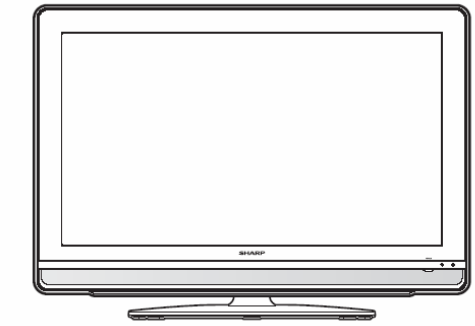
SHARP SERVICE MANUAL



LCD COLOR TELEVISION

MODEL:

LC-32LE440U

CONTENTS

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.
42" F801,F802,F803,F804(T5A/250V)
32" F801,F802,F803,F804(T5AH/250V)

■ BEFORE RETURNING THE RECEIVER (Fire & Shock Hazard)

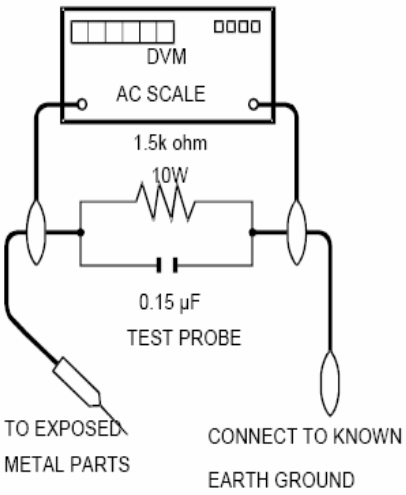
Before returning the receiver to the user, perform the following safety checks:

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 a120 volt AC outlet.
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15μF 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.



Precautions for using lead-free solder

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.

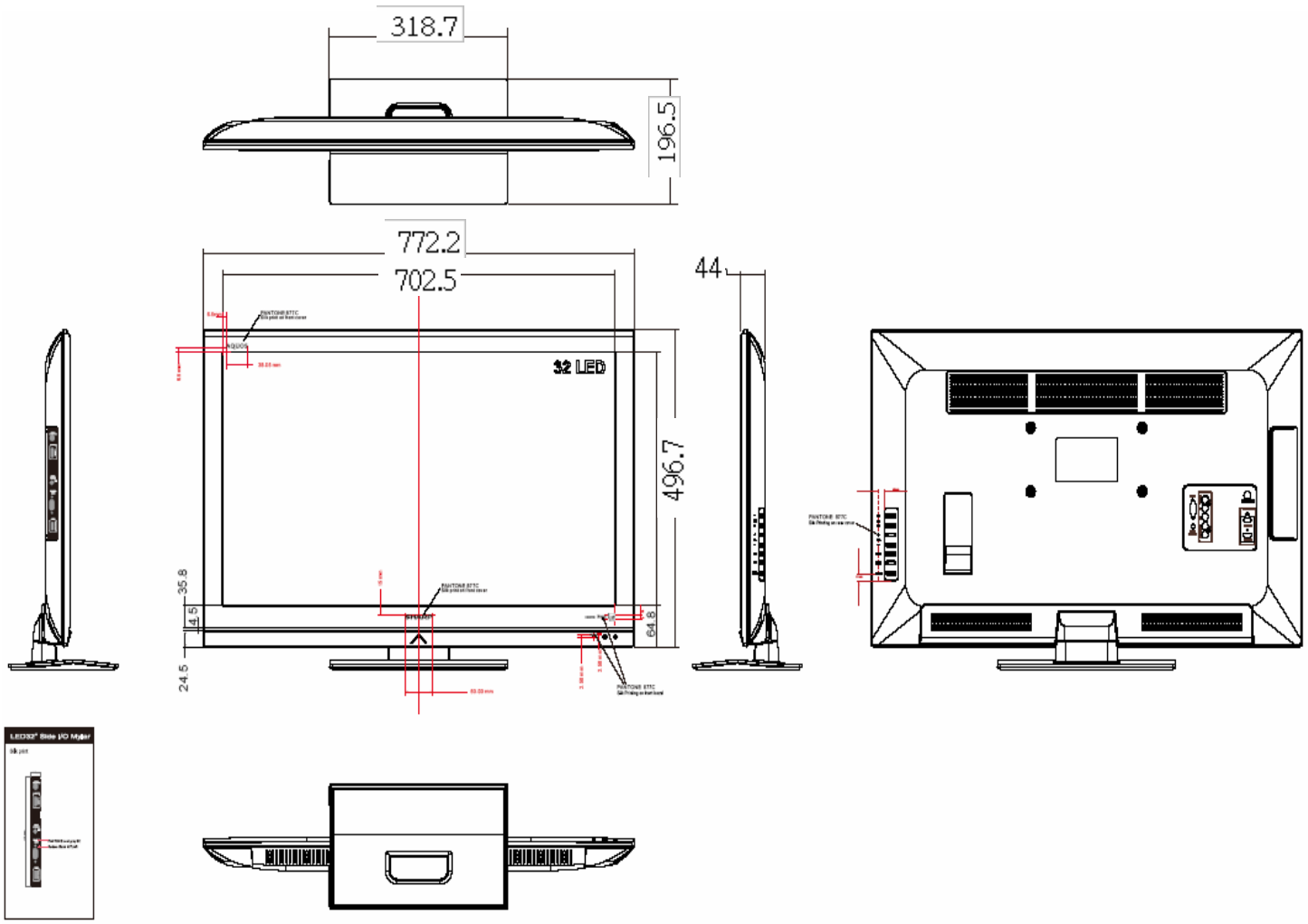
- Be careful when replacing parts with polarity indication on the PWB silk.

CHAPTER 1. OPERATION MANUAL

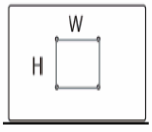
[1] SPECIFICATIONS

Item			Model: LC-32LE440U
LCD screen size			32 inches diagonal
Resolution			1366 x 768
TV function	TV-standard		American TV Standard ATSC/NTSC System
	Receiving channel	VHF/UHF	VHF 2-13ch, UHF 14-69ch
		CATV	1-125ch (non-scrambled channel only)
		Digital Terrestrial Broadcast (8VSB)	2-69ch
		Digital cable*1 (64/256 QAM)	1-135ch (non-scrambled channel only)
	Audio multiplex		BTSC System
Audio out			5W*2
Terminal	Rear	ANT./CABLE	75 Ω Unbalance ,F Type x 1 for Analog (VHF/UHF/CATV) and Digital(AIR/CABLE)
		INPUT2	HDMI in with HDCP
		INPUT3	HDMI in with HDCP
		Audio PC/HDMI	Audio in (Ø 3.5mm jack)
		PC IN	Analog RGB (PC) in (15-pin mini D-sub female connector)
	Side	Headphone out	Ø 3.5mm jack (Audio output)
		SPDIF	HDMI in with HDCP
		RS-232C	D-sub 9 pin for service & Hotel mode using
		INPUT1	HDMI in with HDCP
		USB	Photo/Music/Video mode, Software update
OSD language			English/French/Spanish
Power Requirement			AC 120V ~60Hz
Power Consumption			≤75W (0.7 W Standby with AC 120 V)
Weight	TV + stand		18.7 lbs. /8.5 kg
	TV only		16.7 lbs./7.6kg
Dimension (W/H/D)	TV + stand		$30\ ^{25/64} \times 21^{8/128} \times 7\ ^{96/128}$ inch
	TV only		$30\ ^{25/64} \times 19^{18/32} \times 2\ ^{10/16}$ inch
Operating temperature			+32°F to + 104°F (0°C to + 40°C)
Response time			6ms

[2]DIMENSIONS



WALL MOUNTING



TV screen size(Inches)	VESA-compatible wall bracket (millmeters) (WXH)	Screw type
32"	200 X 100	Metric 4 x 20 mm

CHAPTER 2. Removing of Major Parts

1. Assy/Panel Removal

Notes: Please put your machine on soft material to avoid scrape panel when you disassemble it.

Front view

Fig.1

Back view

Fig.2

Step1. Remove the Base Assy.

1. Remove the 4 screws as Fig.3 and pull out the base .

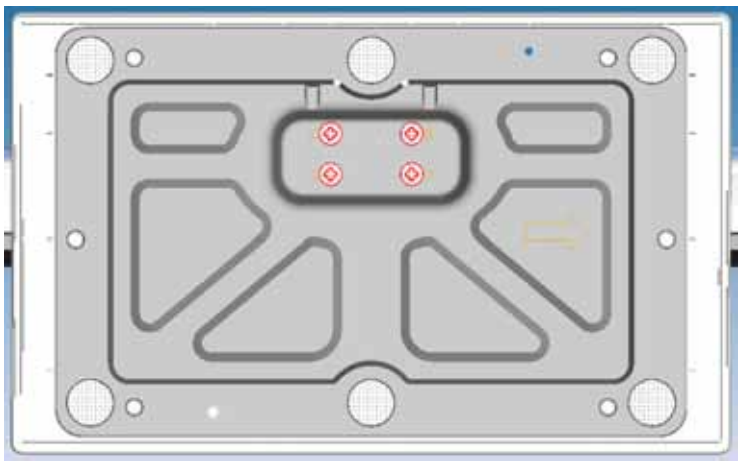


Fig.3

Step 2. Remove the REAR COVER Assy.

1. Remove the 13 screws, around the REAR COVER as Fig.4.

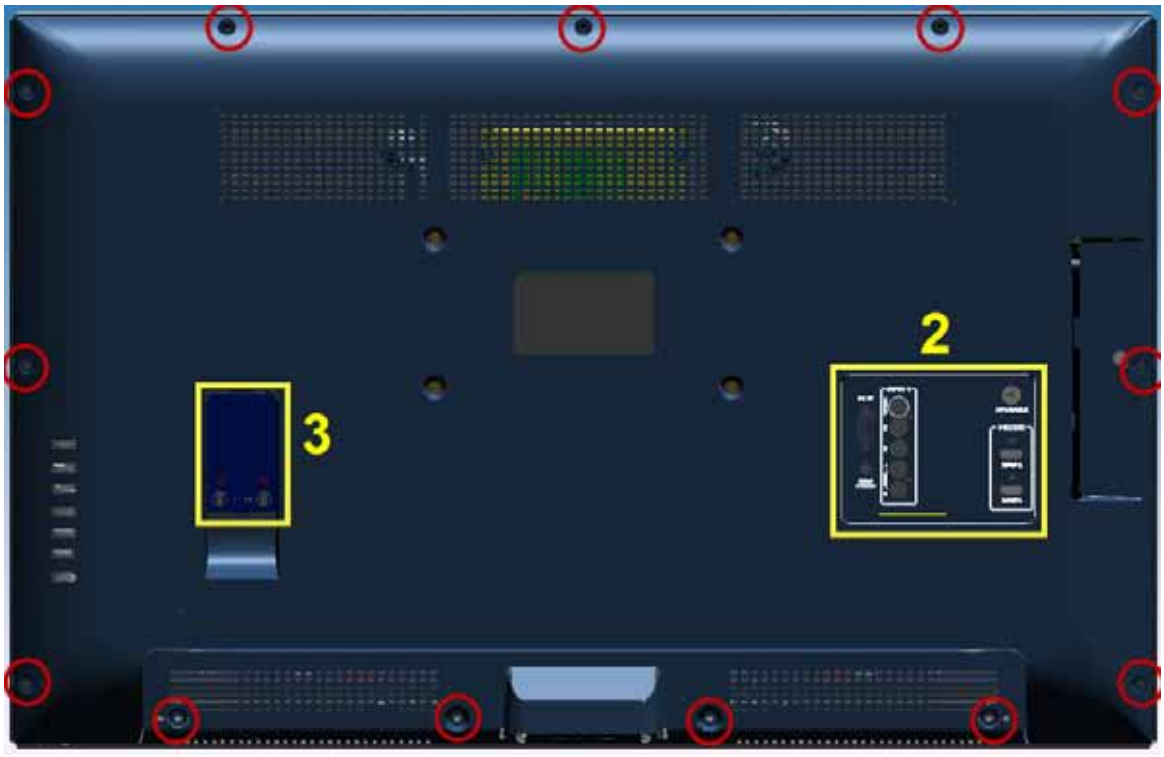


Fig.4

2. Remove the 4 screws at the IO area as Fig.5.

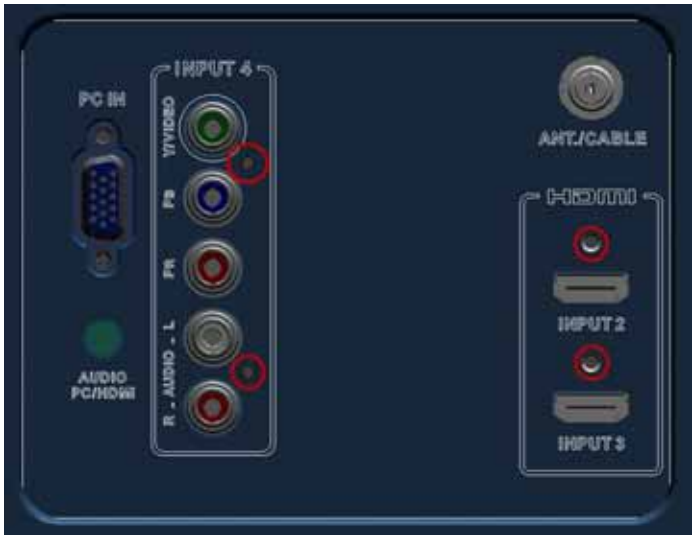


Fig.5

3. Remove the 3 screws to release AC cable as Fig.6 .Fig.7

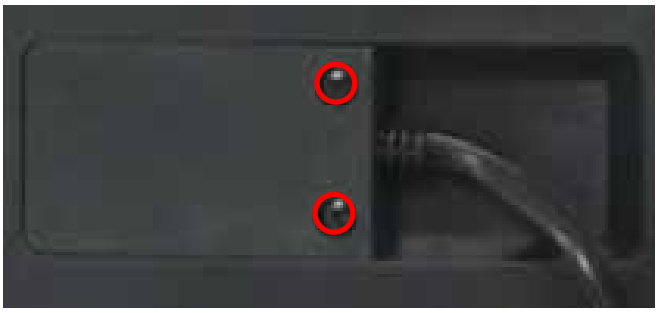


Fig.6

Fig.7

Step3. Remove the Main, Power, IR board, Key Pad ASSY, and the Speakers.

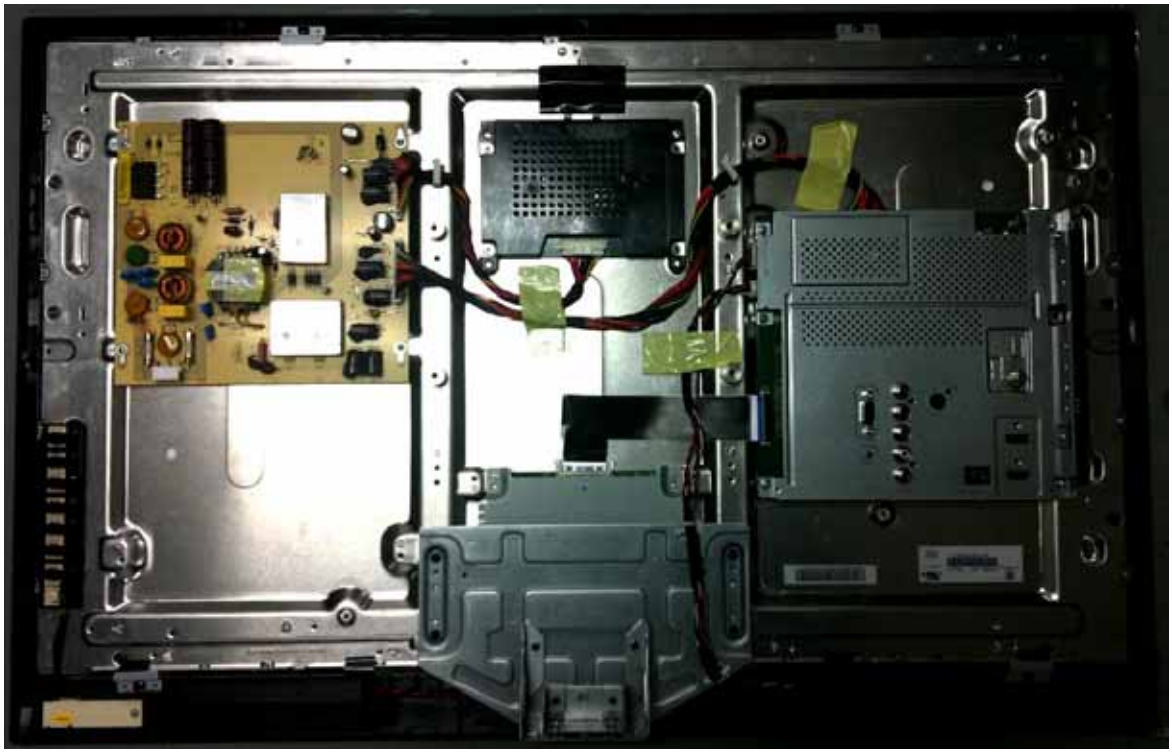


Fig.8

1. Remove the 5 screws and disconnect 4 cables .Detach the Main board ASSY as Fig.9

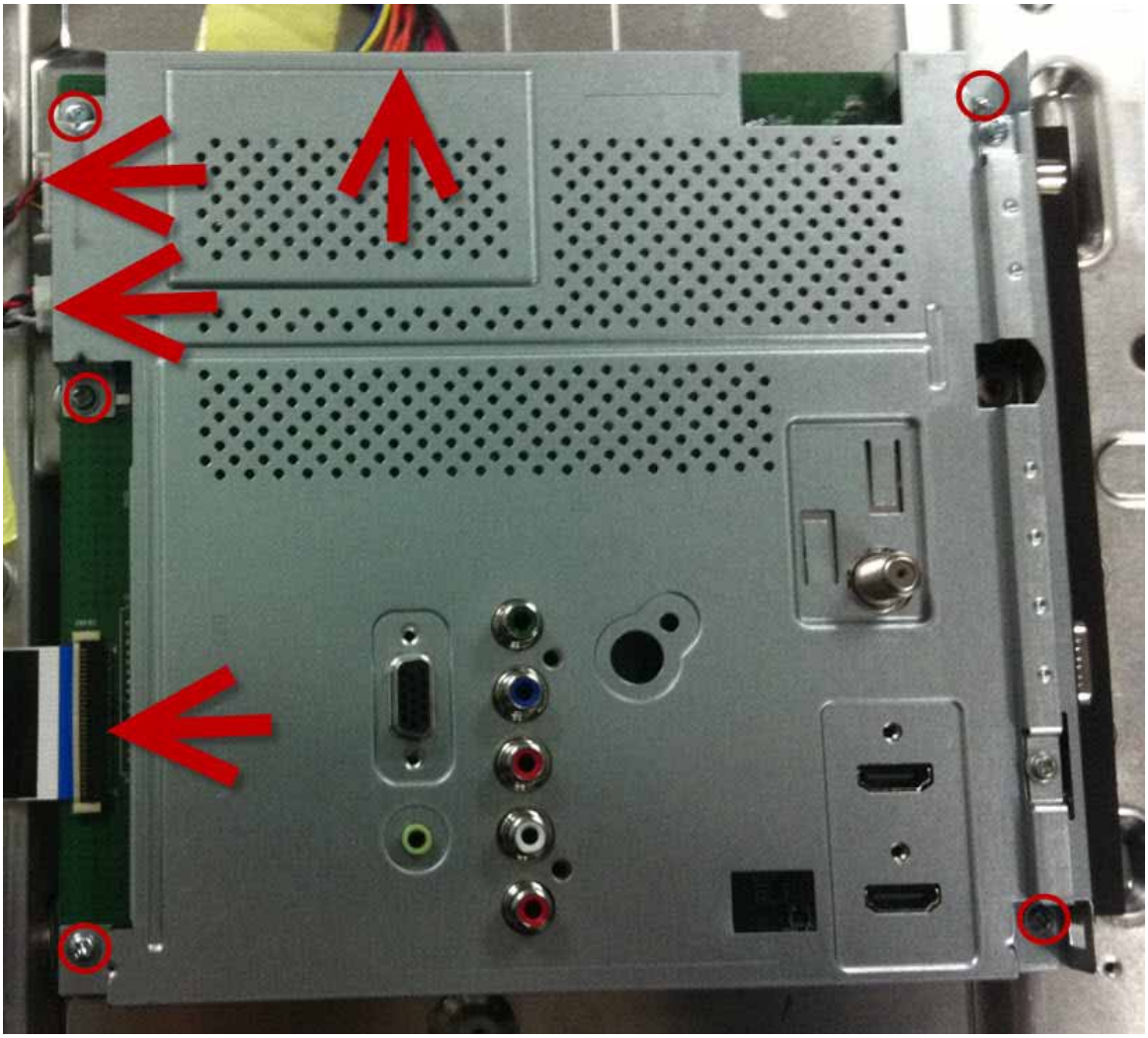


Fig.9

2. Remove the 4 screws and 2 Cables. Detach the Power board as Fig.10.

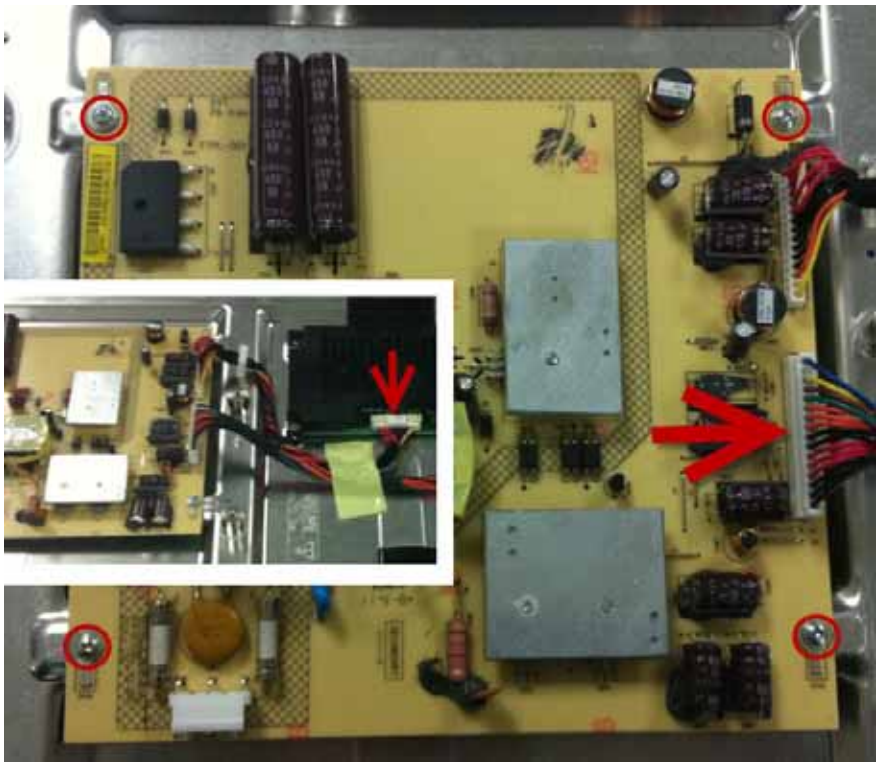


Fig.10

3. Remove the 1screws. Detach the IR board as Fig.11.

Fig.11

4. Remove the 1screws.Detach the Key Pad ASSY as Fig.12.

Fig.12

5. Detach the Speakers as Fig.13. Fig.14.

Fig.13

Fig.14

Step4. Remove BASE SUPPORT.

Remove the 4 screws and 2 cable clamps. Detach the BASE SUPPORT as Fig.15

Fig.15

Step5. Remove PANEL module.

1. Remove the 4 screws. Detach the PANEL HOLDER as Fig.16, Fig.17, Fig.18

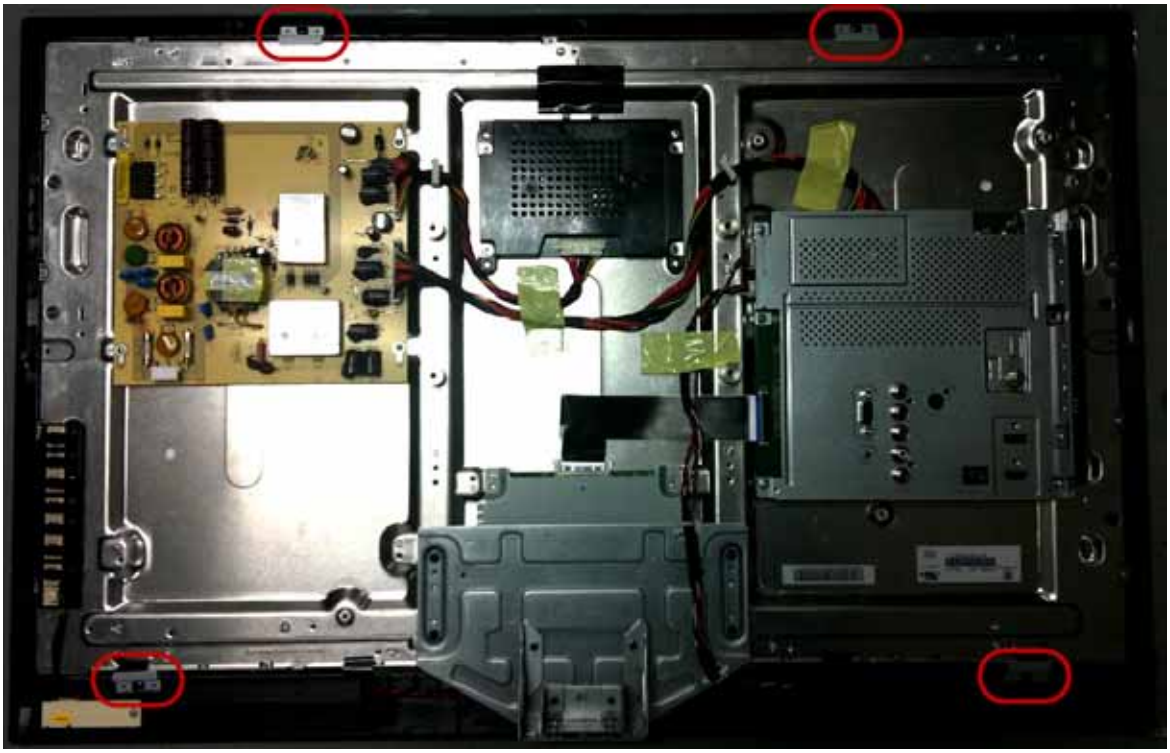


Fig.16

Fig.17

Fig.18

CHAPTER 3. ADJUSTMENT PROCEDURE

[1]ADJUSTMENT PROCEDURE

1. Main Menu (The default value is marked in red)

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Picture Settings	AV Mode	User/ **Standard**/ Movie/ Game/ PC/ Dynamic/ Dynamic(Fixed)			
	OPC	Off/ **On**			Disable when AV mode is Dynamic(Fixed).
	Backlight	0~100 **(100)**			
	Contrast	0~100 **(50)**			
	Brightness	0~100 **(50)**			
	Color	0~100 **(50)**			
	Tint	-50 ~ 50 **(0)**			
	Sharpness	0~20 **(10)**			
	Advanced	Color Temp.	Color Temp.	User/Cool/ **Standard**/Warm	
			R Gain	0~255	
			G Gain	0~255	
			B Gain	0~255	
			Reset	Yes/No	
		Active Contrast	Off/ **On**		
		DI Film Mode	Off/ **Auto**		
		Digital Noise Reduction	Off/ Low/ **Middle**/ High/ Auto		
	Reset (Only reset currect AV mode settings.)	Yes/No			
Audio Settings	Treble	0~100 **(50)**			Disable when AV mode is Dynamic(Fixed).
	Bass	0~100 **(50)**			
	Balance	-50 ~ 50 **(0)**			
	Surround	**Off**/ On			

	Reset (Only reset currect AV mode settings.)	Yes/No			
Power Control	No Signal Off	**Enable**/ Disable			
	Power Saving	Off/ **On**			Disable when AV mode is Dynamic(Fixed).
System Options	View Option	View Mode			
		Freeze			
		Change Audio	MTS	Mono/ **Stereo**/ SAP	
			Audio Language	**English**/ Spanish/ French	
		Change CC	Analog Closed Caption	**Off**/ CC1/ CC2 /CC3 /CC4/ TEXT1/ TEXT2/ TEXT3/ TEXT4	
			Digital Closed Caption	**Off**/ Service1/ Service2/ Service3/ Service4/ Service5/ Service6	
	Input Terminal Setting	Audio Setup	Off/ Dolby Digital/ **PCM**		
		PC input (For PC only)	Auto Sync.		
			Fine Sync.	H-Pos.	
				V-Pos.	
				Clock	
				Phase	
		Audio Select (For PC only)	Video/ **Video+Audio**		
		Audio Select (For HDMI only)	**Auto**/ HDMI(Digital)/ HDMI+Analog		
		HDMI Setup (For HDMI only)	HDMI Mode	**Auto**/ Graphic/ Video	
		Speaker	**On**/ Off		
	Caption setup	Caption Style	**Default**/		

	(For TV & AV only)		Custom		
		Caption Size	Small/ Standard/ **Large**		
		Foreground Color	Black/ **White**/ Green/ Blue/ Red/ Cyan/ Yellow/ Magenta		
		Foreground Opacity	**Solid**/ Translucent/ Transparent		
		Background Color	**Black**/ White/ Green/ Blue/ Red/ Cyan/ Yellow/ Magenta		
		Background Opacity	**Solid**/ Translucent/ Transparent		
		Window Color	**Black**/ White/ Green/ Blue/ Red/ Cyan/ Yellow/ Magenta		
		Window Opacity	Solid/ Translucent/ **Transparent**		
Initial Setup	EZ Setup				
	Broadcasting Setup (For TV only)	CH Setup	Air/Cable	Air/ **Cable**	
			CH Search		
			CH Memory		
		Favorite CH	A		
			B		
			C		
			D		
			All Data Clear	Yes/No	

	Language	**English**/ Español/ Français			
	Individaul Setup (Input Secret No.) (For TV & AV only)	Secret No.	New Secret No.		
			Confirm Secret No.		
		Parental CTRL	V-Chip	MPAA	G/ PG/ PG-13/ R/ NC-17/ X/ **NONE**
				TV Guidelines	TV-Y/ TV-Y7/ TV-G/ TV-PG/ TV-14/ TV-MA/ **NONE** D, L, S, V, FV
				Can.English Ratings	E/ C/ C8+/ G/ PG/ 14+/ 18+/ **NONE**
				Can.French Ratings	E/ G/ 8ans+/ 13ans+/ 16ans+/ 18ans+/ **NONE**
			V-Chip(DTV Only)		
			Status	**No**/ Yes	
	Reset	Yes/No			
Information	Identification				

2. Display adjustment

Only adjust HDMI Mode and copy to all of input source

General set-up:

Equipment Requirements: Minolta CA-210 or Equivalent Color analyzer or equivalent instrument.

Input Signal Type:

1. Internal full white pattern.
2. Select Picture mode to Standard mode and check the x, y data.

Input Injection Point: HDMI cable

Alignment method:

Initial Set-up:

1. Select source as “INPUT 1” (HDMI 1).
2. Set AV mode as “Standard”.
3. Enter factory mode menu: press **MENU** + Numeric keys “**3481**” .

Alignment:

1. Press **MENU** key enter factory mode page.
2. Set Video→White Pattern to “Medium”.
3. Enter Video→Color Temperature adjust.

Color temperature adjust:

1. Set color temperature to “Cool”
2. Adjust R Gain/G Gain values to meet “Cool” color coordinates.(Keep B Gain set “128”)
3. Adjust R Offset/G Offset values to meet “Cool” color coordinates.(Keep B Offset set “128”)
4. Repeat step 2, 3, 4 twice to meet “Cool” color coordinates specification below.
5. Set color temperature to “Warm”、”Standard” then Repeat 2,3,4 step adjusting.
6. Set color temperature “User” mode then set all values to “128”

Mode	Chromaticity Coordinate	
	x	y
COOL	0.272 ± 0.015	0.277 ± 0.015
STANDARD	0.285 ± 0.015	0.293 ± 0.015
WARM	0.313 ± 0.015	0.323 ± 0.015
Customer Color	Panel Native Color Temperature	

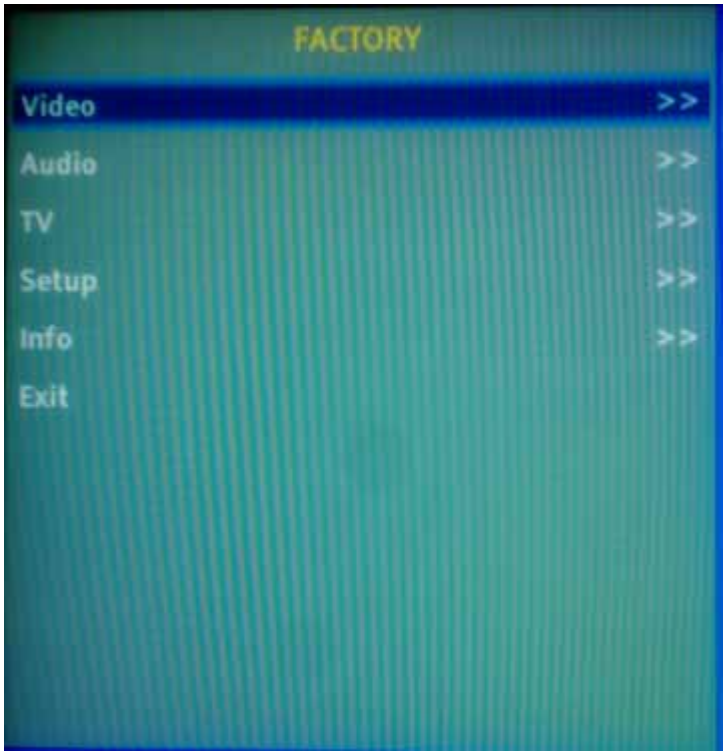
Check the 16 grayscale pattern should be distinguished and color bar is correct

Note:

1. Use Minolta CA-210 for color coordinates and luminance check.
2. Before adjusting, all color analyzers (CA-210) should be coordinates with a same reference TV set.
3. Luminance > =320 cd/m^2 in the center of the screen when Brightness control at 100, Contrast control at 100, Backlight control at 100. (Test Color mode: Standard)

[2] SERVICE MODE

Enter factory mode menu: press **MENU** + Numeric keys "**3481**" to enter factory mode.



You can press "RETURN" key to back to normal main menu.

[3] SOFTWARE UPGRADE PROCEDURE

1. Connect to TV USB port to upgrade the software firmware

Please follow the following steps to upgrade the firmware.

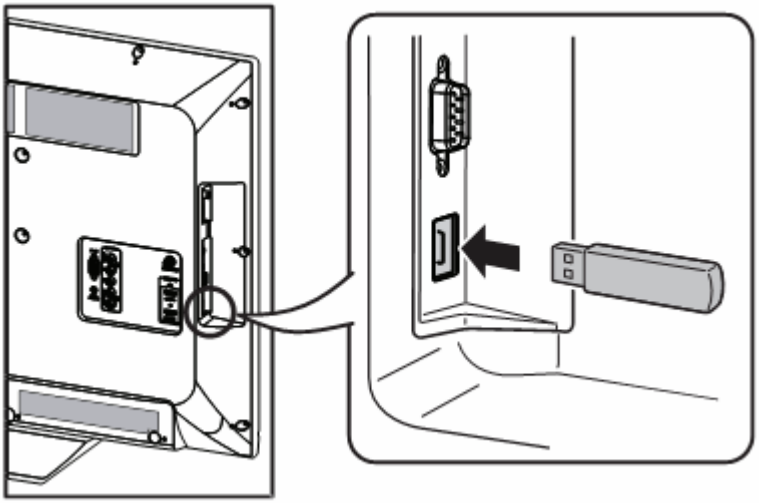
I. Turn on TV.

II. Press **MENU**, select **Information→Identification** to check "Version"

III. Copy the correct software firmware (*.pkg) to USB disk.

Ex: Version: **V2.0**, copy **NAS2_89.pkg** to USB disk.

IV. Insert the USB disk to TV USB port.



V. TV AC power off -> AC power on

VI. TV will upgrade by itself after detect the USB disk condition and the content of the pkg file.

Note: TV's LED will flash during upgrade process

VII. After finish upgrade process, TV will reboot by itself.

VIII. Remove USB disk from TV.

IX. Press **MENU**, select **Information→Identification**.

X. Check the software version is correct or not.

CHAPTER 4.TROUBLESHOOTING TABLE

[1]TROUBLE SHOOTING TABLE

The sound is not emitted from the speaker though the picture has come out.

↓

No sound output in all models?

↓

TEREMINAL

Is the audio signal output of pin (96) (AOSDATA0), pin (95) (AOBCK), pin (94) (AOLRCK) and pin (93) (AOMCLK) of IC U2102 normal?

NO → Check IC U2102 and its peripheral circuits.

YES ↓

Is audio signal input to pin (6) (AOSDATA0), pin (7) (AOBCLK), pin (8) (AOLRCK) and pin (5) (AOMCLK) of IC U6101 (AMP)?

NO → Check the line between IC U2102 and IC U6101.

YES ↓

Is MUTE circuit [YDA_MUTE] normal ?

NO → Check the PD#. (R6130, Q6101, R6134, etc.)

YES ↓

Is the audio signal output of pin (1, 2) (L-ch) and pin (3, 4) (R-ch) of CN6101 (AOUDIO-CONNECTOR) normal?

NO → Check IC U6101 and its peripheral circuits.

YES ↓

Check Speaker Box (right and left) and wire harness.

No sound (during the reception of TV broadcasting)

↓

Does not the sound go out though the picture has come out when UHF/VHF is received?

MAIN UNIT: ↓

Is the DIF signal output from pin (10) and pin (11) of TUNER(TU9101)?

NO → Check the tuner and its peripheral circuits. Replace as required.

YES ↓

Is the DIF signal sent to pin (58) and pin (59) of IC U2102?

NO → Check IC U2102 its peripheral circuits.

YES ↓

Refer to “No sound output in all modes”.

No sound from external input devices (1)

↓

Does not the sound of the audio signal input to input (Component) go out?

MAIN UNIT: ↓

Is the audio signal properly sent to pin (8) and pin (10) of CN1202? → **NO** → Check the connection to CN1202 and the external input device.

YES ↓

Is the audio signal properly sent to pin (68) (AIN0_R) and pin (70) (AIN0_L) of IC U2102? → **NO** → Check the line between CN1202 and IC U2102.

YES ↓

Refer to “No sound output in all modes”.

No sound from external input devices (2)

↓

Does not the sound of the audio signal input to VGA go out?

↓

MAIN UNIT:

Is the audio signal properly sent to pin (3) and pin (2) of CN1102?

NO → Check the connection to CN1102 and the external input device.

YES ↓

Is the audio signal properly sent to pin (67) (AIN1_R) and pin (69) (AIN1_L) of IC U2102?

NO → Check the line between CN1102 and IC U2102.

YES ↓

Refer to “No sound output in all modes”.

No sound from external input devices (3)

Does not the sound of the audio signal input to USB go out?

YES

Is USB stick audio format correct?

NO → Change to correct mp3 format

MAIN **YES**

Is the USB +5V Q7105 sent to pin (1) of CN1104?

NO → Check the connection to Q7105 and the external input device.

YES

Is the USB con (CN1104) signal properly sent to pin (233) (USB_DM0) and pin (234) (USB DP0) of IC U2102?

NO → Check the line between CN1104 and IC2102

YES

Refer to “No sound output in all modes”.

The audio signal is not output

No audio signal output from Headphone terminal (CN6201).

Terminal

Is audio signal output from pin (12) (OUTL) and pin (3) (OUTR) of IC U6201 to Jack (CN6201)?

YES → Check the connection to HPOL(R) OUT and external devices.

No

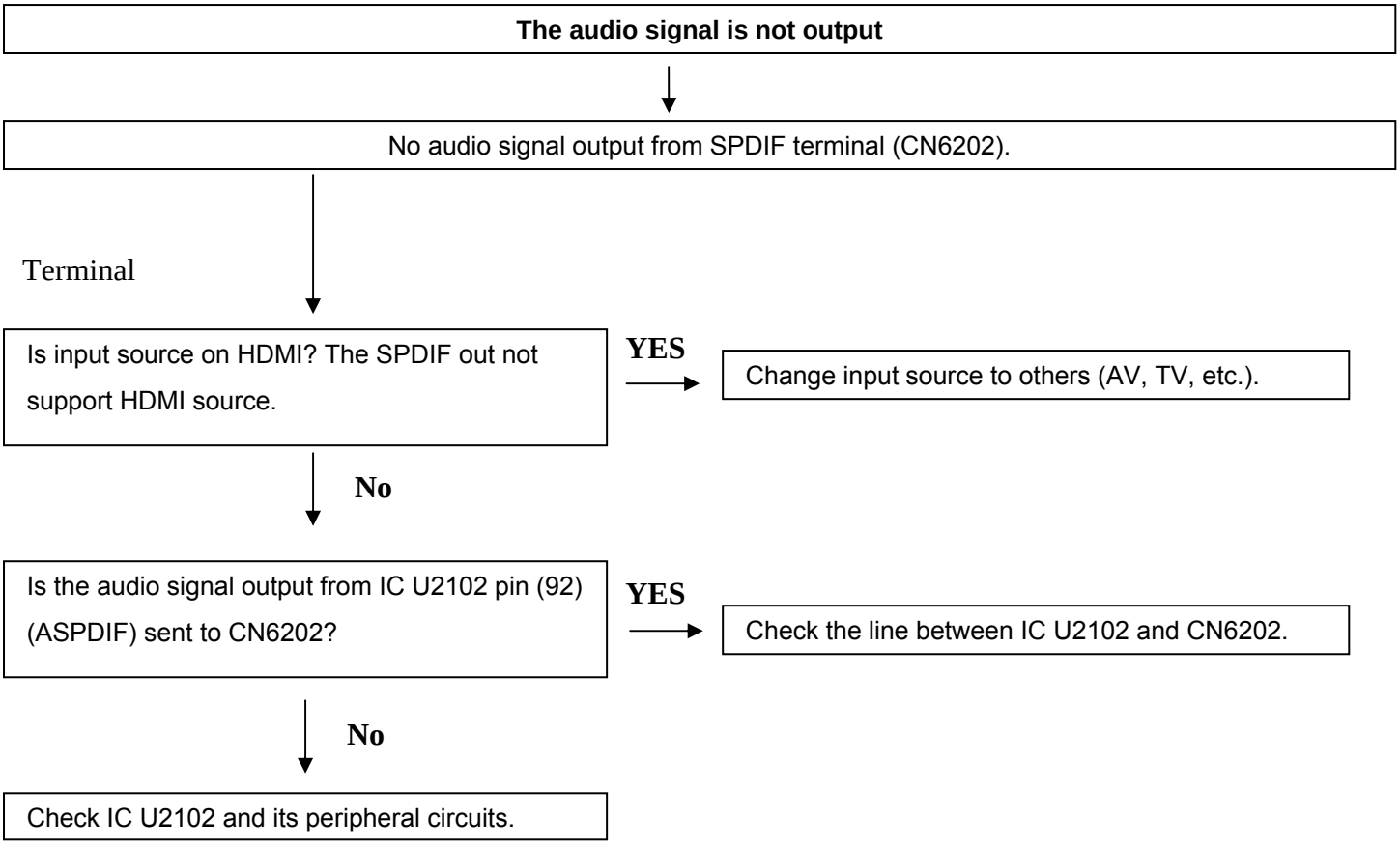
Is the audio signal output from IC U2102 pin (74) (AL1O) and pin (76) (AR1O) to pin (3) (OUTR) and pin (12) (OUTL) of IC U6201

YES → Check the line between IC U2102 and IC U6201.

No

Check IC U2102 and its peripheral circuits.

.


The audio signal is not output
No audio signal output from SPDIF terminal (CN6202).
Terminal
Is input source on HDMI? The SPDIF out not support HDMI source.
YES
Change input source to others (AV, TV, etc.).
No
Is the audio signal output from IC U2102 pin (92) (ASPDIF) sent to CN6202?
YES
Check the line between IC U2102 and CN6202.
No
Check IC U2102 and its peripheral circuits.

No picture on the display (1)

The picture doesn't appear in all modes.

Main UNIT:

Check LVDS signal output from IC U2102 or not?

32" : (O0N/O0p), (O1N/O1P),(O2N/O2P),(O3N/O3P),(OCKN/OCKP)

42" : (O0N/O0p),(O1N/O1P),(O2N/O2P),(O3N/O3P),(OCKN/OCKP), (E0N/E0p), (E1N/E1P), (E2N/E2P), (E3N/E3P), (ECKN/ECKP)

YES

Check IC U2102 and its peripheral control circuits.

Check signal BL_PWM/BL_ON/PSON/ID_0/1/2/LVDS_Power_ON/LVDSVDD are normally or not.

NO

Check relative components are ok or not.

YES

NO

Similarly, is the LVDS signal input to connector of the panel module?

Wire harness is checked.

YES

Check the panel module.

No picture on the display (2)

Does not the picture come out when VHF/UHF is received?

Main UNIT:

Check +5V_tuner/VCCK/DDRV/AV33/DV33/+3V3SB is applied to Tuner and U2102 or not.

NO → Check each power IC and peripheral components are correct or not.

YES

Is the DIF signal output from pin (10) and pin (11) of TUNER (TU9101)?

NO → Check the tuner and its peripheral circuits. Replace as required.

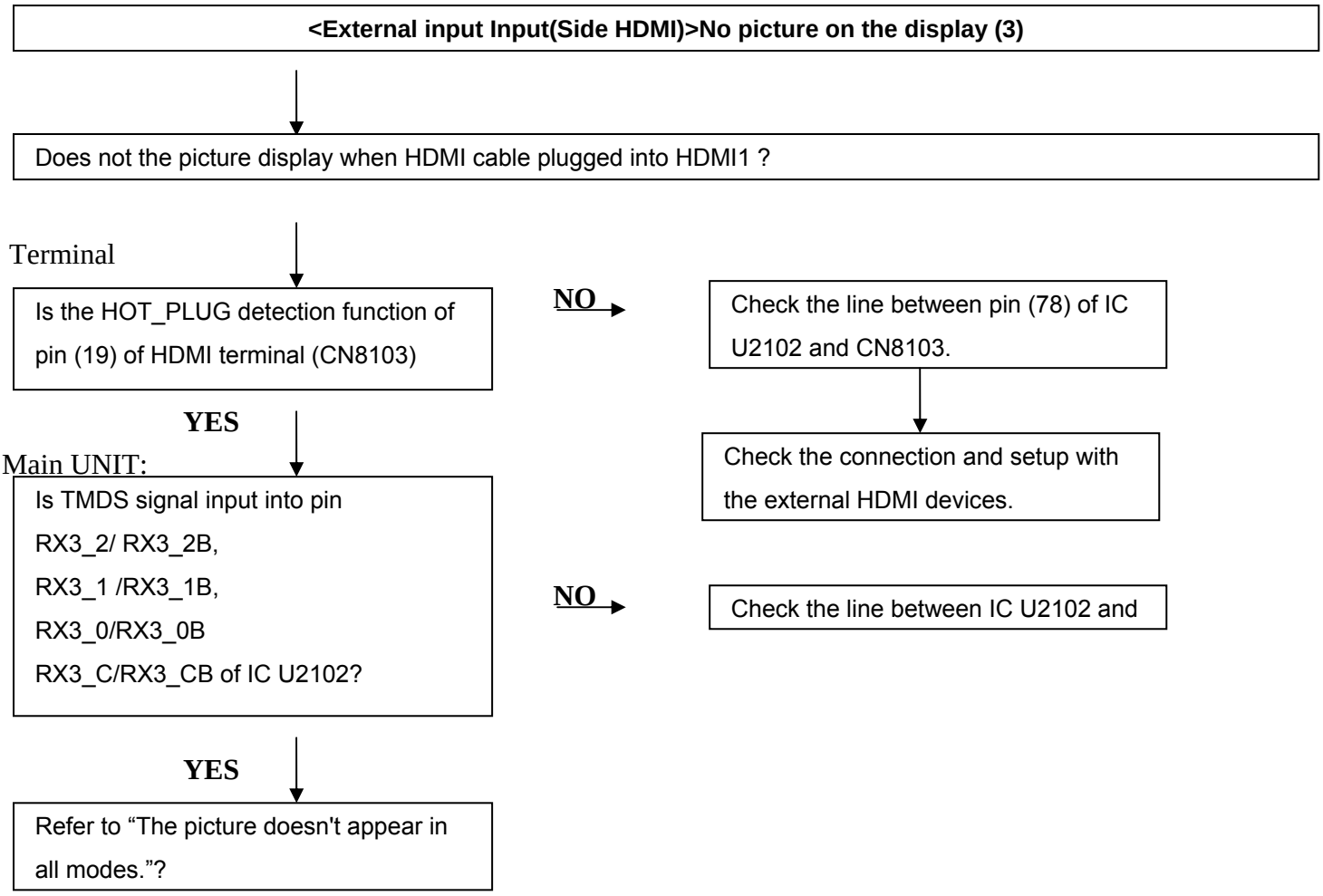
YES

Is the DIF signal sent to pin (58) and pin (59) of IC U2102?

NO → Check IC U2102 its peripheral circuits.

YES

Refer to “The picture doesn't appear in all modes.”


<External input Input(Side HDMI)>No picture on the display (3)
Does not the picture display when HDMI cable plugged into HDMI1 ?
Terminal
Is the HOT_PLUG detection function of pin (19) of HDMI terminal (CN8103)
NO
Check the line between pin (78) of IC U2102 and CN8103.
Check the connection and setup with the external HDMI devices.
YES
Main UNIT:
Is TMDS signal input into pin RX3_2/ RX3_2B, RX3_1 /RX3_1B, RX3_0/RX3_0B RX3_C/RX3_CB of IC U2102?
NO
Check the line between IC U2102 and
YES
Refer to “The picture doesn't appear in all modes.”?

<External input Input(Rear_HDMI2)>No picture on the display (4)

Does not the picture display when HDMI cable plugged into HDMI 2 ?

Terminal

Is the HOT_PLUG detection function of pin (19) of a HDMI terminal (CN8101)

NO → Check the line between pin (7) of IC U2102 and CN8101 → Check the connection and setup with the external HDMI devices.

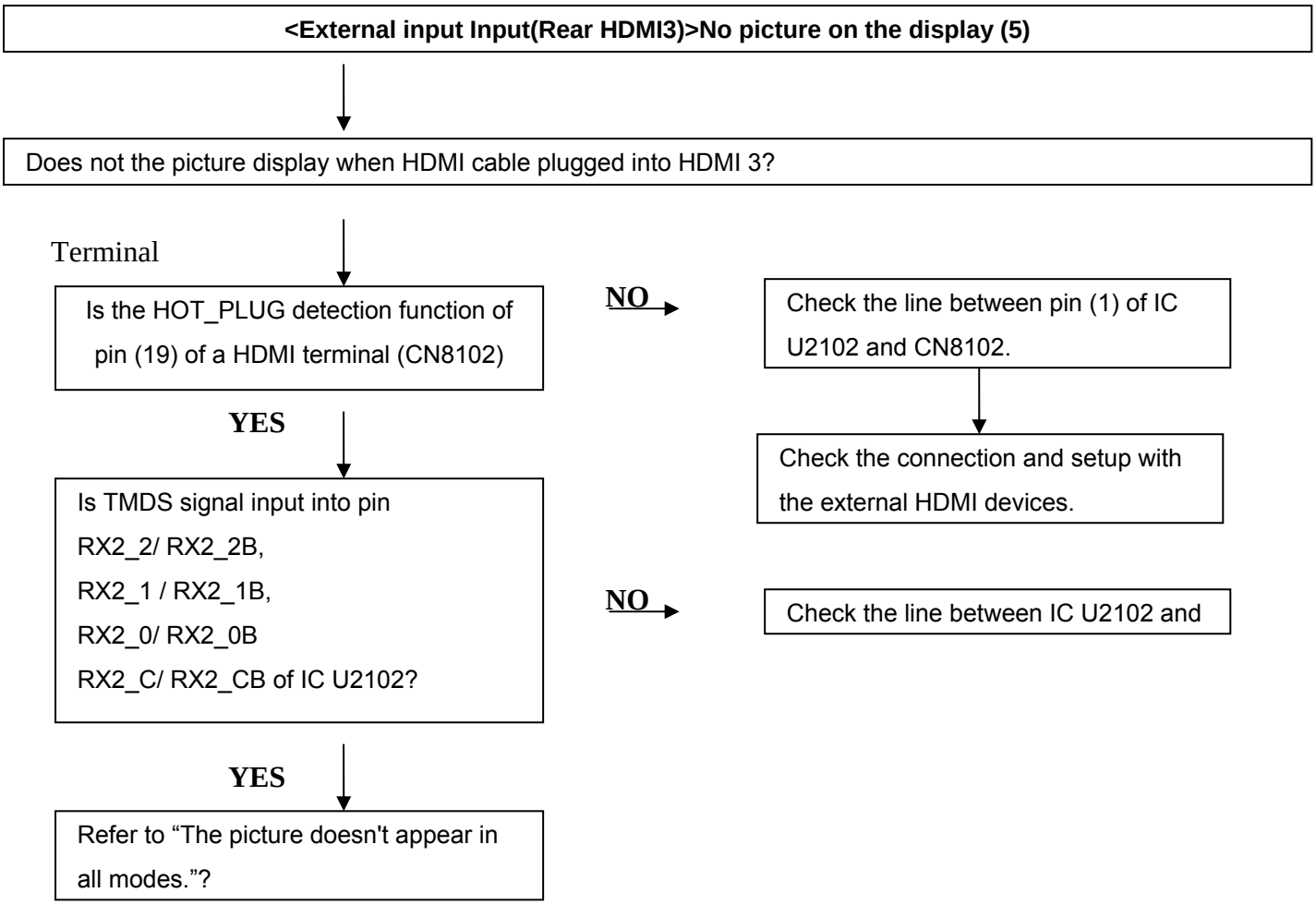
YES

Is TMDS signal input into pin
RX1_2/ RX1_2B,
RX1_1 / RX1_1B,
RX1_0/ RX1_0B
RX1_C/ RX1_CB of IC U2102?

NO → Check the line between IC U2102 and

YES

Refer to “The picture doesn't appear in all modes.”?


<External input Input(Rear HDMI3)>No picture on the display (5)
Does not the picture display when HDMI cable plugged into HDMI 3?
Terminal
Is the HOT_PLUG detection function of pin (19) of a HDMI terminal (CN8102)
NO
Check the line between pin (1) of IC U2102 and CN8102.
Check the connection and setup with the external HDMI devices.
YES
Is TMDS signal input into pin RX2_2/ RX2_2B, RX2_1 / RX2_1B, RX2_0/ RX2_0B RX2_C/ RX2_CB of IC U2102?
NO
Check the line between IC U2102 and
YES
Refer to “The picture doesn't appear in all modes.”?

<External input USB>No picture on the display (6)

Does not the picture display when USB cable plugged into USB port?

Is USB stick video format correct?

NO → Change to correct .jpg or .jpeg or .png or .bmp format.

YES

Main UNIT:

Is the USB +5V sent to pin (1) of

NO → Check the fuse F1101 and the external input device.

YES

Is the USB con (CN1104) signal properly sent to pin (233) (USB_DM0) and pin (234) (USB_DP0) of IC U2102?

NO → Check the line between CN1104 and IC

YES

Refer to “The picture doesn't appear in

<External input Input(Component)>No picture on the display (7)

Does not the picture display when RCA cable plugged into component?

Terminal

Is Component Y/Pb/Pr signal sent to pin (2)/Y, (4)/Pb, (6)/Pr of CN1202?

NO → Check the setting of an external input device that connects of CN1202

YES

Main UNIT:

<External input Input(Component)>No picture on the

NO → Check the line between IC U2102 and

YES

Refer to “The picture doesn't appear in

<External input D-SUB>No picture on the display (8)

Does not the picture display when VGA cable plugged into D-SUB ?

Is Video format correct?

NO → Set the timing which TV is support

YES

Terminal

Is R/G/B/H/V signal sent to pin (1)/RED, (2)/Green, (3)/BLUE, (14)/H sync#,

NO → Check the setting of an external input device that connects of CN1101

YES

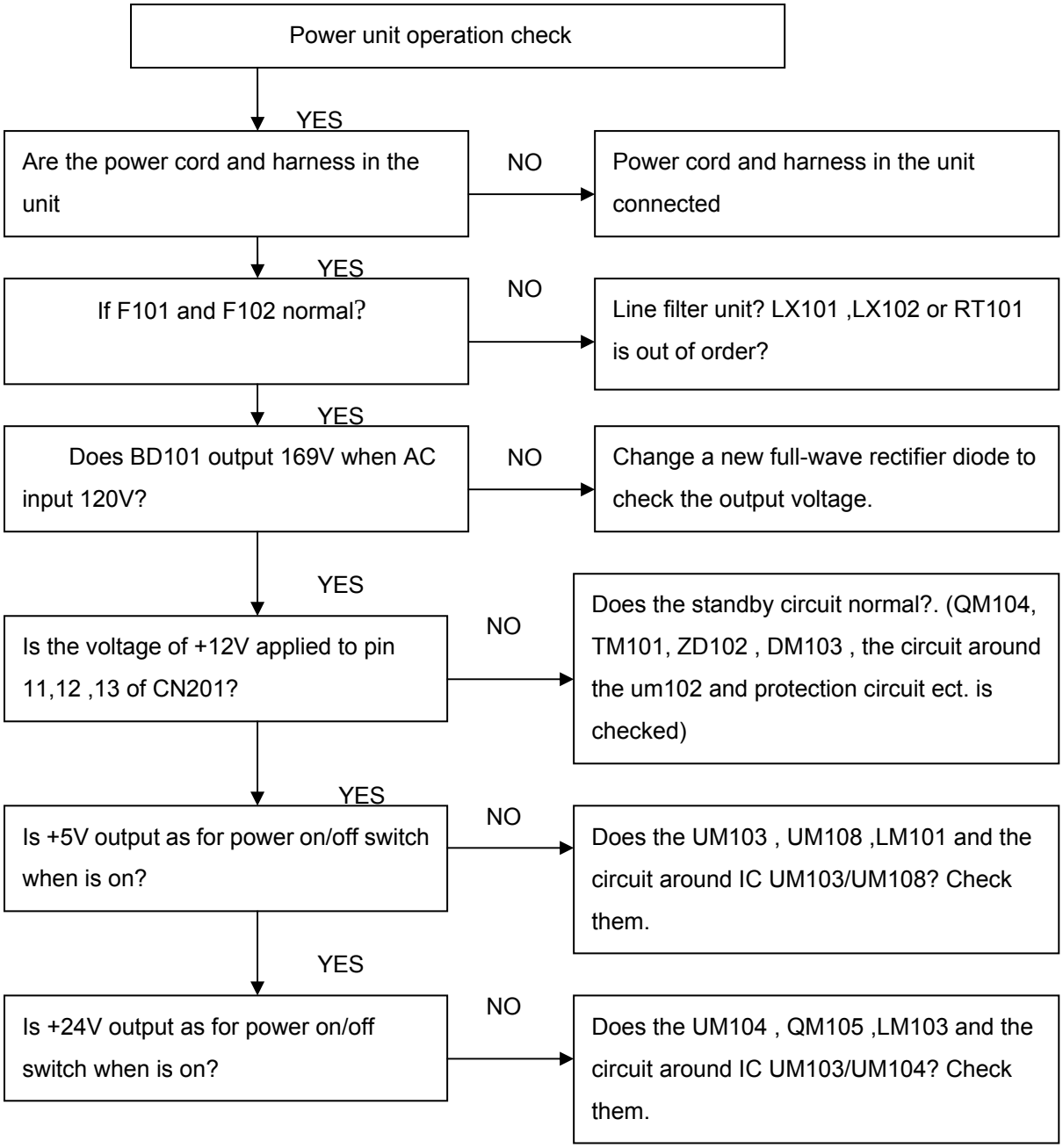
Main UNIT:

Is R/G/B/H/V signal sent to pin (32)/RED, (30)/Green, (28)/BLUE,

NO → Check the line between IC U2102 and

YES

Refer to “The picture doesn't appear in


Power unit operation check
YES
Are the power cord and harness in the unit
NO
Power cord and harness in the unit connected
YES
If F101 and F102 normal?
NO
Line filter unit? LX101 ,LX102 or RT101 is out of order?
YES
Does BD101 output 169V when AC input 120V?
NO
Change a new full-wave rectifier diode to check the output voltage.
YES
Is the voltage of +12V applied to pin 11,12 ,13 of CN201?
NO
Does the standby circuit normal?. (QM104, TM101, ZD102 , DM103 , the circuit around the um102 and protection circuit ect. is checked)
YES
Is +5V output as for power on/off switch when is on?
NO
Does the UM103 , UM108 ,LM101 and the circuit around IC UM103/UM108? Check them.
YES
Is +24V output as for power on/off switch when is on?
NO
Does the UM104 , QM105 ,LM103 and the circuit around IC UM103/UM104? Check them.

CHAPTER5. MAJOR IC INFORMATIONS

[1]MAJOR IC INFORMATIONS

1.1. U2102 (MT5389)

The MediaTek MT5389FUNU family consists of a DTV front-end demodulator, a backend decoder and a TV controller and offers high integration for advanced applications. It combines a transport de-multiplexer, a high definition video decoder, an audio decoder, a dual-link LVDS transmitter, a mini-LVDS transmitter (option), an EPI transmitter (option) and an NTSC/PAL/SECAM TV decoder with a 3D comb filter (NTSC/PAL). The MT5389FUNU enables consumer electronics manufactures to build high quality, low cost and feature-rich DTV.

World-Leading Audio/Video Technology: The MT5389FUNU supports Full-HD MPEG1/2/4/h.264/DiviX/VC1/RM/AVS (option) video decoder standards, and JPEG. The MT5389FUNU also supports MediaTek MDDiTM de-interlace solution can reach very smooth picture quality for motions. A 3D comb filter added to the TV decoder recovers great details for still pictures. The special color processing technology provides natural, deep colors and true studio quality video. Also, the MT5389FUNU family has built-in high resolution and high-quality audio codec.

Rich Features for High Value Products: The MT5389FUNU family enables true singlechip experience. It integrates high-quality HDMI1.4a, high speed VGA ADC, LVDS, mini-LVDS (option), EPI (option), USB2.0 receiver, TCON (option), panel overdrive (option), and ATSC demodulators.

WW Common Platform Capability: The MT5389FUNU family supports ATSC demodulation functions. TV maker can easily port the same UI to worldwide TV models. Excellent adjacent and co-channel rejection capability grants customers never miss any wonderful stream. Professional error-concealment provides stable, smooth and mosaic-free video quality.

Key Features:

1. Worldwide multi-standard analog TV demodulator
2. ATSC demodulators
3. Powerful CPU core
4. A transport de-multiplexer
5. A muti-standard video decoder
6. Rich format audio codec
7. HDMI1.4a receiver
8. Local dimming (LED backlight) (option)
9. TCON (option)
10. Panel overdrive control (option)

11. LVDS, mini-LVDS (option), EPI (option)

1.2. U3101 (NT5CB64M16DP)

Description

The 1Gb Double-Data-Rate-3 (DDR3/L) B-die DRAMs is double data rate architecture to achieve high-speed operation. It is internally configured as an eight bank DRAM.

The 1Gb chip is organized as 16Mbit x 8 I/Os x 8 banks or 8Mbit x 16 I/Os x 8 bank devices. These synchronous devices achieve high speed double-data-rate transfer rates of up to 1866 Mb/sec/pin for general applications.

The chip is designed to comply with all key DDR3/L DRAM key features and all of the control and address inputs are

synchronized with a pair of externally supplied differential clocks. Inputs are latched at the cross point of differential clocks (CK rising and ___falling). All I/Os are synchronized with a single ended DQS or differential DQS pair in a source

synchronous fashion. These devices operate with a single 1.5V ± 0.075V &1.35V -0.067/+0.1V power supply and are available in BGA packages.

The DDR3/L SDRAM D-Die is a high-speed dynamic random access memory internally configured as an eight-bank

DRAM. The DDR3/L SDRAM uses an 8n prefetch architecture to achieve high speed operation. The 8n prefetch

architecture is combined with an interface designed to transfer two data words per clock cycle at the I/O pins. A single read or write operation for the DDR3/L SDRAM consists of a single 8n-bit wide, four clock data transfer at the internal DRAM core and two corresponding n-bit wide, one-half clock cycle data transfers at the I/O pins.

Read and write operation to the DDR3/L SDRAM are burst oriented, start at a selected location, and continue for a burst length of eight or a ‘chopped’ burst of four in a programmed sequence. Operation begins with the registration of an Active command, which is then followed by a Read or Write command. The address bits registered coincident with the Active command are used to select the bank and row to be activated (BA0-BA2 select the bank; A0-A13 select the row). The address bit registered coincident with the Read or Write command are used to select the starting column location for the burst operation, determine if the auto precharge command is to be issued (via A10), and select BC4 or BL8 mode ‘on the fly’ (via A12) if enabled in the mode register.

Prior to normal operation, the DDR3/L SDRAM must be powered up and initialized in a predefined manner. The following sections provide detailed information covering device reset and initialization, register definition, command descriptions and device operation.

1.3. U6102 (YAMAHA YDA175)

Features

・Supply Voltage Range VDDP 5V*1) to 18V

・Input Digital Audio Interface (Stereo)

Sampling Frequency: 32kHz, 44.1kHz, 48kHz

Left-justified, MSB first, 1-bit delay, Digital Audio Data 24-bits

・Max. Instantaneous Output 15W×2ch (VDDP=15V, RL=8Ω, THD+N=10%)

10W×2ch (VDDP=12V, RL=8Ω, THD+N=10%)

10W×2ch (VDDP=12V, RL=6Ω, THD+N=10%)

・Max. Continuous Output 15W*2)×2ch (VDDP=15V, RL=8Ω, Ta=70 ºC, 4-layer Board)

10W*2)×2ch (VDDP=12V, RL=8Ω, Ta=70 ºC, 4-layer Board)

10W*2)×2ch (VDDP=12V, RL=6Ω, Ta=70 ºC, 4-layer Board) *TBD

・Distortion Ratio (THD+N) 0.05% (VDDP=12V, RL=8Ω, Po=4.5W, 1kHz)

・Residual Noise 50μVrms (VDDP=12V, RL=8Ω, A-Weighted Filter)

・S/N Ratio 105dB (VDDP=12V, RL=8Ω, A-Weighted Filter)

・Efficiency 92% (VDDP=12V, RL=8Ω, Po=10W)

・Channel Separation 80 dB (VDDP=12V, RL=8Ω, 1kHz)

・Power Limit Function (15W, RL=8Ω, min, THD+N=10%)

・Output Mute Function (Quick Mute/Quick Start)

・Sleep Function

・Pop Noise Reduction Function

・Overcurrent Protection Function (OCP)

・Over Temperature Protection Function (OTP)

・Under Voltage Lockout (UVLO)

・DC Detection Function (DCDET)

・Clock Detection Function (CKDET)

・Package Lead-free 32-pin Plastic QFN (Exposed die pad) : YDA175-QZ

*1: When operating below 8V (VDDP), the speaker impedance must be 8Ω or higher.

*2: These values are based on evaluations on a Yamaha's PCB board implementation.

1.4. U1101 (TRS3221ECDBR SSOP16)

FEATURES

· ESD Protection for RS-232 Pins

– ±15-kV Human-Body Model (HBM)

– ±8 kV (IEC 61000-4-2, Contact Discharge)

– ±15 kV (IEC 61000-4-2, Air-Gap Discharge)

· Meets or Exceeds the Requirements of

TIA/EIA-232-F and ITU v.28 Standards

· Operates With 3-V to 5.5-V VCC Supply

· Operates up to 250 kbit/s

· One Driver and One Receiver

· Low Standby Current . . . 1 μA Typical

· External Capacitors . . . 4 ´ 0.1 μF

· Accepts 5-V Logic Input With 3.3-V Supply

· Alternative High-Speed Pin-Compatible (1 Mbit/s)

.TRSF3221E

· Auto-Powerdown Feature Automatically

Disables Drivers for Power Savings

Description

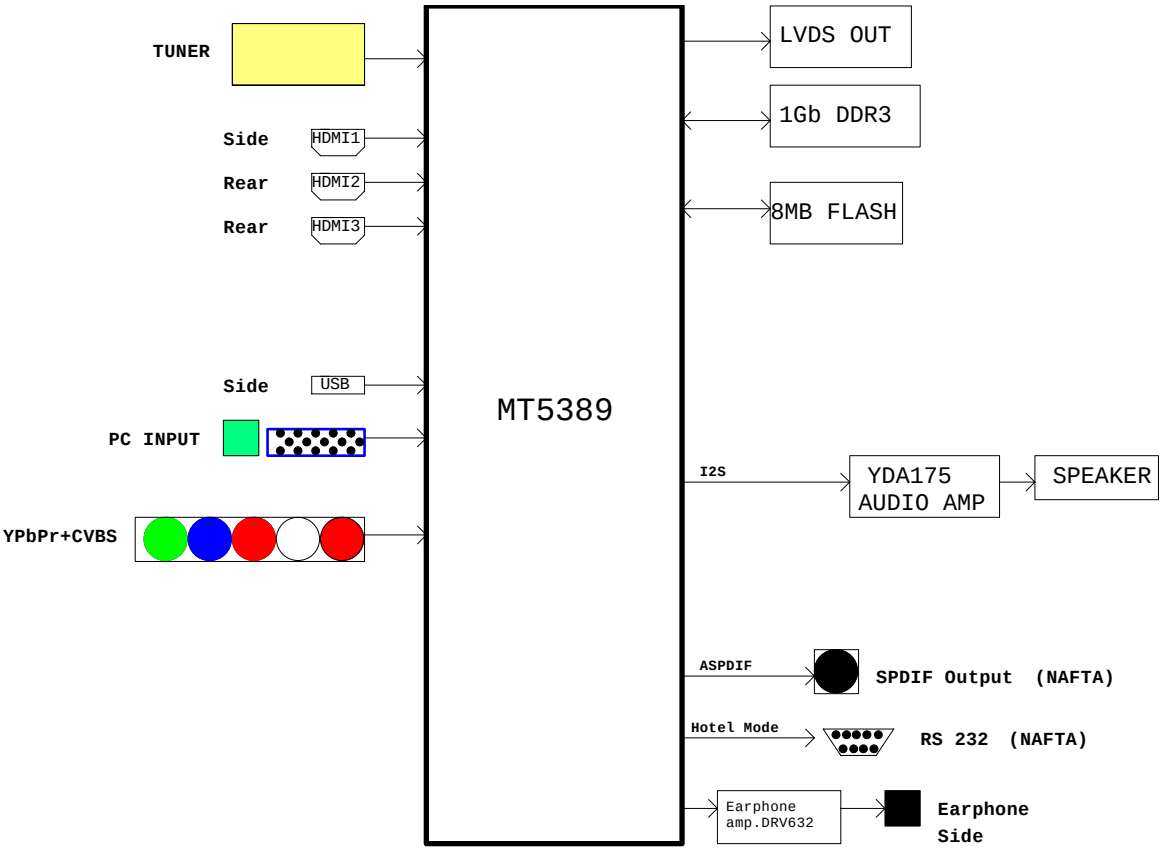
The TRS3221E is a single driver, single receiver RS-232 solution operating from a single VCC supply. The RS-232 pins provide IEC G1000-4-2 ESD protection. The device meets the requirements of TIA/EIA-232-F and provides the electrical interface between an asynchronous communication controller and the serial-port connector. The charge pump and four small external capacitors allow operation from a single 3-V to 5.5-V supply. These devices operate at data signaling rates up to 250 kbit/s and a maximum of 30-V/μs driver output slew rate.

Flexible control options for power management are available when the serial port is inactive. The auto-powerdown feature functions when FORCEON is low and FORCEOFF is high. During this mode of operation, if the device does not sense a valid RS-232 signal on the receiver input, the driver output is disabled. If FORCEOFF is set low and EN is high, both the driver and receiver are shut off, and the supply current is reduced to 1 μA. Disconnecting the serial port or turning off the peripheral drivers causes the auto-powerdown condition to occur. Auto-powerdown can be disabled when FORCEON and FORCEOFF are high.

With auto-powerdown enabled, the device is activated automatically when a valid signal is applied to the receiver input. The INVALID output notifies the user if an RS-232 signal is present at the receiver input. INVALID is high (valid data) if the receiver input voltage is greater than 2.7 V or less than –2.7 V, or has been between -0.3 V and 0.3 V for less than 30 μs. INVALID is low (invalid data) if the receiver input voltage is between –0.3 V and 0.3 V for more than 30 μs. Refer to Figure 5 for receiver input levels.

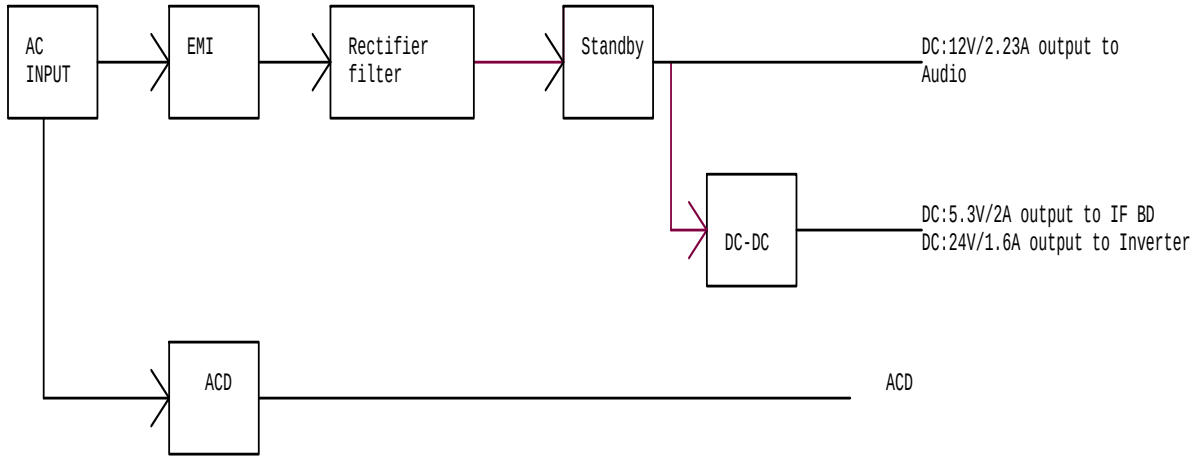
CHAPTER 6.BLOCK DIAGRAM/WIRING DIAGRAM

[1]BLOCK DIAGRAM



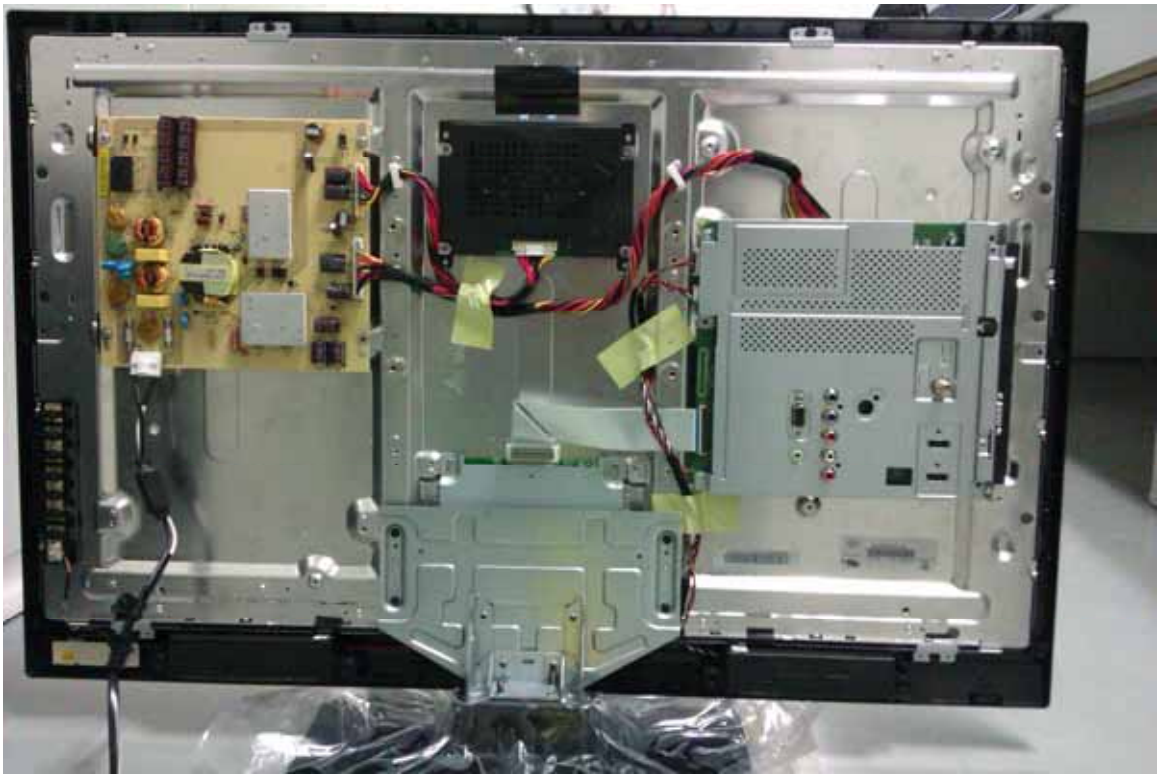
[2]POWER MANAGEMENT BLOCK DIAGRAM

There are 1 part circuits in Power board of this project (fig.1), Power circuits which is a single layer board, There are 3 output in the power parts, one is interface board including USB and TV tuner et; the other is inverter board and audio circuit.+24V output is inverter part.the system block diagram as below; the last is panel Vcc and audio, the power is 12V.



(fig.1)

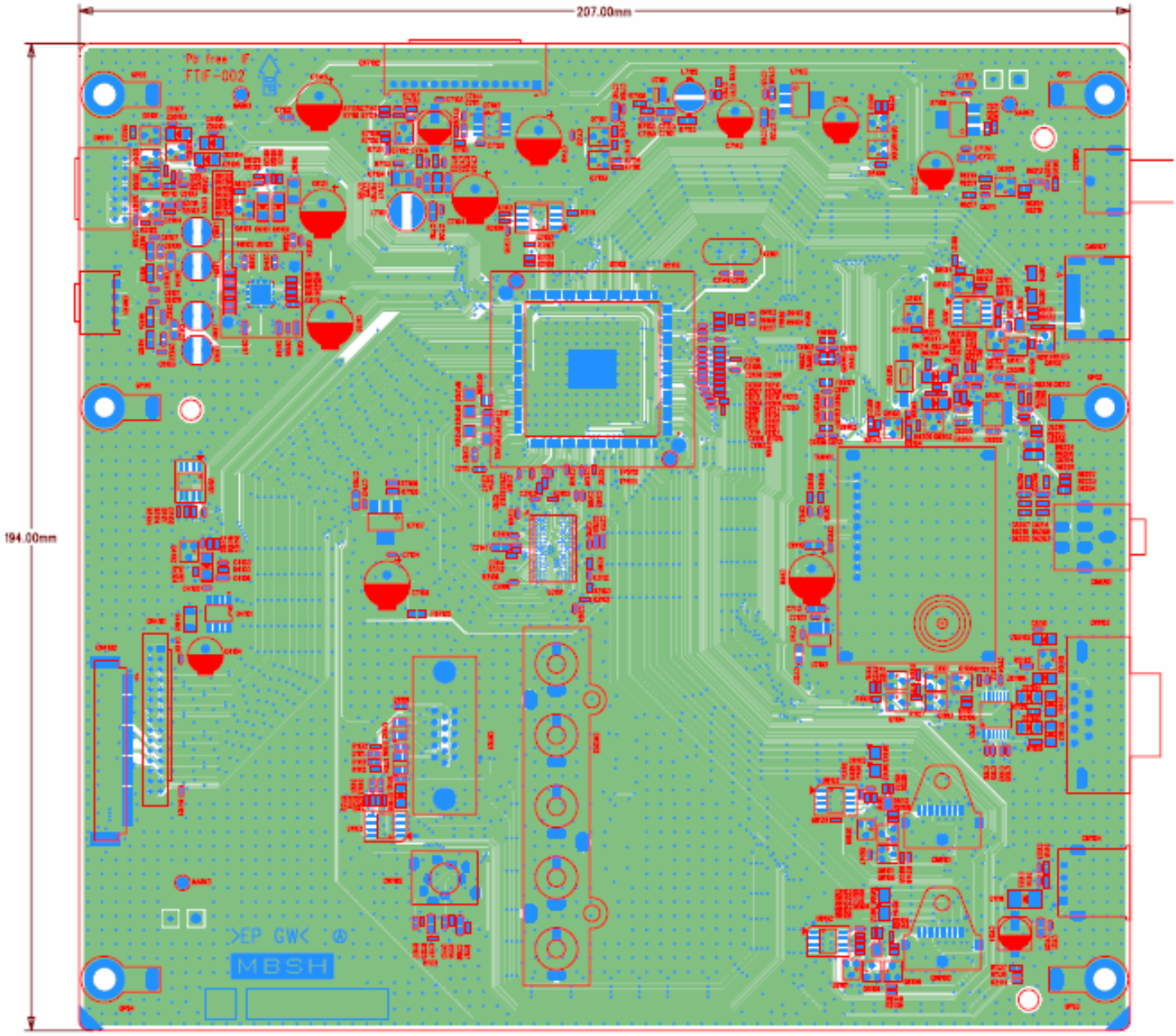
[3]WIRING DIAGRAM



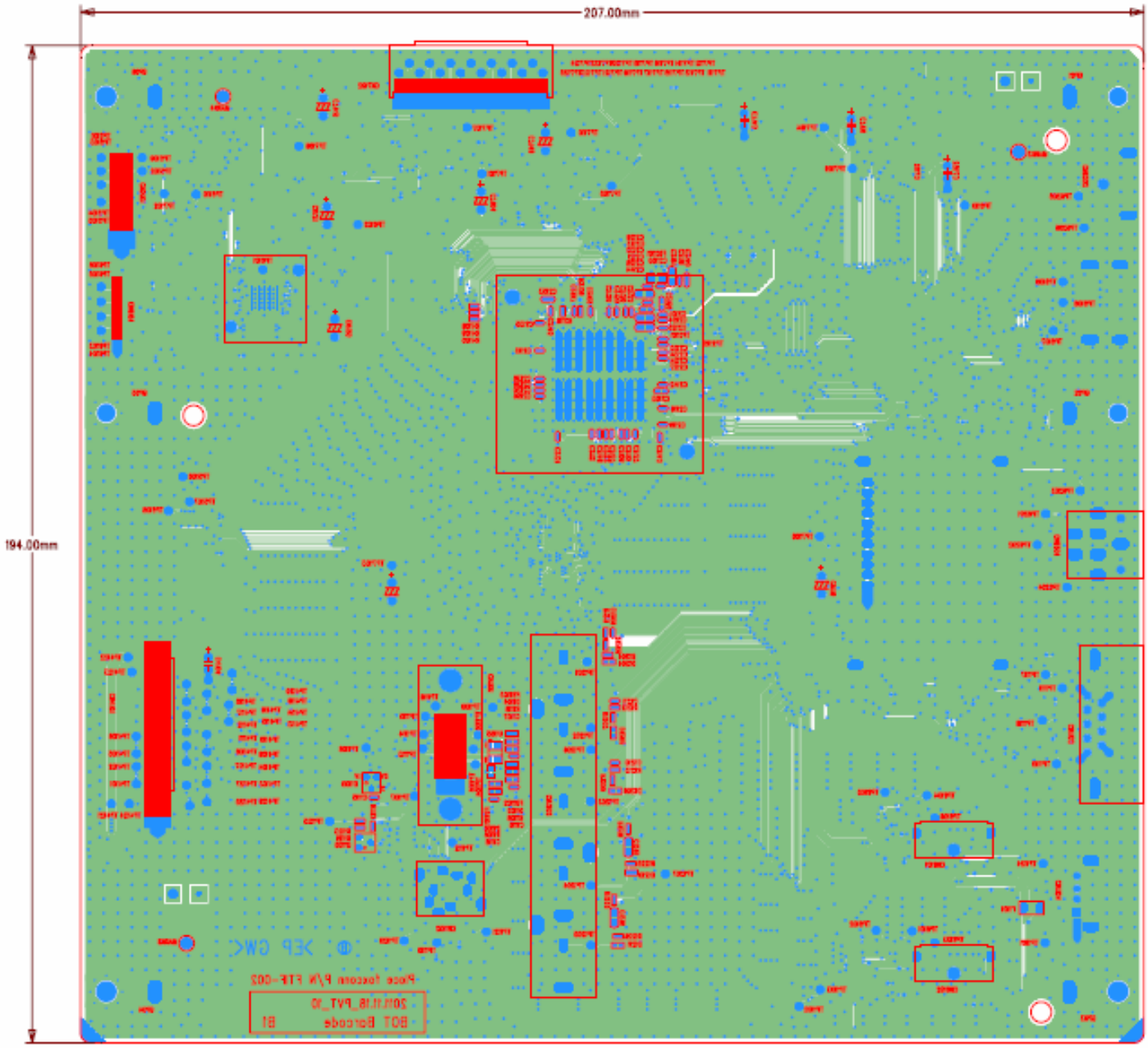
CHAPTER 7.PRINTED WIRING DIAGRAM

[1]MAIN UNIT PRINTED WIRING BOARD (LC-32SV40U&LC-42SV50U&LC-46SV50U)

TOP

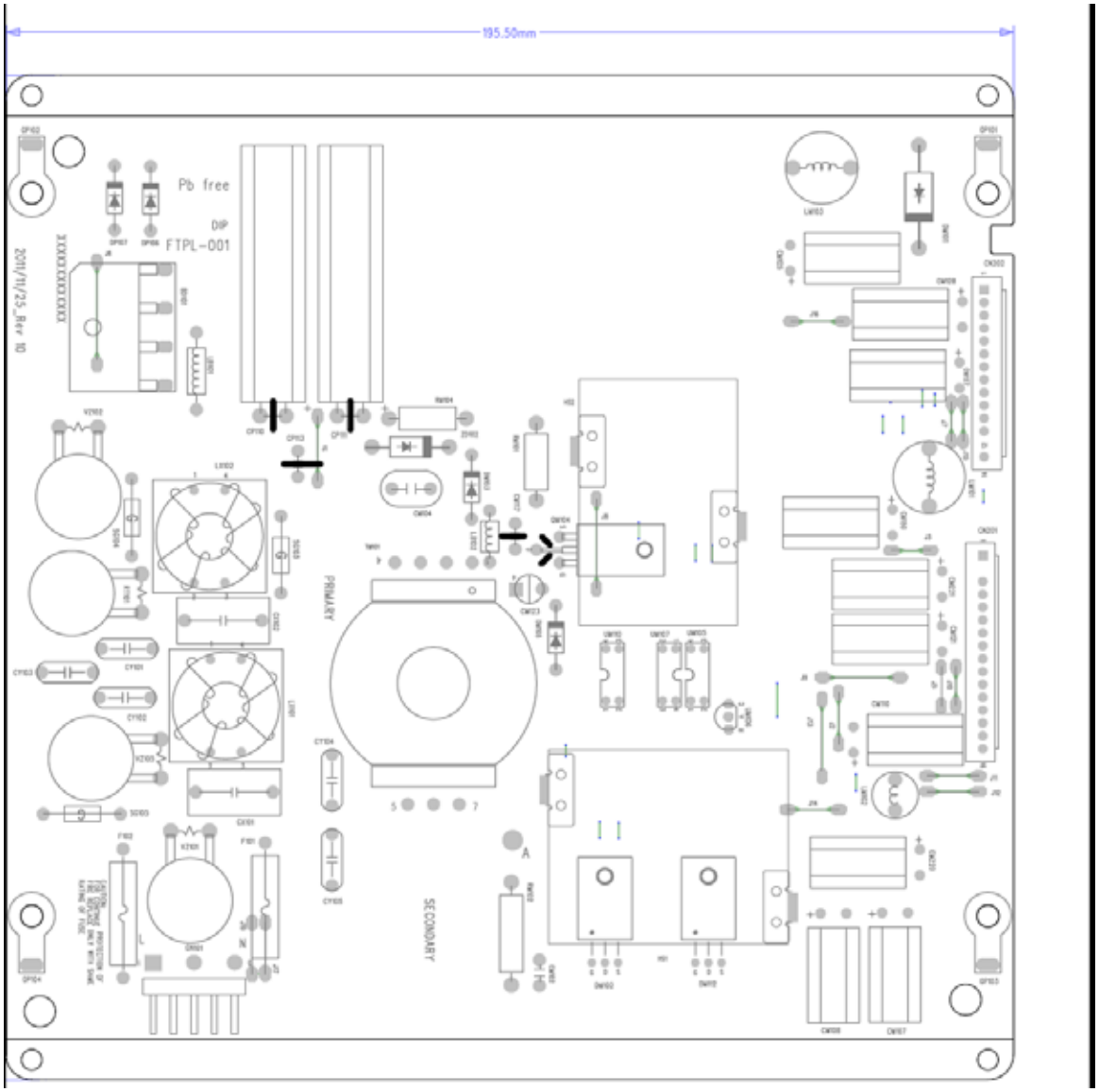


BOTTOM

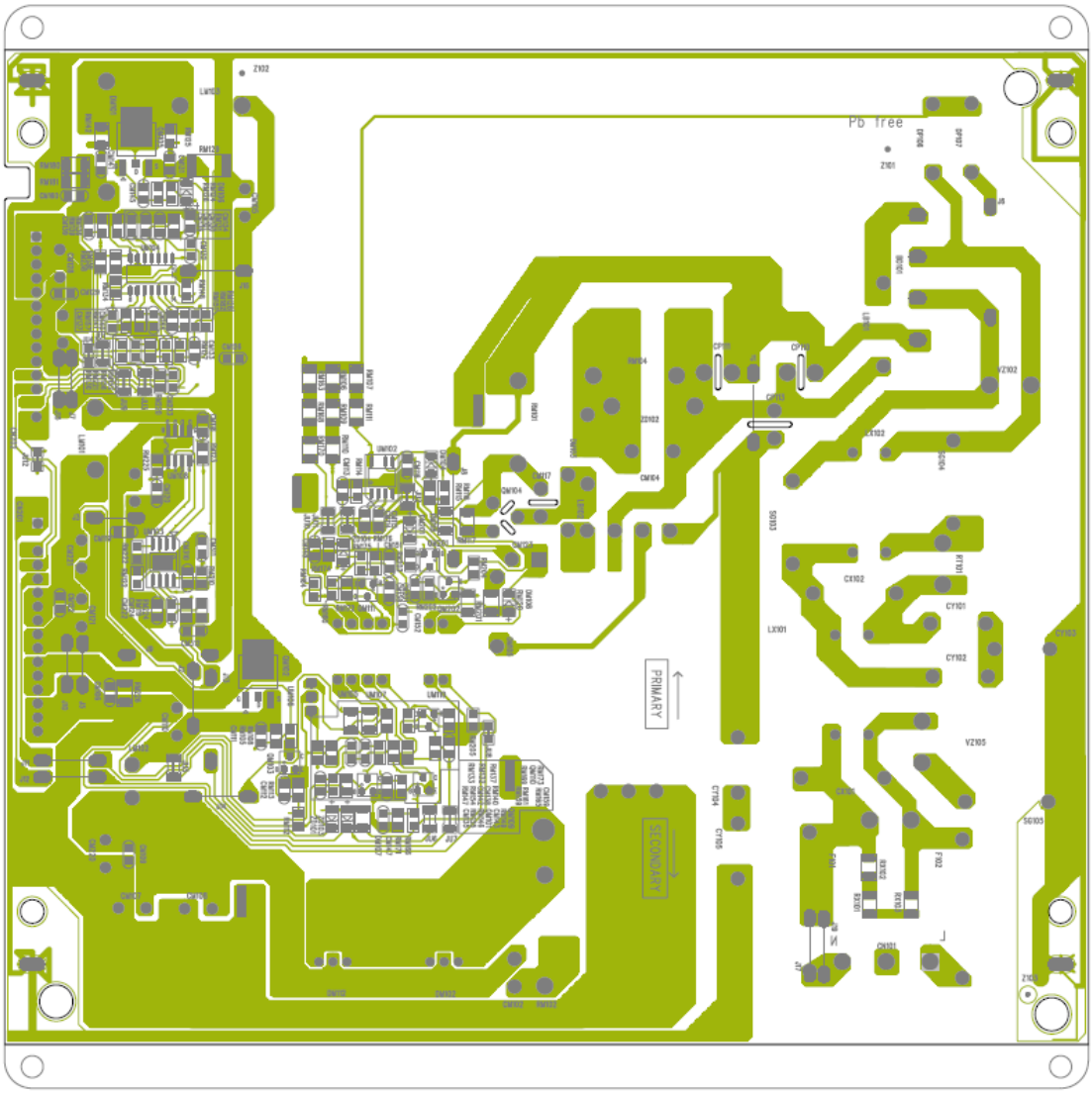


[2]POWER SCHEMATIC DIAGRAM- POWER BOARD WITH TOP/BOTTOM VIEW

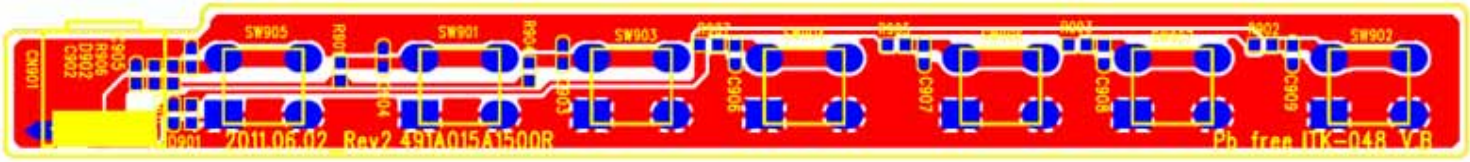
Top Layer



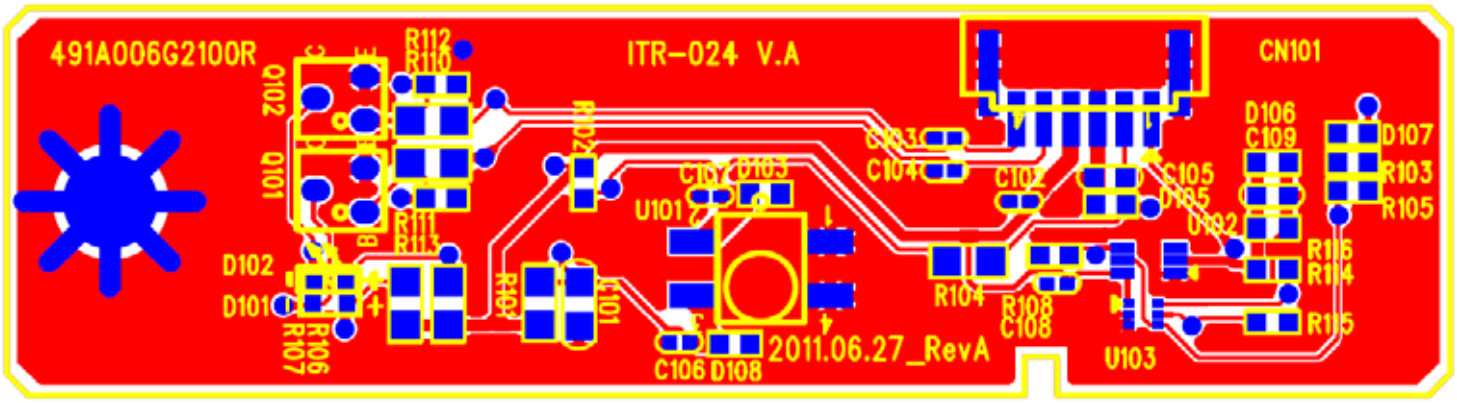
Bottom Layer



[3]KEY UNIT PRINTED WIRING BOARD



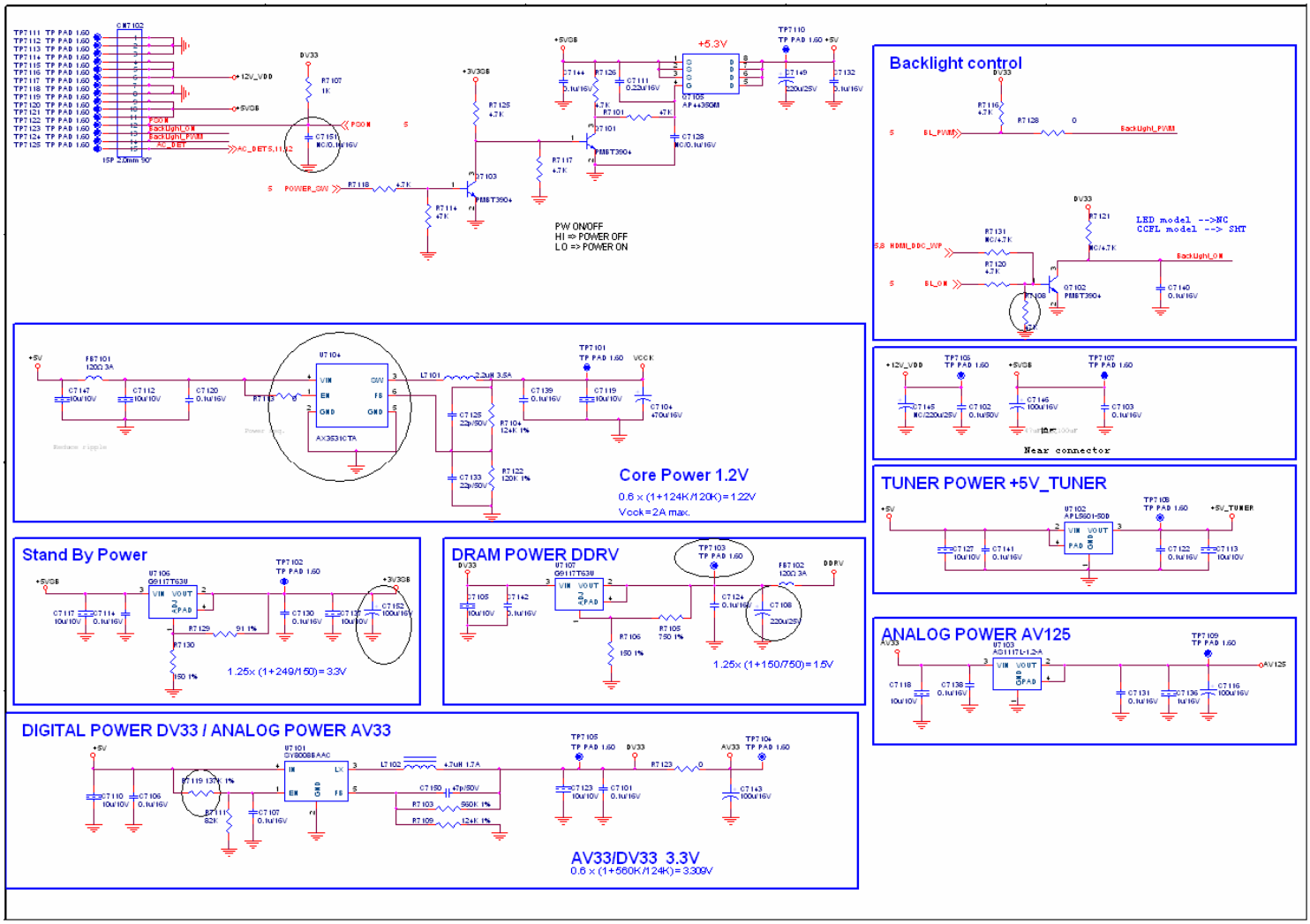
[4] IR UNIT PRINTED WIRING BOARD



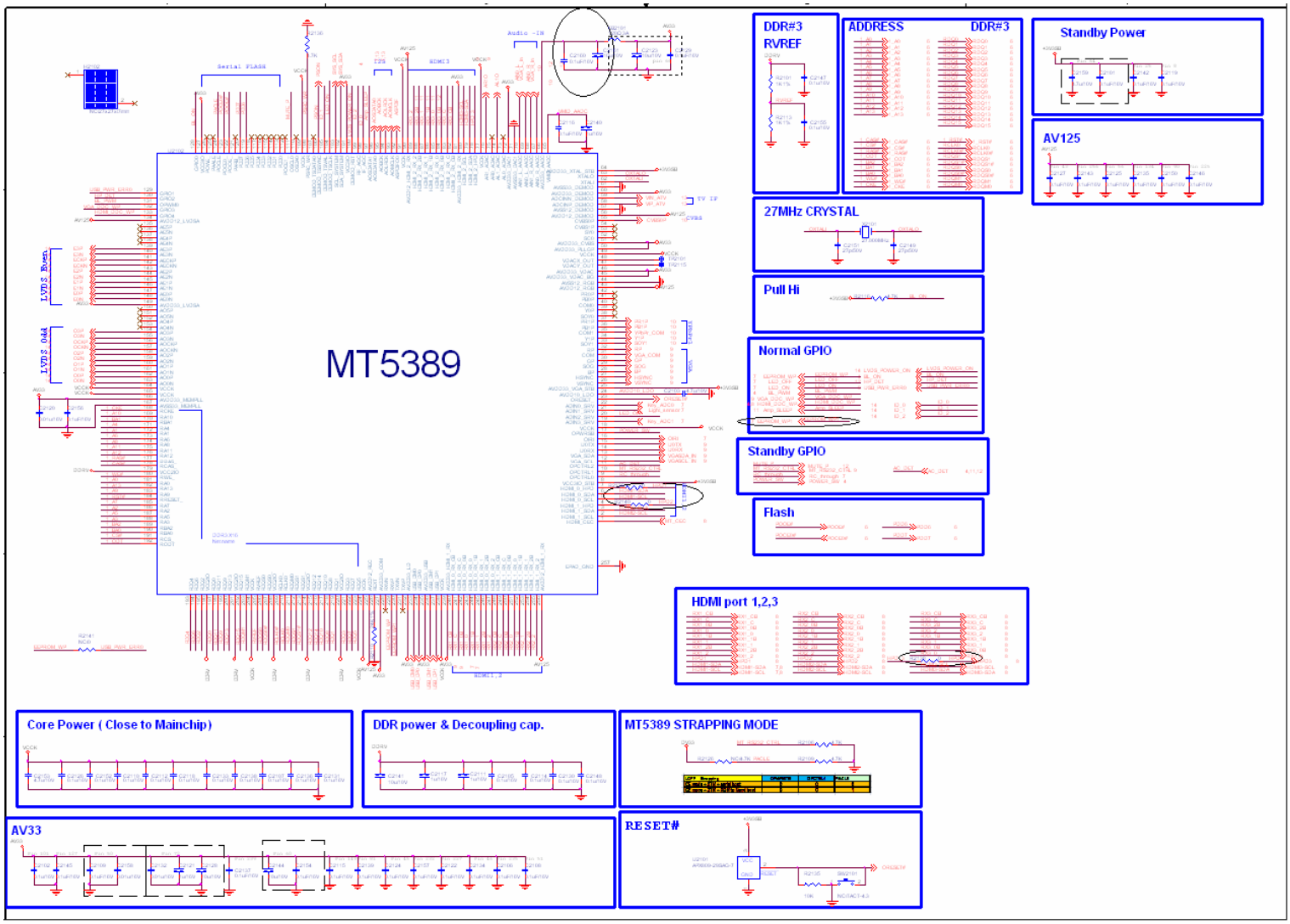
CHAPTER 8.SCHEMATIC DIAGRAM

[1]MAIN SCHEMATIC DIAGRAM

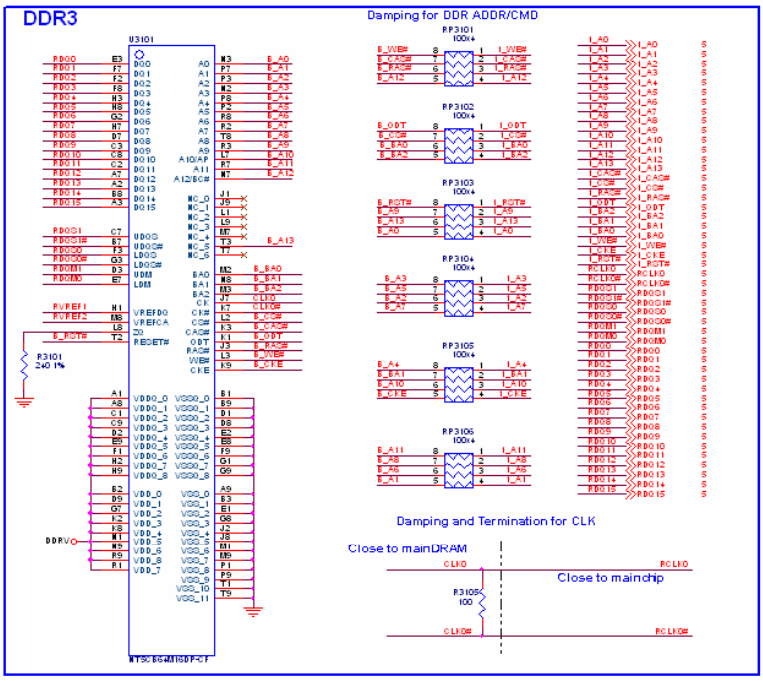
01 System POWER

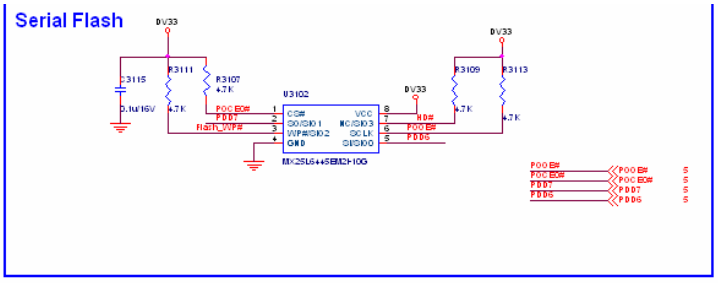


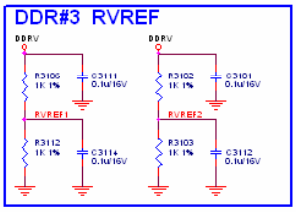
02 MT5389

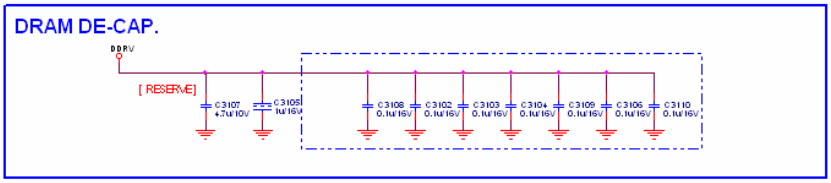

MT5389
DDR#3
RVREF
ADDRESS
DDR#3
Standby Power
AV125
27MHz CRYSTAL
Pull Hi
Normal GPIO
Standby GPIO
Flash
HDMI port 1,2,3
Core Power (Close to Mainchip)
DDR power & Decoupling cap.
MT5389 STRAPPING MODE
AV33
RESET#

03 DDR3 DRAM/Flash.

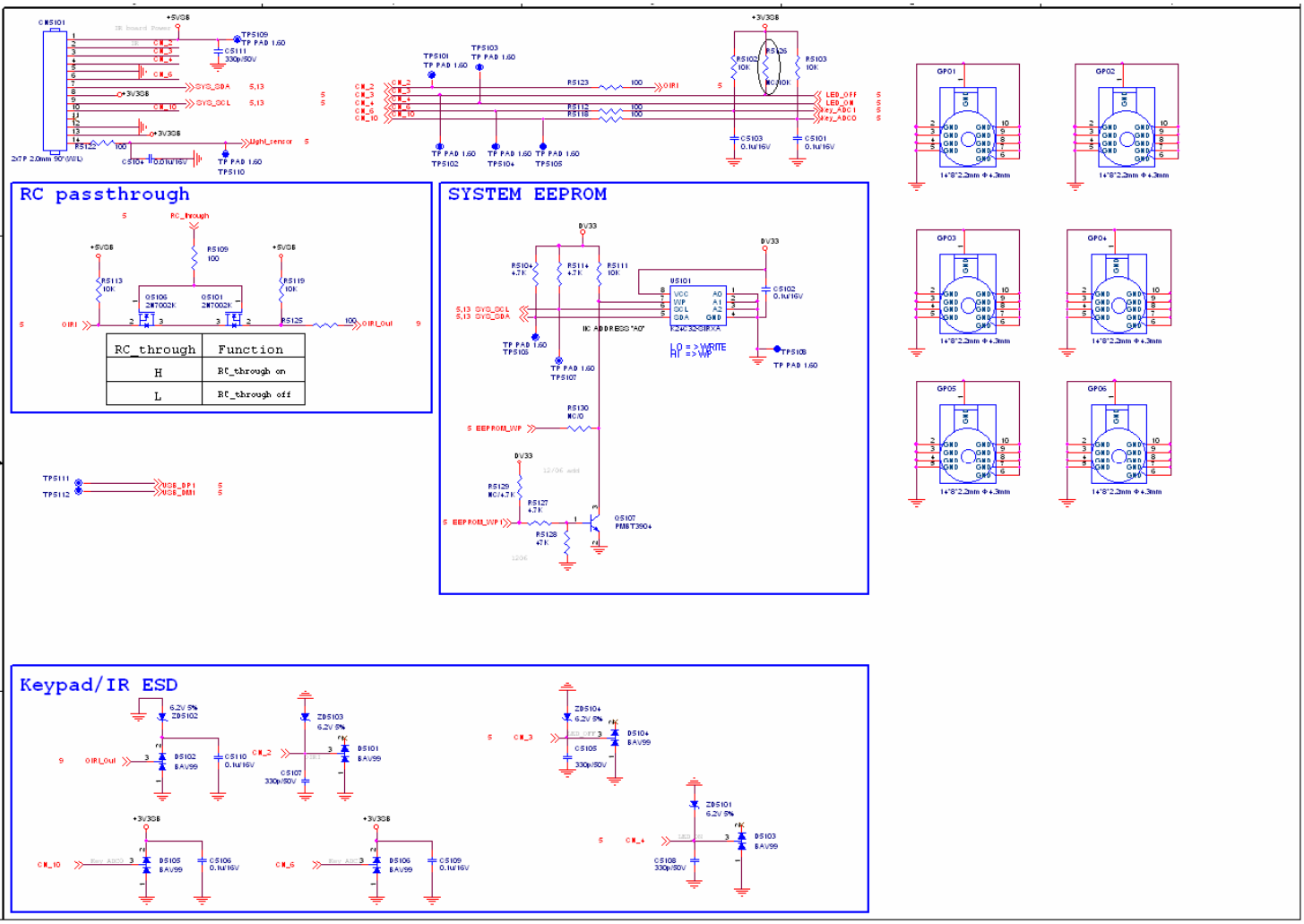




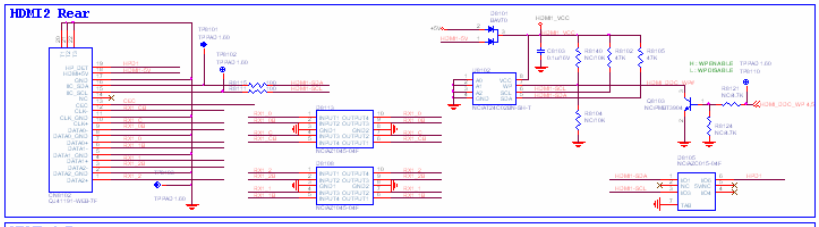


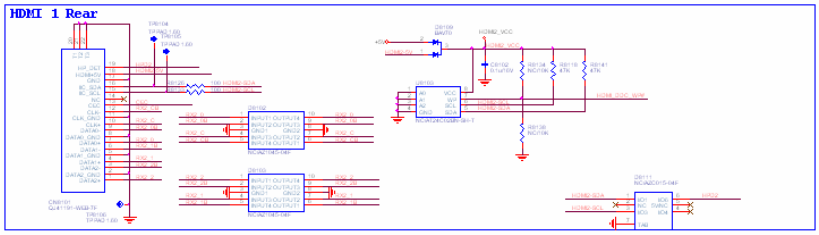


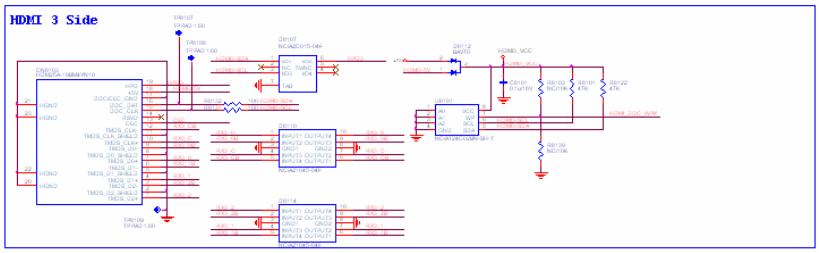
04 Peripheral / IR/Keypad /ESD

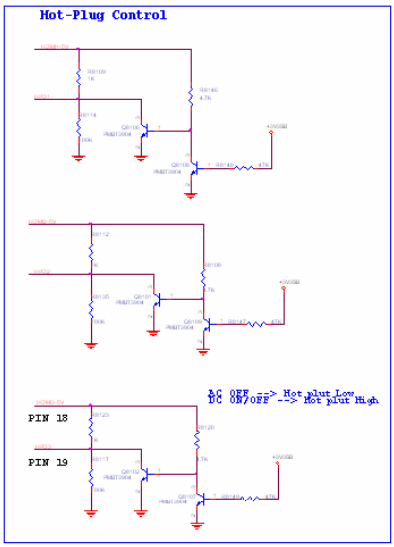


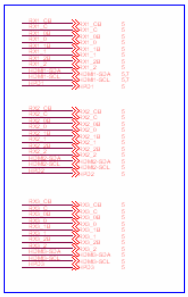
05 HDMI

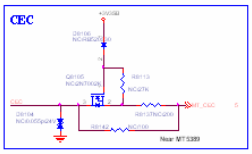

HDMI2 Rear


HDMI 1 Rear

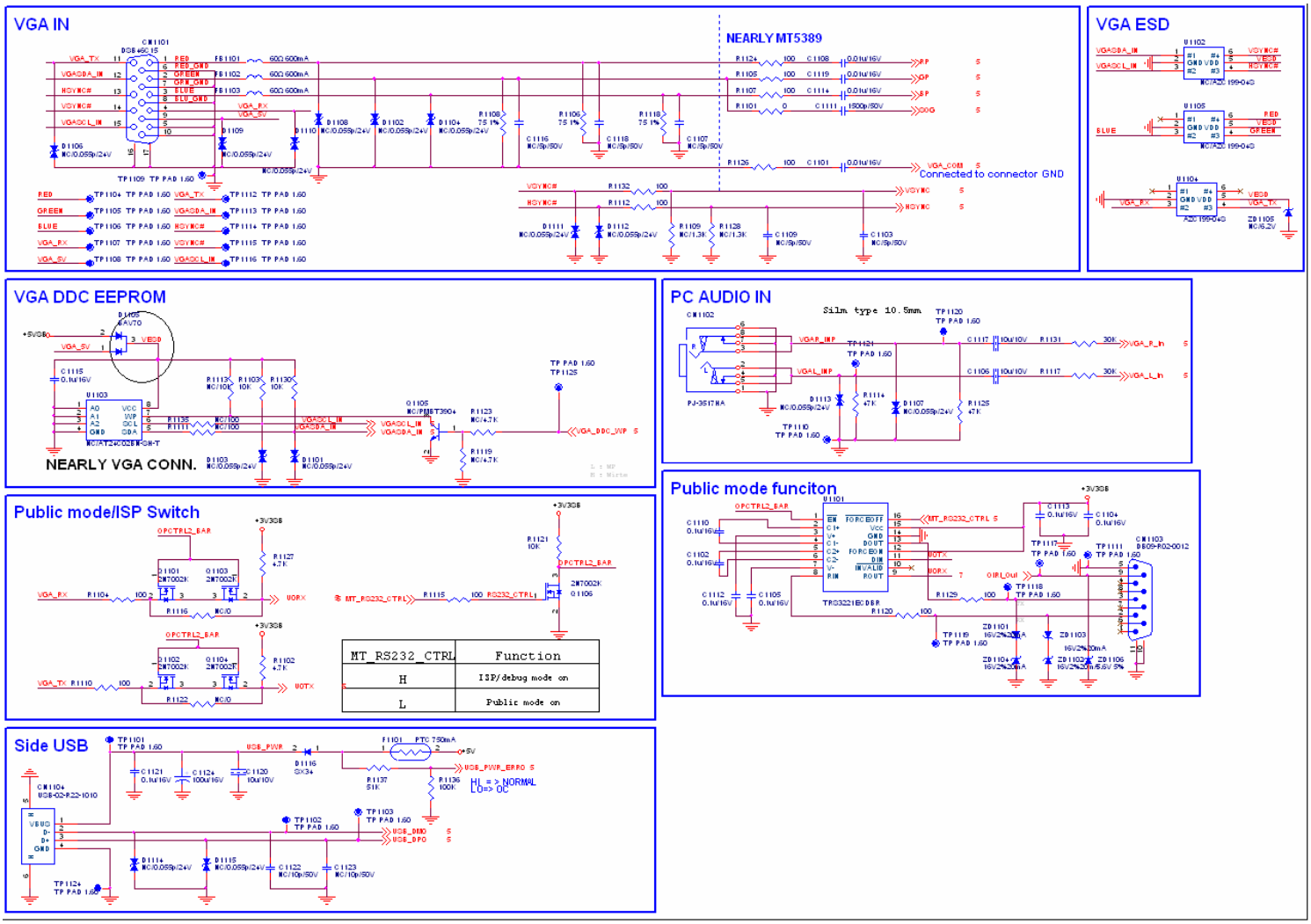

HDMI 3 Side


Hot-Plug Control
AC OFF --> Hot plut Low
DC ON/OFF --> Hot plut High
PIN 18
PIN 19

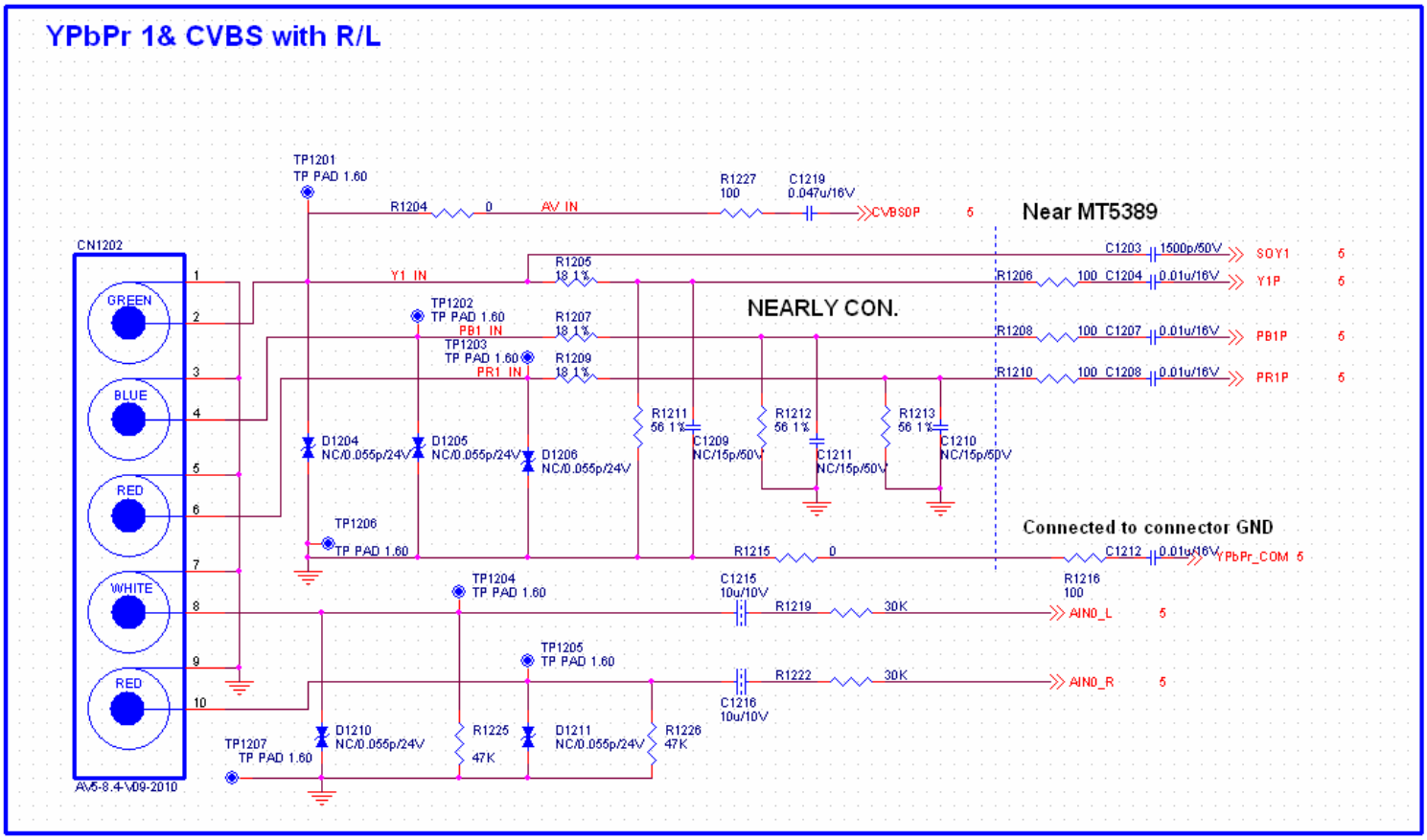



CEC

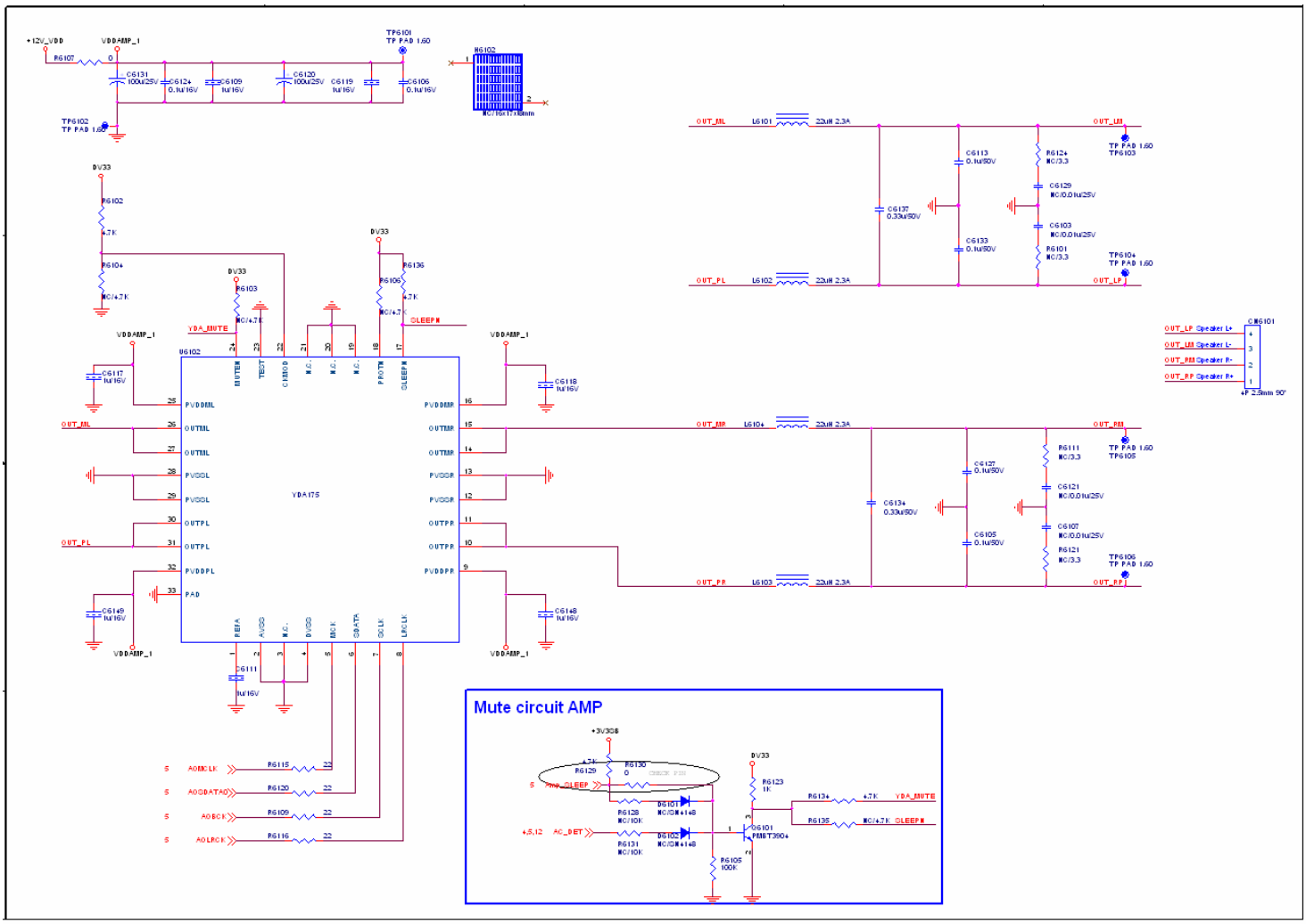
06 VGA/RS-232/USB



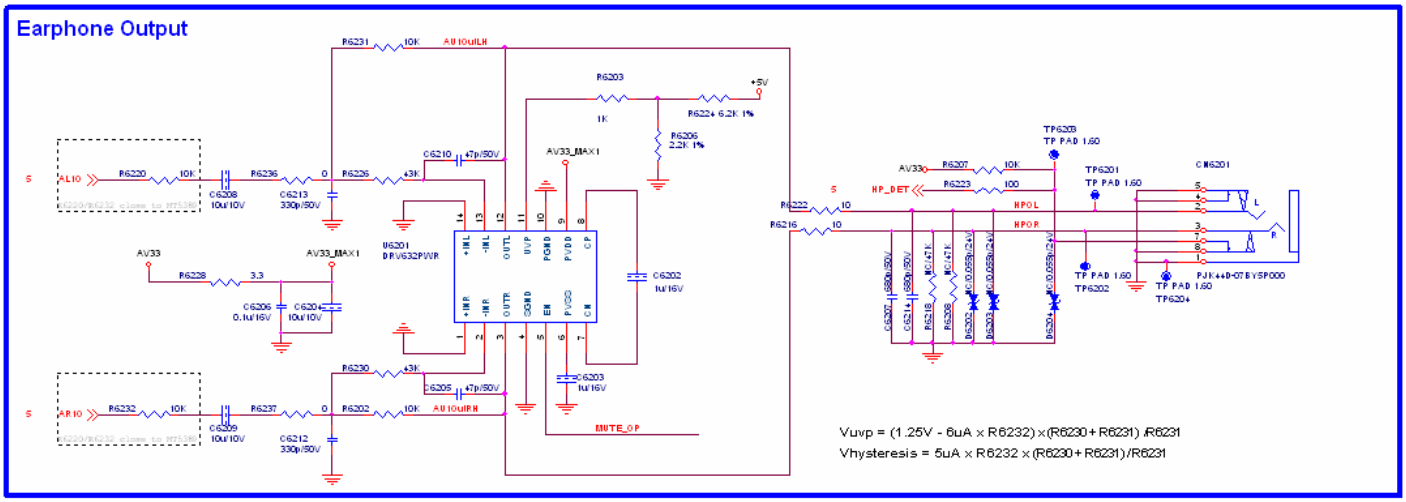
07 YPbPr

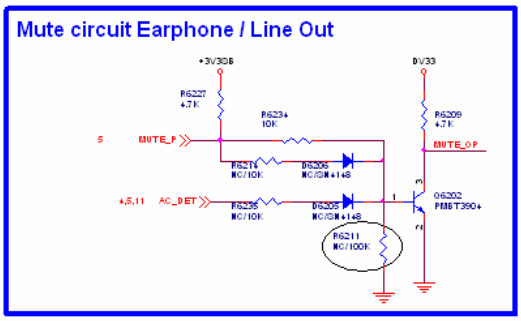

YPbPr 1& CVBS with R/L
CN1202
GREEN
BLUE
RED
WHITE
RED
AV5-8.4-V09-2010
TP1201
TP PAD 1.60
R1204
0
AV IN
R1227
100
C1219
0.047u/16V
CVBSOP
5
Near MT5389
Y1 IN
R1205
18 1%
C1203
1500p/50V
SOY1
R1206
100
C1204
0.01u/16V
Y1P
NEARLY CON.
TP1202
TP PAD 1.60
PB1 IN
R1207
18 1%
R1208
100
C1207
0.01u/16V
PB1P
TP1203
TP PAD 1.60
PR1 IN
R1209
18 1%
R1210
100
C1208
0.01u/16V
PR1P
R1211
56 1%
R1212
56 1%
R1213
56 1%
C1209
NC/15p/50V
C1211
NC/15p/50V
C1210
NC/15p/50V
D1204
NC/0.055p/24V
D1205
NC/0.055p/24V
D1206
NC/0.055p/24V
TP1206
TP PAD 1.60
Connected to connector GND
R1215
0
C1212
0.01u/16V
YPbPr_COM
TP1204
TP PAD 1.60
C1215
10u/10V
R1219
30K
R1216
100
AIN0_L
TP1205
TP PAD 1.60
R1222
30K
AIN0_R
C1216
10u/10V
TP1207
TP PAD 1.60
D1210
NC/0.055p/24V
R1225
47K
D1211
NC/0.055p/24V
R1226
47K

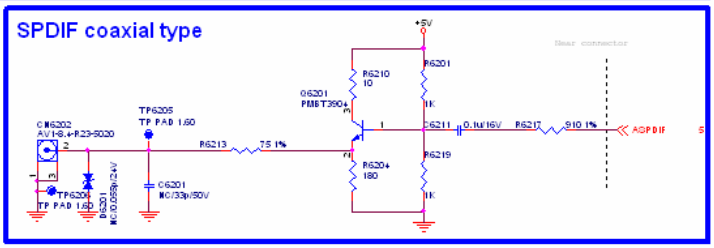
08 Audio amp.


Mute circuit AMP
YDA175
OUT_ML
OUT_PL
OUT_MP
OUT_PP
OUT_MR
OUT_PR
OUT_LP Speaker L+
OUT_LM Speaker L-
OUT_RM Speaker R-
OUT_RP Speaker R+
DV33
VDDAMP_1
SLEEPM
YDA_MUTE

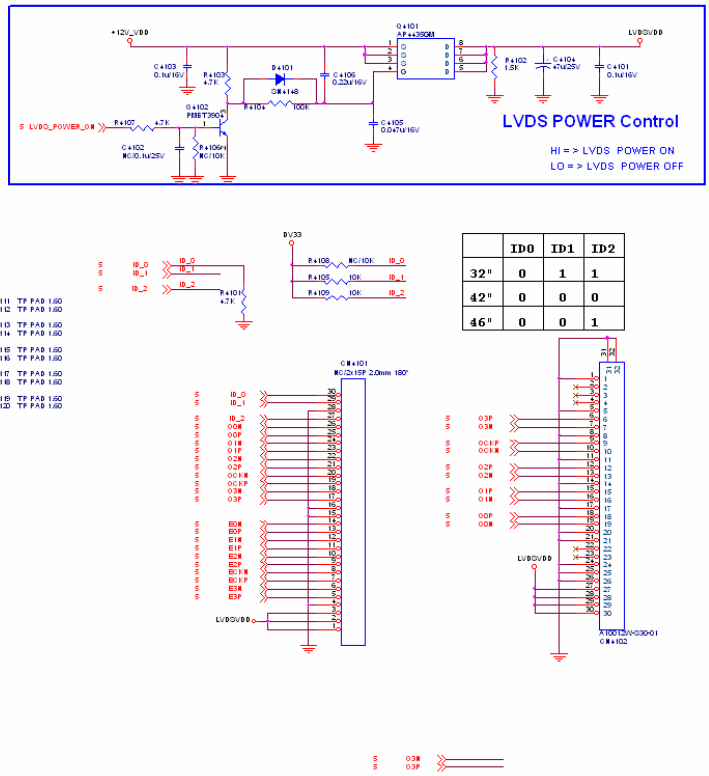
09 Headphone/ line out /SPDIF





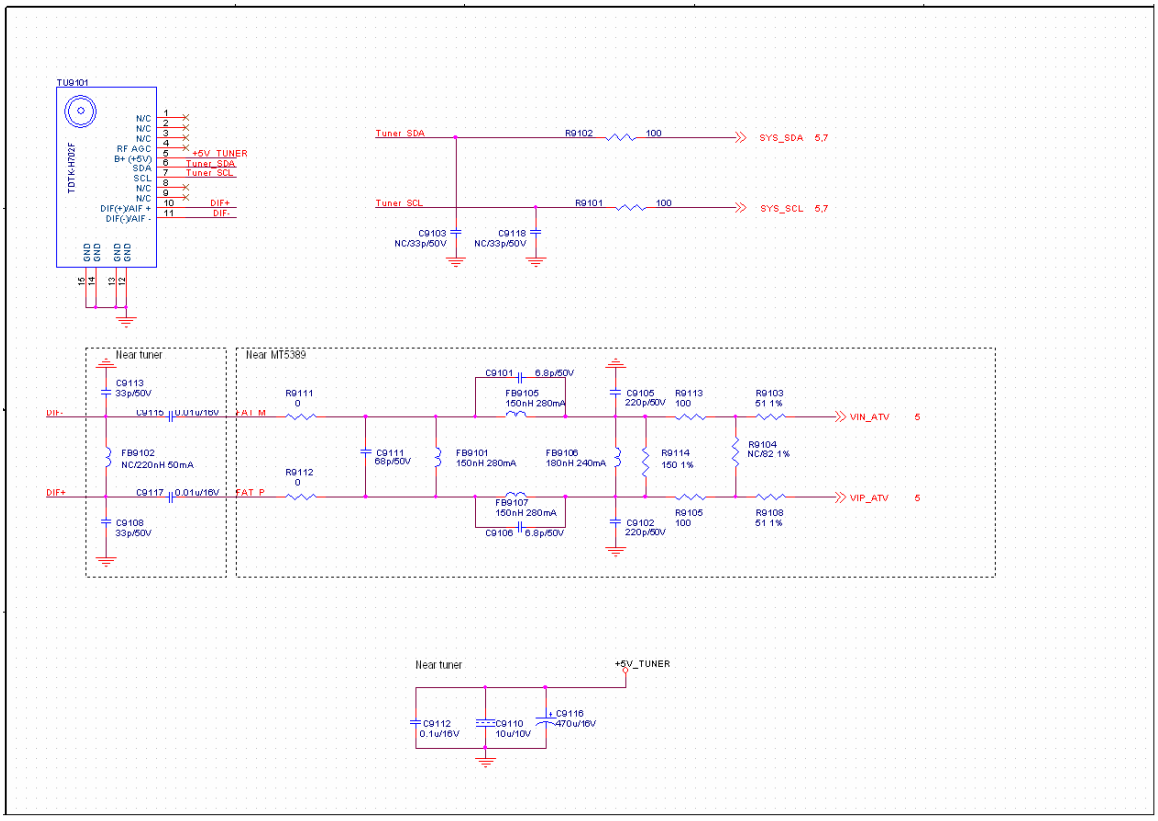


10 LVDS



	ID0	ID1	ID2
32"	0	1	1
42"	0	0	0
46"	0	0	1

11 Tuner



[2]POWER SCHEMATIC DIAGRAM

1) AC Input and EMI Filter:(fig.7)

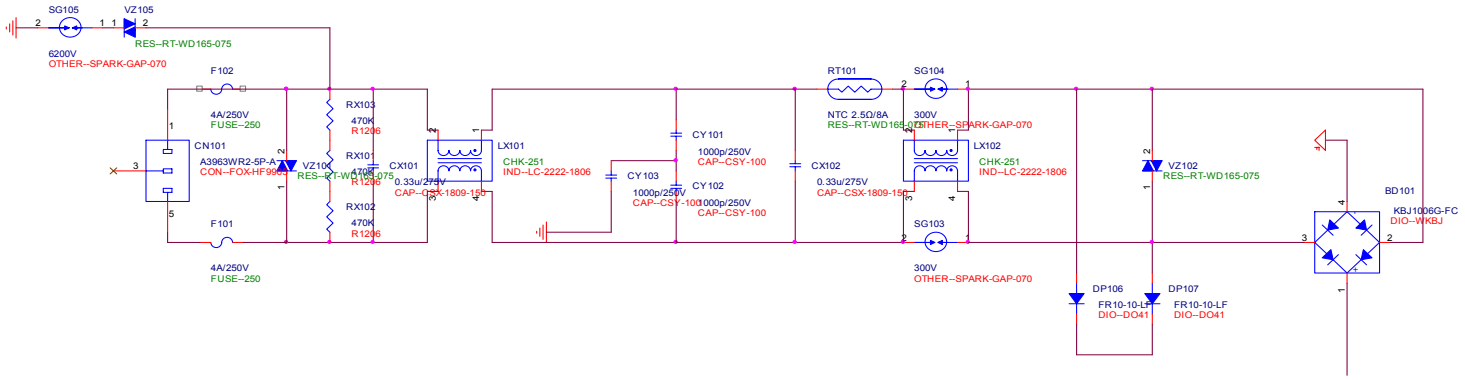
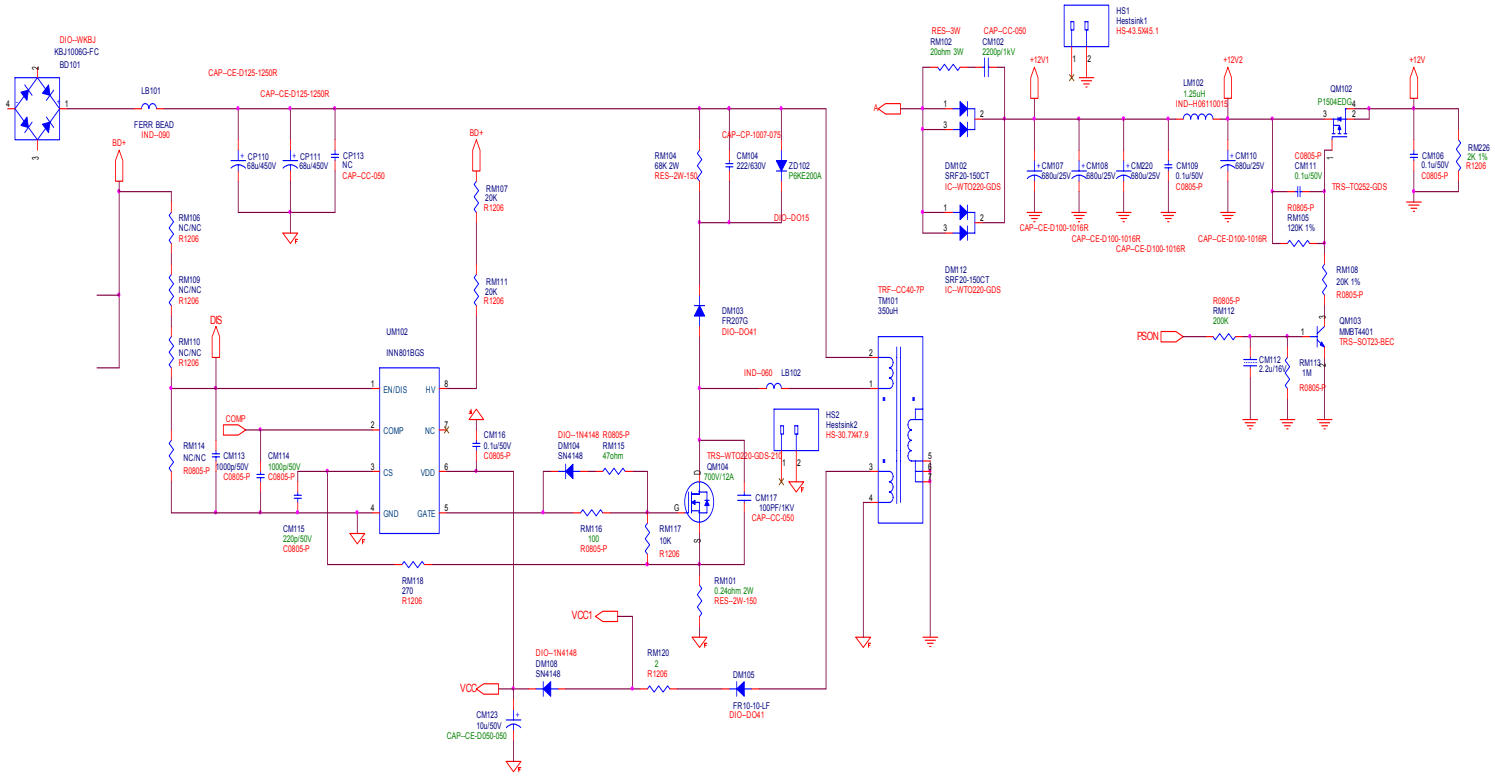


Fig.7

CN101 is a connector for connecting AC Power. F101&F102 are fuse to protect all the circuit AC. Input voltage is single 120V. CY101, CY102, CY103 are used high frequency noise of primary between common GND.LX101,LX102,CX101, CX102 is used to filter low frequency noise. RX101, RX102 and RX103 are used to discharge CX101 and CX102 remnants voltage

2) Standby Control&DC-DC&ACD Circuit:(fig.8)

Fig.8



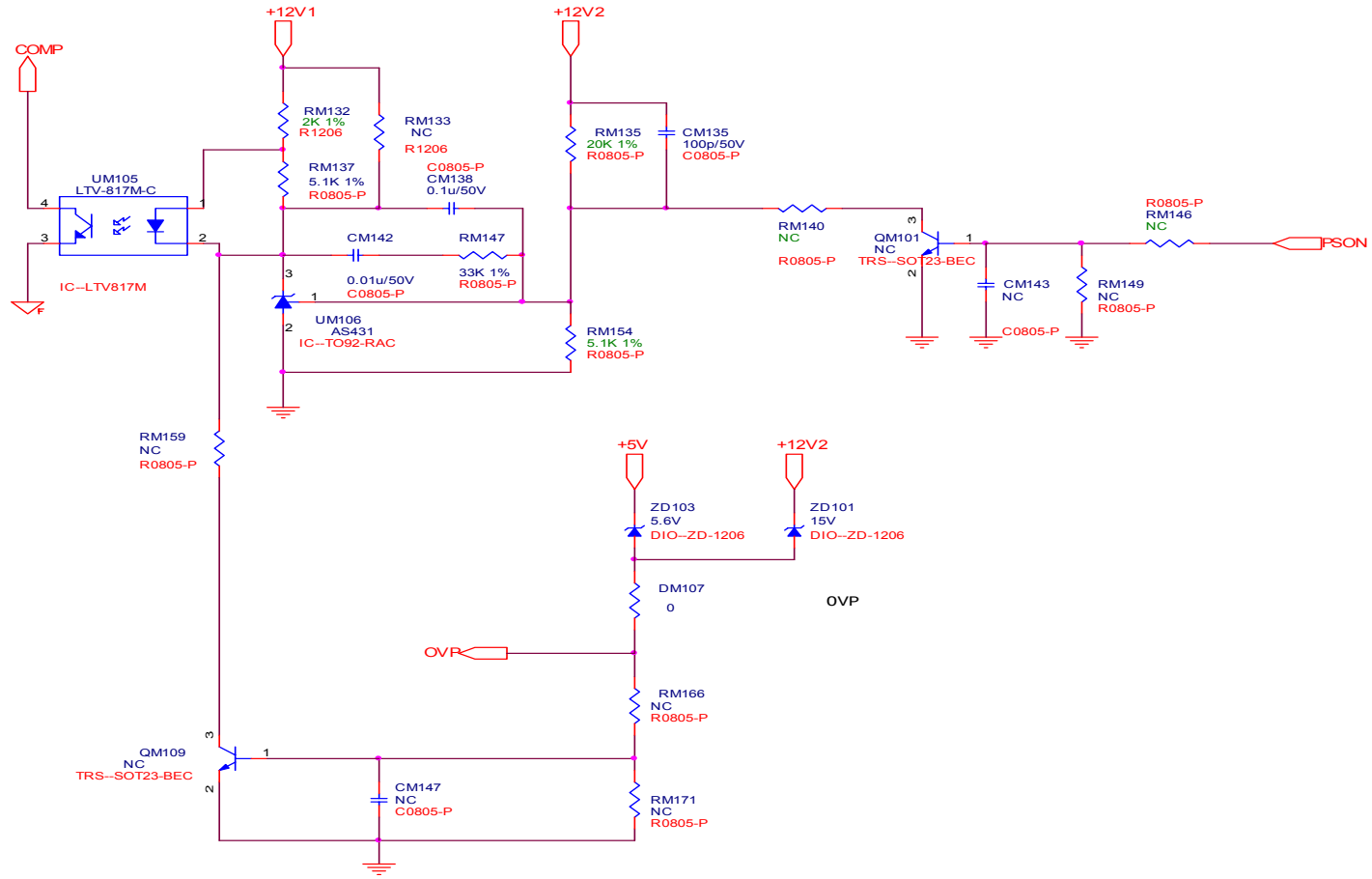
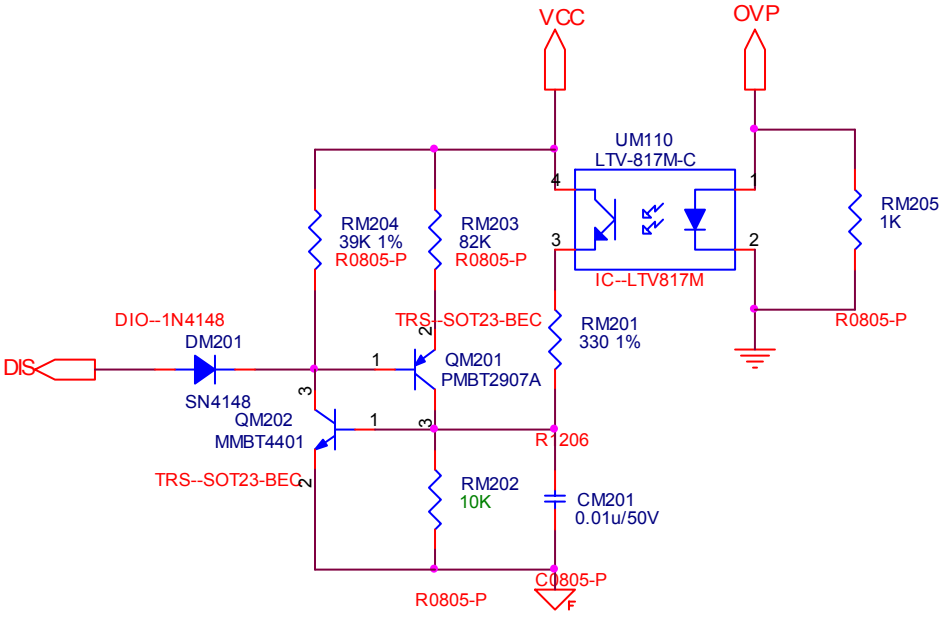
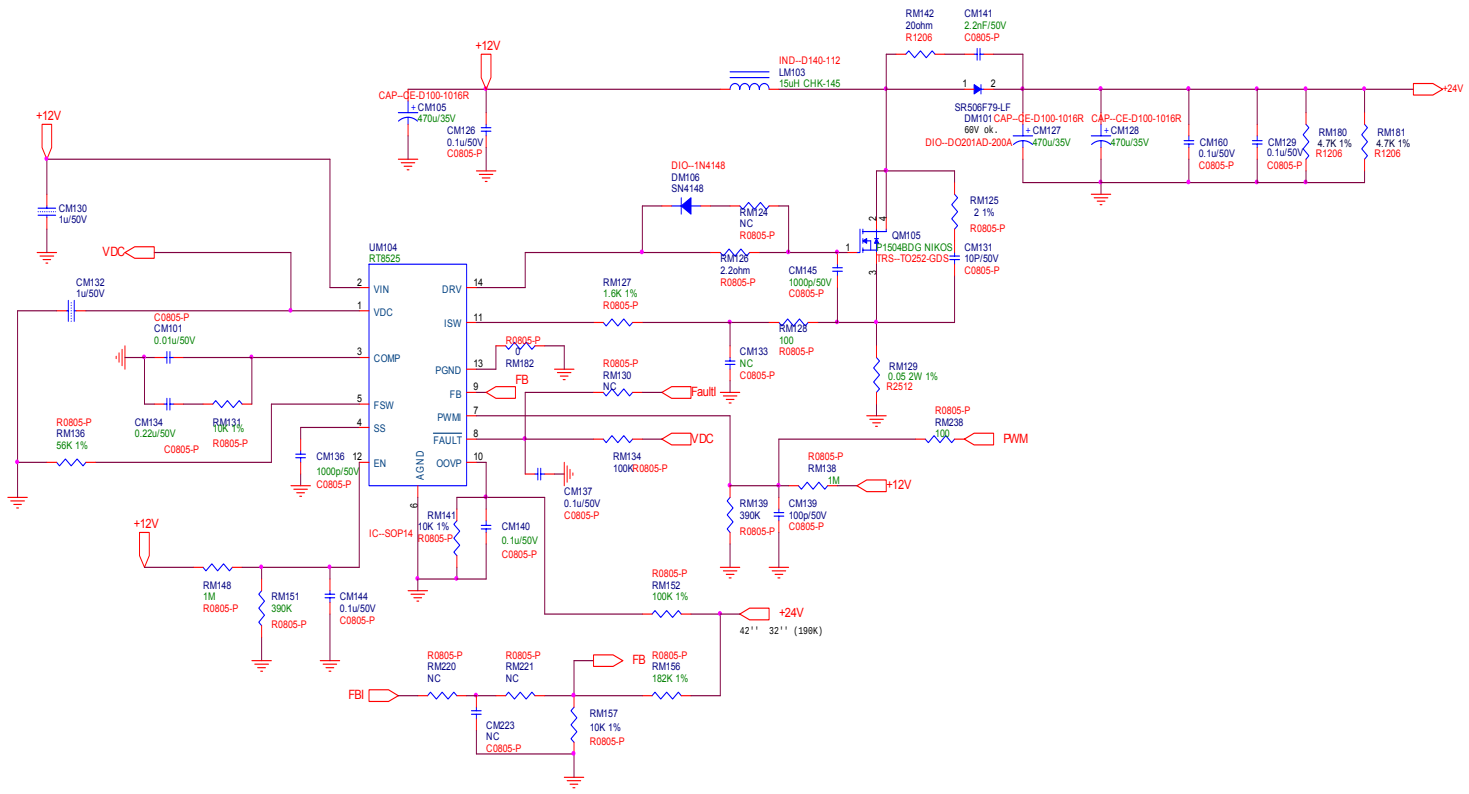
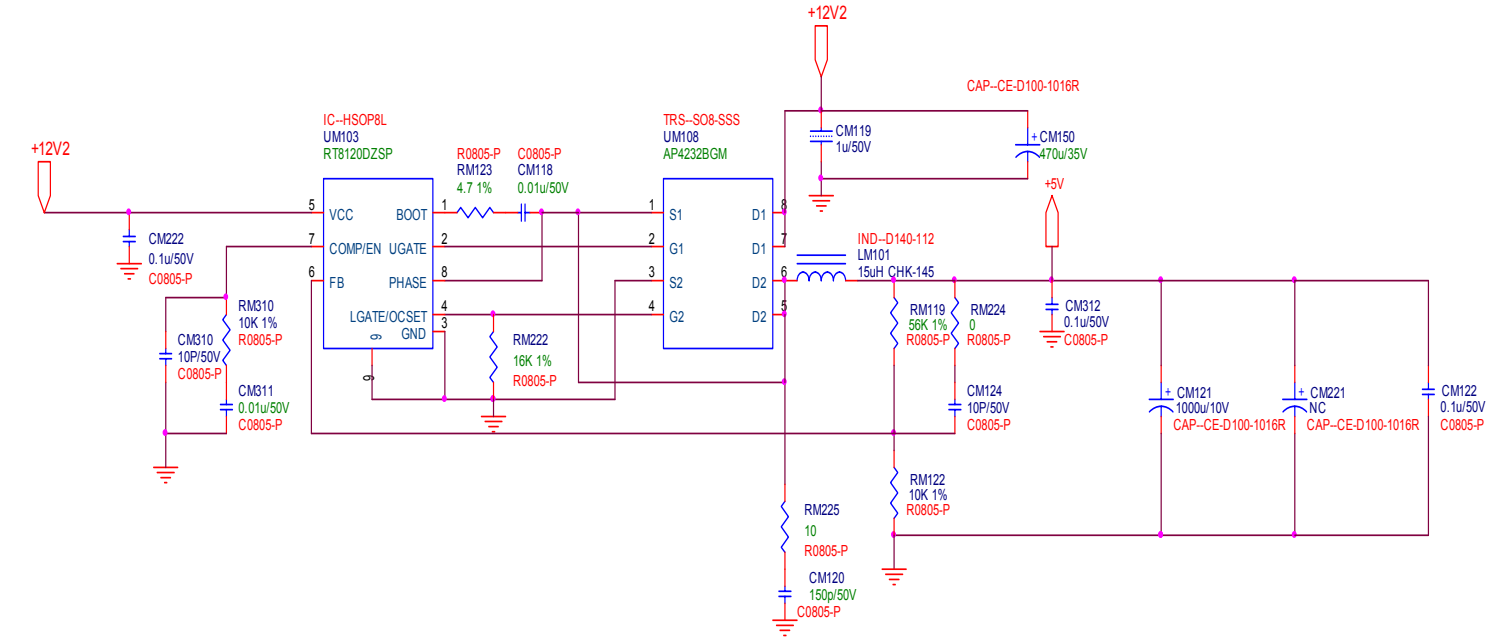
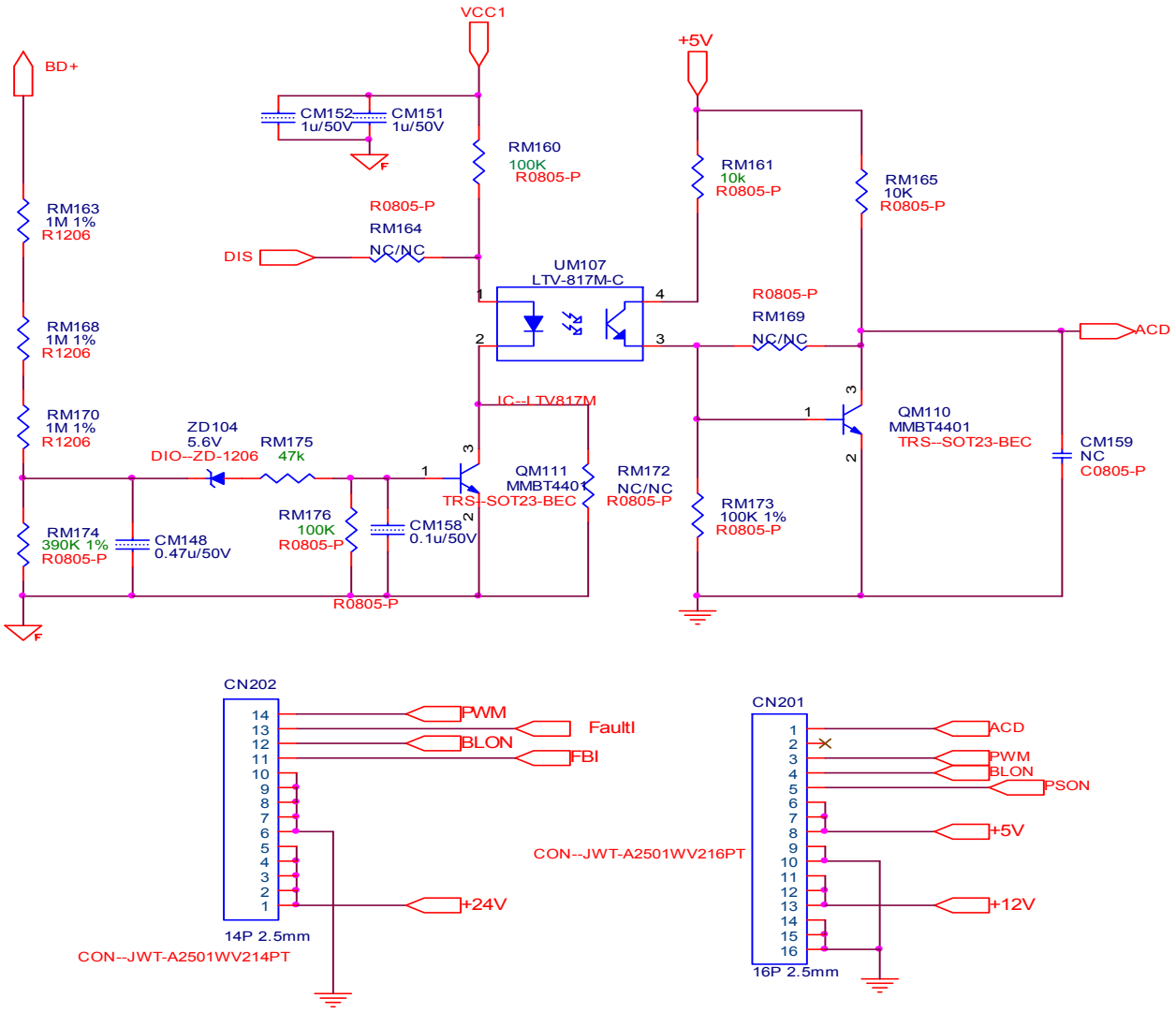

+12V1
+12V2
COMP
RM132
2K 1%
R1206
RM133
NC
R1206
C0805-P
CM138
0.1u/50V
RM137
5.1K 1%
R0805-P
UM105
LTV-817M-C
IC--LTV817M
CM142
RM147
0.01u/50V
C0805-P
33K 1%
R0805-P
UM106
AS431
IC--TO92-RAC
RM135
20K 1%
R0805-P
CM135
100p/50V
C0805-P
RM140
NC
R0805-P
QM101
NC
TRS--SOT23-BEC
CM143
NC
C0805-P
RM149
NC
R0805-P
R0805-P
RM146
NC
PSON
RM154
5.1K 1%
R0805-P
RM159
NC
R0805-P
+5V
+12V2
ZD103
5.6V
DIO--ZD-1206
ZD101
15V
DIO--ZD-1206
DM107
0
0VP
OVP
RM166
NC
R0805-P
QM109
NC
TRS--SOT23-BEC
CM147
NC
C0805-P
RM171
NC
R0805-P

Fig.9


VCC
OVP
UM110
LTV-817M-C
IC--LTV817M
RM204
39K 1%
R0805-P
RM203
82K
R0805-P
RM205
1K
R0805-P
DIO--1N4148
DM201
SN4148
DIS
TRS--SOT23-BEC
QM201
PMBT2907A
RM201
330 1%
QM202
MMBT4401
R1206
TRS--SOT23-BEC
RM202
10K
CM201
0.01u/50V
C0805-P
R0805-P


+12V
VDC
UM104
RT8525
VIN
VDC
COMP
FSW
SS
EN
DRV
ISW
PGND
FB
PWMI
FAULT
OOVP
AGND
IC--SOP14
IND--D140-112
LM103
15uH CHK-145
CAP--CE-D100-1016R
+24V
SR506F79-LF
DM101
DIO--DO201AD-200A
DIO--1N4148
DM106
SN4148
QM105
P1504BDG NIKOS
TRS--TO252-GDS
FB
FaultI
PWM
42'' 32'' (190K)


+12V2
IC--HSOP8L
UM103
RT8120DZSP
VCC
BOOT
COMP/EN
UGATE
FB
PHASE
LGATE/OCSET
GND
TRS--SO8-SSS
UM108
AP4232BGM
S1
S2
G1
G2
D1
D2
CAP--CE-D100-1016R
IND--D140-112
LM101
15uH CHK-145
+5V



BD101 is a rectifier in which there are 4 build-in diodes, inverting AC to DC. CP110,CP111 is used to smooth the wave from rectifier. FR801 is a fuse resistor to protect the following circuit when inrush current is too large.

UM102 is a current-mode PWM controller with excellent power-saving operation, It features a high-voltage current source to directly supply the startup current from two half-wave rectifier diodes further to provide lossless startup circuit. Max start-up current for UM102 is 10mA, When current flow from two half-wave rectifier diodes through RM107 and RM111 gets to HV pin to start up UM102, Meanwhile, the VCC supply current is as low as 550uA thus most of the HV current is utilized to change the VCC capacitor CM123, When Vcc (Pin6) reaches UVLO(on) threshold ,The UM102 is powered on to start issuing the gate drive signal , the high-voltage current source is then disabled ,and the Vcc supply current is provided from the auxiliary winding of the transformer PIN3.

UM102 Pin3 is protection PIN.RM101 are sense circuit, UM102 detects the MOSFET current, from the CS in. When CS pin over 0.73V, the UM102 will enter auto-recovery type protection, Presenting a hiccup mode. The gate-out will not resume switching until OCP falls below 0.67V.

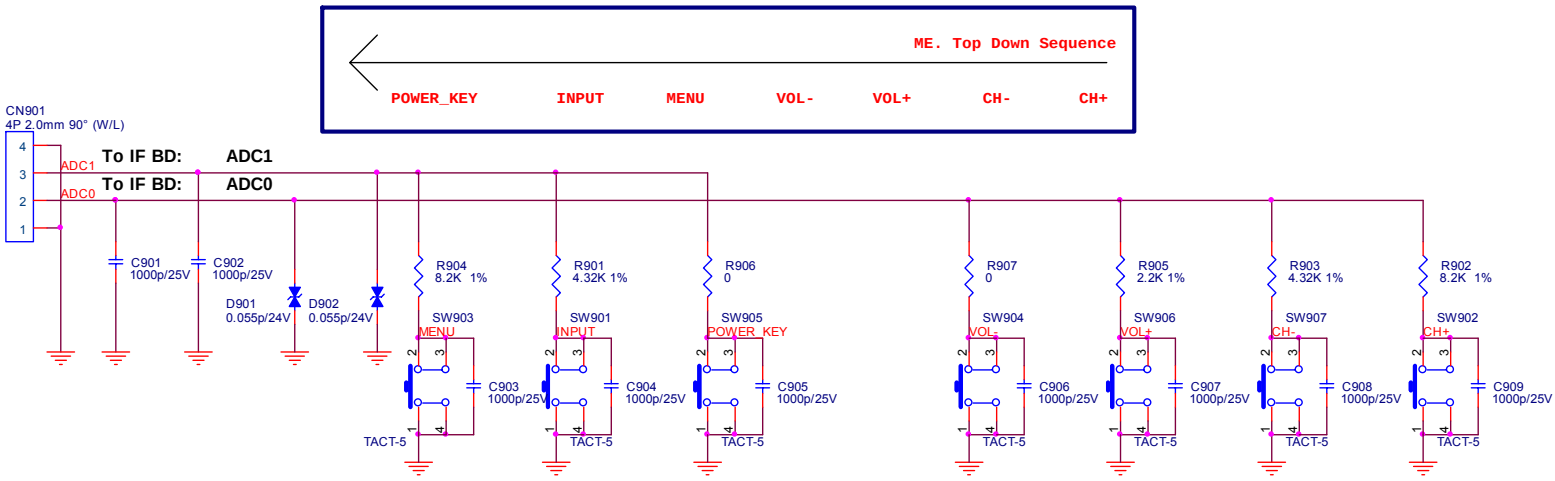
UM102 Pin1 is OVP protection PIN.It receives ON/OFF signal from secondary scalar

controller. If the voltage of EN/DIS pin exceeds the enable threshold voltage 1.2V or EN/DIS pin is floating, the system will be start-up. However, if the voltage of EN/DIS voltage is below the enable threshold voltage 0.8V, the system will be shut down completely and consume almost zero power. For low standby power application, it's important to make current in this path as small as possible. The deglitch delay time of the disable function is about 20us. The internal bias current of EN/DIS is 2uA. For low power consumption, it's a high impedance pin. Therefore, proper layout is necessary for noise immunity. If capacitor is unavoidable, capacitor value should be carefully calculated and not to influence system operation.

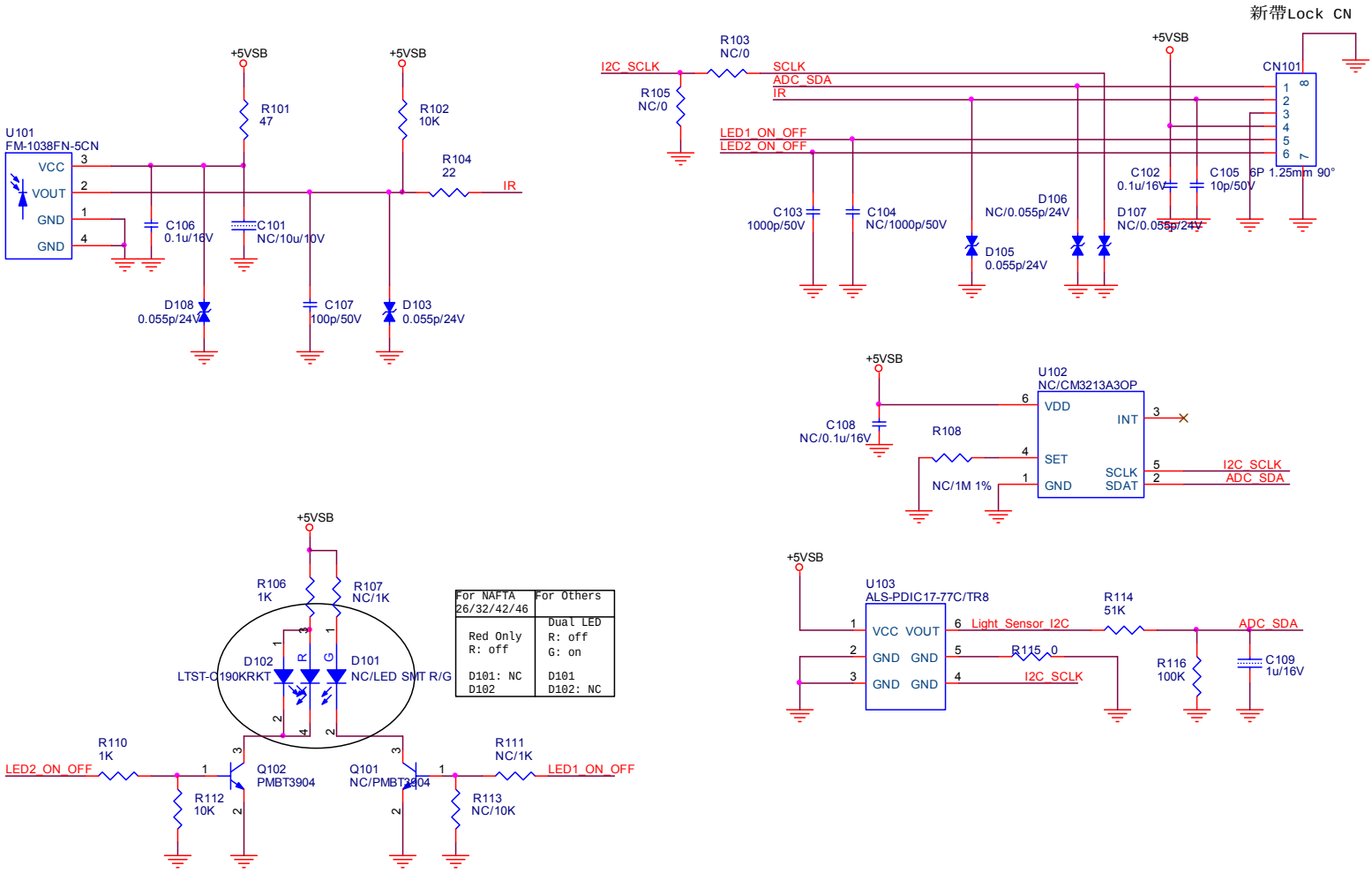
UM102 control 12V output , UM103, UM108, LM101 construct buck circuit to output 5V. UM104, LM103 , QM105 construct buck circuit to output 12V.

ACD circuit is to make the backlight shutdown in time as son as AC input turn off .When AC input turn on , the ACD signal will output a low voltage, then the main board receive this low voltage to make backlight work normally. When AC input turn off , the ACD signal will output a high voltage, then the main board receive this high voltage to make backlight shutdown.

[3]KEY SCHEMATIC DIAGRAM



[4]IR SCHEMATIC DIAGRAM



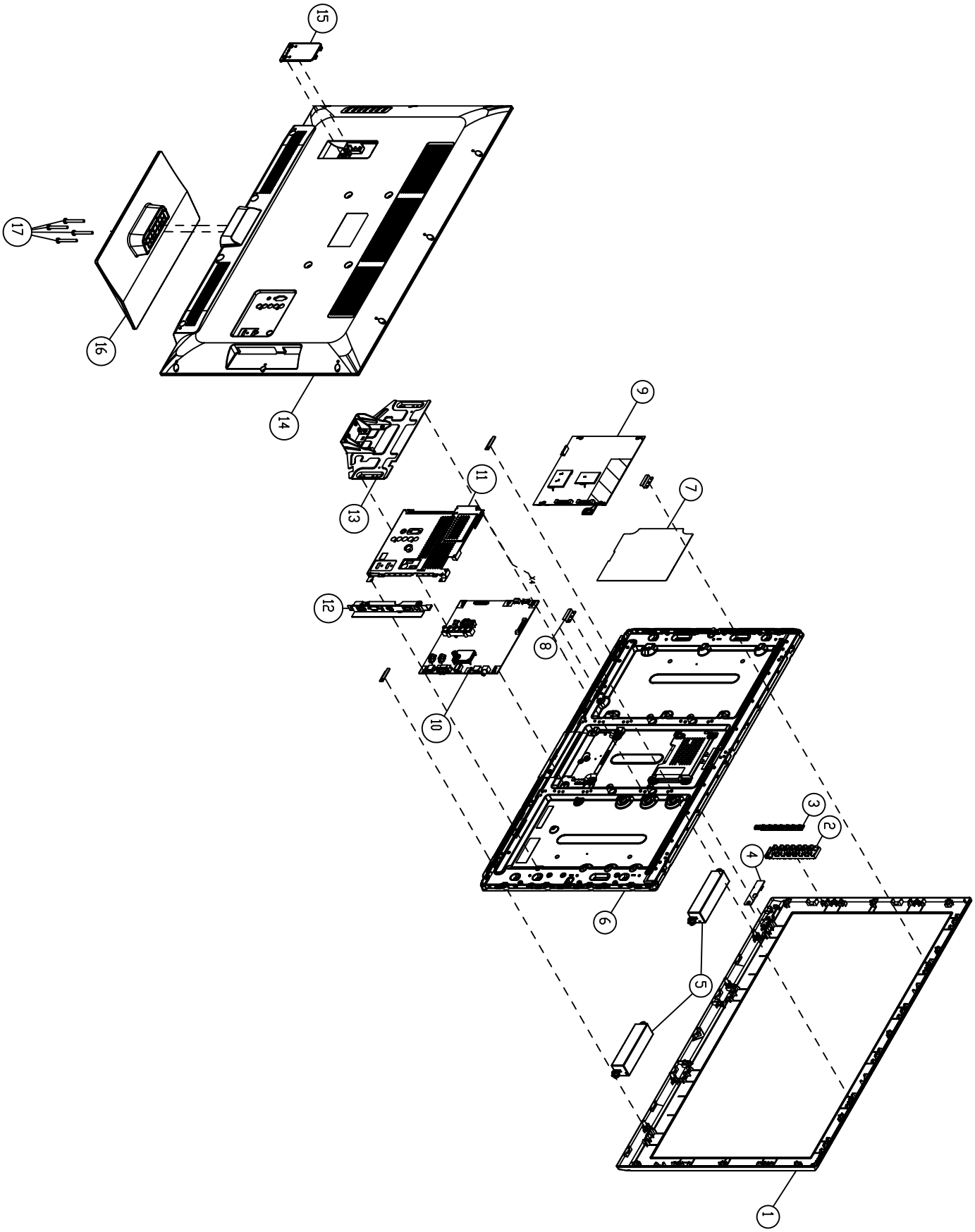
CHAPTER 9.PARTS GUIDE

[1]SPARE PARTS LIST

Recommended Spare Parts List					
Material		751202000-600-G			
Region		NA			
Description		LC-32LE440U			
Updated date		2011 年 12 月 15 日			
Item	**Catalog**	**Component no.**	**Object description**	**Usage**	**Photo**
1	Panel	9JY76040NG00531G	LCD Module,TFT,TV,V315B5-LE3,	1	
2	PCBA	9JY0132CTG04100	LC-32LE440U/CTG04,Mother Board	1	
3		9JY0932CTG04000	LC-32LE440U/CTG04,Power Board	1	
4		9JY0332CTG05000	LC-32SV40U/CTG05,Keypad Board	1	
5		9JY0432CTG05000	LC-32SV40U/CTG05,IR Board	1	
6	Cosmetics	9JY01200019577	FRONT BEZEL ASSY,CTG04	1	
7		9JY01200019573	BASE ASSY,CTG04	1	
8		9JY02500012541	NECK SUPPORT ASSY ,CTG04	1	

9		9JY02500012535	SIDE I/O BRACKET ASSY,CTG04	1	
10		9JY01200009937	ASSY BACKCOVER,CTG04	1	
11		9JY01200019574	FUNCTION KEY,CTG04	1	
12		9JY02500012530	IF SHIELDING ,CTL02	1	
13		9JY02500012537	PANEL HOLDER,CTG04	4	
14		9JY01200019663	AC COVER,VT464D	1	
15	Cable	9JY35101M80033TG	LCD Cable Assembly,420mm,+/-10mm,G	1	
16		9JY35101MC0020UG	LCD Cable Assembly,220mm,+/-5mm,G	1	
17		9JY35110FQ0033TG	FFC Cable Assembly,200mm, +/-3mm,1mm,30,G	1	
18		9JY35101MT0020UG	LCD Cable Assembly,850mm, +20/-0mm,G	1	
19		9JY35071BP00600G	AC Power Cable,1.6m+0.10m,+/-50mm, 18AWG,5PIN+2PIN,G	1	
20	Speaker	9JY57020Q100975G	Speaker Unit,6ohm,5W,G, YDT30120N-R001B06	1	
22	Accessory	9JY600153G00886G	Remote Controller, IR,NEC, 8m,G,RC-LCDTV-520	1	
23	Screw	9JY06000013236	SCREW,B,CROSS,M5*44.5,Zn-black	4	

[2]CABINET PARTS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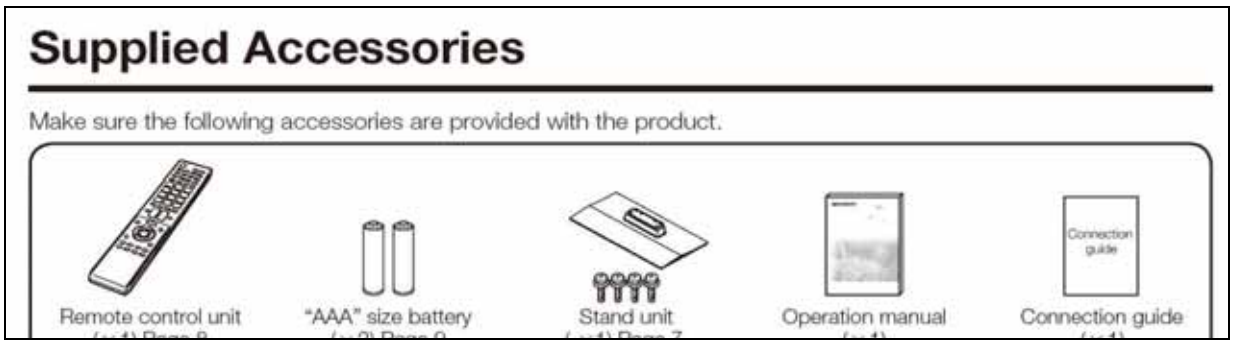
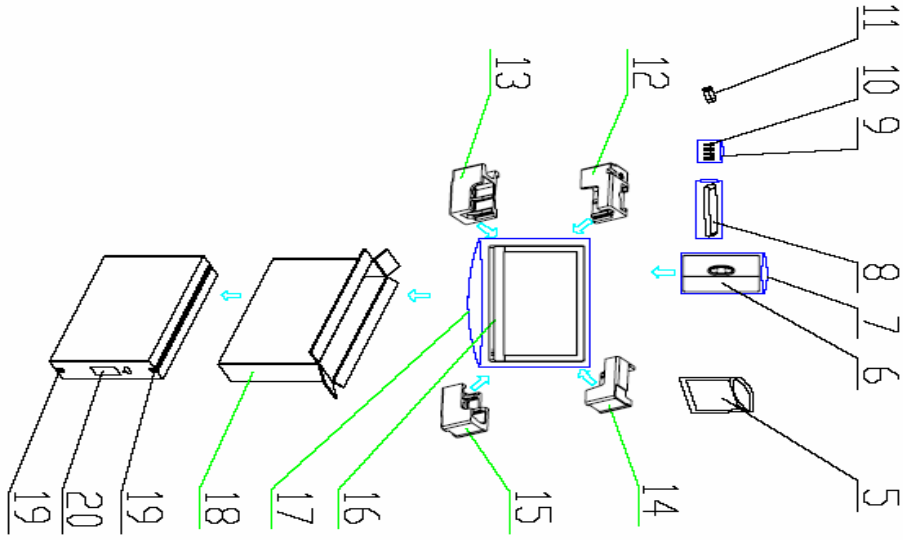
NO	Sharp PN	Description	Q'TY
1	9JY01200019577	FRONT BEZEL ASSY,CTG04	1
2	9JY01200019574	FUNCTION KEY,CTG04	1
3	9JY0332CTG05000	LC-32SV40U/CTG05,Keypad Board	1
4	9JY0432CTG05000	LC-32SV40U/CTG05,IR Board	1
5	9JY57020Q100975G	Speaker Unit,6ohm,5W,G,YDT30120N-R001B06	1
6	9JY76040NG00531G	LCD Module,TFT,TV,V315B5-LE3,	1
7	9JY09000016165	POWER/BD MYLAR,CTG04	1
8	9JY02500012537	PANEL HOLDER,CTG04	7
9	9JY0932CTG04000	LC-32LE440U/CTG04,Power Board	1
10	9JY0132CTG04100	LC-32LE440U/CTG04,Mother Board	1
11	9JY02500012530	IF SHIELDING ,CTL02	1
12	9JY02500012535	SIDE I/O BRACKET ASSY,CTG04	1
13	9JY02500012541	NECK SUPPORT ASSY ,CTG04	1
14	9JY01200009937	ASSY BACKCOVER,CTG04	1
15	9JY01200019663	AC COVER,VT464D	1
16	9JY01200019573	BASE ASSY,CTG04	1
17	9JY06000013236	SCREW,B,CROSS,M5*44.5,Zn-black	4
18	9JY06000013256	SCREW,B,CROSS,T.T-4*10,BLK ,ROHS	26
19	9JY06000013257	SCREW,I,CROSS,T.T-3*5,Zn,ROHS	1
20	9JY06000013261	SCREW,P,CROSS,W/WAS,M3*8,BLK-Zn	4
21	9JY06000013251	SCREW,P,CROSS,W/WAS,M3*6,Zn-Cc	12
22	9JY06000013258	SCREW,P,CROSS,M3*8,Zn	2
23	9JY06000013252	BOLT,#4-40x12.5,Ni ROHS	4
24	9JY06000013259	SCREW,P,CROSS,T.T-3*8,Zn ROHS	4

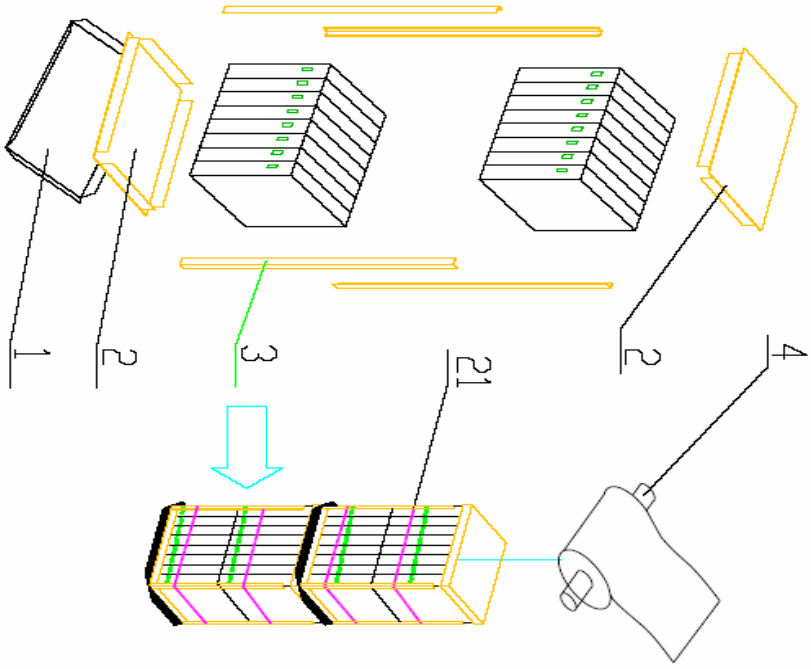
[3]SUPPLIED ACCESSORIES



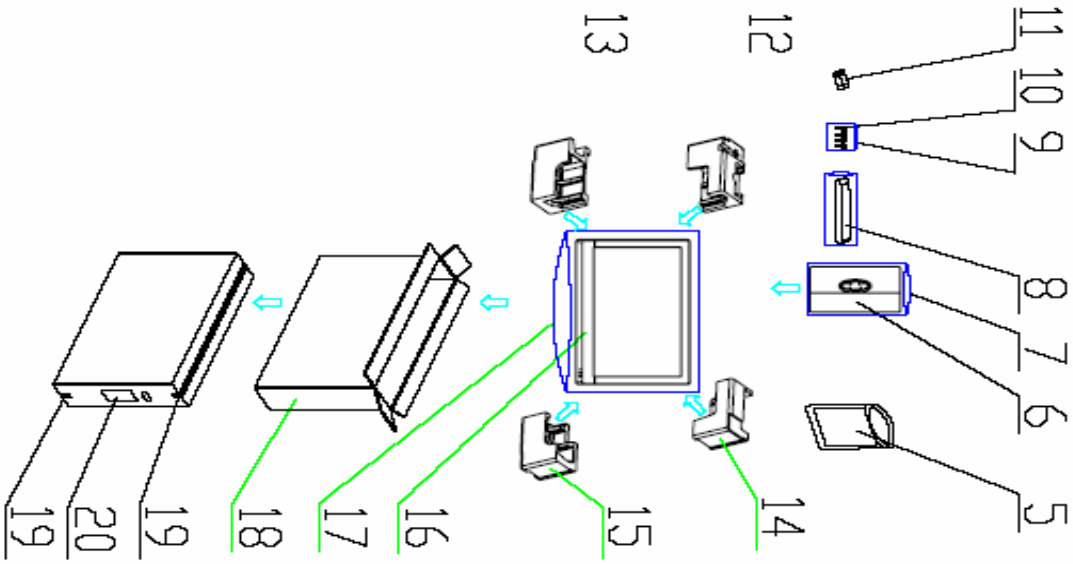
Item	Sharp PN	DESCRIPTION
1	9JY600153G00886G	Remote Controller,IR,NEC,8m,G,RC-LCDTV-520
2	9JY89010330021YG	Primary Battery,1.5V,Zn-Mn Battery,44.5mm*10.5mm,G,GLR03A
3	9JY01200019573	BASE ASSY,CTG04
	9JY06000013236	SCREW,B,CROSS,M5*44.5,Zn-black
4	9JY08400017274	USER MANUAL NAFTA,CTG04
5	9JY08400017277	REGISTRATION CARD,NAFTA

[4]PACKING PARTS





ASSY,PACK,40H FOR S360,CTG04			
Item	Sharp PN	Description	Q'TY
1	9JY08400017525	SLIP SHEET L1140*w915	1
2	9JY08400017528	CARDBOARD COVER,4EARS,L1140xW915xH100,HF	0.0625
	9JY08400017529	CORNER PAPER 1050X50X50XT5mm ROHS	0.125
4	9JY08400017527	FILM,PE 500mmx900M ROHS	0.67
5	9JY08400017233	KIT,ACCESSORY NAFTA,CTG04	0.0034
6	9JY01200019573	BASE ASSY,CTG04	1
7	9JY08400017293	BAG LDPE L400xW250xT0.05MM,CTG04	1
8	9JY600153G00886G	Remote Controller,IR,NEC,8m,G,RC-LCDTV-520	1
9	9JY08400017520	BAG PE L90*W60MM,VI1906	1
10	9JY06000013236	SCREW,B,CROSS,M5*44.5,Zn-black	4
11	9JY89010330021YG	Primary Battery,1.5V,Zn-Mn Battery,44.5mm*10.5mm,G,GLR03A	2
12	9JY08400017316	CUSHION-TL, CTG04	1
13	9JY08400017314	CUSHION-BL, CTG04	1
14	9JY08400017315	CUSHION-TR, CTG04	1
15	9JY08400017313	CUSHION-BR, CTG04	1
16	9JY751202000600G	LC-32LE440U,CTG04	1
17	9JY08400017318	BAG EPE PO L850xW580xT0.5 0.05MM,CTG04	1
18	9JY08400017231	CARTON NAFTA,CTG04	1
19	9JY08400017526	TAPE,WRAPPING TYPE,,914000MMX76MM	0.0022
20	9JY08400017275	LABEL,BLANK,60x15mm	1
21	9JY08401017275	LABEL,BLANK,60x15mm	0.0009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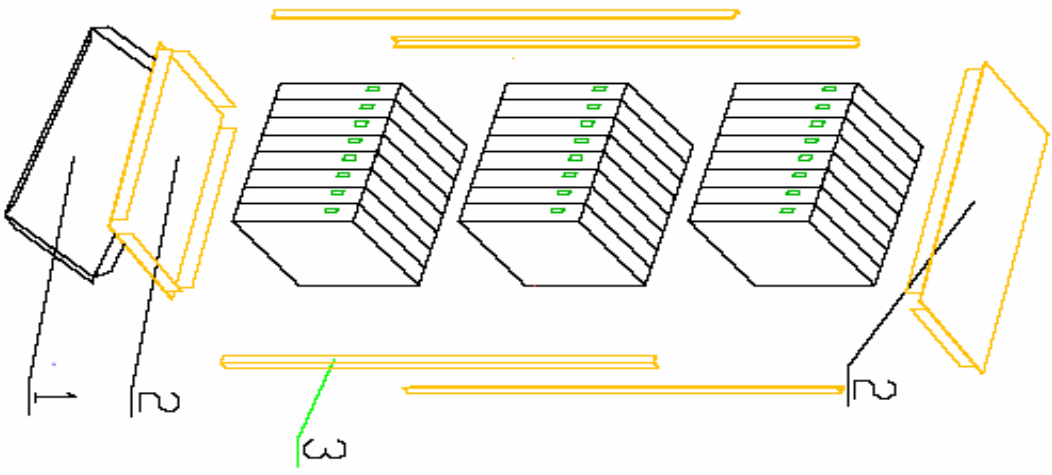
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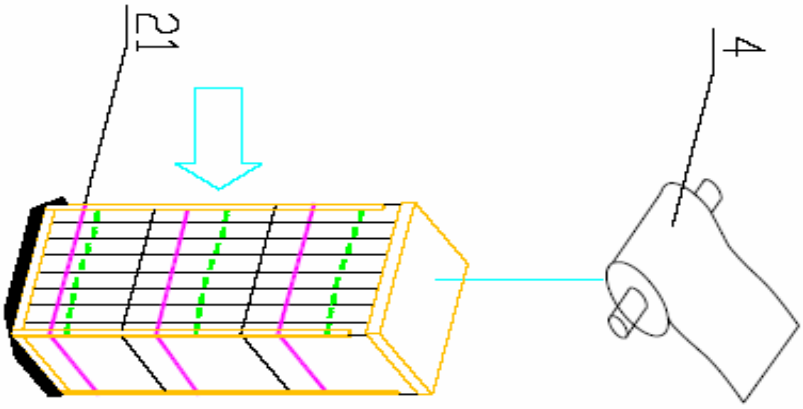
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ASSY,PACK,20&40ST FOR S360,CTG04			
Item	Sharp PN	Description	Q'TY
1	9JY08400017525	SLIP SHEET L1140*w915	1
2	9JY08400017528	CARDBOARD COVER,4EARS,L1140xW915xH100,HF	0.0417
3	9JY08400017536	CORNER PAPER 1610x50x50xT5mm LE1506	0.083
4	9JY08400017527	FILM,PE 500mmx900M ROHS	0.17
5	9JY08400017233	KIT,ACCESSORY NAFTA,CTG04	0.0033
6	9JY01200019573	BASE ASSY,CTG04	1
7	9JY08400017293	BAG LDPE L400xW250xT0.05MM,CTG04	1
8	9JY600153G00886G	Remote Controller,IR,NEC,8m,G,RC-LCDTV-520	1
9	9JY08400017520	BAG PE L90*W60MM,VI1906	1
10	9JY06000013236	SCREW,B,CROSS,M5*44.5,Zn-black	4
11	9JY89010330021YG	Primary Battery,1.5V,Zn-Mn Battery,44.5mm*10.5mm,G,GLR03A	2
12	9JY08400017316	CUSHION-TL, CTG04	1
13	9JY08400017314	CUSHION-BL, CTG04	1
14	9JY08400017315	CUSHION-TR, CTG04	1
15	9JY08400017313	CUSHION-BR, CTG04	1
16	9JY751202000600G	LC-32LE440U,CTG04	1
17	9JY08400017318	BAG EPE PO L850xW580xT0.5 0.05MM,CTG04	1
18	9JY08400017231	CARTON NAFTA,CTG04	1
19	9JY08400017526	TAPE,WRAPPING TYPE,,914000MMX76MM	0.0022
20	9JY08400017275	LABEL,BLANK,60x15mm	1
21	9JY08401017275	LABEL,BLANK,60x15mm	0.0007