

Service
Service
Service

170C8FS/00 190C8FS/00
170C8FS/93



Service Manual

Horizontal frequencies
30 - 82 kHz

TABLE OF CONTENTS

Description	Page	Description	Page
Important Safety Notice-----	2	FAQs (Frequently Asked Questions)-----	29~30
Technical Data-----	3~4	Safety Test Requirements-----	31
Installation/On Screen Display-----	5~6	Wiring Diagram-----	32~33
Failure Mode Of Panel -----	7	Block Diagram-----	34~35
Philips Pixel Defect Policy-----	8	Scaler Diagram&C.B.A -----	36~45
Troubleshooting -----	9	Power Diagram & C.B.A-----	46~51
Warning Message -----	10	Control Diagram&C.B.A-----	52~54
Lock/unlock, Aging, Factory mode -----	11	General product specification-----	55~73
Mechanical Instructions-----	12~13	Exploded View -----	74~75
Color adjustment -----	14	Repair tips-----	76~77
Smart Manage-----	15	Repair Flow chart-----	78~80
DDC Instructions&Serial Number Definition ---	16~22	Spare&Recommended parts list-----	81~89
DDC DATA -----	23~26	Different parts list-----	90~92
Firmware Upgrade for CPU-----	27~28	Revision List-----	93

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



Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

* * Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

WARNING

Critical components having special safety characteristics are identified with a  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 symbol  on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.



* Broken Line

FOR PRODUCTS CONTAINING LASER :

DANGER- Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body are grounded through wrist band.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- Avoid contact with water as it may cause a short circuit within the module.
- If the surface of the panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

LCD

Type NR. : LM170E03 TLL1
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 358.5(w)*296.5(h)*16(d) mm
 Pixel Pitch. : 0.264 mm x 0.264 mm
 Color pixel arrangement. : RGB stripes arrangement
 Support Color. : 16.7M colors
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 337.92 x 270.336mm (17" diagonal)
 Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:75 , down:85
 Contrast ratio. : 800 :1 (typ.), 500:1 (min.)
 White luminance. : 300 nit (typ.), 250nit (min.)

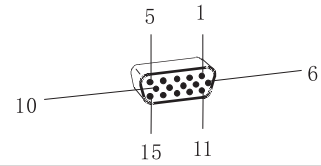
Type NR. : LM170E03 TLL4
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 358.5(w)*296.5(h)*16(d) mm

Pixel Pitch. : 0.264 mm x 0.264 mm
 Color pixel arrangement. : RGB stripes arrangement
 Support Color. : 16.7M colors
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 337.92 x 270.336mm (17" diagonal)
 Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:75 , down:85
 Contrast ratio. : 800 :1 (typ.), 500:1 (min.)
 White luminance. : 300 nit (typ.), 250nit (min.)

Type NR. : CLAA170EA07 P - 040
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 358.5(w)*296.5(h)*17.5(d) mm
 Pixel Pitch. : 0.264 mm x 0.264 mm
 Color pixel arrangement . : RGB vertical stripes
 Support Color. : 16.2M colors
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 337.9 x 270.3 mm (17" diagonal)
 Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:80 , down:80
 Contrast ratio. : 700 :1 (typ.) ; 550:1 (min.)
 White luminance. : 300 nit (typ.), 250nit (min.)

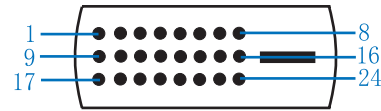
Type NR. : CLAA170EA07 P - 050
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 358.5(w)*296.5(h)*17.5(d) mm
 Pixel Pitch. : 0.264 mm x 0.264 mm
 Color pixel arrangement . : RGB vertical stripes
 Support Color. : 16.2M colors
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 337.9 x 270.3 mm (17" diagonal)
 Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:80 , down:80
 Contrast ratio. : 700 :1 (typ.) ; 550:1 (min.)
 White luminance. : 300 nit (typ.), 250nit (min.)

Pin Assignment



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	DDC +3.3V OR +5V
2	Green video input	10	GND
3	Blue video input	11	GND
4	GND	12	Serial data line (SDA)
5	Cable detect	13	H-sync
6	Red video GND	14	V-sync
7	Green video GND	15	Data clock line (SCL)
8	Blue video GND		

Input DVI-D connector pin



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

Power Management Definition:

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<36W	Green
Stand-by	Off	On	Blanked	<1W	Amber LCD
Suspend	On	Off	Blanked	<1W	Amber LCD
Off	Off	Off	Blanked	<1W	Amber LCD
DC Power off			N / A	<1W	LCD Off

Environmental conditions

Operating

- Temperature : 0 to 35 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

Storage

- Temperature : -20 to 60 degree C
- Humidity : 85% max (< 40°C)
- Altitude : 0-12192m
- Air pressure : 300-1100 mBAR

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

Technical Data - 190C8

LCD

Type NR.	: LM190E08 TLL1 / LM190E08 TLL4
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 396.0(w)*324.0(h)*15(d) mm
Pixel Pitch.	: 0.098*RGB(H) mm x 0.294(V) mm
Color pixel arrangement.	: RGB stripes arrangement
Support Color.	: 16.7M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 376.32 x 301.056mm (19" diagonal)
Viewing Angle (CR>=10).	: Right:80 , Left:80 , UP:75 , down:85
Contrast ratio.	: 800 :1(typ), 500:1(min)
White luminance.	: 300 nit (typ)

Type NR.	: HSD 190MEN3-A00
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 396.0(w)*324.0(h)*16.5(d) (Typ) mm
Pixel Pitch.	: 0.294 mm x 0.294 mm
Color pixel arrangement.	: RGB vertical stripes
Support Color.	: 16.7M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 376.32x301.056mm (19" diagonal)
Viewing Angle (CR>=10).	: Right:85 , Left:85 , UP:80 , down:80
Contrast ratio.	: 1000 :1(typic)
White luminance.	: 300 nit (typ)

Scanning frequencies	
H-Frequency.	: 30K- 83 KHz
V-Frequency.	: 56 - 76 Hz
Video dot rate.	: < 140 MHz
Power input.	: 90-264 V AC, 50/60 ± 2 Hz
Power consumption.	: < 40W maximum
Functions:	

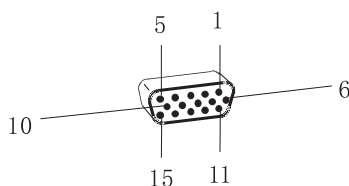
(1)D-Sub analog R/G/B separate inputs, H/V sync separated, Composite (H+V) TTL level, SOG sync.

(2)DVI-D digital Panel Link TMDS input
Ambient temperature: 0 °C- 35 °C

Power Management Definition

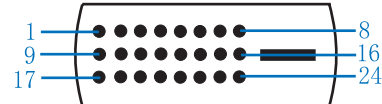
STATUS	H- sync	V- sync	Video	Power	LED
On	On	On	Active	<40W	Green
Stand-by	Off	On	Blanked	<1W	Amber LCD
Suspend	On	Off	Blanked	<1W	Amber LCD
Off	Off	Off	Blanked	<1W	Amber LCD
DC Power off			N / A	<1W	LCD Off

Pin Assignment



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	DDC +3.3V OR +5V
2	Green video input	10	GND
3	Blue video input	11	GND
4	GND	12	Serial data line (SDA)
5	Cable detect	13	H-sync
6	Red video GND	14	V-sync
7	Green video GND	15	Data clock line (SCL)
8	Blue video GND		

Input DVI-D connector pin



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

Environmental conditions

Operating

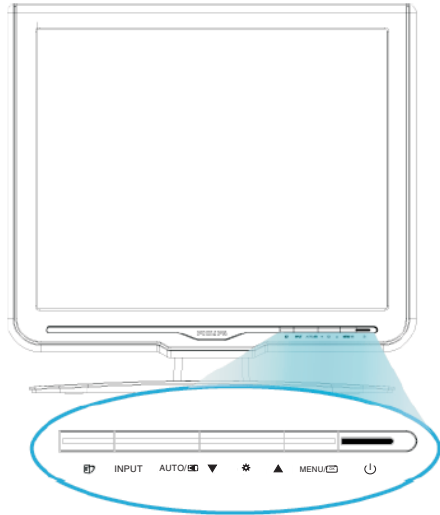
- Temperature : 0 to 35 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

Storage

- Temperature : -20 to 60 degree C
- Humidity : 85% max (< 40 °C)
- Altitude : 0-12192m
- Air pressure : 300-1100 Mbar

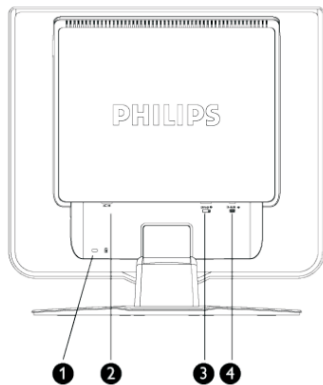
Note: recommend at 5 to 35°C, Humidity less than 60 %

Front View



1. To switch monitor's power On and Off
2. To access OSD menu
3. To adjust the OSD
4. To adjust brightness of the display
5. Automatically adjust the horizontal position, vertical position, phase and clock settings / Return to previous OSD level.
6. To change the signal input source.
7. There are five modes to be selected: Office Work, Image Viewing, Entertainment, Economy, and Off.

Rear View



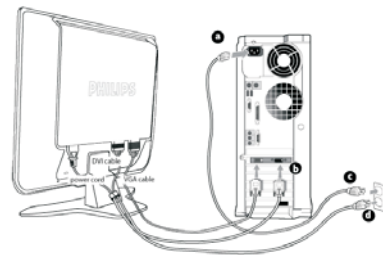
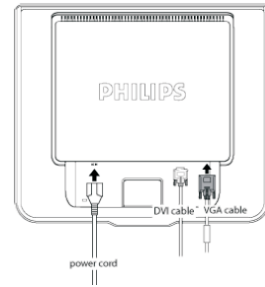
- 1 Kensington anti-thief lock
- 2 AC power input
- 3 DVI-I input
- 4 VGA input

Accessory Pack

Item	Description
	Power cord
	VGA signal cable
	EDFU pack

Connecting to Your PC

Connect the power cord and DVI cable to the back of the monitor firmly. (Philips has preconnected VGA cable for the first installation.)



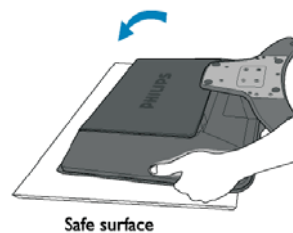
Connect the cables to the back of your computer by following these steps:

- (a) Turn off your computer and unplug its power cable.
- (b) Connect the monitor signal cable to the video connector on the back of your computer.
- (c) Plug the power cord of your computer and your monitor into a nearby outlet.
- (d) Turn on your computer and monitor. If the monitor displays an image, installation is complete.

The Base

Unfold and Fold the Base

Unfold the Base



- 1) Put monitor face down on the safe surface.



- 2) Pull up the base.

Fold the Base



- 1) Push down the head of monitor.

On Screen Display

◀◀ Go to cover page

Description of the On Screen Display

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 :

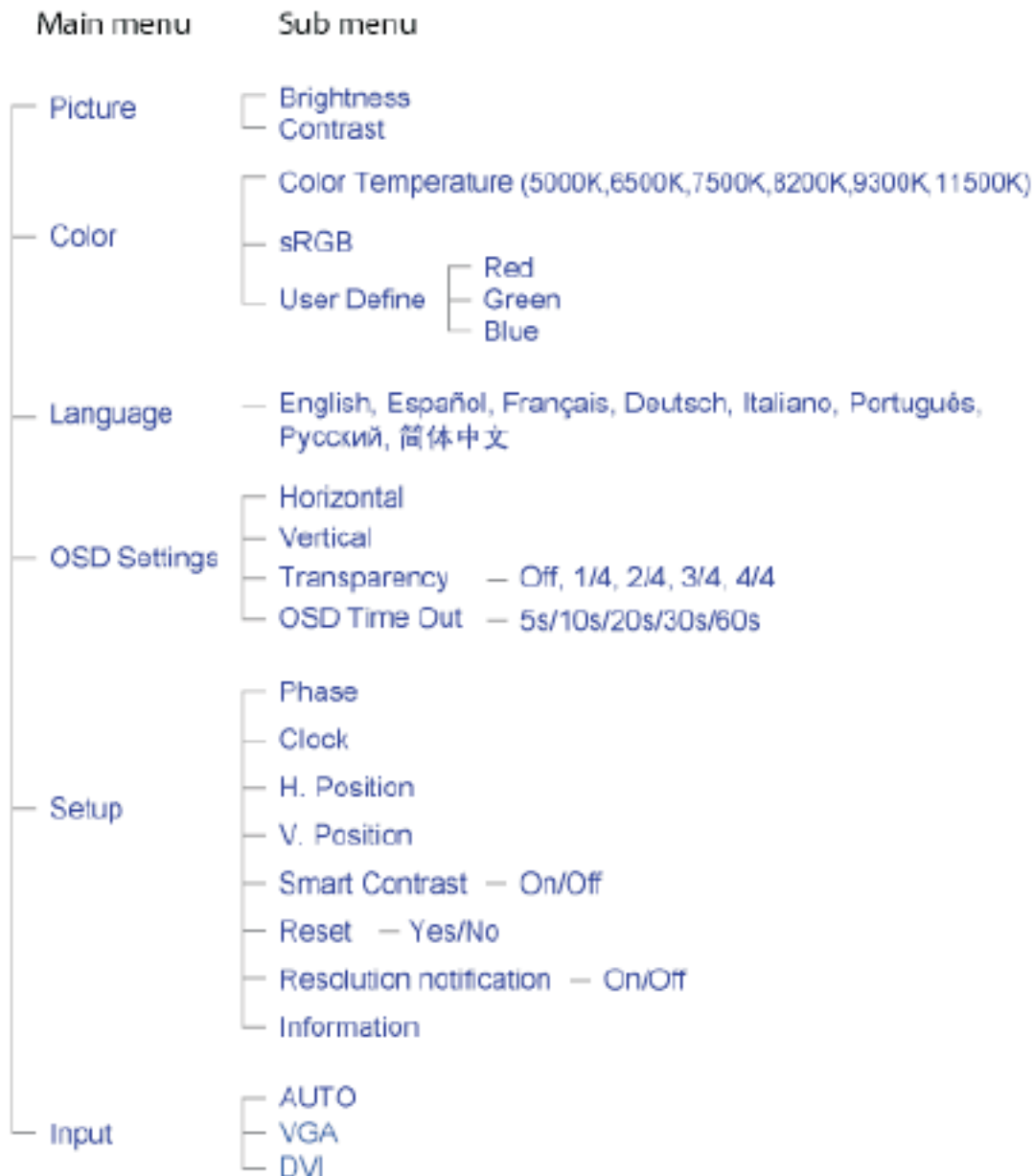


Basic and simple instruction on the control keys.

In the OSD shown above users can press ▲▼ buttons at the front bezel of the monitor to move the cursor, **OK** to confirm the choice or change, and ◀▶ to adjust/select the 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.



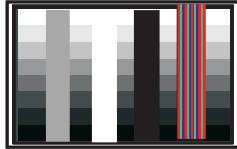
Quick reference for failure mode of LCD panel

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.

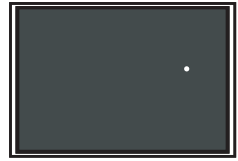
Failure description

Phenomenon

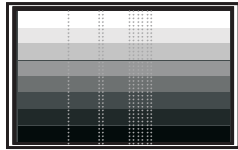
Vertical block defect



Polarizer has bubbles



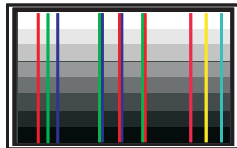
Vertical dim lines



Polarizer has bubbles



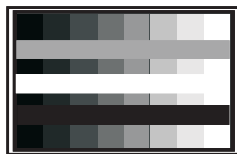
Vertical lines defect
(Always bright or dark)



Foreign material inside polarizer. It shows liner or dot shape.



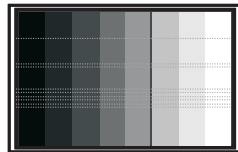
Horizontal block defect



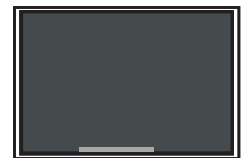
Concentric circle formed



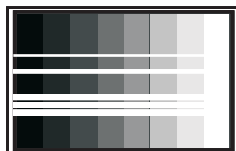
Horizontal dim lines



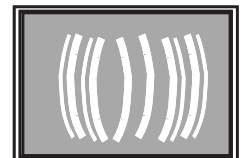
Bottom back light of LCD is brighter than normal



Horizontal lines defect
(Always bright or dark)



Back light un-uniformity



Has bright or dark pixel



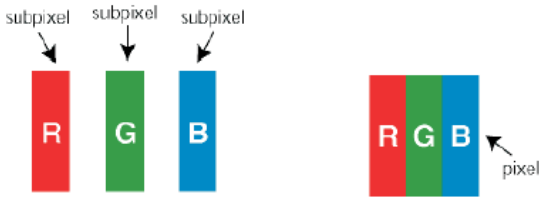
Backlight has foreign material. Black or white color, liner or circular type



Philips Pixel Defect Policy

Philips' Flat Panel Monitors 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 LCD 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 LCD panel must exceed these acceptable levels. For example, no more than 0.0004% of the sub pixels on a 17" XGA 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 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)

 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:



One dark sub pixel
 Two or three adjacent dark sub pixels

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 LCD 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	
MODEL	170C 8	190C 8
1 lit subpixel	3 or fewer	3 or fewer
2 adjacent lit subpixels	1 or fewer	1 or fewer
3 adjacent lit subpixels (one white pixel)	0	0
Distance between two bright dot defects*	15 mm or more	15 mm or more
Total bright dot defects of all types	3 or fewer	3 or fewer

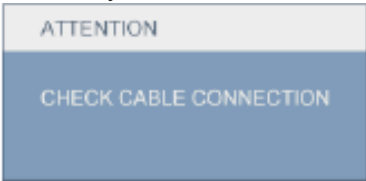
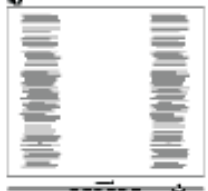
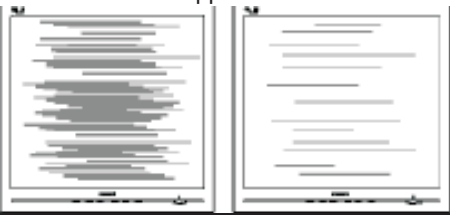
BLACK DOT DEFECTS	ACCEPTABLE LEVEL	
MODEL	170C 8	190C 8
1 dark subpixel	5 or fewer	5 or fewer
2 adjacent dark subpixels	2 or fewer	2 or fewer
3 adjacent dark subpixels	0	0
Distance between two black dot defects*	15 mm or more	15 mm or more
Total black dot defects of all types	5 or fewer	5 or fewer

BLACK DOT DEFECTS	ACCEPTABLE LEVEL	
MODEL	170C 8	190C 8
Total bright or black dot defects of all types	5 or fewer	5 or fewer

Note:

* 1 or 2 adjacent sub pixel defects = 1 dot defect

All Philips monitors are ISO13406-2 Compliant

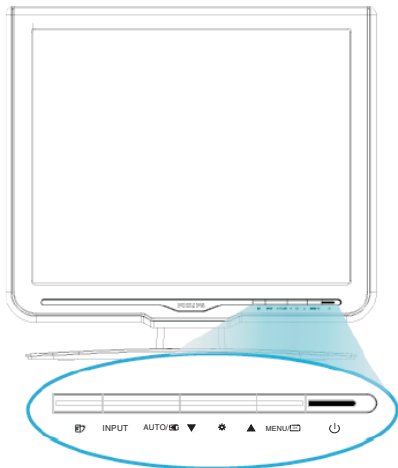
Common Problems	
Having this problem	Check these items
No Picture Power LED not lit)	<ul style="list-style-type: none"> ●.Make sure the power cord is plugged into the power out let and into the back of the monitor. ●.First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position.
No Picture (Power LED is amber or yellow)	<ul style="list-style-type: none"> ●Make sure the computer is turned on. ●Make sure the signal cable is properly connected computer. ●Check to see if the monitor cable has bent pins. ●The Energy Saving feature may be activated
Screen says 	<ul style="list-style-type: none"> ●Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). ●Check to see if the monitor cable has bent pins. ●Make sure the computer is turned on.
AUTO button not working properly	<ul style="list-style-type: none"> ●The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. ●It may not work properly if using nonstandard PC or videocard.
Imaging Problems	
Display position is incorrect	<ul style="list-style-type: none"> ●Press the Auto button. ●Adjust the image position using the Phase/Clock of More Settings in OSD Main Controls.
Image vibrates on the screen	<ul style="list-style-type: none"> ●Check that the signal cable is properly connected to the graphics board or PC
Vertical flicker appears 	<ul style="list-style-type: none"> ●Press the Auto button. ●Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
Horizontal flicker appears 	<ul style="list-style-type: none"> ●Press the Auto button. ●Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
The screen is too bright or too dark	<ul style="list-style-type: none"> ●Adjust the contrast and brightness on On-Screen Display.(The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your sales representative).
An after-image appears	<ul style="list-style-type: none"> ●If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an afterimage.This usually disappears after a few hours
An after-image remains after the power has been turned off.	<ul style="list-style-type: none"> ●This is characteristic of liquid crystal and is not caused by amalfunction or deterioration of the liquid crystal. The afterimage will disappear after a peroid of time.
Green, red, blue, dark, and white dots	<ul style="list-style-type: none"> ●The remaining dots are normal characteristic of the liquid crystal

Warning Message

Warning message table

Item	Attention Signals	Display Time	Condition
1	CANNOT DISPLAY THIS VIDEO MODE, CHANGE COMPUTER DISPLAY INPUT TO 1280X1024 @ 60HZ	30 mins	This warning appears when the input signal from your computer is not in a standard video mode or is out of the monitor's scanning range. After 30 mins, monitor enters sleeping mode.
2	NO VIDEO INPUT	30 mins	This message appears when there is no signal input but with cable while AC or DC power on. After 30 mins, monitor enters sleeping mode.
3	CHECK CABLE CONNECTION	30 mins	This message appears when a signal cable is disconnected while monitor is working. After 30 mins, monitor enters sleeping mode.
4	ENTERING SLEEP MODE	3 secs	This message appears when monitor is about to enter power saving mode.
5	WAITING FOR AUTOMATIC ADJUSTMENT	till auto adjustment finished	This message is displayed when the auto adjustment button is pressed. It disappears when automatic adjustments are completed.
6	USE 1280X 1024 FOR BEST RESULT	On top of OSD main menu	The message will show up at the top of the OSD main menu in red color when the input resolution is not the 1280x1024.
7	OSD MAIN CONTROLS LOCKED	3 secs / or Till "OSD MAIN CONTROLS UNLOCKED" appear	This message will appear 3 seconds to indicate the OSD MAIN CONTROLS status when to lock or un-lock it by pressing "MENU(OK)" button for more than 10 seconds while there is video input from PC. This function provides the alternative that user can lock all the OSD main control in case user don't want the FOS performance setting to be changed, for instance, during commercial exhibition.
8	OSD MAIN CONTROLS UNLOCKED	3 secs	This message will appear 3 seconds to indicate the OSD MAIN CONTROLS status when to un-lock it by pressing "MENU (OK)" button for more than 10 seconds while there is video input from PC.
9	the window of "VOLUME"	60 secs	This message will appear when the VOLUME button is pressed.
10	THIS IS 85HZ OVERSCAN, CHANGE COMPUTER DISPLAY INPUT TO 1280X1024@60HZ	10 mins	This message will appear 5 seconds in every 60 seconds for 10 minutes when the input of PC video timing is at 85Hz mode. Remark: AUTO is still functional in this mode
11	the window of OSD "MONITOR SETUP "	60 secs	This message will appear when the "OK" button is pressed.
12	the window of "BRIGHTNESS"	60 secs	This message will appear when the BRIGHTNESS button is pressed.
13	"SELECTED INPUT NOT AVAILABLE"	3 secs	This message will appear 3 seconds to indicate the SIGNAL SOURCE status when change the signal source but it is not found while there is video input from PC.

Front Control



To Lock/Unlock OSD FUNCTION (User Mode)
 The OSD function can be locked by pressing "OK" button(1) for more than 10 seconds, the screen shows following windows for 4 seconds. Everytime when you press "OK" button, this message appears on the screen automatically.



Unlock OSD function
 Unlocked OSD function can be released by pressing "OK" button for more than 10 seconds again.



Access Aging Mode

Step 1 : Disconnect Interface Cable between Monitor and PC.
 Step 2 : Turn off LCD monitor. Then [Push "AUTO" & "OK" buttons at the same time and hold them]+[Press power "power" button until comes out " AGING screen"] => then release all buttons.
 Bring up:



After 15 seconds, bring up:



After 30 seconds, bring up:



After 15 seconds, bring up:



 repeatedly

Connect Signal cable again=> go back to normal display

Access Factory Mode

- 1). Turn off monitor.
- 2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button until comes out "Windows screen"] => then release all buttons
- 3). Press "OK" button, wait until the OSD menu with Characters "Smart Image" "Factory" (below OSD menu) come on the Screen of the monitor.



Factory Mode indicator

Enter Factory Menu

- Step1: Press "OK" button.
- Step2: Choose "Picture", then press "OK" button.
- Step3: Press "▲" button and choose "factory".
- Step4: Press "OK" button.



Front View



Fig.1

Back View



Fig.2

Step1. Remove the base

- Use two thin " | " screw drivers to drive upon the cover simultaneously as shown in Fig.3
- Remove the screws as shown in Fig.4, then remove the base

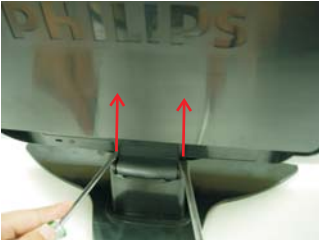


Fig.3

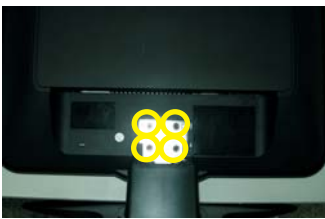


Fig.4

Step2. Remove the Front Bezel as shown in Fig.5~11

- Remove the one screw as shown in Fig.5
- Use the plastic putty knife to open the front Bezel clicks at the top side as shown in Fig.6
- Pull the front Bezel away from the back cover from both left and right sides as shown in Fig.7
- Pull out the front Bezel from the back cover at the bottom side as shown in Fig.8



Fig.5



Fig.6



Fig.7



Fig.8

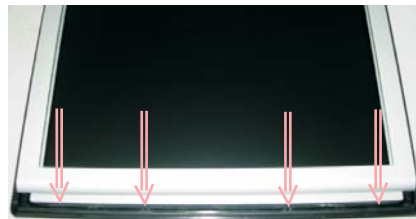


Fig.9



Fig.10

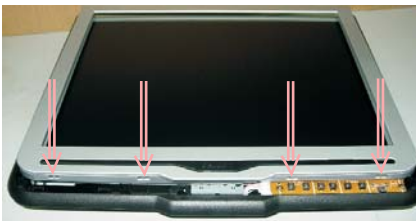


Fig.11

Step3.Remove the Back cover

- Remove the two screws as shown in Fig.12 ,then remove the Control board
- Use the thin " | " type screw driver to open the clicks as shown in Fig.13

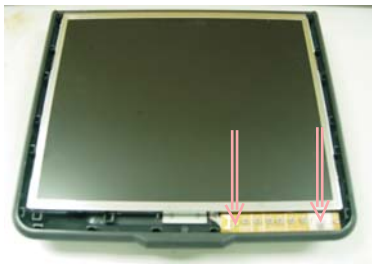


Fig.12



Fig.17

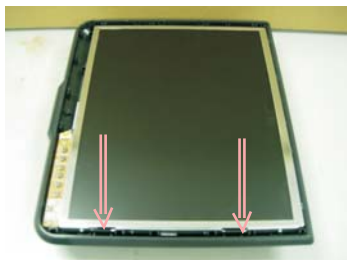


Fig.13

Step4. Remove the Power and Scaler shielding.
 - Remove the eight screws as shown in Fig.14
 - Remove the Power and Scaler shielding as shown in Fig.15

Step6. Remove the Metal Frame.
 - Remove the two screws as shown in Fig.18
 - Remove the two screws as shown in Fig.19
 - Disconnect the one cable as shown in Fig.19

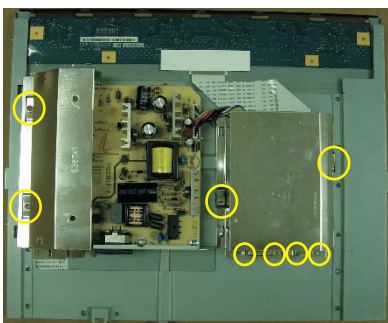


Fig.14



Fig.18



Fig.15



Fig.19

Step 5. Remove the scaler and power board.
 - Remove the eight screws as shown in Fig.16
 - Disconnect the three cables as shown in Fig.16
 - Remove the scaler and power board as shown in Fig.17



Fig.20

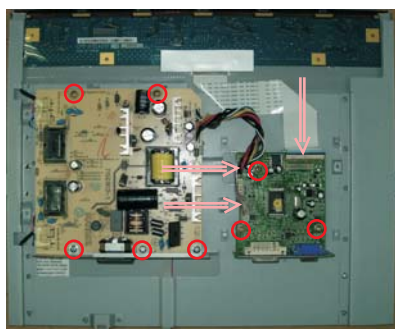


Fig.16

.....
 In warranty, it is not allowed to disassembly the LCD panel, even the backlight unit defect.
 Out of warranty, the replacement of backlight units is a correct way when the defect is caused by backlight (CCFL, Lamp).

Color Adjustment

Alignment procedure

1. Turn on the LCD monitor.
2. Turn on the Timing/pattern generator. See Fig.1
3. Preset LCD color Analyzer CA-110
 - Remove the lens protective cover of probe CA-A30.
 - Set measuring/viewing selector to measuring position for reset analyzer.(zero calibration) as Fig.2
 - Turn on the color analyzer (CA-110)
 - Press 0-CAL button to starting reset analyzer.

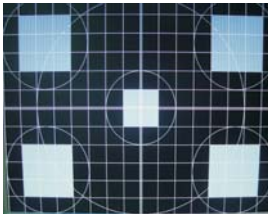


Fig. 1

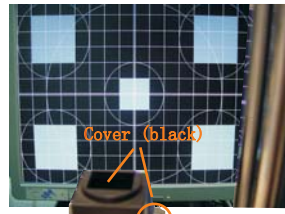
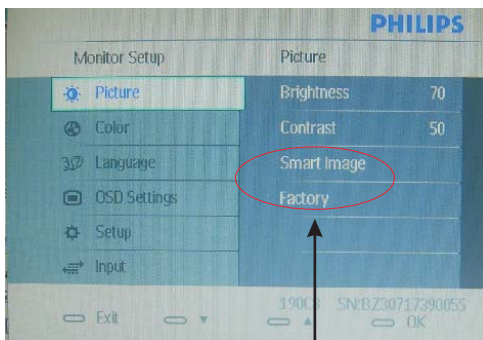


Fig. 2

4. Access Factory Mode

- 1). Turn off monitor.
- 2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button until comes out "Windows screen"] => then release all buttons
- 3). Press "OK" button, wait until the OSD menu with Characters "Smart Image" "Factory" (below OSD menu) come on the Screen of the monitor. as shown in Fig3.



Factory Mode indicator

Fig. 3

- 4). Press "OK" button, then select "factory " indicator by"UP" or "DOWN" button .Press"OK" button to bring up submenu windows as below:



Fig. 4

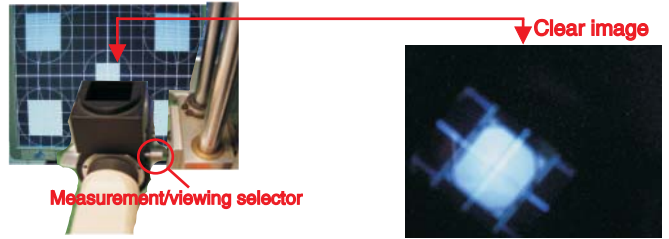


Fig.5

- 5.Display
 - Press "UP" or "DOWN" button to select . Change the value by "LEFT" or "RIGHT" key until the X,Y co-ordinates as below

6. Display Adjustment

- 6.1 Access to factory mode (RS232) in auto-alignment system. The communication protocol switches to RS232.
- 6.2 Auto color adjustment (B)
 - Apply a 640*480/60Hz signal with 16 level grey test pattern, set brightness control at 100%, and contrast control at 50%. Adjust the R.G. B. offset, and gain to calibrate the color smoothly and 64-grey level distinguishable.
- 6.3 Adjustment of WHITE-D (B)
 - Apply a 1280*1024 / 60Hz signal with white pattern, set brightness control at 100%, and contrast control at 50%. Adjust the R, G, B Sub-Gain, for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be

	9300°K	6500°K
x (center)	0.283 ± 0.015	0.313 ± 0.015
y (center)	0.297 ± 0.015	0.329 ± 0.015

Use Minolta CA-210 for color coordinates and luminance check. Luminance is > 200 Nits in the center of the screen when brightness at 100% and contrast set to 100%.

- 6.4 Adjustment of sRGB (B)
 - Apply a 1280*1024/ 60Hz signal with white pattern, set brightness control at 100%, and contrast control at 50%. Adjust the R, G, B Sub-Gain, for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be;

	sRGB
x(center)	0.313 ± 0.008
y(center)	0.329 ± 0.008
Ynits	180 ± 10



Introduction

Philips SmartManage is an advanced solution for users, corporate/institution IT administrator in particular, to manage their Philips monitors as part of the asset management environment. The solution includes three essential components, Philips SmartManage Administrator, and Philips SmartControl and Agent. Philips SmartManage is a solution joint developed by Philips and Altiris Inc.

SmartManage Features and Benefits

The Philips SmartManage is a working console for IT management to gather monitors assets information, run asset report, control assets security, monitor assets security, and issue instant messages to monitor users. Philips SmartManage includes the following major features:

1. Provides an additional security measure that helps corporate users safeguard their investment.
2. Power saving feature that reduces utility costs and manpower required to turn monitors on or off.
3. SmartControl provides an efficient means for adjusting monitor performance and settings.
4. Built-in asset reports reduce audit/maintenance manpower, cycle time and costs.

A trial version of SmartManage can be downloaded from <http://www.altiris.com/philips>

For more information of Philips SmartManage, please contact with Philips sales representatives in your country.

Notes: SmartManage is a software dedicated to business environments. Personal users normally do not need to use SmartManage.

Philips SmartControl

The SmartControl and SmartManage Agent are deployed and installed in computers using Philips monitors. With SmartControl and SmartManage Agent, monitors and PCs can interact with the administrator's inquiries. Because SmartControl operates on individual PC, end users can also use SmartControl to adjust monitor's performance settings.

1. Requirement

1. Graphic cards with nVIDIA (TNT2, GeForce, Quadro, or newer) and ATI (Radeon or newer) graphic chipsets that support the DDC/CI interface
2. Microsoft Windows 2000 and XP operation systems.
3. Philips monitors supporting DDC/CI interface

2. Installation

How to download "SmartControl Installation" file:

1. Visit <http://www.philips.com>
2. Select "Your Country"
3. Click on "Support Center"
4. Click into "Monitors and PC Products"
5. Enter your model number
6. Enter "Software" page
7. Select "SmartControl Installation", and you can download SmartControl and its driver for installation.

Please follow the guidance in the SmartControl installation program.

3. Accessing SmartControl

1. Right click on the desktop of your PC, and select Properties from the shortcut menu pops up.
2. Click on Settings tab, and click on Advanced button.
3. Click Philips SmartControl tab.

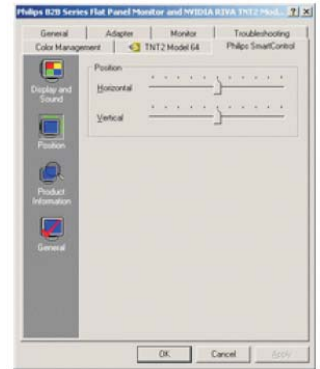
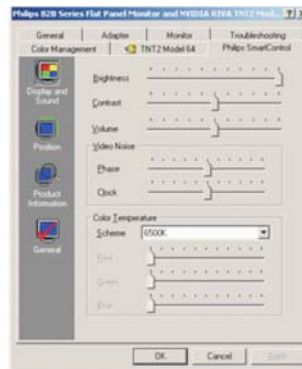
4. SmartControl Options

1. Display and Sound

By moving the sliding bar toward left or right, users will be able to adjust brightness, contrast, audio volume (if applicable), video noise (not applicable when using DVI-D input), and color temperatures.

2. Position

Users can adjust the horizontal and vertical position of the screen by moving the sliding bar left and right. This function is disabled when using DVI-D (digit) input.



3. Product Information

Click Product Information in the left pane to view the product information stored in the monitor's memory.

4. General

Click on General for general information including driver information, device information, and monitor control.



Within monitor control, users can click on Auto Setup to achieve optimum performance or click on factory reset to reset the parameters of the monitor. Such choices are disabled when using DVI-D(digit) input.

DDC Instructions

General

DDC Data Re-programming

In case the DDC data memory IC or main EEPROM which storage all factory settings were replaced due to a defect, the serial numbers have to be re-programmed"Analog DDC IC, & EEPROM". It is advised to re-soldered DDC IC and main EEPROM 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

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.

System and equipment requirements

1. An i486 (or above) personal computer or compatible.
2. Microsoft operation system Windows 95/98 .
You have to Install the EDID_PORT_Tool under Win2000/XP . As Fig. 1 .

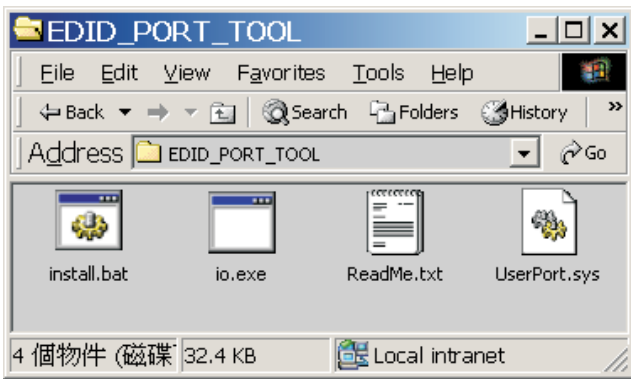


Fig. 1

- A. Copy the "UserPort.sys" to C:\WINNT\system32\drivers(win2000) C:\WINDOWS\system32\drivers(winXP)
 - B. Running "io.exe" everytime, Before you start to programming edid data .
3. EDID45.exe program .
 4. DDC 2BI-ISP TOOL:

Inclusion :

- A. DDC2BI-ISP TOOL(3138 106 10396) x1 (as Fig. 2)
- B. Printer cable x1
- c. (D-Sub) to (D-Sub) cable x2
- D. D-SUB to DVI cable X1

Note: The EDID46.EXE is a windows-based program, which cannot be run in MS-DOS.

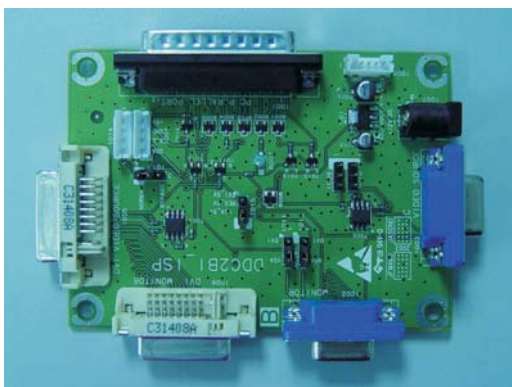


Fig. 2

Pin Assignment

The digital only connector contains 24 signal contacts organized in three rows of eight contacts. Signal pin assignments are listed in the following table:

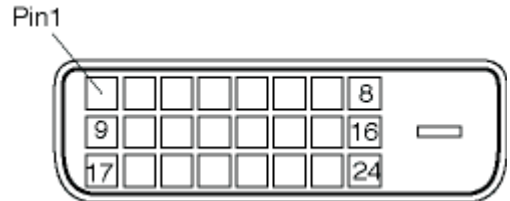


Fig. 3

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

Fig. 4

Input analog D-sub connector pin assignment

PIN No.	SIGNAL
1	Red video input
2	Green video input / sync on green
3	Blue video input
4	GND
5	GND--Cable detect
6	Red video GND
7	Green video GND
8	Blue video GND
9	DDC +3.3V or +5V
10	Logic GND
11	GND
12	Serial data line (SDA)
13	H-sync / H+V
14	V-sync
15	Data clock line (SCL)

Configuration and procedure

There is no Hardware DDC (DDC IC) anymore. Main EEPROM stores all factory settings and DDC data (EDID code) which is also called Software DDC. The following section describes the connection and procedure for Software DDC application. The main EEPROM can be re-programmed by enabling "factory memory data write" function on the DDC program (EDID46.EXE).

Initialize alignment box

In order to avoid that monitor entering power saving mode due to sync will cut off by alignment box, it is necessary to initialize alignment box before running programming software (EDID46.EXE). Following steps show you the procedures and connection.

- Step 1: Supply 8-12V DC power source to the Alignment box by plugging a DC power cord .
- Step 2: Connecting printer cable and D-Sub cable of monitor as Fig. 4

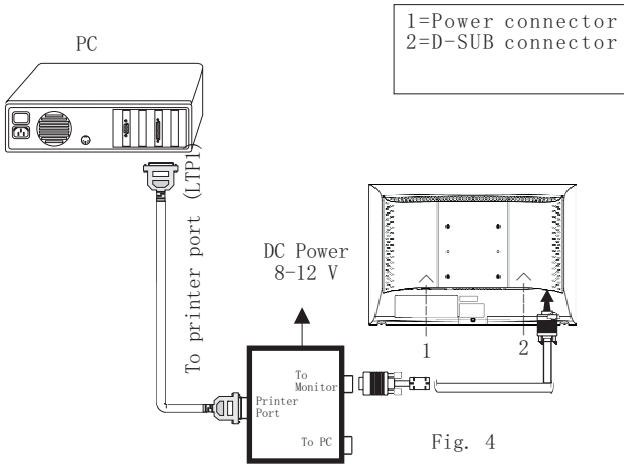


Fig. 4

Step 3: Installation of EDID46.EXE

Method 1: Start on DDC program

Start Microsoft Windows.

1. The Program"EDID46.EXE" in service manual cd-rom be copied to C:\.
2. Click **Start**, choose Run at start menu of Windows as shown In Fig. 5.

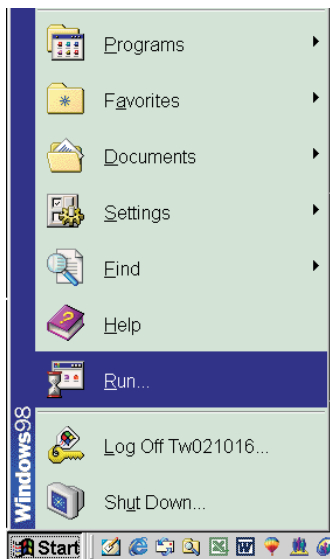


Fig. 5

3. At the submenu, type the letter of your computer's hard disk drive followed by :EDID46 (for example, C:\EDID46, as shown in Fig. 6).

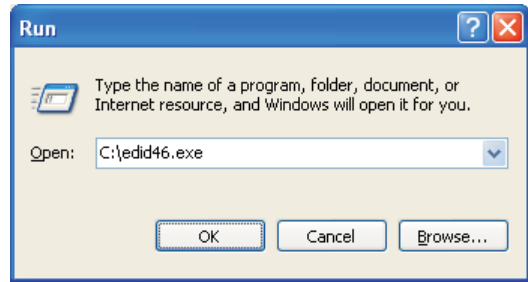


Fig. 6

4. Click OK button. The main menu appears (as shown in Fig. 7). This is for initialize alignment box.

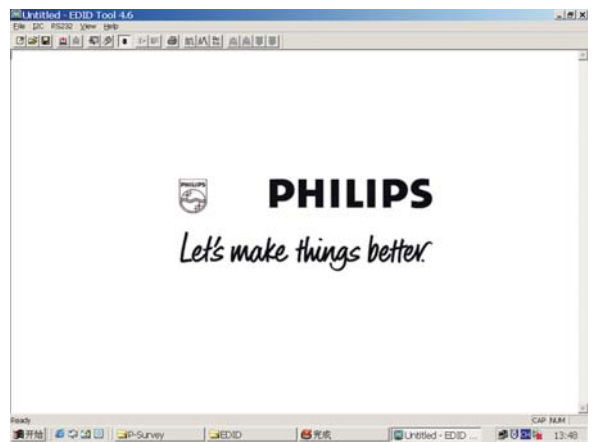


Fig. 7

Note 1: If the connection is improper, you will see the following error message (as shown in Fig. 8) before entering the main menu. Meanwhile, the (read EDID) function will be disable. At this time, please make sure all cables are connected correctly and fixedly, and the procedure has been performed properly.

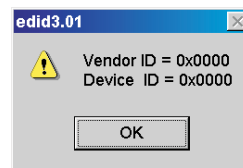


Fig. 8

Note 2: During the loading, EDID46 will verify the EDID data which just loaded from monitor before proceed any further function, once the data structure of EDID can not be recognized, the following error message will appear on the screen as below. Please confirm following steps to avoid this message.

1. The data structure of EDID was incorrect.
2. DDC IC that you are trying to load data is empty.
3. Wrong communication channel has set at configuration setup windows.
4. Cables loosed or poor contact of connection.

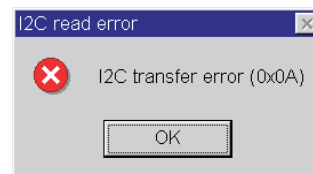


Fig. 9

Re-programming Analog DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 10.

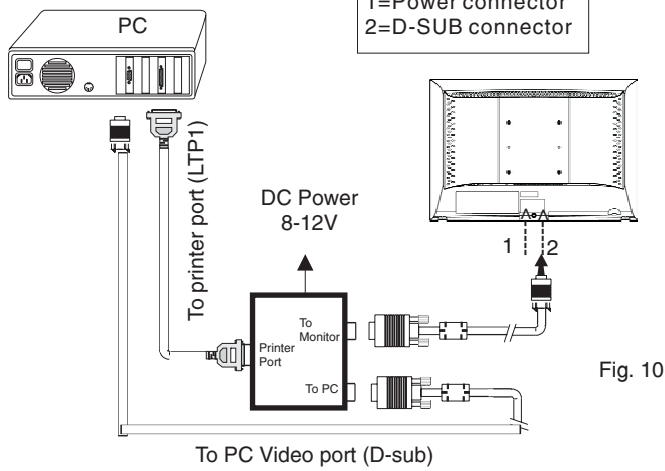


Fig. 10

Step 2: Read DDC data from monitor

1. Click icon as shown in Fig. 11 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 11.

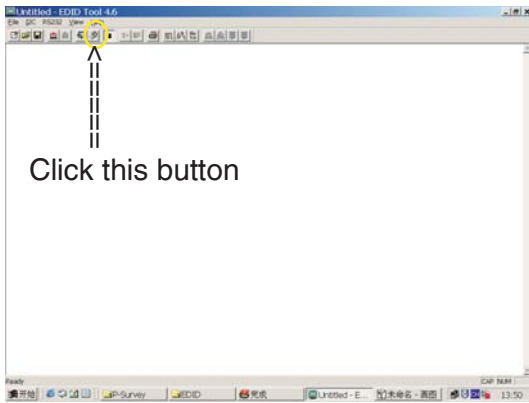


Fig. 11

2. Select the DDC2Bi as the communication channel. As shown in Fig. 12.

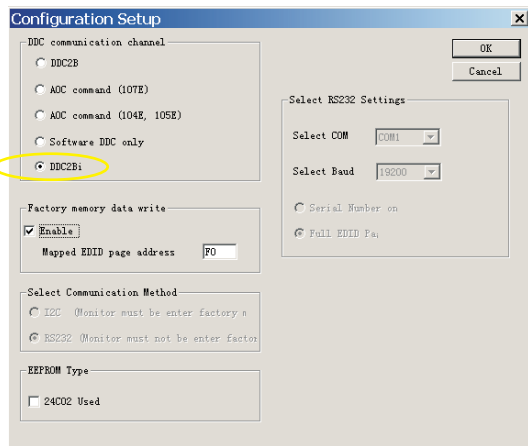


Fig. 12

3. Click OK button to confirm your selection.

4. Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 13.

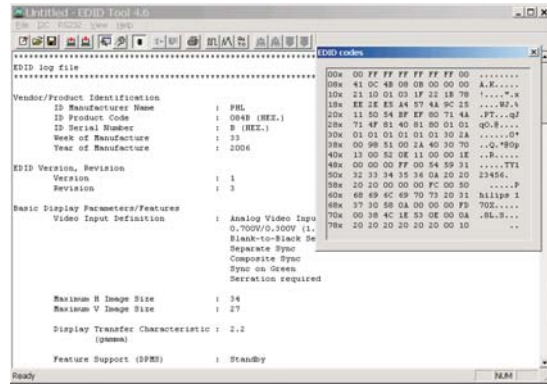
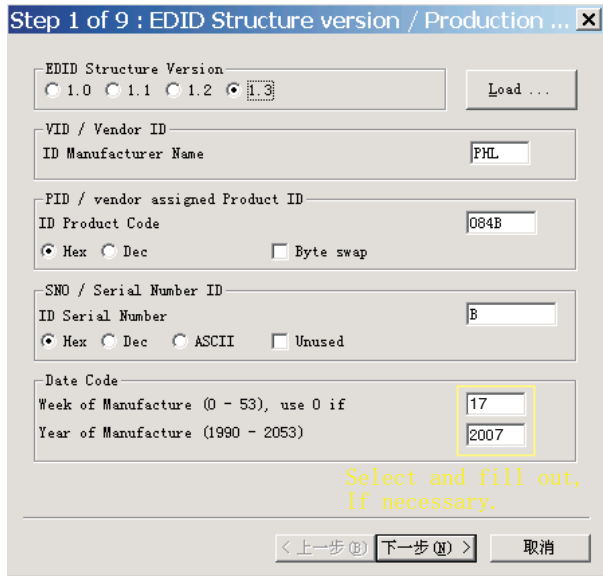


Fig. 13

Step 3: Modify DDC data (verify EDID version, week, year)

Click (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 14 .

EDID46 DDC application provides the function selection and



Select and fill out, If necessary.

Fig. 14

Step 4: Modify DDC data (Monitor Serial No.)

1. Click Next , bring up Fig. 15.

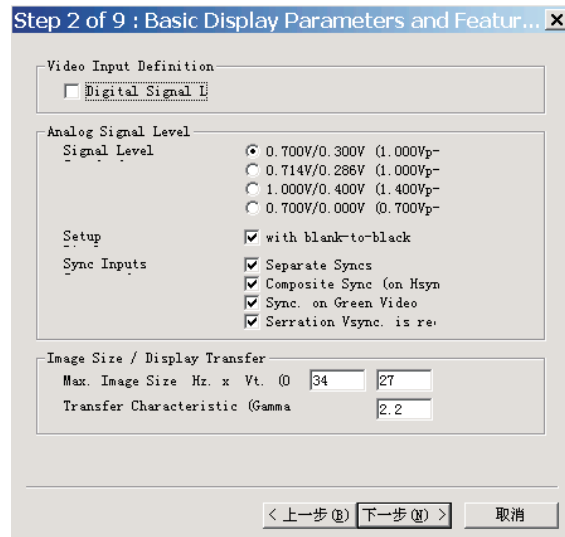


Fig. 15

2. Click Next , bring up Fig.16.

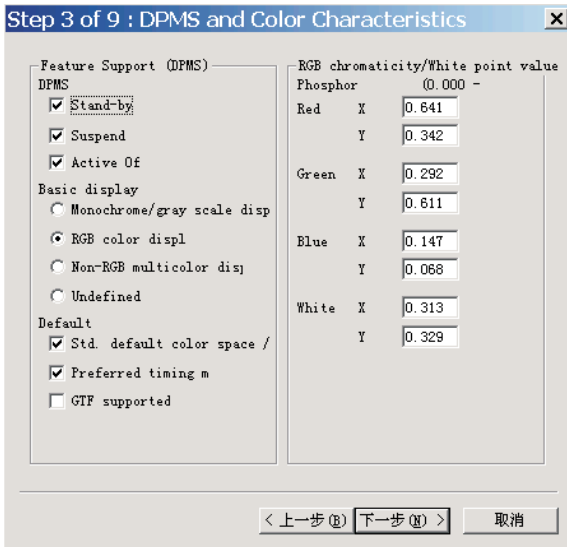


Fig. 16

3. Click Next , bring up Fig.17.

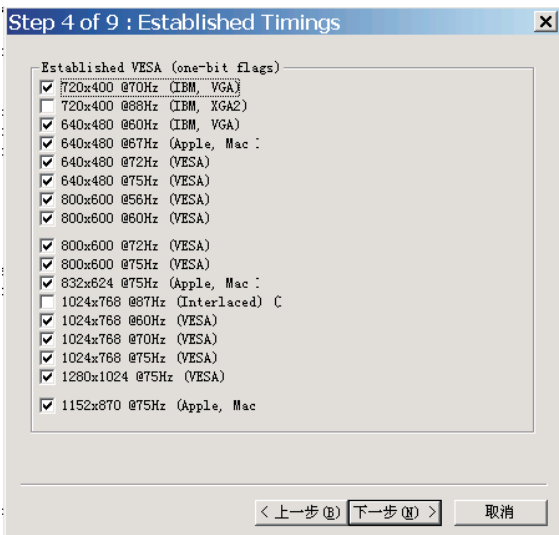


Fig. 17

4. Click Next , bring up Fig.18.

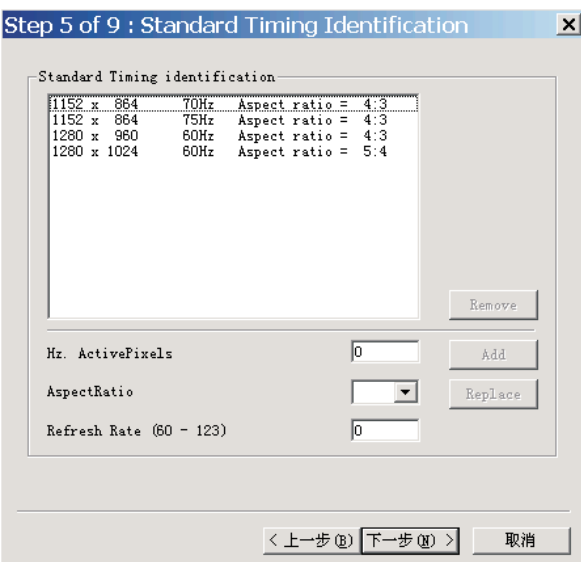


Fig. 18

5. Click Next , bring up Fig.19.

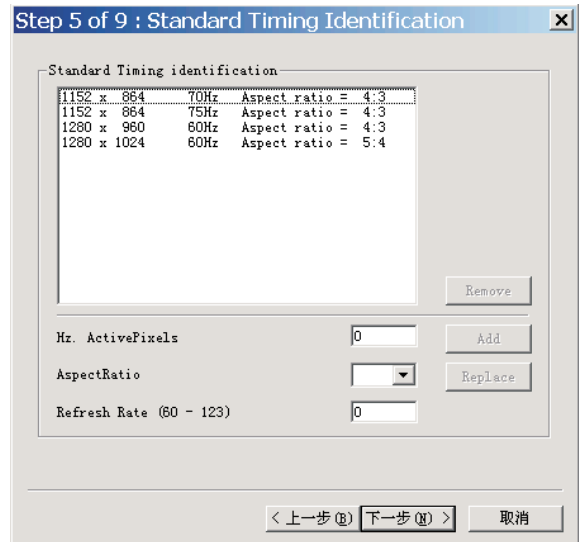


Fig. 19

6. Click Next , bring up Fig. 20.

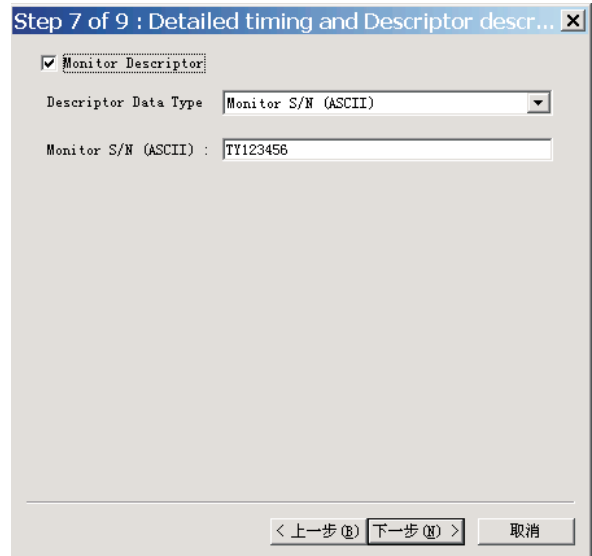


Fig. 20

7. Click Next , bring up Fig. 21.

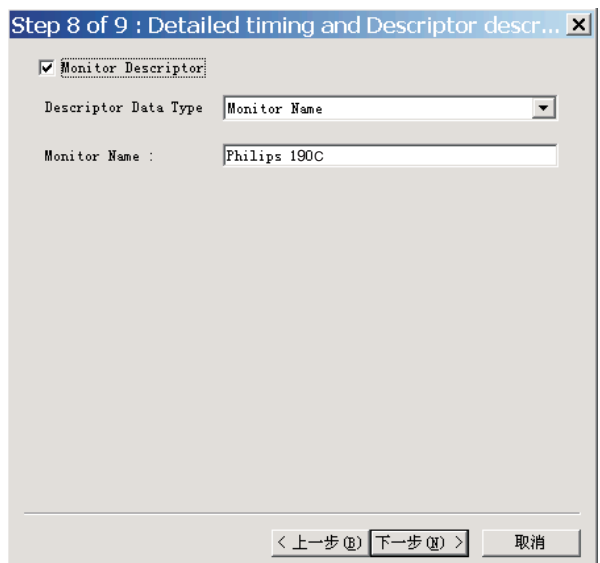


Fig. 21

- Click Next , bring up Fig. 22.
 - In this step, please confirm the Descriptor Data Type is Monitor Range Limits, and all the items are same as below.
 - Click Finish to exit the Step window.
 - Serial number can be filled up at this moment (for example, TY 123456).

Step 5: Write DDC data

- Configuration should be as Fig. 23. And press OK.

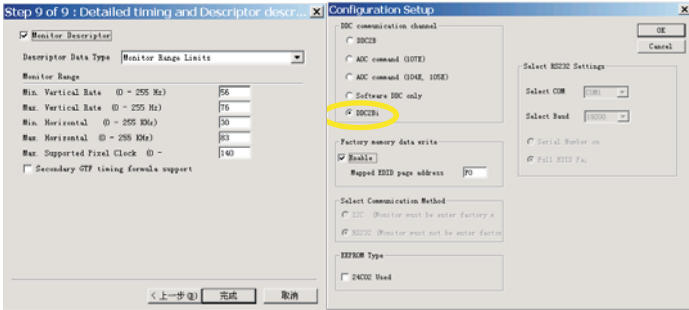


Fig. 22

Fig. 23

2. Access Factory Mode

- Turn off monitor.
- [Push "AUTO" & "OK" buttons at the same time and hold them] + [Press "power" button until comes out "Windows screen"] => then release all buttons
- Press "OK" button, wait until the OSD menu with Characters "Smart Image " "Factory " (below OSD menu) come on the Screen of the monitor. as shown in Fig24.

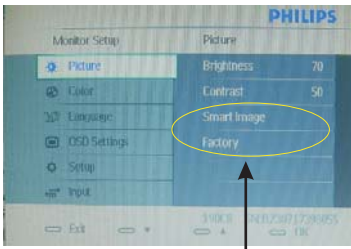


Fig. 24

Factory Mode indicator

- Push "AUTO" to exit OSD menu.
- Click (Write EDID) icon from the tool bar to write DDC data. Then wait for 20-30 seconds ,DDC data will be finished Writing.

Step 6: Save DDC data

Sometimes, you may need to save DDC data as a text file for using in other IC chip. To save DDC data, follow the steps below:

- Click (Save) icon (or click "file"-> "save as") from the tool bar and give a file name as shown in Fig. 25. The file type is EDID46 file (*.ddc) which can be open in WordPad. By using WordPad, the texts of DDC data & table (128 bytes, hex code) can be modified. If DDC TEXTS & HEX Table ar completely correct, it can be saved as .ddc file to re-load it into DDC IC for DDC Data application.

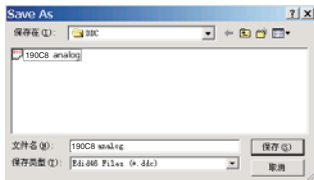


Fig. 25

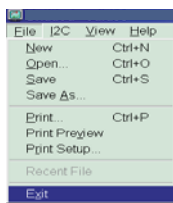


Fig. 26

- Click Save.

Step 7: Exit DDC program

Pull down the File menu and select Exit as shown in Fig. 26.

Step 8: Modify serial number in OSD

- Unzip the serial number.zip to your computer, then open the folder as shown in Fig.27.
- If use Win98 OS, you can execute SN.exe directly. If use Win2000 or XP OS, first, you must execute install.bat, then execute SN.exe
- Set I2C bus (press the left-top button of operating window) as shown in Fig.28, then press " SET" button.
- Set Block2 as shown in Fig.29
- key in new serial number, then press " Write" button as shown in Fig.29 , Click " WRITE" button.
- It will appear "Serial Number Write OK" , Click "Enter" to finish it.

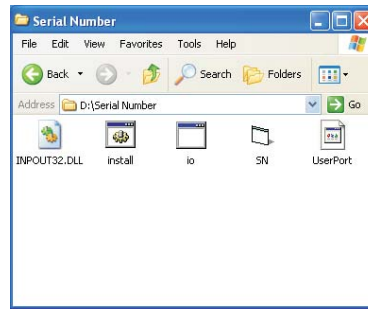


Fig.27

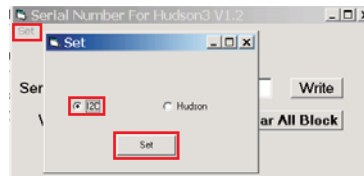


Fig.28

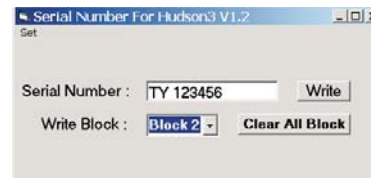


Fig.29

Step9:

- Disconnect the monitor power cord and connect it again.
- Press the OK button to bring up the OSD main manu.
- Re-confirm the serial Number is updated as shown in Fig.30.

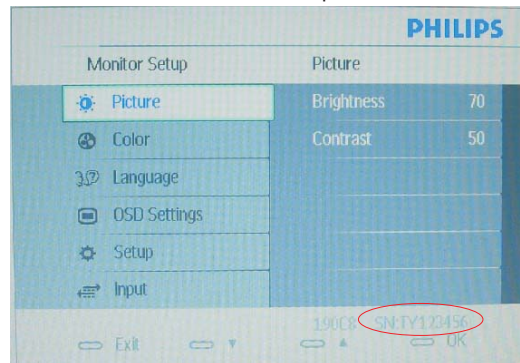


Fig.30

Re-programming Digital DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 31.

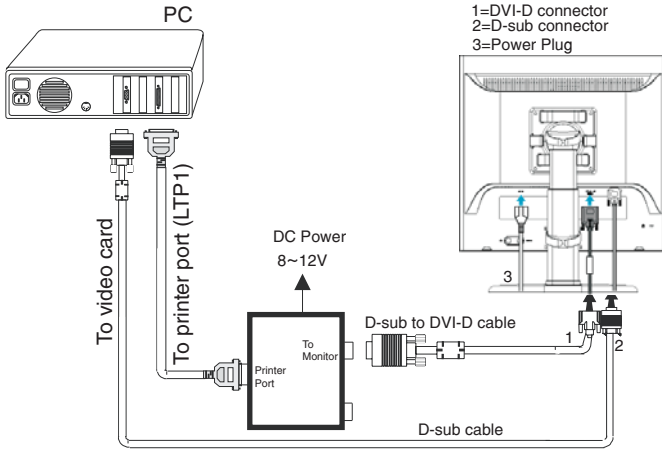


Fig. 31

Step 2: Read DDC data from monitor

- 1. Click icon as shown in Fig. 11 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 32.

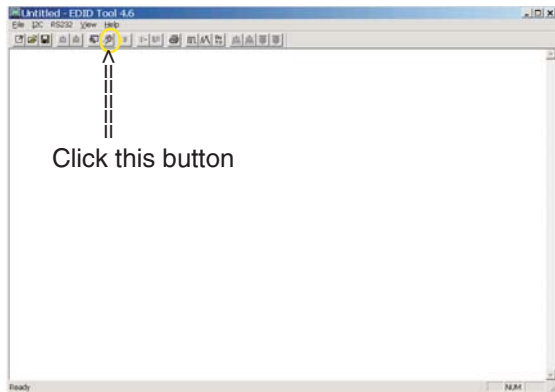


Fig. 32

- 2. Select the DDC2Bi as the communication channel. As shown in Fig. 33.

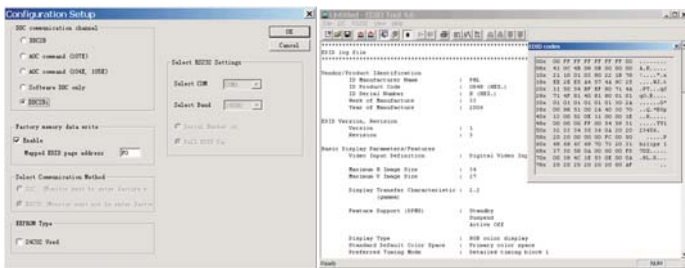


Fig. 33

Fig. 34

- 3. Click OK button to confirm your selection.
- 4. Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 34.

Step 3: Modify DDC data (verify EDID version, week, year)

Click icon (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 35. EDID46 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

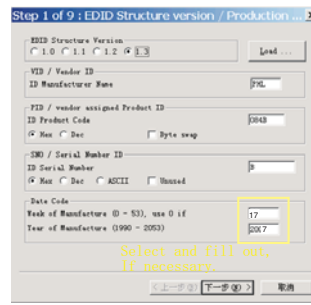


Fig. 35

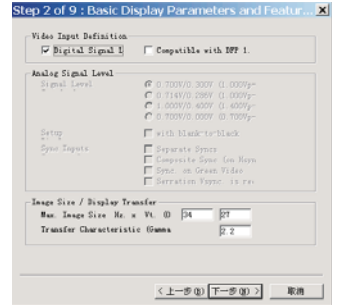


Fig. 36

Step 4: Modify DDC data (Monitor Serial No.)

- 1. Click Next, bring up Fig. 36.
- 2. Click Next, bring up Fig. 37.
- 3. Click Next, bring up Fig. 38.

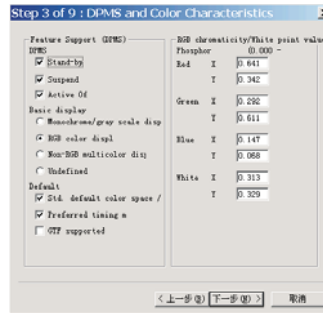


Fig. 37

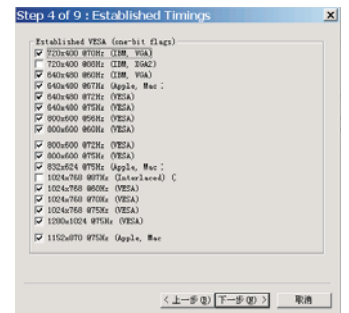


Fig. 38

- 4. Click Next, bring up Fig. 39.
- 5. Click Next, bring up Fig. 40.

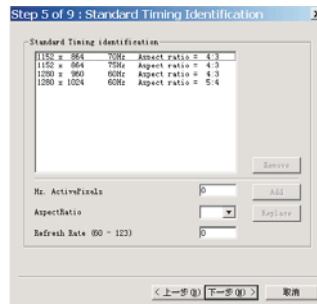


Fig. 39

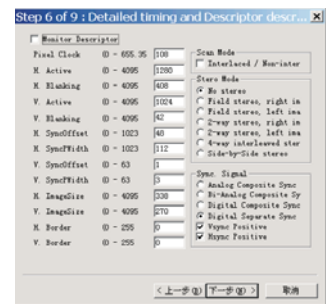


Fig. 40

- 6. Click Next, bring up Fig. 41. In this step, please confirm the Descriptor Data Type is Monitor Range Limits, and all the items are same as below.
- 7. Click Next, bring up Fig. 42.



Fig. 41



Fig. 42

8. Click Next , bring up Fig. 43.
 - In this step, please confirm the Descriptor Data Type is Monitor Range Limits, and all the items are same as below.
 - Click Finish to exit the Step window.
 - Serial number can be filled up at this moment (for example, TY 123456).

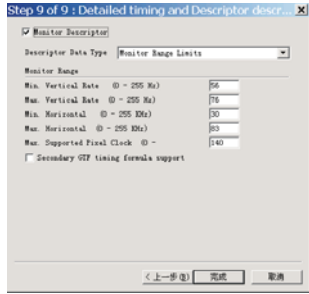


Fig. 43

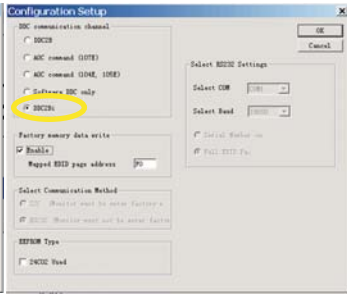
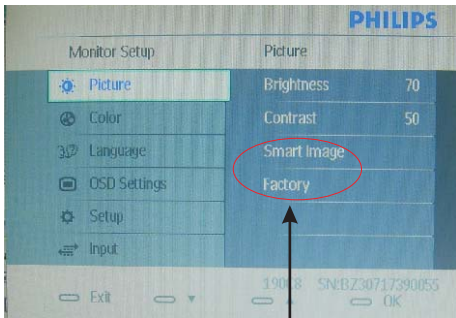


Fig. 44

Step 5: Write DDC data

1. Configuration should be as Fig. 40. And press OK.
2. Access Factory Mode
 - 1). Turn off monitor.
 - 2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button until comes out "Windows screen"] => then release all buttons
 - 3). Press "OK" button, wait until the OSD menu with Characters "Smart image" "Factory" (below OSD menu) come on the Screen of the monitor. as shown in Fig24.



Factory Mode indicator

Fig. 45

- 3) Push "Menu" to exit OSD menu.
3. Click (Write EDID) icon from the tool bar to write DDC data. Then wait for 20-30 seconds ,DDC data will be finished Writing.

Step 6: Save DDC data

Sometimes, you may need to save DDC data as a text file for using in other IC chip. To save DDC data, follow the steps below:

1. Click (Save) icon (or click "file"-> "save as") from the tool bar and give a file name as shown in Fig. 46.

The file type is EDID46 file (*.ddc) which can be open in WordPad. By using WordPad, the texts of DDC data & table (128 bytes, hex code) can be modified. If DDC TEXTS & HEX Table ar completely correct, it can be saved as *.ddc file to re-load it into DDC IC for DDC Data Application.

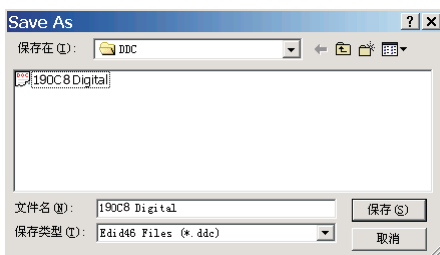


Fig.46

2. Click Save.

Step 7: Exit DDC program

Pull down the File menu and select Exit as shown in Fig. 47.

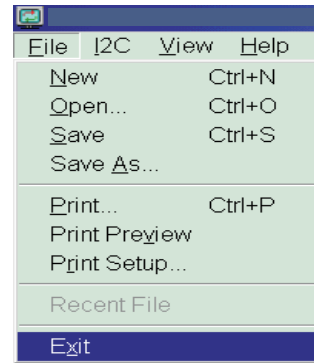


Fig. 47

Step 8: Turn off the monitor, exit the factory mode.

Serial Number Definition

BOM Code

Panel Supplier	CODE
AUO	1
CPT	2
LPL(LG)	3
QDI	4
CMO	5

B Z 1 A 0 6 2 5 0 0 0 0 1

- SERIAL NO
- YEAR/WEEK
- SERVICE VERSION CHANGE CODE
- BOM CODE(BILL OF MATERIAL)CODE
- SITE CODE(PRODUCTION CENTER)
BZ CODE(AR-CZECH REPUBLIC
VN-HUNGARY(SZR),BZ-SUZHOU
DS-DONGGUAN)

For LPL panel (analog DDC) (170C8)

 EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
 ID Product Code : C016 (HEX.)
 ID Serial Number : 123456 (HEX.)
 Week of Manufacture : 19
 Year of Manufacture : 2007

EDID Version, Revision

Version : 1
 Revision : 3

Basic Display Parameters/Features

Video Input Definition : Analog Video Input
 0.700V/0.300V (1.00Vpp)
 Blank-to-Black Setup
 Separate Sync
 Composite Sync
 Sync on Green
 Serration required

Maximum H Image Size : 34
 Maximum V Image Size : 27

Display Transfer Characteristic : 2.2
 (gamma)

Feature Support (DPMS) : no Standby
 no Suspend
 Active Off

Display Type : RGB color display
 Preferred Timing Mode : Detailed timing block 1

Color Characteristics

Red X coordinate : 0.635
 Red Y coordinate : 0.342
 Green X coordinate : 0.298
 Green Y coordinate : 0.611
 Blue X coordinate : 0.147
 Blue Y coordinate : 0.07
 White X coordinate : 0.313
 White Y coordinate : 0.329

Established Timings

Established Timings I : 720 x 400 @70Hz (IBM,VGA)
 640 x 480 @60Hz (IBM,VGA)
 640 x 480 @67Hz (Apple,Mac II)
 640 x 480 @72Hz (VESA)
 640 x 480 @75Hz (VESA)
 800 x 600 @56Hz (VESA)
 800 x 600 @60Hz (VESA)

Established Timings II : 800 x 600 @72Hz (VESA)
 800 x 600 @75Hz (VESA)
 832 x 624 @75Hz (Apple,Mac II)
 1024 x 768 @60Hz (VESA)
 1024 x 768 @70Hz (VESA)
 1024 x 768 @75Hz (VESA)
 1280 x 1024 @75Hz (VESA)

Manufacturer's timings : 1152 x 870 @75Hz (Apple,Mac II)

Standard Timing Identification #1

Horizontal active pixels : 1280
 Aspect Ratio : 5:4
 Refresh Rate : 60

Standard Timing Identification #2

Horizontal active pixels : 1152
 Aspect Ratio : 4:3
 Refresh Rate : 75

Detailed Timing #1

Pixel Clock (MHz) : 108
 H Active (pixels) : 1280
 H Blanking (pixels) : 408
 V Active (lines) : 1024
 V Blanking (lines) : 42
 H Sync Offset (F Porch) (pixels): 48
 H Sync Pulse Width (pixels) : 112
 V Sync Offset (F Porch) (lines) : 1
 V Sync Pulse Width (lines) : 3
 H Image Size (mm) : 338
 V Image Size (mm) : 270
 H Border (pixels) : 0
 V Border (lines) : 0
 Flags : Non-interlaced

: Normal Display, No stereo
 : Digital Separate sync.
 : Positive Vertical Sync.
 : Positive Horizontal Sync.

Monitor Descriptor #2

Serial Number : TY10623123456

Monitor Descriptor #3

Monitor Name : Philips 170C

Monitor Descriptor #4

Monitor Range Limits
 Min. Vt rate Hz : 56
 Max. Vt rate Hz : 76
 Min. Horiz. rate kHz : 30
 Max. Horiz. rate kHz : 83
 Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 8F (HEX.)

 EDID data (128 bytes)

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
 8: 41 9: 0c 10: 16 11: c0 12: 56 13: 34 14: 12 15: 00
 16: 13 17: 11 18: 01 19: 03 20: 1f 21: 22 22: 1b 23: 78
 24: 2a 25: a6 26: c5 27: a2 28: 57 29: 4c 30: 9c 31: 25
 32: 12 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
 40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
 48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
 56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
 64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
 72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
 80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
 88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
 96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
 104: 37 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
 112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
 120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 8f

DDC DATA

For CPT panel (analog DDC)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
 ID Product Code : C016 (HEX.)
 ID Serial Number : 123456 (HEX.)
 Week of Manufacture : 19
 Year of Manufacture : 2007

EDID Version, Revision

Version : 1
 Revision : 3

Basic Display Parameters/Features

Video Input Definition : Analog Video Input
 0.700V/0.300V (1.00Vpp)
 Blank-to-Black Setup
 Separate Sync
 Composite Sync
 Sync on Green
 Serration required

Maximum H Image Size : 34
 Maximum V Image Size : 27

Display Transfer Characteristic : 2.2
 (gamma)

Feature Support (DPMS) : no Standby
 no Suspend
 Active Off

Display Type : RGB color display
 Preferred Timing Mode : Detailed timing block 1

Color Characteristics

Red X coordinate : 0.655
 Red Y coordinate : 0.327
 Green X coordinate : 0.273
 Green Y coordinate : 0.617
 Blue X coordinate : 0.144
 Blue Y coordinate : 0.079
 White X coordinate : 0.313
 White Y coordinate : 0.329

Established Timings

Established Timings I : 720 x 400 @70Hz (IBM,VGA)
 640 x 480 @60Hz (IBM,VGA)
 640 x 480 @67Hz (Apple,Mac II)
 640 x 480 @72Hz (VESA)
 640 x 480 @75Hz (VESA)
 800 x 600 @56Hz (VESA)
 800 x 600 @60Hz (VESA)

Established Timings II : 800 x 600 @72Hz (VESA)
 800 x 600 @75Hz (VESA)
 832 x 624 @75Hz (Apple,Mac II)
 1024 x 768 @60Hz (VESA)
 1024 x 768 @70Hz (VESA)
 1024 x 768 @75Hz (VESA)
 1280 x 1024 @75Hz (VESA)

Manufacturer's timings : 1152 x 870 @75Hz (Apple,Mac II)

Standard Timing Identification #1

Horizontal active pixels : 1280
 Aspect Ratio : 5:4
 Refresh Rate : 60

Standard Timing Identification #2

Horizontal active pixels : 1152
 Aspect Ratio : 4:3
 Refresh Rate : 75

Detailed Timing #1

Pixel Clock (MHz) : 108
 H Active (pixels) : 1280
 H Blanking (pixels) : 408
 V Active (lines) : 1024
 V Blanking (lines) : 42
 H Sync Offset (F Porch) (pixels): 48
 H Sync Pulse Width (pixels) : 112
 V Sync Offset (F Porch) (lines) : 1
 V Sync Pulse Width (lines) : 3
 H Image Size (mm) : 338
 V Image Size (mm) : 270
 H Border (pixels) : 0
 V Border (lines) : 0
 Flags : Non-interlaced
 : Normal Display, No stereo
 : Digital Separate sync.
 : Positive Vertical Sync.
 : Positive Horizontal Sync.

Monitor Descriptor #2

Serial Number : TY10623123456

Monitor Descriptor #3

Monitor Name : Philips 170C

Monitor Descriptor #4

Monitor Range Limits
 Min. Vt rate Hz : 56
 Max. Vt rate Hz : 76
 Min. Horiz. rate kHz : 30
 Max. Horiz. rate kHz : 83
 Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 37 (HEX.)

EDID data (128 bytes)

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
 8: 41 9: 0c 10: 16 11: c0 12: 56 13: 34 14: 12 15: 00
 16: 13 17: 11 18: 01 19: 03 20: 1f 21: 22 22: 1b 23: 78
 24: 2a 25: f0 26: d5 27: a7 28: 53 29: 46 30: 9e 31: 24
 32: 14 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
 40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
 48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
 56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
 64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
 72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
 80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
 88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
 96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
 104: 37 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
 112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
 120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 37

For LPL panel (analog DDC)(190C8)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
 ID Product Code : C017 (HEX.)
 ID Serial Number : 123456 (HEX.)
 Week of Manufacture : 19
 Year of Manufacture : 2007

EDID Version, Revision

Version : 1
 Revision : 3

Basic Display Parameters/Features

Video Input Definition : Analog Video Input
 0.700V/0.300V (1.00Vpp)
 Blank-to-Black Setup
 Separate Sync
 Composite Sync
 Sync on Green
 Serration required

Maximum H Image Size : 38
 Maximum V Image Size : 30

Display Transfer Characteristic : 2.2
 (gamma)

Feature Support (DPMS) : no Standby
 no Suspend
 Active Off

Display Type : RGB color display
 Preferred Timing Mode : Detailed timing block 1

Color Characteristics

Red X coordinate : 0.639
 Red Y coordinate : 0.342
 Green X coordinate : 0.297
 Green Y coordinate : 0.615
 Blue X coordinate : 0.146
 Blue Y coordinate : 0.068
 White X coordinate : 0.313
 White Y coordinate : 0.329

Established Timings

Established Timings I : 720 x 400 @70Hz (IBM,VGA)
 640 x 480 @60Hz (IBM,VGA)
 640 x 480 @67Hz (Apple,Mac II)
 640 x 480 @72Hz (VESA)
 640 x 480 @75Hz (VESA)
 800 x 600 @56Hz (VESA)
 800 x 600 @60Hz (VESA)

Established Timings II : 800 x 600 @72Hz (VESA)
 800 x 600 @75Hz (VESA)
 832 x 624 @75Hz (Apple,Mac II)
 1024 x 768 @60Hz (VESA)
 1024 x 768 @70Hz (VESA)
 1024 x 768 @75Hz (VESA)
 1280 x 1024 @75Hz (VESA)

Manufacturer's timings : 1152 x 870 @75Hz (Apple,Mac II)

Standard Timing Identification #1

Horizontal active pixels : 1280
 Aspect Ratio : 5:4
 Refresh Rate : 60

Standard Timing Identification #2

Horizontal active pixels : 1152
 Aspect Ratio : 4:3
 Refresh Rate : 75

Detailed Timing #1

Pixel Clock (MHz) : 108
 H Active (pixels) : 1280
 H Blanking (pixels) : 408
 V Active (lines) : 1024
 V Blanking (lines) : 42
 H Sync Offset (F Porch) (pixels): 48
 H Sync Pulse Width (pixels) : 112
 V Sync Offset (F Porch) (lines) : 1
 V Sync Pulse Width (lines) : 3
 H Image Size (mm) : 338
 V Image Size (mm) : 270
 H Border (pixels) : 0
 V Border (lines) : 0
 Flags : Non-interlaced

: Normal Display, No stereo
 : Digital Separate sync.
 : Positive Vertical Sync.
 : Positive Horizontal Sync.

Monitor Descriptor #2

Serial Number : TY10623123456

Monitor Descriptor #3

Monitor Name : Philips 190C

Monitor Descriptor #4

Monitor Range Limits
 Min. Vt rate Hz : 56
 Max. Vt rate Hz : 76
 Min. Horiz. rate kHz : 30
 Max. Horiz. rate kHz : 83
 Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : A8 (HEX.)

EDID data (128 bytes)

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
 8: 41 9: 0c 10: 17 11: c0 12: 56 13: 34 14: 12 15: 00
 16: 13 17: 11 18: 01 19: 03 20: 1f 21: 26 22: 1e 23: 78
 24: 2a 25: a2 26: a5 27: a3 28: 57 29: 4c 30: 9d 31: 25
 32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
 40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
 48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
 56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
 64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
 72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
 80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
 88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
 96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
 104: 39 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
 112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
 120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: a8

DDC DATA

For HSD panel (analog DDC)(190C8)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
 ID Product Code : C017 (HEX.)
 ID Serial Number : 123456 (HEX.)
 Week of Manufacture : 19
 Year of Manufacture : 2007

EDID Version, Revision

Version : 1
 Revision : 3

Basic Display Parameters/Features

Video Input Definition : Analog Video Input
 0.700V/0.300V (1.00Vpp)
 Blank-to-Black Setup
 Separate Sync
 Composite Sync
 Sync on Green
 Serration required

Maximum H Image Size : 38
 Maximum V Image Size : 30

Display Transfer Characteristic : 2.2
 (gamma)

Feature Support (DPMS) : no Standby
 no Suspend
 Active Off

Display Type : RGB color display
 Preferred Timing Mode : Detailed timing block 1

Color Characteristics

Red X coordinate : 0.641
 Red Y coordinate : 0.337
 Green X coordinate : 0.304
 Green Y coordinate : 0.62
 Blue X coordinate : 0.141
 Blue Y coordinate : 0.073
 White X coordinate : 0.313
 White Y coordinate : 0.329

Established Timings

Established Timings I : 720 x 400 @70Hz (IBM,VGA)
 640 x 480 @60Hz (IBM,VGA)
 640 x 480 @67Hz (Apple,Mac

II)

640 x 480 @72Hz (VESA)
 640 x 480 @75Hz (VESA)
 800 x 600 @56Hz (VESA)
 800 x 600 @60Hz (VESA)

Established Timings II : 800 x 600 @72Hz (VESA)
 800 x 600 @75Hz (VESA)
 832 x 624 @75Hz (Apple,Mac

II)

1024 x 768 @60Hz (VESA)
 1024 x 768 @70Hz (VESA)
 1024 x 768 @75Hz (VESA)
 1280 x 1024 @75Hz (VESA)

Manufacturer's timings : 1152 x 870 @75Hz
 (Apple,Mac II)

Standard Timing Identification #1

Horizontal active pixels : 1280
 Aspect Ratio : 5:4

Standard Timing Identification #2

Horizontal active pixels : 1152
 Aspect Ratio : 4:3
 Refresh Rate : 75

Detailed Timing #1

Pixel Clock (MHz) : 108
 H Active (pixels) : 1280
 H Blanking (pixels) : 408
 V Active (lines) : 1024
 V Blanking (lines) : 42
 H Sync Offset (F Porch) (pixels): 48
 H Sync Pulse Width (pixels) : 112
 V Sync Offset (F Porch) (lines) : 1
 V Sync Pulse Width (lines) : 3
 H Image Size (mm) : 338
 V Image Size (mm) : 270
 H Border (pixels) : 0
 V Border (lines) : 0
 Flags : Non-interlaced

: Normal Display, No stereo
 : Digital Separate sync.
 : Positive Vertical Sync.
 : Positive Horizontal Sync.

Monitor Descriptor #2

Serial Number : TY10623123456

Monitor Descriptor #3

Monitor Name : Philips 190C

Monitor Descriptor #4

Monitor Range Limits
 Min. Vt rate Hz : 56
 Max. Vt rate Hz : 76
 Min. Horiz. rate kHz : 30
 Max. Horiz. rate kHz : 83
 Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 99 (HEX.)

EDID data (128 bytes)

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
 8: 41 9: 0c 10: 17 11: c0 12: 56 13: 34 14: 12 15: 00
 16: 13 17: 11 18: 01 19: 03 20: 1f 21: 26 22: 1e 23: 78
 24: 2a 25: 1f 26: 35 27: a4 28: 56 29: 4d 30: 9e 31: 24
 32: 12 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
 40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
 48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
 56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
 64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
 72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
 80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
 88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
 96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
 104: 39 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
 112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
 120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 99

Configuration and procedure

"Easywriter " The software is provided by Novatek to upgrade the firmware of CPU.

It is a windows-based program, which cannot be run in MS-DOS.
DDC2BI_ISP TOOL (3138 149 53161) is for the interface between "Parallel Port of PC" and "15 pin-D-SUB connector of Monitor".

System and equipment requirements

1. An i486 (or above) personal computer or compatible.
2. Microsoft operation system Windows 95/98/2000/XP.
3. ISP Software " Easywrite "
4. DDC2BI_ISP TOOL (3138 106 10396) as shown in Fig. 1

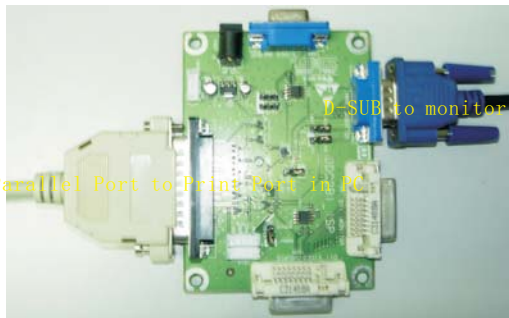


Fig. 1

5. Connect DDC2BI_ISP TOOL and Mains cord to Monitor as shown in Fig. 2.

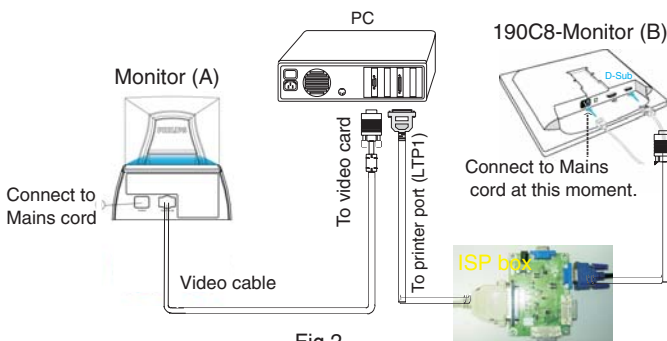


Fig.2

6. Install and setup the Easywriter program

- Step 1 : Make a folder in your PC as shown in Fig. 3.
For example : C:\190C8
- Step 2 : Copy ISP Software Easywriter.zip into your folder as shown in Fig.3.
- Step 3 : Unzip Easywriter.zip into your folder as shown in Fig. 3.
- Step 4 : Double click the EasyWriterV2.4p2 icon to install the Application as Fig. 4.

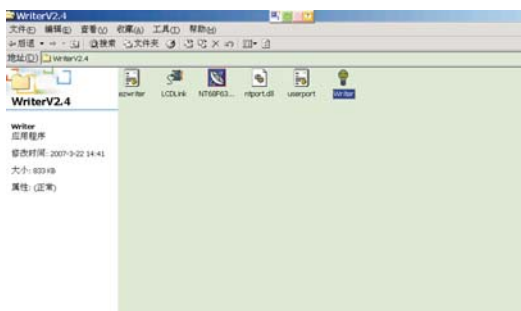


Fig. 3

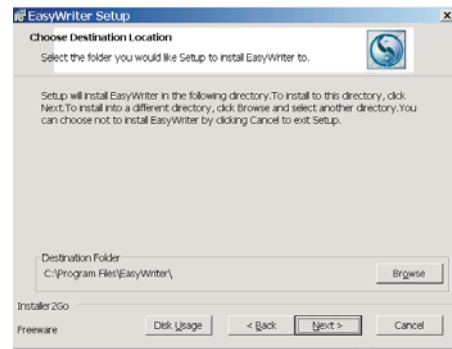


Fig. 4

- Step 5 :Copy the hexcode 190C8 to C:\190C8 as shown in Fig. 5 .

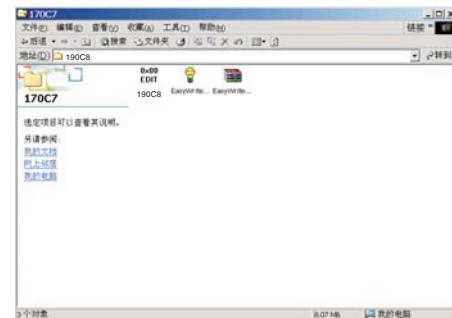


Fig. 5

Update the firmware

1. Double click the Easywriter.exe icon in desktop then appears window as shown in Fig.7 .

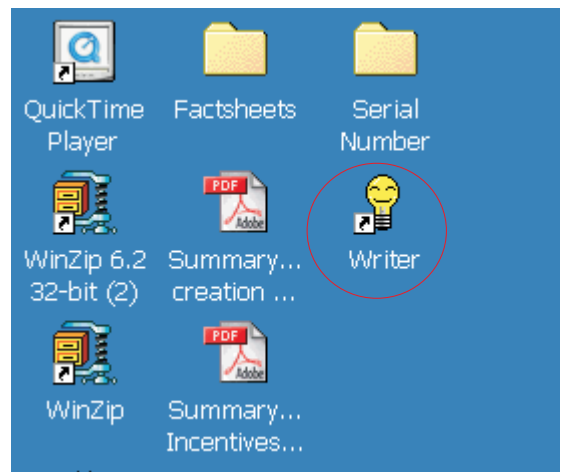


Fig. 6

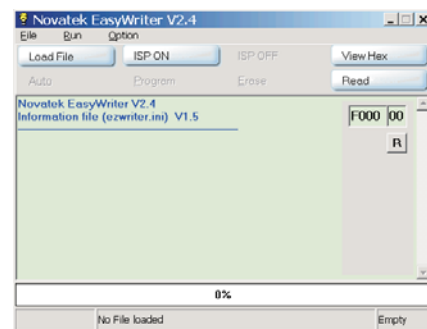


Fig. 7

2. Press the Load hex then select the hex as shown in Fig. 8.

Firmware Upgrade for CPU

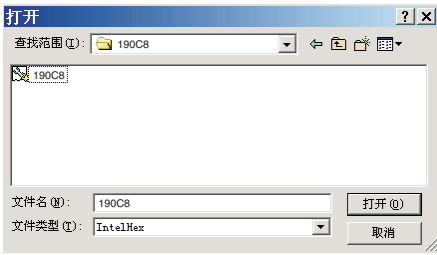


Fig. 8

3 Press the AUTO to running program , the firmware be updated as shown in Fig. 9~10.

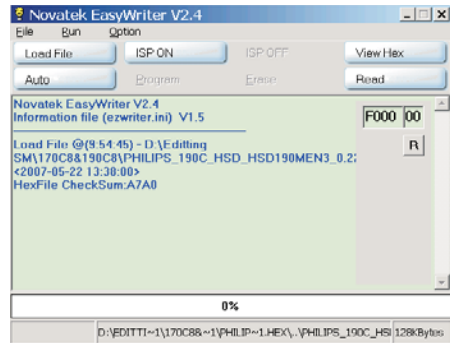


Fig. 9

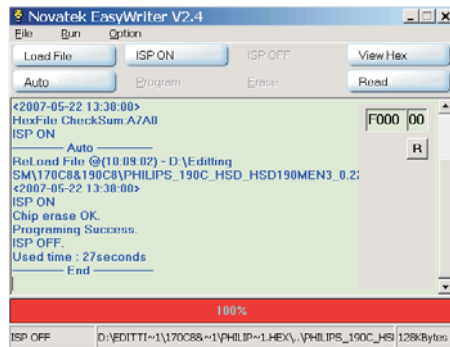


Fig. 10

4 Press the file --> exit to end program , as shown in Fig. 11.

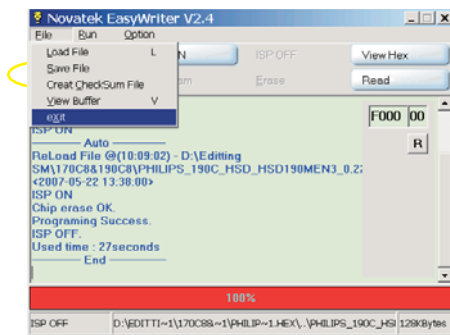


Fig. 11

If there is a warning message coming as shown in Fig 12. , you have to check the AC power, Video cable, or Novatek MCU.

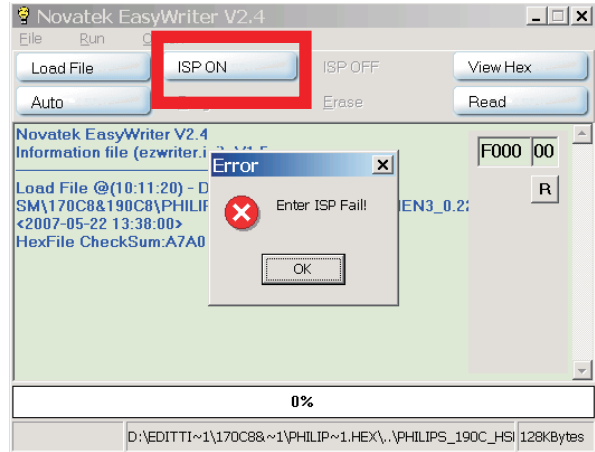


Fig. 12

5 Check the firmware version

- 1). Turn off monitor.
- 2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button until comes out "Windows screen"] => then release all buttons.
- 3). Press "OK" button, choose "Factory" come on the OSD menu. You will find, after upgrade, the version have already changed from The former "HUDSON 170C7 V010 2006/06/29" to the Present "HUDSON 170C7 V011 2006/07/19" as shown in Fig. 13 and Fig. 14.



Factory Mode indicator

Fig. 13



Factory Mode indicator

Fig. 14

4) Turn off the monitor, exit the factory mode.

General FAQs

Q: When I install my monitor what should I do if the screen shows 'Cannot display this video mode'?

A: Recommended video mode for Philips 17": 1280x1024 @60Hz.

1. Unplug all cables, then connect your PC to the monitor that you used previously.
2. In the Windows Start Menu, select Settings/Control Panel. In the Control Panel Window, select the Display icon. Inside the Display Control Panel, select the 'Settings' tab. Under the setting tab, in box labeled 'desktop area', move the slidebar to 1280x1024 pixels (17").
3. Open 'Advanced Properties' and set the Refresh Rate to 60Hz, then click OK.
4. Restart your computer and repeat step 2 and 3 to verify that your PC is set at 1280x1024@60Hz (17").
5. Shut down your computer, disconnect your old monitor and reconnect your Philips LCD monitor.
6. Turn on your monitor and then turn on your PC.

Q: What does 'refresh rate' mean in connection with an LCD monitor?

A: The refresh rate is of much less relevance for LCD monitors. LCD monitors display a stable, flicker-free image at 60Hz. There is no visible difference between 85Hz and 60Hz.

Q: What are the .inf and .icm files on the CD-ROM? How do I install the drivers (.inf and .icm)?

A: These are the driver files for your monitor. Follow the instructions in your user manual to install the drivers. Your computer may ask you for monitor drivers (.inf and .icm files) or a driver disk when you first install your monitor. Follow the instructions to Insert the (companion CD-ROM) included in this package. Monitor drivers (.inf and .icm files) will be installed automatically.

Q: How do I adjust the resolution?

A: Your video card/graphic driver and monitor together determine the available resolutions. You can select the desired resolution under Windows Control Panel with the "Display properties"

Q: What if I get lost when I am making monitor adjustments?

A: Simply press the OK button, then select 'Reset' to recall all of the original factory settings.

Q: What is the Auto function?

A: The *AUTO adjustment* key restores the optimal screen position, phase and clock settings by pressing of a single button without the need to navigate through OSD (On Screen Display) menus and control keys.

Note: Auto function is available in selected models only.

Q: My Monitor has no power (Power LED does not light up). What should I do?

A: Make sure the AC power cord is connected between the monitor and AC outlet, and click a key on keyboard/mouse to wake up the PC.

Q: Will the LCD monitor accept an interlaced signal under PC models?

A: No. If an Interlace signal is used, the screen displays both odd and even horizontal scanning lines at the same time, thus distorting the picture.

Q: What does the Refresh Rate mean for LCD?

A: Unlike CRT display technology, in which the speed of the electron beam is swept from the top to the bottom of the screen determines flicker, an active matrix display uses an active element (TFT) to control each individual pixel and the refresh rate is therefore not really applicable to LCD technology.

Q: Will the LCD screen be resistant to scratches?

A: A protective coating is applied to the surface of the LCD, which is durable to a certain extent (approximately up to the hardness of a 2H pencil). In general, it is recommended that the panel surface is not subject to any excessive shocks or scratches.

Q: How should I clean the LCD surface?

A: For normal cleaning, use a clean, soft cloth. For extensive cleaning, please use isopropyl alcohol. Do not use other solvents such as ethyl alcohol, ethanol, acetone, hexane, etc

Q: Can I change the color setting of my monitor?

A: Yes, you can change your color setting through OSD control as the following procedures,

1. Press "OK" to show the OSD (On Screen Display) menu?

2. Press "Down Arrow" to select the option "Color" then press "OK" to enter color setting, there are four settings as below.

a. Color Temperature; The six settings are 5000K, 6500K, 7500K, 8200K, 9300K and 11500K. With settings in the 5000K range the panel appears

'warm,' with a red-white color tone, while a 11500K temperature yields 'cool, blue-white toning.'

b. sRGB; this is a standard setting for ensuring correct exchange of colors between different device (e.g. digital cameras, monitors, printers, scanners, etc)

c. User Define; the user can choose his/her preference color setting by adjusting red, green blue color.

*A measurement of the color of light radiated by an object while it is being heated. This measurement is expressed in terms of absolute scale, (degrees Kelvin). Lower Kelvin temperatures such as 2004K are red; higher temperatures such as 9300K are blue. Neutral temperature is white, at 6504K.

Q: Can the Philips LCD Monitor be mounted on the wall?

A: Yes. Philips LCD monitors have this optional feature. For standard VESA mount holes on the rear cover allows the user to mount the Philips monitor on most of the VESA standard arms or accessories. We recommend to contact your Philips sales representative for more information.

Screen Adjustments

Q: When I install my monitor, how do I get the best performance from the monitor?

A: For best performance, make sure your display settings are set at 1280x1024@60Hz for 17". Note: You can check the current display settings by pressing the OSD OK button once. The current display mode is shown in OSD first page

FAQs (Frequently Asked Questions)

Q: How do LCDs compare to CRTs in terms of radiation?

A: Because LCDs do not use an electron gun, they do not generate the same amount of radiation at the screen surface.

Compatibility with other Peripherals

Q: Can I connect my LCD monitor to any PC, workstation or Mac?

A: Yes. All Philips LCD monitors are fully compatible with standard PCs, Macs and workstations. You may need a cable adapter to connect the monitor to your Mac system. Please contact your Philips sales representative for more information.

Q: Are Philips LCD monitors Plug-and-Play?

A: Yes, the monitors are Plug-and-Play compatible with Windows 95, 98, 2000, XP and Vista

Q: What is USB (Universal Serial Bus)?

A: Think of USB as a smart plug for PC peripherals. USB automatically determines resources (like driver software and bus bandwidth) required by peripherals. USB makes necessary resources available without user intervention. There are three main benefits of USB. USB eliminates "case anxiety," the fear of removing the computer case to install circuit board cards -- that often requires adjustment of complicated IRQ settings -- for add-on peripherals. USB does away with "port gridlock." Without USB, PCs are normally limited to one printer, two Com port devices (usually a mouse and modem), one Enhanced Parallel Port add-on (scanner or video camera, for example), and a joystick. More and more peripherals for multimedia computers come on the market every day. With USB, up to 127 devices can run simultaneously on one computer. USB permits "hot plug-in." No need to shut down, plug in, reboot and run set up to install peripherals. No need to go through the reverse process to unplug a device. Bottom line: USB transforms today's "Plug-and-Pray" into true Plug-and-Play! Please refer to glossary for more information about USB.

Q: What is a USB hub ?

A: A USB hub provides additional connections to the Universal Serial Bus. A hub's upstream port connects a hub to the host, usually a PC. Multiple downstream ports in a hub allows connection to another hub or device, such as a USB keyboard, camera or printer.

LCD Panel Technology

Q: What is a Liquid Crystal Display?

A: A Liquid Crystal Display (LCD) is an optical device that is commonly used to display ASCII characters and images on digital items such as watches, calculators, portable game consoles, etc. LCD is the technology used for displays in notebooks and other small computers. Like light-emitting diode and gas-plasma technologies, LCD allows displays to be much thinner than cathode ray tube (CRT) technology. LCD consumes much less power than LED and gas-displays because it works on the principle of blocking light rather than emitting it.

Q: What differentiates passive matrix LCDs from active matrix LCDs?

A: An LCD is made with either a passive matrix or an active matrix display grid. An active matrix has a transistor located at each pixel intersection, requiring less current to control the luminance of a pixel. For this reason, the current in an active matrix display can be switched on and off more frequently, improving the screen refresh time (your mouse pointer will appear to move more smoothly across the screen, for example). The passive matrix LCD has a grid of conductors with pixels located at each intersection in the grid.

Q: What are the advantages of TFT LCD compared with CRT?

A: In a CRT monitor, a gun shoots electrons and general light by colliding polarized electrons on fluorescent glass. Therefore, CRT monitors basically operate with an analog RGB signal. A TFT LCD monitor is a device that displays an input image by operating a liquid crystal panel. The TFT has a fundamentally different structure than a CRT: Each cell has an active matrix structure and independent active elements. A TFT LCD has two glass panels and the space between them is filled with liquid crystal. When each cell is connected with electrodes and impressed with voltage, the molecular structure of the liquid crystal is altered and controls the amount of inlet lighting to display images. A TFT LCD has several advantages over a CRT, since it can be very thin and no flickering occurs because it does not use the scanning method.

Q: Why is vertical frequency of 60Hz optimal for an LCD monitor?

A: Unlike a CRT monitor, the TFT LCD panel has a fixed resolution. For example, an XGA monitor has 1024x3 (R, G, B) x 768 pixels and a higher resolution may not be available without additional software processing. The panel is designed to optimize the display for a 65MHz dot clock, one of the standards for XGA displays. Since the vertical/horizontal frequency for this dot clock is 60Hz/48kHz, the optimum frequency for this monitor is 60Hz

Q: What kind of wide-angle technology is available? How does it work?

A: The TFT LCD panel is an element that controls/displays the inlet of a backlight using the dual-refraction of a liquid crystal. Using the property that the projection of inlet light refracts toward the major axis of the liquid element, it controls the direction of inlet light and displays it. Since the refraction ratio of inlet light on liquid crystal varies with the inlet angle of the light, the viewing angle of a TFT is much narrower than that of a CRT. Usually, the viewing angle refers to the point where the contrast ratio is 10. Many ways to widen the viewing angle are currently being developed and the most common approach is to use a wide viewing angle film, which widens the viewing angle by varying the refraction ratio. IPS (In Plane Switching) or MVA (Multi Vertical Aligned) is also used to give a wider viewing angle.

Q: Why is there no flicker on an LCD Monitor?

A: Technically speaking, LCDs do flicker, but the cause of the phenomenon is different from that of a CRT monitor -- and it has no impact of the ease of viewing. Flickering in an LCD monitor relates to usually undetectable luminance caused by the difference between positive and negative voltage. On the other hand, CRT flickering that can irritate the human eye occurs when the on/off action of the fluorescent object becomes visible. Since the reaction speed of liquid crystal in an LCD panel is much slower, this troublesome form of flickering is not present in an LCD display

Q: Why is an LCD monitor virtually low of Electro Magnetic Interference?

A: Unlike a CRT, an LCD monitor does not have key parts that generate Electro Magnetic Interference, especially magnetic fields. Also, since an LCD display utilizes relatively low power, its power supply is extremely quiet.

Ergonomics, Ecology and Safety Standards

Q: What is the CE mark?

A: The CE (Conformit  Europeenne) mark is required to be displayed on all regulated products offered for sale on the European market. This 'CE' mark means that a product complies with the relevant European Directive. A European Directive is a European 'Law' that relates to health, safety, environment and consumer protection, much the same as the U.S. National Electrical Code and UL Standards.

Q: Does the LCD monitor conform to general safety standards?

A: Yes. Philips LCD monitors conform to the guidelines of MPR-II and TCO 99/03 standards for the control of radiation, electromagnetic waves, energy reduction, electrical safety in the work environment and recyclability. The specification page provides detailed data on safety standards.

More information is provided in the Regulatory Information section..

All units that are returned for service or repair must pass the original manufactures safety tests. Safety testing requires both Hipot and Ground Continuity testing.

HI-POT TEST INSTRUCTION

1. Application requirements

- 1.1 All mains operated products must pass the Hi-Pot test as described in this instruction.
- 1.2 This test must be performed again after the covers have been refitted following the repair, inspection or modification of the product.

2. Test method

2.1 Connecting conditions

- 2.1.1 The test specified must be applied between the parallel blade plug of the mains cord and all accessible metal parts of the product.
- 2.1.2 Before carrying out the test, reliable conductive connections must be ensured and thereafter be maintained throughout the test period.
- 2.1.3 The mains switch(es) must be in the "ON" position.

2.2 Test Requirements

All products should be HiPot and Ground Continuity tested as follows:

Condition	HiPot Test for products where the mains input range is Full range(or 220V AC)	HiPot Test for products where the mains input is 110V AC(USA type)	Ground Continuity Test requirement
Test voltage	2820VDC (2000VAC)	1700VDC (1200VAC)	Test current: 25A,AC
Test time (min.)	3 seconds	1 second	Test time: 3 seconds(min.)
Trip current (Tester)	set at 100 uA for Max. limitation; set at 0.1 uA for Min. Limitation	5 mA	Resistance required: $\leq 0.09 + R_{ohm}$, R is the resistance of the mains cord.
Ramp time (Tester)	set at 2 seconds		

- 2.2.1 The minimum test duration for Quality Control Inspector must be 1 minute.
- 2.2.2 The test voltage must be maintained within the specified voltage + 5%.
- 2.2.3 There must be no breakdown during the test.
- 2.2.4 The grounding blade or pin of mains plug must be conducted with accessible metal parts.

3. Equipments and Connection

3.1. Equipments

For example :

- ChenHwa 9032 PROGRAMMABLE AUTO SAFETY TESTER
- ChenHwa 510B Digital Grounding Continuity Tester
- ChenHwa 901 (AC Hi-pot test), 902 (AC, DC Hi-pot test) Withstanding Tester

3.2. Connection

- * Turn on the power switch of monitor before Hipot and Ground Continuity testing.

Clip

Clip

(ChenHwa 9032 tester)

Video cable

Connect the "video cable" or "grounding screw" to the CLIP on your tester.

Grounding screw

Connect the power cord to the monitor.

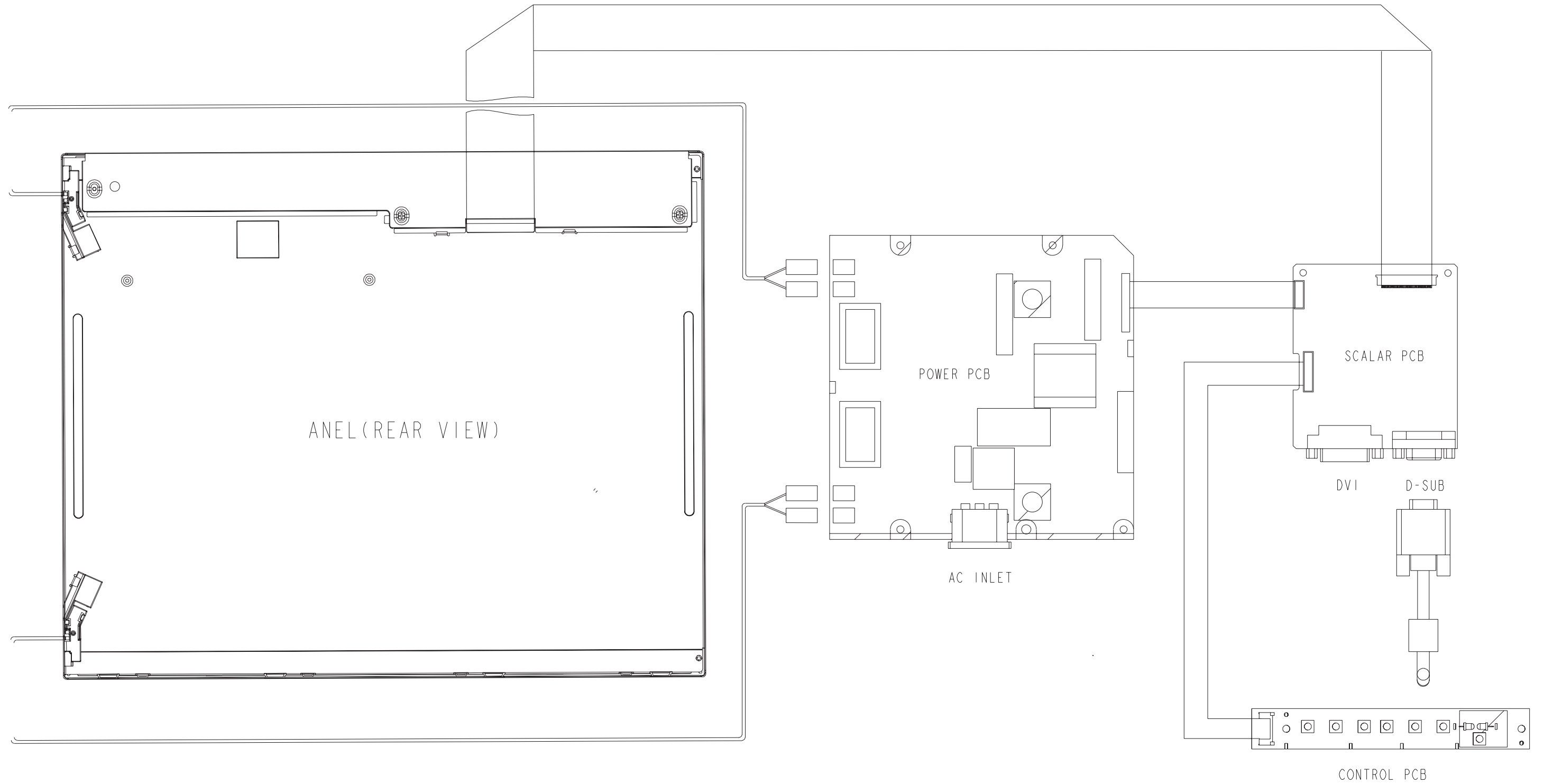
Power outlet

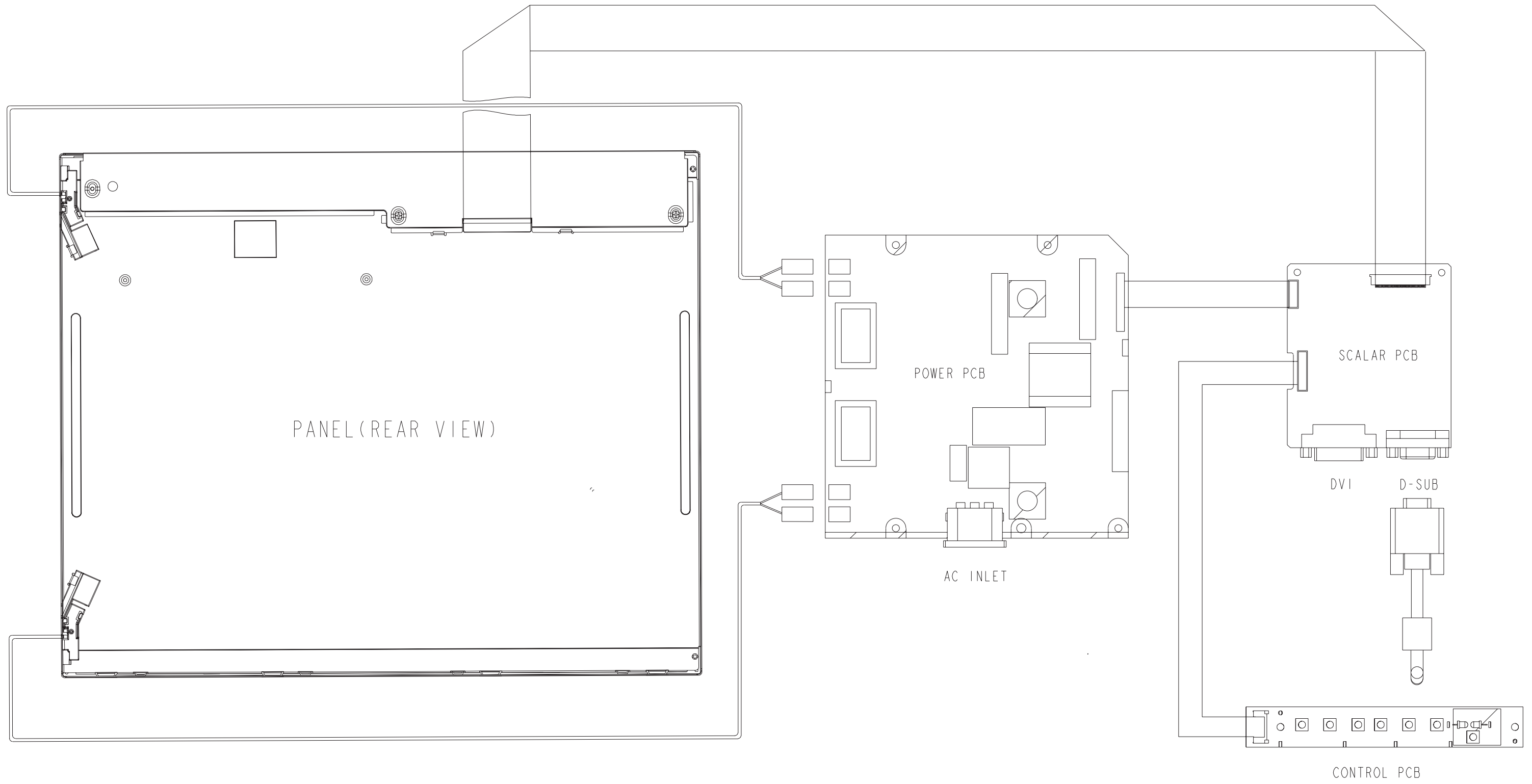
(Rear view of monitor)

4. Recording

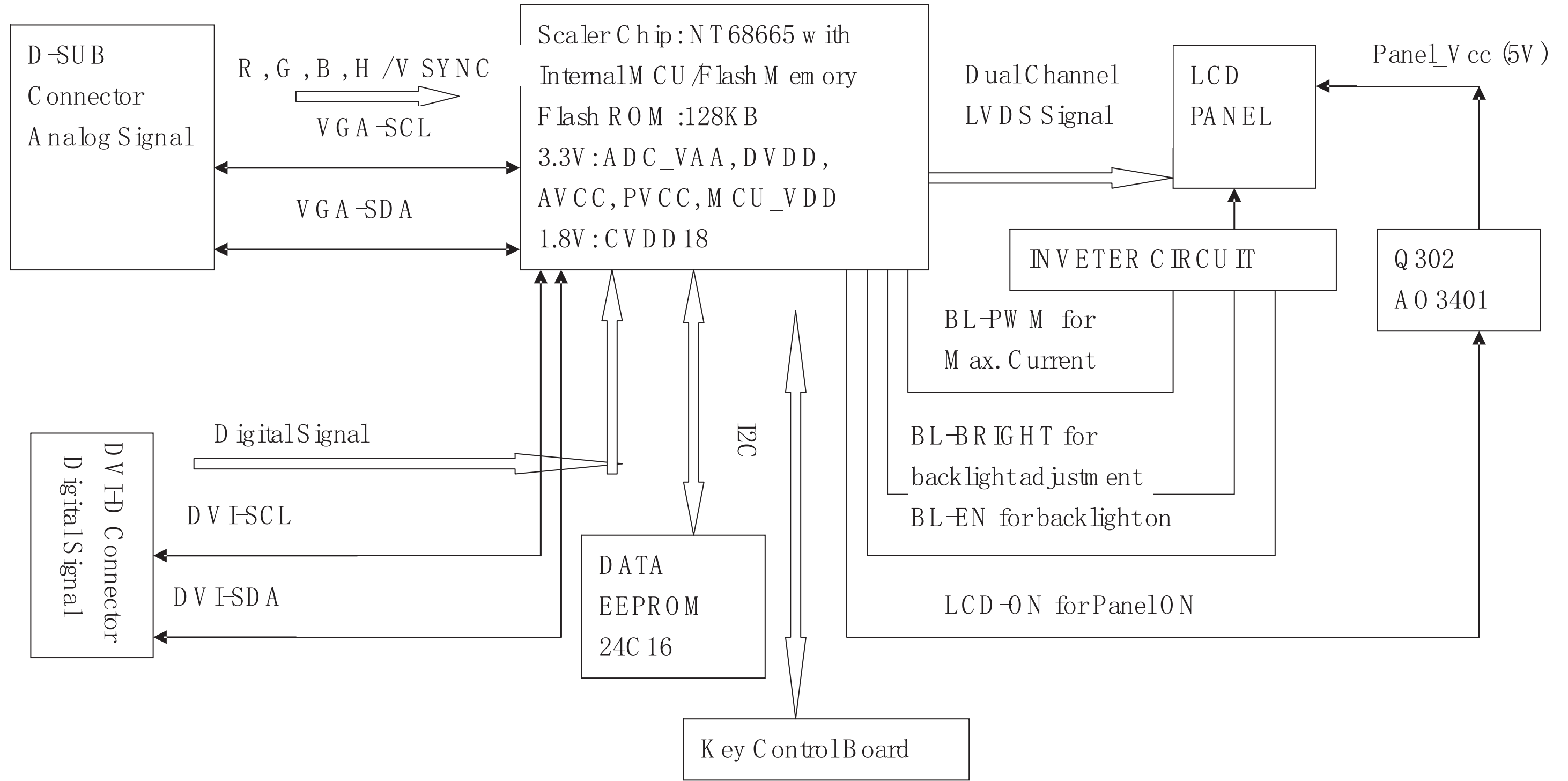
Hipot and Ground Continuity testing records have to be kept for a period of 10 years.

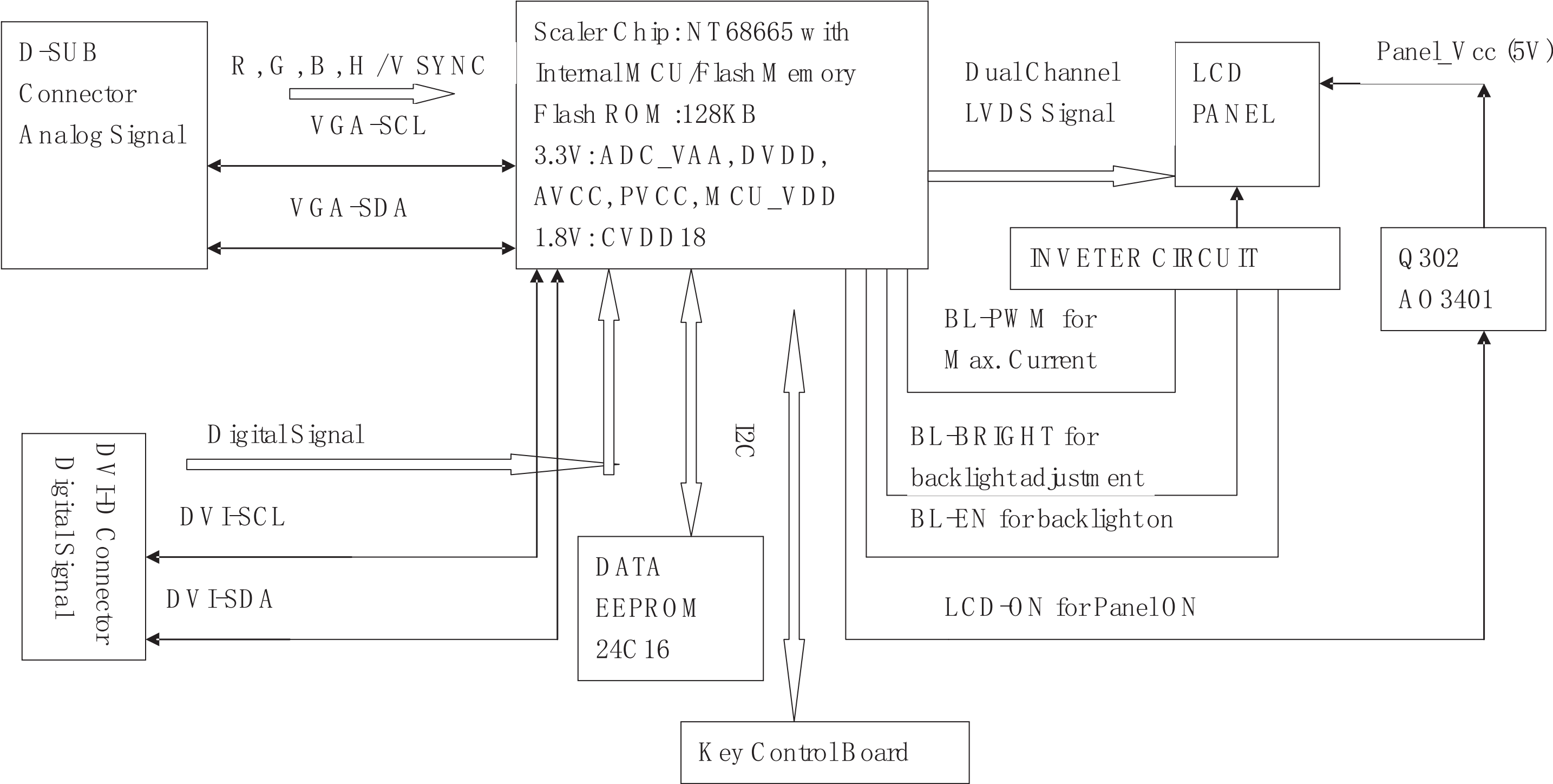
Wiring Diagram(170C8)



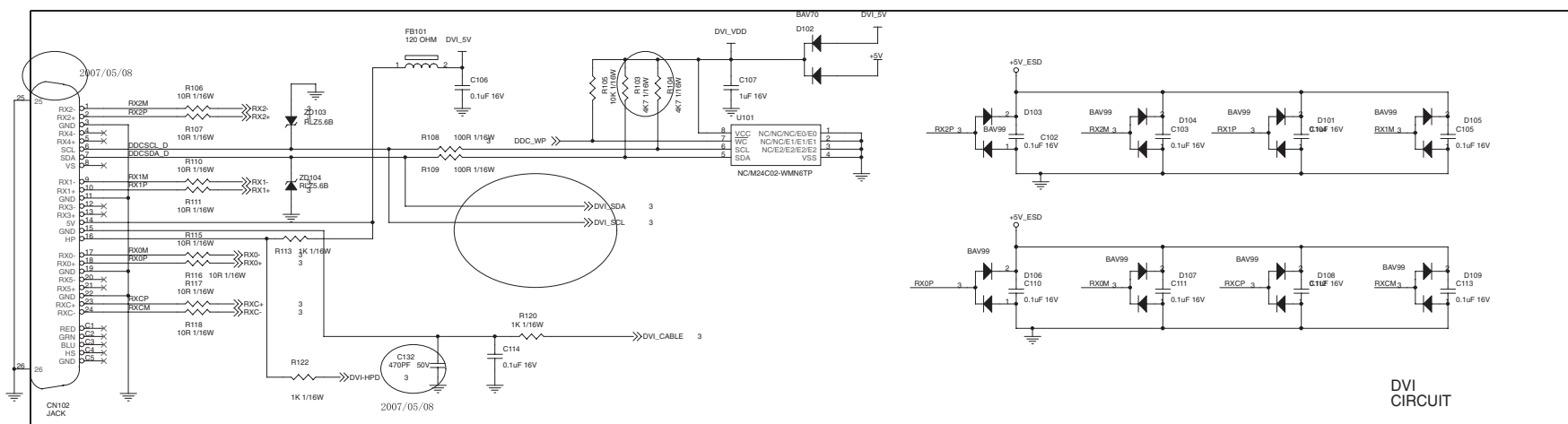


Block Diagram(170C8)

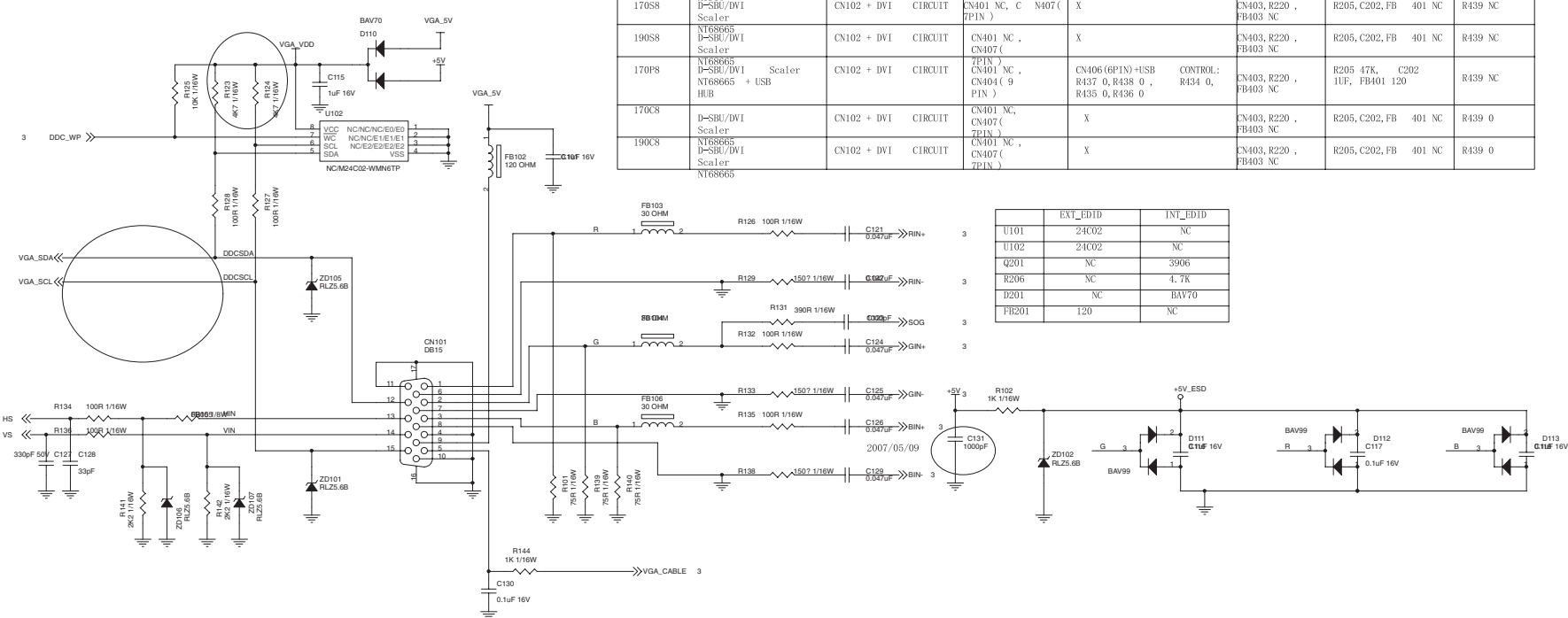




Scaler Diagram(170C8)-1

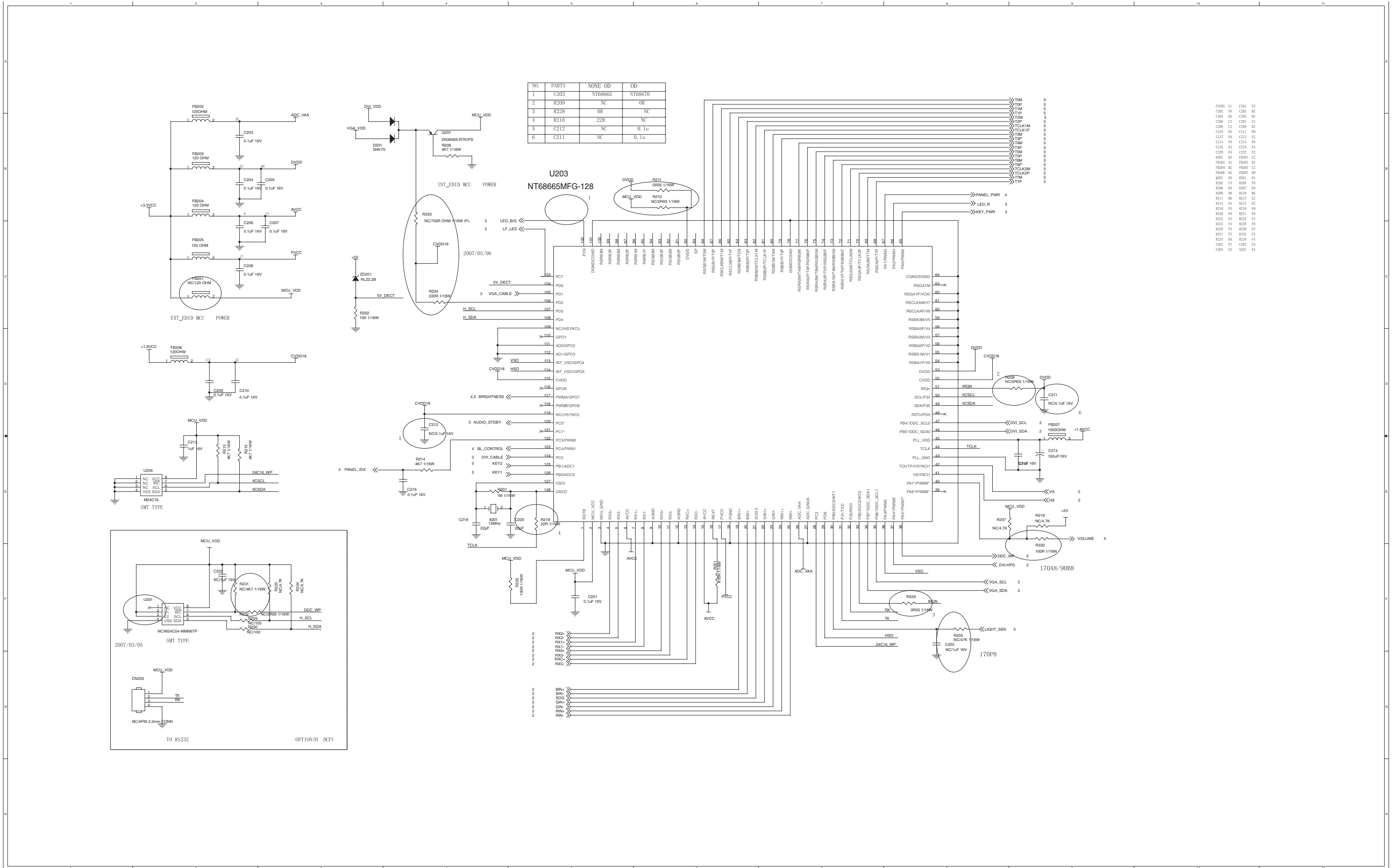


- CN101 F3 CN102 R2
- C101 R4 C102 R6
- C105 R8 C106 R4
- C107 R0 C108 R8
- C111 R6 C112 C7
- C113 R8 C114 C4
- C115 R0 C116 F7
- C117 F7 C118 F8
- C121 R5 C122 R5
- C123 R5 C124 F8
- C125 F3 C126 F3
- C127 F2 C128 F2
- C129 F5 C130 G4
- C131 F6 C132 C3
- D101 R7 D102 R5
- D103 R6 D104 R6
- D105 R8 D106 C6
- D107 C6 D108 C7
- D109 C8 D110 R0
- D111 R6 D112 F7
- D113 F8 D114 R1
- D115 R4 D116 F2
- D117 R4 D118 F4
- D119 R2 D120 R2
- D121 R2 D122 R0
- D123 R2 D124 R0
- D125 R2 D126 R2
- D127 R2 D128 R0
- D129 R2 D130 R0
- D131 R2 D132 R0
- D133 R2 D134 R2
- D135 R2 D136 R2
- D137 R2 D138 R4
- D139 R4 D140 F2
- D141 F2 D142 R4
- D143 R0 D144 R0
- D145 R3 D146 R8
- D147 R3 D148 R0
- D149 R3 D150 R0

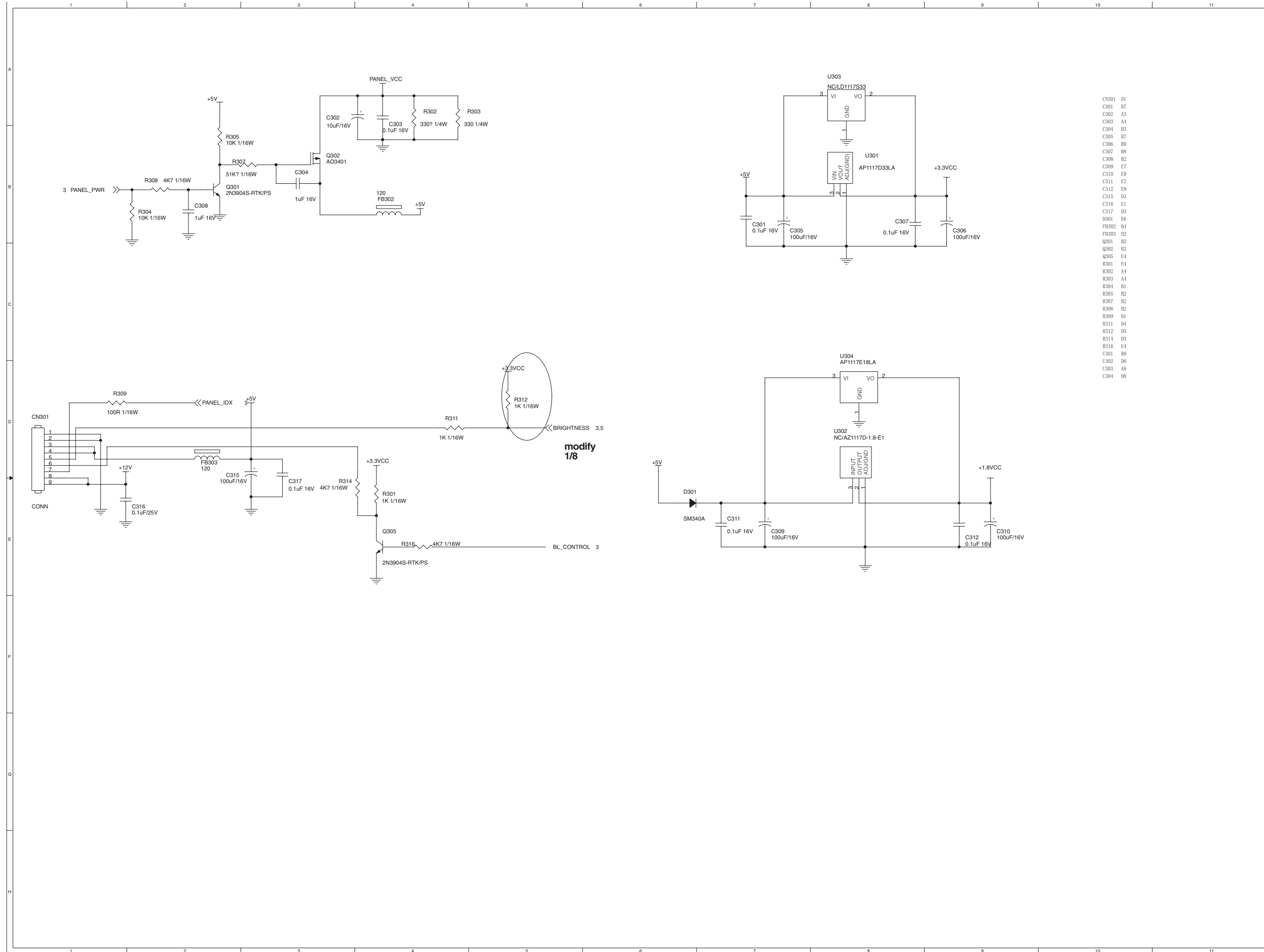


MODEL	FUNCTION	DVI CON.	KEY CON.	USB CON.	VOLUME CON.	LIGHT SE ASOR CONT.	CN407 CON. GND
190B8	D-SBU Sc aler NT68665 +	CN102 + DVI CIRCUIT	CN401 (13 PIN)	X	CN403(2x6 PIN) , R202 100	R205, C202, FB 401 NC	R439 NC
170A8	AUDIO D-SBU Sc aler NT68625 +	CN102 NC	CN401 (13 PIN)	X	CN403(2x6 PIN) , R220 100	R205, C202, FB 401 NC	R439 NC
170S8	AUDIO D-SBU/DVI Sc aler	CN102 + DVI CIRCUIT	CN401 NC , C N407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 NC
190S8	D-SBU/DVI Sc aler NT68665	CN102 + DVI CIRCUIT	CN401 NC , C N407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 NC
170P8	D-SBU/DVI Sc aler NT68665 + USB HUB	CN102 + DVI CIRCUIT	CN401 NC , C N404 (9 PIN)	CN406 (6PIN)+USB CONTROL: R437 0, R438 0 , R434 0, R435 0, R436 0	CN403, R220 , FB403 NC	R205 47K, C202 1UF, FB401 120	R439 NC
170C8	D-SBU/DVI Sc aler NT68665	CN102 + DVI CIRCUIT	CN401 NC , C N407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 0
190C8	D-SBU/DVI Sc aler NT68665	CN102 + DVI CIRCUIT	CN401 NC , C N407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 0

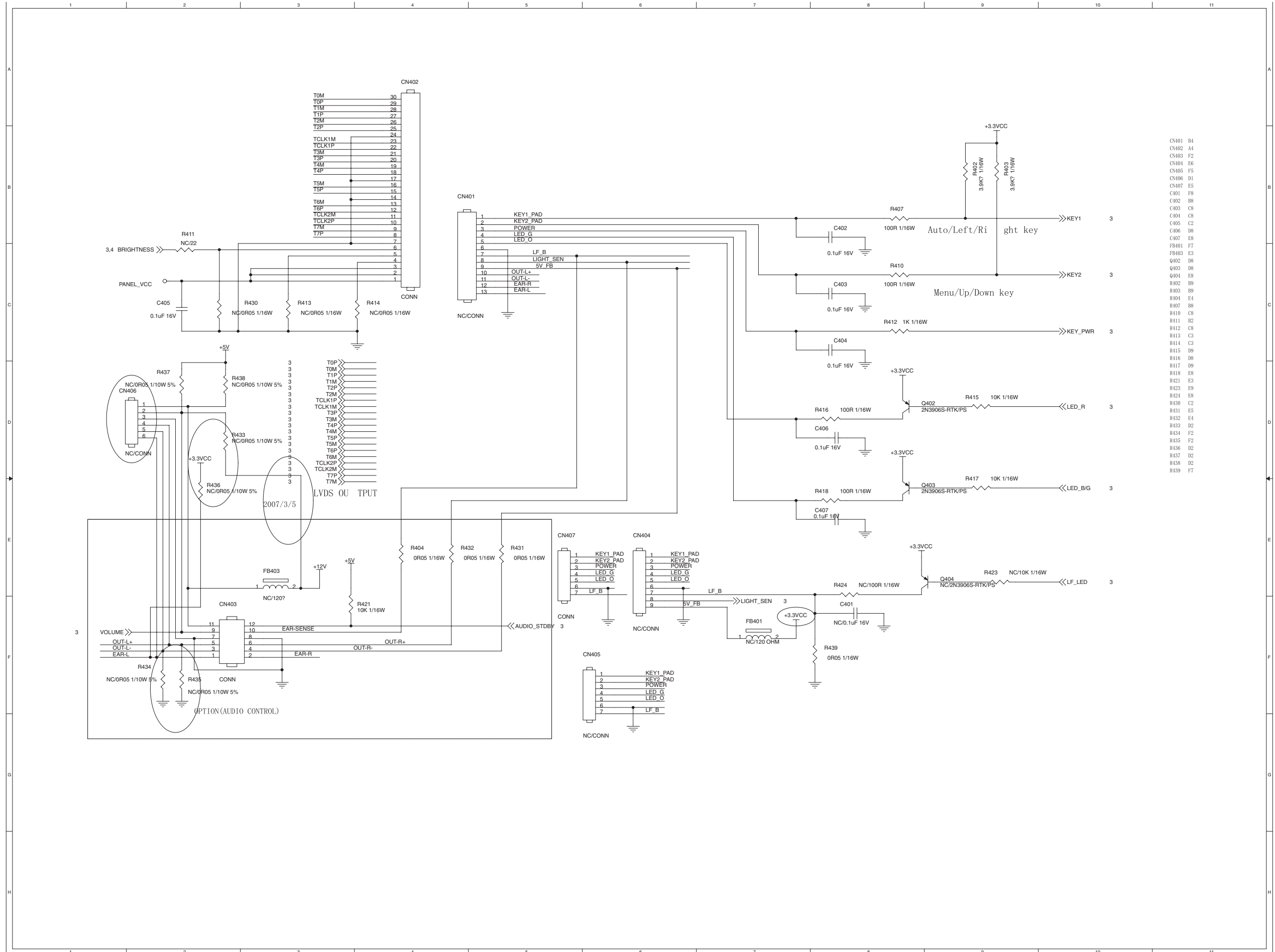
	EXT_FBDD	INT_FBDD
U101	24C02	NC
U102	24C02	NC
Q201	NC	3906
R206	NC	4.7K
D201	NC	BAV70
FB201	120	NC



Scaler Diagram(170C8) - 3

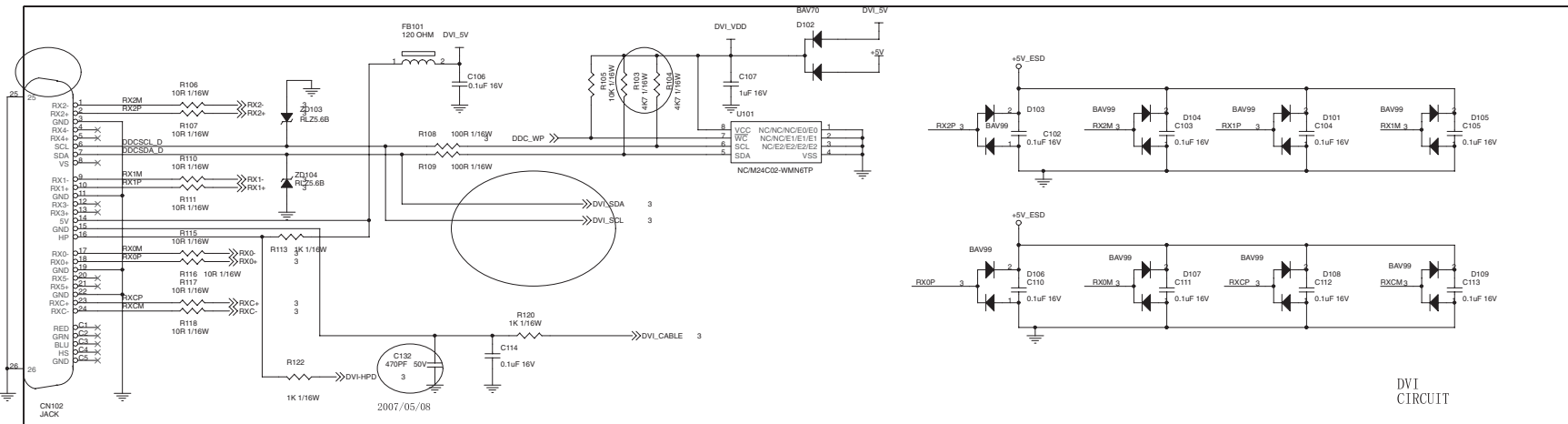


- C301 D1
- C301 B7
- C302 A3
- C303 A4
- C304 B3
- C305 B7
- C306 B9
- C307 B8
- C308 B2
- C309 E7
- C310 E9
- C311 E7
- C312 E9
- C315 D3
- C316 E1
- C317 D3
- D301 E6
- FB302 B4
- FB303 D2
- Q301 B2
- Q302 B3
- Q305 E4
- R301 E4
- R302 A4
- R303 A4
- R304 B1
- R305 B2
- R307 B2
- R308 B2
- R309 D1
- R311 D4
- R312 D5
- R314 D3
- R316 E4
- U301 B8
- U302 D8
- U303 A8
- U304 D8



- CN401 B4
- CN402 A4
- CN403 F2
- CN404 E6
- CN405 F5
- CN406 D1
- CN407 E5
- C401 F8
- C402 B8
- C403 C8
- C404 C8
- C405 C2
- C406 D8
- C407 E8
- FB401 F7
- FB403 E3
- Q402 D8
- Q403 D8
- Q404 E8
- R402 B9
- R403 B9
- R404 E4
- R407 B8
- R410 C8
- R411 B2
- R412 C8
- R413 C3
- R414 C3
- R415 D9
- R416 D8
- R417 D9
- R418 E8
- R421 E3
- R422 E9
- R423 E8
- R424 E8
- R430 C2
- R431 E5
- R432 E4
- R433 D2
- R434 F2
- R435 F2
- R436 D2
- R437 D2
- R438 D2
- R439 D2

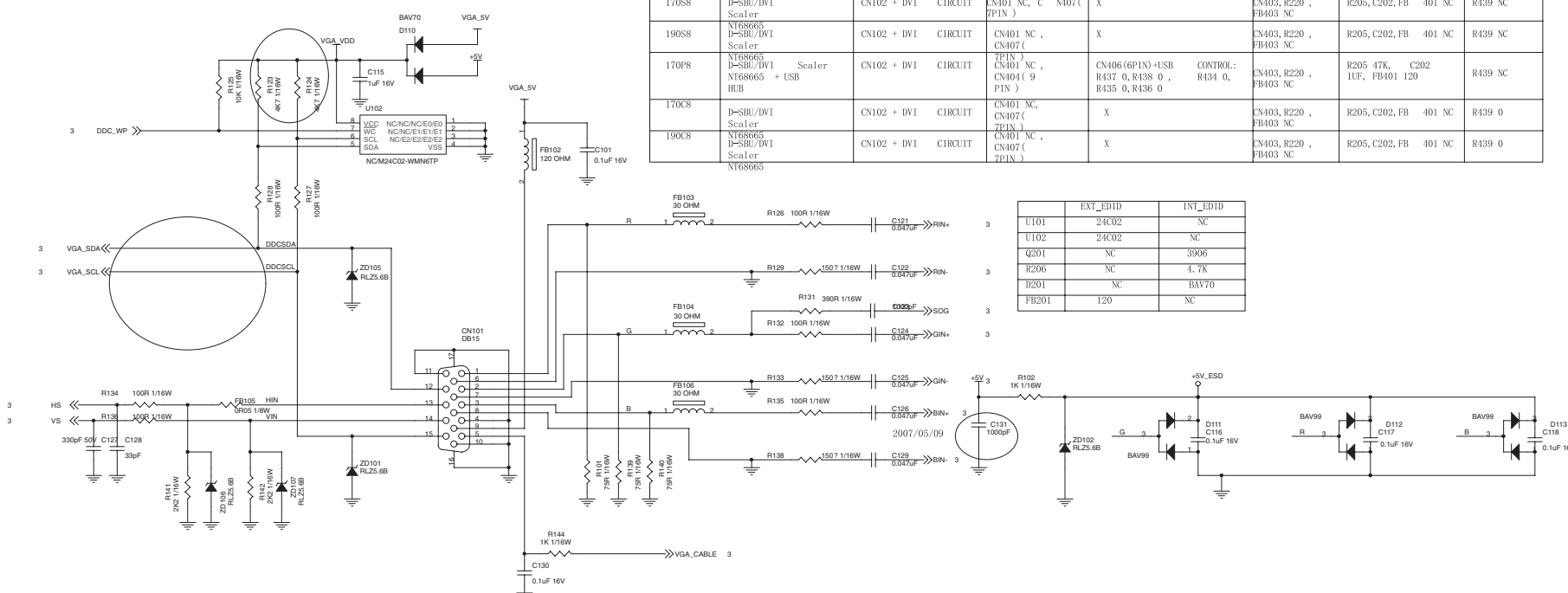
Scaler Diagram(190C8)-1



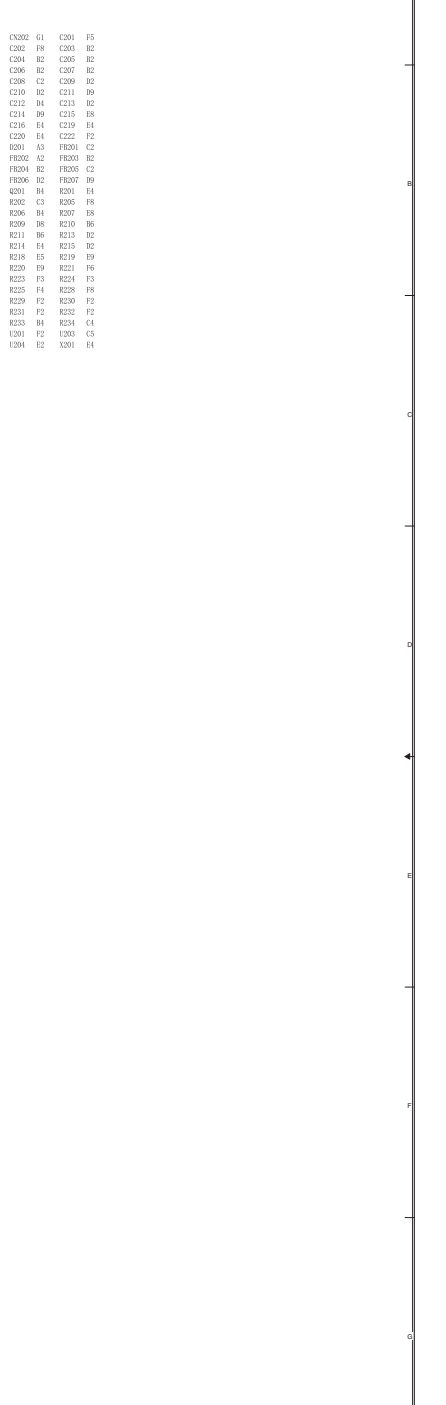
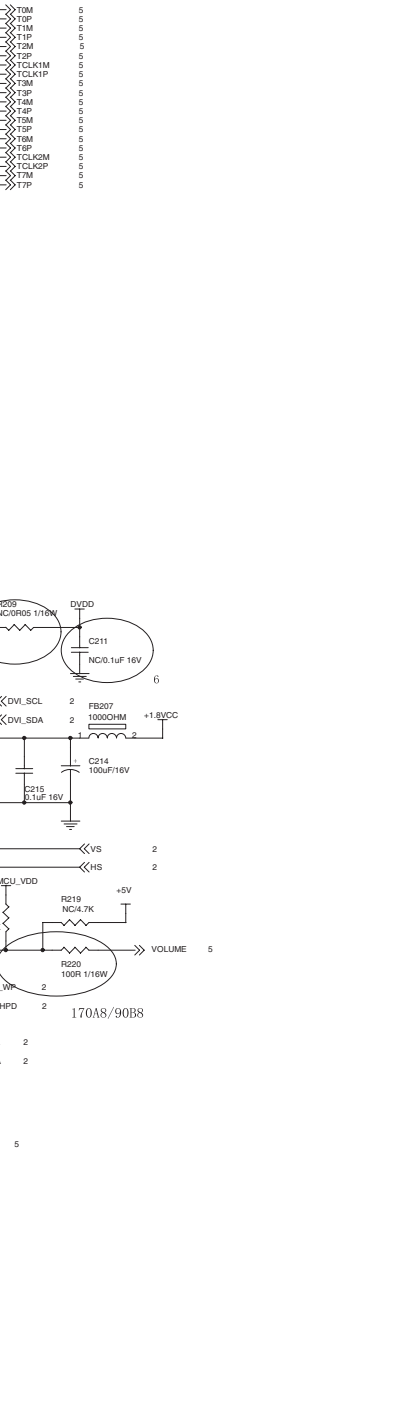
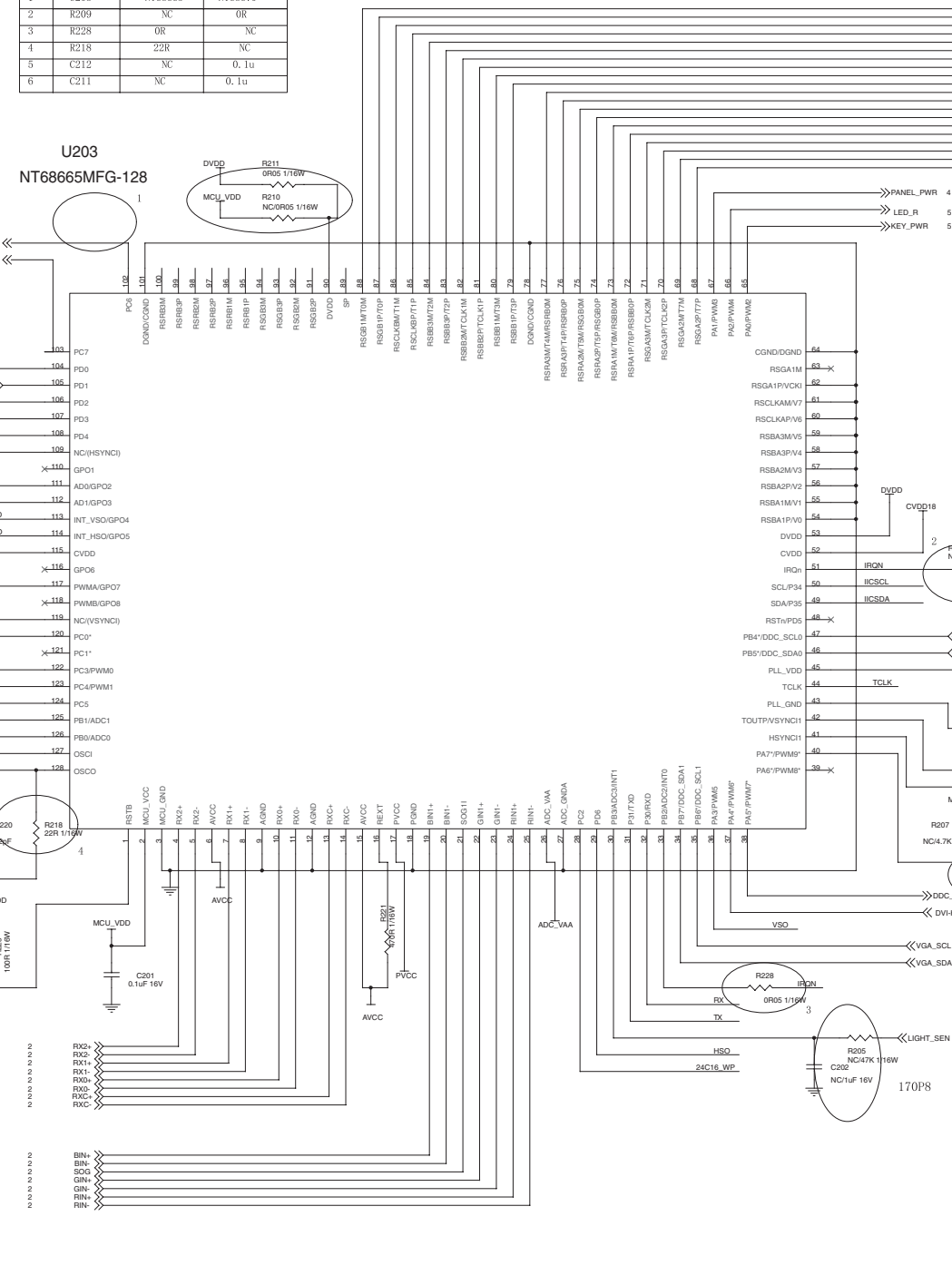
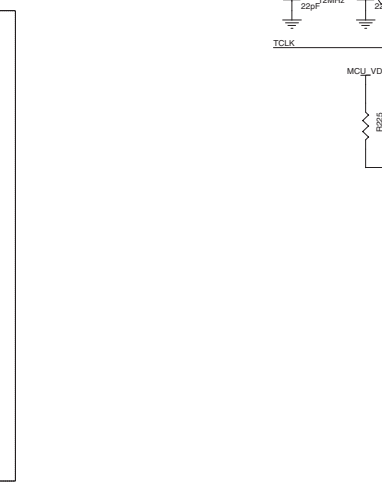
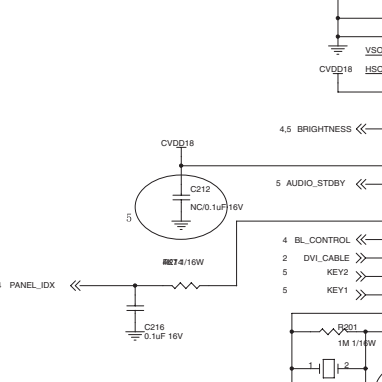
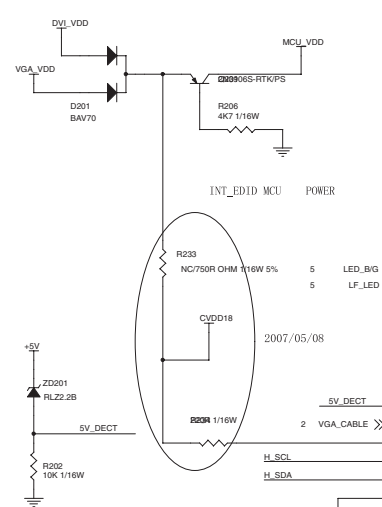
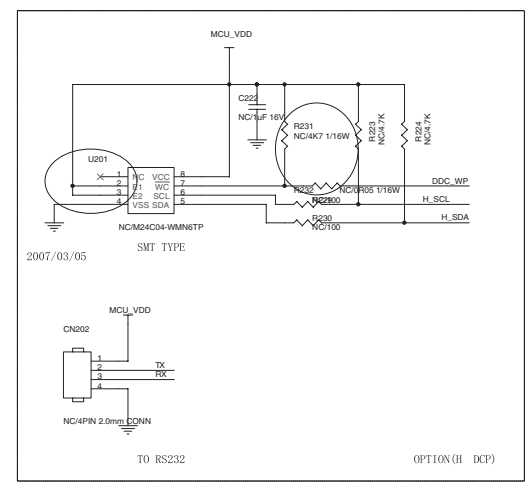
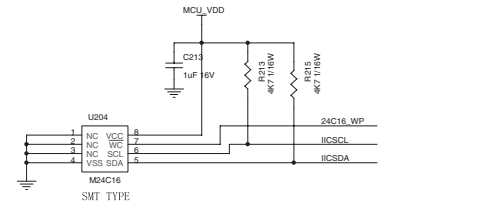
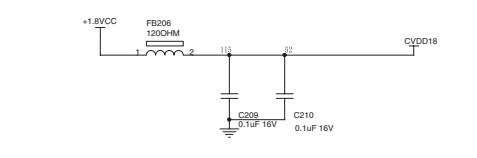
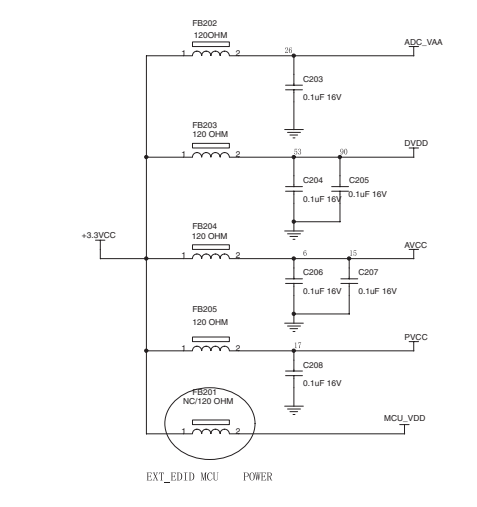
- CN101 F3 CN102 B2
- C101 E4 C102 B6
- C103 B7 C104 B7
- C105 B8 C106 B4
- C107 B5 C110 C9
- C111 C7 C112 C7
- C113 C8 C114 C4
- C115 D3 C116 F7
- C117 F7 C118 F8
- C121 E5 C122 E5
- C123 E5 C124 E5
- C125 F5 C126 F5
- C127 F2 C128 F2
- C129 F5 C130 G4
- C131 F6 C132 C4
- D101 B7 D102 A5
- D103 B8 D104 B6
- D105 B8 D106 B6
- D107 B8 D108 B7
- D109 B8 D110 D3
- D111 F7 D112 F7
- D113 F8 FB101 A3
- FB102 E4 FB103 E4
- FB104 E4 FB105 F2
- FB106 F4 D101 F4
- R102 F6 R103 B4
- R104 B4 R105 B4
- R106 B3 R107 B3
- R108 B4 R109 B4
- R110 B3 R111 B3
- R113 B3 R115 B3
- R116 B3 R117 C3
- R118 C3 R120 C4
- R122 C3 R123 D3
- R124 D3 R125 D2
- R126 E5 R127 E3
- R128 E3 R129 E5
- R131 E5 R132 E5
- R133 F5 R134 F2
- R135 F5 R136 F2
- R138 F5 R139 F4
- R140 F4 R141 F2
- R142 F3 R144 G4
- U101 B5 U102 D3
- ZD101 F3 ZD102 F6
- ZD103 B3 ZD104 B3
- ZD105 E3 ZD106 F2

MODEL	FUNCTION	DVI CON.	KEY CON.	USB CON.	VOLUME CON.	LIGHT SENSOR CONT.	CM407 CON. GND
190BS	D-SUB Sc aler NT68665 +	CN102 + DVI CIRCUIT	CM401 (13 PIN)	X	CN403 (2x6 PIN) R202 100	R205, C202, FB 401 NC	R439 NC
170AS	AD101 D-SUB Sc aler NT68625 +	CN102 NC	CM401 (13 PIN)	X	CN403 (2x6 PIN) R220 100	R205, C202, FB 401 NC	R439 NC
170SS	AD101 D-SUB/DVI Sc aler NT68665	CN102 + DVI CIRCUIT	CM401 NC, C M107 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 NC
190SS	NT68665 D-SUB/DVI Sc aler	CN102 + DVI CIRCUIT	CM401 NC , CM407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 NC
170PS	NT68665 D-SUB/DVI Sc aler NT68665 + USB HUB	CN102 + DVI CIRCUIT	CM401 NC , CM404 (9 PIN)	CM406 (6PIN)-USB CONTROL: R437 0, R438 0 , R435 0, R436 0	CN403, R220 , FB403 NC	R205 47K, C202 1UF, FB401 120	R439 NC
170CS	D-SUB/DVI Sc aler	CN102 + DVI CIRCUIT	CM401 NC, CM407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 0
190CS	NT68665 D-SUB/DVI Sc aler	CN102 + DVI CIRCUIT	CM401 NC , CM407 (7PIN)	X	CN403, R220 , FB403 NC	R205, C202, FB 401 NC	R439 0

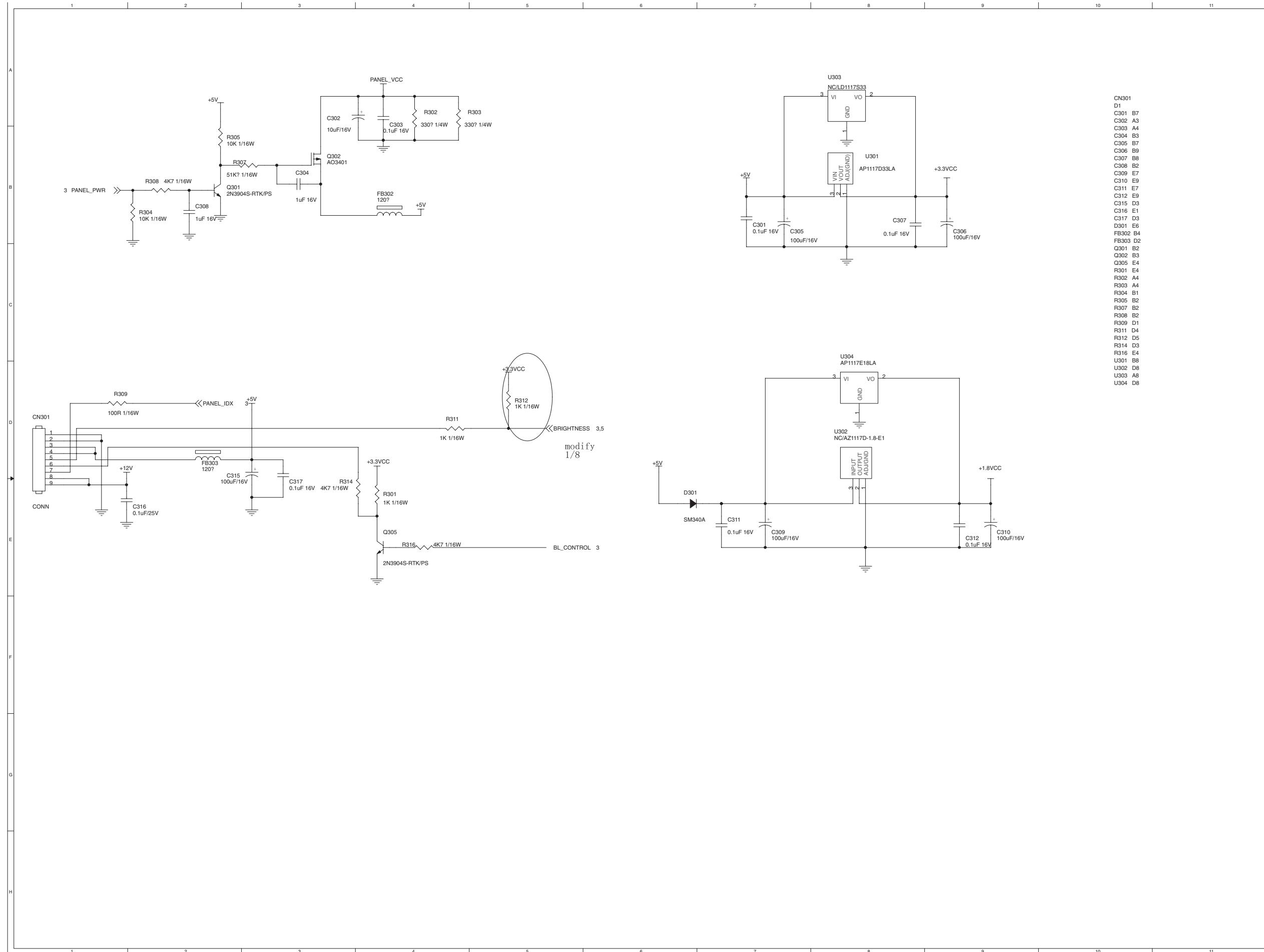
	EXT_EDID	INT_EDID
U101	24C02	NC
U102	24C02	NC
Q201	NC	3906
R206	NC	4.7K
B201	NC	BAV70
FB201	120	NC



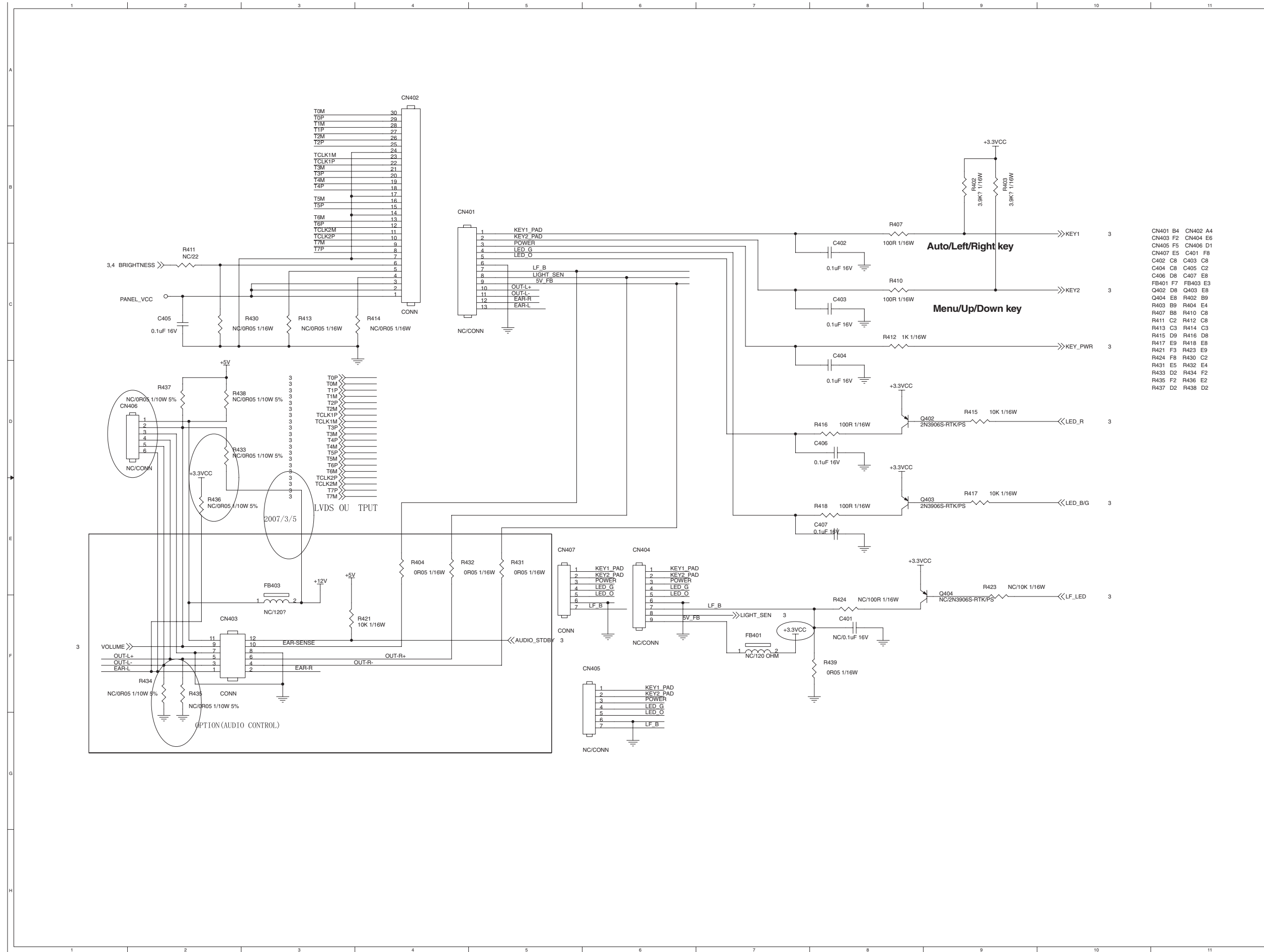
NO.	PARTS	NONE QD	QD
1	U203	NT68665	NT68670
2	R209	NC	0R
3	R228	0R	NC
4	R218	22R	NC
5	C212	NC	0.1u
6	C211	NC	0.1u



Scaler Diagram(190C8)-3

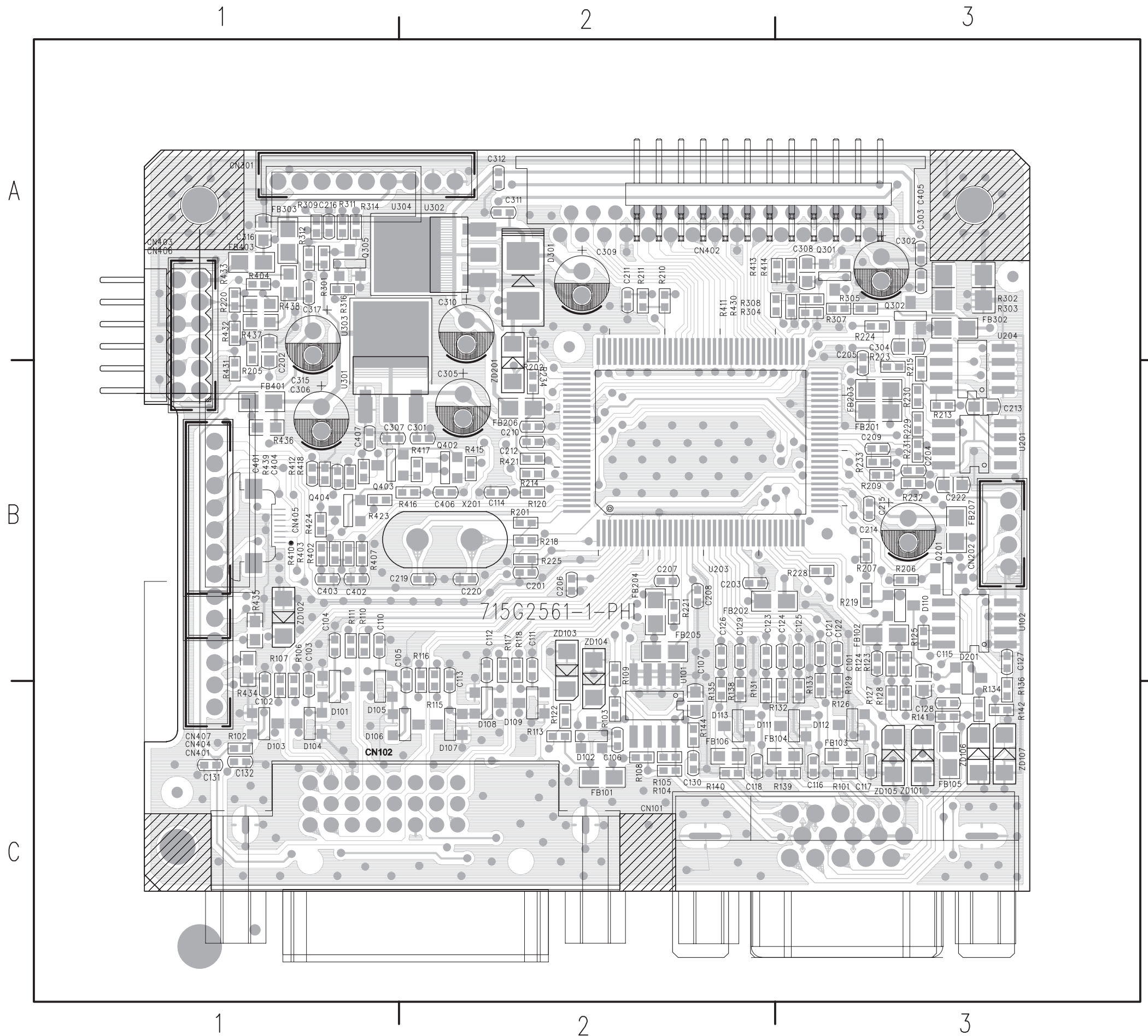


Scaler Diagram(190C8)-4



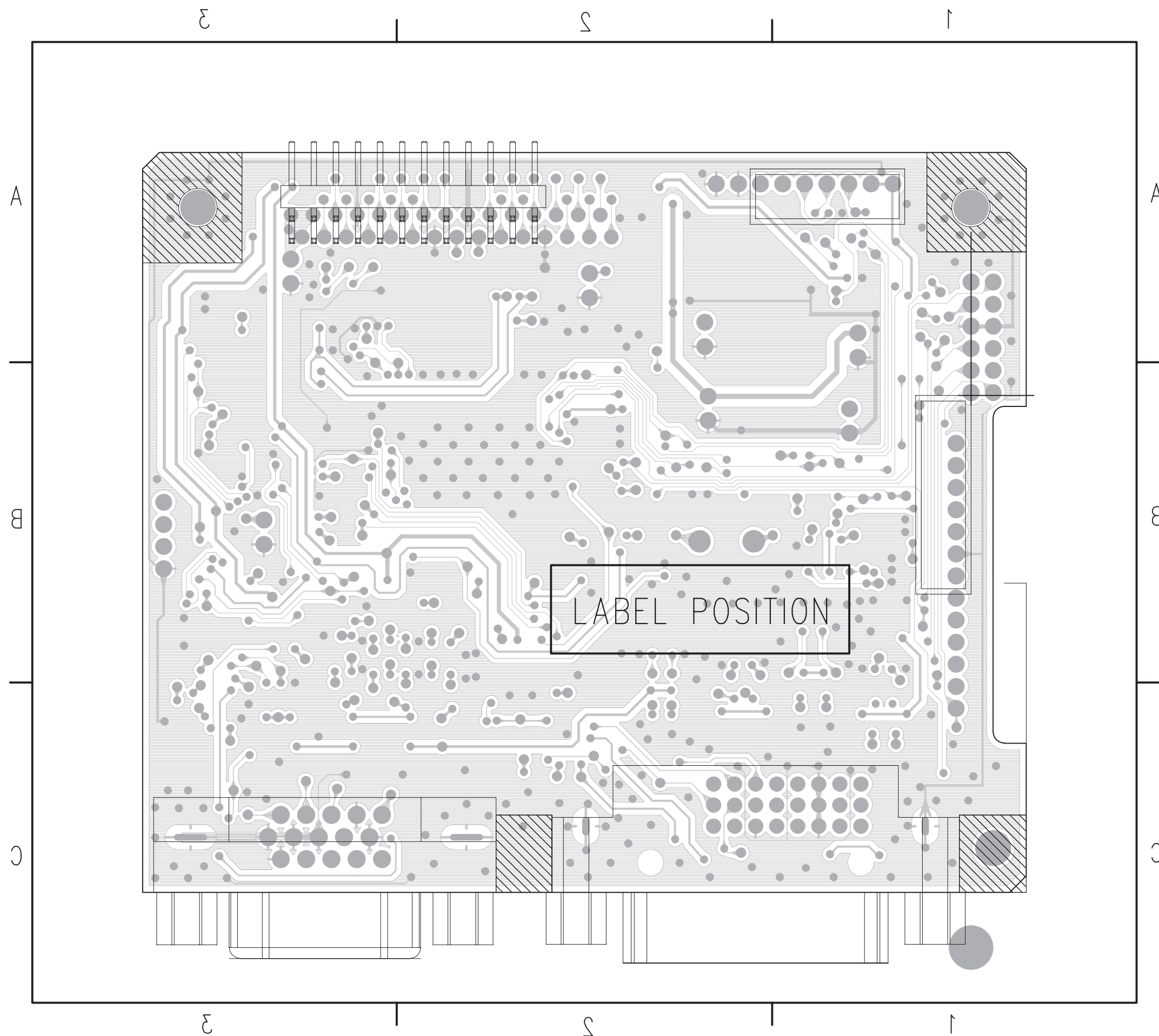
- CN401 B4 CN402 A4
- CN403 F2 CN404 E6
- CN405 F5 CN406 D1
- CN407 E5 C401 F8
- C402 C8 C403 C8
- C404 C8 C405 C2
- C406 D8 C407 E8
- FB401 F7 FB403 E3
- Q402 D8 Q403 E8
- Q404 E8 R402 B9
- R403 B9 R404 E4
- R407 B8 R410 C8
- R411 C2 R412 C8
- R413 C3 R414 C3
- R415 D9 R416 D8
- R417 E9 R418 E8
- R421 F3 R423 E9
- R424 F8 R430 C2
- R431 E5 R432 E4
- R433 D2 R434 F2
- R435 F2 R436 E2
- R437 D2 R438 D2

Scaler Layout-1

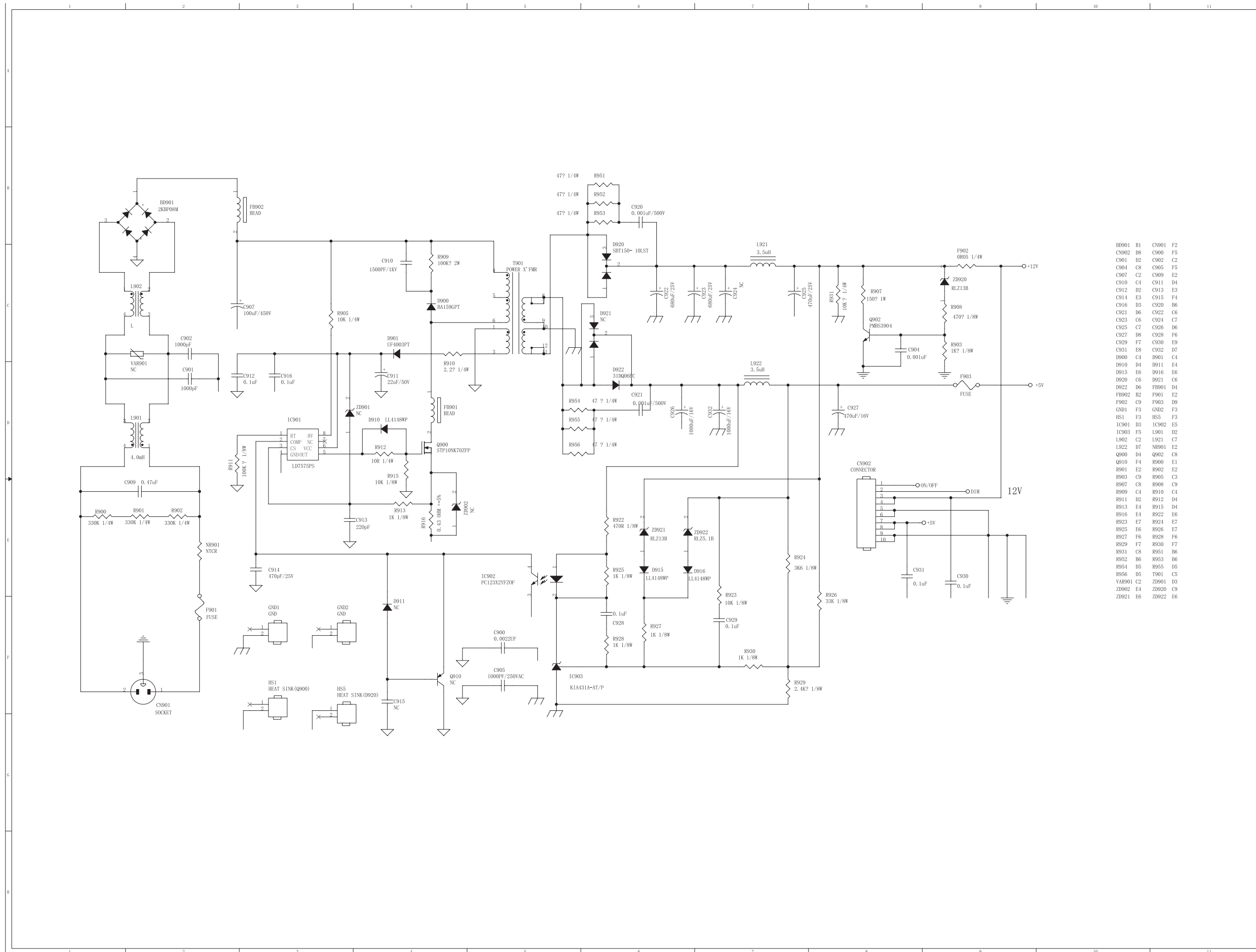


C101	B3	C215	B3	D105	C1	Q305	A1	R202	A2	R412	B1
C102	C1	C216	A1	D106	C2	Q402	B2	R205	A1	R413	A3
C103	C1	C219	B2	D107	C2	Q403	B2	R206	B3	R414	A3
C104	B1	C220	B2	D108	C2	Q404	B1	R207	B3	R415	B2
C105	C2	C222	B3	D109	C2	R101	C3	R209	B3	R416	B2
C106	C2	C301	B2	D110	B3	R102	C1	R210	A2	R417	B2
C107	C2	C302	A3	D111	C3	R103	C2	R211	A2	R418	B1
C110	B1	C303	A3	D112	C3	R104	C2	R213	B3	R421	B2
C111	B2	C304	A3	D113	C2	R105	C2	R214	B2	R423	B1
C112	B2	C305	B2	D201	B3	R106	C1	R215	B3	R424	B1
C113	C2	C306	B1	D301	A2	R107	C1	R218	B2	R430	A3
C114	B2	C307	B1	FB101	C2	R108	C2	R219	B3	R431	B1
C115	C3	C308	A3	FB102	B3	R109	B2	R220	A1	R432	A1
C116	C3	C309	A2	FB103	C3	R110	B1	R221	B2	R433	A1
C117	C3	C310	A2	FB104	C3	R111	B1	R223	B3	R434	B1
C118	C2	C311	A2	FB105	C3	R113	C2	R224	A3	R435	B1
C121	B3	C312	A2	FB106	C2	R115	C2	R225	B2	R436	B1
C122	B3	C315	A1	FB201	B3	R116	C2	R228	B3	R437	A1
C123	B2	C316	A1	FB202	B3	R117	B2	R229	B3	R438	A1
C124	B3	C317	A1	FB203	B3	R118	B2	R230	B3	R439	B1
C125	B3	C401	B1	FB204	B2	R120	B2	R231	B3	U101	B2
C126	B2	C402	B1	FB205	B2	R122	C2	R232	B3	U102	B3
C127	B3	C403	B1	FB206	B2	R123	B3	R233	B3	U201	B3
C128	C3	C404	B1	FB207	B3	R124	B3	R234	B2	U203	B2
C129	B2	C405	A3	FB302	A3	R125	B3	R301	A1	U204	B3
C130	C2	C406	B2	FB303	A1	R126	C3	R302	A3	U301	B1
C131	C1	C407	B1	FB401	B1	R127	C3	R303	A3	U302	A2
C132	C1	CN101	C3	FB403	A1	R128	C3	R304	A3	U303	B1
C201	B2	CN102	C2	FDT1	B3	R129	C3	R305	A3	U304	A2
C202	A1	CN202	B3	FDT10	:1	R131	C2	R307	A3	X201	B2
C203	B2	CN301	A2	FDT11	C8	R132	C3	R308	A3	ZD101	C3
C204	B3	CN401	B1	FDT12	:8	R133	C3	R309	A1	ZD102	B1
C205	B3	CN402	A2	FDT13	C1	R134	C3	R311	A1	ZD103	B2
C206	B2	CN403	B1	FDT2	A2	R135	C2	R312	A1	ZD104	B2
C207	B2	CN404	B1	FDT3	A3	R136	C3	R314	A1	ZD105	C3
C208	B2	CN405	B1	FDT4	C1	R138	C2	R316	A1	ZD106	C3
C209	B3	CN406	A1	FDT5	C1	R139	C3	R402	B1	ZD107	C3
C210	B2	CN407	B1	FDT8	:8	R140	C2	R403	B1	ZD201	B2
C211	A2	D101	C1	FDT9	C1	R141	C3	R404	A1		
C212	B2	D102	C2	Q201	B3	R142	C3	R407	B1		
C213	B3	D103	C1	Q301	A3	R144	C2	R410	B1		
C214	B3	D104	C1	Q302	A3	R201	B2	R411	A3		

Scaler Layout-2

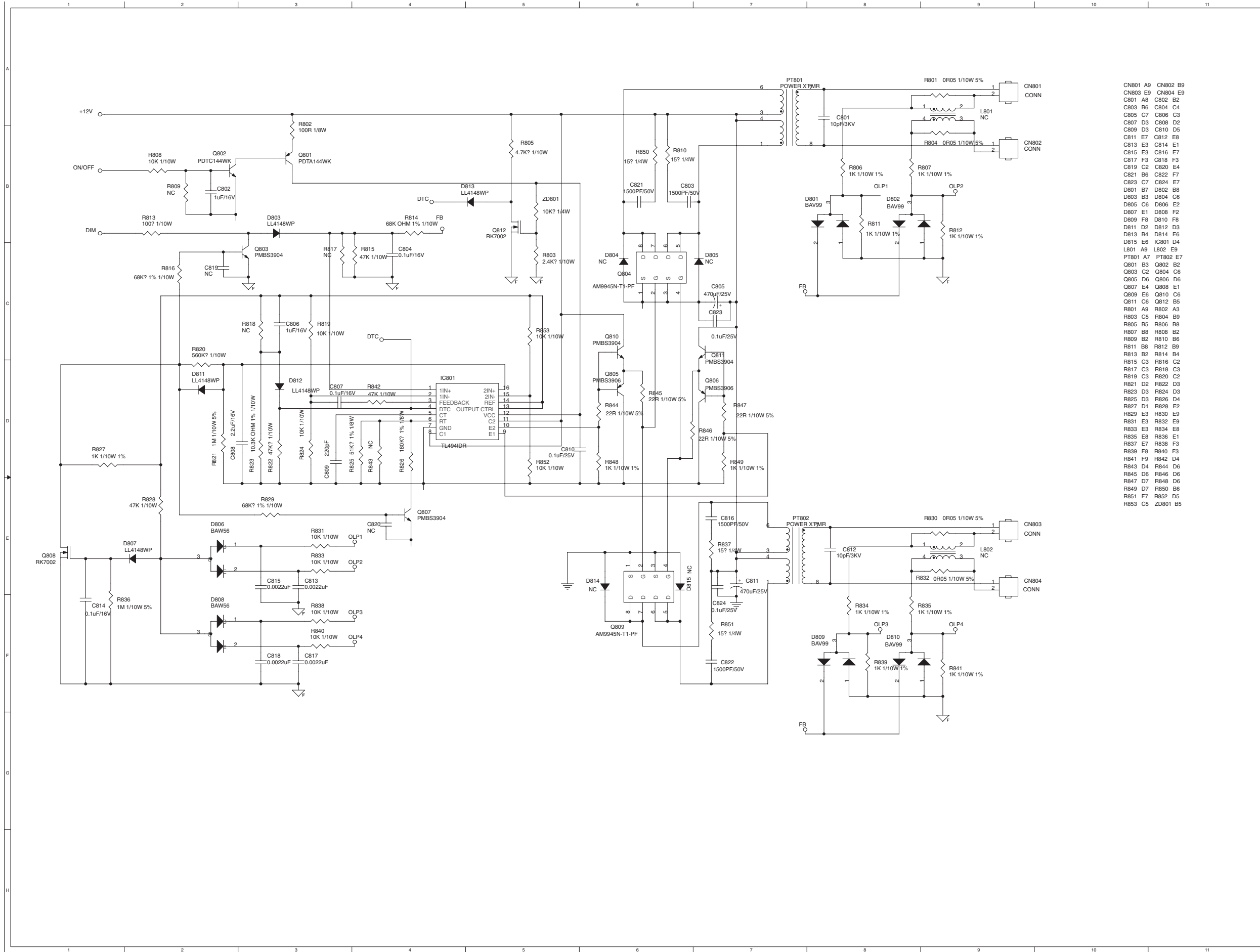


Power Board Diagram(170C8)-1



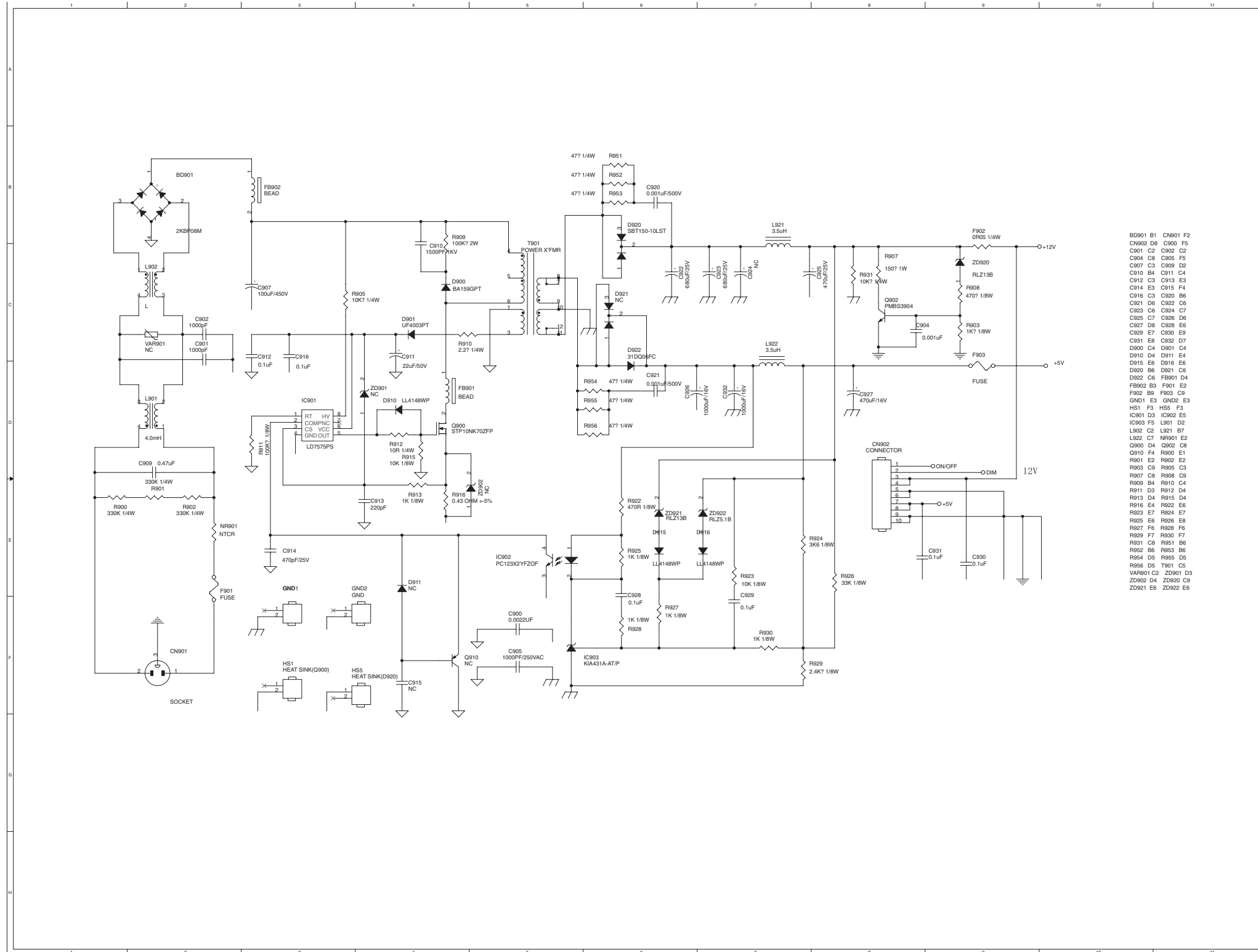
B901	B1	CN901	F2
CN902	D8	C900	F5
C901	D2	C902	C2
C904	C8	C905	F5
C907	C2	C909	E2
C910	C4	C911	D4
C912	D2	C913	E3
C914	E3	C915	F4
C916	D3	C920	B6
C921	D6	C922	C6
C923	C6	C924	C7
C925	C7	C926	D6
C927	D8	C928	F6
C929	F7	C930	E9
C931	E8	C932	D7
D900	C1	D901	C4
D910	D4	D911	E4
D915	E6	D916	E6
D920	C6	D921	C6
D922	D6	F901	D4
F902	B2	F901	E2
F902	C9	F903	D9
GND1	F3	GND2	F3
HS1	F3	HS5	F3
IC901	D3	IC902	E5
IC903	F5	L901	D2
L902	C2	L921	C7
L922	D7	N901	E2
Q900	D4	Q902	C8
Q910	F1	R900	E1
R901	E2	R902	E2
R903	C9	R905	C3
R907	C8	R908	C9
R909	C4	R910	C4
R911	D2	R912	D4
R913	E4	R915	D4
R916	E4	R922	E6
R923	E7	R924	E7
R925	E6	R926	E7
R927	F6	R928	F6
R929	F7	R930	F7
R931	C8	R951	B6
R952	B6	R953	B6
R954	D5	R955	D5
R956	D5	T901	C5
VAR901	C2	Z901	D3
Z902	E4	Z902	C9
Z921	E6	Z922	E6

Power Board Diagram(170C8)-2



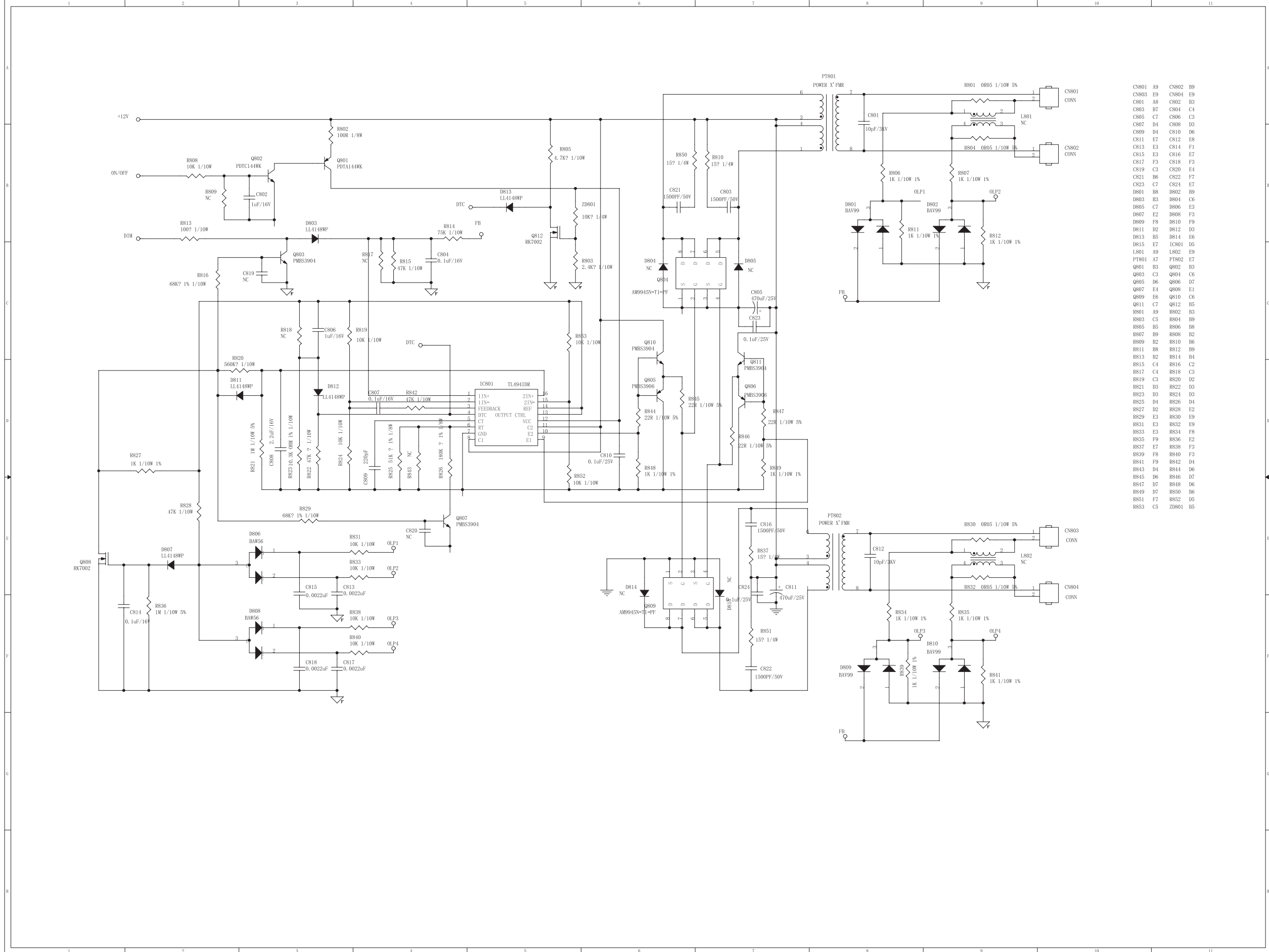
- CN801 A9 CN802 B9
- CN803 E9 CN804 E9
- C801 A8 C802 B2
- C803 B6 C804 C4
- C805 C7 C806 C3
- C807 D3 C808 D2
- C809 D3 C810 D5
- C811 E7 C812 E8
- C813 E3 C814 E1
- C815 E3 C816 E7
- C817 F3 C818 F3
- C819 C2 C820 E4
- C821 B6 C822 F7
- C823 C7 C824 E7
- D801 B7 D802 B8
- D803 B3 D804 C6
- D805 C6 D806 E2
- D807 E1 D808 F2
- D809 F8 D810 F8
- D811 D2 D812 D3
- D813 B4 D814 E6
- D815 E6 IC801 D4
- L801 A9 L802 E9
- PT801 A7 PT802 E7
- Q801 B3 Q802 B2
- Q803 C2 Q804 C6
- Q805 D6 Q806 D6
- Q807 E4 Q808 E1
- Q809 E6 Q810 C6
- Q811 C6 Q812 B5
- R801 A9 R802 A3
- R803 C5 R804 B9
- R805 B5 R806 B8
- R807 B8 R808 B2
- R809 B2 R810 B6
- R811 B8 R812 B9
- R813 B2 R814 B4
- R815 C3 R816 C2
- R817 C3 R818 C3
- R819 C3 R820 C2
- R821 D2 R822 D3
- R823 D3 R824 D3
- R825 D3 R826 D4
- R827 D1 R828 E2
- R829 E3 R830 E9
- R831 E3 R832 E9
- R833 E3 R834 E8
- R835 E8 R836 E1
- R837 E7 R838 F3
- R839 F8 R840 F3
- R841 F9 R842 D4
- R843 D4 R844 D6
- R845 D6 R846 D6
- R847 D7 R848 D6
- R849 D7 R850 B6
- R851 F7 R852 D5
- R853 C5 ZD801 B5

Power Board Diagram(190C8)-1



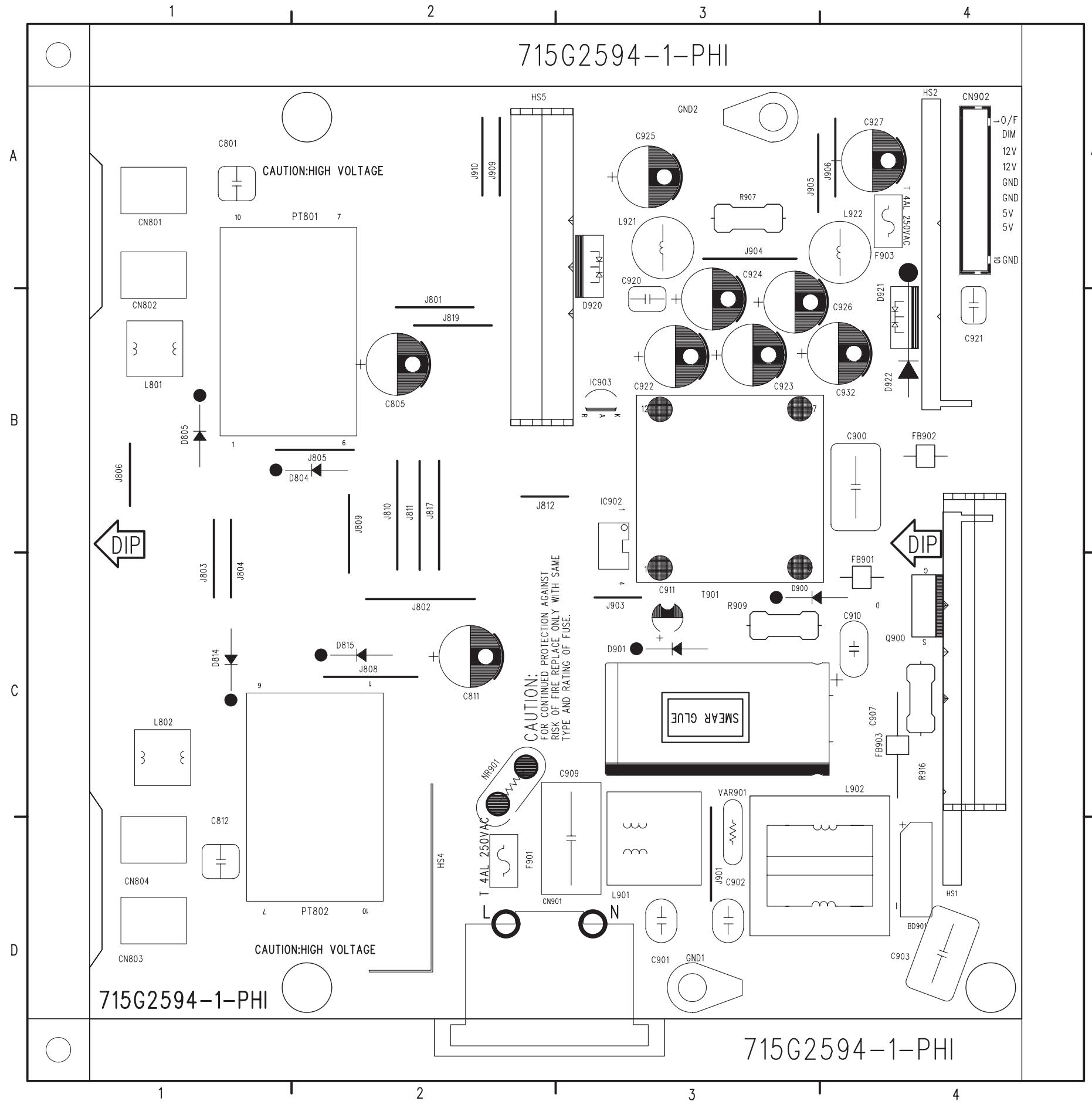
- BD901 B1
- CN902 D8
- C901 C2
- C904 C8
- C907 C3
- C910 B4
- C912 C3
- C914 E3
- C916 C3
- C921 D6
- C923 C6
- C925 C7
- C927 D8
- C929 E7
- C931 E8
- D900 C4
- D910 D4
- D915 E6
- D920 B6
- D922 C6
- FB902 B3
- F902 B9
- GND1 E3
- HS1 F3
- IC901 D3
- IC903 F5
- L902 C2
- L922 C7
- Q900 D4
- Q910 F4
- R901 E2
- R903 C9
- R907 C5
- R909 B4
- R911 D3
- R913 D4
- R916 E4
- R923 E7
- R925 E6
- R927 F6
- R929 F7
- R931 C8
- R952 B6
- R954 D5
- R956 D5
- T901 C5
- VAR901 C2
- ZD902 D4
- ZD921 E6
- CN901 F2
- C900 F5
- C902 C2
- C905 F5
- C909 D2
- C911 C4
- C913 E3
- C915 F4
- C920 B6
- C922 C6
- C924 C7
- C926 D6
- C928 E6
- C930 E9
- C932 D7
- D901 C4
- D911 E4
- D916 E6
- D921 C6
- FB901 D4
- F901 E2
- F903 C9
- GND2 E3
- HS5 F3
- IC902 E5
- L901 D2
- L921 B7
- NR901 E2
- Q902 C8
- R900 E1
- R902 E2
- R905 C3
- R908 C9
- R910 C4
- R912 D4
- R915 D4
- R922 E5
- R924 E7
- R926 E8
- R928 F6
- R930 F7
- R951 B6
- R953 B6
- R955 D5
- T902 D3
- ZD901 C3
- ZD922 E6

Power Board Diagram(190C8)-2



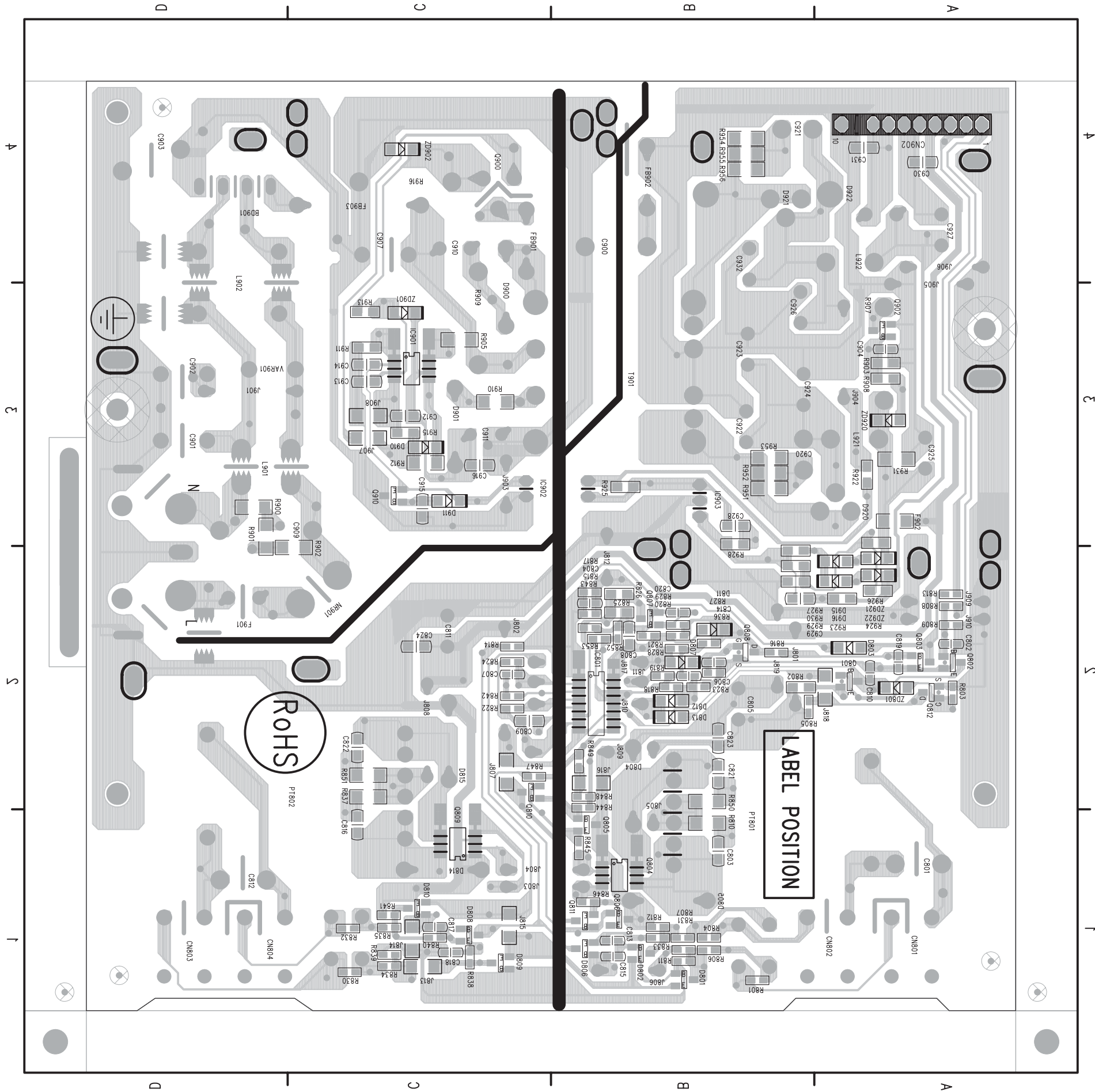
- CN801 A9 CN802 B9
- CN803 E9 CN804 E9
- C801 A8 C802 E3
- C803 H7 C804 C4
- C805 C7 C806 C3
- C807 D4 C808 D3
- C809 D4 C810 D6
- C811 E7 C812 E8
- C813 E3 C814 F1
- C815 E3 C816 E7
- C817 F3 C818 F3
- C819 C3 C820 E4
- C821 B6 C822 F7
- C823 C7 C824 E7
- D801 B8 D802 B9
- D803 B3 D804 C6
- D805 C7 D806 E3
- D807 E2 D808 F3
- D809 F8 D810 F9
- D811 D2 D812 D3
- D813 B5 D814 E6
- D815 E7 IC801 D5
- L801 A9 L802 E9
- PT801 A7 PT802 E7
- Q801 B3 Q802 B3
- Q803 C3 Q804 C6
- Q805 D6 Q806 D7
- Q807 E4 Q808 E1
- Q809 E6 Q810 C6
- Q811 C7 Q812 B5
- R801 A9 R802 B3
- R803 C5 R804 B9
- R805 B5 R806 B8
- R807 B9 R808 E2
- R809 E2 R810 D6
- R811 B8 R812 B9
- R813 B2 R814 B4
- R815 C4 R816 C2
- R817 C4 R818 C3
- R819 C3 R820 D2
- R821 D3 R822 D3
- R823 D3 R824 D3
- R825 D4 R826 D4
- R827 D2 R828 E2
- R829 E3 R830 E9
- R831 E3 R832 E9
- R833 E3 R834 F8
- R835 F9 R836 E2
- R837 E7 R838 F3
- R839 F8 R840 F3
- R841 F9 R842 D4
- R843 D4 R844 D6
- R845 D6 R846 D7
- R847 D7 R848 D6
- R849 D7 R850 B6
- R851 F7 R852 D5
- R853 C5 Z801 B5

Power Board Layout-1



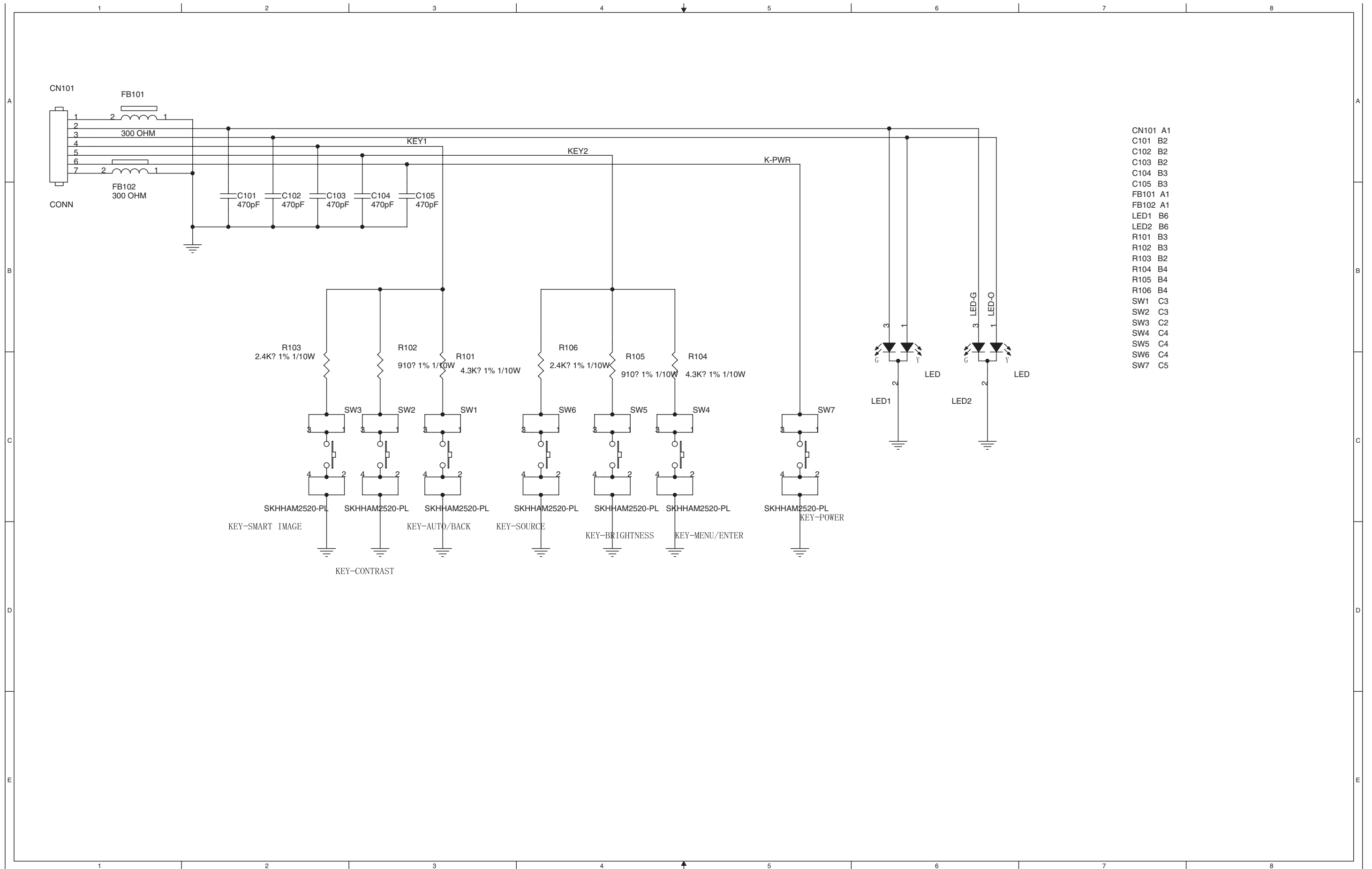
- BD901 D4 J802 C2
- C801 A1 J803 B1
- C805 B2 J804 B1
- C811 C2 J805 B2
- C812 D1 J806 B1
- C900 B4 J808 C2
- C901 D3 J809 C2
- C902 D3 J810 C2
- C903 D4 J811 C2
- C907 C4 J812 B2
- C909 D3 J817 C2
- C910 C4 J819 B2
- C911 C3 J901 D3
- C920 B3 J903 C3
- C921 B4 J904 A3
- C922 B3 J905 A3
- C923 B3 J906 A4
- C924 B3 J909 A2
- C925 A3 J910 A2
- C926 B3 L801 B1
- C927 A4 L802 C1
- C932 B4 L901 D3
- CN801 A1 L902 D4
- CN802 A1 L921 A3
- CN803 D1 L922 A4
- CN804 D1 NR901 C2
- CN901 D2 PT801 B1
- CN902 A4 PT802 C2
- D804 B1 Q900 C4
- D805 B1 R907 A3
- D814 C1 R909 C3
- D815 C2 R916 C4
- D900 C3 SG11 C4
- D901 C3 SG12 D2
- D920 A3 SG19 D2
- D921 B4 SG22 D4
- D922 A4 SG25 D4
- F901 D2 SG27 D3
- F903 A4 SG28 C3
- FB901 C4 SG31 D3
- FB902 B4 SG33 A1
- FB903 C4 SG34 A1
- HS10 A3 SG35 A1
- HS13 A3 SG36 A1
- HS14 A2 SG39 A1
- HS16 A2 SG40 D1
- HS17 B4 SG42 D1
- HS20 A8 SG44 D1
- HS28 A7 SG45 D1
- HS29 B1 SG46 C4
- HS31 B4 SG47 C4
- IC902 B3 SG49 C4
- IC903 B3 T901 C3
- J801 B2 VAR901 D3

Power Board Layout-2



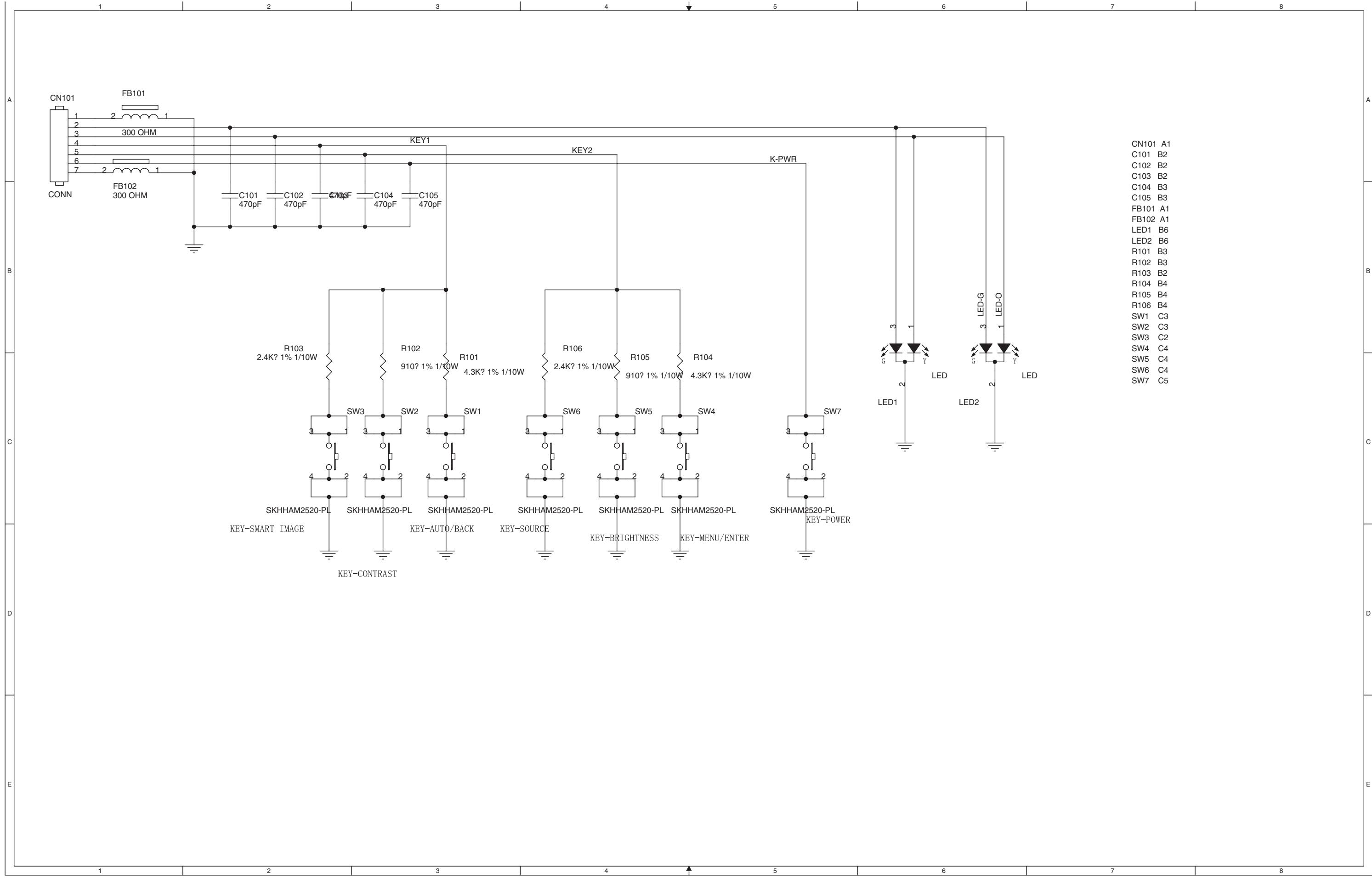
- C802 A2 J907 C3 R843 B2
- C803 B1 J908 C3 R844 B2
- C804 B2 Q801 A2 R845 B1
- C806 B2 Q802 A2 R846 B1
- C807 C2 Q803 A2 R847 C2
- C808 B2 Q804 B1 R848 B2
- C809 C2 Q805 B1 R849 B2
- C810 A2 Q806 B1 R850 B2
- C813 B1 Q807 B2 R851 C2
- C814 B2 Q808 B2 R852 B2
- C815 B1 Q809 C1 R853 B2
- C816 C1 Q810 C2 R900 D3
- C817 C1 Q811 B1 R901 D3
- C818 C1 Q812 A2 R902 C2
- C819 A2 Q902 A3 R903 A3
- C820 B2 Q910 C3 R905 C3
- C821 B2 R801 B1 R908 A3
- C822 C2 R802 B2 R910 C3
- C823 B2 R803 A2 R911 C3
- C824 C2 R804 B1 R912 C3
- C904 A3 R805 B2 R913 C3
- C912 C3 R806 B1 R915 C3
- C913 C3 R807 B1 R922 A3
- C914 C3 R808 A2 R923 A2
- C915 C3 R809 A2 R924 A2
- C916 C3 R810 B1 R925 B3
- C928 B3 R811 B1 R926 A3
- C929 B2 R812 B1 R927 B2
- C930 A4 R813 A2 R928 B3
- C931 A4 R814 C2 R929 B2
- D801 B1 R815 B2 R930 B2
- D802 B1 R816 B2 R931 A3
- D803 A2 R817 B2 R951 B3
- D806 B1 R818 B2 R952 B3
- D807 B2 R819 B2 R953 B3
- D808 C1 R820 B2 R954 B4
- D809 C1 R821 B2 R955 B4
- D810 C1 R822 C2 R956 B4
- D811 B2 R823 B2 SG10 C3
- D812 B2 R824 C2 SG15 D3
- D813 B2 R825 B2 SG17 D3
- D910 C3 R826 B2 SG18 D4
- D911 C3 R827 B2 SG20 D4
- D915 A2 R828 B2 SG21 D3
- D916 A2 R829 B2 SG23 D4
- F902 A3 R830 C1 SG24 D3
- HS11 D4 R831 B1 SG26 D4
- HS15 A1 R832 C1 SG29 C3
- HS21 A7 R833 B1 SG30 D3
- HS22 A1 R834 C1 SG32 D3
- IC801 B2 R835 C1 SG37 D2
- IC901 C3 R836 B2 SG38 D2
- J807 C2 R837 C2 ZD801 A2
- J813 C1 R838 C1 ZD901 C3
- J814 C1 R839 C1 ZD902 C4
- J815 C1 R840 C1 ZD920 A3
- J816 B2 R841 C1 ZD921 A2
- J818 A2 R842 C2 ZD922 A2

Key Board Diagram(170C8)



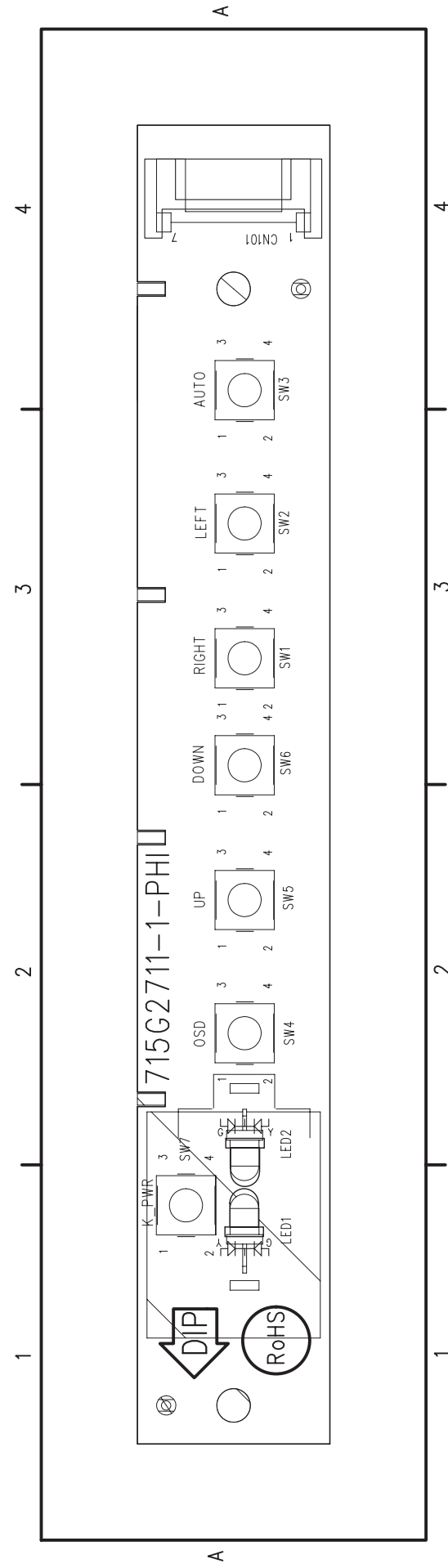
- CN101 A1
- C101 B2
- C102 B2
- C103 B2
- C104 B3
- C105 B3
- FB101 A1
- FB102 A1
- LED1 B6
- LED2 B6
- R101 B3
- R102 B3
- R103 B2
- R104 B4
- R105 B4
- R106 B4
- SW1 C3
- SW2 C3
- SW3 C2
- SW4 C4
- SW5 C4
- SW6 C4
- SW7 C5

Key Board Diagram(190C8)

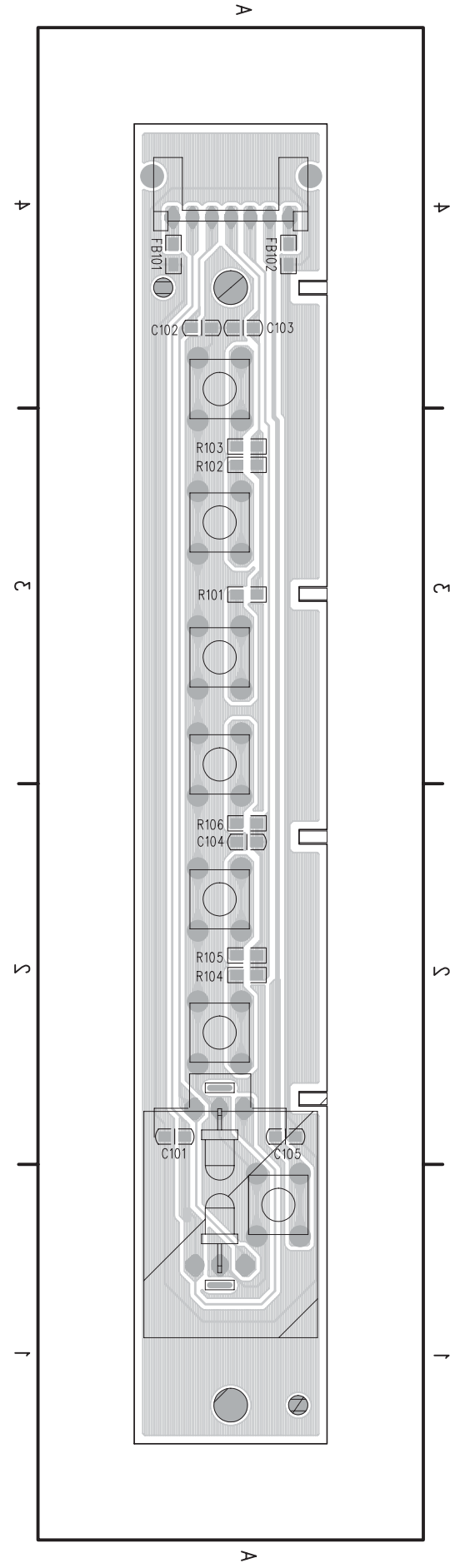


- CN101 A1
- C101 B2
- C102 B2
- C103 B2
- C104 B3
- C105 B3
- FB101 A1
- FB102 A1
- LED1 B6
- LED2 B6
- R101 B3
- R102 B3
- R103 B2
- R104 B4
- R105 B4
- R106 B4
- SW1 C3
- SW2 C3
- SW3 C2
- SW4 C4
- SW5 C4
- SW6 C4
- SW7 C5

Key Board Layout



- CN101 A4
- LED1 A1
- LED2 A2
- SW5 A2
- SW4 A2
- SW6 A3
- SW1 A3
- SW2 A3
- SW3 A4
- SW7 A1



- C101 A2
- C102 A4
- C103 A4
- C104 A2
- C105 A2
- FB101 A4
- FB102 A4
- R101 A3
- R102 A3
- R103 A3
- R104 A2
- R105 A2
- R106 A2

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

HUDSON-8 170C8
GENERAL PRODUCT
SPECIFICATION

- . ANALOG AND DIGITAL DUAL INPUT
- . AUTO PICTURE ADJUSTMENT
- . 12 FACTORY PRESET MODES AND 45 PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES
- . NEW OSD STYLING DISPLAY FOR MODE IDENTIFICATION /ADJUSTMENT
- . DDC 2B & DDC/CI COMMUNICATION CAPABILITY
- . MAX. RESOLUTION 1280*1024 NON-INTERLACED AT 76 HZ
- . 17" COLOR TFT LCD FLAT PANEL
- . EASY TILT & SWIVEL BASE
- . FULL RANGE POWER SUPPLY 90 □ 264 VAC
- . CE ENVIRONMENTAL POLICY
- . LEAD-FREE PRODUCT POLICY
- . ANTI-GLARE TO REDUCE LIGHT REFLECTION
- . POWER MANAGEMENT CAPABILITY
- . SOG SUPPORT
- . TCO.03

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.		590	—	1
TY	CHECK	DATE	2007-06-01	10	A4
Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.					



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

CONTENTS

- 1.0 Foreword
- 2.0 Product profile
- 2.1 LCD
- 2.2 Scanning frequencies
- 2.3 Video dot rate
- 2.4 Power input
- 2.5 Power consumption
- 2.6 Dimensions
- 2.7 Weight
- 2.8 Functions
- 2.9 Ambient temperature
- 2.10 Regulatory compliance
- 3.0 Electrical characteristics
 - 3.1 Interface signals
 - 3.2 Interface
 - 3.2.1 D-Sub cable
 - 3.2.2 DVI cable
 - 3.2.3 Audio cable
 - 3.2.4 USB cable
 - 3.2.5 OSD function control
 - 3.3 Timing requirement
 - 3.3.1 Mode storing capacity
 - 3.3.2 Factory/ preset timings
 - 3.3.3 Horizontal scanning
 - 3.3.4 Vertical scanning
 - 3.4 Power input connection
 - 3.5 Power management
 - 3.6 Display identification
 - 3.6.1 Analog DDC
 - 3.6.2 Digital DDC
- 4.0 Visual characteristics
 - 4.1 Test conditions
 - 4.2 Resolution
 - 4.3 Brightness
 - 4.4 Image size
 - 4.4.1 Actual display size
 - 4.4.2 Max scan size
 - 4.5 Brightness uniformity
 - 4.6 Check cross talk
 - 4.7 White color adjustment
- 5.0 Mechanical characteristics
 - 5.1 Controls
 - 5.2 Unit dimension / weight
 - 5.3 Tilt and swivel base
 - 5.4 Transportation packages
 - 5.4.1 Shipping dimension / weight
 - 5.4.2 Block unit / palletization
- 6.0 Environmental characteristics
 - 6.1 Susceptibility of display to external environment
 - 6.2 Transportation tests
 - 6.3 Display disturbances from external environment
 - 6.4 Display disturbances to external environment
 - 6.4.1 EMI
- 7.0 Reliability
 - 7.1 Mean time between failures
- 8.0 Quality assurance requirements
- 8.1 Acceptance test
- 9.0 Serviceability
- 10.0 Philips Flat panel monitors pixel defect policy

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE : 170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	2	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority, from the proprietors.

1.0 FOREWORD

This specification describes a 17" SXGA multi-scan color TFT-LCD monitor with max resolution up to 1280*1024 /76 Hz non-interlaced.

2.0 PRODUCT PROFILE

This display monitor unit is a color display monitor enclosed in PHILIPS global styling cabinet, which has an integrated tilt and swivel base.

2.1 LCD

- 2.1.1 Type NR. : LM170E03 TLL1
 - Number of Pixels. : 1280 (H) x1024 (V)
 - Physical Size. : 358.5(w)*296.5(h)*16(d) mm
 - Pixel Pitch. : 0.264 mm x 0.264 mm
 - Color pixel arrangement. : RGB stripes arrangement
 - Support Color. : 16.7M colors
 - Display Mode. : Normally White
 - Backlight. : CCFL edge light system
 - Active area. (WXH). : 337.92 x 270.336mm (17" diagonal)
 - Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:75 , down:85
 - Contrast ratio. : 800 :1(typ.), 500:1(min.)
 - White luminance. : 300 nit (typ.), 250nit (min.)

- 2.1.2 Type NR. : LM170E03 TLL4
 - Number of Pixels. : 1280 (H) x1024 (V)
 - Physical Size. : 358.5(w)*296.5(h)*16(d) mm
 - Pixel Pitch. : 0.264 mm x 0.264 mm
 - Color pixel arrangement. : RGB stripes arrangement
 - Support Color. : 16.7M colors
 - Display Mode. : Normally White
 - Backlight. : CCFL edge light system
 - Active area. (WXH). : 337.92 x 270.336mm (17" diagonal)
 - Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:75 , down:85
 - Contrast ratio. : 800 :1(typ.), 500:1(min.)
 - White luminance. : 300 nit (typ.), 250nit (min.)

- 2.1.3 Type NR. : CLAA170EA07 P - 040
 - Number of Pixels. : 1280 (H) x1024 (V)
 - Physical Size. : 358.5(w)*296.5(h)*17.5(d) mm
 - Pixel Pitch. : 0.264 mm x 0.264 mm
 - Color pixel arrangement . : RGB vertical stripes
 - Support Color. : 16.2M colors
 - Display Mode. : Normally White
 - Backlight. : CCFL edge light system
 - Active area. (WXH). : 337.9 x 270.3 mm (17" diagonal)
 - Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:80 , down:80
 - Contrast ratio. : 700 :1(typ.) ; 550:1 (min.)
 - White luminance. : 300 nit (typ.), 250nit (min.)

- 2.1.4 Type NR. : CLAA170EA07 P - 050
 - Number of Pixels. : 1280 (H) x1024 (V)
 - Physical Size. : 358.5(w)*296.5(h)*17.5(d) mm
 - Pixel Pitch. : 0.264 mm x 0.264 mm
 - Color pixel arrangement . : RGB vertical stripes
 - Support Color. : 16.2M colors
 - Display Mode. : Normally White
 - Backlight. : CCFL edge light system
 - Active area. (WXH). : 337.9 x 270.3 mm (17" diagonal)
 - Viewing Angle (CR>=10). : Right:80 , Left:80 , UP:80 , down:80
 - Contrast ratio. : 700 :1(typ.) ; 550:1 (min.)
 - White luminance. : 300 nit (typ.), 250nit (min.)

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	590 — 3		10	A4
TY	CHECK	DATE	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		
		2007-06-01			



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

- 2.2 Scanning frequencies
 - H-Frequency. : 30K \square 83 KHz
 - V-Frequency. : 56 - 76 Hz
- 2.3 Video dot rate. : < 140 MHz
- 2.4 Power input. : 90-264 V AC, 50/60 \pm 2 Hz
- 2.5 Power consumption. : < 36 W maximum
- 2.6 Dimensions. :
- 2.7 Weight. :
- 2.8 Functions:
 - (1) D-Sub analog R/G/B separate inputs, H/V sync separated, Composite (H+V) TTL level, SOG sync.
 - (2) DVI-D digital Panel Link TMDS input
- 2.9 Ambient temperature: 0 °C - 40 °C
- 2.10 Regulatory compliance:

Safety	B, CCIB / CCEE(China), CE(Europe), CSA(Canada), DEMKO(Nordic), EZU(Czech), FIMKO(Nordic), Gost(Russia), IEC 950 CB Report, NOM NYCE(Mexico), PSB(Singapore), SEMKO(Nordic),SISIR CPA(Singapore), TUV(Germany), UL(USA),
	* UL2601-1(NAFTA), EN60601(EU) and IEC60601-1(WW)
EMI	C-tick, CE(Europe), FCC(USA), IC(Canada), VCCI(Japan),BSMI,
	*IEC60601-1-2 (EU)
Ergonomics	E2000, MPRII(Sweden), Nutek(Sweden), TCO99, TCO03, TUV/GS, TUV/ERG, EPA, ISO 13406-2
Compatibility	PC2001, Windows 2000, Windows 98/Me, Windows XP, NSTL

* Medical compliance only applies for dedicated models

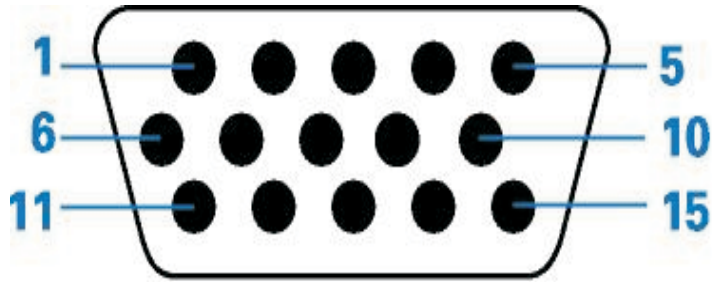
- 3.0 Electrical characteristics
- 3.1 Interface signals
 - There are two main display interface input signals (D-sub and DVI-D)
 - 1). D-shell Analog
 - Input signal: Video, H-sync, V-sync,
 - Video: 0.7 V p-p, input impedance, 75 ohm
 - Sync. : Separate sync TTL level, input impedance 2k2 ohm terminate
 - H-sync Positive/Negative
 - V-sync Positive/Negative
 - Composite sync TTL level, input impedance 2k2 ohm terminate (Positive/Negative)
 - Sync on green video 0.3V p-p Negative. (Video 0.7 V p-p Positive)
 - 2). DVI-D Digital
 - Input signal: Single TMDS link (Three channels: RX0-/, RX1-/, RX2-/+)
- 3.2 Interface
- 3.2.1 D-Sub Cable
 - Length. : 1.8 M +/- 50 mm
 - Connector type. : D-Sub male with DDC-2B pin assignments.
Blue connector thumb-operated jackscrews

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE : 170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590 — 4	10	A4
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority, from the proprietors.

Pin Assignment:



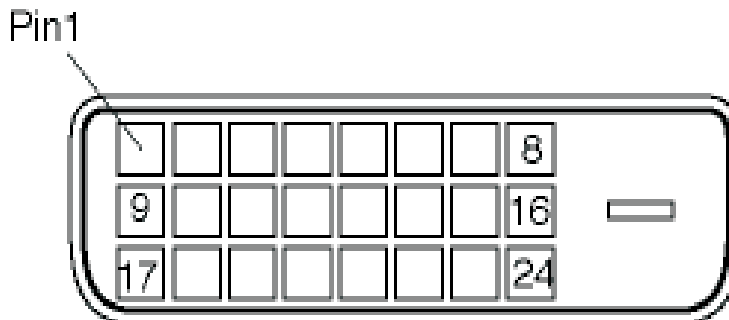
PIN No.	SIGNAL
1	Red video input
2	Green video input / sync on green
3	Blue video input
4	GND
5	GND- Cable detect
6	Red video GND
7	Green video GND
8	Blue video GND
9	DDC +3.3V or +5V
10	Logic GND
11	GND
12	Serial data line (SDA)
13	H-sync / H+V
14	V-sync
15	Data clock line (SCL)

3.2.2 DVI Cable

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

- Length. : 1.8 M +/- 50 mm
- Connector type. : DVI-D male with DDC-2B pin assignments
- White connector thumb-operated jackscrews

Pin Assignment:



CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	5	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

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

3.2.5 Software control functions via OSD/control

OSD (On Screen Display) function

(1) Analog interface OSD:

Adjustable functions:

MAIN MENU	Sub Menu	Sub Menu 2	Description	
Picture	Brightness		Sliding bar	
	Contrast		Sliding bar	
Color	Original			
	Color Temperature			
		5000K		
		6500K		
		7500K		
		8200K		
		9300K		
		11500K		
		sRGB		
		User Define		
		Red(0-100)	Sliding bar	
		Green(0-100)	Sliding bar	
		Blue(0-100)	Sliding bar	

CLASS NO.

17 inch LCD Monitor

TYPE : 170C8FS/00

BRAND : PHILIPS

8670 000 25561

2007-06-01

NAME

SUPERS.

19

590

6

10

A4

TY

CHECK

DATE 2007-06-01

Property of

PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

Source	AUTO		
	VGA		
	DVI		
Language			Left/right arrow to select
	English		t
	Spanish		
	French		
	German		
	Italian		
	Portuguese		
	Russian		
	Simplified Chinese		
OSD Settings			
	Horizontal	0-100	Sliding bar
	Vertical	0-100	Sliding bar
	Transparency	Off, 1, 2, 3, 4	
	OSD Time out	5, 10, 20, 60	
	OSDLock	On, Off	
Setup	Phase	0~100	Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out)
	Clock	0~100	Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out)
	H.Position	0~100	Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out)
	V.Position	0~100	Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out)
	Smart Contrast	On, Off	
	Reset	Yes, No	
	Resolution Notification	On, Off	
	Information		
	Demo		

Reset - Yes: Auto adjustment for displaying timing mode and recall factory preset
 No: Exit

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	590 — 7		10	A4
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



3.3 Timing requirement

3.3.1 Mode storing capacity

(1) Factory preset modes.	: 12
(2) Preset modes.	: 45
(3) User define modes	: 10

3.3.2 Factory/ Preset timings

The factory settings of size and centering are according to the reference timing charts
(See as below)

MODE NO.	1	2	3	4
RESOLUTION	640 x 350	720 x 400	640 x 480	640 x 480
Dot clock(MHz)	25.175	28.321	25.175	30.24
f h	31.469kHz	31.468kHz	31.5kHz	35 kHz
A (us)	31.778(800 dots)	31.78(900dots)	31.778(800 dots)	28.571 (864 dots)
B (us)	3.813(96 dots)	3.813(108dots)	3.813(96 dots)	2.116 (64 dots)
C (us)	1.907(48 dots)	1.907(54dots)	1.907(48 dots)	3.175(96 dots)
D (us)	25.422(640 dots)	25.42(720dots)	25.422(640 dots)	21.164(640 dots)
E (us)	0.636(16 dots)	0.636(18dots)	0.636(16 dots)	2.116(64 dots)
f v	70Hz(70.09)	70Hz(70.085)	60Hz	67Hz
O (ms)	14.27(449 lines)	14.27(449 lines)	16.683 (525 lines)	15 (525 lines)
P (ms)	0.064(2 lines)	0.064(2 lines)	0.064 (2 lines)	0.086(3 lines)
Q (ms)	1.907(60 lines)	1.080(34 lines)	1.049 (33 lines)	1.114(39 lines)
R (ms)	11.12(350 lines)	12.71(400 lines)	15.253 (480 lines)	13.714(480 lines)
S (ms)	1.175(37 lines)	0.381(13 lines)	0.317 (10 line)	0.086(3 line)
SYNC. H/V	+/-	-/+	-/-	-/-
POLARITY				
SEP . SYNC	Y	Y	Y	Y

MODE NO.	5	6	7	8
RESOLUTION	640 x 480	640 x 480	640x480	800 x 600
Dot clock(MHz)	31.500	31.501	36	36
f h	37.861kHz	37.5kHz	36kHz	35.2kHz
A (us)	26.413(832 dots)	26.667 (840 dots)	23.111 (832 dots)	28.444(1024 dots)
B (us)	1.270(40 dots)	2.032 (54 dots)	1.556 (56 dots)	2.000 (72 dots)
C (us)	3.810(120 dots)	3.81 (120 dots)	2.222 (80 dots)	3.556 (128 dots)
D (us)	20.317(640 dots)	20.317 (640 dots)	17.778 (640 dots)	22.222(800 dots)
E (us)	1.016(32 dots)	0.508 (26 dots)	1.555 (56 dots)	0.666 (24 dots)
f v	72.809Hz	75Hz	85Hz	56Hz
O (ms)	13.735(520 lines)	13.333 (500 lines)	11.763 (509 lines)	17.778 (625 lines)
P (ms)	0.079(3 lines)	0.08 (3 lines)	0.069 (3 lines)	0.057 (2 lines)
Q (ms)	0.528(20 lines)	0.427 (16 lines)	0.578 (25 lines)	0.626 (22 lines)
R (ms)	12.678(480 lines)	12.8 (480 lines)	11.093 (480 lines)	17.066 (600 lines)
S (ms)	0.45(17 lines)	0.026 (1 lines)	0.023 (1 lines)	0.029 (1 line)
SYNC. H/V	-/-	-/-	-/-	+ / +
POLARITY				
SEP . SYNC	Y	Y	Y	Y

CLASS NO.

17 inch LCD Monitor

TYPE : 170C8FS/00

BRAND : PHILIPS

8670 000 25561

2007-06-01

NAME

SUPERS.

19

590

8

10

A4

TY

CHECK

DATE 2007-06-01

Property of

PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

PHILIPS



MODE NO.	9	10	11	12
RESOLUTION	800 x 600	800 x 600	800 x 600	800 x 600
Dot clock(MHz)	40	50	49.498	56.251
f h	37.9kHz	48.077kHz	46.9kHz	53.7kHz
A (us)	26.4 (1056 dots)	20.80 (1040dots)	21.333 (1056 dots)	18.631 (1048 dots)
B (us)	3.2 (128 dots)	2.400 (120 dots)	1.616 (80 dots)	1.138 (64 dots)
C (us)	2.2 (88 dots)	1.280 (64 dots)	3.232 (160 dots)	2.702 (152 dots)
D (us)	20 (800 dots)	16.00 (800 dots)	16.162 (800 dots)	14.222 (800 dots)
E (us)	1 (40 dots)	1.120 (56 dots)	0.323 (16 dots)	0.569 (32 dots)
f v	60Hz	72Hz (72.188)	75Hz	85Hz
O (ms)	16.579 (628 lines)	13.85 (666 lines)	13.333 (625 lines)	11.756(631 lines)
P (ms)	0.106 (4 lines)	0.125 (6 lines)	0.064 (3 lines)	0.056 (3 lines)
Q (ms)	0.607 (23 lines)	0.478 (23 lines)	0.448 (21 lines)	0.503 (27 lines)
R (ms)	15.84 (600lines)	12.48 (600 lines)	12.8 (600 lines)	11.179 (600 lines)
S (ms)	0.026 (1 line)	0.770 (37 line)	0.021 (1 line)	0.018 (1 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+ / +	+ / +
SEP. SYNC	Y	Y	Y	Y

MODE NO.	13	14	15	16
RESOLUTION	832 x 624	1024 x 768	1024 x 768	1024 x 768
Dot clock(MHz)	57.28	65	75	78.75
f h	49.7kHz	48.363kHz	56.5kHz	60kHz
A (us)	20.11(1152 dots)	20.677(1344 dots)	17.707(1328 dots)	16.66 (1312dots)
B (us)	1.117(64 dots)	2.092(136 dots)	1.813(136 dots)	1.219 (96 dots)
C (us)	3.91(224 dots)	2.462(160 dots)	1.920(144 dots)	2.235 (176 dots)
D (us)	14.52(832 dots)	15.754(1024 dots)	13.653(1024 dots)	13.003 (1024 dots)
E (us)	0.563(32 dots)	0.369(24 dots)	0.321 (24 dots)	0.203 (16 dots)
f v	75Hz	60.004Hz	70.004Hz	75Hz (75.000)
O (ms)	13.41(667 lines)	16.666(806 lines)	14.272(806 lines)	13.328 (800 lines)
P (ms)	0.06(3 lines)	0.124(6 lines)	0.106(6 lines)	0.05(3 lines)
Q (ms)	0.784(39 lines)	0.600(29 lines)	0.514(29 lines)	0.446 (28 lines)
R (ms)	12.55(624 lines)	15.880(768 lines)	13.599(768 lines)	12.80 (768 lines)
S (ms)	0.016(1 lines)	0.062(3 lines)	0.053(3 lines)	0.017 (1 line)
SYNC. H/V POLARITY	+ / +	- / -	- / -	+ / +
SEP. SYNC	Y	Y	Y	Y

MODE NO.	17	18	21	22
RESOLUTION	1024 x 768	1024 x 768	1152 x 864	1152 x 864
Dot clock(MHz)	83.096	94.5	79.9	94.5
f h	61.1kHz	68.7kHz	54.0kHz	63.9kHz
A (us)	16.367 (1360dots)	14.561 (1376 dots)	18.523(1480 dots)	15.661(1480 dots)
B (us)	1.348 (112 dots)	1.016 (96 dots)	1.952(156 dots)	1.016(96 dots)
C (us)	2.022 (168 dots)	2.201 (208 dots)	1.352(108 dots)	1.116(105 dots)
D (us)	12.323 (1024 dots)	10.836 (1024 dots)	14.418(1152 dots)	12.19(1152 dots)
E (us)	0.674 (56 dots)	0.508 (48 dots)	0.801(64 dots)	1.339(127 dots)
f v	76Hz	85Hz	60Hz	70Hz
O (ms)	13.142 (803 lines)	11.765 (808 lines)	16.671(900lines)	14.283(912lines)
P (ms)	0.049 (3 lines)	0.044 (3 lines)	0.148(8 lines)	0.047(3lines)
Q (ms)	0.507 (31 lines)	0.524 (36 lines)	0.445(24 lines)	0.689(44 lines)
R (ms)	12.57 (768 lines)	11.183 (768lines)	16.004(864 lines)	13.531(864 lines)
S (ms)	0.016 (1 line)	0.014 (1 line)	0.074(4 lines)	0.016(1 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+ / +	+ / +
SEP. SYNC	Y	Y	Y	Y

CLASS NO.	17 inch LCD Monitor		8670 000 25561		
	TYPE :170C8FS/00				
	BRAND : PHILIPS				
2007-06-01					
NAME	SUPERS.	19	590 — 9	10	A4
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

MODE NO.	23	24	25	26
RESOLUTION	1152 x 864	1152 x 870	1152 x 900	1152 x 900
Dot clock(MHz)	108	100	94.5	108
f h	67.5kHz	68.7kHz	61.8kHz	71.8kHz
A (us)	14.815 (1600 dots)	14.56 (1456 dots)	16.169 (1528 dots)	13.926 (1054dots)
B (us)	1.185 (128 dots)	1.28 (128 dots)	1.354 (128 dots)	1.185 (128 dots)
C (us)	2.37 (256 dots)	1.44(144 dots)	2.201 (208 dots)	1.778 (192 dots)
D (us)	10.667 (1152 dots)	11.52 (1152 dots)	12.19 (1152 dots)	10.667 (1152 dots)
E (us)	0.593 (64 dots)	0.32 (32 dots)	0.424 (40 dots)	0.296 (32 dots)
f v	75Hz	75Hz	66Hz	76Hz
O (ms)	13.333 (900 lines)	13.333 (916 lines)	15.151 (937lines)	13.132 (943 lines)
P (ms)	0.044 (3 lines)	0.044 (3 lines)	0.065 (4 lines)	0.111 (8 lines)
Q (ms)	0.474 (32 lines)	0.568(39 lines)	0.501 (31 lines)	0.46 (33 lines)
R (ms)	12.8 (864 lines)	12.678 (870 lines)	14.552 (900lines)	12.533 (900 lines)
S (ms)	0.015 (1 lines)	0.043 (4 line)	0.033 (2 line)	0.028 (2 lines)
SYNC. H/V POLARITY	- / -	- / -	Serr-	+ / +
SEP. SYNC	Y	Y	Y	Y

MODE NO.	27	28	29	30
RESOLUTION	1280 x 960	1280 x 960	1280 x 1024	1280 x 1024
Dot clock(MHz)	108	129.895	108	117
f h	60kHz	75kHz	64kHz	71.7kHz
A (us)	16.667(1800 dots)	13.307 (1728 dots)	15.63 (1688 dots)	13.949 (1632 dots)
B (us)	1.037(112 dots)	1.047 (136 dots)	1.037 (112 dots)	0.957 (112 dots)
C (us)	2.889(312 dots)	1.725 (224 dots)	2.296 (248 dots)	1.915 (224 dots)
D (us)	11.852(1280 dots)	9.857 (1280 dots)	11.852 (1280 dots)	10.94 (1280 dots)
E (us)	0.889(96 dots)	0.678 (88 dots)	0.445 (48 dots)	0.137 (16 dots)
f v	60Hz	75Hz	60Hz	67Hz
O (ms)	16.667(1000 lines)	13.333 (1002 lines)	16.661 (1066 lines)	14.883 (1067lines)
P (ms)	0.05(3 lines)	0.039 (3 lines)	0.047 (3 lines)	0.112 (8 lines)
Q (ms)	0.600(36 lines)	0.48 (36 lines)	0.594 (38 lines)	0.46 (33 lines)
R (ms)	16(960 lines)	12.774 (960 lines)	16.005 (1024 lines)	14.283 (1024 lines)
S (ms)	0.017(1 lines)	0.04 (3 lines)	0.015 (1 line)	0.028 (2 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+ / +	+ / +
SEP. SYNC	Y	Y	Y	Y

MODE NO.	31	32	33	34
RESOLUTION	1280 x 1024	1280 x 1024	1280 x 1024	1280*1024
Dot clock(MHz)	130.223	135	138.008	157.5
F h	76kHz	80kHz	81.1kHz	91.1kHz
A (us)	13.158 (1712 dots)	12.504(1688 dots)	12.326 (1664 dots)	10.971(1728 dots)
B (us)	1.024 (133 dots)	1.067(144 dots)	0.474 (64 dots)	1.016(160 dots)
C (us)	1.905 (248 dots)	1.837(248 dots)	2.133 (288 dots)	1.422(224 dots)
D (us)	9.83 (1280 dots)	9.481(1280 dots)	9.481 (1280 dots)	8.127(1280 dots)
E (us)	0.399(51 dots)	0.119(16 dots)	0.238 (32 dots)	???
F v	72Hz	75Hz	76Hz	85Hz
O (ms)	14 (1064 lines)	13.329(1066 lines)	13.139 (1066 lines)	11.761(1072 lines)
P (ms)	0.02 (2 lines)	0.038(3 lines)	0.099 (8 lines)	0.033(3 lines)
Q (ms)	0.5 (38 lines)	0.475(38 lines)	0.394 (32 lines)	0.483(44 lines)
R (ms)	13.468 (1024 lines)	12.804(1024 lines)	12.622 (1024 lines)	11.234(1024 lines)
S (ms)	0.012 (0 line)	0.012 (1 line)	0.024(2 lines)	???
SYNC. H/V POLARITY	+ / +	+ / +	- / -	+ / +
SEP. SYNC	Y	Y	Y	Y

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE : 170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	10	A4
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

MODE NO.	35	36	37	38	
RESOLUTION	1280x720	1280*720	1440*900	1440*900	
Dot clock(MHz)	74.5		88.75	106.5	
F h	44.772KHz	56.456KHz	55.469KHz	55.935KHz	
A (us)	22.335	17.713	18.028(1600 dots)	17.878(1904 dots)	
B (us)	1.718	1.337	0.361(32 dots)	1.427(152 dots)	
C (us)	2.577	2.172	0.901(80 dots)	2.178(232 dots)	
D (us)	17.181	13.368	16.225(1440 dots)	13.521(1440 dots)	
E (us)	0.859	???	???	???	
F v(Hz)	59.855	75	59.901	59.887	
O (ms)	16.707	13.373	16.694(926 lines)	16.698(934 lines)	
P (ms)	0.112	0.089	0.108(6 lines)	0.107(6 lines)	
Q (ms)	0.447	0.478	0.306(17 lines)	0.447(25 lines)	
R (ms)	16.082	12.753	16.225(900 lines)	16.090(900 lines)	
S (ms)	0.067	???	???	???	
SYNC. H/V POLARITY	-/+	-/+	+/-	-/+	
SEP . SYNC	Y	Y	Y	Y	
MODE NO.	39	40	41	42	
RESOLUTION	1440*900	1600*1200	1920*1080	1680*1050	
Dot clock(MHz)	136.75	162	138.5	146.25	
F h	70.635KHz	75KHz	66.587KHz	65.29KHz	
A (us)	14.157(1936 dots)	13.333(2160 dots)	15.018(2080 dots)	15.316(2240 dots)	
B (us)	1.112(152 dots)	1.185(192 dots)	0.231(32 dots)	1.203(176 dots)	
C (us)	1.814(248 dots)	1.877(304 dots)	0.587(80 dots)	1.915(280 dots)	
D (us)	10.530(1440 dots)	9.877(1600 dots)	13.863(1920 dots)	11.487(1680 dots)	
E (us)	???	???	???	???	
F v(Hz)	74.984	60	59.934	59.954	
O (ms)	13.336(942 lines)	16.667(1250 lines)	16.685(1111 lines)	16.679(1089 lines)	
P (ms)	0.085(6 lines)	0.040(3 lines)	0.075(5 lines)	0.092(6 lines)	
Q (ms)	0.467(33 lines)	0.613(46 lines)	0.360(24 lines)	0.459(30 lines)	
R (ms)	12.741(900 lines)	16.000(1200 lines)	16.219(1080 lines)	16.082(1050 lines)	
S (ms)	???	???	???	???	
SYNC. H/V POLARITY	-/+	+/+	-/-	-/-	
SEP . SYNC	Y	Y	Y	Y	
MODE NO.	43	44	45	19	20
RESOLUTION	1680*1050	1920*1200	1600*1000	1280 x 768	1280 x 768
Dot clock(MHz)	119.00			79.5	102.25
F h	64.674KHz	74.52KHz		47.776kHz	60.289kHz
A (us)	15.462(1840 dots)			20.931	16.587
B (us)	0.269(32 dots)			1.61	1.252
C (us)	0.672(80 dots)			2.415	2.034
D (us)	14.118(1680 dots)			16.101	12.518
E (us)	???			0.805	0.782
F v(Hz)	60	60	60	59.87Hz	74.893Hz
O (ms)	16.699(1080 lines)			16.703	13.352
P (ms)	0.093(6 lines)			0.147	0.116
Q (ms)	0.340(22 lines)			0.419	0.448
R (ms)	16.235(1050 lines)			16.075	12.739
S (ms)	???			0.063	0.05
SYNC. H/V POLARITY	-/-	-/+	-/+	-/+	-/+
SEP . SYNC	Y	Y	Y		

CLASS NO.	17 inch LCD Monitor		8670 000 25561			
	TYPE :170C8FS/00					
	BRAND : PHILIPS					
2007-06-01						
NAME	SUPERS.	19	590	11	10	A4
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.			



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

- 3.3.3 Horizontal scanning
 - Sync polarity. : Positive or Negative
 - Scanning frequency. : 30 - 83 KHz
- 3.3.4 Vertical scanning
 - Sync polarity. : Positive or Negative
 - Scanning frequency. : 56 - 76 Hz
- 3.4 Power input connection
 - Power-cord length. : 1.8 M
 - Power-cord type. : 3 leads power cord with protective earth plug.
- 3.5 Power management

The power consumption and the status indication of the set with power management function are as below:

Status	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<36W	Green
Stand-by	Off	On	Blanked	<1W	Amber
Suspend	On	Off	Blanked	<1W	Amber
Off	Off	Off	Blanked	<1W	Amber
DC Power off			N/A	<1W	LED Off

According to VESA power saving signal. TCO.99 power saving requirement
EPA energy star requirement
(Power Switch Off)

For digital input power consumption is less 1W
(In non-DMPM recoverable off mode)

- 3.6 Display identification
- 3.6.1 In accordance with VESA Display Channel Standard V1.0 and having DDC-2B and DDC/CI capability.
- 3.6.2 In accordance with DVI requirement (DDWG digital Visual Interface revision 1.0) use DDC-2B, DDC/CI, and EDID 3.0 structure 2.0
- 4.0 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, 1280 x 1024/60Hz non-interlaced mode, signal sources must have 75 ohm output impedance.
 - (2) Luminance setting: controls to be set to 200 nits 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 Resolution
Factory preset modes (12 modes)

Item	Resolution	V.Freq. (Hz)	H.Freq. (KHz)	Mode
1	640x350	70.086	31.469	IBM VGA 10H
2	720x400	70.087	31.469	IBM VGA 3H
3	640x480	59.94	31.469	IBM VGA 12H
4	640x480	67	35	MACINTOSH
5	640x480	75	37.5	VESA
6	800x600	60.317	37.879	VESA
7	800x600	75	46.875	VESA
8	832x624	75	49.7	MACINTOSH
9	1024x768	60.004	48.363	VESA
10	1024x768	75.029	60.023	VESA
11	1280x1024	60.02	63.981	VESA
12	1280x1024	75.025	79.976	VESA

CLASS NO.

17 inch LCD Monitor
TYPE : 170C8FS/00
BRAND : PHILIPS

8670 000 25561

2007-06-01

NAME

SUPERS.

19

590 — 12

10

A4

TY

CHECK

DATE 2007-06-01

Property of

PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority, from the proprietors.

- Note: 1. Screen displays perfect picture at 12 factory-preset modes.
 2. Screen displays visible picture with OSD warning when input modes are other than 45 preset modes
- 4.3 Brightness: 200 nits (at panel color temperature, Screen center point, Fig. 1)
- 4.4 Image size
 4.4.1 Actual display size
 338x270mm
- 4.5 Brightness uniformity
 Set contrast at 50% and turn the brightness to get average above 200 nits at center of the screen.
 Apply the Fig 1. It should comply with the following formula:
 Minimum luminance of nine points (brightness) _____ ≥ 0.75 (Min)
 Maximum luminance of nine points (brightness)
- 4.6 Check Cross talk (S)
 Apply Pattern 2. Set contrast at 100 % and brightness at 100 %. Measure A. Then output Pattern 3 and measure A. The cross talk value:

$$\frac{ABS (YA - YB)}{YA} \times 100 \% < 2.0\% \text{ (Max)}$$
- 4.7 White color 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:
 9300K CIE coordinates X = 0.283 \square 0.020
 Y = 0.297 \square 0.020
 6500K CIE coordinates X = 0.313 \square 0.020
 Y = 0.329 \square 0.020
 sRGB CIE coordinates X = 0.313 \square 0.020
 Y = 0.329 \square 0.020
- 5.0 Mechanical characteristics
- 5.1 Controls
 Front. :
 DC power switch
 OSD function key
 UP/DOWN (Brightness key)
 LEFT/RIGHT
 Auto key
 Rear. :
 Video signal connector
 DVI signal connector
 Power cord socket
- 5.2 Unit dimension / Weight
 Set dimension (incl. pedestal). : 403(W) * 392(H) * 171(D) mm
 Net weight. : 4.63 Kg
- 5.3 Tilt and swivel base
 Pedestal.: Detachable
 Tilt angle: -2 ° to +23 °
 Swivel rotation:
- 5.4 Green aspects (not labels/certificates)

Type	
Cabinet material	PC + ABS
Document material (paper)	Recycled paper
Buffer material	EPS
Elimination of CFC/PBBE/PBDE/absent 100% eliminated	
Design for disassembly	yes

CLASS NO.	17 inch LCD Monitor		8670 000 25561		
	TYPE :170C8FS/00				
	BRAND : PHILIPS				
2007-06-01					
NAME	SUPERS.	19	590 — 13	10	A4
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

5.5 Transportation packages
 5.5.1 Shipping dimension/Weight
 Carton dimension. : 482(W) * 488(D) * 189(H) mm
 Gross weight. : 6.0 Kg

5.5.2 Block unit / Palletization
 Basic Base:

	layers / block	sets/layer	sets/block unit
pallet	11	4	44
slipsheet	12/11	4	48/44

	Blocks/container	
	20 feet	40 feet
pallet	12	24
slipsheet	10/2	22/2

6.0 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 35 degree C
 - Humidity : 80% max
 - Altitude : 0-3658m
 - Air pressure : 600-1100 mBAR

Storage
 - Temperature : -20 to 60 degree C
 - Humidity : 85% max (< 40?)
 - Altitude : 0-12192m
 - Air pressure : 300-1100 mBAR

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

6.2 Transportation tests

Standard		NSTA
Drop Test	Height	76.0 cm
	Sequence	1 corner 3 edge (Room temp) 6 face
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance (Room temp 20°C~23°C, humidity 40%~65%)
Vibration Test	Sequence	(1) PACKAGING 0.73 Grms. Truck spectrum, 30 min /axis , 3 Axes.
		(2) OPERATING 10-55-10 Hz, 0.35 Ampl,30 min/axis, 3 Axes
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance
Bump Test	For design evaluation only Operating 10 G, 11 msec, 1000 cycles Temperature : 23°C Humidity : 60 % Air pressure : 100 kpa (According to DSD draft standard UAN-D636)	

CLASS NO.

17 inch LCD Monitor
 TYPE : 170C8FS/00
 BRAND : PHILIPS

8670 000 25561

2007-06-01

NAME

SUPERS.

19

590 — 14

10

A4

TY

CHECK

DATE 2007-06-01

Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

- 6.3 Display disturbances from external environment
According to IEC 801-2 for ESD disturbances
- 6.4 Display disturbances to external environment
 - 6.4.1 EMI
EMI: FCC, VCCI, CE, C-Tick, MPRIII, BCIQ, IC, BSMI, *IEC60601-1-2 (EU)
* Medical compliance only applies for dedicated models.
 - 6.4.2 Marking and identification
In accordance with UAN-D1109 and the approval marking required by the countries of destination.
- 7.0 Reliability
- 7.1. Mean Time Between Failures
System MTBF (Excluding the LCD panel and CCFL): 50,000 hrs
CCFL MTBF: 30,000 hrs (50% of original brightness)
- 8.0 Quality assurance requirements
- 8.1 Acceptance test
According to MIL-STD-105D Control II level
AQL: 0.4 (major)
1.5 (minor)
(Please also refer to annual quality agreement)
Customer acceptance criteria: UAW0377/00
- 9.0 Serviceability
The serviceability of this monitor should fulfill the requirements, which are prescribed in UAW-0346 and must be checked with the checklist UAT-0361.
- 10.0 Philips Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	170C8
1 lit subpixels	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels	0
Distance between two bright dot defects	> 15 mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	170C8
1 dark subpixels	4
2 adjacent dark subpixels	2
3 adjacent dark subpixels	0
Distance between two dark dot defects	> 15 mm
Total dark dot defects of all types	4

Total DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	170C8
Total bright or dark dot defect of all type	5

* 1 or 2 adjacent sub-pixel defects = 1 dot defect

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	15	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

Go to cover page

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietor.

Fig 1: Brightness and Uniformity

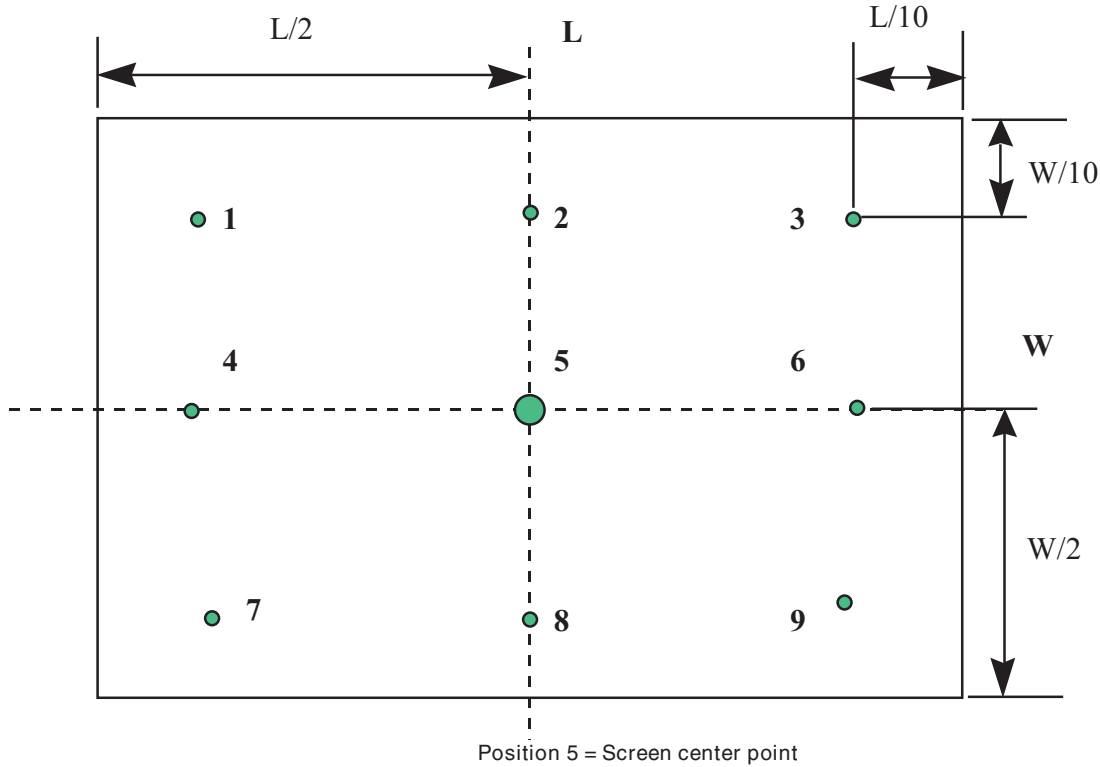
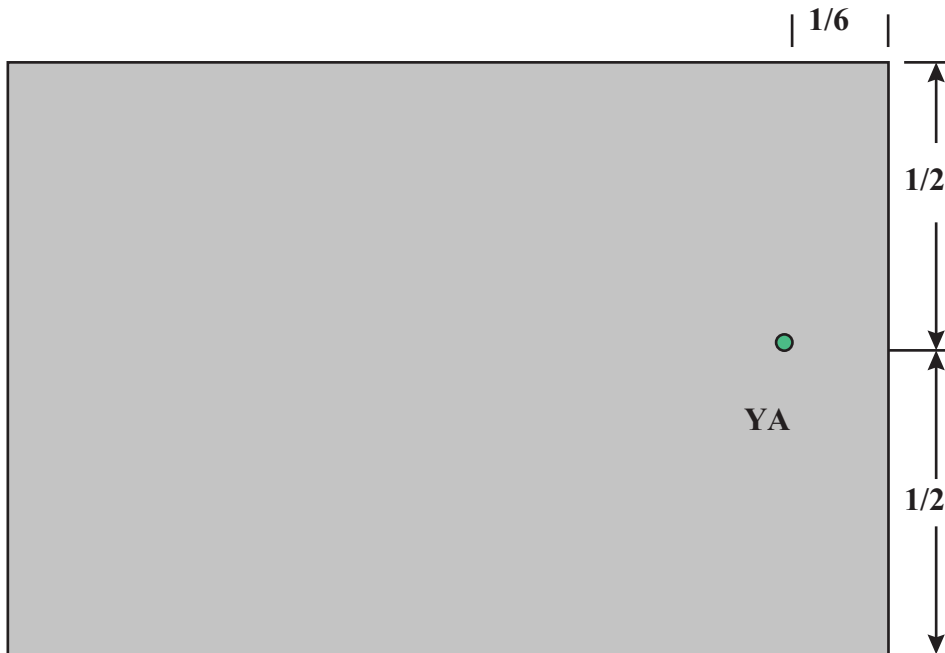


Fig 2: Cross talk pattern
Gray level 46 (64 Gray level)



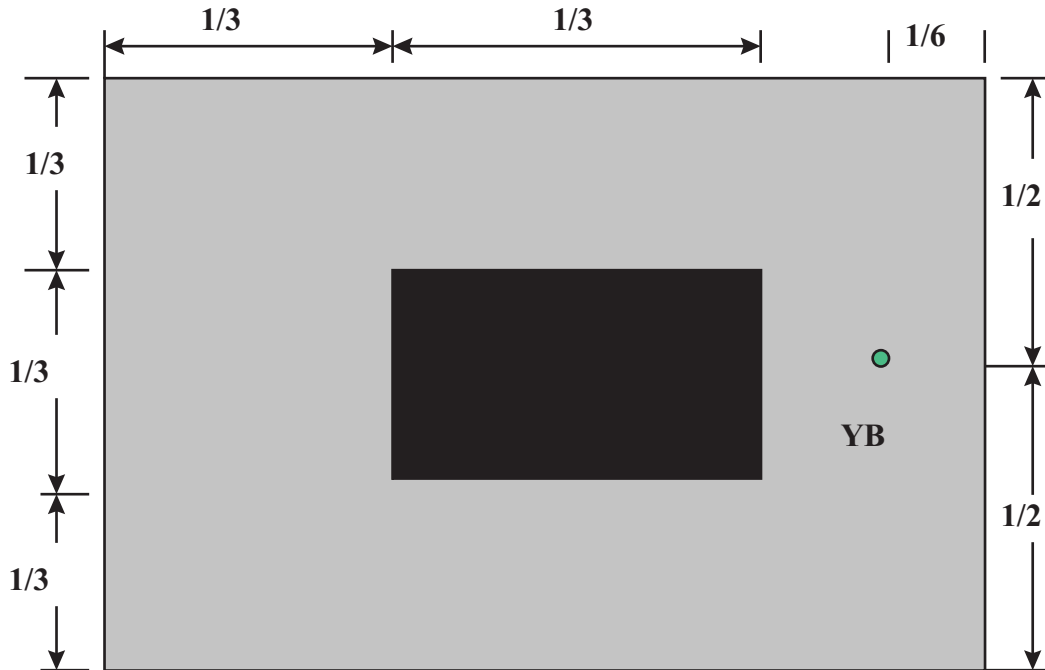
CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE : 170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	16	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

Go to cover page

PHILIPS



Fig 3: Cross talk pattern
Center at Gray level 0 (Black)



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	17	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority from the proprietors.

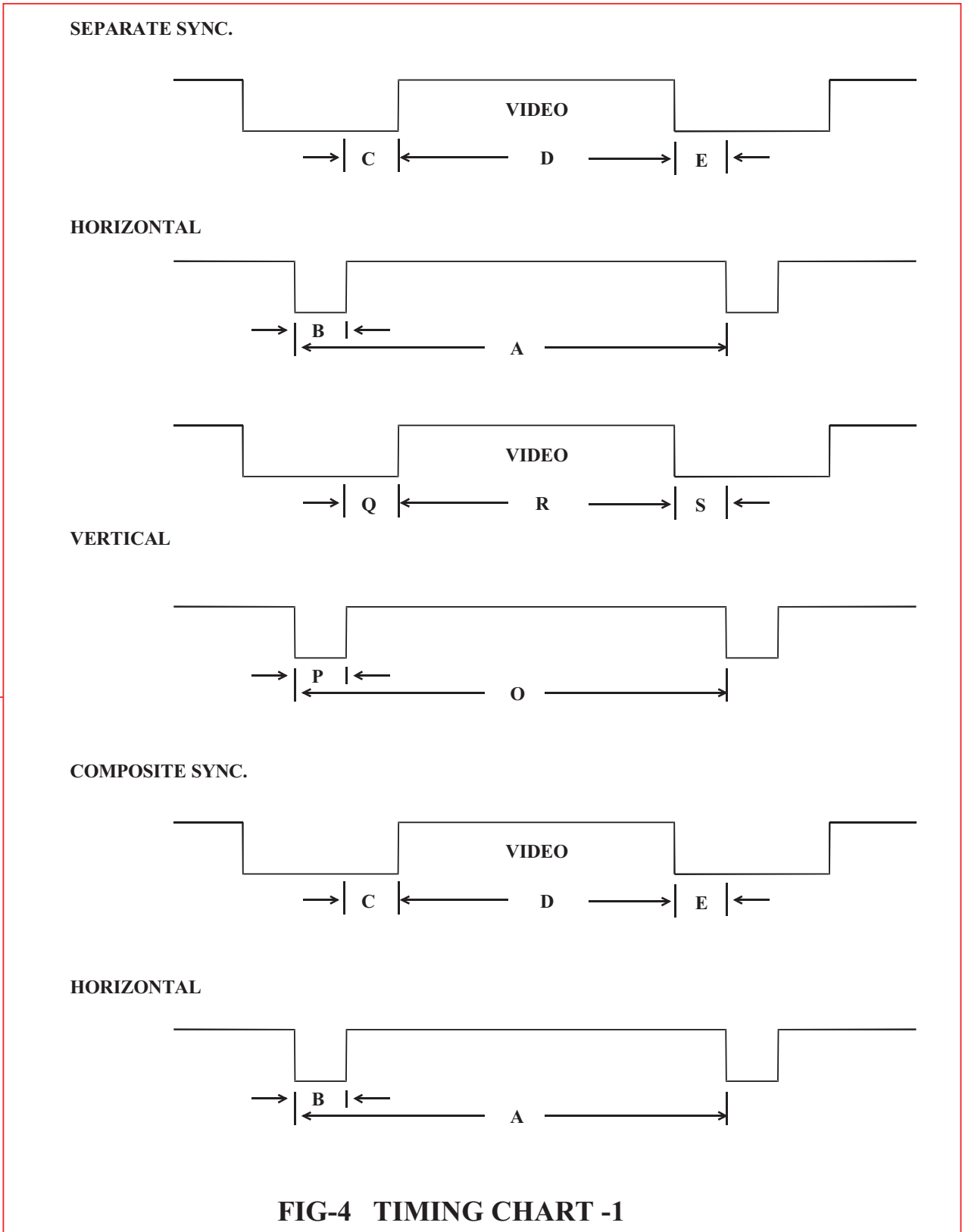


FIG-4 TIMING CHART -1

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE : 170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	18	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

PHILIPS



All rights strictly reserved. Reproduction or issue to third parties in any form whatever is not permitted without written authority, from the proprietors.

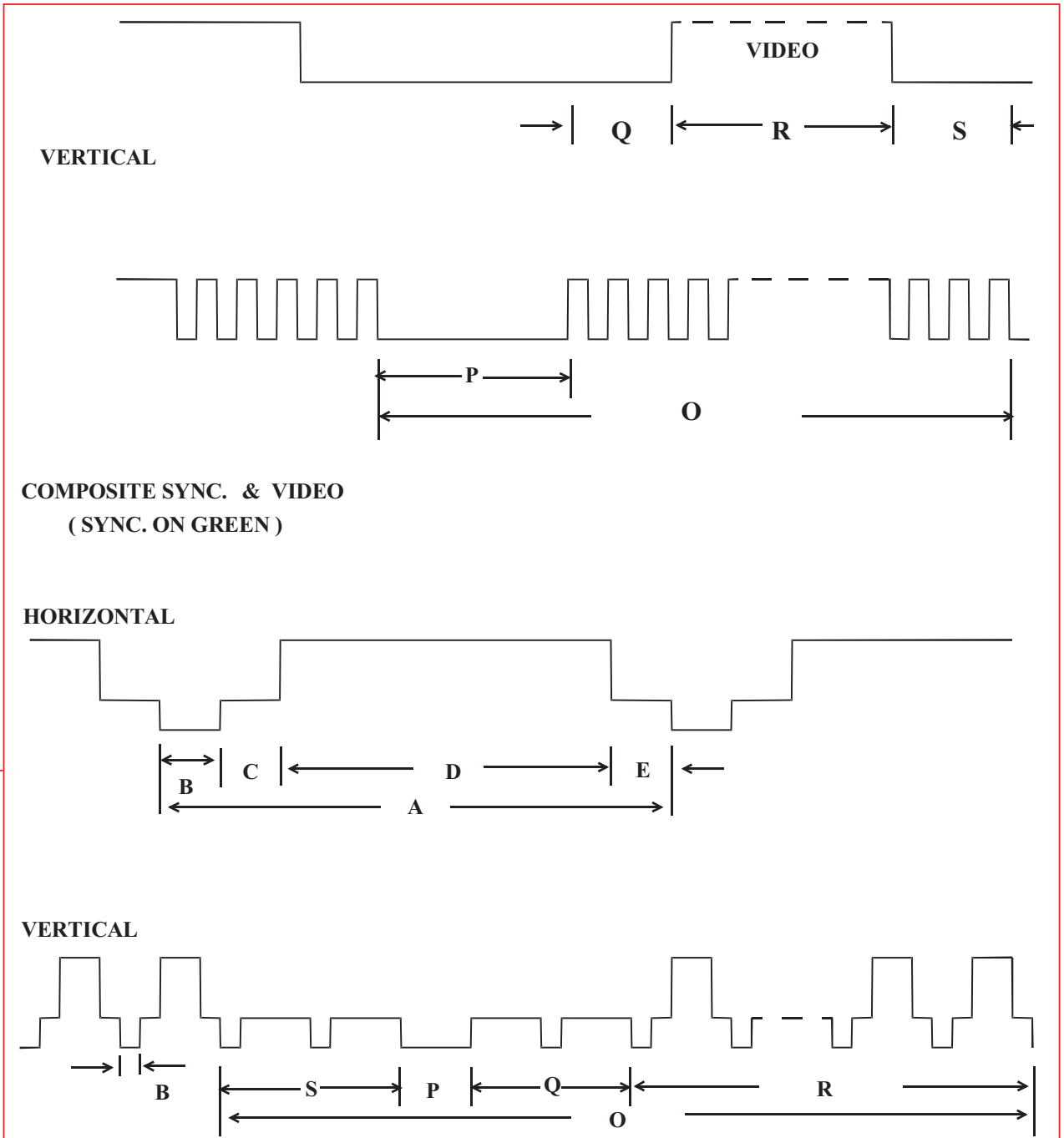
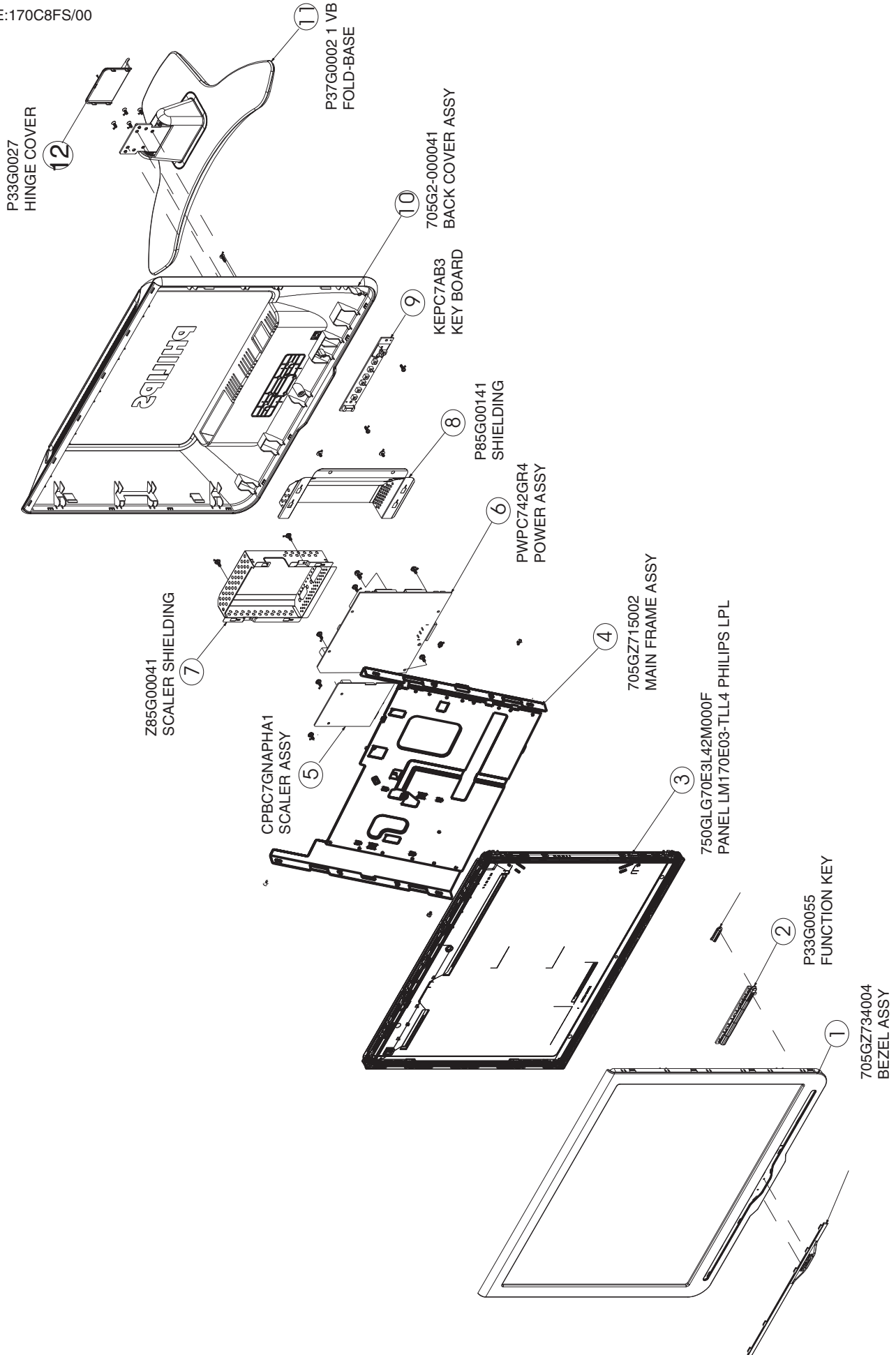


FIG-5 TIMING CHART -2

CLASS NO.		17 inch LCD Monitor		8670 000 25561	
		TYPE :170C8FS/00			
		BRAND : PHILIPS			
2007-06-01					
NAME	SUPERS.	19	590	19	10
TY	CHECK	DATE 2007-06-01	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		

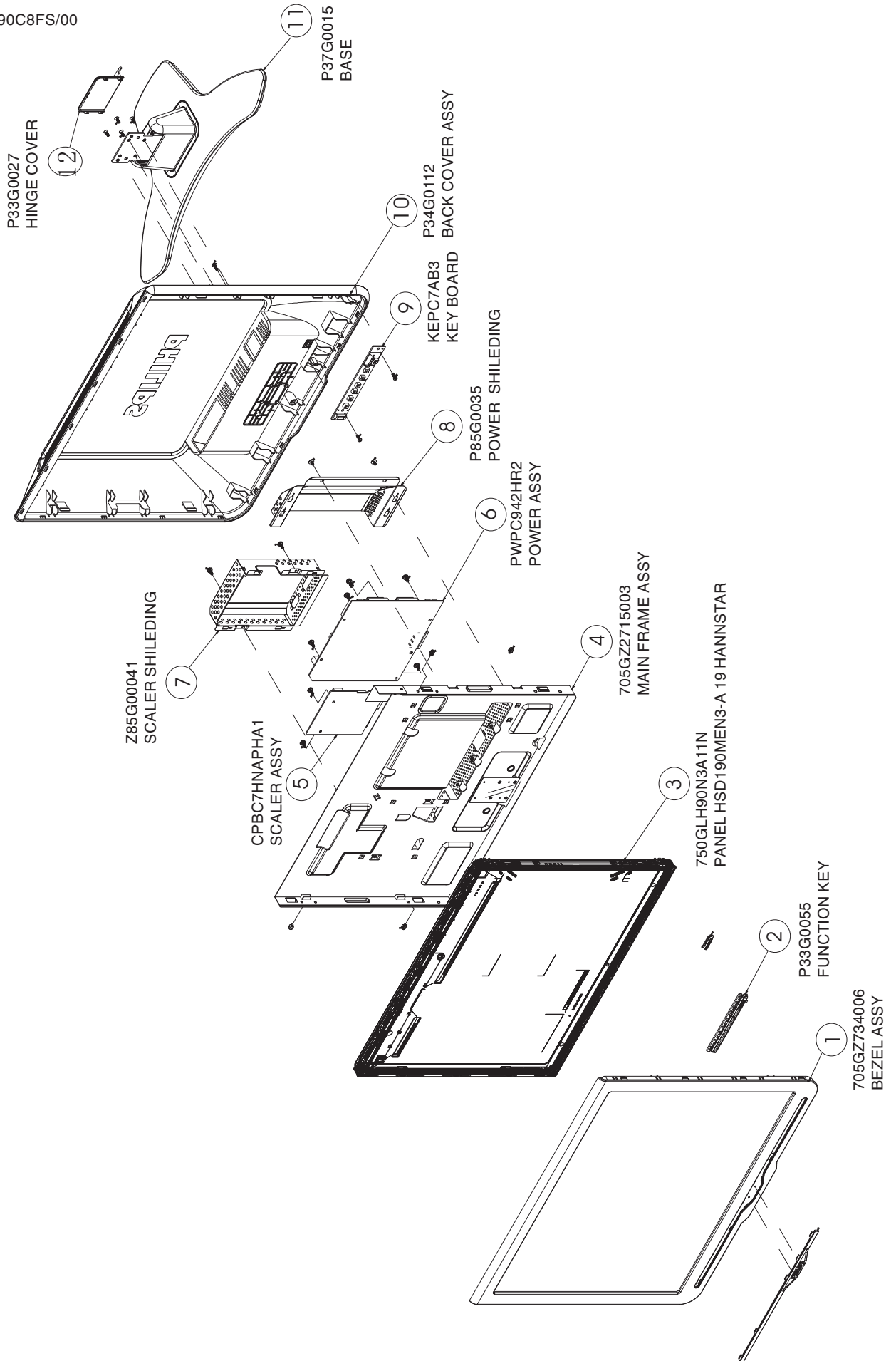
Exploded View

TYPE:170C8FS/00



Exploded View

TYPE:190C8FS/00



Repair Tips

0. Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential !

1. Servicing of SMDs (Surface Mounted Devices)

1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering.

Do not handle SMDs with bare hands.

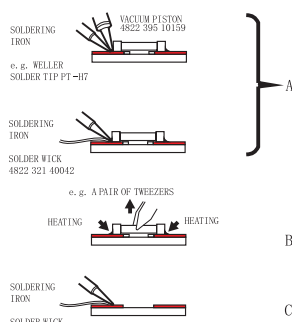
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.

- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 1A)

Fig. 1 DISMOUNTING



While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 1 B).

- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 1C).

1.3 Caution on removal

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should

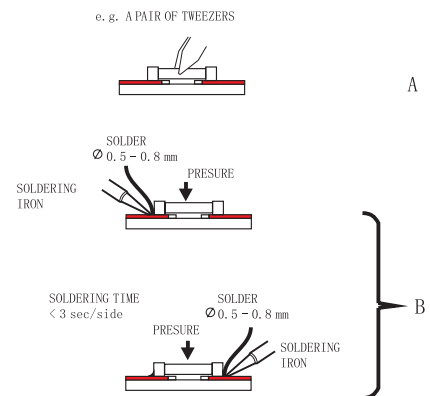
preferably be equipped with a thermal control (soldering temperature: 225 to 250 C).

- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig.2A).
- Next complete the soldering of the terminals of the component (see Fig. 2B).

Fig. 2 MOUNTING

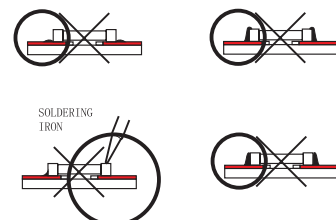


2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 3).



Fig. 3 Examples



3. Lead-free product identification

You can identify lead-free product by Philips-lead-free logo on PCB.



4. Lead-free product repair instruction

4.1 Use only lead-free Solder Alloy 0622 149 00106(1.2mm SAC305) or 0622 14900108(1.0mm SAC305).

Remark: For lead free soldering material, please visit www.alphametals.com website for details. This is recommended by Philips.

4.2 Use only adequate solder tools applicable for lead-free soldering-tin. The solder tool must be able to reach at least a solder-temperature of 400 , to stabilize the adjusted temperature at the solder-tip and to exchange solder-tips for different applications. Small Passives/Actives to be removed with thermal tweezers

Automated system for IC and BGA repair (Microscope, Camera, Beam split optics, Computer, Programmer, Heat controllers, Vacuum system, Laser pointer) Solder Hand-Tool (Adjustable in temperature height, Temperature shall be held constant, Flexible tips)

4.3 Adjust your solder tool so that a temperature around 360 -380 is reached and stabilized at the solder joint.

Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400 otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. Corrosion of Tool-Spikes can be avoided when using SAC305 and a temperature of less than 400 .

4.4 Mix of lead-free solder-tin/parts with leaded soldering-tin/parts is possible but not recommended. If not to avoid clean carefully the solder-joint from old tin and re-solder with new tin.

4.5 Use only original spare-parts listed in the Service-Manuals. Standard-material(consumables) can also be purchased at external companies.

4.6 Special information for lead-free BGA-ICs: this ICs will be delivered in so-called dry-packaging to protect the IC against moisture and with lead-free logo on it. This packaging may only be opened shortly before it is used (soldered). Otherwise the body of the IC gets wet inside and during the heating time the structure of the IC will be destroyed due to high (steam-)pressure. If the packaging was opened before usage the IC has to be heated up for some hours (around 90) for drying (Take attention for ESD-protection!)

5. Rework on BGA (Ball Grid Array) ICs

General

Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal

As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.

To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation

When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.

Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent. After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the(LF)BGA

Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device Replacement

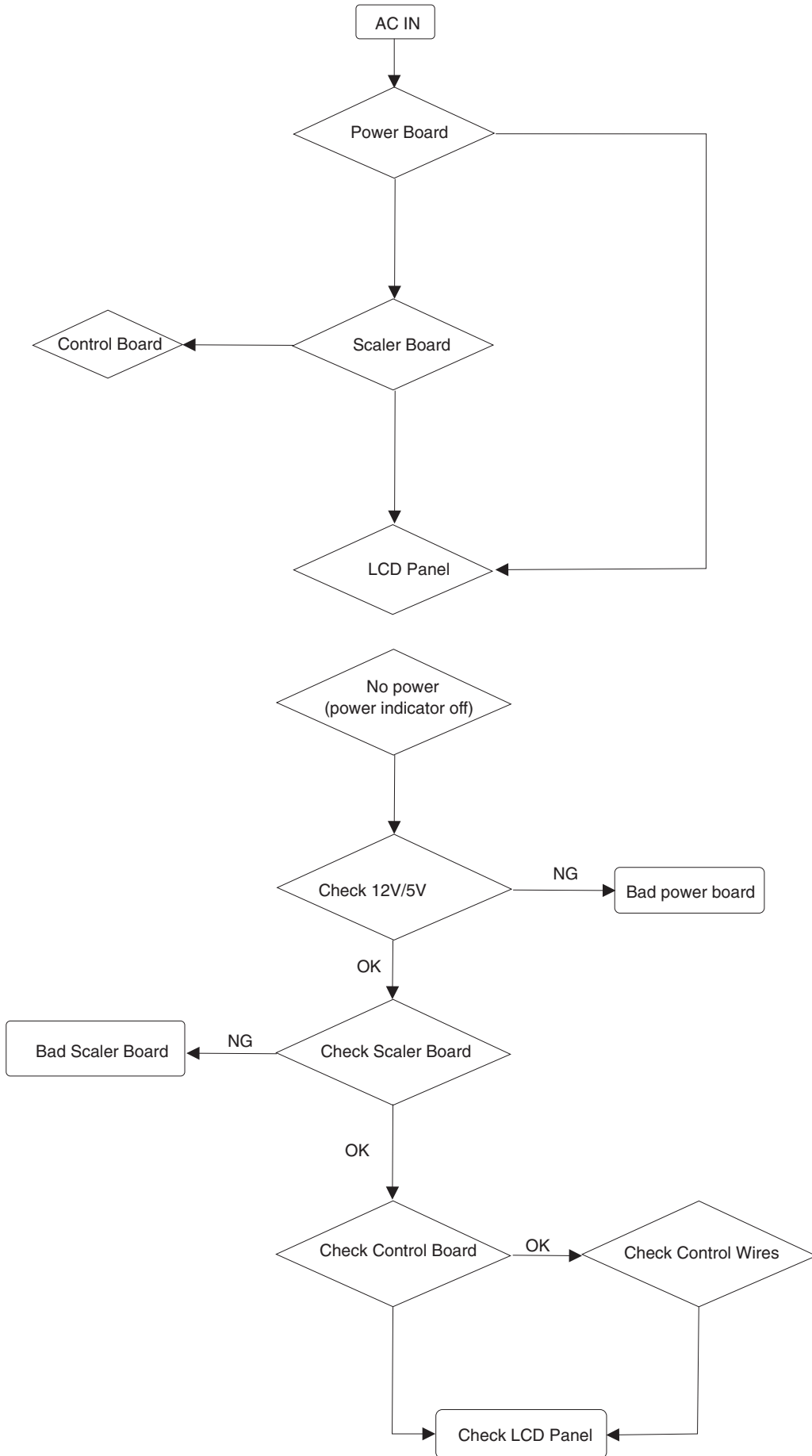
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.

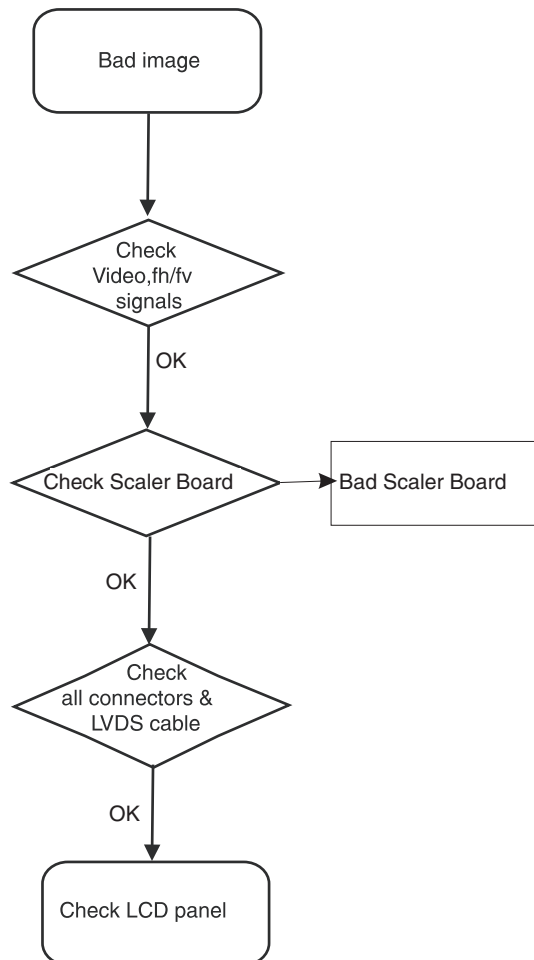
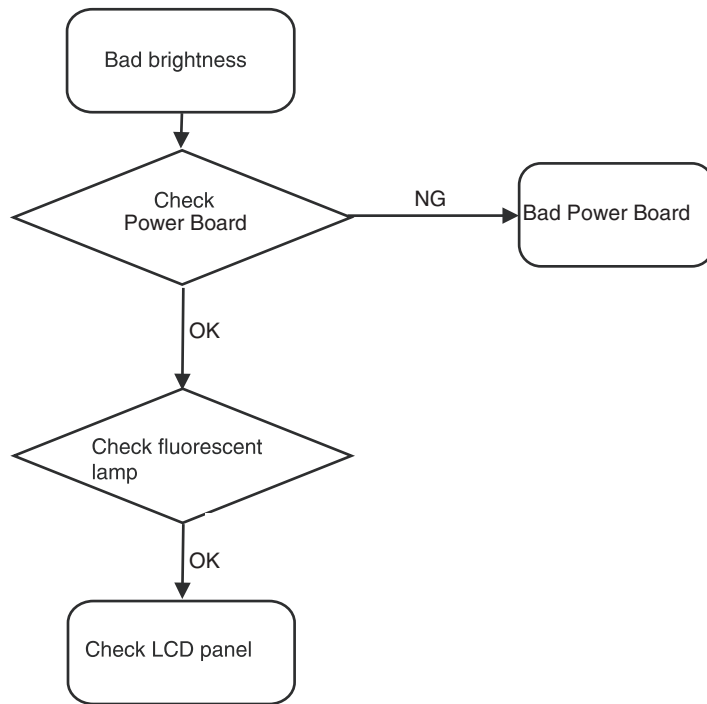
To reflow the solder, apply a temperature profile according to the IC data sheet. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information

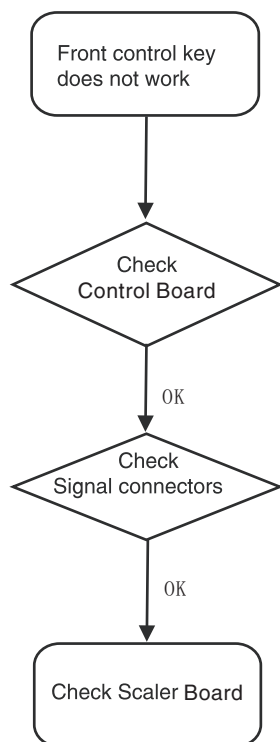
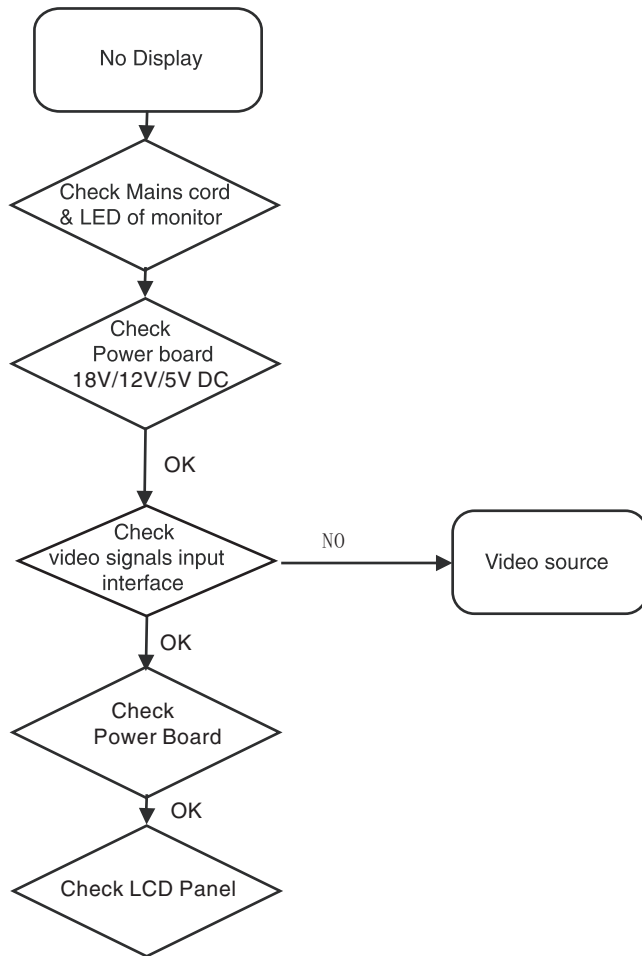
For more information on how to handle BGA devices, visit this URL: <http://www.atyourservice.ce.philips.com> (needs subscription). After login, select Magazine , then go to Workshop Information . Here you will find information on how to deal with BGA-ICs.

Repair Flow Chart





Repair Flow Chart



Recommended Parts List

Recommended Parts List

TYPE:170C8FS/00(LPL)

Item	Component	description
	705GZ701001	DFU Assy
	Q45G7628B05	PE BAG FOR MANUAL
	Z41G7002813 1A	QSG
	Z40G7N01813 1A	RATING LABEL
	Z44G7002813 1A	CARTON
	Z70G7001813 1A	E-D.F.U.
40	089G179E30H 15	FFC CABLE 30P 200mm
50	089G1738SAA922	D-SUB CABLE 1800mm BK RFS-92101708
60	089G404A18NLS1	POWER CORD PG8B1C3C300-060
100	705GZ734004	BEZEL ass'y
	040G 152509	RECYCLE LABEL
	040G 152512	RECYCLE LABEL
	P33G0055	FUNCTION KEY
	P33G0057	POWER LENS
	P33G0059 2	STRIP
	P34G0109	BEZEL
110	705GZ-000041	Back COVER ass'y
	P15T0048	HINGE PLATE
	P34G0110	Back COVER
120	P33G0027	HINGE COVER
130	P37G0002 1 VB	FOLD-BASE
140	705GZ715002	MAIN FRAME ASSY
	095G8014 7D 16	HARNESS 7P-7P 300mm
	Z15G0004 1	MAIN FRAME
150	P15G8316 1	POWER BRACKET
160	P85G0014 1	SHIELDING
170	Z85G0004 1	SCALER SHIELDING
270	P44G700 1	CUSHION-RIGHT
280	P44G700 2	CUSHION-LEFT
U203	056G 562908	IC NT68665MEFG-128 QFP128
U301	056G 563 52	IC AP1117D33LA TO252-3L ATC
U304	056G 56327A	IC AP1117E18LA SOT223-3L ANACHIP
U204	056G1133 56	M24C16-WMN6TP
Q301	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q305	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q403	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q402	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q201	057G 417 6	PMBS3906/PHILIPS-SMT(06)



Recommended Parts List

TYPE:190C8FS/00(CMO)

Item	Component	description
	089G1738SAA922	D-SUB CABLE 1800mm BK RFS-92101708
	089G1738WAA922	I/F cable
	089G179E30H 16	FFC CABLE 30P 170mm
	089G404A18NLS1	POWER CORD PG8B1C3C300-060
	705GZ701002	DFU Assy
	Q45G7628B05	PE BAG FOR MANUAL
	Z41G9010813 1A	QSG
	705GZ715003	MAIN_FRAME ASSY
	095G8014 7D 17	HARNESS 7P-7P 250mm
	Z15G0005 1	MAIN FRAME(Panel-CMO)
	705GZ734006	BEZEL ASSY
	P33G0055	FUNCTION KEY
	P33G0056	BEZEL STRIP
	P33G0057	POWER LENS
	P34G0111	BEZEL
	P33G0027	HINGE COVER
	P33G0058 1	housing cover
	P34G0112	B/C ASSY
	P37G0015	BASE
	P41T1800813 4A	CHINA WARRANTY CARD
	P44G9008 1	CUSHION - R (WW)
	P44G9008 2	CUSHION - L (ww)
	P44T9504090	CORNER PAPER(6 layer)
	P44T9504110	CORNER PAPER(5 layer)
	P52G 57001	MIDDLE TAPE FOR CARTON
	P52G 58002	SMALL TAPE
	P85G0035	POWER_SHIELDING
	Z40G9N01813 1A	RATING LABEL
	Z44G9010813 1A	CARTON
	Z70G9001813 1A	E-D.F.U.
	Z85G0004 1	SCALER SHIELDING
U301	056G 563 52	IC AP1117D33LA TO252-3L ATC
U304	056G 56327A	IC AP1117E18LA SOT223-3L ANACHIP
U204	056G1133 56	M24C16-WMN6TP
Q301	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q305	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q201	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q402	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q403	057G 417 6	PMBS3906/PHILIPS-SMT(06)

Spare Parts List

Model:170C8FS/00(LPL)	12NC:8670 000 25561	C112	065G0402104 12	CHIP 0.1UF 50V X7R
Item 18NC	Description	C112	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
Mechanical Parts		C113	065G0402104 12	CHIP 0.1UF 50V X7R
100 705GZ734004	BEZEL ass'y	C113	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
040G 152509	RECYCLE LABEL	C114	065G0402104 12	CHIP 0.1UF 50V X7R
040G 152512	RECYCLE LABEL	C114	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
P33G0055	FUNCTION KEY	C115	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V
P33G0057	POWER LENS	C115	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V
P33G0059 2	STRIP	C116	065G0402104 12	CHIP 0.1UF 50V X7R
P34G0109	BEZEL	C116	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
110 705GZ-000041	Back COVER ass'y	C117	065G0402104 12	CHIP 0.1UF 50V X7R
P15T0048	HINGE PLATE	C117	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
P34G0110	Back COVER	C118	065G0402104 12	CHIP 0.1UF 50V X7R
120 P33G0027	HINGE COVER	C118	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
130 P37G0002 1 VB	FOLD-BASE	C121	065G0402473 12	CHIP 0.047uF 16V X7R
Packing parts		C122	065G0402473 12	CHIP 0.047uF 16V X7R
Z44G7002813 1A	CARTON	C123	065G0402102 32	1000PF +10% 50V X7R
270 P44G700 1	CUSHION-RIGHT	C124	065G0402473 12	CHIP 0.047uF 16V X7R
280 P44G700 2	CUSHION-LEFT	C125	065G0402473 12	CHIP 0.047uF 16V X7R
Q45G7628B05	PE BAG FOR MANUAL	C126	065G0402473 12	CHIP 0.047uF 16V X7R
Accessory		C127	065G0402331 32	CHIP 330PF 50V X7R
60 089G404A18NLS1	POWER CORD PG8B1C3C300-060	C128	065G0402330 31	33PF +50% 50V NPO
Miscellanea		C129	065G0402473 12	CHIP 0.047uF 16V X7R
705GZ701001	DFU Assy	C130	065G0402104 12	CHIP 0.1UF 50V X7R
Z41G7002813 1A	QSG	C130	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
Z40G7N01813 1A	RATING LABEL	C201	065G0402104 12	CHIP 0.1UF 50V X7R
Z70G7001813 1A	E-D.F.U.	C201	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
40 089G179E30H 15	FFC CABLE 30P 200mm	C203	065G0402104 12	CHIP 0.1UF 50V X7R
50 089G1738SAA922	D-SUB CABLE 1800mm BK RFS-92101708	C203	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
140 705GZ715002	MAIN FRAME ASSY	C204	065G0402104 12	CHIP 0.1UF 50V X7R
095G8014 7D 16	HARNESS 7P-7P 300mm	C204	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
Z15G0004 1	MAIN FRAME	C205	065G0402104 12	CHIP 0.1UF 50V X7R
150 P15G8316 1	POWER BRACKET	C205	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
160 P85G0014 1	SHIELDING	C206	065G0402104 12	CHIP 0.1UF 50V X7R
170 Z85G0004 1	SCALER SHIELDING	C206	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
LCD Panel		C207	065G0402104 12	CHIP 0.1UF 50V X7R
80 750GLG70E3L42M000F	PANEL LM170E03-TLL4 PHILIPS LPL	C207	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
PCB Assy		C208	065G0402104 12	CHIP 0.1UF 50V X7R
10 CPBC7GNAPHA1	scaler assy	C208	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
20 KEPC7AB3	KEY BOARD	C209	065G0402104 12	CHIP 0.1UF 50V X7R
30 PWPC742GR4	POWER G2594-G-X-X-2-070515	C209	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
PCB Assy		C210	065G0402104 12	CHIP 0.1UF 50V X7R
10 CPBC7GNAPHA1	scaler assy	C210	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
Various		C213	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V
CN101 088G 35315F H	D-SUB 15PIN	C213	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V
CN102 088G 35424F H	DV1 CONNECTOR 24PIN	C214	067G 305101 3T	100UF 16V 105C
CN402 033G801930F H	FFC CONN. 1.0MM 30P	C214	067G305V101 3	105°C 100UF M 16V
X201 093G 22 51	CRYSTAL 12MHz HC-49US ARG6-120	C214	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V
705GZ756004	CPU Assembly	C215	065G0402104 12	CHIP 0.1UF 50V X7R
100CZ101000301	CPU Software	C215	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
Z40G700081328A	CPU Label	C216	065G0402104 12	CHIP 0.1UF 50V X7R
		C216	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
		C219	065G0402220 31	CHIP 22PF 50V NPO
		C220	065G0402220 31	CHIP 22PF 50V NPO
		C301	065G0402104 12	CHIP 0.1UF 50V X7R
		C301	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
		C302	067G305V100 3	105°C 10UF +20% 16V
		C302	067G305V100 3L	RGA100M1CCC-0511
		C303	065G0402104 12	CHIP 0.1UF 50V X7R
		C303	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
		C304	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V
		C304	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V
		C305	067G 305101 3T	100UF 16V 105C
		C305	067G305V101 3	105°C 100UF M 16V
		C305	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V
		C306	067G 305101 3T	100UF 16V 105C
		C306	067G305V101 3	105°C 100UF M 16V
		C306	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V
		C307	065G0402104 12	CHIP 0.1UF 50V X7R
		C307	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%
		C308	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V
		C308	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V
		C309	067G 305101 3T	100UF 16V 105C
		C309	067G305V101 3	105°C 100UF M 16V
		C309	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V
		C310	067G 305101 3T	100UF 16V 105C
		C310	067G305V101 3	105°C 100UF M 16V
		C310	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V
		C311	065G0402104 12	CHIP 0.1UF 50V X7R

C311	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	R312	061G0402102	RST CHIPR 1 KOHM +5% 1/16W
C312	065G0402104 12	CHIP 0.1UF 50V X7R	R314	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W
C312	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	R316	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W
C315	067G 305101 3T	100UF 16V 105C	R402	061G0402392	RST CHIP 3.9K 1/16W 5%
C315	067G305V101 3	105°C 100UF M 16V	R403	061G0402392	RST CHIP 3.9K 1/16W 5%
C315	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	R404	061G0402000	RST CHIPR 0 OHM +5% 1/16W
C316	065G0603104 22	CHIP 0.1UF 25V X7R	R407	061G0402101	RST CHIPR 100 OHM +5% 1/16W
C317	065G0402104 12	CHIP 0.1UF 50V X7R	R410	061G0402101	RST CHIPR 100 OHM +5% 1/16W
C317	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	R412	061G0402102	RST CHIPR 1 KOHM +5% 1/16W
C402	065G0402104 12	CHIP 0.1UF 50V X7R	R415	061G0402103	RST CHIPR 10 KOHM +5% 1/16W
C402	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	R416	061G0402101	RST CHIPR 100 OHM +5% 1/16W
C403	065G0402104 12	CHIP 0.1UF 50V X7R	R417	061G0402103	RST CHIPR 10 KOHM +5% 1/16W
C403	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	R418	061G0402101	RST CHIPR 100 OHM +5% 1/16W
C404	065G0402104 12	CHIP 0.1UF 50V X7R	R431	061G0402000	RST CHIPR 0 OHM +5% 1/16W
C404	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	R432	061G0402000	RST CHIPR 0 OHM +5% 1/16W
C405	065G0402104 12	CHIP 0.1UF 50V X7R	R439	061G0402000	RST CHIPR 0 OHM +5% 1/16W
C405	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%			
C406	065G0402104 12	CHIP 0.1UF 50V X7R	FB101	071G 56D121	B201209D121TT
C406	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	FB101	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
C407	065G0402104 12	CHIP 0.1UF 50V X7R	FB102	071G 56D121	B201209D121TT
C407	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	FB102	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB103	071G 59B300 K	CHIP BEAD 30 OHM 0603
			FB103	071G 59B300 M	CHIP BEAD 30 OHM
			FB103	071G 59K300 TA	CHIP BEAD 0603 30R/700mA TAI-TECH
			FB104	071G 59B300 K	CHIP BEAD 30 OHM 0603
			FB104	071G 59B300 M	CHIP BEAD 30 OHM
			FB104	071G 59K300 TA	CHIP BEAD 0603 30R/700mA TAI-TECH
			FB105	071G 56D121	B201209D121TT
			FB105	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB106	071G 59B300 K	CHIP BEAD 30 OHM 0603
			FB106	071G 59B300 M	CHIP BEAD 30 OHM
			FB106	071G 59K300 TA	CHIP BEAD 0603 30R/700mA TAI-TECH
			FB202	071G 56D121	B201209D121TT
			FB202	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB203	071G 56D121	B201209D121TT
			FB203	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB204	071G 56D121	B201209D121TT
			FB204	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB205	071G 56D121	B201209D121TT
			FB205	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB206	071G 56D121	B201209D121TT
			FB206	071G 56G121 TA	CHIP BEAD 120R/200mA FCM2012KF-121T02
			FB207	071G 56C102 TA	CHIP BEAD 1000R/400mA FCM2012KF-102T02
			FB207	071G 56D102	B201209D102TT
			FB302	071G 56K121 M	CHIP BEAD
			FB302	071G 56K121 TA	CHIP BEAD 120R/6000mA HCB2012KF-121T6C
			FB303	071G 56K121 M	CHIP BEAD
			FB303	071G 56K121 TA	CHIP BEAD 120R/6000mA HCB2012KF-121T6C
					
R101	061G0402750	RST CHIPR 75 OHM +5% 1/16W	D101	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R102	061G0402102	RST CHIPR 1 KOHM +5% 1/16W	D101	093G 6433S	DIODE BAV99 SEMTECH
R103	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W	D102	093G 64 42 PP	BAV70 SOT-23
R104	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W	D103	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R105	061G0402103	RST CHIPR 10 KOHM +5% 1/16W	D103	093G 6433S	DIODE BAV99 SEMTECH
R106	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D104	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R107	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D104	093G 6433S	DIODE BAV99 SEMTECH
R108	061G0402101	RST CHIPR 100 OHM +5% 1/16W	D105	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R109	061G0402101	RST CHIPR 100 OHM +5% 1/16W	D105	093G 6433S	DIODE BAV99 SEMTECH
R110	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D106	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R111	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D106	093G 6433S	DIODE BAV99 SEMTECH
R113	061G0402102	RST CHIPR 1 KOHM +5% 1/16W	D107	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R115	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D107	093G 6433S	DIODE BAV99 SEMTECH
R116	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D108	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R117	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D108	093G 6433S	DIODE BAV99 SEMTECH
R118	061G0402000	RST CHIPR 0 OHM +5% 1/16W	D109	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R120	061G0402102	RST CHIPR 1 KOHM +5% 1/16W	D109	093G 6433S	DIODE BAV99 SEMTECH
R122	061G0402102	RST CHIPR 1 KOHM +5% 1/16W	D110	093G 64 42 PP	BAV70 SOT-23
R123	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W	D111	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R124	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W	D111	093G 6433S	DIODE BAV99 SEMTECH
R125	061G0402103	RST CHIPR 10 KOHM +5% 1/16W	D112	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R126	061G0402101	RST CHIPR 100 OHM +5% 1/16W	D112	093G 6433S	DIODE BAV99 SEMTECH
R127	061G0402101	RST CHIPR 100 OHM +5% 1/16W	D113	093G 64 33	DIO SIG SM BAV99 (PHSE)R
R128	061G0402101	RST CHIPR 100 OHM +5% 1/16W	D113	093G 6433S	DIODE BAV99 SEMTECH
R129	061G0402151	RST CHIP 150R 1/16W 5%	D201	093G 64 42 PP	BAV70 SOT-23
R131	061G0402391	RST CHIPR 390 OHM +5% 1/16W	D301	093G3004 3	SM340A
R132	061G0402101	RST CHIPR 100 OHM +5% 1/16W	ZD101	093G 39GA01 T	RLZ5.6B
R133	061G0402151	RST CHIP 150R 1/16W 5%	ZD101	093G 39S 24 T	RLZ 5.6B LLDS
R134	061G0402101	RST CHIPR 100 OHM +5% 1/16W	ZD102	093G 39GA01 T	RLZ5.6B
R135	061G0402101	RST CHIPR 100 OHM +5% 1/16W	ZD102	093G 39S 24 T	RLZ 5.6B LLDS
R136	061G0402101	RST CHIPR 100 OHM +5% 1/16W	ZD103	093G 39GA01 T	RLZ5.6B
R138	061G0402151	RST CHIP 150R 1/16W 5%	ZD103	093G 39S 24 T	RLZ 5.6B LLDS
R139	061G0402750	RST CHIPR 75 OHM +5% 1/16W	ZD104	093G 39GA01 T	RLZ5.6B
R140	061G0402750	RST CHIPR 75 OHM +5% 1/16W	ZD104	093G 39S 24 T	RLZ 5.6B LLDS
R141	061G0402222	RST CHIPR 2.2 KOHM +5% 1/16W	ZD105	093G 39GA01 T	RLZ5.6B
R142	061G0402222	RST CHIPR 2.2 KOHM +5% 1/16W	ZD105	093G 39S 24 T	RLZ 5.6B LLDS
R144	061G0402102	RST CHIPR 1 KOHM +5% 1/16W	ZD106	093G 39GA01 T	RLZ5.6B
R201	061G0402105	RST CHIPR 1MOHM +5% 1/16W	ZD106	093G 39S 24 T	RLZ 5.6B LLDS
R202	061G0402103	RST CHIPR 10 KOHM +5% 1/16W			
R206	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W			
R211	061G0402000	RST CHIPR 0 OHM +5% 1/16W			
R213	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W			
R214	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W			
R215	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W			
R218	061G0402220	RST CHIPR 22 OHM +5% 1/16W			
R221	061G0402471	RST CHIPR 470 OHM +5% 1/16W			
R225	061G0402101	RST CHIPR 100 OHM +5% 1/16W			
R228	061G0402000	RST CHIPR 0 OHM +5% 1/16W			
R301	061G0402102	RST CHIPR 1 KOHM +5% 1/16W			
R302	061G1206151	RST CHIPR 150 OHM +5% 1/4W			
R303	061G1206151	RST CHIPR 150 OHM +5% 1/4W			
R304	061G0402103	RST CHIPR 10 KOHM +5% 1/16W			
R305	061G0402103	RST CHIPR 10 KOHM +5% 1/16W			
R307	061G0402513	RST CHIP 51K 1/16W 5%			
R308	061G0402472	RST CHIPR 4.7 KOHM +5% 1/16W			
R309	061G0402101	RST CHIPR 100 OHM +5% 1/16W			
R311	061G0402102	RST CHIPR 1 KOHM +5% 1/16W			

Spare Parts List

ZD107 093G 39GA01 T
ZD107 093G 39S 24 T
ZD201 093G 39G586



Q201 057G 417 6
Q201 057G 417 13 T
Q301 057G 417 4
Q301 057G 417 12 T
Q302 057G 763 1
Q305 057G 417 4
Q305 057G 417 12 T
Q402 057G 417 6
Q402 057G 417 13 T
Q403 057G 417 6
Q403 057G 417 13 T
U203 056G 562908
U204 056G 1133 56
U301 056G 563 52
U304 056G 56327A

PCB Assy

20 KEPC7AB3

Various

LED1 081G 12900 KB
LED2 081G 12900 KB
SW1 077G 605 1 FD
SW2 077G 605 1 FD
SW3 077G 605 1 FD
SW4 077G 605 1 FD
SW5 077G 605 1 FD
SW6 077G 605 1 FD
SW7 077G 605 1 FD



C101 065G0603471 32
C102 065G0603471 32
C103 065G0603471 32
C104 065G0603471 32
C105 065G0603471 32



FB101 071G 59G301
FB102 071G 59G301



R101 061G0603432
R102 061G0603911
R103 061G0603242
R104 061G0603432
R105 061G0603911
R106 061G0603242

PCB Assy

30 PWPC742GR4

Various

BD901 093G 50460 28
CN801 033G8021 2E F
CN801 033G8021 2E U
CN802 033G8021 2E F
CN802 033G8021 2E U
CN803 033G8021 2E F
CN803 033G8021 2E U
CN804 033G8021 2E F
CN804 033G8021 2E U
CN901 087G 501 32 S
CN902 095G801410D 53
F901 084G 56 4W
F902 061G1206000
IC801 056G 379 22
IC902 056G 139 8
IC902 056G 139 3A
IC902 056G 139 3B
IC903 056G 158 12
J807 061G1206000
J813 061G1206000
J814 061G1206000
J815 061G1206000
J816 061G1206000
J818 061G1206000
J907 061G1206000
J908 061G1206000
NR901 061G 58 9T
PT801 080GL17T 40 V
PT801 080GL17T 40 DN
PT802 080GL17T 40 V

RLZ5.6B
RLZ 5.6B LLDS
RLZ2.2B

PMBS3906/PHILIPS-SMT(06)
KEC 2N3906S-RTK/PS
PMBS3904/PHILIPS-SMT(04)
KEC 2N3904S-RTK/PS
AO3401 SOT23 BY AOS(A1)
PMBS3904/PHILIPS-SMT(04)
KEC 2N3904S-RTK/PS
PMBS3906/PHILIPS-SMT(06)
KEC 2N3906S-RTK/PS
PMBS3906/PHILIPS-SMT(06)
KEC 2N3906S-RTK/PS
IC NT68665MEFG-128 QFP128
M24C16-WMN6TP
IC AP1117D33LA TO252-3L ATC
IC AP1117E18LA SOT223-3L ANACHIP

KEY BOARD

LED VS L-115WSYKCGKW-8.03LSF5/F
LED VS L-115WSYKCGKW-8.03LSF5/F
SWI TACT H=5 GY 160G SKHHAM B
SWI TACT H=5 GY 160G SKHHAM B
SWI TACT H=5 GY 160G SKHHAM B
SWI TACT H=5 GY 160G SKHHAM B
SWI TACT H=5 GY 160G SKHHAM B
SWI TACT H=5 GY 160G SKHHAM B
SWI TACT H=5 GY 160G SKHHAM B

CHIP 470PF 50V X7R
CHIP 470PF 50V X7R
CHIP 470PF 50V X7R
CHIP 470PF 50V X7R
CHIP 470PF 50V X7R

CHIP BEAD 300OHM
CHIP BEAD 300OHM

RST CHIPR 4.3 KOHM +5% 1/10W
RST CHIPR 910 OHM +5% 1/10W
RST CHIPR 2.4 KOHM +5% 1/10W
RST CHIPR 4.3 KOHM +5% 1/10W
RST CHIPR 910 OHM +5% 1/10W
RST CHIPR 2.4 KOHM +5% 1/10W

POWER G2594-G-X-X-2-070515

BRIDGE DIODE KBP208G LITEON
WAFER
WAFER
WAFER
WAFER
WAFER
WAFER
WAFER
AC SOCKET
HARNNESS 9P-10P 130mm
FUSE 4.0A 250V
RST CHIPR 0 OHM +5% 1/4W
IC TL494IDR SOIC-16
IC PS2561L1-1-V-A LJ Lead Bending 4pin
PC123Y22FZOF
PC123 Y82F20F
KIA431A-AT/P TO-92
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST CHIPR 0 OHM +5% 1/4W
RST NTCR 10 ohm +20% 5A THINKING
X'FMR TK.2001U.101
X'FMR TK.2001U.101
X'FMR TK.2001U.101

PT802 080GL17T 40 DN
T901 080GL17T 33 N2
T901 080GL17T 33 T2
T901 080GL17T 33DN2
T901 080GL17T 33YS2



C801 065G 3J1006ET
C802 065G0603105 12
C803 065G0805152 32
C804 065G0603104 12
C805 067G215D4714KV
C806 065G0603105 12
C807 065G0603104 12
C808 065G0805225 12
C809 065G0805221 31
C810 065G0603104 22
C811 067G215D4714KV
C812 065G 3J1006ET
C813 065G0603222 22
C814 065G0603104 12
C815 065G0603222 22
C816 065G0805152 32
C817 065G0603222 22
C818 065G0603222 22
C821 065G0805152 32
C822 065G0805152 32
C823 065G0805104 22
C824 065G0805104 22
C900 065G306M2222BP
C901 065G305M1022E2
C901 065G305M1022E3
C901 065G305M1022EM
C902 065G305M1022E2
C902 065G305M1022E3
C902 065G305M1022EM
C903 065G306M1022BP
C904 065G0603102 32
C907 067G 40J10115K
C907 067G305T10115H
C909 063G 107474 U
C909 063G 107474 HS
C910 065G 2K152 1T6921
C911 067G 2152207NT
C911 067G215Y2207KT
C912 065G0805104 32
C913 065G0805221 31
C914 065G0805471 21
C914 065G0805471 31
C916 065G0805104 32
C920 065G517K102 5T
C921 065G517K102 5T
C922 067G215D6814KV
C923 067G215D6814KV
C925 067G215D4714KV
C926 067G215S102 3K
C927 067G215S4713KV
C928 065G0805104 32
C929 065G0805104 32
C930 065G0805104 32
C931 065G0805104 32
C932 067G215S102 3K



R801 061G0603000
R802 061G0805101
R803 061G0603242
R804 061G0603000
R805 061G0603472
R806 061G0603100 1F
R807 061G0603100 1F
R808 061G0603100 2F
R810 061G1206150
R811 061G0603100 1F
R812 061G0603100 1F
R813 061G0603101
R814 061G0603680 2F
R815 061G0603470 2F
R816 061G0603680 2F
R819 061G0603100 2F
R820 061G0603564
R821 061G0603105
R822 061G0603473
R824 061G0603100 2F
R825 061G0805510 2F
R826 061G0805180 3F
R827 061G0603100 1F
R828 061G0603470 2F
R829 061G0603680 2F
R830 061G0603000

X'FMR TK.2001U.101
XFMR POWER 550uH YUVA
X'FMR 550uH SRW28EC-T147H015
XFMR 550uH LK.PC001.B60
X'FMR 550uH YS04160106

10PF.J,3KV,SL
CHIP 1UF 16VX7R 0603
CHIP 1500PF 50V X7R 0805
CER2 0603 X7R 16V 100N P M10 R
E.C 105°C CAP 470UF M 25V ED SERIES
CHIP 1UF 16VX7R 0603
CER2 0603 X7R 16V 100N P M10 R
CHIP 2.2UF 16V X7R 0805
220PF 50V NPO
CHIP 0.1UF 25V X7R
E.C 105°C CAP 470UF M 25V ED SERIES
10PF.J,3KV,SL
CHIP 2200PF 25V X7R
CER2 0603 X7R 16V 100N P M10 R
CHIP 2200PF 25V X7R
CHIP 1500PF 50V X7R 0805
CHIP 2200PF 25V X7R
CHIP 1500PF 50V X7R 0805
CHIP 1500PF 50V X7R 0805
CHIP 0805 0.1UF +10% 25V X7R
CHIP 0805 0.1UF +10% 25V X7R
2200PF +20% 400VAC
1000P 400VAC/250VAC
1000PF. M.250VAC.Y2
Y2 1000PF +20% 250VAC
1000P 400VAC/250VAC
1000PF. M.250VAC.Y2
Y2 1000PF +20% 250VAC
1000PF Y1.CAP
1000PF +10% 50V X7R
EC CAP 100uF 450V 18*35mm
ELCAP 105°C 100UF M 450V
MPX-474K27B15L3
0.47UF 275VAC
1.5NF/2KV Y5P +10%
KY50VB22M-TP5 5*11
CAP 105°C 22UF M 50V KINGNICH
CHIP 0.1U 50V X7R
220PF 50V NPO
CHIP 470PF 25V NPO
CHIP 470PF 50V NPO
CHIP 0.1U 50V X7R
1000PF 10% Y5P 500V
1000PF 10% Y5P 500V
CAP 105°C 680uF M 25V
CAP 105°C 680uF M 25V
E.C 105°C CAP 470UF M 25V ED SERIES
ED1000UF 16V
EC 105°C CAP 470UF M 16V
CHIP 0.1U 50V X7R
CHIP 0.1U 50V X7R
CHIP 0.1U 50V X7R
CHIP 0.1U 50V X7R
ED1000UF 16V

RST CHIPR 0 OHM +5% 1/10W
RST CHIPR 100 OHM +5% 1/8W
RST CHIPR 2.4 KOHM +5% 1/10W
RST CHIPR 0 OHM +5% 1/10W
RST CHIPR 4.7KOHM +5% 1/10W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 10 KOHM +1% 1/10W
RST CHIPR 15 OHM +5% 1/4W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 100 OHM +5% 1/10W
RST CHIPR 68 KOHM +1% 1/10W
RST CHIPR 47 KOHM +5% 1/10W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 51 KOHM +1% 1/8W
RST CHIPR 180 KOHM +1% 1/8W
RST CHIPR 1 KOHM +1% 1/10W
RST CHIPR 47 KOHM +1% 1/10W
RST CHIPR 68 KOHM +1% 1/10W
RST CHIPR 0 OHM +5% 1/10W

R831	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W	D901	093T1020 752T	UF4003PT
R832	061G0603000	RST CHIPR 0 OHM +5% 1/10W	D910	093G 6432V	LL4148-GSO8
R833	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W	D910	093G 64S3PH	BAS32L
R834	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W	D910	093T 64 44 S	LL4148WP
R835	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W	D915	093G 6432V	LL4148-GSO8
R836	061G0603105	RST CHIPR 1 MOHM +5% 1/10W	D915	093G 64S3PH	BAS32L
R837	061G1206150	RST CHIPR 15 OHM +5% 1/4W	D915	093T 64 44 S	LL4148WP
R838	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W	D916	093G 6432V	LL4148-GSO8
R839	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W	D916	093G 64S3PH	BAS32L
R840	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W	D916	093T 64 44 S	LL4148WP
R841	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W	D920	093G 60276	DIODE SBT150-10LST SANYO
R842	061G0603470 2F	RST CHIPR 47 KOHM +1% 1/10W	D922	093G3006 1 1	31DQ06FC3 NIHON INTER
R844	061G0603220	RST CHIPR 22 OHM +5% 1/10W	ZD801	061G1206103	RST CHIPR 10 KOHM +5% 1/4W
R845	061G0603220	RST CHIPR 22 OHM +5% 1/10W	ZD920	093G 39GA28 T	ZENER DIODE RLZ13B SEMTECH
R846	061G0603220	RST CHIPR 22 OHM +5% 1/10W	ZD920	093G 39S 40 T	RLZ 13B L LDS
R847	061G0603220	RST CHIPR 22 OHM +5% 1/10W	ZD921	093G 39GA28 T	ZENER DIODE RLZ13B SEMTECH
R848	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W	ZD921	093G 39S 40 T	RLZ 13B L LDS
R849	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W	ZD922	093G 39GA26 T	ZENER DIODE RLZ5.1B SEMTECH
R850	061G1206150	RST CHIPR 15 OHM +5% 1/4W	ZD922	093G 39S 25 T	RLZ5.1B L LDS
R851	061G1206150	RST CHIPR 15 OHM +5% 1/4W			
R852	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W			
R853	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W			
R900	061G1206334	RST CHIPR 330KOHM +5% 1/4W			
R901	061G1206334	RST CHIPR 330KOHM +5% 1/4W	Q801	057G 760 4	DTA144WKA BY ROHM SMT
R902	061G1206334	RST CHIPR 330KOHM +5% 1/4W	Q801	057G 760 4B	PDTA144WK SOT346
R903	061G0805102	RST CHIPR 1KOHM +5% 1/8W	Q802	057G 760 5B	PDTC144WK SOT346
R905	061G1206103	RST CHIPR 10 KOHM +5% 1/4W	Q803	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R907	061G 208151 64	RST MOFR 150 OHM +5% 1W	Q803	057G 417 4 T	KEC 2N3904S-RTK/PS
R908	061G0805471	RST CHIPR 470 OHM +5% 1/8W	Q804	057G 763 6	AO4828L
R909	061G152M104 64	100KOHM 5% 2W	Q804	057G 763 14	AM9945N
R910	061G1206229	RST CHIPR 2.2 OHM +5% 1/4W	Q805	057G 417 6	PMBS3906/PHILIPS-SMT(06)
R911	061G0805100 3F	RST CHIPR 100KOHM +1% 1/8W	Q805	057G 417 13 T	KEC 2N3906S-RTK/PS
R912	061G1206100	RST CHIPR 10R 1/4W 5%	Q806	057G 417 6	PMBS3906/PHILIPS-SMT(06)
R913	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q806	057G 417 13 T	KEC 2N3906S-RTK/PS
R915	061G0805100 2F	RST CHIPR 10KOHM +1% 1/8W	Q807	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R916	061G152M438 64	RST MOFR 0.43OHM +5% 2WS	Q807	057G 417 12 T	KEC 2N3904S-RTK/PS
R922	061G0805471	RST CHIPR 470 OHM +5% 1/8W	Q808	057G 759 2	RK7002
R923	061G0805100 2F	RST CHIPR 10KOHM +1% 1/8W	Q808	057G 763904	TRA FET 2N7002 SOT-23 PHILIPS
R924	061G0805360 1F	RST CHIPR 3.6KOHM +1% 1/8W	Q808	057T 758 1	FET 2N7002E VISHAY
R925	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q809	057G 763 6	AO4828L
R926	061G0805330 2F	RST CHIPR 33 KOHM +1% 1/8W	Q809	057G 763 14	AM9945N
R927	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q810	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R928	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q810	057G 417 12 T	KEC 2N3904S-RTK/PS
R929	061G0805240 1F	RST CHIPR 2.4KOHM +1% 1/8W	Q811	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R930	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q811	057G 417 12 T	KEC 2N3904S-RTK/PS
R931	061G1206103	RST CHIPR 10 KOHM +5% 1/4W	Q812	057G 759 2	RK7002
R951	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q812	057G 763904	TRA FET 2N7002 SOT-23 PHILIPS
R952	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q812	057T 758 1	FET 2N7002E VISHAY
R953	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q900	057G 667 21	STP10NK70ZFP
R954	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q902	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R955	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q902	057G 417 12 T	KEC 2N3904S-RTK/PS
R956	061G1206470	RST CHIPR 47 OHM +5% 1/4W	U901	056T 379 61	IC LD7575PS SOP-8 LEADTREND



FB901	071G 55 29	FERRITE BEAD
FB902	071G 55 29	FERRITE BEAD
FB903	071G 55 29	FERRITE BEAD
L901	073G 174 76 H	FILTER
L901	073G 174 76 L	CHOKE COIL LI TAI LF-002923
L902	073G 174 65 H	LINE FILTER
L902	073G 174 65 T	LINE FILTER 7mH MIN TDK
L921	073G 253 91 H	CHOKE COIL
L921	073G 253 91 LS	CHOKE BY LI SHIN
L922	073G 253 91 H	CHOKE COIL
L922	073G 253 91 LS	CHOKE BY LI SHIN



D801	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D802	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D803	093G 6432V	LL4148-GSO8
D803	093G 64S3PH	BAS32L
D803	093T 64 44 S	LL4148WP
D806	093G 64 38 D	DIODE BAW56 DIODES
D806	093G 64S 10	DIODE BAW56PT SOT-23 CHENMKO
D807	093G 6432V	LL4148-GSO8
D807	093G 64S3PH	BAS32L
D807	093T 64 44 S	LL4148WP
D808	093G 64 38 D	DIODE BAW56 DIODES
D808	093G 64S 10	DIODE BAW56PT SOT-23 CHENMKO
D809	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D810	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D811	093G 6432V	LL4148-GSO8
D811	093G 64S3PH	BAS32L
D811	093T 64 44 S	LL4148WP
D812	061G1206000	RST CHIPR 0 OHM +5% 1/4W
D813	093G 6432V	LL4148-GSO8
D813	093G 64S3PH	BAS32L
D813	093T 64 44 S	LL4148WP
D900	093T1100 1052T	BA159GPT
D901	093G 6038T52T	FR103

Spare Parts List

Model:190C8FS/00(CMO)	12NC:					
Item	18NC	Description				
Mechanical Parts						
	705GZ734006	BEZEL ASSY	C116	065G0402104 12	CHIP 0.1UF 50V X7R	
	P33G0055	FUNCTION KEY	C116	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	P33G0056	BEZEL STRIP	C117	065G0402104 12	CHIP 0.1UF 50V X7R	
	P33G0057	POWER LENS	C117	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	P34G0111	BEZEL	C118	065G0402104 12	CHIP 0.1UF 50V X7R	
	P33G0027	HINGE COVER	C118	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	P33G0058 1	housing cover	C121	065G0402473 12	CHIP 0.047uF 16V X7R	
	P34G0112	B/C ASSY	C122	065G0402473 12	CHIP 0.047uF 16V X7R	
	P37G0015	BASE	C123	065G0402102 32	1000PF +10% 50V X7R	
Packing Parts						
	Q45G7628B05	PE BAG FOR MANUAL	C124	065G0402473 12	CHIP 0.047uF 16V X7R	
	P44G9008 1	CUSHION - R (WW)	C125	065G0402473 12	CHIP 0.047uF 16V X7R	
	P44G9008 2	CUSHION - L (ww)	C126	065G0402473 12	CHIP 0.047uF 16V X7R	
	Z44G9010813 1A	CARTON	C127	065G0402331 32	CHIP 330PF 50V X7R	
Accessory						
	089G404A18NLS1	POWER CORD PG8B1C3C300-060	C128	065G0402330 31	33PF +50% 50V NPO	
Miscellaneous						
	089G1738SAA922	D-SUB CABLE 1800mm BK RFS-92101708	C129	065G0402473 12	CHIP 0.047uF 16V X7R	
	089G1738WAA922	I/F cable	C130	065G0402104 12	CHIP 0.1UF 50V X7R	
	089G179E30H 16	FFC CABLE 30P 170mm	C130	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	705GZ701002	DFU Assy	C201	065G0402104 12	CHIP 0.1UF 50V X7R	
	Z41G9010813 1A	QSG	C201	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	705GZ715003	MAIN_FRAME ASSY	C203	065G0402104 12	CHIP 0.1UF 50V X7R	
	095G8014 7D 17	HARNES 7P-7P 250mm	C203	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	Z15G0005 1	MAIN FRAME(PANEL-CMO)	C204	065G0402104 12	CHIP 0.1UF 50V X7R	
	P41T1800813 4A	CHINA WARRANTY CARD	C204	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	P44T9504090	CORNER PAPER(6 layer)	C205	065G0402104 12	CHIP 0.1UF 50V X7R	
	P44T9504110	CORNER PAPER(5 layer)	C205	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	P52G 57001	MIDDLE TAPE FOR CARTON	C206	065G0402104 12	CHIP 0.1UF 50V X7R	
	P52G 58002	SMALL TAPE	C206	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	P85G0035	POWER_SHIELDING	C207	065G0402104 12	CHIP 0.1UF 50V X7R	
	Z40G9N01813 1A	RATING LABEL	C207	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	Z70G9001813 1A	E-D.F.U	C208	065G0402104 12	CHIP 0.1UF 50V X7R	
	Z85G0004 1	SCALER SHIELDING	C208	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
LCD Panel						
	750GLH90N3A11N	PANEL HSD190MEN3-A 19" HANNSTAR	C209	065G0402104 12	CHIP 0.1UF 50V X7R	
PCB Assy						
	CPBCH7HNAPHA1	SCALER BOARD ASSY-HSD	C209	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	KEPC7AB3	KEY BOARD	C210	065G0402104 12	CHIP 0.1UF 50V X7R	
	PWPC942HR2	POWER ASSY-HSD	C210	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
PCB Assy						
	CPBCH7HNAPHA1	SCALER BOARD ASSY-HSD	C213	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
Various						
	CN101 088G 35315F H	D-SUB 15PIN	C213	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V	
	CN102 088G 35424F H	DV1 CONNECTOR 24PIN	C214	067G 305101 3T	100UF 16V 105C	
	CN402 033G801930F H	FPC CONN. 1.0MM 30P	C214	067G305V101 3	105°C 100UF M 16V	
	X201 093G 22 51	CRYSTAL 12MHz HC-49US ARG6-120	C214	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
	705GZ756001	CPU Assy	C215	065G0402104 12	CHIP 0.1UF 50V X7R	
	100CZ101000251	CPU Software	C215	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
	Z40G900081359A	CPU Label	C216	065G0402104 12	CHIP 0.1UF 50V X7R	
			C216	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C219	065G0402220 31	CHIP 22PF 50V NPO	
			C220	065G0402220 31	CHIP 22PF 50V NPO	
			C301	065G0402104 12	CHIP 0.1UF 50V X7R	
			C301	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C302	067G305V100 3	105°C 10UF +20% 16V	
			C302	067G305V100 3L	RGA100M1CCC-0511	
			C303	065G0402104 12	CHIP 0.1UF 50V X7R	
			C303	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C304	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
			C304	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V	
			C305	067G 305101 3T	100UF 16V 105C	
			C305	067G305V101 3	105°C 100UF M 16V	
			C305	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
			C306	067G 305101 3T	100UF 16V 105C	
			C306	067G305V101 3	105°C 100UF M 16V	
			C306	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
			C307	065G0402104 12	CHIP 0.1UF 50V X7R	
			C307	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C308	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
			C308	065G060310517Z Y	CAP CHIP 0603 1UF Z 16V Y5V	
			C309	067G 305101 3T	100UF 16V 105C	
			C309	067G305V101 3	105°C 100UF M 16V	
			C309	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
			C310	067G 305101 3T	100UF 16V 105C	
			C310	067G305V101 3	105°C 100UF M 16V	
			C310	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
			C311	065G0402104 12	CHIP 0.1UF 50V X7R	
			C311	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C312	065G0402104 12	CHIP 0.1UF 50V X7R	
			C312	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C315	067G 305101 3T	100UF 16V 105C	
			C315	067G305V101 3	105°C 100UF M 16V	
			C315	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
			C316	067G305V101 3L	105°C RADIAL E-CAPACTOR 100uF 16V	
			C316	065G0603104 22	CHIP 0.1UF 25V X7R	
			C317	065G0402104 12	CHIP 0.1UF 50V X7R	
			C317	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C402	065G0402104 12	CHIP 0.1UF 50V X7R	
			C402	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C403	065G0402104 12	CHIP 0.1UF 50V X7R	
			C403	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C404	065G0402104 12	CHIP 0.1UF 50V X7R	
			C404	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C405	065G0402104 12	CHIP 0.1UF 50V X7R	
			C405	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	
			C406	065G0402104 12	CHIP 0.1UF 50V X7R	
			C406	065G040210412K Y	CAP CHIP 0402 100N 16V X7R 10%	

Spare Parts List

C407 065G0402104 12 CHIP 0.1UF 50V X7R
 C407 065G040210412K Y CAP CHIP 0402 100N 16V X7R 10%



R101 061G0402750 RST CHIPR 75 OHM +5% 1/16W
 R102 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R103 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R104 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R105 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R106 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R107 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R108 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R109 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R110 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R111 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R113 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R115 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R116 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R117 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R118 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R120 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R122 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R123 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R124 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R125 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R126 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R127 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R128 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R129 061G0402151 RST CHIP 150R 1/16W 5%
 R131 061G0402391 RST CHIPR 390 OHM +5% 1/16W
 R132 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R133 061G0402151 RST CHIP 150R 1/16W 5%
 R134 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R135 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R136 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R138 061G0402151 RST CHIP 150R 1/16W 5%
 R139 061G0402750 RST CHIPR 75 OHM +5% 1/16W
 R140 061G0402750 RST CHIPR 75 OHM +5% 1/16W
 R141 061G0402222 RST CHIPR 2.2 KOHM +5% 1/16W
 R142 061G0402222 RST CHIPR 2.2 KOHM +5% 1/16W
 R144 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R201 061G0402105 RST CHIPR 1MOHM +5% 1/16W
 R202 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R206 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R211 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R213 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R214 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R215 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R218 061G0402220 RST CHIPR 22 OHM +5% 1/16W
 R221 061G0402471 RST CHIPR 470 OHM +5% 1/16W
 R225 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R228 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R301 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R302 061G1206151 RST CHIPR 150 OHM +5% 1/4W
 R303 061G1206151 RST CHIPR 150 OHM +5% 1/4W
 R304 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R305 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R307 061G0402513 RST CHIP 51K 1/16W 5%
 R308 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R309 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R311 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R312 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R314 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R316 061G0402472 RST CHIPR 4.7 KOHM +5% 1/16W
 R402 061G0402392 RST CHIP 3.9K 1/16W 5%
 R403 061G0402392 RST CHIP 3.9K 1/16W 5%
 R404 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R407 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R410 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R412 061G0402102 RST CHIPR 1 KOHM +5% 1/16W
 R415 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R416 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R417 061G0402103 RST CHIPR 10 KOHM +5% 1/16W
 R418 061G0402101 RST CHIPR 100 OHM +5% 1/16W
 R431 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R432 061G0402000 RST CHIPR 0 OHM +5% 1/16W
 R439 061G0402000 RST CHIPR 0 OHM +5% 1/16W



FB101 071G 56D121 B201209D121TT
 FB101 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB102 071G 56D121 B201209D121TT
 FB102 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB103 071G 59B300 K CHIP BEAD 30 OHM 0603
 FB103 071G 59B300 M CHIP BEAD 30 OHM
 FB103 071G 59K300 TA CHIP BEAD 0603 30R/700mA TAI-TECH
 FB104 071G 59B300 K CHIP BEAD 30 OHM 0603
 FB104 071G 59B300 M CHIP BEAD 30 OHM
 FB104 071G 59K300 TA CHIP BEAD 0603 30R/700mA TAI-TECH
 FB105 071G 56D121 B201209D121TT

FB105 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB106 071G 59B300 K CHIP BEAD 30 OHM 0603
 FB106 071G 59B300 M CHIP BEAD 30 OHM
 FB106 071G 59K300 TA CHIP BEAD 0603 30R/700mA TAI-TECH
 FB202 071G 56D121 B201209D121TT
 FB202 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB203 071G 56D121 B201209D121TT
 FB203 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB204 071G 56D121 B201209D121TT
 FB204 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB205 071G 56D121 B201209D121TT
 FB205 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB206 071G 56D121 B201209D121TT
 FB206 071G 56G121 TA CHIP BEAD 120R/200mA FCM2012KF-121T02
 FB207 071G 56C102 TA CHIP BEAD 1000R/400mA FCM2012KF-102T04
 FB207 071G 56D102 B201209D102TT
 FB302 071G 56K121 M CHIP BEAD
 FB302 071G 56K121 TA CHIP BEAD 120R/6000mA HCB2012KF-121T60
 FB303 071G 56K121 M CHIP BEAD
 FB303 071G 56K121 TA CHIP BEAD 120R/6000mA HCB2012KF-121T60



D101 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D101 093G 6433S DIODE BAV99 SEMTECH
 D102 093G 64 42 PP BAV70 SOT-23
 D103 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D103 093G 6433S DIODE BAV99 SEMTECH
 D104 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D104 093G 6433S DIODE BAV99 SEMTECH
 D105 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D105 093G 6433S DIODE BAV99 SEMTECH
 D106 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D106 093G 6433S DIODE BAV99 SEMTECH
 D107 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D107 093G 6433S DIODE BAV99 SEMTECH
 D108 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D108 093G 6433S DIODE BAV99 SEMTECH
 D109 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D109 093G 6433S DIODE BAV99 SEMTECH
 D110 093G 64 42 PP BAV70 SOT-23
 D111 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D111 093G 6433S DIODE BAV99 SEMTECH
 D112 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D112 093G 6433S DIODE BAV99 SEMTECH
 D113 093G 64 33 DIO SIG SM BAV99 (PHSE)R
 D113 093G 6433S DIODE BAV99 SEMTECH
 D201 093G 64 42 PP BAV70 SOT-23
 D301 093G3004 3 SM340A
 ZD101 093G 39GA01 T RLZ5.6B
 ZD101 093G 39S 24 T RLZ 5.6B LLDS
 ZD102 093G 39GA01 T RLZ5.6B
 ZD102 093G 39S 24 T RLZ 5.6B LLDS
 ZD103 093G 39GA01 T RLZ5.6B
 ZD103 093G 39S 24 T RLZ 5.6B LLDS
 ZD104 093G 39GA01 T RLZ5.6B
 ZD104 093G 39S 24 T RLZ 5.6B LLDS
 ZD105 093G 39GA01 T RLZ5.6B
 ZD105 093G 39S 24 T RLZ 5.6B LLDS
 ZD106 093G 39GA01 T RLZ5.6B
 ZD106 093G 39S 24 T RLZ 5.6B LLDS
 ZD107 093G 39GA01 T RLZ5.6B
 ZD107 093G 39S 24 T RLZ 5.6B LLDS
 ZD201 093G 39G586 RLZ2.2B



Q201 057G 417 6 PMBS3906/PHILIPS-SMT(06)
 Q201 057G 417 13 T KEC 2N3906S-RTK/PS
 Q301 057G 417 4 PMBS3904/PHILIPS-SMT(04)
 Q301 057G 417 12 T KEC 2N3904S-RTK/PS
 Q302 057G 763 1 AO3401 SOT23 BY AOS(A1)
 Q305 057G 417 4 PMBS3904/PHILIPS-SMT(04)
 Q305 057G 417 12 T KEC 2N3904S-RTK/PS
 Q402 057G 417 6 PMBS3906/PHILIPS-SMT(06)
 Q402 057G 417 13 T KEC 2N3906S-RTK/PS
 Q403 057G 417 6 PMBS3906/PHILIPS-SMT(06)
 Q403 057G 417 13 T KEC 2N3906S-RTK/PS
 U203 056G 562908 IC NT68665MEFG-128 QFP128
 U204 056G1133 56 M24C16-WMN6TP
 U301 056G 563 52 IC AP1117D33LA TO252-3L ATC
 U304 056G 56327A IC AP1117E18LA SOT223-3L ANACHIP

PCB Assy

KEPC7AB3

KEY BOARD

Various

LED1 081G 12900 KB
 LED2 081G 12900 KB
 SW1 077G 605 1 FD

LED VS L-115WSYKCGKW-8.03LSF5/F
 LED VS L-115WSYKCGKW-8.03LSF5/F
 SWI TACT H=5 GY 160G SKHHAM B

Spare Parts List

SW2	077G 605 1 FD	SWI TACT H=5 GY 160G SKHHAM B	C900	065G306M2222BP	2200PF +20% 400VAC
SW3	077G 605 1 FD	SWI TACT H=5 GY 160G SKHHAM B	C901	065G305M1022E2	1000P 400VAC/250VAC
SW4	077G 605 1 FD	SWI TACT H=5 GY 160G SKHHAM B	C901	065G305M1022E3	1000PF. M.250VAC.Y2
SW5	077G 605 1 FD	SWI TACT H=5 GY 160G SKHHAM B	C901	065G305M1022EM	Y2 1000PF +20% 250VAC
SW6	077G 605 1 FD	SWI TACT H=5 GY 160G SKHHAM B	C902	065G305M1022E2	1000P 400VAC/250VAC
SW7	077G 605 1 FD	SWI TACT H=5 GY 160G SKHHAM B	C902	065G305M1022E3	1000PF. M.250VAC.Y2
			C902	065G305M1022EM	Y2 1000PF +20% 250VAC
			C903	065G306M1022BP	1000PF Y1.CAP
C101	065G0603471 32	CHIP 470PF 50V X7R	C904	065G0603102 32	1000PF +10% 50V X7R
C102	065G0603471 32	CHIP 470PF 50V X7R	C907	067G 40J10115K	EC CAP 100uF 450V 18*35mm
C103	065G0603471 32	CHIP 470PF 50V X7R	C907	067G305T10115H	EC 105°C CAP 470UF M 16V
C104	065G0603471 32	CHIP 470PF 50V X7R	C909	063G 107474 U	MPX-474K27B15L3
C105	065G0603471 32	CHIP 470PF 50V X7R	C909	063G 107474 HS	0.47UF 275VAC
			C910	065G 2K152 1T6921	CAP 1.5NF/2KV Y5P +10%
R101	061G0603432	RST CHIPR 4.3 KOHM +5% 1/10W	C911	067G 2152207NT	KY50VB22M-TP5 5*11
R102	061G0603911	RST CHIPR 910 OHM +5% 1/10W	C911	067G215Y2207KT	CAP 105°C 22UF M 50V KINGNICH
R103	061G0603242	RST CHIPR 2.4 KOHM +5% 1/10W	C912	065G0805104 32	CHIP 0.1U 50V X7R
R104	061G0603432	RST CHIPR 4.3 KOHM +5% 1/10W	C913	065G0805221 31	220PF 50V NPO
R105	061G0603911	RST CHIPR 910 OHM +5% 1/10W	C914	065G0805471 21	CHIP 470PF 25V NPO
R106	061G0603242	RST CHIPR 2.4 KOHM +5% 1/10W	C914	065G0805471 31	CHIP 470PF 50V NPO
			C916	065G0805104 32	CHIP 0.1U 50V X7R
			C920	065G517K102 5T	1000PF 10% Y5P 500V
			C921	065G517K102 5T	1000PF 10% Y5P 500V
FB101	071G 59G301	CHIP BEAD 300OHM	C922	067G215D6814KV	CAP 105°C 680uF M 25V
FB102	071G 59G301	CHIP BEAD 300OHM	C923	067G215D6814KV	CAP 105°C 680uF M 25V
			C925	067G215D4714KV	105°C CAP 470UF M 25V ED SERIES
			C926	067G215S102 3K	ED1000UF 16V
PCB Assy			C927	067G215S4713KV	EC 105°C CAP 470UF M 16V
PWPC942HR2		POWER ASSY-HSD	C928	065G0805104 32	CHIP 0.1U 50V X7R
			C929	065G0805104 32	CHIP 0.1U 50V X7R
Various			C930	065G0805104 32	CHIP 0.1U 50V X7R
BD901	093G 50460 28	BRIDGE DIODE KBP208G LITEON	C931	065G0805104 32	CHIP 0.1U 50V X7R
CN801	033G8021 2E F	WAFER	C932	067G215S102 3K	ED1000UF 16V
CN801	033G8021 2E U	WAFER			
CN802	033G8021 2E F	WAFER			
CN802	033G8021 2E U	WAFER			
CN803	033G8021 2E F	WAFER			
CN803	033G8021 2E U	WAFER			
CN804	033G8021 2E F	WAFER			
CN804	033G8021 2E U	WAFER			
CN901	087G 501 32 S	AC SOCKET			
CN902	095G801410D 53	HARNES 9P-10P 130mm			
F901	084G 56 4W	FUSE 4.0A 250V			
F902	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
IC801	056G 379 22	IC TL494IDR SOIC-16			
IC902	056G 139 8	IC PS2561L1-1-V-A LJ Lead Bending 4pin			
IC902	056G 139 3A	PC123Y22FZOF			
IC902	056G 139 3B	PC123 Y82FZ0F			
IC903	056G 158 12	KIA431A-AT/P TO-92			
J807	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J813	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J814	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J815	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J816	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J818	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J907	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
J908	061G1206000	RST CHIPR 0 OHM +5% 1/4W			
NR901	061G 58 9T	RST NTCR 10 ohm +20% 5A THINKING			
PT801	080GL17T 40 V	X'FMR TK.2001U.101			
PT801	080GL17T 40 DN	X'FMR TK.2001U.101			
PT802	080GL17T 40 V	X'FMR TK.2001U.101			
PT802	080GL17T 40 DN	X'FMR TK.2001U.101			
T901	080GL17T 33 N2	XFMR POWER 550uH YUVA			
T901	080GL17T 33 T2	X'FMR 550uH SRW28EC-T147H015			
T901	080GL17T 33DN2	XFMR 550uH LK.PC001.B60			
T901	080GL17T 33YS2	X'FMR 550uH YS04160106			
C801	065G 3J1006ET	10PF,J,3KV,SL	R801	061G0603000	RST CHIPR 0 OHM +5% 1/10W
C802	065G0603105 12	CHIP 1UF 16VX7R 0603	R802	061G0805101	RST CHIPR 100 OHM +5% 1/8W
C803	065G0805152 32	CHIP 1500PF 50V X7R 0805	R803	061G0603242	RST CHIPR 2.4 KOHM +5% 1/10W
C804	065G0603104 12	CER2 0603 X7R 16V 100N P M10 R	R804	061G0603000	RST CHIPR 0 OHM +5% 1/10W
C805	067G215D4714KV	105°C CAP 470UF M 25V ED SERIES	R805	061G0603472	RST CHIPR 4.7KOHM +5% 1/10W
C806	065G0603105 12	CHIP 1UF 16VX7R 0603	R806	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
C807	065G0603104 12	CER2 0603 X7R 16V 100N P M10 R	R807	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
C808	065G0805225 12	CHIP 2.2UF 16V X7R 0805	R808	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
C809	065G0805221 31	220PF 50V NPO	R810	061G1206150	RST CHIPR 15 OHM +5% 1/4W
C810	065G0603104 22	CHIP 0.1UF 25V X7R	R811	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
C811	067G215D4714KV	105°C CAP 470UF M 25V ED SERIES	R812	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
C812	065G 3J1006ET	10PF,J,3KV,SL	R813	061G0603101	RST CHIPR 100 OHM +5% 1/10W
C813	065G0603222 22	CHIP 2200PF 25V X7R	R814	061G0603750 2F	RST CHIPR 75KOHM +1% 1/10W
C814	065G0603104 12	CER2 0603 X7R 16V 100N P M10 R	R815	061G0603470 2F	RST CHIPR 47 KOHM +1% 1/10W
C815	065G0603222 22	CHIP 2200PF 25V X7R	R816	061G0603680 2F	RST CHIPR 68 KOHM +1% 1/10W
C816	065G0805152 32	CHIP 1500PF 50V X7R 0805	R819	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
C817	065G0603222 22	CHIP 2200PF 25V X7R	R820	061G0603564	RST CHIPR 560 KOHM +5% 1/10W
C818	065G0603222 22	CHIP 2200PF 25V X7R	R821	061G0603105	RST CHIPR 1 MOHM +5% 1/10W
C821	065G0805152 32	CHIP 1500PF 50V X7R 0805	R822	061G0603473	RST CHIPR 47 KOHM +5% 1/10W
C822	065G0805152 32	CHIP 1500PF 50V X7R 0805	R824	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
C823	065G0805104 22	CHIP 0805 0.1UF +10% 25V X7R	R825	061G0805510 2F	RST CHIPR 51 KOHM +1% 1/8W
C824	065G0805104 22	CHIP 0805 0.1UF +10% 25V X7R	R826	061G0805180 3F	RST CHIPR 180 KOHM +1% 1/8W
			R827	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R828	061G0603470 2F	RST CHIPR 47 KOHM +1% 1/10W
			R829	061G0603680 2F	RST CHIPR 68 KOHM +1% 1/10W
			R830	061G0603000	RST CHIPR 0 OHM +5% 1/10W
			R831	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
			R832	061G0603000	RST CHIPR 0 OHM +5% 1/10W
			R833	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
			R834	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R835	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R836	061G0603105	RST CHIPR 1 MOHM +5% 1/10W
			R837	061G1206150	RST CHIPR 15 OHM +5% 1/4W
			R838	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
			R839	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R840	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
			R841	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R842	061G0603470 2F	RST CHIPR 47 KOHM +1% 1/10W
			R844	061G0603220	RST CHIPR 22 OHM +5% 1/10W
			R845	061G0603220	RST CHIPR 22 OHM +5% 1/10W
			R846	061G0603220	RST CHIPR 22 OHM +5% 1/10W
			R847	061G0603220	RST CHIPR 22 OHM +5% 1/10W
			R848	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R849	061G0603100 1F	RST CHIPR 1 KOHM +1% 1/10W
			R850	061G1206150	RST CHIPR 15 OHM +5% 1/4W
			R851	061G1206150	RST CHIPR 15 OHM +5% 1/4W
			R852	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
			R853	061G0603100 2F	RST CHIPR 10 KOHM +1% 1/10W
			R900	061G1206334	RST CHIPR 330KOHM +5% 1/4W
			R901	061G1206334	RST CHIPR 330KOHM +5% 1/4W
			R902	061G1206334	RST CHIPR 330KOHM +5% 1/4W
			R903	061G0805102	RST CHIPR 1KOHM +5% 1/8W
			R905	061G1206103	RST CHIPR 10 KOHM +5% 1/4W
			R907	061G 208151 64	RST MOFR 150 OHM +5% 1W
			R908	061G0805471	RST CHIPR 470 OHM +5% 1/8W

R909	061G152M104 64	100KOHM 5% 2W	Q805	057G 417 13 T	KEC 2N3906S-RTK/PS
R910	061G1206229	RST CHIPR 2.2 OHM +5% 1/4W	Q806	057G 417 6	PMBS3906/PHILIPS-SMT(06)
R911	061G0805100 3F	RST CHIPR 100KOHM +1% 1/8W	Q806	057G 417 13 T	KEC 2N3906S-RTK/PS
R912	061G1206100	RST CHIP 10R 1/4W 5%	Q807	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R913	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q807	057G 417 12 T	KEC 2N3904S-RTK/PS
R915	061G0805100 2F	RST CHIPR 10KOHM +1% 1/8W	Q808	057G 759 2	RK7002
R916	061G152M438 64	RST MOFR 0.43OHM +5% 2WS	Q808	057G 763904	TRA FET 2N7002 SOT-23 PHILIPS
R922	061G0805471	RST CHIPR 470 OHM +5% 1/8W	Q808	057T 758 1	FET 2N7002E VISHAY
R923	061G0805100 2F	RST CHIPR 10KOHM +1% 1/8W	Q809	057G 763 6	AO4828L
R924	061G0805360 1F	RST CHIPR 3.6KOHM +1% 1/8W	Q809	057G 763 14	AM9945N
R925	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q810	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R926	061G0805330 2F	RST CHIPR 33 KOHM +1% 1/8W	Q810	057G 417 12 T	KEC 2N3904S-RTK/PS
R927	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q811	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R928	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q811	057G 417 12 T	KEC 2N3904S-RTK/PS
R929	061G0805240 1F	RST CHIPR 2.4KOHM +1% 1/8W	Q812	057G 759 2	RK7002
R930	061G0805100 1F	RST CHIPR 1KOHM +1% 1/8W	Q812	057G 763904	TRA FET 2N7002 SOT-23 PHILIPS
R931	061G1206103	RST CHIPR 10 KOHM +5% 1/4W	Q812	057T 758 1	FET 2N7002E VISHAY
R951	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q900	057G 667 21	STP10NK70ZFP
R952	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q902	057G 417 4	PMBS3904/PHILIPS-SMT(04)
R953	061G1206470	RST CHIPR 47 OHM +5% 1/4W	Q902	057G 417 12 T	KEC 2N3904S-RTK/PS
R954	061G1206470	RST CHIPR 47 OHM +5% 1/4W	U901	056T 379 61	IC LD7575PS SOP-8 LEADTREND
R955	061G1206470	RST CHIPR 47 OHM +5% 1/4W			
R956	061G1206470	RST CHIPR 47 OHM +5% 1/4W			



FB901	071G 55 29	FERRITE BEAD
FB902	071G 55 29	FERRITE BEAD
FB903	071G 55 29	FERRITE BEAD
L901	073G 174 76 H	FILTER
L901	073G 174 76 L	CHOKO COIL LI TAI LF-002923
L902	073G 174 65 H	LINE FILTER
L902	073G 174 65 T	LINE FILTER 7mH MIN TDK
L921	073G 253 91 H	CHOKO COIL
L921	073G 253 91 LS	CHOKO BY LI SHIN
L922	073G 253 91 H	CHOKO COIL
L922	073G 253 91 LS	CHOKO BY LI SHIN



D801	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D802	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D803	093G 6432V	LL4148-GSO8
D803	093G 64S3PH	BAS32L
D803	093T 64 44 S	LL4148WP
D806	093G 64 38 D	DIODE BAW56 DIODES
D806	093G 64S 10	DIODE BAW56PT SOT-23 CHENMKO
D807	093G 6432V	LL4148-GSO8
D807	093G 64S3PH	BAS32L
D807	093T 64 44 S	LL4148WP
D808	093G 64 38 D	DIODE BAW56 DIODES
D808	093G 64S 10	DIODE BAW56PT SOT-23 CHENMKO
D809	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D810	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D811	093G 6432V	LL4148-GSO8
D811	093G 64S3PH	BAS32L
D811	093T 64 44 S	LL4148WP
D812	061G1206000	RST CHIPR 0 OHM +5% 1/4W
D813	093G 6432V	LL4148-GSO8
D813	093G 64S3PH	BAS32L
D813	093T 64 44 S	LL4148WP
D900	093T1100 1052T	BA159GPT
D901	093G 6038T52T	FR103
D901	093T1020 752T	UF4003PT
D910	093G 6432V	LL4148-GSO8
D910	093G 64S3PH	BAS32L
D910	093T 64 44 S	LL4148WP
D915	093G 6432V	LL4148-GSO8
D915	093G 64S3PH	BAS32L
D915	093T 64 44 S	LL4148WP
D916	093G 6432V	LL4148-GSO8
D916	093G 64S3PH	BAS32L
D916	093T 64 44 S	LL4148WP
D920	093G 60276	DIODE SBT150-10LST SANYO
D922	093G3006 1 1	31DQ06FC3 NIHON INTER
ZD801	061G1206103	RST CHIPR 10 KOHM +5% 1/4W
ZD920	093G 39GA28 T	ZENER DIODE RLZ13B SEMTECH
ZD920	093G 39S 40 T	RLZ 13B LLDS
ZD921	093G 39GA28 T	ZENER DIODE RLZ13B SEMTECH
ZD921	093G 39S 40 T	RLZ 13B LLDS
ZD922	093G 39GA26 T	ZENER DIODE RLZ5.1B SEMTECH
ZD922	093G 39S 25 T	RLZ5.1B LLDS



Q801	057G 760 4	DTA144WKA BY ROHM SMT
Q801	057G 760 4B	PDTA144WK SOT346
Q802	057G 760 5B	PDTC144WK SOT346
Q803	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q803	057G 417 12 T	KEC 2N3904S-RTK/PS
Q804	057G 763 6	AO4828L
Q804	057G 763 14	AM9945N
Q805	057G 417 6	PMBS3906/PHILIPS-SMT(06)

Different Parts List

Diversity of 170C8FS/00(CPT) compared with 170C8FS/00(LPL)					
170C8FS/00(CPT)			170C8FS/00(LPL)		
Item	18NC	Description	Item	18NC	Description
80	750GLC70A7P51N	PANEL CLAA170EA07P Rev050 CPT 17"	80	750GLG70E3L42M000F	PANEL LM170E03-TLL4 PHILIPS LPL
1	P40G700081336A	VISTA STICKER			
90	705GZ-P00024	PROCESS BOX			
180	0M1G1730 6106	SCREW TAPPING M3X0.5X6+SW			
190	0D1G3440 8106	SCREW			
210	0M1G1430 5128	SCREW (FOR SHIELD)			
230	0B1G 930 8128	SCREW			
240	0P 1T0001 1	SCREW 3x8 PT BLK			
250	0M1G 130 8 47	SCREW FLAT M3-0.5X10			
330	P52G 58002	SMALL TAPE			
350	P40G700081330A	SCREEN STICKER			
360	P33G0058 1	housing cover			
370	P40G5000813 1A	Hi-pot label			
380	P45G 46014 1A	PE BAG FOR MONITOR			
390	P52G 57001	MIDDLE TAPE FOR CARTON			
400	P44T9504090	CORNER PAPER(6 layer)			
410	P44T9504110	CORNER PAPER(5 layer)			
420	P44GSLIP001 8A	paperboard			
430	P45G 77001	paperboard			
440	040G 58162435A	LABEL			
450	P44GSLIP002 5A	Slip Sheet			
460	P07G0032	Pallet			
470	P40GD000813 9A	FAMILY SHEET			
480	P40GD00081310A	Family Sheet			
490	P50T 53002	cable tie			
	CPBC7CNAPHA1	scaler assy		CPBC7GNAPHA1	scaler assy
C131	065G0402102 32	1000PF +-10% 50V X7R			
C132	065G040247132K T	CAP CHIP 0402 470PF 50V X7R			
C132	065G040247132K Y	CAP CHIP 0402 470P 50V X7R +/-10%			
C132	065T0402471 32	CHIP 470PF 50V X7R			
CN301	033G3802 9	WAFER 9P RIGHT ANELE PITCH			
CN407	033G3802 7	WAFER EH 7			
FB105	061G0805000	0 OHM 1/10W	FB105	071G 56D121	B201209D121TT
R234	061G0402221	RST CHIPR 220 OHM +-5% 1/16W			
U204	056G1133 24	AT24C16AN-10SU-2.7	U204	056G1133 56	M24C16-WMN6TP
	314105870031	THERMAL TRANSFER RIBBON			
	CN-313816850385	N2			
	CN-313816850387	Label			
	P49G 52001	Lonco RF800 flux(LT)			
	P55G 71001	SOLD BAR SAC305(KG)			
	P55G 72001	SOLD WR CR SAC305 1532(KG)			
	P55G 74001	THINNER ALPHA IPA425(LT)			
	SMTC7CNAPHA1	CPBC7CNAPHA1 SMT			
	705GZ756003	CPU Assembly		705GZ756004	CPU Assembly
	100CZ101000281	CPU Software		100CZ101000301	CPU Software
	Z40G700081324A	CPU Label		Z40G700081328A	CPU Label
	715G2561 1PHI	Scaler Bare PCB			
	P55G 73002	SOLD PASTE (reflow-OM-338SAC405)(KG)			
	PWPC742CR1	POWER G2594-G-X-X-1-070515		PWPC742GR4	POWER G2594-G-X-X-1-070515
C905	065G306M1022BP	1000PF Y1.CAP			
CN901	006G 31500	EYELET	CN901	087G 501 32 S	AC SOCKET
F903	095G 90 23	Fuse			
GND1	009G6005 1	Fuse			
GND2	009G6005 1	Fuse			
HS1	090G6264 1	HEAT SINK			
HS4	Q85G0053 1 S	shield			
HS5	090G6241 1 GP	HEAT SINK			
J801	095G 90 23	RST CHIPR			
J802	095G 90 23	RST CHIPR			
J803	095G 90 23	RST CHIPR			
J804	095G 90 23	RST CHIPR			
J805	095G 90 23	RST CHIPR			
J806	095G 90 23	RST CHIPR			
J808	095G 90 23	RST CHIPR			
J809	095G 90 23	RST CHIPR			
J810	095G 90 23	RST CHIPR			
J811	095G 90 23	RST CHIPR			
J812	095G 90 23	RST CHIPR			
J817	095G 90 23	RST CHIPR			
J819	095G 90 23	RST CHIPR			
J901	095G 90 23	RST CHIPR			
J903	095G 90 23	RST CHIPR			
J904	095G 90 23	RST CHIPR			
J905	095G 90 23	RST CHIPR			
J906	095G 90 23	RST CHIPR			
J909	095G 90 23	RST CHIPR			
J910	095G 90 23	RST CHIPR			
NR901	006G 31 4	1.7MM RIVET	NR901	061G 58 9T	RST NTCR 10 ohm +20% 5A THINKING
R823	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W			
	705GQ761016	NR901 ASS'Y			
	096G 29 10	H.S. TUBE			
	P51G 11006	GLUE FOR SMD LOCTITE			
	314105870031	THERMAL TRANSFER RIBBON			
	CN-313816850387	Label			
	P51G 13001	GREASE SILICONE DC4			
	051G 6 4503	paperboard			
	705GQ9KP 57001	Q900 ASS'Y			
	0M1G1730 8128 CR3	SCREW M3X6			
	705GQ9KP 93001	D920 ASS'Y			
	0M1G1730 8128 CR3	SCREW M3X6			
	CN-313816850385	N2			

Different Parts List

Diversity of 170C8FS/00(CMO) compared with 190C8FS/00(HSD)					
190C8FS/00(CMO)			190C8FS/00(HSD)		
ITEM	18NC	DESCRIPTION	ITEM	18NC	DESCRIPTION
		Q45G7628B05			PE BAG FOR MANUAL
		Z41G9010813 1A			QSG
		Z15G0005 1			MAIN FRAME(Panel-CMO)
		P33G0055			FUNCTION KEY
		P33G0056			BEZEL STRIP
		P33G0057			POWER LENS
		P34G0111			BEZEL
		750GLG90E8L12M000F		750GLH90N3A11N	PANEL HSD190MEN3-A 19" HANNSTAR
		P 1G0001 1			SCREW_3X10_BLK
		P 7G0019 1			pallet
		P33G0058 1			housing cover
		P40G5000813 1A			Hi-pot label
		P40G700081330A			SCREEN STICKER
		P40G700081336A			VISTA STICKER
		P40GA00081334A			PASS CARD LABEL
		P40GD000813 9A			FAMILY SHEET
		P40GD00081310A			Family Sheet
		P41T1800813 4A			CHINA WARRANTY CARD
		P44G600281324A			paper board
		P44G9008 1			CUSHION - R (WW)
		P44G9008 2			CUSHION - L (ww)
		P44GSLIP00142A			SLIP SHEET
		P44T9504090			CORNER PAPER(6 layer)
		P44T9504110			CORNER PAPER(5 layer)
		P45G 77001			
		P45G746041 1A			pe bag for monitor
		P50T 53002			cable tie
		P52G 57001			MIDDLE TAPE FOR CARTON
		P52G 58002			SMALL TAPE
		P52T 58004			REINFORCED TAPE
		P85G 86021			GASKET
		P85G0035			POWER_SHIELDING
		Z40G9N01813 1A			RATING LABEL
		Z44G9010813 1A			CARTON
		Z85G0004 1			SCALER SHIELDING
		CPBC7GNAPHA3		CPBC7HNAPHA1	SCALER BOARD ASSY-HSD
C131		065G0402102 32			1000PF +-10% 50V X7R
C131		065G0402102 32			1000PF +-10% 50V X7R
C132		065G040247132K T			CAP CHIP 0402 470PF 50V X7R
C132		065G040247132K Y			CAP CHIP 0402 470P 50V X7R +/-10%
C132		065T0402471 32			CHIP 470PF 50V X7R
CN301		033G3802 9			WAFER 9P RIGHT ANELE PITCH
CN402		033G801930F BH U	CN402	033G801930F H	FPC CONN. 1.0MM 30P
CN407		033G3802 7			WAFER EH 7
FB105		061G0805000		FB105	071G 56D121
R234		061G0402221			RST CHIPR 220 OHM +-5% 1/16W
U203		056G 562908	U203	705GZ756001	CPU Assy-HSD
U204		056G1133 24	U204	056G1133 56	M24C16-WMNP6T
		314105870031			THERMAL TRANSFER RIBBON
		CN-313816850385			N2
		CN-313816850387			Label
		P49G 52001			Lonco RF800 flux(LT)
		P55G 71001			SOLD BAR SAC305(KG)
		P55G 72001			SOLD WR CR SAC305 1532(KG)
		P55G 74001			THINNER ALPHA IPA425(LT)
		SMTG7GNAPHA3			CPBC7GNAPHA3 SMT
		705GZ756002			CPU Assy
		100CZ101000261		100CZ101000261	CPU Software
		Z40G900081361A		Z40G900081361A	CPU Label
		715G2561 1PHI			Scaler Bare PCB
		P55G 73002			SOLD PASTE (reflow-OM-338SAC405)(KG)
		PWPC942GR3		PWPC942HR2	POWER ASSY-HSD
C905		065G306M1022BP			1000PF Y1.CAP
CN801		033G8021 2E F			WAFER
CN801		033G8021 2E U			WAFER
CN802		033G8021 2E F			WAFER
CN802		033G8021 2E U			WAFER
CN803		033G8021 2E F			WAFER
CN803		033G8021 2E U			WAFER
CN804		033G8021 2E F			WAFER
CN804		033G8021 2E U			WAFER
CN901		006G 31500	CN901	087G 501 32 S	AC SOCKET
D812		093G 64 44 S	D812	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
F903		095G 90 23			FERRITE BEAD
GND1		009G6005 1			鍍 ± 濼鍙 鍙 鍙 鍙
GND2		009G6005 1			鍍 ± 濼鍙 鍙 鍙 鍙
HS1		090G6264 1			HEAT SINK
HS4		Q85G0053 1 S			shield
HS5		090G6241 1 GP			HEAT SINK
J801		095G 90 23			RST
J802		095G 90 23			RST
J803		095G 90 23			RST
J804		095G 90 23			RST
J805		095G 90 23			RST
J806		095G 90 23			RST
J808		095G 90 23			RST
J809		095G 90 23			RST
J810		095G 90 23			RST
J811		095G 90 23			RST
J812		095G 90 23			RST
J817		095G 90 23			RST
J819		095G 90 23			RST

Different Parts List

J901	095G 90 23	RST			
J903	095G 90 23	RST			
J904	095G 90 23	RST			
J905	095G 90 23	RST			
J906	095G 90 23	RST			
J909	095G 90 23	RST			
J910	095G 90 23	RST			
NR901	006G 31 4	1.7MM RIVET	NR901	061G 58 9T	RST NTCR 10 ohm +20% 5A THINKING
R823	061G0603100 2F	RST CHIPR 10 KOHM +-1% 1/10W			
	P51G 11006	GLUE FOR SMD LOCTITE			
	314105870031	THERMAL TRANSFER RIBBON			
	CN-313816850387	Label			
	P51G 13001	GREASE SILICONE DC4			
	705GQ761016	NR901 ASS"Y			
	096G 29 10	H.S. TUBE			
	705GQ9KP 57001	Q900 ASS"Y			
	0M1G1730 8128 CR3	SCREW M3X6			
	705GQ9KP 93001	D920 ASS"Y			
	0M1G1730 8128 CR3	SCREW M3X6			
	CN-313816850385	N2			
	P49G 52001	Lonco RF800 flux(LT)			
	P51G 11001	GLUE JETMELT 3748-V0-TC			
	P55G 71001	SOLD BAR SAC305(KG)			
	P55G 72001	SOLD WH CR SAC305 1532(KG)			
	P55G 74001	THINNER ALPHA IPA425(LT)			
	SMTWPC942GR3	POWER BOARD FOR SMT			
	AIPWPC942GR3	POWER BOARD FOR AI			
	715G2594 1PHI	PHILIPS 17" 19" 19W LCD POWER BOARD			
	051G 6 4503	RTV 鑼?3000			

Diversity of 170C8FS/93(LPL) compared with 170C8FS/00(LPL)

170C8FS/93(LPL)			170C8FS/00(LPL)		
Item	18NC	Description	Item	18NC	Description
SZ022	750GLG70E3L12M000F	PANEL LM170E03-TLL1 PHILIPS LPL		750GLG70E3L42M000F	PANEL LM170E03-TLL4 PHILIPS LPL
SZ024	CBPC7GNAPHS44	SCALER ASSY- LPL	SZ024	CPBC7GNAPHA1	scaler assy
C131	065G0402102 32	1000PF +10% 50V X7R			
C132	065G040247132K T	CAP CHIP 0402 470PF 50V X7R			
C132	065G040247132K Y	CAP CHIP 0402 470P 50V X7R 10%			
C132	065T0402471 32	CHIP 470PF 50V X7R			
FB105	061G0805000	0 OHM 1/10W	FB105	071G 56D121	B201209D121TT
R106	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R106	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R107	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R107	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R110	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R110	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R111	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R111	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R115	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R115	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R116	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R116	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R117	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R117	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R118	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R118	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R234	061G0402221	RST CHIPR 220 OHM +5% 1/16W			
R302	061G1206331	RST CHIPR 330 OHM +5% 1/4W	R302	061G1206151	RST CHIPR 150 OHM +5% 1/4W
R303	061G1206331	RST CHIPR 330 OHM +5% 1/4W	R303	061G1206151	RST CHIPR 150 OHM +5% 1/4W
SZ025	705GZ756008	CPU Assembly - LPL			

Diversity of 170C8FS/93(CPT) compared with 170C8FS/00(LPL)

170C8FS/93(CPT)			170C8FS/00(LPL)		
Item	18NC	Description	Item	18NC	Description
SZ001	7051Z701030	DFU ASSY		705GZ701001	DFU Assy
SZ007	750GLC70A7P41N	PANEL CLAA170EA07P Rev040		750GLG70E3L42M000F	PANEL LM170E03-TLL4 PHILIPS LPL
SZ008	750GLC70A7P51N	PANEL CLAA170EA07P Rev050			
SZ017	P33G0058 1	housing cover			
SZ018	CBPC7GNAPHS43	scaler assy - CPT	SZ018	CPBC7GNAPHA1	scaler assy
C131	065G0402102 32	1000PF +10% 50V X7R			
C132	065G040247132K T	CAP CHIP 0402 470PF 50V X7R			
C132	065G040247132K Y	CAP CHIP 0402 470P 50V X7R 10%			
C132	065T0402471 32	CHIP 470PF 50V X7R			
FB105	061G0805000	0 OHM 1/10W	FB105	071G 56D121	B201209D121TT
R106	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R106	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R107	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R107	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R110	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R110	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R111	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R111	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R115	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R115	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R116	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R116	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R117	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R117	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R118	061G0402100	RST CHIPR 10 OHM +5% 1/16W	R118	061G0402000	RST CHIPR 0 OHM +5% 1/16W
R234	061G0402221	RST CHIPR 220 OHM +5% 1/16W			
R302	061G1206331	RST CHIPR 330 OHM +5% 1/4W	R302	061G1206151	RST CHIPR 150 OHM +5% 1/4W
R303	061G1206331	RST CHIPR 330 OHM +5% 1/4W	R303	061G1206151	RST CHIPR 150 OHM +5% 1/4W
SZ019	705GZ756007	CPU Assembly- CPT			

Manual 3122 785 17180
-First release
-ALL chapters

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:

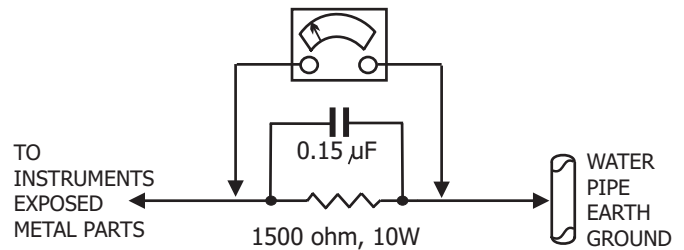
Fire and Shock Hazard

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 asterisks 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 safely operated without danger of electrical shock.

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 X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation 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

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.