LCD Colour Monitor

Chassis: HUDSON 7

Service
Service
Service

170C7FS/00
170C7FS/27
170C7FS/69
170C7FS/75
170C7FS/78
170C7FS/93

190C7FS/00
190C7FS/27
190C7FS/69
190C7FS/75
190C7FS/78
190C7FS/93
190C7FS/96

ENERGY STAR

Service Manual

Horizontal frequencies
30 - 82 kHz

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SAFETY NOTICE

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

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

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

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PHILIPS

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Important Safety Notice

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

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

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

WARNING

Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematics or exploded views.

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

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

* Broken Line

FOR PRODUCTS CONTAINING LASER :

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

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

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

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

Take care during handling the LCD module with backlight unit

- Must mount the moduleusing mounting holes arranged infour corners.
- Do not press onthe panel, edge of theframe strongly or electric shock as this will result in damage to the screen.
- Do not scratch orpress on the panel withany sharp objects, such as pencil or pen asthis may result in damage to the panel.
- Protect the module fromthe ESD as it maydamage the electronic circuit (C-MOS).
- Make certain that treatment person s body are grounded through wrist band.
- Do not leave themodule in high temperature andin areas of high humidity for a long time.
- Avoid contact with water as it may ashort circuit within the module.
- If the surface ofpanel become dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

Technical Data - 170C7

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LCD

Type NR.	: LM170E03 TLB1
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 358.5(w)*296.5(h)*17(d) mm
Pixel Pitch.	: 0.264 mm x 0.264 mm
Color pixel arrangement.	: RGB stripes arrangement
Support Color.	: 16.2M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 337.92 x 270.336mm (17" diagonal)
Viewing Angle (CR>=10).	: Right:80 , Left:80 , UP:75 , down:85
Contrast ratio.	: 800 :1(typic
White luminance.	: 300 nit

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

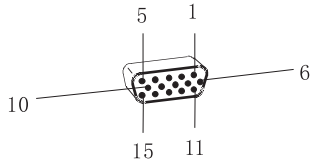
Type NR.	: M170E5-L0C
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 358.5(w)*296.5(h)*17.0(d) mm
Pixel Pitch.	: 0.264 mm x 0.264 mm
Color pixel arrangement.	: RGB vertical stripes
Support Color.	: 16.7M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 337.92 x 270.34 mm (17" diagonal)
Viewing Angle (CR>=10).	: Right :80; Left :80 ; Up : 80 ; Down: 80
White luminance.	: 300 nit

Video dot rate.	: < 140 MHz
Power input.	: 90-264 V AC, 50/60 ± 2 Hz
Power consumption.	: < 36 W maximum Operating < 31W (typical), Standby < 1W. DC power switch off < 1W.
Power cord length	: 1.8M
Power cord type	: 3 lead with earth plug
Power indicator	: LED (ON: green, Standby: amber)
Auto power saving	: EPA, Nutek, VESA, DPMS,
Dimensions.	: 403 x 392 x 171 mm (incl. Pedestal)
Weight.	: 4.6 kg
Scanning frequencies	
H-Frequency.	: 30K - 82 KHz
V-Frequency.	: 56 - 76 Hz

Power Management Definition

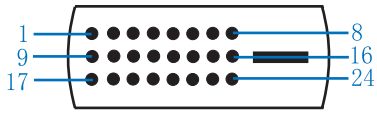
STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<36W	Green
Stand-by	Off	On	Blanked	<1W	Amber LCD
Suspend	On	Off	Blanked	<1W	Amber LCD
Off	Off	Off	Blanked	<1W	Amber LCD
DC Power off			N / A	<1W	LCD Off

Pin Assignment



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

Input DVI-D connector pin



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

Environmental conditions

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

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

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

Technical Data - 190C7

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LCD

Type NR.	: LM190E08 TLB1
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 396.0(w)*324.0(h)*16.5(d) mm
Pixel Pitch.	: 0.294 mm x 0.294 mm
Color pixel arrangement.	: RGB stripes arrangement
Support Color.	: 16.7M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 376.32 x 301.056mm (19" diagonal)
Viewing Angle (CR>=10).	: Right:80 , Left:80 , UP:75 , down:85
Contrast ratio.	: 800 :1(typic
White luminance.	: 300 nit

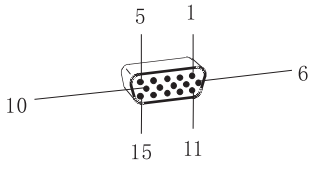
Type NR.	: CMO M190E5 L0E
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 396.0(w)*324.0(h)*16.5(d) (Typ) mm
Pixel Pitch.	: 0.294 mm x 0.294 mm
Color pixel arrangement.	: RGB vertical stripes
Support Color.	: 16.2M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 376.32x301.056mm (19" diagonal)
Viewing Angle (CR>=10).	: Right:85 , Left:85 , UP:80 , down:80
Contrast ratio.	: 700 :1(typic)
White luminance.	: 300 nits

Dimension (WxHxD) *	: 442 x 420 x 201 mm (incl. Pedestal)
Weight	: 5.3 kg
Tilt	: -5 ~ 25°C
Main Voltage	: AC 90 - 135 Vrms and 170 - 264 Vrms, 50/60±2 Hz Power consumption: 40W Max. Operating < 36W (typical), Standby < 2W. DC power switch off < 1W.
Power cord length	: 1.8M Power cord type: 3 lead with earth plug Power indicator: LED (ON: green, Standby: amber)
Auto power saving	: EPA, Nutek, VESA, DPMS,
Scanning frequencies	
Horizontal scan	: 30 - 82 KHz
Vertical scan	: 56 - 76 Hz

Power Management Definition

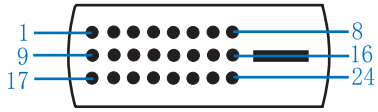
STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<40W	Green
Stand-by	Off	On	Blanked	<1W	Amber LCD
Suspend	On	Off	Blanked	<1W	Amber LCD
Off	Off	Off	Blanked	<1W	Amber LCD
DC Power off			N / A	<1W	LCD Off

Pin Assignment



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

Input DVI-D connector pin



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

Environmental conditions

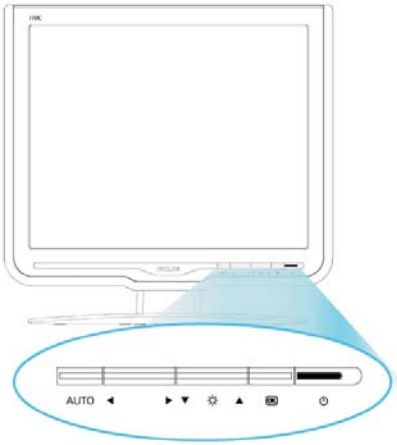
Operating
- Temperature : 0 to 40 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

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

Note: recommended at 5 to 35°C, humidity less than 60%.

Installation

Front View



UP and DOWN buttons are used when adjusting the OSD of your monitor.

LEFT and RIGHT buttons, like the UP and DOWN buttons, are also used in adjusting the OSD of your monitor.

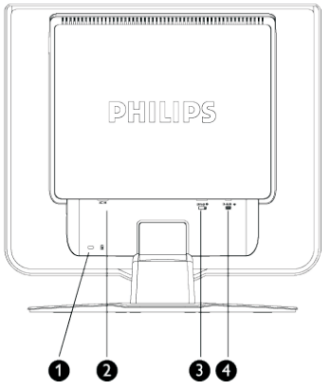
BRIGHTNESS hotkey. When the UP and DOWN arrow buttons are pressed, the adjustment controls for the BRIGHTNESS will show up.

OK button which when pressed will take you to the OSD controls.

POWER button switches your monitor on.

AUTO — Automatically adjust the horizontal position, vertical position, phase and clock setting.

Rear View



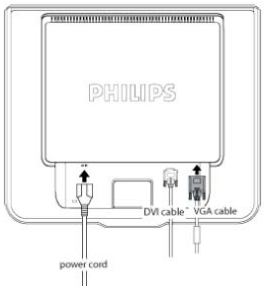
1 Kensington anti-thief lock
2 AC power input
3 DVI-I input
4 VGA input

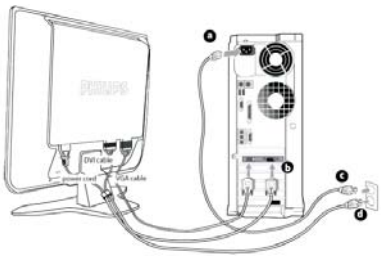
Accessory Pack

Item	Description
	Power cord
	VGA signal cable
	EDFU pack

Connecting to Your PC

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





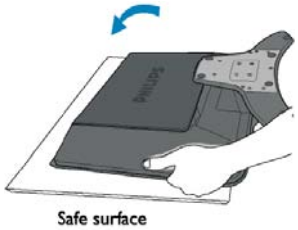
Connect the cables to the back of your computer by following these steps:

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

The Base

Unfold and Fold the Base

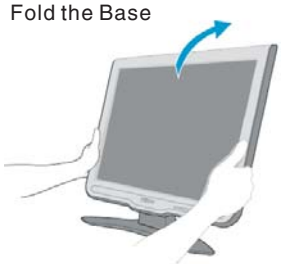
Unfold the Base



1) Put monitor face down on the safe surface.

2) Pull up the base.

Fold the Base



1) Push down the head of monitor.

On Screen Display

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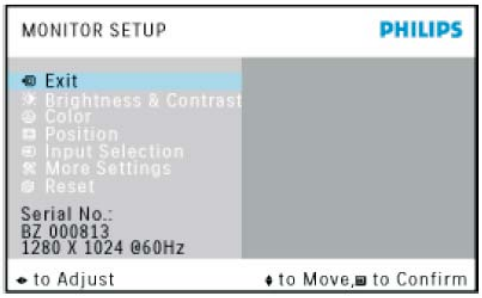
Description of the On Screen Display

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



Basic and simple instruction on the control keys.

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

The OSD Tree

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

Only available for Europe Model

Main Menu — Sub Menu

- Exit
- Brightness & Contrast
  - Brightness
  - Contrast
  - Back
- Color
  - Original Color
  - 9300K
  - 6500K
  - sRGB
  - User Define
    - Red
    - Green
    - Blue
  - Back
- Position
  - Horizontal
  - Vertical
  - Back
- Input Selection
  - Analog (D-Sub)
  - Digital (DVI-D)
  - Back
- More Setting
  - Language
    - English
    - Español
    - Français
    - Deutsch
    - Italiano
    - Русский
    - Back
  - Phase/Clock
    - Phase
    - Clock
    - Back
  - OSD Settings
    - Horizontal
    - Vertical
    - Back
  - Back
- Reset
  - No
  - Yes

On Screen Display

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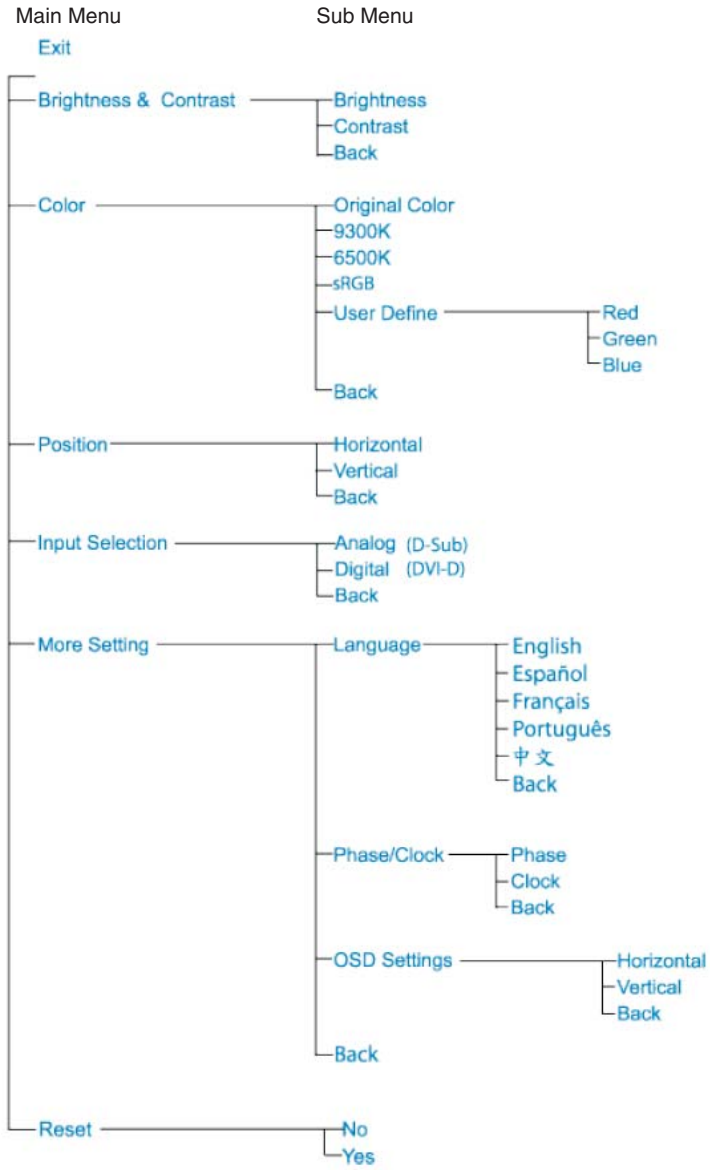
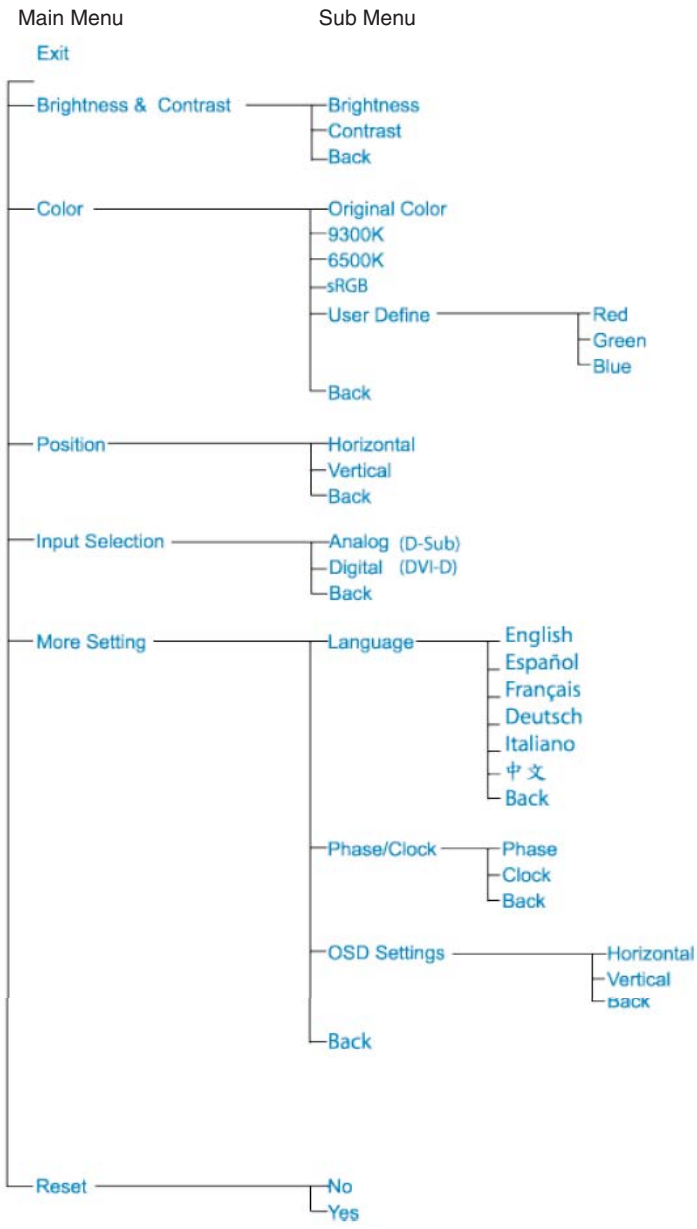
Only available for Nafta Model



Only available for Asia Pacific Model



Failure Mode Of Panel

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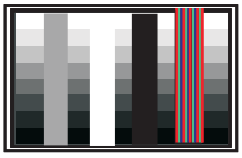
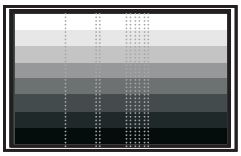
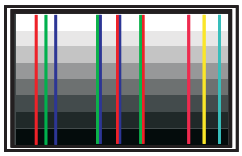
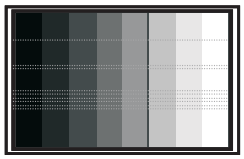
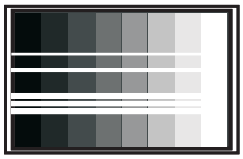
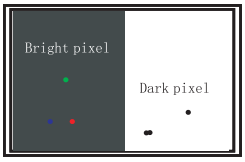
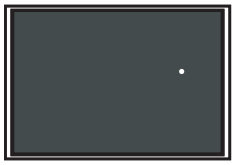
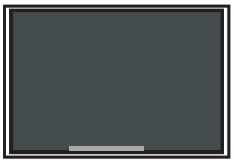
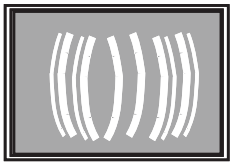
Quick reference for failure mode of LCD panel

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

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

Philips Pixel Defect Policy

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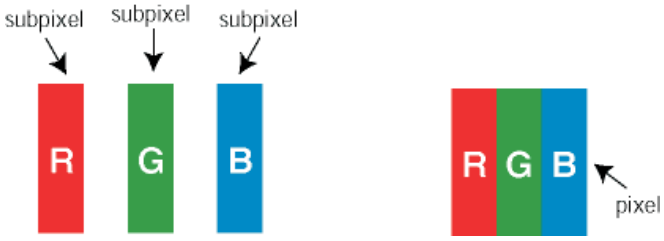
Philips' Flat Panel Monitors Pixel Defect Policy

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.

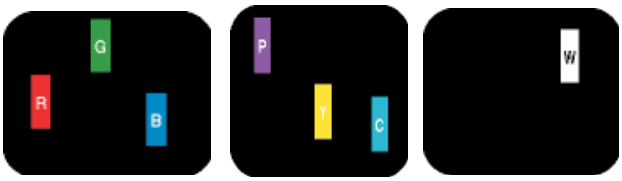


Pixels and Sub pixels

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 appear as pixels or sub pixels that are always lit or 'on'. These are the types of bright dot defects:

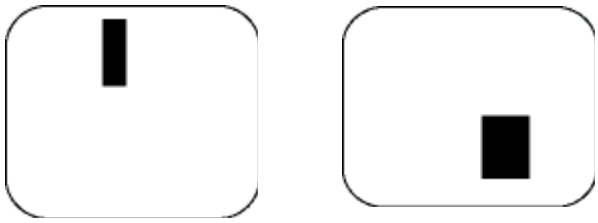


One lit red, green or blue sub pixel

Two adjacent lit sub pixels:
- Red + Blue = Purple
- Red + Green = Yellow
- Green + Blue = Cyan (Light Blue)

Three adjacent lit sub pixels (one white pixel)

Black Dot Defects Black dot defects appear as pixels or sub pixels that are always dark or 'off'. 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	170C7	190C7
1 lit subpixel	3 or fewer	3 or fewer
2 adjacent lit subpixels	1 or fewer	1 or fewer
3 adjacent lit subpixels (one white pixel)	0	0
Distance between two bright dot defects*	15 mm or more	25 mm or more
Total bright dot defects of all types	3 or fewer	3 or fewer

BLACK DOT DEFECTS	ACCEPTABLE LEVEL	
MODEL	170C7	190C7
1 dark subpixel	4 or fewer	5 or fewer
2 adjacent dark subpixels	2 or fewer	2 or fewer
3 adjacent dark subpixels	0	0
Distance between two black dot defects*	15 mm or more	15 mm or more
Total black dot defects of all types	4 or fewer	5 or fewer

BLACK DOT DEFECTS	ACCEPTABLE LEVEL	
MODEL	170C7	190C7
Total bright or black dot defects of all types	5 or fewer	5 or fewer

Note:

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

All Philips monitors are ISO13406-2 Compliant

Troubleshooting

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Common Problems	
Having this problem	Check these items
No Picture (Power LED not lit)	1.Make sure the power cord is plugged into the power outlet and into the back of the monitor. 2.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)	1.Make sure the computer is turned on. 2. Make sure the signal cable is properly connected to your computer. 3.Check to see if the monitor cable has bent pins. 4.The Energy Saving feature may be activated
Screen says ATTENTION NO VIDEO INPUT	1. Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). 2.Check to see if the monitor cable has bent pins. 3. Make sure the computer is turned on.
AUTO button not working properly	1.The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. 2. It may not work properly if using nonstandard PC or video card.
Imaging Problems	
Display position is incorrect	1.Press the Auto button. 2. Adjust the image position using the Horizontal Position and/or Vertical Position in OSD Main Controls.
Image vibrates on the screen	Check that the signal cable is properly connected to the graphics board or PC.
Vertical flicker appears 	1. Press the Auto button. 2. Eliminate the vertical bars using the More Settings of Phase/ Clock in OSD Main Controls.
Horizontal flicker appears  	1. Press the Auto button. 2. Eliminate the vertical bars using the More Settings of Phase/ Clock in OSD Main Controls.
The screen is too bright or too dark	Adjust the contrast and brightness on OSD Main Controls. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer).
An after-image appears	If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an afterimage. This usually disappears after a few hours.
An after-image remains after the power has been turned off.	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 peroid of time.
Green, red, blue, dark, and white dots Remains	The remaining dots are normal characteristic of the liquid crystal used in today's technology.

Warning Message

Warning message table

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

Lock/Unlock,Aging,Factory Mode

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Front Control

To Lock/Unlock OSD FUNCTION(User Mode)

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

ATTENTION SIGNAL
OSD MAIN CONTROLS LOCKED

Unlock OSD function

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

ATTENTION SIGNAL
OSD MAIN CONTROLS UNLOCKED

Access Aging Mode

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

After 15 seconds, bring up:

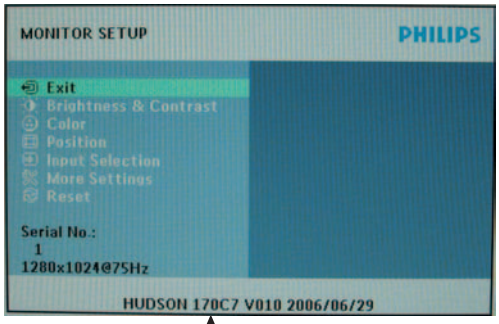
After 30 seconds, bring up:

After 15 seconds, bring up:

---
repeatly
Connect Signal cable again=> go back to normal display

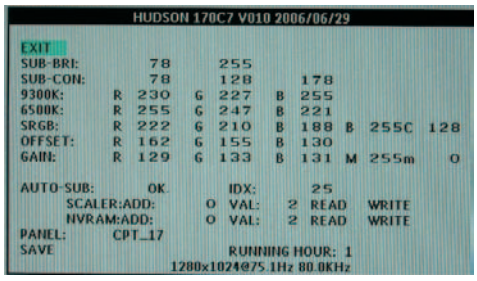
Access Factory Mode

1). Turn off monitor.
2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button untill comes out "Windows screen"] => then release all buttons
3).Press "OK" button, wait until the OSD menu with Characters "HUDSON 170C7 V010 2006/06/29" (below OSD menu) come on the Screen of the monitor.



Factory Mode indicator

Factory Menu
Cursor can move on gray color area
Hot key function: by pressing " UP " and " DOWN " key Simultaneously at User Mode (or Factory Mode)
(PS: The Offset R G B function can be used on reduce or eliminate snowy noise on the background when the resolution of video signal is 1280*1024 vertical 60Hz. Slightly increase or decrease the value until snowy noise completely disappear.



SUB-BRI	: Brightness value range(Min Max)
SUB-CON	: Contrast value range(Min Mid Max)
SRGB-B	: Brightness of sRGB
SRGB-C	: Contrast of sRGB
Gain-m	: Minimum value of User Gain
Gain-M	: Maximum value of User Gain
AUTO-SUB	: To do Auto color function when push Menu key in white pattern
IDX	: Limit current of inverter
SCALER	: Read/Write scaler register
NVRAM	: Read/Write eeprom address
Panel	: HS, LG, AU, QDI, DEFAULT?.
EXIT	: Exit Factory Menu
SAVE	: Save the setup values of Factory Menu

Front View

Fig.1

Back View

Fig.2

Step1. Remove the base
-Use two thin " | " screw drivers to drive upon the cover simultaneously as shown in Fig.3
-Remove the screws as shown in Fig.4, then remove the base

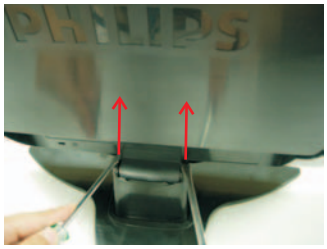


Fig.3

Fig.4

Step2. Remove the Front Bezel
-Remove the one screw as shown in Fig.5
-Use the thin " | " screw driver to open the clicks as shown in Fig.6-8

Fig.5

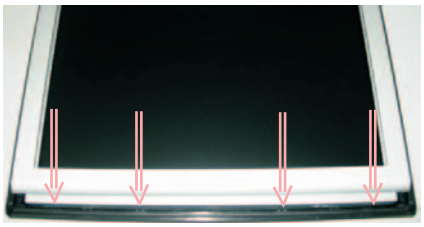


Fig.6

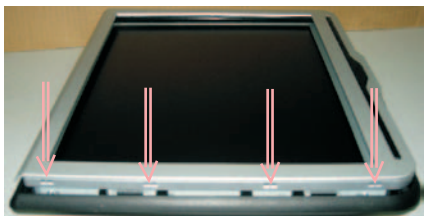


Fig.7

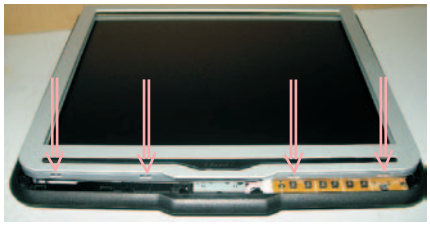


Fig.8

Step3.Remove the Back cover
- Remove the two screws as shown in Fig.9 ,then remove the Control board
-Use the thin " | " type screw driver to open the clicks as shown in Fig.10

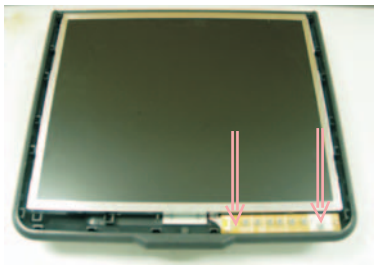


Fig.9

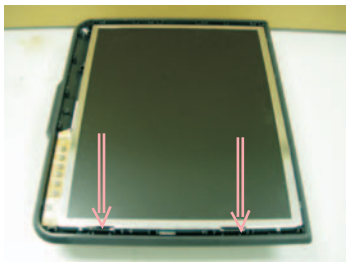


Fig.10

Step4. Remove the Power and Scaler shielding.
- Remove the eight screws as shown in Fig.11
- Remove the Power and Scaler shielding as shown in Fig.12

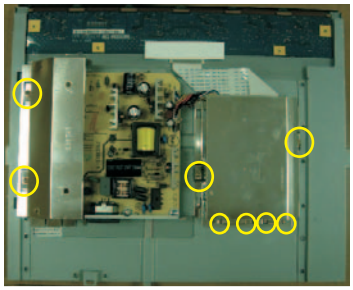


Fig.11

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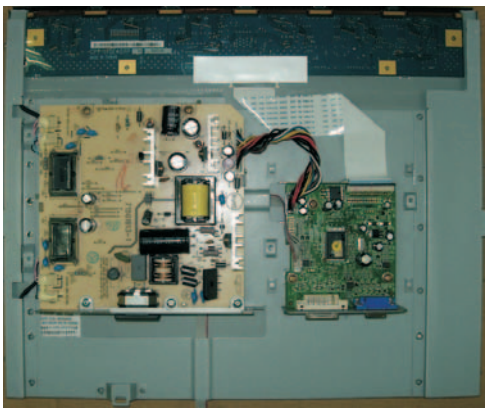


Fig.12

Step 5. Remove the sclar and power board.
- Remove the eight screws as shown in Fig.13
- Disconnect the three cables as shown in Fig.13
- Remove the scaler and power board as shown in Fig.14

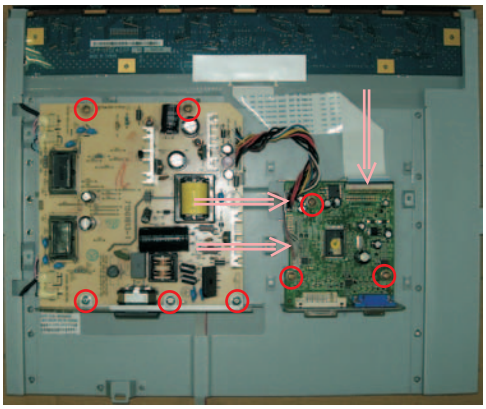


Fig.13

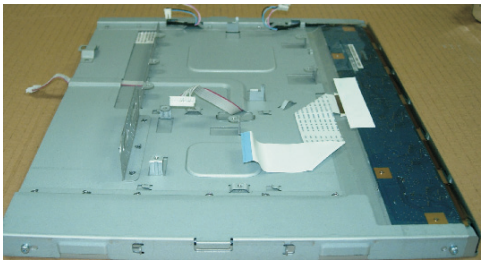


Fig.14

Step6. Remove the Metal Frame.
- Remove the two screws as shown in Fig.15
- Remove the two screws as shown in Fig.16
- Disconnect the one cable as shown in Fig.16

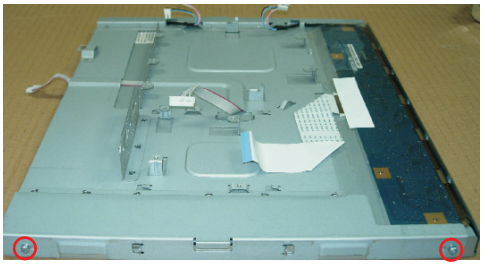


Fig.15

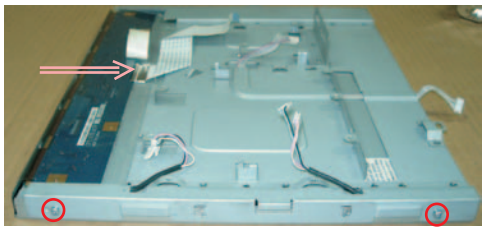


Fig.16

Fig.17

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

Color Adjustment

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

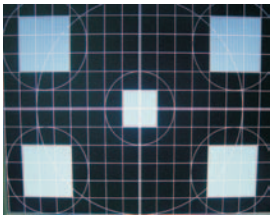


Fig. 1

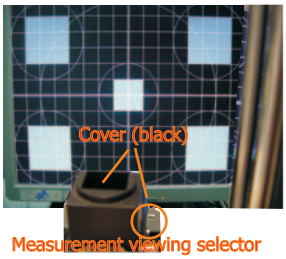
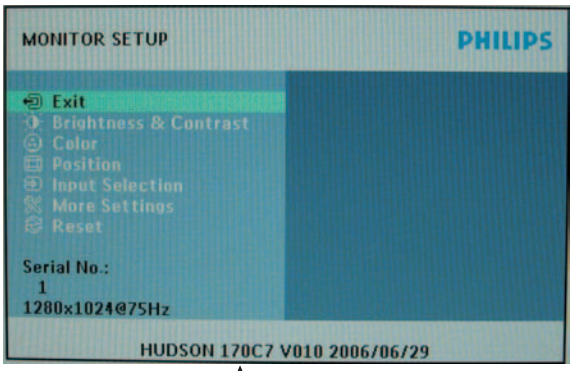


Fig. 2

4. Access Factory Mode

1). Turn off monitor.
2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button untill comes out "Windows screen"] => then release all buttons
3).Press "OK" button, wait until the OSD menu with Characters" HUDSON 170C7 V010 2006/06/29" (below OSD menu) come on the Screen of the monitor. as shown in Fig3.



Factory Mode indicator

Fig. 3

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

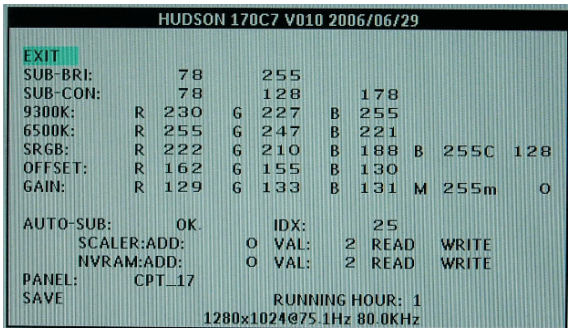


Fig. 4

Fig.5

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

6. Display Adjustment

6.1 Access to factory mode (RS232) in auto-alignment system. The communication protocol switches to RS232.

6.2 Auto color adjustment (B)
Apply a 640*480/60Hz signal with 16 level grey test pattern, set brightness control at 100%, and contrast control at 50%. Adjust the R.G. B. offset, and gain to calibrate the color smoothly and 64-grey level distinguishable.

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

	9300°K	6500°K
x (center)	0.283 ± 0.020	0.313 ± 0.020
y (center)	0.297 ± 0.020	0.329 ± 0.020

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

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

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

Smart Manage

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Introduction

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

SmartManage Features and Benefits

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

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

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

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

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

Philips SmartControl

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

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

How to download "SmartControl Installation " file:

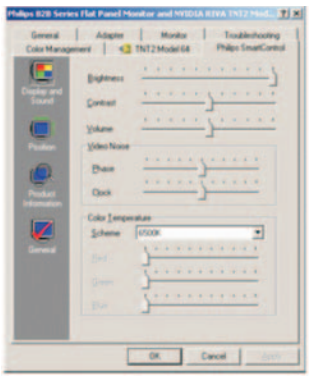
1. Visit http:// www.philips.com
2. Select "Your Country"
3. Click on "Support Center"
4. Click into "Monitors and PC Products"
5. Enter your model number
6. Enter "Software" page
7. Select "SmartControl Installation", and you can download SmartControl and its driver for installation.

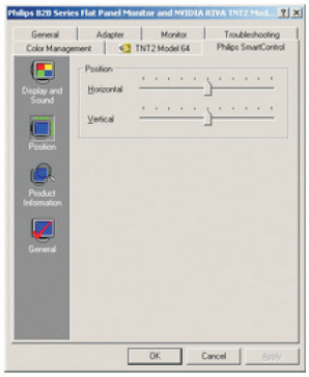
Please follow the guidance in the SmartControl installation program.

3. Accessing SmartControl
   1. Right click on the desktop of your PC, and select Properties from the shortcut menu pops up.
   2. Click on Settings tab, and click on Advanced button.
   3. Click Philips SmartControl tab.
4. SmartControl Options
   1. Display and Sound
      By moving the sliding bar toward left or right, users will be able to adjust brightness, contrast, audio volume (if applicable), video noise (not applicable when using DVI-D input), and color temperatures.

2. Position

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





3. Product Information

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

4. General

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

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

General

DDC Data Re-programming
In case the DDC data memory IC or main EEPROM which storage all factory settings were replaced due to a defect, the serial numbers have to be re-programmed "Analog DDC IC, Digital DDC IC & EEPROM".
It is advised to re-soldered DDC IC and main EEPROM from the old board onto the new board if circuit board have been replaced, in this case the DDC data does not need to be re-programmed.

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

System and equipment requirements

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

Fig. 1

A. Cody the "UserPort.sys" to C:\WINNT\system32\drivers(win2000)

C:\WINDOWS\system32\drivers(winXP)

B. Running " io.exe" everytime, Before you start to programming edid data .

3. EDID46.EXE program

4. A/D Alignment kits (12NC: 3138 106 10396):
   inclusion : a. Alignment box x1 (Fig. 2)

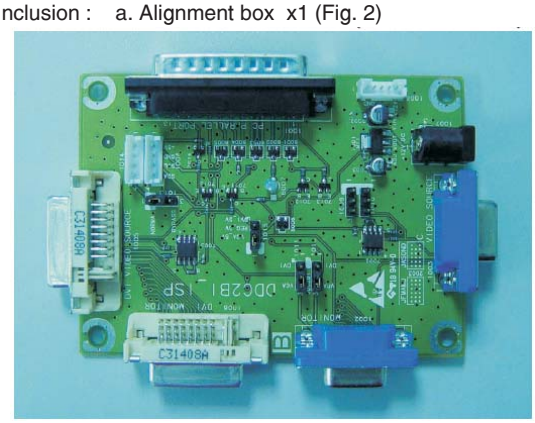


Fig. 2

b. Printer cable x1
c. (D-Sub) to (D-Sub) cable x1
D. (D-Sub) to (DVI) cable x1

Note: The alignment box has already build-in a batteries socket for using batteries (8~12V) as power source. Pull out the socket by remove four screws at the rear of box. Please do not forget that remove batteries after programming. The energy of batteries can only drive circuits for a short period of time.

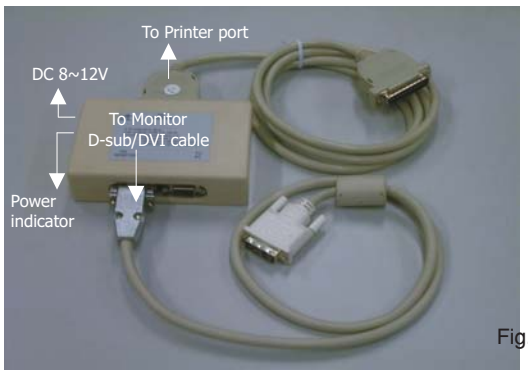
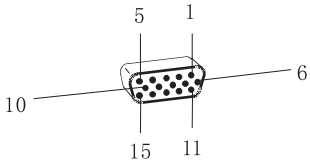


Fig. 3

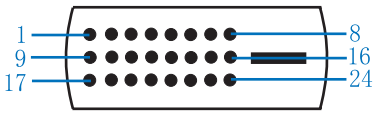
Pin assignment

A. 15-pin D-Sub Connector



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

B. Input DVI -D Connector pin



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

DDC Instructions

Go to cover page

Configuration and procedure

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

Initialize alignment box

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

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

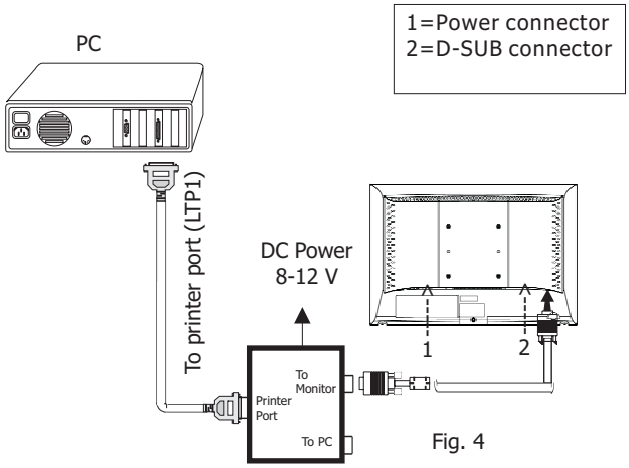


Fig. 4

Step 3: Installation of EDID46.EXE

Method 1: Start on DDC program

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

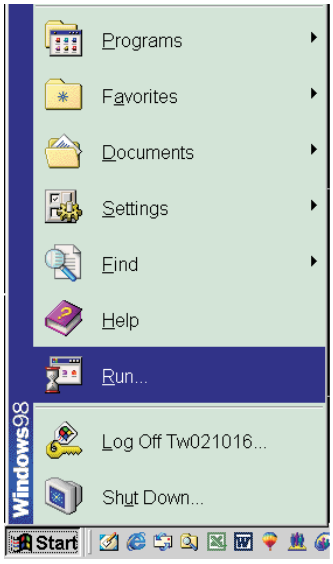


Fig. 5

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

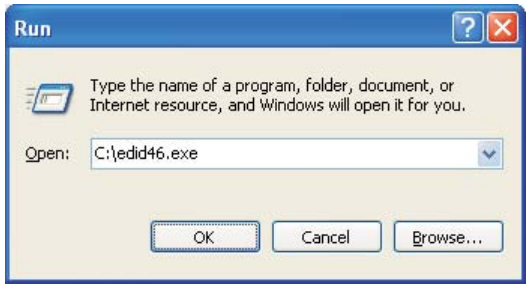


Fig. 6

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

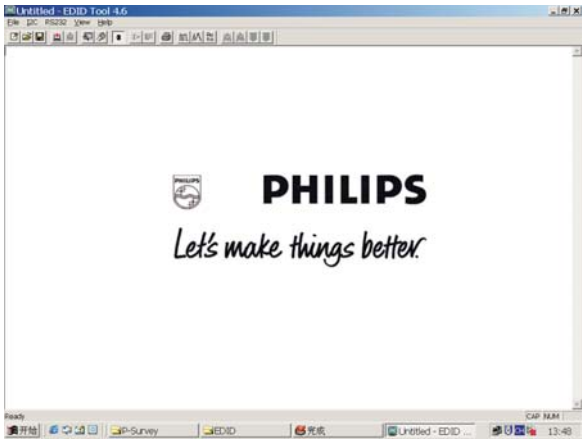


Fig. 7

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

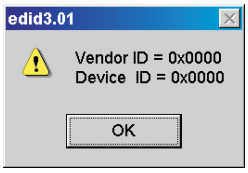


Fig. 8

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

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

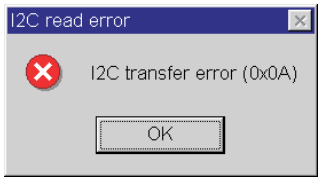


Fig. 9

Re-programming Analog DDC IC

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

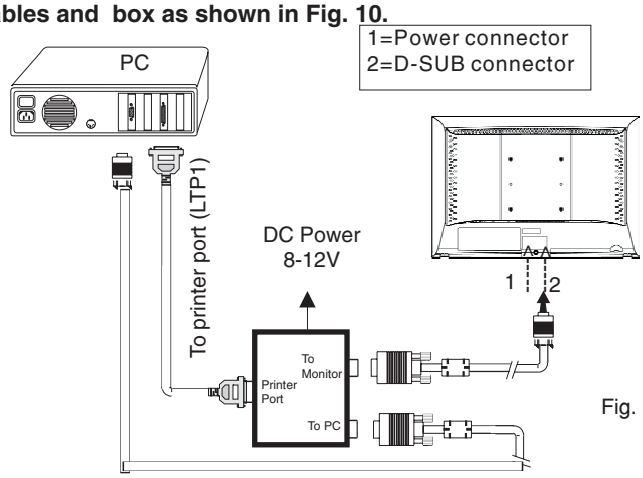


Fig. 10

Step 2: Read DDC data from monitor

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

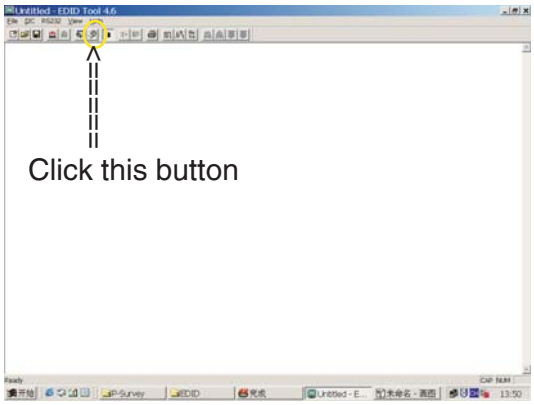


Fig. 11

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

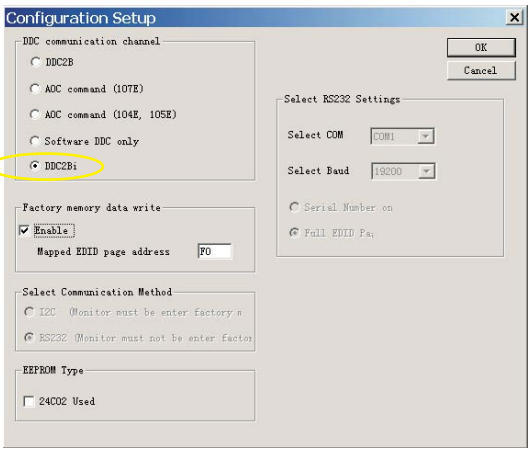


Fig. 12

3. Click OK button to confirm your selection.

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

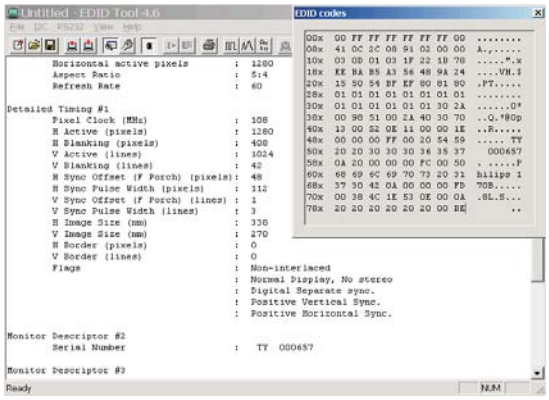


Fig. 13

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

Click (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 14 .
EDID46 DDC application provides the function selection and

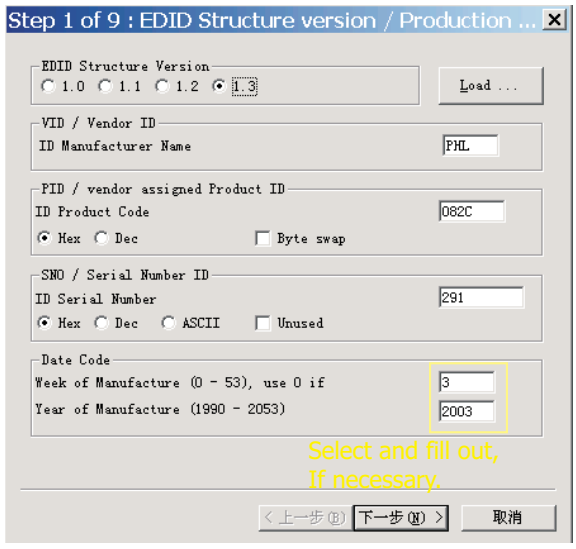


Fig. 14

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

1. Click Next , bring up Fig. 15.

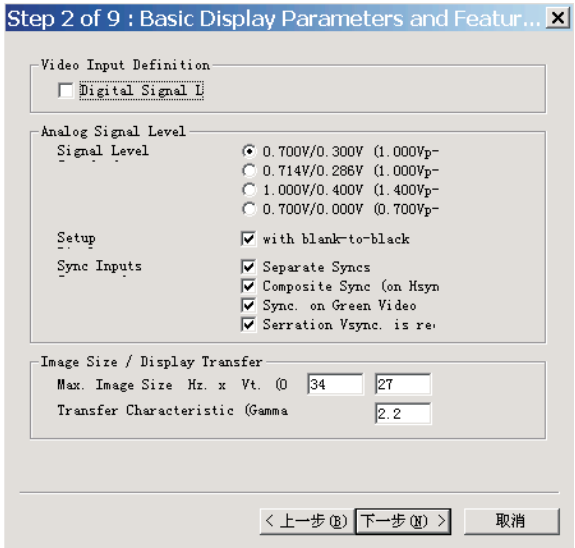


Fig. 15

2. Click Next , bring up Fig.16.

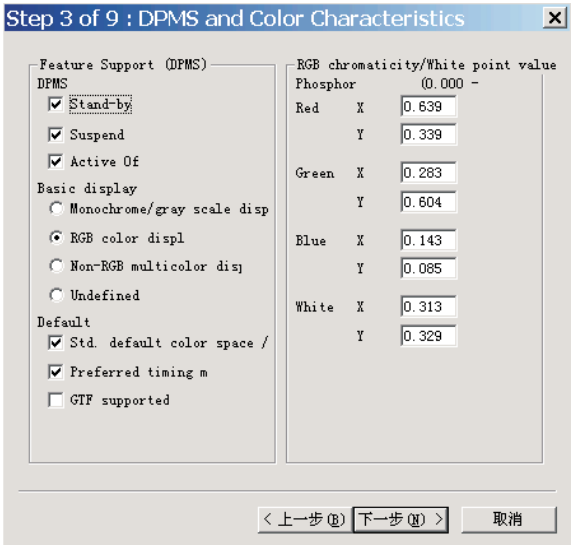


Fig. 16

3. Click Next , bring up Fig.17.

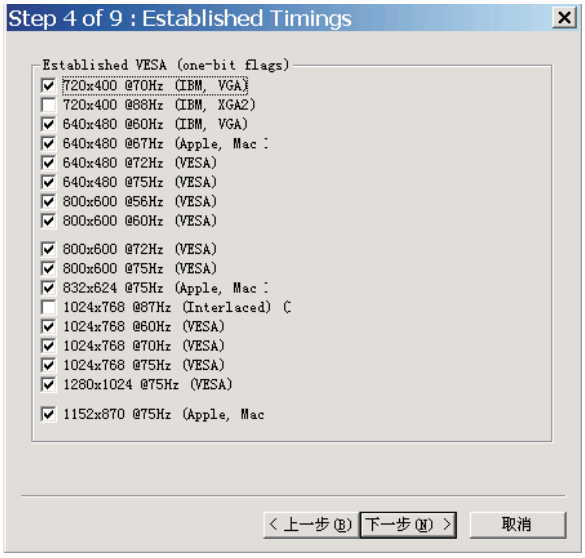


Fig. 17

4. Click Next , bring up Fig.18.

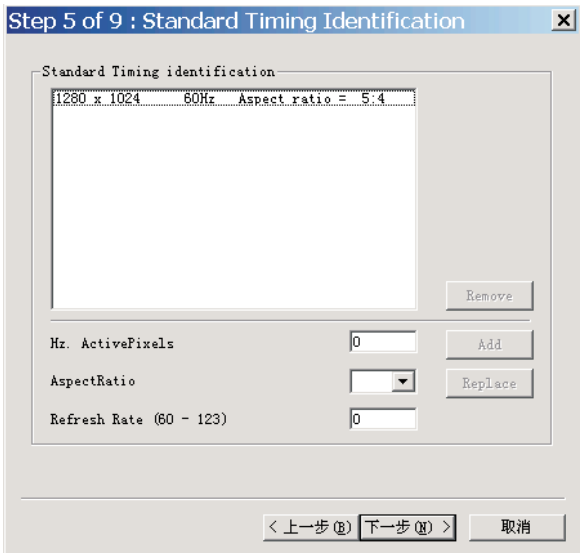


Fig. 18

5. Click Next , bring up Fig.19.

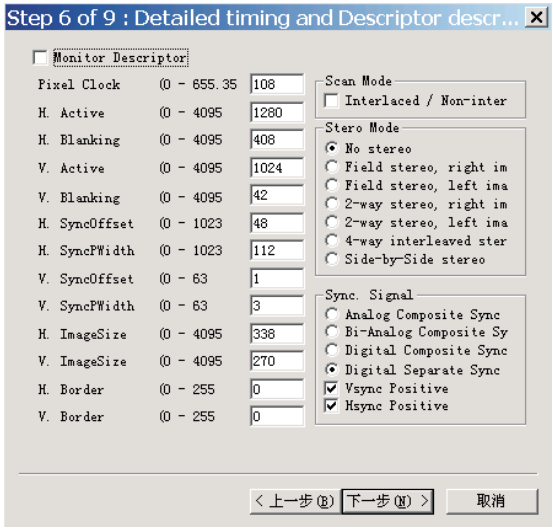


Fig. 19

6. Click Next , bring up Fig. 20.

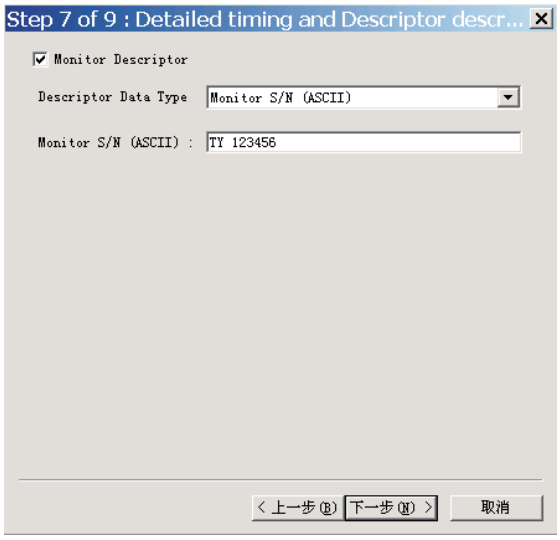


Fig. 20

7. Click Next , bring up Fig. 21.

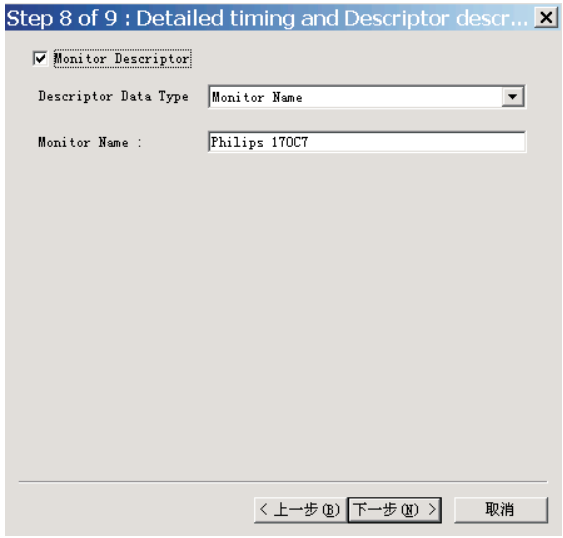


Fig. 21

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

Step 5: Write DDC data

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

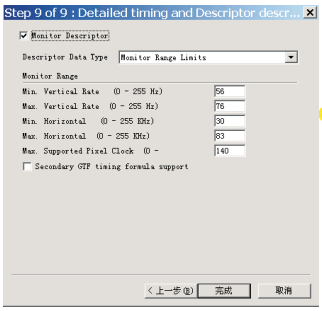


Fig. 22

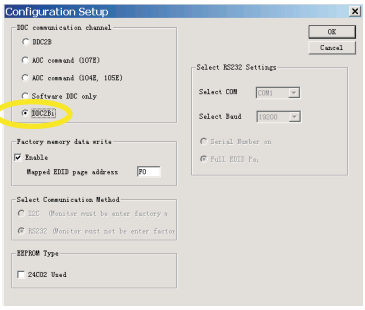


Fig. 23

2. Access Factory Mode

1). Turn off monitor.

2). [Push "AUTO" & "OK" buttons at the same time and hold them] +[Press "power" button untill comes out "Windows screen"] => then release all buttons

3).Press "OK" button, wait until the OSD menu with Characters "HUDSON 170C7 V010 2006/06-29" (below OSD menu) come on the Screen of the monitor. as shown in Fig24.

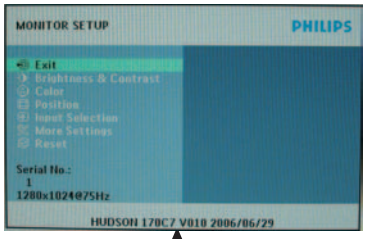


Fig. 24

Factory Mode indicator

3) Push "Menu" to exit OSD menu.

4). Click (Write EDID) icon from the tool bar to write DDC data. Then wait for 20-30 seconds ,DDC data will be finished Writing.

Step 6: Save DDC data

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

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

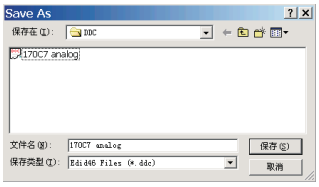


Fig. 25

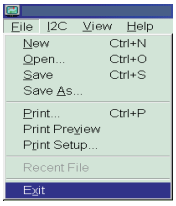


Fig. 26

2. Click Save.

Step 7: Exit DDC program

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

Step 8: Modify serial number in OSD

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

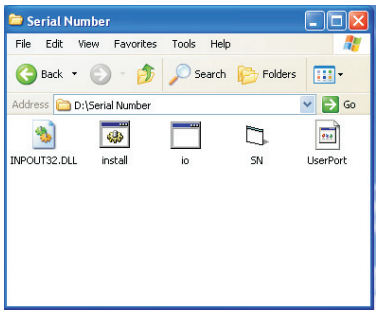


Fig.27

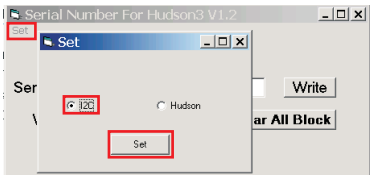


Fig.28

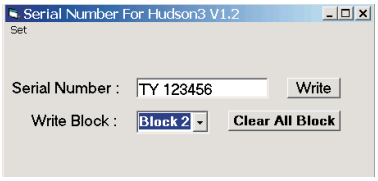


Fig.29

Step9:

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

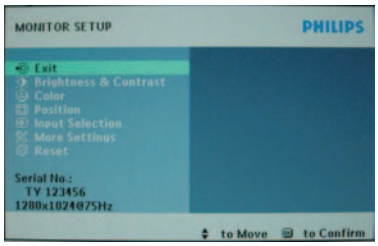


Fig.30

Go to cover page

Re-programming Digital DDC IC

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

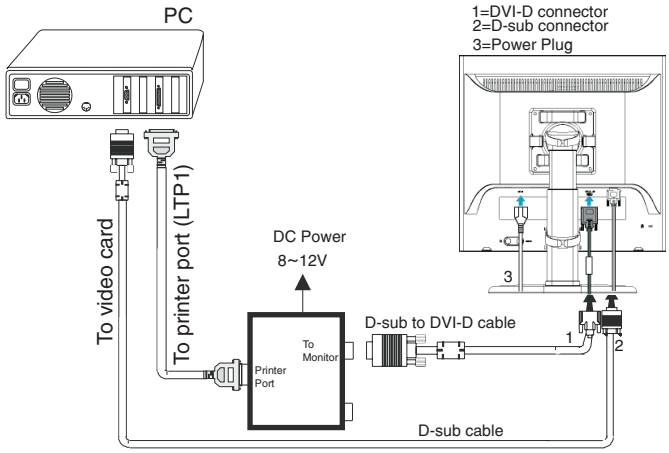


Fig. 31

Step 2: Read DDC data from monitor

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

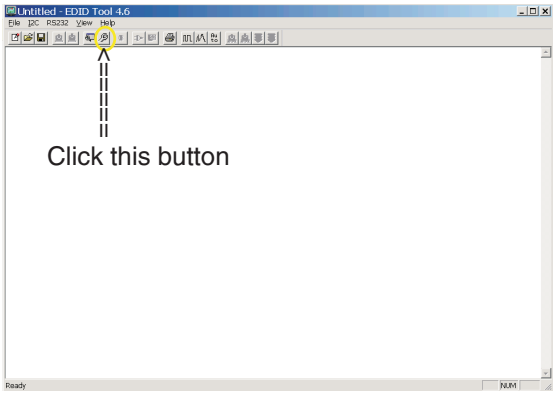


Fig. 32

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

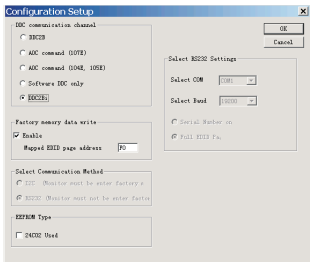


Fig. 33

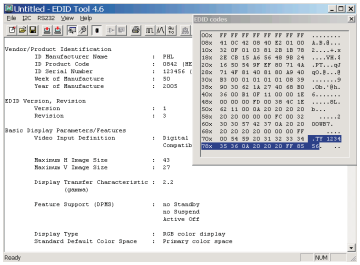


Fig. 34

3. Click OK button to confirm your selection.

4. Click  icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 34.

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

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

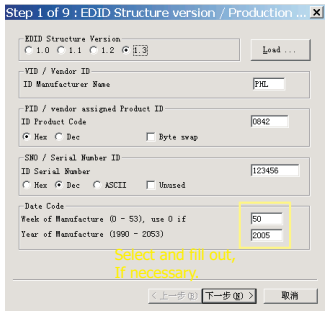


Fig. 35

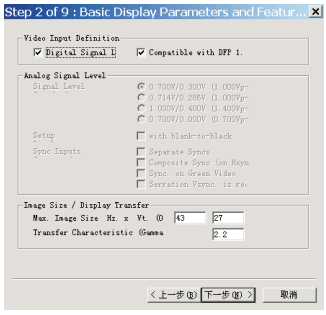


Fig. 36

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

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

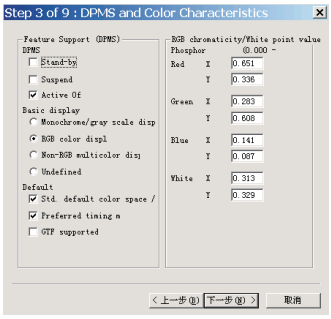


Fig. 37

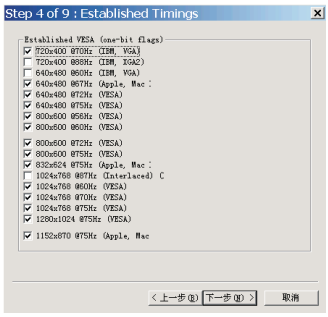


Fig. 38

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

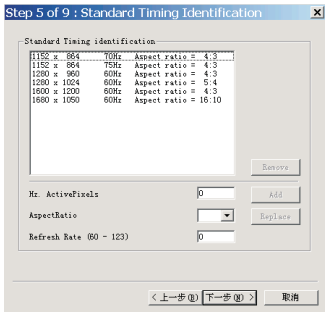


Fig. 39

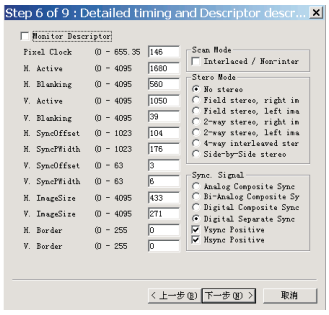


Fig. 40

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

7. Click Next , bring up Fig. 42.

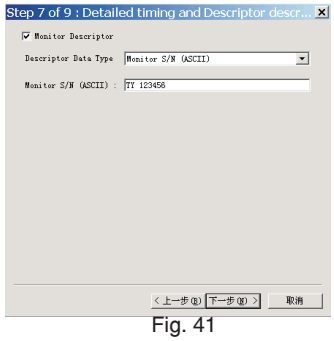


Fig. 41

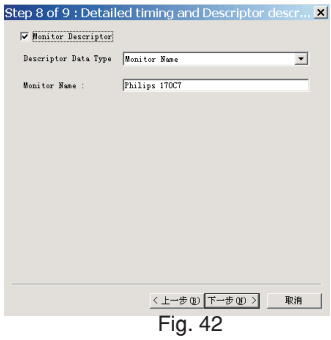


Fig. 42

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

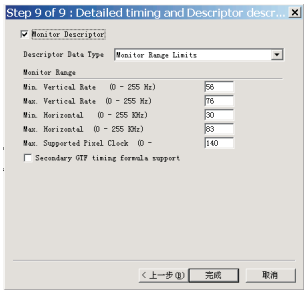


Fig. 43

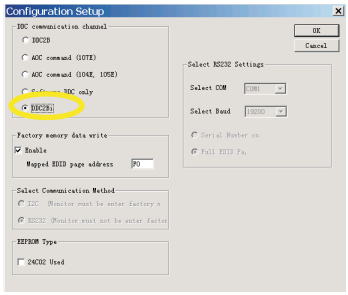
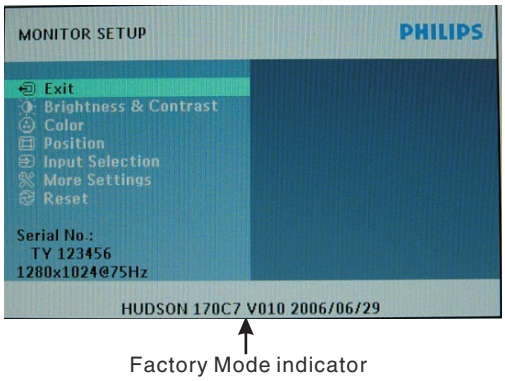


Fig. 44

Step 5: Write DDC data

1. Configuration should be as Fig. 40. And press OK.

2. Access Factory Mode
1). Turn off monitor.
2). [Push "AUTO" & "OK" buttons at the same time and hold them]
+[Press "power" button untill comes out "Windows screen"]
=> then release all buttons
3).Press "OK" button, wait until the OSD menu with Characters "HUDSON 170C7 V010 2006/06/29" (below OSD menu) come on the Screen of the monitor. as shown in Fig24.



Factory Mode indicator

Fig. 45

3) Push "Menu" to exit OSD menu.

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

Step 6: Save DDC data

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

1. Click (Save) icon (or click "file"-> "save as") from the tool bar and give a file name as shown in Fig. 46.
   The file type is EDID46 file (*.ddc) which can be open in WordPad. By using WordPad, the texts of DDC data & table (128 bytes, hex code) can be modified. If DDC TEXTS & HEX Table ar completely correct, it can be saved as *.ddc flie to re-load it into DDC IC for DDC Data application.

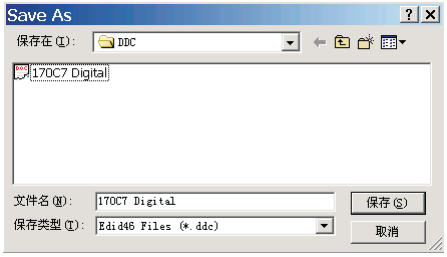


Fig.46

2. Click Save.

Step 7: Exit DDC program

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

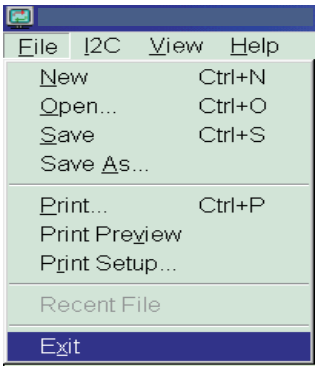


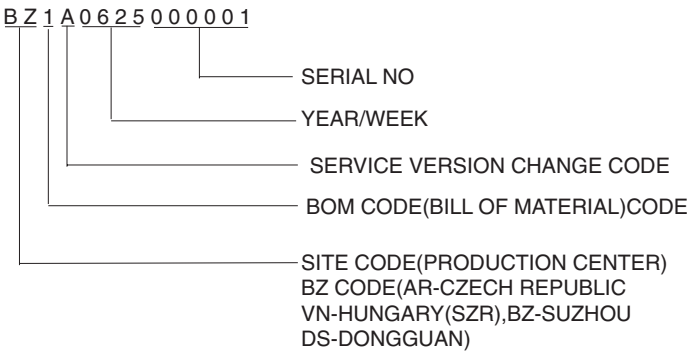
Fig. 47

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

Serial Number Definition

BOM Code

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



DDC DATA

Go to cover page

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 170C7 ANALOG FOR CPT PANEL)

****
EDID log file
****

Vendor/Product Identification
ID Manufacturer Name : PHL
ID Product Code : 0848 (HEX.)
ID Serial Number : 123456 (HEX.)
Week of Manufacture : 23
Year of Manufacture : 2006

EDID Version, Revision
Version : 1
Revision : 3

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

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

Display Transfer Characteristic : 2.2
(gamma)

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

Display Type : RGB color display
Standard Default Color Space : Primary color space
Preferred Timing Mode : Detailed timing block 1

Color Characteristics
Red X coordinate : 0.645
Red Y coordinate : 0.335
Green X coordinate : 0.283
Green Y coordinate : 0.614
Blue X coordinate : 0.146
Blue Y coordinate : 0.07
White X coordinate : 0.313
White Y coordinate : 0.329

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

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

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

Standard Timing Identification #1
Horizontal active pixels : 1280
Aspect Ratio : 5:4
Refresh Rate : 60

Standard Timing Identification #2
Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 75

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

Monitor Descriptor #2
Serial Number : TY10623123456

Monitor Descriptor #3
Monitor Name : Philips 170C

Monitor Descriptor #4
Monitor Range Limits
Min. Vt rate Hz : 56
Max. Vt rate Hz : 76
Min. Horiz. rate kHz : 30
Max. Horiz. rate kHz : 83
Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : BD (HEX.)

****
Analog EDID d ata (128 bytes)
****

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 48 11: 08 12: 56 13: 34 14: 12 15: 00
16: 17 17: 10 18: 01 19: 03 20: 1f 21: 22 22: 1b 23: 78
24: 2e 25: 39 26: 85 27: a5 28: 55 29: 48 30: 9d 31: 25
32: 12 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 37 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: bd

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 170C7 DIGITAL FOR CPT PANEL)
****
EDID log file
****

Vendor/Product Identification
ID Manufacturer Name : PHL
ID Product Code : 0848 (HEX.)
ID Serial Number : 123456 (HEX.)
Week of Manufacture : 23
Year of Manufacture : 2006

EDID Version, Revision
Version : 1
Revision : 3

Basic Display Parameters/Features
Video Input Definition : Digital Video Input

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

Display Transfer Characteristic : 2.2
(gamma)

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

Display Type : RGB color display
Standard Default Color Space : Primary color space
Preferred Timing Mode : Detailed timing block 1

Color Characteristics
Red X coordinate : 0.645
Red Y coordinate : 0.335
Green X coordinate : 0.283
Green Y coordinate : 0.614
Blue X coordinate : 0.146
Blue Y coordinate : 0.07
White X coordinate : 0.313
White Y coordinate : 0.329

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

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

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

Standard Timing Identification #1
Horizontal active pixels : 1280
Aspect Ratio : 5:4
Refresh Rate : 60

Standard Timing Identification #2
Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 75

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

Monitor Descriptor #2
Serial Number : TY10623123456

Monitor Descriptor #3
Monitor Name : Philips 170C

Monitor Descriptor #4
Monitor Range Limits
Min. Vt rate Hz : 56
Max. Vt rate Hz : 76
Min. Horiz. rate kHz : 30
Max. Horiz. rate kHz : 83
Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 5C (HEX.)

****
Digital EDID data (128 bytes)
****

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 48 11: 08 12: 56 13: 34 14: 12 15: 00
16: 17 17: 10 18: 01 19: 03 20: 80 21: 22 22: 1b 23: 78
24: 2e 25: 39 26: 85 27: a5 28: 55 29: 48 30: 9d 31: 25
32: 12 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 37 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 5c

DDC DATA

Go to cover page

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 190C7 ANALOG FOR LPL PANEL)

****
EDID log file
****

Vendor/Product Identification
ID Manufacturer Name : PHL
ID Product Code : 0849 (HEX.)
ID Serial Number : 123456 (HEX.)
Week of Manufacture : 23
Year of Manufacture : 2006

EDID Version, Revision
Version : 1
Revision : 3

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

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

Display Transfer Characteristic : 2.2
(gamma)

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

Display Type : RGB color display
Standard Default Color Space : Primary color space
Preferred Timing Mode : Detailed timing block 1

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

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

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

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

Standard Timing Identification #1
Horizontal active pixels : 1280
Aspect Ratio : 5:4
Refresh Rate : 60

Standard Timing Identification #2
Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 75

Detailed Timing #1
Pixel Clock (MHz) : 108
H Active (pixels) : 1280
H Blanking (pixels) : 408
V Active (lines) : 1024
V Blanking (lines) : 42
H Sync Offset (F Porch) (pixels) : 48
H Sync Pulse Width (pixels) : 112
V Sync Offset (F Porch) (lines) : 1
V Sync Pulse Width (lines) : 3
H Image Size (mm) : 376
V Image Size (mm) : 301
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
: Normal Display, No stereo
: Digital Separate sync.
: Positive Vertical Sync.
: Positive Horizontal Sync.

Monitor Descriptor #2
Serial Number : TY10623123456

Monitor Descriptor #3
Monitor Name : Philips 190C

Monitor Descriptor #4
Monitor Range Limits
Min. Vt rate Hz : 56
Max. Vt rate Hz : 76
Min. Horiz. rate kHz : 30
Max. Horiz. rate kHz : 83
Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : E2 (HEX.)

****
Analog EDID data (128 bytes)
****

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 49 11: 08 12: 56 13: 34 14: 12 15: 00
16: 17 17: 10 18: 01 19: 03 20: 1f 21: 26 22: 1e 23: 78
24: 2e 25: a2 26: a5 27: a3 28: 57 29: 4c 30: 9d 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 78 67: 2d 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: e2

DDC DATA(170C7)

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 190C7 DIGITAL FOR LPL PANEL)
****
EDID log file
****

Vendor/Product Identification
ID Manufacturer Name : PHL
ID Product Code : 0849 (HEX.)
ID Serial Number : 123456 (HEX.)
Week of Manufacture : 23
Year of Manufacture : 2006

EDID Version, Revision
Version : 1
Revision : 3

Basic Display Parameters/Features
Video Input Definition : Digital Video Input

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

Display Transfer Characteristic : 2.2
(gamma)

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

Display Type : RGB color display
Standard Default Color Space : Primary color space
Preferred Timing Mode : Detailed timing block 1

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

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

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

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

Standard Timing Identification #1
Horizontal active pixels : 1280
Aspect Ratio : 5:4
Refresh Rate : 60

Standard Timing Identification #2
Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 75

Detailed Timing #1
Pixel Clock (MHz) : 108
H Active (pixels) : 1280
H Blanking (pixels) : 408
V Active (lines) : 1024
V Blanking (lines) : 42
H Sync Offset (F Porch) (pixels) : 48
H Sync Pulse Width (pixels) : 112
V Sync Offset (F Porch) (lines) : 1
V Sync Pulse Width (lines) : 3
H Image Size (mm) : 376
V Image Size (mm) : 301
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
: Normal Display, No stereo
: Digital Separate sync.
: Positive Vertical Sync.
: Positive Horizontal Sync.

Monitor Descriptor #2
Serial Number : TY10623123456

Monitor Descriptor #3
Monitor Name : Philips 190C

Monitor Descriptor #4
Monitor Range Limits
Min. Vt rate Hz : 56
Max. Vt rate Hz : 76
Min. Horiz. rate kHz : 30
Max. Horiz. rate kHz : 83
Max. Supported Pixel : 140

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 81 (HEX.)

****
Digital EDID data (128 bytes)
****

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 49 11: 08 12: 56 13: 34 14: 12 15: 00
16: 17 17: 10 18: 01 19: 03 20: 80 21: 26 22: 1e 23: 78
24: 2e 25: a2 26: a5 27: a3 28: 57 29: 4c 30: 9d 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
40: 71 41: 4f 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 78 67: 2d 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 54 78: 59 79: 31
80: 30 81: 36 82: 32 83: 33 84: 31 85: 32 86: 33 87: 34
88: 35 89: 36 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 43 107: 0a 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 53 117: 0e 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 81

Firmware Upgrade for CPU

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Configuration and procedure

"Easywriter " The software is provided by Novatek to upgrade the firmware of CPU.
It is a windows-based program, which cannot be run in MS-DOS.
DDC2BI_ISP TOOL (3138 149 53161) is for the interface between "Parallel Port of PC" and "15 pin-D-SUB connector of Monitor".

System and equipment requirements

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

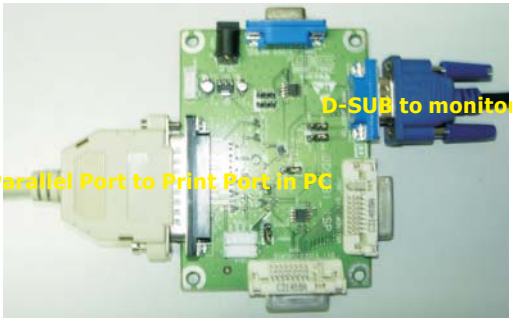


Fig. 1

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

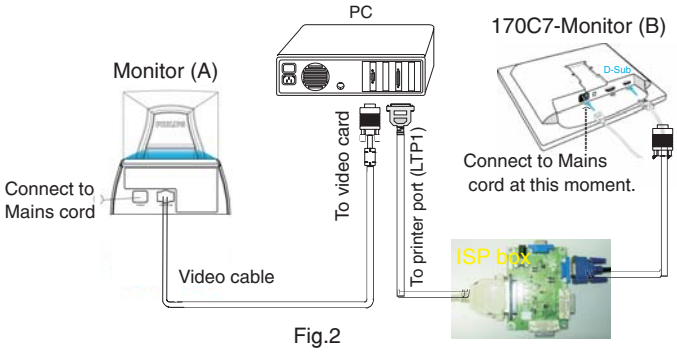


Fig.2

6. Install and setup the Easywriter program

Step 1 : Make a folder in your PC as shown in Fig. 3.
For example : C:\170C7
Step 2 : Copy ISP Software Easywriter.zip into your folder as shown in Fig.3.
Step 3 : Unzip Easywriter.zip into your folder as shown in Fig. 3.

Step 4 : Double click the EasyWriterV2.10p2 icon to install the Application as Fig. 4.

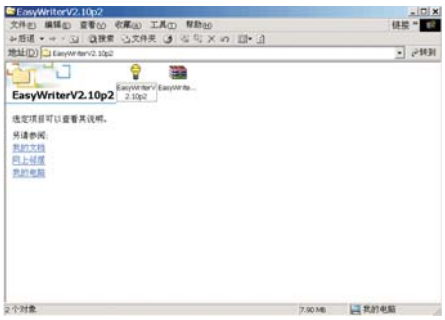


Fig. 3

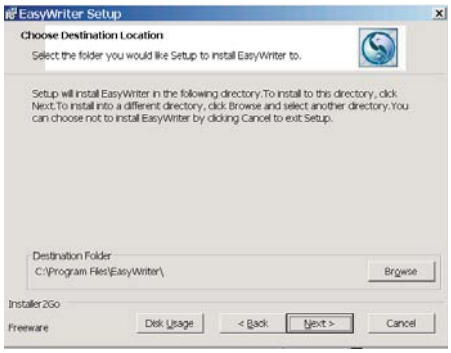


Fig. 4

Step 5 :Copy the hexcode 170C7 to C:\170C7 as shown in Fig. 5 .

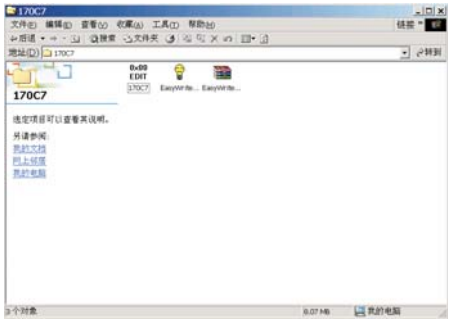


Fig. 5

Update the firmware

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

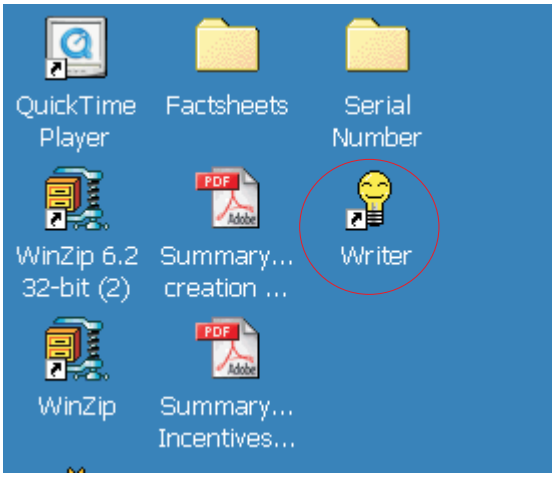


Fig. 6

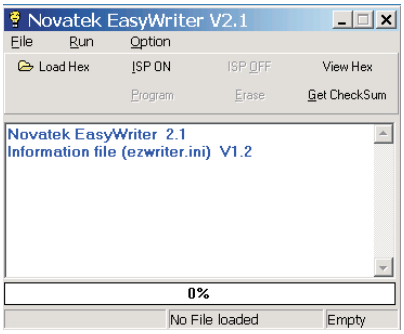


Fig. 7

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

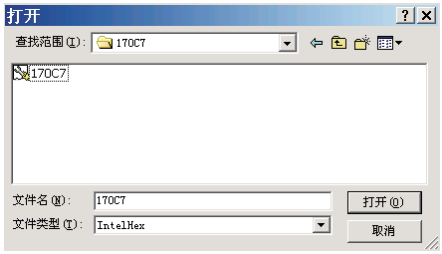


Fig. 8

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

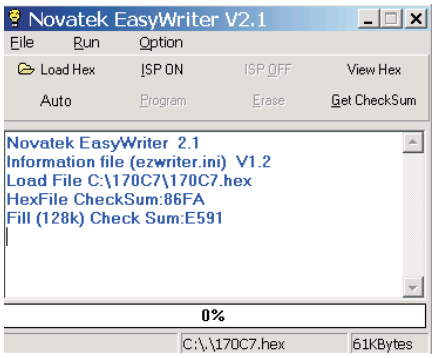


Fig. 9

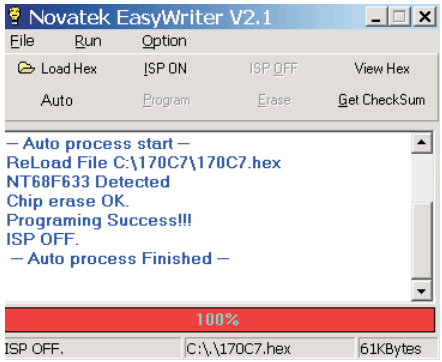


Fig. 10

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

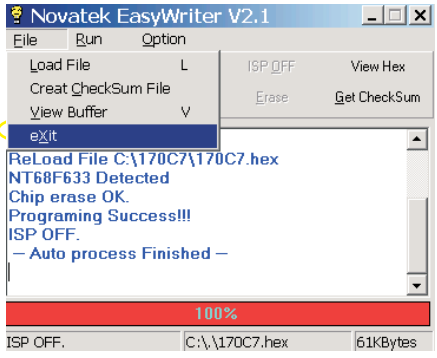


Fig. 11

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

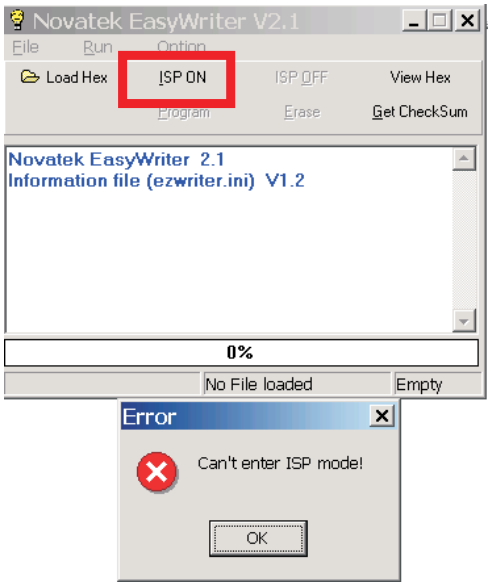
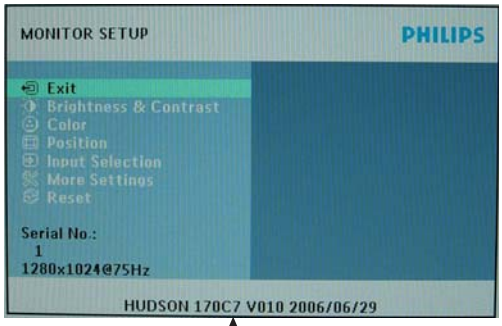


Fig. 12

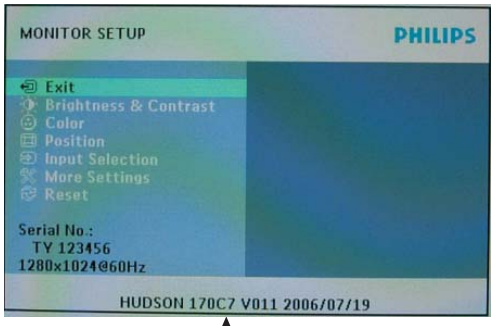
5 Check the firmware version

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



Factory Mode indicator

Fig. 13



Factory Mode indicator

Fig. 14

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

FAQs (Frequently Asked Questions)

Go to cover page

General FAQs

Q: When I install my monitor what should I do if the screen shows 'Cannot display this video mode'?
A: Recommended video mode for Philips 17": 1280x1024 @60Hz.
1. Unplug all cables, then connect your PC to the monitor that you used previously.
2. In the Windows Start Menu, select Settings/Control Panel. In the Control Panel Window, select the Display icon. Inside the Display Control Panel, select the 'Settings' tab. Under the setting tab, in box labeled 'desktop area', move the slidebar to 1280x1024 pixels (17").
3. Open 'Advanced Properties' and set the Refresh Rate to 60Hz, then click OK.
4. Restart your computer and repeat step 2 and 3 to verify that your PC is set at 1280x1024@60Hz (17").
5. Shut down your computer, disconnect your old monitor and reconnect your Philips LCD monitor.
6. Turn on your monitor and then turn on your PC.

Q: What does 'refresh rate' mean in connection with an LCD monitor?
A: The refresh rate is of much less relevance for LCD monitors. LCD monitors display a stable, flicker-free image at 60Hz. There is no visible difference between 75Hz and 60Hz.

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

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

Q: What if I get lost when I am making monitor adjustments?
A: Simply press the OK button, then select 'Reset' to recall all of the original factory settings.

Q: What is the Auto function?
A: The *AUTO adjustment* key restores the optimal screen position, phase and clock settings by pressing of a single button without the need to navigate through OSD (On Screen Display) menus and control keys.
Note: Auto function is available in selected models only.

Q: My Monitor has no power (Power LED does not light up). What should I do?
A: Make sure the AC power cord is connected between the monitor and AC outlet, and click a key on keyboard/mouse to wake up the PC.

Q: Will the LCD monitor accept an interlaced signal under PC models?
A: No. If an Interlace signal is used, the screen displays both odd and even horizontal scanning lines at the same time, thus distorting the picture.

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

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

Q: How should I clean the LCD surface?
A: For normal cleaning, use a clean, soft cloth. For extensive cleaning, please use isopropyl alcohol. Do not use other solvents such as ethyl alcohol, ethanol, acetone, hexane, etc.

Q:Can I change the color setting of my monitor?
A:Yes, you can change your color setting through OSD control as the following procedures,
1. Press "OK" to show the OSD (On Screen Display) menu
2. Press "Down Arrow" to select the option "color" then press "OK" to enter color setting, there are five settings as below.
   a. 6500K; this setting features the panel closed to red-white color tone.
   b. 9300K; this setting features the panel closed to blue-white color tone.
   c. Original; this setting load the default panel setting in terms of color tone. (Note: different panel maker may feature a different color temperature*)
   d. SRGB; this is a standard setting for ensuring correct exchange of colors between different device (e.g. digital cameras, monitors, printers, scanners, etc.)
   e. User Define; the user can choose his/her preference color setting by adjusting red, green, blue color.

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

Screen Adjustments

Q: What is the FPadjust program on the CD-ROM?
A: The FPadjust program generates alignment patterns that help you adjust monitor settings such as Contrast, Brightness, Horizontal Position, Vertical Position, Phase and Clock for optimal performance.

Q: When I install my monitor, how do I get the best performance from the monitor?
A: 1. For best performance, make sure your display settings are set at 1280x1024@60Hz for 17". Note: You can check the current display settings by pressing the OSD OK button once. The current display mode is shown in OSD first page.
2. To install the Flat Panel Adjust (FPadjust) program located on the monitor setup CD-ROM, open the CD-ROM and double-click the FP_setup4.3.exe icon. This will install FP Adjust automatically and place a shortcut on your desktop.
3. Run FPadjust by double clicking the shortcut. Follow the instructions step by step to optimize image performance with your system's video controller.

Q: How do LCDs compare to CRTs in terms of radiation?
A: Because LCDs do not use an electron gun, they do not generate the same amount of radiation at the screen surface.

Compatibility with other Peripherals

Q: Can I connect my LCD monitor to any PC, workstation or Mac?
A: Yes. All Philips LCD monitors are fully compatible with standard PCs, Macs and workstations. You may need a cable adapter to connect the monitor to your Mac system. Please contact your dealer/retailer for more information.

Q: Are Philips LCD monitors Plug-and-Play?
A: Yes, the monitors are Plug-and-Play compatible with Windows 95, 98, 2000 and XP.

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

LCD Panel Technology

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

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

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

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

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

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

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

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

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

Safety Test Requirements

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

HI-POT TEST INSTRUCTION

1.Application requirements

1.1 All mains operated products must pass the Hi-Pot test as described in this instruction.

1.2 This test must be performed again after the covers have been refitted following the repair, inspection or modification of the product.

2. Test method

2.1 Connecting conditions

2.1.1 The test specified must be applied between the parallel-blade plug of the mainscord and all accessible metal parts of the product.

2.1.2 Before carrying out the test, reliable conductive connections must be ensured and thereafter be maintained throughout the test period.

2.1.3 The mains switch(es) must be in the "ON" position.

2.2 Test Requirements

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

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

2.2.1 The minimum test duration for Quality Control Inspector must be 1 minute.

2.2.2 The test voltage must be maintained within the specified voltage + 5%.

2.2.3 There must be no breakdown during the test.

2.2.4 The grounding blade or pin of mains plug must be conducted with accessible metal parts.

3. Equipments and Connection

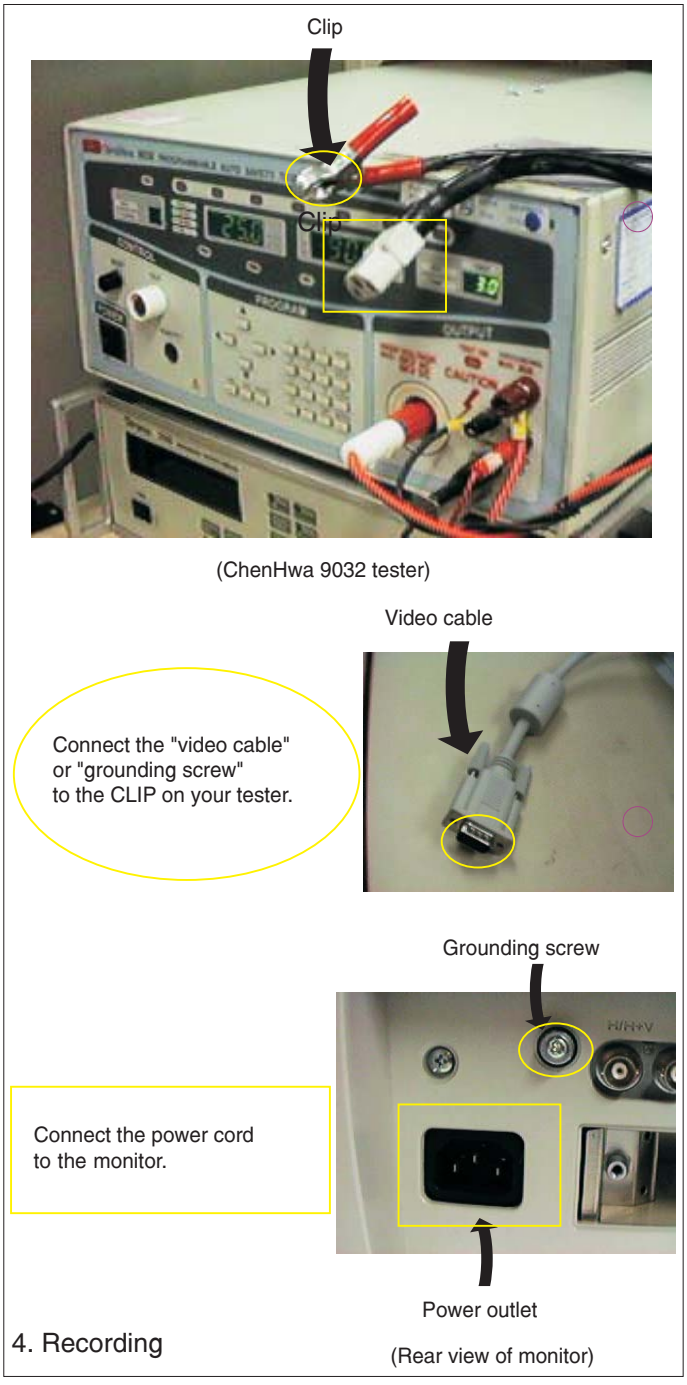
3.1. Equipments

For example :

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

3.2. Connection

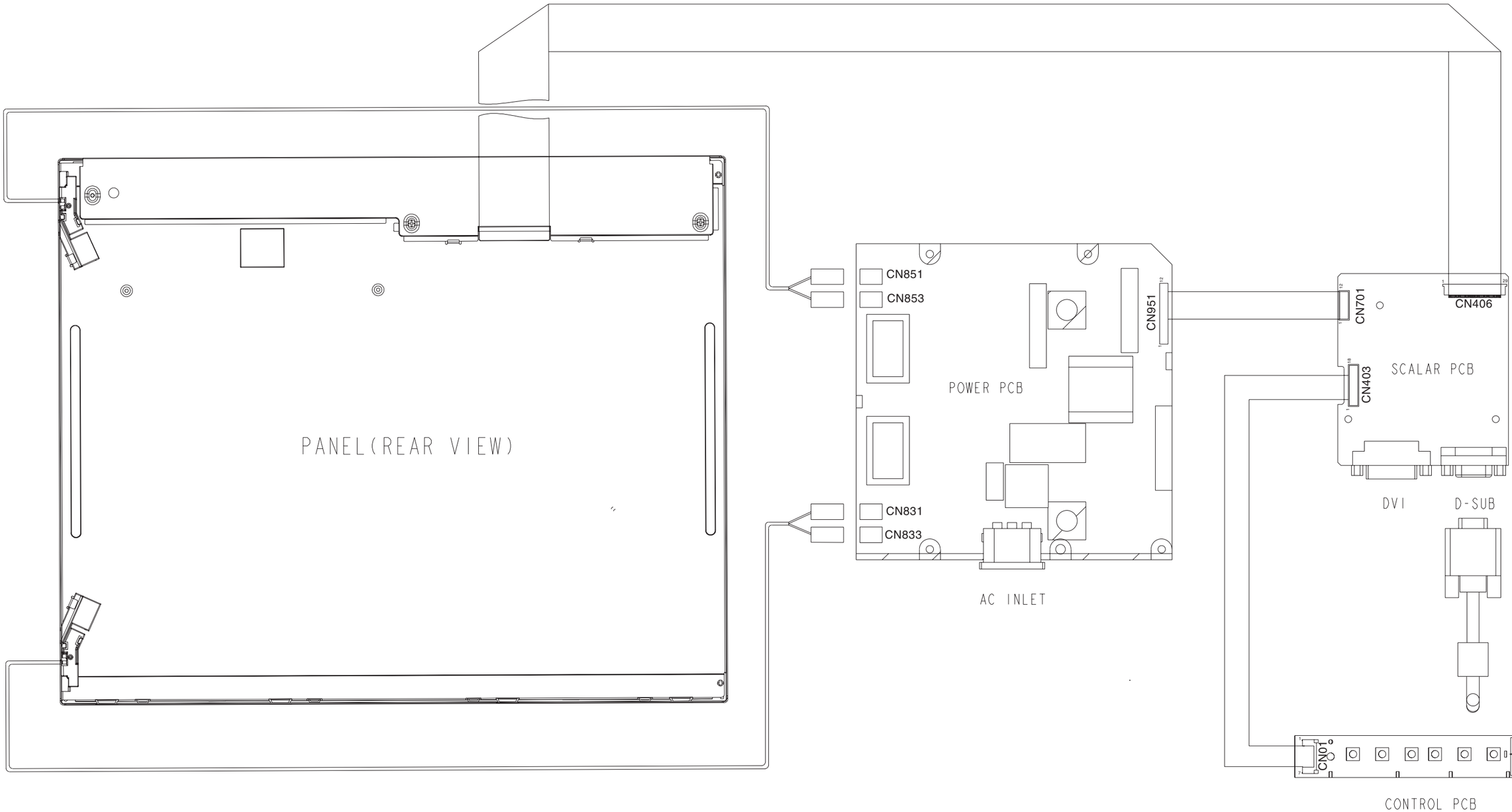
* Turn on the power switch of monitor before Hipot and Ground Continuity testing.



4. Recording

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

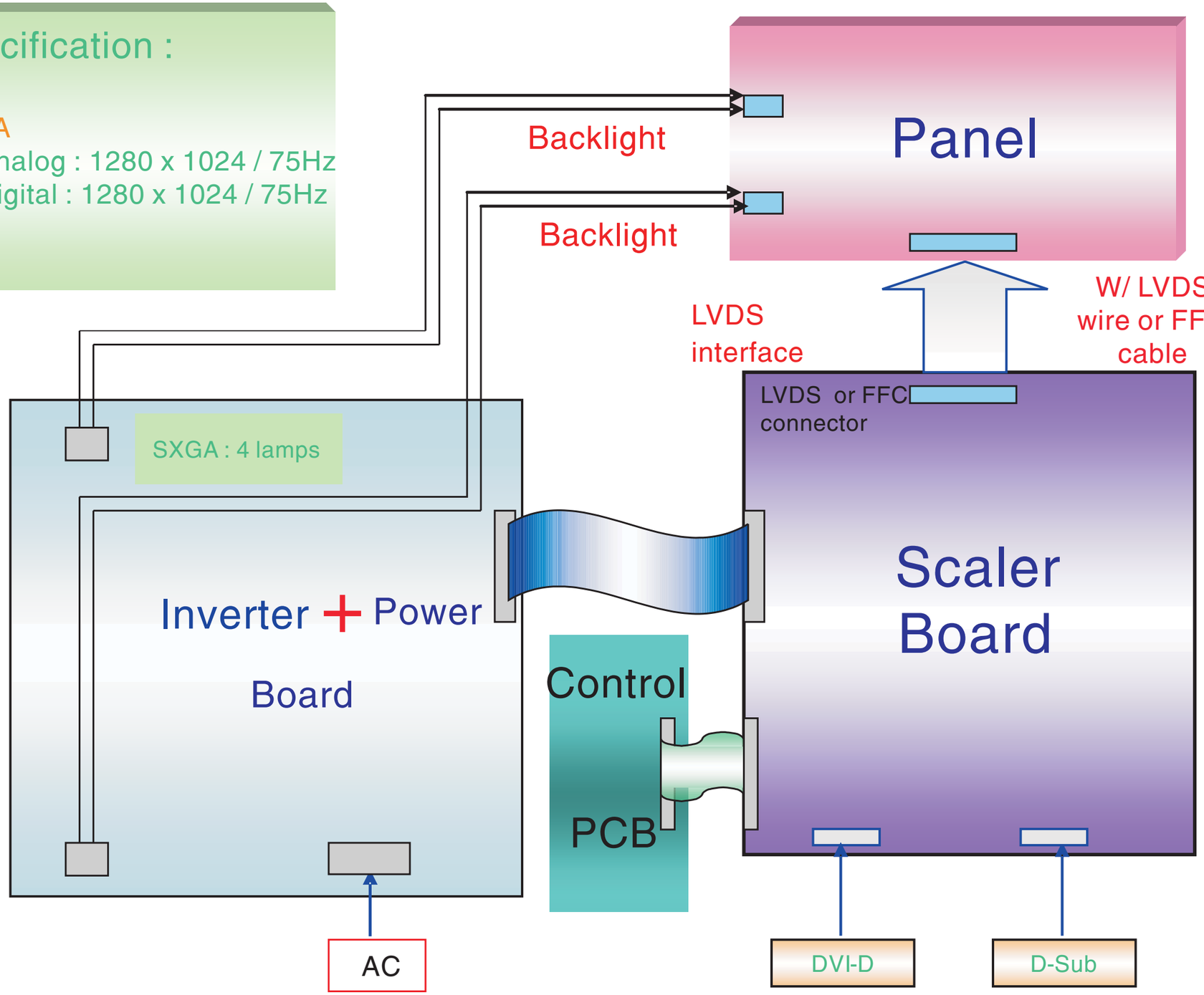
Wiring Diagram

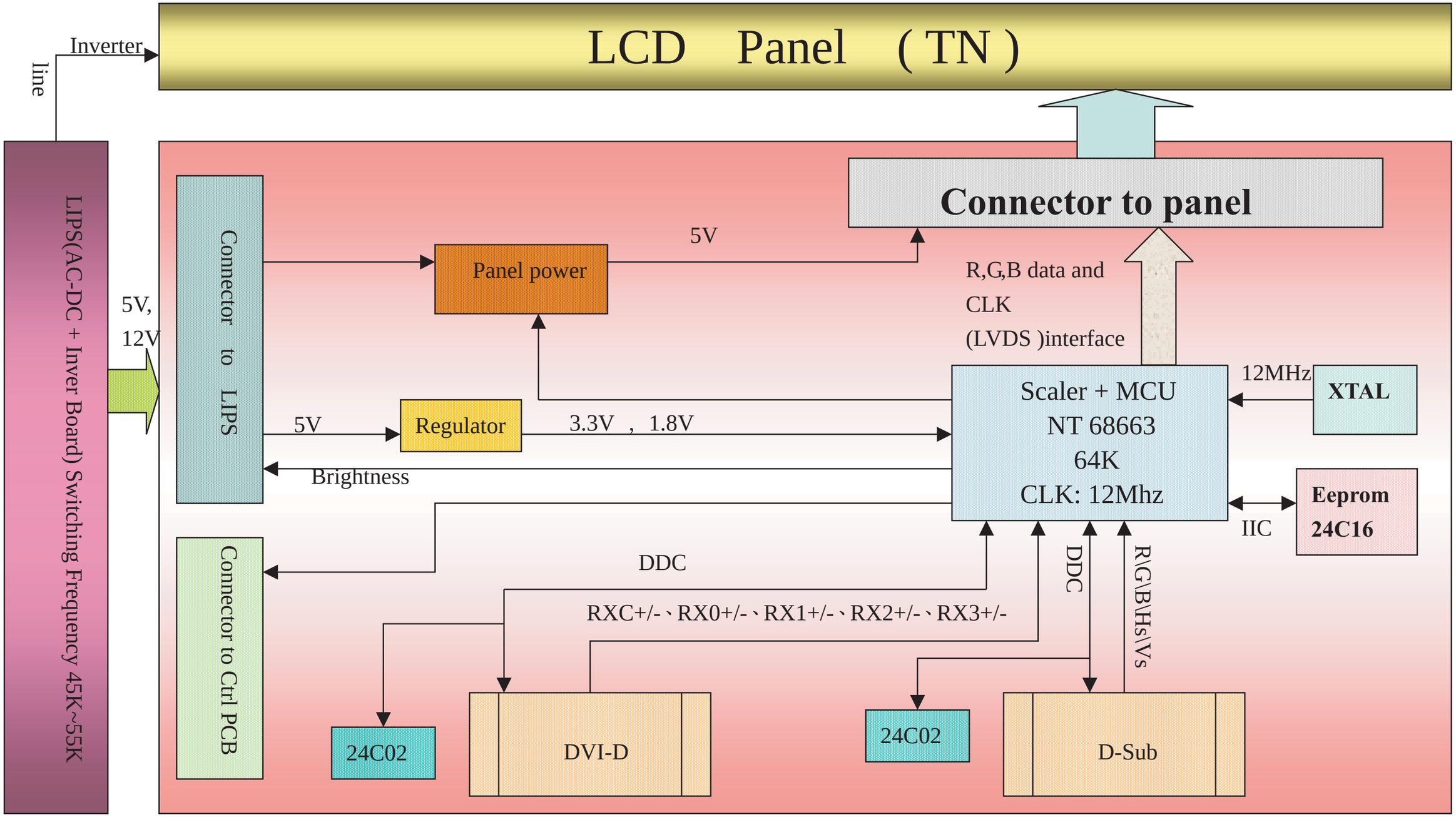


190C7 / 170C7 System Block Diagram - Platform

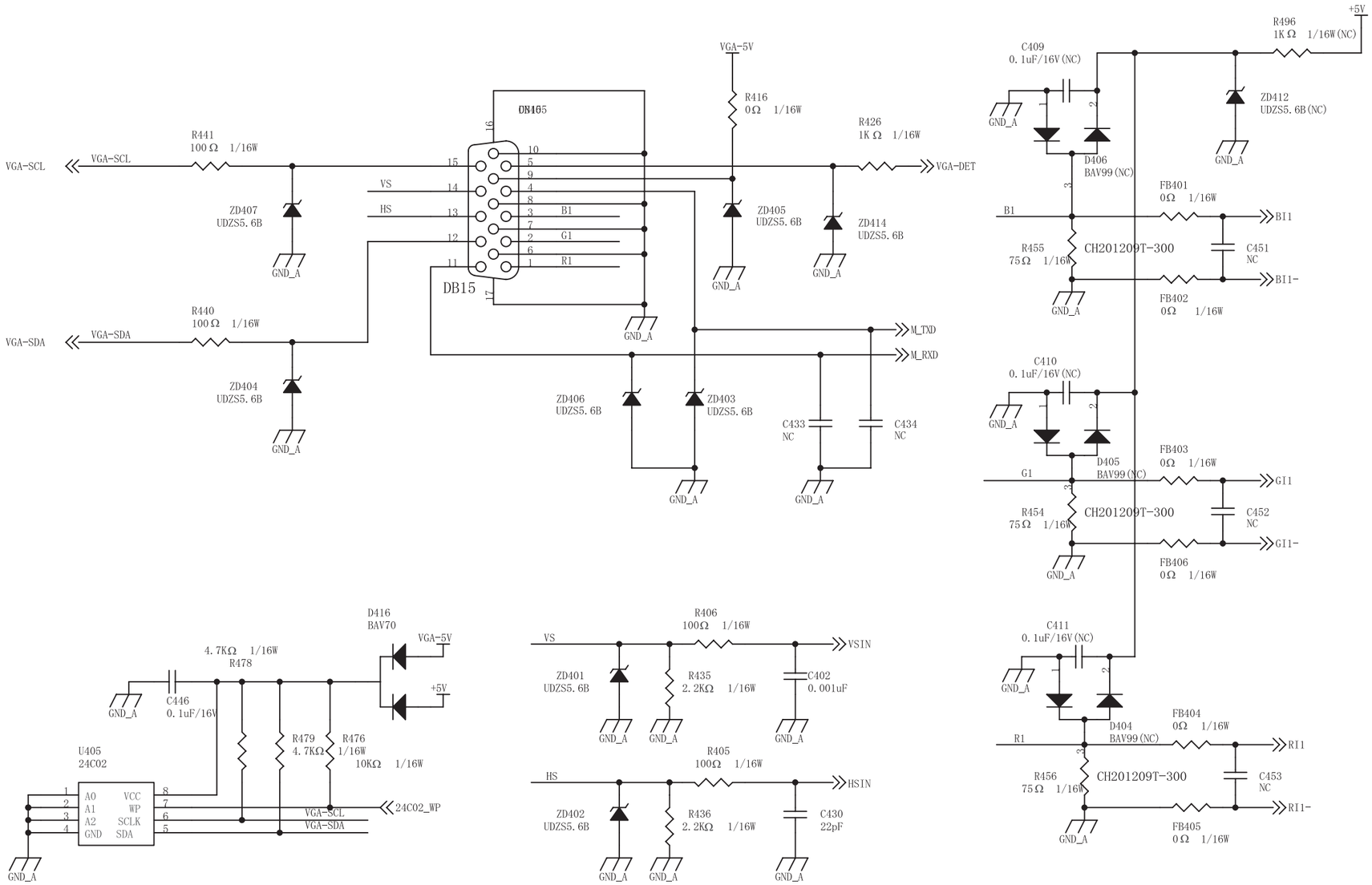
Specification :

SXGA
1 x Analog : 1280 x 1024 / 75Hz
1 x Digital : 1280 x 1024 / 75Hz




LCD Panel (TN)
Inverter line
LIPS(AC-DC + Inver Board) Switching Frequency 45K~55K
5V, 12V
Connector to LIPS
Connector to panel
Panel power
5V
R,G,B data and CLK (LVDS)interface
Scaler + MCU NT 68663 64K CLK: 12Mhz
12MHz
XTAL
5V
Regulator
3.3V , 1.8V
Brightness
Eeprom 24C16
IIC
Connector to Ctrl PCB
DDC
RXC+/-、RX0+/-、RX1+/-、RX2+/-、RX3+/-
DDC
R\G\B\Hs\Vs
24C02
DVI-D
24C02
D-Sub

Scaler Diagram - 1



CN405	A3
C402	C4
C409	A5
C410	B5
C411	C5
C430	D4
C433	B4
C434	B4
C446	C1
C451	B6
C452	C6
C453	D6
D404	C5
D405	B5
D406	A5
D416	C2
FB401	A5
FB402	B5
FB403	C5
FB404	D5
FB405	D5
FB406	C5
R405	D3
R406	C3
R416	A4
R426	A4
R435	C3
R436	D3
R440	B1
R441	A1
R454	C5
R455	B5
R456	D5
R476	D2
R478	D2
R479	D2
R496	A6
U405	D1
ZD401	C3
ZD402	D3
ZD403	B3
ZD404	B2
ZD405	A4
ZD406	B3
ZD407	A2
ZD412	A6
ZD414	A4

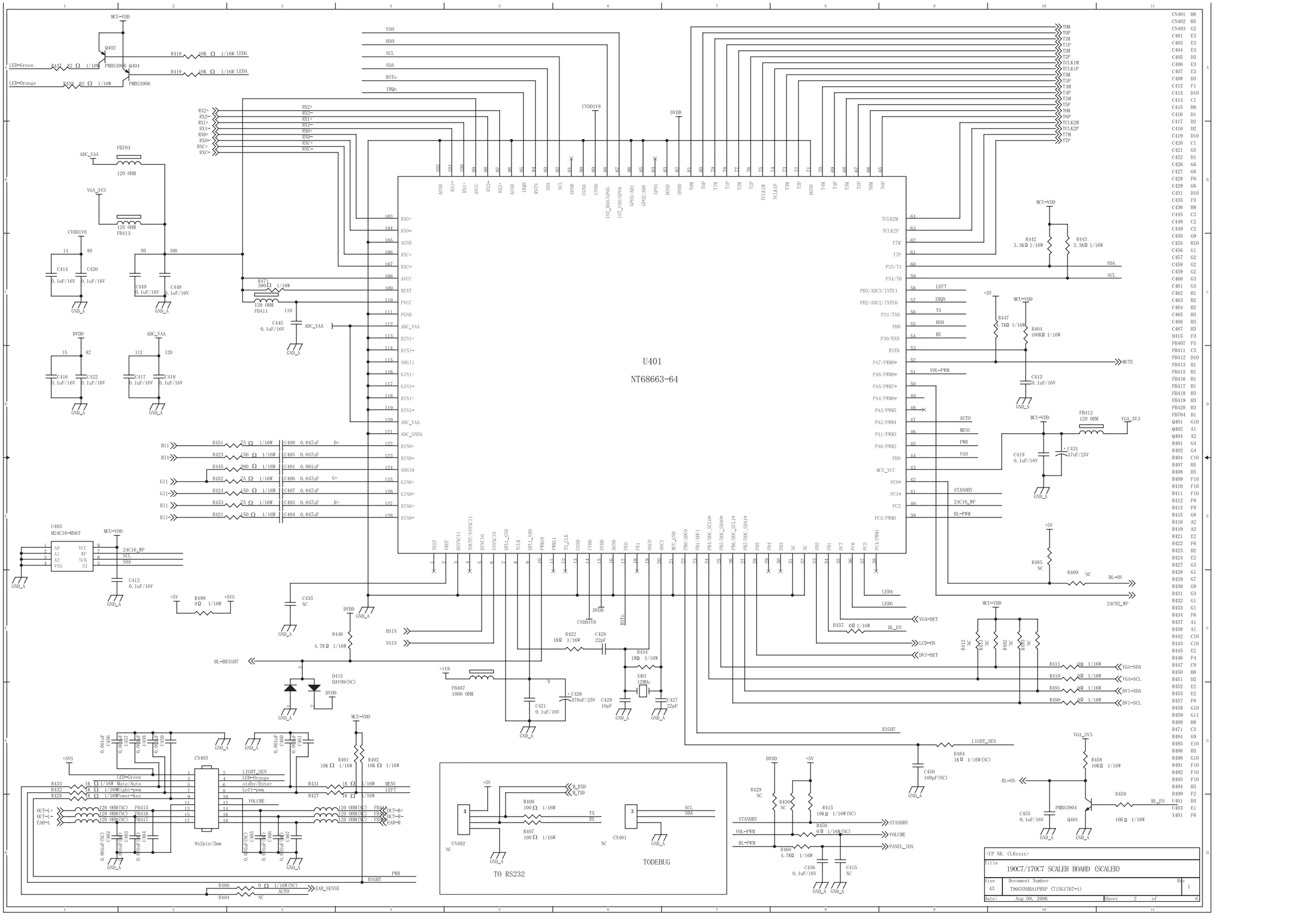
<CP NR. CL6xxxx>

Title: 190C7/170C7 SCALER BOARD (ADC INPUT)

Size	Document Number	Rev
A3	T96GNNHBA1PHNP (715G1767-1)	1

Date: Aug 09, 2006 Sheet 1 of 6

Scaler Diagram - 2



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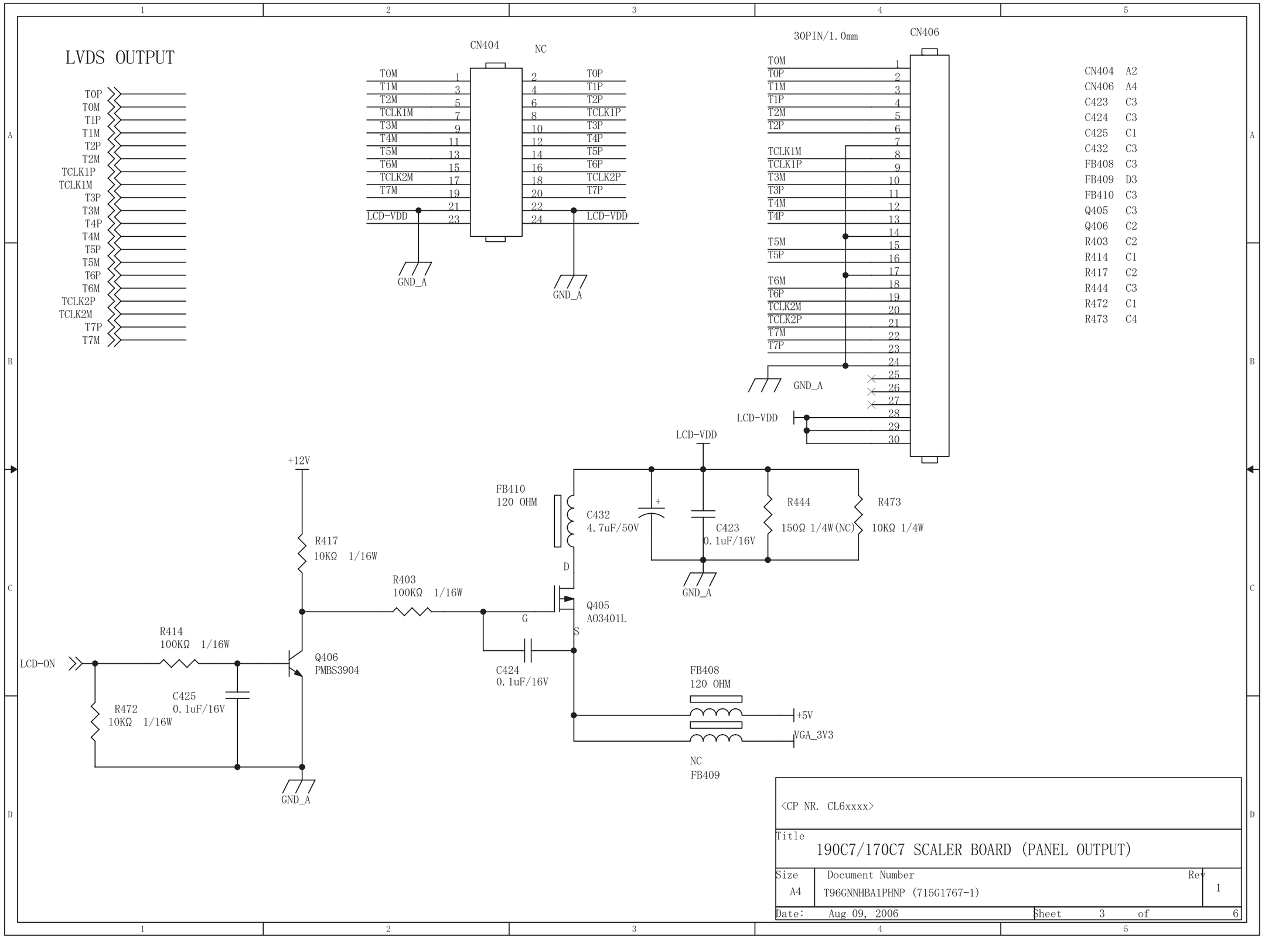
Size: A3	Document Number: T96GNNHBA1PHNP (715G1767-1) Rev: 1
Date: Aug 09, 2006	Sheet 2 of 6

Scaler Diagram - 3



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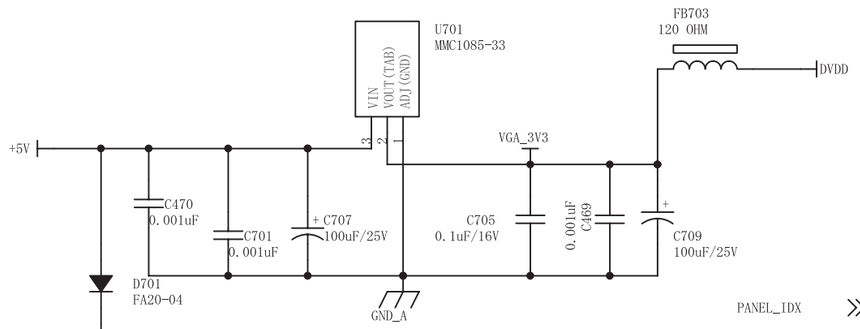
190C7/170C7 SCALER BOARD (PANEL OUTPUT)

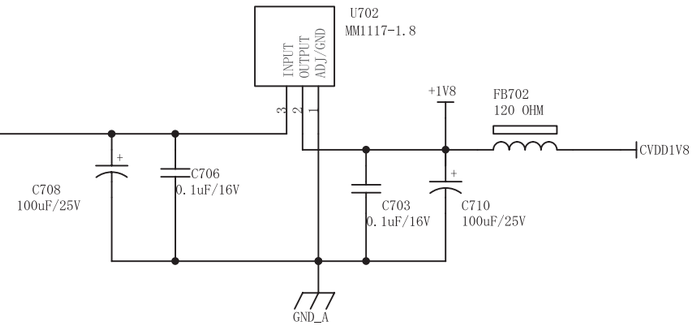
Size	Document Number	Rev
A4	T96GNNHBA1PHNP (715G1767-1)	1

Date: Aug 09, 2006 Sheet 3 of 6

Scaler Diagram - 4

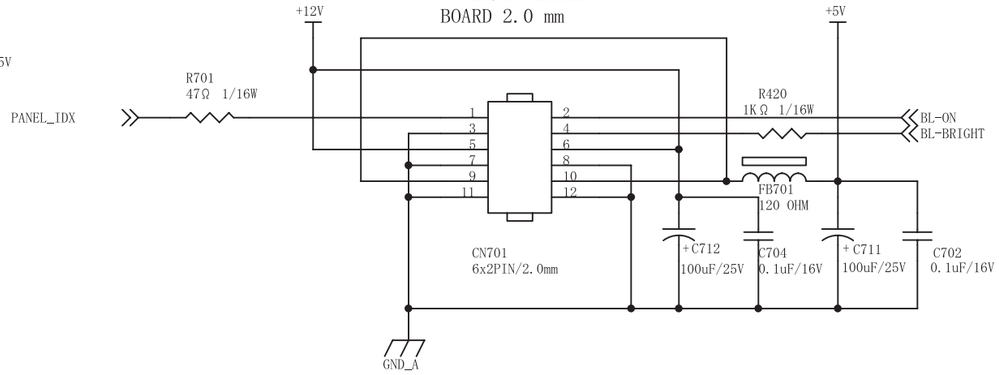


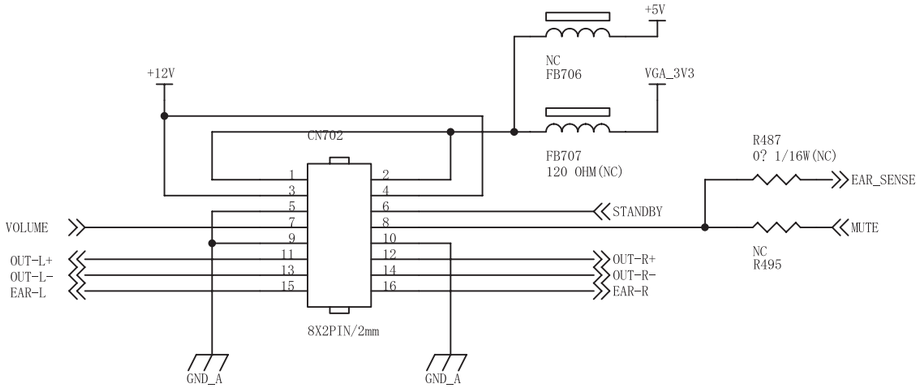
FOR 3.3V POWER USE



FOR 1.8V POWER USE

CONNECTOR FOR
POWER/INVERTER
BOARD 2.0 mm





CN701	B5
CN702	C5
C469	A3
C470	A1
C701	A2
C702	B6
C703	C3
C704	B6
C705	A3
C706	C2
C707	A2
C708	C2
C709	A3
C710	C3
C711	B6
C712	B5
D701	A1
D702	B1
FB701	B6
FB702	C3
FB703	A3
FB706	C5
FB707	C5
R420	B6
R487	C6
R495	C6
R701	B4
U701	A2
U702	B2

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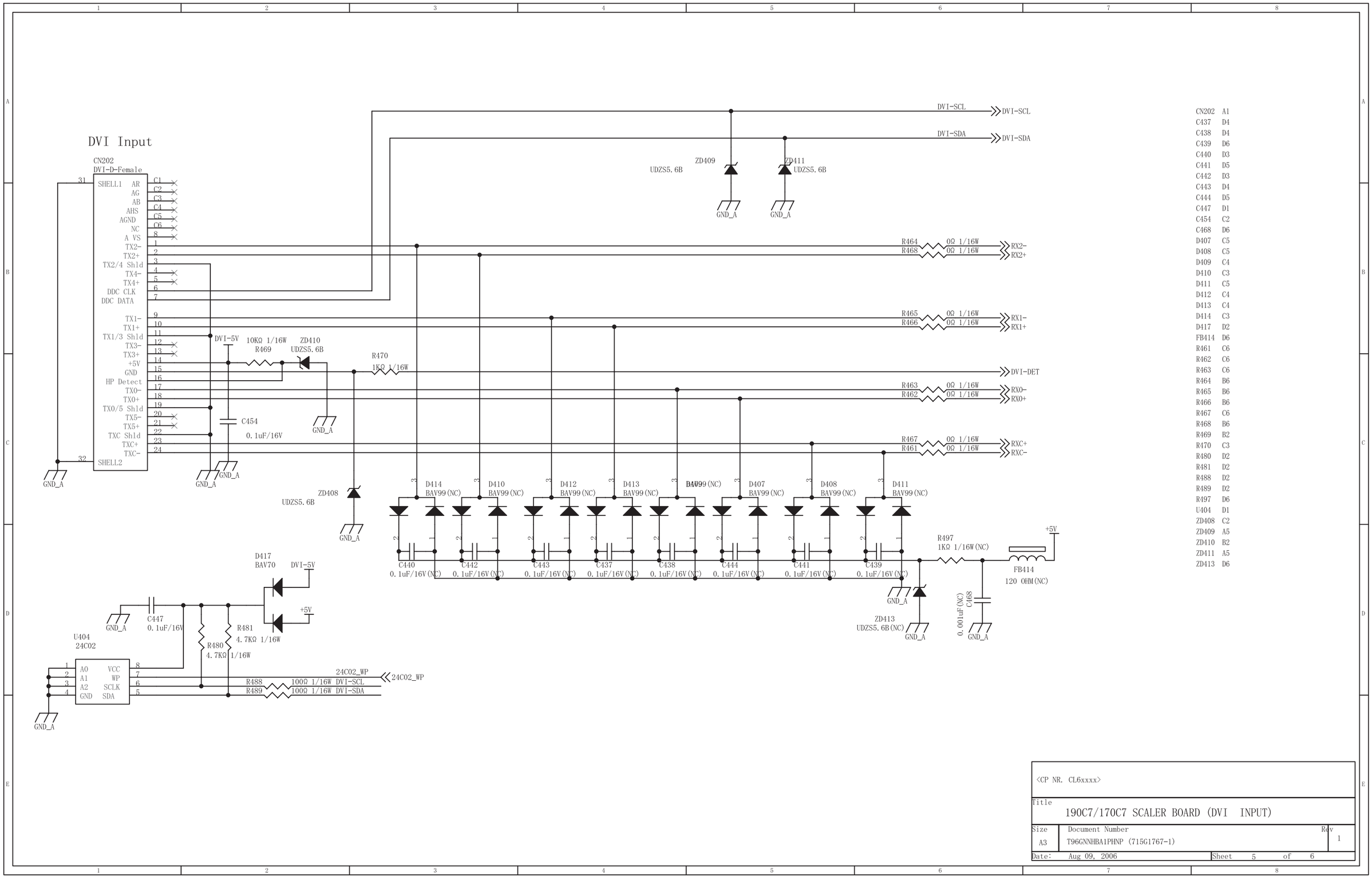
Title
190C7/170C7 SCALER BOARD (SCALER POWER)

Size	Document Number	Rev
A3	T96GNNHBA1PHNP (715G1767-1)	1
Date: Aug 09, 2006	Sheet 4 of 6	

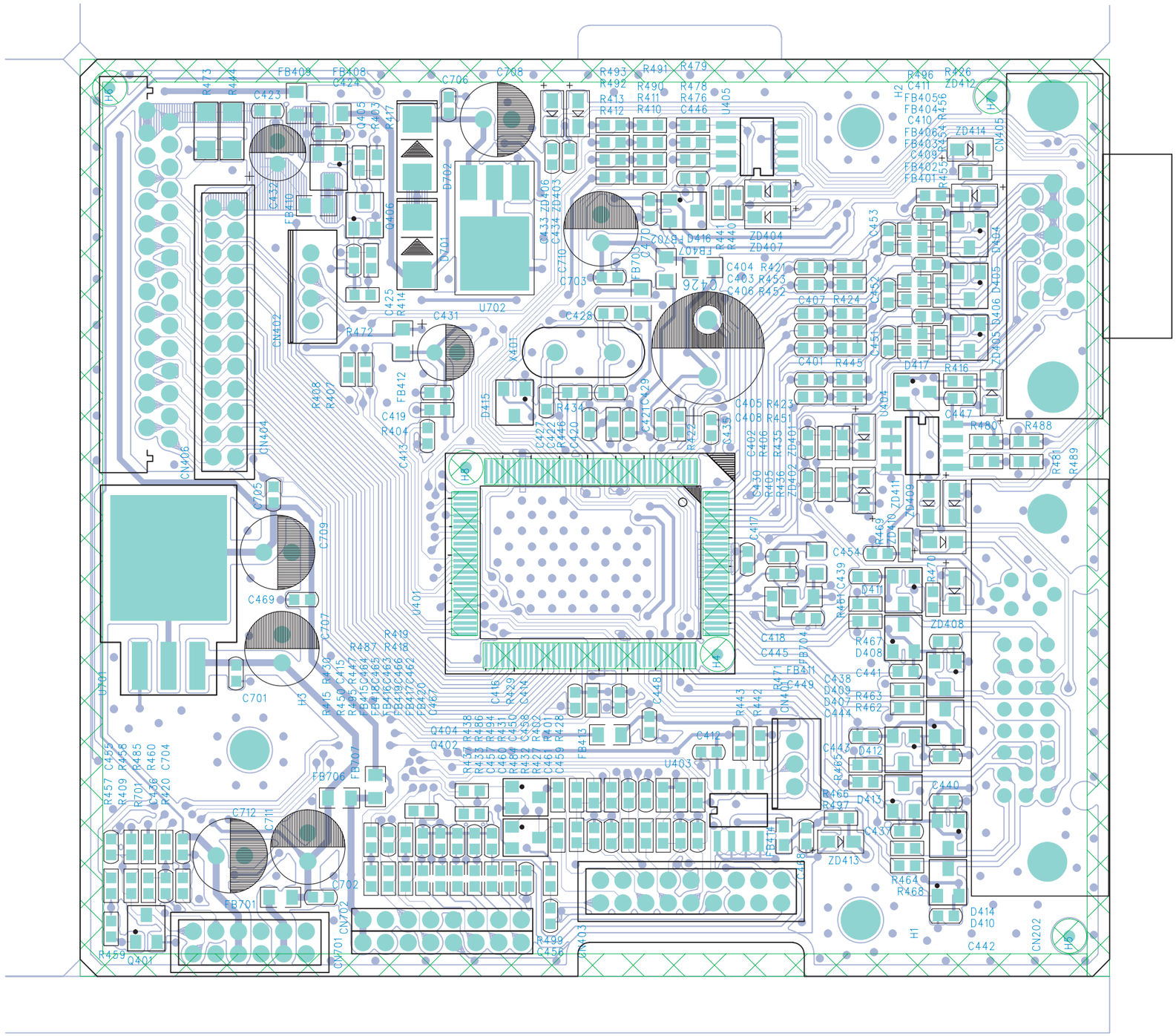
Scaler Diagram - 5



CN202	A1
C437	D4
C438	D4
C439	D6
C440	D3
C441	D5
C442	D3
C443	D4
C444	D5
C447	D1
C454	C2
C468	D6
D407	C5
D408	C5
D409	C4
D410	C3
D411	C5
D412	C4
D413	C4
D414	C3
D417	D2
FB414	D6
R461	C6
R462	C6
R463	C6
R464	B6
R465	B6
R466	B6
R467	C6
R468	B6
R469	B2
R470	C3
R480	D2
R481	D2
R488	D2
R489	D2
R497	D6
U404	D1
ZD408	C2
ZD409	A5
ZD410	B2
ZD411	A5
ZD413	D6

<CP NR. CL6xxxx>		
Title: 190C7/170C7 SCALER BOARD (DVI INPUT)		
Size: A3	Document Number: T96GNNHBA1PHNP (715G1767-1)	Rev: 1
Date: Aug 09, 2006	Sheet 5 of 6	

Scaler Board C.B.A.-1



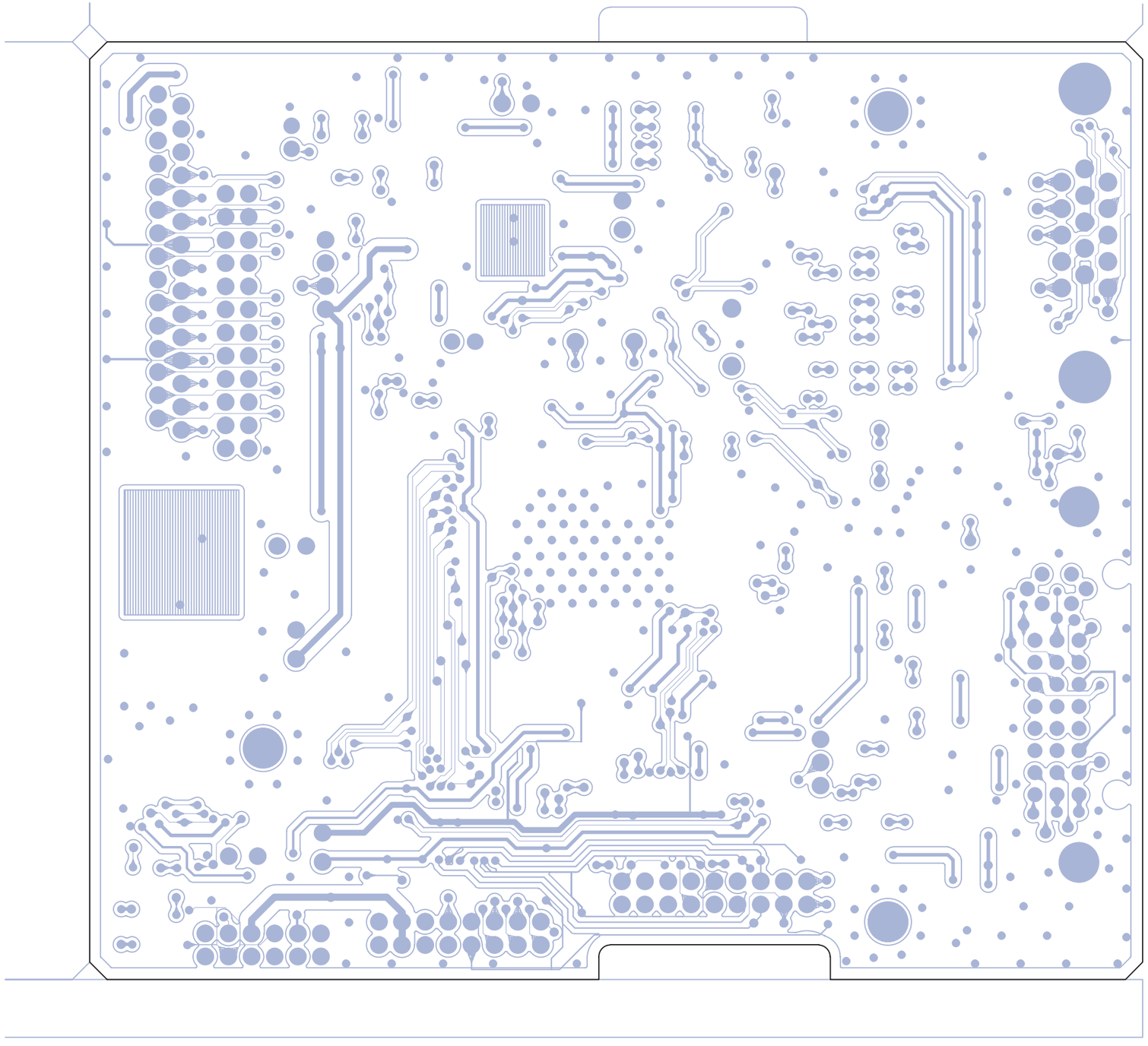
DATE	2006-3-10
F/N	715G1767-1
LAYER	2
LAYOUT	cheng

MODEL: 715G1767-1

HS TOP SIDE

Tel: (03)5630585 ; Fax: (03)5630587

Scaler Board C.B.A.-2



DATE	2006-3-10
F/N	715G1767-1
LAYER	2
LAYOUT	cheng

MODEL: 715G1767-1

HS

BOTTOM SIDE

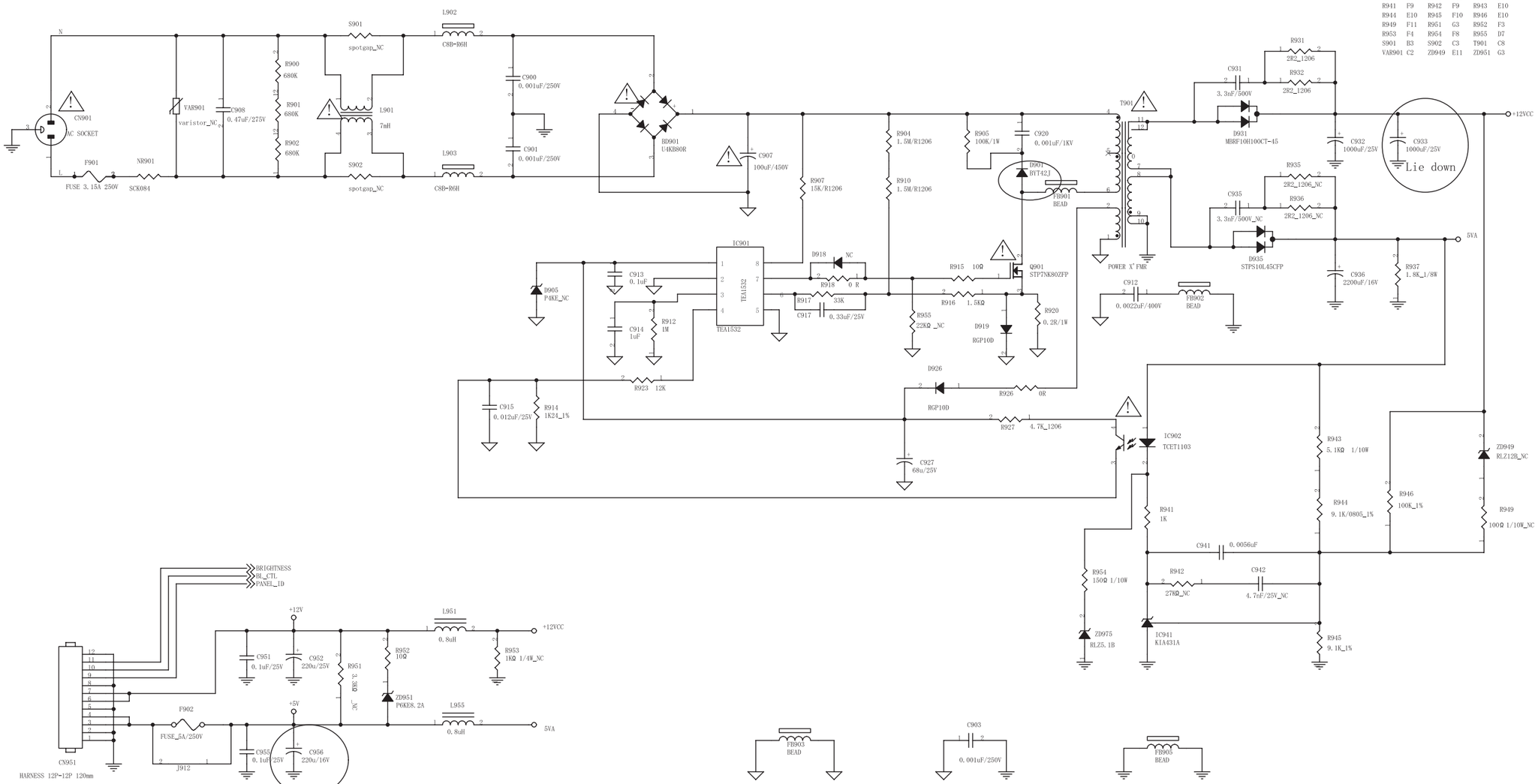
Tel: (03)5630585 ; Fax: (03)5630587

Power Diagram-1

ADAPTOR

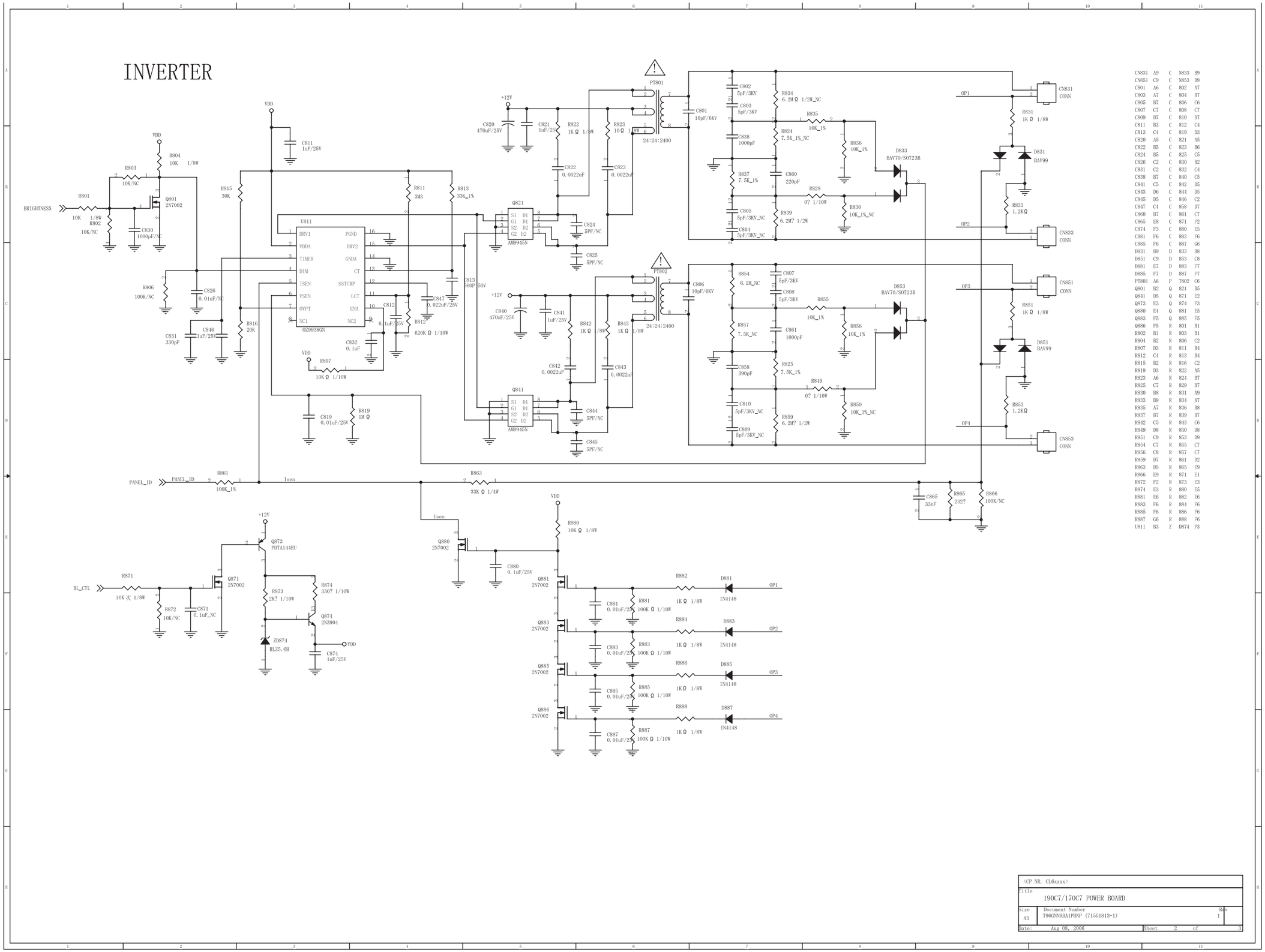
170S7	LM170EG01-TLB5/8 QD17EL0711	PWPC1742LG PWPC1742QD	R1
170A7	LM170EG01-TLB5/8 QD17EL0711	PWPC1742LG PWPC1742QD	R2
170B7	LM170EG01-TLB5/8 M170EG01 v8	PWPC1742LG PWPC1742AU	R3
170P7	LM170EG01-TLB5/8 M170EG01 v8	PWPC1742LG PWPC1742AU	R4

BD901	C5	CN901	C1	CN951	F1
C900	C4	C901	C4	C903	G7
C907	C6	C908	C2	C912	D9
C913	D5	C914	D5	C915	E4
C917	D6	C920	C8	C927	E7
C931	C9	C932	C10	C933	C10
C935	C9	C936	D10	C941	F9
C942	F9	C951	G2	C952	F3
C955	G2	C956	G3	D901	C8
D905	D4	D918	D6	D919	D8
D926	E7	D931	C9	D935	D9
FB901	C8	FB902	D9	FB903	G6
FB905	G9	F901	C1	F902	G2
IC901	D6	IC902	E8	IC941	F9
J912	G2	L901	C3	L902	B4
L903	C4	L951	F4	L955	G4
NR901	C2	Q901	D8	R900	C3
R901	C3	R902	C3	R904	C7
R905	C7	R907	C6	R910	C7
R912	D5	R914	E4	R915	D7
R916	D7	R917	D6	R918	D6
R920	D8	R923	E5	R926	E8
R927	E8	R931	B10	R932	C10
R935	C10	R936	C10	R937	D10
R941	F9	R942	F9	R943	E10
R944	E10	R945	F10	R946	E10
R949	F11	R951	G3	R952	F3
R953	F4	R954	F8	R955	D7
S901	E3	S902	C3	T901	C8
VAR901	C2	ZD949	E11	ZD951	G3



CP NR.CL6xxxx		
Title	190C7/170C7 POWER BOARD	
Size A3	Document Number T96GNNHBA1PHNP (715G1813-1)	Rev 1
Date: Aug 08, 2006	Sheet 3 of 3	

Power Diagram-2



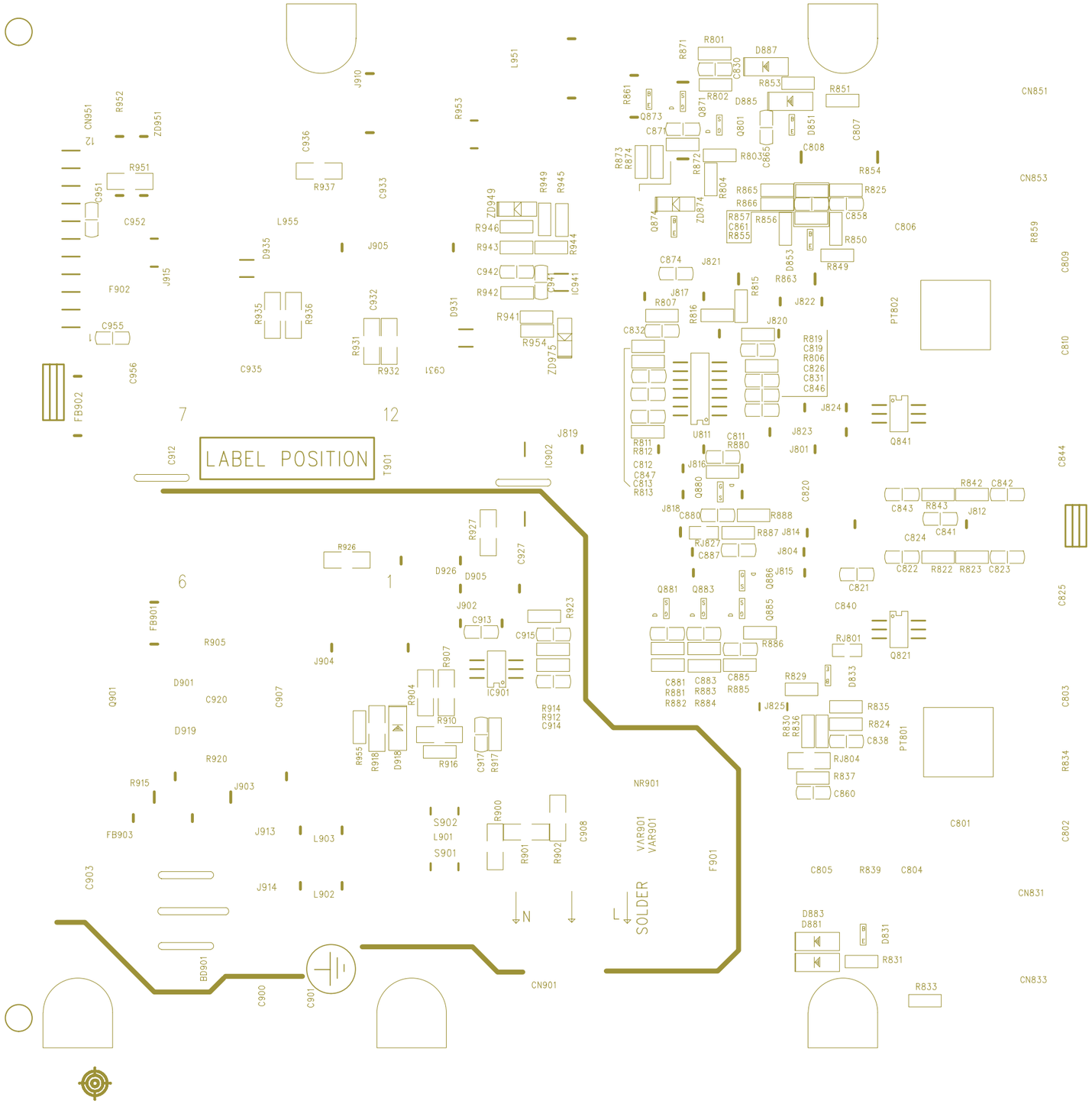
CN831	A9	C	N833	B9
CN851	C9	C	N853	D9
C801	A6	C	802	A7
C803	A7	C	804	B7
C805	B7	C	806	C6
C807	C7	C	808	C7
C809	D7	C	810	D7
C811	B3	C	812	C4
C813	C4	C	819	D3
C820	A5	C	821	A5
C822	B5	C	823	B6
C824	B5	C	825	C5
C826	C2	C	830	B2
C831	C2	C	832	C4
C838	B7	C	840	C5
C841	C5	C	842	D5
C843	D6	C	844	D5
C845	D5	C	846	C2
C847	C4	C	858	D7
C860	B7	C	861	C7
C865	E8	C	871	F2
C874	F3	C	880	E5
C881	F6	C	883	F6
C885	F6	C	887	G6
D831	B9	D	833	B8
D851	C9	D	853	C8
D881	E7	D	883	F7
D885	F7	D	887	F7
PT801	A6	P	T802	C6
Q801	B2	Q	821	B5
Q841	D5	Q	871	E2
Q873	E3	Q	874	F3
Q880	E4	Q	881	E5
Q883	F5	Q	885	F5
Q886	F5	R	801	B1
R802	B1	R	803	B1
R804	B2	R	806	C2
R807	D3	R	811	B4
R812	C4	R	813	B4
R815	B2	R	816	C2
R819	D3	R	822	A5
R823	A6	R	824	B7
R825	C7	R	829	B7
R830	B8	R	831	A9
R833	B9	R	834	A7
R835	A7	R	836	B8
R837	B7	R	839	B7
R842	C5	R	843	C6
R849	D8	R	850	D8
R851	C9	R	853	D9
R854	C7	R	855	C7
R856	C8	R	857	C7
R859	D7	R	861	D2
R863	D5	R	865	E9
R866	E9	R	871	E1
R872	F2	R	873	E3
R874	E3	R	880	E5
R881	E6	R	882	E6
R883	F6	R	884	F6
R885	F6	R	886	F6
R887	G6	R	888	F6
U811	B3	Z	D874	F3

<CP NR, CL6xxx>		
Title: 190C7/170C7 POWER BOARD		
Size: A3	Document Number: T906XNHBA1PHNP (715G1813-1)	Rev: 1
Date: Aug 08, 2006	Sheet 2 of 3	

Power Board C.B.A-1

715G1813-1 VER:C 2006/04/27

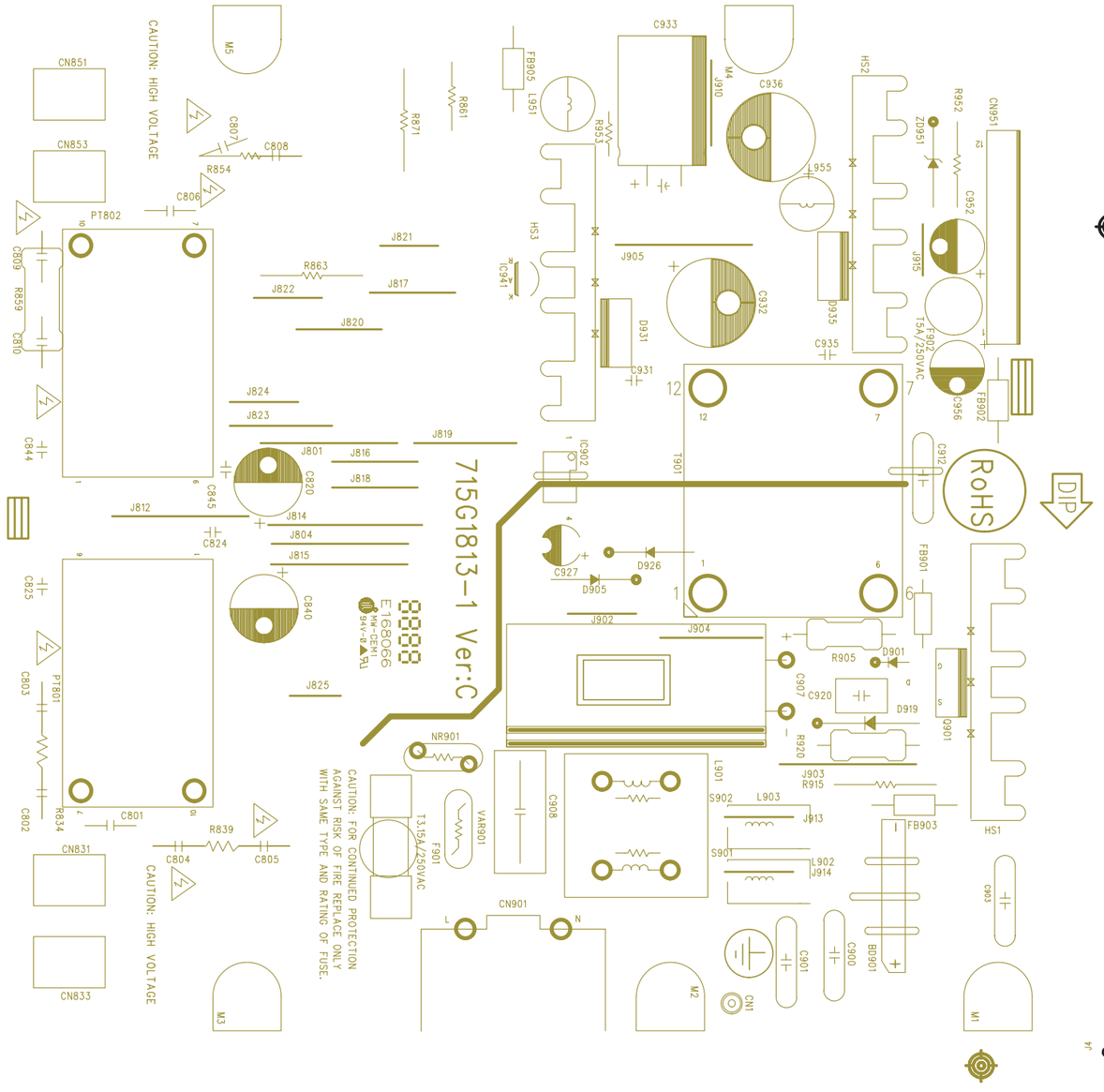
715G1813-1 Ver:C

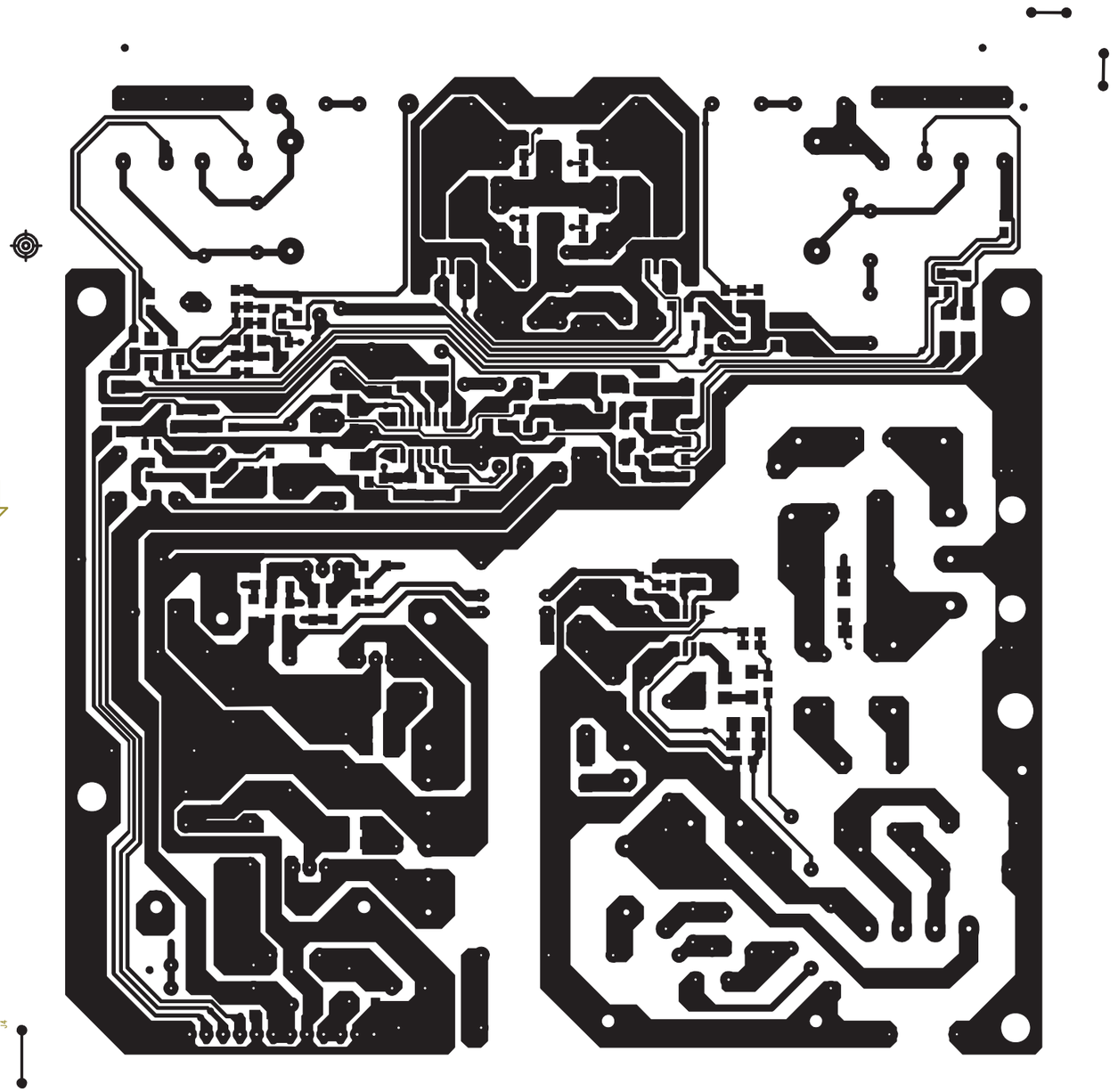


Power Board C.B.A-2

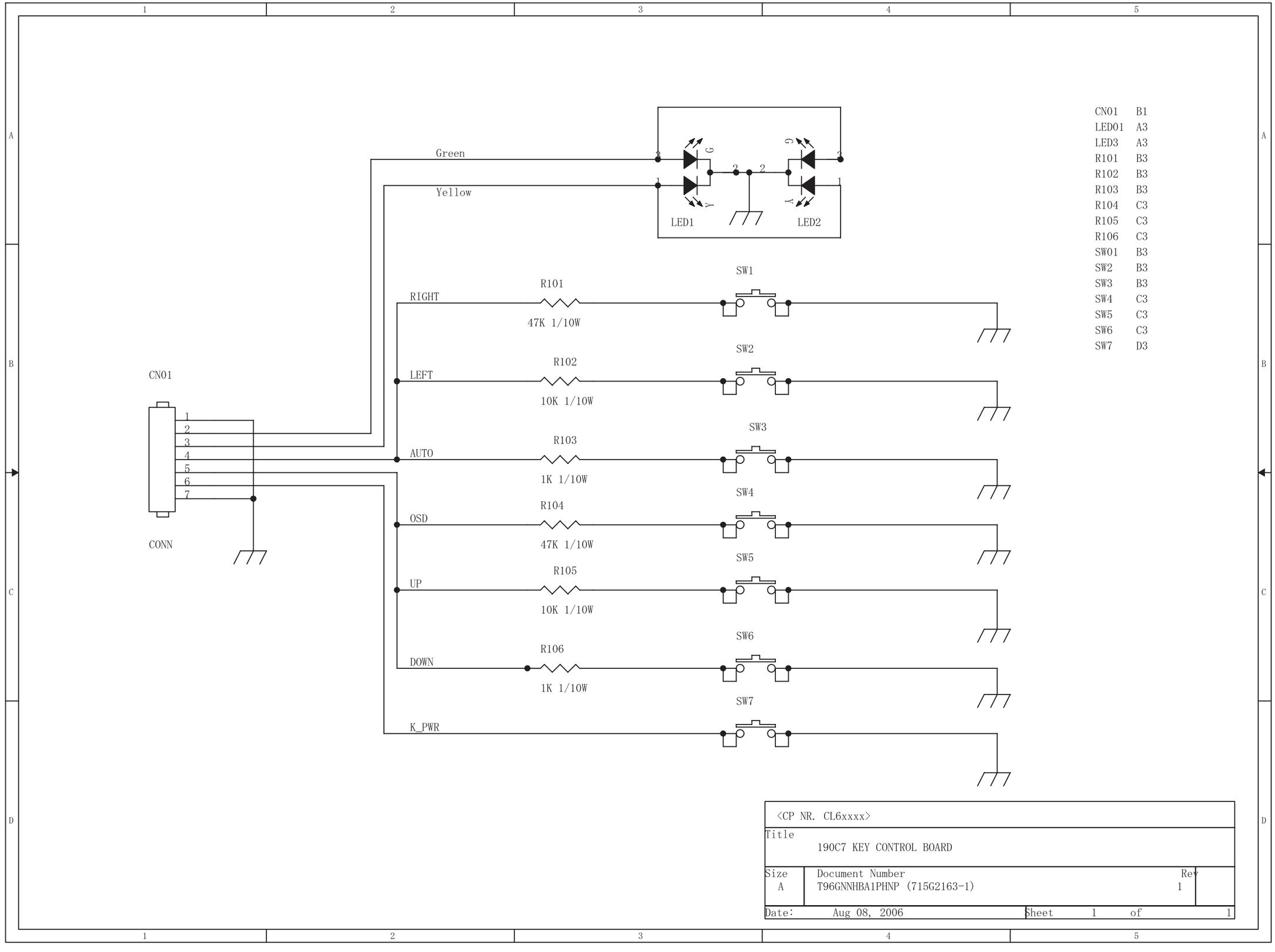
715G1813-1 VER:C 2006/04/27

715G1813-1 Ver:C





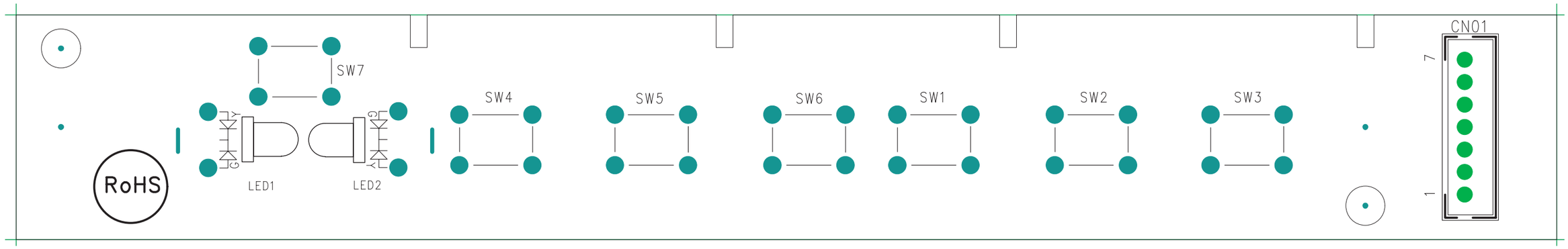
Control Diagram

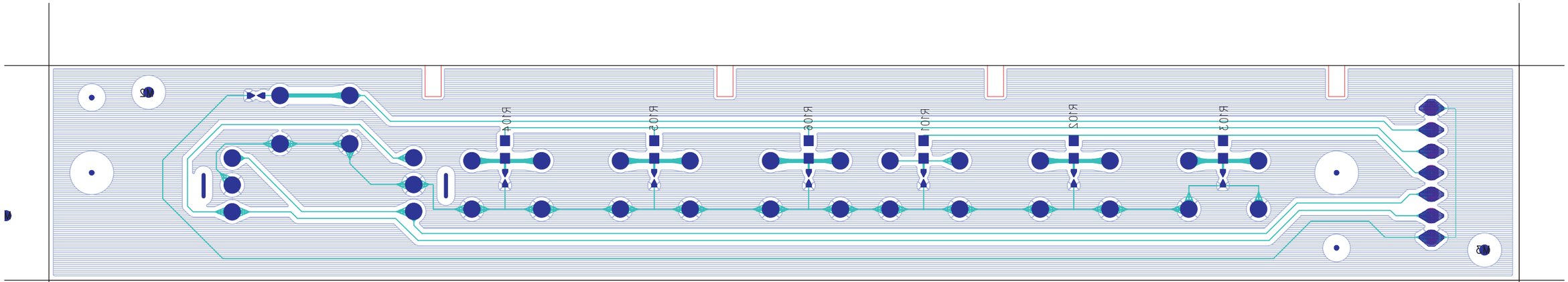


CN01	B1
LED01	A3
LED3	A3
R101	B3
R102	B3
R103	B3
R104	C3
R105	C3
R106	C3
SW01	B3
SW2	B3
SW3	B3
SW4	C3
SW5	C3
SW6	C3
SW7	D3

<CP NR. CL6xxxx>		
Title: 190C7 KEY CONTROL BOARD		
Size: A	Document Number: T96GNNHBA1PHNP (715G2163-1)	Rev: 1
Date: Aug 08, 2006	Sheet 1 of 1	

Control Board C.B.A





PHILIPS

HUDSON-7 170C7
GENERAL PRODUCT
SPECIFICATION

. ANALOG AND DIGITAL DUAL INPUT

. AUTO PICTURE ADJUSTMENT

. 15 FACTORY PRESET MODES AND 34 PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES

. NEW OSD STYLING DISPLAY FOR MODE IDENTIFICATION /ADJUSTMENT

. DDC 2B & DDC/CI COMMUNICATION CAPABILITY

. MAX. RESOLUTION 1280*1024 NON-INTERLACED AT 76 HZ

. 17□COLOR TFT LCD FLAT PANEL

. EASY TILT & SWIVEL BASE

. FULL RANGE POWER SUPPLY 90 - 264 VAC

. CE ENVIRONMENTAL POLICY

. LEAD-FREE PRODUCT POLICY

. ANTI-GLARE TO REDUCE LIGHT REFLECTION

. POWER MANAGEMENT CAPABILITY

. SOG SUPPORT

. TCO'03

.

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GENERAL PRODUCT SPECIFICATION(Continued)

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CLASS NO.

17 inch LCD Monitor
TYPE : 170C7FS/00
BRAND : PHILIPS

8639 000 17066

2004-04-17

NAME GF Chien	SUPERS.	19	590 — 2	10	A4
TY CHECK	DATE 2004-04-17	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.			

PHILIPS

1.0 FOREWORD

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

2.0 PRODUCT PROFILE

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

2.1 LCD

2.1.1

Type NR.	: LM170E03 TLB1
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 358.5(w)*296.5(h)*17(d) mm
Pixel Pitch.	: 0.264 mm x 0.264 mm
Color pixel arrangement.	: RGB stripes arrangement
Support Color.	: 16.2M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 337.92 x 270.336mm (17" diagonal)
Viewing Angle (CR>=10).	: Right:80 , Left:80 , UP:75 , down:85
Contrast ratio.	: 800 :1(typic
White luminance.	: 300 nit

2.1.2

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

2.1.3

Type NR.	: M170E5-L0C
Number of Pixels.	: 1280 (H) x1024 (V)
Physical Size.	: 358.5(w)*296.5(h)*17.0(d) mm
Pixel Pitch.	: 0.264 mm x 0.264 mm
Color pixel arrangement.	: RGB vertical stripes
Support Color.	: 16.7M colors
Display Mode.	: Normally White
Backlight.	: CCFL edge light system
Active area. (WXH).	: 337.92 x 270.34 mm (17" diagonal)
Viewing Angle (CR>=10).	: Right :80; Left :80 ; Up : 80 ; Down: 80
Contrast ratio.	: 800:1
White luminance.	: 300 nit

2.2 Scanning frequencies

H-Frequency.	: 30K - 82 KHz
V-Frequency.	: 56 - 76 Hz

2.3 Video dot rate. : < 140 MHz

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

2.5 Power consumption. : < 36 W maximum

2.6 Dimensions. :

2.7 Weight.

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2.8 Functions:

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

(2) DVI-D digital Panel Link TMDS input

2.9 Ambient temperature: 0 °C - 40 °C

2.10 Regulatory compliance:

Safety	B, CCIB / CCEE(China), CE(Europe), CSA(Canada), DEMKO(Nordic), EZU(Czech), FIMKO(Nordic), Gost(Russia), IEC 950 CB Report, NOM NYCE(Mexico), PSB(Singapore), SEMKO(Nordic),SISIR CPA(Singapore), TUV(Germany), UL(USA), * UL2601-1(NAFTA), EN60601(EU) and IEC60601-1(WW)
EMI	C-tick, CE(Europe), FCC(USA), IC(Canada), VCCI(Japan),BSMI, *IEC60601-1-2 (EU)
Ergonomics	E2000, MPRII(Sweden), Nutek(Sweden), TCO99, TCO03, TUV/GS, TUV/ERG, EPA, ISO13406-2
Compatibility	PC2001, Windows 2000, Windows 98/Me, Windows XP, NSTL

* Medical compliance only applies for dedicated models.

3.0 Electrical characteristics

3.1 Interface signals

There are two main display interface input signals (D-sub and DVI-D)

1). D-shell Analog

Input signal: Video, H-sync, V-sync,

Video: 0.7 V p-p, input impedance, 75 ohm

Sync. : Separate sync TTL level, input impedance 2k2 ohm terminate

H-sync Positive/Negative

V-sync Positive/Negative

Composite sync TTL level, input impedance 2k2 ohm terminate (Positive/Negative)

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

2). DVI-D Digital

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

3.2 Interface

3.2.1 D-Sub Cable

Length. : 1.8 M +/- 50 mm

Connector type. : D-Sub male with DDC-2B pin assignments.
Blue connector thumb-operated jackscrews

Pin Assignment:

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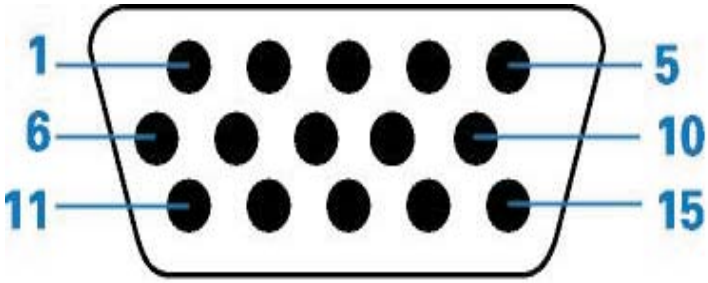


PIN No.	SIGNAL
1	Red video input
2	Green video input / sync on green
3	Blue video input
4	GND
5	GND- Cable detect
6	Red video GND
7	Green video GND
8	Blue video GND
9	DDC +3.3V or +5V
10	Logic GND
11	GND
12	Serial data line (SDA)
13	H-sync / H+V
14	V-sync
15	Data clock line (SCL)

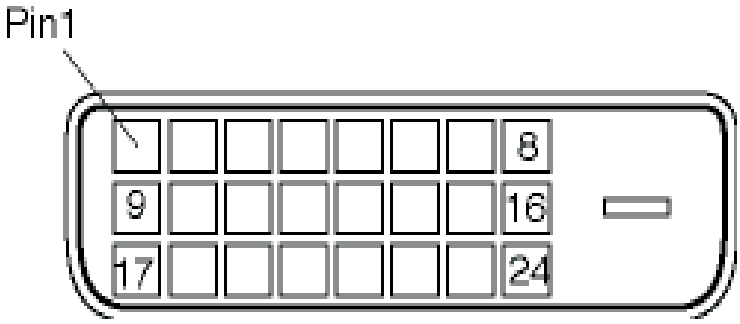
3.2.2 DVI Cable

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

Length. : 1.8 M +/- 50 mm

Connector type. : DVI-D male with DDC-2B pin assignments
White connector thumb-operated jackscrews

Pin Assignment:



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

3.2.5 Software control functions via OSD/control

OSD (On Screen Display) function

(1) Analog interface OSD:

Adjustable functions:

1. Main Menu	2.1 Sub Menu	2.2 Sub Menu 2
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness, Contrast	
Color	Original Color, 9300K,6500K, sRGB	
	User Define	Red, Green, Blue
Position	Horizontal, Vertical	
Input Selection	Analog(D-Sub), Digital(DVI-D)	
More Settings	Language	English, Spanish, French, German, Italian, S. Chinese
	Phase/ Clock	Phase, Clock
	OSD Setting	Horizontal, Vertical
Reset	Yes, No	
Serial No.:		
(Serial No.)		
(Timing Mode)		
Move Selection Then ok		

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(2) Digital interface OSD:
Adjustable functions:

1. Main Menu	2.1 Sub Menu	2.2 Sub Menu 2
MONITOR SETUP		
Exit		
Brightness & Contrast	Brightness, Contrast	
Color	Original Color, 9300K,6500K, sRGB	
	User Define	Red, Green, Blue
Position (Gray out)		
Input Selection	Analog(D-Sub), Digital(DVI-D)	
More Settings	Language,	English, Spanish, French, German, Italian, S.Chinese
	Phase/ Clock (Gray out)	Phase, Clock (Gray out)
	OSD Setting	Horizontal, Vertical
Reset	Yes, No	
Serial No.:		
(Serial No.)		
(Timing Mode)		
Move Selection Then ok		

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

3.3 Timing requirement
3.3.1 Mode storing capacity
(1) Factory preset modes. : 19
(2) Preset modes. : 40
(3)User define modes : 24
3.3.2 Factory/ Preset timings
The factory settings of size and centering are according to the reference timing charts(See as below)

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

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GENERAL PRODUCT SPECIFICATION(Continued)

Go to cover page

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 (1 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+ / +	+ / +
SEP . SYNC	Y	Y	Y	Y

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

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CLASS NO.

17 inch LCD Monitor
TYPE : 170C7FS/00
BRAND : PHILIPS

8639 000 17066

2004-04-17

NAME GF Chien | SUPERS. | 19 | 590 — 8 | 10 | A4

TY | CHECK | DATE 2004-04-17

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

2838 100 05424

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 (1 line)	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 POLARITY	- / -	- / -	Serr-	+ / +
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)	11.852 (1280 dots)	10.94 (1280 dots)
E (us)	0.889(96 dots)	0.678 (88 dots)	0.445 (48 dots)	0.137 (16 dots)
f v	60Hz	75Hz	60Hz	67Hz
O (ms)	16.667(1000 lines)	13.333 (1002 lines)	16.661 (1066 lines)	14.883 (1067lines)
P (ms)	0.05(3 lines)	0.039 (3 lines)	0.047 (3 lines)	0.112 (8 lines)
Q (ms)	0.600(36 lines)	0.48 (36 lines)	0.594 (38 lines)	0.46 (33 lines)
R (ms)	16(960 lines)	12.774 (960 lines)	16.005 (1024 lines)	14.283 (1024 lines)
S (ms)	0.017(1 lines)	0.04 (3 lines)	0.015 (1 line)	0.028 (2 lines)
SYNC. H/V POLARITY	+/+	+ / +	+ / +	+ / +
SEP . SYNC	Y	Y	Y	Y

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CLASS NO.

2006-04-17

17 inch LCD Monitor

TYPE :170C7FS/00

BRAND : PHILIPS

8639 000 17066

NAME GF Chien | SUPERS. | 19 | 590 — 9 | 10 | A4

TY | CHECK | DATE 2006-04-17

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

2838 100 05424

GENERAL PRODUCT SPECIFICATION(Continued)

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	35	36
RESOLUTION	960X720	960X720	1280x720	1280x720
Dot clock(MHz)	57.58	72.42	74.5	89.04
F h	44.76kHz	56.4kHz	44.772KHz	52.5KHz
A (us)	22.34(1286 dots)	17.73(1284 dots)	22.335	19.048
B (us)	1.72(99 dots)	1.44(104 dots)	1.718	1.527
C (us)	2.58(148 dots)	2.21(160 dots)	2.577	2.336
D (us)	16.67(960 dots)	13.256(960 dots)	17.181	14.376
E (us)	0.856(49 dots)	0.780(56 dots)	0.859	0.809
F v	60Hz	75Hz	59.855	70
O (ms)	16.667(746 lines)	13.333(752 lines)	16.707	14.286
P (ms)	0.067(2.9 lines)	0.053(3 lines)	0.112	0.057
Q (ms)	0.495(22 lines)	0.5(28 lines)	0.447	0.495
R (ms)	16.081(720 lines)	12.766(720 lines)	16.082	13.714
S (ms)	0.0228(1 lines)	0.0184(1 lines)	0.067	0.019
SYNC. H/V POLARITY	-/ +	-/ +	-/+	-/+
SEP . SYNC	Y	Y	Y	Y

MODE NO.	37	38	39	40
RESOLUTION	1280x720	1280 x 768	1280 x 768	1280 x 768
Dot clock(MHz)	95.75	79.5	94.976	102.25
F h	56.456KHz	47.776kHz	56kHz	60.289kHz
A (us)	17.713	20.931	17.857	16.587
B (us)	1.337	1.61	1.432	1.252
C (us)	2.172	2.415	2.19	2.034
D (us)	13.368	16.101	13.477	12.518
E (us)	0.836	0.805	0.758	0.782
F v	74.777	59.87Hz	70Hz	74.893Hz
O (ms)	13.373	16.703	14.286	13.352
P (ms)	0.089	0.147	0.054	0.116
Q (ms)	0.478	0.419	0.5	0.448
R (ms)	12.753	16.075	13.714	12.739
S (ms)	0.053	0.063	0.018	0.05
SYNC. H/V POLARITY	-/+	- / +	-/+	-/ +
SEP . SYNC	Y	Y	Y	Y

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CLASS NO.

17 inch LCD Monitor
TYPE : 170C7FS/00
BRAND : PHILIPS

8639 000 17066

2004-04-17

NAME GF Chien | SUPERS. | 19 | 590 — 10 | 10 | A4

TY | CHECK | DATE 2004-04-17 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

2838 100 05424

3.3.3 Horizontal scanning

Sync polarity. : Positive or Negative
Scanning frequency. : 30 - 82 KHz

3.3.4 Vertical scanning

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

3.4 Power input connection

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

3.5 Power management

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

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

According to VESA power saving signal. TCO'99 power saving requirement EPA energy star requirement

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

3.6 Display identification

3.6.1 In accordance with VESA Display Channel Standard V1.0 and having DDC-2B and DDC/CI capability.

3.6.2 In accordance with DVI requirement (DDWG digital Visual Interface revision 1.0) use DDC-2B, DDC/CI, and EDID 3.0 structure 2.0

4.0 Visual characteristics

4.1 Test conditions

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

(1) Input signal: As defined in 3.3, 1280 x 1024 non-interlaced mode (80K/75Hz), signal sources must have 75 ohm output impedance.

(2) Luminance setting: controls to be set to 200 nits with full screen 100 % duty cycle white signal

(3) Warm up: more than 30 minutes after power on with signal supplied.

(4) Ambient light: 400 -- 600 lux.

(5) Ambient temperature: 20 ± 5 °C

4.2 Resolution
Factory preset modes (19 modes)

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Note: 1. Screen displays perfect picture at 15 factory-preset modes.

Item	H.Freq . (KHz)	Mode	Resolution	V.Freq. (Hz)	Item	H.Freq. (KHz)	Mode	Resolution	V.Freq. (Hz)
1	31.469	DOS	720x400	70.087	12	60.023	VESA	1024x768	75.029
2	31.469	VESA	640x480	59.940	13	67.500	VESA	1152x864	75.000
3	35.000	MACINTOSH	640x480	67.000	14	60.000	VESA	1280x960	60.000
4	37.861	VESA	640x480	72.809	15	63.981	VESA	1280x1024	60.020
5	37.500	VESA	640x480	75.000	16	79.976	VESA	1280x1024	75.025
6	35.156	VESA	800x600	56.250	17	49.700	MACINTOSH	832x624	75.000
7	37.879	VESA	800x600	60.317	18	68.7	MACINTOSH	1152x870	75
8	48.077	VESA	800x600	72.188	19	71.8	SUN Mode II	1152x900	76
9	46.875	VESA	800x600	75.000					
10	48.363	VESA	1024x768	60.004					
11	56.476	VESA	1024x768	70.069					

2. Screen displays visible picture with OSD warning when input modes are other then 34 preset modes

4.3 Brightness: 200 nits (at panel color temperature, Screen center point, Fig. 1)

4.4 Image size

4.4.1 Actual display size 338x270mm

4.5 Brightness uniformity
Set contrast at 50% and turn the brightness to get average above 200 nits at center of the screen.
Apply the Fig 1. It should comply with the following formula:

$$\frac{\text{Minimum luminance of nine points (brightness)}}{\text{Maximum luminance of nine points (brightness)}} >= 0.75 \text{ (Min)}$$

4.6 Check Cross talk (S)
Apply Pattern 2. Set contrast at 100 % and brightness at 100 %. Measure A. Then output Pattern 3 and measure A
The cross talk value:

$$\frac{ABS\ (YA - YB)}{YA} \times 100\ \% < 2.0\%\ (Max)$$

4.7 White color adjustment

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

Apply full white pattern, with brightness in 100 % position and the contrast control at 50 % position. The 1931 CIE Chromaticity (color triangle) diagram (x,y) coordinate for the screen center should be:

9300K CIE coordinates	X = 0.283 ± 0.020 Y = 0.297 ± 0.020
6500K CIE coordinates	X = 0.313 ± 0.020 Y = 0.329 ± 0.020
sRGB CIE coordinates	X = 0.313 ± 0.008 Y = 0.329 ± 0.008

5.0 Mechanical characteristics

5.1 Controls

Front. :

DC power switch
OSD function key
UP/DOWN (Brightness key)
LEFT/RIGHT
Auto key

Rear. :

Video signal connector
DVI signal connector
Power cord socket

5.2 Unit dimension / Weight

Set dimension (incl. pedestal). : 403(W) * 392(H) * 171(D) mm
Net weight. : 4.63 Kg

5.3 Tilt and swivel base

Basic base:
Tilt angle: -5 ° to +20 °
Swivel rotation:

5.4 Transportation packages

5.4.1 Shipping dimension/Weight

Carton dimension. : 482(W) * 488(D) * 189(H) mm
Gross weight. : 6.0 Kg

5.4.2 Block unit / Palletization

Basic Base:

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

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

6.0 Environmental characteristics

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

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6.1 Susceptibility of display to external environment

Operating

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

Storage

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

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

6.2 Transportation tests

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

6.3 Display disturbances from external environment
According to IEC 801-2 for ESD disturbances

6.4 Display disturbances to external environment

6.4.1 EMI

EMI: FCC, VCCI, CE, C-Tick, MPRIII, BCIQ, IC, BSMI, *IEC60601-1-2 (EU)
* Medical compliance only applies for dedicated models.

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PHILIPS

7.0 Reliability

7.1. Mean Time Between Failures
System MTBF (Excluding the LCD panel and CCFL): 50,000 hrs CCFL MTBF: 30,000 hrs (50% of original brightness)

8.0 Quality assurance requirements

8.1 Acceptance test
According to MIL-STD-105D Control II level

AQL: 0.4 (major)
1.5 (minor)
(Please also refer to annual quality agreement)
Customer acceptance criteria: UAW0377/00

9.0 Serviceability
The serviceability of this monitor should fulfill the requirements, which are prescribed in UAW-0346 and must be checked with the checklist UAT-0361.

10.0 Philips' Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	170C7
1 lit subpixels	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels	0
Distance between two bright dot defects	> 15 mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	
MODEL	170C7
1 dark subpixels	4
2 adjacent dark subpixels	2
3 adjacent dark subpixels	0
Distance between two dark dot defects	> 15 mm
Total dark dot defects of all types	4

Total DOT DEFECTS	
MODEL	170C7
Total bright or dark dot defect of all type	5

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

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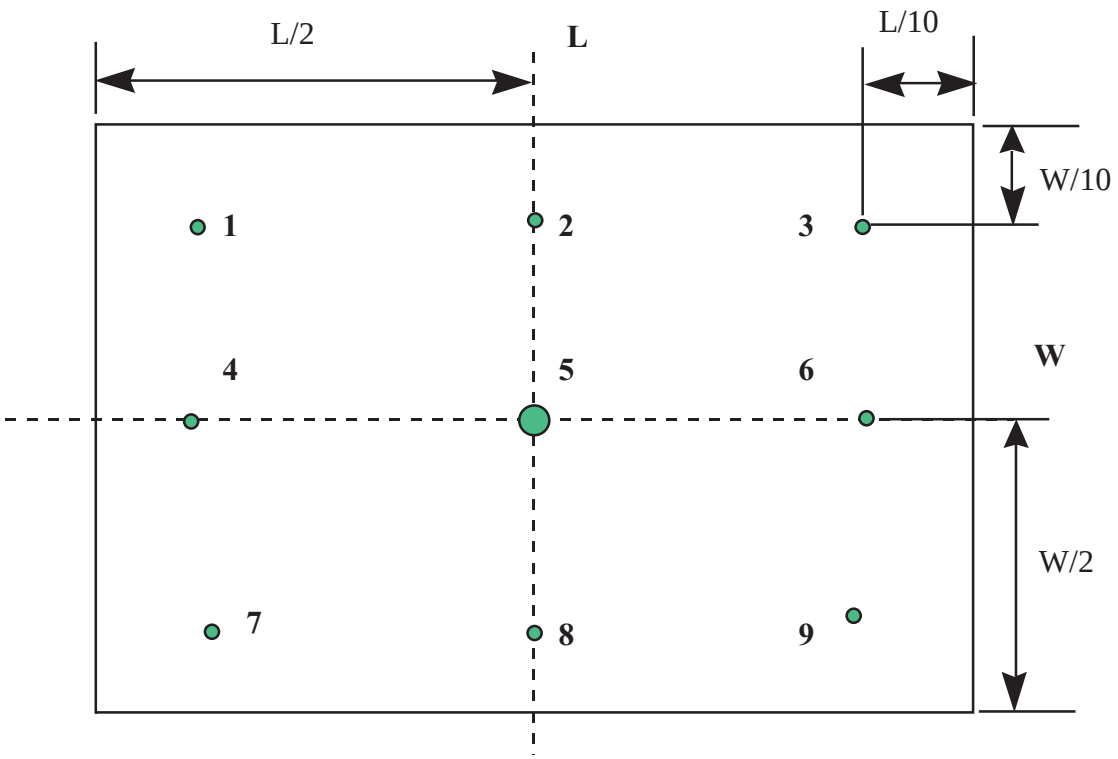
Fig 1: Brightness and Uniformity



Position 5 = Screen center point

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CLASS NO.	17 inch LCD Monitor TYPE : 170C7FS/00 BRAND : PHILIPS	8639 000 17066
2004-04-17		
NAME GF Chien	SUPERS.	19 / 590 — 16 / 10 / A4
TY / CHECK	DATE 2004-04-17	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

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

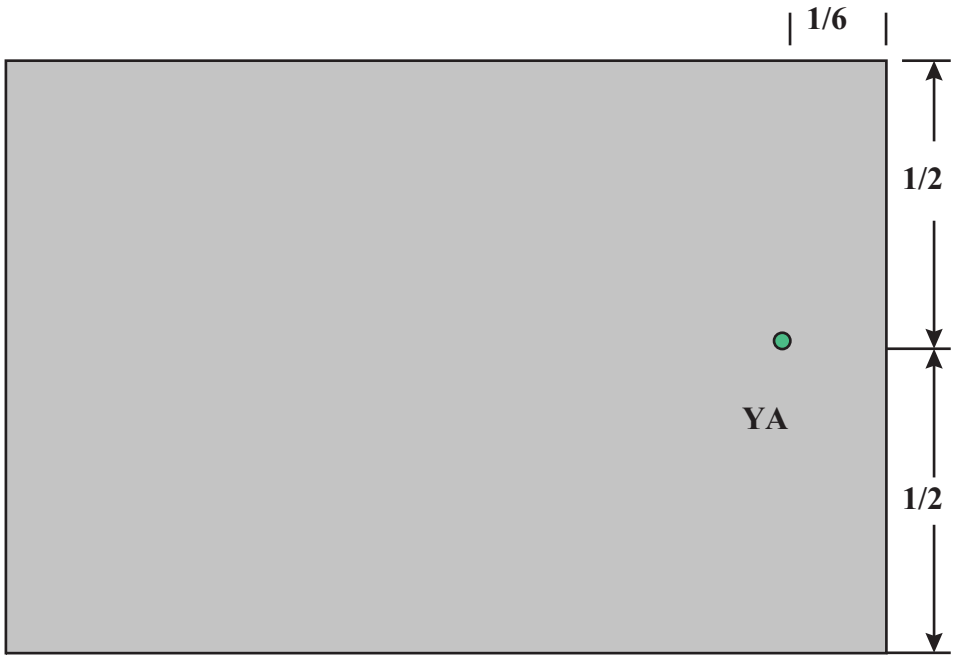
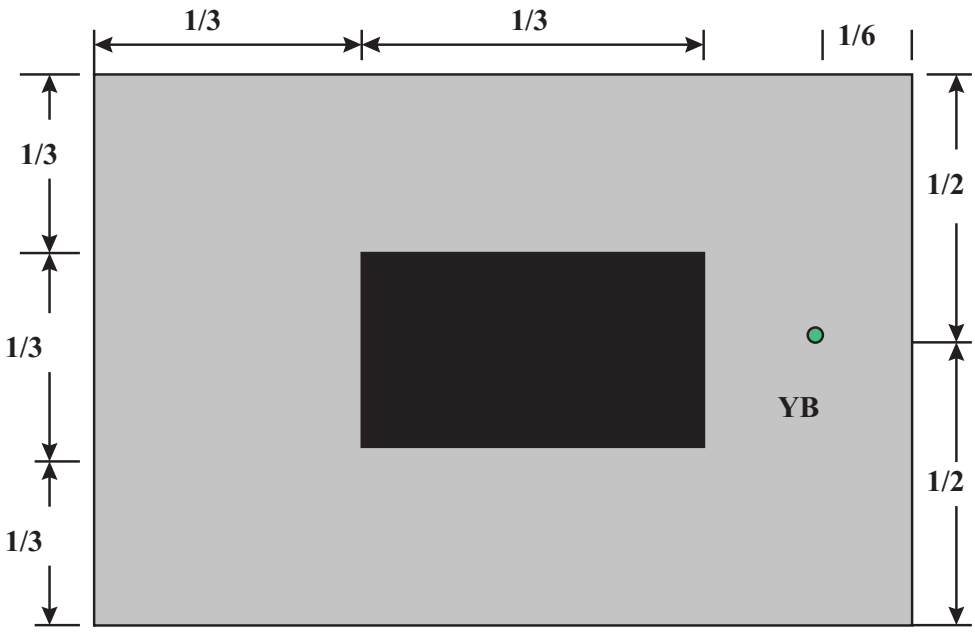


Fig 3: Cross talk pattern
Center at Gray level 0 (Black)



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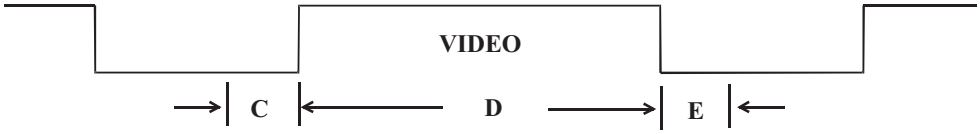
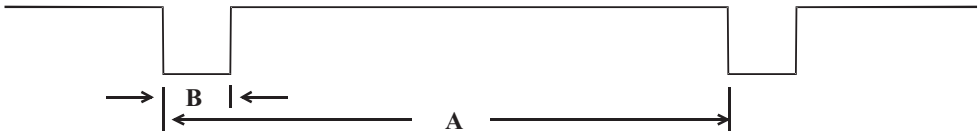
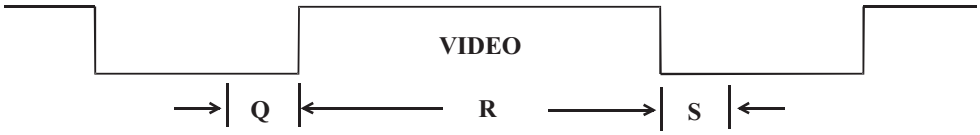
SEPARATE SYNC.

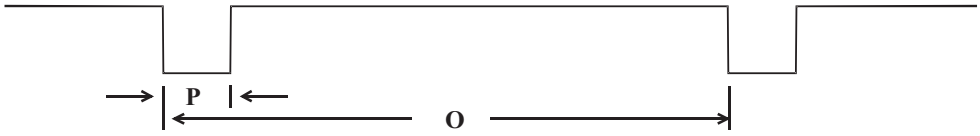


HORIZONTAL

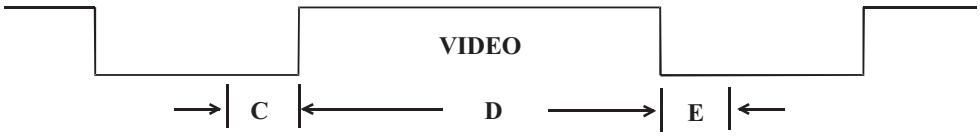




VERTICAL



COMPOSITE SYNC.



HORIZONTAL

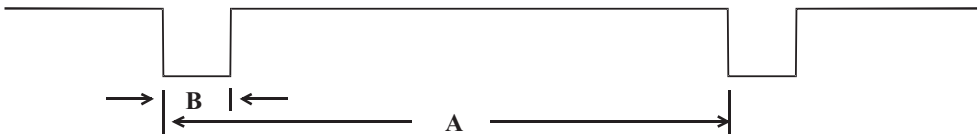


FIG-4 TIMING CHART -1

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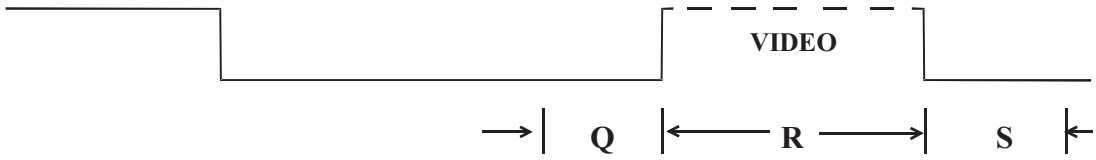
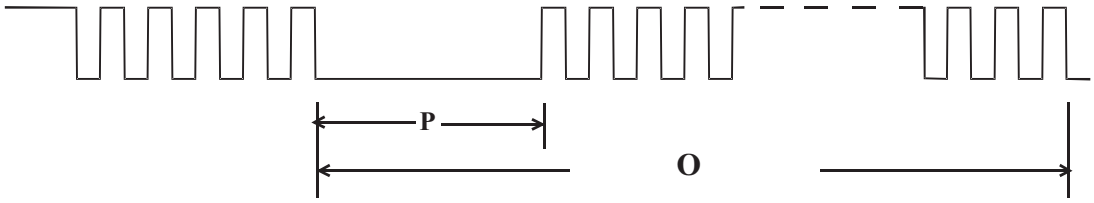
CLASS NO.	17 inch LCD Monitor TYPE : 170C7FS/00 BRAND : PHILIPS			8639 000 17066			
2004-04-17							
NAME GF Chien	SUPERS.	19	590 — 18	10		A4	
TY / CHECK	DATE 2004-04-17	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.					

PHILIPS

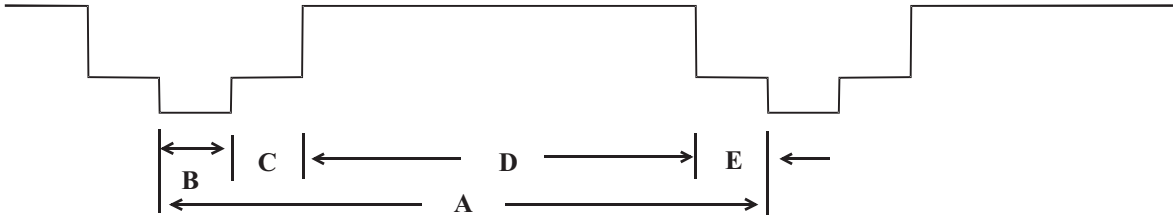
VERTICAL





COMPOSITE SYNC. & VIDEO
(SYNC. ON GREEN)

HORIZONTAL



VERTICAL

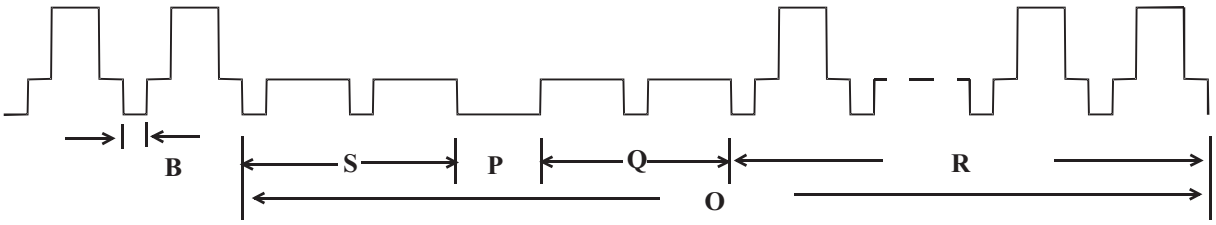


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FIG-5 TIMING CHART -2

CLASS NO.	17 inch LCD Monitor TYPE :170C7FS/00 BRAND : PHILIPS	8639 000 17066
2006-04-17		

NAME GF Chien	SUPERS.	19	590 — 19	10	A4
TY / CHECK	DATE 2006-04-17	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.			

2838 100 05424

Exploded View

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Type: 170C7FS/00

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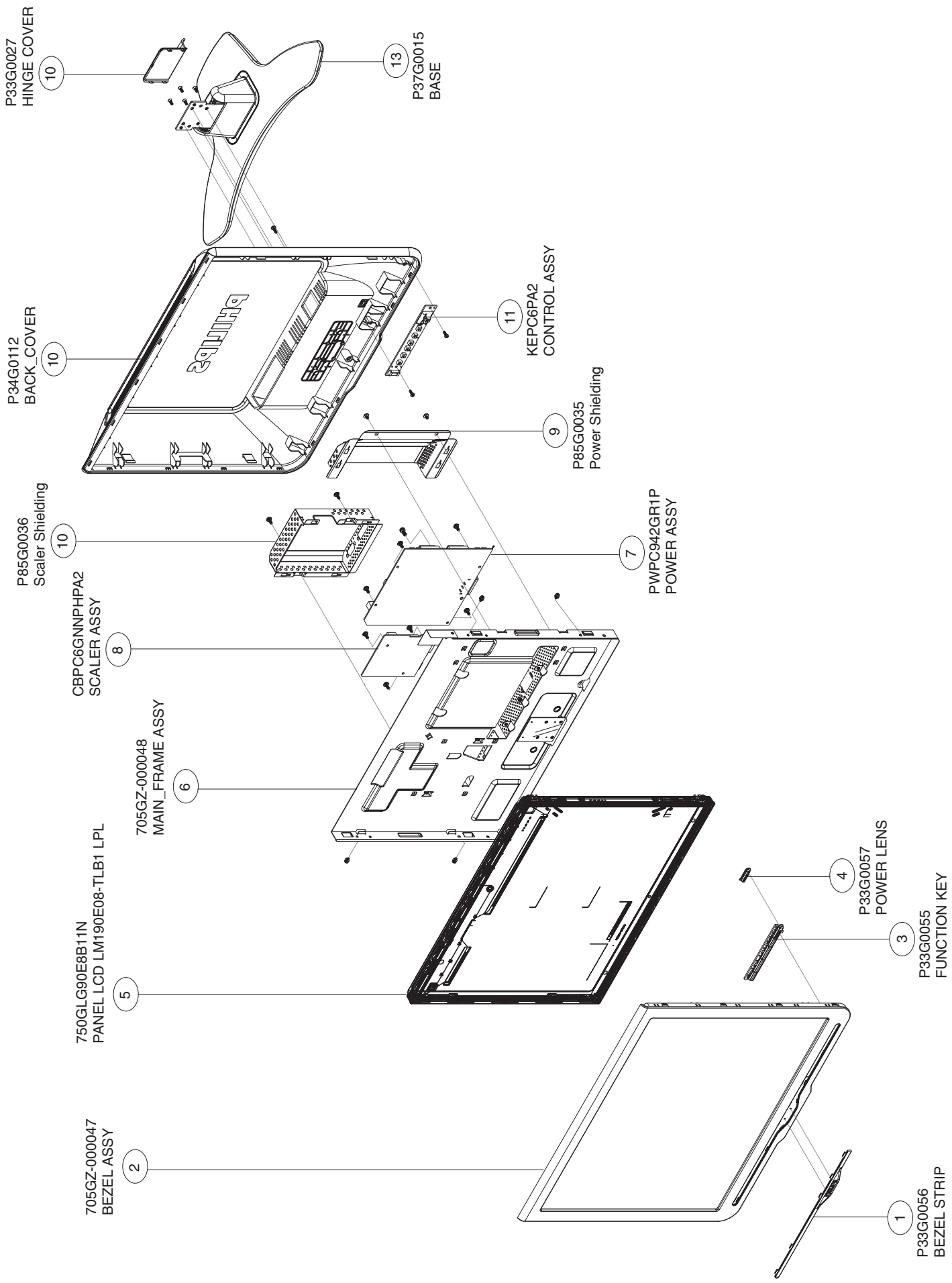
Exploded View

Type: 190C7FS/00



Repair Tips

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0. Warning

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

1. Servicing of SMDs (Surface Mounted Devices)

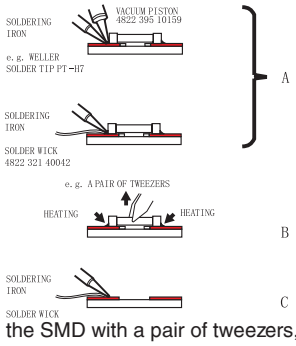
1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

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

Fig. 1 DISMOUNTING



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

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

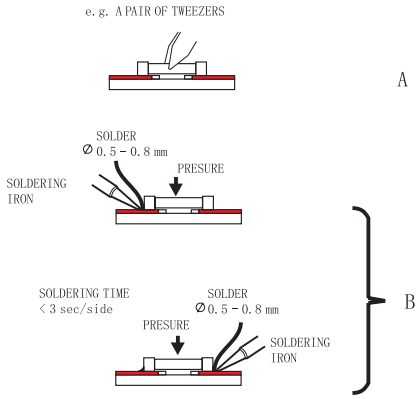
1.3 Caution on removal

- When handling the soldering.iron. use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

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

Fig. 2 MOUNTING



2. Caution when attaching SMDs

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

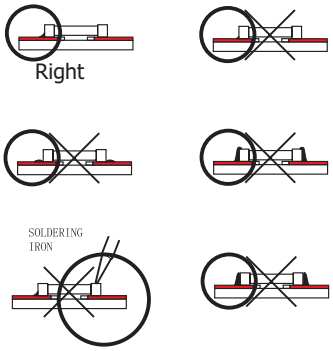


Fig.3 Examples

3. Lead-free product identification

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

4. Lead-free product repair instruction

4.1 Use only lead-free Solder Alloy 0622 149 00106(1.2mm SAC305) or 0622 14900108(1.0mm SAC305).
Remark: For lead free soldering material, please visit www.alphametals.com website for details. This is recommended by Philips.

4.2 Use only adequate solder tools applicable for lead-free soldering-tin. The solder tool must be able to reach at least a solder-temperature of 400 , to stabilize the adjusted temperature at the solder-tip and to exchange solder-tips for different applications.
Small Passives/Actives to be removed with thermal tweezers
Automated system for IC and BGA repair (Microscope, Camera, Beam split optics, Computer, Programmer, Heat controllers, Vacuum system, Laser pointer) Solder Hand-Tool (Adjustable in temperature height, Temperature shall be held constant,Flexible tips)

4.3 Adjust your solder tool so that a temperature around 360 -380 is reached and stabilized at the solder joint.
Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400 otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed.Corrosion of Tool-Spikes can be avoided when using SAC305 and a temperature of less than 400 .

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

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

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

5. Rework on BGA (Ball Grid Array) ICs

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

Device Removal
As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.
To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation
When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent. After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the(LF)BGA
Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.
To reflow the solder, apply a temperature profile according to the IC data sheet. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

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

Repair Flow Chart

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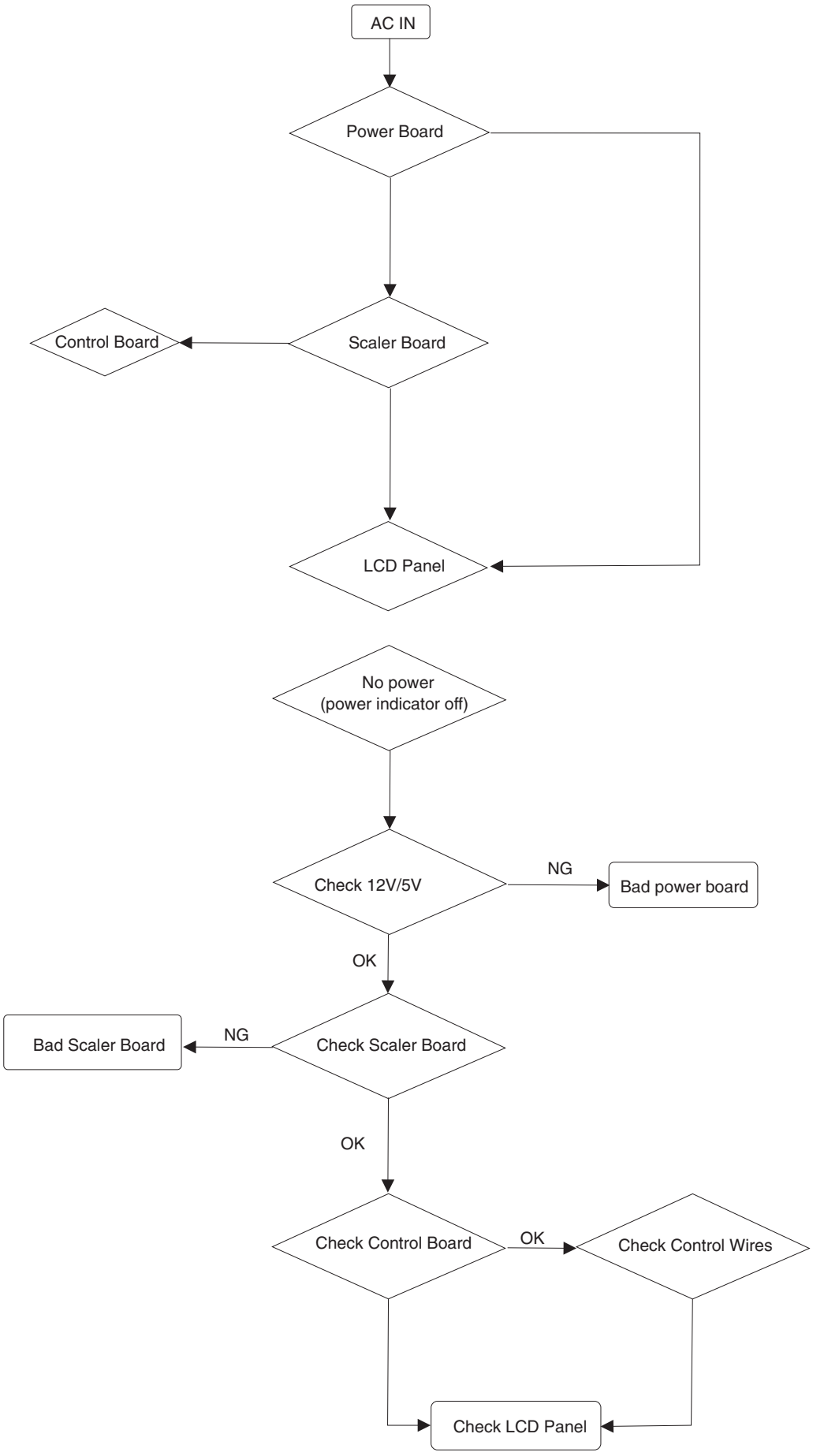
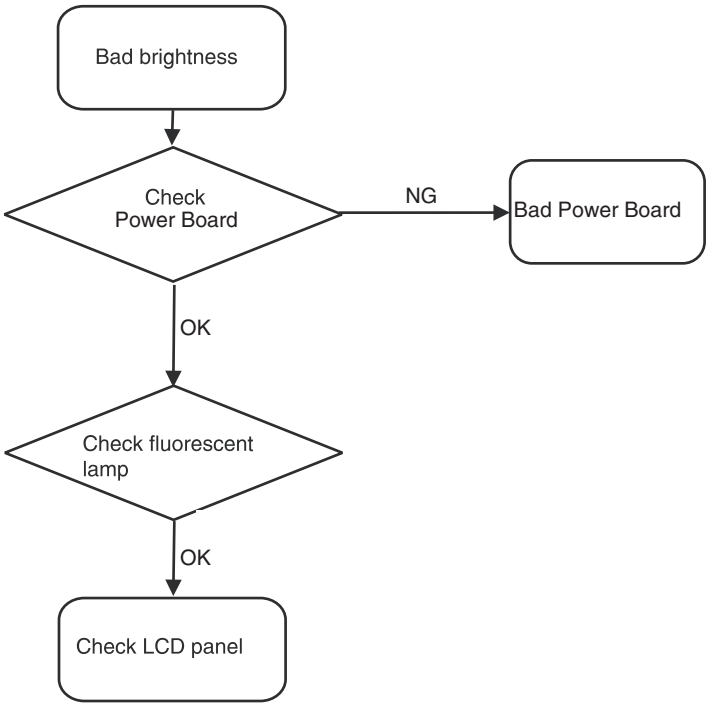
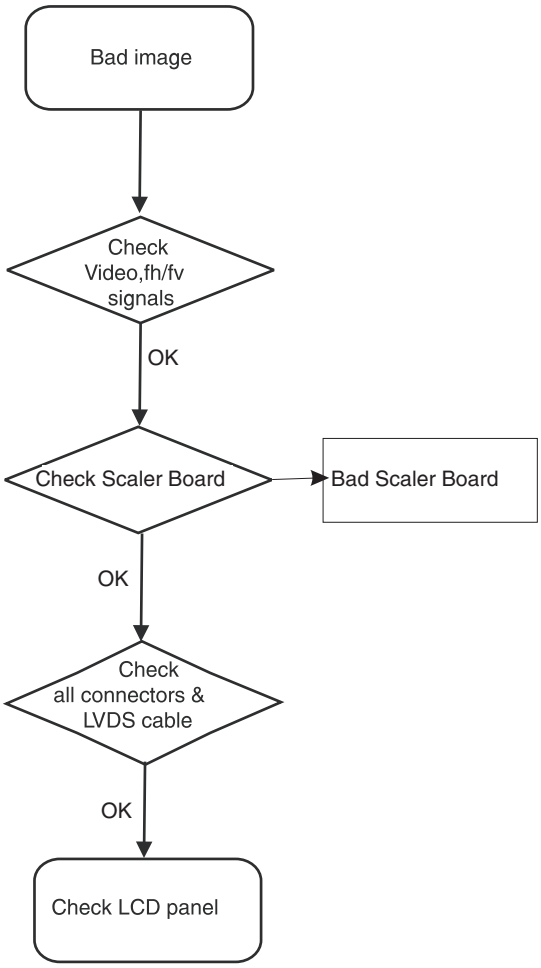


Repair Flow Chart





Repair Flow Chart

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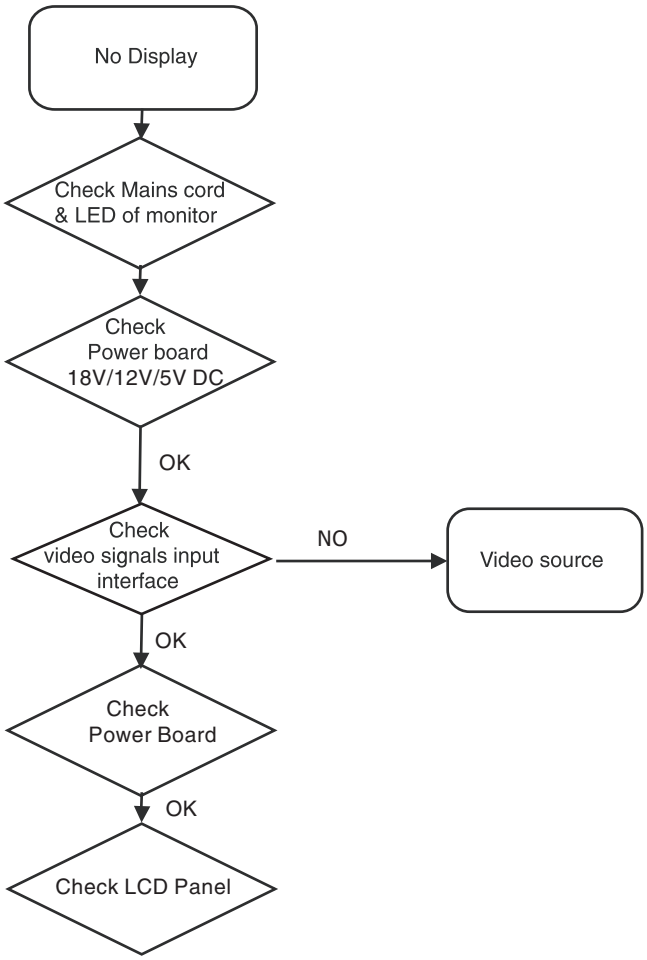

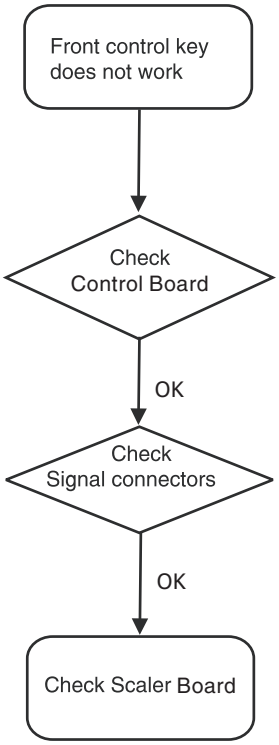

Recommended Parts List

TYPE:170C7FS/00(CPT)

Item	TPV 18NC	DESCRIPTION	Philips 12NC
	089G179E30C912	FFC CABLE 30P 180MM P1.0	9965 000 40014
	089G1738WAA922	I/F CABLE	9965 000 40015
	705GZ-000040	BEZEL ASS'Y	9965 000 40018
	P33G0055	FUNCTION KEY	9965 000 40019
	P33G0057	POWER LENS	9965 000 40020
	P34G0109	BEZEL	9965 000 40021
	705GZ-000041	BACK COVER ASS'Y	9965 000 40022
	P15T0048	HINGE PLATE	9965 000 40023
	P34G0110	BACK COVER	9965 000 40024
	P33G0027	HINGE COVER	9965 000 40025
	P37G00021VB	FOLD-BASE	9965 000 40026
	705GZ-000042	MAIN FRAME ASSY	9965 000 40027
	P44G700	CARTON	9965 000 40028
	P44G7001	CUSHION-RIGHT	9965 000 40029
	P44G7002	CUSHION-LEFT	9965 000 40030
	P40G7N0081310A	RATING LABEL	9965 000 40032
	P33G00581	HOUSING COVER	9965 000 40033
	P45G46014	PE BAG FOR MONITOR	9965 000 40034
U401	056G562913	NT68663MEFG	9965 000 36927
U403	056G113324	AT24C16AN-10SU-2.7	9965 000 35964
U403	056L113356	M24C16-WMN6T/W SO-8	9965 000 40044
U404	056G113334	M24C02-WMN6TP	9965 000 35965
U405	056G113334	M24C02-WMN6TP	9965 000 35965
U701	056G5637	AIC1084-33PM	9965 000 37095
U701	056G56321	AP1084K33LA	9965 000 37330
U701	056G56363	MM1117DT33 TO-252 MMC	9965 000 36928
U701	056G563931	AME1085-3.3-TO263	9965 000 40043
U702	056G56331	AI1117D-1.8-EI	9965 000 35963
U702	056G563930	IC AIC1117A-18PE SOT-252	9965 000 40042
U811	056G60810	0Z9938	9965 000 36059

Spare Parts List

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Model: 170C7FS/00(CPT) 12NC: 8639 000 17066

Item	TPV 18NC	Description	Philips 12NC
Mechanical Parts			
	705GZ-000040	BEZEL ASS'Y	9965 000 40018
	P33G0055	FUNCTION KEY	9965 000 40019
	P33G0057	POWER LENS	9965 000 40020
	P34G0109	BEZEL	9965 000 40021
	705GZ-000041	BACK COVER ASS'Y	9965 000 40022
	P15T0048	HINGE PLATE	9965 000 40023
	P34G0110	BACK COVER	9965 000 40024
	P33G0027	HINGE COVER	9965 000 40025
	P37G00021VB	FOLD-BASE	9965 000 40026
	705GZ-000042	MAIN FRAME ASSY	9965 000 40027
	P33G00581	HOUSING COVER	9965 000 40033
Packing Parts			
	P44G700	CARTON	9965 000 40028
	P44G7001	CUSHION-RIGHT	9965 000 40029
	P44G7002	CUSHION-LEFT	9965 000 40030
	P45G46014	PE BAG FOR MONITOR	9965 000 40034
Accessory			
	089G404A18NLSI	POWER CORD	9965 000 40016
	P70G70058131A	E-D.F.U	9965 000 40031
miscellanea			
	089G179E30C912	FFC CABLE 30P 180MM P1.0	9965 000 40014
	089G1738WAA922	I/F CABLE	9965 000 40015
	P40G7N0081310A	RATING LABEL	9965 000 40032
LCD Panel			
	750GLC70A7P11N	PANEL LCD 17" EA07P 000 CPT	9965 000 40017
PCB Assy			
	CBPC6CNNPHPA1	SCALER ASSY	9965 000 40035
	KEPC6PA1	CONTROL ASSY	9965 000 40036
	PWPC742CR1P	POWER ASSY	9965 000 40037
PCB Assy			
	CBPC6CNNPHPA1	SCALER ASSY	9965 000 40035
Various			
CN202	088G35424FH	DV1 CONNECTOR 24PIN	9965 000 36926
CN405	088G35315FH	D-SUB 15PIN	9965 000 35960
CN406	033G801930FH	FPC CONN. 1.0MM 30P	9965 000 36924
X401	093G2251	CRYSTAL 12MHZ HC-49US ARG6-120	9965 000 35961
X401	093G22901H	CRYSTAL 12M000 20P AT-49	9965 000 40041
	040G4576241B	LABEL-CPU	9965 000 35944
C401	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C402	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C403	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C404	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C405	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C406	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C407	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C408	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C412	065G060322415	CHIP 0.22UF 16VX5R	9965 000 36920
C413	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C414	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C416	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C417	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C418	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C419	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C420	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C421	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C422	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C423	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C424	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C425	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C426	067G5154713C	EC 470UF 16V GF 10*12.5MM	9965 000 40039
C426	067G215L4713N	KY16VB470M-L 10*12.5	9965 000 36922
C427	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C428	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C429	065G060310031	CHIP 10PF -0.5PF 50V NPO	9965 000 36916
C430	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C431	067G5154704C	EC 47UF 25V GF 5*11MM	9965 000 40038
C431	067G215V4704N	KY25VB47-M-CC3.0 5*11MM	9965 000 36923
C432	067G5154797C	EC 4U7 50V GF 5*11MM	9965 000 40040
C432	067G215Y4797N	LOW ESR EC 4.7 UF 50V NCC	9965 000 35959
C436	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C445	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C446	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C447	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C448	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C449	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C454	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C455	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C456	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C457	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C458	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C459	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C460	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C461	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C469	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C470	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C701	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C702	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C703	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C704	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C705	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C706	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C707	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C707	067G215P1014C	105 100UF M 25V	9965 000 37776
C708	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C708	067G215P1014C	105 100UF M 25V	9965 000 37776
C709	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C709	067G215P1014C	105 100UF M 25V	9965 000 37776
C710	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C710	067G215P1014C	105 100UF M 25V	9965 000 37776
C711	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C711	067G215P1014C	105 100UF M 25V	9965 000 37776
C712	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C712	067G215P1014C	105 100UF M 25V	9965 000 37776
R401	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R402	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R403	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R404	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R405	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R406	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R407	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R408	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R410	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R411	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R414	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R416	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R417	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R418	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R419	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R420	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R421	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R422	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R423	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R424	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R426	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R427	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R428	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R431	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R432	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R433	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R434	061L0603105	RST SM 0603 RC0603 1M PM5 R	9965 000 35973
R435	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R436	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R437	061G060382	CHIPR 82 OHM -5% 1/10W	9965 000 40047
R438	061G060382	CHIPR 82 OHM -5% 1/10W	9965 000 40047
R440	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R441	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R442	061L0603332	CHIP 3.3K OHM 1/10W	9965 000 35978
R443	061L0603332	CHIP 3.3K OHM 1/10W	9965 000 35978
R445	061L06033900F	CHIP 390 OHM 1/10W 1%	9965 000 35979
R446	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R447	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R451	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R452	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R453	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R454	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R455	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R456	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R457	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R458	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R459	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R460	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981

R461	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R462	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R463	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R464	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R465	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R466	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R467	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R468	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R469	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R470	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R471	061L06033900F	CHIP 390 OHM 1/10W 1%	9965 000 35979
R472	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R473	061G1206103	10 KOHM 1/8W	9965 000 40048
R476	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R478	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R479	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R480	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R481	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R488	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R489	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R490	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R491	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R499	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R701	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
FB401	071G59B300K		9965 000 36934
FB402	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB403	071G59B300K		9965 000 36934
FB404	071G59B300K		9965 000 36934
FB405	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB406	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB407	071G56C102TA	CHIP BEAD 1000R/400MA FCM2012KF-	9965 000 40050
FB407	071G56D102	B201209D102TT	9965 000 37332
FB408	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB408	071G56K121	CHIP BEAD	9965 000 35993
FB410	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB410	071G56K121	CHIP BEAD	9965 000 35993
FB411	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB411	071G56K121	CHIP BEAD	9965 000 35993
FB412	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB412	071G56K121	CHIP BEAD	9965 000 35993
FB413	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB701	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB701	071G56K121	CHIP BEAD	9965 000 35993
FB702	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB702	071G56K121	CHIP BEAD	9965 000 35993
FB703	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB703	071G56K121	CHIP BEAD	9965 000 35993
FB704	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB704	071G56K121	CHIP BEAD	9965 000 35993
D416	093G6442PP	BAV70 SOT-23	9965 000 35995
D417	093G6442PP	BAV70 SOT-23	9965 000 35995
D701	093G1020PH	DIODE S1D-E3 VISHAY	9965 000 37793
D701	093G20403F	FA20-04	9965 000 36935
D702	093G1020PH	DIODE S1D-E3 VISHAY	9965 000 37793
D702	093G20403F	FA20-04	9965 000 36935
ZD401	093G39S34T	UDZS5.6B	9965 000 35996
ZD402	093G39S34T	UDZS5.6B	9965 000 35996
ZD403	093G39S34T	UDZS5.6B	9965 000 35996
ZD404	093G39S34T	UDZS5.6B	9965 000 35996
ZD405	093G39S34T	UDZS5.6B	9965 000 35996
ZD406	093G39S34T	UDZS5.6B	9965 000 35996
ZD407	093G39S34T	UDZS5.6B	9965 000 35996
ZD408	093G39S34T	UDZS5.6B	9965 000 35996
ZD409	093G39S34T	UDZS5.6B	9965 000 35996
ZD410	093G39S34T	UDZS5.6B	9965 000 35996
ZD411	093G39S34T	UDZS5.6B	9965 000 35996
ZD414	093G39S34T	UDZS5.6B	9965 000 35996
Q401	057G4174	PMBS3904/PHILIPS-SMT(04)	9965 000 35966
Q401	057G417903T	TRA SIG SM MMBT3904 (PHSE) R	9965 000 40045
Q402	057G41713T	KEC 2N3906S-RTK/PS	9965 000 35967
Q402	057G761900T	BC857 SOT23	9965 000 40046
Q404	057G41713T	KEC 2N3906S-RTK/PS	9965 000 35967
Q404	057G761900T	BC857 SOT23	9965 000 40046
Q405	057G7631	A03401 SOT23 BY AOS(A1)	9965 000 35968
Q406	057G4174	PMBS3904/PHILIPS-SMT(04)	9965 000 35966
Q406	057G417903T	TRA SIG SM MMBT3904 (PHSE) R	9965 000 40045
U401	056G562913	NT68663MEFG	9965 000 36927
U403	056G113324	AT24C16AN-10SU-2.7	9965 000 35964
U403	056L113356	M24C16-WMN6T/W SO-8	9965 000 40044
U404	056G113334	M24C02-WMN6TP	9965 000 35965
U405	056G113334	M24C02-WMN6TP	9965 000 35965
U701	056G5637	AIC1084-33PM	9965 000 37095
U701	056G56321	AP1084K33LA	9965 000 37330
U701	056G56363	MM1117DT33 TO-252 MMC	9965 000 36928
U701	056G563931	AME1085-3.3-TO263	9965 000 40043
U702	056G56331	AI1117D-1.8-EI	9965 000 35963
U702	056G563930	IC AIC1117A-18PE SOT-252	9965 000 40042
PCB Assy			
	KEPC6PA1	CONTROL ASSY	9965 000 40036
Various			
SW1	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW2	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW3	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW4	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW5	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW6	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW7	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
R101	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
R102	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R103	061G0603102	RST CHIP 1K 1/10W 5%	9965 000 40053
R104	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
R105	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R106	061G0603102	RST CHIP 1K 1/10W 5%	9965 000 40053
LED1	081G12900KB	LED VS L-115WSYKCGKW-8.03LSF5/F	9965 000 40051
LED2	081G12900KB	LED VS L-115WSYKCGKW-8.03LSF5/F	9965 000 40051
PCB Assy			
	PWPC742CR1P	POWER ASSY	9965 000 40037
Various			
CN901	087G50132S	AC SOCKET	9965 000 36028
F901	084G557GP	FUSE 3.15A 250V	9965 000 37006
F902	084G554	FOSE 382-5A 250V SICKMANN	9965 000 37005
PT801	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
PT802	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
T901	080GL17T900L	XFMR FOR POWER LITAI	9965 000 40061
T901	080GL17T900N	XFMR FOR POWER YUVA	9965 000 40062
T901	080GL17T900T	X'FMR SRW28LEC-T93H016	9965 000 36950
T901	S80GL17T900V	XFMR FOR POWER LITAI	9965 000 40065
	071FPC2820105	PC40 EER28L A217	9965 000 37795
C801	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C802	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C803	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C806	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C807	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C808	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C811	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C812	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C813	065G080556131	CHIP 560PF 50V NPO 0805	9965 000 36997
C819	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C820	067G215D4714K	ED 470UF 25V	9965 000 36007
C821	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C822	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C823	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C831	065G080533132	CHIP 330P 50V X7R 0805	9965 000 36994
C832	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C838	065G080510231	1000PF 50V NPO	9965 000 36991
C840	067G215D4714K	ED 470UF 25V	9965 000 36007
C841	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C842	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C843	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C846	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C847	065G080522322	CHIP 0.022UF 25V X7R 0805	9965 000 36043
C858	065G080539131	CHIP 390PF 50V	9965 000 36996
C860	065G080522122	CHIP 220PF 25V X7R 0805	9965 000 36993
C861	065G080510231	1000PF 50V NPO	9965 000 36991
C865	065G080533332	CHIP 0.033UF 50V	9965 000 36995
C874	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C880	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
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
C900	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C901	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C907	067G215S10115K	100UF 450V	9965 000 36086
C908	063G10747410S	FILM CAPACITOR	9965 000 37794
C912	065G305M2222BP	2200PF -20%	9965 000 36944
C913	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C914	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073

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C915	065G080512322	CHIP 12NF 25V X7R 0805	9965 000 36992
C917	065G080533422	0.33UF -10% 25V X7R 0805	9965 000 36074
C920	065G1K1025T	1000PF/1KV	9965 000 36999
C927	067G3056804KT	ELCAP 68UF M 25V 105∑ KINGNICHI	9965 000 37001
C931	065G517K3322T	3.3NF 500V	9965 000 37000
C932	067G215S1024K	ED1000UF 25V	9965 000 36946
C933	067G215S1024K	ED1000UF 25V	9965 000 36946
C936	067G215D2222K	105 2200UF M 10V	9965 000 40057
C936	067G215D2222KV	105∑ 2200UF M 10V	9965 000 36945
C941	065G080556221	5600PF/25V/NPO/J	9965 000 36998
C951	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C952	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
C955	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C956	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
R801	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R802	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R804	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R807	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R811	061L0805335	3.3M 0805	9965 000 36978
R812	061L0805624	CHIP 620KOHM 5% 0805 1/8W	9965 000 36980
R813	061L08053302F	CHIP 33KOHM 1/8W 1%	9965 000 36975
R815	061L0805303	CHIP 30K OHM 1/8W	9965 000 36974
R816	061L0805203	CHIPR 20KOHM -5% 1/8W	9965 000 36972
R819	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R822	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R823	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R825	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R829	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R831	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R833	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R835	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R836	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R837	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R839	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
R842	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R843	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R849	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R851	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R853	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R855	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R856	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R859	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
R861	061G20010452T	100K OHM 1/4W 1%	9965 000 36989
R863	061G20033352T	33KOHM 1% 1/4W	9965 000 36990
R865	061L08052320F	CHIP 232OHM	9965 000 36973
R871	061G17210352T	CFR 10KOHM -5% 1/4W	9965 000 36988
R872	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R873	061L0805202	CHIP 2KOHM 1/8W	9965 000 36971
R874	061L0805331	CHIP 330 OHM 5% 1/10W	9965 000 36976
R880	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R881	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R882	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R883	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R884	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R885	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R886	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R887	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R888	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
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
R904	061L1206155	1.5M/0805	9965 000 36983
R905	061G152M10464	100KOHM 5% 2W	9965 000 36939
R907	061L1206103	CHIP 10KOHM 5% 1/4W	9965 000 36016
R910	061L1206155	1.5M/0805	9965 000 36983
R912	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R914	061L08051241F	CHIP 1.24K OHM 1/10W 1%	9965 000 36969
R915	061G17210052T	100HM 5% 1/4W	9965 000 36987
R916	061L0805152	CHIPR 1.5K OHM -5% 1/10W	9965 000 36970
R917	061L0805333	CHIP 33KOHM 1% 1/8W	9965 000 36977
R918	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R920	061G152M20864	0.20 OHM 2W	9965 000 36940
R923	061L0805123	CHIP 12KOHM 1/8W	9965 000 36968
R926	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R927	061L1206472	CHIP 4.7KOHM 5% 1/4W	9965 000 36986
R931	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R932	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R937	061L1206182	CHIP 1.8KOHM	9965 000 36984
R941	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R943	061L08055101F	CHIP 5.1K OHM 1/10W 1%	9965 000 36979
R944	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R945	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R946	061L08051103F	110KOHM 1% 1/10W	9965 000 36966
R952	061G17210052T	100HM 5% 1/4W	9965 000 36987
R954	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
RJ801	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
RJ804	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
RJ827	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
NR901	061G5810T	8 OHM 4A NTCR BY THINKING	9965 000 36938
FB901	071G5529	FERRITE BEAD	9965 000 36053
FB901	071G55901	FERRITE CORE 2.5*3*1 BF30TA-2	9965 000 40066
FB902	071G5523S	BEAD	9965 000 37004
FB903	071G5523S	BEAD	9965 000 37004
FB905	071G5523S	BEAD	9965 000 37004
L901	073G17465H	LINE FILTER	9965 000 36088
L901	073G17465LS	LINE FILTER BY LISHIN	9965 000 36025
L902	071G5524	FERRITE BEAD	9965 000 36947
L903	071G5524	FERRITE BEAD	9965 000 36947
L951	073G253902H	IND CHOKE 0.8UH MIN DADONG	9965 000 40058
L951	073G253902S	IND CHOKE 0.8UH TAICHANG	9965 000 40059
L951	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
L951	073G253902YS	IND CHOKE 0.8UH MIN TOP NATION	9965 000 40060
L955	073G253902H	IND CHOKE 0.8UH MIN DADONG	9965 000 40058
L955	073G253902S	IND CHOKE 0.8UH TAICHANG	9965 000 40059
L955	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
L955	073G253902YS	IND CHOKE 0.8UH MIN TOP NATION	9965 000 40060
BD901	093G5046010	GBU405	9965 000 40054
BD901	093G5046016	U4KB80R	9965 000 36951
D831	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D833	093G6442PP	BAV70 SOT-23	9965 000 35995
D851	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D853	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
D901	093G6026T52T	RECTIFIER DIODE FR107	9965 000 36030
D919	093G6038T52T	FR103	9965 000 36095
D926	093G6038T52T	FR103	9965 000 36095
D926	093G645152T	RGP10-DO-204AL	9965 000 40067
D931	093G60267	SP10100	9965 000 36957
D931	093G60901	MBRF10H100CT ITO-220AB	9965 000 40064
D935	093G60240	YG802C06R TO-220F15	9965 000 37337
D935	093G15062	FMW-2156	9965 000 36958
ZD874	093G39S24T	RLZ 5.6B LLDS	9965 000 36079
ZD951	093G3990352T	ZD P6KE8.2A	9965 000 37335
ZD951	093G39A3552T	ZENER DIODE P6KE8.2A ZOWIE	9965 000 37007
ZD975	093G39S25T	RLZ5.1B LLDS	9965 000 37002
IC901	056G564911	IC TEA1532AT S08	9965 000 36960
IC902	056G1393A	PC123Y22FZOF	9965 000 36055
IC902	056G1393B	PC123 Y82FZ0F	9965 000 40055
IC902	056G1395A	TCET1103G	9965 000 40056
IC941	056G1584T	H431BA	9965 000 40068
IC941	056G15810T	AZ431AZ-AE1	9965 000 36101
Q801	057G7592	RK7002	9965 000 36033
Q821	057G60055	P5506 HVG SO-8	9965 000 36032
Q821	057G7636	AO4828L	9965 000 39748
Q821	057G76314	AM9945N	9965 000 36100
Q841	057G60055	P5506 HVG SO-8	9965 000 36032
Q841	057G7636	AO4828L	9965 000 39748
Q841	057G76314	AM9945N	9965 000 36100
Q871	057G7592	RK7002	9965 000 36033
Q873	057G7604B	PDTA144WK SOT346	9965 000 36962
Q874	057G41712T	KEC 2N3904S-RTK/PS	9965 000 36961
Q880	057G7592	RK7002	9965 000 36033
Q881	057G7592	RK7002	9965 000 36033
Q883	057G7592	RK7002	9965 000 36033
Q885	057G7592	RK7002	9965 000 36033
Q886	057G7592	RK7002	9965 000 36033
Q901	057G60035	STP8NK80ZFP	9965 000 36959
Q901	057G66722	FQPF8N80C	9965 000 40063
U811	056G60810	0Z9938	9965 000 36059

Model: 190C7FS/00(LPL) 12NC: 8639 000 17068

Item	TPV 18NC	Description	Philips 12NC
Mechanical Parts			
	705GZ-000047	BEZEL ASSY	9965 000 41039
	P33G0055	FUNCTION KEY	9965 000 40019
	P33G0056	BEZEL STRIP	9965 000 41040
	P33G0057	POWER LENS	9965 000 40020
	P34G0111	BEZEL	9965 000 41041
	705GZ-000048	MAIN_FRAME ASSY	9965 000 41042
	P33G0027	HINGE COVER	9965 000 40025
	P34G0112	BACK_COVER	9965 000 41044
	P37G0015	BASE	9965 000 41045
Accessory			
	089G1738WAA922	I/F CABLE	9965 000 40015
	089G404A18NLS1	POWER CORD	9965 000 41038
	P41G90128131A?	MANUAL??	9965 000 41047
	P70G90048131A	E-D.F.U	9965 000 41048
miscellanea			
	089G179E30C913	FFC CABLE 30P 150MM P1.0	9965 000 41037
LCD Panel			
	750GLG90E8B11N	PANEL LCD LM190E08-TLB1 LPL	9965 000 41043
PCB Assy			
	CBPC6GNNPHPA2	SCALER ASSY	9965 000 41049
	KEPC6PA2	CONTROL ASSY	9965 000 41050
	PWPC942GR1P	POWER ASSY	9965 000 41051
PCB Assy			
	CBPC6GNNPHPA2	SCALER ASSY	9965 000 41049
Various			
CN202	088G35424FH	DV1 CONNECTOR 24PIN	9965 000 36926
CN405	088G35315FH	D-SUB 15PIN	9965 000 35960
CN406	033G801930FH	FPC CONN. 1.0MM 30P	9965 000 36924
X401	093G2251	CRYSTAL 12MHZ HC-49US ARG6-120	9965 000 35961
X401	093G22901H	CRYSTAL 12M000 20P AT-49	9965 000 40041
	040G4576241B	LABEL-CPU	9965 000 35944
C401	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C402	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C403	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C404	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C405	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C406	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C407	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C408	065G060347332	CHIP 0.047UF 50V X7R	9965 000 36921
C412	065G060322415	CHIP 0.22UF 16VX5R	9965 000 36920
C413	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C414	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C416	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C417	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C418	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C419	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C420	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C421	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C422	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C423	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C424	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C425	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C426	067G5154713C	EC 470UF 16V GF 10*12.5MM	9965 000 40039
C426	067G215L4713N	KY16VB470M-L 10*12.5	9965 000 36922
C427	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C428	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C429	065G060310031	CHIP 10PF -0.5PF 50V NPO	9965 000 36916
C430	065G060322031	CER1 0603 NP0 50V 22P PM5 R	9965 000 36919
C431	067G5154704C	EC 47UF 25V GF 5*11MM	9965 000 40038
C431	067G215V4704N	KY25VB47-M-CC3.0 5*11MM	9965 000 36923
C432	067G5154797C	EC 4U7 50V GF 5*11MM	9965 000 40040
C432	067G215Y4797N	LOW ESR EC 4.7 UF 50V NCC	9965 000 35959
C436	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C445	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C446	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C447	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C448	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C449	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C454	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C455	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C456	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C457	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C458	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C459	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C460	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C461	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C469	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C470	065G060310231	CHIP 1000PF 50V NPO	9965 000 36917
C701	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C702	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C703	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C704	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C705	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C706	065G060310412	CER2 0603 X7R 16V 100N PM10 R	9965 000 36918
C707	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C707	067G215P1014C	105 100UF M 25V	9965 000 37776
C708	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C708	067G215P1014C	105 100UF M 25V	9965 000 37776
C709	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C709	067G215P1014C	105 100UF M 25V	9965 000 37776
C710	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C710	067G215P1014C	105 100UF M 25V	9965 000 37776
C711	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C711	067G215P1014C	105 100UF M 25V	9965 000 37776
C712	067G215L1014N	KY25VB100M-L 6.3*11	9965 000 35958
C712	067G215P1014C	105 100UF M 25V	9965 000 37776
FB402	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB405	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
FB406	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R401	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R402	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R403	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R404	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R405	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R406	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R407	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R408	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R410	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R411	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R414	061L0603104	RST SM 0603 RC0603 100K PM5 R	9965 000 35972
R416	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R417	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R418	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R419	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R420	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R421	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R422	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R423	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R424	061L0603151	CHIPR 150 OHM -5% 1/16W	9965 000 35974
R426	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R427	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R428	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R431	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R432	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R433	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R434	061L0603105	RST SM 0603 RC0603 1M PM5 R	9965 000 35973
R435	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R436	061L0603222	CHIPR 2.2K OHM -5% 1/16W	9965 000 35977
R437	061G060382	CHIPR 82 OHM -5% 1/10W	9965 000 40047
R438	061G060382	CHIPR 82 OHM -5% 1/10W	9965 000 40047
R440	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R441	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R442	061L0603332	CHIP 3.3K OHM 1/10W	9965 000 35978
R443	061L0603332	CHIP 3.3K OHM 1/10W	9965 000 35978
R445	061L06033900F	CHIP 390 OHM 1/10W 1%	9965 000 35979
R446	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R447	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R451	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R452	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R453	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R454	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R455	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R456	061L0603750	CHIPR 75 OHM -5% 1/16W	9965 000 35982
R457	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R458	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R459	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R460	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R461	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R462	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R463	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R464	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R465	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R466	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R467	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002

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R468	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R469	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R470	061L0603102	CHIPR 1K OHM -5% 1/16W	9965 000 35970
R471	061L06033900F	CHIP 390 OHM 1/10W 1%	9965 000 35979
R472	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R473	061G1206103	10 KOHM 1/8W	9965 000 40048
R476	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R478	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R479	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R480	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R481	061L0603472	CHIPR 4.7K OHM -5% 1/16W	9965 000 35981
R488	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R489	061L0603101	CHIPR 100 OHM -5% 1/16W	9965 000 35969
R490	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R491	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R499	061L0603000	RST SM 0603 JUMP MAX 0R05 R	9965 000 36002
R701	061L0603470	CHIPR 47 OHM -5% 1/16W	9965 000 35980
FB401	071G59B300K		9965 000 36934
FB403	071G59B300K		9965 000 36934
FB404	071G59B300K		9965 000 36934
FB407	071G56C102TA	CHIP BEAD 1000R/400MA FCM2012KF-	9965 000 40050
FB407	071G56D102	B201209D102TT	9965 000 37332
FB408	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB408	071G56K121	CHIP BEAD	9965 000 35993
FB410	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB410	071G56K121	CHIP BEAD	9965 000 35993
FB411	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB411	071G56K121	CHIP BEAD	9965 000 35993
FB412	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB412	071G56K121	CHIP BEAD	9965 000 35993
FB413	071G59B121K	CHIP BEAD 120 OHM 0603FBM-11-1	9965 000 36933
FB701	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB701	071G56K121	CHIP BEAD	9965 000 35993
FB702	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB702	071G56K121	CHIP BEAD	9965 000 35993
FB703	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB703	071G56K121	CHIP BEAD	9965 000 35993
FB704	071G56121TA	IND FXD 0805 EMI 100MHZ 120R R	9965 000 40049
FB704	071G56K121	CHIP BEAD	9965 000 35993
D416	093G6442PP	BAV70 SOT-23	9965 000 35995
D417	093G6442PP	BAV70 SOT-23	9965 000 35995
D701	093G1020PH	DIODE S1D-E3 VISHAY	9965 000 37793
D701	093G20403F	FA20-04	9965 000 36935
D702	093G1020PH	DIODE S1D-E3 VISHAY	9965 000 37793
D702	093G20403F	FA20-04	9965 000 36935
ZD401	093G39S34T	UDZS5.6B	9965 000 35996
ZD402	093G39S34T	UDZS5.6B	9965 000 35996
ZD403	093G39S34T	UDZS5.6B	9965 000 35996
ZD404	093G39S34T	UDZS5.6B	9965 000 35996
ZD405	093G39S34T	UDZS5.6B	9965 000 35996
ZD406	093G39S34T	UDZS5.6B	9965 000 35996
ZD407	093G39S34T	UDZS5.6B	9965 000 35996
ZD408	093G39S34T	UDZS5.6B	9965 000 35996
ZD409	093G39S34T	UDZS5.6B	9965 000 35996
ZD410	093G39S34T	UDZS5.6B	9965 000 35996
ZD411	093G39S34T	UDZS5.6B	9965 000 35996
ZD414	093G39S34T	UDZS5.6B	9965 000 35996
Q401	057G4174	PMBS3904/PHILIPS-SMT(04)	9965 000 35966
Q401	057G417903T	TRA SIG SM MMBT3904 (PHSE) R	9965 000 40045
Q402	057G41713T	KEC 2N3906S-RTK/PS	9965 000 35967
Q402	057G761900T	BC857 SOT23	9965 000 40046
Q404	057G41713T	KEC 2N3906S-RTK/PS	9965 000 35967
Q404	057G761900T	BC857 SOT23	9965 000 40046
Q405	057G7631	A03401 SOT23 BY AOS(A1)	9965 000 35968
Q406	057G4174	PMBS3904/PHILIPS-SMT(04)	9965 000 35966
Q406	057G417903T	TRA SIG SM MMBT3904 (PHSE) R	9965 000 40045
U401	705TP9K056001	MCU ASSY	9965 000 41052
U403	056L113356	M24C16-WMN6T/W SO-8	9965 000 40044
U404	056G113334	M24C02-WMN6TP	9965 000 35965
U405	056G113334	M24C02-WMN6TP	9965 000 35965
U701	056G5637	AIC1084-33PM	9965 000 37095
U701	056G56321	AP1084K33LA	9965 000 37330
U701	056G56363	MM1117DT33 TO-252 MMC	9965 000 36928
U701	056G563931	AME1085-3.3-TO263	9965 000 40043
U702	056G56331	AI1117D-1.8-EI	9965 000 35963
U702	056G563930	IC AIC1117A-18PE SOT-252	9965 000 40042

PCB Assy

	KEPC6PA2	CONTROL ASSY	9965 000 41050

Various

SW1	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW2	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW3	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW4	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW5	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW6	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
SW7	077G6051FD	SWI TACT H=5 GY 160G SKHHAM B	9965 000 40052
R101	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
R102	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R103	061G0603102	RST CHIP 1K 1/10W 5%	9965 000 40053
R104	061L0603473	RST SM 0603 RC0603 47K PM5 R	9965 000 36003
R105	061L0603103	CHIPR 10K OHM -5% 1/16W	9965 000 35971
R106	061G0603102	RST CHIP 1K 1/10W 5%	9965 000 40053
LED1	081G12900KB	LED VS L-115WSYKCGKW-8.03LSF5/F	9965 000 40051
LED2	081G12900KB	LED VS L-115WSYKCGKW-8.03LSF5/F	9965 000 40051

PCB Assy

	PWPC942GR1P	POWER ASSY	9965 000 41051

Various

CN901	087G50132S	AC SOCKET	9965 000 36028
F901	084G557GP	FUSE 3.15A 250V	9965 000 37006
F902	084G554	FOSE 382-5A 250V SICKMANN	9965 000 37005
NR901	061G5810T	8 OHM 4A NTCR BY THINKING	9965 000 36938
PT801	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
PT802	080GL19T8DN1	X'FMR DARFONTK.2006M.101	9965 000 36093
T901	S80GL17T900V	XFMR FOR POWER LITAI	9965 000 40065
T901	080GL17T900L	XFMR FOR POWER LITAI	9965 000 40061
T901	080GL17T900N	XFMR FOR POWER YUVA	9965 000 40062
T901	080GL17T900T	X'FMR SRW28LEC-T93H016	9965 000 36950
	071FPC2820105	PC40 EER28L A217	9965 000 37795
C801	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C802	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C803	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C806	065G6J1006ET	10PF 5% SL 6KV	9965 000 36942
C807	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C808	065G3J5096ET	5PF 5% SL 3KV	9965 000 36941
C811	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C812	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C813	065G080556131	CHIP 560PF 50V NPO 0805	9965 000 36997
C819	065G080510322	CHIP 0.01UF 25V X7R 0805	9965 000 36039
C820	067G215D4714K	ED 470UF 25V	9965 000 36007
C821	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C822	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C823	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C831	065G080533132	CHIP 330P 50V X7R 0805	9965 000 36994
C832	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C838	065G080510231	1000PF 50V NPO	9965 000 36991
C840	067G215D4714K	ED 470UF 25V	9965 000 36007
C841	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C842	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C843	065G080522232	CHIP 2200PF 25V X7R 0805	9965 000 37334
C846	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C847	065G080522322	CHIP 0.022UF 25V X7R 0805	9965 000 36043
C858	065G080539131	CHIP 390PF 50V	9965 000 36996
C860	065G080522122	CHIP 220PF 25V X7R 0805	9965 000 36993
C861	065G080510231	1000PF 50V NPO	9965 000 36991
C865	065G080533332	CHIP 0.033UF 50V	9965 000 36995
C874	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C880	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
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
C900	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C901	065G305M1022BP	Y2 1000PF M 250VAC Y5P	9965 000 36943
C907	067G215S10115K	100UF 450V	9965 000 36086
C908	063G10747410S	FILM CAPACITOR	9965 000 37794
C912	065G305M2222BP	2200PF -20%	9965 000 36944
C913	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C914	065G080510522	CHIP 1UF 25V X7R 0805	9965 000 36073
C915	065G080512322	CHIP 12NF 25V X7R 0805	9965 000 36992
C917	065G080533422	0.33UF -10% 25V X7R 0805	9965 000 36074
C920	065G1K1025T	1000PF/1KV	9965 000 36999
C927	067G3056804KT	ELCAP 68UF M 25V 105Σ KINGNICHI	9965 000 37001
C931	065G517K3322T	3.3NF 500V	9965 000 37000
C932	067G215S1024K	ED1000UF 25V	9965 000 36946
C933	067G215S1024K	ED1000UF 25V	9965 000 36946
C936	067G215D2222K	105 2200UF M 10V	9965 000 40057
C936	067G215D2222KV	105Σ 2200UF M 10V	9965 000 36945
C941	065G080556221	5600PF/25V/NPO/J	9965 000 36998
C951	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C952	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076
C955	065G080510422	0.1UF -10% 25V X7R 080	9965 000 36040
C956	067G215B2214KT	LOW E,S,R 220UF -20% 25V	9965 000 36076

R801	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R802	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R804	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R807	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R811	061L0805335	3.3M 0805	9965 000 36978
R812	061L0805624	CHIP 620KOHM 5% 0805 1/8W	9965 000 36980
R813	061L08053302F	CHIP 33KOHM 1/8W 1%	9965 000 36975
R815	061L0805303	CHIP 30K OHM 1/8W	9965 000 36974
R816	061L0805203	CHIPR 20KOHM -5% 1/8W	9965 000 36972
R819	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R822	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R823	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R825	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R829	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R831	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R833	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R835	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R836	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R837	061L0805752	CHIP 7.5K OHM 1/10W	9965 000 36981
R839	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
R842	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R843	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
R849	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
R851	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R853	061L0805122	1.2KOHM -5%,1/8W,0805	9965 000 36967
R855	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R856	061L08051002F	CHIP 10K OHM 1/8W 1%	9965 000 36020
R859	061G212Y625KT	MGFR 6.2MOHM -5% 1/2W	9965 000 36083
R861	061G20010452T	100K OHM 1/4W 1%	9965 000 36989
R863	061G20033352T	33KOHM 1% 1/4W	9965 000 36990
R865	061L08052320F	CHIP 232OHM	9965 000 36973
R871	061G17210352T	CFR 10KOHM -5% 1/4W	9965 000 36988
R872	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R873	061L0805202	CHIP 2KOHM 1/8W	9965 000 36971
R874	061L0805331	CHIP 330 OHM 5% 1/10W	9965 000 36976
R880	061L0805103	CHIPR 10K OHM -5% 1/10W	9965 000 36964
R881	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R882	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R883	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R884	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R885	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R886	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R887	061L0805104	CHIPR 100K OHM -5% 1/10W	9965 000 36965
R888	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
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
R904	061L1206155	1.5M/0805	9965 000 36983
R905	061G152M10464	100KOHM 5% 2W	9965 000 36939
R907	061L1206103	CHIP 10KOHM 5% 1/4W	9965 000 36016
R910	061L1206155	1.5M/0805	9965 000 36983
R912	061L0805105	CHIP 1M OHM 5% 1/8W	9965 000 36013
R914	061L08051241F	CHIP 1.24K OHM 1/10W 1%	9965 000 36969
R915	061G17210052T	100HM 5% 1/4W	9965 000 36987
R916	061L0805152	CHIPR 1.5K OHM -5% 1/10W	9965 000 36970
R917	061L0805333	CHIP 33KOHM 1% 1/8W	9965 000 36977
R918	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R920	061G152M20864	0.20 OHM 2W	9965 000 36940
R923	061L0805123	CHIP 12KOHM 1/8W	9965 000 36968
R926	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
R927	061L1206472	CHIP 4.7KOHM 5% 1/4W	9965 000 36986
R931	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R932	061L1206229	CHIP 2.2OHM 5% 1/8W	9965 000 36985
R937	061L1206182	CHIP 1.8KOHM	9965 000 36984
R941	061L0805102	CHIPR 1K OHM -5% 1/10W	9965 000 36963
R943	061L08055101F	CHIP 5.1K OHM 1/10W 1%	9965 000 36979
R944	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R945	061L08059101F	CHIP 9.1K OHM 1/10W 1%	9965 000 36982
R946	061L08051103F	110KOHM 1% 1/10W	9965 000 36966
R952	061G17210052T	100HM 5% 1/4W	9965 000 36987
R954	061L0805100	CHIPR 10 OHM -5% 1/10W	9965 000 36012
RJ801	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984
RJ804	061L1206000	CHIPR 0 OHM -5% 1/8W	9965 000 36067
RJ827	061L0805000	CHIPR 0OHM -5% 1/10W	9965 000 35984

FB901	071G5529	FERRITE BEAD	9965 000 36053
FB901	071G55901	FERRITE CORE 2.5*3*1 BF30TA-2	9965 000 40066
FB902	071G5523S	BEAD	9965 000 37004
FB903	071G5523S	BEAD	9965 000 37004
FB905	071G5523S	BEAD	9965 000 37004
L901	073G17465H	LINE FILTER	9965 000 36088
L901	073G17465LS	LINE FILTER BY LISHIN	9965 000 36025
L902	071G5524	FERRITE BEAD	9965 000 36947
L903	071G5524	FERRITE BEAD	9965 000 36947
L951	073G253902H	IND CHOKE 0.8UH MIN DADONG	9965 000 40058
L951	073G253902S	IND CHOKE 0.8UH TAICHANG	9965 000 40059
L951	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
L951	073G253902YS	IND CHOKE 0.8UH MIN TOP NATION	9965 000 40060
L955	073G253902H	IND CHOKE 0.8UH MIN DADONG	9965 000 40058
L955	073G253902S	IND CHOKE 0.8UH TAICHANG	9965 000 40059
L955	073G253902T	CKOLE COIL 0.8UH	9965 000 36948
L955	073G253902YS	IND CHOKE 0.8UH MIN TOP NATION	9965 000 40060

BD901	093G5046010	GBU405	9965 000 40054
BD901	093G5046016	U4KB80R	9965 000 36951
D831	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D833	093G6442PP	BAV70 SOT-23	9965 000 35995
D851	093G6433	DIO SIG SM BAV99 (PHSE)R	9965 000 35994
D853	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
D901	093G6026T52T	RECTIFIER DIODE FR107	9965 000 36030
D919	093G6038T52T	FR103	9965 000 36095
D926	093G6038T52T	FR103	9965 000 36095
D926	093G645152T	RGP10-DO-204AL	9965 000 40067
D931	093G60267	SP10100	9965 000 36957
D931	093G60901	MBRF10H100CT ITO-220AB	9965 000 40064
D935	093G60240	YG802C06R TO-220F15	9965 000 37337
D935	093G15062	FMW-2156	9965 000 36958
ZD874	093G39S24T	RLZ 5.6B LLDS	9965 000 36079
ZD951	093G3990352T	ZD P6KE8.2A	9965 000 37335
ZD951	093G39A3552T	ZENER DIODE P6KE8.2A ZOWIE	9965 000 37007
ZD975	093G39S25T	RLZ5.1B LLDS	9965 000 37002

IC901	056G564911	IC TEA1532AT S08	9965 000 36960
IC902	056G1393A	PC123Y22FZOF	9965 000 36055
IC902	056G1393B	PC123 Y82FZ0F	9965 000 40055
IC902	056G1395A	TCET1103G	9965 000 40056
IC941	056G1584T	H431BA	9965 000 40068
IC941	056G15810T	AZ431AZ-AE1	9965 000 36101
Q801	057G7592	RK7002	9965 000 36033
Q821	057G60055	P5506 HVG SO-8	9965 000 36032
Q821	057G7636	AO4828L	9965 000 39748
Q821	057G76314	AM9945N	9965 000 36100
Q841	057G60055	P5506 HVG SO-8	9965 000 36032
Q841	057G7636	AO4828L	9965 000 39748
Q841	057G76314	AM9945N	9965 000 36100
Q871	057G7592	RK7002	9965 000 36033
Q873	057G7604B	PDTA144WK SOT346	9965 000 36962
Q874	057G41712T	KEC 2N3904S-RTK/PS	9965 000 36961
Q880	057G7592	RK7002	9965 000 36033
Q881	057G7592	RK7002	9965 000 36033
Q883	057G7592	RK7002	9965 000 36033
Q885	057G7592	RK7002	9965 000 36033
Q886	057G7592	RK7002	9965 000 36033
Q901	057G60035	STP8NK80ZFP	9965 000 36959
Q901	057G66722	FQPF8N80C	9965 000 40063
U811	056G60810	0Z9938	9965 000 36059

Different Parts List

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Diversity of 170C7FS/69 compared with 170C7FS/00

Item	TPV 18NC	DESCRIPTION	Philips 12NC
		170C7FS/69	8639 000 17073
	P44G70078131A	CARTON	9965 000 41056
	089G410A18NLSB	POWER CORD 1.8M PY8B1V6CC0A-060	9965 000 41057
	CBPC6CNNPHSA2	SCALER ASSY	9965 000 41058
U401	705TP7K056003	MCU ASSY	9965 000 41059
	Z40G70008132A	LABEL-CPU	9965 000 41060

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TELEVISION/MONITOR SAFFTY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

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

Fire and Shock Hazard

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

* Broken line

Implosion

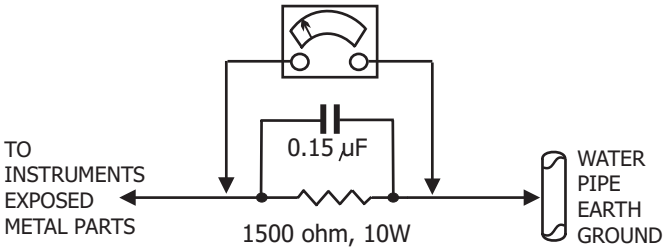
1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn,whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified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

X-radiation

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an x-radiation problem. High voltage should always be kept at the manufacturer's rated value-no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do
6. New picture tubes are specifically designed to withstand higher operathng voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-diation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

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



Leakage Current Hot Check

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

Picture Tube Replacement

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

Parts Replacement

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

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