

Service
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Service Manual

Horizontal Frequency
30- 83KHz

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SAFETY NOTICE

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

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

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all Philips 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 Company will be referred to as Philips.

WARNING

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.

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 is grounded through wristband.

-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 a short circuit within the module.

-If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1. Monitor Specifications

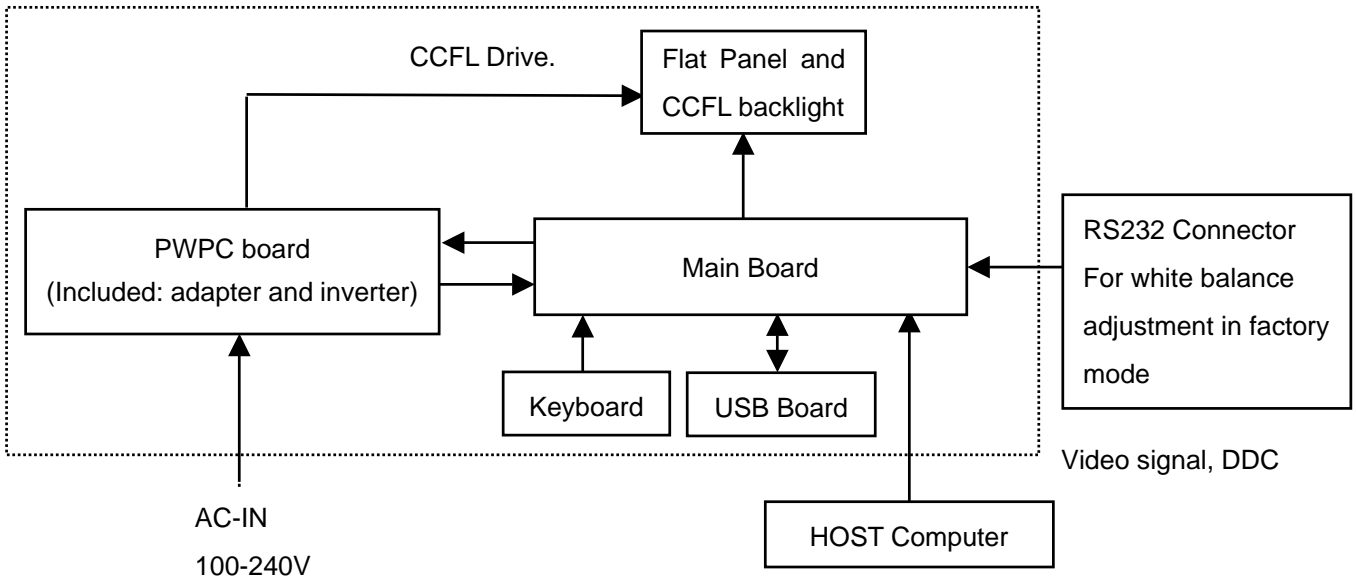
LCD Panel	Screen type	Active matrix - TFT LCD
	Panel Type	M190EG01 (AUO)
	Size	19.0"
	Pixel pitch	0.294mm(H) x 0.294mm(V)
	Viewable angle (CR=10)	Horizontal 178°, Vertical 178° (type) (AUO)
	Response time	8 ms (type)
	Separate Sync	TTL level, input impedance 2.2k OHM terminate
	Horizontal Frequency	30kHz – 83kHz
	Vertical refresh rate	56 - 76Hz
Input Connector		28pin DVI A
		28pin DVI B
Maximum Resolution		1280 x 1024 at 75Hz (analog input)
		1280 x 1024 at 75Hz (digital input)
Display Colors		16.7M colors (RGB 8-bits data)
Contrast Ratio		1000:1
White Luminance		300cd/m ²
Video dot rate		140 MHz
Recommended Resolution		1280 x 1024 at 60Hz (digital input)
Plug & Play		VESA DDC2B
Power Consumption		Power on: < 40 W Power off: < 1 W
Input Video Signal		0.7 Vp-p, input impedance, 75 ohm @DC
Tilt		-5° ~ 25°
Maximum Screen Size		Horizontal: 376.32mm; Vertical: 301.056 mm
Power Source		100-240 VAC, 50/60 Hz
Weight		8.2Kg
Environmental Considerations		Operating Temp: 0°C to 40°C Storage Temp.: -20°C to 60°C Relative Humidity: 20% to 80%
Cabinet color		Black/Silver/Gray

2. LCD Monitor Description

The LCD MONITOR will contain a main board, PWPC board, keypad board and a USB board which house the flat panel control logic, brightness control logic and DDC.

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

Monitor Block Diagram



3. Operation instructions

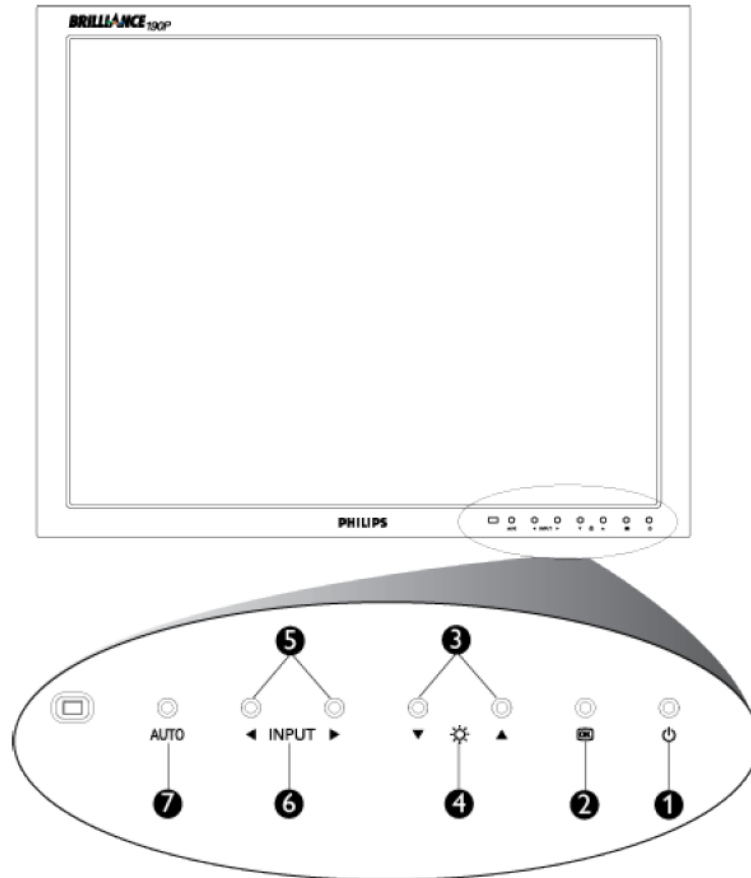
3.1 General Instructions






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

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor, the power indicator will light up.

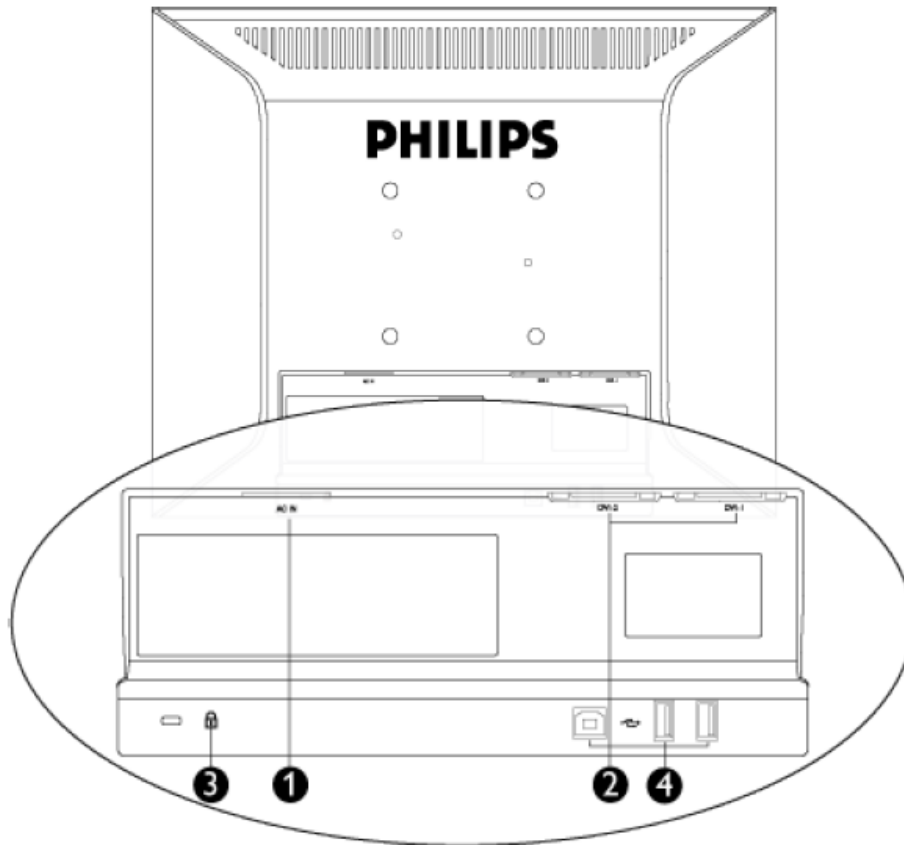
3.2 Control Buttons

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  To adjust the OSD
- 6 **INPUT** Signal input selection
- 7 **AUTO** Automatically adjust the horizontal position, vertical position, phase and clock settings.




Rear View



- 1 AC power input
- 2 DVI-I input
- 3 Kensington anti-thief lock
- 4 USB upstream and downstream

3.3 Adjusting the Picture

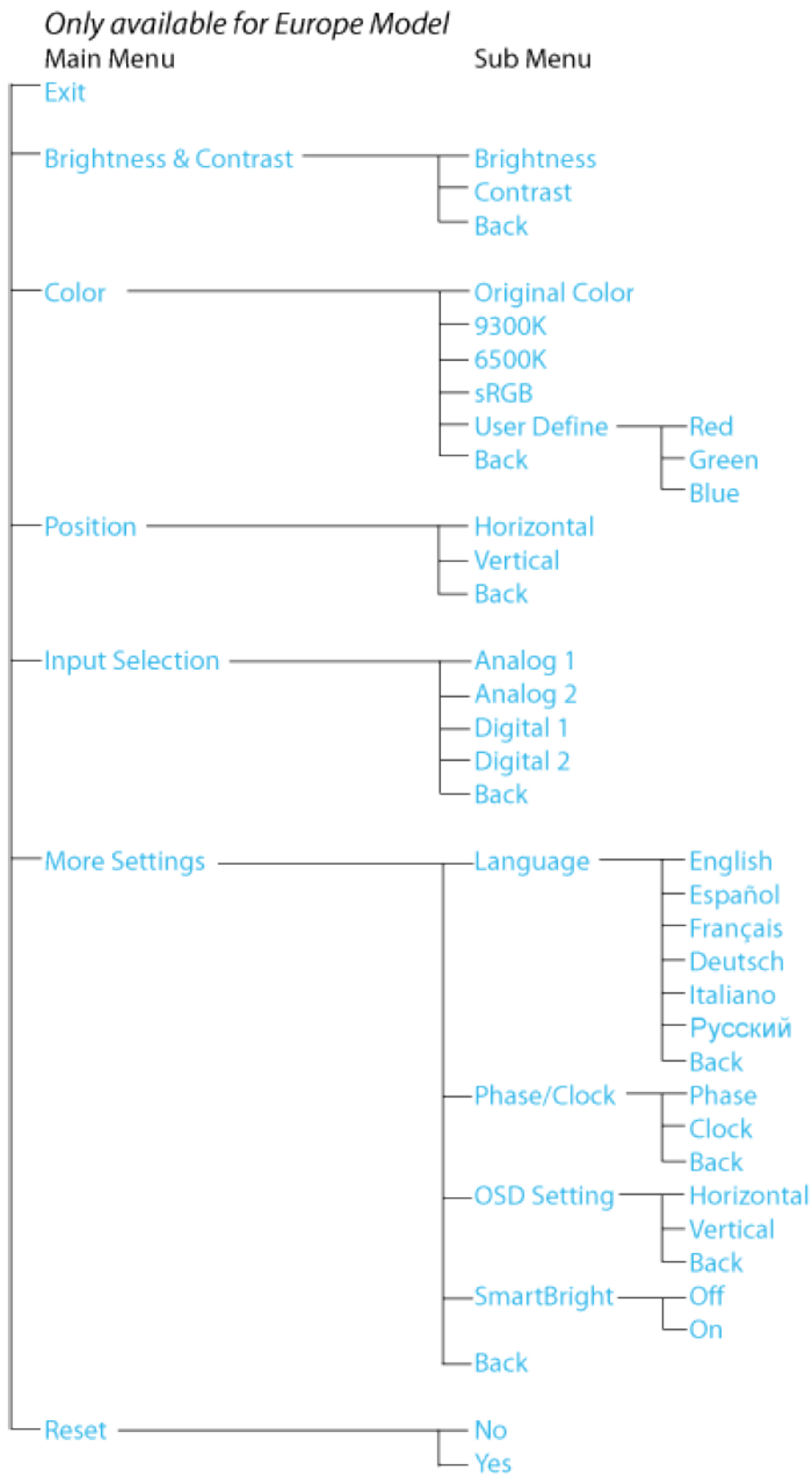
This is a feature in all Philips LCD monitors. It allows an end user to adjust screen performance of the monitors directly through an on-screen instruction window. The user interface provides user-friendliness and ease-of-use when operating the monitor.

When you press the  button on the front control of your monitor, the On-Screen Display (OSD) Main Controls window will pop up and you can then start making adjustments to your monitor's various features. Use the  or the  keys to make your adjustments.

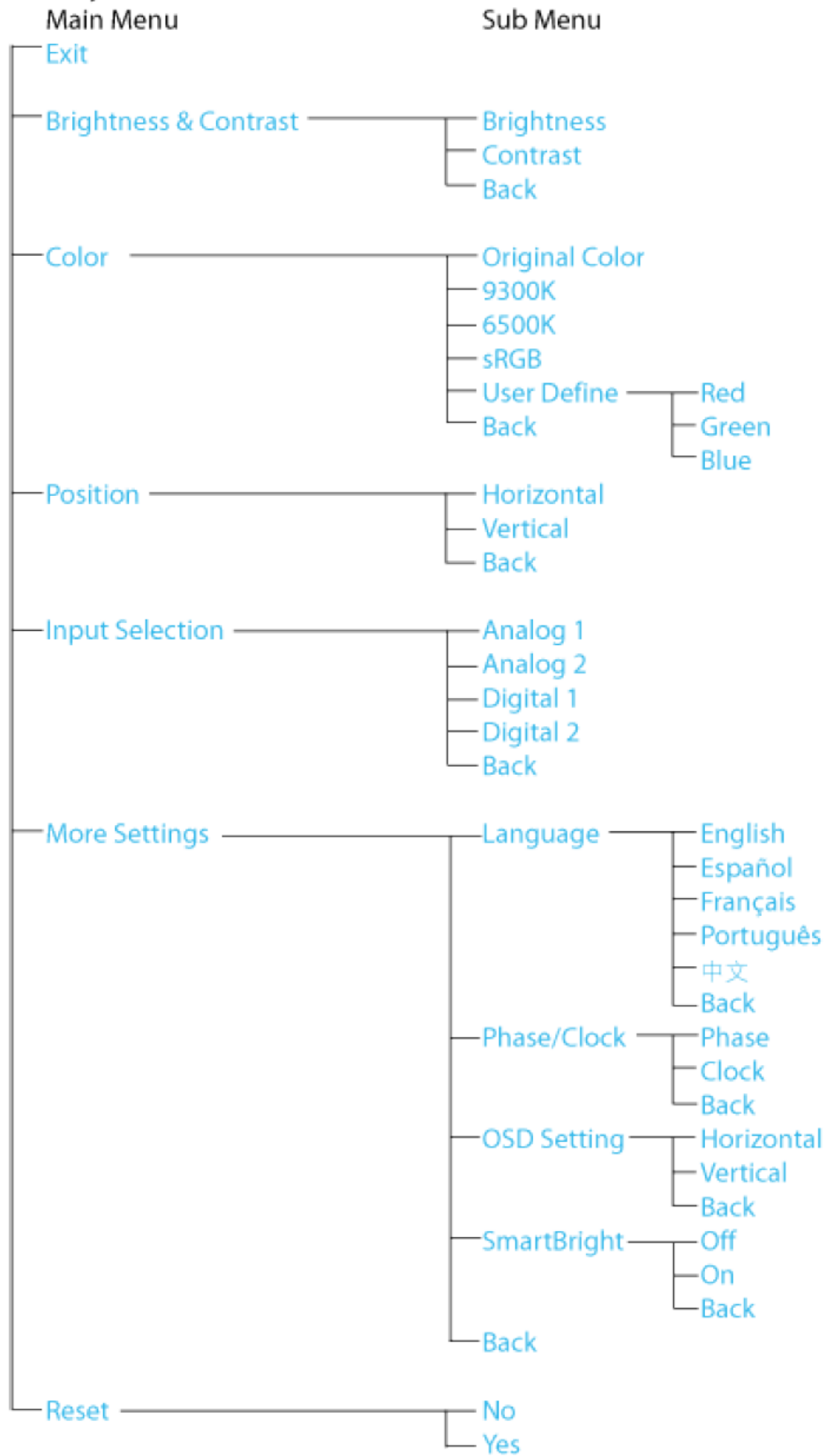


The OSD tree

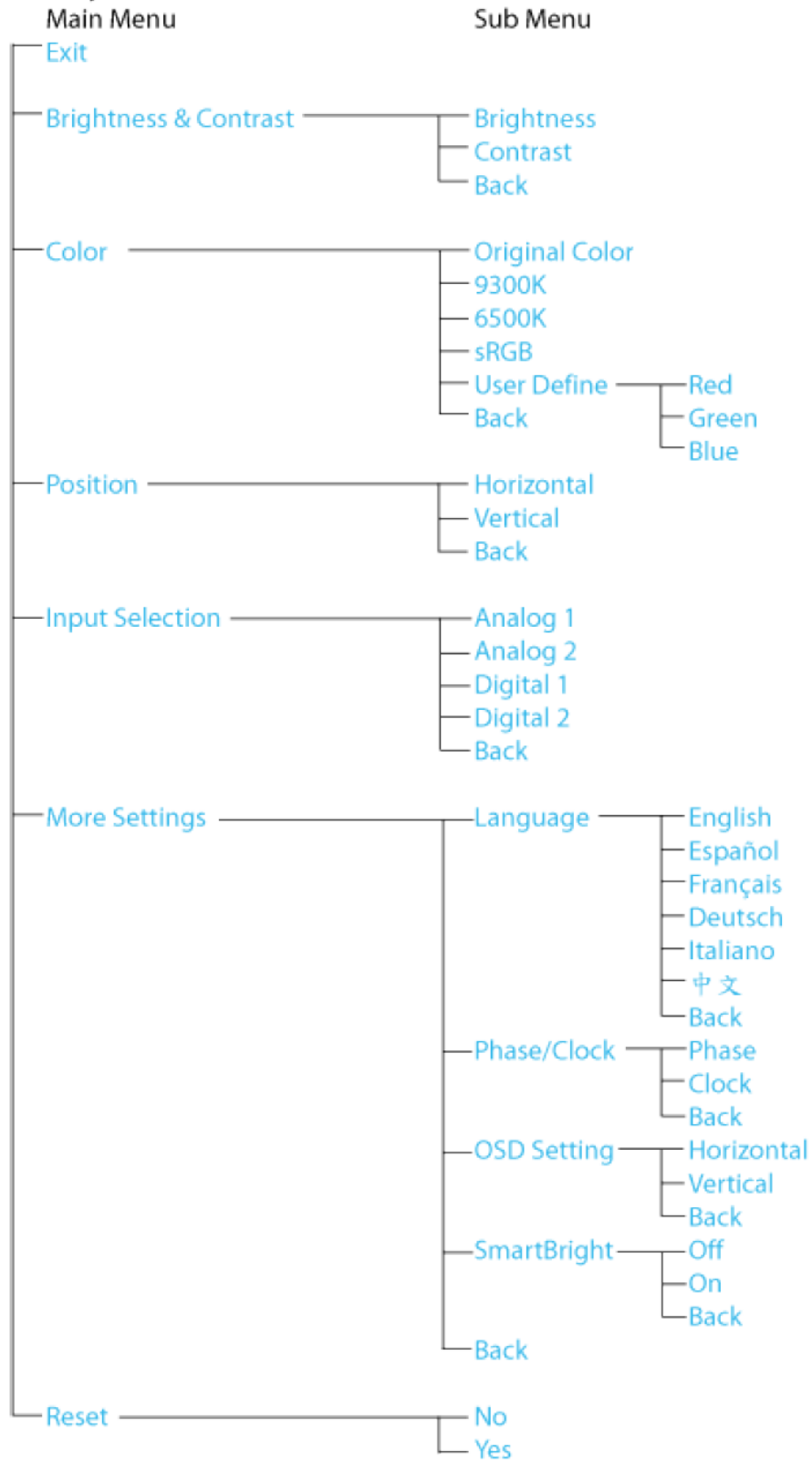
Below is an overall view of the structure of the On-Screen Display. You can use this as a reference when you want to work your way around the different adjustments later on.



Only available for Nafta Model

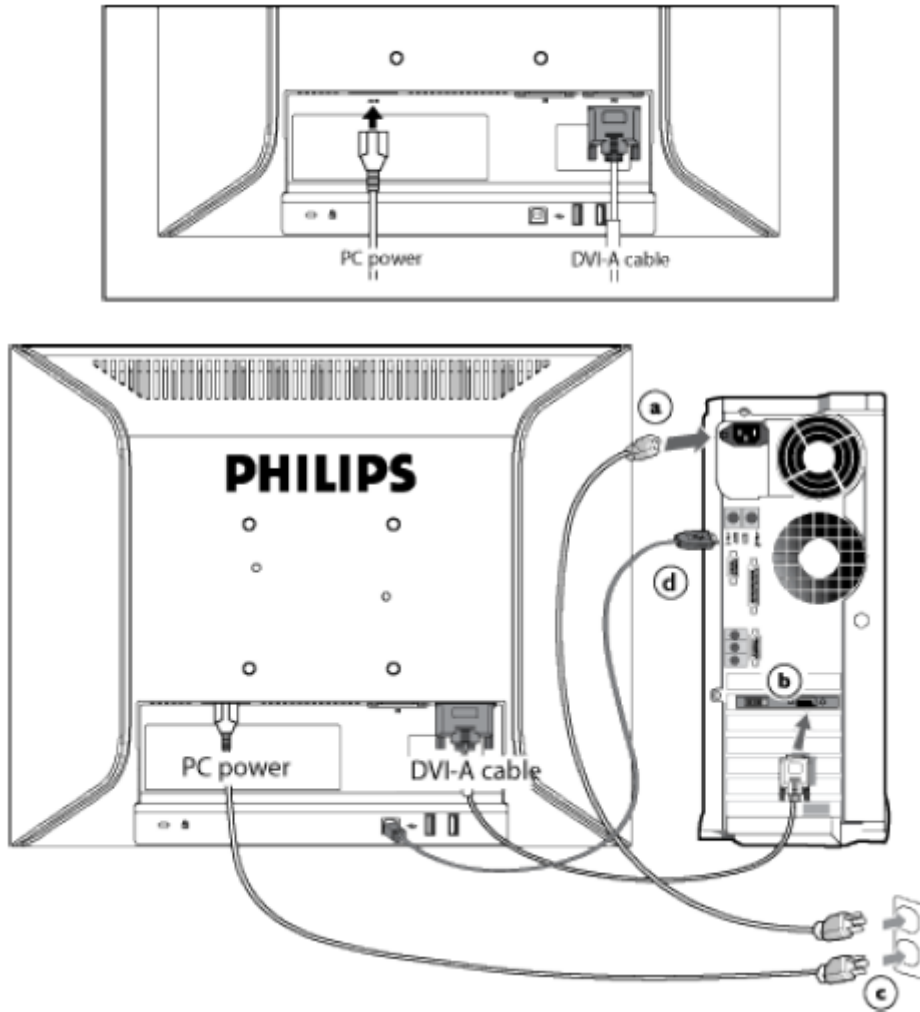


Only available for Asia Pacific Model



3.4 Connecting to the PC

1) Connect the power and DVI cable to the back of the monitor firmly. (Philips has pre-connected DVI-A cable for the first installation.)



2) 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 on your computer and your monitor into a nearby outlet.
- (d) USB plug
 - (1) Connect USB upstream port on monitor and the USB port on PC with a USB cable.
 - (2) The USB downstream port is now ready for any USB device to plug in.
- (e) Turn on your computer and monitor. If the monitor displays an image, installation is complete.

Note: The USB plug is a pass through connection whether it can support USB 1.1 or USB 2.0 depends on your PC's specification.

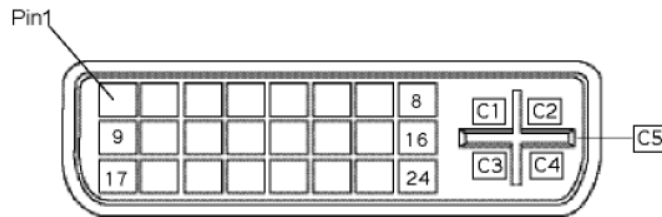
4. Input/Output Specification

4.1 Input Signal Connector

DVI A/B connectors

Pin No.	Description	Pin No.	Description	Pin No.	Description
1.	T.M.D.S Data 2-	13.	NC	C1	* Analog R
2.	T.M.D.S Data 2+	14.	+5V Power	C2	* Analog G
3.	T.M.D.S Data 2 Shield	15.	GND (return for + 5V and H/V-sync)	C3	* Analog B
4.	NC	16.	Hot Plug Detect	C4	* Analog H-sync
5.	NC	17.	T.M.D.S Data 0-	C5	* Analog GND (Analog R, G, B return)
6.	DDC Clock	18.	T.M.D.S Data 0+		
7.	DDC Data	19.	T.M.D.S Data 0		
8.	Analog V-sync	20.	NC		
9.	T.M.D.S Data 1-	21.	NC		
10.	T.M.D.S Data 1+	22.	T.M.D.S Clock Shield		
11.	T.M.D.S Data 1 Shield	23.	T.M.D.S Clock +		
12.	NC	24.	T.M.D.S Clock -		

DVI Connector layout



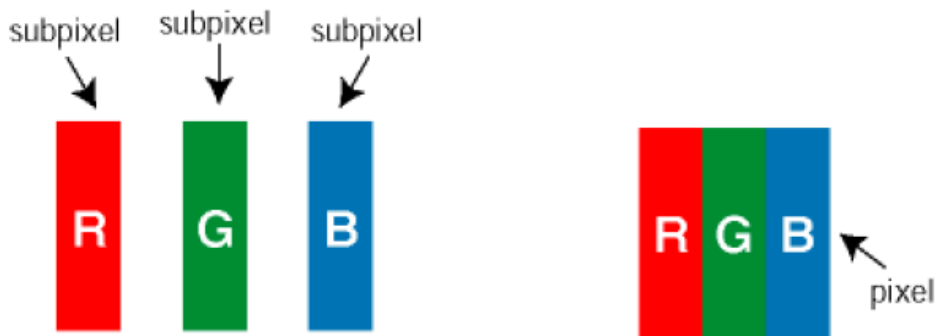
4.2 Factory Preset Display Modes

H. freq (kHz)	Resolution	V. freq (Hz)
31.5	640*350	70 (IBM VGA 10h)
31.5	720*400	70
31.5	640*480	60
35.0	640*480	67
37.5	640*480	75
35.2	800*600	56
37.9	800*600	60
46.9	800*600	75
49.7	832*624	75
48.4	1024*768	60
60.0	1024*768	75
69.0	1152*870	75
71.8	1152*900	76
63.9	1280*1024	60
80.0	1280*1024	75

4.3 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 15" 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.



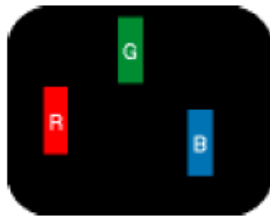
Pixels and Sub pixels

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:

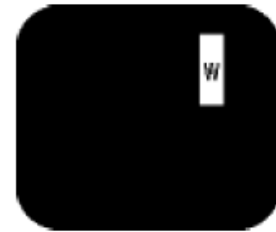


One lit red, green or blue sub pixel



Two adjacent lit sub pixels:

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



Three adjacent lit sub pixels (one white pixel)

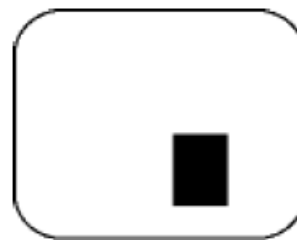


A red or blue *bright dot* must be more than 50 percent brighter than neighboring dots while a green bright dot is 30 percent brighter than neighboring dots.

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	190P7
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	> 25 mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190P7
1 dark subpixel	5
2 adjacent dark subpixels	2
3 adjacent dark subpixels	0
Distance between two black dot defects*	> 15 mm
Total black dot defects of all types	5

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190P7
Total bright or black dot defects of all types	5

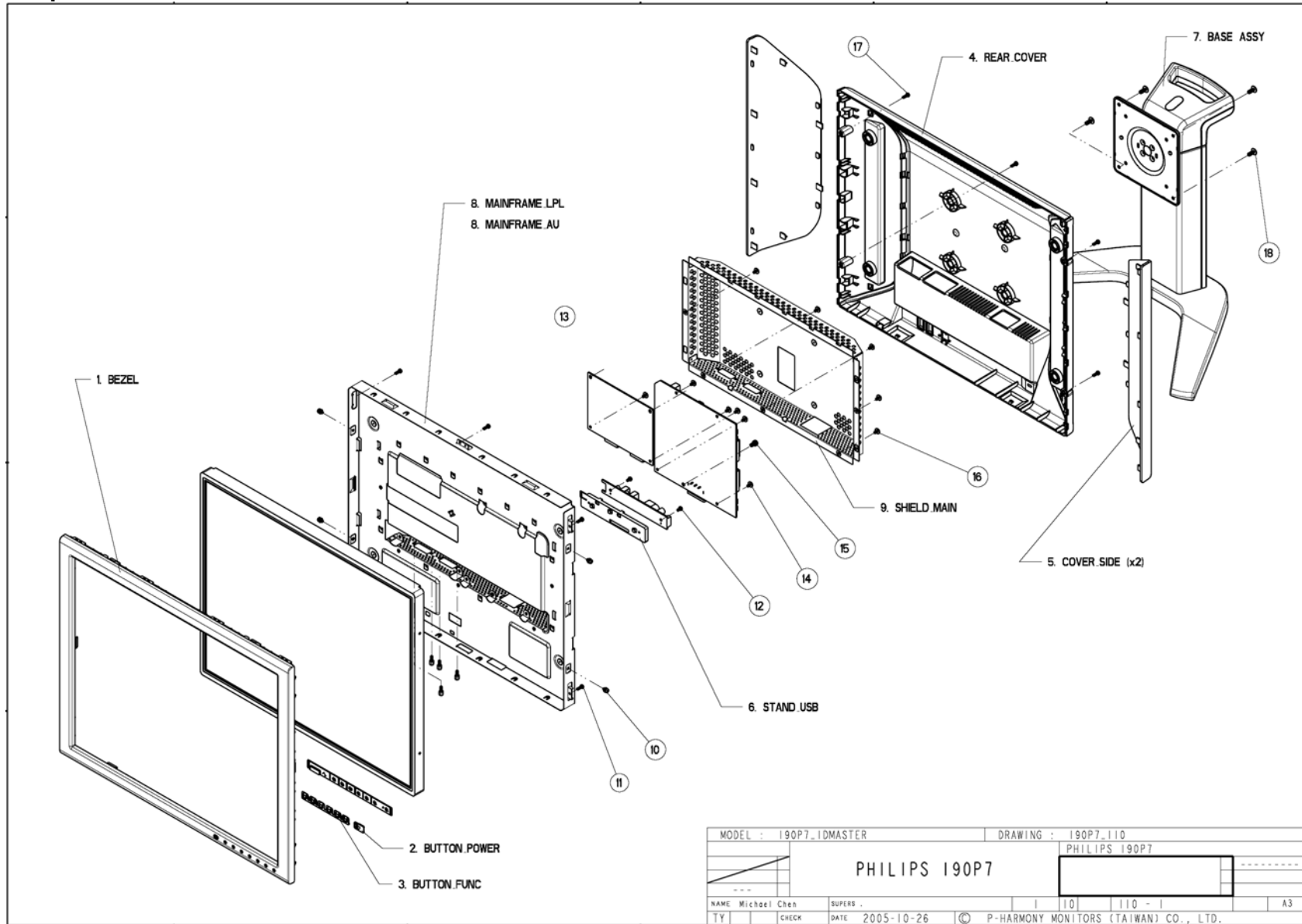
Note:

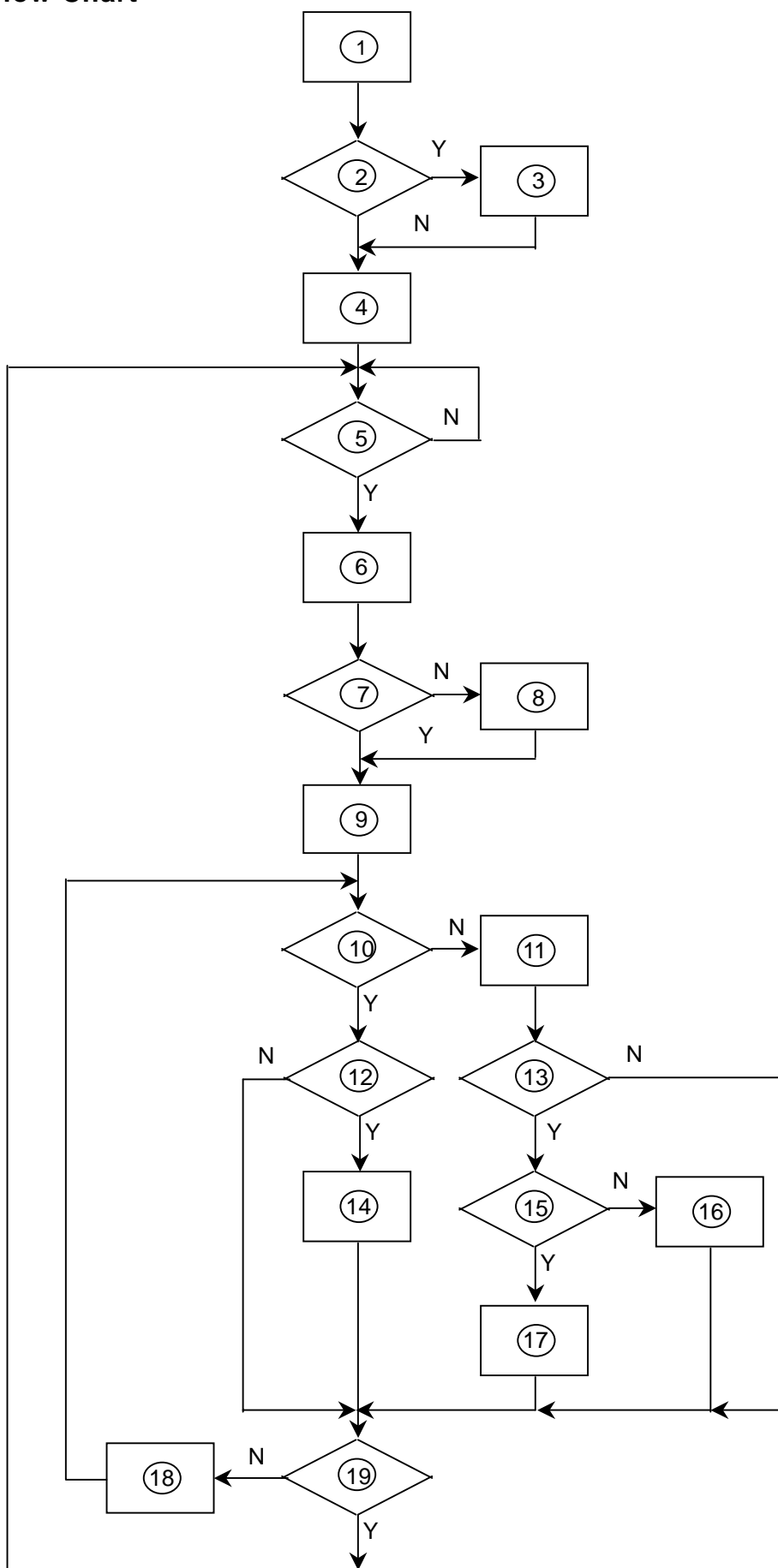
* 1 or 2 adjacent sub pixel defects = 1 dot defect

Your Philips monitor is ISO13406-2 Compliant

5. Block Diagram

5.1 Monitor Exploded View





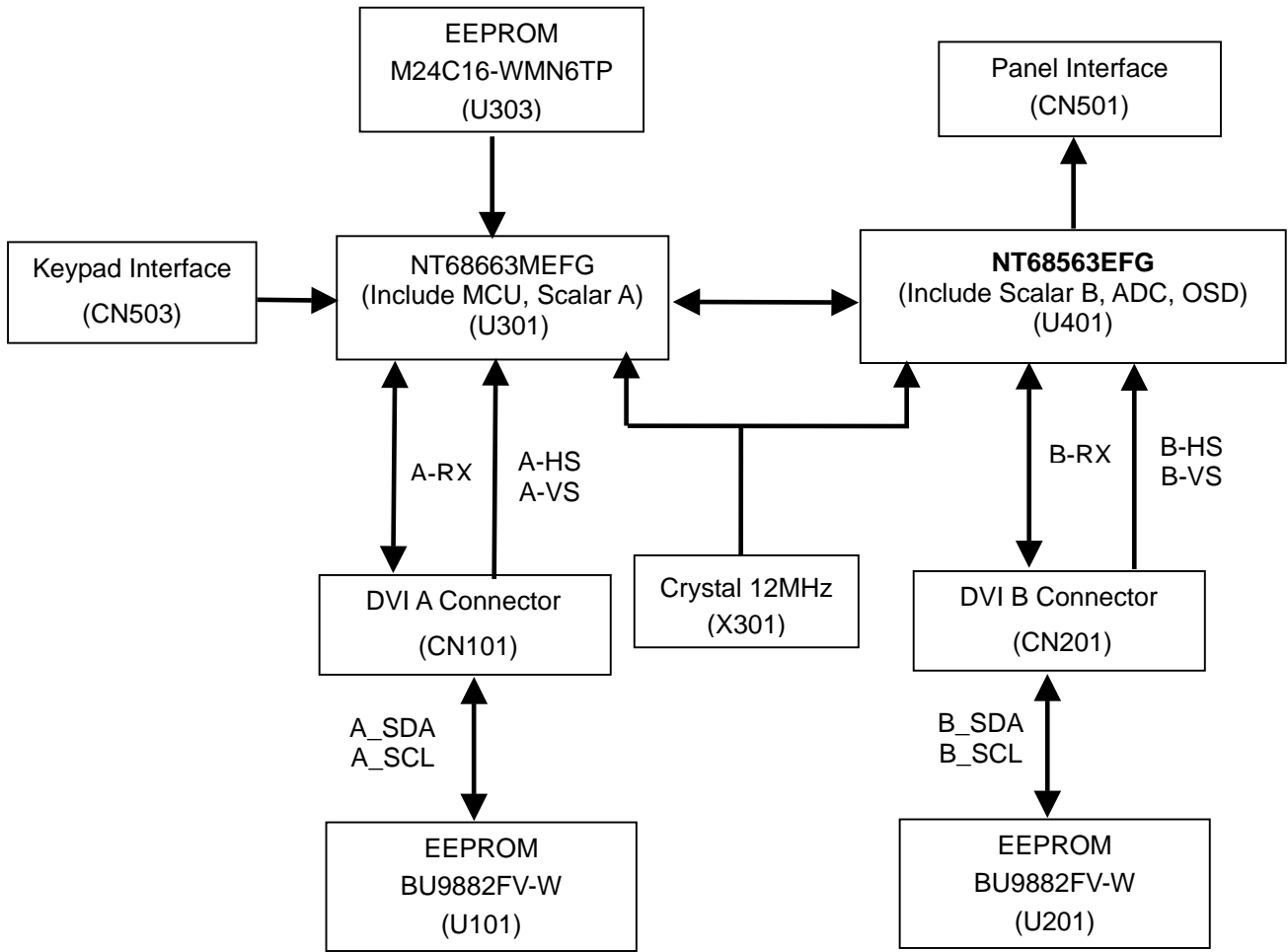
- 1) MCU Initializes.
- 2) Is the EEPROM blank?
- 3) Program the EEPROM by default values.
- 4) Get the PWM value of brightness from EEPROM.
- 5) Is the power key pressed?
- 6) Clear all global flags.
- 7) Are the AUTO and SELECT keys pressed?
- 8) Enter factory mode.
- 9) Save the power key status into EEPROM.

Turn on the LED and set it to green color. Scalar initializes.

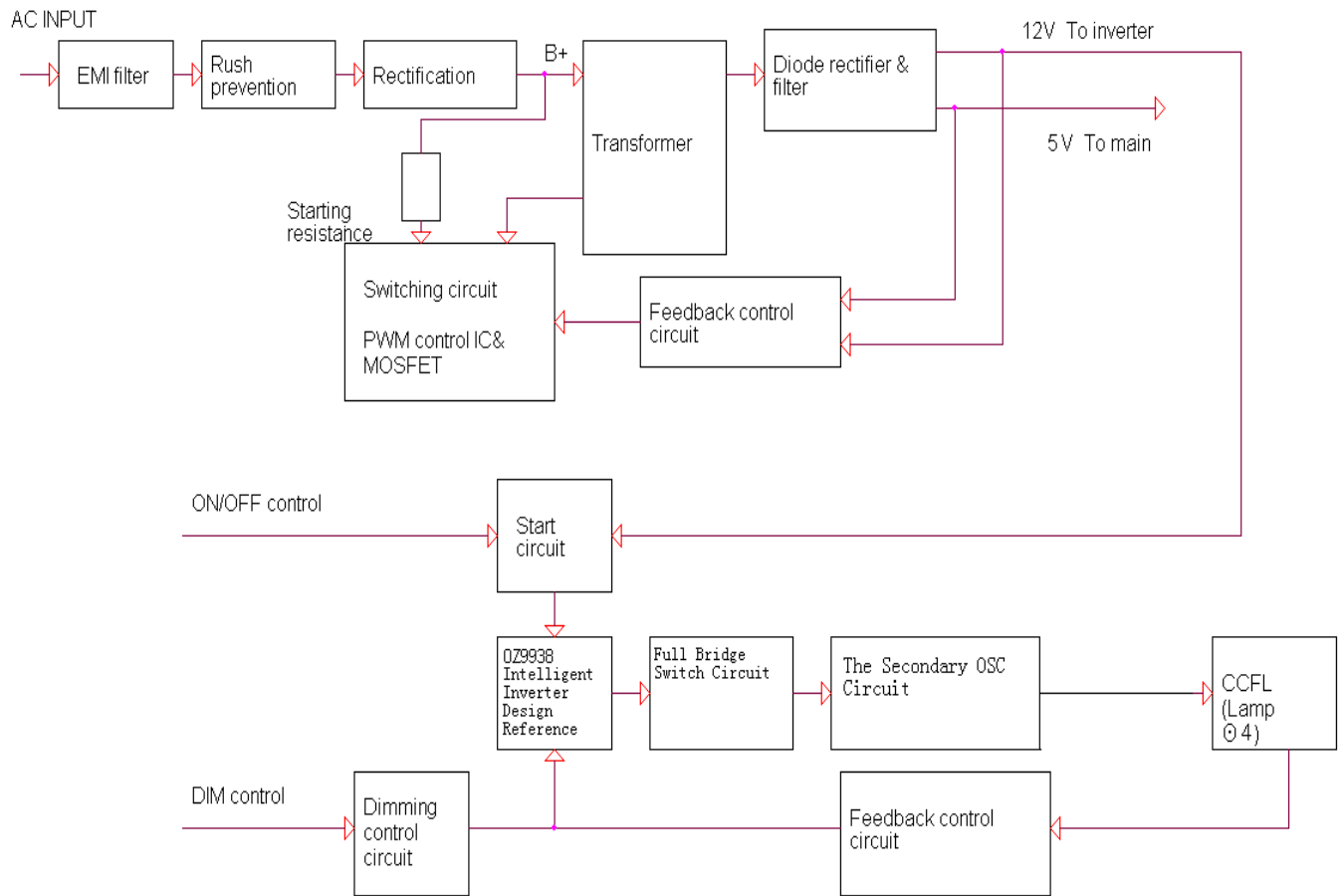
- 10) In standby mode?
- 11) Update the lifetime of back light.
- 12) Check the analog port, are there any signals coming?
- 13) Does the scalar send out an interrupt request?
- 14) Wake up the scalar.
- 15) Are there any signals coming from analog port?
- 16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappears.
- 17) Program the scalar to be able to show the coming mode.
- 18) Process the OSD display.
- 19) Read the keyboard. Is the power key pressed?

5.3 Electrical Block Diagram

5.3.1 Main Board



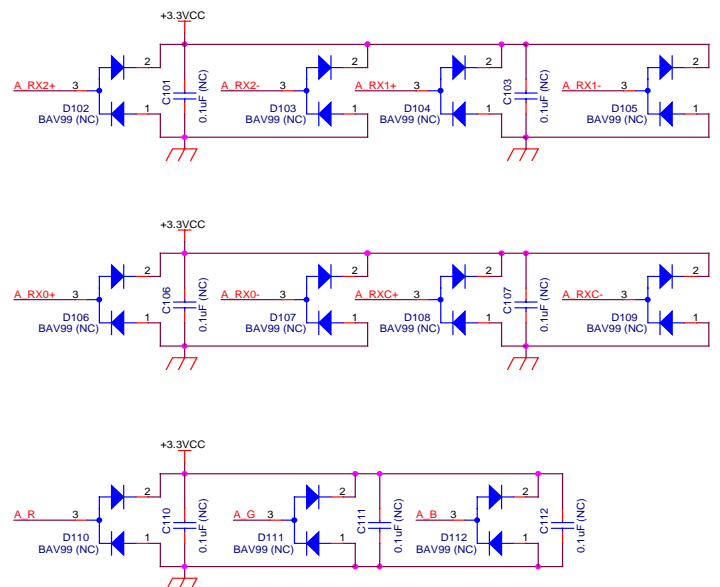
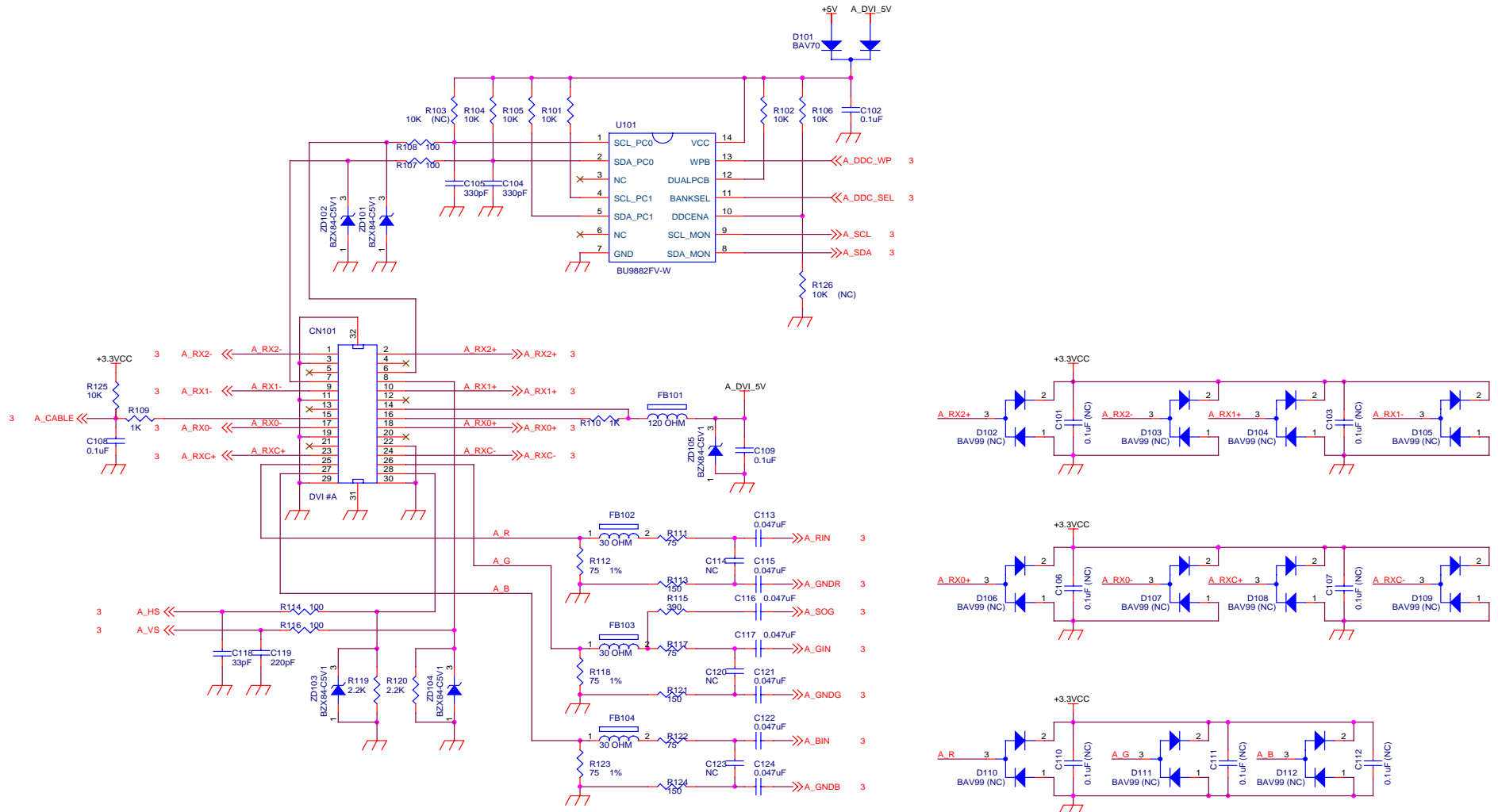
5.3.2 Inverter/Power Board



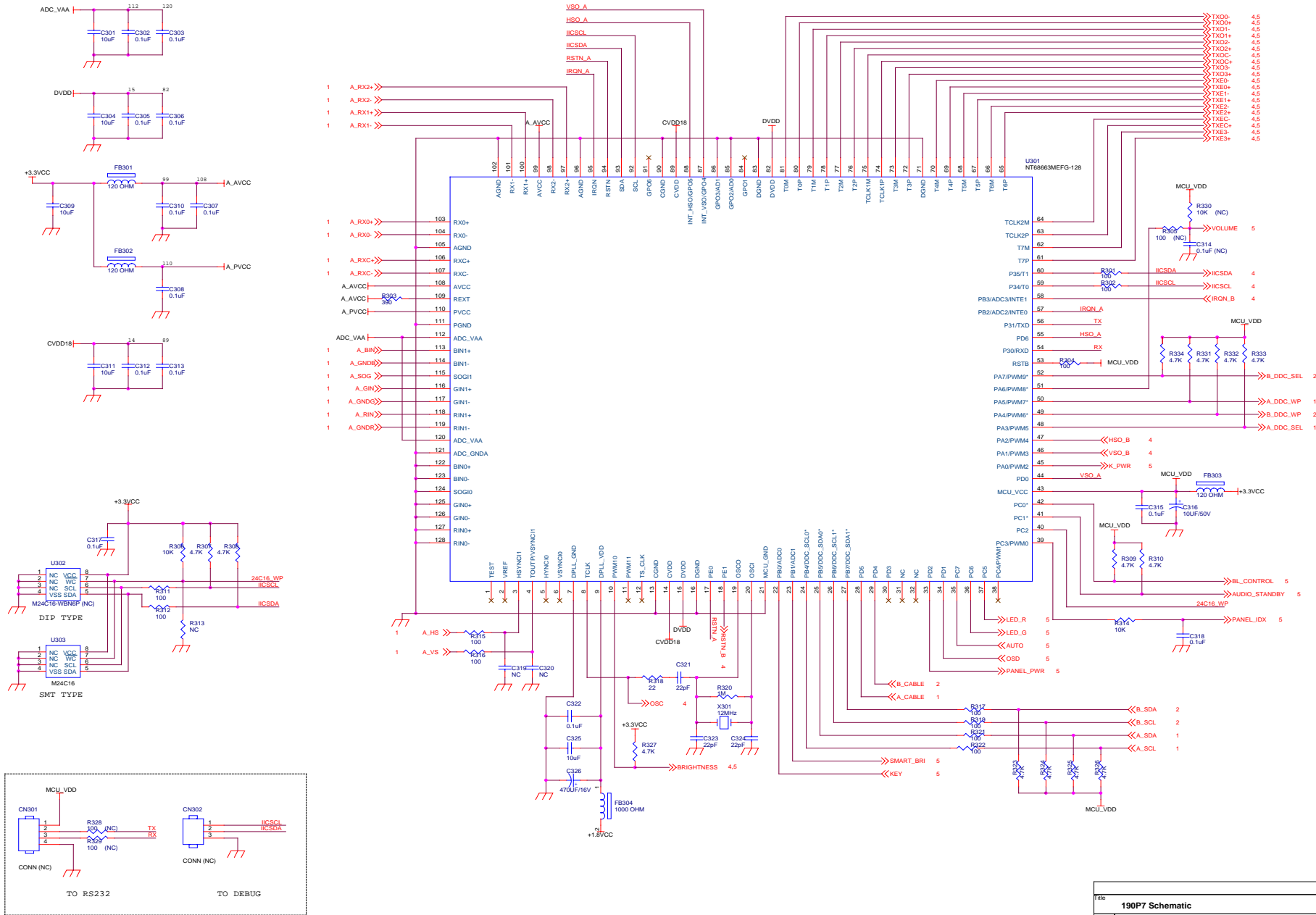
6. Schematic Diagram

6.1 Main Board

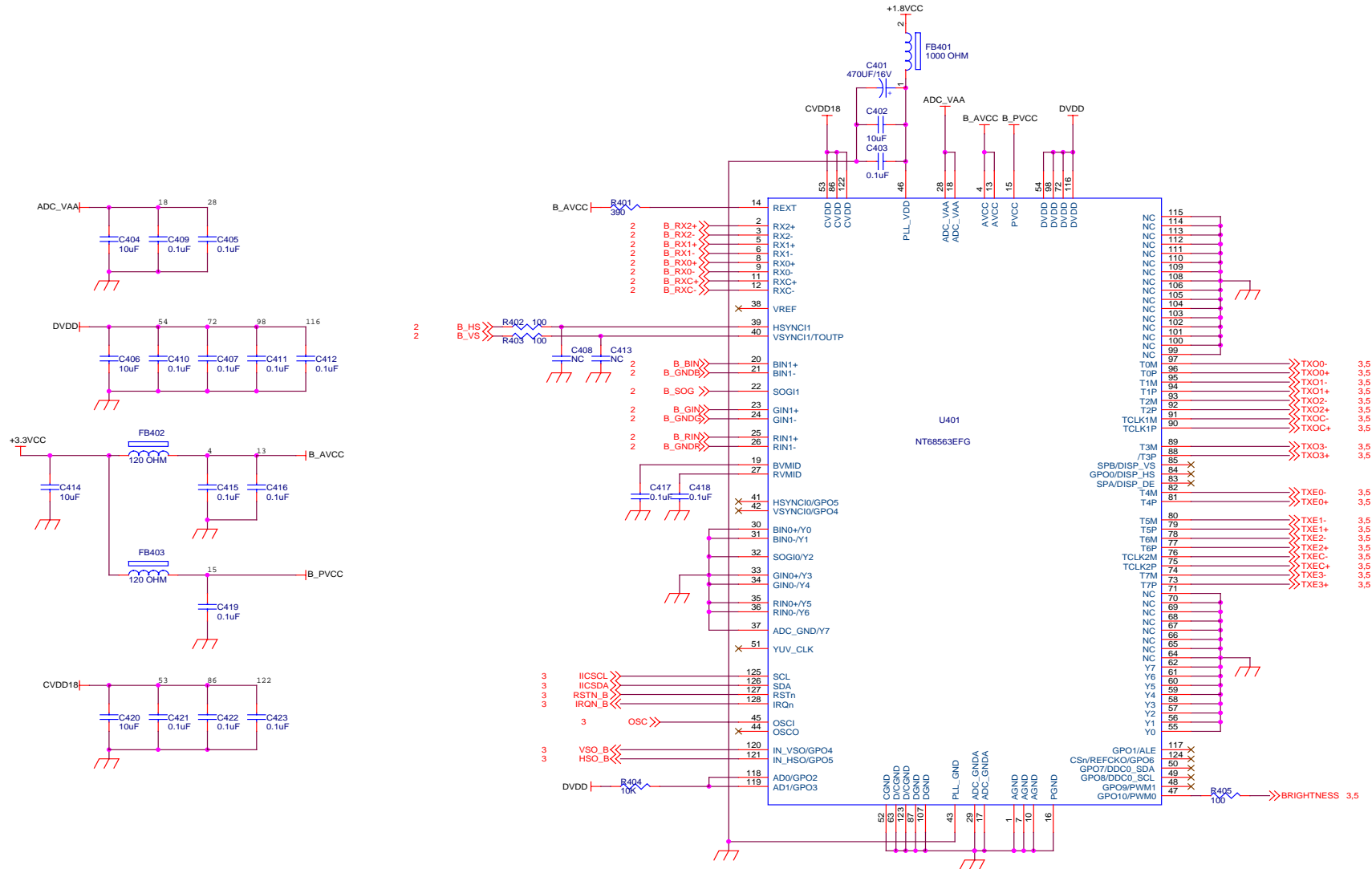
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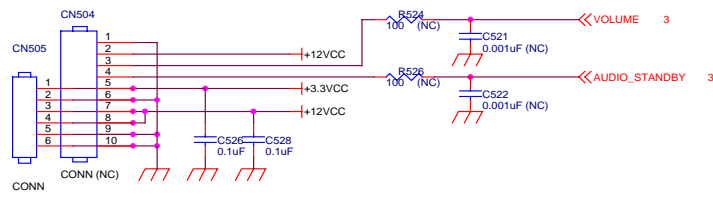
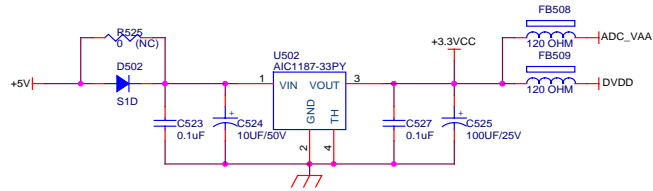
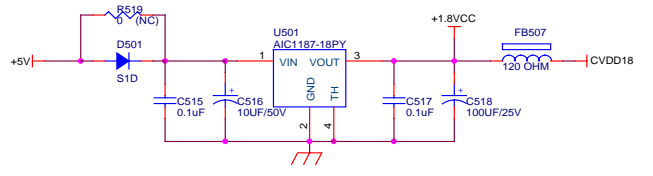
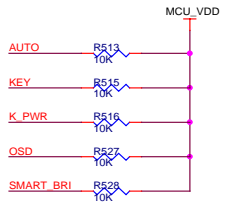
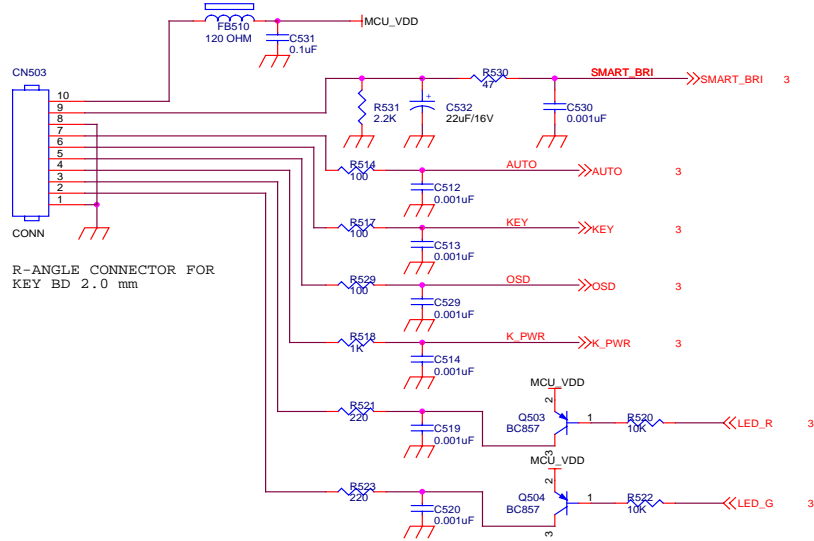
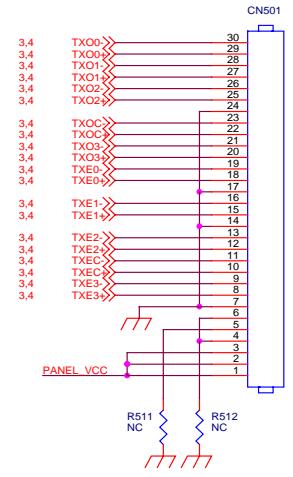
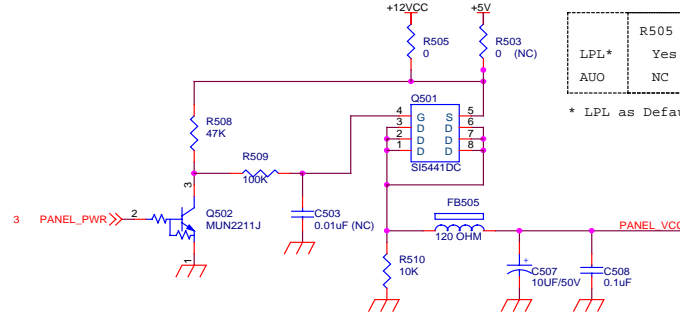
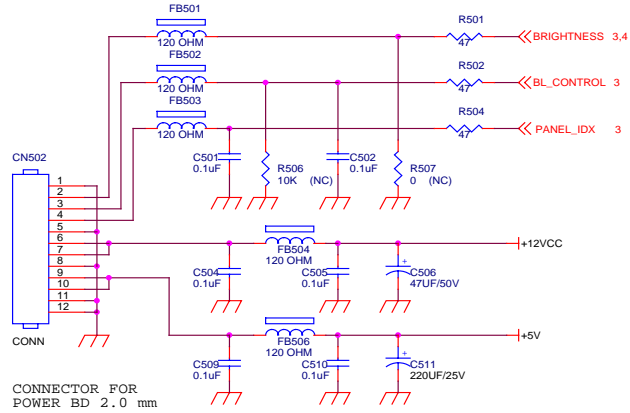
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Size	Document Number	Rev
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Date:	Sunday, January 08, 2006	Sheet 1 of 5



Title		
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Date:	Sunday, January 08, 2006	Sheet 3 of 5



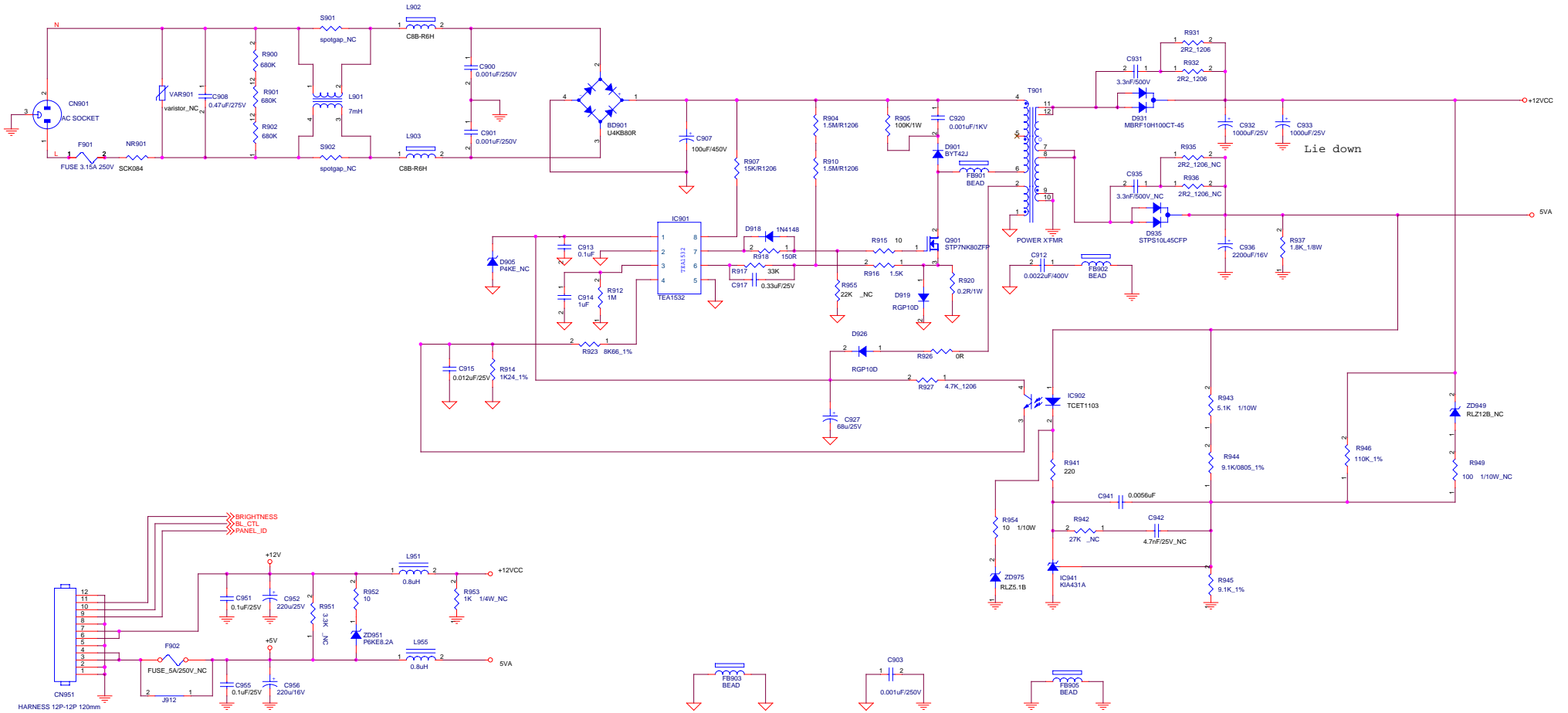
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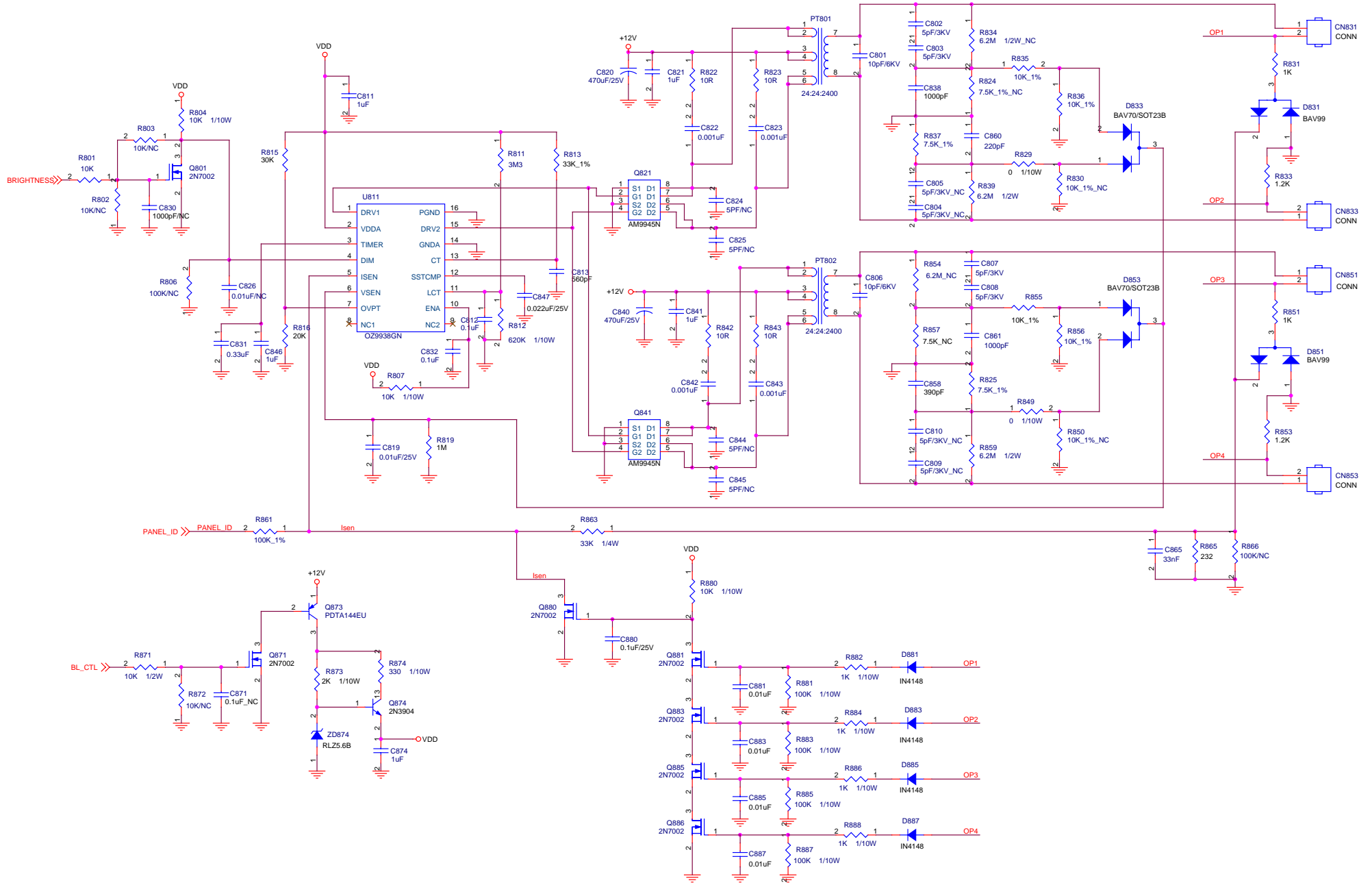


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6.2 Power Board

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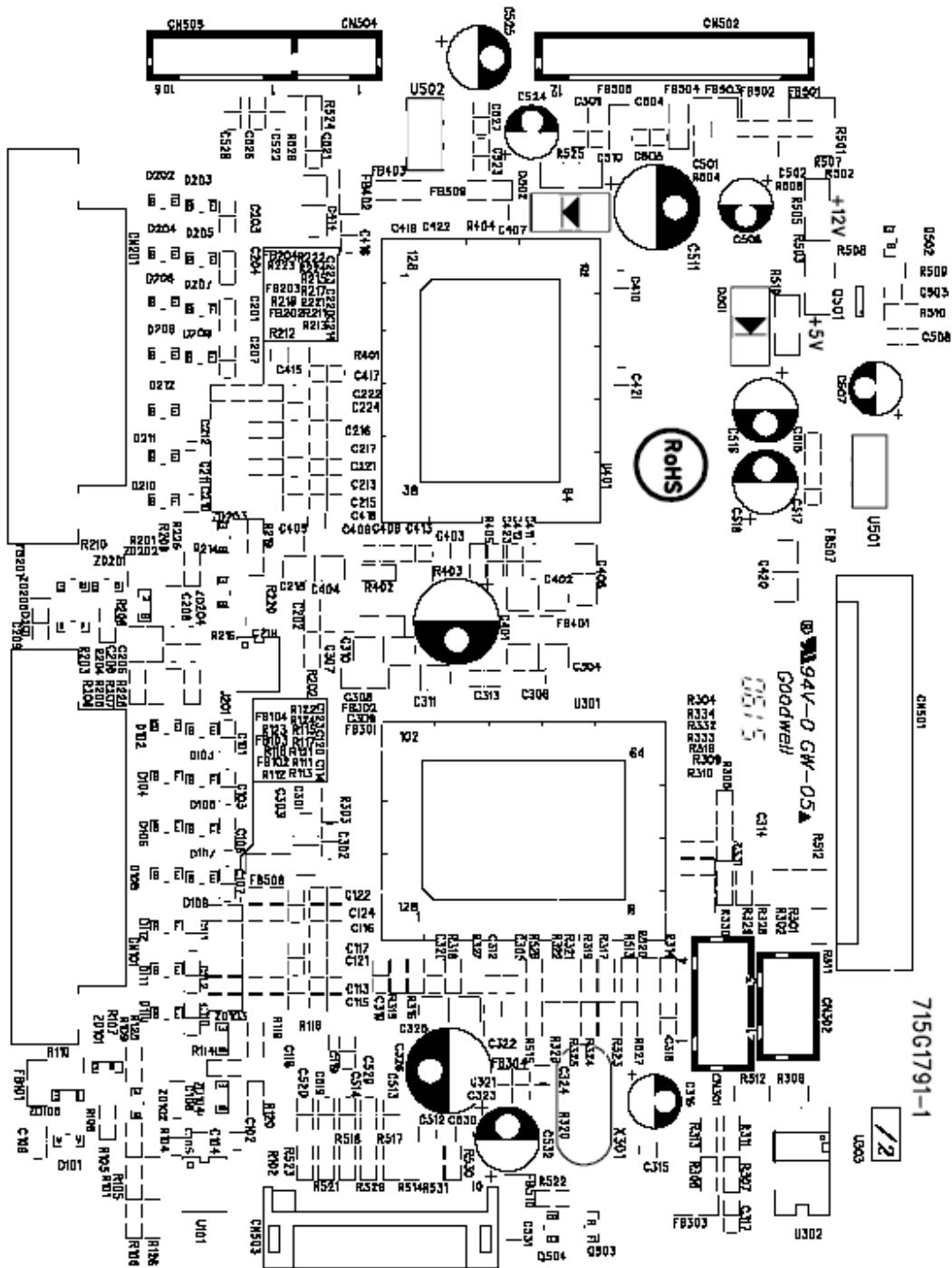


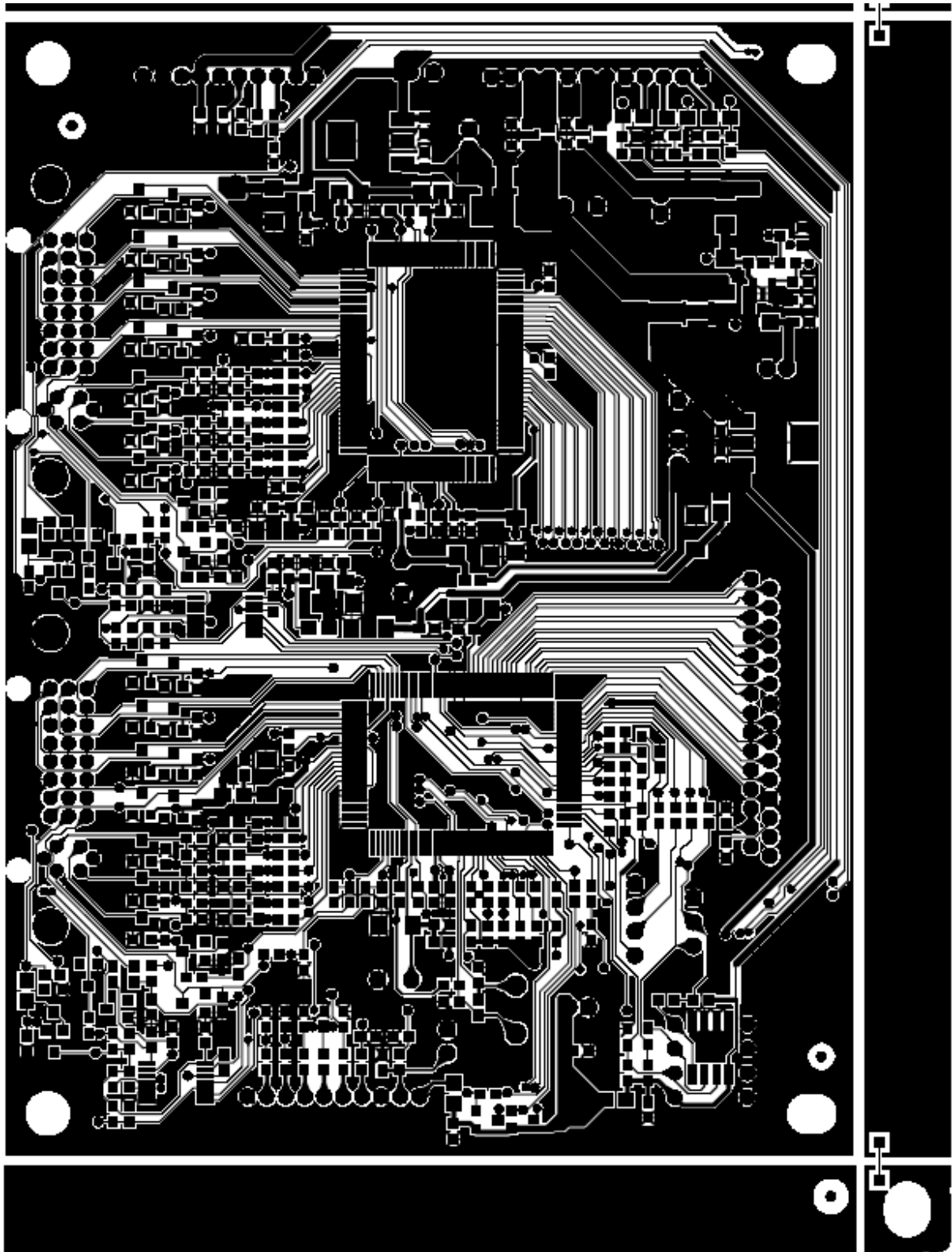


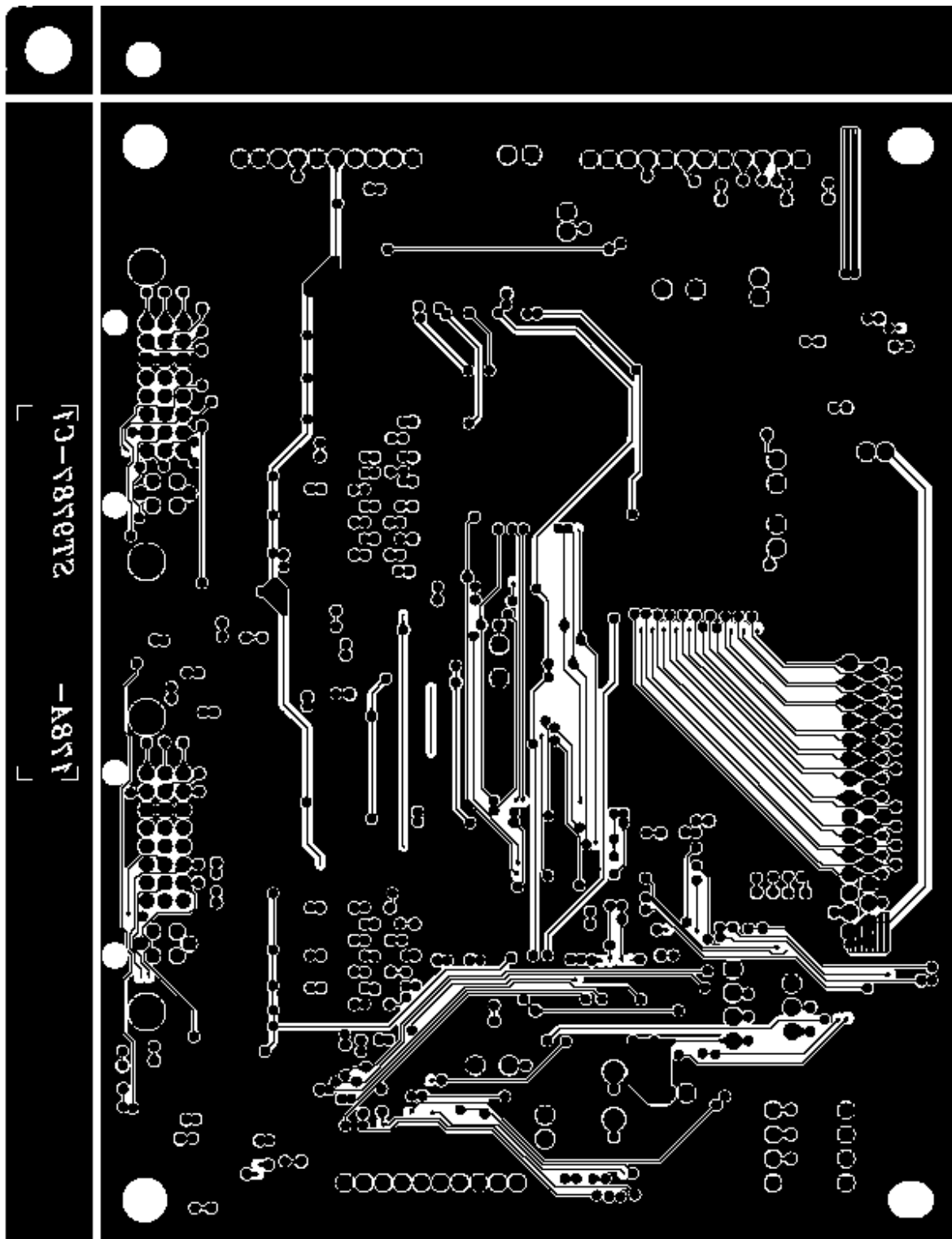
7. PCB Layout

7.1 Main Board

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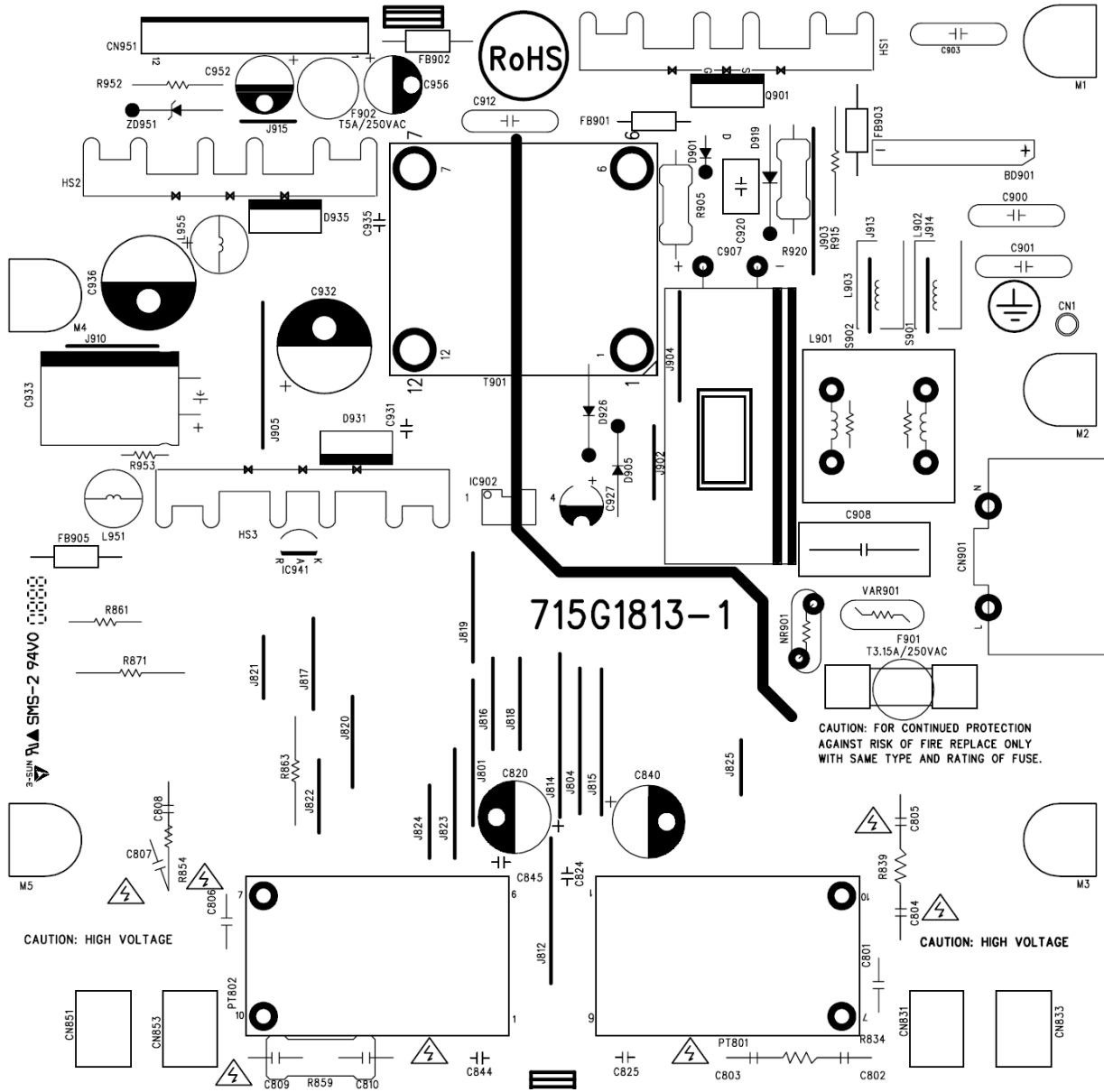




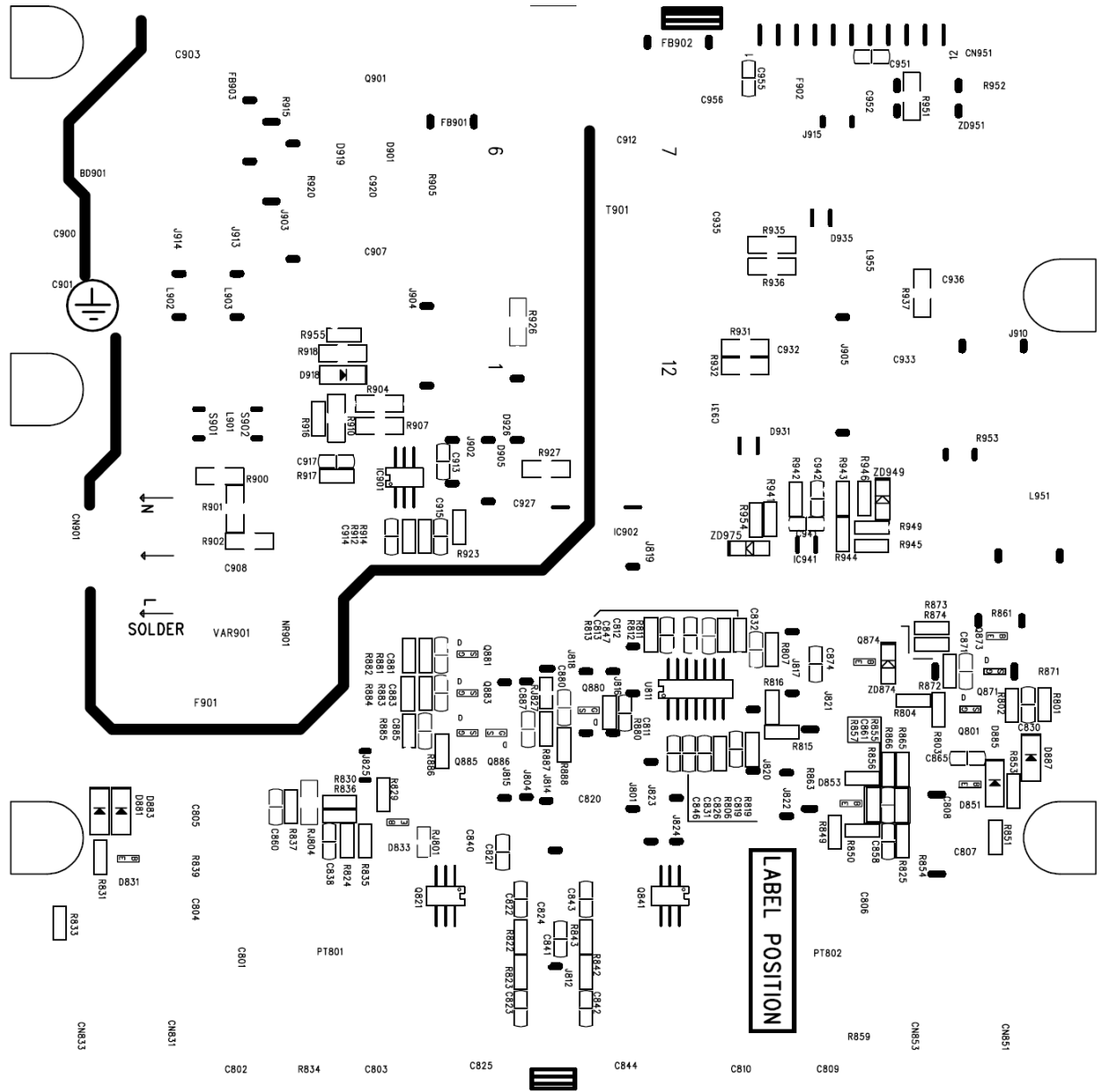
7.2 Power Board

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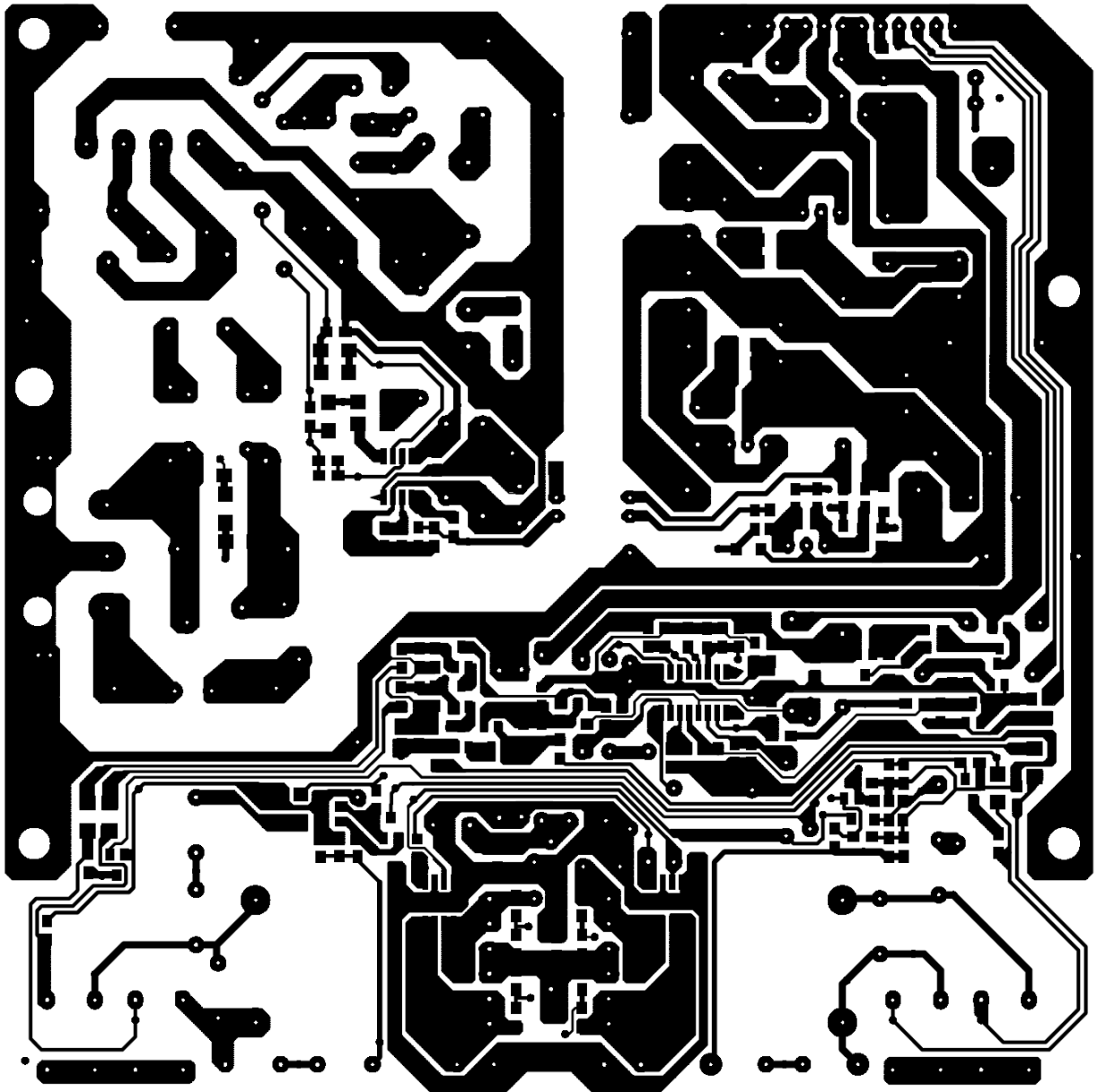
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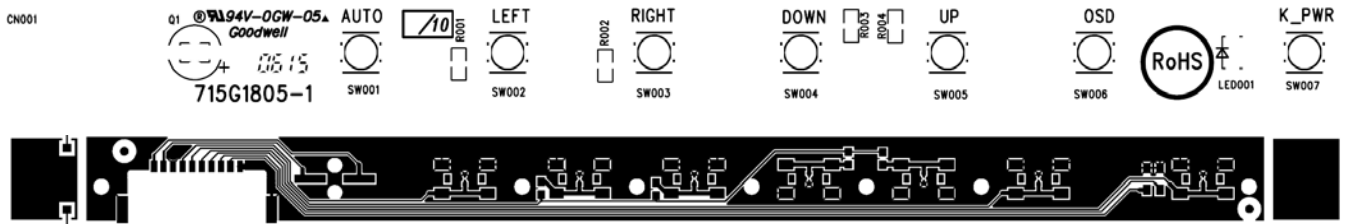


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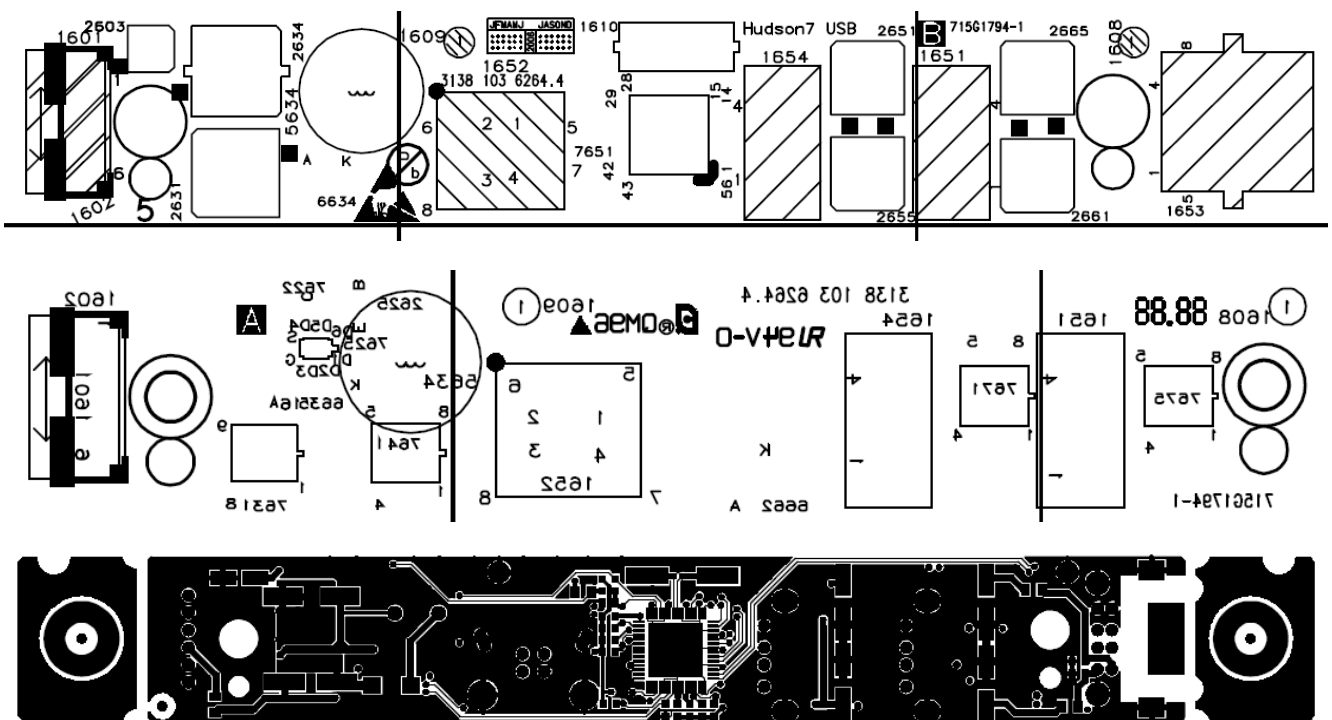
7.3 Key Board

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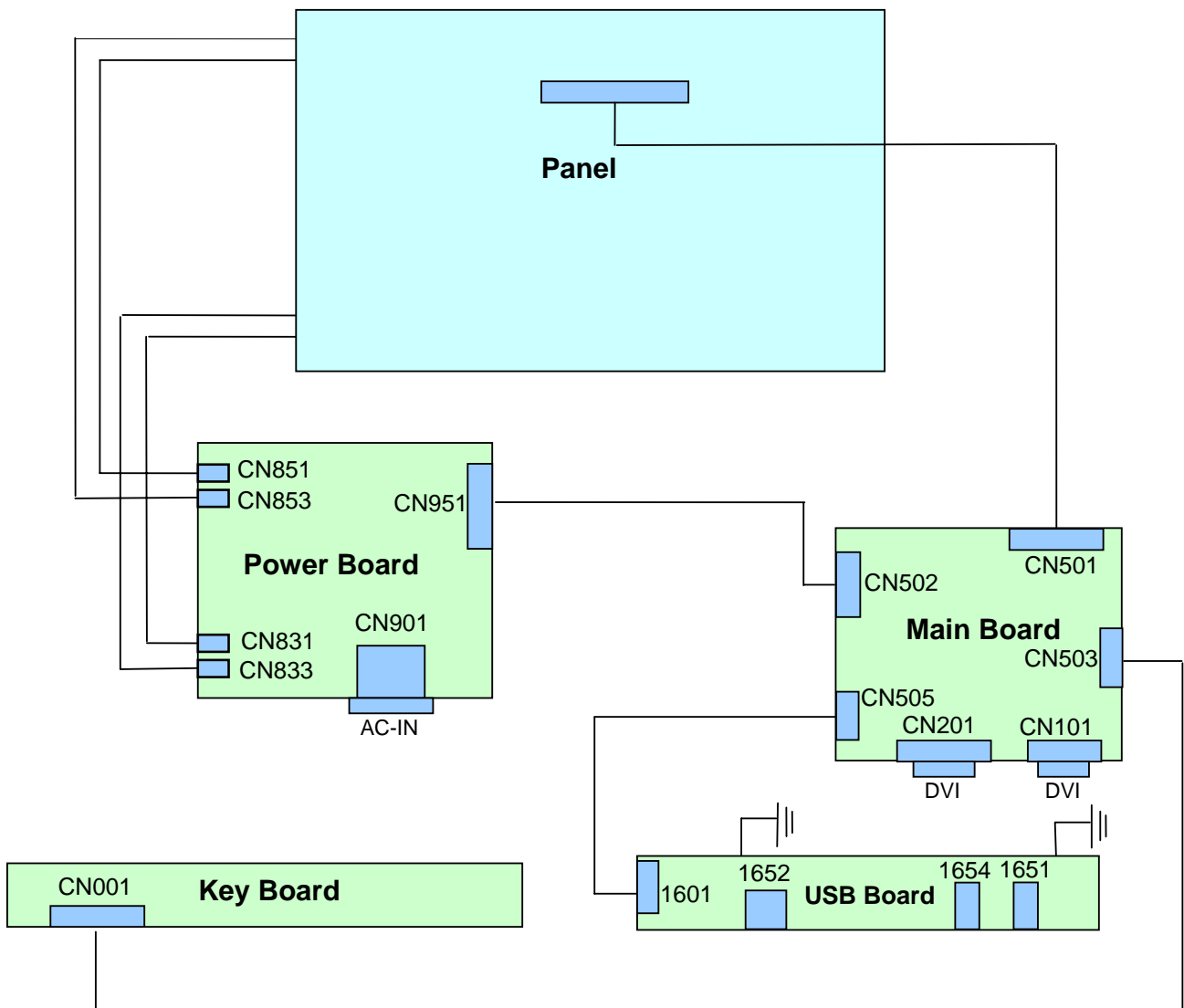


7.4 USB Board

715G1794-1



8. Wiring Diagram



9. Mechanical Instructions

Steps of dismantling base stand from base column

Step 1: Place the monitor face down on a smooth surface as Fig 1. Be careful to avoid scratch and injury during the uninstallation. Meanwhile, it is need to avoid pressing the control key.



Fig1

Step 2: Unfasten one screw on the base stand as Fig 2.



Fig2

Step 3: Firmly insert the base removal tool into four-pronged clicks as Fig 3.

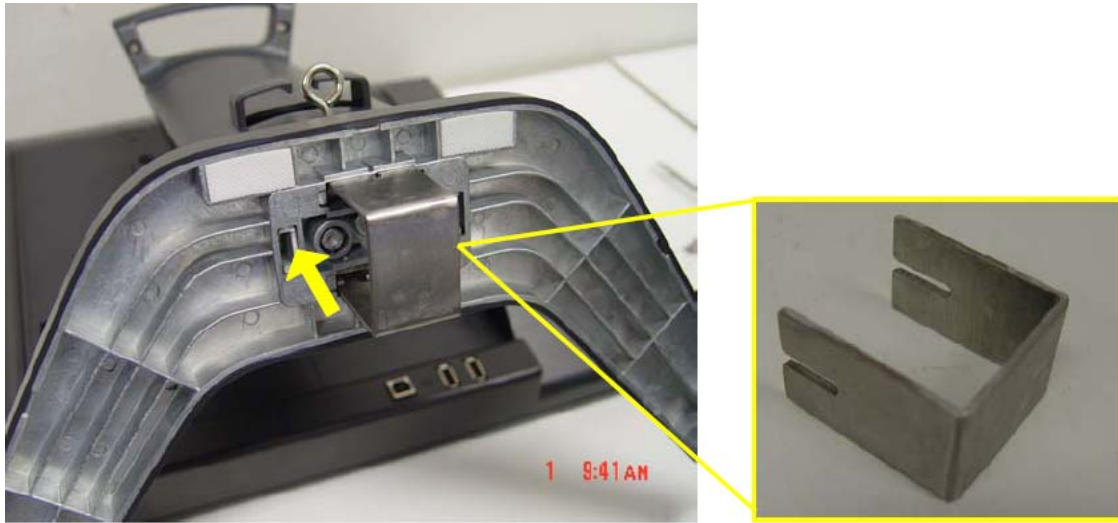
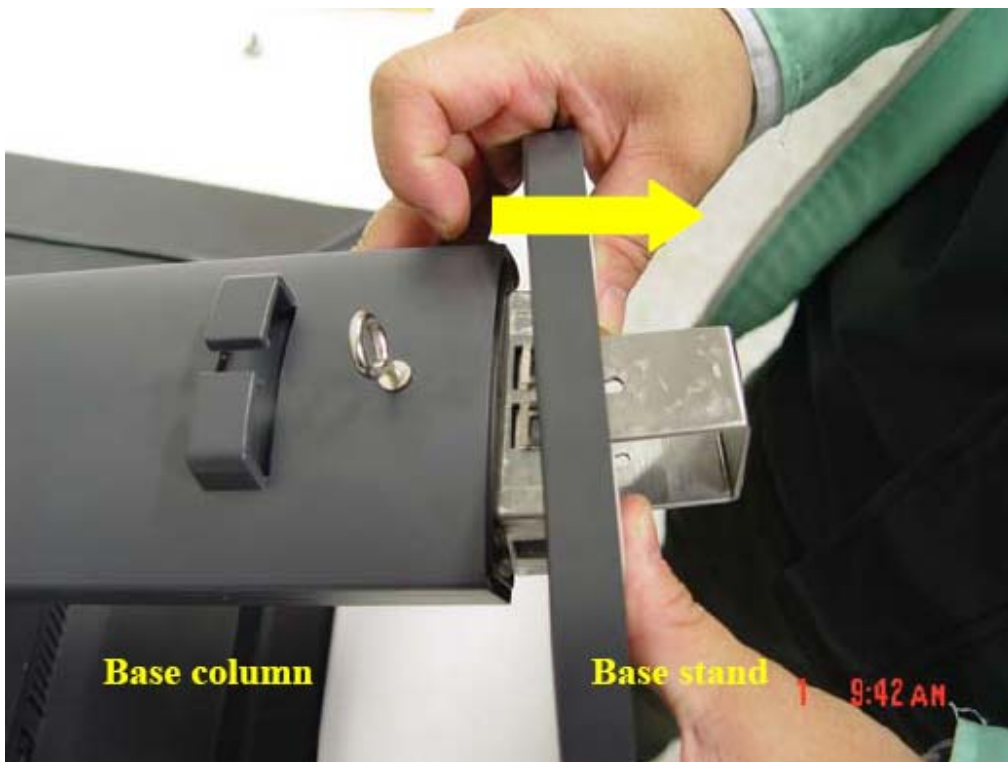


Fig3

Step 4: Pull out the foot from base as Fig 4.





Steps of assembling and disassembling side cover

1. Press down the rim of side cover and hold as Fig 1. (Press direction is toward panel surface side.)

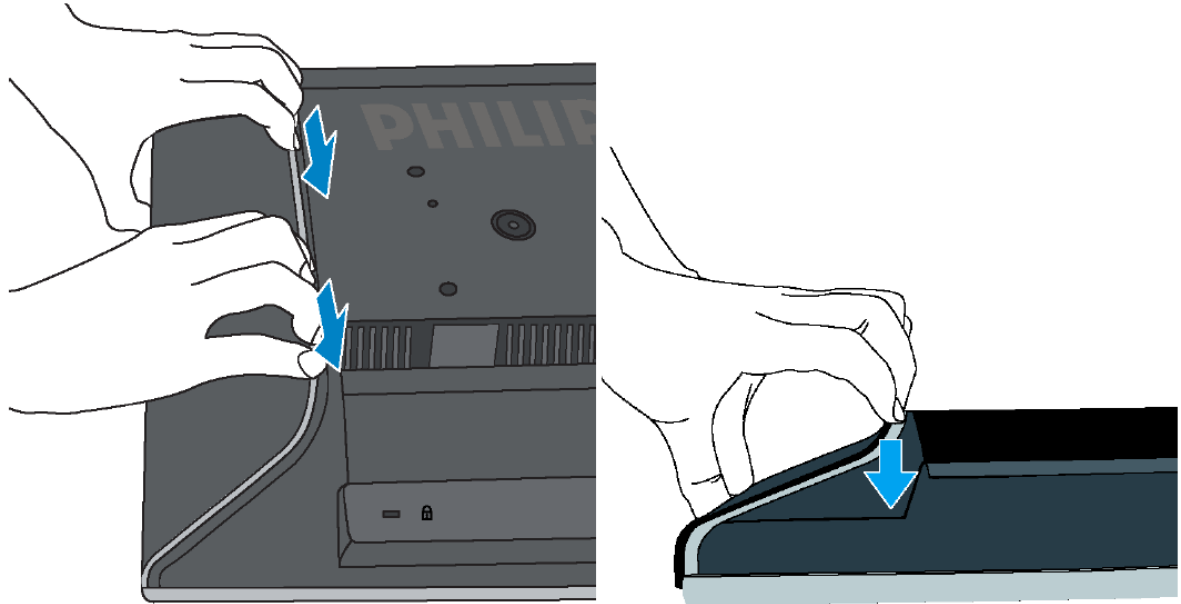


Fig1

2. Pull out the side cover horizontally as Fig 2.

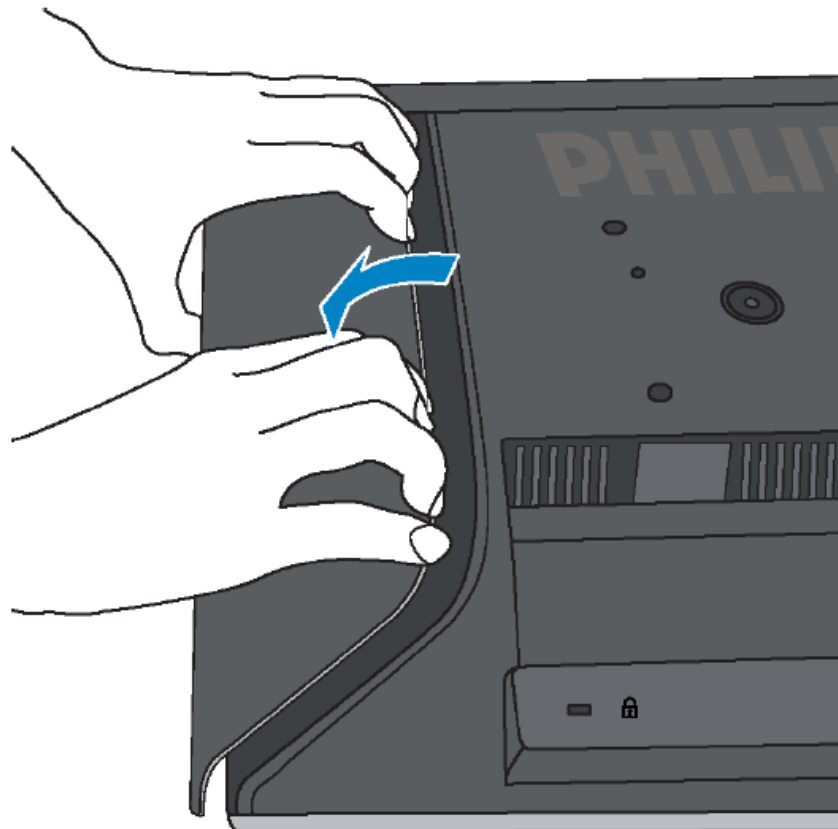
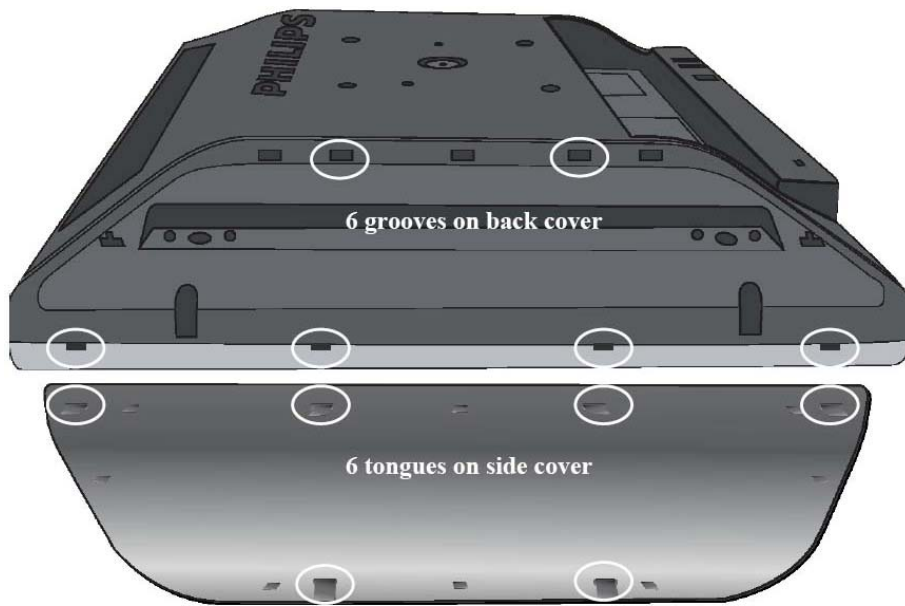


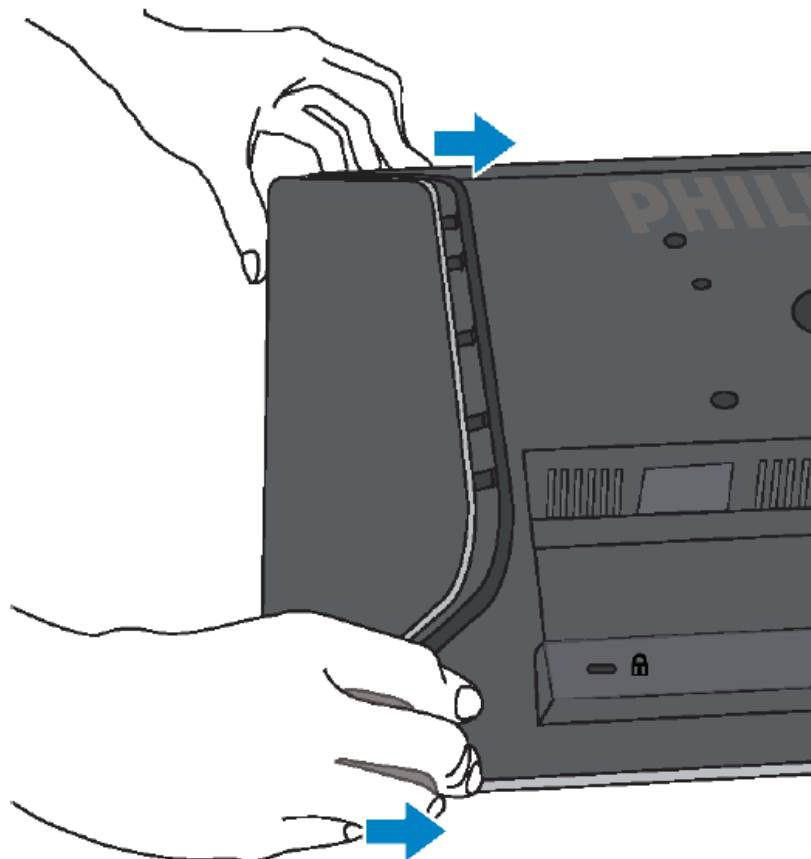
Fig2

3. Tongues and grooves position on side cover and back cover as Fig 3.



Assembling the side cover:

1. Have 6 tongues on side cover aligned with back cover's 6 grooves then push side cover horizontally into back cover.



1. Back View as Fig.1

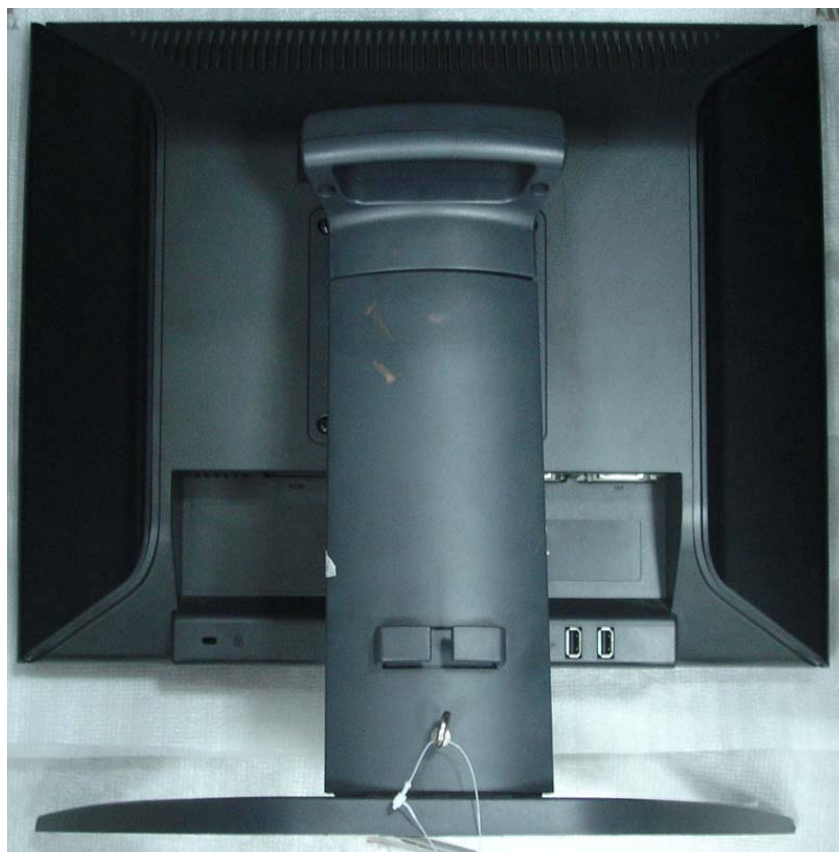


Fig.1

2. Remove base stand as Fig.2.

Remove the four screws to remove the base stand as Fig.2



Fig.2

3. Disassembling the side covers as Fig.3.



Fig.3

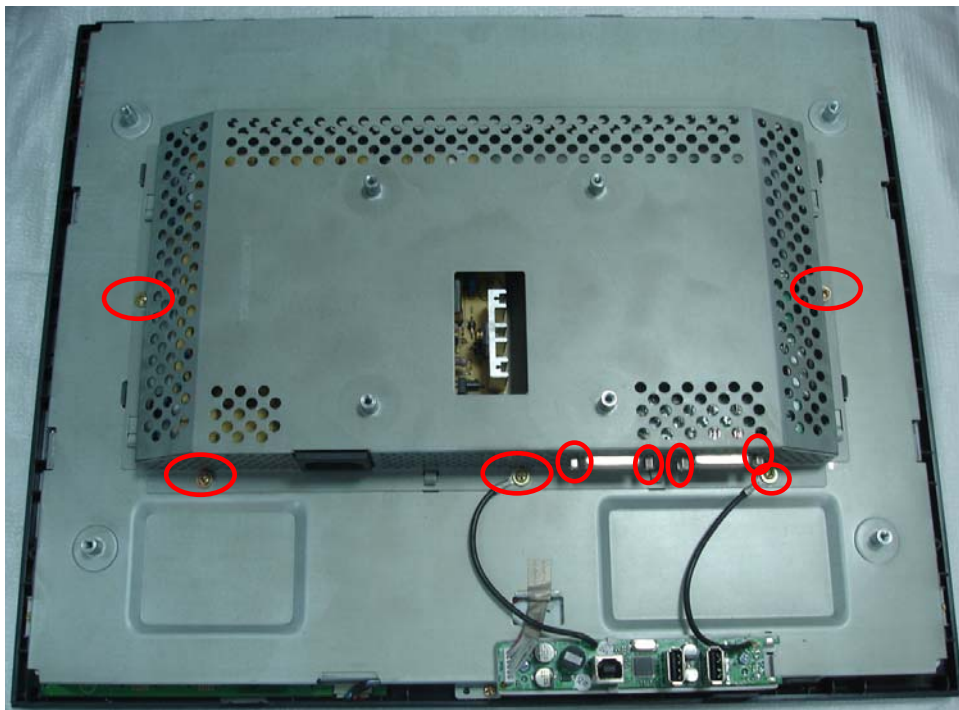


4. Remove rear cover as Fig.4.

Remove the four screws to remove the rear cover as Fig.4

**Fig.4****5. Remove the shield as Fig.5**

Remove the nine screws as Fig.5 to remove the shield.

**Fig.5**

6. Remove the main board, the power board and the USB board as Fig.6

Remove the eleven screws as Fig.6 to remove the main board, the power board and the USB board.

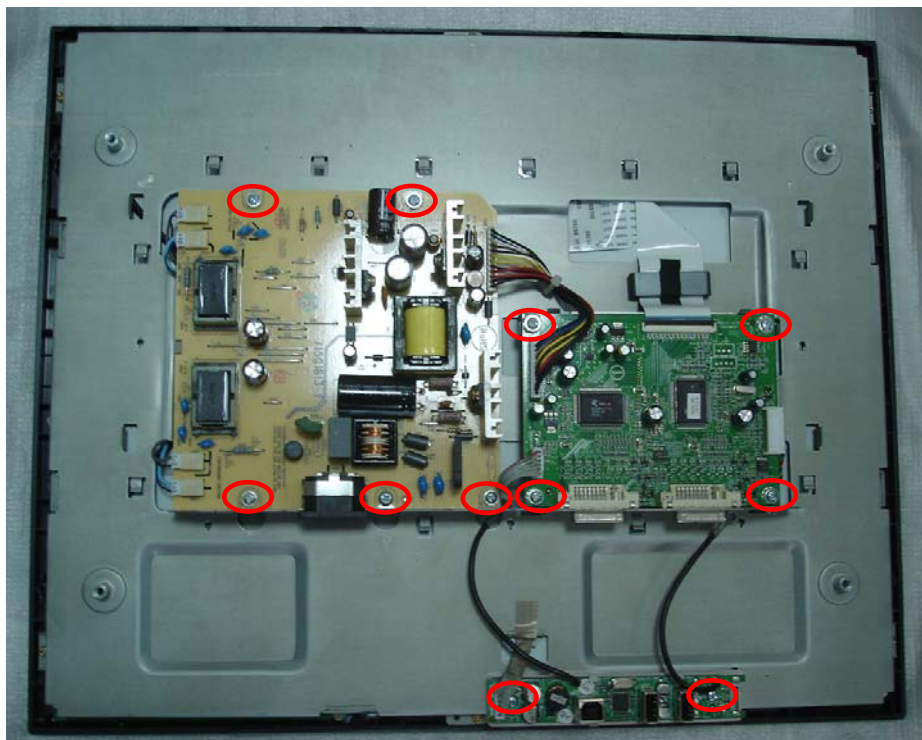


Fig.6

7. Remove the front panel as Fig.7.

Remove the four screws as Fig.7 to remove the front panel.

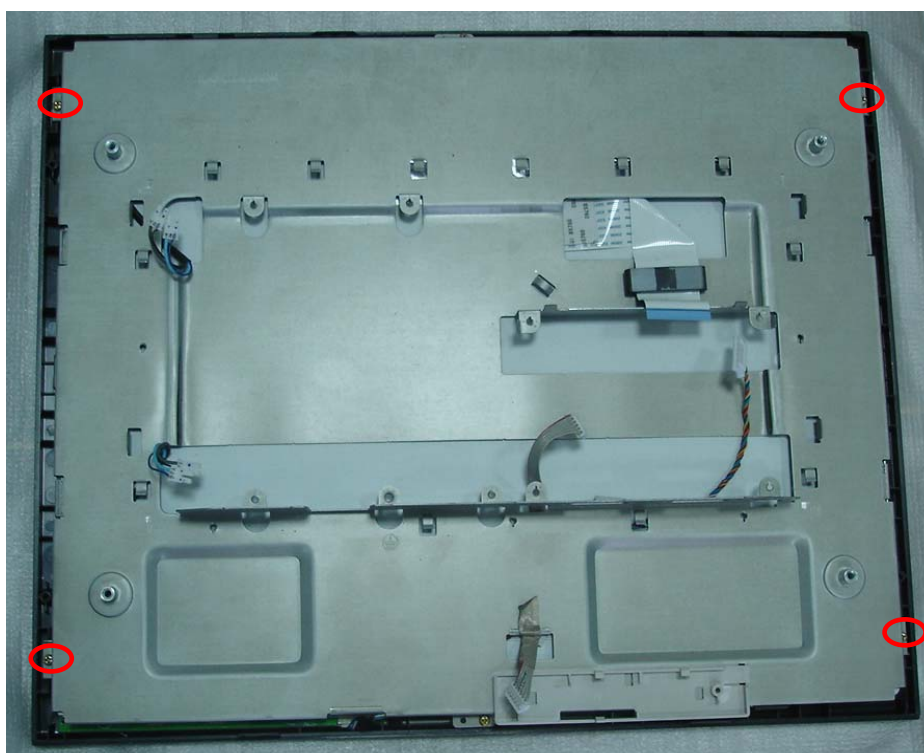
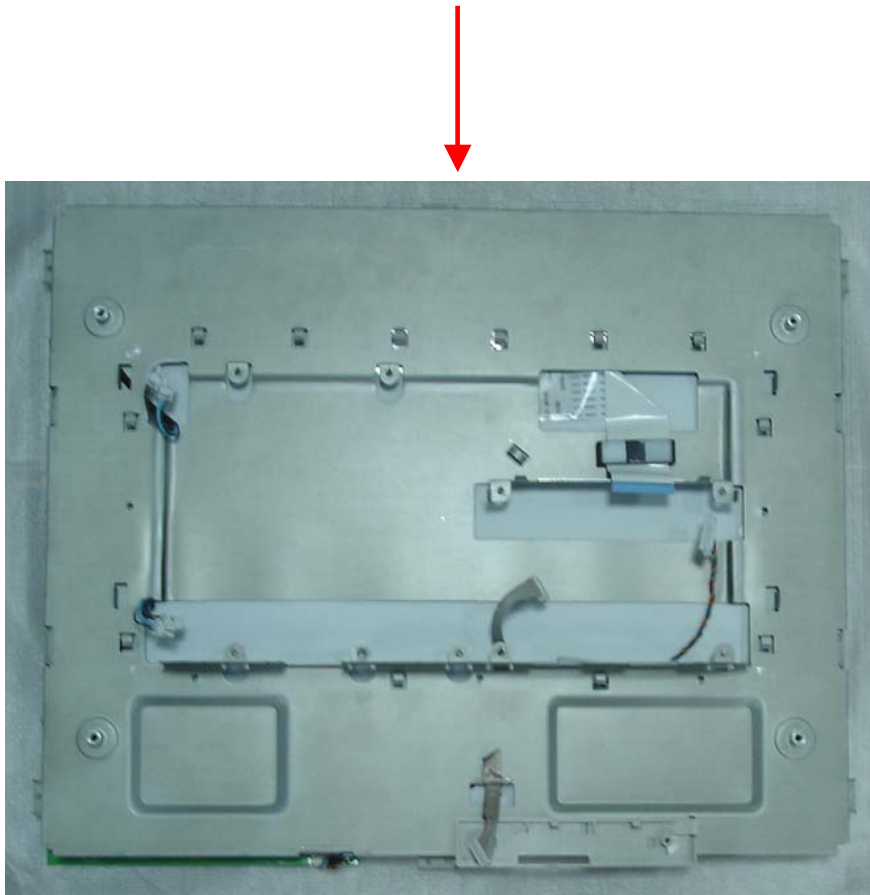


Fig.7



8. Remove the main frame as Fig.8

Remove the four screws as Fig.8 to remove the main frame.






Fig.8



10. Trouble Shooting

This page deals with problems that can be corrected by a user. If the problem still persists after you have tried these solutions, contact Philips customer service representative.

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 outlet 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 to your 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 video card.
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.

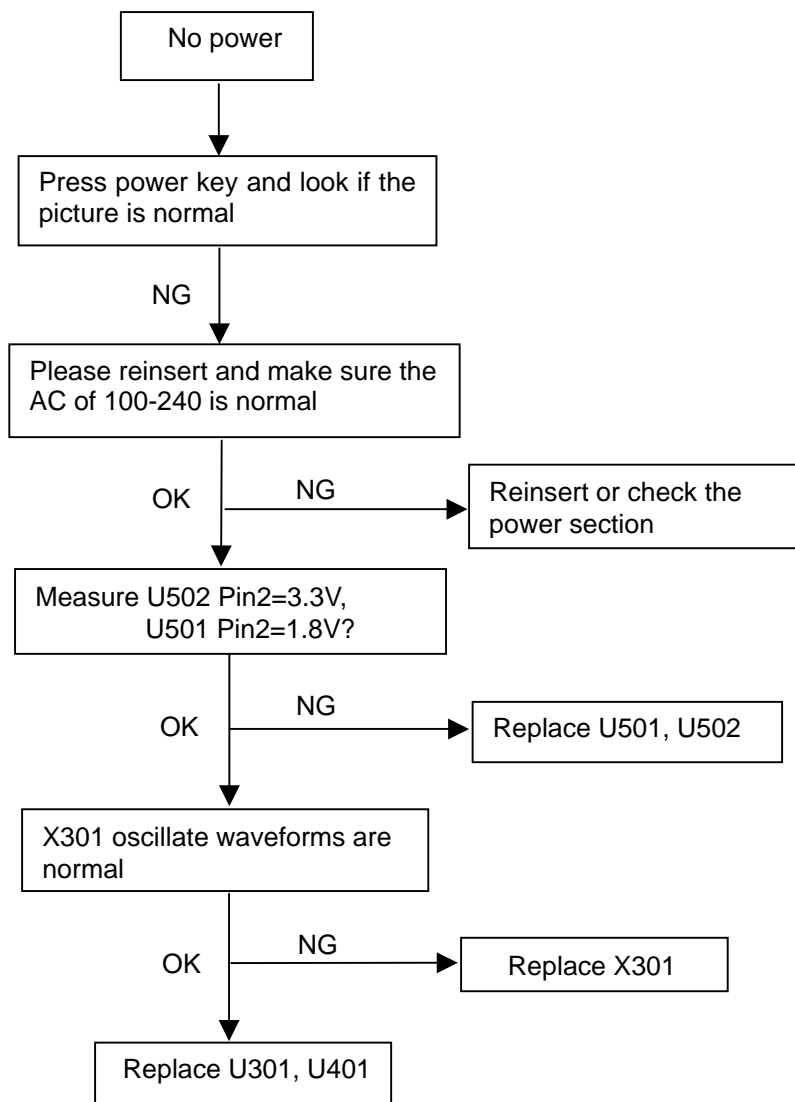
<p>Image vibrates on the screen</p>	<ul style="list-style-type: none"> • Check that the signal cable is properly connected to the graphics board or PC.
<p>Vertical flicker appears</p> 	<ul style="list-style-type: none"> • Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
<p>Horizontal flicker appears</p> 	<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.
<p>The screen is too bright or too dark</p>	<ul style="list-style-type: none"> • Adjust the contrast and brightness on Monitor Setup. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer).
<p>An after-image appears</p>	<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 after-image. This usually disappears after a few hours
<p>An after-image remains after the power has been turned off.</p>	<ul style="list-style-type: none"> • This is characteristic of liquid crystal and is not caused by a malfunction or deterioration of the liquid crystal. The after-image will disappear after a period of time.
<p>Green, red, blue, dark, and white dots remains</p>	<ul style="list-style-type: none"> • The remaining dots are normal characteristic of the liquid crystal used in today's technology.

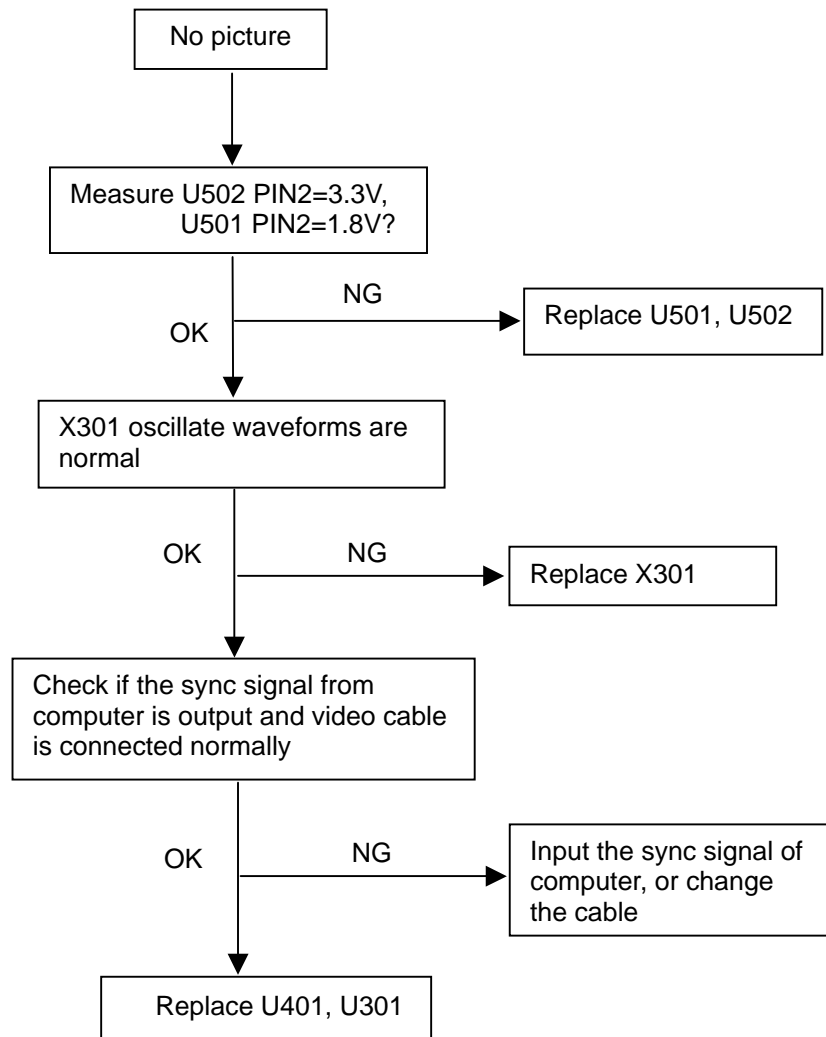
For further assistance, refer to the [Consumer Information Centers](#) list and contact Philips customer service representative.

[RETURN TO TOP OF THE PAGE](#)

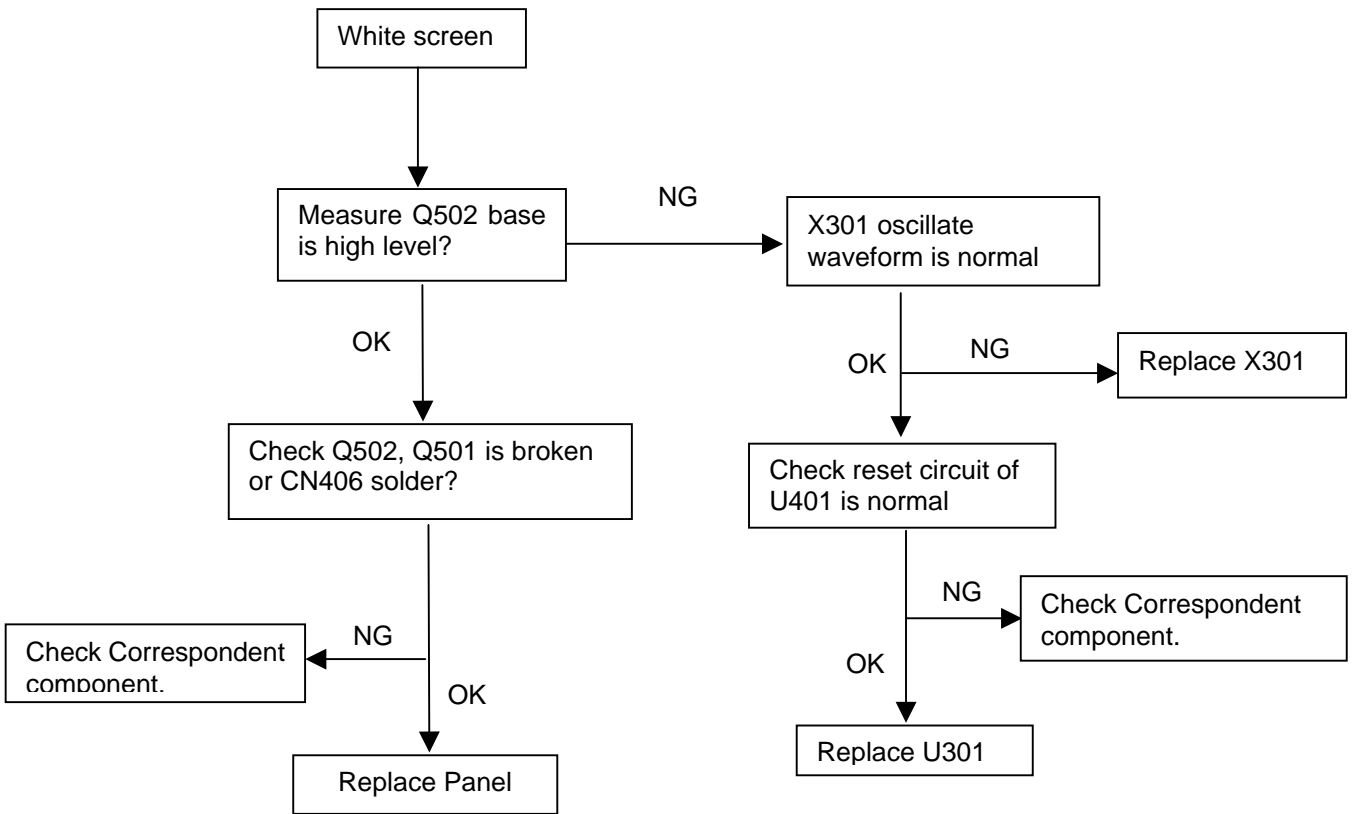
11. Repair Flow Chart

(1). No Power

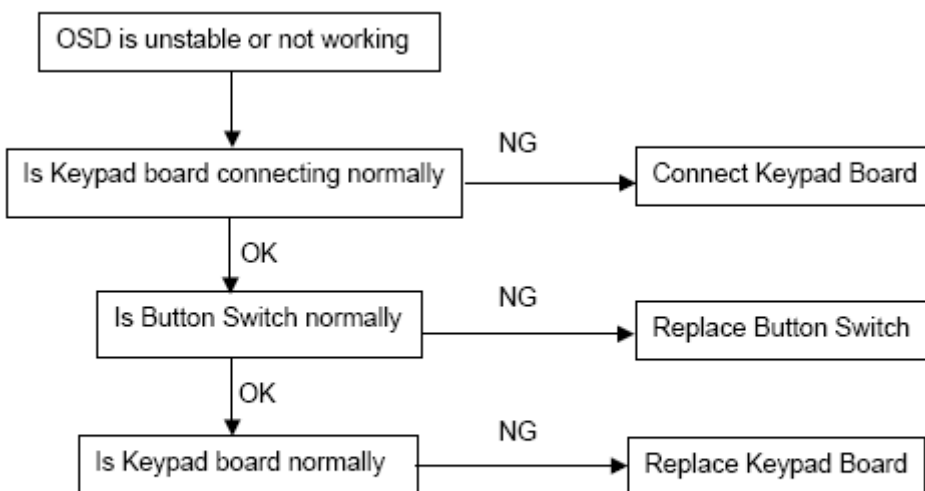




(3). White screen

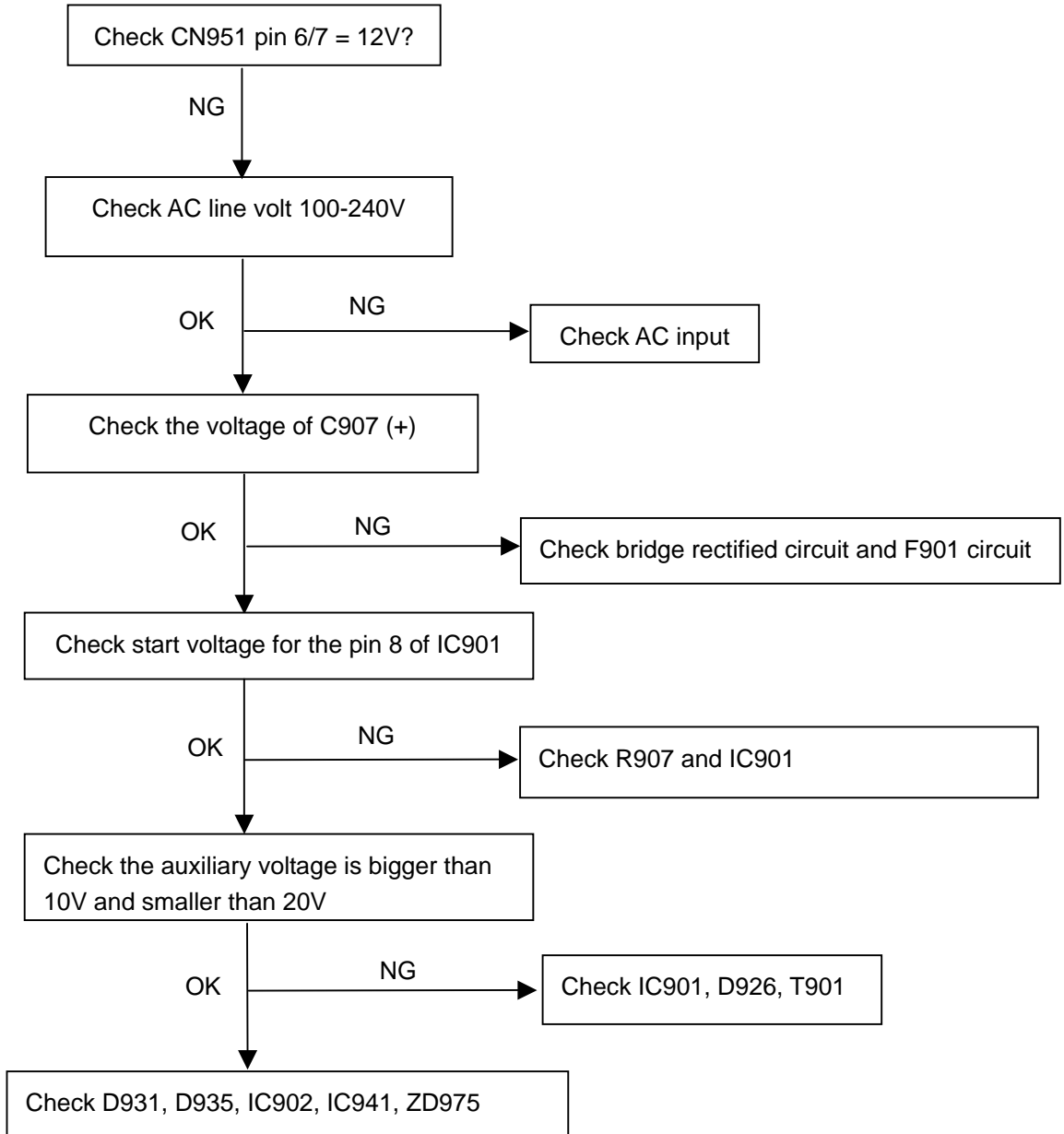


(4). Keypad Board



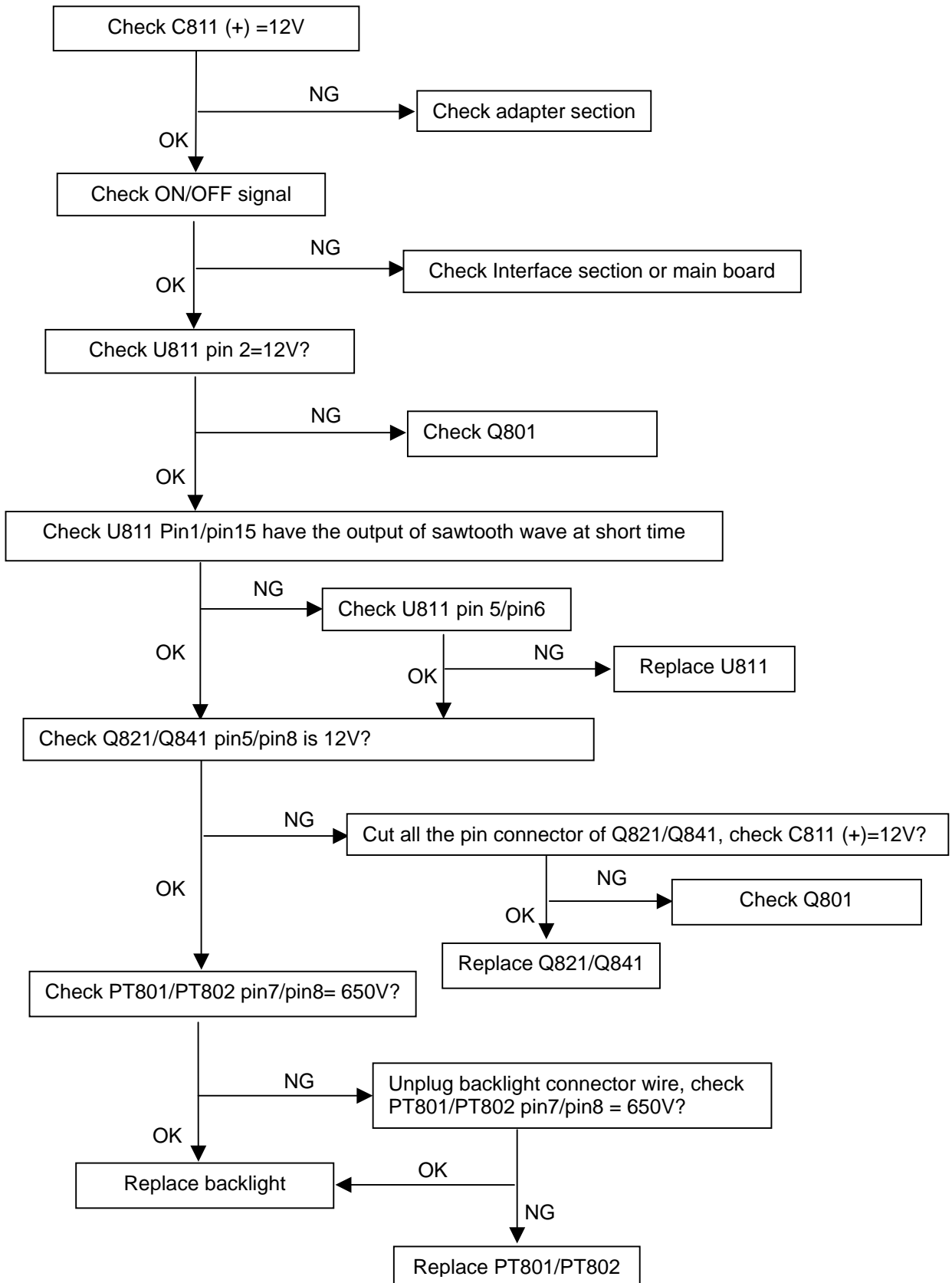
9.2.2 Power/Inverter Board

No power
Adapter Board

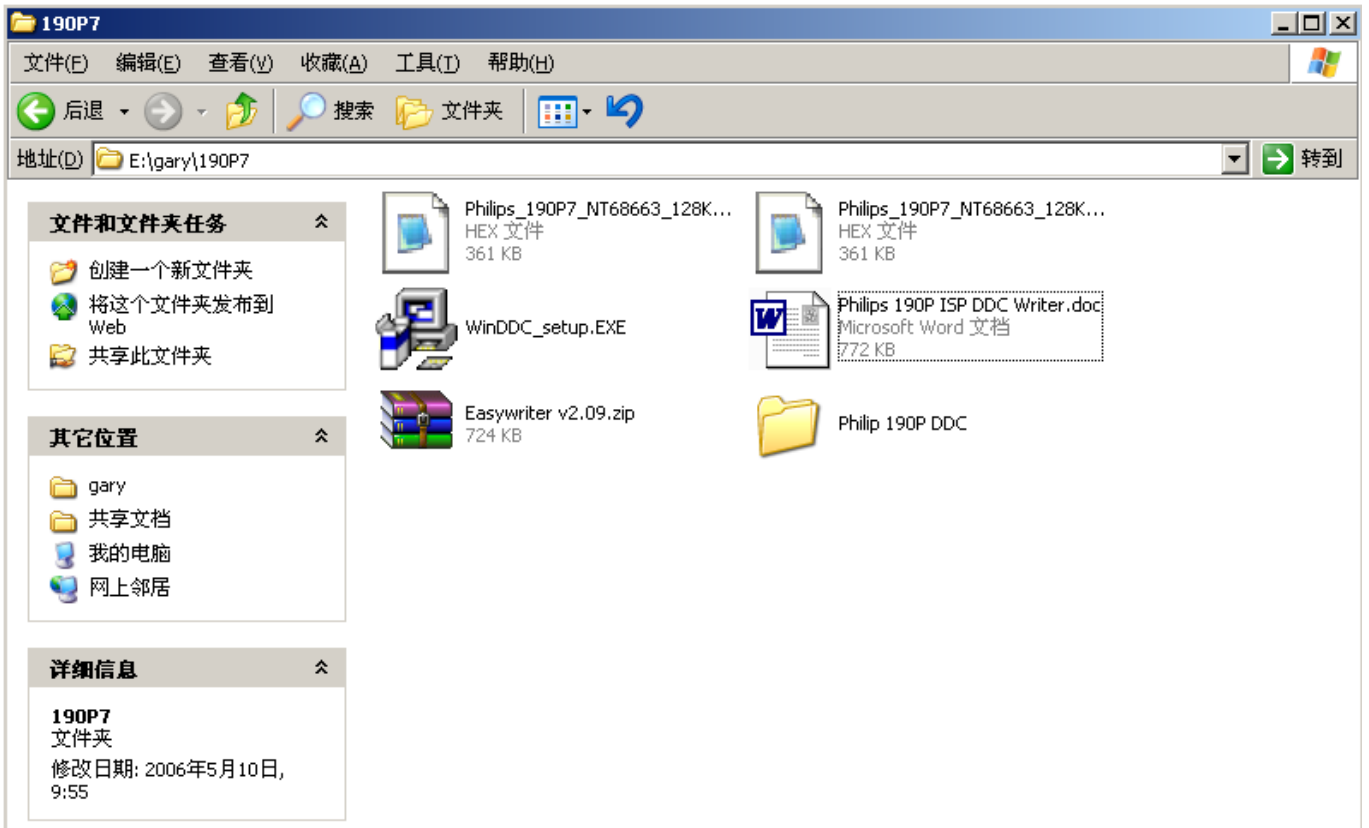


Inverter board

No power

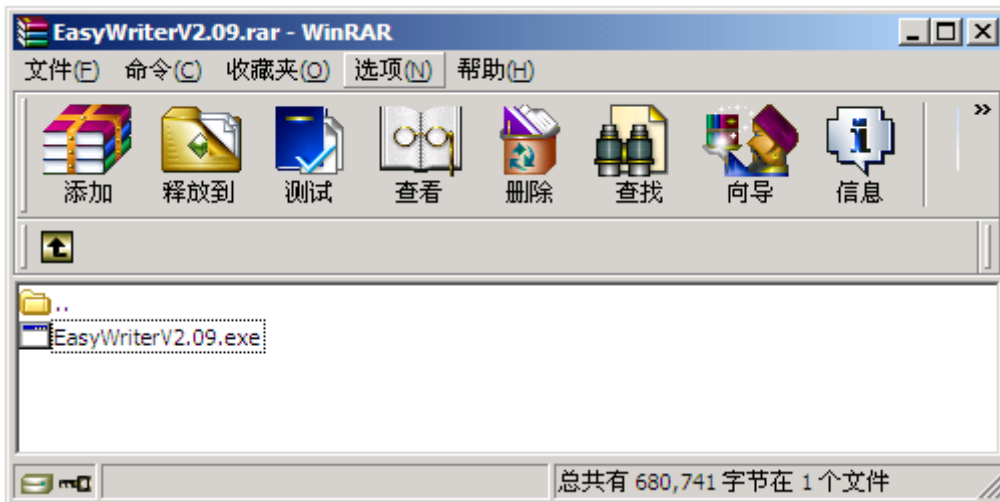



12. ISP Instruction

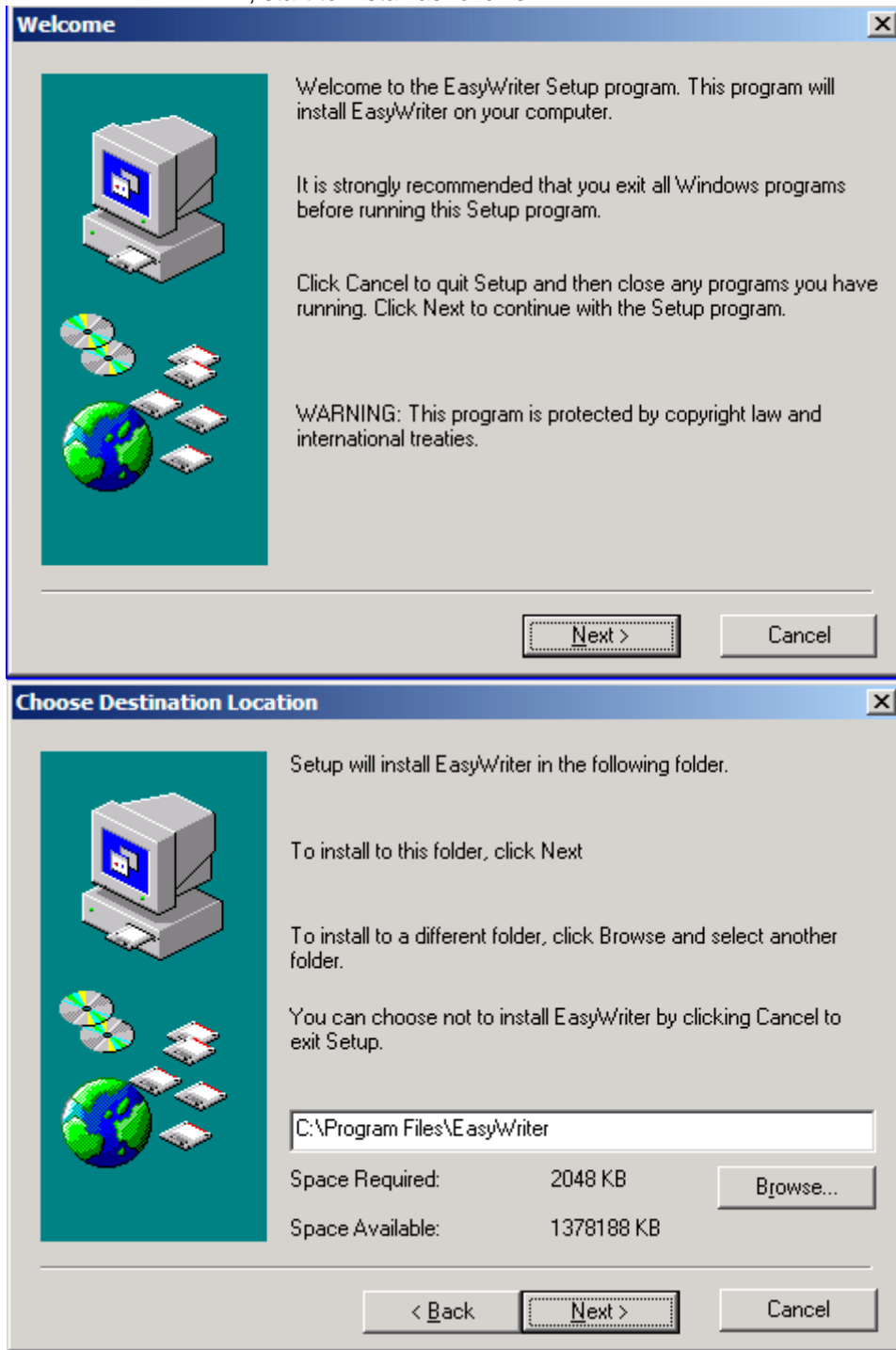


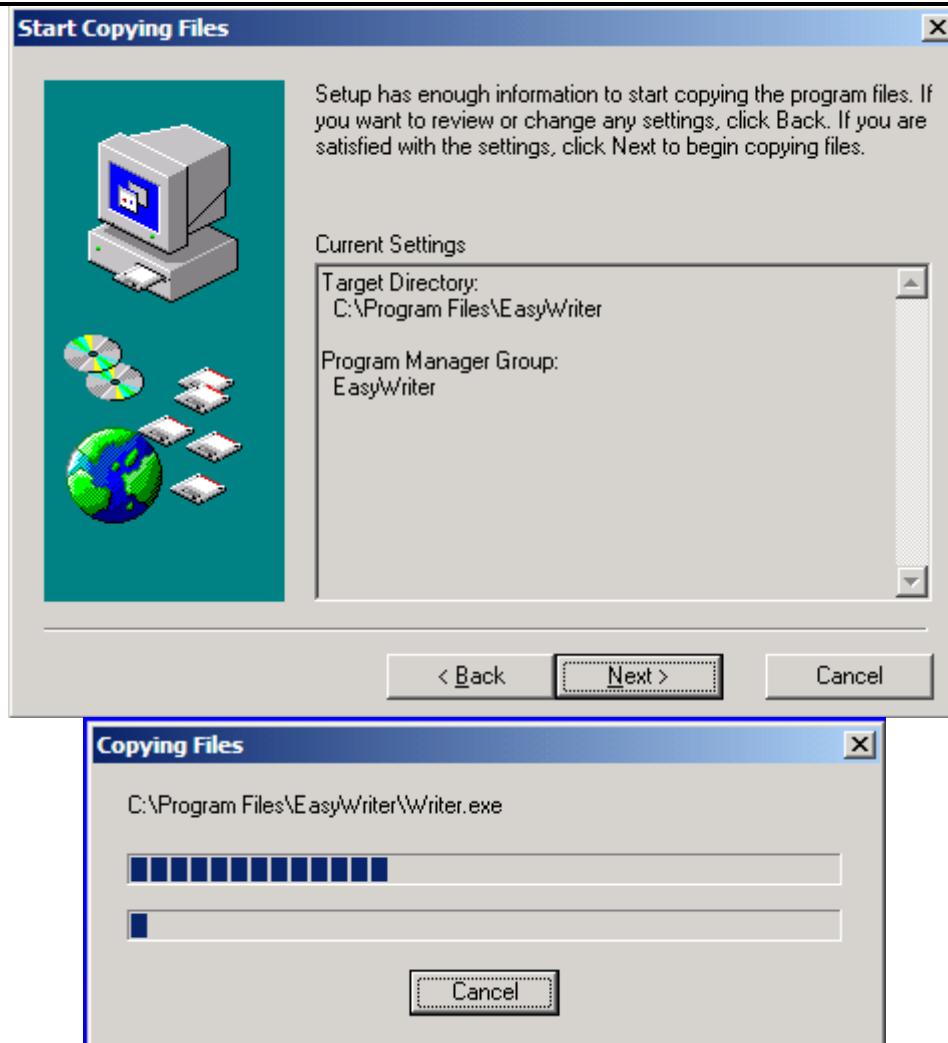
(1). Install the program software

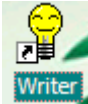
a. First decompressing files  , as follow:



b. Double – click  EasyWriterV2.09.exe, start to install as follows:

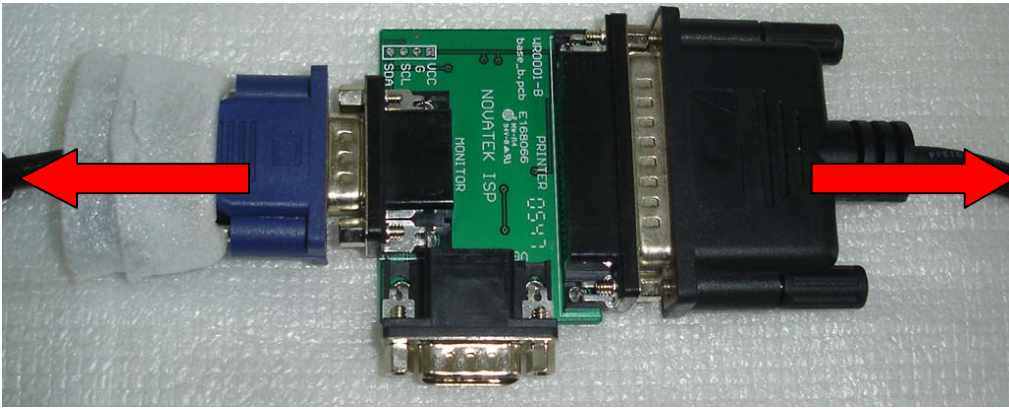




- c. There will be a shortcut key  appears on the desktop.


(2). Connect the ISP board as follow:

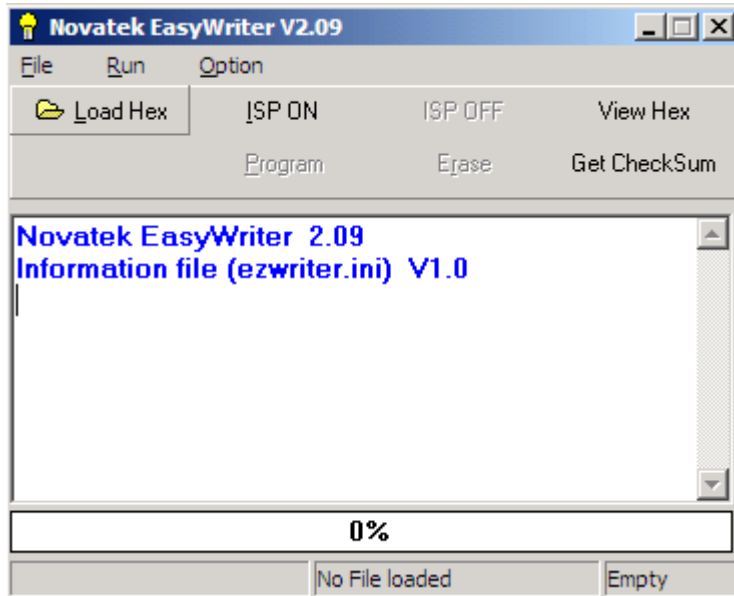
Connect to the Philips 190P by a VGA to DVI-A commutator as below fig




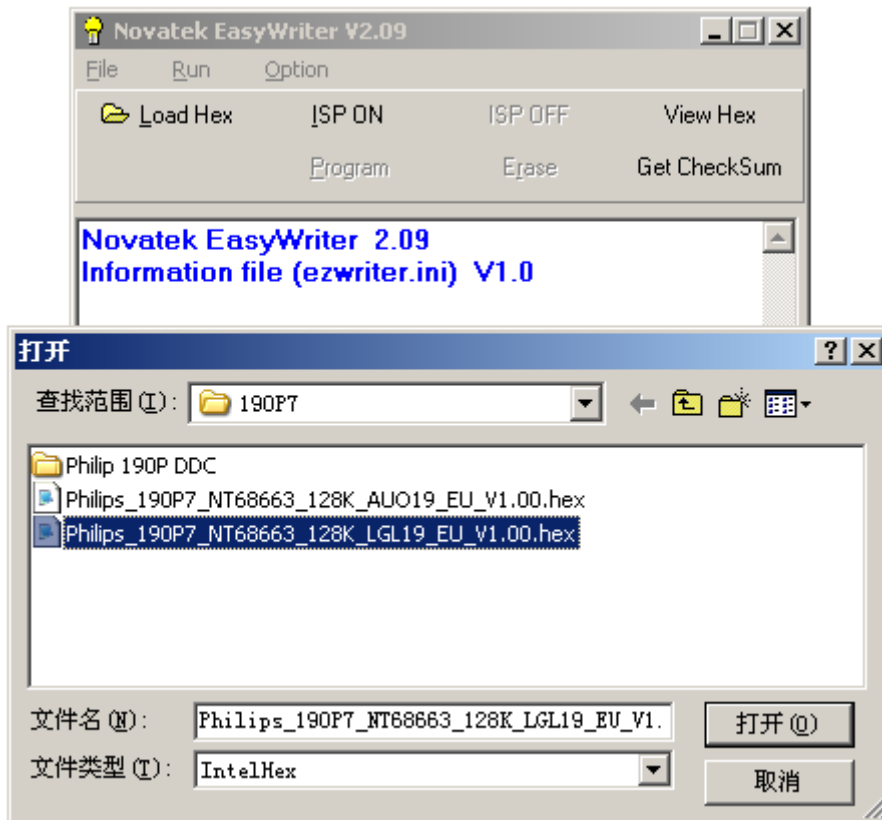
Connect to the PC LPT




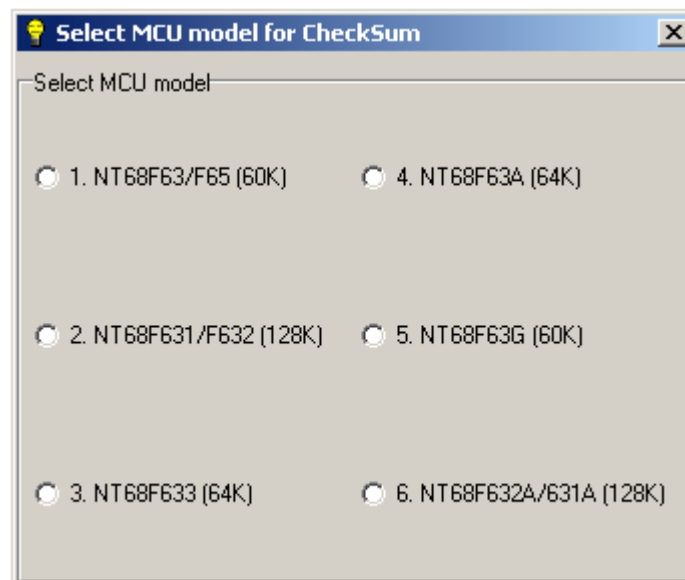
a. Double-click , running the program as follows:



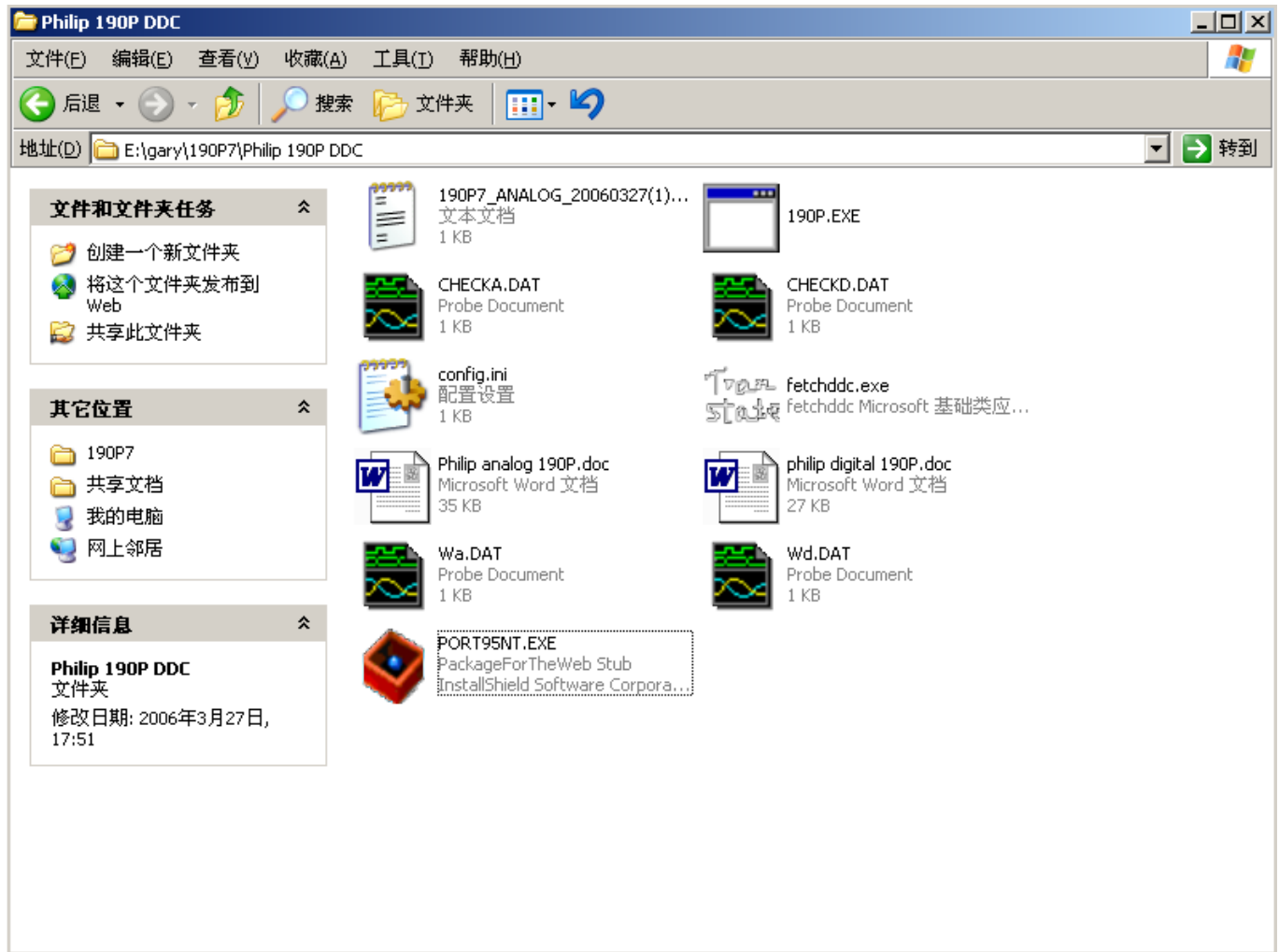
b. Click  Load Hex icon, search the program "PHILIPS_190P7_NT68663_128K_LG19_EU_V1.00.hex", and click open:



c. After click "OPEN", there would be a dialog box, select  3. NT68F633 (64K).



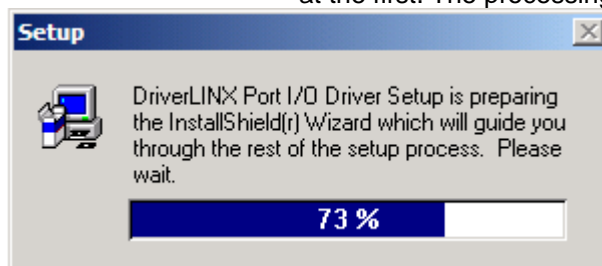
13. DDC Instruction

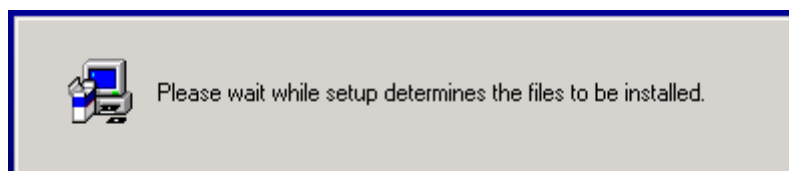
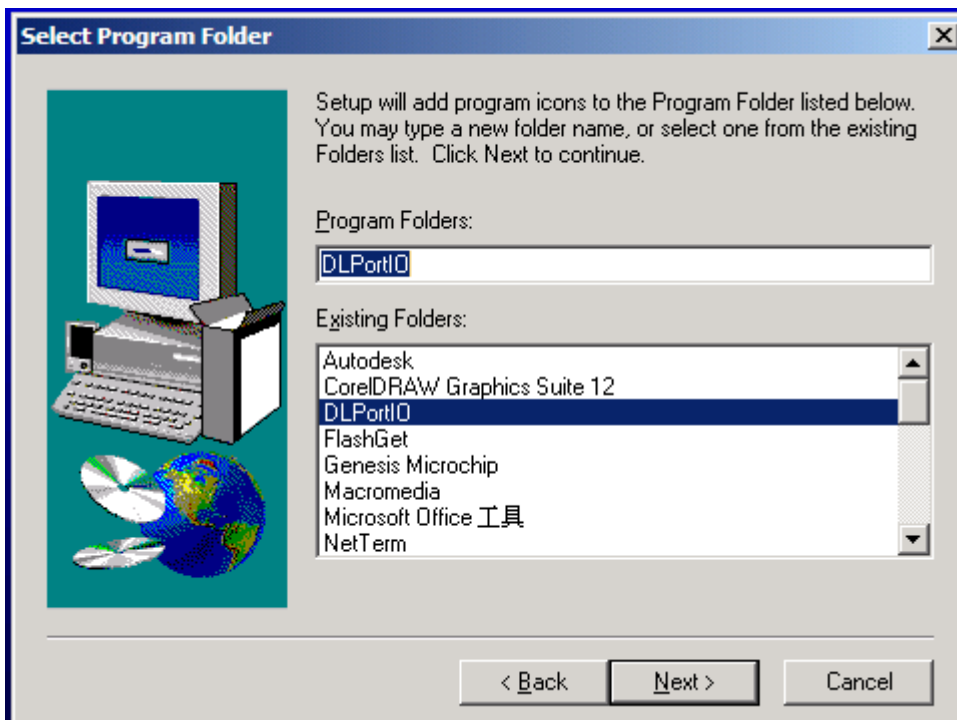
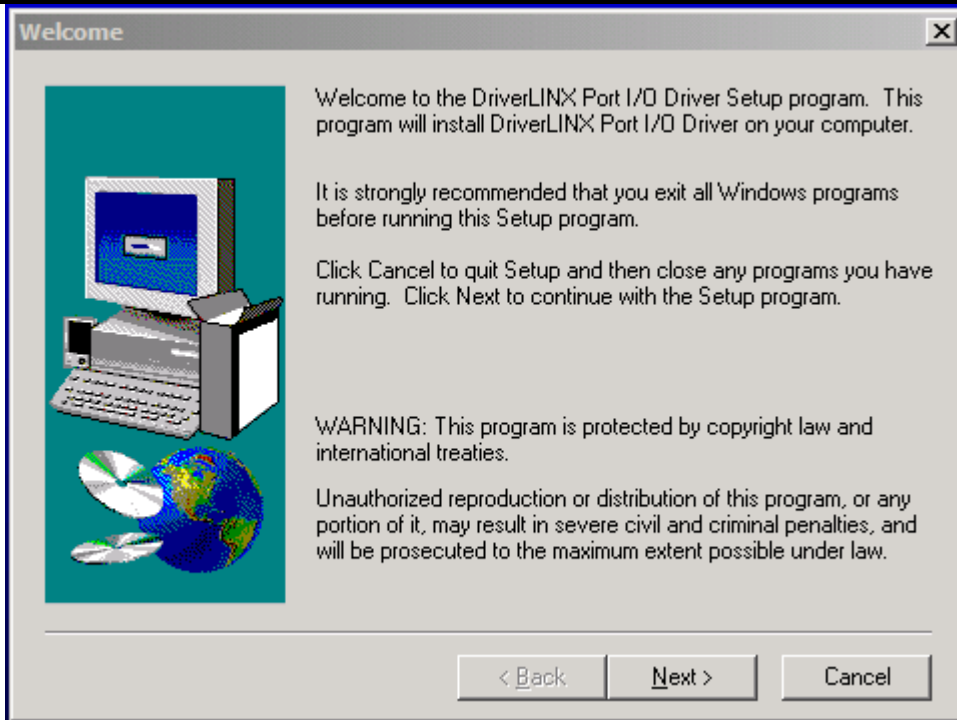


(1). Install software

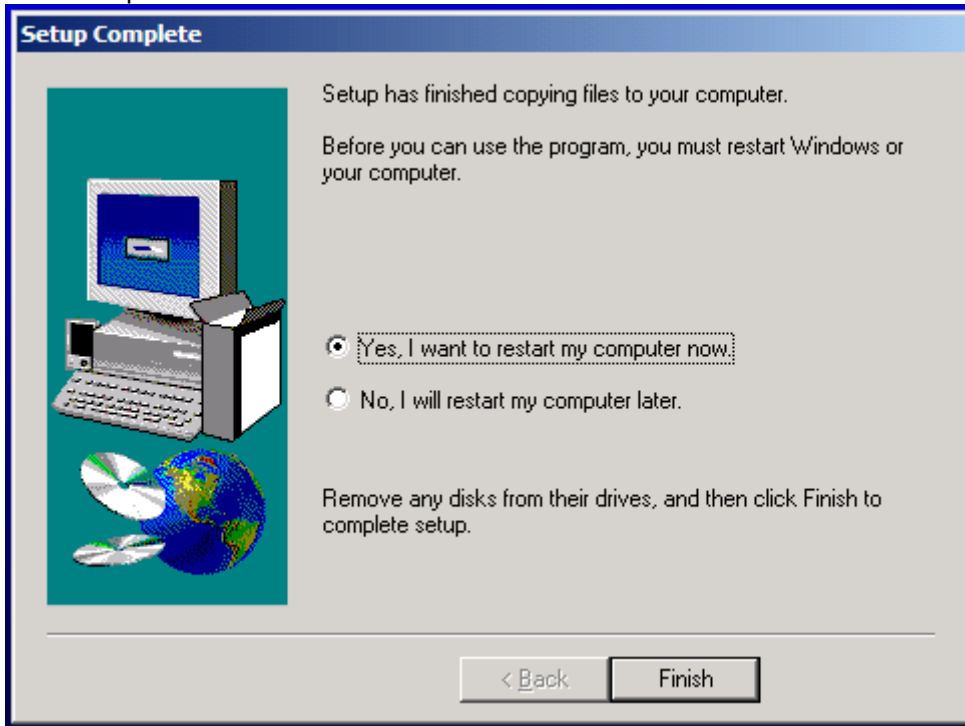
You must install the  **PORT95NT.EXE**
 PackageForTheWeb Stub
 InstallShield Software Corpora...

at the first. The processing as follows:



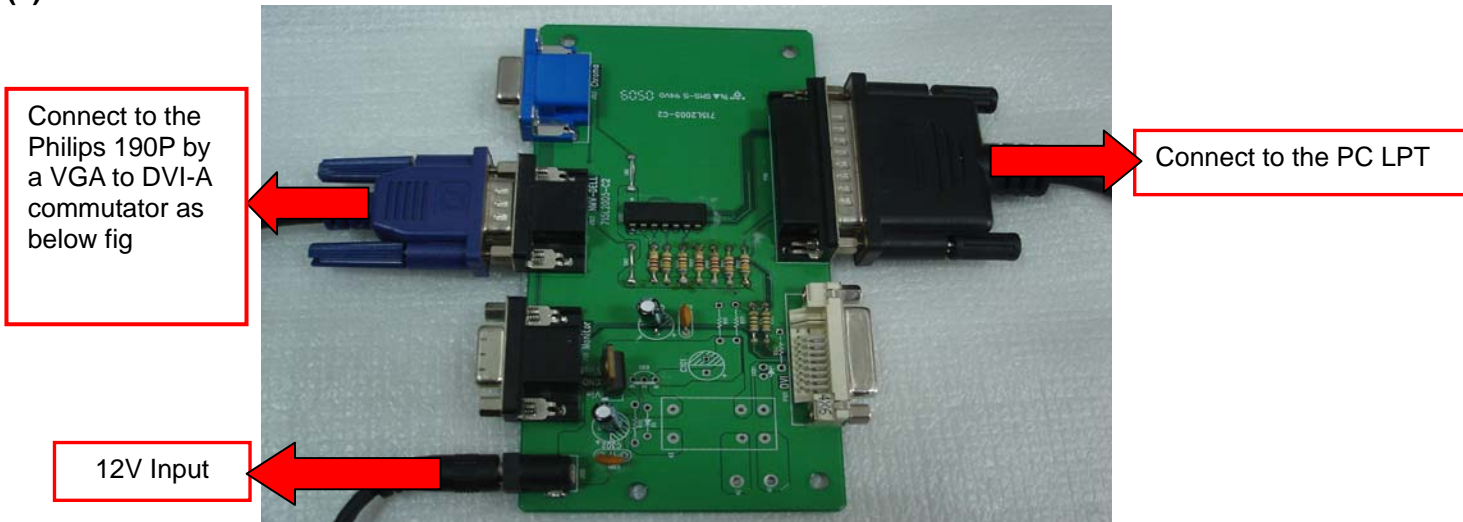


Click **Finish** to complete the installation.




Note: After installation, you must restart the PC to take the setup to effect.

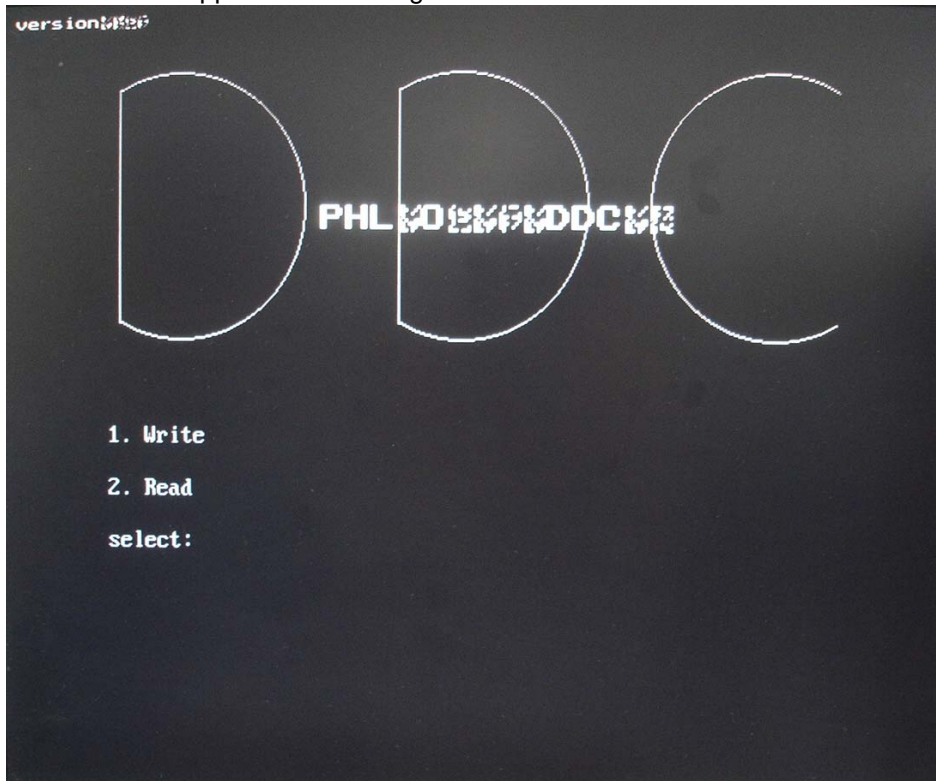
(2). Connect the DDC board as follow:



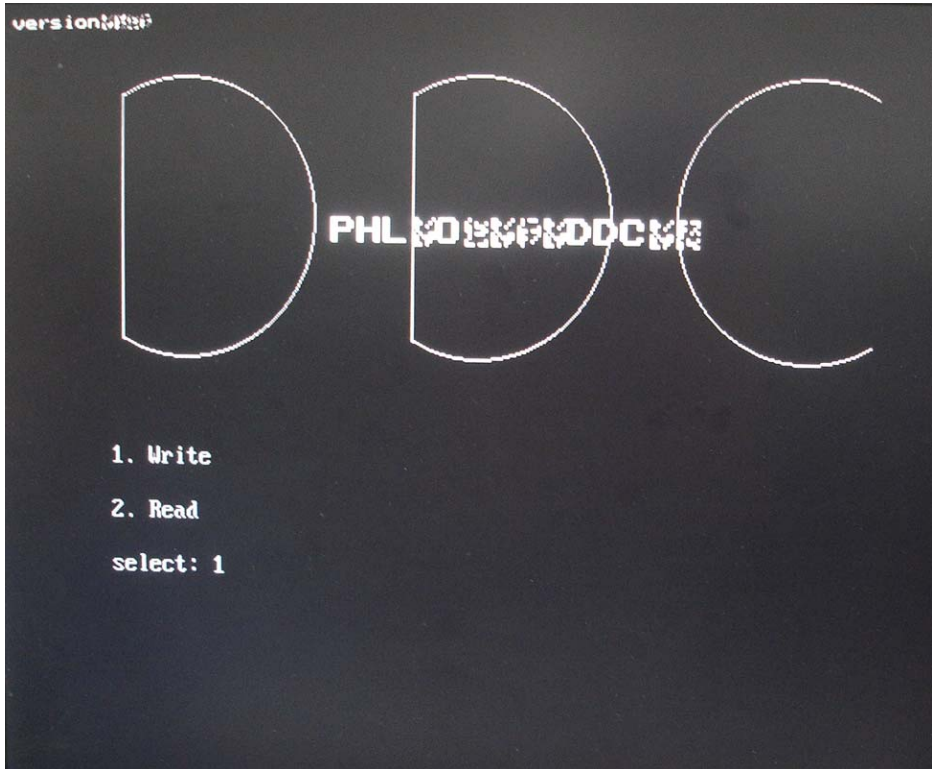
Note: The 2 DVI-I ports should be respectively program.

A. Program digital and analog EDID data

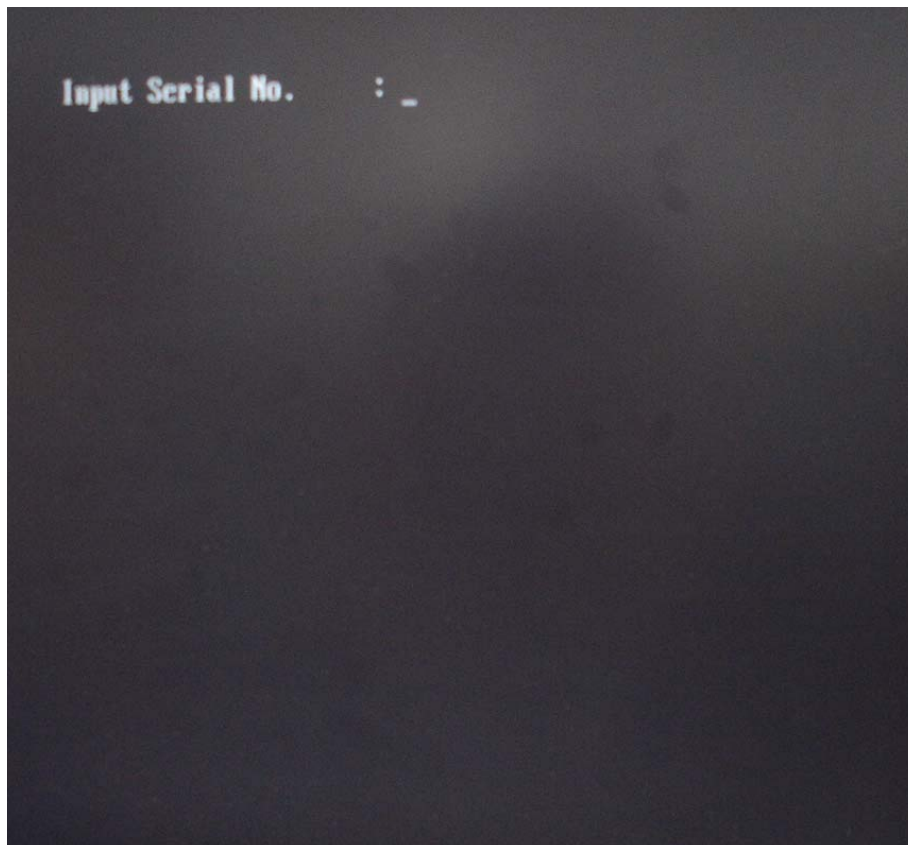
a. Double-click  190P.EXE, appear as follow Fig:



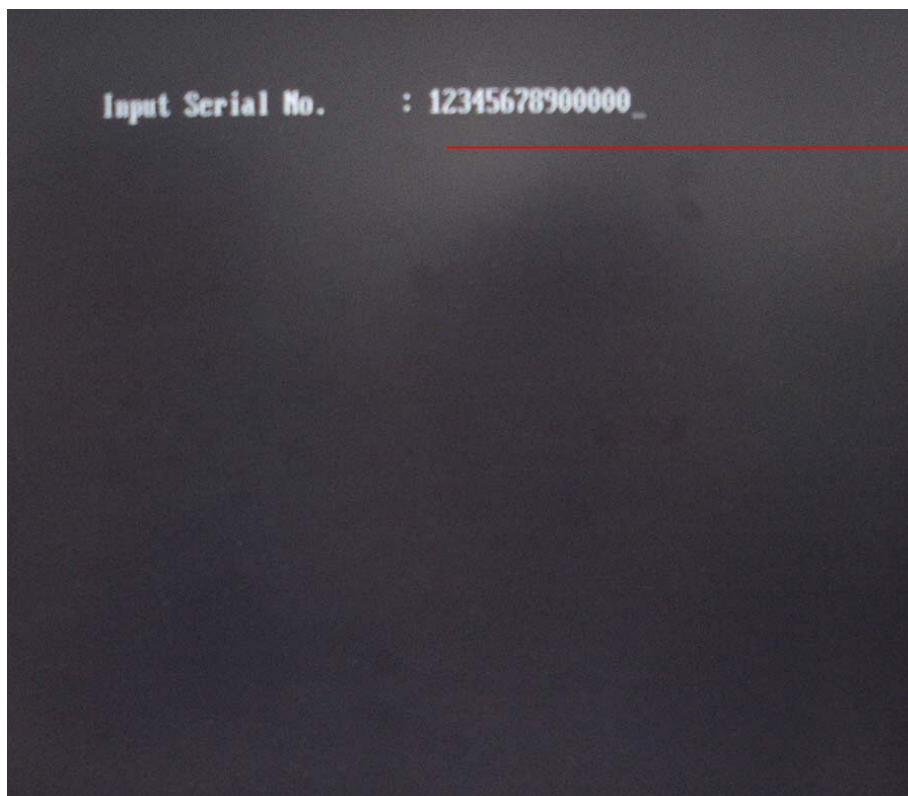
b. Key in "1" as follow Figs:



c. Press Enter key, then appears the following Fig:

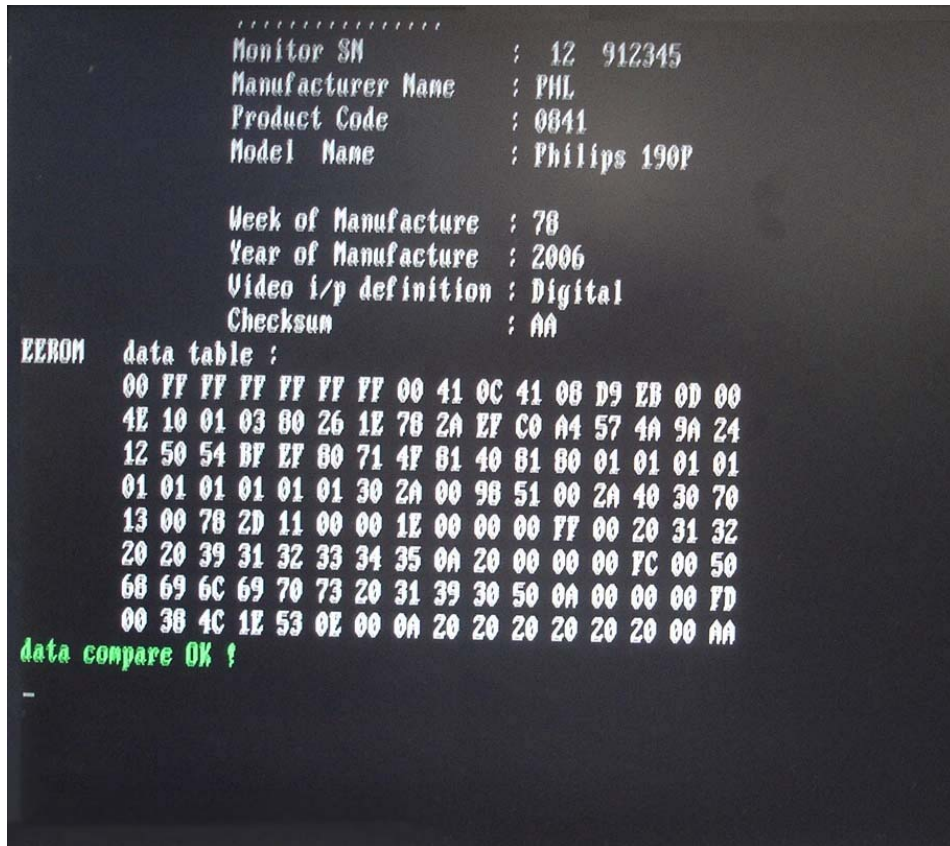


d. Key in the Serial Number printed on the barcode label, then click "OK"

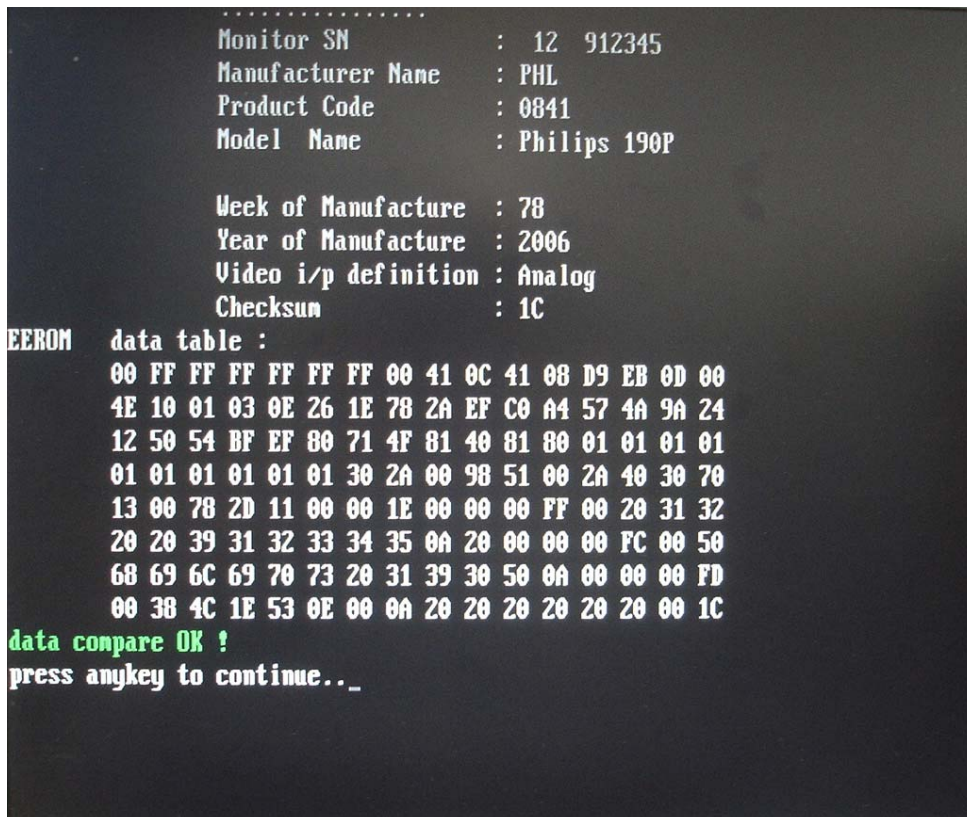


14 codes,
for example.

e. When digital EDID program completed, appears the following Fig:

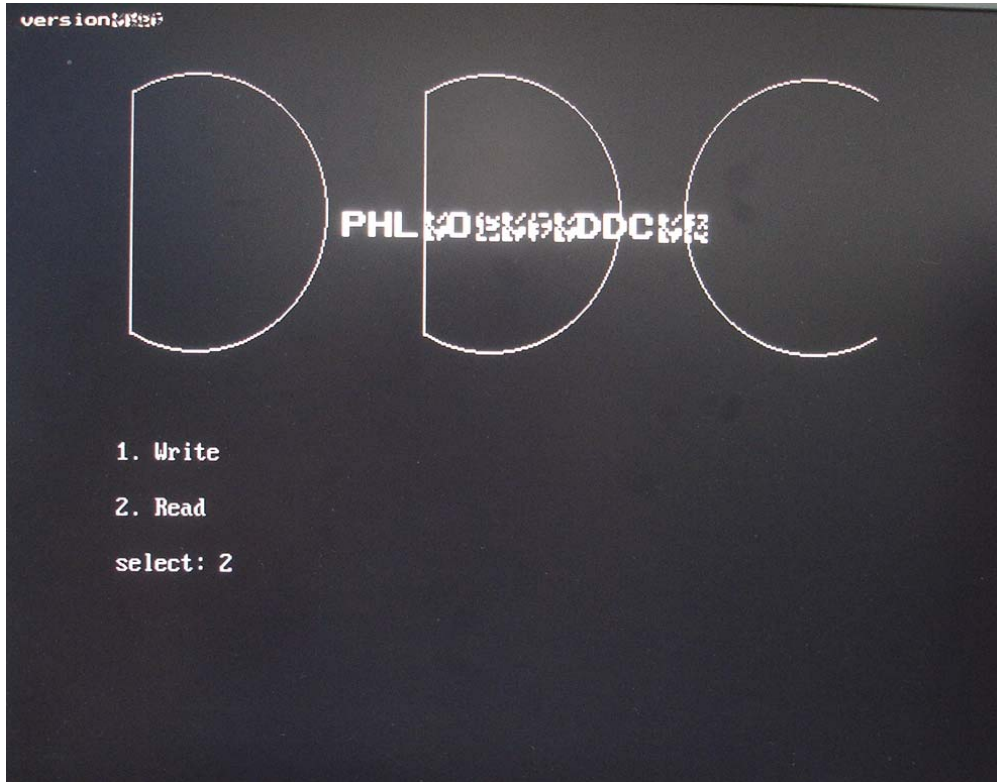


f. When ANALOG EDID program completed, appears the following Fig:

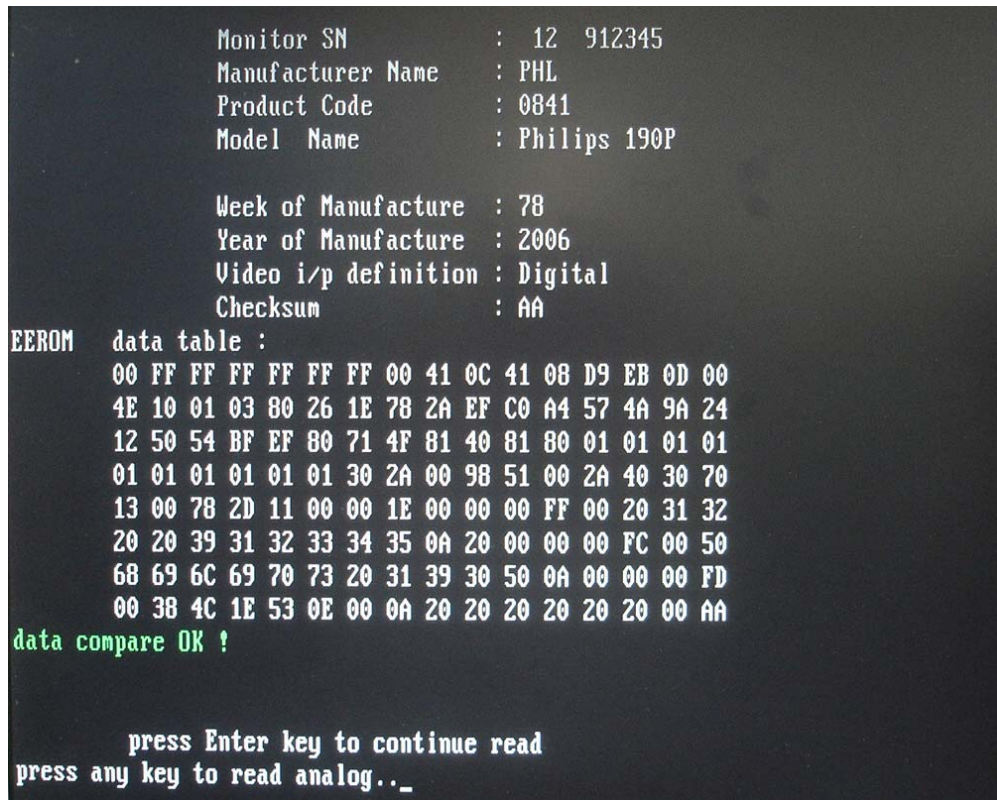


B. Read digital and analog EDID data.

a. Key in "2" as follow Figs:



b. Press Enter key, then appears the following Fig:



c. Press Enter key to read analog as follow:

```
press Enter key to continue read
press any key to read analog..

Monitor SN      : 12 912345
Manufacturer Name : PHL
Product Code    : 0841
Model Name      : Philips 190P

Week of Manufacture : 78
Year of Manufacture : 2006
Video i/p definition : Analog
Checksum         : 1C

EEROM data table :
00 FF FF FF FF FF FF 00 41 0C 41 08 D9 EB 0D 00
4E 10 01 03 0E 26 1E 78 2A EF C0 A4 57 4A 9A 24
12 50 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
13 00 78 2D 11 00 00 1E 00 00 00 FF 00 20 31 32
20 20 39 31 32 33 34 35 0A 20 00 00 00 FC 00 50
68 69 6C 69 70 73 20 31 39 30 50 0A 00 00 00 FD
00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 20 00 1C

data compare OK !

press Enter key to continue read_
```

128 bytes EDID Data (Hex):

x0 x1 x2 x3 x4 x5 x6 x7 x8 x9 xA xB xC xD xE xF

```

0: 00 FF FF FF FF FF FF 00 41 0C 41 08 01 00 00 00
10: 3E 0F 01 03 0E 26 1E 78 2A EF C0 A4 57 4A 9A 24
20: 12 50 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
30: 01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
40: 13 00 78 2D 11 00 00 1E 00 00 00 FF 00 20 41 55
50: 20 20 30 30 30 30 31 0A 20 00 00 00 FC 00 50
60: 68 69 6C 69 70 73 20 31 39 30 50 0A 00 00 00 FD
70: 00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 20 00 E1

```

Decoded EDID data

<---Header--->

Header: 00 FF FF FF FF FF FF 00

<-x-Header-x->

<---Vendor/Product Identification--->

```

ID Manufacturer Name:   PHL
ID Product Code:       2113
ID Serial Number:      00000001
Week of Manufacture:   62
Year of Manufacture:   2005

```

<-x-Vendor/Product Identification-x->

<---EDID Structure Version/Revision--->

```

EDID Version#:         01
EDID Revision#:        03

```

<-x-EDID Structure Version/Revision-x->

<---Basic Display Parameters/Features--->

```

Video i/p definition:   Analog
Signal Level Standard:  0.700V/0.300V(1.000Vpp)
Setup:                  Blank-to-Black not expected
Separate Sync Support:  Yes
Composite Sync Support: Yes
Sync. on green video supported: Yes
Serration of the Vsync.Pulse is not required.
Max. H. Image Size :   38cm.
Max. V. Image Size :   30cm.
Display Gamma:         2.2
DPMS Features, Stand-by: No.
DPMS Features, Suspend: No.
DPMS Features, Active off: Yes.
Display Type: R.G.B color display.
Standard Default Color Space: R.G.B color.
Preferred Timing Mode:  In First Detailed Timing.
GTF supported:         No.

```

<---Basic Display Parameters/Features--->

<---Color Characteristics--->

```

Red x:      0.6435546875
Red y:      0.3417968750
Green x:    0.2939453125
Green y:    0.6044921875
Blue x:     0.1435546875
Blue y:     0.0703125000
White x:    0.3125000000

```

White y: 0.3281250000

<-x-Color Characteristics-x->

<---Established Timings--->

Established Timings 1: BF

-720x400 @70Hz VGA,IBM

-640x480 @60Hz VGA,IBM

-640x480 @67Hz Apple,Mac II

-640x480 @72Hz VESA

-640x480 @75Hz VESA

-800x600 @56Hz VESA

-800x600 @60Hz VESA

Established Timings 2: EF

-800x600 @72Hz VESA

-800x600 @75Hz VESA

-832x624 @75Hz Apple,Mac II

-1024x768 @60Hz VESA

-1024x768 @70Hz VESA

-1024x768 @75Hz VESA

-1280x1024 @75Hz VESA

Established Timings 3: 80

-1152x870 @75Hz Apple,Mac II

<-x-Established Timings-x->

<---Standard Timing Identification--->

-1152x864 @75

-1280x960 @60

-1280x1024 @60

<-x-Standard Timing Identification-x->

<---Detailed Timing Descriptions--->

Detailed Timing: 1280x1024 @ 60Hz.

<-x-Detailed Timing Descriptions-x->

<---Detailed Timing Descriptions--->

Detailed Timing: FF (Monitor SN) 'AU 000001'

Detailed Timing: FC (Monitor Name) 'Philips 190P'

Detailed Timing: FD (Monitor limits)

Min. V. rate: 56Hz

Max. V. rate: 76Hz

Min. H. rate: 30KHz

Max. H. rate: 83KHz

Max. Pixel Clock: 140MHz

<-x-Detailed Timing Descriptions-x->

Extension Flag: 00

Checksum: E1

128 bytes EDID Data (Hex):

x0 x1 x2 x3 x4 x5 x6 x7 x8 x9 xA xB xC xD xE xF

0: 00 FF FF FF FF FF FF 00 41 0C 41 08 01 00 00 00
10: 3E 0F 01 03 80 26 1E 78 2A EF C0 A4 57 4A 9A 24
20: 12 50 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
30: 01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
40: 13 00 78 2D 11 00 00 1E 00 00 00 FF 00 20 41 55
50: 20 20 30 30 30 30 31 0A 20 00 00 00 FC 00 50
60: 68 69 6C 69 70 73 20 31 39 30 50 0A 00 00 00 FD
70: 00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 20 00 6F

Decoded EDID data

<---Header--->

Header: 00 FF FF FF FF FF FF 00

<-x-Header-x->

<---Vendor/Product Identification--->

ID Manufacturer Name: PHL
ID Product Code: 2113
ID Serial Number: 00000001
Week of Manufacture: 62
Year of Manufacture: 2005

<-x-Vendor/Product Identification-x->

<---EDID Structure Version/Revision--->

EDID Version#: 01
EDID Revision#: 03

<-x-EDID Structure Version/Revision-x->

<---Basic Display Parameters/Features--->

Video i/p definition: Digital
Max. H. Image Size : 38cm.
Max. V. Image Size : 30cm.
Display Gamma: 2.2
DPMS Features, Stand-by: No.
DPMS Features, Suspend: No.
DPMS Features, Active off: Yes.
Display Type: R.G.B color display.
Standard Default Color Space: R.G.B color.
Preferred Timing Mode: In First Detailed Timing.
GTF supported: No.

<---Basic Display Parameters/Features--->

<---Color Characteristics--->

Red x: 0.6435546875
Red y: 0.3417968750
Green x: 0.2939453125
Green y: 0.6044921875
Blue x: 0.1435546875
Blue y: 0.0703125000
White x: 0.3125000000
White y: 0.3281250000

<-x-Color Characteristics-x->

<---Established Timings--->

Established Timings 1: BF
-720x400 @70Hz VGA,IBM

- 640x480 @60Hz VGA,IBM
- 640x480 @67Hz Apple,Mac II
- 640x480 @72Hz VESA
- 640x480 @75Hz VESA
- 800x600 @56Hz VESA
- 800x600 @60Hz VESA

Established Timings 2: EF

- 800x600 @72Hz VESA
- 800x600 @75Hz VESA
- 832x624 @75Hz Apple,Mac II
- 1024x768 @60Hz VESA
- 1024x768 @70Hz VESA
- 1024x768 @75Hz VESA
- 1280x1024 @75Hz VESA

Established Timings 3: 80

- 1152x870 @75Hz Apple,Mac II

<-x-Established Timings-x->

<---Standard Timing Identification--->

- 1152x864 @75
- 1280x960 @60
- 1280x1024 @60

<-x-Standard Timing Identification-x->

<---Detailed Timing Descriptions--->

Detailed Timing: 1280x1024 @ 60Hz.

<-x-Detailed Timing Descriptions-x->

<---Detailed Timing Descriptions--->

- Detailed Timing: FF (Monitor SN) 'AU 000001'
- Detailed Timing: FC (Monitor Name) 'Philips 190P'
- Detailed Timing: FD (Monitor limits)
 - Min. V. rate: 56Hz
 - Max. V. rate: 76Hz
 - Min. H. rate: 30KHz
 - Max. H. rate: 83KHz
 - Max. Pixel Clock: 140MHz

<-x-Detailed Timing Descriptions-x->

Extension Flag: 00
 Checksum: 6F

14. White Balance, Luminance Adjustment

Approximately 30 minutes should be allowed for warm up before proceeding White-Balance adjustment.

1. Required instruments: Chroma 7120、 Chroma 2325 (BGA265A)。
2. First connect the instruments together and turn on the LCD power.
3. Set Chroma 2325 (BGA265A) to be T144 (1280*1024/60HZ) and P105 of full white screen.
4. **Enter into the factory mode:**
 Firstly, turn off the power, press the AUTO and OK at the same time, and then turn the power on (AUTO and OK are still pressed, about 10s), release, press the menu again will activate the factory mode, the factory OSD will be at the left top of the screen.

 Move the cursor to select the Hyson 190P7*****, press OK button to enter into the sub-menu; Move the cursor again to select " Cool/warm ".
5. Set Chroma-7120 CH3 as 9300 color temperature by ID key, press SC and Next key set 9300K: $x=283\pm 20$, $y=297\pm 20$, $Y>200$.

 Set Chroma-7120 CH4 as 6500 color temperature by ID key, press SC and Next key set 6500K: $x=313\pm 20$, $y=329\pm 20$, $Y>230$.
6. Adjust 9300K color temperature:
 - 1). Switch the Chroma-7120 to RGB-Mode (with press "MODE" button)
 - 2). Switch the MEM. Channel to Channel 3 (with up or down arrow on chroma 7120)
 - 3). Adjust the **R** of Cool item on factory window until chroma 7120 indicator reached the value $R=100\pm 5$
 - 4). Adjust the **G** of Cool item on factory window until chroma 7120 indicator reached the value $G=100\pm 5$
 - 5). Adjust the **B** of Cool item on factory window until chroma 7120 indicator reached the value $B=100\pm 5$
 - 6). Switch the Chroma-7120 to x, y, Y Mode (with press "MODE" button), check whether the color-temperature value is within Spec (the Spec is 9300: $x=283\pm 20$, $y=297\pm 20$, $Y>200$). If not in the SPEC, repeat step 3,4,5.
7. Adjust 6500K/SRGB color temperature:
 - 1). Switch the Chroma-7120 to RGB-Mode (with press "MODE" button)
 - 2). Switch the MEM. Channel to Channel 4 (with up or down arrow on chroma 7120)
 - 3). Adjust the **R** of Warm item on factory window until chroma 7120 indicator reached the value $R=100\pm 5$
 - 4). Adjust the **G** of Warm item on factory window until chroma 7120 indicator reached the value $G=100\pm 5$
 - 5). Adjust the **B** of Warm item on factory window until chroma 7120 indicator reached the value $B=100\pm 5$
 - 6). Switch the Chroma-7120 to x, y, Y Mode, check whether the color-temperature value is within Spec.
 the Spec is 6500: $x=313\pm 20$, $y=329\pm 20$, $Y>230$. If not in the SPEC, repeat step 3,4,5.

Turn the Power-button off to quit and save the factory mode.

15. Spare Parts List

190P7ES/00

PCB

Part No for TPV	Description	Philips 12NC
CBPC986KAMPHUP	CONVERSION BOARD ASS'Y	9965 000 37767
KEPC986KHUP	KEY BOARD ASS'Y	9965 000 37769
PWPC1942LGR2P	POWER BOARD ASS'Y	9965 000 37768
USB986A1P	USB BOARD ASS'Y	9965 000 37770

Panel

Part No for TPV	Description	Philips 12NC
750GLU90G0111M	PANEL LCD 19" EG01 V0 PHILIPS AU	9965 000 37757

Accessory and Mechanical

Part No for TPV	Description	Philips 12NC
089G179E30C902	FFC CABLE P-TWO	9965 000 37756
089G175921	USB CABLE	9965 000 37753
P15G83322	MAINFRAME_LPL	9965 000 37758
P33G500811C	BUTTON_POWER	9965 000 37759
P33G5009VP1L	BUTTON_FUNC	9965 000 37760
P33G5010VB1T	STAND_USB	9965 000 37761
P34G1868VOA1T	BEZEL	9965 000 37762
P34G1869VB1T	REAR_COVER	9965 000 37763
P34G1870VP1T	COVER_SIDE	9965 000 37764
P37G5661VO	BASE ASS'Y	9965 000 37765
Q15G00391	JIG	9965 000 37766

Main Board

Location	Part No. for TPV	Description	Philips 12NC
C316	067G3051007C	105 10UF M 50V	9965 000 37771
C507	067G3051007C	105 10UF M 50V	9965 000 37771
C511	067G3052214C	105 220UF M 25V	9965 000 37772
C506	067G3054707C	105 47UF M 50V	9965 000 37773
C401	067G3054713C	105 470UF M 16V	9965 000 37774
C326	067G3054713C	105 470UF M 16V	9965 000 37774
C516	067G215P1007C	105 10UF M 50V	9965 000 37775
C524	067G215P1007C	105 10UF M 50V	9965 000 37775
C518	067G215P1014C	105 100UF M 25V	9965 000 37776
C525	067G215P1014C	105 100UF M 25V	9965 000 37776
C532	067G305V2203	105 22UF -20% 16V	9965 000 37777
CN101	088G35428FH	DVI CONN R/A 28P	9965 000 37778
CN201	088G35428FH	DVI CONN R/A 28P	9965 000 37778
X301	093G2251	CRYSTAL 12MHZ HC-49US ARG6-120	9965 000 35961
U301	056G562117	IC NT68663MEFG-128 QFP-128L NOVA	9965 000 37779
U401	056G562512	NT68563EFG	9965 000 37780
U502	056G563806	IC AIC1187-33PY SOT-223 AIC	9965 000 37781
U501	056G563807	IC AIC1187-18PY SOT-223 AIC	9965 000 37782
U303	056G113356	M24C16-WMN6TP	9965 000 37783
U101	056G1133902	IC BU9882FV-W SSOP14 ROHM	9965 000 37784
U201	056G1133902	IC BU9882FV-W SSOP14 ROHM	9965 000 37784
Q504	057G420519T	TRA SIG SM BC857CG (ONSE) R	9965 000 37785
Q503	057G420519T	TRA SIG SM BC857CG (ONSE) R	9965 000 37785
Q502	057G7601PH	TRA SIG SM MUN2211J(ONSE)R	9965 000 37397
Q501	057G7631PH	FET POW SM SI5441DC(VISH)R	9965 000 37398
R517	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R405	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R403	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R402	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R316	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R315	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R312	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R311	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R304	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R302	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R301	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R216	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R214	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R116	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R114	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R529	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970

R514	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R518	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R210	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R209	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R110	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R109	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R225	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R306	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R314	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R404	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R510	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R513	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R515	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R516	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R520	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R522	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R527	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R528	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R207	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R101	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R102	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R103	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R104	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R105	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R106	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R125	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R202	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R203	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R204	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R205	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R206	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R509	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R320	061L0603105	RST SM 0603 RC0603 1M PM5 R	9965 000 35973
R224	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R221	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R213	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R124	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R121	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R113	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R318	061L0603220	CHIPR 22 OHM -5% 1/16W	9965 000 37786
R531	061L06032201F	2.2K OHM 1% 1/10W	9965 000 37787
R523	061L0603221	CHIPR 220 OHM -5% 1/16W	9965 000 35976
R521	061L0603221	CHIPR 220 OHM -5% 1/16W	9965 000 35976

R119	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R120	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R219	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R220	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R401	061L0603391	CHIP 390 OHM 1/10W	9965 000 37788
R303	061L0603391	CHIP 390 OHM 1/10W	9965 000 37788
R215	061L0603391	CHIP 390 OHM 1/10W	9965 000 37788
R115	061L0603391	CHIP 390 OHM 1/10W	9965 000 37788
R322	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R321	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R319	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R317	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R208	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R201	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R108	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R107	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R530	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R504	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R502	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R501	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
R334	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R333	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R332	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R331	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R327	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R310	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R309	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R308	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R307	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R508	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
R222	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R217	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R211	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R122	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R117	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R111	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R112	061L06037509F	75OHM 1% 1/10W	9965 000 35983
R118	061L06037509F	75OHM 1% 1/10W	9965 000 35983
R123	061L06037509F	75OHM 1% 1/10W	9965 000 35983
R212	061L06037509F	75OHM 1% 1/10W	9965 000 35983
R218	061L06037509F	75OHM 1% 1/10W	9965 000 35983
R223	061L06037509F	75OHM 1% 1/10W	9965 000 35983
R503	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067

C530	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C520	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C519	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C502	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C501	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C423	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C422	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C421	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C419	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C418	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C417	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C416	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C415	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C412	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C411	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C531	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C528	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C527	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C526	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C523	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C517	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C515	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C510	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C509	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C508	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C505	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C504	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C307	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C306	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C305	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C303	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C302	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C209	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C208	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C202	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C109	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C108	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C102	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C317	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C410	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C409	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C407	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C405	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918

C403	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C322	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C318	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C315	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C313	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C312	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C310	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C308	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C324	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C323	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C321	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C119	065G060322131	CER1 0603 NP0 50V 220P PM5 R	9965 000 37789
C219	065G060322131	CER1 0603 NP0 50V 220P PM5 R	9965 000 37789
C118	065G060333031	CER1 0603 NP0 50V 33P PM5 R	9965 000 37790
C218	065G060333031	CER1 0603 NP0 50V 33P PM5 R	9965 000 37790
C206	065G060333131	330PF -5% 50V NPO	9965 000 37791
C205	065G060333131	330PF -5% 50V NPO	9965 000 37791
C105	065G060333131	330PF -5% 50V NPO	9965 000 37791
C104	065G060333131	330PF -5% 50V NPO	9965 000 37791
C224	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C222	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C221	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C217	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C216	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C215	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C213	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C113	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C115	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C116	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C117	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C121	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C122	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C124	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C420	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C414	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C406	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C404	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C402	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C325	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C311	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C309	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C304	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
C301	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402

D101	093G6442P	DIO SW BAV70 SOT23	9965 000 13591
D201	093G6442P	DIO SW BAV70 SOT23	9965 000 13591
ZD205	093G39S66	DIO REG SM BZX84-C5V1 (PHSE)R	9965 000 37792
ZD204	093G39S66	DIO REG SM BZX84-C5V1 (PHSE)R	9965 000 37792
ZD203	093G39S66	DIO REG SM BZX84-C5V1 (PHSE)R	9965 000 37792
ZD105	093G39S66	DIO REG SM BZX84-C5V1 (PHSE)R	9965 000 37792
ZD104	093G39S66	DIO REG SM BZX84-C5V1 (PHSE)R	9965 000 37792
ZD103	093G39S66	DIO REG SM BZX84-C5V1 (PHSE)R	9965 000 37792
D501	093G1020PH	DIODE S1D-E3 VISHAY	9965 000 37793
D502	093G1020PH	DIODE S1D-E3 VISHAY	9965 000 37793

Power Board

Location	Part No. for TPV	Description	Philips 12NC
IC902	056G1393A	PC123Y22FZOF	9965 000 36055
NR901	061G5810T	8 OHM 4A NTCR BY THINKING	9965 000 36938
R905	061G152M10464	100KOHM 5% 2W	9965 000 36939
R920	061G152M20864	0.20 OHM 2W	9965 000 36940
C908	063G10747410S	FILM CAPACITOR	9965 000 37794
C808	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C807	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C803	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C802	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C801	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C806	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C900	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C901	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C912	065G305M2222BP	2200PF -20%	9965 000 36944
C936	067G215D2222KV	105Σ 2200UF M 10V	9965 000 36945
C840	067G215D4714K	ED 470UF 25V	9965 000 36007
C907	067G215S10115K	100UF 450V	9965 000 36086
C933	067G215S1024K	ED1000UF 25V	9965 000 36946
C932	067G215S1024K	ED1000UF 25V	9965 000 36946
L902	071G5524	FERRITE BEAD	9965 000 36947
L903	071G5524	FERRITE BEAD	9965 000 36947
L901	073G17465LS	LINE FILTER BY LISHIN	9965 000 36025
L951	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
L955	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
T901	080GL17T900T	X'FMR SRW28LEC-T93H016	9965 000 36950
PT801	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
PT802	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
CN901	087G50132S	AC SOCKET	9965 000 36028
BD901	093G50460900	BRIDGE DIODE GBU408 LITEON	9965 000 37336
D901	093G6026T52T	RECTIFIER DIODE FR107	9965 000 36030
Q901	057G60035	STP8NK80ZFP	9965 000 36959
D931	093G60267	SP10100	9965 000 36957
D935	093G60240	YG802C06R TO-220F15	9965 000 37337
IC901	056G564911	IC TEA1532AT S08	9965 000 36960
U811	056G60810	OZ9938	9965 000 36059
Q874	057G41712T	KEC 2N3904S-RTK/PS	9965 000 36961
Q886	057G7592	RK7002	9965 000 36033
Q885	057G7592	RK7002	9965 000 36033
Q883	057G7592	RK7002	9965 000 36033
Q881	057G7592	RK7002	9965 000 36033
Q880	057G7592	RK7002	9965 000 36033

Q801	057G7592	RK7002	9965 000 36033
Q871	057G7592	RK7002	9965 000 36033
Q873	057G7604B	PDTA144WK SOT346	9965 000 36962
Q821	057G76314	AM9945N	9965 000 36100
Q841	057G76314	AM9945N	9965 000 36100
RJ827	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
RJ801	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R849	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R829	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R822	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R823	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R842	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R843	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R954	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R856	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R855	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R836	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R835	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R941	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R851	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R888	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R886	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R884	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R882	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R831	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R801	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R804	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R807	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R880	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R872	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R802	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R887	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R885	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R883	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R881	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R819	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R912	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R946	061L08051103F	110KOHM 1% 1/10W	9965 000 36966
R833	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R853	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R923	061L0805123	CHIP 12KOHM 1/8W	9965 000 36968
R914	061L08051241F	CHIP 1.24K OHM 1/10W 1%	9965 000 36969
R916	061L0805152	CHIPR 1.5K OHM -5% 1/10W	9965 000 36970

R873	061L0805202	CHIP 2KOHM 1/8W	9965 000 36971
R816	061L0805203	CHIPR 20KOHM -5% 1/8W	9965 000 36972
R865	061L08052490F	RST CHIPR 249 OHM -1% 1/8W	9965 000 37494
R815	061L0805303	CHIP 30K OHM 1/8W	9965 000 36974
R813	061L08053302F	CHIP 33KOHM 1/8W 1%	9965 000 36975
R874	061L0805331	CHIP 330 OHM 5% 1/10W	9965 000 36976
R917	061L0805333	CHIP 33KOHM 1% 1/8W	9965 000 36977
R811	061L0805335	3.3M 0805	9965 000 36978
R943	061L08055101F	CHIP 5.1K OHM 1/10W 1%	9965 000 36979
R812	061L0805624	CHIP 620KOHM 5% 0805 1/8W	9965 000 36980
R825	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R837	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R945	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R944	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
RJ804	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R926	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R918	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R907	061L1206103	CHIP 10KOHM 5% 1/4W	9965 000 36016
R904	061L1206155	1.5M/0805	9965 000 36983
R910	061L1206155	1.5M/0805	9965 000 36983
R937	061L1206182	CHIP 1.8KOHM	9965 000 36984
R931	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R932	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R927	061L1206472	CHIP 4.7KOHM 5% 1/4W	9965 000 36986
R900	061L1206684	CHIPR 680K OHM -5% 1/8W	9965 000 36024
R901	061L1206684	CHIPR 680K OHM -5% 1/8W	9965 000 36024
R902	061L1206684	CHIPR 680K OHM -5% 1/8W	9965 000 36024
C861	065G080510231	1000PF 50V NPO	9965 000 36991
C838	065G080510231	1000PF 50V NPO	9965 000 36991
C819	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C881	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C883	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C885	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C887	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C955	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C951	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C913	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C880	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C832	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C812	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C914	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C874	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C846	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073

C841	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C821	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C811	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C915	065G080512322	CHIP 12NF 25V X7R 0805	9965 000 36992
C860	065G080522122	CHIP 220PF 25V X7R 0805	9965 000 36993
C822	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C823	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C842	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C843	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C847	065G080522322	CHIP 0.022UF 25V X7R 0805	9965 000 36043
C831	065G080533132	CHIP 330P 50V X7R 0805	9965 000 36994
C865	065G080533332	CHIP 0.033UF 50V	9965 000 36995
C917	065G080533422	0.33UF -10% 25V X7R 0805	9965 000 36074
C858	065G080539131	CHIP 390PF 50V	9965 000 36996
C813	065G080556131	CHIP 560PF 50V NPO 0805	9965 000 36997
C941	065G080556221	5600PF/25V/NPO/J	9965 000 36998
D831	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D851	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D853	093G6442PP	BAV70 SOT-23	9965 000 35995
D833	093G6442PP	BAV70 SOT-23	9965 000 35995
D881	093G6444S	LL4148WP	9965 000 36035
D883	093G6444S	LL4148WP	9965 000 36035
D885	093G6444S	LL4148WP	9965 000 36035
D887	093G6444S	LL4148WP	9965 000 36035
ZD874	093G39S24T	RLZ 5.6B LLDS	9965 000 36079
ZD975	093G39S25T	RLZ5.1B LLDS	9965 000 37002
IC941	056G15810T	AZ431AZ-AE1	9965 000 36101
R915	061G17210052T	100HM 5% 1/4W	9965 000 36987
R952	061G17210052T	100HM 5% 1/4W	9965 000 36987
R871	061G17210352T	CFR 10KOHM -5% 1/4W	9965 000 36988
R861	061G20010452T	100K OHM 1/4W 1%	9965 000 36989
R863	061G20033352T	33KOHM 1% 1/4W	9965 000 36990
R839	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
R859	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
C920	065G1K1025T	1000PF/1KV	9965 000 36999
C931	065G517K3322T	3.3NF 500V	9965 000 37000
C927	067G3056804KT	ELCAP 68UF M 25V 105Σ KINGNICH	9965 000 37001
C820	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
C956	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
C952	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
FB902	071G5523S	BEAD	9965 000 37004
FB903	071G5523S	BEAD	9965 000 37004
FB905	071G5523S	BEAD	9965 000 37004

FB901	071G5529	FERRITE BEAD	9965 000 36053
F902	084G554	FOSE 382-5A 250V SICKMANN	9965 000 37005
F901	084G557GP	FUSE 3.15A 250V	9965 000 37006
ZD951	093G39A3552T	ZENER DIODE P6KE8.2A ZOWIE	9965 000 37007
D926	093G6038T52T	FR103	9965 000 36095
D919	093G6038T52T	FR103	9965 000 36095
	071FPC2820105	PC40 EER28L A217	9965 000 37795

Key Board

Location	Part No. for TPV	Description	Philips 12NC
R001	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R003	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R004	061L0603273	RES 27K 1/10W 5% 0603	9965 000 37796
R002	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
SW007	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
SW006	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
SW005	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
SW004	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
SW003	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
SW002	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
SW001	077G6041FD	SWI TACT 1P 1POS 12V V 1MM5 R	9965 000 37797
LED001	081G14YGKB	SMD LED KPB-3025YSGC(V7) KINGBRI	9965 000 37798
Q1	081GIR500KB	LED TRAL-698DANUP-1SP7C-TG KINGB	9965 000 37799

USB Board

Location	Part No. for TPV	Description	Philips 12NC
5634	073G253518LS	COI CHOKE 35UH 82M OHM DR10X8	9965 000 37800
1652	088G3514TN	USB CONN	9965 000 37338
1651	088G352900TN	USB CONN 5401-342-101-92	9965 000 37801
1654	088G352900TN	USB CONN 5401-342-101-92	9965 000 37801
7631	056G379909	IC TPS54357PWP HTSSOP16 TI	9965 000 37391
7641	056G1133914LP1	IC AT2425040AN-10SU-2.7 ATMEL	9965 000 37802
7651	056G11424	CY7C65640A-LFXC	9965 000 37803
7622	057G7601PH	TRA SIG SM MUN2211J(ONSE)R	9965 000 37397
7625	057G7631PH	FET POW SM SI5441DC(VISH)R	9965 000 37398
3622	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
3682	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
3623	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
3693	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3692	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3691	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3689	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3687	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3685	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3683	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3681	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3642	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3641	061L06031502F	CHIPR 15KOHM -1% 1/10W	9965 000 37394
3634	061L06032001F	CHIP 2KOHM 1% 1/10W	9965 000 37399
2623	065G060310331	CHIP 0.01UF 50V NPO	9965 000 37804
2685	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2691	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2692	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2693	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2694	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2695	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2696	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2697	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2698	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2699	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2601	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2604	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2621	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2633	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2652	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2656	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393

2671	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2680	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2681	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2684	065G060310432	CHIP 0.1UF 50V X7R	9965 000 37393
2682	065G060327031	27PF 50V NPO	9965 000 37805
2683	065G060327031	27PF 50V NPO	9965 000 37805
2625	065G120610617	CHIP 10UF 16V Y5V	9965 000 37402
2603	067G3111004T	105Σ 10UF M 25V	9965 000 37403
2655	067G3121013	SMD 100UF -20% 16V	9965 000 37395
2651	067G3121013	SMD 100UF -20% 16V	9965 000 37395
2631	067G3121014	100U 25V	9965 000 37396
2634	067G3121014	100U 25V	9965 000 37396
1610	093G22S54	REX XTL SM 24MHZ 20PFSMD-49 XS	9965 000 37404
6634	093G60S801	SURFACE MOUNT	9965 000 37806
6635	093G60S801	SURFACE MOUNT	9965 000 37806
6662	093G64S3PH	BAS32L	9965 000 37405

16. General Product Specification

- . ANALOG AND DIGITAL DUAL INPUT
- . AUTO PICTURE ADJUSTMENT
- . 17 FACTORY PRESET MODES AND 33 PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES, 24 USER MODES
- . USER FRIENDLY OSD DISPLAY FOR MODE IDENTIFICATION/ADJUSTMENT

- . MAX. RESOLUTION 1280*1024 NON-INTERLACED AT 76 HZ
- . 19" COLOR TFT LCD FLAT PANEL
- . EASY TILT & SUPER ERGO BASE
- . FULL RANGE POWER SUPPLY 90 – 264 VAC
- . CE ENVIRONMENTAL POLICY
- . ANTI-GLARE TO REDUCE LIGHT REFLECTION
- . POWER MANAGEMENT CAPABILITY
- . SOG SUPPORT
- . TCO 03
- AUDIO
- . PROVIDE USB HUB
- . SMART CONTROL & SMART MANAGEMENT REQUIREMENT
- . SMART BRIGHT
- . WALL MOUNT KIT (OPTION)
- . WEEE REQUIREMENT
- . RoHS REQUIREMENT

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1. FOREWORD

This specification describes a 19" wide SXGA multi-scan color TFT LCD monitor with max. resolution up to 1280*1024/ 75 Hz non-interlaced.

All optical characteristics (including WHITE-D, Brightness, and so on) are determined according to panel specification after warming up approximate 30 minutes that brightness stability is optimal, and follow strictly after panel specification.

2. 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.	: LM190E05-SL01 (LPL)
Outside dimensions	: 396.0(w)*324.0(h)*20.0(d) (Typ) mm
Pitch (mm)	: 0.294 x 0.294mm
Color pixel arrangement	: RGB vertical stripes
Display surface	: low reflection, antiglare with hard coating
Color depth	: 16.2M colors (8 bits)
Backlight	: CCFL edge light system
Active area (WxH)	: 376.32x301.06mm (19" diagonal)
View angle (CR>10)	: 170/170 (min), 178/178 (typ) for Horizontal & Vertical
Contrast ratio	: 800:1(Typ.) 500:1(Min.)
White luminance	: Original color 250 nits (Typ.)
Gate IC	: Magna
Source IC	: NEC
Response time	: 18ms

2.1.1 Type NR.	: M190EG01 V0 (AUO)
Outside dimensions	:
Pitch (mm)	:
Color pixel arrangement:	:
Display surface	:
Color depth	:
Backlight	:
View angle	: 170/170 (min), 178/178 (typ) for Horizontal & Vertical
Contrast ratio	:
White luminance	: 300 nits (Typ.)
Contrast ratio	:
Gate IC	:
Source IC	:
Response time	: 8ms

2.2 Scanning frequencies

Hor.	: 30 – 83 K Hz
Ver.	: 56 - 76 Hz
Video dot rate	: <140 MHz
Power input	: 90-264 V AC, 50/60 ± 2 Hz
Power consumption	: < 43 W maximum (without audio and USB loading) < 55 W maximum (with audio and 4x full USB loading)

Functions:

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

2.3 Ambient temperature: 0 °C - 35 °C

3. Electrical characteristics

3.1 Interface signals

1). DVI-I Analog

Input signal : Video, Hsync., Vsync

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

Sync. : Separate sync TTL level , input impedance 2.2k ohm terminate
 Hsync Positive/Negative
 Vsync Positive/Negative

Composite sync TTL level, input impedance 2.2k ohm terminate (Positive/Negative)
 Sync on green video 0.3 Vp-p Negative (Video 0.7 Vp-p Positive)

2). DVI-I Digital

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

3). Audio

Input signal: 500mVrms
 Loudspeaker (Impedance: 16 Ohm +/-15%): 2W+2W stereo for RMS Power
 Frequency range: 320Hz - 13KHz
 Headphone connection will mute speakers

4). USB hub

Input signal: Upstream input (V_{BUS}, D+, D-, GND) via USB-B receptacle.
 Output signal: Downstream output (V_{BUS}, D+, D-, GND) through USB-A receptacle

3.2 Interface

3.2.1 DVI Cable (analog part) (adapter or cable?)

3.2.2 DVI Cable (digital part)

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:

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-

3.2.3 Audio Cable

Length. : 1.8 M +/- 50 mm
Connector type. : 3.5-mini jack with lime color on the both end.

3.2.4 USB Cable (High Full Speed)

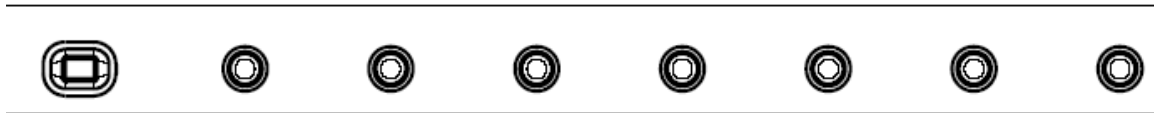
Length. : 1.8 M +/- 50 mm (Max.)
Connector type. : USB- B Plug (Input)
USB- A Plug (Output)

Pin Assignment:

Pin No.	Description
1	VBUS
2	Data+
3	Data-
4	GND

3.2.2 Software control functions via OSD/control adjustable functions:

OSD control bottom sequence.



Light sensor – auto – left – (INPUT) – right – down – (brightness) – up – ok - power

PC Analog only Signal Input Mode

Adjustable functions:

1 st LEVEL	2 nd LEVEL	3rd LEVEL
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness Contrast	
Color	Original Color, 9300K,6500K, sRGB, User Define	
Position	Horizontal Vertical	
Input Selection	Analog, Digital	
More Settings	Language	/00,/05 : English, Spanish, French, German, Italian and Russian /27 : English, French, Spanish, Portuguese & S. Chinese /69,/75,/93,/96 : English, Spanish, French, German, Italian and S. Chinese
	Phase/ Clock	Phase Clock
	OSD Settings	Horizontal Vertical
	Audio Options	Stand-alone (On, Off) Mute (On, Off)
	Smart Bright	On, Off
Reset	No Yes	
Serial No.:		
(Serial No.)		
Timing Mode		
Up/Down to Move, <input type="checkbox"/> ok to Confirm		

Remark : " To move " at OSD window right-bottom.

" To adjust " at OSD window left-bottom.

Remark: Color Temperature factory default setting = 6500K for all regions.

Remark: Audio Selection - Stand-alone – On: Isolate video and audio control input

Stand-alone – Off: Integrate video and audio control input

Mute – On: Turn off Audio input

Mute – Off: Turn on Audio input

Reset - No: Exit

Yes: Auto adjustment for displaying timing mode and recall

3.3 Timing requirement

3.3.1 Mode storing capacity

Factory preset modes: 15
 Preset modes : 24
 User define modes : 24

Note: 1. Screen displays perfect picture at 15 factory-preset modes.
 2. Screen displays visible picture with OSD warning when input modes are the 34 preset modes

3.3.2 Factory preset modes (15 modes)

#	Resolution	H-Frequency	Pixel rate	V-Frequency	Comment
1	640X350	31.5KHz	25.175	70Hz	IBM VGA 10h
2	720X400	31.5KHz	28.322	70Hz	IBM VGA 3h
3	640X480	37.5KHz	31.501	75Hz	
4	640X480	35.0KHz	30.24	67Hz	
5	640X480	31.5KHz	25.175	60Hz	
6	800X600	35.2KHz	36	56Hz	
7	800X600	46.9KHz	49.498	75Hz	
8	800X600	37.9KHz	40	60Hz	
9	832X624	49.7KHz	57.28	75Hz	MAC
10	1024X768	60.0KHz	78.75	75Hz	
11	1024X768	48.4KHz	65	60Hz	
12	1152X870	68.7KHz	100	75Hz	MAC
13	1152X900	71.8KHz	108	76Hz	SUN Mode II
14	1280X1024	64.0KHz	108	60Hz	
15	1280X1024	80.0KHz	135	75Hz	

3.3.3 Preset Modes (34modes)

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

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 (1lines)
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	19	20
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(1line)	0.074(4 lines)	0.016(1 lines)
SYNC. H/V	+ / +	+ / +	+/+	+/+
POLARITY				
SEP . SYNC	Y	Y	Y	Y

MODE NO.	21	22	23	24
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	- / -	- / -	Serr-	+ / +
POLARITY				
SEP . SYNC	Y	Y	Y	Y

MODE NO.	25	26	27	28
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)	1.852 (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 (6 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.	29	30	31	32
RESOLUTION	1280 x 1024	1280 x 1024	1280 x 1024	688 x 556
Dot clock(MHz)	130.223	135	138.008	27
F h	76kHz	80kHz	81.1kHz	31.25kHz
A (us)	13.158(1712 dots)	12.504(1688 dots)	12.326(1664 dots)	32 (864 dots)
B (us)	1.024 (133 dots)	1.067(144 dots)	0.474 (64 dots)	3.852 (104 dots)
C (us)	1.905(248 dots)	1.837(248 dots)	2.133 (288 dots)	1.778 (48 dots)
D (us)	9.83 (1280 dots)	9.481(1280 dots)	9.481 (1280 dots)	25.481 (688 dots)
E (us)	0.399(51 dots)	0.119(16 dots)	0.238 (32 dots)	0.889 (24 dots)
F v	72Hz	75Hz	76Hz	50Hz
O (ms)	14 (1064 lines)	13.329(1066 lines)	13.139(1066 lines)	20 (625 lines)
P (ms)	0.02 (2 lines)	0.038(3 lines)	0.099(8 lines)	0.128 (4 lines)
Q (ms)	0.5 (38 lines)	0.475(38 lines)	0.394 (32 lines)	1.408 (44 lines)
R (ms)	13.468(1024 lines)	12.804(1024 lines)	12.622(1024 lines)	17.972 (556 lines)
S (ms)	0.012 (0 line)	0.012 (1 line)	0.024(2 lines)	0.672 (21 lines)
SYNC. H/V	+ / +	+ / +	- / -	- / +
POLARITY				
SEP . SYNC	Y	Y	Y	Y

MODE NO.	33	34
RESOLUTION	960X720	960X720
Dot clock(MHz)	57.58	72.42
F h	44.76kHz	56.4kHz
A (us)	22.34(1286 dots)	17.73(1284 dots)
B (us)	1.72(99 dots)	1.44(104 dots)
C (us)	2.58(148 dots)	2.21(160 dots)
D (us)	16.67(960 dots)	13.256(960 dots)
E (us)	0.856(49 dots)	0.780(56 dots)
F v	60Hz	75Hz
O (ms)	16.667(746 lines)	13.333(752 lines)
P (ms)	0.067(2.9 lines)	0.053(3 lines)
Q (ms)	0.495(22 lines)	0.5(28 lines)
R (ms)	16.081(720 lines)	12.766(720 lines)
S (ms)	0.0228(1 lines)	0.0184(1 lines)
SYNC. H/V	- / +	- / +
POLARITY		
SEP . SYNC	Y	Y

3.4 Horizontal scanning

Sync polarity : Positive or Negative
 Scanning frequency : 30 – 83 K Hz

3.5 Vertical scanning

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

3.6 Power input connection

Power input connection
 Power cord length : 1.8 M
 Power cord type : 3 leads power cord with protective earth plug.

3.7 Power management

The monitor must comply with the Microsoft On Now specification, with two power management states, as defined by the VESA DPMS document. The monitor must appropriately display the DPMS state

Mode	HSYNC	VSYNC	Video	Pwr-cons.	Indication	Rec. time
Power-On	On	On	active	< 43 W (w/o audio and USB loading), <55W (with audio and full USB loading)	Green LED	--
Off	Off	Off	blanked	< 1 W	Amber LED	< 3 s
DC Power Off			N/A	< 1 W	LED Off	

3.8 Display identification

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

3.9 Display identification

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. 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, 1280x 1024 non-interlaced mode (83K/75Hz), signal sources must have 75 ohm output impedance.
- (2) Luminance setting : controls to be set to 300 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 Brightness

>=300 nits (at panel color temperature, at center of the screen, set contrast and brightness at maximum)

4.3 Image size

Actual display size: 376.32x301.056mm

4.4 Brightness uniformity

Set contrast at 100% and turn the brightness to get average above 300 nits at centre of the screen. Apply the Fig 1, it should comply with the following formula:

$$\frac{B_{min}}{B_{max}} \times 100\% > 75\%$$

Where B_max =Maximum brightness
 B_min = Minimum brightness

4.5 Check Cross talk (S)

Apply Pattern 2. Set contrast and brightness at 100 %. Measure YA. Then output Pattern 3 and measure YB.the cross talk value:

$$\frac{ABS(YA - YB)}{YA} \times 100\% < 1.5 \%$$

4.6 White color adjustment

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

Apply full gray64 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 ± 0.010 Y = 0.297 ± 0.010
6500K/ sRGB CIE coordinates	X = 0.313 ± 0.010 Y = 0.329 ± 0.010
sRGB CIE coordinates	X = 0.313 ± 0.010 Y = 0.329 ± 0.010

5 Mechanical characteristics

- 5.1 Cosmetic - Philips ID
- 5.2 Mechanical data files - ProE files required
- 5.3 Location of Philips logo - Per Philips make-up sheet
- 5.4 Gap between Panel and front bezel < 0.8 mm
- 5.5 Location of Control icons - Per Philips make-up sheet
- Front side: - tbc
- Rear : - tbc

5.6 Color for resin/paint - Per Philips make-up sheet

5.7 Resins

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

5.8 If paint is used

- Rohs required
- WEEE require

5.9 Plastic mold tooling

- Tooling to be designed to minimize cosmetic defects induced by molding process (sink, blush, weld lines, gate marks, ejector marks, etc.).
- Painting to cover up cosmetic defects due to molding is strongly discouraged.

5.10 Plastics flammability

- All Plastics to be Flame Retardant UL 94-V0 or Better (if monitor weighs less than 18kg; UL94-V0 is OK).
- All major plastic parts (bezel, back cover, base) need to be molded from same resin.

5.11 Texture/Glossing of housing

- The texture area and texture no should follow Philips make-up sheet.
- The exterior surfaces shall have a uniform texture.
- Philips must approve the mold texturing.
- Detail document for texture refer to UAN-D249.
- ≤ 20 gloss units

5.12 Tilt and swivel base

Tilt angle	: -5 ° max forward, +25 ° min backward
Swivel angle	: +/- 45 °
High adjustment	: 130 mm
Portrait Display	: 90 ° CCW

5.13 Label

- Regulatory label / Carton label should follow Philips requirement.
- Detail document refer to Philips Engineering Reference Book.

5.14 Product dimension / Weight

- Unit dimension (incl. pedestal) : ?(W) * ? (H) * ? (D) mm
- Packed unit dimension (carton) : ? (W) * ? (H) * ? (D) mm (for all other regions)
? (W) * ? (H) * ? (D) mm (for China/ India)
- Net weight : ? Kg (Including I/F cable 240 g)
- Gross weight : ? Kg (for all other regions)
- : ? Kg (for China, India)

5.15 Transportation

Transportation standards refer to TYE-M0002.

5.15.1 Transportation packages

Packaging and wrapping shall be sufficient to protect the product against damage or loss during shipment from the supplier to the destination specified in the purchase order. All packaging materials are subject to test and evaluation per TYE-M0002. The cushion material shall be constructed using EPS material.

5.15.2 Transportation Test_

The overall test refer to TYE-M0002.

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

A. Transportation test specification for all regions except China/India

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

B. Transportation test specification for China/India

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

5.16 Pallet / Container loading

Transportation standards refer to TYE-M0002.

Transportation standards refer to TYE-M0002.

- | | |
|---|-----|
| • Air shipment - | tbc |
| • Sea container 20'(pallet/slip sheet) - | tbc |
| • Sea container 40'(pallet/slip sheet) - | tbc |
| • Sea container 40' High Cube (pallet/slip sheet) - | tbc |
| • Truck shipment- | tbc |

A. Air shipment**B. Container loading for other regions****C. Truck loading for other regions****6. Environmental characteristics**

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

6.1 Susceptibility of display to external environment

Operating

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

Storage

- Temperature : -20 to 60 degree C
- Humidity : 95% max (< 40°C)
- Altitude : 0-12192m
- Air pressure : 300-1100 mBAR

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

6.2 Transportation tests

Refer to 5.15.2

6.3 Display disturbances from external environment

According to IEC 801-2 for ESD disturbances

6.4 Display disturbances to external environment**7. Reliability****7.1 Mean Time Between Failures**

System MTBF (Including the LCD panel and CCFL) : 50,000 hrs

8. 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. Philips' Flat Panel Monitors Pixel Defect Policy

Philips' Flat Panel Monitors Pixel Defect Policy, 190P7 is PP panel product.

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	190P7		
1 lit sub-pixel	0		
2 adjacent lit sub-pixels	0		
3 adjacent lit sub-pixels (one white pixel)	0		
Distance between two bright dot defects*	25mm or more		
Bright dot defects within 20 mm circle	0		
Total bright dot defects of all type	0		

BLACK DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	190P7		
1 dark sub-pixel	0		
2 adjacent dark sub-pixels	0		
3 adjacent dark sub-pixels (one white pixel)	0		
Distance between two black dot defects*	15mm or more		
Black dot defects within 20 mm circle*	0		
Total black dot defects of all type	0		

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	190P7		
Total bright or black dot defects of all type	0		

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

10. Artworks

Fig 1: Brightness Uniformity

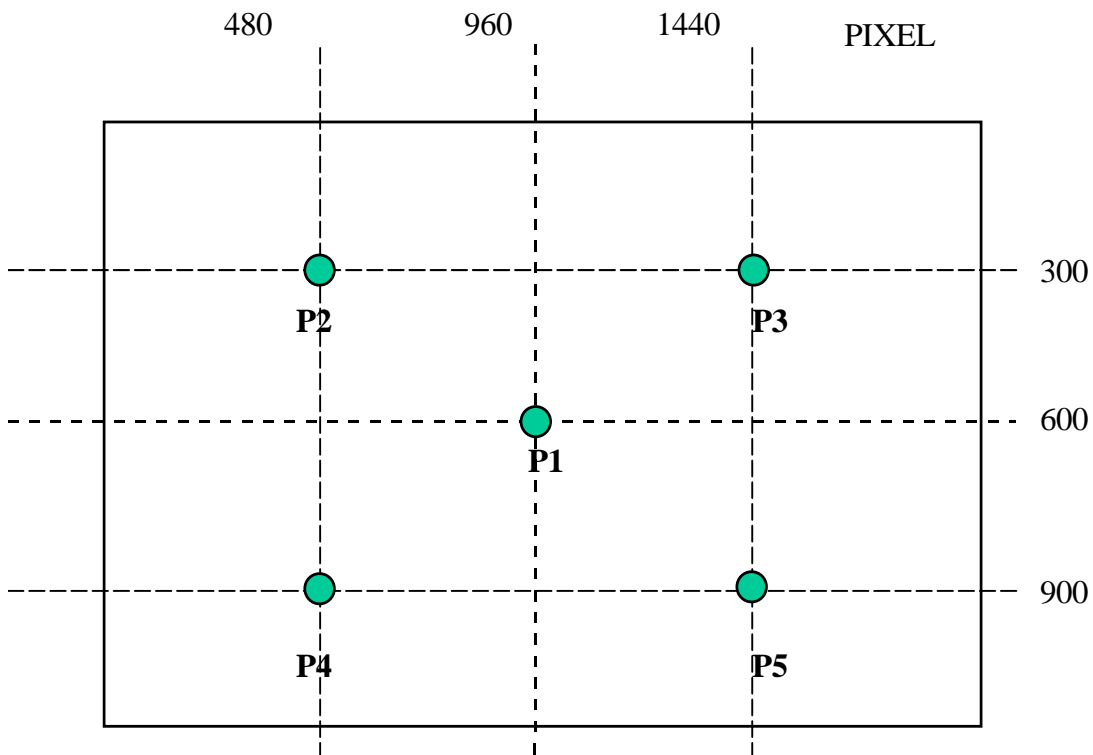


Fig 2: Cross talk pattern
Gray level 46 (64 Gray level)

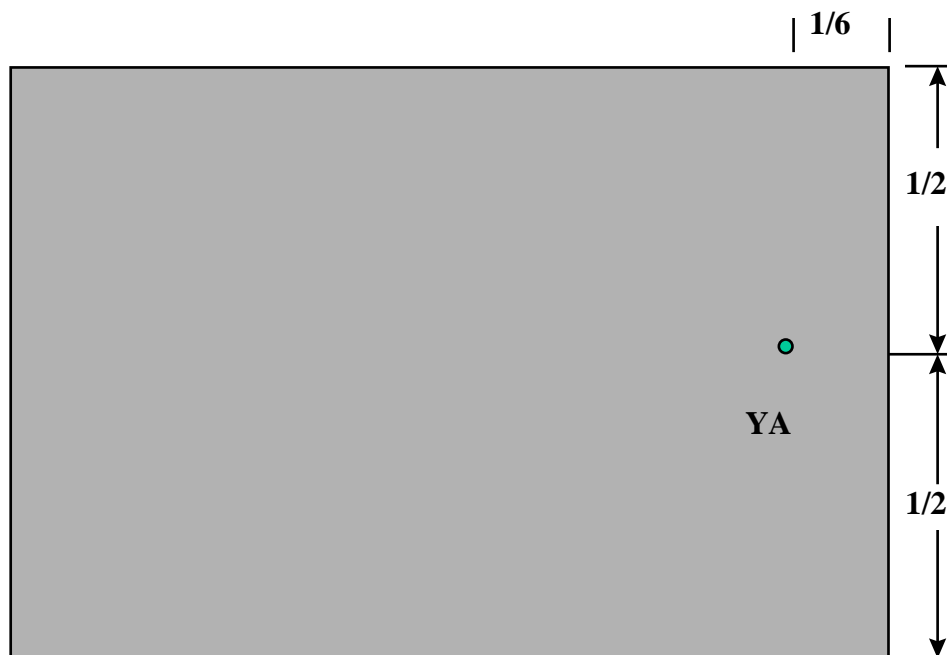
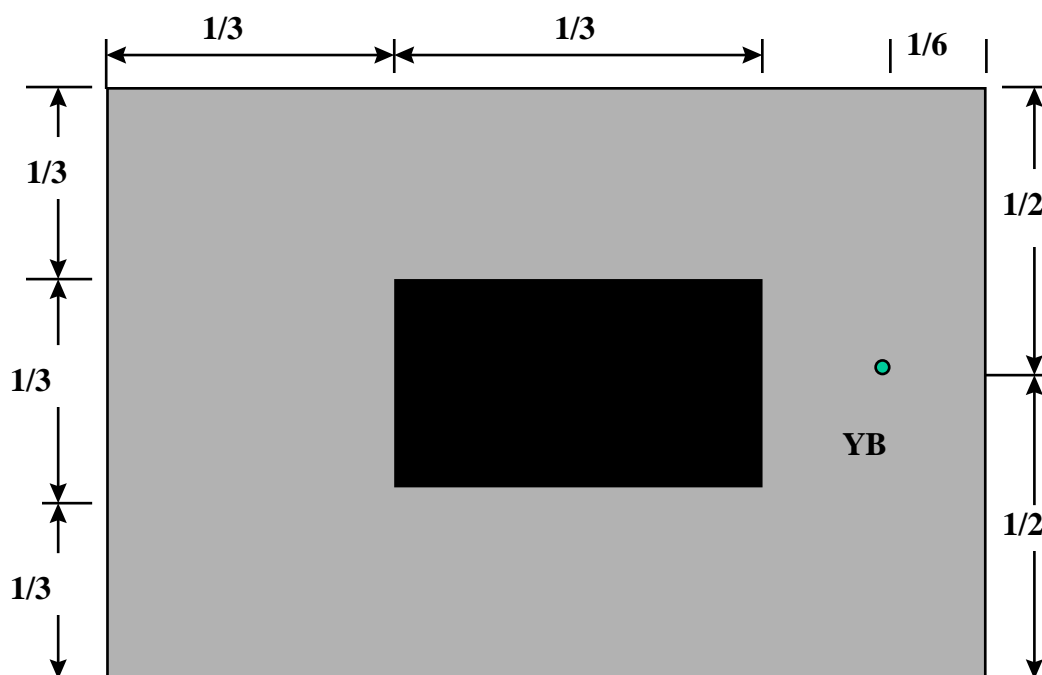
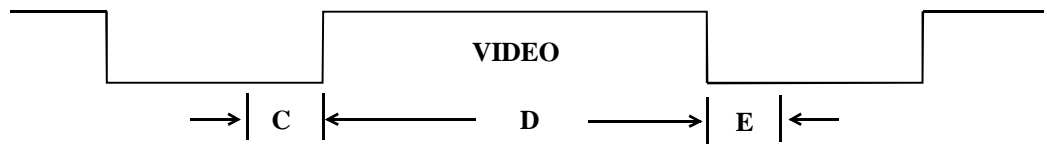


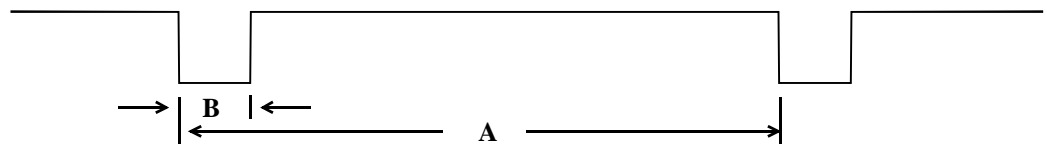
Fig 3: Cross talk Pattern
Center at Gray level 0 (Black)



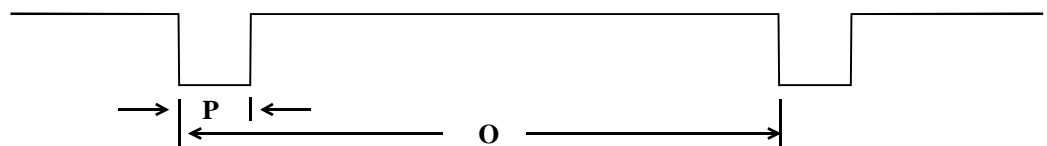
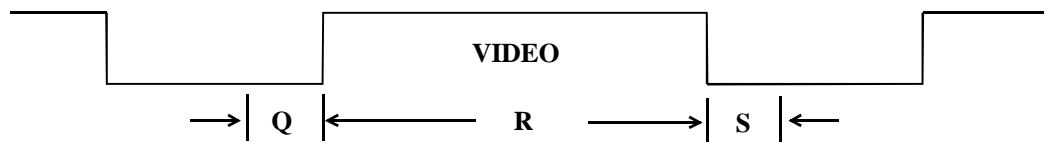
SEPARATE SYNC.



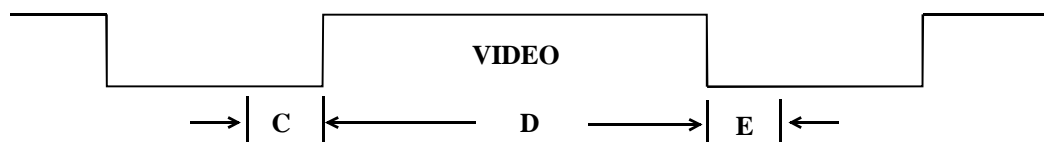
HORIZONTAL



VERTICAL



COMPOSITE SYNC.



HORIZONTAL

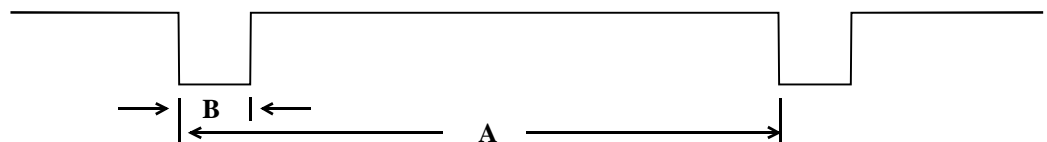


FIG-4 TIMING CHART -1