

Service
Service
Service



223V5LSB/00	223V5LSB2/00	223V5LHSB/00
223V5LSB/01	223V5LSB2/10	223V5LHSB/01
223V5LSB/27	223V5LSB2/57	223V5LHSB/11
223V5LSB/62	223V5LSB2/62	223V5LHSB/27
223V5LSB/74	223V5LSB2/69	223V5LHSB/69
223V5LSB/75	223V5LSB2/71	223V5LHSB/70
223V5LSB/86	223V5LSB2/93	223V5LHSW/11
223V5LSB/93	223V5LSB2/96	223V5LHSB2/57
223V5LSB/94	223V5BSB2/93	



Service Manual

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

Revision List

Version	Release Date	Revision History
A00	Jun.09,2013	Initial release, Draft Version
A01	Jun.21,2013	Add new model 223V5LSB/00(TPV)
A02	Jul.04,2013	Add new models 223V5LSB/00(TPV),223V5LSB2/57(TPV)
A03	Jul.11,2013	Add new models 223V5LSB2/10(TPV),223V5LHSB/00(TPV),223V5LHSB/70(TPV)
A04	Jul.18,2013	Add new models 223V5LSB/00(TPV),223V5LSB2/71(TPV)
A05	Jul.25,2013	Add new model 223V5LSB/75(TPV)
A06	Aug.08,2013	Add new models 223V5LSB/01(TPV),223V5LSB/93(TPV)
A07	Aug.14,2013	Add new model 223V5LSB2/69(TPV)
A08	Aug.22,2013	Add new model 223V5LSB2/93(TPV)
A09	Sep.06,2013	Add new models 223V5LSB2/62(TPV),223V5LSB2/93(TPV),223V5LHSB/11(TPV)
A10	Sep.24,2013	Add new models 223V5LSB2/10(TPV),223V5LSB2/62(TPV),223V5LHSB/00(TPV),223V5LSB/93(TPV)
A11	Oct.16,2013	Add new model 223V5LSB/62(TPV)
A12	Oct.31,2013	Add new model 223V5LHSB/69(TPV)
A13	Nov.07,2013	Add new model 223V5LSB/86(TPV)
A14	Nov.26,2013	Add new model 223V5LSB/74(TPV)
A15	Dec.11,2013	Add new model 223V5LHSW/11(TPV)
A16	Dec.17,2013	Add new model 223V5LSB/94(TPV)
A17	Dec.24,2013	Add new model 223V5LHSB/01(TPV)
A18	Jan.22,2014	Add new models 223V5LSB2/10(TPV),223V5LSB2/93(TPV)
A19	Jan.27,2014	Add new model 223V5LSB2/00(TPV)
A20	Feb.26,2014	Add new model 223V5LSB2/62(TPV)
A21	Mar.13,2014	Add new model 223V5LHSB/27(TPV)
A22	Mar.26,2014	Add new models 223V5LSB2/96(TPV),226V4LSB2/93(TPV)
A23	Apr.16,2014	Add new models 223V5LSB2/69(TPV)
A24	May.27,2014	Add new models 223V5LSB2/93(TPV)
A25	Jun.04,2014	Add new models 223V5LSB2/93(TPV), 223V5LSB2/62(TPV)

A26	Sep.11,2014	Add new models 223V5LSB/93(TPV), 223V5LSB2/93(TPV)
A27	Sep.25,2014	Add new models 223V5LHSB/00(TPV)
A28	Jan.08,2015	Add new model 223V5LSB2/93(TPV)
A29	Jan.15,2015	Add new model 223V5LSB2/10(TPV)
A30	Jan.22,2015	Add new model 223V5LSB/93(TPV), 223V5LSB2/93(TPV)
A31	Jan.29,2015	Add new model 223V5LSB2/10(TPV)
A32	Feb.03,2015	Add new models 223V5LSB/00(TPV), 223V5LSB2/62(TPV)
A33	Feb.27,2015	Add new models 223V5LHSB2/57(TPV), 223V5LSB/01(TPV), 223V5LSB/62(TPV)
A34	Apr.09,2015	Add new model 223V5LSB2/93(TPV),
A35	Apr.21,2015	Add new models 223V5LSB2/10(TPV), 223V5LSB2/62(TPV), 223V5LSB/00(TPV)
A36	May.18,2015	Add new models 223V5LSB2/62(TPV)
A37	May.25,2015	Add new models 223V5LSB/01(TPV)
A38	Jun.24,2015	Add new models 223V5BSB2/93(TPV)
A39	Nov.23,2015	Add new models 223V5LSB/01(TPV)
A40	Dec.14,2015	Add new models 223V5LSB/01(TPV)
A41	Dec.21,2015	Add new models 223V5LSB/00(TPV), 223V5LSB/01(TPV)
A42	Dec.29,2015	Add new models 223V5LSB/93(TPV)
A43	Mar.28,2016	Add new models 223V5LSB/62(TPV)
A44	Jul.20,2016	Add new models 223V5LSB/01(TPV)
A45	Jul.25,2016	Add new models 223V5LSB/00(TPV), 223V5LSB/62(TPV), 223V5LSB2/10(TPV)
A46	Aug.11,2016	Add new models 223V5LSB2/93(TPV)
A47	Aug.25,2016	Add new models 223V5LSB/93(TPV), 223V5LSB2/10(TPV) , 223V5LSB2/93(TPV)
A48	Sep.01,2016	Add new models 223V5LSB2/62(TPV), 223V5LSB/93(TPV) , 223V5LSB/00(TPV)
A49	Sep.27,2016	Add new models 223V5LSB2/10(TPV), 223V5LSB2/93(TPV)
A50	Nov.17,2016	Add new models 223V5LSB2/62(TPV)
A51	Nov.24,2016	Add new models 223V5LSB/27(TPV)
A52	Dec.19,2016	Add new models 223V5LSB/01(TPV)
A53	Jan.18,2017	Add new models 223V5LSB2/10(TPV)
A54	Feb.06,2017	Add new models 223V5LSB2/93(TPV)

A55	Feb.21,2017	Add new models 223V5LSB/27(TPV) , 223V5LSB2/62(TPV)
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Important Safety Notice

This electronic user guide is intended for anyone who uses the Philips monitor. Take time to read this user manual before you use your monitor. It contains important information and notes regarding operating your monitor. The Philips guarantee applies provided the product is handled properly for its intended use, in accordance with its operating instructions and upon presentation of the original invoice or cash receipt, indicating the date of purchase, dealers name and model and production number of the product.

Warnings

Use of controls, adjustments or procedures other than those specified in this documentation may result in exposure to shock, electrical hazards and/or mechanical hazards. Read and follow these instructions when connecting and using your computer monitor.

Operation

- Please keep the monitor out of direct sunlight and away from stoves or any other heat source.
- Remove any object that could fall into ventilation holes or prevent proper cooling of the monitor's electronics.
- Do not block the ventilation holes on the cabinet.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.
- If turning off the monitor by detaching the power cable or DC power cord, wait for 6 seconds before attaching the power cable or DC power cord for normal operation.
- Please use approved power cord provided by Philips all the time. If your power cord is missing, please contact with your local service center. (Please refer to Customer Care Consumer Information Center)
- Do not subject the monitor to severe vibration or high impact conditions during operation.
- Do not knock or drop the monitor during operation or transportation.

Maintenance

- To protect your monitor from possible damage, do not put excessive pressure on the LCD panel. When moving your monitor, grasp the frame to lift; do not lift the monitor by placing your hand or fingers on the LCD panel.
- Unplug the monitor if you are not going to use it for an extensive period of time.
- Unplug the monitor if you need to clean it with a slightly damp cloth. The screen may be wiped with a dry cloth when the power is off. However, never use organic solvent, such as, alcohol, or ammonia-based liquids to clean your monitor.
- To avoid the risk of shock or permanent damage to the set, do not expose the monitor to dust, rain, water, or excessive moisture environment.
- If your monitor gets wet, wipe it with dry cloth as soon as possible.
- If foreign substance or water gets in your monitor, please turn the power off immediately and disconnect the power cord. Then, remove the foreign substance or water, and send it to the maintenance center.
- Do not store or use the monitor in locations exposed to heat, direct sunlight or extreme cold.
- In order to maintain the best performance of your monitor and use it for a longer lifetime, please use the monitor in a location that falls within the following temperature and humidity ranges.
 - Temperature: 0-40°C 32-95°F
 - Humidity: 20-80% RH

Important information for Burn-in/Ghost image:

- Always activate a moving screen saver program when you leave your monitor unattended. Always activate a periodic screen refresh application if your monitor will display unchanging static content. Uninterrupted display of still or static images over an extended period may cause “burn in”, also known as “after-imaging” or “ghost imaging”, on your screen. “Burn-in”, “after-imaging”, or “ghost imaging” is a well-known phenomenon in LCD panel technology. In most cases, the “burned in” or “after-imaging” or “ghost imaging” will disappear gradually over a period of time after the power has been switched off.

Warning

Failure to activate a screen saver, or a periodic screen refresh application may result in severe “burn-in” or “after-image” or “ghost image” symptoms will not disappear and cannot be repaired. The damage mentioned above is not covered under your warranty.

Service

- The casing cover should be opened only by qualified service personnel.
- If there is any need for any document for repair or integration, please contact with your local service center. (Please refer to the chapter of "Consumer Information Center")
- For transportation information, please refer to "Technical Specifications".
- Do not leave your monitor in a car/trunk under direct sun light.

Note

Consult a service technician if the monitor does not operate normally, or you are not sure what procedure to take when the operating instructions given in this manual have been followed.

Notational Descriptions

The following subsections describe notational conventions used in this document.

Notes, Cautions and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold or italic type. These blocks contain notes, cautions or warnings. They are used as follows:

Note

This icon indicates important information and tips that help you make better use of your computer system.

Caution

This icon indicates information that tells you how to avoid either potential damage to hardware or loss of data.


Warning

This icon indicates the potential for bodily harm and tells you how to avoid the problem.

Some warnings may appear in alternate formats and may not be accompanied by an icon. In such cases, the specific presentation of the warning is mandated by the relevant regulatory authority.

1. Monitor Specifications

Technical specifications

Picture/Display	
Monitor Panel Type	TFT-LCD
Backlight	LED
Panel Size	21.5" W (54.6cm)
Aspect Ratio	16:9
Pixel Pitch	0.248 x 0.248 mm
Brightness	250 cd/m ² or 200 cd/m ²
SmartContrast	10,000,000:1
Contrast Ratio (typ.)	1000:1 or 600:1 for 200 nits
Response Time (typ.)	5ms
Optimum Resolution	1920 x 1080 @ 60Hz
Viewing Angle	170° (H) / 160° (V) @ C/R > 10 or 90° (H) / 65° (V) @ C/R > 10 for 200 nits
Display Colors	16.7M
Vertical Refresh Rate	56Hz - 76Hz
Horizontal Frequency	30kHz - 83kHz
sRGB	YES
SoftBlue	YES(223V5BSB2)
Connectivity	
Signal Input	223V5LSB/223V5LSW/223V5LSB2/223V5BSB2: VGA(Analog) ,DVI(Digital,HDCP) (optional)
	223V5LHSB/223V5LHSW/223V5LHSB2:VGA(Analog), HDMI(Digital,HDCP)
Audio In/Out	HDMI audio out (223V5LHSB/223V5LHSW)
Input Signal	Separate Sync, Sync on Green
Convenience	
User Convenience	
OSD Languages	English, French, German, Spanish, Italian, Russian, Simplified Chinese, Portuguese, Turkish, Dutch, Swedish, Finnish, Polish, Czech, Korean, Japanese, Hungarian, Ukraine, Brazil Portuguese, Greek(optional), Traditional Chinese(optional)
Other Convenience	Kensington Lock
Plug & Play Compatibility	DDC/CI, sRGB, Windows 7/Windows 8/Vista/XP, Mac OSX, Linux
VESA mount	100x100 mm
Stand	
Tilt	-5 / +20
223V5LHSB/223V5LHSW/223V5LHSB2:	
Power	
On Mode	19.66 W (typ.), 23.76 W (max.)for 223V5LHSB/223V5LHSW

	Or 21.3W (typ.), 25.63 W (max.)for 223V5LHSB2
Sleep (Standby)	0.5W
Off	0.5W
Power LED indicator	On mode: White, Standby/Sleep mode: White (blinking)
Power Supply	Built-in, 100-240VAC, 50-60Hz

223V5LSB/223V5LSW/223V5LSB2:

Power	
On Mode	18.6 W (typ.), 22.57 W (max.)for 223V5LSB/223V5LSW or 17.07 W (typ.), 20.26 W (max.)for 223V5LSB2
Sleep (Standby)	0.5W
Off	0.5W
Power LED indicator	On mode: White, Standby/Sleep mode: White (blinking)
Power Supply	Built-in, 100-240VAC, 50-60Hz

223V5BSB2

Power	
On Mode	19.92 W (typ.), 21.60 W (max.)
Sleep (Standby)	0.5W
Off	0.5W
Power LED indicator	On mode: White, Standby/Sleep mode: White (blinking)
Power Supply	Built-in, 100-240VAC, 50-60Hz

Dimension	
Product with stand (WxHxD)	503 x 376 x 213 mm
Product without stand(WxHxD)	503 x 316 x 50 mm
Weight	
Product with stand	2.605kg
Product without stand	2.304kg or 2.345kg for 223V5BSB2
Operating Condition	
Temperature range (operation)	0°C to 40 °C
Temperature range(Non-operation)	-20°C to 60°C
Relative humidity	20% to 80%
MTBF	30,000hrs
Environmental	
ROHS	YES
EPEAT	Silver (www.epeat.net)
Packaging	100% recyclable
Energy Star	YES
Compliance and standards	

Regulatory Approvals	CE Mark, FCC Class B, EAC, SEMKO, BSMI, cETLus, ISO9241-307, TCO Certified, INMETRO(Only for selective models) or CE Mark, FCC Class B,CCC,CECP for 223V5BSB2
Cabinet	
Color	Black/White
Finish	Texture

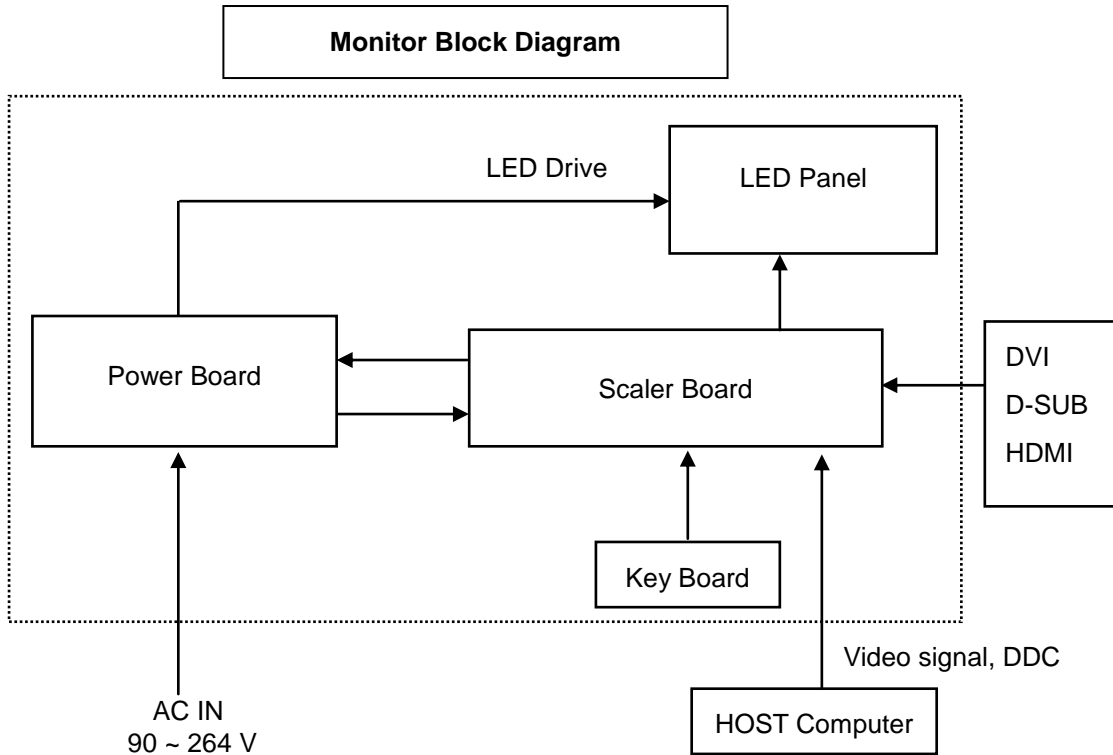
**Note:**

1. EPEAT Gold or Silver is valid only where Philips registers the product. Please visit www.epeat.net for registration status in your country.
2. This data is subject to change without notice. Go to www.philips.com/support to download the latest version of leaflet.

2. LCD Monitor Description

The LCD monitor will contain a scaler board, a power board and a key board. The scaler board houses the flat panel control logic, brightness control logic and DDC.

The power board will provide AC to DC inverter voltage to drive the backlight of panel and the scaler board chips each voltage.



3. Operating Instructions

3.1 General Instructions

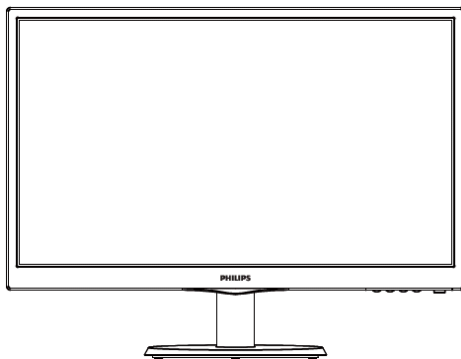
Press the power button to turn the monitor on or off. The other control knobs are located at front panel of the monitor. By changing these setting, the picture can be adjusted to your personal preference.

- * The power cord should be connected.
- * Press the power button to turn on the monitor. The power indicator will light up.

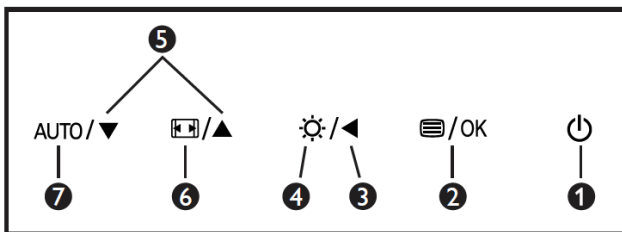
3.2 Control Buttons

1. Operating the Monitor

Front view product description



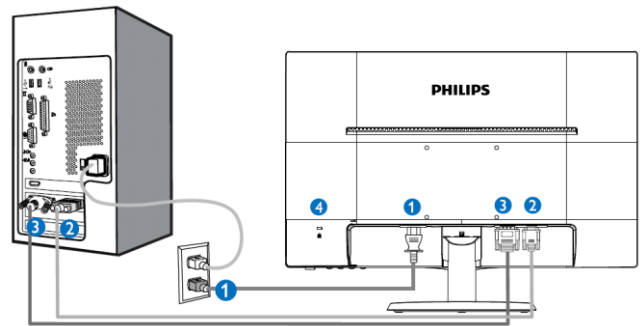
223V5



1		Switch monitor's power ON and OFF.
2		Access the OSD menu. Confirm the OSD adjustment.
3		Return to previous OSD level.
4		Adjust the brightness level.
5		Adjust the OSD menu.
6		Change display format.
7	AUTO	Automatically adjust the monitor.

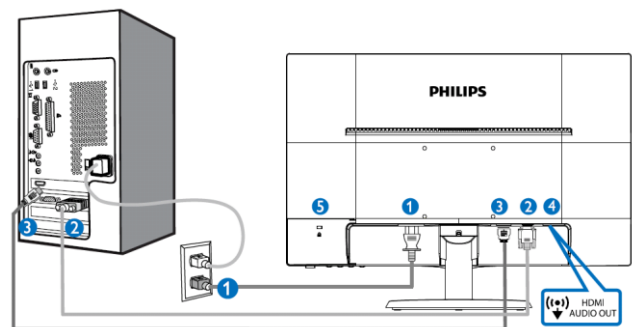
2. Connecting to your PC

223V5LSB/223V5LSW/223V5LSB2



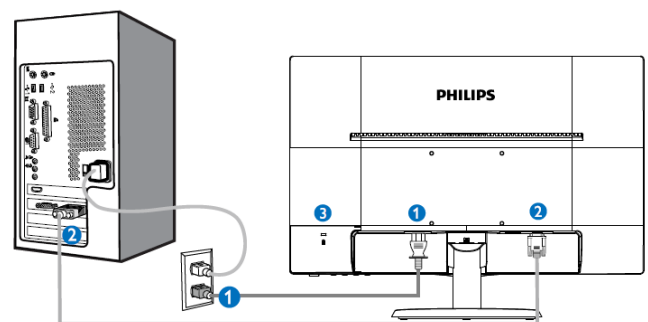
1. AC power input
2. VGA input
3. DVI-D input (available for selected models)
4. Kensington anti-theft lock

223V5LHSB/223V5LHSW/223V5LHSB2



1. AC power input
2. VGA input
3. HDMI input
4. HDMI Audio out
5. Kensington anti-theft lock

223V5BSB2



1. AC power input
2. VGA input
3. Kensington anti-theft lock

Connect to PC

1. Connect the power cord to the back of the monitor firmly.
2. Turn off your computer and unplug its power cable.
3. Connect the monitor signal cable to the video

12 Meridian 5

connector on the back of your computer.

4. Plug the power cord of your computer and your monitor into a nearby outlet.

5. Turn on your computer and monitor. If the monitor displays an image, installation is complete.

3.3 OSD Menu

On-Screen Display (OSD) is a feature in all Philips LCD monitors. It allows an end user to adjust screen performance or select functions of the monitors directly through an on-screen instruction window. A user friendly on screen display interface is shown as below:

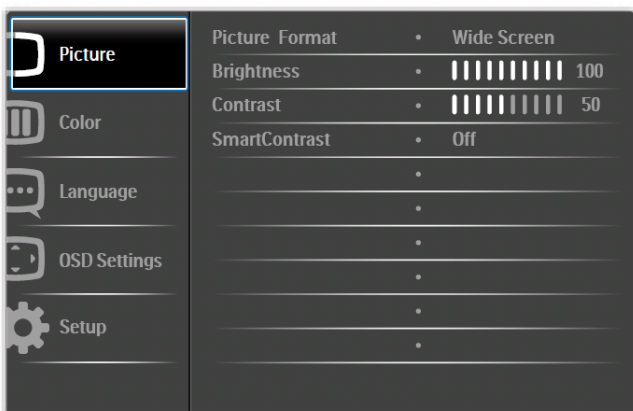
223V5LHSB/223V5LHSW/223V5LHSB2:





223V5LSB/223V5LSW/223V5LSB2:



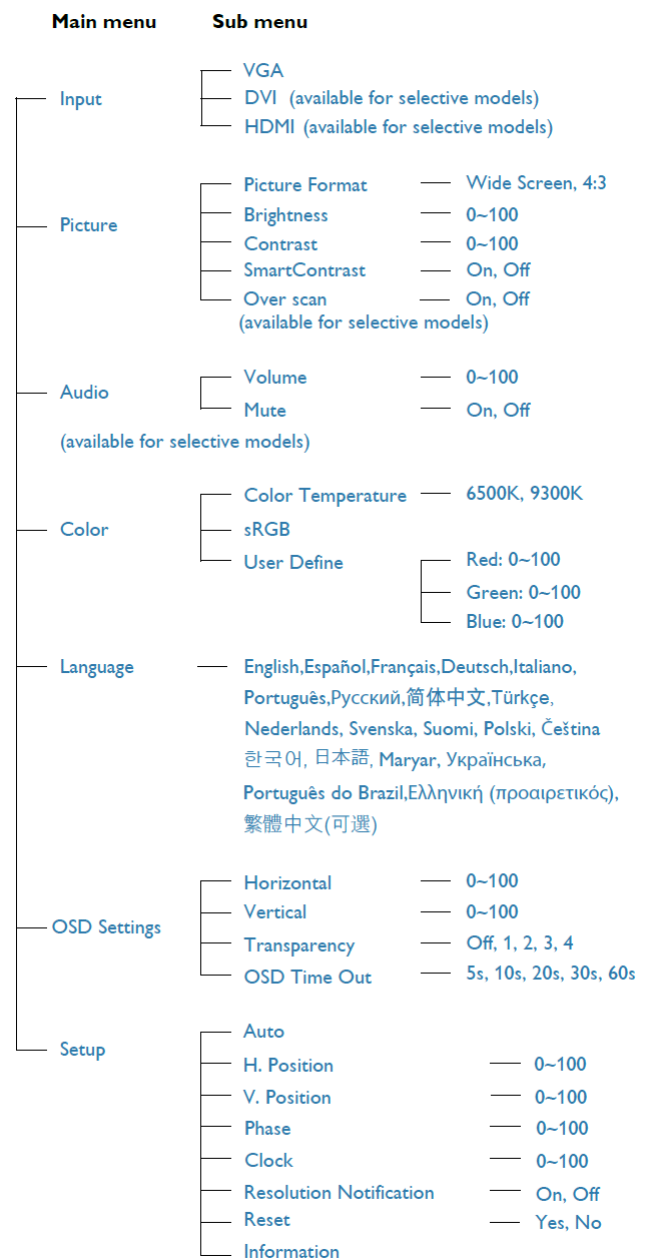
223V5LSB/223V5LSW/223V5LSB2/223V5BSB2 (for 1A model):



In the OSD shown above, you can press   buttons at the front bezel of the monitor to move the cursor, and press **OK** button to confirm the choice or change.

The OSD tree

Below is an overall view of the structure of the On-Screen Display. You can use this as a reference when you want to work your way around the different adjustments later on.



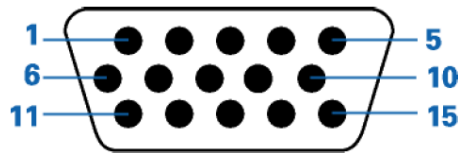
Basic and simple instruction on the control keys

4. Input/ Output Specification

4.1 Input Signal Connector

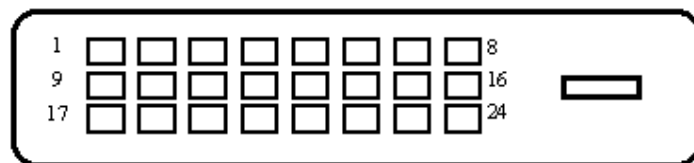
D-sub Connector

Pin No.	Signal Name	Pin No.	Signal Name
1	Red	9	DDC +3.3V or +5V
2	Green/ SOG	10	Logic GND
3	Blue	11	Sense (GND)
4	Sense (GND)	12	Bi-directional data
5	Cable Detect (GND)	13	H/H+V sync
6	Red GND	14	V-sync
7	Green GND	15	Data clock
8	Blue GND		



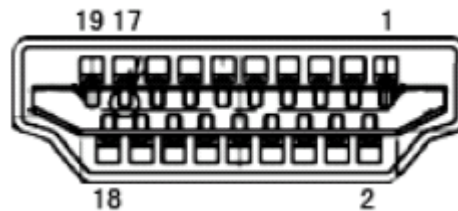
DVI-D Connector

Pin No.	Signal Name	Pin No.	Signal Name
1	T.M.D.S. data2-	13	No Connect
2	T.M.D.S. data2+	14	+5V Power
3	T.M.D.S. data2 shield	15	Ground (for +5V)
4	No Connect	16	Hot plug detect
5	No Connect	17	T.M.D.S. data0-
6	DDC clock	18	T.M.D.S. data0+
7	DDC data	19	T.M.D.S. data0 shield
8	No Connect	20	No Connect
9	T.M.D.S. data1-	21	No Connect
10	T.M.D.S. data1+	22	T.M.D.S clock shield
11	T.M.D.S. data1 shield	23	T.M.D.S. clock+
12	No Connect	24	T.M.D.S. clock-



HDMI Connector

Pin No.	Signal Name	Pin No.	Signal Name
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	CEC
4	TMDS Data1+	14	Reserved (HDMI 1.0-1.3c), HEC Data- (Optional, HDMI 1.4+ with Ethernet)
5	TMDS Data1 Shield	15	SCL (I ² C Serial Clock for DDC)
6	TMDS Data1-	16	SDA (I ² C Serial Data Line for DDC)
7	TMDS Data0+	17	DDC/CEC/HEC Ground
8	TMDS Data0 Shield	18	+5 V Power (max 50 mA)
9	TMDS Data0-	19	Hot Plug Detect (All versions) and HEC Data+ (Optional, HDMI 1.4+ with Ethernet)
10	TMDS Clock+		



4.2 Resolution & Preset Modes

Maximum Resolution

1920 x 1080 @ 60 Hz (analog input)
 1920 x 1080 @ 60 Hz (digital input)

Recommended Resolution

1920 x 1080 @ 60 Hz (digital input)

H. freq (kHz)	Resolution	V. freq (Hz)
31.47	720x400	70.09
31.47	640x480	59.94
35.00	640x480	66.67
37.86	640x480	72.81
37.50	640x480	75.00
37.88	800x600	60.32
46.88	800x600	75.00
48.36	1024x768	60.00
60.02	1024x768	75.03
44.77	1280x720	59.86
63.89	1280x1024	60.02
79.98	1280x1024	75.03
55.94	1440x900	59.89
70.64	1440x900	74.98
65.29	1680x1050	59.95
67.50	1920x1080	60.00

Note: Please notice that your display works best at native resolution of 1920 x 1080 @ 60 Hz. For best display quality, please follow this resolution recommendation

Power Management Definition

If you have VESA DPM compliance display card or software installed in your PC, the monitor can automatically reduce its power consumption when not in use. If an input from a keyboard, mouse or other input device is detected, the monitor will 'wake up' automatically. The following table shows the power consumption and signaling of this automatic power saving feature:

223V5LHSB/223V5LHSW/223V5LHSB2 :

Power Management Definition					
VESA Mode	Video	H-sy nc	V-sy nc	Power Used	LED Color
Active	ON	Yes	Yes	19.66W (typ.)for 223V5LHSB/223V5LH SW or 21.63W (typ.)for 223V5LHSB2	White
Sleep (Standby)	OFF	NO	NO	0.5W (typ.)	White (blink)
Switch Off	OFF	-	-	0.5W (typ.)	OFF

223V5LSB/223V5LSW/223V5LSB2/223V5BSB2:

Power Management Definition					
VESA Mode	Video	H-syn c	V-syn c	Power Used	LED Color
Active	ON	Yes	Yes	18.6 W (typ.) for 223V5LSB/223V5L SW or 17.07 W (typ.) for 223V5LSB2 or 19.92 W (typ.) for 223V5BSB2	White
Sleep (Standby)	OFF	NO	NO	0.5W (typ.)	White (blink)
Switch Off	OFF	-	-	0.5W (typ.)	OFF

The following setup is used to measure power consumption on this monitor.

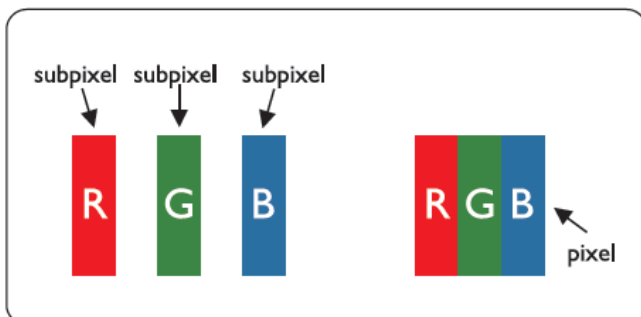
- Native resolution: 1920 x 1080
- Contrast: 50%
- Brightness: 250 nits or 200 nits
- Color temperature: 6500k with full white pattern

 **Note:**

This data is subject to change without notice.

4.3 Pixel Defect Policy

Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or sub pixel defects on the TFT Monitor panels used in flat panel monitors are sometimes unavoidable. No manufacturer can guarantee that all panels will be free from pixel defects, but Philips guarantees that any monitor with an unacceptable number of defects will be repaired or replaced under warranty. This notice explains the different types of pixel defects and defines acceptable defect levels for each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT Monitor panel must exceed these acceptable levels. For example, no more than 0.0004% of the sub pixels on a monitor may be defective. Furthermore, Philips sets even higher quality standards for certain types or combinations of pixel defects that are more noticeable than others. This policy is valid worldwide.



Pixels and Sub pixels

A pixel, or picture element, is composed of three sub pixels in the primary colors of red, green and blue. Many pixels together form an image. When all sub pixels of a pixel are lit, the three colored sub pixels together appear as a single white pixel. When all are dark, the three colored sub pixels together appear as a single black pixel. Other combinations of lit and dark sub pixels appear as single pixels of other colors.

Types of Pixel Defects

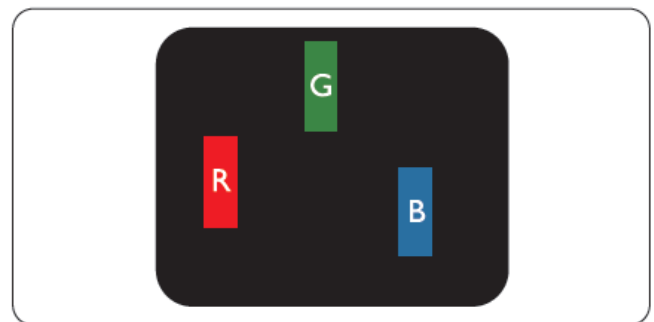
Pixel and sub pixel defects appear on the screen in different ways. There are two categories of pixel
Pixel and sub pixel defects appear on the screen in

different ways. There are two categories of pixel defects and several types of sub pixel defects within each category.

Bright Dot Defects

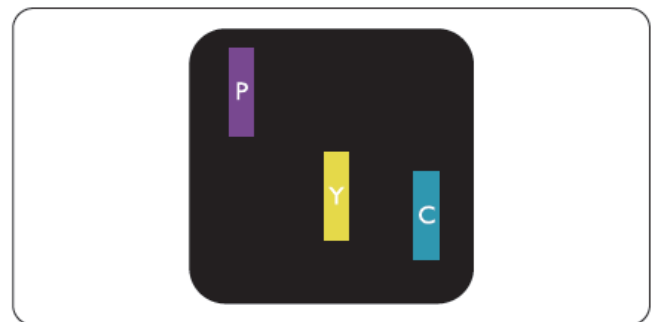
Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. That is, a bright dot is a sub-pixel that stands out on the screen when the monitor displays a dark pattern. There are the types of bright dot defects.

One lit red, green or blue sub pixel

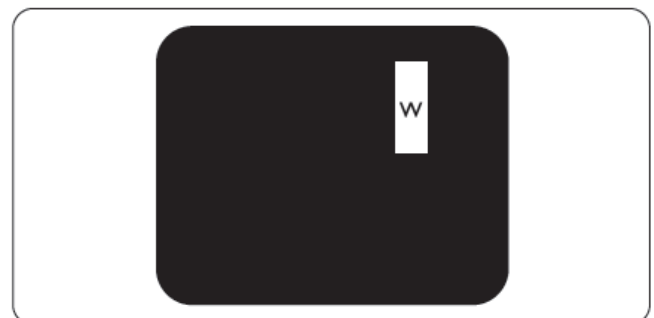


Two adjacent lit sub pixels:

- Red + Blue = Purple
- Red + Green = Yellow
- Green + Blue = Cyan (Light Blue)



Three adjacent lit sub pixels (one white pixel)

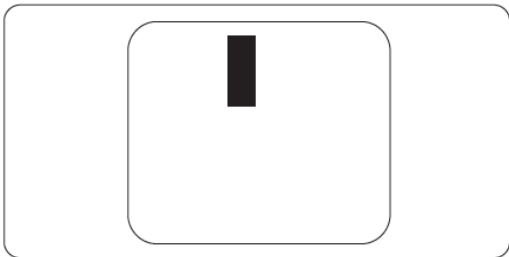


Note:

A red or blue bright dot must be more than 50 percent brighter than neighboring dots while a green bright dot is 30 percent brighter than neighboring dots.

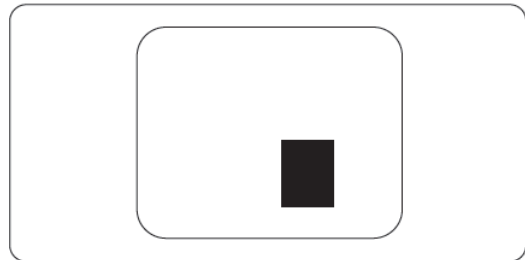
Black Dot Defects

Black dot defects appear as pixels or sub pixels that are always dark or 'off'. That is, a dark dot is a sub-pixel that stands out on the screen when the monitor displays a light pattern. These are the types of black dot defects.



Proximity of Pixel Defects

Because pixel and sub pixels defects of the same type that are near to one another may be more noticeable, Philips also specifies tolerances for the proximity of pixel defects.



Pixel Defect Tolerances

In order to qualify for repair or replacement due to pixel defects during the warranty period, a TFT Monitor panel in a Philips flat panel monitor must have pixel or sub pixel defects exceeding the tolerances listed in the following tables.

Bright Dot Defects	Acceptable level
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	>15mm
Total bright dot defects of all types	3

Black Dot Defects	Acceptable level
1 dark subpixel	5 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	>15mm
Total black dot defects of all types	5 or fewer

Total Dot Defects	Acceptable level
Total bright or black dot defects of all types	5 or fewer


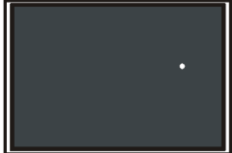
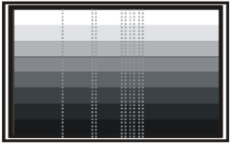
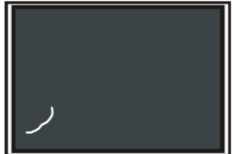
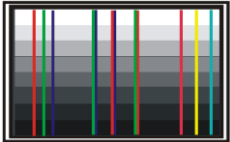





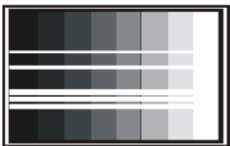

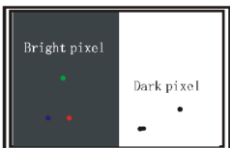

Note:

1. 1 or 2 adjacent sub pixel defects = 1 dot defect
2. This monitor is ISO9241-307 compliant Class-I compliant.(ISO9241-307: Ergonomic requirement,analysis and compliance test methods for electronic visual displays)
3. ISO9241-307 is the successor of formerly known ISO13406 standard, which is withdrawn by the International Organisation for Standardisation (ISO) per: 2008-11-13.

4.4 Failure Mode Of Panel

Quick reference for failure mode of LCD panel

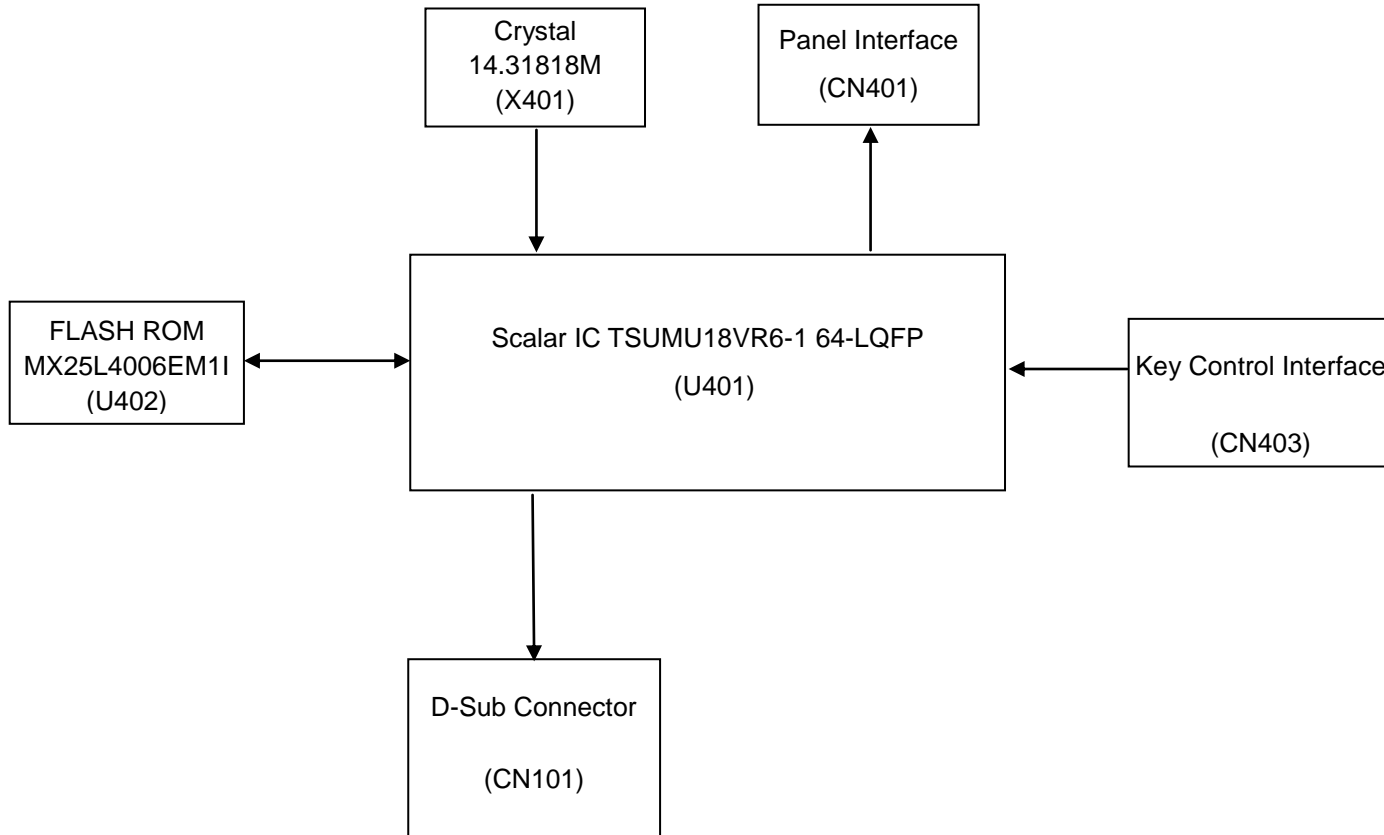
this page presents problems that could be made by LCD panel. It is not necessary to repair circuit board. Simply follow the mechanical instruction on this manual to eliminate failure by replace LCD panel.

Failure description	Phenomenon	Failure description	Phenomenon
Vertical block defect		Polarizer has bubbles	
Vertical dim lines		Polarizer has bubbles	
Vertical lines defect (Always bright or dark)		Foreign material inside polarizer. It shows liner or dot shape.	
Horizontal block defect		Concentric circle formed	
Horizontal dim lines		Bottom back light of LCD is brighter than normal	
Horizontal lines defect (Always bright or dark)		Back light un-uniformity	
Has bright or dark pixel		Backlight has foreign material. Black or white color, liner or circular type	

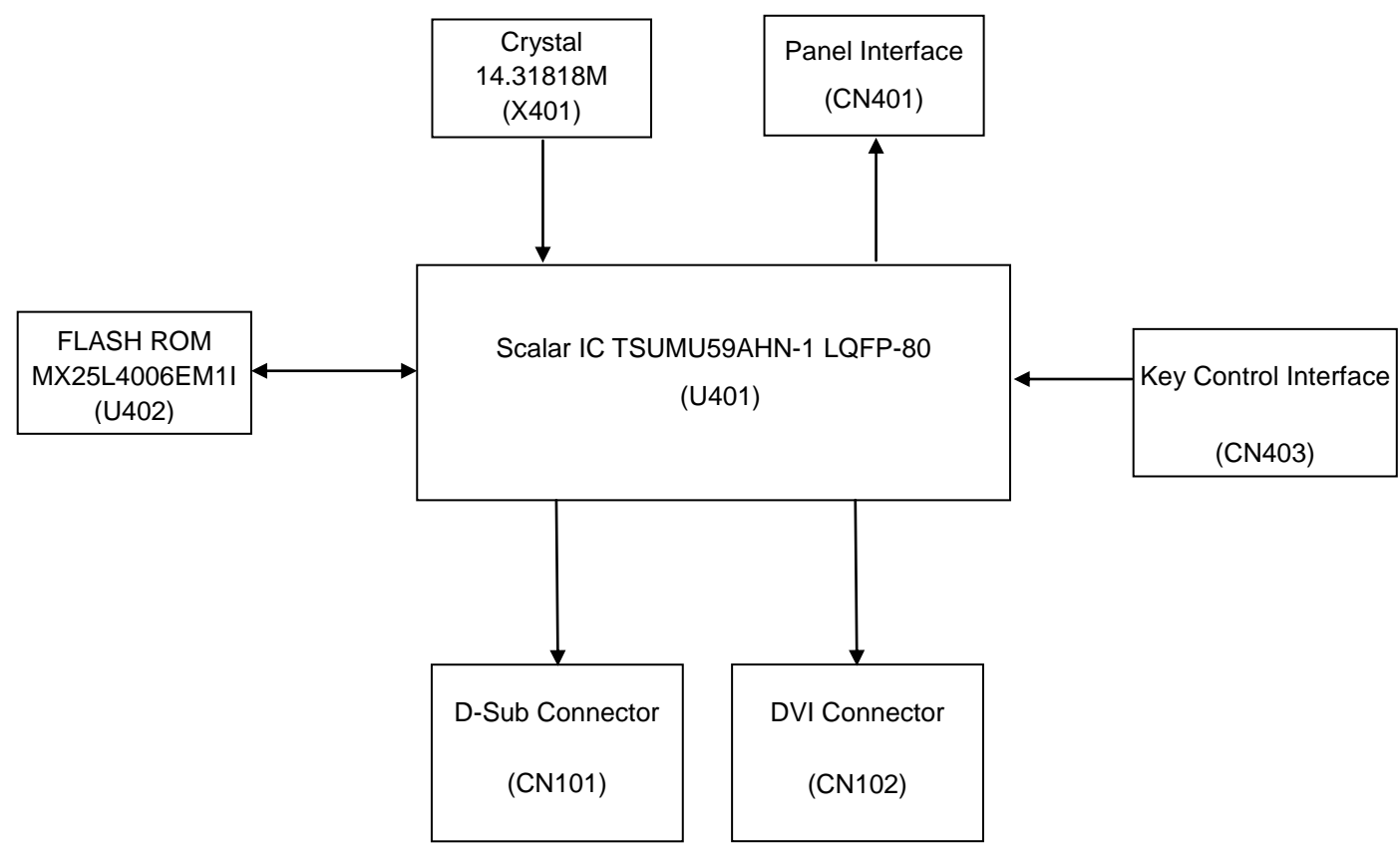
5. Block Diagram

5.1 Scaler Board

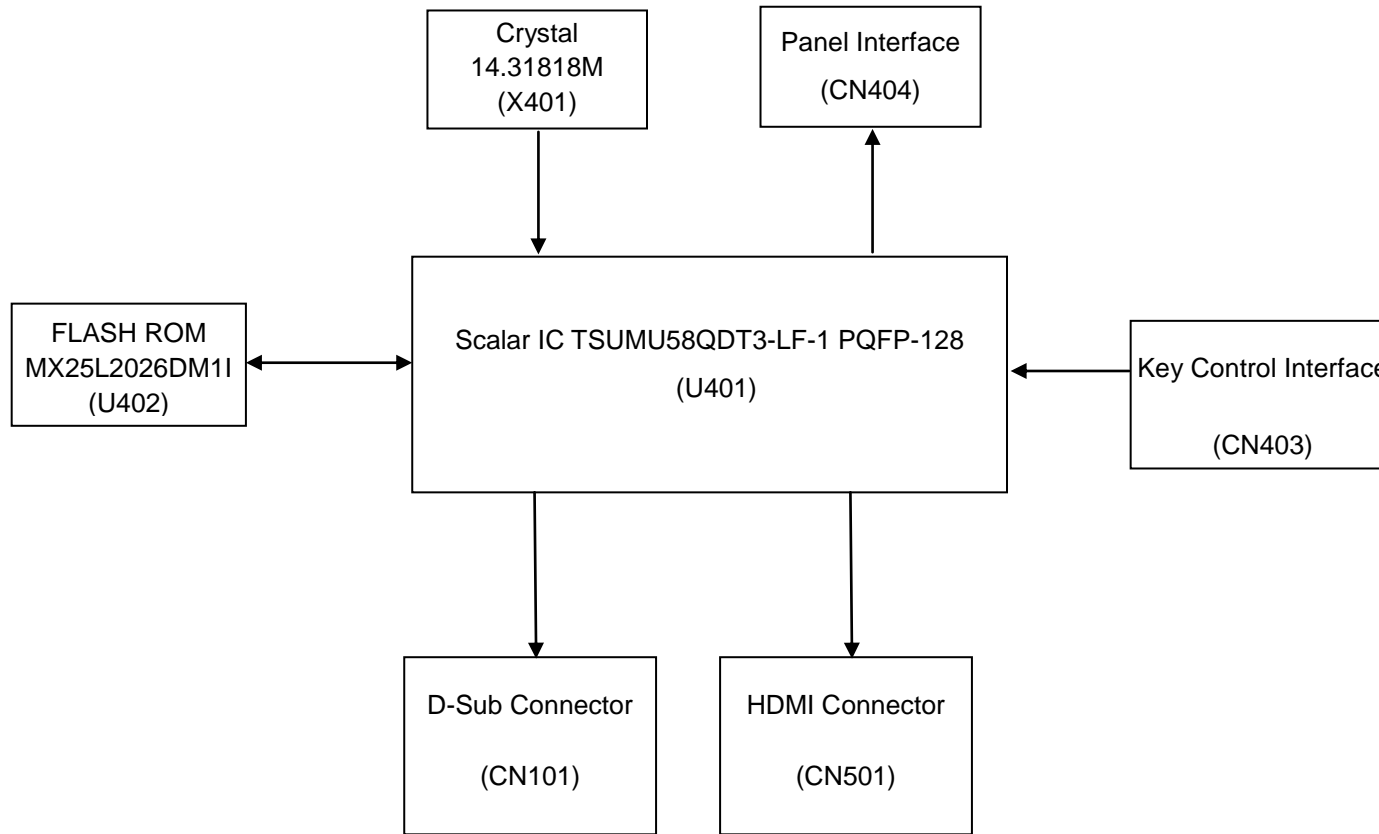
715G5846M01000004I(for 223V5LSB2)



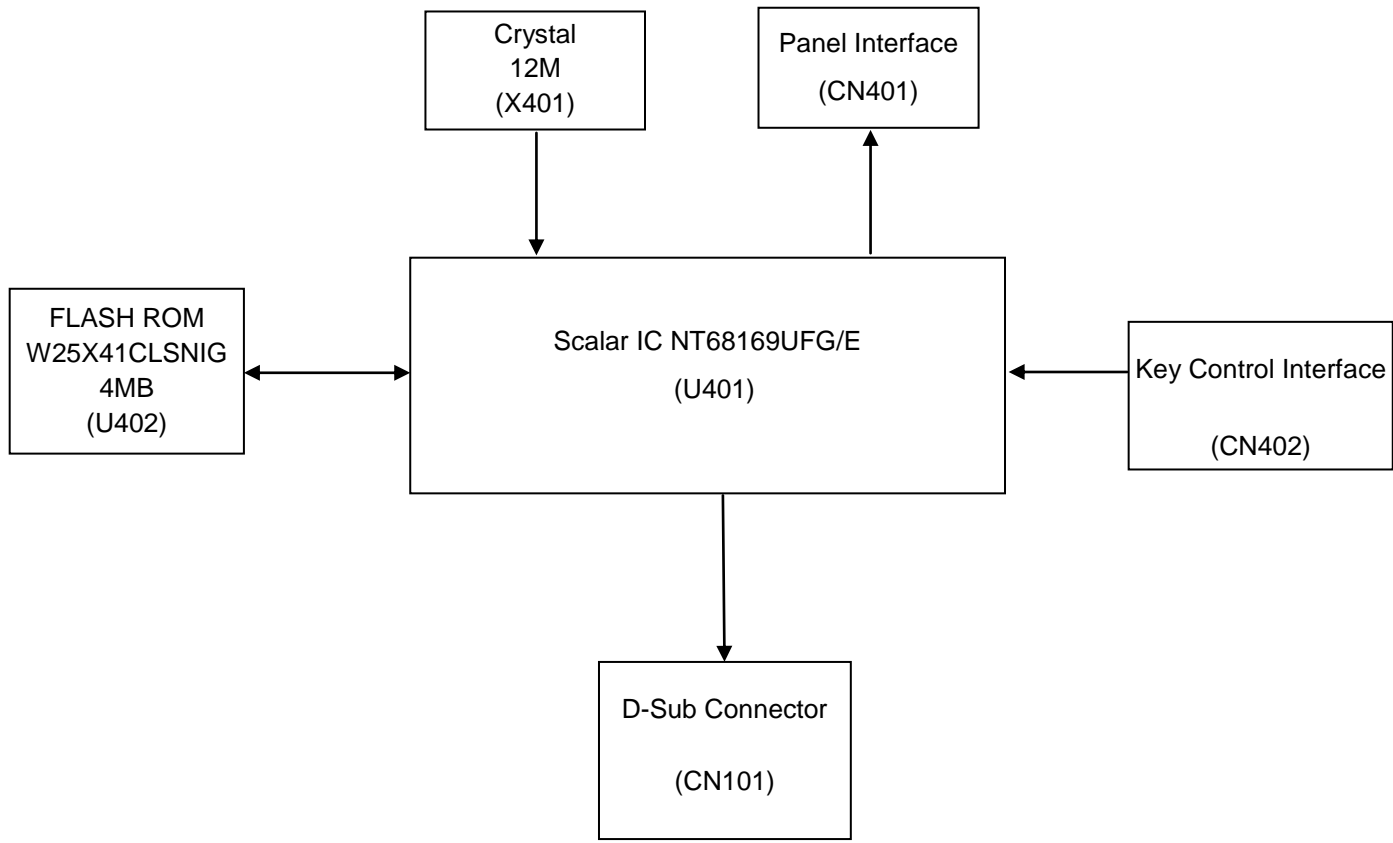
715G5863M0D000004S (for 223V5LSB)



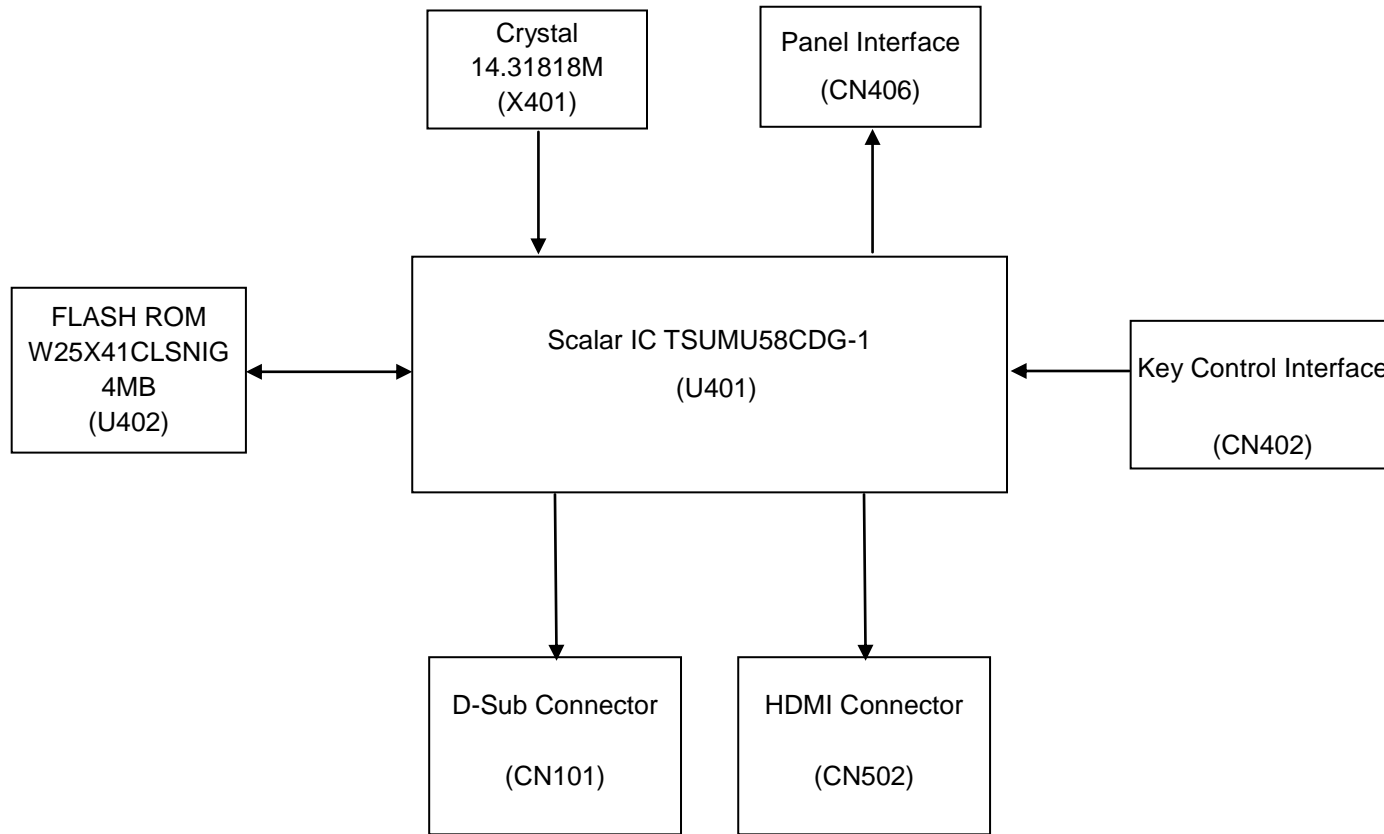
715G5844M0100004S (for 223V5LHSB)



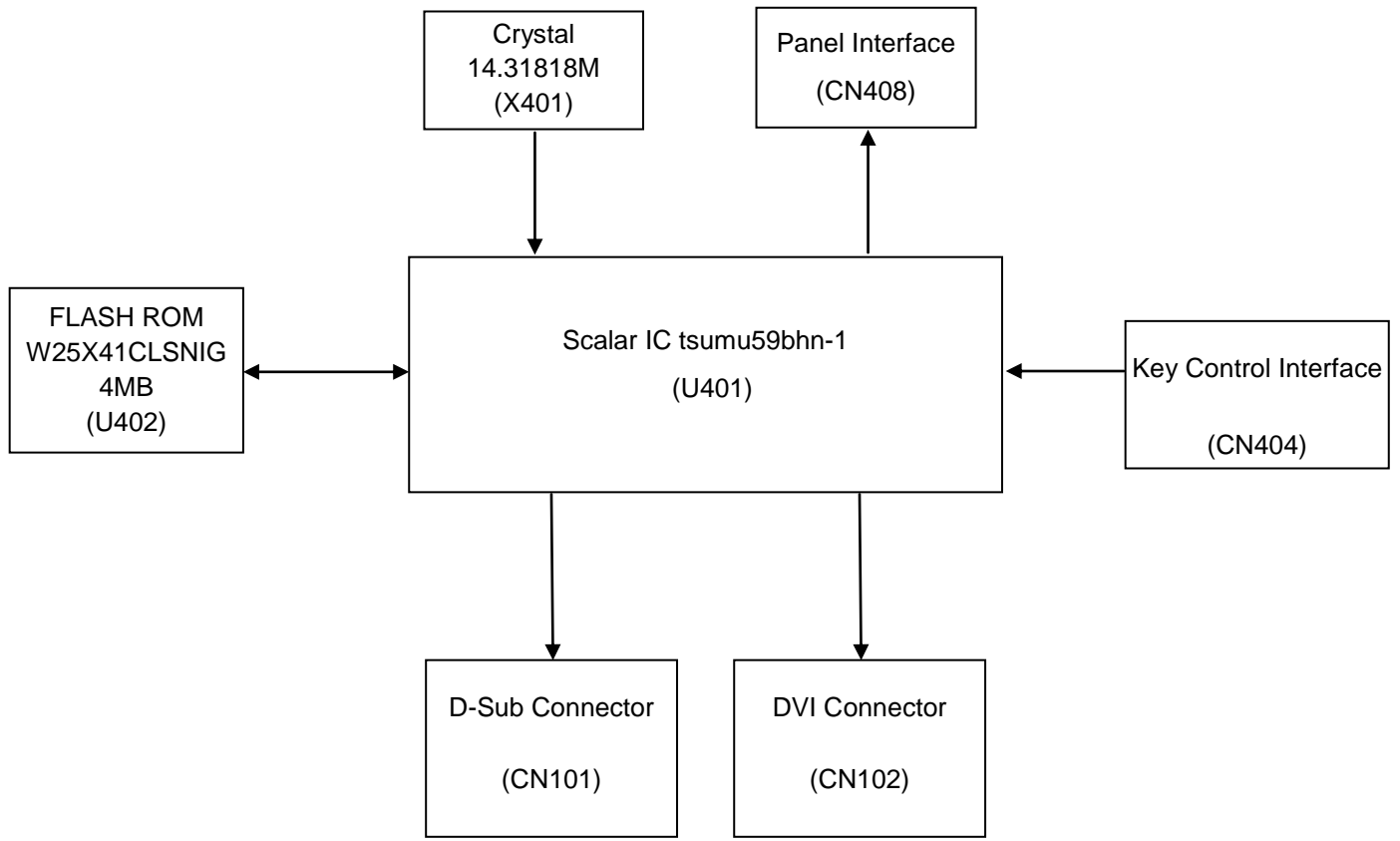
715G6851M01000004C (for 223V5LSB2/223V5BSB2)



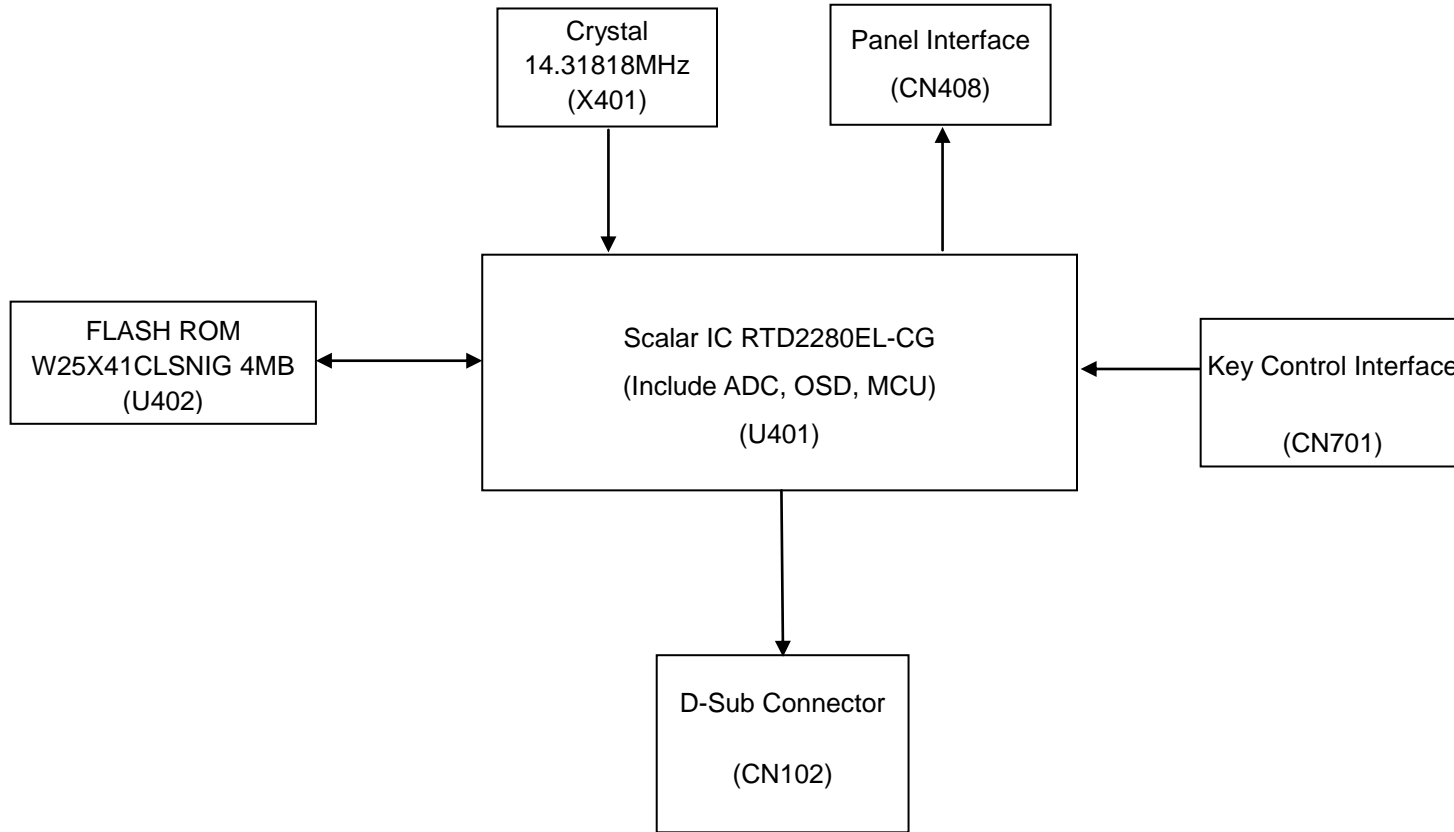
715G7334M01BRA004Y (for 223V5LHSB2)



715G6911M01003004C (for 223V5LSB)

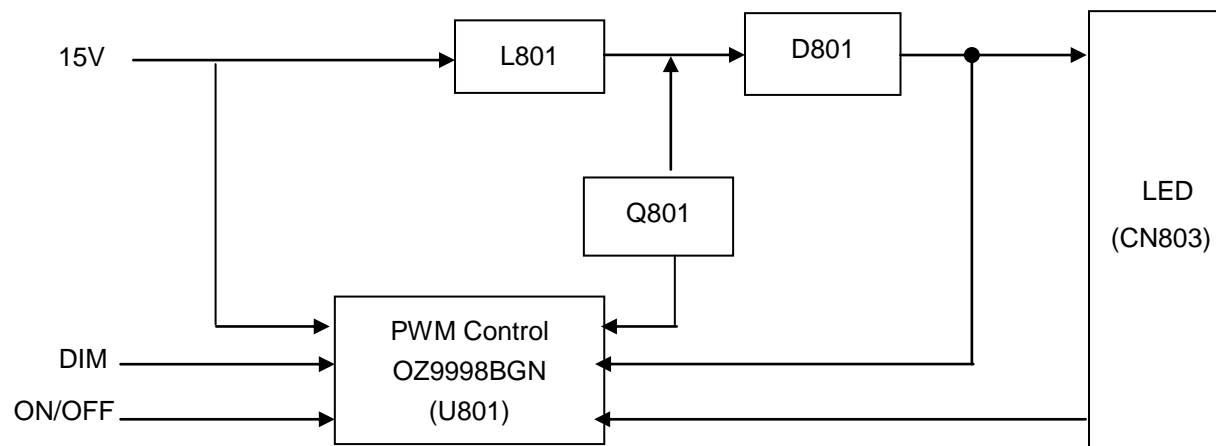
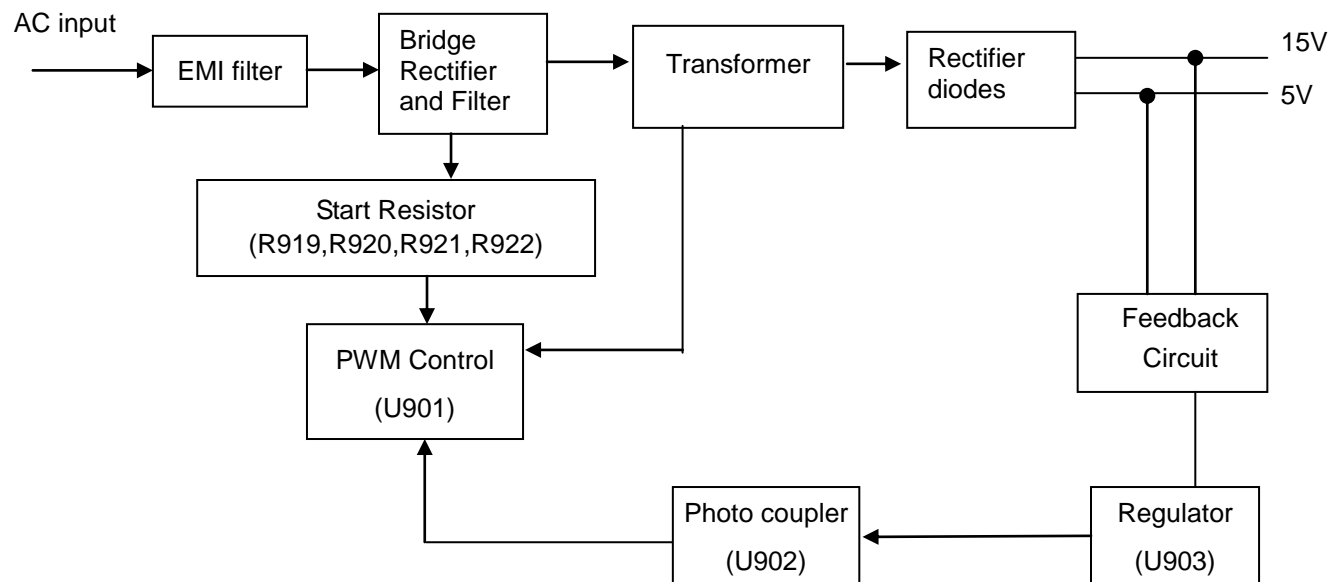


715G6948M02007004K (for 223V5LSB2)

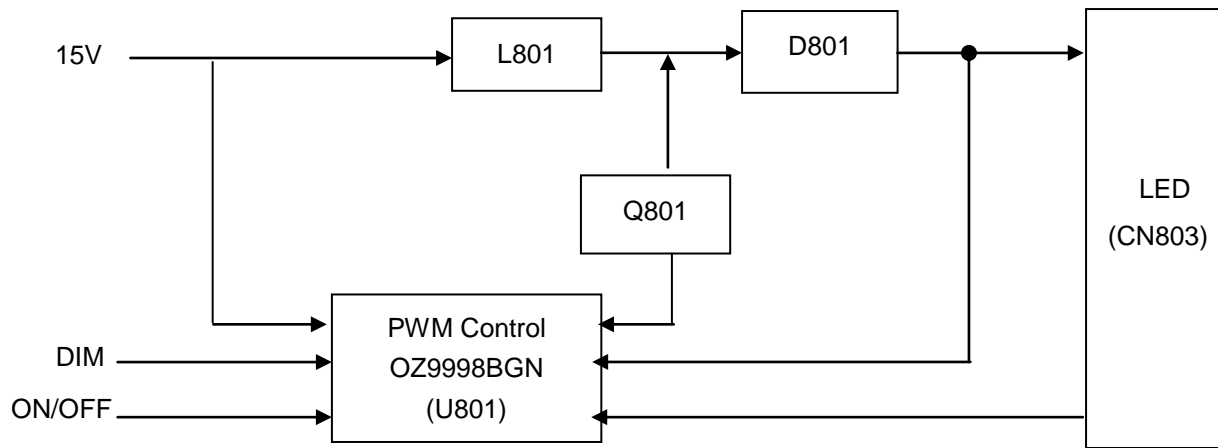
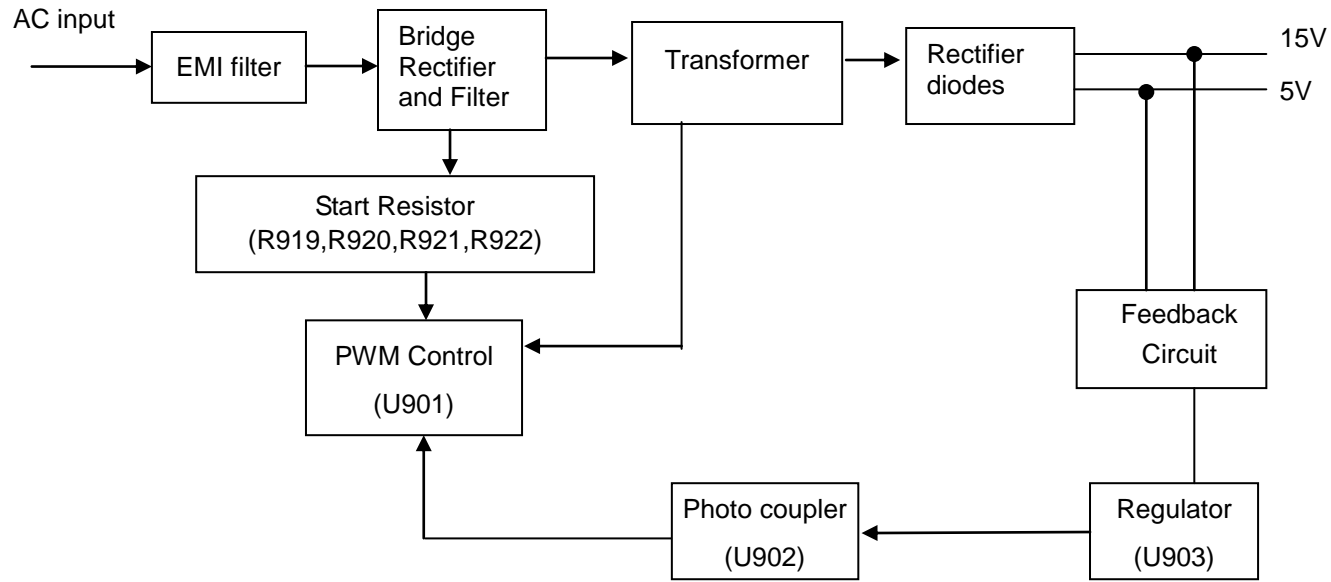


5.2 Power Board

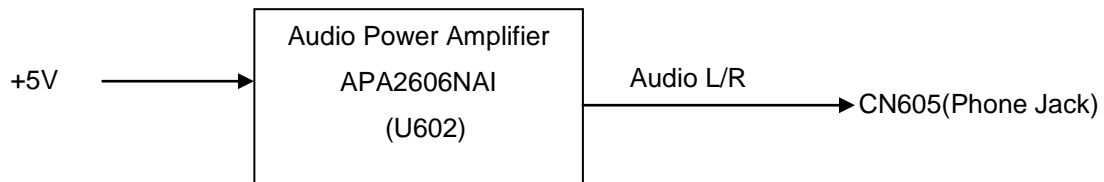
715G5527P01004001C (for 223V5LSB2/223V5LSB)



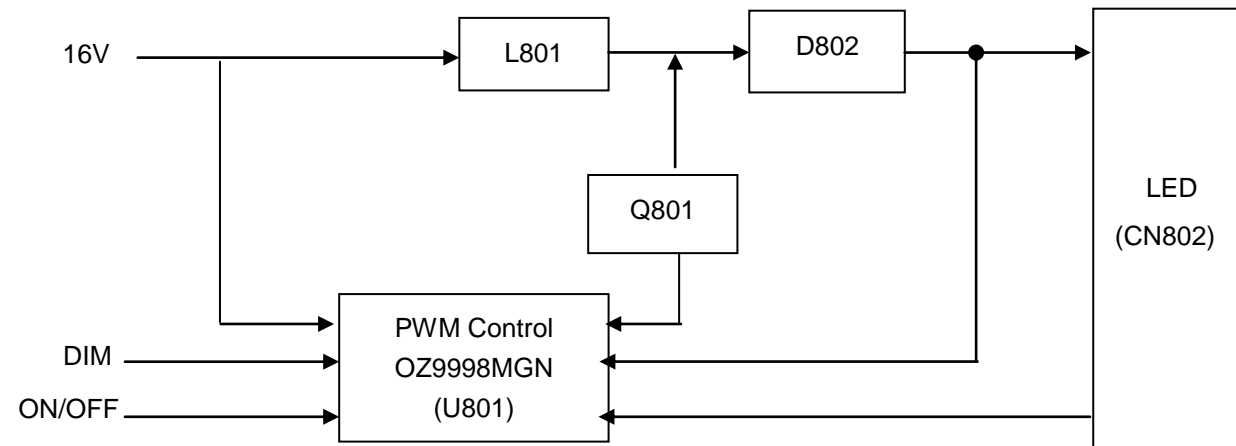
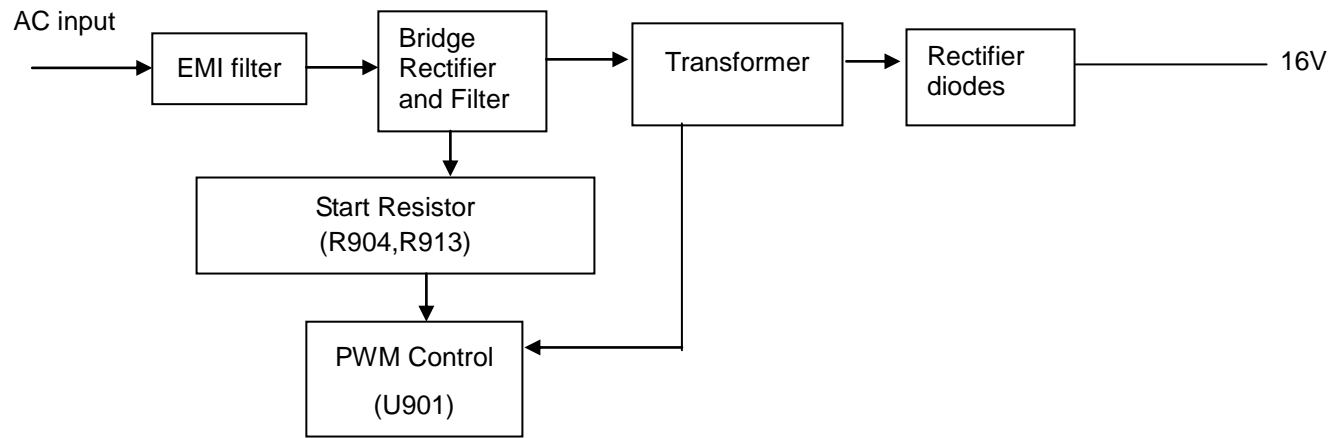
715G4497P06000001S(for 223V5LHSB)

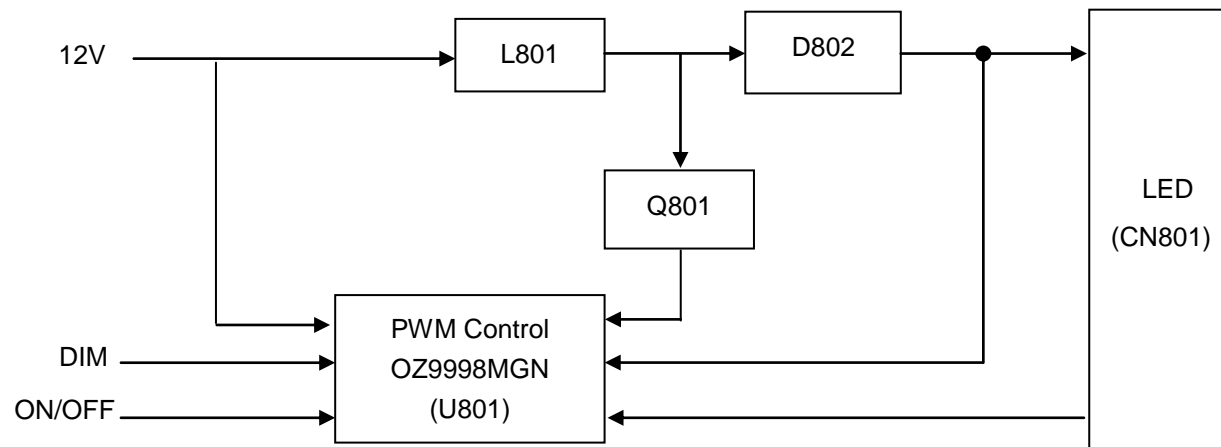
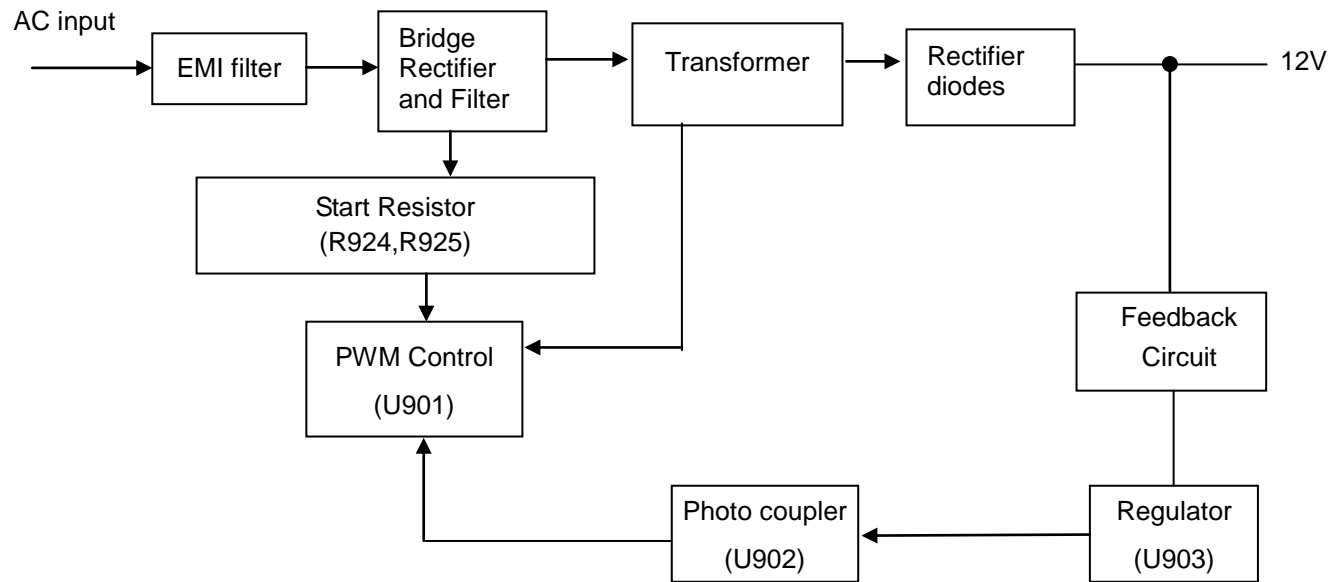


Audio

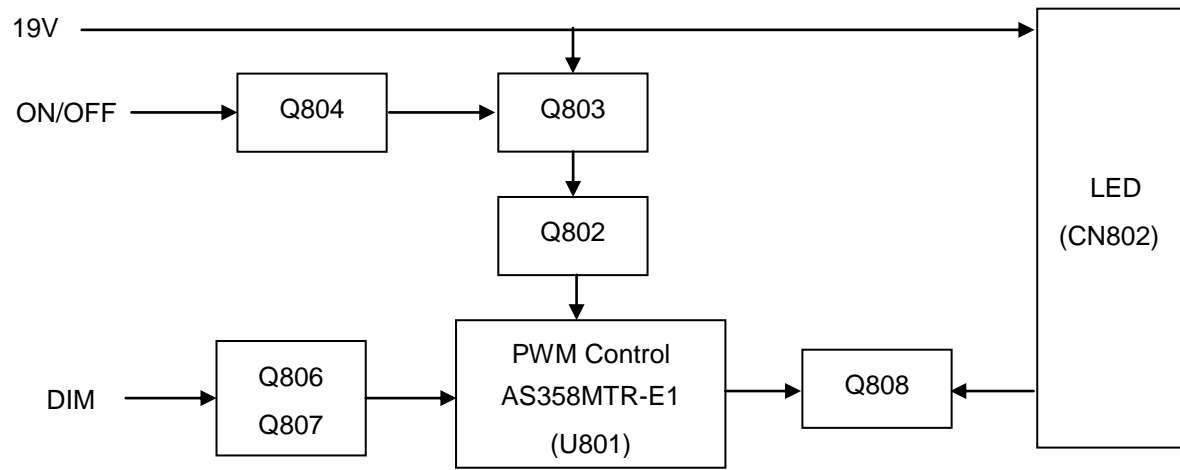
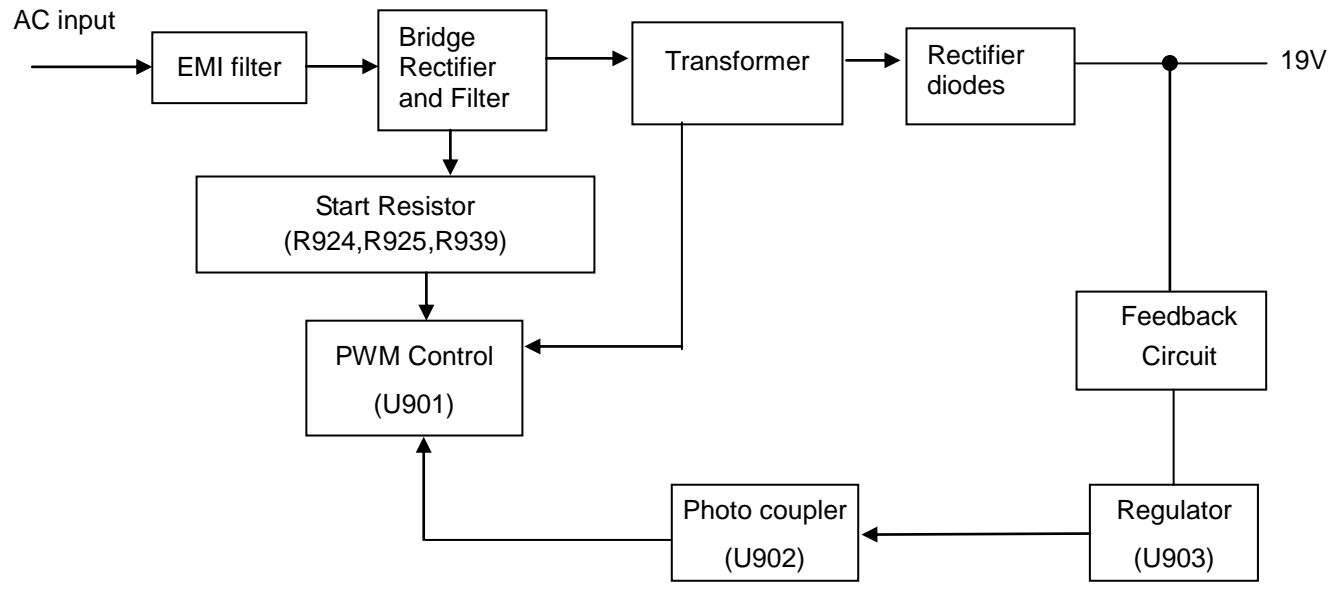


715G6503P02001001C (for 223V5LSB2/223V5LHSB2)





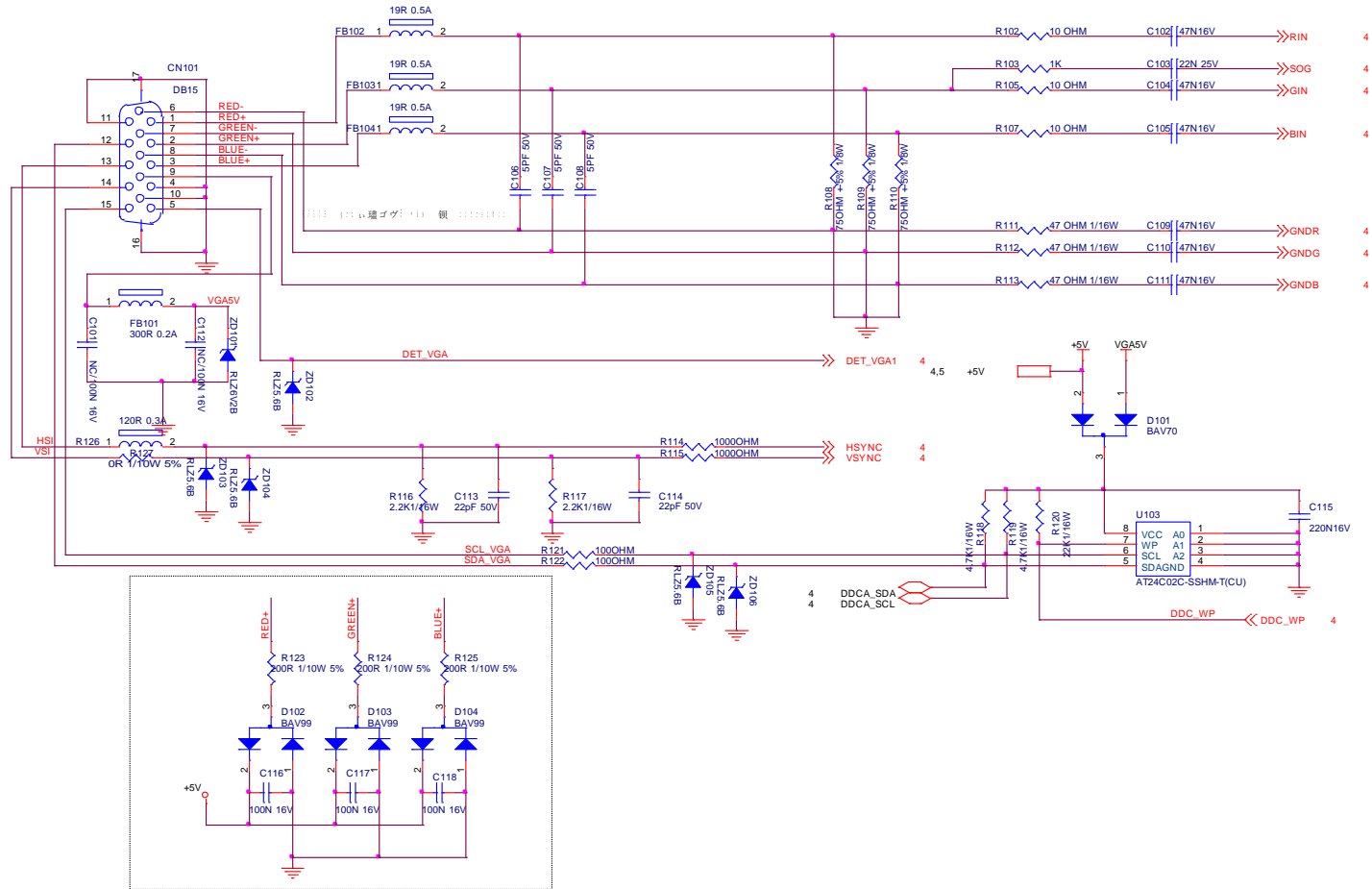
715G7300P02001001C



6. Schematic

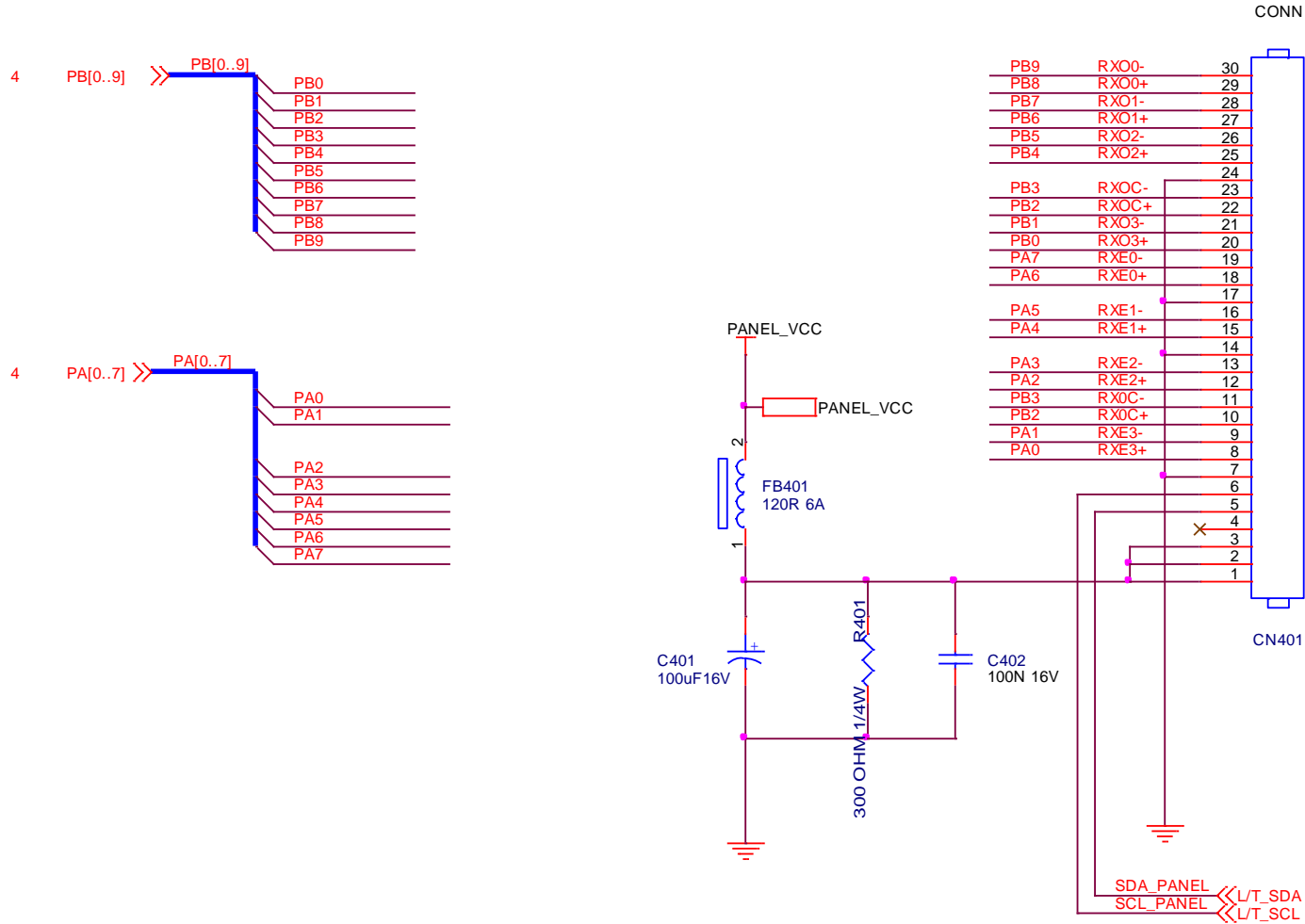
6.1 Scaler Board (715G5846M01000004I)(for 223V5LSB2)

Remark: Parts position can be searched by using FIND function in PDF.



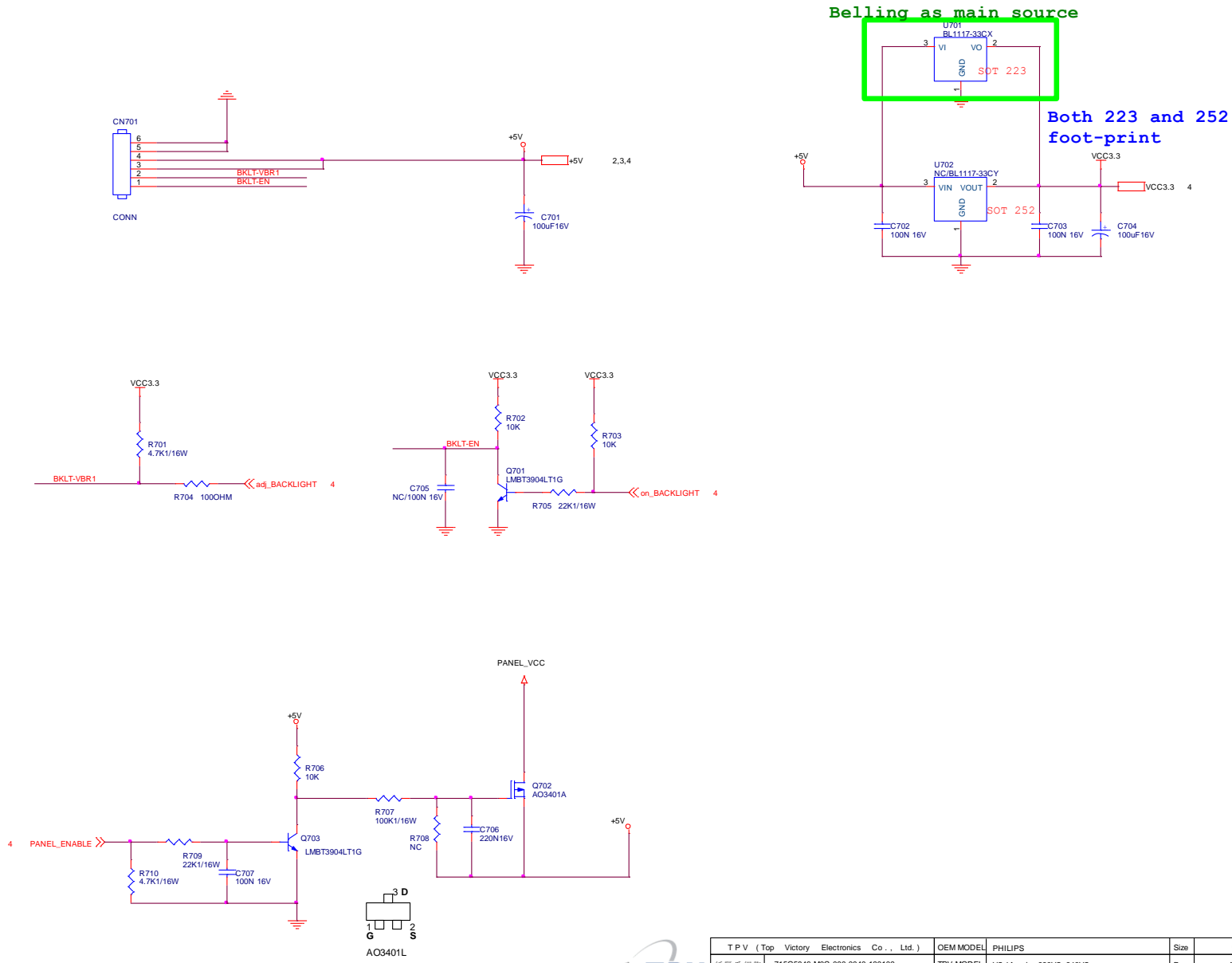
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS	Size	B
振南広電機	715G5846-M0C-000-0040-130103	TPV MODEL	V5 1A only 223V5 243V5	Rev
Key Component	02.INPUT VGA	PCB NAME		修案
Date	Monday, May 27, 2013	Sheet	2 of 5	<修案>

Remark: Parts position can be searched by using FIND function in PDF.



T P V (Top Victory Electronics Co., Ltd.)		OEM MODEL	PHILIPS	Size	A
結構瓜網腹	715G5846-M0C-000-0040-130103	TPV MODEL	V5 1A only 223V5 243V5	Rev	A
Key Component	03.OUTPUT	PCB NAME		称爹	<称爹>
Date	Friday, January 04, 2013	Sheet	3 of 5		

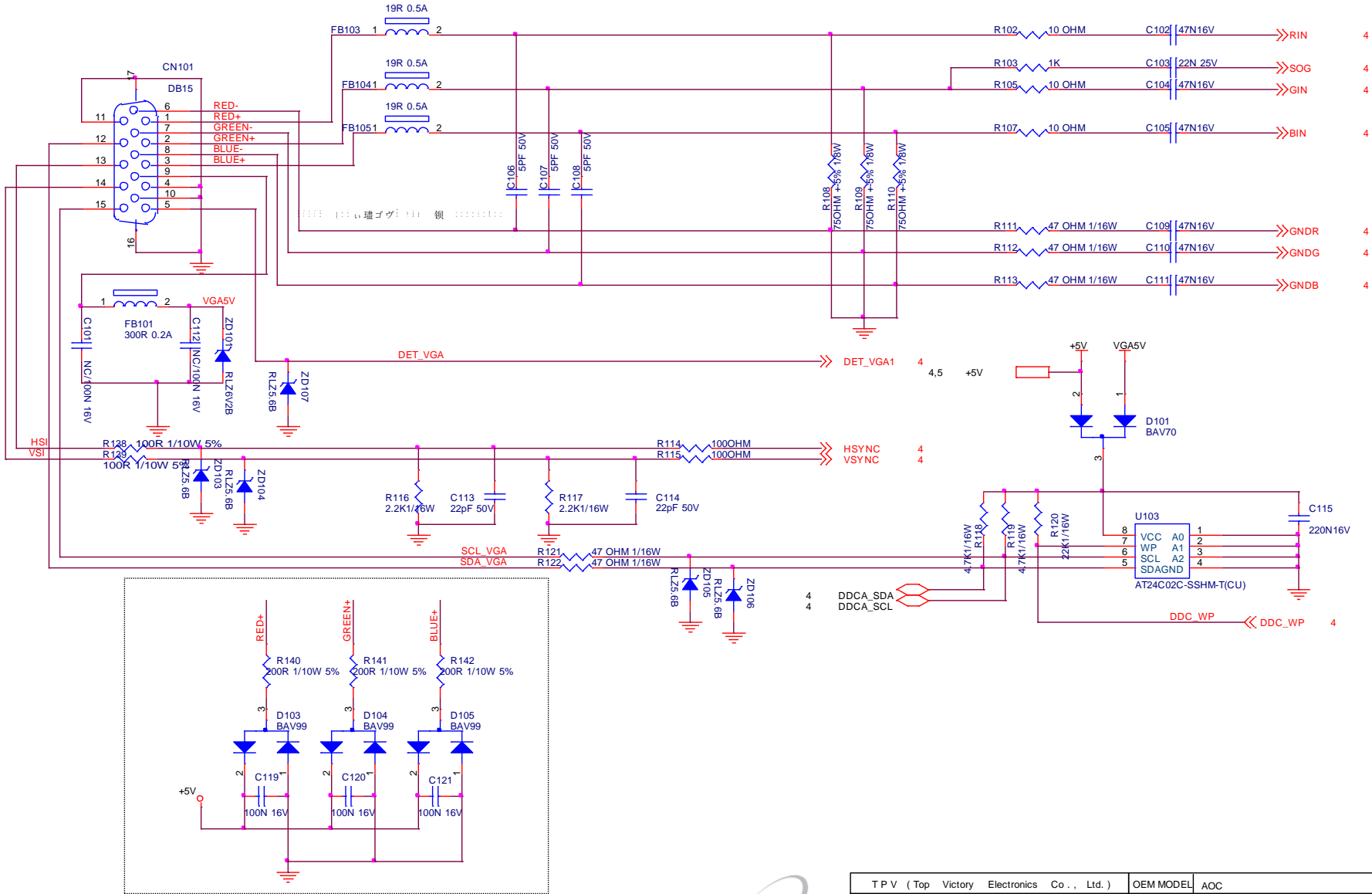
Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS	Size	Custom
新隔瓜總機 715G5846-MOC-000-0040-130103	TPV MODEL	V5 1A only 223V5 243V5	Rev	A
Key Component 05_POWER	PCB NAME		修簽	<修簽>
Date Friday, January 04, 2013	Sheet	5 of 5		

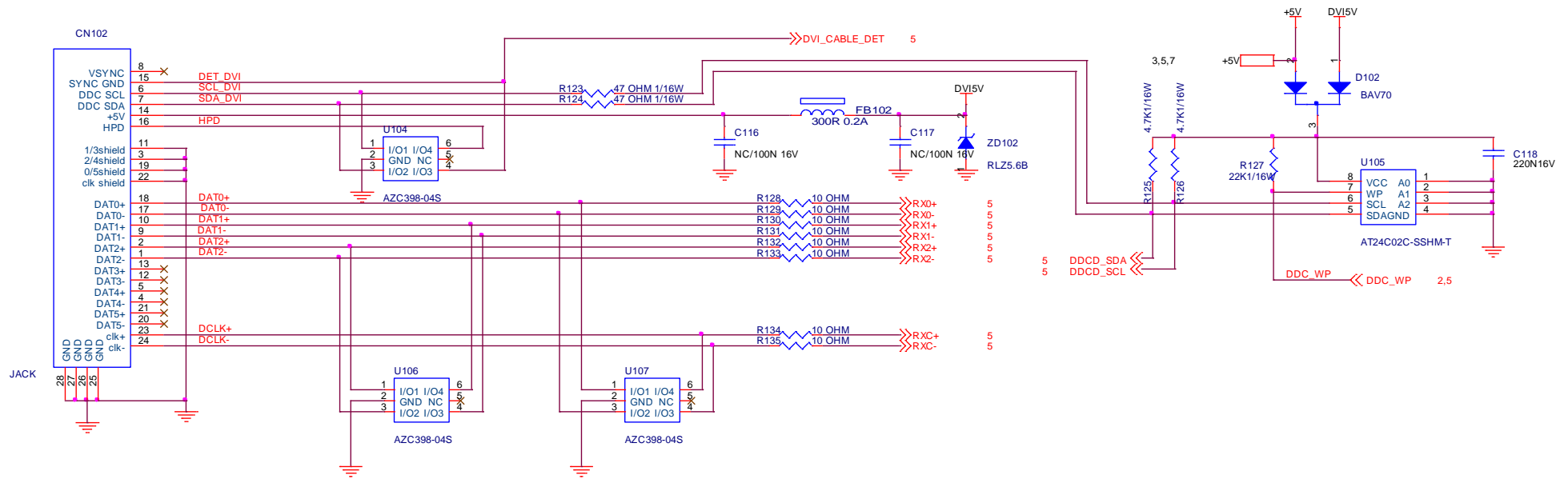
715G5863M0D00004S (for 223V5LSB)

Remark: Parts position can be searched by using FIND function in PDF.

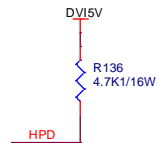


T P V (Top Victory Electronics Co . , Ltd .)	OEM MODEL	AOC	Size	B
蘇 隔 瓜 網 股	715G5863-M0B-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	02.INPUT VGA	PCB NAME		称 号
Date	Thursday , January 03, 2013	Sheet	2 of 6	< 称 号 >

Remark: Parts position can be searched by using FIND function in PDF.

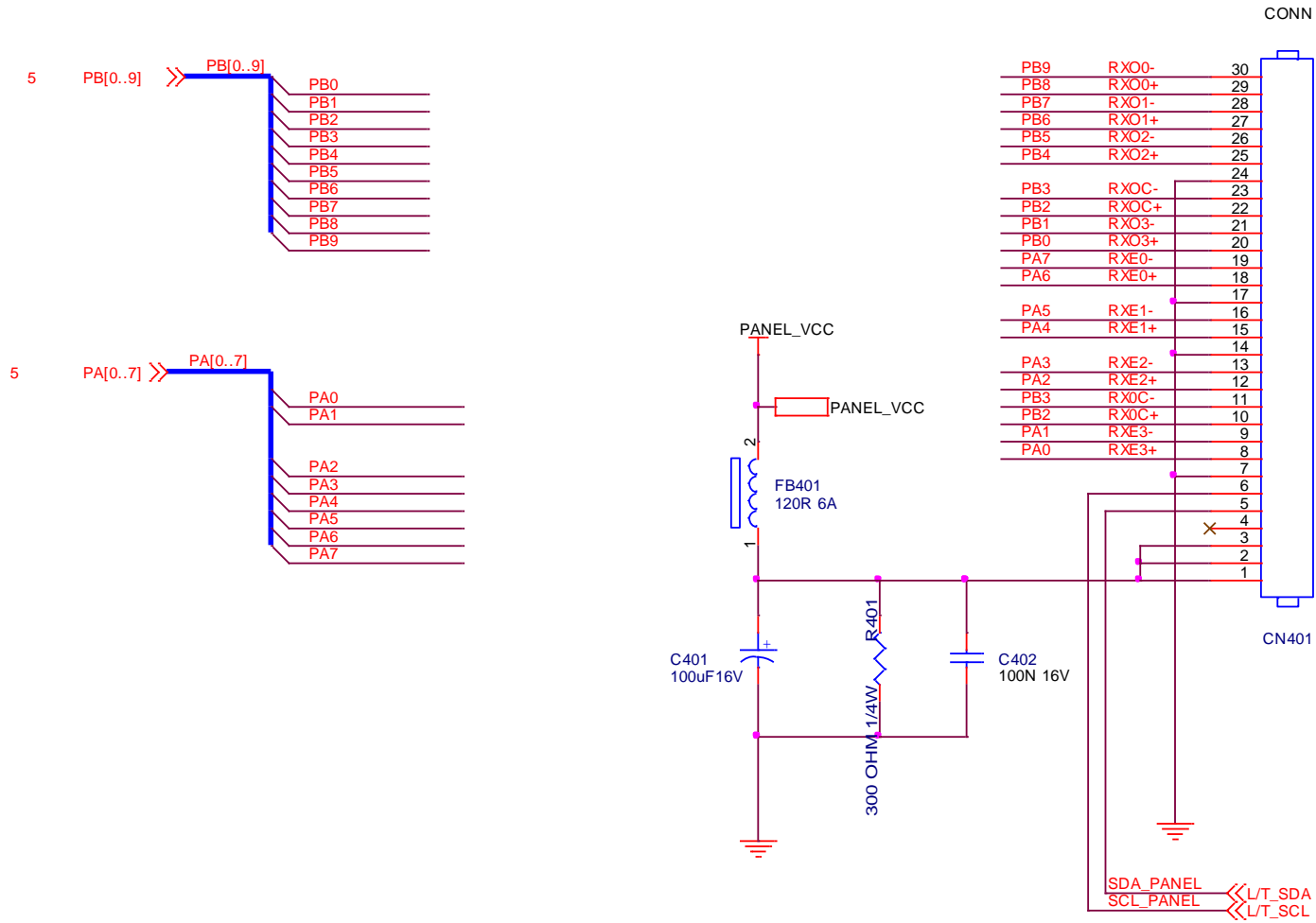


散廉催PN: 088G 35424FXNH



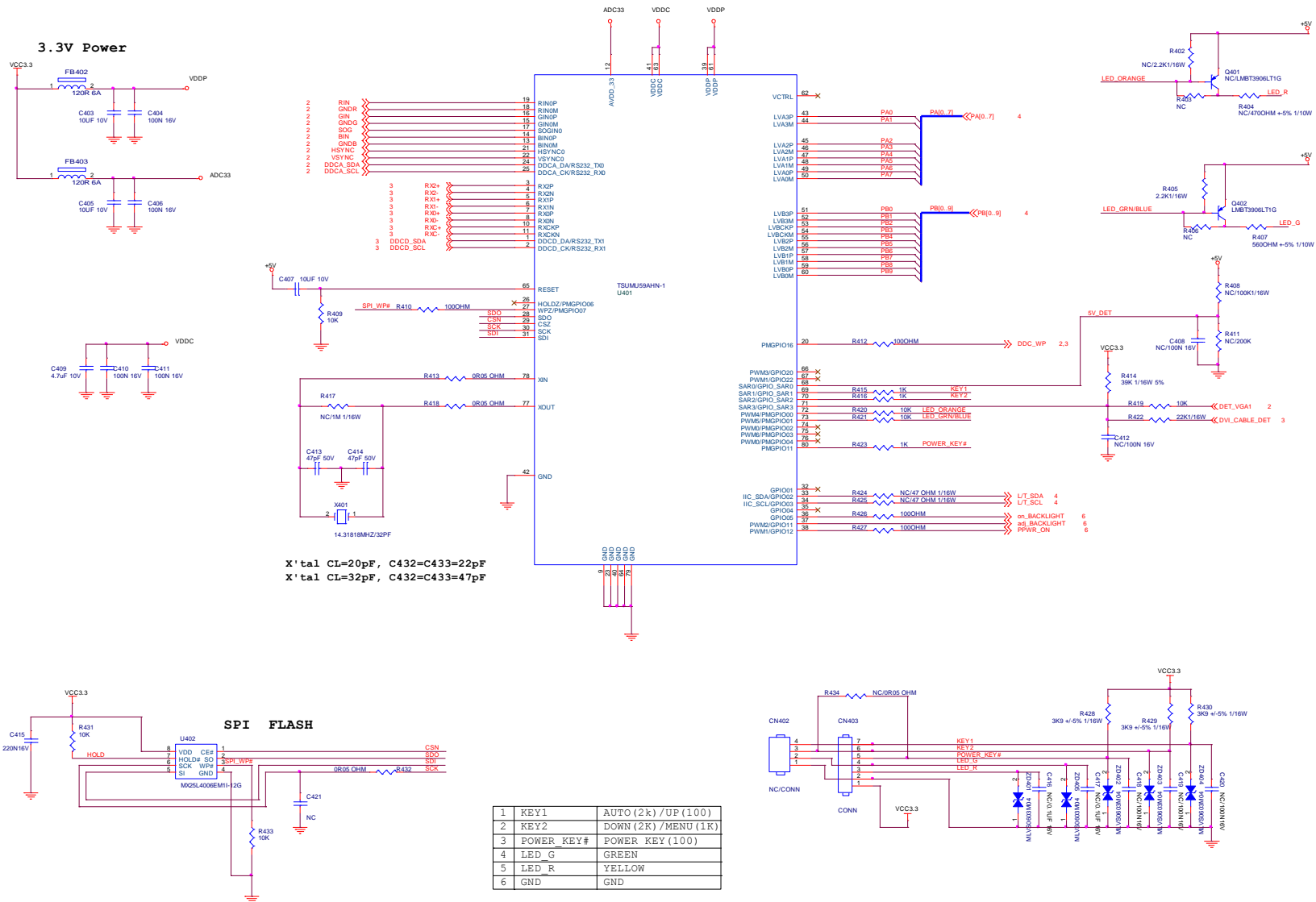
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	B
经隔瓜網膜	715GS863-M0B-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	03.INPUT DVI	PCB NAME	称爹	<称爹>
Date	Thursday, January 03, 2013	Sheet	3 of 6	

Remark: Parts position can be searched by using FIND function in PDF.



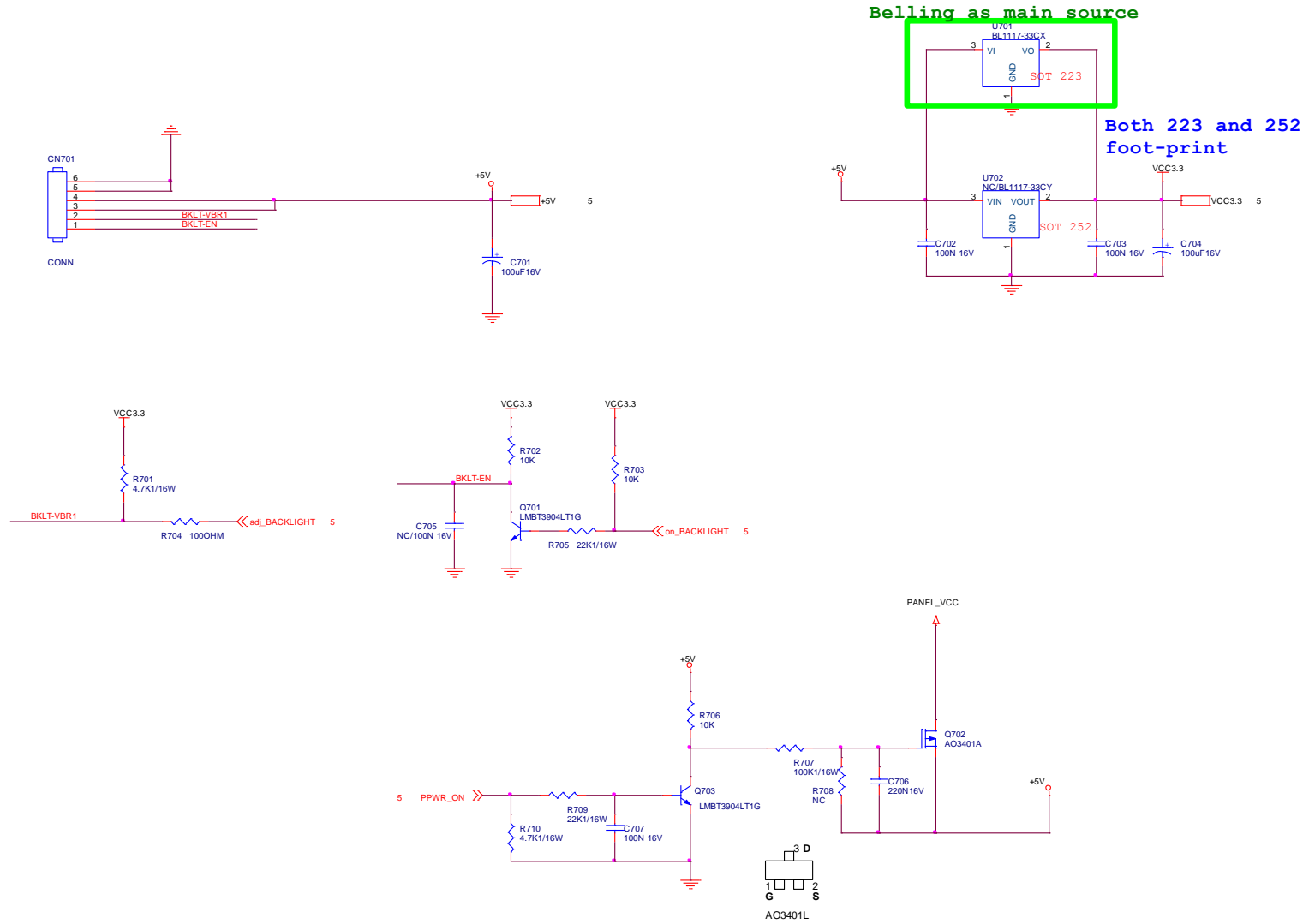
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	A
結構瓜網腹	715G5863-M0B-000-0040	TPV MODEL	Rev	A
Key Component	04.OUTPUT	PCB NAME	稱號	<稱號>
Date	Thursday, January 03, 2013	Sheet	4 of 6	

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AQC	Size	C
Rev 001	715G863-MB-000-0040	TPV MODEL	E24705WD	Rev
Key Component	05.SCALER TSMU59AHN-1	PCB NAME		A
Date	Thursday, January 03, 2013	Sheet	5 of 6	Rev
				*

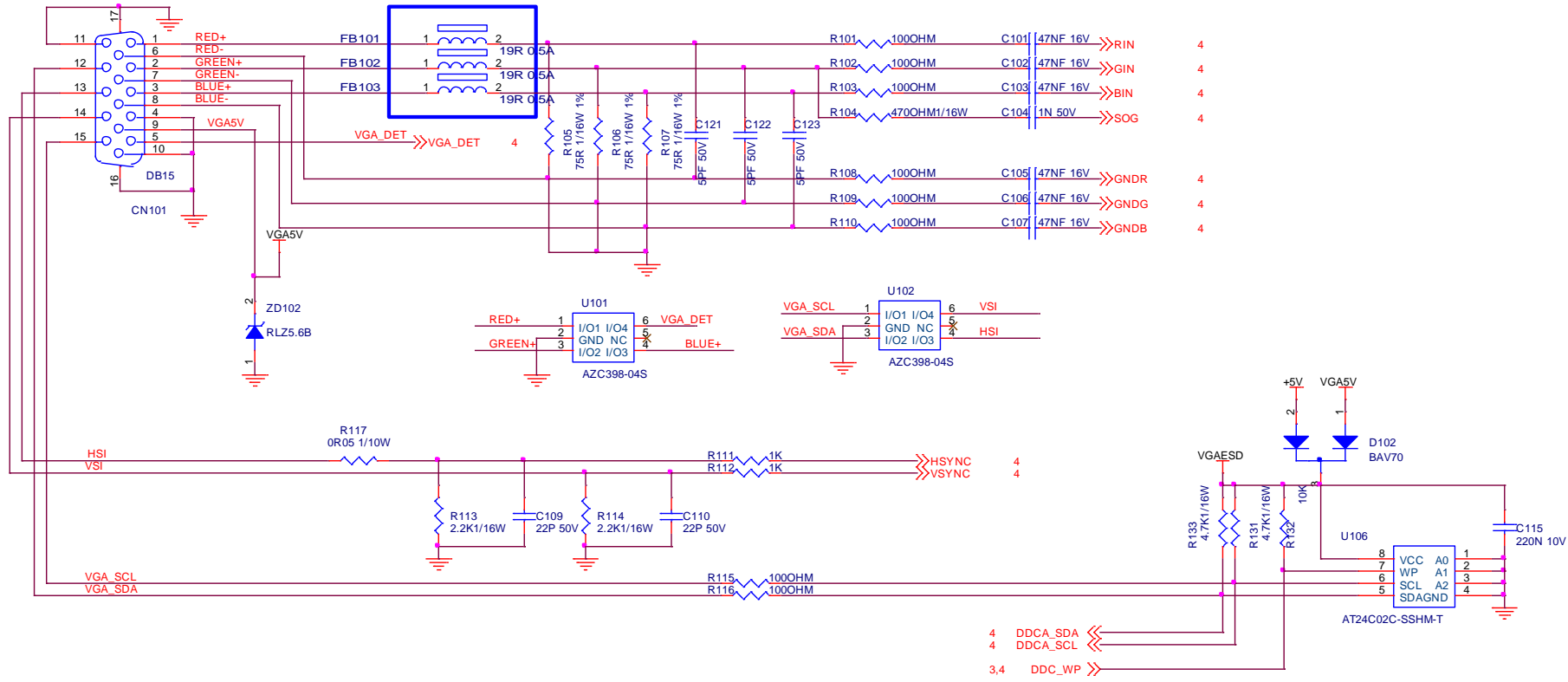
Remark: Parts position can be searched by using FIND function in PDF.



T P V (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	Custom
插板位置	715G58E3-MOB-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	06.POWER	PCB NAME	板架	<修差>
Date	Thursday, January 03, 2013	Sheet	6 of 6	

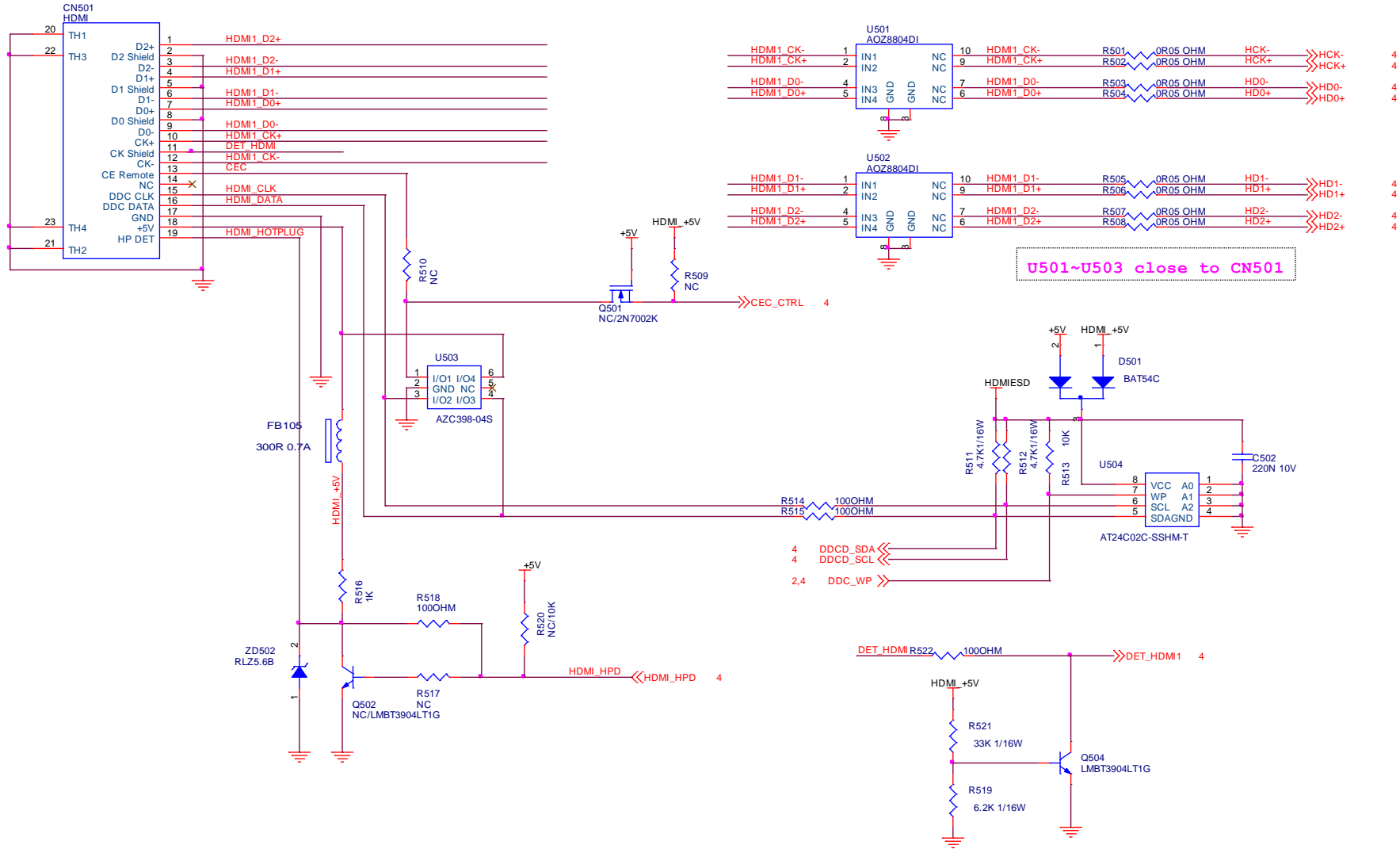
715G5844M01000004S (for 223V5LHSB)

Remark: Parts position can be searched by using FIND function in PDF.



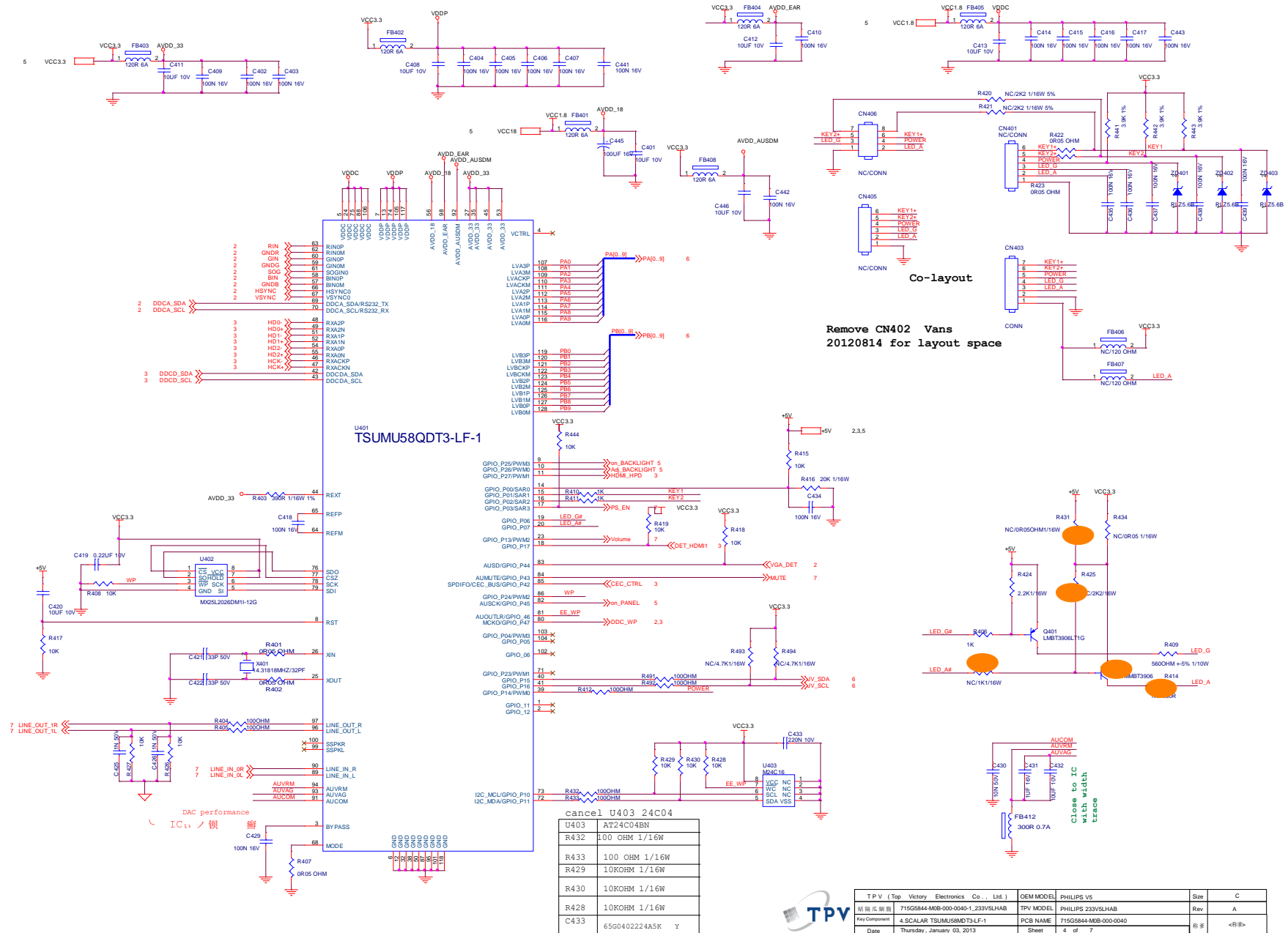
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS V5	Size	B
隔隔瓜網膜	715G5844-M0B-000-0040-1_233V5LHAB	TPV MODEL	PHILIPS 233V5LHAB	Rev
Key Component	2.VGA INPUT	PCB NAME	715G5844-M0B-000-0040	称簽
Date	Thursday, January 03, 2013	Sheet	2 of 7	<称簽>

Remark: Parts position can be searched by using FIND function in PDF.

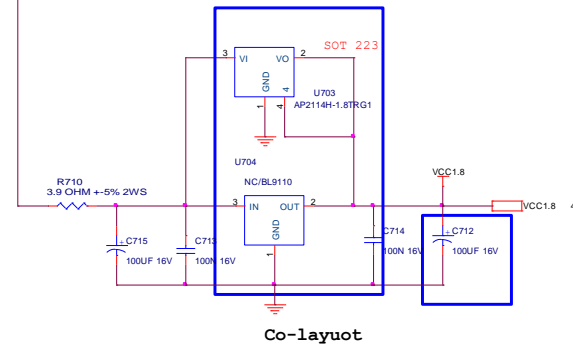
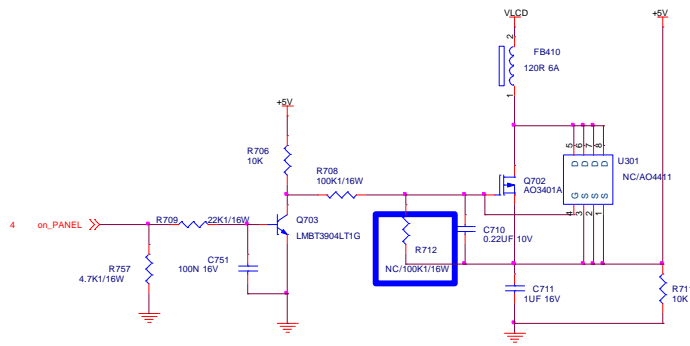
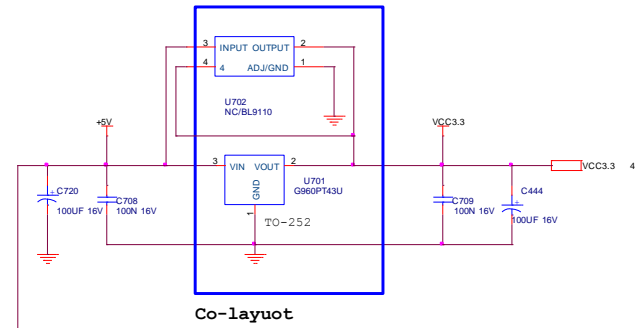
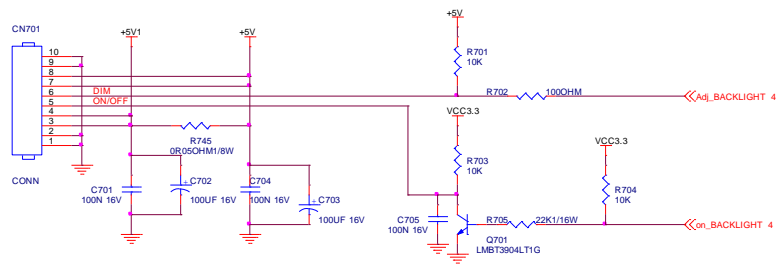


T P V (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS V5	Size	B
基爾瓜爾膜	715G5844-M0B-000-0040-1_233V5LHAB	TPV MODEL	PHILIPS 233V5LHAB	Rev
Key Component	3.HDMI INPUT	PCB NAME	715G5844-M0B-000-0040	称差
Date	Thursday, January 03, 2013	Sheet	3 of 7	<称差>

Remark: Parts position can be searched by using FIND function in PDF.

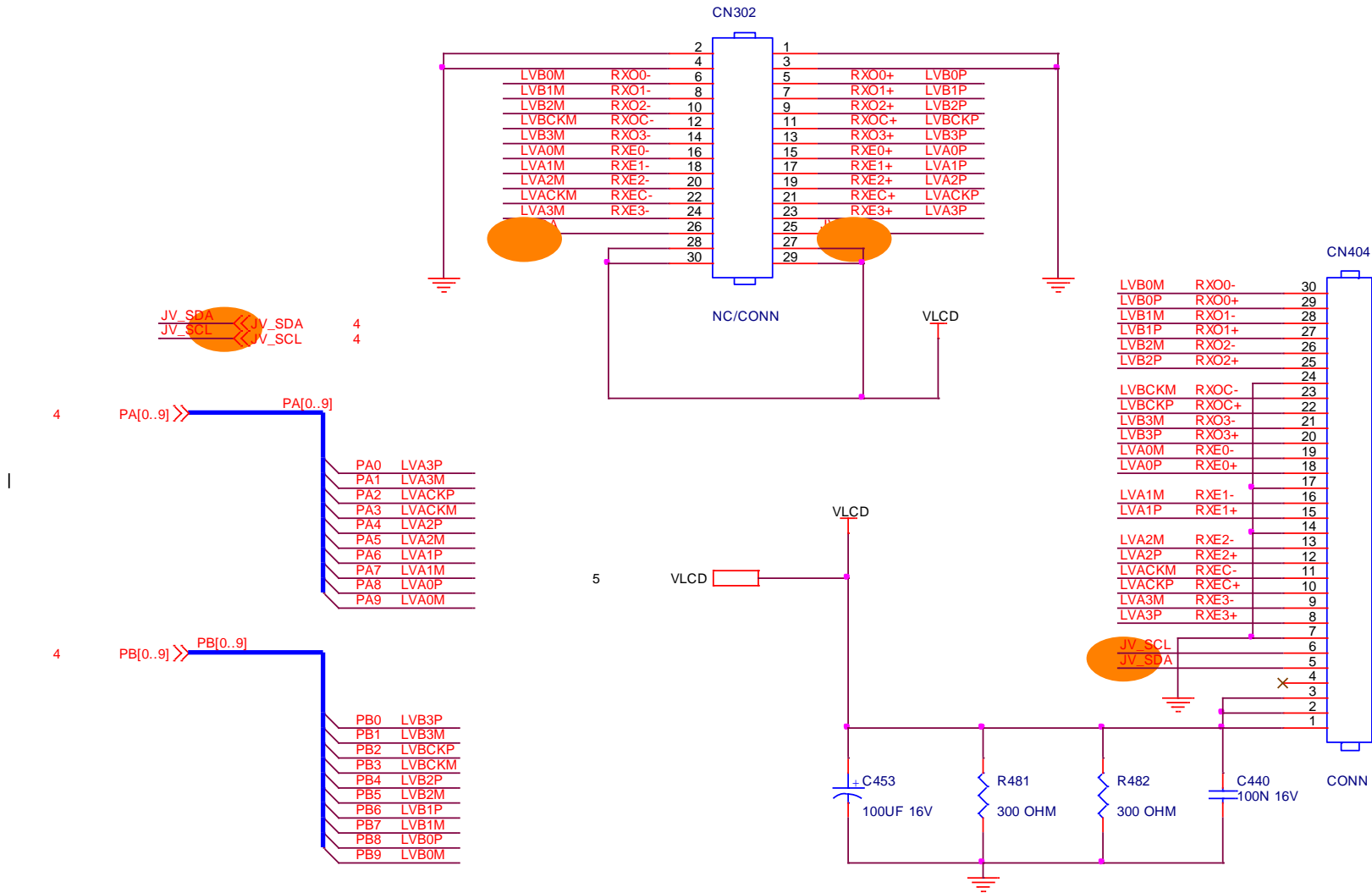


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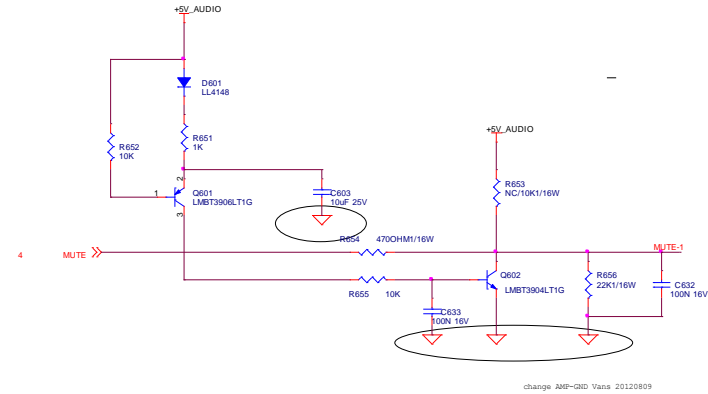
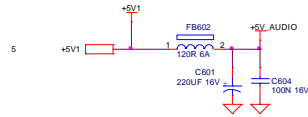
T.P.V (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS V5	Size	Custom
結算 瓜前数	715G5844-M0B-000-0040-1_233V5LHAB	TPV MODEL	PHILIPS 233V5LHAB	Rev
Key Component	5.POWER	PCB NAME	715G5844-M0B-000-0040	称差
Date	Thursday, January 03, 2013	Sheet	5 of 7	<称差>

Remark: Parts position can be be searched by using FIND function in PDF.

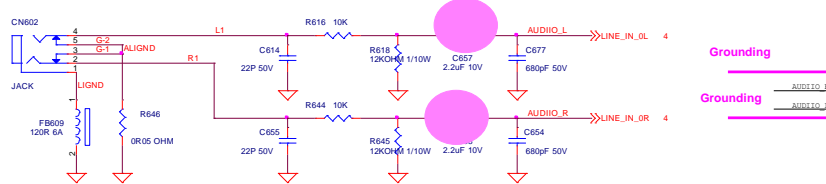


TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS V5	Size	A
結構瓜網腹	715G5844-M0B-000-0040-1_233V5LHAB	TPV MODEL	PHILIPS 233V5LHAB	Rev
Key Component	6.OUTPUT	PCB NAME	715G5844-M0B-000-0040	称爹
Date	Thursday, January 03, 2013	Sheet	6 of 7	<称爹>

Remark: Parts position can be searched by using FIND function in PDF.

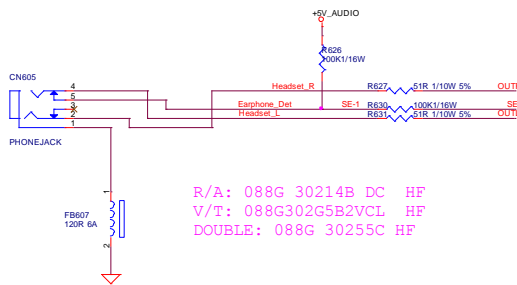


Placement Near Audio Connector

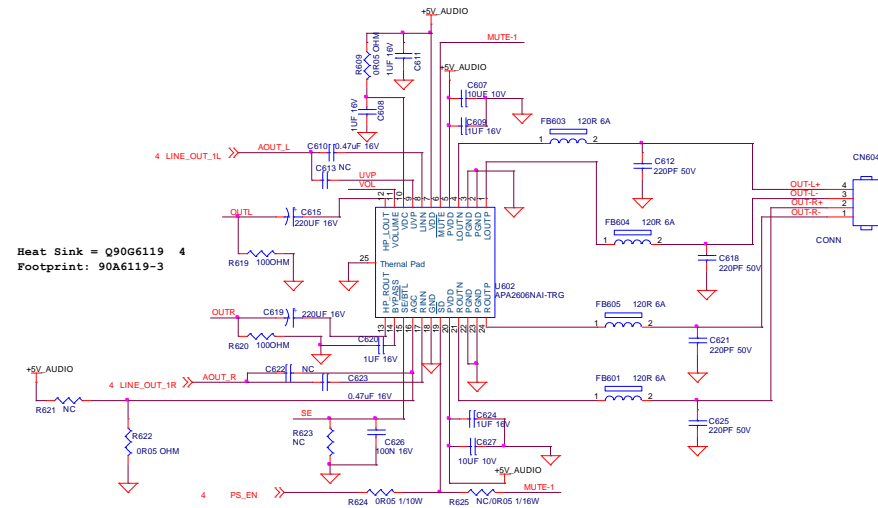
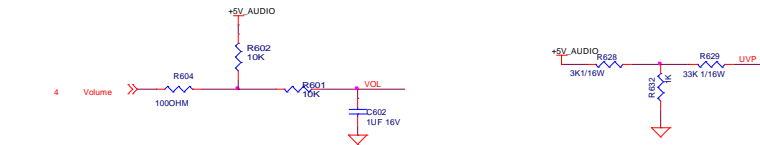
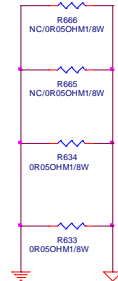


R/A: 088G 30214K DC HF
V/T: 088G302G5G1VCL HF

Placement Near Scaler



R/A: 088G 30214B DC HF
V/T: 088G302G5B2VCL HF
DOUBLE: 088G 30255C HF



Heat Sink = Q90G6119 4
Footprint: 90A6119-3



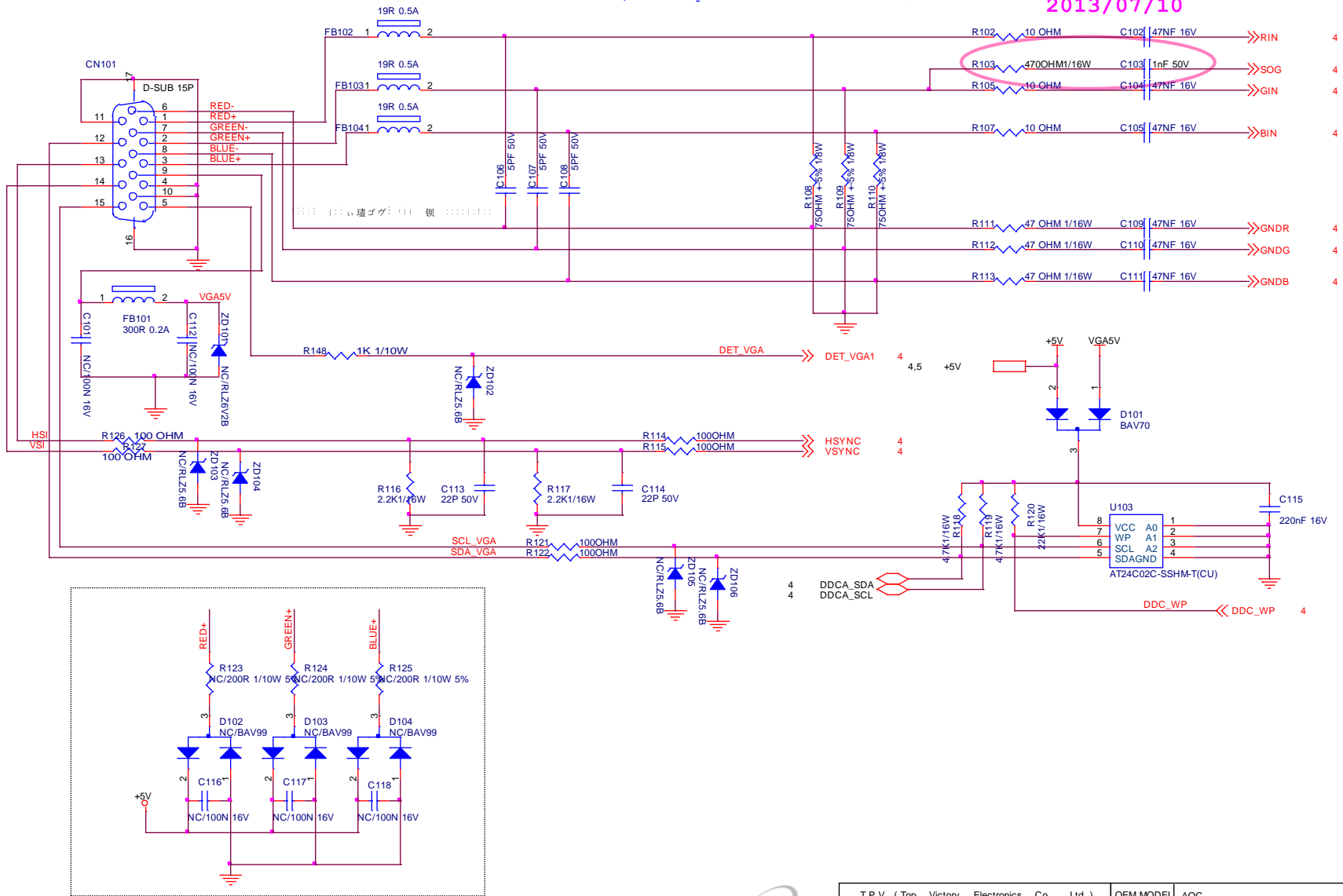
T P V (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS V5	Size	Custom
前通式圖號	715G5844-MOB-000-0040-1.233V5LHAB	TPV MODEL	PHILIPS 233V5LHAB	Rev
Key Component	7.AUDIO APA2606	PCB NAME	715G5844-MOB-000-0040	A
Date	Thursday, January 03, 2013	Sheet	7 of 7	特製 <非製>

715G6851M01000004C (for 223V5LSB2/223V5BSB2)

Remark: Parts position can be searched by using FIND function in PDF.

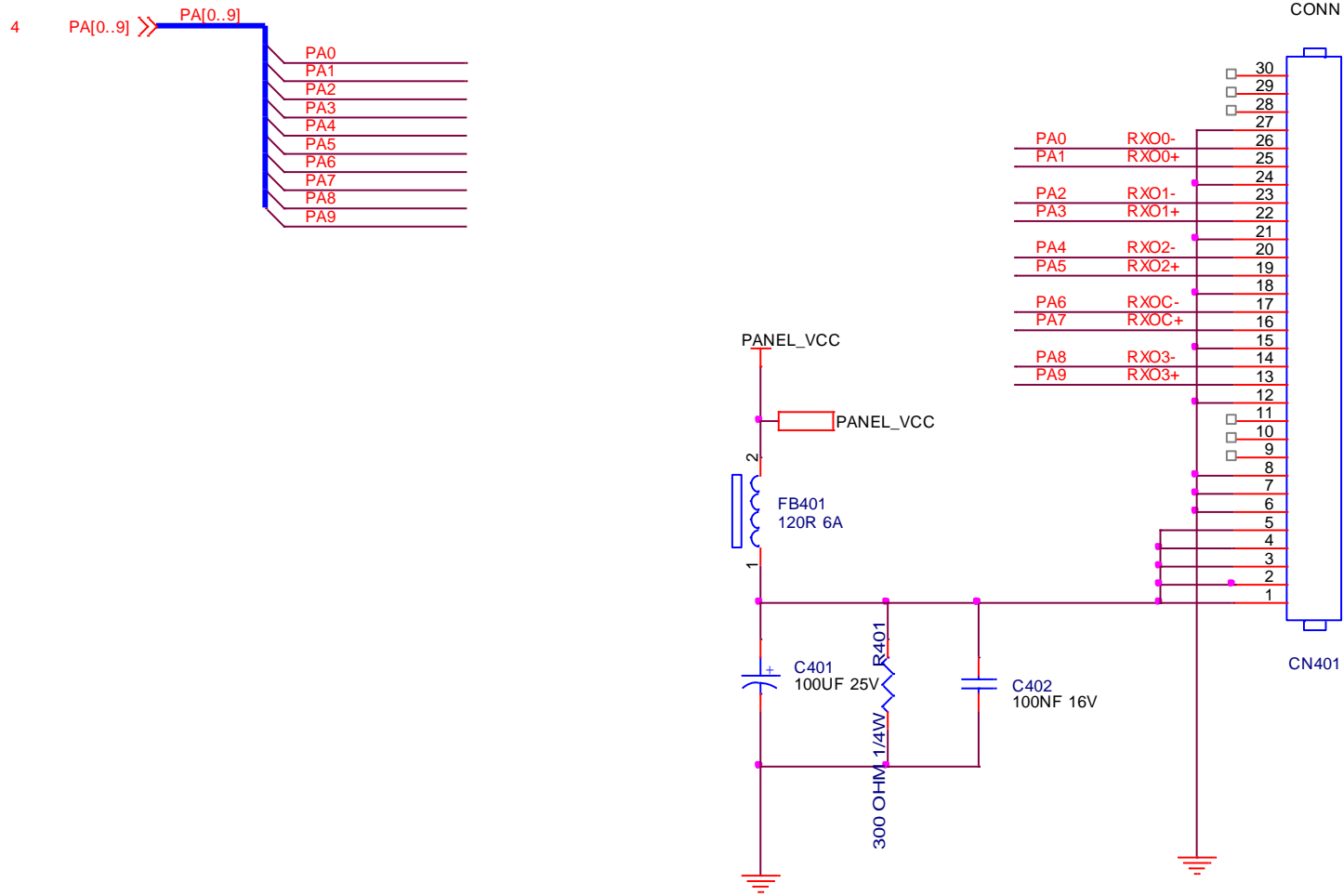
For NT68169 ,VGA input ESD回路可省 (需考量)

2013/07/10



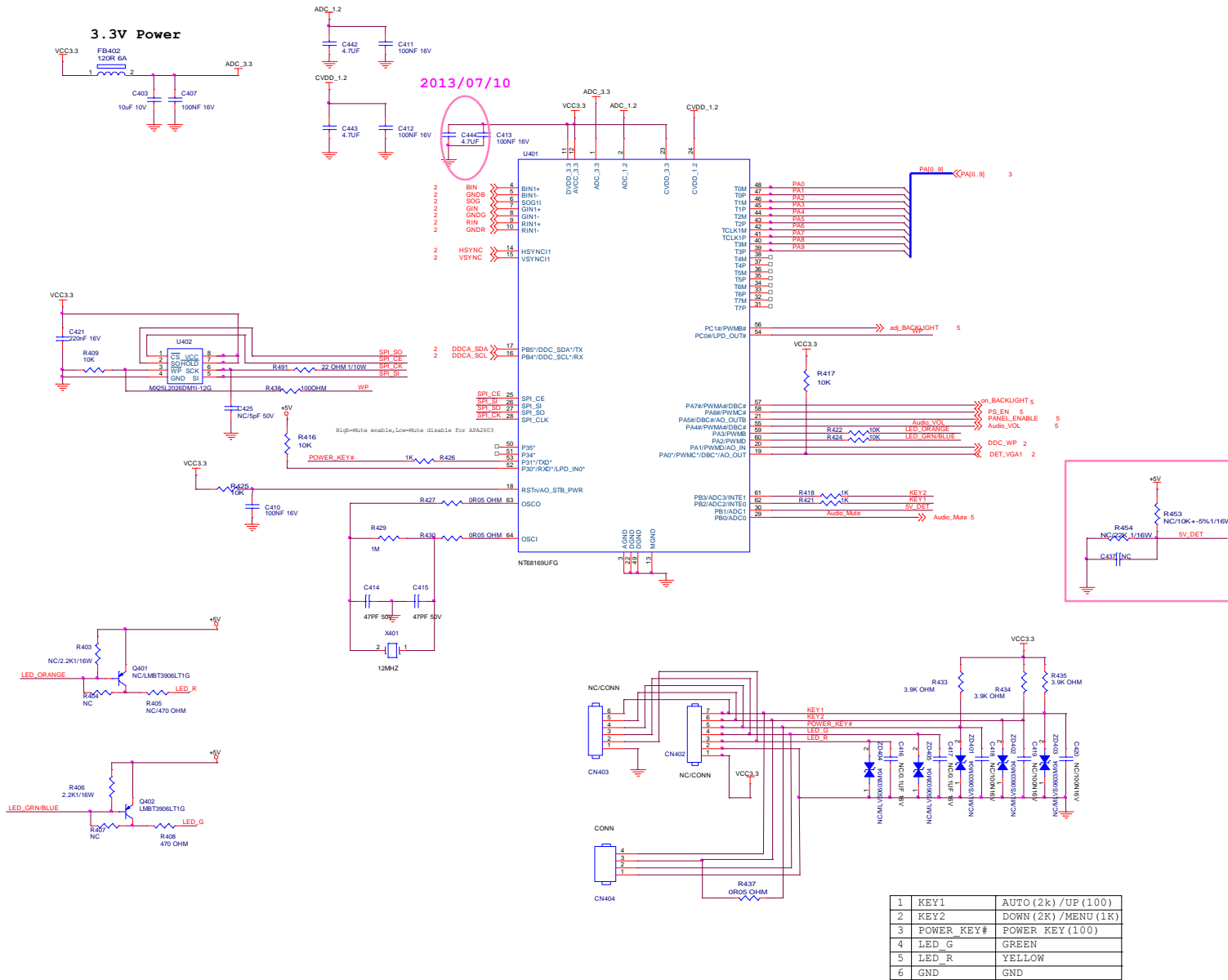
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	B
显示屏模组	TPV MODEL	1A-19"	Rev	A
Key Component	02.INPUT VGA	PCB NAME	称爹	<称爹>
Date	Wednesday, February 12, 2014	Sheet	2 of 5	

Remark: Parts position can be searched by using FIND function in PDF.



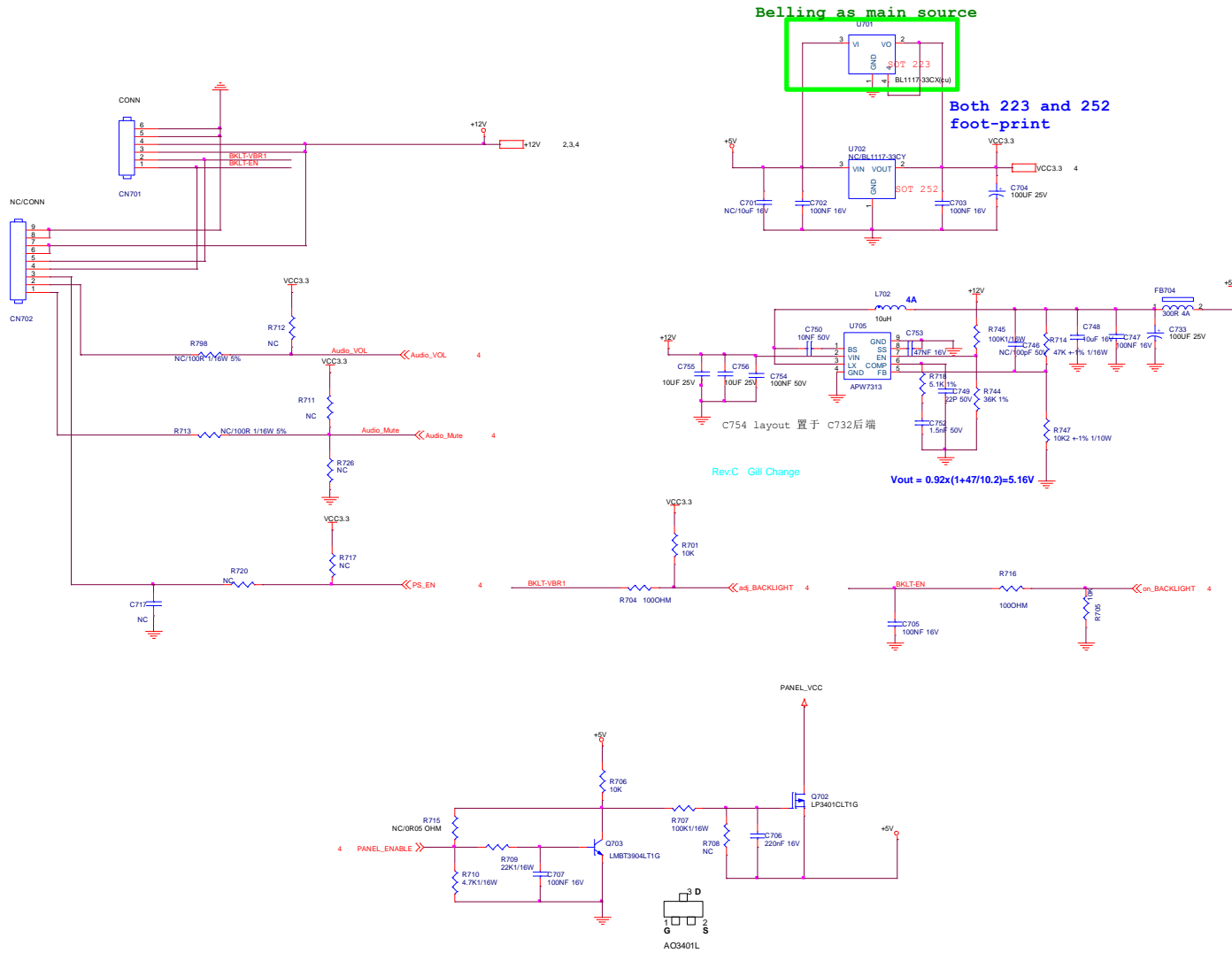
TPV (Top Victory Electronics Co. , Ltd.)		OEM MODEL	AOC	Size	A
結構瓜網腹		TPV MODEL	1A-19"	Rev	A
Key Component	03.OUTPUT	PCB NAME		称爹	<称爹>
Date	Wednesday, February 12, 2014	Sheet	3 of 5		

Remark: Parts position can be searched by using FIND function in PDF.



1	KEY1	AUTO (2K) / UP (100)
2	KEY2	DOWN (2K) / MENU (1K)
3	POWER_KEY#	POWER KEY (100)
4	LED_G	GREEN
5	LED_R	YELLOW
6	GND	GND

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	C
第 五 版 修 改	TPV MODEL	1A-19'	Rev	A
Key Component	05.POWER	PCB NAME		
Date	Thursday, February 27, 2014	Sheet	5 of 5	<8 8>

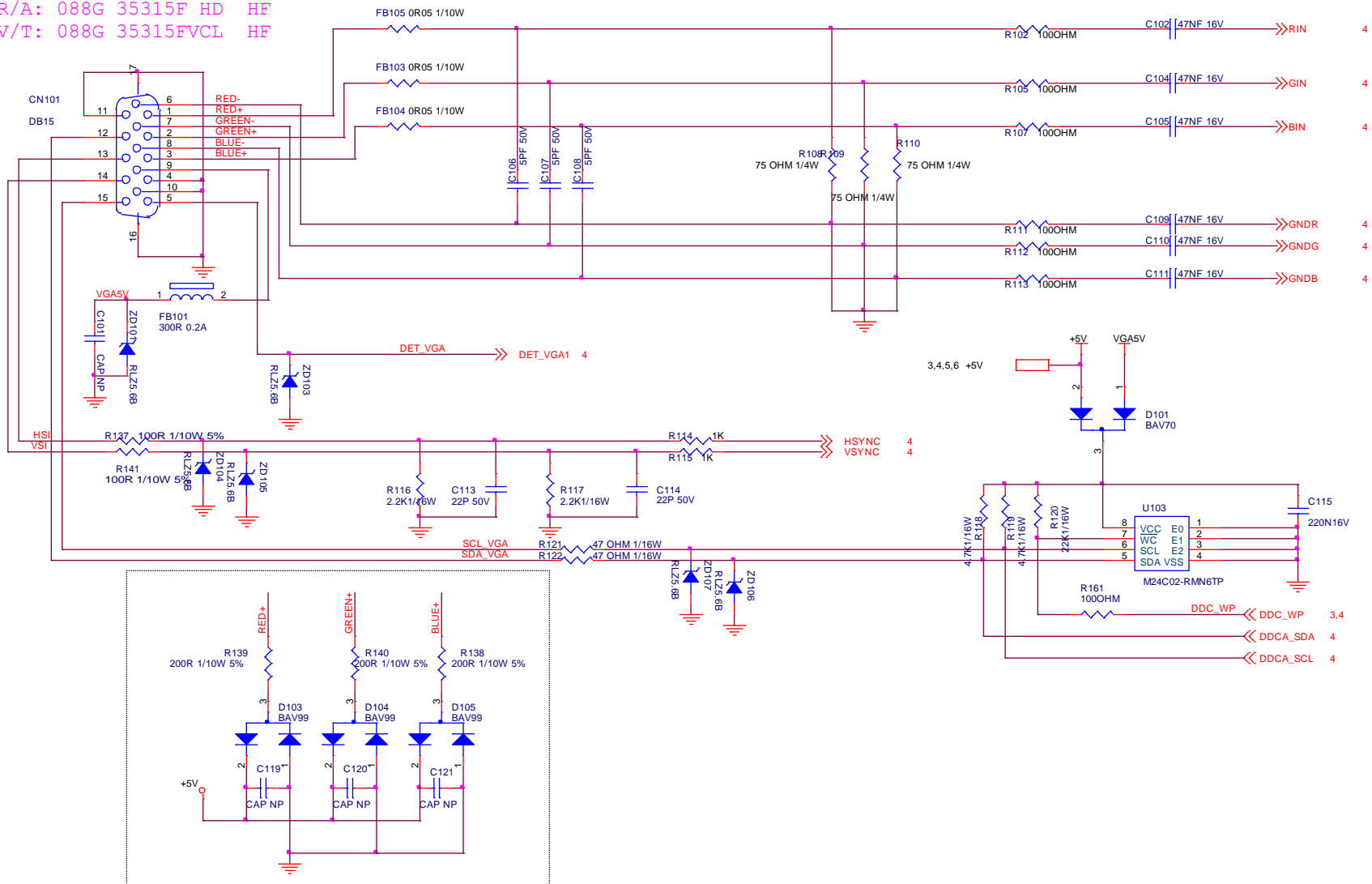
715G7334M01BRA004Y (for 223V5LHSB2)

Remark: Parts position can be searched by using FIND function in PDF.

VGA

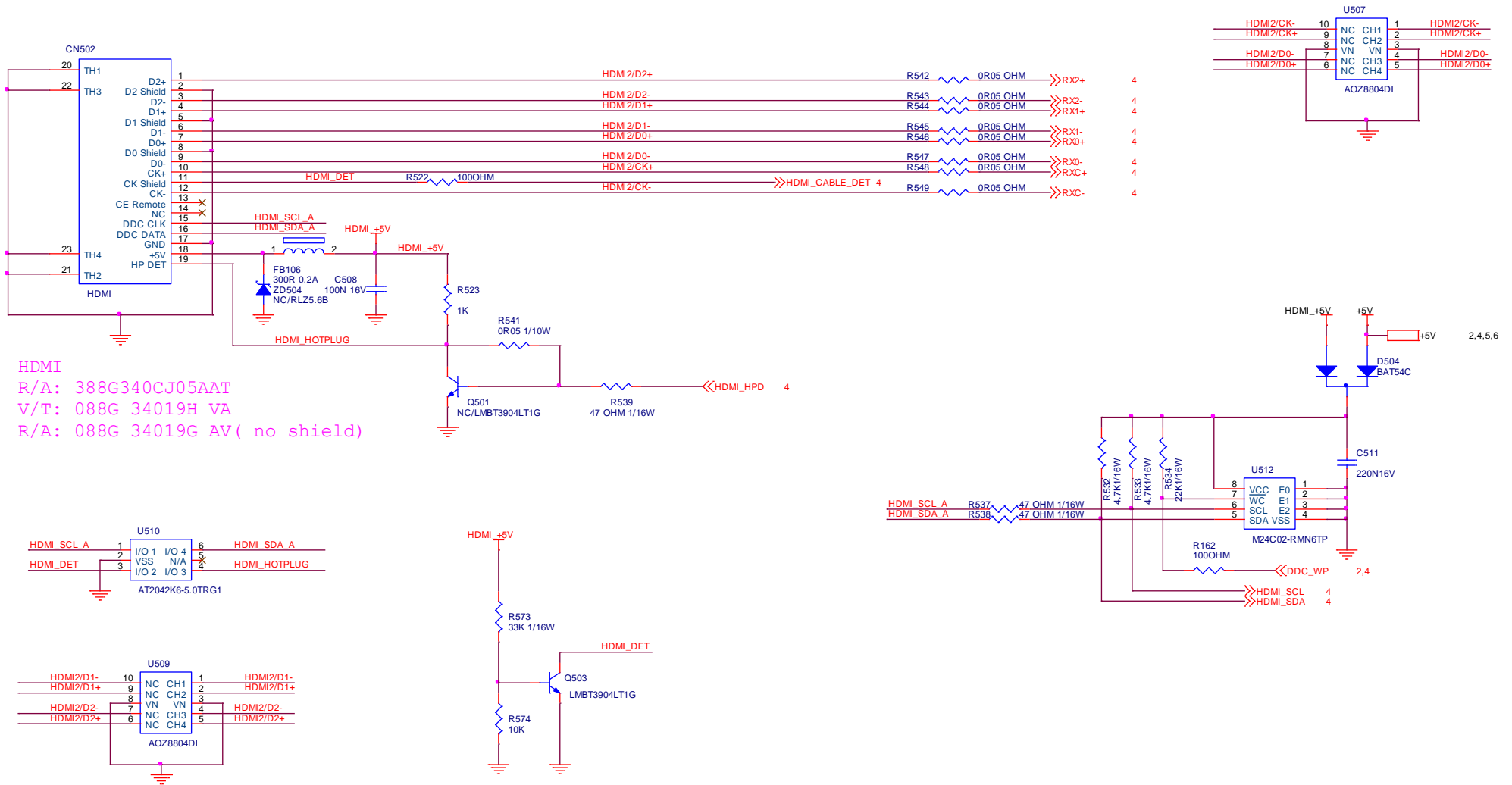
R/A: 088G 35315F HD HF

V/T: 088G 35315FVCL HF



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS	Size	B
结福瓜 蝦膜	715G7334M01BRA0040	TPV MODEL	223V5	Rev
Key Component	02 VGA Input	PCB NAME	715G7334M01BRA0040	A
Date	Thursday, February 26, 2015	Sheet	2 of 6	称委
				<称委>

Remark: Parts position can be searched by using FIND function in PDF.

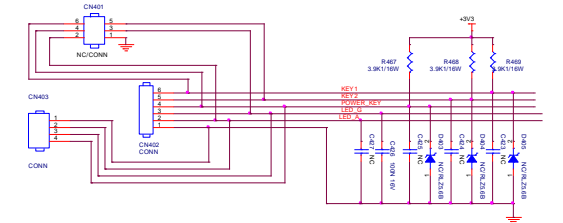
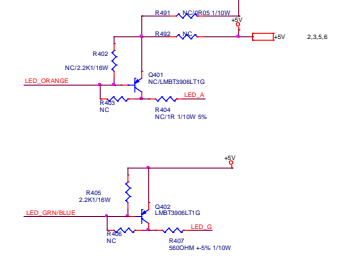
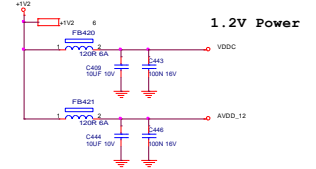
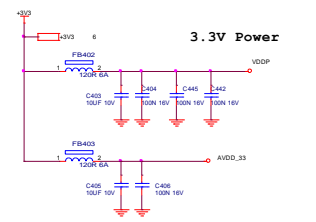
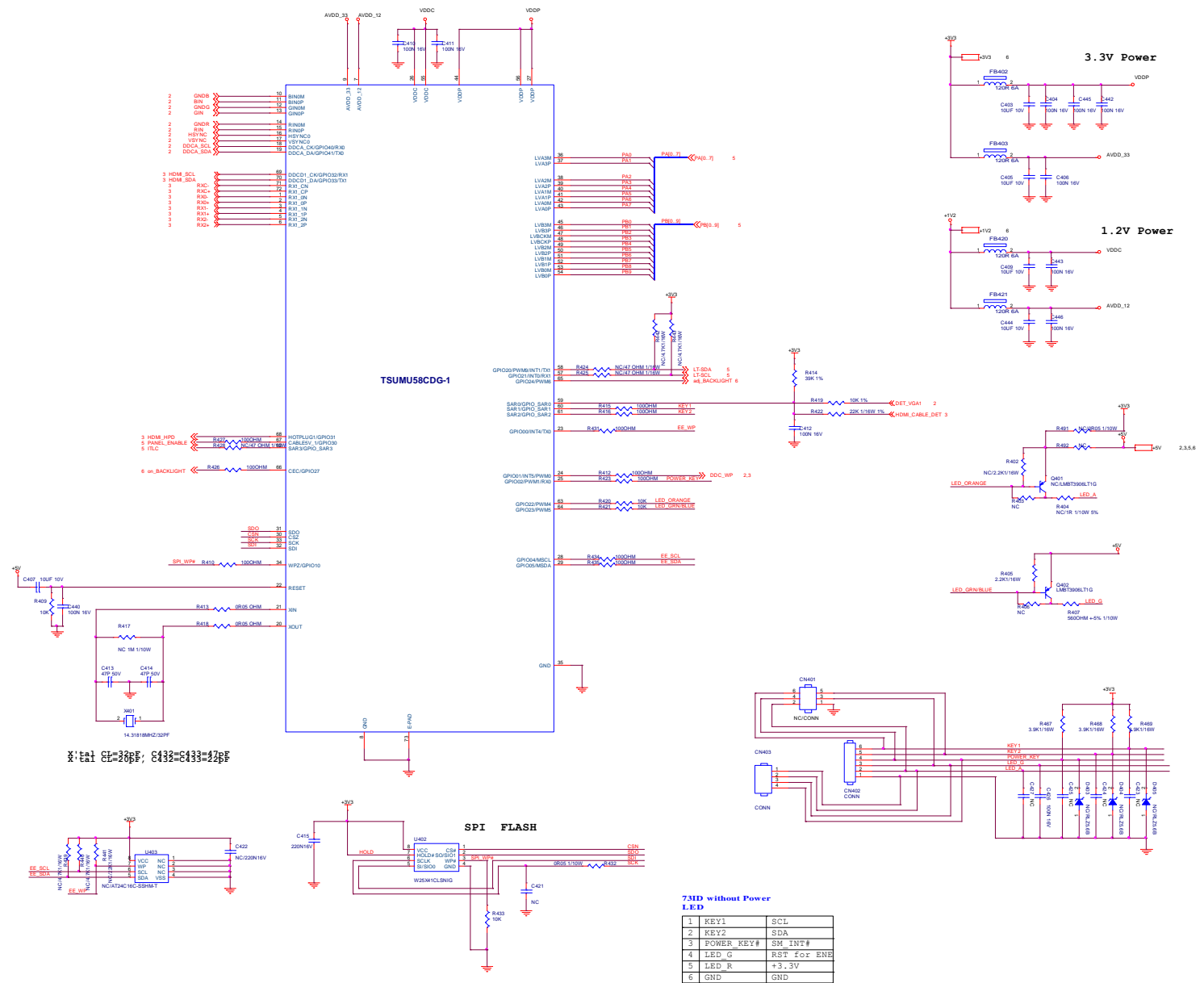


HDMI
 R/A: 388G340CJ05AAT
 V/T: 088G 34019H VA
 R/A: 088G 34019G AV(no shield)

TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS	Size	B
話隔瓜網版	715G7334M01BRA0040	TPV MODEL	223V5	Rev
Key Component	03 HDMI Input	PCB NAME	715G7334M01BRA0040	称参
Date	Thursday, February 26, 2015	Sheet	3 of 6	<称参>



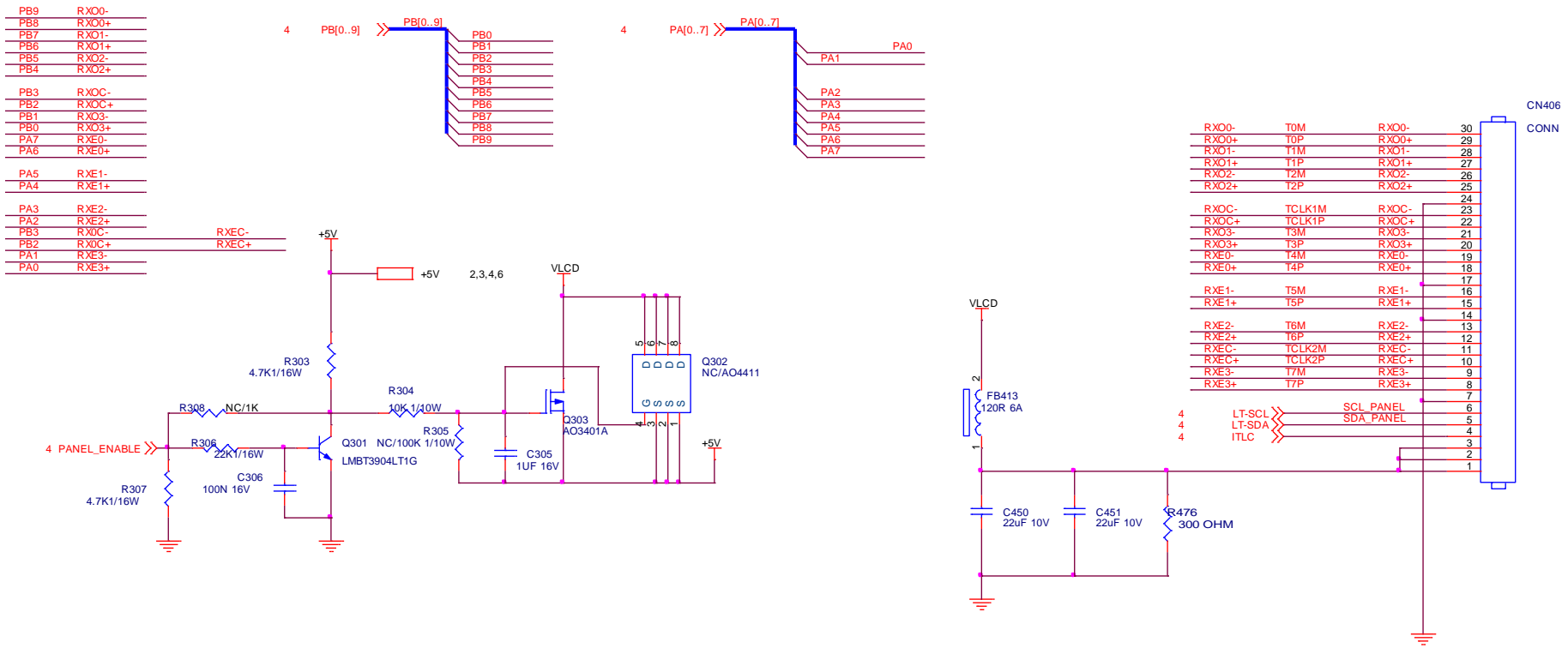
Remark: Parts position can be searched by using FIND function in PDF.



731D without Power LED

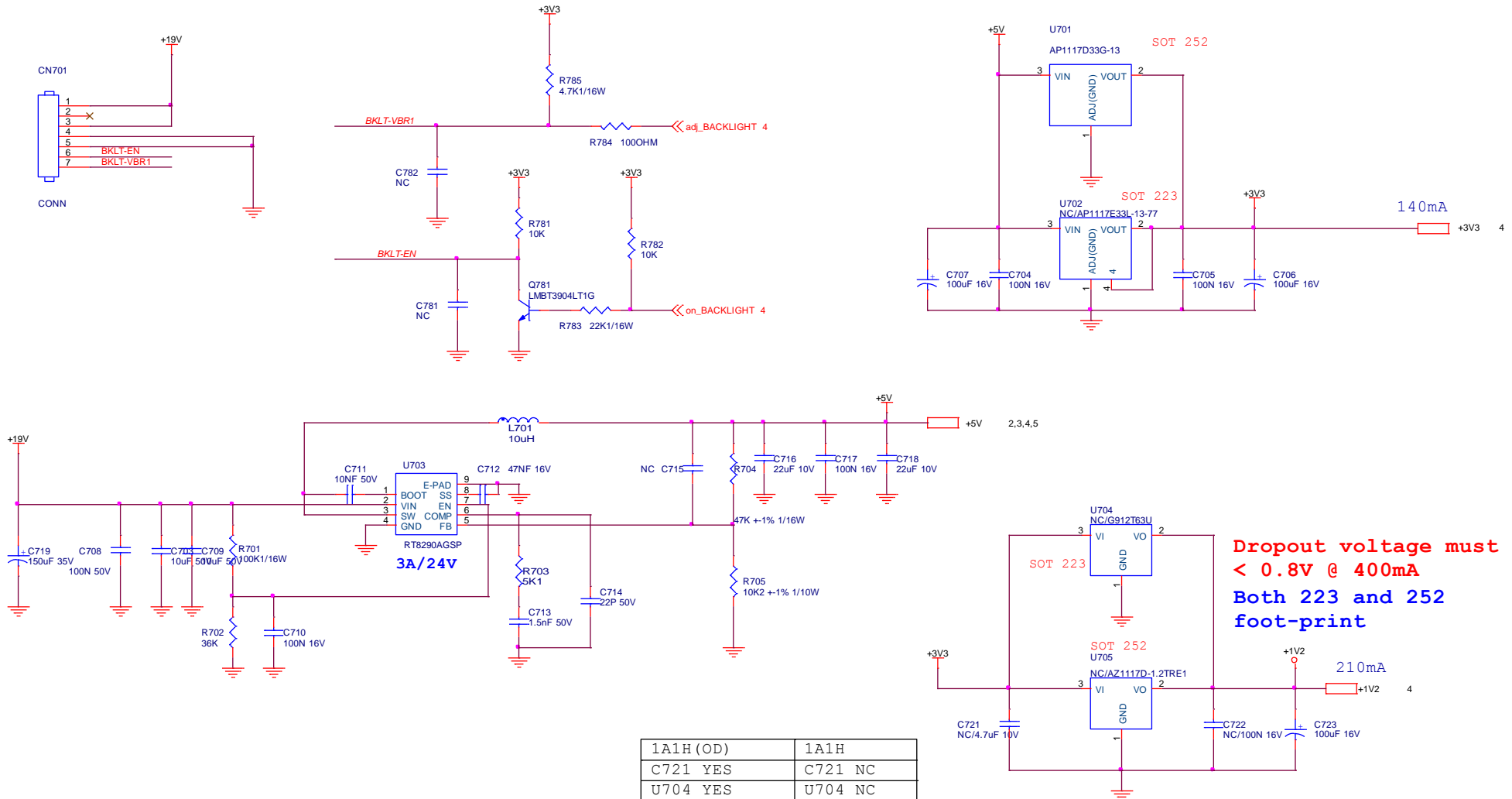
1	KEY1	SCL
2	KEY2	SDA
3	POWER KEY#	SW_INT#
4	LED_G	RST for ENB
5	LED_R	+3.3V
6	GND	GND

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS	Size	B
新橋瓜網廠	715G7334M01BRA0040	TPV MODEL	223V5	Rev
Key Component	05 PANEL Output	PCB NAME	715G7334M01BRA0040	稱號
Date	Thursday, February 26, 2015	Sheet	5 of 6	<稱號>

Remark: Parts position can be searched by using FIND function in PDF.



Dropout voltage must < 0.8V @ 400mA
Both 223 and 252 foot-print

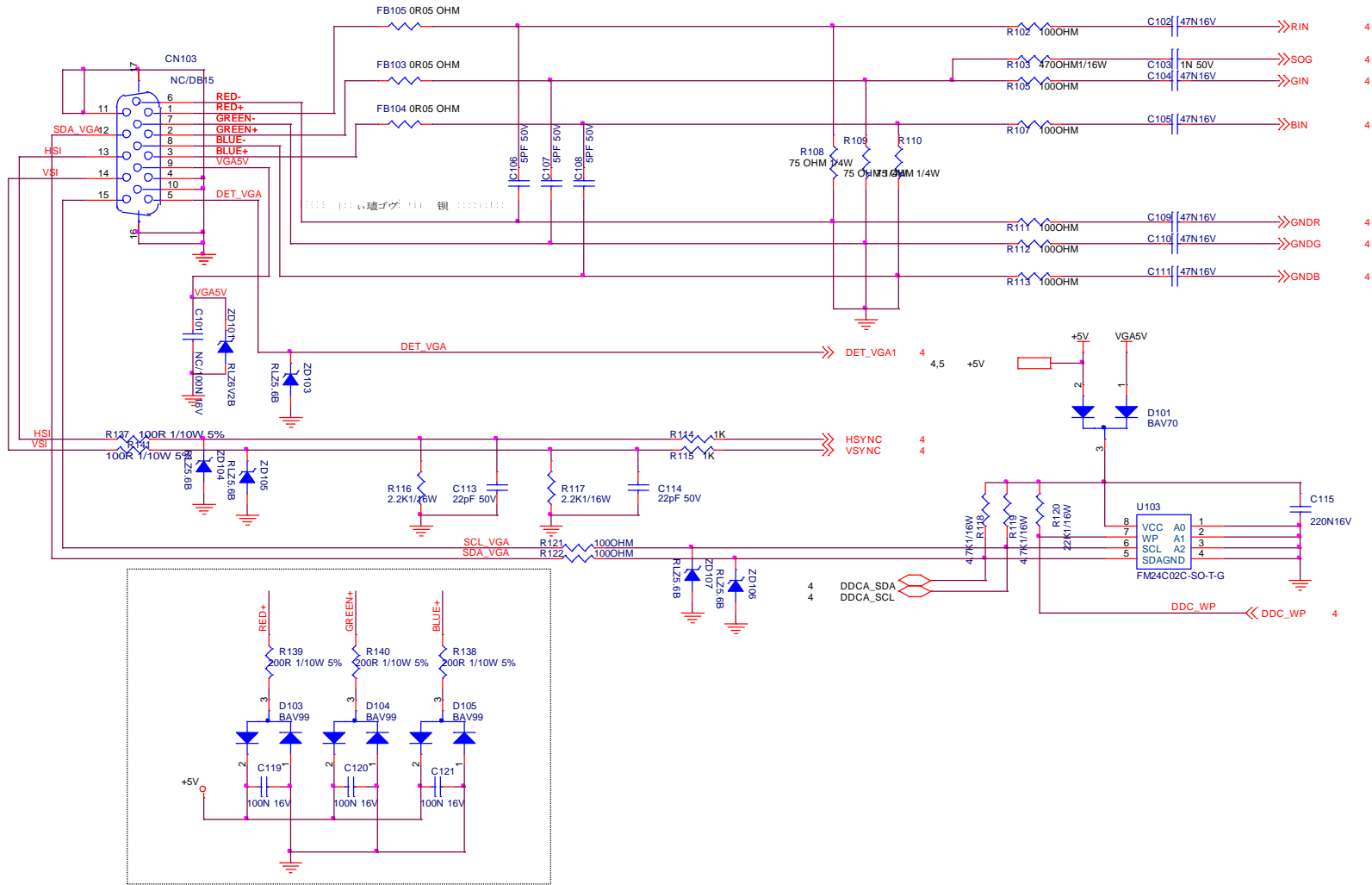
1A1H (OD)	1A1H
C721 YES	C721 NC
U704 YES	U704 NC
C722 YES	C722 NC
C723 YES	C723 NC



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS	Size	Custom
结构瓜瓞版	715G7334M01BRA0040	TPV MODEL	223V5	Rev
Key Component	06 POWER	PCB NAME	715G7334M01BRA0040	称差
Date	Thursday, February 26, 2015	Sheet	6 of 6	<称差>

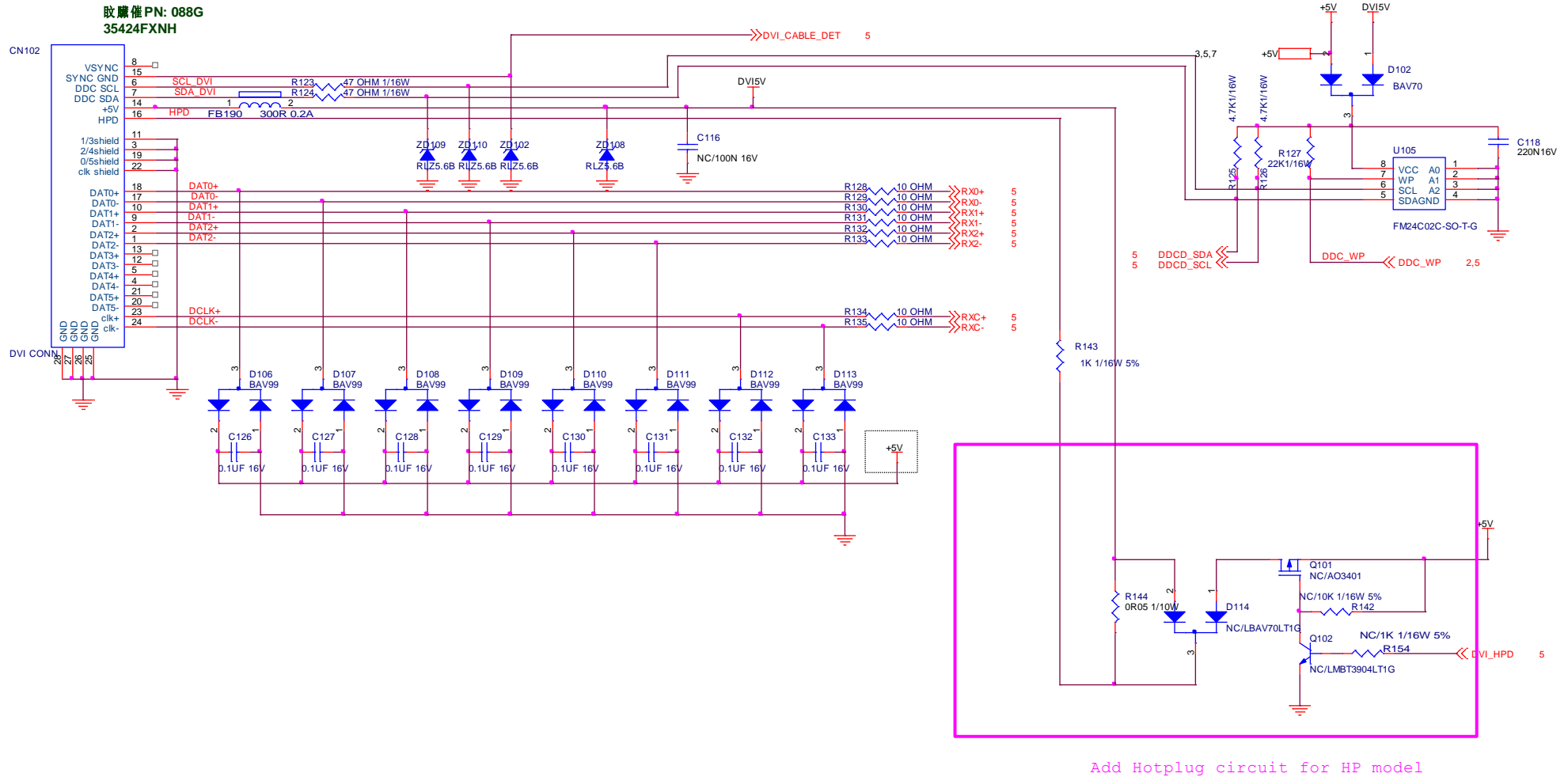
715G6911M01003004C (for 223V5LSB)

Remark: Parts position can be searched by using FIND function in PDF.



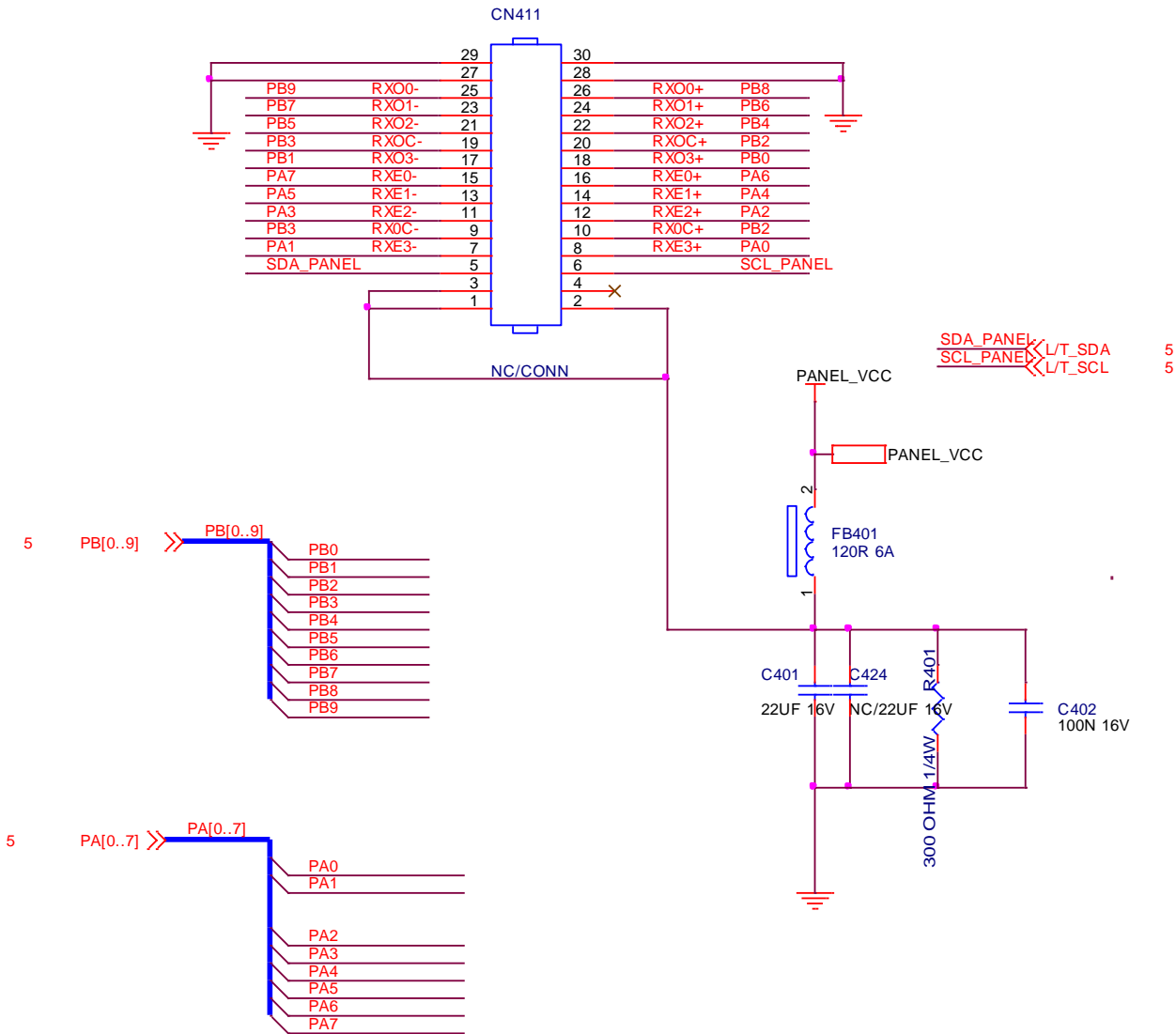
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	B
冠捷瓜網	715G5863-MOC-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	02.INPUT VGA	PCB NAME		修家
Date	Sunday, February 01, 2015	Sheet	2 of 6	<修家>

Remark: Parts position can be searched by using FIND function in PDF.



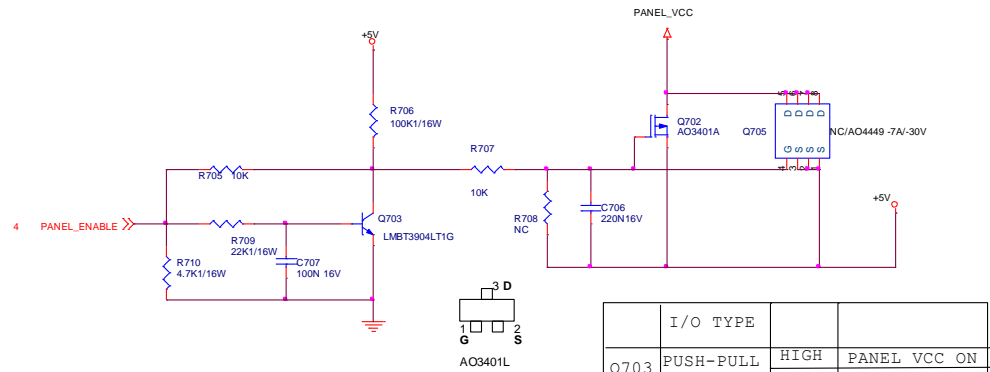
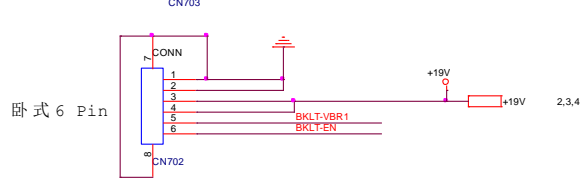
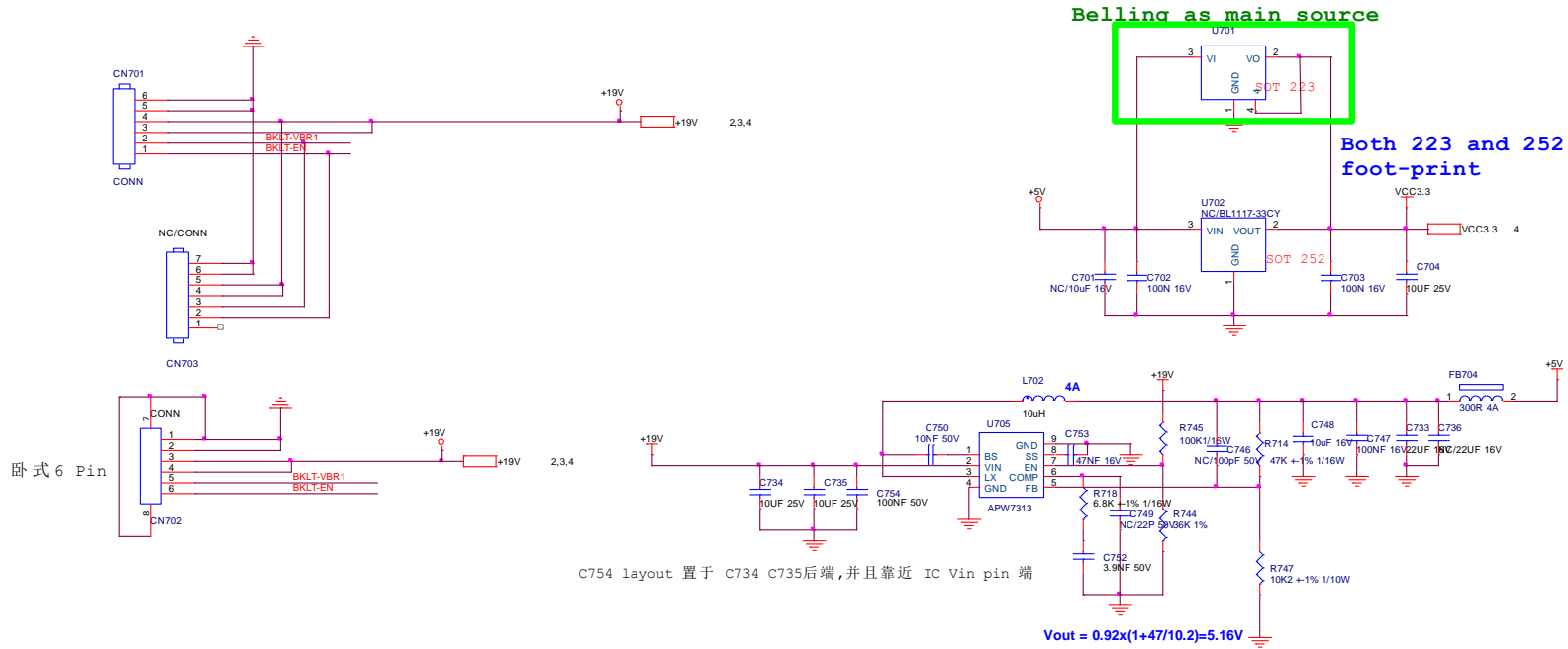
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	B
錫蘭瓜爾製	715G5863-MOC-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	03.INPUT DVI	PCB NAME		稱參
Date	Monday, February 02, 2015	Sheet	3 of 6	<稱參>

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	A
結構瓜網腹	715G6911-M0C-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	04.OUTPUT	PCB NAME		称爹
Date	Monday, February 02, 2015	Sheet	4 of 6	<称爹>

Remark: Parts position can be searched by using FIND function in PDF.



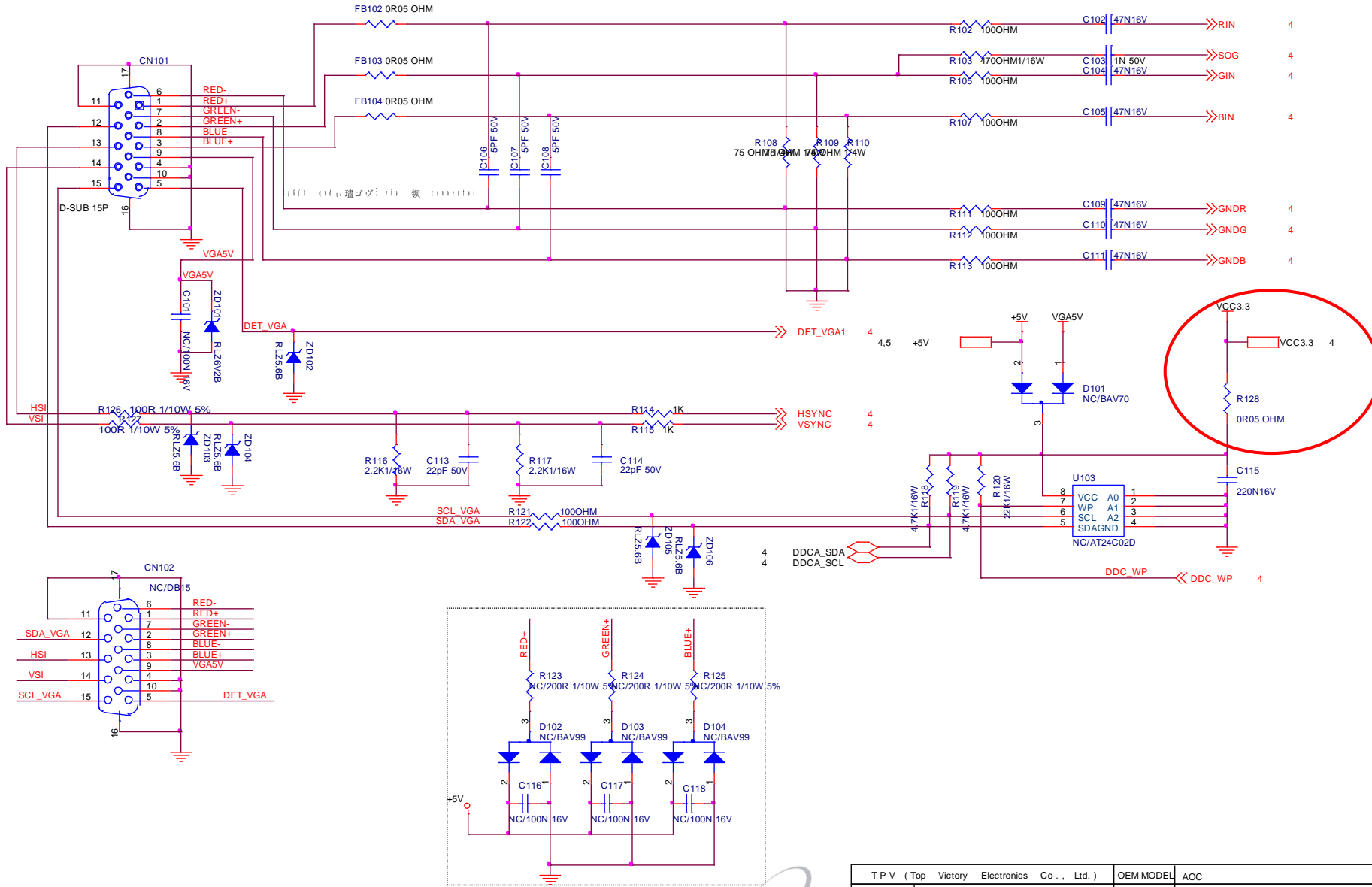
	I/O TYPE		
Q703	PUSH-PULL	HIGH	PANEL VCC ON
		LOW	PANEL VCC OFF
Q703	OPEN-DRAIN	HIGH	PANEL VCC OFF
		LOW	PANEL VCC ON
NC			



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	Custom
新源瓜瓞版	715G5863-MOC-000-0040	TPV MODEL	E2470SWD	Rev
Key Component	06.POWER	PCB NAME		A
Date	Sunday, February 01, 2015	Sheet	6 of 6	称差

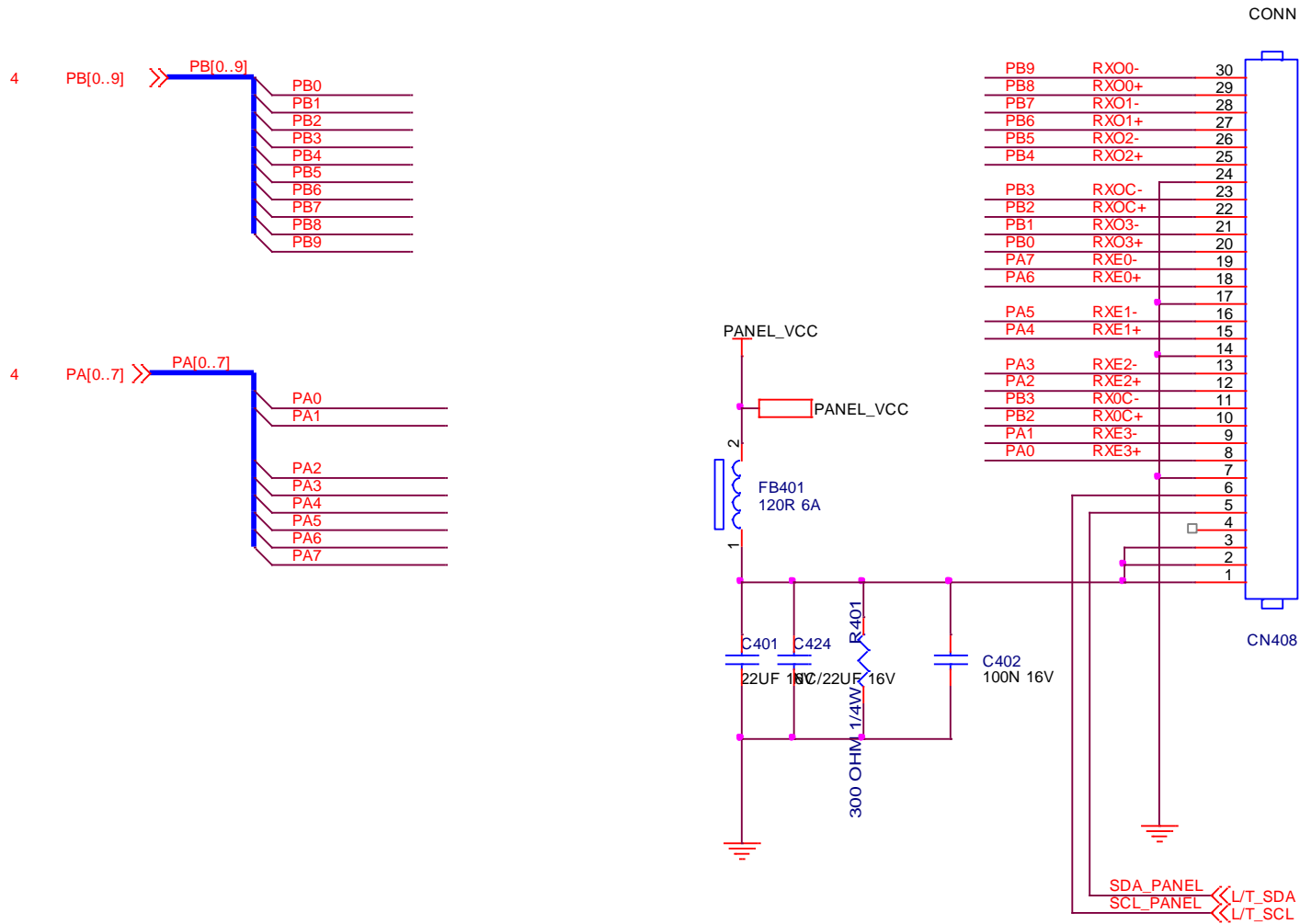
715G6948M02007004K (for 223V5LSB2)

Remark: Parts position can be searched by using FIND function in PDF.



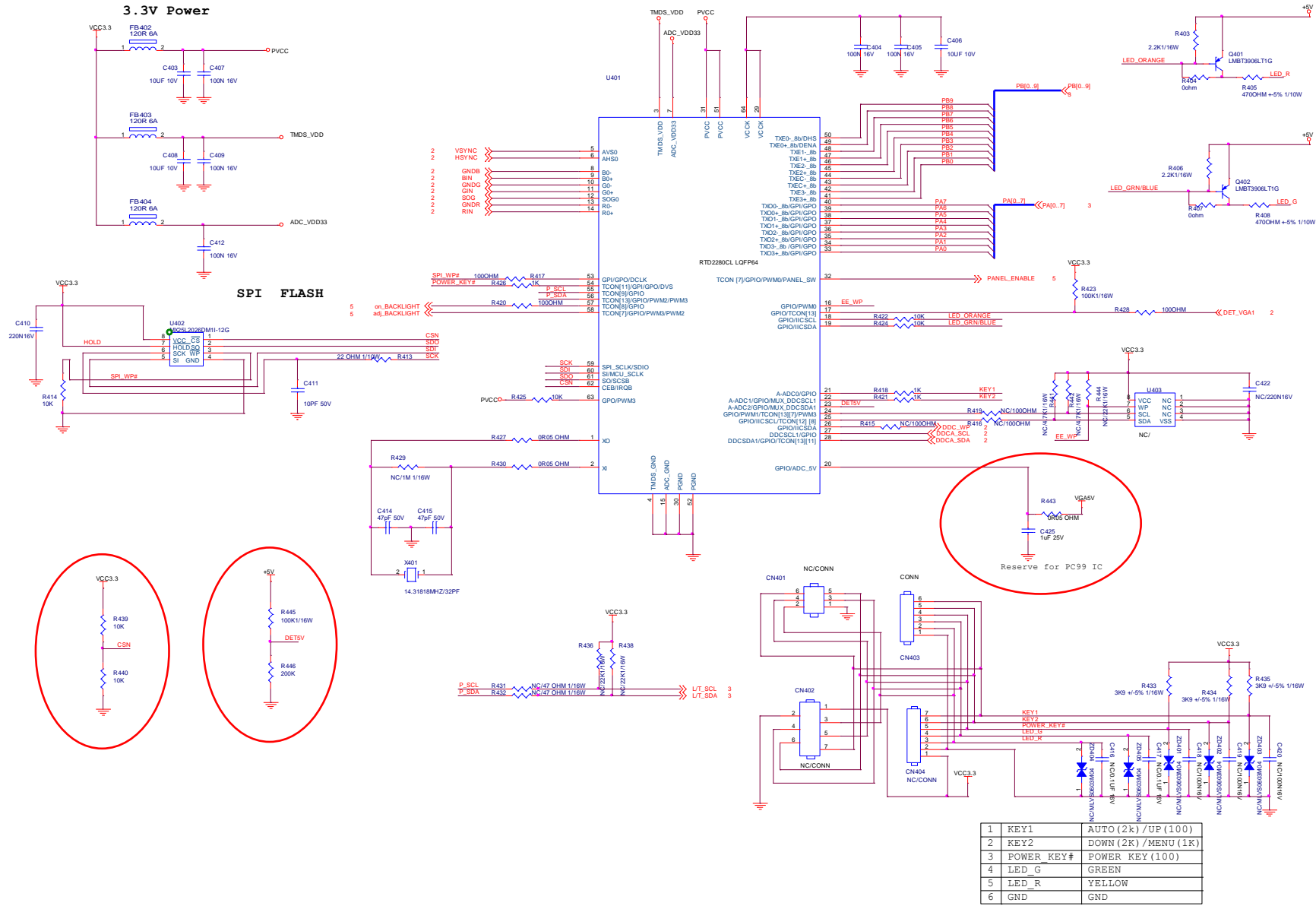
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	B
纸扇瓜瓞	715G5846-M0C-000-0040	TPV MODEL	1A-19"	Rev
Key Component	02.INPUT VGA	PCB NAME	称参	<称参>
Date	Thursday, April 17, 2014	Sheet	2 of 5	

Remark: Parts position can be searched by using FIND function in PDF.



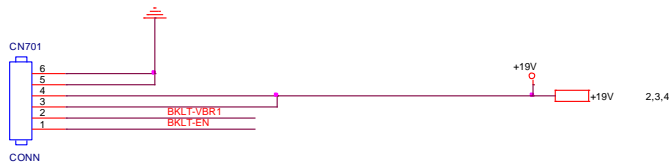
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	A
絳隔瓜網腹	715G5846-MOC-000-0040	TPV MODEL	1A-19"	Rev
Key Component	03.OUTPUT	PCB NAME		称爹
Date	Thursday, April 17, 2014	Sheet	3 of 5	<称爹>

Remark: Parts position can be searched by using FIND function in PDF.

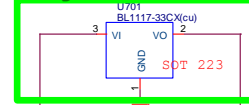


T.P.V. (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	C
振源正 振源	715G5846-MOC-000-0040	TPV MODEL	1A-19'	Rev
Key Component	04 SCALER TSUMU19AR6-1	PCB NAME		A
Date	Thursday, April 17, 2014	Sheet	4 of 5	Rev

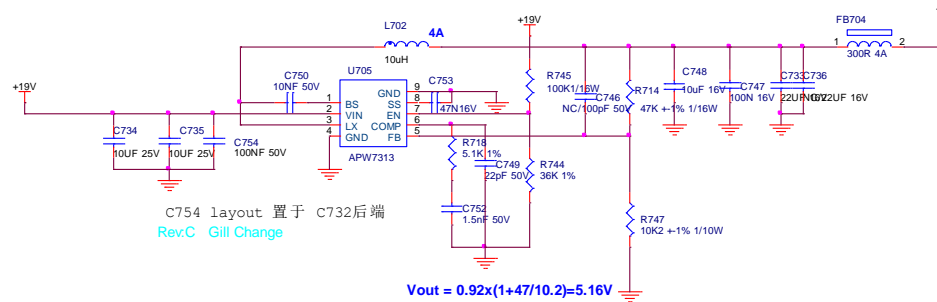
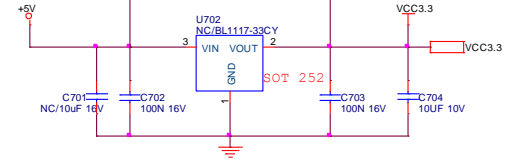
Remark: Parts position can be searched by using FIND function in PDF.



Belling as main source

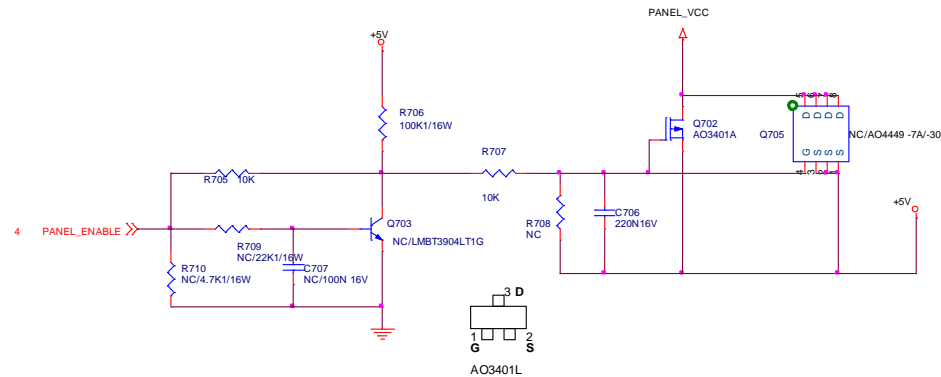
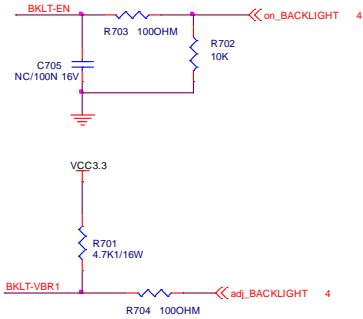


Both 223 and 252 foot-print



C754 layout 置于 C732后端
Rev.C Gill Change

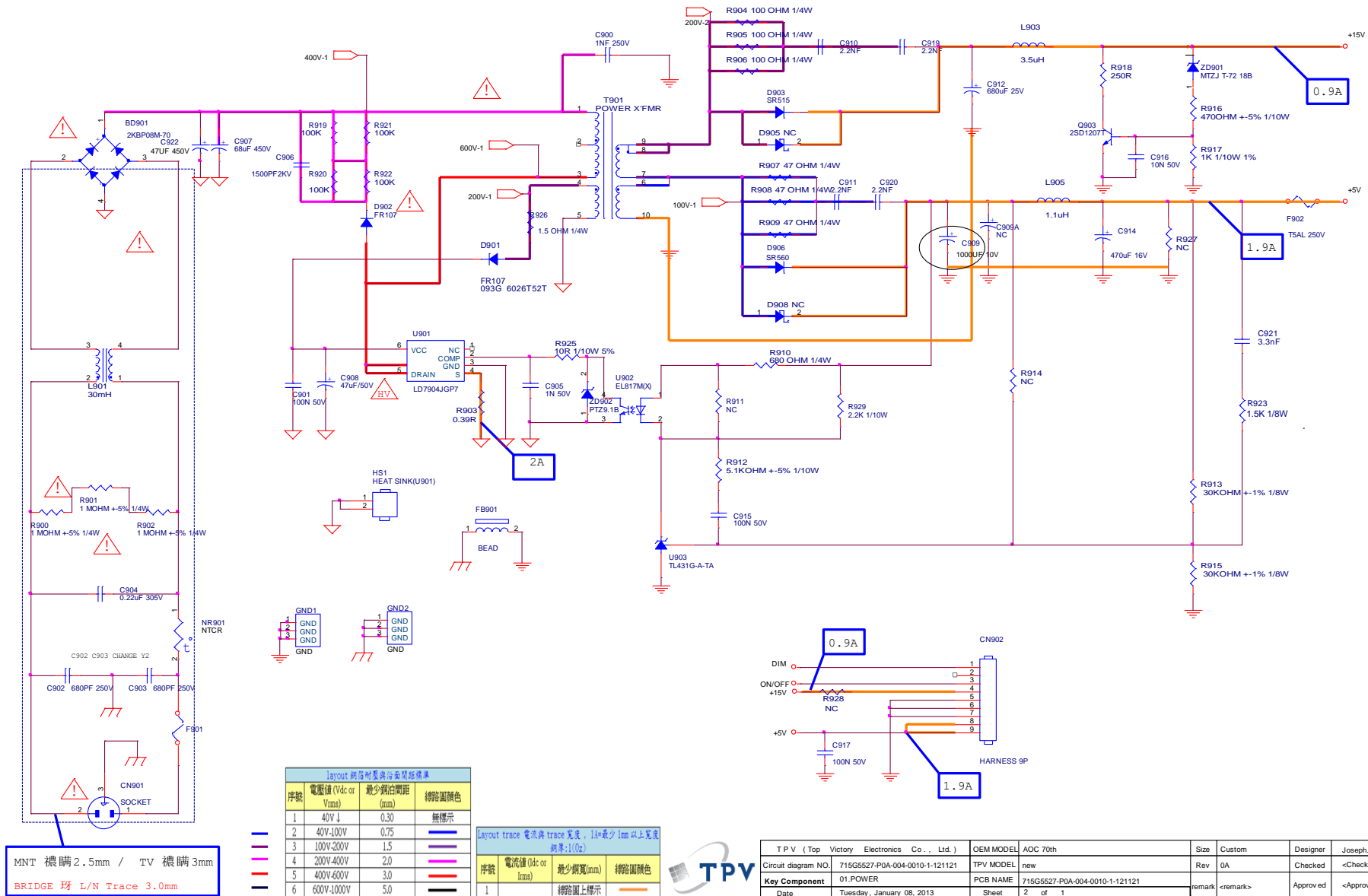
$$V_{out} = 0.92 \times (1 + 47/10.2) = 5.16V$$



T.P.V (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC	Size	Custom
产品数量 715GS846-MDC-000-0040	TPV MODEL	1A-19"	Rev	A
Key Component 05_POWER	PCB NAME		符号	<符号>
Date Thursday, April 17, 2014	Sheet	5 of 5		

6.2 Power Board(715G5527P01004001C)(for 223V5LSB)

Remark: Parts position can be searched by using FIND function in PDF.

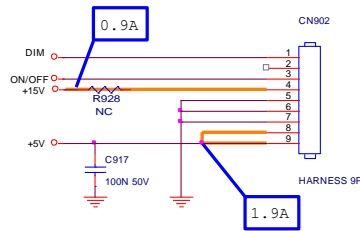


layout 銅箔厚度與沿面間距標準

序號	電壓值 (Vdc or Vrms)	最少銅箔間距 (mm)	線路圖顏色
1	40V ↓	0.30	無標示
2	40V-100V	0.75	—
3	100V-200V	1.5	—
4	200V-400V	2.0	—
5	400V-600V	3.0	—
6	600V-1000V	5.0	—

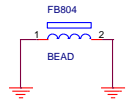
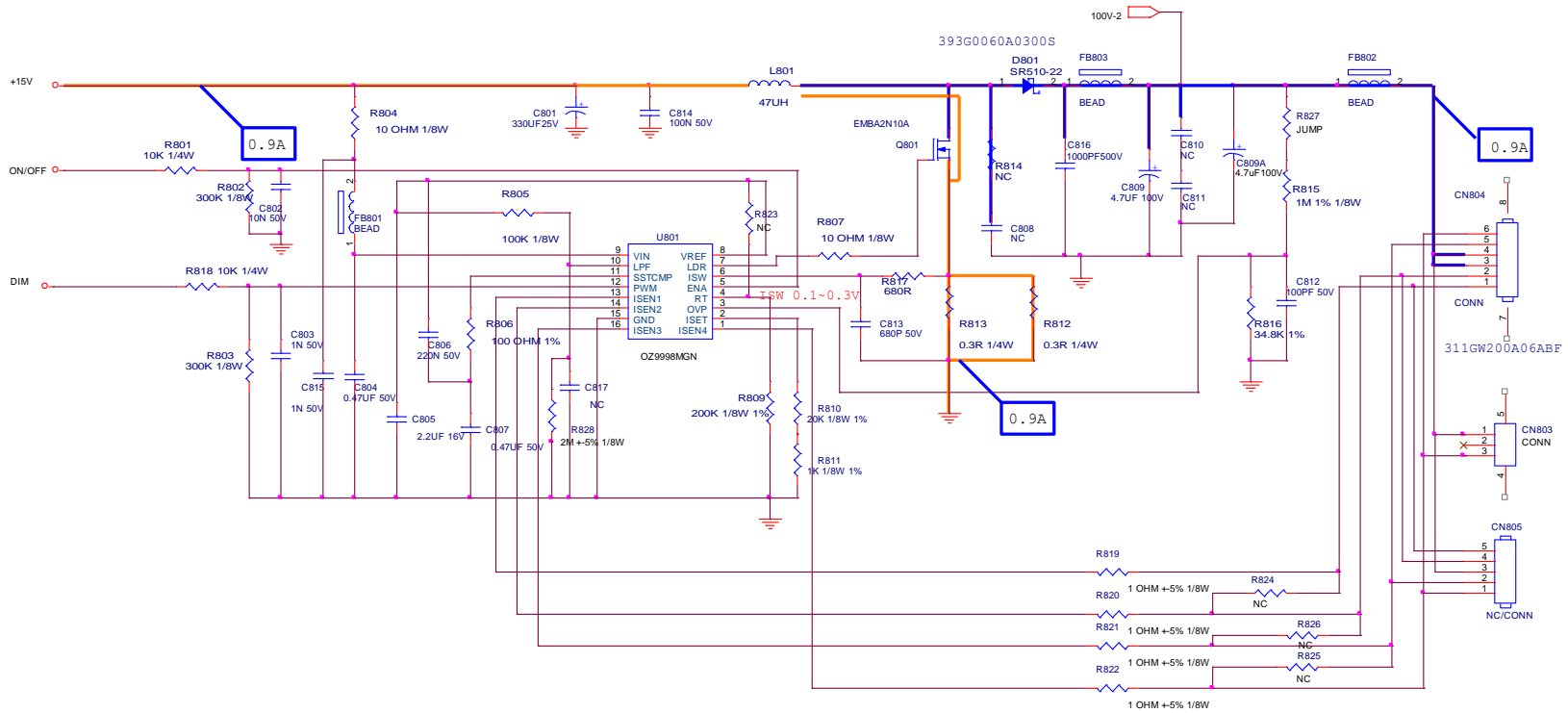
layout trace 電流與 trace 寬度, 1l=最少 1mm 以上寬度

序號	電流值 (I dc or I rms)	最少銅箔寬 (mm)	線路圖顏色
1			無標示



T P V (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC 70th	Size	Custom	Designer	Joseph.Chen
Circuit diagram NO. 715G5527-POA-004-0010-1-121121	TPV MODEL	new	Rev	0A	Checked	<Checked>
Key Component	01-POWER	PCB NAME	715G5527-POA-004-0010-1-121121	remark	<remark>	Approved
Date	Tuesday, January 08, 2013	Sheet	2 of 1			<Approved>

Remark: Parts position can be searched by using FIND function in PDF.



panel 腹	OVF(碌)	ISET(碌)
TPM215HW01-HGEL03	R816=34.8K	R810=20k
TPM215HW01-DAT03	R816=33K	R810 20K R811 1KOHM

序號	電壓值 (Vdc or Vrms)	最少銅箔間距 (mm)	線路圖顏色
1	40V ↓	0.30	無標示
2	40V-100V	0.75	藍色
3	100V-200V	1.5	紫色
4	200V-400V	2.0	粉紅色
5	400V-600V	3.0	紅色
6	600V-1000V	5.0	黑色

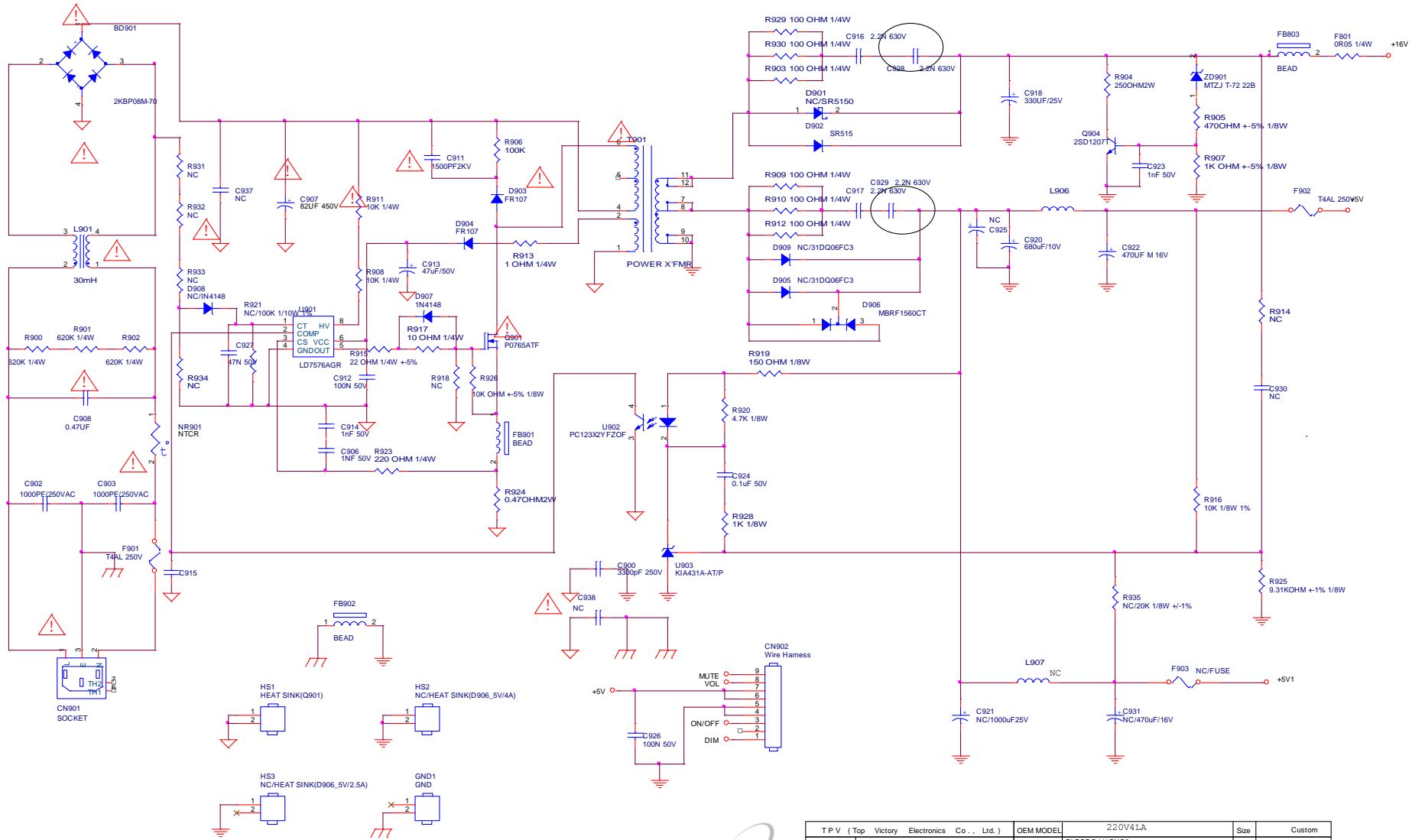
序號	電流值 (dc or lms)	最少銅寬(mm)	線路圖顏色
1			線路圖上標示



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	AOC 70th	Size	Custom	Designer	Joseph.Chen
Circuit diagram NO. 715G5527-POA-004-0010-1-121121	TPV MODEL	new	Rev	0A	Checked	<Checked>
Key Component	02.conv.enr	PCB NAME	715G5527-POA-004-0010-1-121121	remark	<remark>	Approved <Approved>
Date	Thursday, December 20, 2012	Sheet	2 of 1			

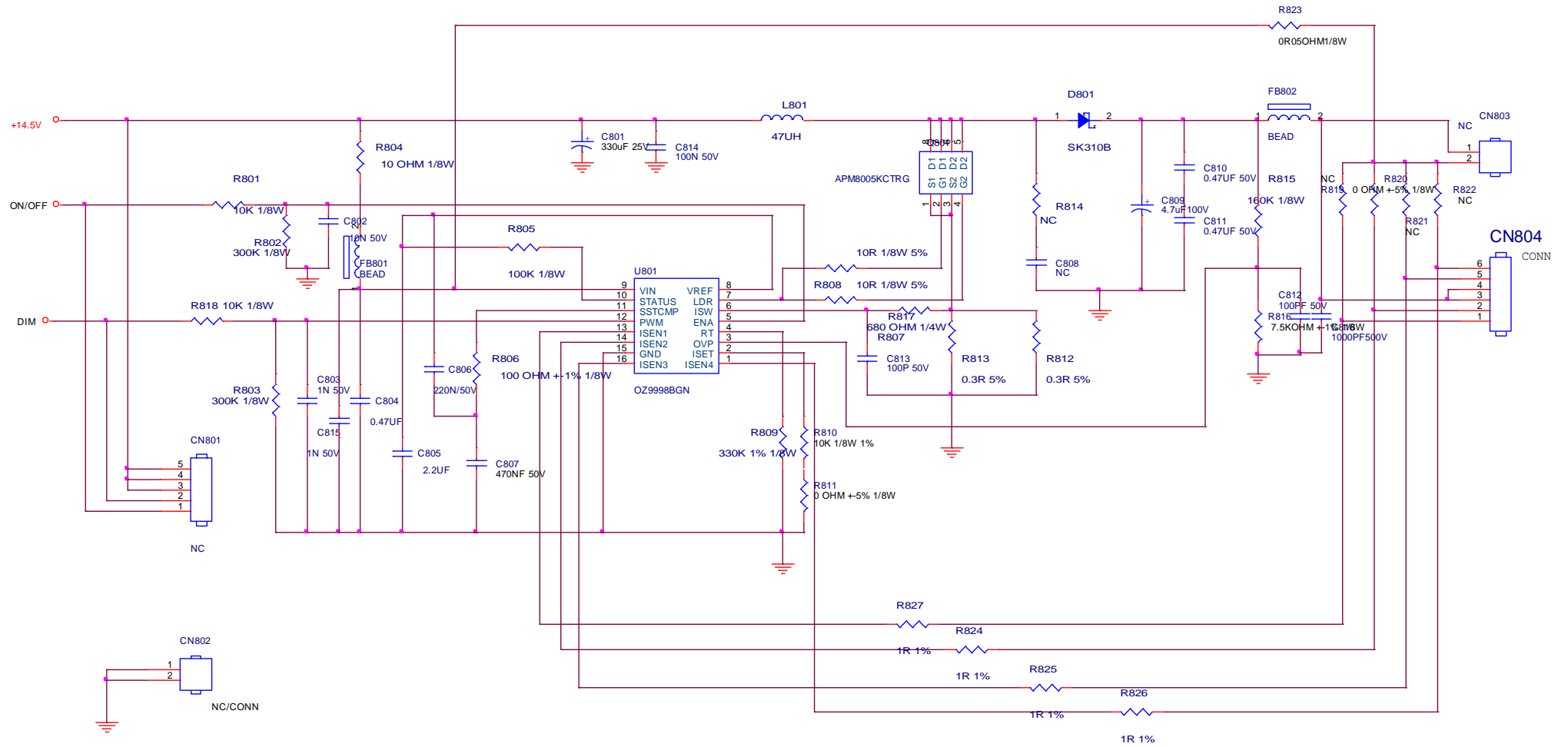
715G4497P0600001S(for 223V5LHSB)

Remark: Parts position can be searched by using FIND function in PDF.



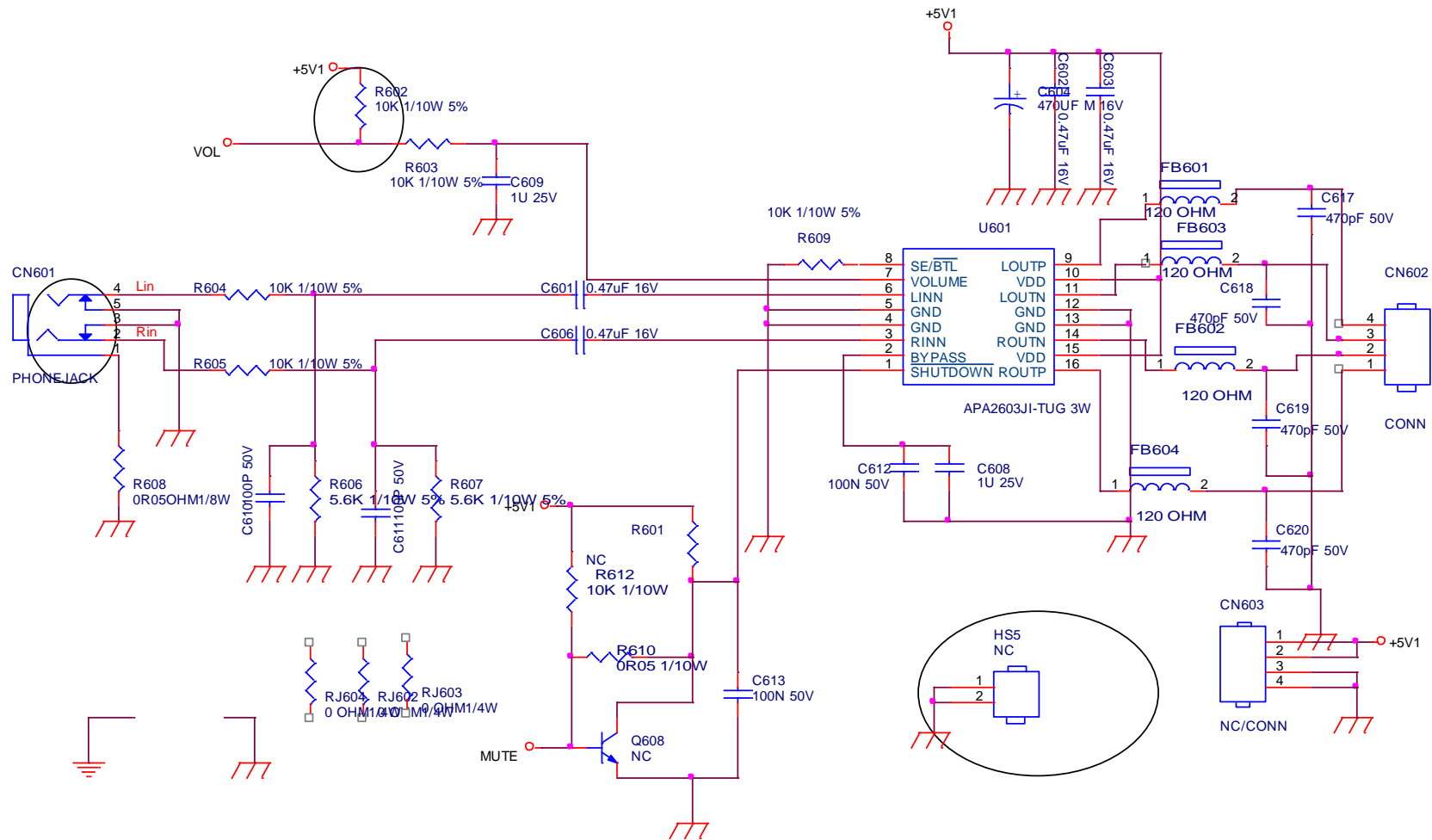
T.P.V. (Top Victory Electronics Co., Ltd.)	OEM MODEL	220V4LA	Size	Custom
蘇州冠捷	G4497-P06-000-0010-28-130401	TPV MODEL	PLPCDC441SHC2	Rev
Key Component	02.Power	PCB NAME	715G4497-P06-000-0010	Rev
Date	Monday, April 01, 2013	Sheet	of	ODM MODEL

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	220V4IA	Size	Custom
結構圖號 G4497-P06-000-0010-26-130401	TPV MODEL	PLPCDC441SHC2	Rev	1
Key Component 03.Converter	PCB NAME	715G4497-P06-000-0010	標號	ODM MODEL
Date Monday, April 01, 2013	Sheet	of		

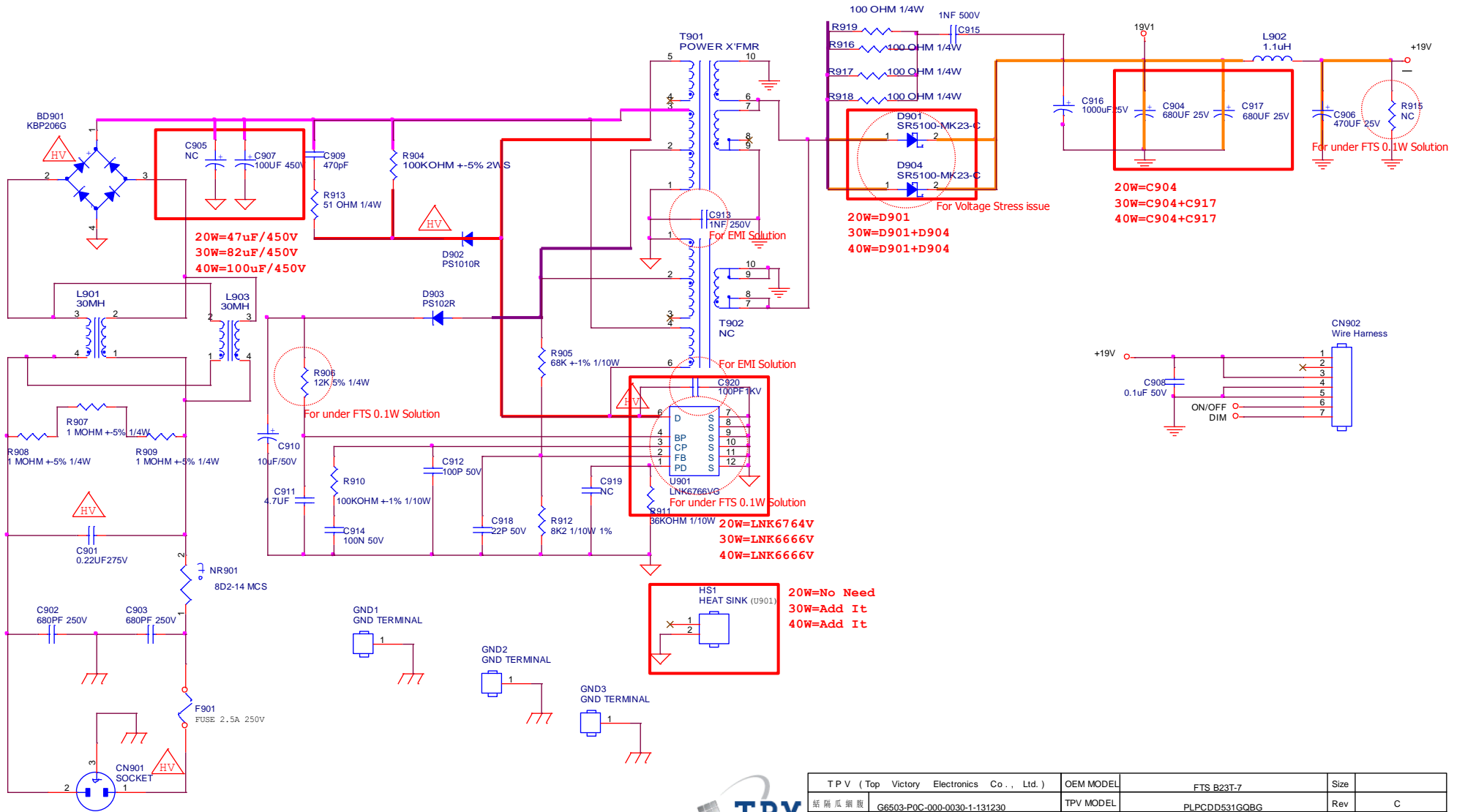
Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	220V4LAB	Size	A
紙隔瓜網膜	G4497-P06-000-0010-26-130401	TPV MODEL	PLPCDC441SHC2	Rev
Key Component	04.Audio	PCB NAME	715G4497-P06-000-0010	称爹
Date	Monday, April 01, 2013	Sheet	of	ODM MODEL

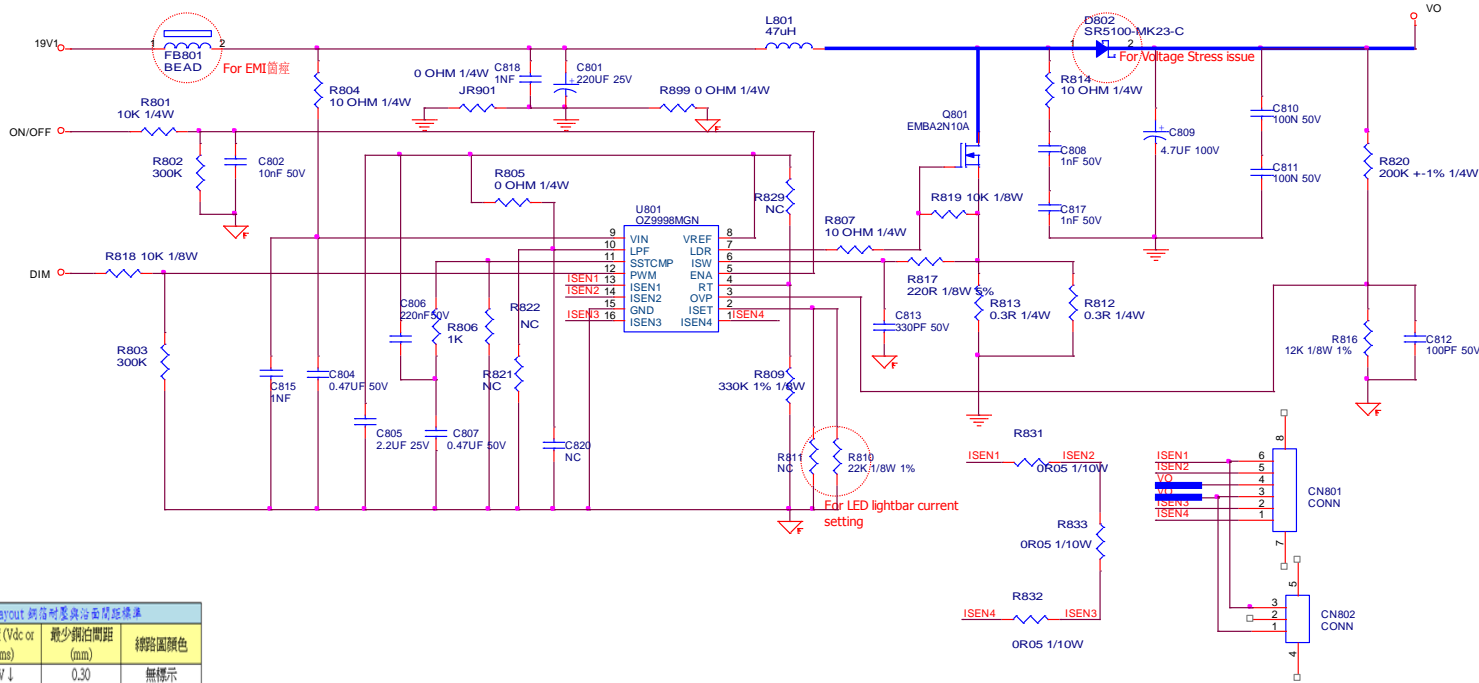
715G6503P02001001C (for 223V5LSB2/223V5LHSB2)

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	FTS_B23T-7		Size	
葫芦瓜 振膜	G6503-P0C-000-0030-1-131230	TPV MODEL	PLPCDD531GOBG	Rev	C
Key Component	02 Power	PCB NAME	715G6503-P0C-001-0030	称参	FTS
Date	Saturday, February 08, 2014	Sheet	2 of 3		

Remark: Parts position can be searched by using FIND function in PDF.



layout 銅箔耐壓與治面間距標準

序號	電壓值 (Vdc or Vrms)	最少銅箔間距 (mm)	線路圖顏色
1	40V ↓	0.30	無標示
2	40V-100V	0.75	藍色
3	100V-200V	1.5	紫色
4	200V-400V	2.0	粉紅色
5	400V-600V	3.0	紅色
6	600V-1000V	5.0	黑色

Layout trace 電流與 trace 寬度, 1# 最少 1mm 以上寬度 銅厚: 1(Oz)

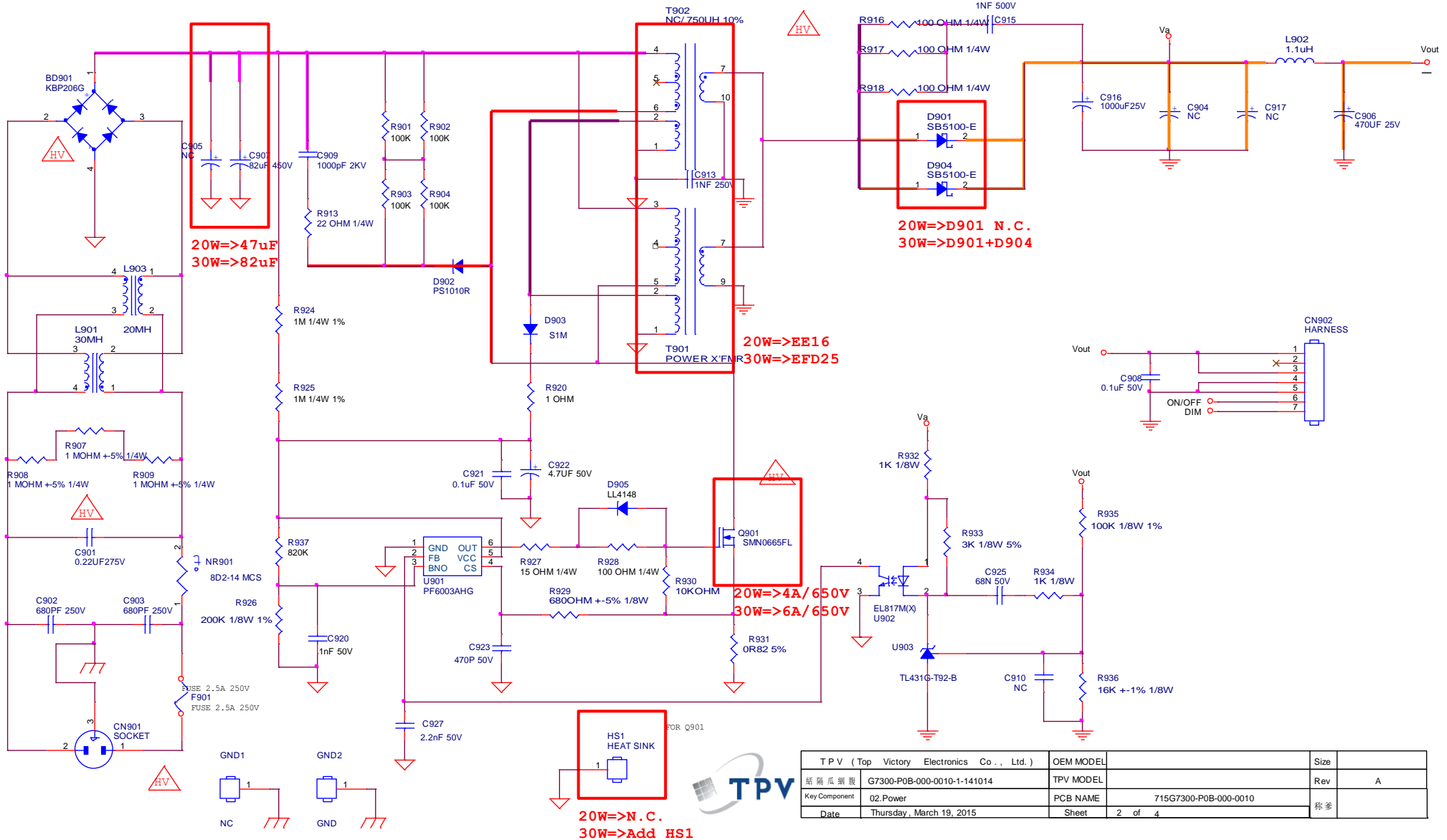
序號	電流值 (Idc or Irms)	最少銅寬 (mm)	線路圖顏色
1			線路圖上標示



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	FTS B23T-7		Size	
結構圖編號: G6503-P08-000-0010-1-131025	TPV MODEL	PLPCDD531GOBG		Rev	C
Key Component: 03.LED Converter	PCB NAME	745G6503-P0C-001-0030		簽署	FTS
Date: Wednesday, January 22, 2014	Sheet	3 of 3			

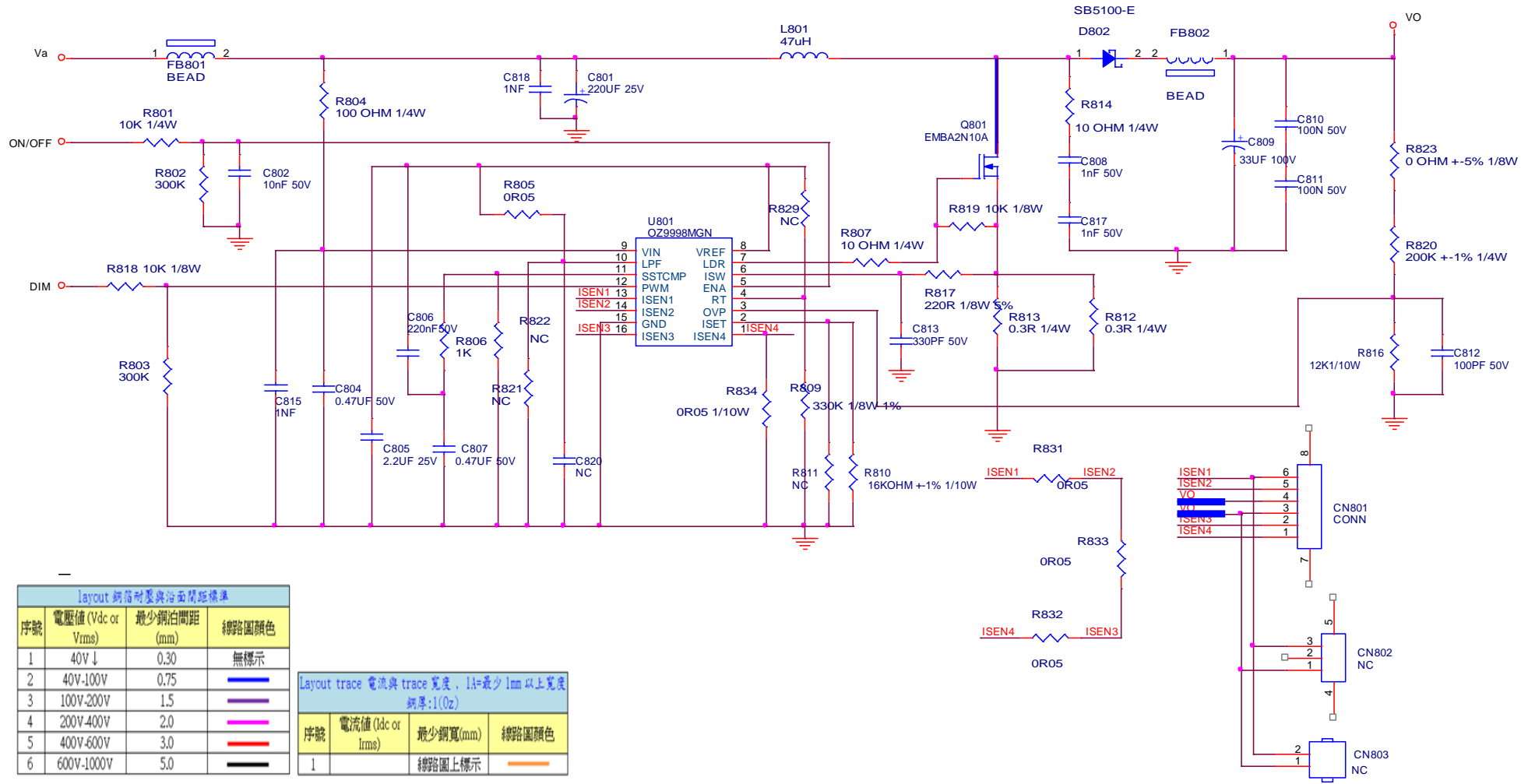
715G7300P01001001C (for 223V5LSB2)

Remark: Parts position can be searched by using FIND function in PDF.



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	Size	
紙隔瓜銅膜	G7300-P0B-000-0010-1-141014	TPV MODEL	Rev A
Key Component	02.Power	PCB NAME	715G7300-P0B-000-0010
Date	Thursday, March 19, 2015	Sheet	2 of 4

Remark: Parts position can be searched by using FIND function in PDF.



layout 銅箔耐壓與浴面間距標準

序號	電壓值 (Vdc or Vrms)	最少銅箔間距 (mm)	線路圖顏色
1	40V ↓	0.30	無標示
2	40V-100V	0.75	藍色
3	100V-200V	1.5	紫色
4	200V-400V	2.0	粉紅色
5	400V-600V	3.0	紅色
6	600V-1000V	5.0	黑色

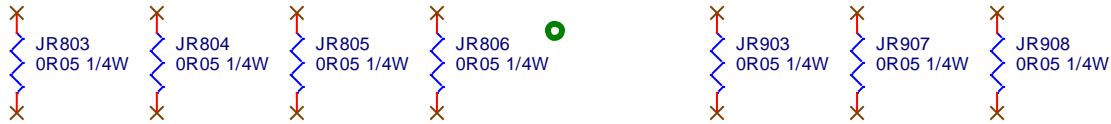
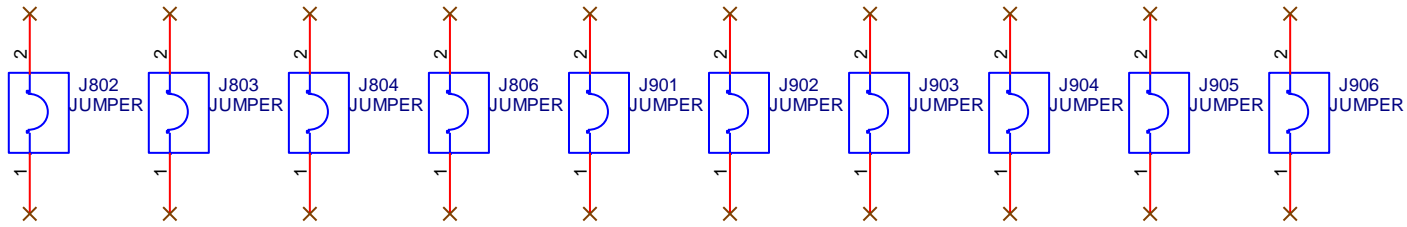
Layout trace 電流與 trace 寬度, 1A=最少 1mm 以上寬度 銅厚:1(Oz)

序號	電流值 (Idc or Irms)	最少銅寬(mm)	線路圖顏色
1		線路圖上標示	藍色



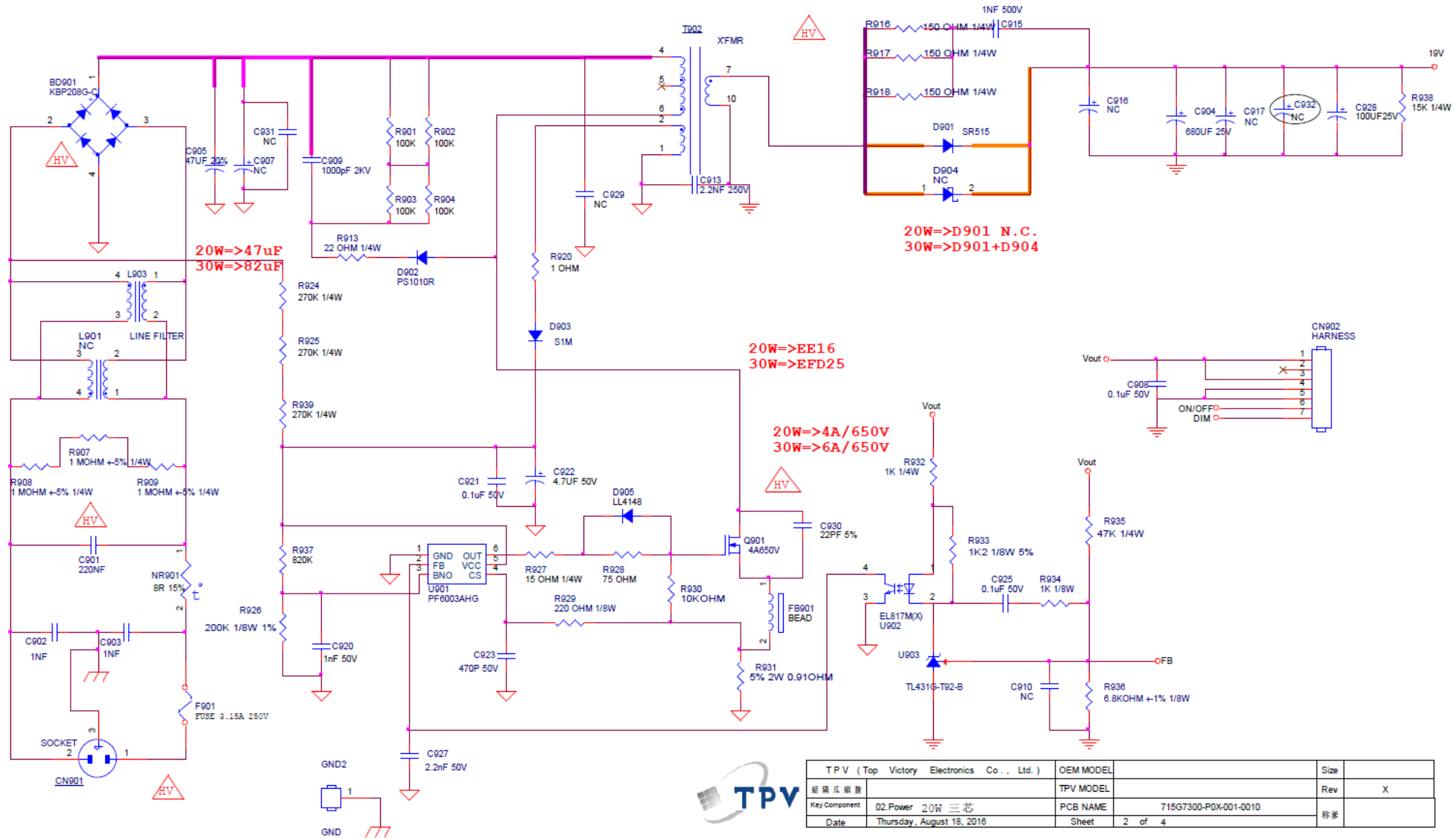
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL		Size	
絲瓜網腹	G7300-P0B-000-0010-1-141014	TPV MODEL	Rev	A
Key Component	03.CONVERTER	PCB NAME	715G7300-P0B-000-0010	稱差
Date	Thursday, March 19, 2015	Sheet	3 of 4	

Remark: Parts position can be searched by using FIND function in PDF.

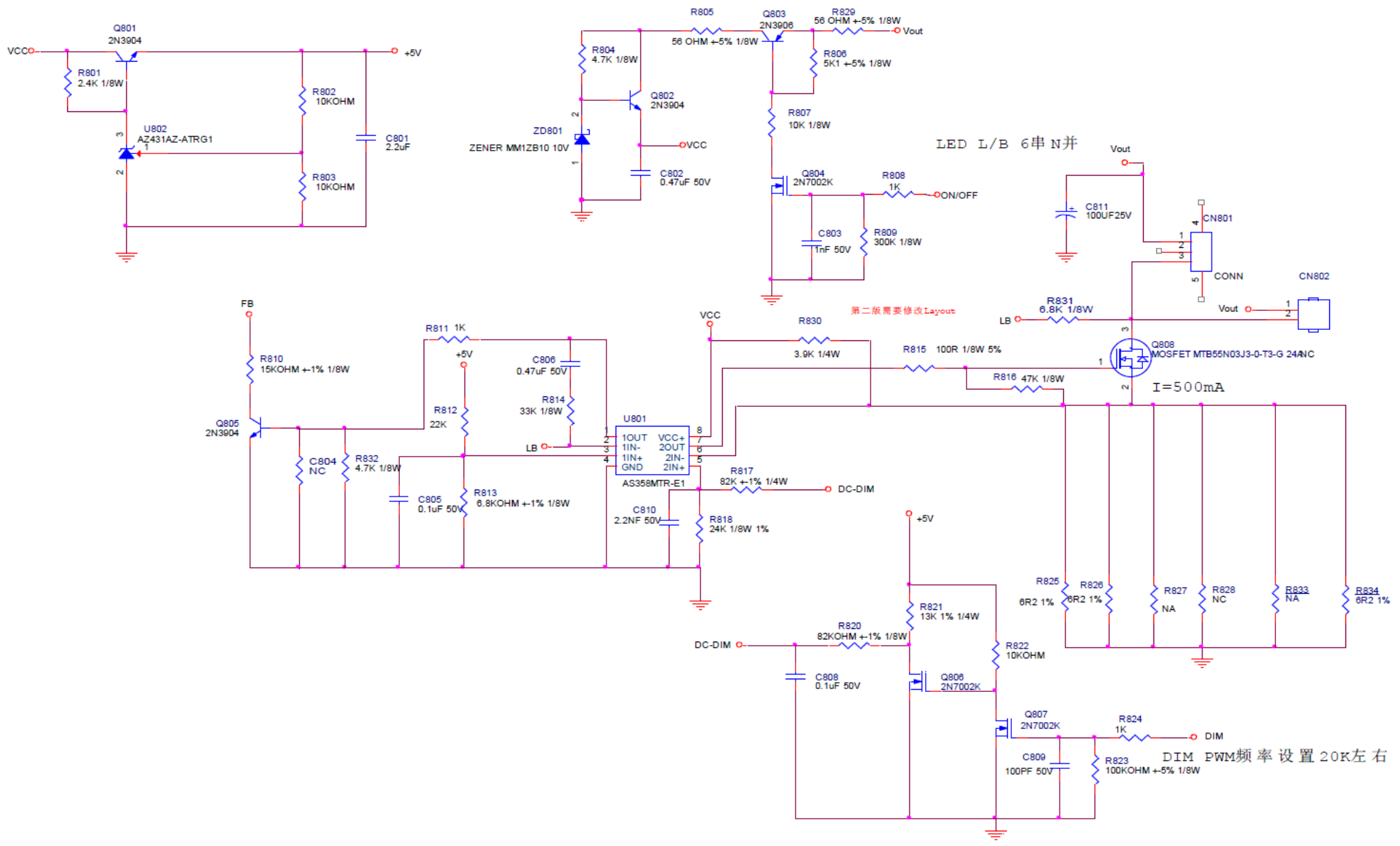


TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL		Size	
結構瓜網腹	G7300-P0B-000-0010-1-141014	TPV MODEL		Rev	A
Key Component	04.JUMP	PCB NAME	715G7300-P0B-000-0010	称爹	
Date	Thursday, March 19, 2015	Sheet	4 of 4		

715G7300P02001001C

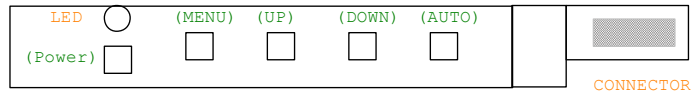
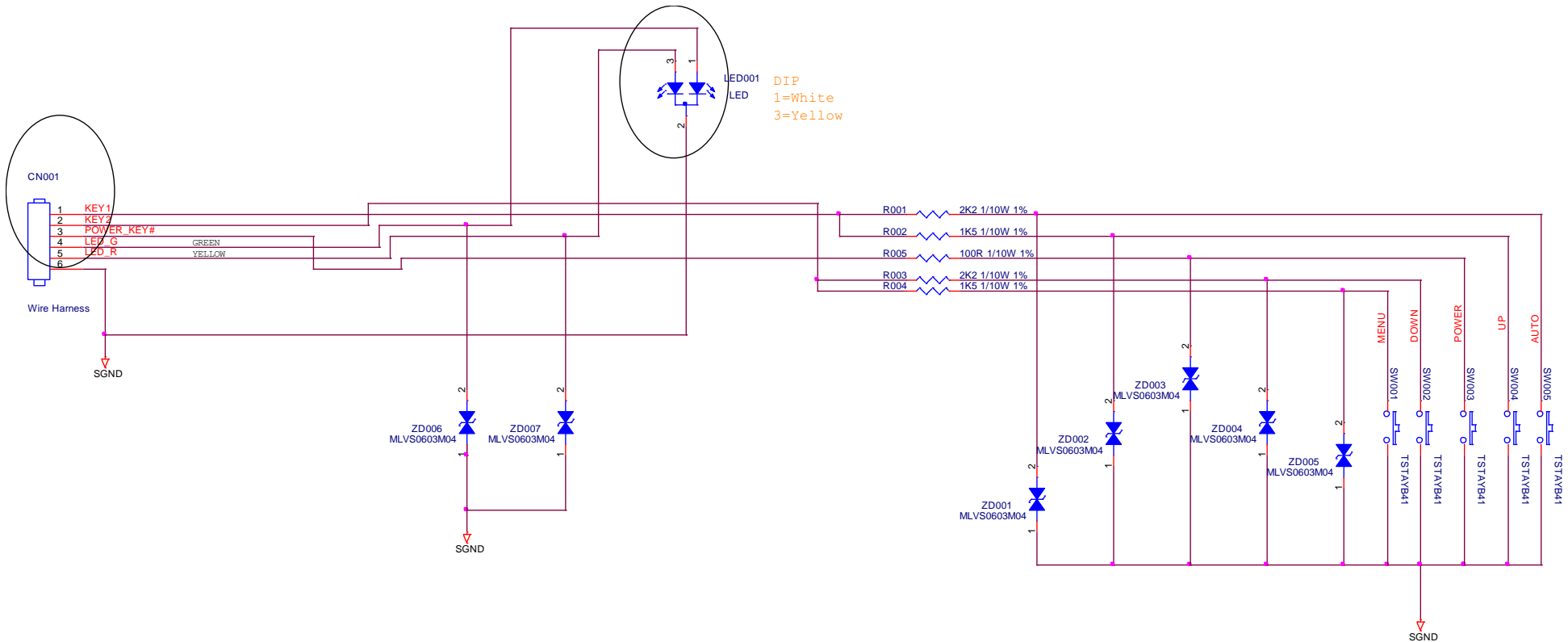


TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL		Size	
新產品編號		TPV MODEL		Rev	X
Key Component		PCB NAME	715G7300-P0X-001-0010	稱號	
Date		Thursday, August 18, 2016	Sheet	2 of 4	



6.3 Key Board (715G6039K01001001S)

Remark: Parts position can be searched by using FIND function in PDF.



KEY1	AUTO (2.0K)	1.118V
	UP (100 ohm)	0.083V
KEY2	DOWN (2K)	1.118V
	MENU (1K)	0.673V
POWER	POWER (100 ohm)	0.083V

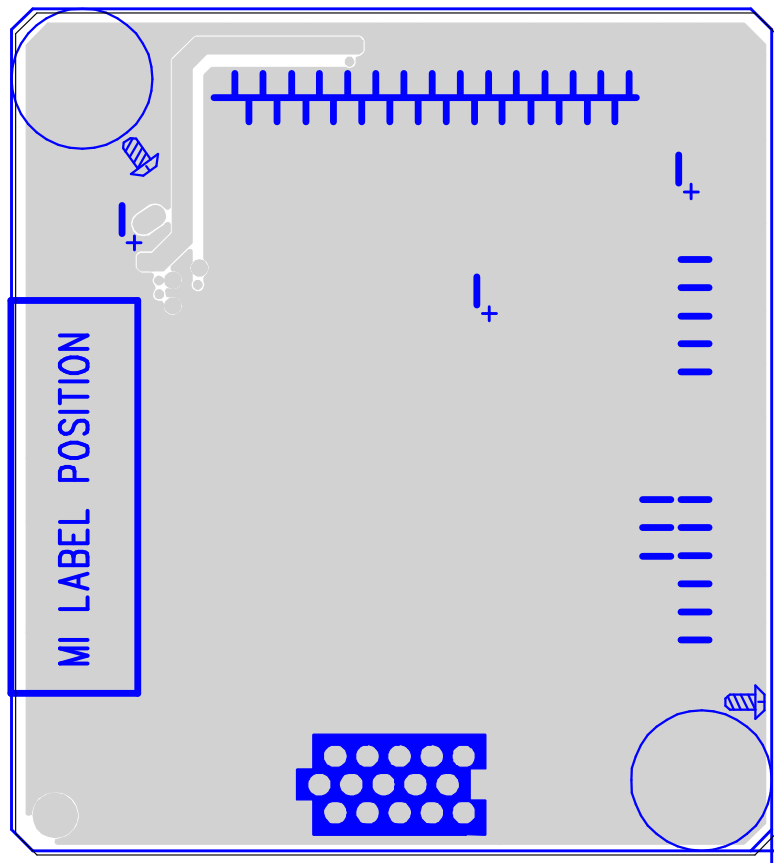
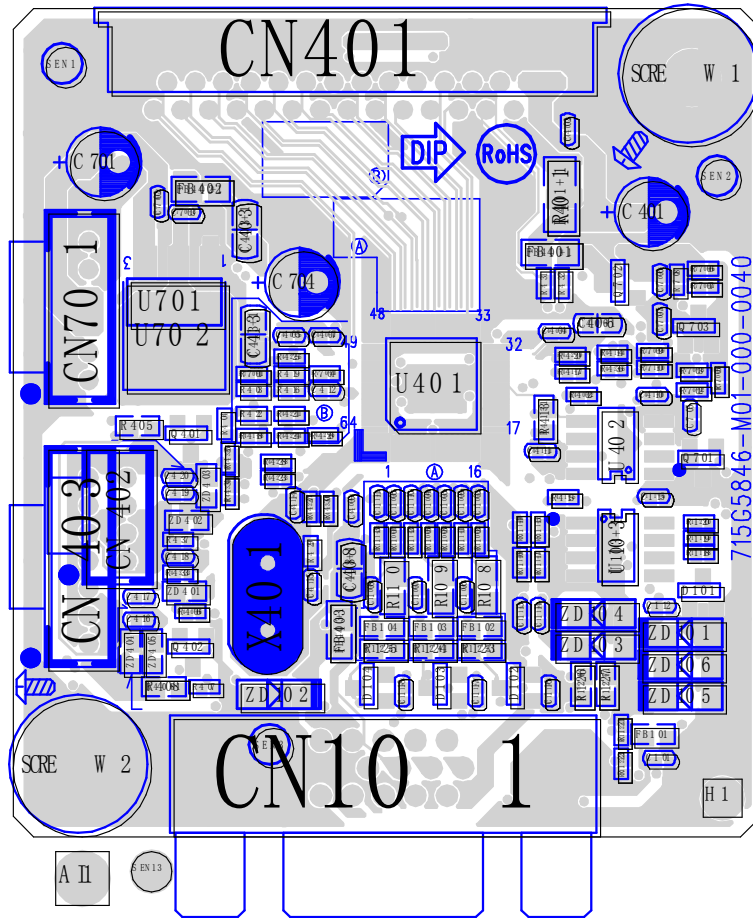


TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	PHILIPS V5	Size	B
絲隔瓜網廠 715G6039-K0A-000-0010	TPV MODEL	PHILIPS V5 FIVE KEY	Rev	B
Key Component 2.0.key	PCB NAME	715G6039-K0A-000-0010_PHILIPS V5 FIVE KEY	稱號	<稱號>
Date Thursday, January 03, 2013	Sheet	2 of 2		

7. PCB Layout

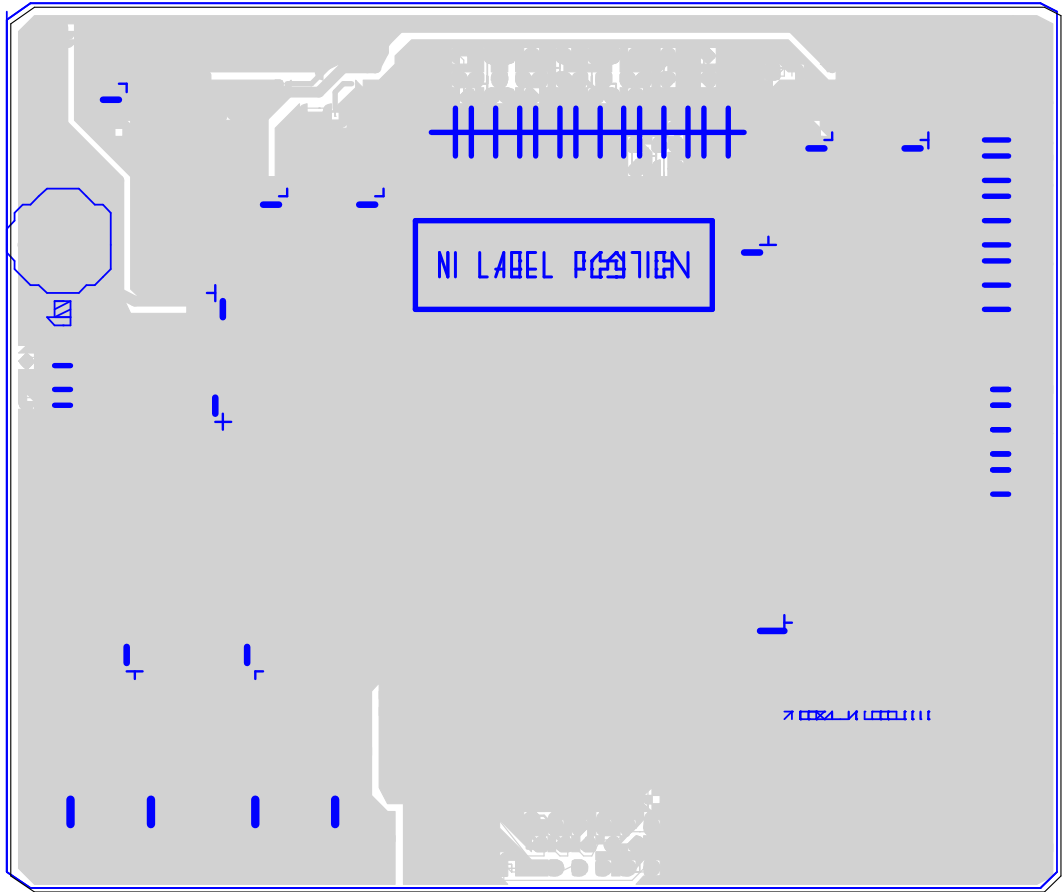
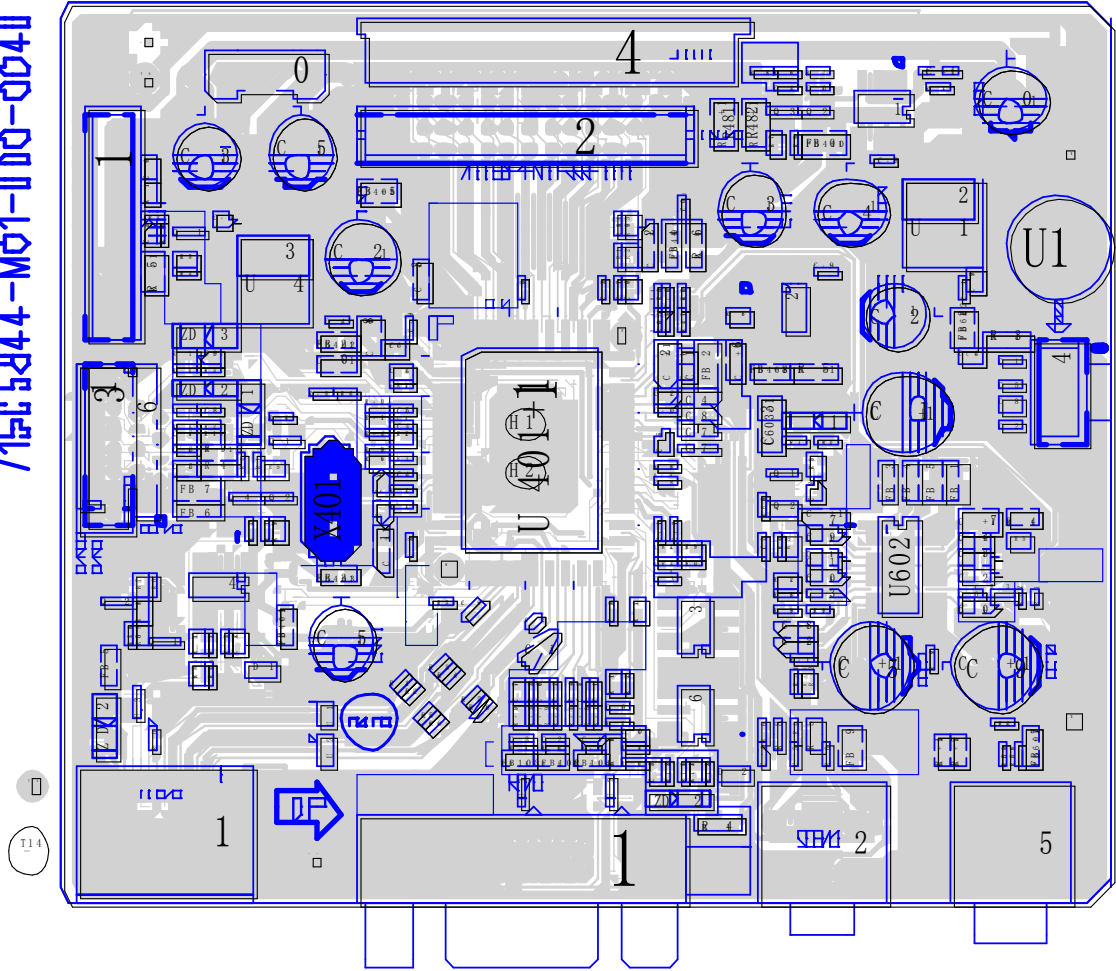
7.1 Scaler Board

715G5846M0100004I (for 223V5LSB2)

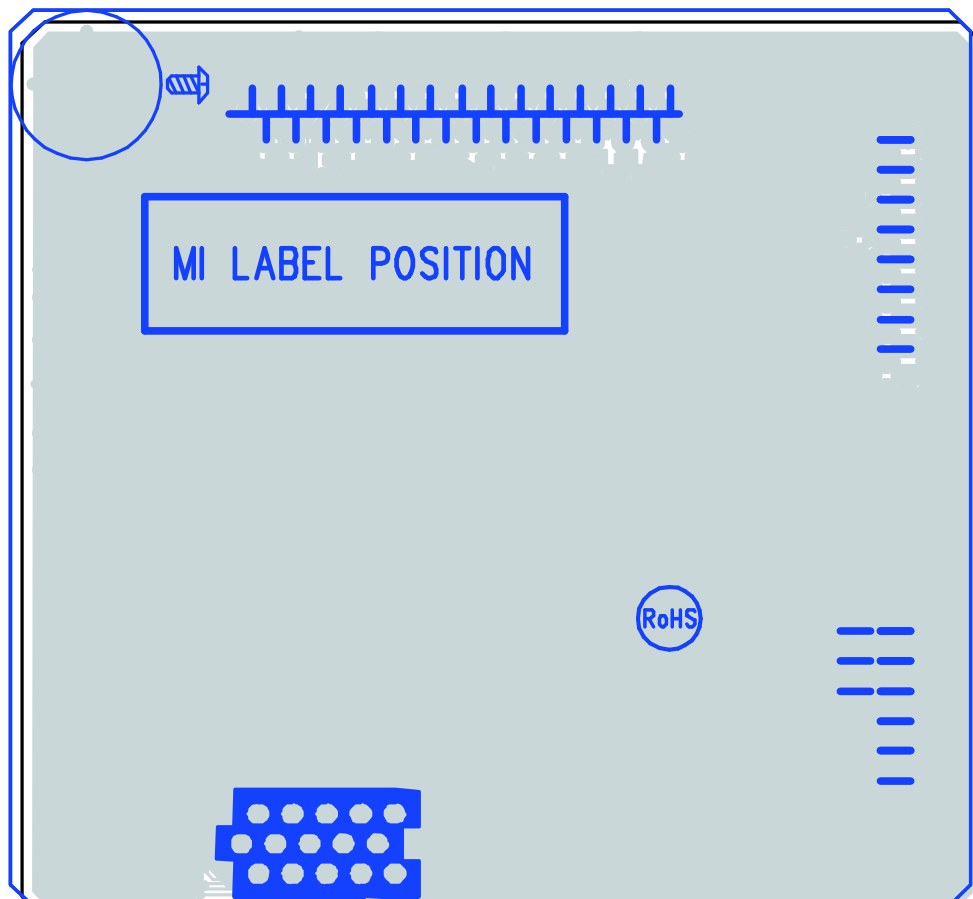
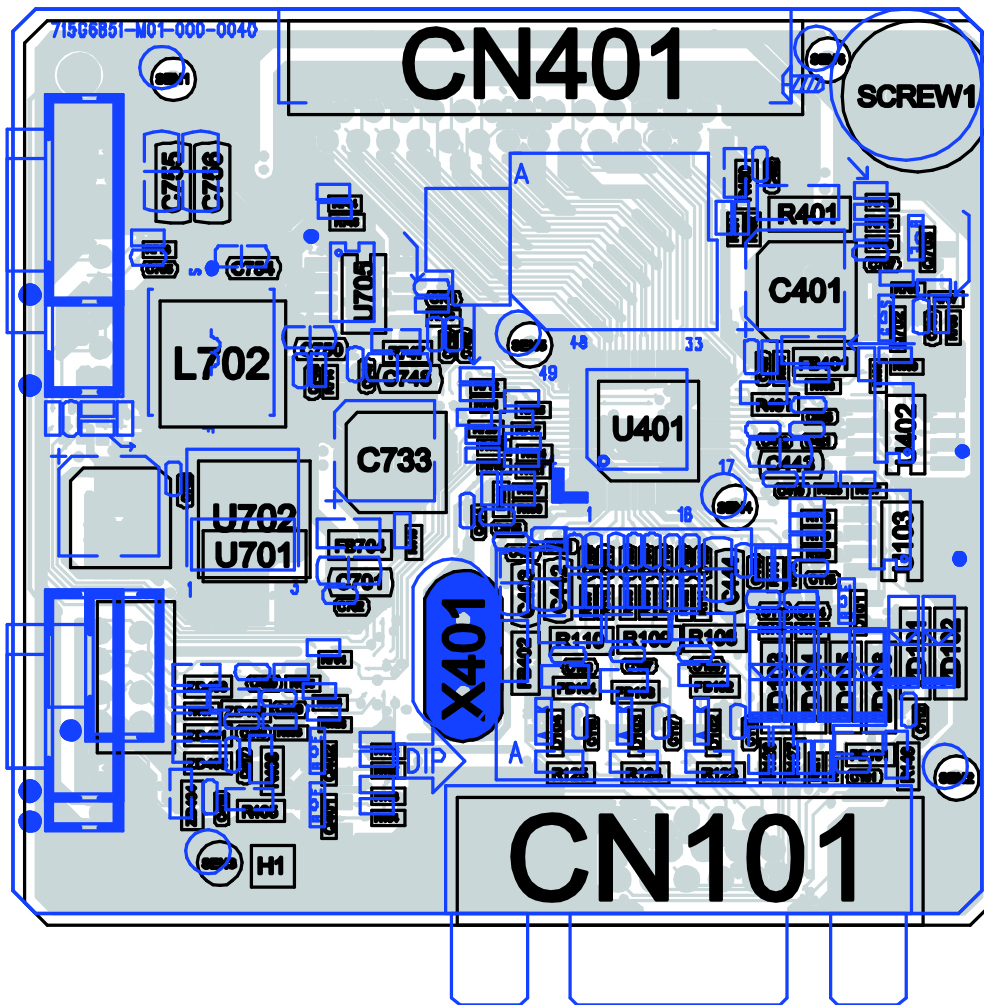


715G5844M0100004S(for 223V5LHSB)

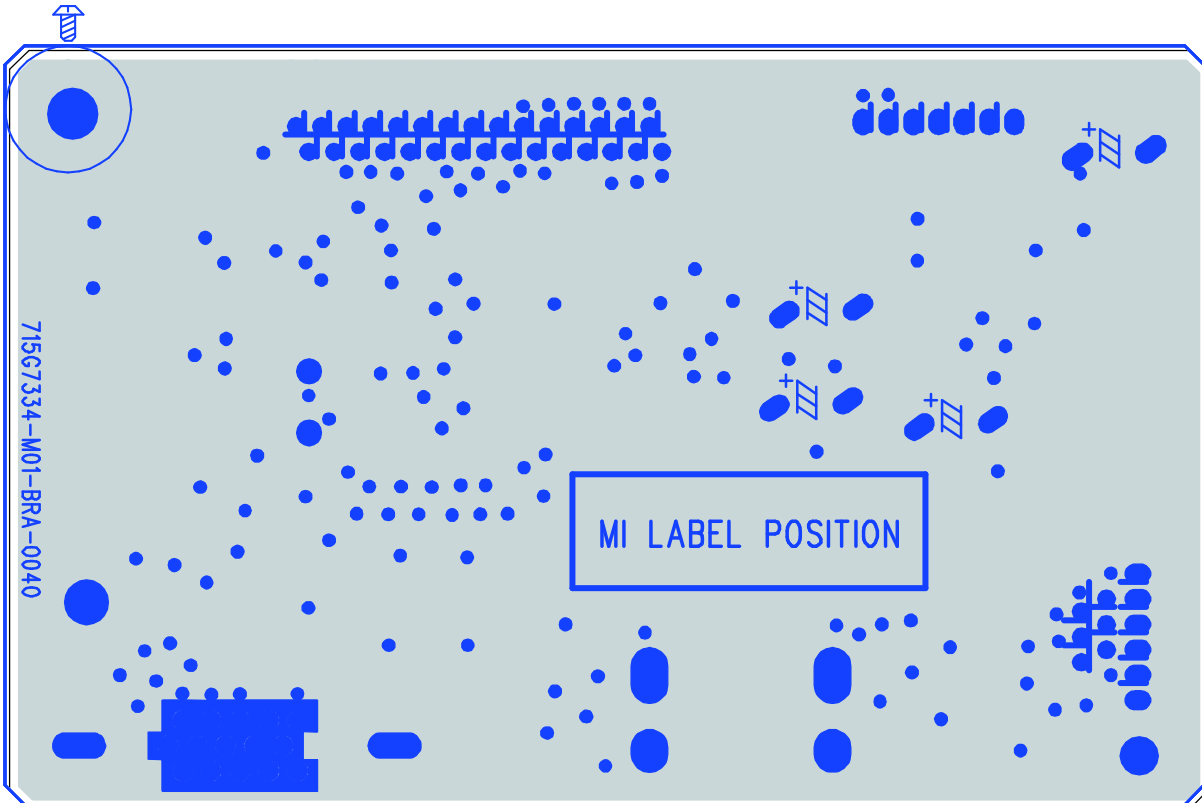
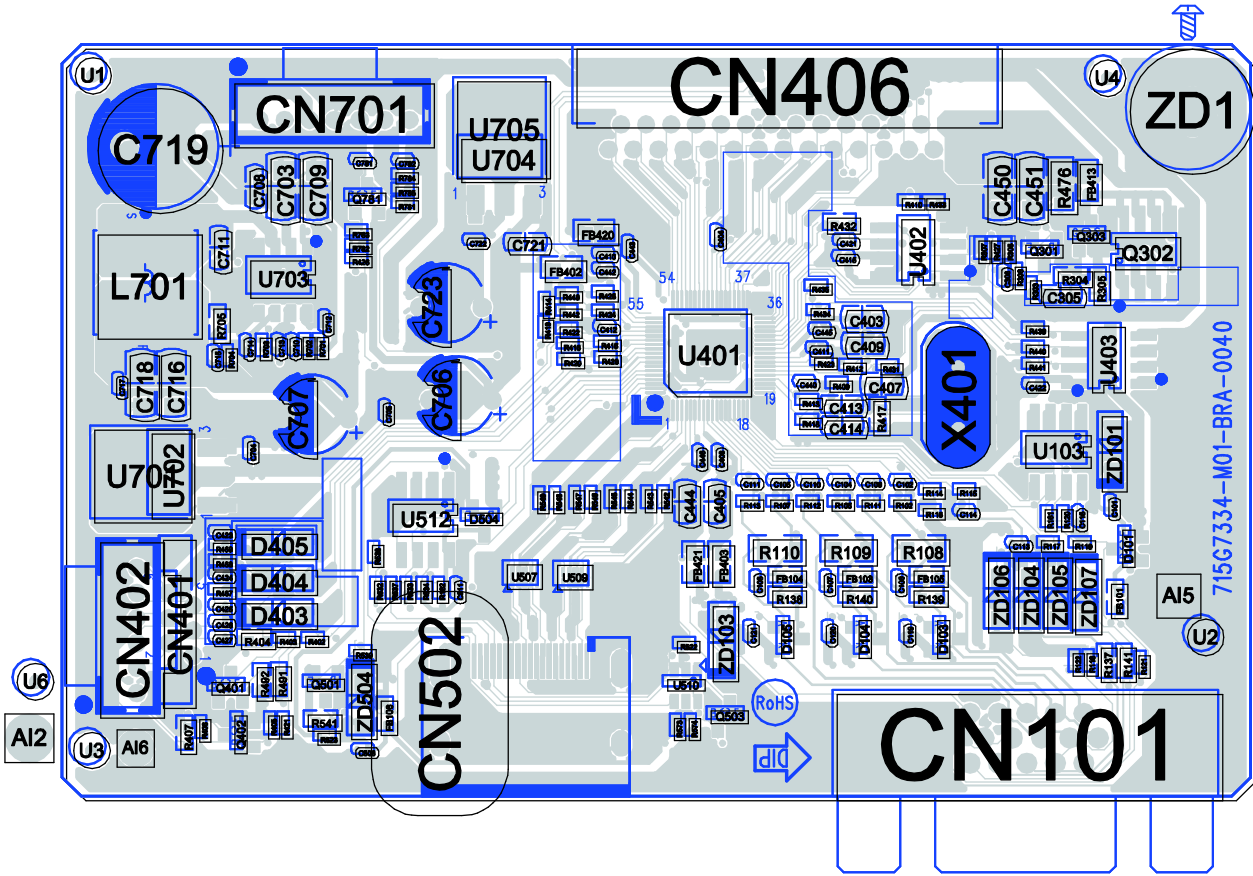
715G5844-M01-000-0040



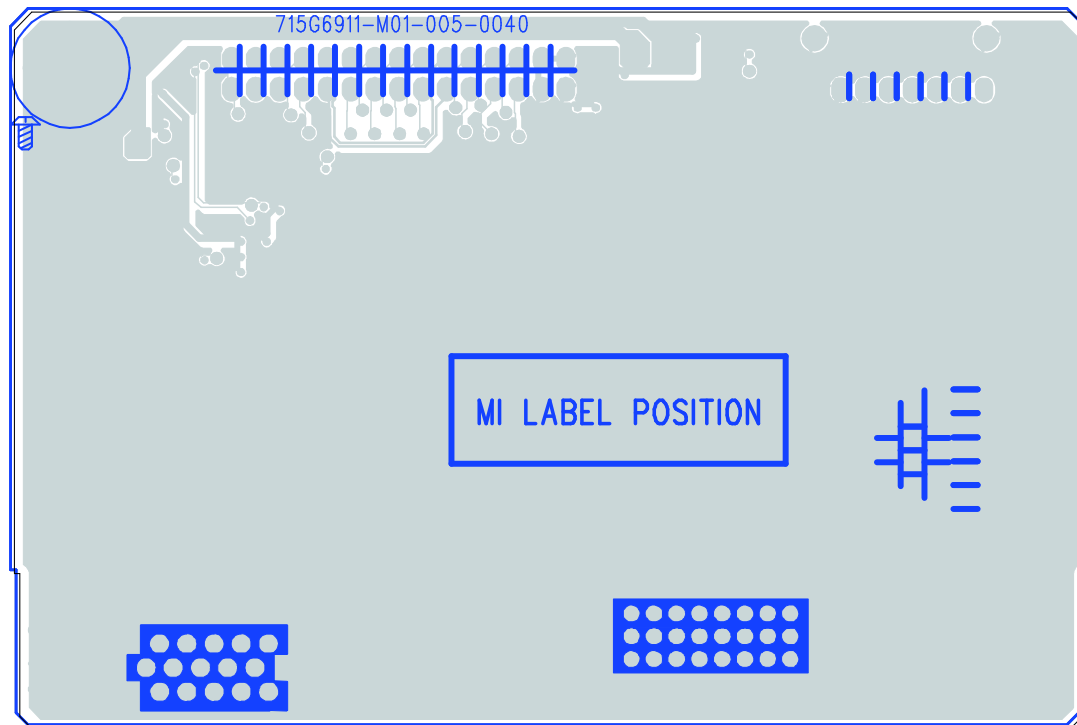
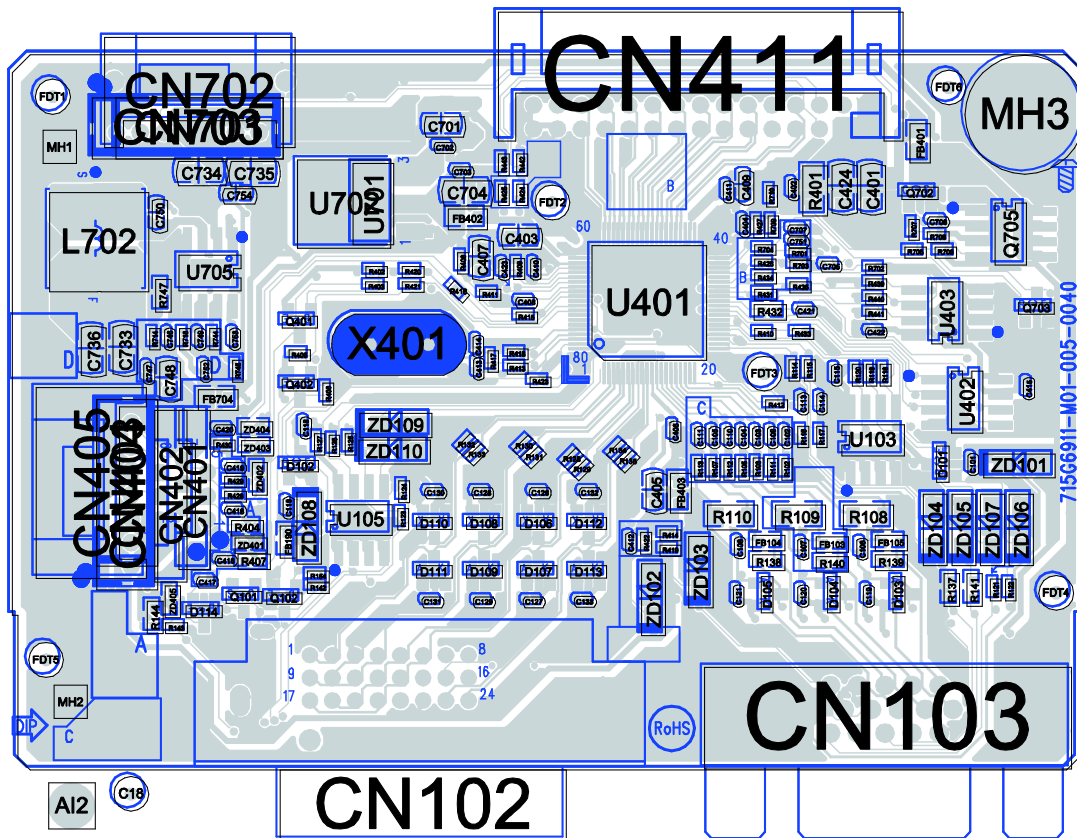
715G6851M0100004C(for 223V5LSB2)



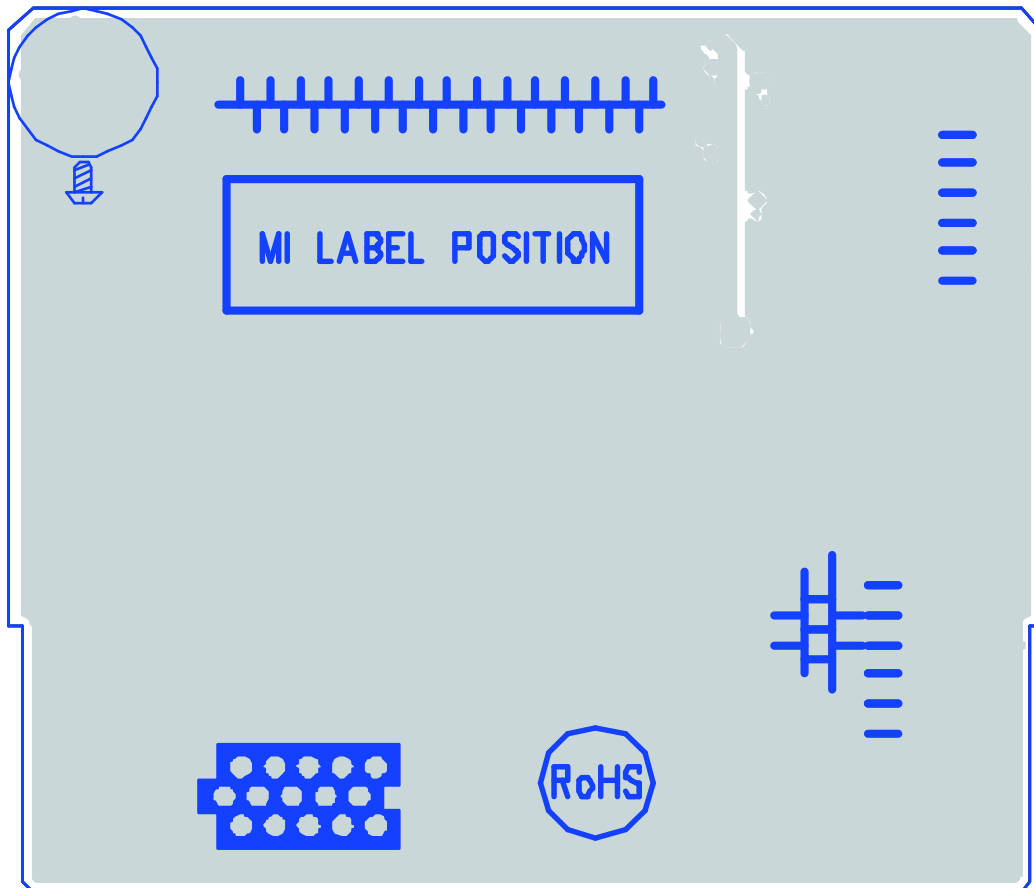
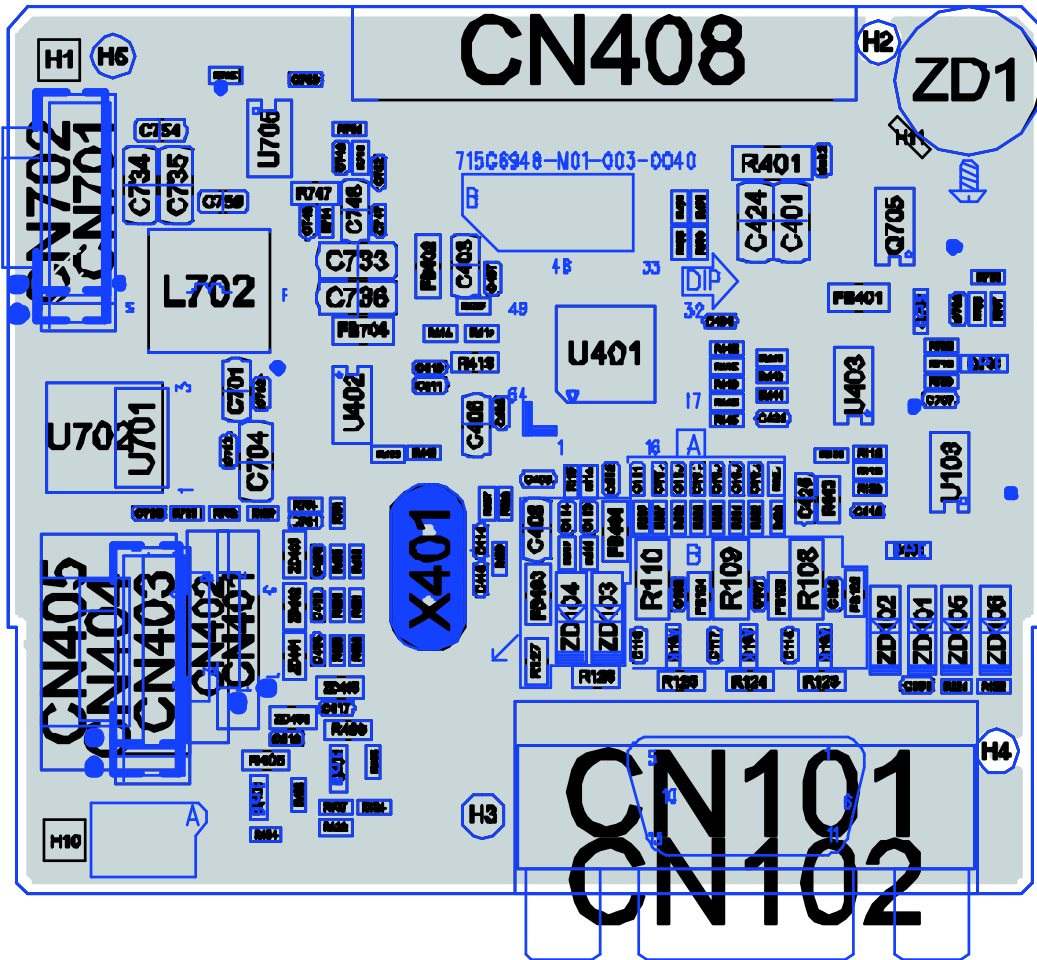
715G7334M01BRA004Y (for 223V5LHSB2)



715G6911M01003004C (for 223V5LSB)

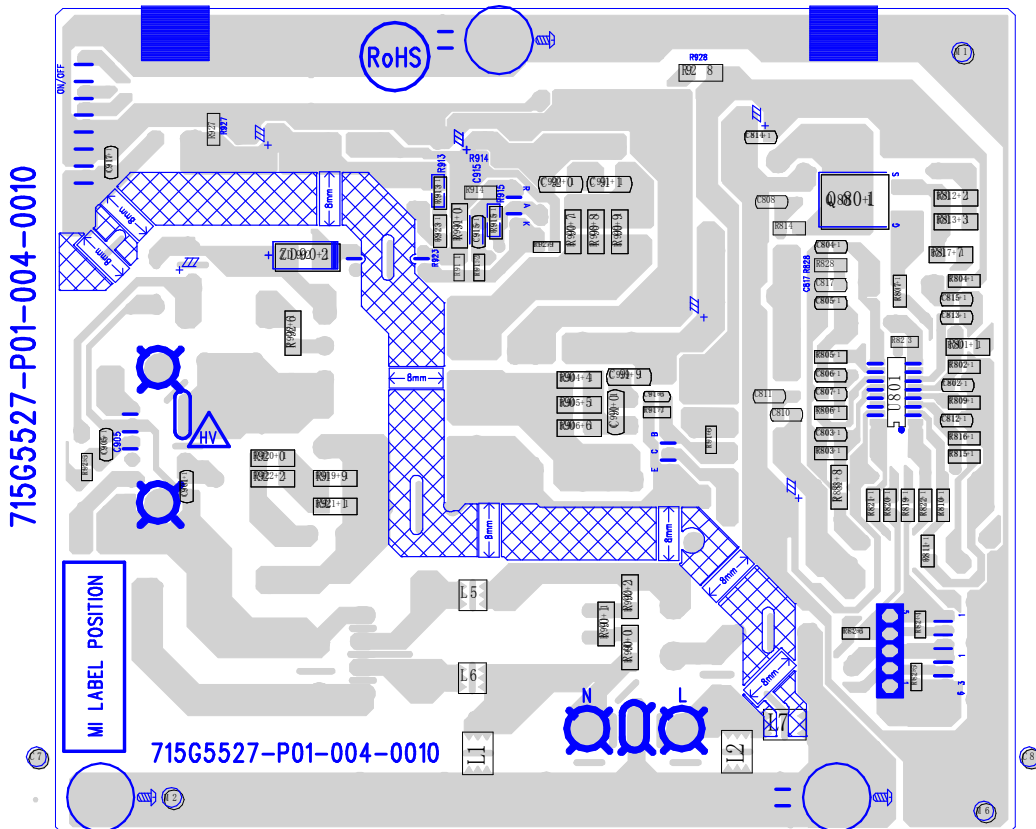
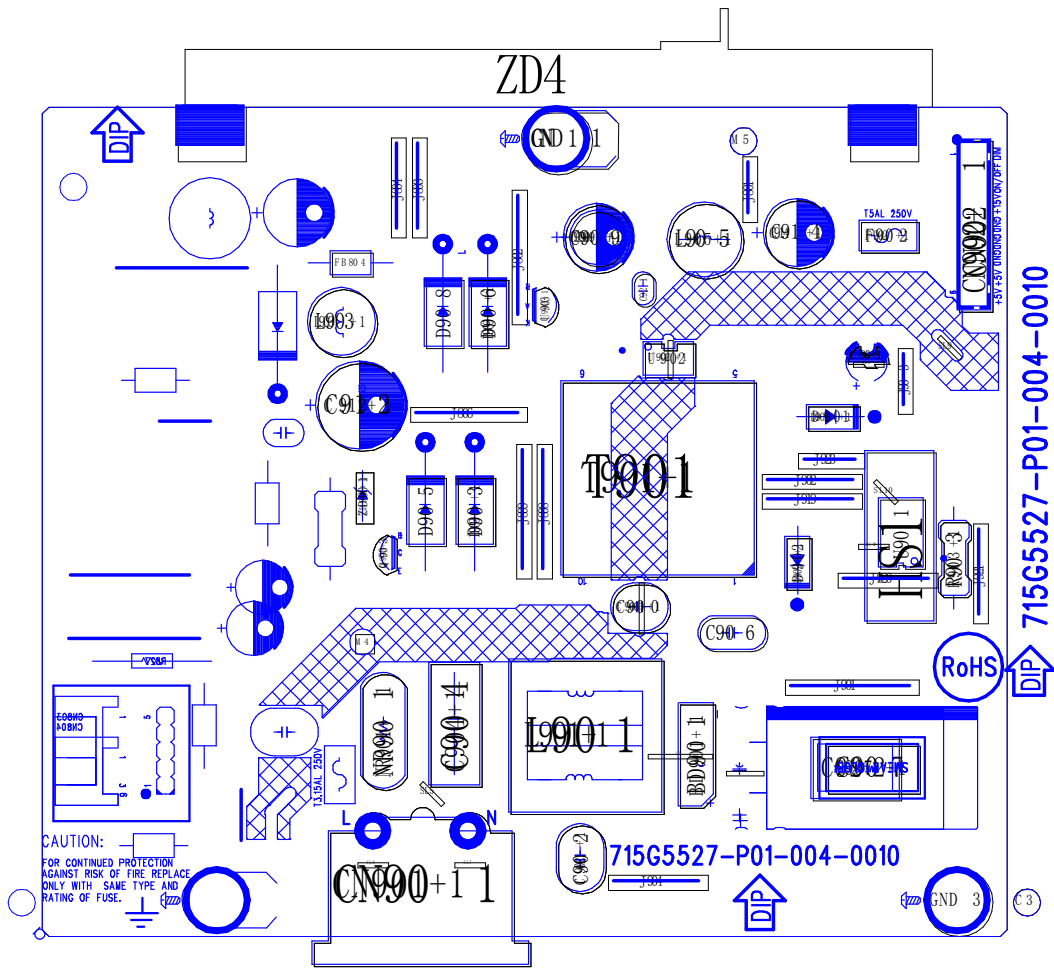


715G6948M02007004K (for 223V5LSB2)

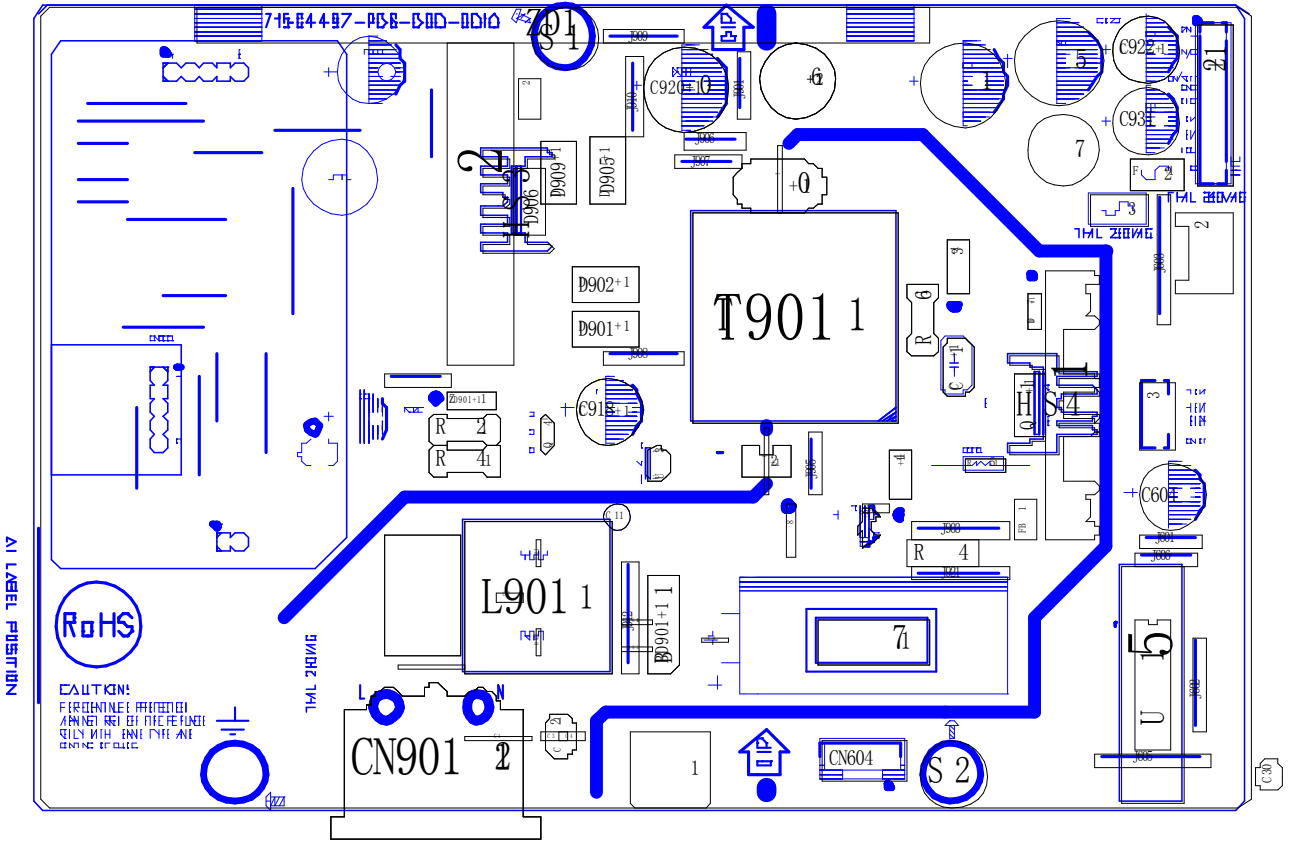


7.2 Power Board

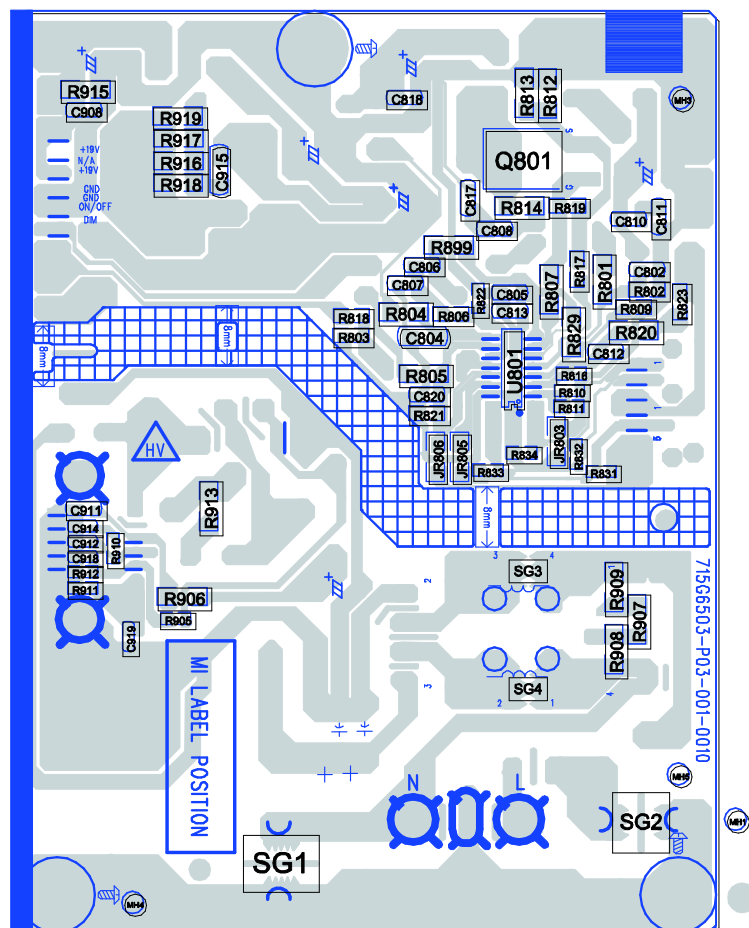
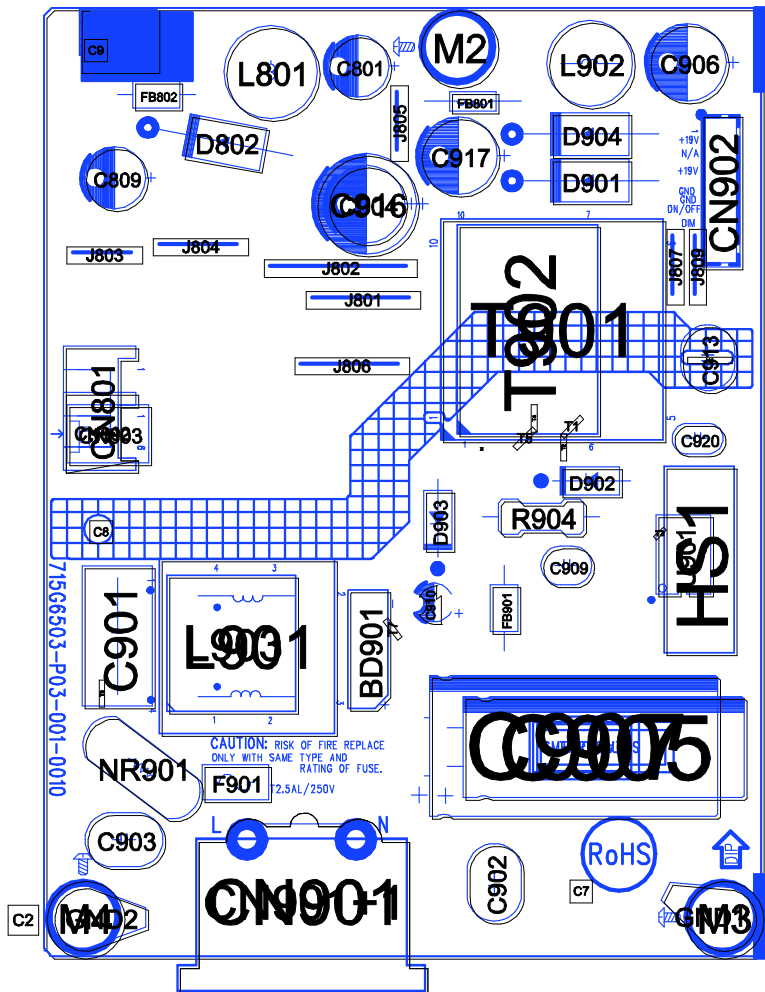
715G5527P01004001C (for 223V5LSB)



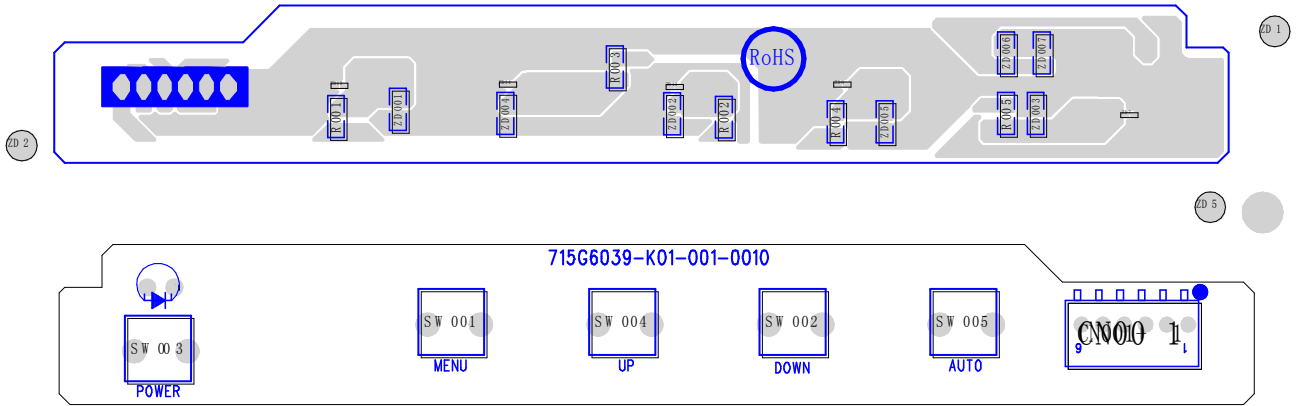
715G4497P0600001S (for 223V5LHSB)



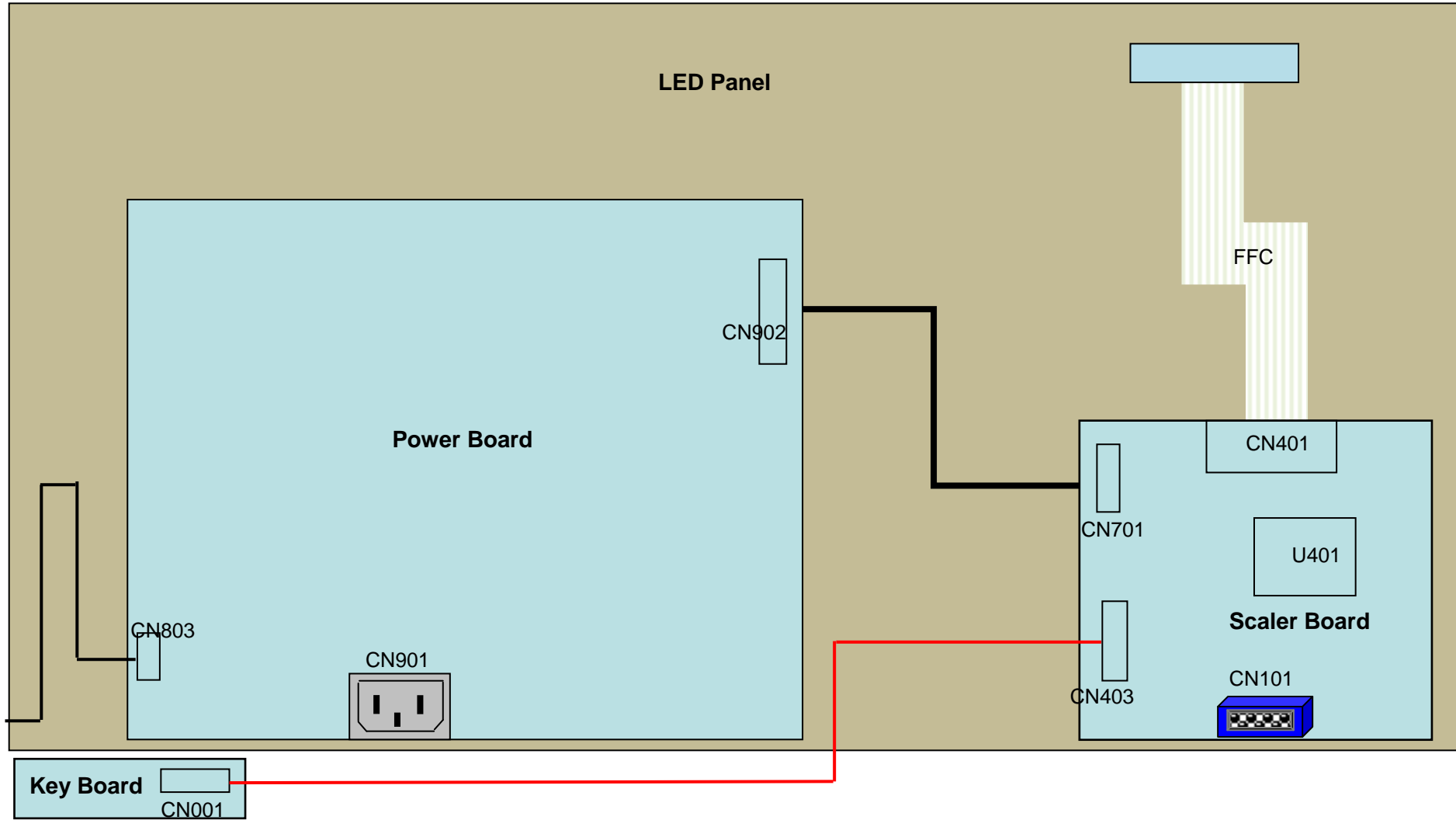
715G6503P02001001C (for 223V5LSB2/223V5LHSB2)



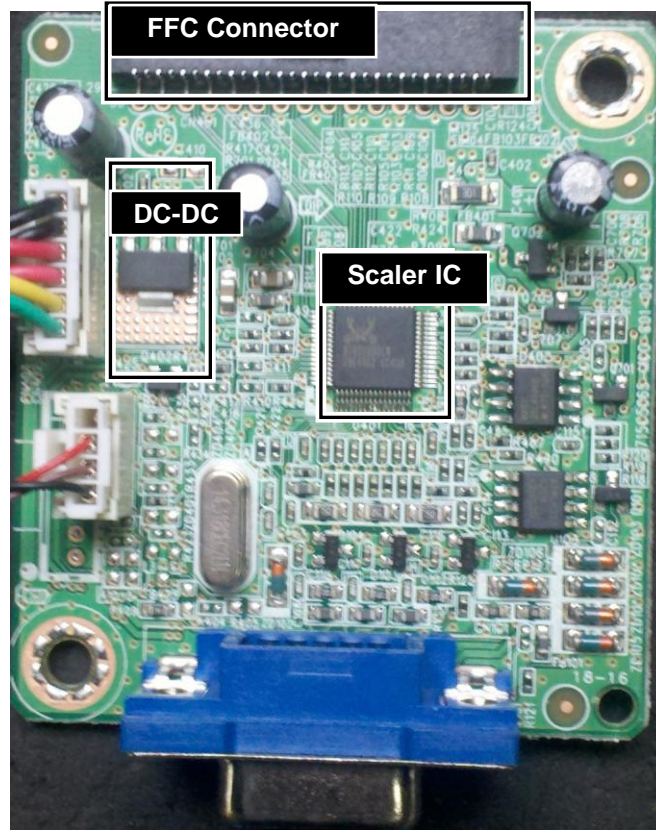
7.3 Key Board (715G6039K01001001S)



8. Wiring Diagram (eg: 223V5LSB2)



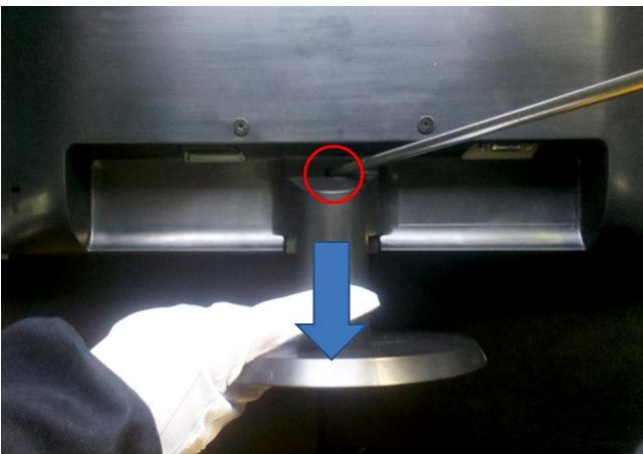
9. Scaler Board Overview (EG: 223V5LSB2)



10. Mechanical Instructions



1. Place the monitor face on a clean surface, and leave off stand while press the push area of back cover with fixture.



2. Disassemble the middle of rear cover top: press rear cover with thumb meanwhile other fingers clip into the gap between rear cover and bezel to separate them..



3. Disassemble each corner and two sides of rear cover: press rear cover with thumb meanwhile other fingers clip into the gap between rear cover and bezel to separate them.



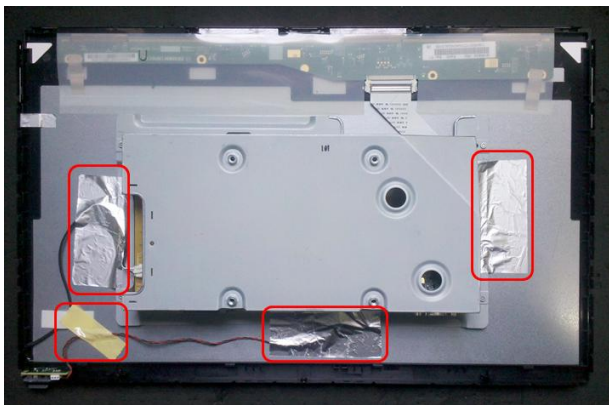


EMI Monitor:

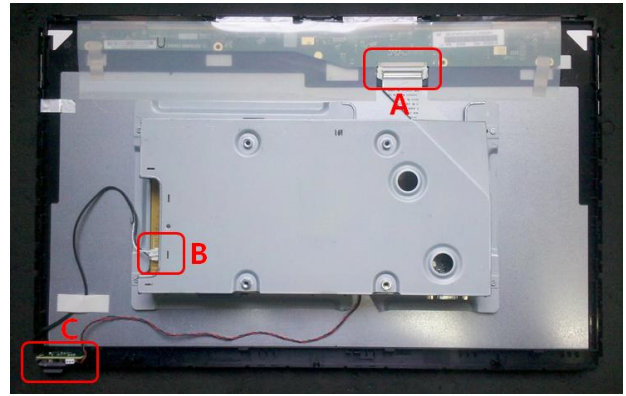
4. Take off back cover.



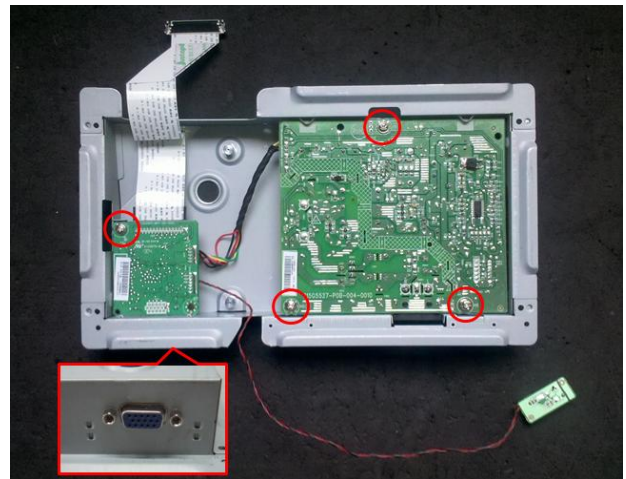
5. Pull out aluminum foils and tape.



6. Take off FFC (A), light PIN (B) and Key Board(C).



7. Take up main frame, according to the different defective area, takes off the screws then get the relevant part to maintain (Take off the six-angle before take Main Board).

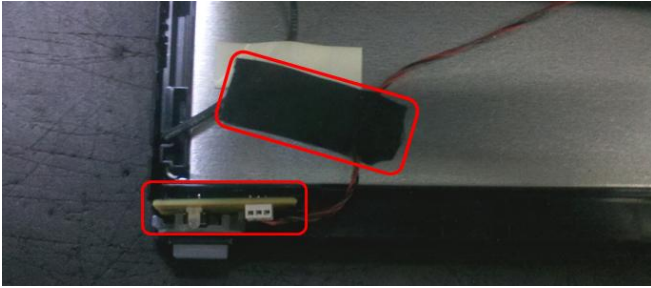


NON EMI Monitor (Do follow steps after step 4):

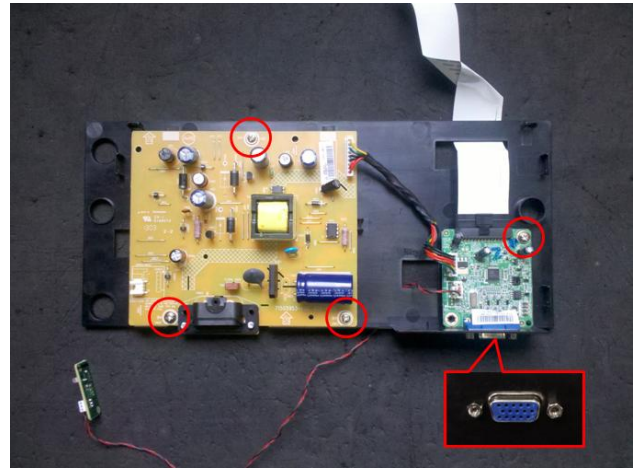
8. Open rear cover from the top (Notice: Do not take off rear cover, or else PIN and wire may be pulled out), take off FFC.



9. Take Key Board off from the front frame (Notice: Do not take off rear cover, or else PIN and wire may be pulled out).



10. Open rear cover from the right. Light PIN is still connect to Power Board, so does not take away rear cover completely.

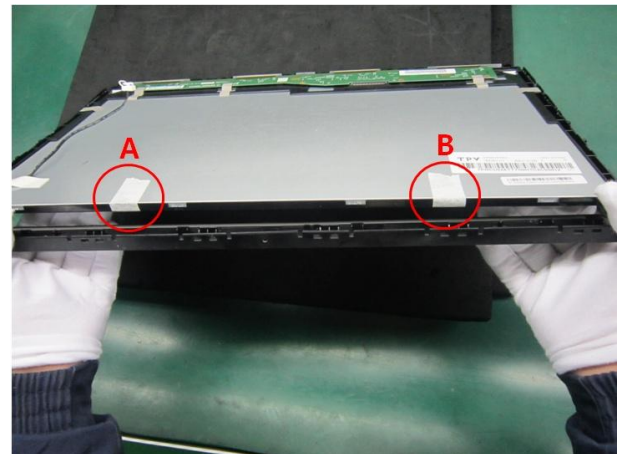


Exchange bezel:

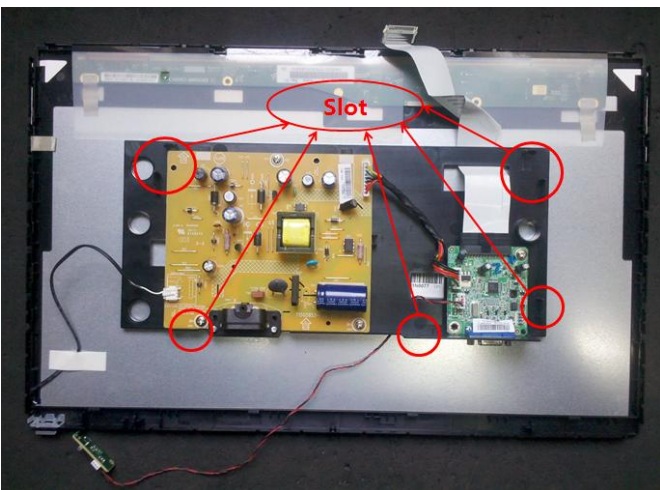
1. Separate bezel and the bottom of Panel, hold the bottom of Panel with fingers tightly, otherwise dust may get in. Stick bottom of panel tightly with two pieces textured plastic, then you can unloose your hand.



11. Take plastic plate off from rear cover.



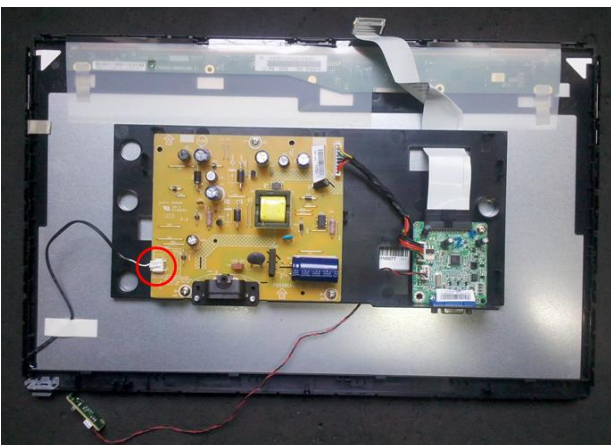
2. Separate bezel slot from clips on Panel.



12. Take off light PIN, then get plastic plate.



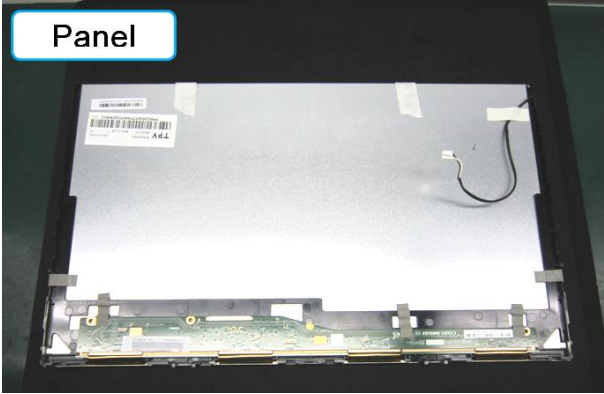
3. Separate bezel and Panel.



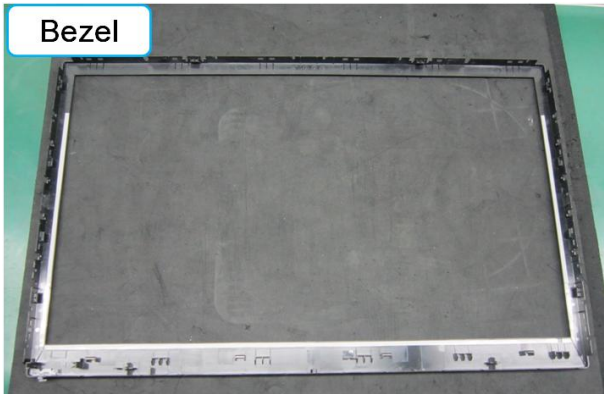
13. According to the different defective area, take off the screws to get the relevant part to maintain (Take off the six-angle before take Main Board).



Panel

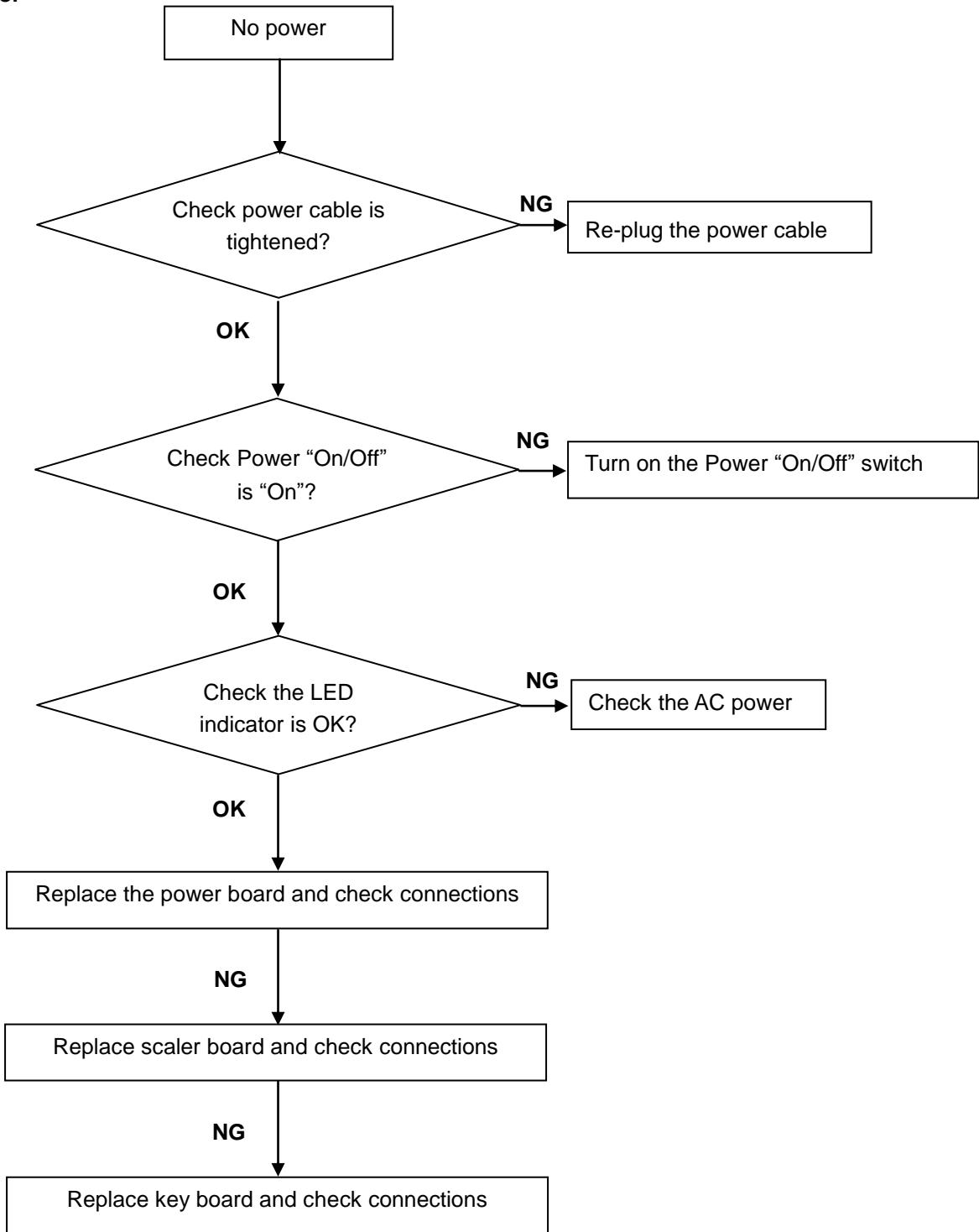


Bezel

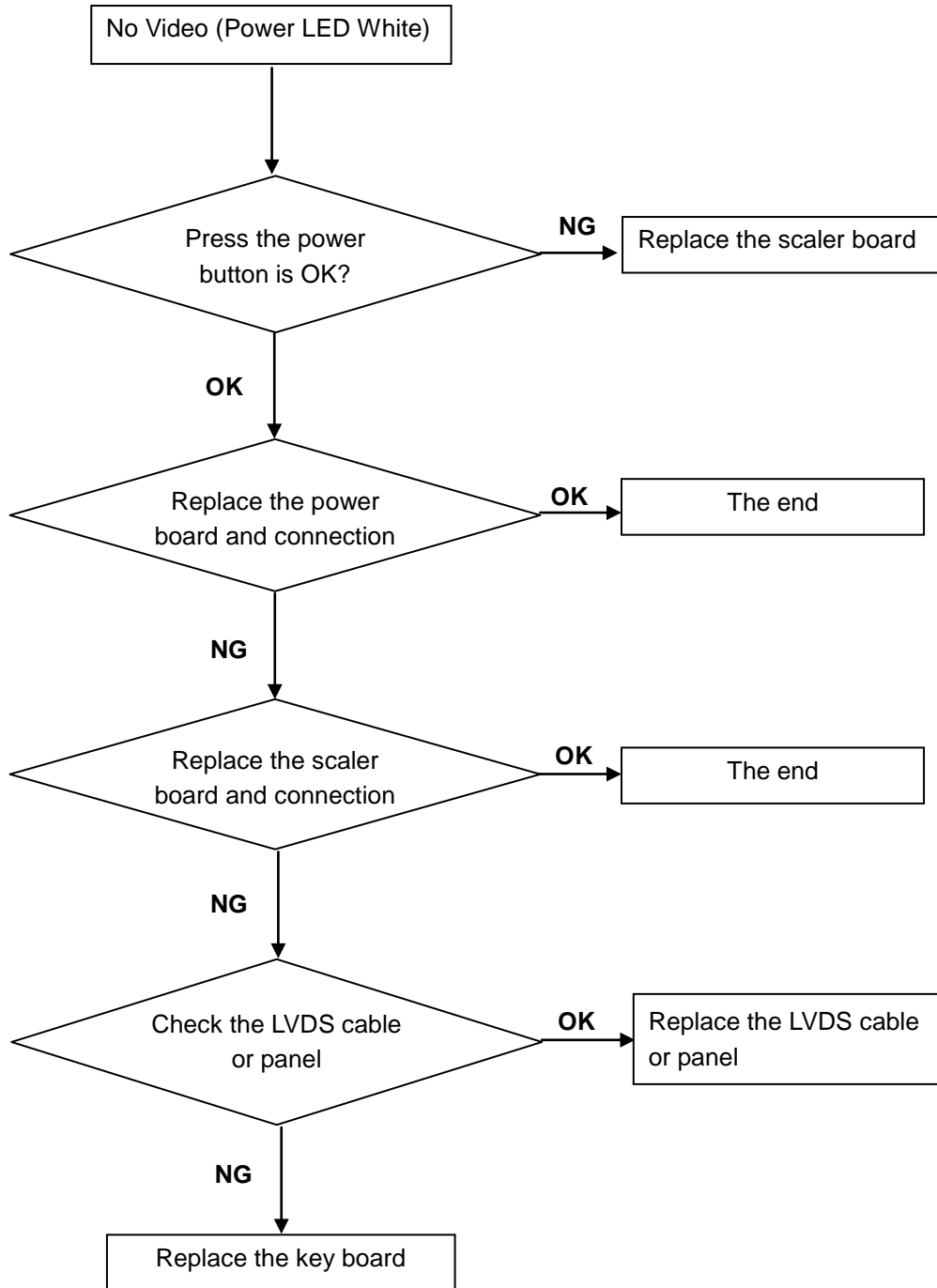


11. Repair Flow Chart

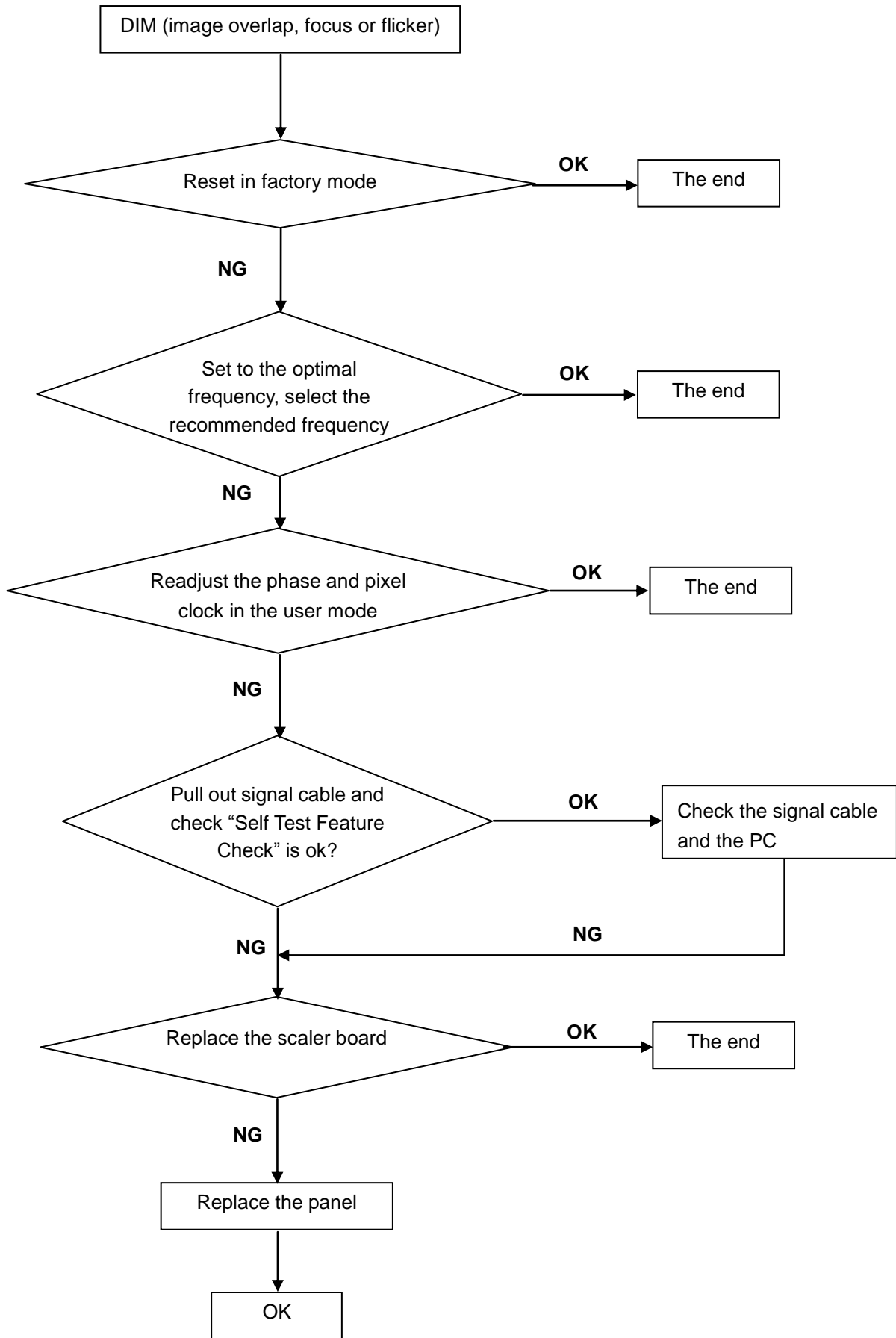
1. No Power



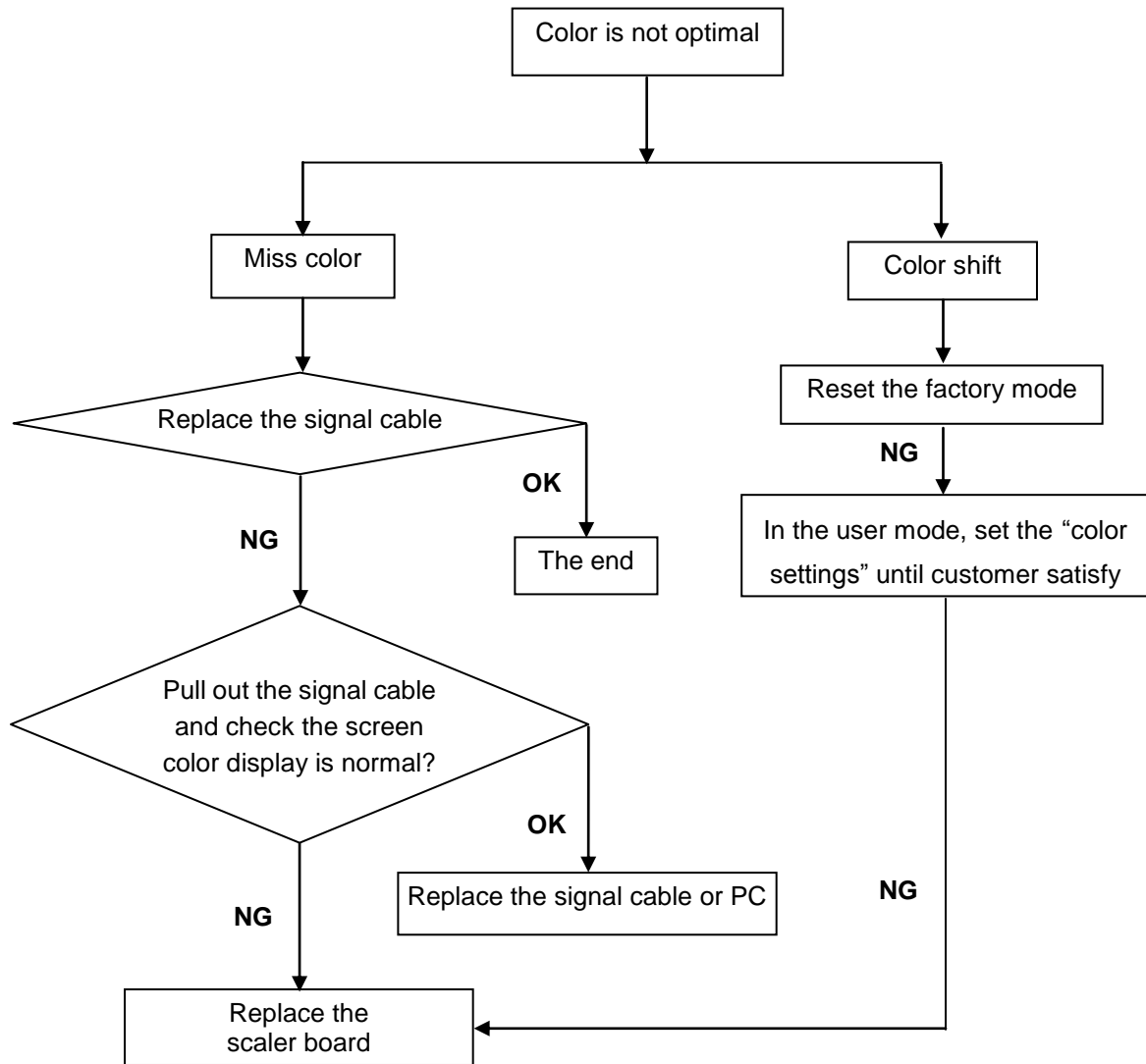
2. No Video (Power LED White)



3. DIM



4. Color is not optimal




12. ISP Instruction

Step 1: Materials:

1. ISP JIG: 715GT089-B.
2. USB cable one pcs, D-SUB cable one pcs.
3. Three core power cord one pcs.





Step 2: Software:

1. Mstar USB Driver: 

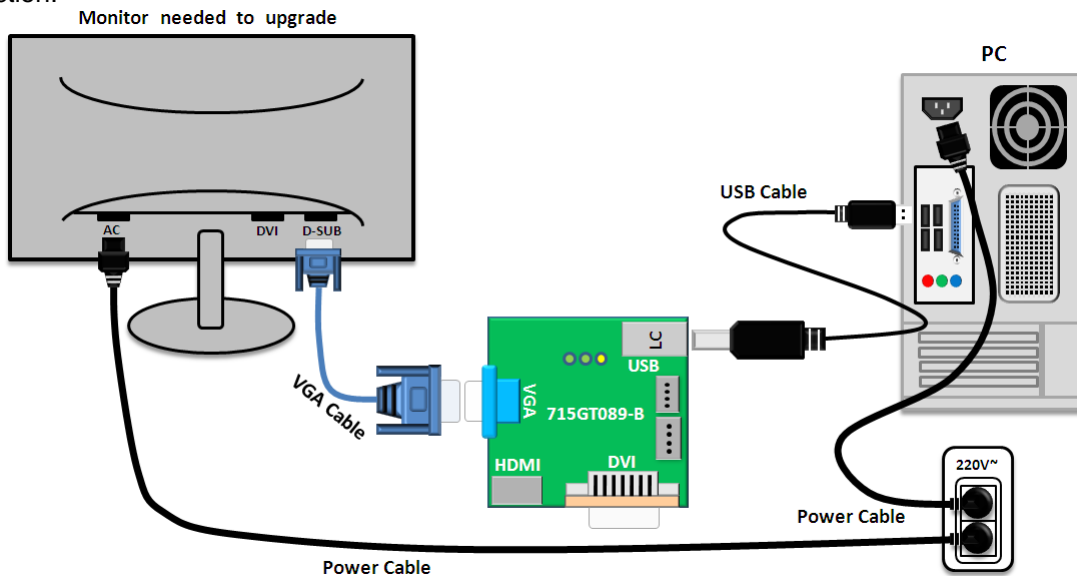
2. ISP_Tool: 

Step 3: Install software and connect:

1. Double-click Mstar USB Driver  to install USB driver;

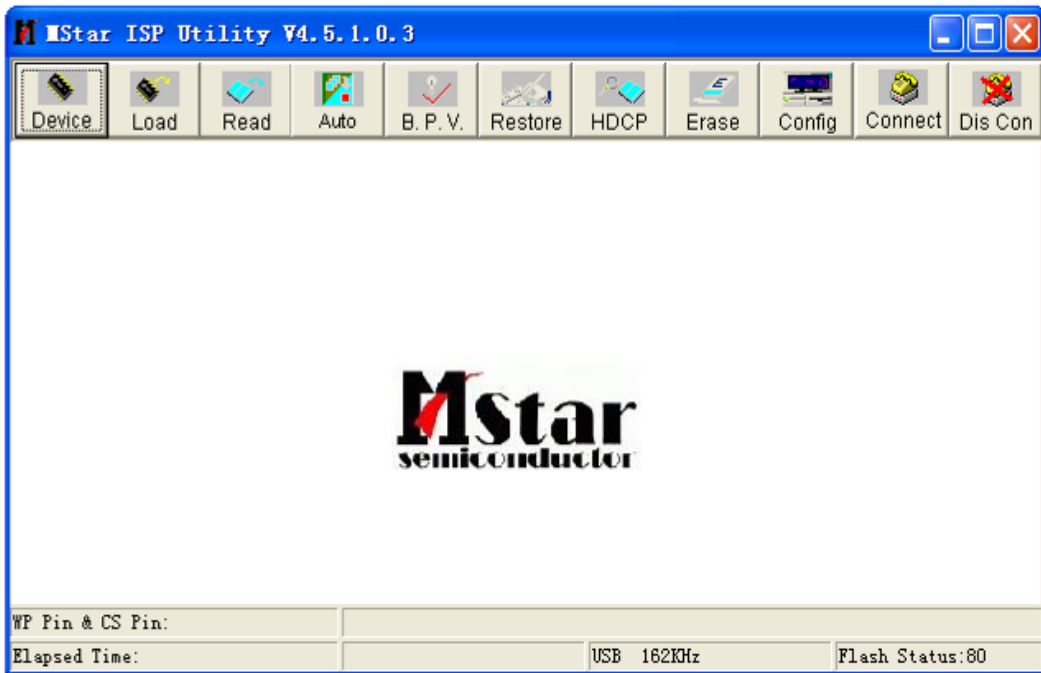
2. Uncompress  to get ISP tool  ;

3. Connection:

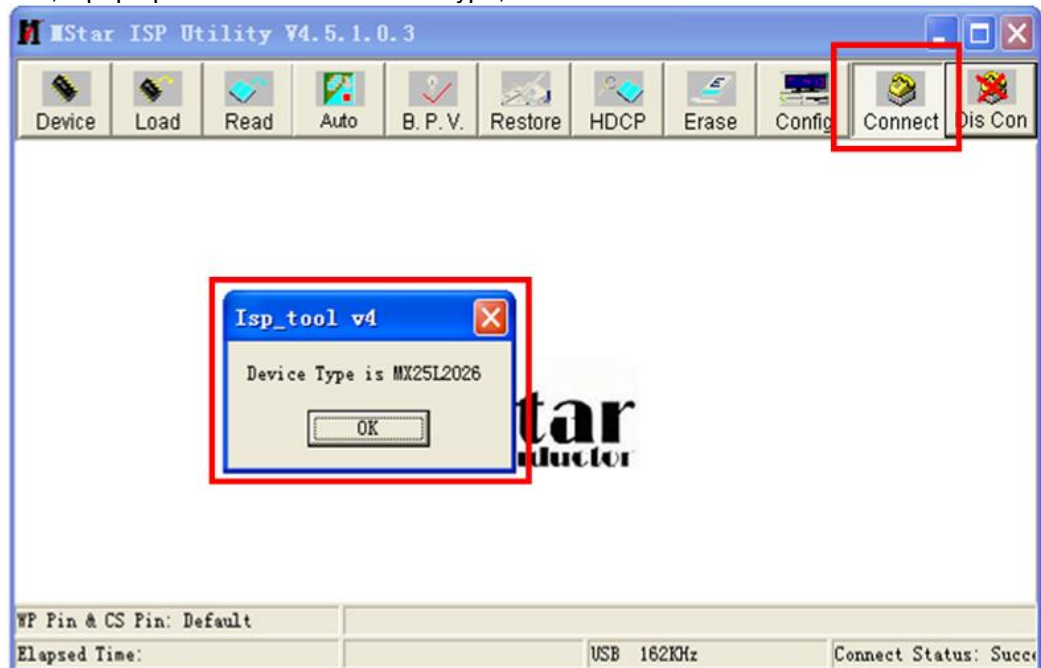


Step 4: ISP:

1. Double-click  to run ISP tool.

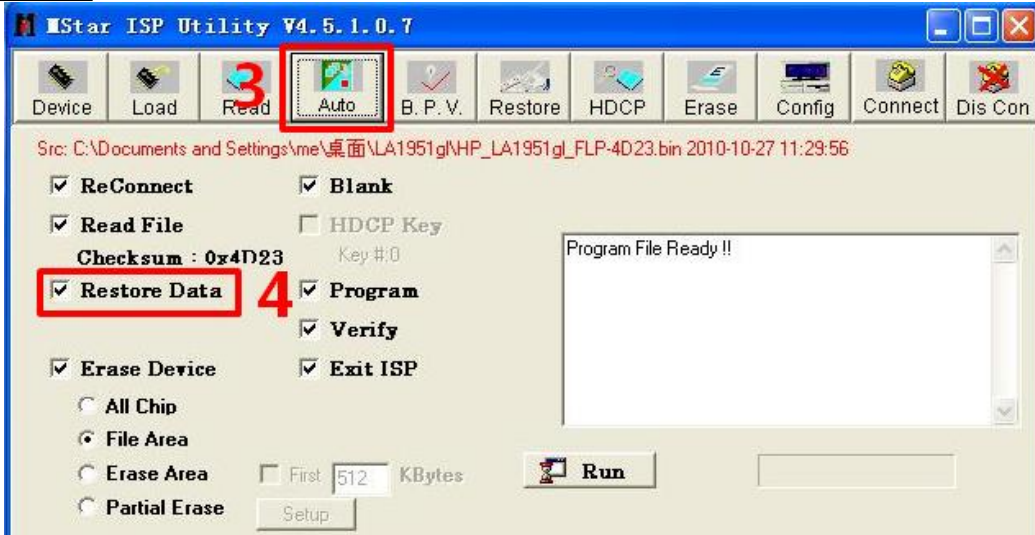


2. Click "Connect", if pop up a window show device type, communicate with monitor is ok. Click "OK".

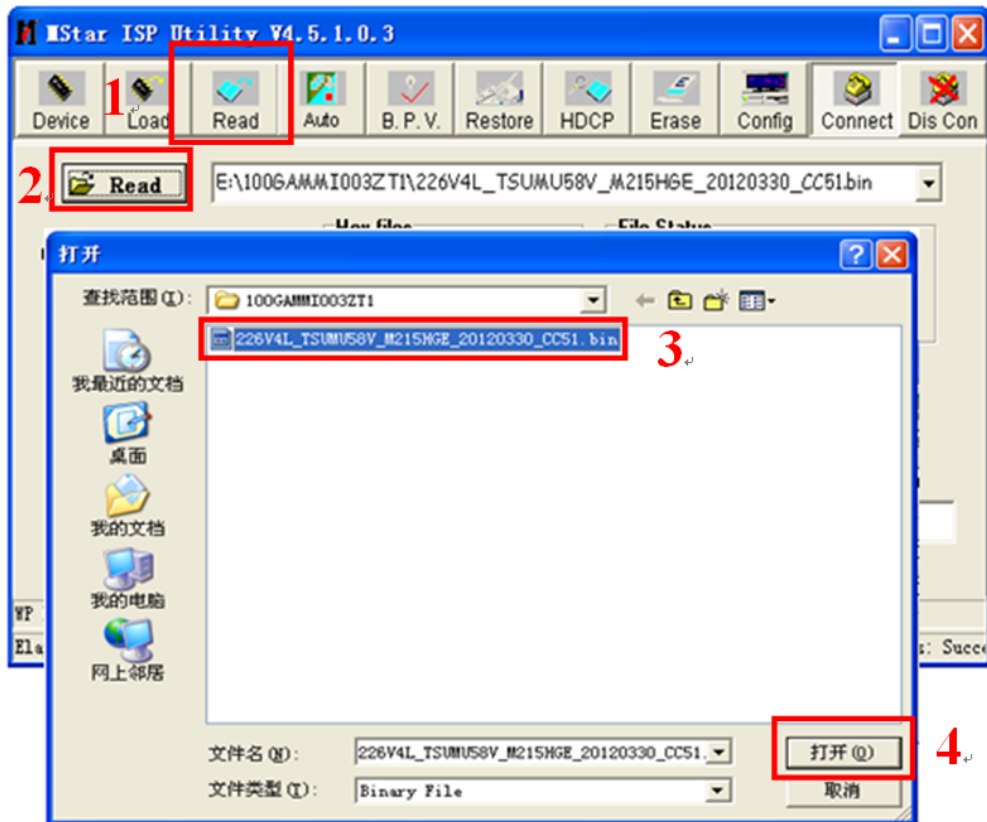


3. Monitor with HDCP need set as below to restore HDCP CODE.

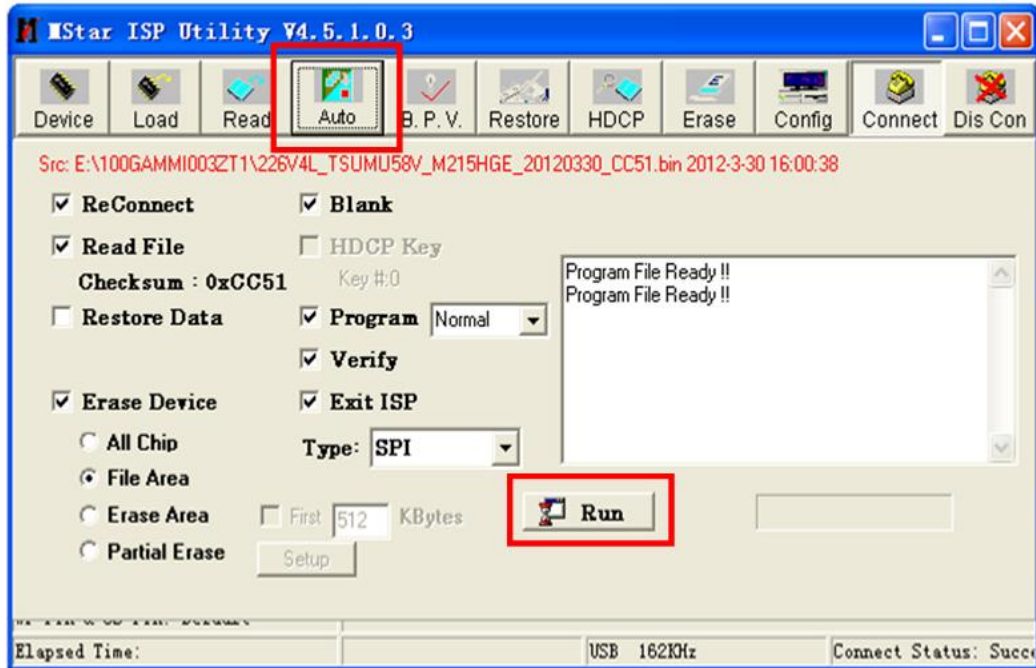




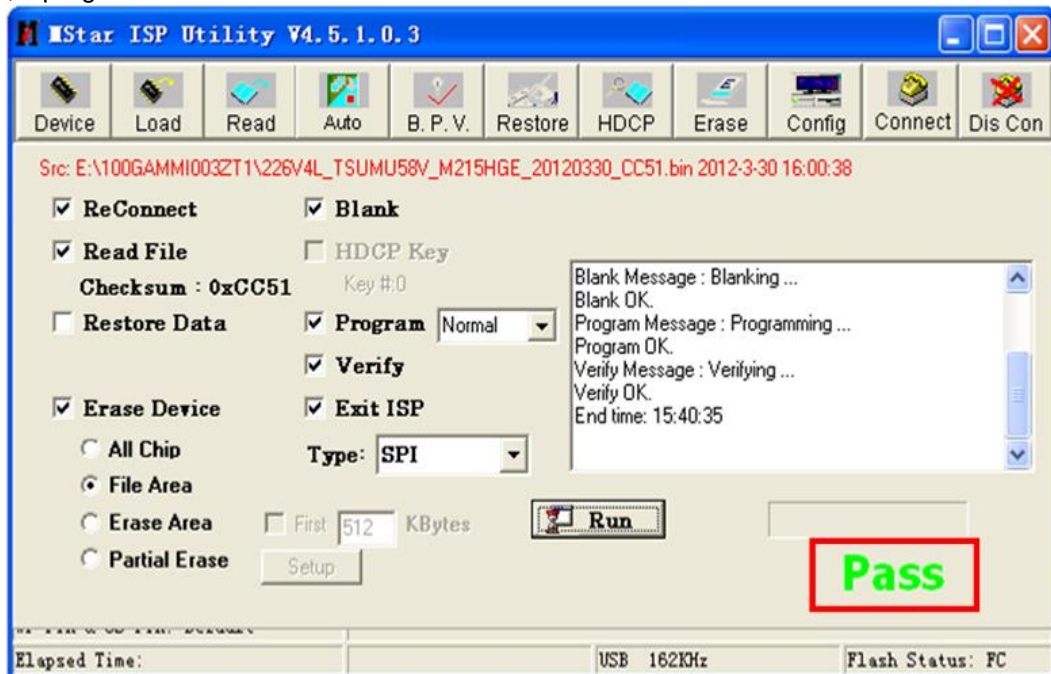
4. Click "Read" to enter load F/W window, click "Read" to load correct F/W.



5. Click "Auto" to enter ISP window, click "Run" to start programming.



6. Show "Pass", if program success.



7. Remove ISP tool, connect video source and check image. Enter factory menu, check the FW version. If check OK, do "Auto Color" in factory. Any abnormality, record again.

Check whether the FW version is correct, then do "Auto Color" and "Reset".

1. Connect the VGA source and power off the monitor.
 2. Press and and buttons at the same time, power on the monitor, and then press the menu again; the menu will appear on the top left corner.
 3. Select the "Factory" and press the "MENU" button to enter the factory mode.
- Eg: 193V5L

Model 193V5L
Scaler RTD2280DLW
Panel TPV-TPM185B1-BGEL03
Version V100-20130306

Exit
Auto Color
Burnin Of f
Gain R125 G126 B108
Offset R123 G120 B114
ColorTemp
6500 R127 G122 B128
9300 R103 G109 B128

DFM Of f SSC 4
TD Reset Of f Logo Of f
Auto Source On DDCCI On
POT 0

4. Power off/on to exit the factory mode.

5. Press the "MENU" button to enter the user menu, choose the "Reset" to do factory reset.

13. DDC Instruction

take the 273E3 for example

General

DDC Data Re-programming

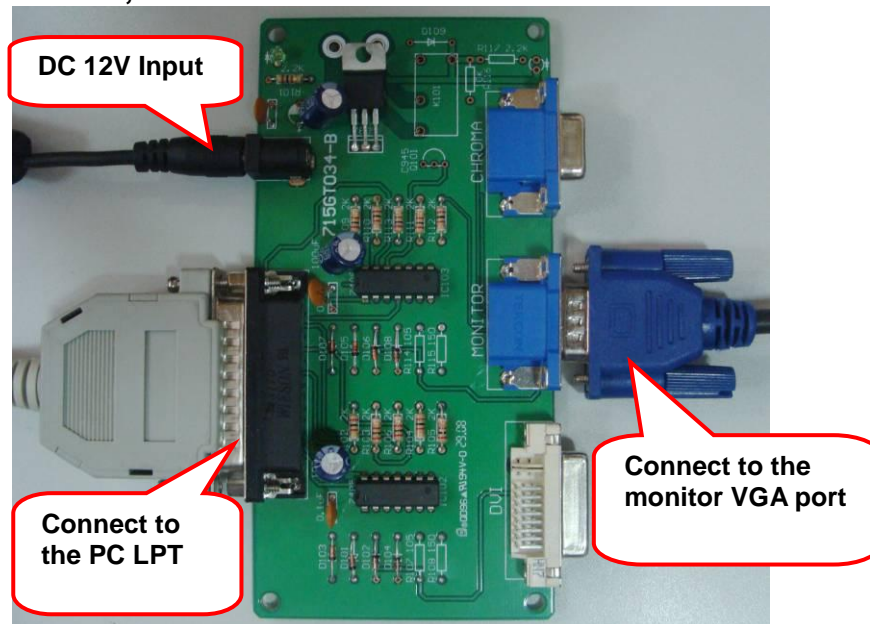
In case the main EEPROM with Software DDC which store all factory settings were replaced because a defect repaired monitor' the serial numbers have to be re-programmed.

It is advised to re- soldered the main EEPROM with Software DDC from the old board onto the new board if circuit board have been replaced, in this case the DDC data does not need to be re-programmed.

Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification Data (EDID) information may be also obtained from VESA.

1. An i486 (or above) personal computer or compatible.
2. Microsoft operation system Windows 95/98/2000/XP.
3. LPT drive "PORT95NT.exe" and EDID tool "VGA_PHL.exe"
4. EDID Board (715GT034-B) x1,
5. Printer cablex1, VGA cable x 1, DVI-D cable x 1
6. 12V DC power source
7. EDID data

13.1 Connect the ISP board, PC and monitor as follow:



13.2 Install the LPT drive

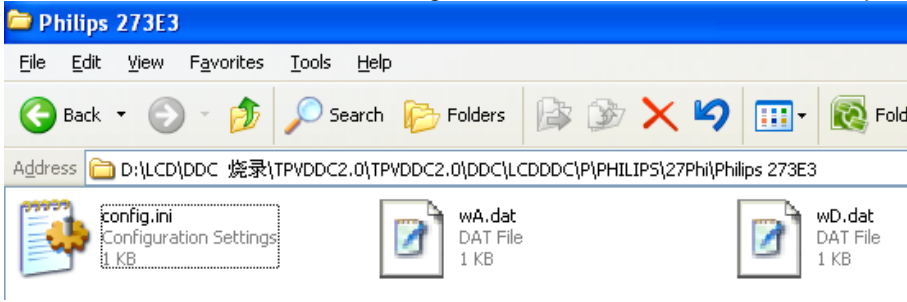


PORT95NT.EXE
PackageForTheWeb Stub
InstallShield Software Corpora.

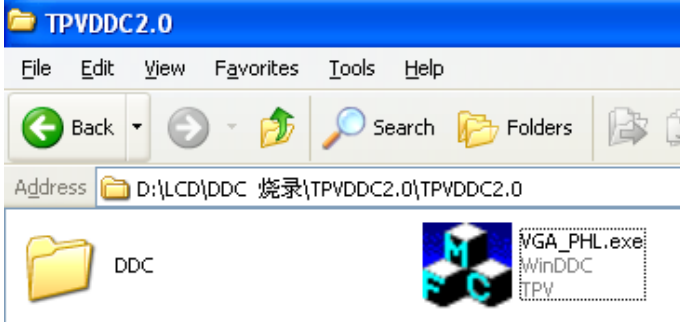
1. Double click the icon to install the driver.
2. Restart the PC after the LPT driver installation

13.3 The process of writing EDID and SN

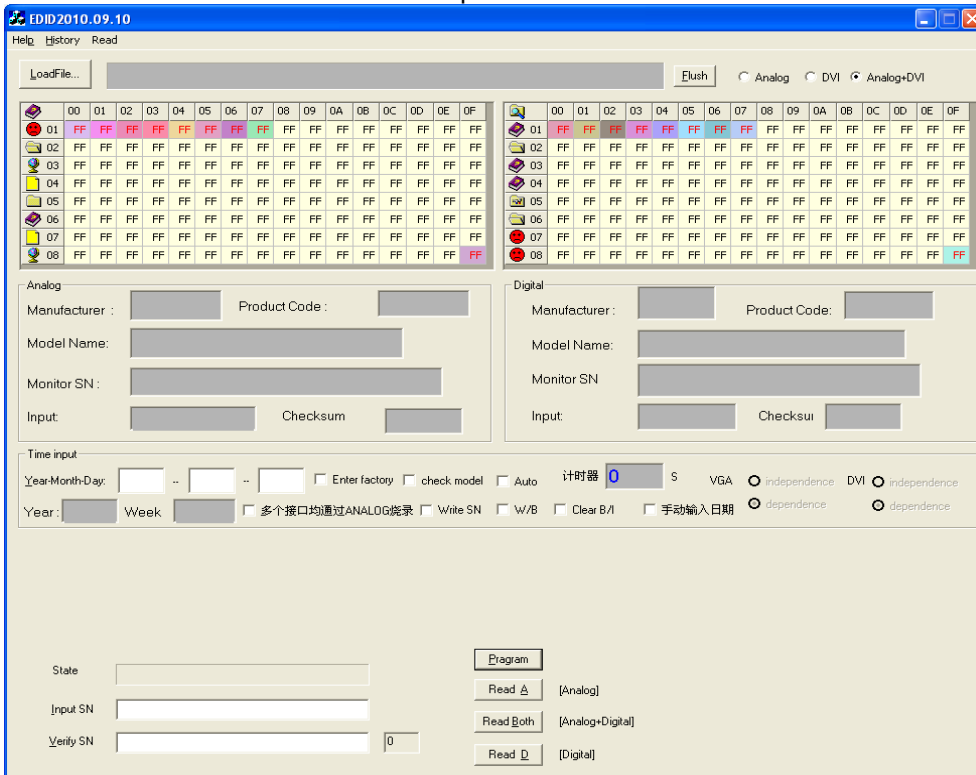
1. Rename the analog EDID to "wa.dat" and digital EDID to "wd.dat".
2. Put the "wa.dat", "wd.dat" and "config.ini" files into one folder named Philips 273E3.



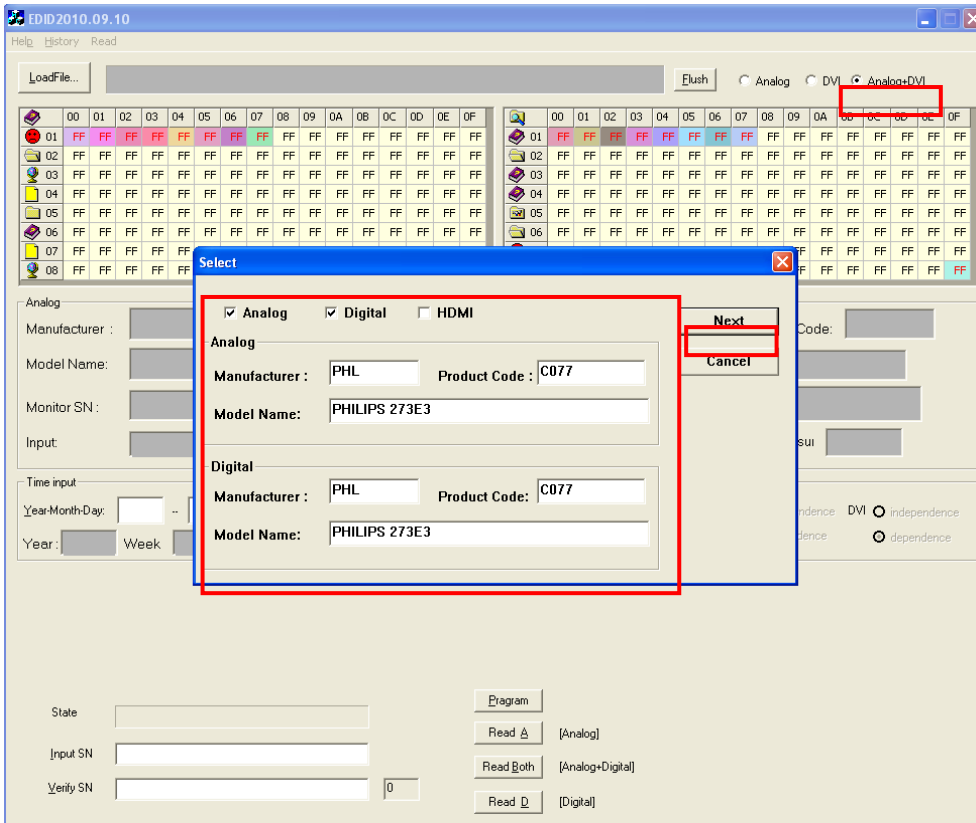
3. Copy the folder named Philips 273E3 to the "ddc" folder. (It must be "ddc" instead of other names).



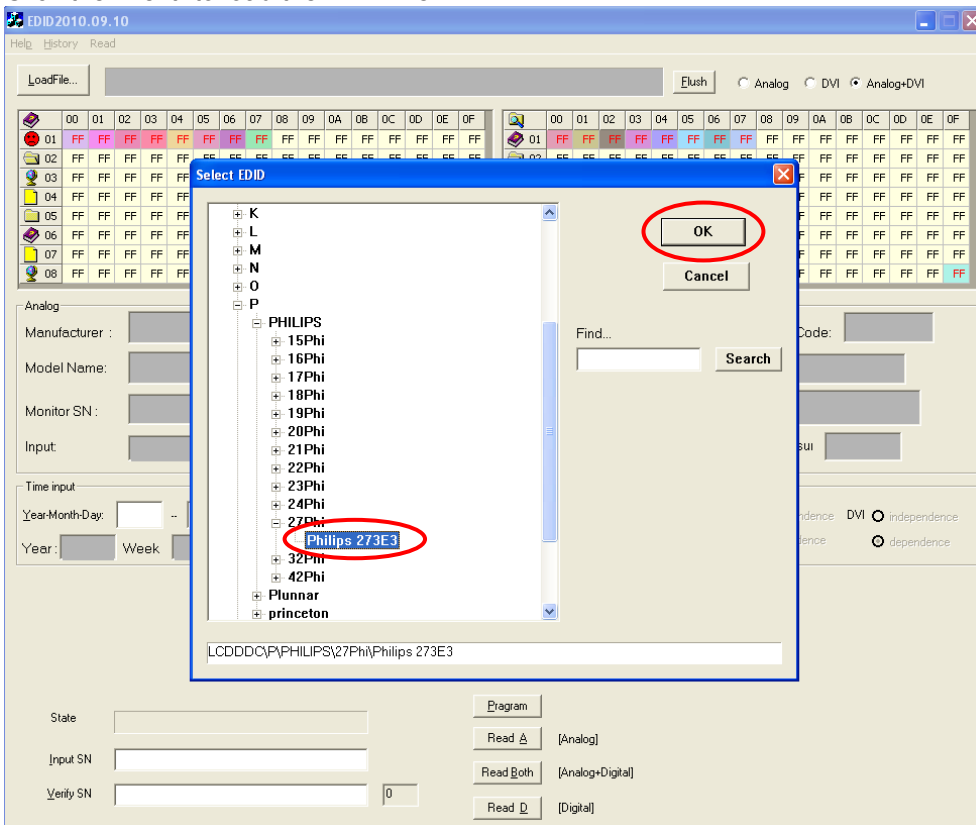
4. Double-click the icon  to open the tool.



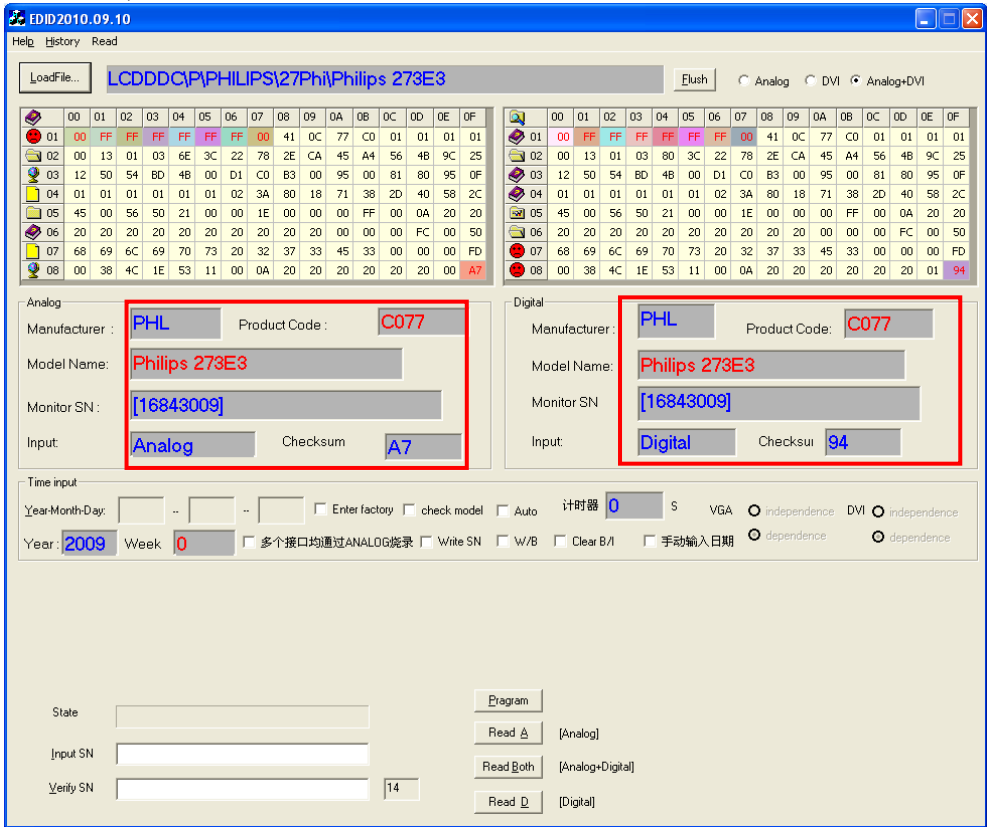
5. Choose the "Analog and DVI", and click "Loadfile" to set the parameters as below picture:



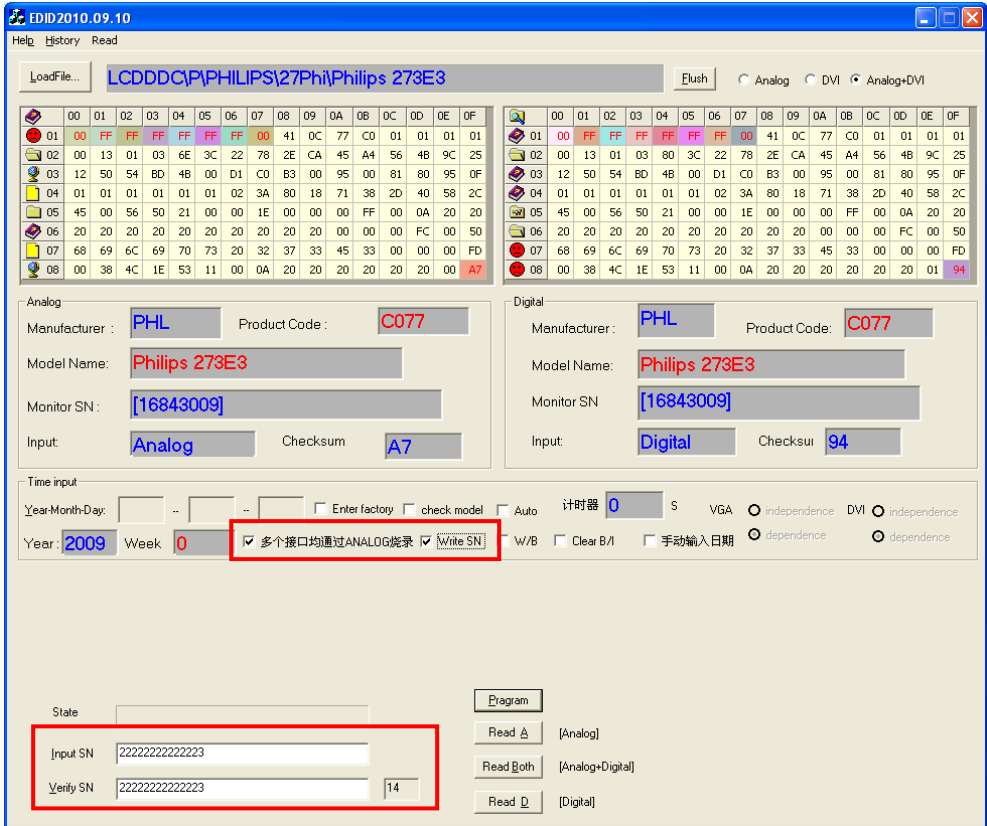
6. Click the “Next” to load the EDID file.



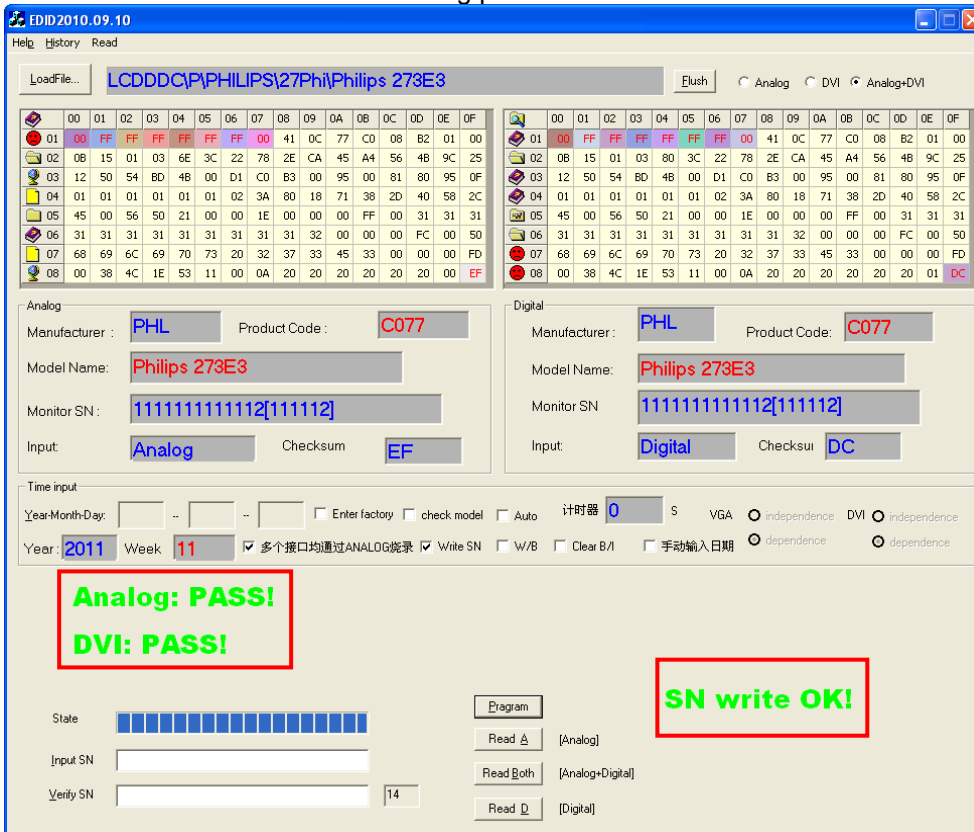
7. Click "OK", the tool will read the EDID information:



8. Choose the “多个接口通过 ANALOG 烧录” and “Write SN”, and key in the 14 digital S/N which must be the same as the barcode S/N of monitor.



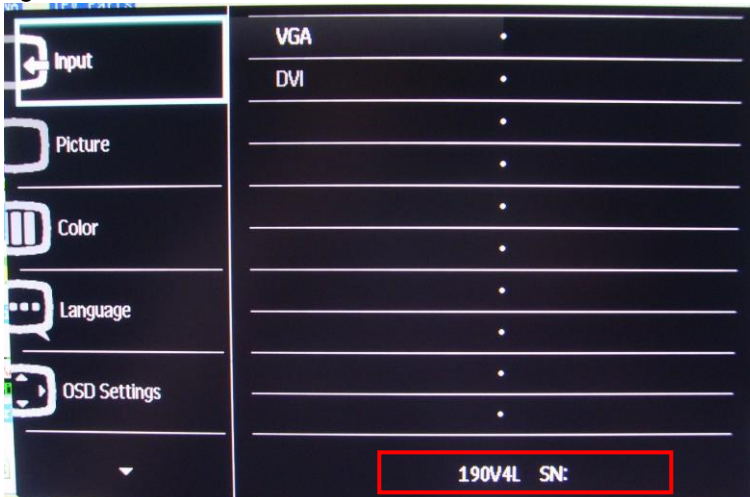
- Click the “Program” to start programming after monitor power on. When it shows “Analog: PASS, DVI: PASS and SN write OK”. The EDID and SN writing process are finished.



13.4 Check the SN

- Connect the VGA or DVI source and power on monitor.
- Press the “MENU” button to enter the user menu. We can check the 14 digital SN on the bottom right of the menu.

eg: 190V4L



- If this SN number is the same as what we had written by EDID tool, the EDID and SN writing is completed finally

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Note: When you can't burn in the EDID and SN, try the following ways.

1. AC on the monitor and turn on it.
2. Cut off the 5 pin of VGA cable terminal connected to monitor



3. Take apart the monitor and connect the 7pin of EEPROM to GND to disable write protection.

13.5 Troubleshooting

Can't write error, try below few ways to cure can't write errors!

- 1) AC on the monitor and turn on it.(Restart the monitor)
- 2) Take apart the monitor and connect the 7pin of EEPROM to GND to disable write protection then write EDID one by one.
- 3) Set the Burn in on to try again.

223V5 EDID

Analog

00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F

00| 00 FF FF FF FF FF FF 00 41 0C CF C0 01 01 01 01
10| 0A 17 01 03 6E 30 1B 78 2A 39 35 A2 59 52 A1 27
20| 0C 50 54 BD 4B 00 D1 C0 95 00 95 0F B3 00 81 C0
30| 81 80 01 01 01 01 02 3A 80 18 71 38 2D 40 58 2C
40| 45 00 DD 0C 11 00 00 1E 00 00 00 FF 00 0A 20 20
50| 20 20 20 20 20 20 20 20 20 00 00 00 FC 00 50
60| 48 4C 20 32 32 33 56 35 0A 20 20 20 00 00 00 FD
70| 00 38 4C 1E 53 11 00 0A 20 20 20 20 20 00 FB

EDID Structure Version/Revision: 01 03

<-Vendor/Product Identification:->

ID Manufacturer Name: PHL
ID Product Code: C0CF
ID Serial Number: No Use
Week of Manufacture: 10
Year of Manufacture: 2013

<-Basic Display Parameters/Features:->

Video i/p definition: Analog
Max. H. Image Size : 48cm
Max. V. Image Size : 27cm
Display Gamma : 2.2

<-Color Characteristics:->

Rx: 0.633 Gx: 0.322 Bx: 0.152 Wx: 0.313
Ry: 0.351 Gy: 0.630 By: 0.050 Wy: 0.329

<-Established Timings:->

Established Timings 1:BD
720 x 400 @ 70Hz VGA,IBM
640 x 480 @ 60Hz VGA,IBM
640 x 480 @ 67Hz Apple,Mac II
640 x 480 @ 72Hz VESA
640 x 480 @ 75Hz VESA
800 x 600 @ 60Hz VESA
Established Timings 2:4B
800 x 600 @ 75Hz VESA
1024 x 768 @ 60Hz VESA
1024 x 768 @ 75Hz VESA
1280 x1024 @ 75Hz VESA
Established Timings 3:00

<-Standard Timing Identification:->

1920 x 1080 @ 60Hz
1440 x 900 @ 60Hz
1440 x 900 @ 75Hz
1680 x 1050 @ 60Hz
1280 x 720 @ 60Hz
1280 x 1024 @ 60Hz

<-Detailed Timing Descriptions:->

FC (Monitor Name) : PHL 223V5
FD (Monitor Limits):
Min. V. rate: 56 Hz

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Max. V. rate: 76 Hz

Min. H. rate: 30 KHz

Max. H. rate: 83 KHz

Max. P Clock: 170 MHz

FF (Monitor SN) :

Detailed Timing : 1920x1080 @ 60Hz

Extension Flag : 00

Block0 Checksum : FB

Digital

00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F

```

00| 00 FF FF FF FF FF FF 00 41 0C CF C0 01 01 01 01
10| 0A 17 01 03 80 30 1B 78 2A 39 35 A2 59 52 A1 27
20| 0C 50 54 BD 4B 00 D1 C0 95 00 95 0F B3 00 81 C0
30| 81 80 01 01 01 01 02 3A 80 18 71 38 2D 40 58 2C
40| 45 00 DD 0C 11 00 00 1E 00 00 00 FF 00 0A 20 20
50| 20 20 20 20 20 20 20 20 20 20 00 00 00 FC 00 50
60| 48 4C 20 32 32 33 56 35 0A 20 20 20 00 00 00 FD
70| 00 38 4C 1E 53 11 00 0A 20 20 20 20 20 00 E9

```

EDID Structure Version/Revision: 01 03

<-Vendor/Product Identification:->

```

ID Manufacturer Name:  PHL
ID Product Code:      C0CF
ID Serial Number:     No Use
Week of Manufacture:  10
Year of Manufacture:  2013

```

<-Basic Display Parameters/Features:->

```

Video i/p definition:  Digital
Max. H. Image Size :  48cm
Max. V. Image Size :  27cm
Display Gamma :       2.2

```

<-Color Characteristics:->

```

Rx: 0.633  Gx: 0.322  Bx: 0.152  Wx: 0.313
Ry: 0.351  Gy: 0.630  By: 0.050  Wy: 0.329

```

<-Established Timings:->

```

Established Timings 1:BD
 720 x 400 @ 70Hz VGA,IBM
 640 x 480 @ 60Hz VGA,IBM
 640 x 480 @ 67Hz Apple,Mac II
 640 x 480 @ 72Hz VESA
 640 x 480 @ 75Hz VESA
 800 x 600 @ 60Hz VESA
Established Timings 2:4B
 800 x 600 @ 75Hz VESA
1024 x 768 @ 60Hz VESA
1024 x 768 @ 75Hz VESA
1280 x1024 @ 75Hz VESA
Established Timings 3:00

```

<-Standard Timing Identification:->

```

1920 x 1080 @ 60Hz
1440 x 900 @ 60Hz
1440 x 900 @ 75Hz
1680 x 1050 @ 60Hz
1280 x 720 @ 60Hz
1280 x 1024 @ 60Hz

```

<-Detailed Timing Descriptions:->

```

FC (Monitor Name) : PHL 223V5
FD (Monitor Limits):
Min. V. rate:  56 Hz
Max. V. rate:  76 Hz

```

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Min. H. rate: 30 KHz

Max. H. rate: 83 KHz

Max. P Clock: 170 MHz

FF (Monitor SN) :

Detailed Timing : 1920x1080 @ 60Hz

Extension Flag : 00

Block0 Checksum : E9

Hdmi

00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F

-----Block 0-----

```
00| 00 FF FF FF FF FF FF 00 41 0C CF C0 01 01 01 01
10| 0A 17 01 03 80 30 1B 78 2A 39 35 A2 59 52 A1 27
20| 0C 50 54 BD 4B 00 D1 C0 95 00 95 0F B3 00 81 C0
30| 81 80 01 01 01 01 02 3A 80 18 71 38 2D 40 58 2C
40| 45 00 DD 0C 11 00 00 1E 00 00 00 FF 00 0A 20 20
50| 20 20 20 20 20 20 20 20 20 00 00 00 FC 00 50
60| 48 4C 20 32 32 33 56 35 0A 20 20 20 00 00 00 FD
70| 00 38 4C 1E 53 11 00 0A 20 20 20 20 20 01 E8
```

-----Block 1-----

```
00| 02 03 22 F1 4F 01 02 03 05 06 07 10 11 12 13 14
10| 15 16 1F 04 23 09 17 07 83 01 00 00 65 03 0C 00
20| 10 00 02 3A 80 18 71 38 2D 40 58 2C 45 00 DD 0C
30| 11 00 00 1E 8C 0A D0 8A 20 E0 2D 10 10 3E 96 00
40| DD 0C 11 00 00 18 01 1D 00 72 51 D0 1E 20 6E 28
50| 55 00 DD 0C 11 00 00 1E 8C 0A D0 90 20 40 31 20
60| 0C 40 55 00 DD 0C 11 00 00 18 00 00 00 00 00 00
70| 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 4D
```

Block 0:

EDID Structure Version/Revision: 01 03

<-Vendor/Product Identification:->

```
ID Manufacturer Name:  PHL
ID Product Code:      C0CF
ID Serial Number:     No Use
Week of Manufacture:  10
Year of Manufacture:  2013
```

<-Basic Display Parameters/Features:->

```
Video i/p definition:  Digital
Max. H. Image Size :   48cm
Max. V. Image Size :   27cm
Display Gamma :        2.2
```

<-Color Characteristics:->

```
Rx: 0.633  Gx: 0.322  Bx: 0.152  Wx: 0.313
Ry: 0.351  Gy: 0.630  By: 0.050  Wy: 0.329
```

<-Established Timings:->

```
Established Timings 1:BD
720 x 400 @ 70Hz VGA,IBM
640 x 480 @ 60Hz VGA,IBM
640 x 480 @ 67Hz Apple,Mac II
640 x 480 @ 72Hz VESA
640 x 480 @ 75Hz VESA
800 x 600 @ 60Hz VESA
Established Timings 2:4B
800 x 600 @ 75Hz VESA
1024 x 768 @ 60Hz VESA
1024 x 768 @ 75Hz VESA
1280 x1024 @ 75Hz VESA
Established Timings 3:00
```

<-Standard Timing Identification:->

```
1920 x 1080 @ 60Hz
1440 x 900 @ 60Hz
1440 x 900 @ 75Hz
```

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1680 x 1050 @ 60Hz
1280 x 720 @ 60Hz
1280 x 1024 @ 60Hz

<-Detailed Timing Descriptions:->

Detailed Timing : 1920x1080 @ 60Hz
FF (Monitor SN) :
FC (Monitor Name) : PHL 223V5
FD (Monitor Limits):
Min. V. rate: 56 Hz
Max. V. rate: 76 Hz
Min. H. rate: 30 KHz
Max. H. rate: 83 KHz
Max. P Clock: 170 MHz

Extension Flag : 01
Block0 Checksum : E8

Block 1:

Extended Block Type: CEA 861B
Detailed Timing Blocks start at Byte: 22
DTV Underscan YES
DTV Basic Audio YES
YCbCr (4:4:4) YES
YCbCr (4:2:2) YES

<-Video Short Block Description:->

640 x 480 P 59.94/60Hz 4:3
720 x 480 P 59.94/60Hz 4:3
720 x 480 P 59.94/60Hz 16:9
1920 x 1080 I 59.94/60Hz 16:9
720(1440) x 480 I 59.94/60Hz 4:3
720(1440) x 480 I 59.94/60Hz 16:9
1920 x 1080 P 59.94/60Hz 16:9
720 x 576 P 50Hz 4:3
720 x 576 P 50Hz 16:9
1280 x 720 P 50Hz 16:9
1920 x 1080 I 50Hz 16:9
720(1440) x 576 I 50Hz 4:3
720(1440) x 576 I 50Hz 16:9
1920 x 1080 P 50Hz 16:9
1280 x 720 P 59.94/60Hz 16:9

<-Audio Short Block Description:->

Numbers of Audio Channels: 2
Audio Format Description: Linear PCM
Audio Supported: 96KHz 48KHz 44KHz 32KHz
Audio Bit Rate: 24bit 20bit 16bit

<-Speaker Allocation:->

Speaker Allocation: FL/FR

<-Detailed Timing Descriptions: ->

Detailed Timing Descriptions: 1920x1080 @ 60Hz
H Image Size: 477 mm V Image Size: 268 mm
Pixel Clock: 148 Hz Refreshed Mode: Non-Interlaced

Detailed Timing Descriptions: 720x480 @ 60Hz

H Image Size: 477 mm V Image Size: 268 mm
Pixel Clock: 27 Hz Refreshed Mode: Non-Interlaced

Detailed Timing Descriptions: 1280x720 @ 60Hz
H Image Size: 477 mm V Image Size: 268 mm
Pixel Clock: 74 Hz Refreshed Mode: Non-Interlaced

Detailed Timing Descriptions: 720x576 @ 50Hz
H Image Size: 477 mm V Image Size: 268 mm
Pixel Clock: 27 Hz Refreshed Mode: Non-Interlaced

Block1 Checksum : 4D

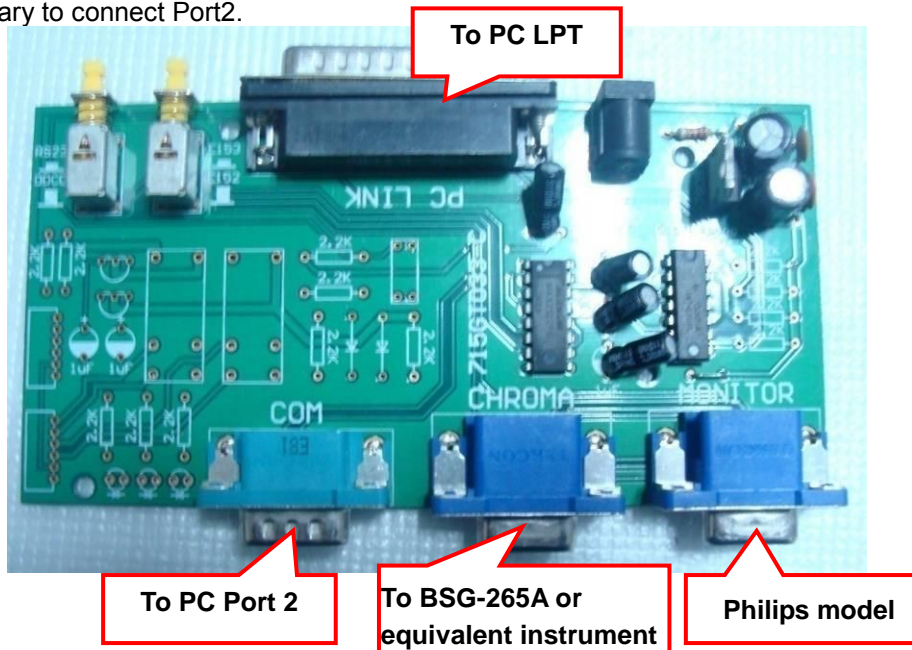
14. White Balance, Luminance Adjustment

1. Apparatuses and program: analyzer CA-210, PC, tool, FGA adjustment program (PHILIPS LEDFGA.DDCI), Pattern generator.

2. Equipment installation:

- Connect analyzer CA-210 to PC by USB connector, install drive program CA-SDK Ver4.00 for CA-210 and restart PC after finish installing
- Install Port95NT drive program, set PC printer connector mode as ECP mode and reset PC after finish installing.
- Connect tool as follow:

Note: It's not necessary to connect Port2.



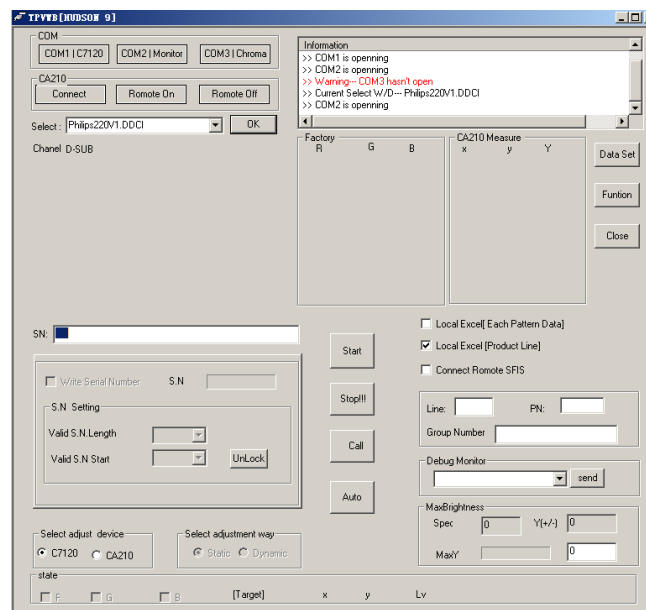
3. Adjustment

Preparation before adjustment:

- Monitor should be warmed up for more than half an hour.
- Make sure that the tools are connected right and drive programs have been installed OK.

4. Adjustment process:

- Press the power of CA-210, shut off the lens, press 0-Cal and open the lens after analyzer reset.
- Open white balance adjustment program, select the right parameter according with the program and click OK.
- Make sure that the lens of CA-210 aims at the center of the screen, then click START to adjust.
- After finish adjusting, the adjustment program displays pass, and the START button changes for NEXT, which means that you can adjust another monitor.





5. Color Temp confirmation

Connect the signal to the monitor, the monitor displays white-picture, use CA-210 to measure the Color Temp of the screen center and select the OSD to make sure whether the Color Temps accord with the SPEC.

CIE coordinates	11500K	9300K	8200K	7500K	6500K/sRGB	sRGB	5000K
X (± 0.02)	0.270	0.283	0.291	0.298	0.313	0.313	0.345
Y (± 0.02)	0.281	0.297	0.306	0.314	0.329	0.329	0.357

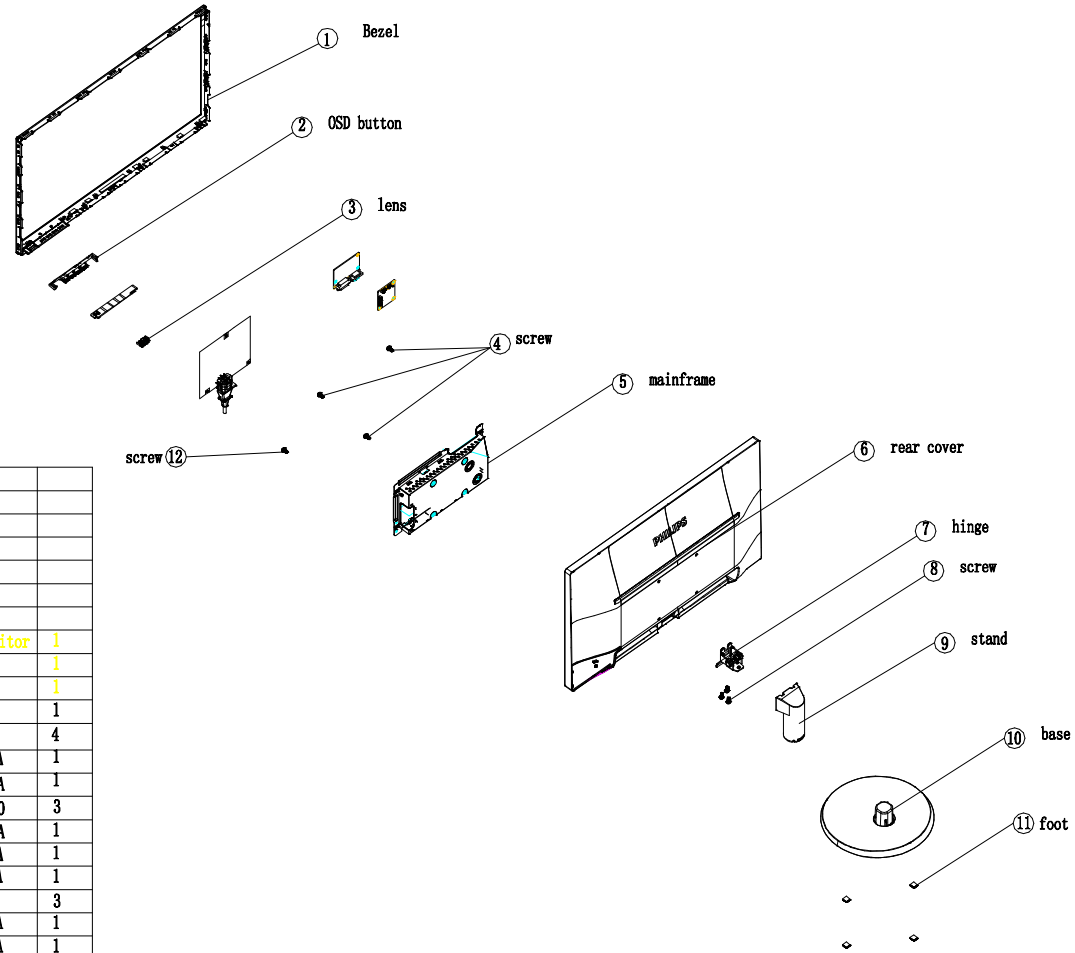
6. How to enter into the factory mode:

1. Connect the VGA source and power off the monitor.
2. Press  and  buttons at the same time, power on the monitor, and then press the menu again; the menu will appear on the top left corner.
3. Select the "Factory" and press the "MENU" button to enter the factory mode.

15. Monitor Exploded View

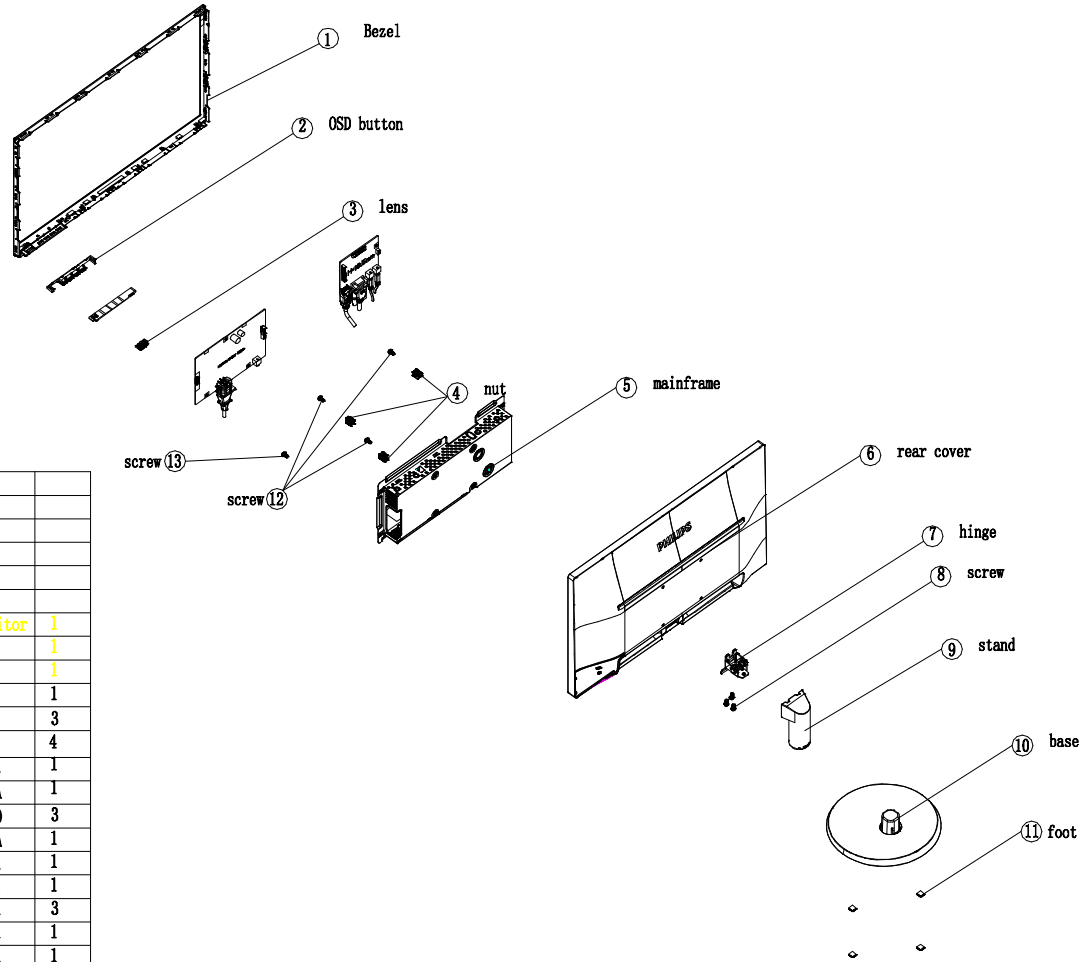
223V5LSB*/ 223V5BSB*

philips 223v5LSB ecplode_drawing



21			
20			
19			
18			
17			
16			
15	Q45G990161940800BX	PE BAG FOR monitor	1
14	H44GB066101	EPS 223v5	1
13	H44GB066201	EPS 223v5	1
12	Screw	0M1G1140-6-120	1
11	Foot rumber	Q12G6300118	4
10	Base	Q34G7745-11-01A	1
9	Stand	A34G3266-11-01A	1
8	Screw	AM1G1740-12-120	3
7	hinge	H37G0039-11-01A	1
6	Rear_cover	Q34G7744-11-01A	1
5	mainframe	Q15G1429-11-01A	1
4	Screw	0D1G1030-6-120	3
3	lens	A33G1481-11-01A	1
2	OSD button	A33G1538-12-01A	1
1	Bezel	Q34G7743-11-01A	1
item	Part name	Part NO.	usage

philips 223v5LHSB ecplode_drawing



21			
20			
19			
18			
17			
16	Q45G990161940800BY	PE BAG FOR monitor	1
15	H44GB066101	EPS 223v5	1
14	H44GB066201	EPS 223v5	1
13	Screw	OM1G1140-6-120	1
12	Screw	OQ1G1030-8-120	3
11	Foot rumber	Q12G6300118	4
10	Base	Q34G7745-11-01A	1
9	Stand	A34G3266-11-01A	1
8	Screw	AM1G1740-12-120	3
7	hinge	H37G0039-11-01A	1
6	Rear cover	Q34G7744-11-01A	1
5	mainframe	Q15G1514-11-01A	1
4	nut	A33G1492-13-01A	3
3	lens	A33G1481-11-01A	1
2	OSD button	A33G1538-12-01A	1
1	Bezel	Q34G7743-11-01A	1
item	Part name	Part NO.	usage

16. Recommended & Spare Parts List

Note: Take the **223V5LSB2/93 (TPV)** BOM for example, the parts information listed below are for reference only, and are subject to change without notice. Please go to <http://cs.tpv.com.cn/hello1.asp> for the latest information

Item	Location	PCM Codes	Description	Remark
	WH205	705GHDCS044003	EPS ASS'Y	
	WH202	H44GB06681301A00HX	ARTWORK CARTON 223V5 CH	
	WH209	Q45G990161940800BX	PROTECT BAG	
	ECN401	S95G179T30PW23	FFC CABLE 30P 190mm 1.0MM	2nd source
	E08902	389G0722CAA02G	D-SUB CABLE 1200	2nd source
	E08902	389G0722HAA02G	D-SUB CABLE 1200	
	E08901	389G414A12N0HL	AC POWER CORD 1200 for China	
	E08901	389G414A12N0IS	AC POWER CORD 1200	2nd source
	ECN401	395G179X30PW23	FFC CABLE 30P 190mm 1.0MM	
	E750	750GBV215GE3D6N000	LCD TPM215HW01-HGEL03 C1D WH TPV	
	WH201	H40G000N81302A	RATING LABEL V5 CH NO TCO	
	WH206	H41G78S181321A	QSG 223V5 M5223VQ1CHT CHINA	
	WH208	H70G21C181303A	CD MANUAL 223V5 M5223V1T	
	WH110	Q15G142920110100B1	MAINFRAME	
	WH109	A34G3266DBK01K0100	STAND	
	WH108	Q34B77435190007W33	Plastic front frame ABS+HB	
	WH107	Q34G7744DBK02K0130	REAR_COVER	
	WH111	Q34G7745DBK01K0130	BASE	
	M037	H37G00390110CX	HINGE ASS'Y	
	WH418	Q12G630017600A00SI	FOOT PAD	2nd source
	WH002	CBPCDUAPHH1	SCALER BOARD	
	WH002	756GHDCB0PB005010H	SCALER BOARD ASSY(CBPCDUAPHH1)	2nd source
	SMTCD-U402	100GPMVI001W11	MCU ASSY-056G2233 37	
	CN701	033G3802 6B Y	CONN 6PIN 2.0	
	CN403	033G3802 7B Y	WAFER	
	X401	093G 22 53CEC	CRYSTAL S-F-14.31818M-32-3030-2085-30	
	CN401	311GF100B30ABL	FFC CONN 1.0mm 30P R/A B1002F30TDHB	
	CN101	388G353HE01AXH	D-SUB R/A 15P 1*1 BLUE --	
	C401	067G 3051013PB	EC 105C 100uF M 16V 5*11mm JH CD263	
	U701	056G 563527BHF	LDO BL1117-33CX 1A 3.3V SOT-223	
	U103	056G1133161	EEPROM AT24C02C-SSHM-T 2Kb SOIC-8	2nd source
	U402	056G2233 37	MX25L4006EM11-12G 4Mb SOP-8 150 mil	
	Q402	057G 417517	Tra LMBT3906LT1G -200mA/-40V SOT-23 LRC	
	Q701	057G 417518	TRA LMBT3904LT1G 200mA/40V SOT-23 LRC	
	Q702	057G 763940	MOSFET AO3401A SOT-23	
	R430	061G0402000 JT	RST 0402 0.05R MAX 1/16W -	2nd source
	R430	061G0402000 JY	RST CHIPR MAX 0R05 OHM 1/16W YAGEO	
	R105	061G0402100 JT	RST CHIP 10R 1/16W 5% TZAI YUAN	2nd source
	R107	061G0402100 JY	RST CHIPR 10 OHM +-5% 1/16W YAGEO	
	R115	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	2nd source
	R121	061G0402101 JY	RST CHIPR 100 OHM +-5% 1/16W YAGEO	
	R421	061G0402102 JT	RST CHIP 1K 1/16W 5% TZAI YUAN	2nd source
	R103	061G0402102 JY	RST CHIPR 1KOHM +-5% 1/16W YAGEO	
	R706	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	2nd source
	R402	061G0402103 JY	RST CHIPR 10KOHM +-5% 1/16W YAGEO	
	R423	061G0402104 JT	RST CHIP 100K 1/16W 5% TZAI YUAN	2nd source
	R707	061G0402104 JY	RST CHIPR 100KOHM +-5% 1/16W YAGEO	
	R117	061G0402222 JT	RST CHIP 2K2 1/16W 5% TZAI YUAN	2nd source
	R116	061G0402222 JY	RST 0402 2.2K 5% 1/16W RC0402JR-072K2L	

R709	061G0402223 JT	RST CHIP 22K 1/16W 5% TZAI YUAN	2nd source
R705	061G0402223 JY	RST CHIPR 22KOHM +-5% 1/16W YAGEO	
R433	061G04023901FT	RST 0402 3.9K 1% 1/16W TZAI YUAN	2nd source
R435	061G04023901FY	RST CHIP 3.9KOHM 1% YAGEO	
R111	061G0402470 JT	RST CHIP 47R 1/16W 5% TZAI YUAN	2nd source
R113	061G0402470 JY	RST CHIPR 47 OHM 5% 1/16W YAGEO	
R701	061G0402472 JT	RST CHIP 4K7 1/16W 5% TZAI YUAN	2nd source
R119	061G0402472 JY	RST 0402 4.7K 5% 1/16W RC0402JR-074K7L	
R126	061G0603101 JT	RST CHIP 100R 1/10W 5% TZAI YUAN	
R126	061G0603101 JY	RST CHIPR 100 OHM +-5% 1/10W YAGEO	2nd source
R124	061G0603201 JF	RST CHIP 200R 1/10W 5% FENGHUA	
R125	061G0603201 JT	RST CHIP 200R 1/10W 5% TZAI YUAN	2nd source
R413	061G0603220 JT	RST CHIP 22R 1/10W 5% TZAI YUAN	2nd source
R413	061G0603220 JY	RST CHIPR 22 OHM ±5% 1/10W YAGEO	
R408	061G0603561 JT	RST CHIPR 560OHM +-5% 1/10W TZAI YUAN	
R408	061G0603561 JY	RST CHIP 560R 1/10W 5% YAGEO	2nd source
R109	061G0805750 JT	RST CHIPR 75OHM +-5% 1/8W TZAI YUAN	
R401	061G1206301 JF	RST CHIPR 300 OHM +-5% 1/4W fenghua	2nd source
R401	061G1206301 JT	RST CHIPR 300 OHM +-5% 1/4W TZAI YUAN	
C411	065G040210031J A	CAP 0402 10PF 5% 50V NP0	2nd source
C411	065G040210031J Y	CAP 0402 10PF 5% 50V NP0	
C703	065G040210412K F	CAP 0402 100NF 10% 16V X7R	
C405	065G040210412K Y	CAP 0402 100NF 10% 16V X7R	2nd source
C113	065G040222031J A	CAP 0402 22PF J 50V NPO	2nd source
C114	065G040222031J T	CAP 0402 22pF 5% 50V NP0 UMK105 CG220JV	
C103	065G040222322K A	CAP 0402 22NF 10% 25V X7R SAMSUNG	2nd source
C103	065G040222322K Y	CAP 0402 22NF 10% 25V X7R	
C706	065G040222415K T	CAP CHIP 0402 220nF K 16V X5R	
C115	065G040222415K Y	CAP CHIP 0402 220nF 16V X5R	2nd source
C415	065G040247031J A	CAP 0402 47PF 5% 50V NP0	2nd source
C415	065G040247031J Y	CAP 0402 47PF 5% 50V NP0	
C104	065G040247312K T	CAP 0402 47NF 10% 16V X7R	
C102	065G040247312K Y	CAP 0402 47NF 10% 16V X7R	2nd source
C106	065G040250931C A	CAP 0402 5PF 0.25pF 50V NP0	2nd source
C108	065G040250931C Y	CAP 0402 5PF 0.25pF 50V NP0	
C406	065G0603475A5K A	CAP 0603 4.7UF 10% 10V X5R CL10A475KP8NN	
C406	065G0603475A5K T	CAP CHIP 0603 4.7UF K 10V X5R	2nd source
C413	065G0805106A5K 3	CHIP 10uF 10V X5R 10%	
C413	065G0805106A5K T	CAP 0805 10uF 10% 10V X5R LMK212 BJ106K	2nd source
FB401	071G 56K121 M	CHIP BEAD 120OHM 6A MGLB2012-120T-LF	2nd source
FB401	071G 56K121 TA	CHIP BEAD 120R/6000mA HCB2012KF-121T60	
FB101	071G 59G301 TA	CHIP BEAD 300OHM 200mA FCM1608KF-301T02	
FB103	071G 59K190 TA	CHIP BEAD 0603 19R 25% FCB1608KF-190T05	
D102	093G 64 33	SWITCHING BAV99 0.2A 85V SOT-23	
D101	093G 64 42SEM	SWITCHING BAV70 215mA 75V SOT-23	
ZD104	093G 39GA01 T	RLZ5.6B	
ZD101	093G 39S957 T	ZENER RLZ6V2B 6.2V 0.5W LL-34	
U401	356G0562064B64	SCALER TSUMU18VR6-1 64-LQFP	
U103	356G113316100C	EEPROM AT24C02C-SSHM-T(CU) 2K SOP-8	
WH003	PLPCDB411UHC1	POWER BOARD ASSY	
U902	056G 139 9	IC EL817M(X) photocoupler DIP-4	2nd source
U902	056G 139 3A	PC123Y22FZOF SHARP	
U901	056G 379205	AC/DC LD7904JGP7 DIP-6	

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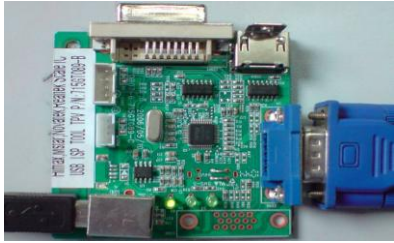

	NR901	061G 5810X	NTCR 8R 20% 4W 8D2-14 MCS	
	NR901	061G 58809MEN	RST NTCR 8OHM +/-20%/NMM01 4A XIANZHENG	2nd source
	C904	063G107K224 UM	X2 CAP 0.22uF K 275VAC	2nd source
	C904	063G107K2246S1	X2 CAP 0.22UF K 275VAC	
	C907	067G 43Z68015K	EC 68UF 20% 450V 18*32 2000 hr	
	C907	067G 43Z68015L	EC 68uF M 450V RGT 18*31.5mm	2nd source
	L901	073G 174 65 H2	LINE FILTER 30mH MIN	2nd source
	L903	073G 253 91 H	IND CHOKE 3.5uH+-10% DADONG	2nd source
	L903	073G 253 91 V	CHOKE COIL 3.5uH+-10%	
	L905	073G 253191 H	IND CHOKE 1.1uH DADON	2nd source
	L905	073G 253191 L	CHOKE COIL 1.1uH CC-007802	
	L801	073G 253242 H	CHOKE COIL 47UH 10% L470M HA 2.5A	
	L801	073G 253242 DN	CHOKE COIL 47UH 10% LZ.CC013.M01 2.5A	2nd source
	T901	080GL19P 39 N1 HF	MR 950UH 10% 20UH MAX EFD25 YUVA-207	
	CN901	087G 501 32 DL	AC SOCKET DIP 3PIN+2PIN GROUND	2nd source
	CN901	087G 501 32 HC	AC SOCKET 3P DB-14-05 R/A	
	BD901	093G 50460517	BRIDGE 2KBP08M-70 2A 800V KBP 80A	2nd source
	BD901	093G 50460519	BRIDGE KBP206G X0 2A 800V KBP 80A	
	D903	093G 60322	SCHOTTKY SR5150-MK23 5A 150V D0-27	
	D906	093G 60334	SCHOTTKY SR506-44 5A 60V DO-201AD	
	D903	093G 60335	DIODE SR515 5A/150V DO-201AD	2nd source
	D906	093G 60519	DIODE SR560-MK23 5A/60V DO-27 SECOS	2nd source
	D801	093G 60520	DIODE SR5100-MK23 5A/100V DO-27 SECOS	
	D801	093G 60924	DIODE SR510-22 DO-201AD	2nd source
	CN803	311GW200A03ABL	WAFER 2.0mm 3P R/A B2009W03HTKO	2nd source
	CN803	311GW200A03ABX	WAFER 2.0mm 3P	
	CN902	395G082509DM10	HARNESS 9P(SCN)-6P 120mm	2nd source
	CN902	395G082509TM10	HARNESS 9P(SCN)-6P(PLUG) 140mm	
	L901	S73G17465V2	Transformer Ass'Y	
	T901	S80GL19P39V1HF	X'FMR - - - - -	2nd source
	E5501	Q55G 100655	Sn-Cu Solder	
	E5501	Q55G50SW3AS0HF	Solder Wire	2nd source
	Q801	057G 763141	MOSFET APM1105NUC-TRG 16A 100V TO-252-3	
	R825	061G0603000 JF	RST CHIPR MAX 0R05 1/10W FENGHUA	
	R826	061G0603000 JY	RST CHIPR MAX0R05 1/10W YAGEO	2nd source
	R925	061G0603100 JF	RST CHIPR 10 OHM 5% 1/10W FENGHUA	
	R925	061G0603100 JT	RST CHIP 10R 1/10W 5% TZAI YUAN	2nd source
	R917	061G06031001FF	RST CHIPR 1 KOHM +/-1% 1/10W FENGHUA	2nd source
	R917	061G06031001FT	RST CHIP 1K 1/10W 1%	
	R929	061G0603222 JF	RST CHIPR 2.2K OHM +/-5% 1/10W FENGHUA	
	R929	061G0603222 JT	RST CHIP 2K2 1/10W 5% TZAI YUAN	2nd source
	R916	061G0603471 JF	RST CHIPR 470OHM +/-5% 1/10W FENGHUA	2nd source
	R916	061G0603471 JT	RST CHIPR 470OHM +/-5% 1/10W TZAI YUAN	
	R912	061G0603512 JF	RST CHIPR 5.1K OHM +/-5% 1/10W FENGHUA	2nd source
	R912	061G0603512 JT	RST 0603 5.1K 5% 1/10W	
	R807	061G0805100 JF	RST CHIPR 10 OHM +/-5% 1/8W FENGHUA	
	R807	061G0805100 JT	RST CHIP 10R 1/8W 5% TZAI YUAN	2nd source
	R815	061G08051004FF	RST CHIPR 1 MOHM +/-1% 1/8W FENGHUA	
	R815	061G08051004FT	RST CHIP R 1 MOHM +/-1% 1/8W	2nd source
	R806	061G0805101 JF	RST 0805 100R 5% 1/8W	
	R806	061G0805101 JT	RST CHIP 100R 1/8W 5% TZAI YUAN	2nd source
	R805	061G0805104 JT	RST CHIPR 100KOHM +/- 5% 1/8W TZAI YUAN	2nd source

R805	061G0805104 JY		RST CHIPR 100KOHM 1/8W YAGEO	
R819	061G0805109 JF		RST CHIPR 1 OHM +- 5% 1/8W FENGHUA	
R821	061G0805109 JT		RST CHIP 1R 1/8W 5% TZAI YUAN	2nd source
R810	061G08051102FF		RST CHIRP 11K OHM 1/8W 1% FENGHUA	2nd source
R810	061G08051102FT		RST 0805 11K 1% 1/8W SMD0805011KF	
R923	061G0805152 JF		RST CHIPR 1.5KOHM +-5% 1/8W FENGHUA	
R923	061G0805152 JT		RST CHIP 1K5 1/8W 5% TZAI YUAN	2nd source
R809	061G08052003FF		RST CHIPR 200KOHM +-1% 1/8W FENGHUA	2nd source
R809	061G08052003FT		RST CHIP 200K 1/8W 1%	
R915	061G08053002FF		RST CHIPR 30KOHM +-1% 1/8W FENGHUA	
R915	061G08053002FT		RST CHIP 30K 1/8W 1%	2nd source
R802	061G0805304 JF		RST CHIPR 300KOHM +-5% 1/8W FENGHUA	
R803	061G0805304 JT		RST CHIP 300K 1/8W 5% TZAI YUAN	2nd source
R816	061G08053302FF		RST CHIPR 33KOHM +-1% 1/8W FENGHUA	2nd source
R816	061G08053302FT		RST CHIP 33K 1/8W 1%	
R811	061G08059101FF		RST CHIPR 9.1KOHM +-1% 1/8W FENGHUA	2nd source
R811	061G08059101FT		RST CHIP 9K1 1/8W 1%	
R904	061G1206101 JF		RST CHIPR 100 OHM +-5% 1/4W FENGHUA	2nd source
R905	061G1206101 JT		RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R801	061G1206103 JF		RST CHIPR 10KOHM +-5% 1/4W FENGHUA	
R801	061G1206103 JT		RST CHIPR 10KOHM +-5% 1/4W TZAI YUAN	2nd source
R922	061G1206104 JF		RST CHIPR 100KOHM +-5% 1/4W FENGHUA	2nd source
R920	061G1206104 JT		RST CHIPR 100KOHM +-5% 1/4W TZAI YUAN	
R900	061G1206105 JF		RST CHIPR 1 MOHM +-5% 1/4W FENGHUA	
R902	061G1206105 JT		RST CHIPR 1MOHM +-5% 1/4W TZAI YUAN	2nd source
R926	061G1206159 JF		RST CHIPR 1.5 OHM +-5% 1/4W FENGHUA	
R926	061G1206159 JT		RST CHIP R 1.5ohm 1/4W +/-5%	2nd source
R813	061G1206308 JF		RST CHIPR 0.3 OHM +-5% 1/4W FENGHUA	2nd source
R813	061G1206308 JT		RST 1206 0.3R 5% 1/4W	
R908	061G1206470 JF		RST CHIPR 47 OHM +-5% 1/4W FENGHUA	2nd source
R908	061G1206470 JT		RST CHIPR 47 OHM +-5% 1/4W TZAI YUAN	
R910	061G1206681 JF		RST 1206 680R 5% 1/4W FENGHUA	2nd source
R910	061G1206681 JT		RST CHIPR 680 OHM +-5% 1/4W TZAI YUAN	
C916	065G060310332K F		CAP CHIP 0603 10NF K 50V X7R	2nd source
C916	065G060310332K Y		CAP CHIP 0603 10N 50V X7R +/-10%	
C812	065G080510131J A		CAP CHIP 0805 100pF J 50V NPO	2nd source
C812	065G080510131J F		CAP CHIP 0805 100PF J 50V NPO	
C803	065G080510232K F		CAP 0805 1000PF 10% 50V X7R	2nd source
C905	065G080510232K Y		CAP CHIP 0805 1N 50V X7R +/-10%	
C802	065G080510332K F		CAP 0805 10NF K 50V X7R	2nd source
C802	065G080510332K Y		CAP CHIP 0805 10N 50V X7R +/-10%	
C814	065G080510432K F		CAP CHIP 0805 0.1UF K 50V X7R	
C814	065G080510432K Y		CAP CHIP 0805 100N 50V X7R +/-10%	2nd source
C806	065G080522432K F		CAP 0805 220NF 10% 50V X7R	2nd source
C806	065G080522432K Y		CAP CHIP 0805 220N 50V X7R +/-10%	
C805	065G080522512K M		CAP 0805 2.2UF 10% 16V X7R	
C805	065G080522512K T		CAP 0805 2.2UF 10% 16V X7R CE EMK212 B72	2nd source
C804	065G080547432K F		0805 0.47UF K 50V X7R	
C807	065G080547432K Y		CAP CHIP 0805 470N 50V X7R +/-10%	2nd source
C813	065G080568131J F		CAP 0805 680PF 5% 50V NPO	2nd source
C813	065G080568131J Y		CAP CHIP 0805 680P 50V NPO +/-5%	
C919	065G120622272K F		CAP 1206 2.2NF 10% 500V X7R	2nd source
C911	065G120622272K Y		CER 1206 2N2 500V X7R 10%	
ZD902	093G 39S 38 T		PTZ 9.1B	2nd source

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U801	356G070001100C	LED DRIVER 0Z9998BGN-A1-7-TR SOP16	
Q801	357G0600974	MOSFET EMBA2N10A 14A 100V 50W TO-252	2nd source
ZD902	393G039SA2500T	ZENER 1SMA4739 9.1V 20W SMA	
ZD901	093G 3958952T	ZENER BZX55T18B 18V 500mW DO-35	
ZD901	093G 39A0852T	GDZJ18B	2nd source
C906	065G 2K152 2T6921	CAP CER 1500pF K 2KV Y5P	
C912	067G215S6814KT	EC 680UF 20% 25V 12.5*16 ED -	
FB803	071G 55 29	FERRITE BEAD	
C801	067G215D3314KT	EC 330UF 20% 25V 10*12 ED	
R903	061G152M39852T SY	RST MOF 0.39R 5% 2W	
D901	093G 60964	RECTIFIER PS1010R T/B 1A 1000V DO-41	
C921	065G500K3322HT	CAP CER 3.3NF 10% 50V X7R CT4G-0805-2X1	
U903	056G 158 12	Shunt Regulator KIA431A-AT/P TO-92	
C914	067G215S4713KT	EC 470UF 20% 16V 10*13 ED 4000 hr 1030mA	
C908	067G215Y4707KT	EC 47uF 20% 50V 6.3*11mm EG	
R918	061G152M25152T SY	RST MOF 250R 5% 2W	
C816	065G517K102 2T6921	CAP CER 1000PF K 500V Y5P	
F902	084G 56 5 B	FUSE 5A 250V SS-5-5A-AP	
C909	067G 2041022LT	CAP CS 1000uF 20% 10V 10*12 2000 hr 6.1A	
C902	065G306K68123R	CAP Y1 680PF 10% 250V Y5P	
C900	065G306M1023WR	CAP Y1 1NF 20% 250V Y5U	
F901	084G 56 3W	FUSE 3.15A 250V	
C809A	067G 4154799KT	EC 4.7UF 20% 100V 8*12 4000 hr ED	
Q903	057G 530503 T	2SD1207T	
C912	367G215S6814AT	EC 680UF 20% 25V - 12.5*16 RF	2nd source
C801	367G215X3314AT	EC 330UF 20% 25V 10*12 RF	2nd source
R903	061G152M39852T HX	RST MOF 0.39R 5% 2W	2nd source
D901	093G 6026T52T	CTIFIER DIODE FR107	2nd source
C909	067G 2041022KT	CAP CS 1000UF 20% 10V 10*12 2000 hr 6100	2nd source
C902	365G306K6812WR	CAP Y1 680PF 10% 250V Y5P	2nd source
C900	065G306M10233R	CAP Y1 1NF 20% 250V Y5U	2nd source
F901	084G 56 3 C	FUSE 3.15A 250V MST 3.15A 250V	2nd source
C809A	067G 4154799LT	EC 4.7UF 20% 100V 8*11.5	2nd source
Q903	057G 761 16	TRA KTD1028 KEC	2nd source
U903	056G 563355	Shunt Regu TL431G-A-TA TO-92 42V 150mA	2nd source
C914	367G415X4713AT	EC 470uf 20% 16V 10X13 RS	2nd source
C908	367G215X4707AT	EC 47uF 20% 50V - 6.3*11mm RG	2nd source
R918	061G152M25152T HX	RST MOF 250R 5% 2W	2nd source
F902	084G 56 5 C	FUSE 5A 250V MST 5A 250V	2nd source
WH004	KEPCDHP1	KEY BOARD ASSY	
LED001	081G 2 W GP	LED white GPW2803M1/G303-35	
CN001	395G820H06DW08	HARNESS 6P(SANW)-7P(2008) 280mm	
CN001	395G820H06LW08	HARNESS 6P(SANW)-7P(2008) 280mm	2nd source
R005	061G06031000FT	RST CHIP 100R 1/10W 1%	
R002	061G06031501FT	RST CHIP 1K5 1/10W 1%	
R003	061G06032201FT	RST CHIP 2K2 1/10W 1%	
ZD006	093G 64 59 SU	ESD MLVS0603M04 0603	
SW002	077G603S 4 HJ	TACT SW 2P 5 150g TSTAYB41	

Service Kit

Description	Part No.	Picture
ISP TOOL	715GT089-B	 <p>A green printed circuit board (PCB) for an ISP tool. It features a USB Type-A connector on the left, a DVI connector at the top, and a blue VGA connector on the right. A white label on the board reads 'Meridian 5 (Meridian 5) 715GT089-B ISP TOOL'. Various electronic components like resistors and capacitors are visible on the board.</p>
EDID TOOL	715GT034-B	 <p>A green printed circuit board (PCB) for an EDID tool. It features a DVI connector on the left, a blue VGA connector in the center, and a blue D-sub connector on the right. The board is populated with several integrated circuits, resistors, and capacitors. A white label on the board reads 'Meridian 5 (Meridian 5) 715GT034-B EDID TOOL'. The board is labeled 'EDID TOOL' and 'CUD00A'.</p>

17. General Product Specification

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1. Foreword

This specification describes a multi-scan color TFT LCD monitor.

All optical characteristics are determined according to panel specification after warming up longer than 30 minutes.

2. Product Profile

2.1 EDID Header

Data for EDID & .inf file

Philips 223V5

1	User visible strings on .inf file	Philips 223V5 (21.5inch WIDE LCD MONITOR 223V5)
2	Manufacturer ID (EDID data)	PHL
3	Product ID, "xxxx" 4 codes	MSB(byte 12): C0 LSB (byte 11): CF
4	maximum resolution	1920x1080
5	Horizontal Frequency Range	30~83 KHz
6	Vertical Frequency Range	56~76Hz
7	Monitor Name (13 characters max.)	PHL 223V5

LCD

Suppliers to offer panel specifications.

Panel incoming specification: Follow Philips' specification.

223V5 :

TPV-CMI TPM215HW01-HGEL03 C1D

Type NR. : TPV-CMI TPM215HW01-HGEL03 C1D
 Resolution : 1920 x 1080
 Pitch (mm) : 0.248mm x 0.248mm
 Color pixel arrangement : RGB vertical stripe
 Color depth : 16.7M
 Backlight : LED
 Active area (W x H) : 476.64(H) x 268.11(V) mm
 View angle (CR=10) : =90 for Right/Left (Typ)
 : =60 for Up/Down (Typ)
 Contrast ratio : 700:1 (Typ)
 White luminance : 200(Typ.)
 Luminance Uniformity : 70 (Min)
 Response time : Tr + Tf <=5 ms (Typ)

TPV-CMI TPM215HW01-HGEL02 C1E

Type NR. : TPV-CMI TPM215HW01-HGEL02 C1E
 Resolution : 1920 x 1080
 Pitch (mm) : 0.248mm x 0.248mm
 Color pixel arrangement : RGB vertical stripe
 Color depth : 16.7M
 Backlight : LED
 Active area (W x H) : 476.64(H) x 268.11(V) mm
 View angle (CR=10) : =90 for Right/Left (Typ)
 : =65 for Up/Down (Typ)
 Contrast ratio : 700:1 (Typ)
 White luminance : 250(Typ.)
 Luminance Uniformity : 70 (Min)
 Response time : Tr + Tf <=5 ms (Typ)

2.2 Scanning Frequencies

Hor. : 30 – 83 K Hz

Ver. : 56 - 76 Hz

Video dot rate: < 210 MHz for VGA and < 170 MHz for DVI, warning message must be displayed while over 165 MHz (supplier to provide accurate scaler bandwidth number)

Power input: 90-264 V AC, 50/60 ± 2 Hz

Functions:

(1) D-SUB analog R/G/B separate inputs, H/V sync separated, Composite (H+V) TTL level,

(2) SOG sync: a. Sync select: H + V

b. Sync select: SERR

(3) DVI digital Panel Link TMDS inputs, HDCP supported.

2.3 Ambient temperature: 0 °C - 40 °C

2.4 Power Range: Full Range Power Supply: 100-240V AC

3. Electrical Characteristics

Scaler should be capable of below items.

1) Scaler must support color engine for Image enhancement feature (SmartImage)

2) Scaler must have enough memory to support PerfecTune feature and Philips OSD

3) Scaler must support SmartContras,500K:1 DCR preferred

4) VGA signal Auto adjustment:

Monitor automatically adjusts and optimizes resolution and frequency based on input signal defined by "Source" function. "NO VIDEO INPUT" message to be displayed on screen while no signal is detected.

Monitor will automatically optimize resolution and frequency whenever connected to different signal source. When press the "Auto", the screen also show a status bar. During adjustment period, a status bar will show on screen from 0% to 100% to indicate the progress of adjustment.

Auto auto adjustment : new timing & preset modes (non- factory preset mode) should do auto adjustment at first time detection and save the related date into memory.

Resolution ≤ 800x600 , do not do auto auto adjustment.

3.1 Interface signals

1). D-Sub Analog

Input signal : Video, Hsync., Vsync

Video : 0.7 Vp-p, input impedance, 75 ohm @DC

Sync. : Separate sync TTL level , input impedance 2.2k ohm terminate

Hsync Positive/Negative

Vsync Positive/Negative

Composite sync TTL level, input impedance 2.2k ohm terminate (Positive/Negative)

Sync on green video 0.3 Vp-p Negative (Video 0.7 Vp-p Positive)

2). DVI-D Digital

Input signal: Single TMDS link (Three channels: RX0-/+, RX1-/+, RX2-/+))

3). HDMI (option , refer to Quick specification table)

Follow HDMI 1.4 specification

TMDS channel:

- Carries audio, video and auxiliary data.
- Signaling method: According to DVI 1.0 specification. Single-link (Type A HDMI).
- Video pixel rate: 25 MHz to 165 MHz (Type A)
- Pixel encodings: RGB 4:4:4, YCbCr 4:2:2, YCbCr 4:4:4.
- Audio sample rates: 32 kHz, 44.1 kHz, 48 kHz
- Audio channels: **2**.

DDC channel:

- Allows source to interrogate capabilities of sink.
- I²C signaling with 100 kHz clock.
- E-EDID data structure according to EIA/CEA-861D and VESA Enhanced EDID.

Content protection:

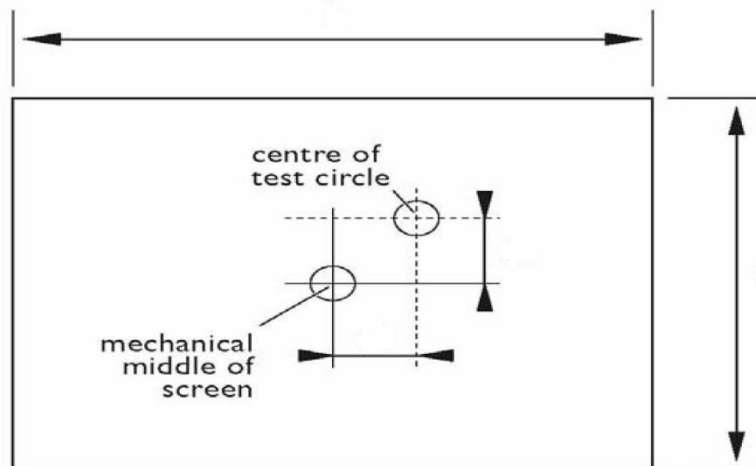
According to High-Definition Content Protection (HDCP) Specification 1.10.

HDMI video input should support timing defined in **CEA 861-D** specification with extended EDID blocks

Video Timing Support :

Format	Resolution	Type	Vertical frequency
480i	720 x 480	SD	60Hz
480p	720 x 480	SD	60Hz
576i	720 x 576	SD	50Hz
576p	720 x 576	SD	50Hz
720p	1280 x 720	HD	50Hz , 60Hz
1080i	1920 x 1080	HD	50Hz , 60Hz
1080p	1920 x 1080	HD	24Hz, 25Hz, 30Hz, 50Hz, 60Hz

- Picture centering - H & V ≤ 0.5 %. (for TV, 480i/p, 576i/p, 720p, 1080i/p)



Over Scan -

1. RGB signal : OFF (no this function)
2. YUV signal : (Video timing) ON (Be use and set ON/OFF) (But only 1080p define is OFF)

PC timing: to follow PC timing table

TMDS/+5V/DDC/HPD/CEC Signals

(TMDS Signal)

- Termination Supply Voltage AV_{CC} : 3.3V±5%
- Differential Voltage Level : 150mV – 1200mV
- Common Mode Voltage : $(AV_{CC} - 300mV) - (AV_{CC} - 37.5mV)$
- Differential Sensitivity : 150mVp-p
- Maximum differential Voltage : 1560mVp-p

(+5V Power)

- Power Supply Voltage : 4.7V – 5.3V
- Maximum Current Consumption : 50mA

(DDC Signal)

- Maximum Capacitance : 50pF

(HPD Signal)

- High Voltage Level : 2.4V – 5.0V
- Low Voltage Level : 0 – 0.4V
- Output Resistance : 1KΩ±20%

(CEC Signal, not supported by this model)

Input Low Voltage :	< 0.8V
Input High Voltage :	> 2.0V
Output Low Voltage:	0 – 0.4V
Output High Voltage:	2.5V – 3.6V
Pull-up Resistor:	2.7K Ω ±10%
Leakage Current in standby/off :	< 1.8 μ A
Maximum Capacitance:	100pF

4). DisplayPort (option , refer to Quick specification table)
Follow [DisplayPort 1.1](#) specification.

5). USB Hub 2.0 (option , refer to Quick specification table)
USB port (1 upstream, 2 or 4 downstream)

6). Audio in (option , refer to Quick specification table)
Input signal: 1Vrms
Loudspeaker: stereo of RMS Power
Frequency range: (WAIT FOR SUPPLIER INPUT)
Headphone connection will mute speaker

7). USB PLUG (option , refer to Quick specification table)
USB port (1 upstream, 1 downstream), black jack color

8). HDMI audio out (headphone): (option, refer to Quick specification table)
Stereo, > 50mVrms for headphone of 32 Ω

3.2 Interface

3.2.1 D-Sub Cable

Length : Please refer to M5 cable bundle summary file
Fix with monitor when packing, with transplant pin protective cover.

Connector type : D-Sub male with DDC2B pin assignments.
Blue connector thumb-operated jack screws

Pin assignments:

Pin	Signal Assignment	Pin	Signal Assignment
1	Red	9	DDC +3.3V or +5V
2	Green/ SOG	10	Logic GND
3	Blue	11	Sense (GND)
4	Sense (GND)	12	Bi-directional data
5	Cable Detect (GND)	13	H/H+V sync
6	Red GND	14	V-sync
7	Green GND	15	Data clock
8	Blue GND		

3.2.2 DVI Cable(option)

The input signals are applied to the display through DVI-D cable.

Length : Please refer to cable bundle summary file

Connector type : DVI-D male with DDC-2B pin assignments

White connector thumb-operated jackscrews

With transplant pin protective cover.

Pin Assignment:

Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. data2-	13	No Connect
2	T.M.D.S. data2+	14	+5V Power
3	T.M.D.S. data2 shield	15	Ground (for +5V)
4	No Connect	16	Hot plug detect
5	No Connect	17	T.M.D.S. data0-
6	DDC clock	18	T.M.D.S. data0+
7	DDC data	19	T.M.D.S. data0 shield
8	No Connect	20	No Connect
9	T.M.D.S. data1-	21	No Connect
10	T.M.D.S. data1+	22	T.M.D.S. clock shield
11	T.M.D.S. data1 shield	23	T.M.D.S. clock+
12	No Connect	24	T.M.D.S. clock-

3.2.3 DisplayPort cable (option)

Length : Please refer to cable bundle summary file
 Connector type : [DisplayPort 1.1](#) External cable-connector

Pin Assignment:

Pin No.	Description	Pin No.	Description
1	Lane 0 (positive)	11	Ground
2	Ground	12	Lane 3 (negative)
3	Lane 0 (negative)	13	connected to Ground
4	Lane 1 (positive)	14	connected to Ground
5	Ground	15	Auxiliary Channel (positive)
6	Lane 1 (negative)	16	Ground
7	Lane 2 (positive)	17	Auxiliary Channel (negative)
8	Ground	18	Hot Plug Detect
9	Lane 2 (negative)	19	Return for Power
10	Lane 3 (positive)	20	Power for connector

3.2.4 HDMI cable(option)

Length : Please refer to cable bundle summary file
 Connector type : HDMI 1.4 type A cable-connector

Pin Assignment:

Pin No.	Description	Pin No.	Description
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	CEC
4	TMDS Data1+	14	Reserved (HDMI 1.0-1.3c), HEC Data- (Optional, HDMI 1.4+ with Ethernet)
5	TMDS Data1 Shield	15	SCL (I ² C Serial Clock for DDC)
6	TMDS Data1-	16	SDA (I ² C Serial Data Line for DDC)
7	TMDS Data0+	17	DDC/CEC/HEC Ground
8	TMDS Data0 Shield	18	+5 V Power (max 50 mA)
9	TMDS Data0-	19	Hot Plug Detect (All versions) and HEC Data+ (Optional, HDMI 1.4+ with Ethernet)
10	TMDS Clock+		

3.2.5 3.5mm Audio Jack cable(option)

Length : Please refer to cable bundle summary file
 Connector type : 3.5mm stereo audio jack (TRS) connector

3.3 Timing Requirement

Factory Preset Mode Definition:

- a. Perfect FOS while presenting those timings.
- b. Will specify those timing in User's Manual

Preset Mode Definition

- a. Need to support those timings
- b. Perfect FOS after auto adjustment.

User Mode

- a. Can save those timing that not in Preset mode and can be showed (not over scaler or Panel spec.)
- b. It needs to reserve the 10 timings space in memory size.

3.3.1 Mode Storing Capacity







Factory preset modes : Refer to timing table
 Preset modes : Refer to timing table
 User modes : Refer to timing table
 Timing pixel clock over H/W limitation do not support.

Factory modes and preset modes are defined in the enclosed timing table file



Timing table.xls

3.4 OSD/Keypad functions:

ITEM			
1	OSD/keypad definition	 MMD OSD Function definition _FW SP  OSD V5.xlsx  M5 OSD  M5 OSD Button_V系列_CurtButton_V系列_ONE_	
2	OSD Translation	 OSD_String_M4_M5_20121225.xlsx	English, German, Spanish, Greek, French, Italian, Hungarian, Dutch, Portuguese, Português do Brazil, Russian, Polish, Swedish, Finnish, Türkçe, Czech, Ukrainian, S. Chinese, T.Chinese, Japaness, Korean (21)
3	Power On logo	 Philips_Logo_1920x1080.bmp	Power On Logo: Power On → Show up Philips logo 3 seconds → Change to input signal. This picture is reference only. The official drawing will send out by PM.

3.5 Horizontal scanning

Sync polarity : Positive or Negative
 Scanning frequency : 30 - 83 KHz

PS: Item 3.4 and 3.5, as far as possible to be display (another Horizontal and Vertical)

3.6 Vertical scanning

Sync polarity : Positive or Negative
 Scanning frequency : 56 - 76 Hz

3.7 Power input connection

Power cord length : please refer to M5 cable bundle summary file
 Power cord type : M5 leads power cord with protective earth plug.

3.8 Power management

The monitor must comply with the Microsoft On Now specification, and meet EPA requirements.

Mode	HSYNC	VSYNC	Video	Pwr-cons.	Indication	Rec. time
Power-On	On	On	Active	21.5" ,22" 23.6": <30W (typ.), < 35W(max.) 15.6" , 18.5" , 19" ,19.5" 20": <20W (typ.), <25W(max.)	White LED	--
Standby (Sleep mode)	Off	Off	Blanked	< 0.5W	Blinking white LED Period 3sec on, 3sec off	Note 1 Note 2
DC Power Off			N/A	< 0.5W	LED Off	

EPA 6.0 spec. as below

Panel size	Native resolution	Max. Power (W)
15.6"(16:9)	1366x768	12.8
17"(4:3)	1280x1024	15.1
18.5"(16:9)	1366x768	13.6
19"(16:10)	1440x900	15.5
19"(4:3)	1280x1024	16
19.5"(16:9)	1600x900	16.4
20"(16:9)	1600x900	16.6
21.5"(16:10)	1920x1080	21.1
22"(16:10)	1680x1050	19.7
23"(16:9)	1920x1080	22
23.6"(16:9)	1920x1080	22.7
24"(16:10)	1920x1200	25.4

Note 1:

- a. D-SUB mode,
 - 193V5 Normal mode to Power saving mode: 15/s (typ.)
 - 223V5 Normal mode to Power saving mode: 18/s (typ.)
 - Power saving mode to Normal: 4/s(typ.)
- b. DVI mode,
 - Normal mode to Power saving mode: 15/s (typ.)
 - Power Saving to Normal mode: 3.8s (typ.)

Note 2:

Measurement power saving.

measurement of
power saving.pdfPower consumption
measure the way -090**3.9 VGA Display Identification**

In accordance with VESA Display Channel Standard Ver. 1.0 and DDC 2B capability

3.10 DVI Display Identification

In accordance with DVI requirement (DDWG digital Visual Interface revision 1.0)
use DDC-2B, DDC/CI, and EDID V1.3

3.11 USB support (option)

Connect the upstream port of the monitor to host PC's USB port via USB cable. Then attach external device to the downstream port of the monitor. Check if the device can work properly.

3.12 DDC /CI Support and Smart Manage/Control

In accordance with VESA DDC/CI and MCCS ver.2.0, the monitor should be workable with , Philips Smart Manage, Smart Control V6.1, and Protrait Display Tune at least.

3.13 Pivot function(Auto pivot) (option)

It needs to support AUTO PIVOT function with SmartControl PC application tool.

3.14 Hot-key definition

D:\ENGL\monitor
projects\spec\H8\hot k

3.15 Smart image(option)

Smart Image.doc

3.16 PerfectTune II (formerly FGA, FACTORY GAMMA Alignment) (option)

- A. PerfectTune must be done after warming 30 minutes at least.
- B. PerfectTune must be performed after Auto Color.
- C. PerfectTune must be conducted through DVI or scaler embedded patterns.
- D. Delta E < 2.5

3.17 Audio**3.17.1 Frequency Response**

The amplifier and speaker combination shall provide a frequency response of 300 Hz to 20 kHz, with +/- 3 dB variation over the entire response range.

3.17.2 Total Harmonic Distortion

Total harmonic distortion shall be limited to 5% THD at the maximum wattage speaker rating specified in section 1.3, at 1 kHz, when the input is 1.0Vrms.

3.17.3 Power Handling

Each speaker transducer shall accept up to the specified Wattage of audio power without damage or exceeding the frequency response and total harmonic distortion specifications.

3.17.4 Audio Amplifier

The amplifier shall provide two channels of audio up to 2 Watts per channel from 100 Hz to 20 kHz, based upon an audio signal input of 1.0V RMS per channel.

3.17.5 Volume Control

For monitors with a manual volume control, the direction (at the bottom) of the bezel volume control is “-“ key for Minimum volume and “+” key for Maximum volume. The default shipping position of the Volume Control shall be approximately 90%.

3.17.6 Speaker Sensitivity

The speakers shall support a minimum sensitivity of 75 dB +/- 3 dB at 2W/1m at 1 kHz.

3.17.7 Maximum Audio Card Output

The monitor audio amplifier shall accept a maximum input voltage of 1.5 Vrms and meet the following requirements at the maximum monitor volume setting:

1. The ratings of the audio amplifier may not be exceeded.
2. The ratings of the speakers may not be exceeded.
3. There must not be any clipping of the audio amplifier output signal.

Voltage dividers may be used to reduce the input signal level.

3.17.8 Monitor Audio Amplifier Input Impedance

The monitor audio amplifier shall have minimum 10K Ohm AC input impedance

3.18 Power sensor (option)

FUNCTIONAL Requirements for the front detection

For the presence sensor functionality, the following requirements are defined:

- Two IRs be used for user present detections, one IR is for transmission signals, the other one is for receiving reflection IR signals
- User must be detected in the following range:
40 up to 100 cm (+ 20cm).
- Detection angle:
+- 35 degree (for IR LED)
- SENSOR key control,
Adjust detection distances (0~4 scales), default is 3 , tolerance : (±10cm)
0 : OFF
1 : **90 cm**
2 : **100 cm**
3 : **110 cm**
4 : **>130 cm**
- SENSOR distance measure :
1. Cotton material color : black
2. Monitor center straight distance (90 deg)
3. Body width : about 40cm
4. Body horizontal move : Monitor center +- 5cm
- Anti-interference between two monitors,
Monitors must have anti-interference methods(coding ..etc) to prevent monitors to talk to each other

● power sensor Functional behavior

Time Period	60sec	60sec ~ 180sec	180sec ~
PowerSensor	No ACTION	Lower down backlight brightness	Backlight & LCD panel shutdown
Power Saving	0	50%	80%

- The following set-up's will be supported

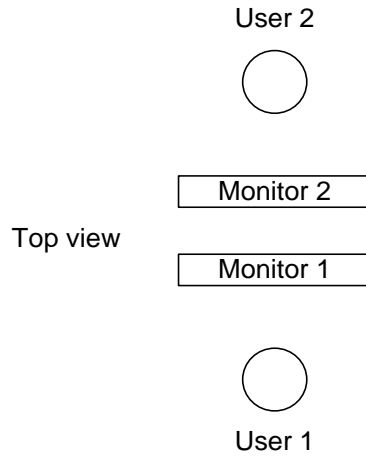


Fig. 2: 2 monitors standing back to back.

The monitors may influence each other. So Monitor 1 may produce unexpected brightness-switches in monitor 2 (and vice versa). Furthermore, user 1 could perhaps (via monitor 1) influence the powersensor readout on monitor 2.

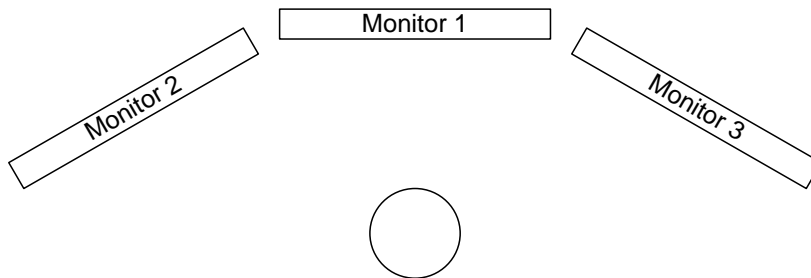


Fig. 3: set up of multiple monitors under an angle

3.19 Smart Power (option , refer to Quick specification table)

To reduce the power by adjusting backlight , contrast and color.
Algorithm is provided by Supplier.

4. Visual Characteristics

4.1 Test Conditions

Unless otherwise specified, this specification is defined under the following conditions.

- (1) Input signal : As defined in 3.3, follow panel resolution, signal sources must have 75 ohm output impedance.
- (2) Luminance setting : controls to be set to 250 nits /200nits with full screen 100 % duty cycle white signal
- (3) Warm up: more than 30 minutes after power on with signal supplied.
- (4) Ambient light: 400 -- 600 lux.
- (5) Ambient temperature: 20 ± 5 °C

4.2 Brightness

Follow panel specification

4.3 Color Temperature Adjustment

There are three factory preset white color 9300K, 6500K, sRGB.

Apply full white pattern, with brightness in 100 % position and the contrast control at 50 % position.

The 1931 CIE Chromaticity (color triangle) diagram (x ,y) coordinate for the screen center should be:

Product specification

CIE coordinates	(x,y)	
------------------------	--------------	--

11500K	$x = 0.270 \pm 0.02$ $y = 0.281 \pm 0.02$	PerfectTune II
9300K	$x = 0.283 \pm 0.02$ $y = 0.297 \pm 0.02$	PerfectTune II
8200K	$x = 0.291 \pm 0.02$ $y = 0.306 \pm 0.02$	PerfectTune II
7500K	$x = 0.298 \pm 0.02$ $y = 0.314 \pm 0.02$	PerfectTune II
6500K/sRGB	$x = 0.313 \pm 0.02$ $y = 0.329 \pm 0.02$	PerfectTune II
sRGB	$x = 0.313 \pm 0.02$ $y = 0.329 \pm 0.02$	PerfectTune II
5000K	$x = 0.345 \pm 0.02$ $y = 0.357 \pm 0.02$	PerfectTune II

Production alignment spec.

CIE coordinates	(x,y)	
11500K	$x = 0.270 \pm 0.006$ $y = 0.281 \pm 0.006$	PerfectTune II
9300K	$x = 0.283 \pm 0.006$ $y = 0.297 \pm 0.006$	PerfectTune II
8200K	$x = 0.291 \pm 0.006$ $y = 0.306 \pm 0.006$	PerfectTune II
7500K	$x = 0.298 \pm 0.006$ $y = 0.314 \pm 0.006$	PerfectTune II
6500K/sRGB	$x = 0.313 \pm 0.006$ $y = 0.329 \pm 0.006$	PerfectTune II
sRGB	$x = 0.313 \pm 0.006$ $y = 0.329 \pm 0.006$	PerfectTune II
5000K	$x = 0.345 \pm 0.006$ $y = 0.357 \pm 0.006$	PerfectTune II

Quality Inspection specification:

CIE coordinates	(x,y)	
9300K	$x = 0.283 \pm 0.015$ $y = 0.297 \pm 0.015$	Note 1
6500K/sRGB	$x = 0.313 \pm 0.015$ $y = 0.329 \pm 0.015$	
sRGB	$x = 0.313 \pm 0.015$ $y = 0.329 \pm 0.015$	

Note 1: Test in 9 points pattern, 9300K color temperature x-shift or y-shift must be less than 15 at center, the x-shift or y-shift in 9 points should be judged by panel Spec.

5. Mechanical Characteristics

5.1 Cosmetic -

Philips ID

5.2 Mechanical data files -

ProE files required

5.3 Location of Philips logo -

Per Philips make-up sheet

5.4 Gap between panel and front bezel

18.5": <0.8mm, 21.5"W: <1.2mm,

- Between bezel and rear cover: $\leq 0.4\text{mm}$ (without art groove)

5.5 Step

Between bezel and rear cover: $\leq 0.4\text{mm}$ (Around),Rear cover can't be higher than bezel

5.6 Location of Control icons

Per Philips graphic sheet

5.7 Color for resin/paint -

Per Philips make-up sheet

5.8 Fire Enclosure Request

Shielding cover should fulfill international standard.

5.9 Resins

- RoHS required
- WEEE required.
- Resin type/selection refers to Project Book Section 7.2 Plastic material.

5.10 If paint is used

- RoHS required
- WEEE require
- If new painting type needs to implement, refer to UN-D 1235.

5.11 Plastic mold tooling

- Tooling to be designed to minimize cosmetic defects induced by molding process (sink, blush, weld lines, gate marks, ejector marks, etc.). Refer to "TYV61-90007".
- Painting to cover up cosmetic defects due to molding is strongly discouraged.
- China RoHS mark requested.

5.12 Plastics flammability

- All Plastics to be Flame Retardant UL 94-HB or Better.
- Base / Pedestal to be Flame Retardant UL 94-HB.
- All major plastic parts (bezel, back cover) need to be molded from same resin.
- Plastic resin type selection should be referred to "plastic-Philips Pool monitor".

5.13 Texture/Glossing of housing

- The texture area and texture no should follow Philips make-up sheet.
- The exterior surfaces shall have a uniform texture.
- Philips must approve the mold texturing.

- Detail document for texture refer to “UN-D249”, “UN-D 600”.
- ≤ 20 gloss units

5.14 Tilt and swivel base

- Swivel angle : nil
- High Adjustment : nil
- Portrait Display : nil
- Slant : $\leq 20^\circ$ or 20° W, follow OTS model |A-B| ≤ 4.5 mm
- $> 20^\circ$ or 20° W, |A-B| ≤ 4 mm
- After Tilt test $\leq 20^\circ$ or 20° W, |A-B| ≤ 5 mm
- $> 20^\circ$ or 20° W, |A-B| ≤ 6 mm

5.15 Kensington Lock

- Must meet Kensington_slot.spec “TYE-M0004”.
- MMD request metal plate in Kensington hole.

5.16 Product dimension / Weight (Refer to Philips approved SHT 191/ SHT560)

5.17 Transportation

Transportation standards refer to UAN-D1534/00/01/02.

5.17.1 Transportation packages

- Net weight Packaging and wrapping shall be sufficient to protect the product against damage or loss during shipment from the supplier to the destination specified in the purchase order. All packaging materials are subject to test and evaluation per UAN-D1534/00/01/02.
- The cushion material shall be constructed using EPS material.
- The doggy hole is requested.

5.17.2 Transportation Test

Overall tests refer to UAN-D1534/00/01/02.

Vibration, drop test should be performed at ambient temperature (20°C to 23°C) and relative humidity (40% to 65%).

A. Transportation test specification for all regions

- Package test
 1. Random Vibration test
 2. Drop test
 3. Cold Drop test (for design reference)
- Un-package test
 1. Half sine shock test (non operation)

B. Transportation test specification for China/India

- Package test
 1. Random Vibration test
 2. Drop test
 3. Cold Drop test (for design reference)
- Un-package test
 1. Sine vibration (operating)
 2. Half sine shock test (non operation)

5.18 Pallet / Container loading (Refer to Philips approved SHT 560)

Transportation standards refer to TYE-M0002 ,UAN-D1534 and UAW-0309.

- Air shipment -
- Sea container 20'(pallet/slip sheet)
- Sea container 40'(pallet/slip sheet)
- Sea container 40' High Cube (pallet/slip sheet)
- Land 45' Truck and Trailer (800X1200mm pallet)
- Land 45' Truck and Trailer (1000X1200mm pallet) for UK
- Truck shipment-

Transportation request for all regions except China/India

- Air shipment
- 20'/40'/40'HQ Container loading for WW

Transportation request for China and India

- Container loading for China and India
- Truck loading

Transportation request for EU

- Land 45' Truck and Trailer (800X1200mm pallet)
- Land 45' Truck and Trailer (1000X1200mm pallet) for UK

6. Environmental Characteristics

The following sections define the interference and susceptibility condition limits that might occur between external environment and the display device.

6.1 Susceptibility of display to external environment

Operating

- Temperature : 0 to 40 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

Storage

- Temperature : -20 to 60 degree C
- Humidity : 95% max
- Altitude : 0-12192m
- Air pressure : 300-1100 mBAR

Note: recommend at 5 to 35°C, Humidity less than 60 %

6.2 Transportation tests

Refer to 5.15.2'

6.3 Display disturbances from external environment

According to IEC 801-2 for ESD disturbances

6.4 Display disturbances to external environment

TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed in accordance with the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with ans by the Ref. No. in the parts list and enclosed within a broken line * (where several critical components are grouped in one area) along with the safety symbols on the schematic diagrams and/or exploded views.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug.) Defeating this safety feature may create a potential hazard to the service and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit may be safety operated without danger of electrical shock.

* Broken line

Implosion

1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn, whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

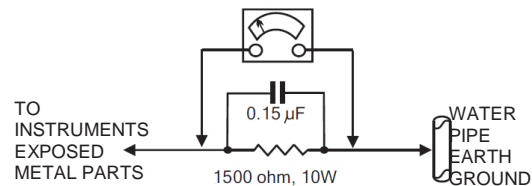
X-radiation

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an xradiation problem. High voltage should always be kept at the manufacturer's rated value-no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.

5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do not operate the chassis longer than necessary to locate the cause of the excessive HV.
6. New picture tubes are specifically designed to withstand higher operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive
7. It is essential to use the specified picture tube to avoid a possible X-diation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.

**Leakage Current Hot Check**

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10w resistor paralleled by a 0.15uf. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5 milliamps. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

Picture Tube Replacement

The primary source of X-radiation in this television receiver is the picture tube. The picture tube utilized in this chassis is specially constructed to limit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter, or a Philips approved type.

Parts Replacement

Many electrical and mechanical parts in Philips television sets have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards

WARNING: Before removing the CRT anode cap, turn the unit **OFF** and short the HIGH VOLTAGE to the CRT DAG ground.
SERVICE NOTE: The CRT DAG is not at chassis ground.