$
B: Interchangeable from OLD to NEW $\boxed{\text{OLD}} \rightarrow \boxed{\text{NEW}}$	D: Not interchangeable $\boxed{\text{NEW}} \times \boxed{\text{OLD}}$