

Service
Service
Service



150S6FB/00	170S6FB/00	190S6FB/00
150S6FB/27	170S6FB/27	190S6FB/27
150S6FG/00	170S6FG/00	190S6FG/00
150S6FG/27	170S6FG/27	190S6FG/93
150S6FS/00	170S6FS/00	190S6FS/00
	170S6FS/78	190S6FS/27
		190S6FS/96



Service Manual

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SAFETY NOTICE

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

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

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

Important Safety Notice

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

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

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

WARNING

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

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

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

* Broken Line



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

Take care during handling the LCD module with Backlight unit

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

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.

LCD PANEL

Type TFT LCD

Screen size :17" / 43.2 cm diagonal

Pixel Pitch :0.264 x 0.264 mm
:1280 x 1024 pixels

LCD Panel type :R.G.B. vertical stripe
:Anti-glare polarizer, hard coated

Effective viewing area :337.9 x 270.3 mm

Display Colors :16.2 M colors

SCANNING

Vertical refresh rate :56 Hz-76 Hz

Horizontal Frequency :30k Hz-83 kHz

VIDEO

Video dot rate :140 Mhz

Input impedance

Video : 750 ohm

Sync :2.2k ohm

Input signal levels :700m Vpp

Separate sync

Sync input signal Composite sync

Sync on green

Sync polarities Positive and negative

Video interface D-Sub (analog)

Optical characteristics

Contrast ratio 500:1 (typ.)

Brightness 250 cd/m2 (typ.)

Peak contrast angle 6 o'clock

x: 0.283 y: 0.297 (at 9300° K)

White Chromaticity x: 0.313 y: 0.329 (at 6500° K)

x: 0.313 y: 0.329 (at sRGB)

Upper >60° (typ.)

Lower >80° (typ.)

Viewing Angle (C/R>5) Left >80° (typ.)

Right >80° (typ.)

Response time :<12 ms (typ.)

Resolution & Preset Modes

Maximum :1280 x 1024 at 75 Hz

Recommended :1280 x 1024 at 60 Hz

50 user definable modes

15 factory preset modes:

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

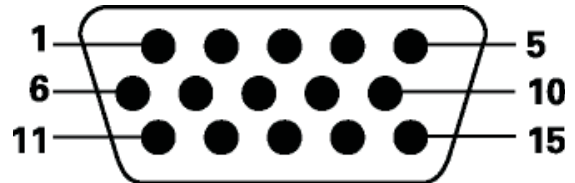
Physical Specifications

Dimension (WxHxD)	375 x 390 x 200 mm (incl. Pedestal)
Weight	4.2 kg
Tilt	-5° ~ 25°
Power supply	100 □ 240 VAC, 60 - 50 Hz
Power consumption	30 W* (typ.)
Temperature	5° C to 40° C (operating) -20° C to 60° C (storage)
Relative humidity	20% to 80%
System MTBF	50K hours (including CCFL 40K hours)

This monitor is ENERGY STAR® compliant. As an ENERGY STAR® Partner, PHILIPS has determined that this product meets the ENERGY STAR® guidelines for energy efficiency

Pin Assignment

The 15-pin D-sub connector (male) of the signal cable:



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	+5V
2	Green video input/SOG	10	Logic ground
3	Blue video input	11	Ground
4	Sense (GND)	12	Serial data line (SDA)
5	Hot Plug Detect	13	H. Sync / H+V
6	Red video ground	14	V. Sync (VCLK for DDC)
7	Green video ground	15	Data clock line (SCL)
8	Blue video ground		

Automatic Power Saving

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

Power Management Definition					
VESA Mode	Video	H-sync	V-sync	Power Used	LED color
Active	ON	Yes	Yes	< 30 W	Green
Sleep	OFF	No	No	< 1 W	Amber
Switch Off	OFF	-	-	< 1W	Off



Lead-free Product

Philips eliminated toxic substances like lead from its displays. Lead-free display helps protect your health and promotes environmentally sound recovery and disposal of waste from electrical and electronic equipment. Philips complies with the European Community stringent RoHS Directive mandating restrictions on hazardous substances in electrical and electronic equipment. With Philips, you can be confident that your display device does not harm the environment.

LCD PANEL

Type TFT LCD

Screen size :15" / 38 cm diagonal

Pixel Pitch :0.297 x 0.297 mm

:1024 x 768 pixels

LCD Panel type :R.G.B. vertical stripe

:Anti-glare polarizer, hard coated

Effective viewing area :304.1 x 228.1 mm

Display Colors :16.2 M colors

SCANNING

Vertical refresh rate :56 Hz-76 Hz

Horizontal Frequency :30k Hz-63 kHz

VIDEO

Video dot rate :85 Mhz

Input impedance

Video : 75 ohm

Sync : 2ohm

Input signal levels :700m Vpp

Separate sync

Sync input signal Composite sync

Sync on green

Sync polarities Positive and negative

Video interface D-Sub (analog)

Input Frequency XGA -Hsync 48- 61 kHz, Vsync 60 - 76 Hz (N.I.)

SVGA -Hsync 35- 50 kHz, Vsync 56 - 75 Hz (N.I.)

VGA -Hsync 31- 38 kHz, Vsync 60 - 76 Hz (N.I.)

Optical characteristics

Contrast ratio 450:1 (typ.)

Brightness 250 cd/m2 (typ.)

Peak contrast angle 6 o'clock

x: 0.283 y: 0.297 (at 9300° K)

White Chromaticity x: 0.313 y: 0.329 (at 6500° K)

x: 0.313 y: 0.329 (at sRGB)

Upper >60° (typ.)

Lower >80° (typ.)

Viewing Angle (C/R>5) Left >80° (typ.)

Right >80° (typ.)

Response time <16 ms (typ.)

Resolution & Preset Modes

Maximum :1024 x 768 at 75 Hz

Recommended :1024 x 768 at 60 Hz

50 user definable modes

15 factory preset modes:

H. freq (kHz) Resolution V. freq (Hz)

31.469 640*350 70.086

31.469 720*400 70.087

31.469 640*480 59.940

35.000 640*480 67.000

37.861 640*480 72.809

37.500 640*480 75.000

35.156 800*600 56.250

37.879 800*600 60.317

48.077 800*600 72.188

46.875 800*600 75.000

49.700 832*624 75.000

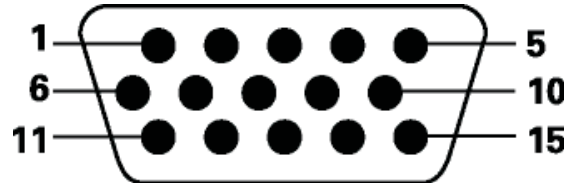
48.363 1024*768 60.004

56.476 1024*768 70.069

60.023 1024*768 75.029

Pin Assignment

The 15-pin D-sub connector (male) of the signal cable:



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	+5V
2	Green video input/SOG	10	Logic ground
3	Blue video input	11	Ground
4	Sense (GND)	12	Serial data line (SDA)
5	Hot Plug Detect	13	H. Sync / H+V
6	Red video ground	14	V. Sync (VCLK for DDC)
7	Green video ground	15	Data clock line (SCL)
8	Blue video ground		

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Power Management Definition					
VESA Mode	Video	H-sync	V-sync	Power Used	LED color
Active	ON	Yes	Yes	< 17 W	Green
Sleep	OFF	No	No	< 1 W	Amber
Switch Off	OFF	-	-	< 1W	Off

This monitor is ENERGY STAR® compliant. As an ENERGY STAR® Partner, PHILIPS has determined that this product meets the ENERGY STAR® guidelines for energy efficiency

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LCD PANEL

Type TFT LCD

Screen size :19" / 48.26 cm diagonal

Pixel Pitch :0.294 x 0.294 mm

:1280 x 1024 pixels

LCD Panel type :R.G.B. vertical stripe

:Anti-glare polarizer, hard coated

Effective viewing area :376.32 x 301.06 mm

Display Colors :16.2 M colors

SCANNING

Vertical refresh rate :56 Hz-76 Hz

Horizontal Frequency :30k Hz-83 kHz

VIDEO

Video dot rate :140 Mhz

Input impedance

Video :75 ohm

Sync :2.2k ohm

Input signal levels :0.7 Vpp

Separate sync

Sync input signal Composite sync

Sync on green

Sync polarities Positive and negative

Video interface D-Sub (analog)

Optical characteristics

Contrast ratio 500:1 (typ.)

Brightness 250 cd/m2 (typ.)

Peak contrast angle 6 o'clock

x: 0.283 y: 0.297 (at 9300° K)

x: 0.313 y: 0.329 (at 6500° K)

x: 0.313 y: 0.329 (at sRGB)

Upper >80° (typ.)

Lower >80° (typ.)

Viewing Angle (C/R>5) Left >80° (typ.)

Right >80° (typ.)

Response time :<8 ms (typ.)

Resolution & Preset Modes

Maximum :1280 x 1024 at 75 Hz

Recommended :1280 x 1024 at 60 Hz

50 user definable modes

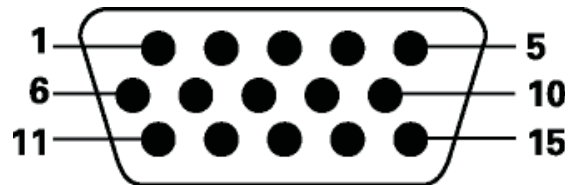
15 factory preset modes:

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

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The 15-pin D-sub connector (male) of the signal cable:



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2	Green video input/SOG	10	Logic ground
3	Blue video input	11	Ground
4	Sense (GND)	12	Serial data line (SDA)
5	Hot Plug Detect	13	H. Sync / H+V
6	Red video ground	14	V. Sync (VCLK for DDC)
7	Green video ground	15	Data clock line (SCL)
8	Blue video ground		

Automatic Power Saving

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

Power Management Definition					
VESA Mode	Video	H-sync	V-sync	Power Used	LED color
Active	ON	Yes	Yes	< 30 W	Green
Sleep	OFF	No	No	< 1 W	Amber
Switch Off	OFF	-	-	< 1W	Off



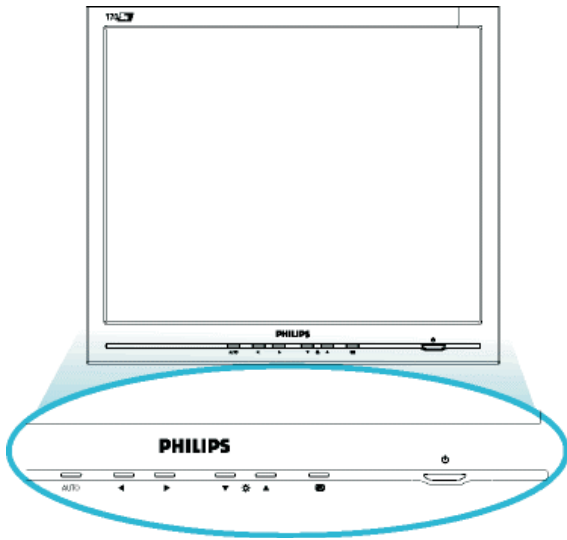
Lead-free Product

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Physical Specifications

Dimension (WxHxD)	425 x 419 x235 mm
Weight	5.4 kg
Tilt	-5° ~ 25°
Power supply	100 - 240 VAC, 60 - 50 Hz
Power consumption	30 W* (typ.)
Temperature	5° C to 40° C (operating) -20° C to 60° C (storage)
Relative humidity	20% to 80%
System MTBF	50K hours (including CCFL 40K hours)

Front Control



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.

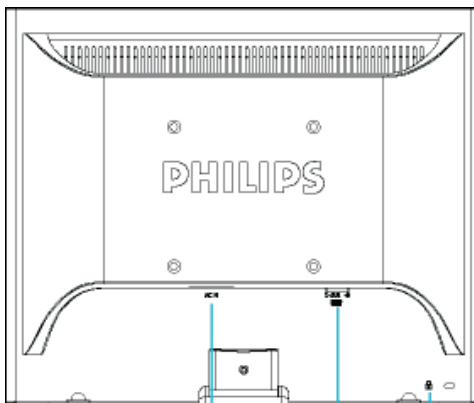
AUTO

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

Accessory Pack

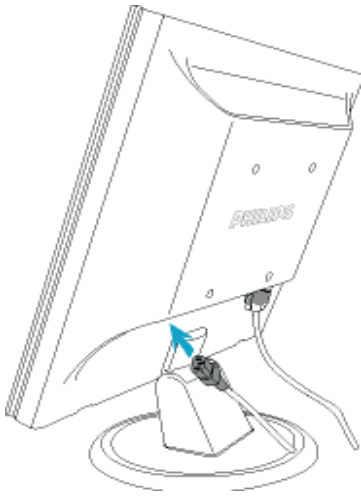
Item	Description
	1) Power Cable (socket may differ for different countries)
	2) Macintosh Adapter (optional)
	3) VGA Signal Cable
	4) E-DFU package with Quick Setup Guide and CD-ROM.

Back View

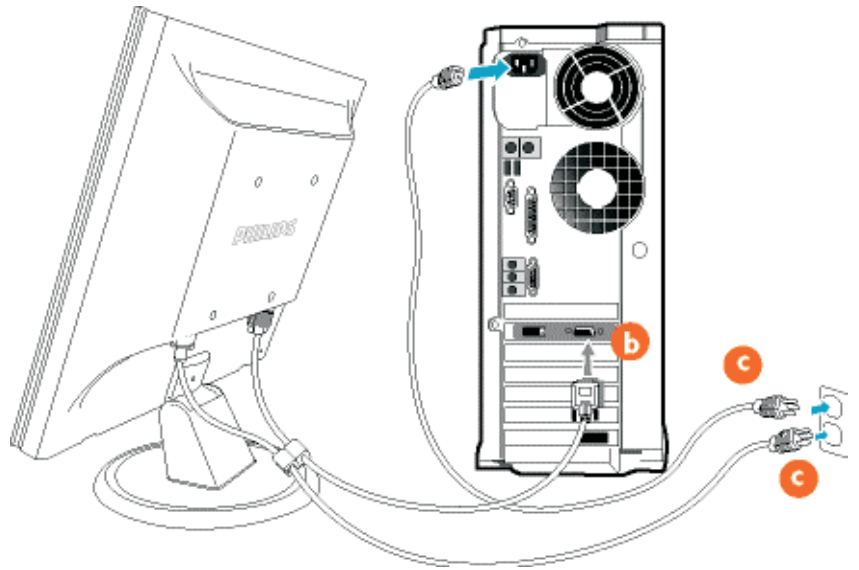


- 1 Kensington anti-thief lock
- 2 VGA input
- 3 AC power input

Connecting to Your PC

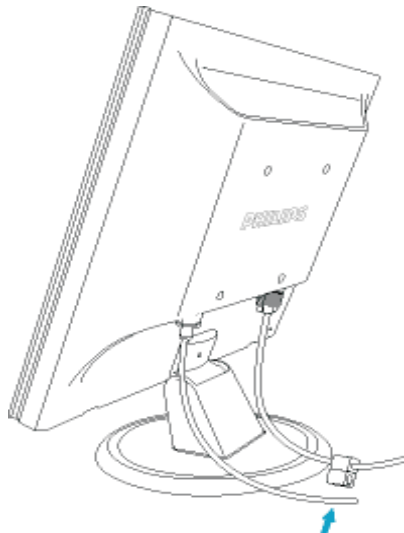


1) Plug the power cord into monitor firmly.

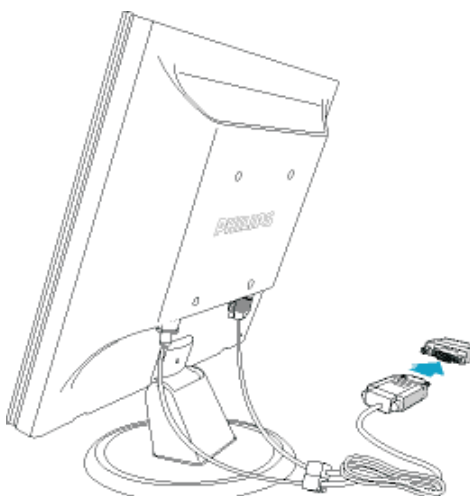


2) Connect to PC

- (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.



2) Clip the power cord and signal cable together for cable management

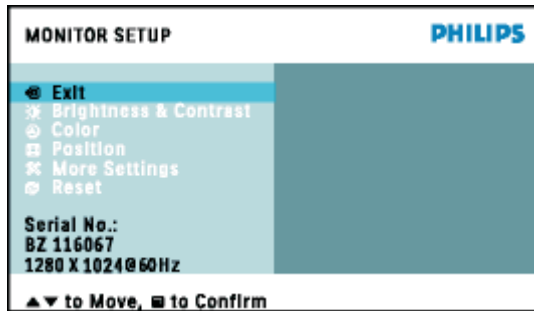


Note: If you use an Apple Macintosh, you need to connect the special Mac adapter to one end of the monitor signal cable

On Screen Display


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 :

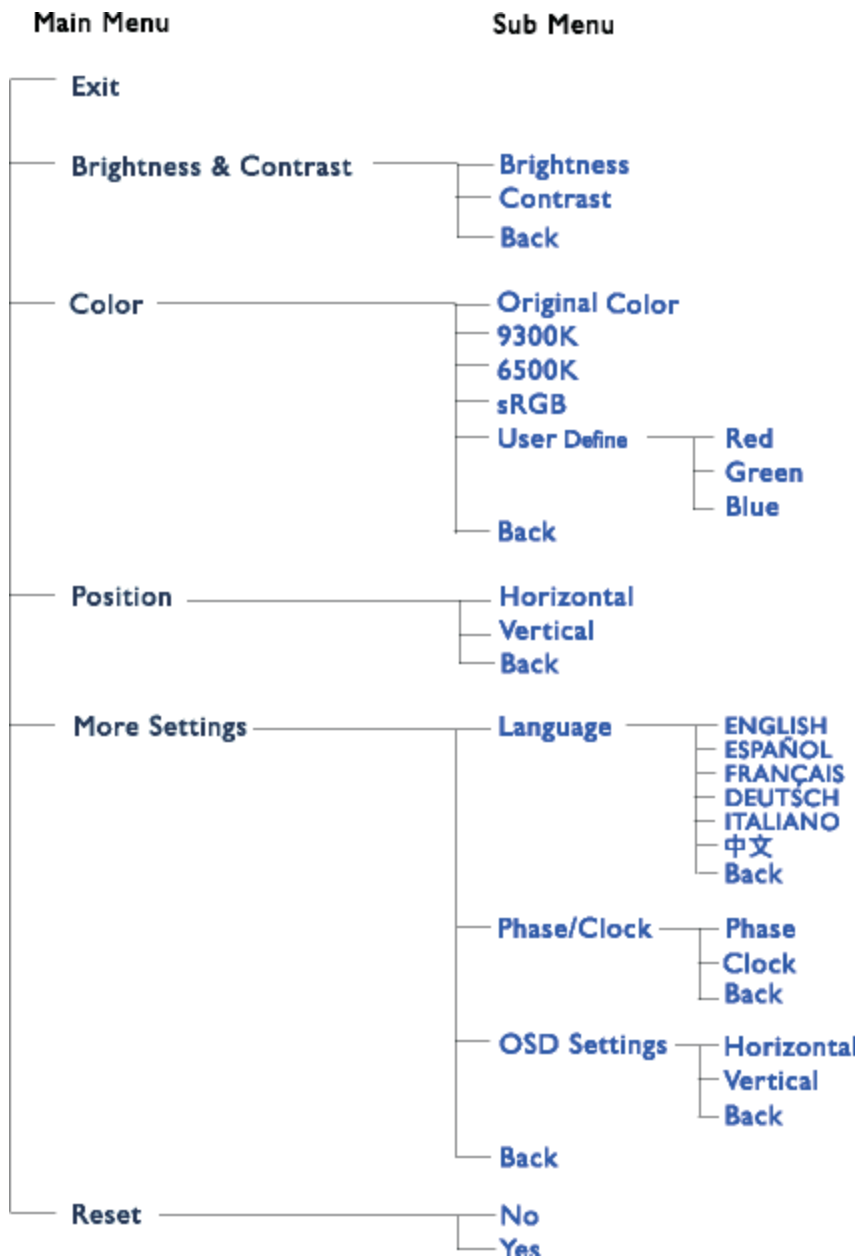


Basic and simple instruction on the control keys.

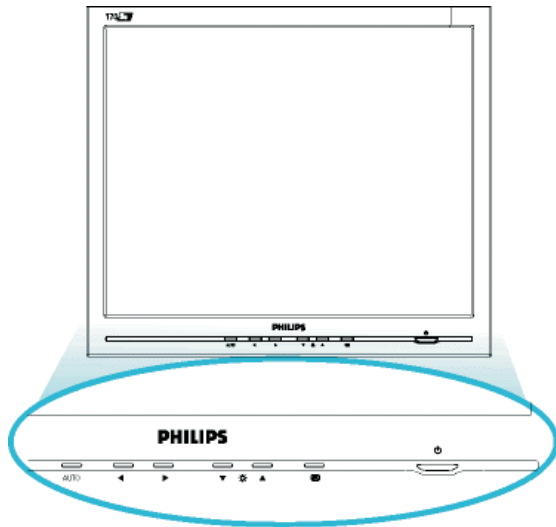
In the OSD shown above users can press ▲▼ buttons at the front bezel of the monitor to move the

cursor,  to confirm the choice or change, and ◀▶ to adjust/select the change

The OSD Tree



Front Control Panel



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 3 seconds. Everytime when you press "AUTO" or "OK" button, this message appears on the screen automatically.



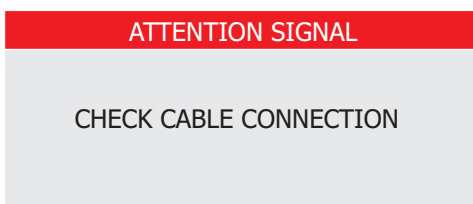
Unlock OSD function

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



NO VIDEO INPUT

This screen appears if there is no video signal input. Please check that the signal is properly connected to the video card of PC and make sure PC is on



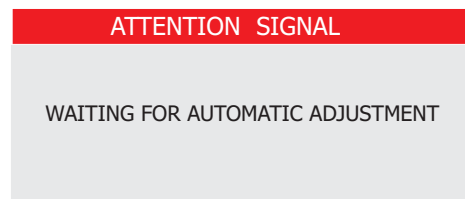
CANNOT DISPLAY THIS VIDEO MODE..

This screen warns when the input frequency from the computer is not a standard video mode or out of the monitor's scanning range. Please change the display mode of the operating software in the computer(i.e.windows) to 1280*1024@60HZ for best display results.





WAIT FOR AUTOMATIC ADJUSTMENT

This screen appears when you press the "AUTO" buttons at the same time. It will disappear when the monitor is properly adjusted



Access Aging.. Mode

Step 1 : Turn off LCD monitor, and disconnect Interface Cable between Monitor and PC.

Step 2 : [Push AUTO "  " & "auto" buttons at the same time and hold it]+[Press power "  " button until comes out " AGING screen"] => then release all buttons.

Bring up:



After 15 seconds, bring up:



After 15 seconds, bring up:



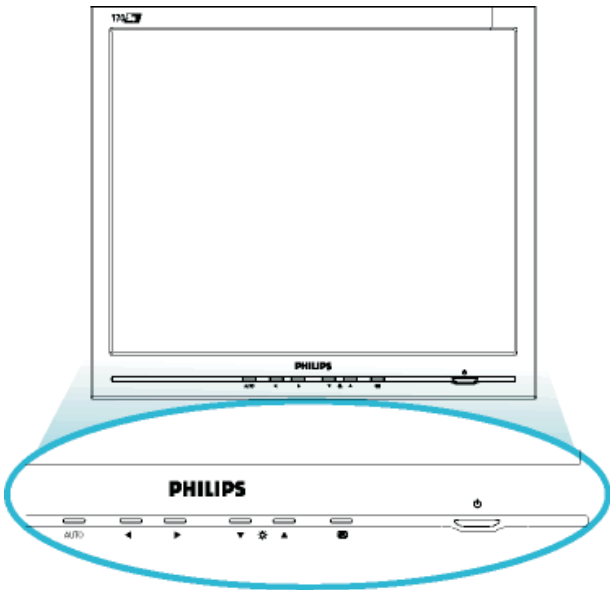
After 15 seconds, bring up:



repatly

Connect Signal cable again=> go back to normal display

Front Control Panel



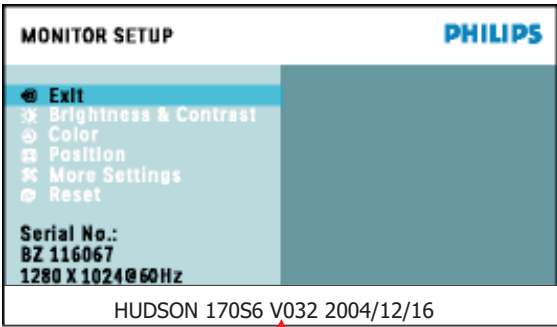
Hudson 170S6 V008 2004-11-01									
BL :	0								
SUB - BRI :	0	255							
SUB - CON :	78	128	178						
9300K	R	Xxx	G	xxx	B	xxx			
6500K	R	Xxx	G	xxx	B	xxx			
SRGB	R	Xxx	G	xxx	B	xxx	B	255	C 128
OFFSET	R	Xxx	G	xxx	B	xxx			
GAIN	R	Xxx	G	xxx	B	xxx	M	255	m 0
AUTO-SUB		OK!							
							IDX :		65
SCALER:ADD:							VAL:	READ	WRITE
NVRAM:ADD:							VAL:	READ	WRITE
PANEL:							LG 17		
SAVE							RUNNING HOUR:		
								1024x768	48.3KHz @60Hz

- 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
- Panel : HS (Hannstar panel)
LG (LG.Philips panel)
AU
QDI(Quanta Display Inc.)
DEFAULT
- EXIT : Exit Factory Menu
- SAVE : Save the setup values of Factory Menu
- RUNNING HOUR : Backlight on time

Access Factory Mode

How to get into Factory Mode Menu

- Step1: Turn off monitor.
- Step2: [Push AUTO "AUTO" & OK "OK" buttons at the same time and hold it] +[Press power "power" button until comes out "Windows screen"] => then release all buttons
- Step3: Press OK "OK" button, bring up Factory mode indication as shown in Fig2.



Factory Mode indicator

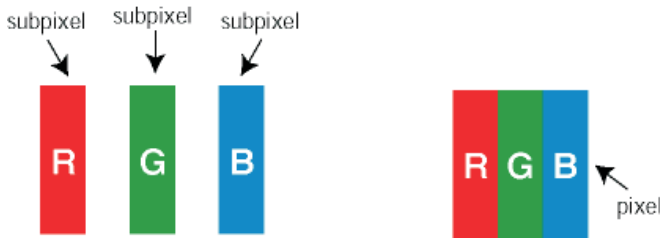
Factory Menu

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

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 subpixel 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 subpixels 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 Subpixels

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

Types of Pixel Defects

Pixel and subpixel defects appear on the screen in different ways.

There are two categories of pixel defects and several types of subpixel defects within each category.

Bright Dot Defects Bright dot defects appear as pixels or subpixels that are always lit or "on".

These are the types of bright dot defects:



One lit red, green or blue subpixel



Two adjacent lit subpixels:

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

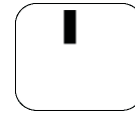


Three adjacent lit subpixels (one white pixel)

Black Dot Defects

Black dot defects appear as pixels or subpixels that are always dark or "off".

These are the types of black dot defects:



One dark subpixel



Two or three adjacent dark subpixels

Proximity of Pixel Defects

Because pixel and subpixels defects of the same type that are nearby 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 subpixel defects exceeding the tolerances listed in the following tables.

BRIGHT DEFECTS	DOT	ACCEPTABLE LEVEL
<i>MODEL</i>		170S6
1 lit subpixel		4 or fewer
2 adjacent lit subpixels		2 or fewer
3 adjacent lit subpixels (one white pixel)		0
Distance between two bright dot defects*		15 mm or more
Total bright dot defects of all types		4 or fewer
BLACK DOT DEFECTS		ACCEPTABLE LEVEL
<i>MODEL</i>		170S6
1 dark subpixel		4 or fewer
2 adjacent dark subpixels		2 or fewer
3 adjacent dark subpixels		0
Distance between two black dot defects*		15 mm or more
Total black dot defects of all types		4 or fewer
TOTAL DOT DEFECTS		ACCEPTABLE LEVEL
<i>MODEL</i>		170S6
Total bright or black dot defects of all types		5 or fewer

Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
<i>MODEL</i>	150S6
1 lit subpixel	4 or fewer
2 adjacent lit subpixels	2 or fewer
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	15 mm or more
Total bright dot defects of all types	4 or fewer
BLACK DOT DEFECTS	ACCEPTABLE LEVEL
<i>MODEL</i>	150S6
1 dark subpixel	4 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	15 mm or more
Total black dot defects of all types	4 or fewer
TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
<i>MODEL</i>	150S6
Total bright or black dot defects of all types	5 or fewer

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
<i>MODEL</i>	190S6
1 lit subpixel	3 or fewer
2 adjacent lit subpixels	1 or fewer
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	25 mm or more
Total bright dot defects of all types	3 or fewer
BLACK DOT DEFECTS	ACCEPTABLE LEVEL
<i>MODEL</i>	190S6
1 dark subpixel	5 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	15 mm or more
Total black dot defects of all types	5 or fewer
TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
<i>MODEL</i>	190S6
Total bright or black dot defects of all types	5 or fewer

Front View



Fig.1

Back View



Fig.2

Step1. Remove the base

-Remove the screws as shown in Fig.3 & Fig.4



Fig.3

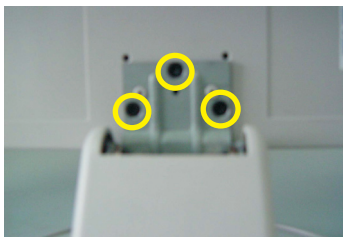


Fig.4

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

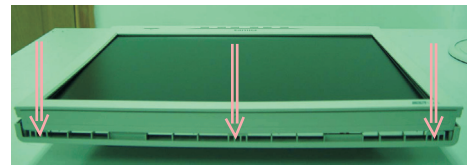


Fig.8

Step3. Remove the Back cover

- Remove the two clicks 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

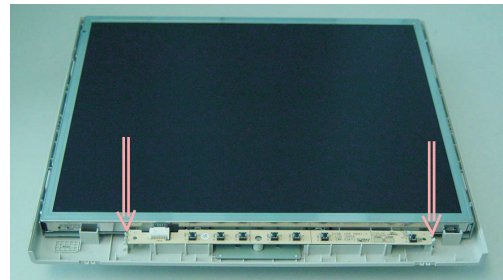


Fig.9

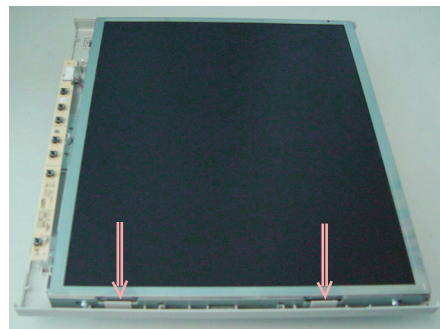


Fig.10

Step4. Remove the Matel frame board

- Remove the two screws as shown in Fig.11

- Remove the matel frame as shown in Fig.12

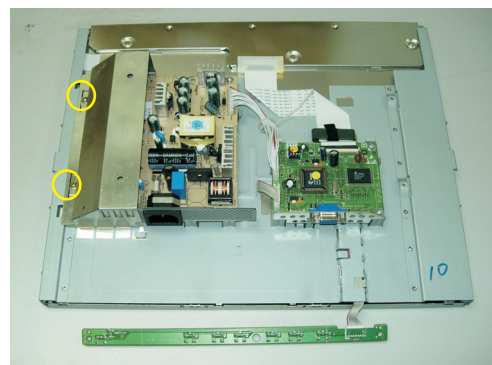


Fig.11

Mechanical Instruction

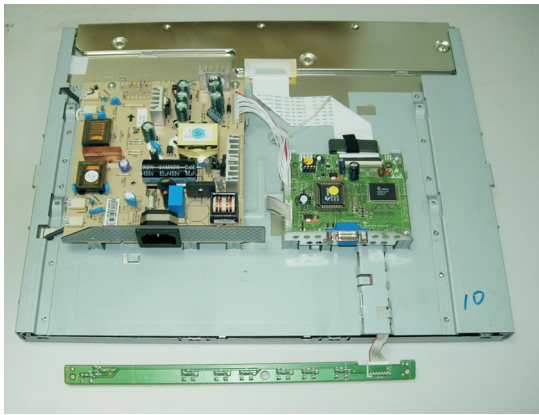


Fig.12

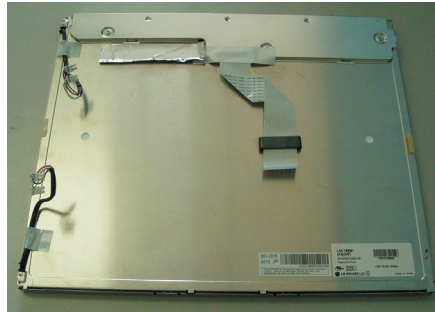


Fig.15

Step 5. Remove the scaler and power board.

- Disconnect the 1505,1502,1413 and 4 backlight cables as shown in Fig.13
- Remove the scaler and power board as shown in Fig.14

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).

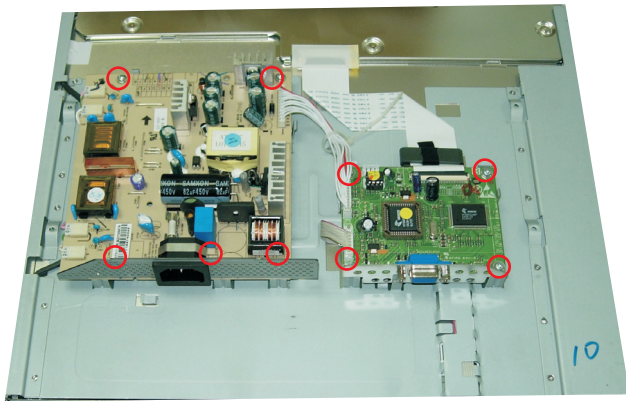


Fig.13

Panel

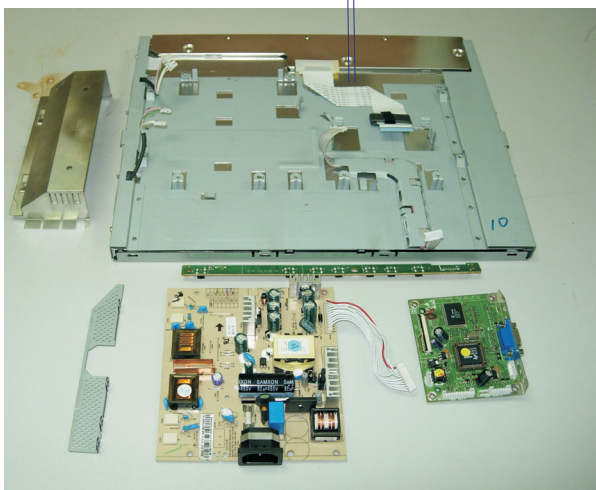


Fig.14

Alignment procedure

1. Turn on the LCD monitor.
2. Turn on the Timing/pattern generator. See Fig.1
Resolution :1280x1024(Use the best resolution)
Timing : H= 31.47KHz V=60Hz
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. See Fig.3

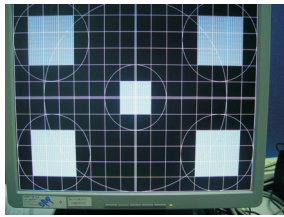


Fig. 1

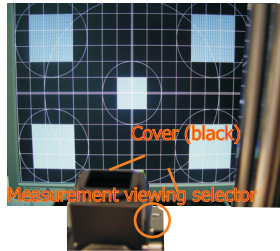
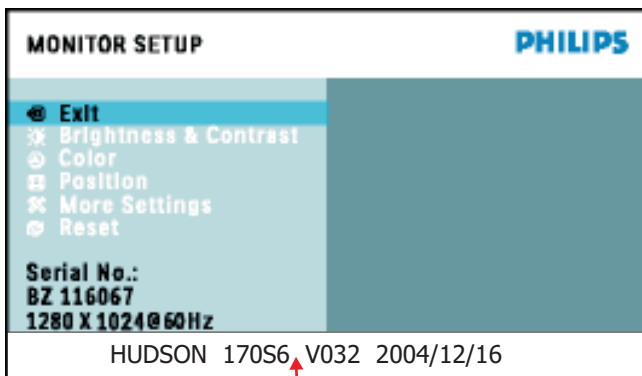


Fig. 2

4. Access Factory Mode

How to get into Factory Mode Menu

- Step1:
Turn off monitor.
- Step2:
[Push AUTO "AUTO" & OK "OK" buttons at the same time and hold it]
+[Press power "POWER" button until comes out "Windows screen"]
=> then release all buttons
- Step3:
Press OK "OK" button, bring up Factory mode indication as shown in Fig3.



Factory Mode indicator Fig. 3

Note: after alignment, please reset OSD to user s mode for normal operation. Otherwise, the monitor won t entering power saving mode and showing full white picture all the time as no video signal supplied. To leave factory mode by restart the monitor.

5. Adjust OSD menu to lower position of screen (i.g. adjust V-position to value " 0 " at submenu of OSD Setting.
6. Setting Brightness and Contrast
- Adjust Brightness to value " 90".
- Adjust Contrast to value " 80".
7. Switch light probe to Viewing position.
8. Move the Lens barrel forward or backward to get clear image as shown in Fig. 4
9. Switch light probe to Measuring position. It should be able to indicate

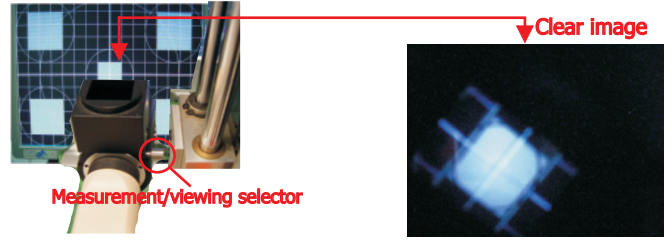
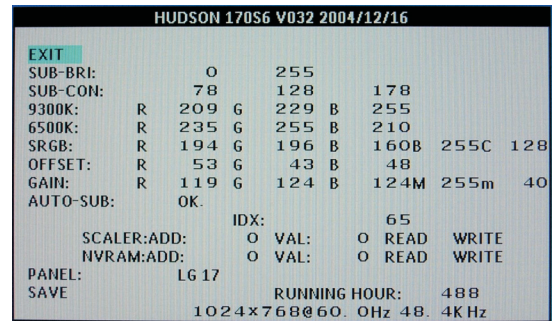


Fig.4

10. Setting pattern to full white picture
11. Press "OK" button, then select factory mode indicator by "▼" button
12. Press "OK" button to bring up submenu windows as below:



13. Press "▲" or "▼" button to select R G B. Change the value by "◀" or "▶" key until the X,Y co-ordinates as below

	sRGB
x(center)	0.313 ± 0.008
y(center)	0.329 ± 0.008
Ynits	180 ± 10
	9300°K 6500°K
x (center)	0.283 ± 0.020 0.313 ± 0.020
y (center)	0.297 ± 0.020 0.329 ± 0.020

- Alignment hits: 1. R for x value, G for y value, B for Y value on the colour analyzer.
2. If the colour analyzer has been calibrated and preset colour temperature in it. Please switch to correct setting in accordance with colour settings.



15. EEPROM presetting (B)

After finishing all the adjustment, set:
Brightness control to 100%
Contrast control to 50%
OSD position at middle of screen
COLOR adjusts to 6500K color.

Warning Message Table



Warning message table

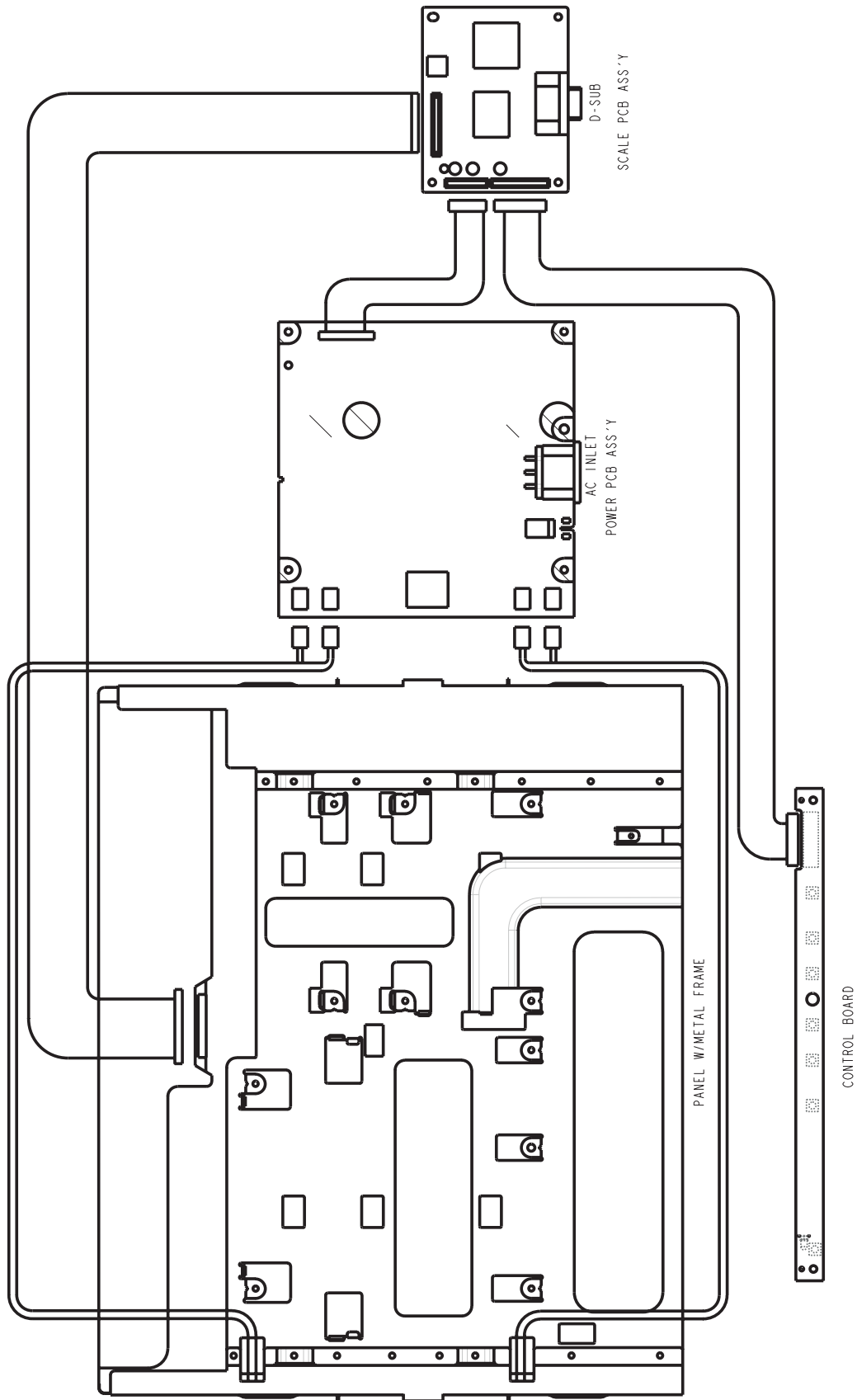
Item	Attention Signals	Display Time	Condition	Attention off
1	CANNOT DISPLAY THIS VIDEO MODE, CHANGE COMPUTER DISPLAY INPUT TO 1024X768 @ 60HZ	30 mins	This warning appears when the input signal from your computer is not in a standard video mode or is out of the monitor's scanning range. After 30 mins, monitor enters sleeping mode.	No
2	NO VIDEO INPUT	30 mins	This message appears when there is no signal input but with cable while AC or DC while power on. After 30 mins, monitor enters sleeping mode.	Yes Show floating menu ATTENTION SIGNAL OFF
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.	Yes Show floating menu ATTENTION SIGNAL OFF
4	ENTERING SLEEP MODE	3 secs	This message appears when monitor is about to enter power saving mode.	No
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.	No
6	USE 1024 X 768 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 1024x768.	Yes
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.	No function when push 10 secs (If OSD lock then attention off, not any message and only attention on)
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.	No function when push 10 secs
9	ATTENTION SIGNAL ON ATTENTION SIGNAL OFF	3 secs 3 secs	This message will appear 3 seconds to indicate the attention signals in ON or OFF status when to switch this function on or off by pressing the AUTO button for more than 10 seconds while at no video input from PC.	Yes
10	THIS IS 85HZ OVERSCAN, CHANGE COMPUTER DISPLAY INPUT TO 1024X768@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	No
11	the window of OSD MAIN CONTROLS	60 secs	This message will appear when the OK button is pressed.	Yes

Common Problems	
Having this problem?	Check these items
No Picture (power LED not lit)	<ul style="list-style-type: none"> • Make sure the power cord is plugged into the power outlet and into the back of the monitor. • First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position
No Picture (Power LED is amber or yellow)	<ul style="list-style-type: none"> • Make sure the computer is turned on. • Make sure the signal cable is properly connected to your computer. • Check to see if the monitor cable has bent pins. • The Energy Saving feature may be activated
Screen says 	<ul style="list-style-type: none"> • Make sure the monitor cable properly connected to your computer. (Also refer to the Quick Set-Up Guide). • Check to see if the monitor cable has bent pins, • Make sure the computer is turned on.
Screen says 	<ul style="list-style-type: none"> • Make sure the vertical sync of input signal is within the range of 56--75Hz. • Change the refresh rate to 56--75Hz within 10 minutes. • Re-power on monitor to start over again if you failed to change the refresh rate within 10 minutes.
AUTO button not working properly	<ul style="list-style-type: none"> • The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. • It may not work properly if using nonstandard PC or video card. • The AUTO adjustment does not function when digital input is used for display

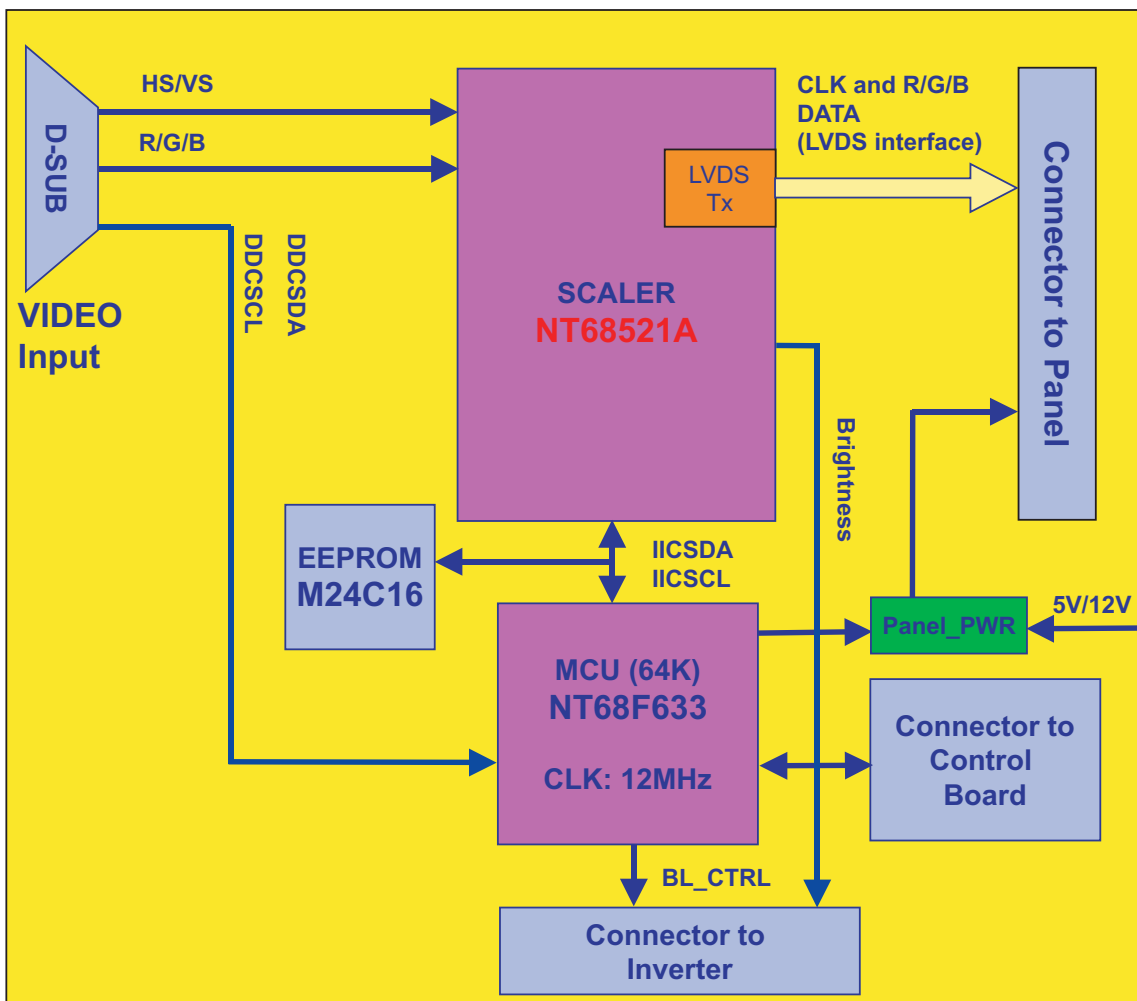
Trouble Shooting

The following table lists possible Image problems, and the recommended resolutions.

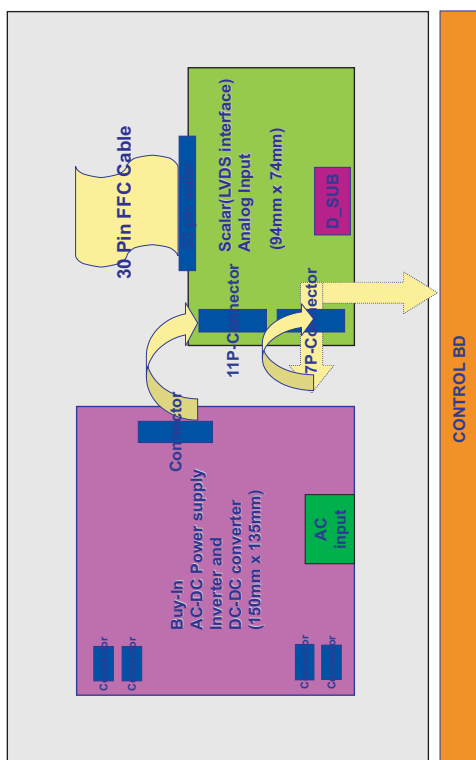
Image Problems	
Having this problem?	Check these items
Display position is incorrect	<ul style="list-style-type: none"> • Press the AUTO button • Adjust the image position using the Horizontal Position and/or Vertical Position in OSD Main Controls.
Image vibrates on the screen	<ul style="list-style-type: none"> • Check that the signal cable is properly connected to the graphics board or PC.
Vertical flicker appears 	<ul style="list-style-type: none"> • Press the AUTO button • Eliminate the vertical bars using the Clock Adjustment of VIDEO NOISE in OSD Main Controls.
Horizontal flicker appears 	<ul style="list-style-type: none"> • Press the AUTO button • Eliminate the horizontal bars using the Phase Adjustment of VIDEO NOISE in OSD Main Controls.
The screen is too bright or too dark	<ul style="list-style-type: none"> • Adjust the contrast and brightness on OSD Main Controls.
An after-image appears	<ul style="list-style-type: none"> • If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an after-image. This usually disappears after a few hours.
An after-image remains after the power has been turned off.	<ul style="list-style-type: none"> • This is characteristic of liquid crystal and is not caused by a malfunction or deterioration of the liquid crystal. The after-image will disappear after a period of time.
Green, red, blue, and white dots remains	<ul style="list-style-type: none"> • The remaining dots are normal characteristic of the liquid crystal used in today' s technology.



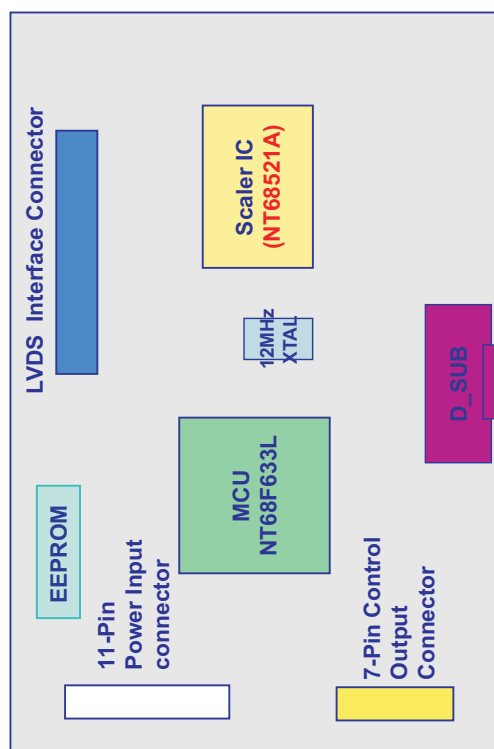
Scaler Board Block Diagram



System Block Diagram



Scaler Board Layout



Scaler Schematic Diagram - 1

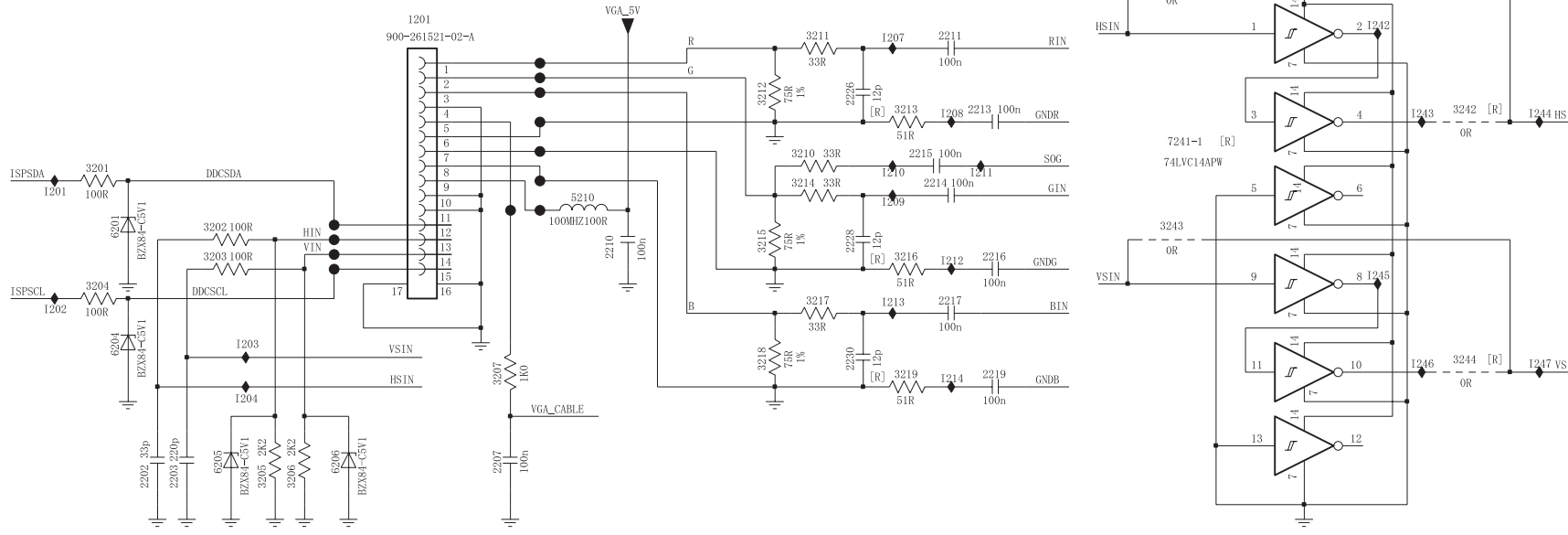
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A SCALER BOARD
SB: 61611 x 6
PB: 61621

Ref Des	Reserved
2222	223878615649 100n
2223	223878615649 100n
2224	223878615649 100n
2226	223886715129 12p
2228	223886715129 12p
2230	223886715129 12p
2241	223878615649 100n
3242	232270296001
3244	232270296001
6222	933215370215 BAV99
6223	933215370215 BAV99
6224	933215370215 BAV99
7241-1	935260739118 74LVC14APW
7241-2	935260739118
7241-3	935260739118
7241-4	935260739118
7241-5	935260739118
7241-6	935260739118



EXCEPT 1201 WERE CHIP COMPONENTS.

- 1201 D4
- 2202 F2
- 2203 F3
- 2207 F4
- 2210 E5
- 2211 D6
- 2213 D6
- 2214 E6
- 2215 D6
- 2216 E7
- 2217 E6
- 2219 E7
- 2222 B7
- 2223 B8
- 2224 B8
- 2226 D6
- 2228 E6
- 2230 E6
- 2241 C8
- 3201 D2
- 3202 E3
- 3203 E3
- 3204 E2
- 3205 F3
- 3206 F3
- 3207 E4
- 3210 D6
- 3211 D6
- 3212 D5
- 3213 D6
- 3214 E6
- 3215 E5
- 3216 E6
- 3217 E6
- 3218 E5
- 3219 E6
- 3241 C7
- 3242 D9
- 3243 E7
- 3244 E9
- 5210 E5
- 6201 E2
- 6204 E2
- 6205 F3
- 6206 F3
- 6222 B7
- 6223 B7
- 6224 B8
- 7241-1 D9
- 1201 E2
- 1202 E2
- 1203 E3
- 1204 F3
- 1207 D6
- 1208 D6
- 1209 E6
- 1210 D6
- 1211 D6
- 1212 E6
- 1213 E6
- 1214 E6
- 1241 C8
- 1242 D8
- 1243 D9
- 1244 D9
- 1245 E8
- 1246 E9
- 1247 E9

CHN	ECO-	SETNAME	LCD SH6
CLASS_00	DSUB		
2004-12-15	3		
NAME	Peter V./Stella Fann	SUPERS.	4 10 130 - 1 *** A3
Mgr	CHECK *****	DATE	2004-12-15
© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000			

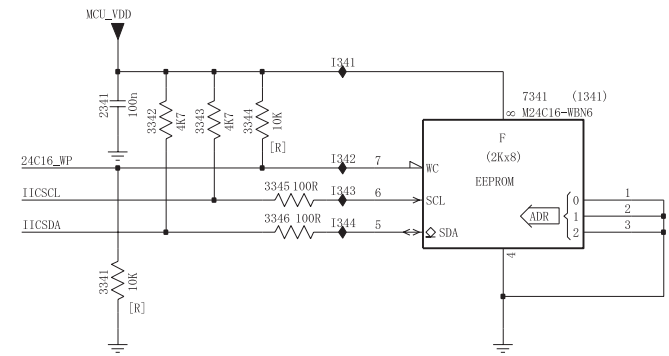
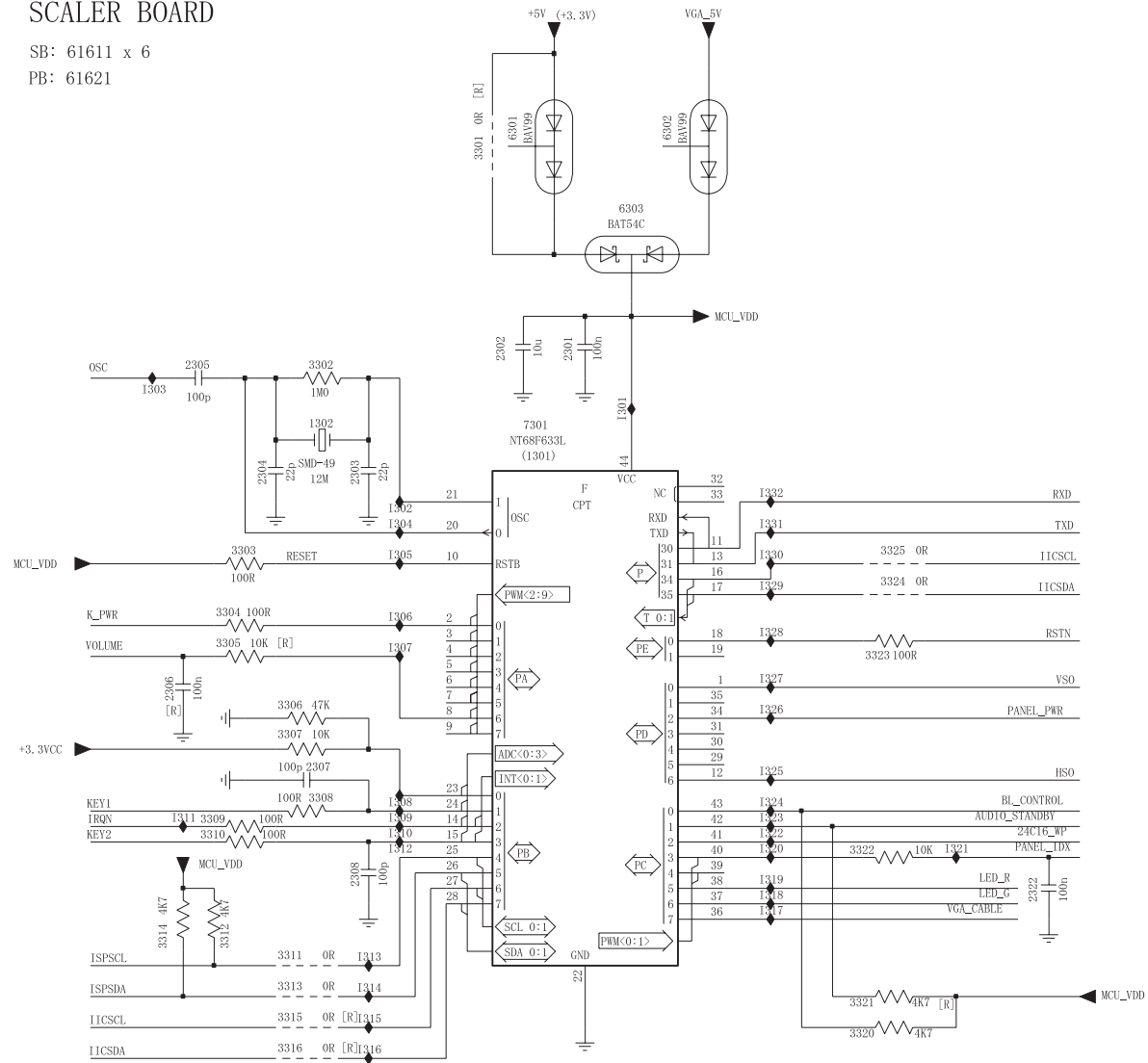
Scaler Schematic Diagram - 2

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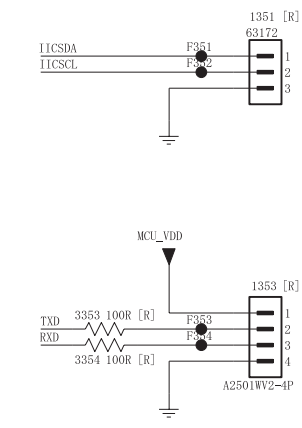
SCALER BOARD

SB: 61611 x 6
PB: 61621



Ref_Des	Reserved
1351	243803100116
	63172
1353	313816876941
	A2501WV2-4P
2306	223878615649
	100n
3301	232273091002
3305	212211805669
	10K
3315	232270296001
3316	232270296001
3321	232270260472
	4K7
3341	232270260103
	10K
3344	212211805669
	10K
3353	232270260101
	100R
3354	232270260101
	100R

ITEM	15"	17"/19"
3301	V	X
6301	X	



- 1302 C2
- 1351 C9
- 1353 D9
- 2301 B3
- 2302 B3
- 2303 C3
- 2304 C2
- 2305 B2
- 2306 D2
- 2307 D2
- 2308 E3
- 2322 E6
- 2341 A7
- 3301 A3
- 3302 B2
- 3303 C2
- 3304 D2
- 3305 D2
- 3306 D2
- 3307 D2
- 3308 D2
- 3309 D2
- 3310 E2
- 3311 E2
- 3312 E2
- 3313 E2
- 3314 E2
- 3315 E2
- 3316 F2
- 3320 E5
- 3321 E5
- 3322 E5
- 3323 D5
- 3324 C5
- 3325 C5
- 3341 B7
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- 3346 B8
- 3353 D8
- 3354 D8
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- F352 C9
- F353 D9
- F354 D9
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- I302 C3
- I303 B2
- I304 C3
- I305 C3
- I306 D3
- I307 D3
- I308 D3
- I309 D3
- I310 E3
- I311 D2
- I312 E3
- I313 E3
- I314 E3
- I315 E3
- I316 F3
- I317 E4
- I318 E4
- I319 E4
- I320 E4
- I321 E5
- I322 E4
- I323 D4
- I324 D4
- I325 D4
- I326 D4
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- I331 C4
- I332 A8
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- I334 B8
- I334 B8

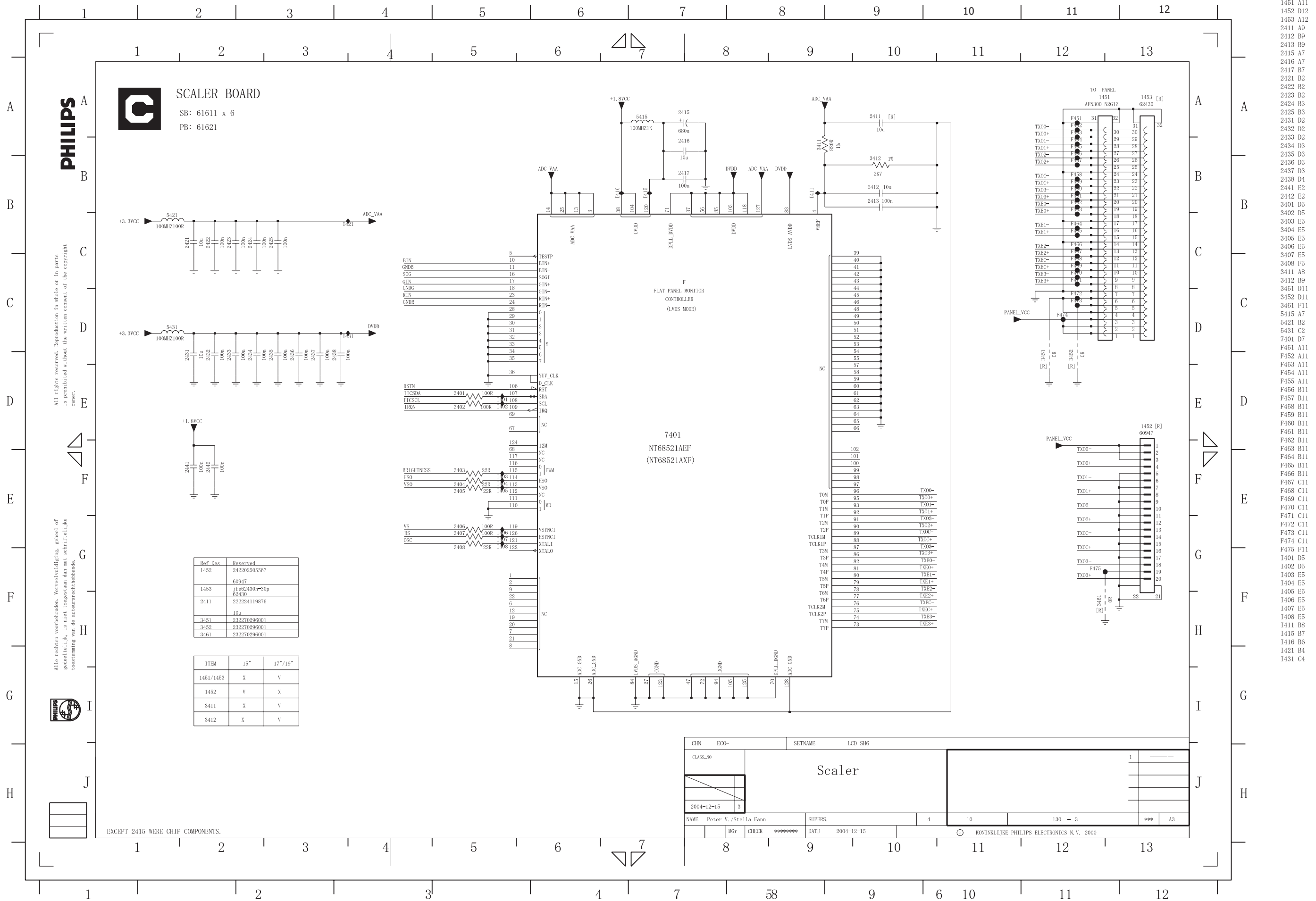
EXCEPT 1351, 1353 WERE CHIP COMPONENTS.

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CHN	ECO-	SETNAME	LCD SH6
CLASS_NO	MICRO		1
2004-12-15	3		
NAME	Peter V./Stella Fann	SUPERS.	4
Gr	CHECK	*****	DATE
			2004-12-15
		© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000	

Scaler Schematic Diagram - 3



1451 A11
 1452 D12
 1453 A12
 2411 A9
 2412 B9
 2413 B9
 2415 A7
 2416 A7
 2417 B7
 2421 B2
 2422 B2
 2423 B2
 2424 B3
 2425 B3
 2431 D2
 2432 D2
 2433 D2
 2434 D3
 2435 D3
 2436 D3
 2437 D3
 2438 D4
 2441 E2
 2442 E2
 3401 D5
 3402 D5
 3403 E5
 3404 E5
 3405 E5
 3406 E5
 3407 E5
 3408 F5
 3411 A8
 3412 B9
 3451 D11
 3452 D11
 3461 F11
 5415 A7
 5421 B2
 5431 C2
 7401 D7
 F451 A11
 F452 A11
 F453 A11
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 F475 F11
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 1402 D5
 1403 E5
 1404 E5
 1405 E5
 1406 E5
 1407 E5
 1408 E5
 1411 B8
 1415 B7
 1416 B6
 1421 B4
 1431 C4

Scaler Schematic Diagram - 4

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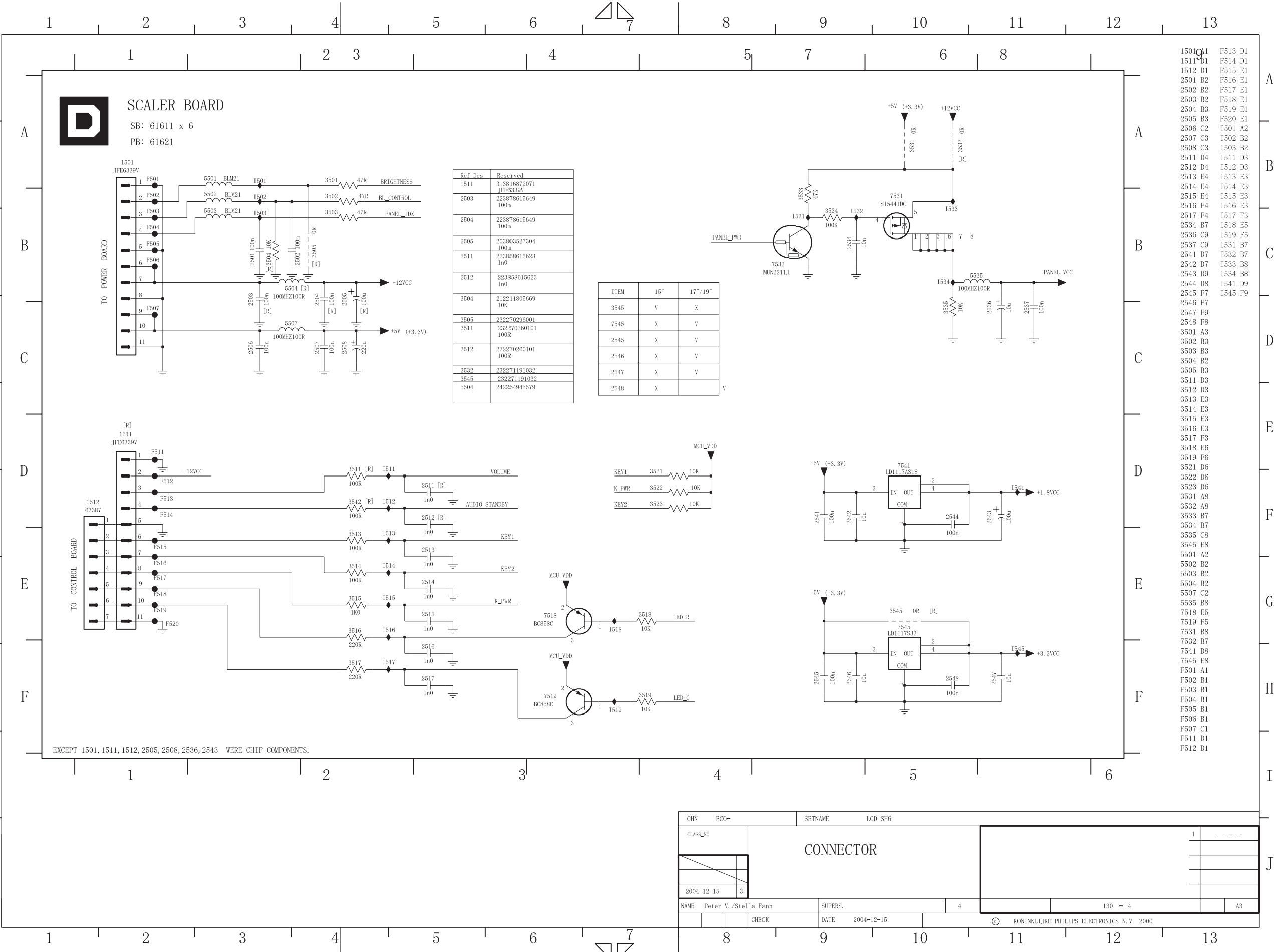
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SCALER BOARD

SB: 61611 x 6
PB: 61621



Ref_Des	Reserved
1511	313816872071 JFE6339V
2503	223878615649 100n
2504	223878615649 100n
2505	203803527304 100u
2511	223858615623 1n0
2512	223858615623 1n0
3504	212211805669 10K
3505	232270296001
3511	232270260101 100R
3512	232270260101 100R
3532	232271191032
3545	232271191032
5504	242254945579

ITEM	15"	17"/19"
3545	V	X
7545	X	V
2545	X	V
2546	X	V
2547	X	V
2548	X	

- 1501 D1 F513 D1
- 1511 D1 F514 D1
- 1512 D1 F515 E1
- 2501 B2 F516 E1
- 2502 B2 F517 E1
- 2503 B2 F518 E1
- 2504 B3 F519 E1
- 2505 B3 F520 E1
- 2506 C2 1501 A2
- 2507 C3 1502 B2
- 2508 C3 1503 B2
- 2511 D4 1511 D3
- 2512 D4 1512 D3
- 2513 E4 1513 E3
- 2514 E4 1514 E3
- 2515 E4 1515 E3
- 2516 F4 1516 E3
- 2517 F4 1517 F3
- 2534 B7 1518 E5
- 2536 C9 1519 F5
- 2537 C9 1531 B7
- 2541 D7 1532 B7
- 2542 D7 1533 B8
- 2543 D9 1534 B8
- 2544 D8 1541 D9
- 2545 F7 1545 F9
- 2546 F7
- 2547 F9
- 2548 F8
- 3501 A3
- 3502 B3
- 3503 B3
- 3504 B2
- 3505 B3
- 3511 D3
- 3512 D3
- 3513 E3
- 3514 E3
- 3515 E3
- 3516 E3
- 3517 F3
- 3518 E6
- 3519 F6
- 3521 D6
- 3522 D6
- 3523 D6
- 3531 A8
- 3532 A8
- 3533 B7
- 3534 B7
- 3535 C8
- 3545 E8
- 5501 A2
- 5502 B2
- 5503 B2
- 5504 B2
- 5507 C2
- 5535 B8
- 7518 E5
- 7519 F5
- 7531 B8
- 7532 B7
- 7541 D8
- 7545 E8
- F501 A1
- F502 B1
- F503 B1
- F504 B1
- F505 B1
- F506 B1
- F507 C1
- F511 D1
- F512 D1

EXCEPT 1501, 1511, 1512, 2505, 2508, 2536, 2543 WERE CHIP COMPONENTS.

CHN	ECO-	SETNAME	LCD SH6
CLASS_No	CONNECTOR		1
2004-12-15			3
NAME	Peter V./Stella Fann	SUPERS.	4
CHECK	DATE	2004-12-15	130 - 4
KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000			

Scaler Board C.B.A - 2

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e

f

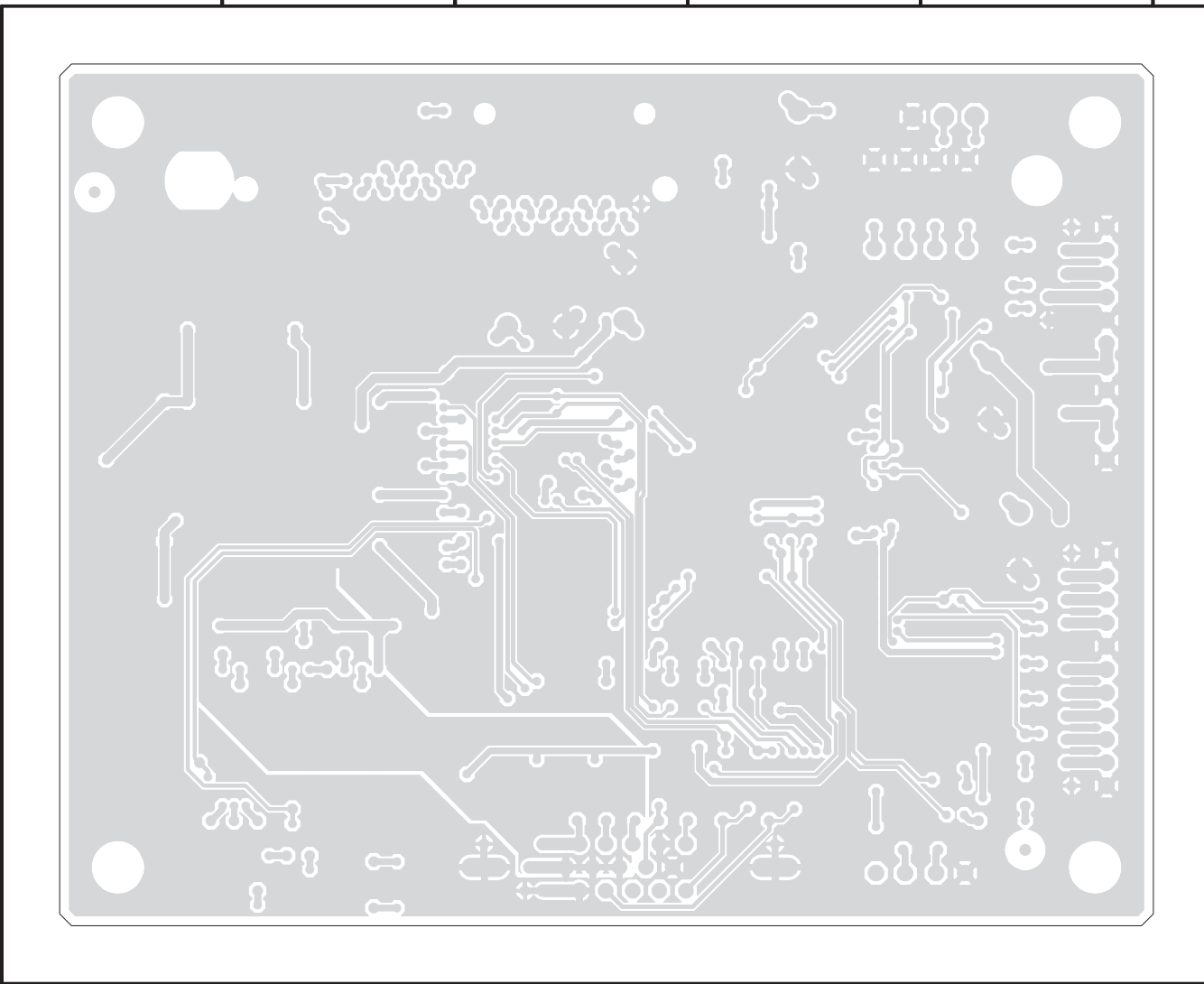
1 2 3 4 5 6 7 8

1 2 3 4

A

B

C



A

B

C

a

b

c

d

1 2 3 4

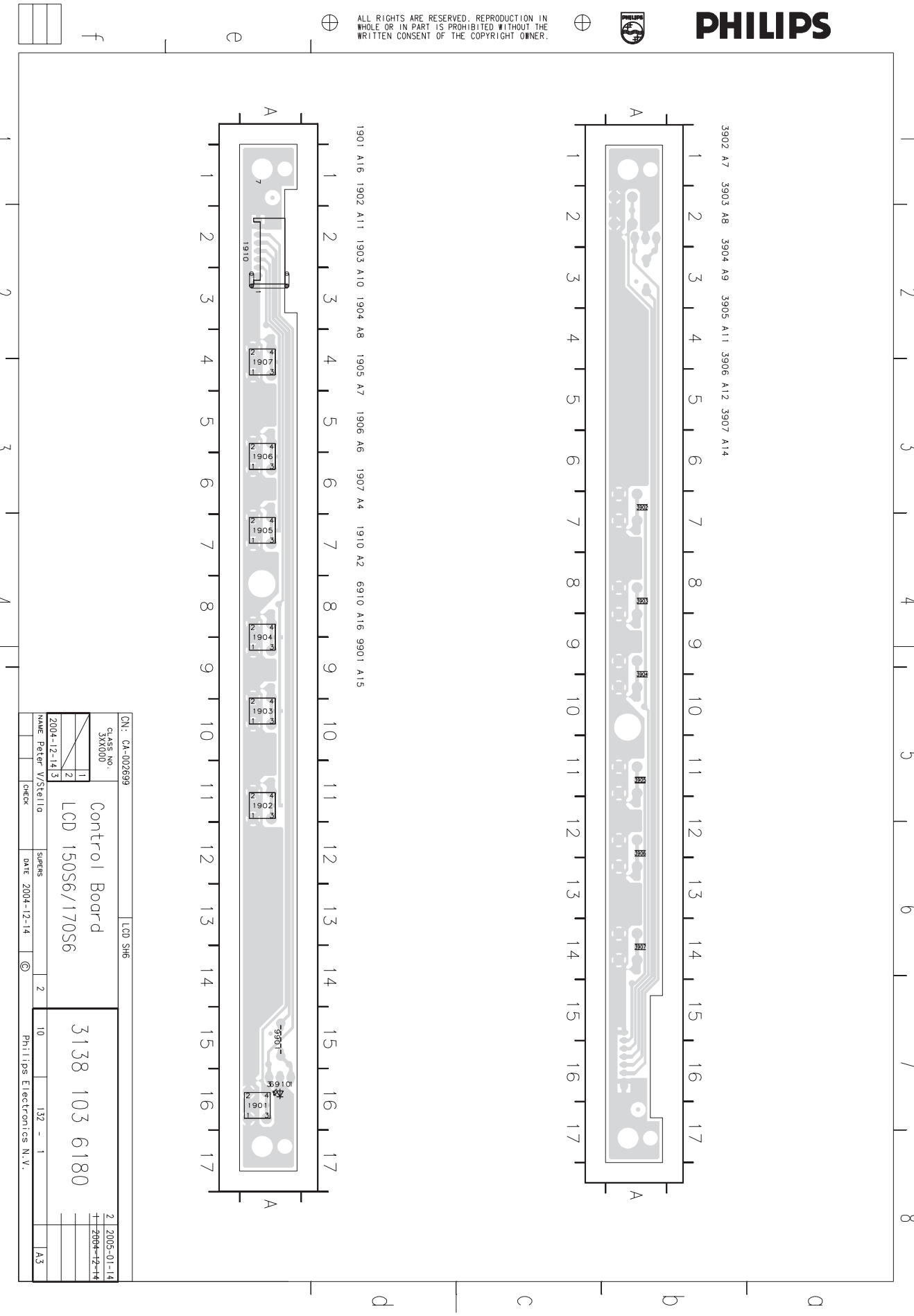
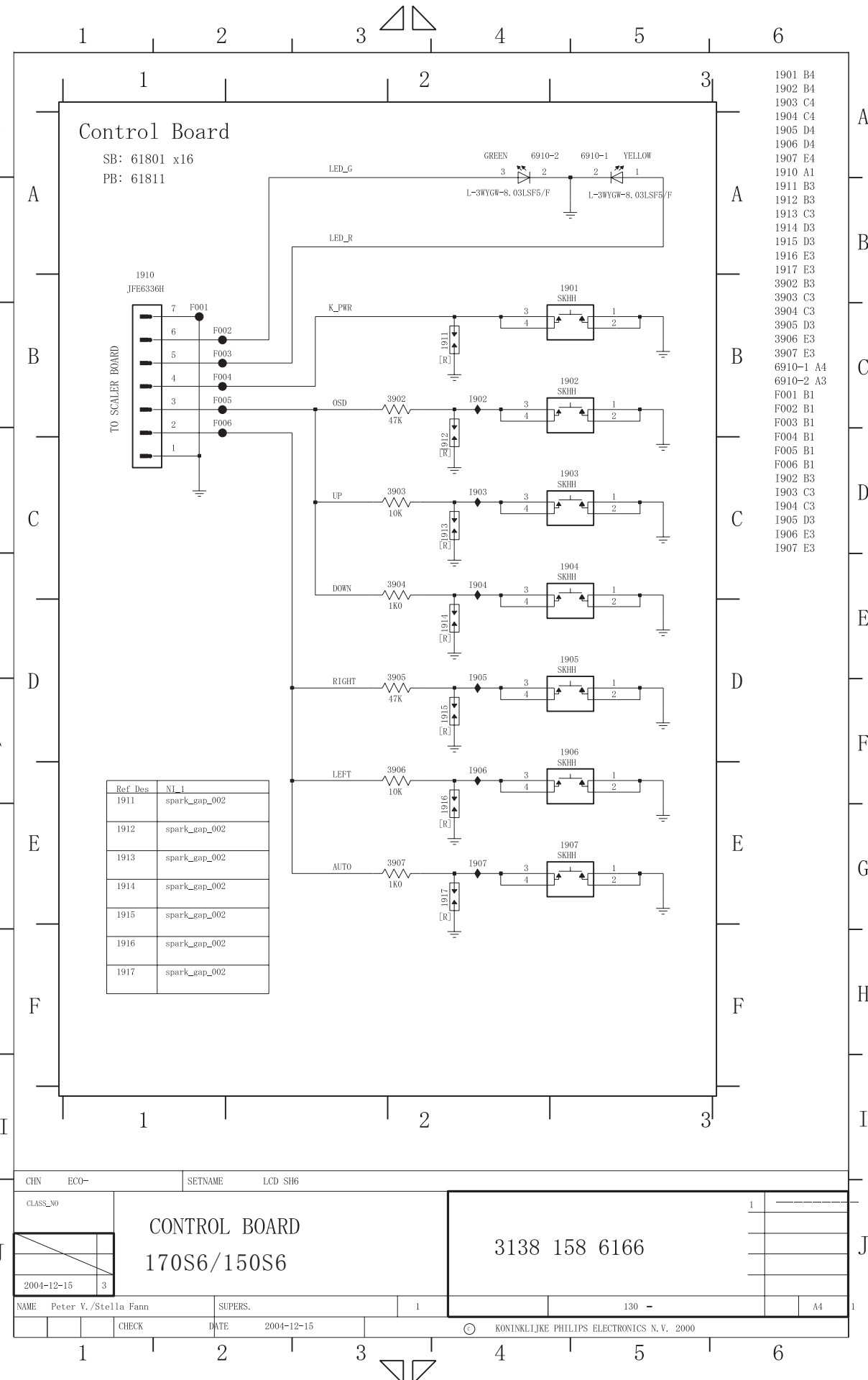
CN:		SH6 170			
CLASS NO. 3XX000	Scaler Board			1	2004-12-14
	LCD SH6			3138	103
2004-12-14	1	2	3		
NAME Peter V./Stella	SUPERS	2	10	132 - 2	A3
CHECK	DATE 2004-12-14	©	Philips Electronics N.V.		

Control Board Schematic Diagram and C.B.A - 150S6/170S6



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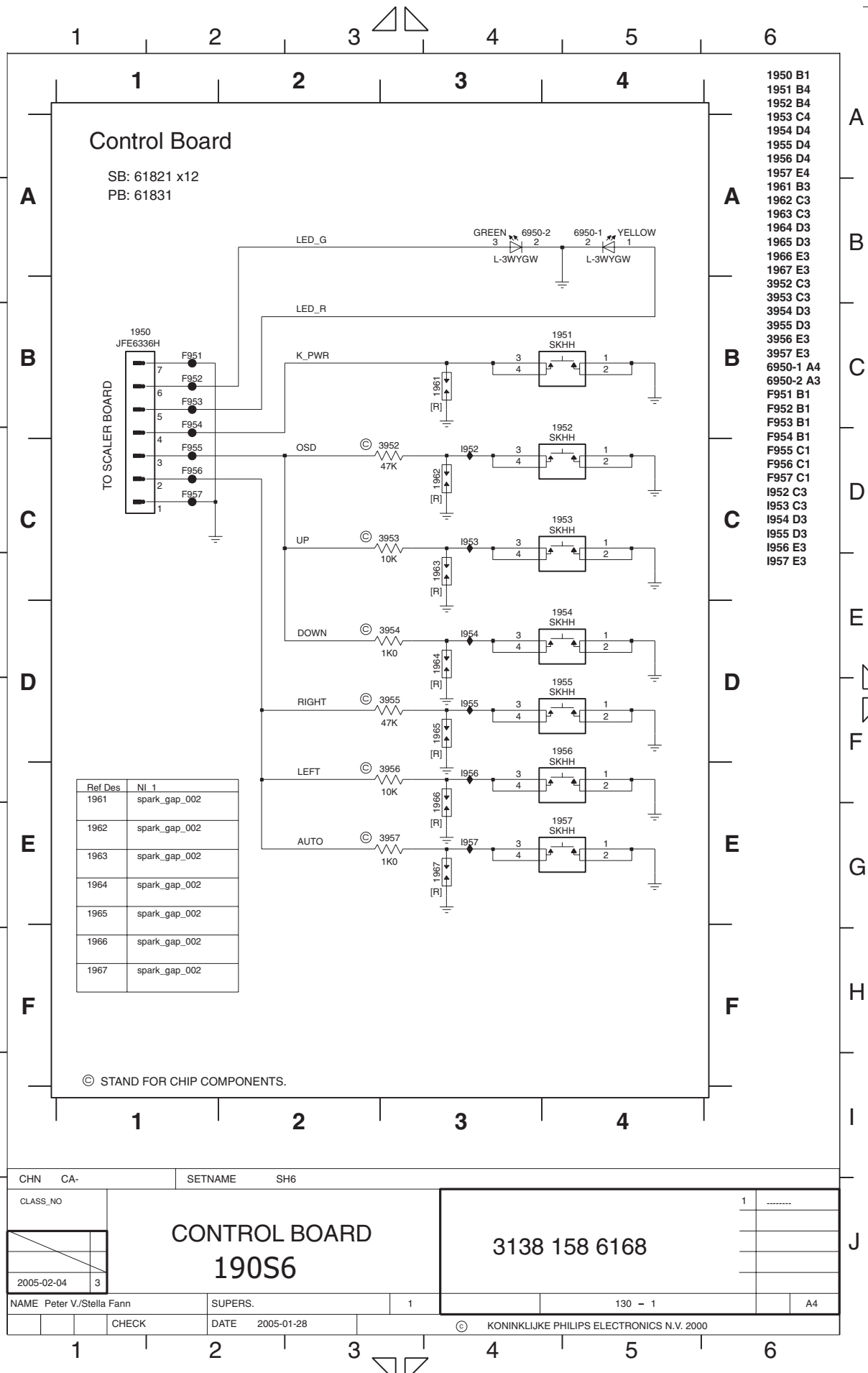


Control Board Schematic Diagram and C.B.A - 190S6

PHILIPS

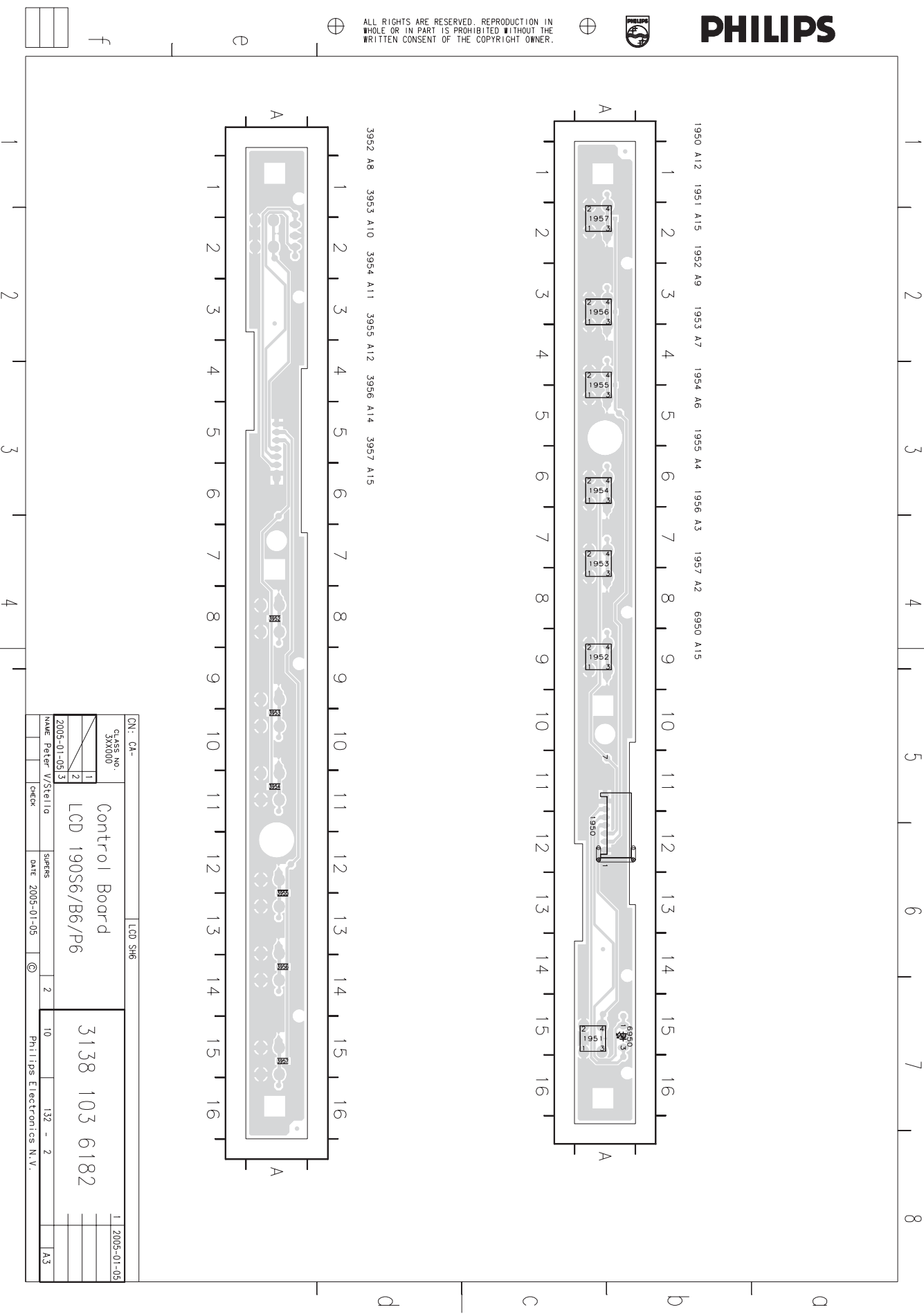
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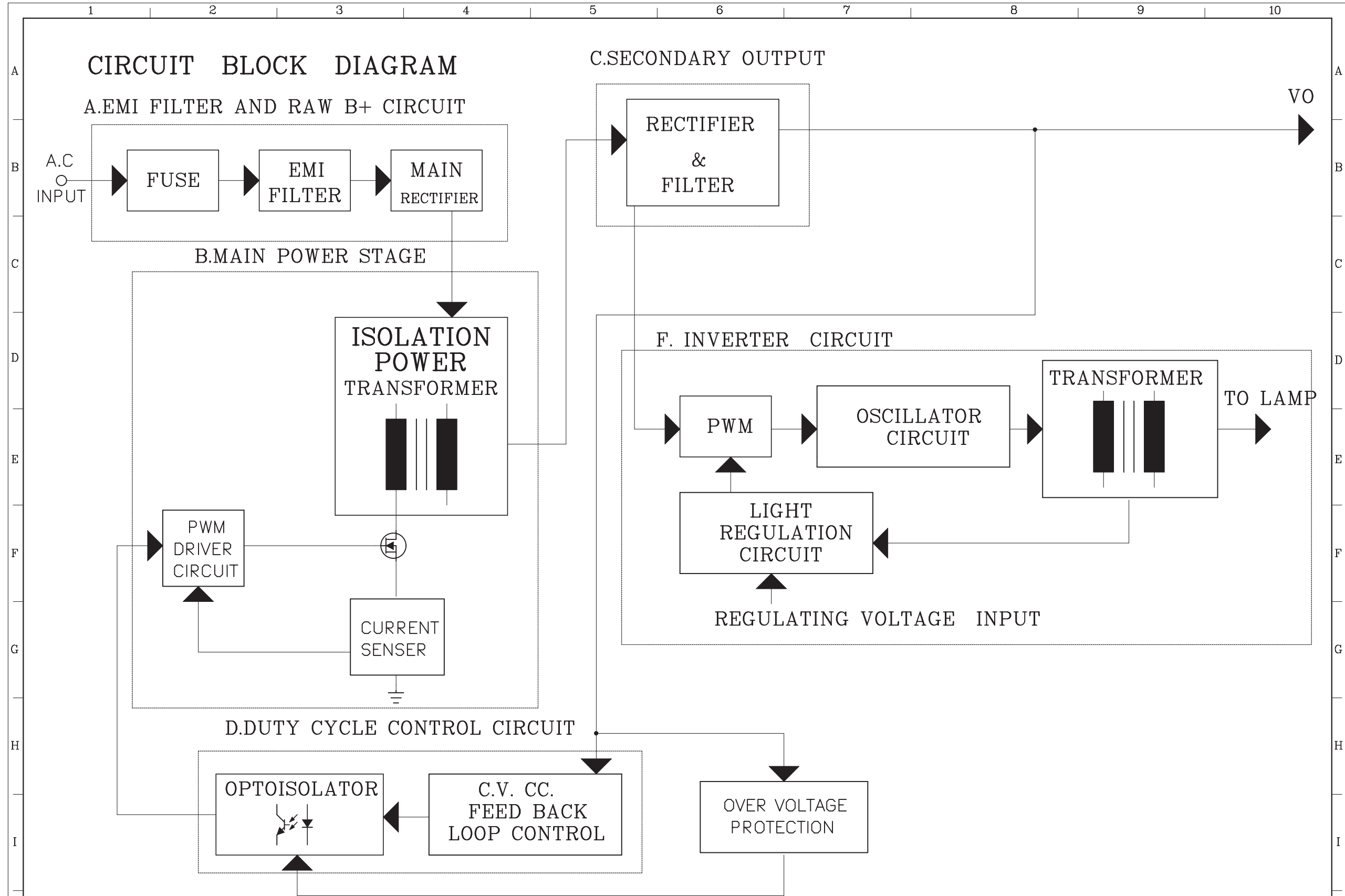
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- 1950 B1
- 1951 B4
- 1952 B4
- 1953 C4
- 1954 D4
- 1955 D4
- 1956 D4
- 1957 E4
- 1961 B3
- 1962 C3
- 1963 C3
- 1964 D3
- 1965 D3
- 1966 E3
- 1967 E3
- 3952 C3
- 3953 C3
- 3954 D3
- 3955 D3
- 3956 E3
- 3957 E3
- 6950-1 A4
- 6950-2 A3
- F951 B1
- F952 B1
- F953 B1
- F954 B1
- F955 C1
- F956 C1
- F957 C1
- I952 C3
- I953 C3
- I954 D3
- I955 D3
- I956 E3
- I957 E3

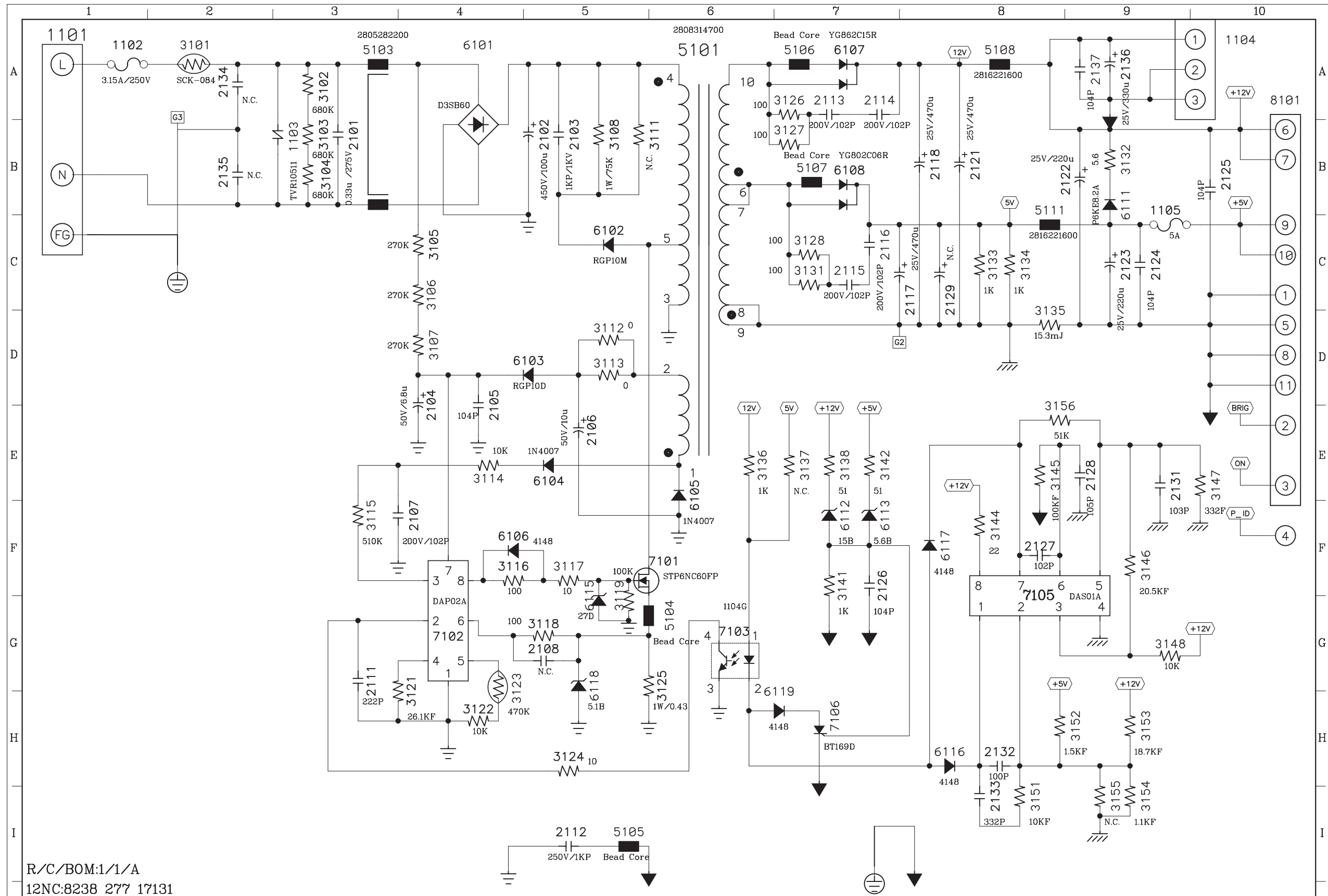
CHN CA-	SETNAME SH6		
CLASS_NO	CONTROL BOARD 190S6		1
2005-02-04	3138 158 6168		
NAME Peter V./Stella Fann	SUPERS.	1	A4
CHECK	DATE 2005-01-28	© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000	





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	PWB: EADP-43AF A 2941012401	FILE NAME: BD-43AF A		\$%&	!"#	EADP-43AF A		01 TO END
	DESCRIPTION: SCHEMATIC OF AC --> DC ADAPTOR			12/21/04	12/21/04			

Power Board Schematic Diagram (170S6/190S6) - Delta



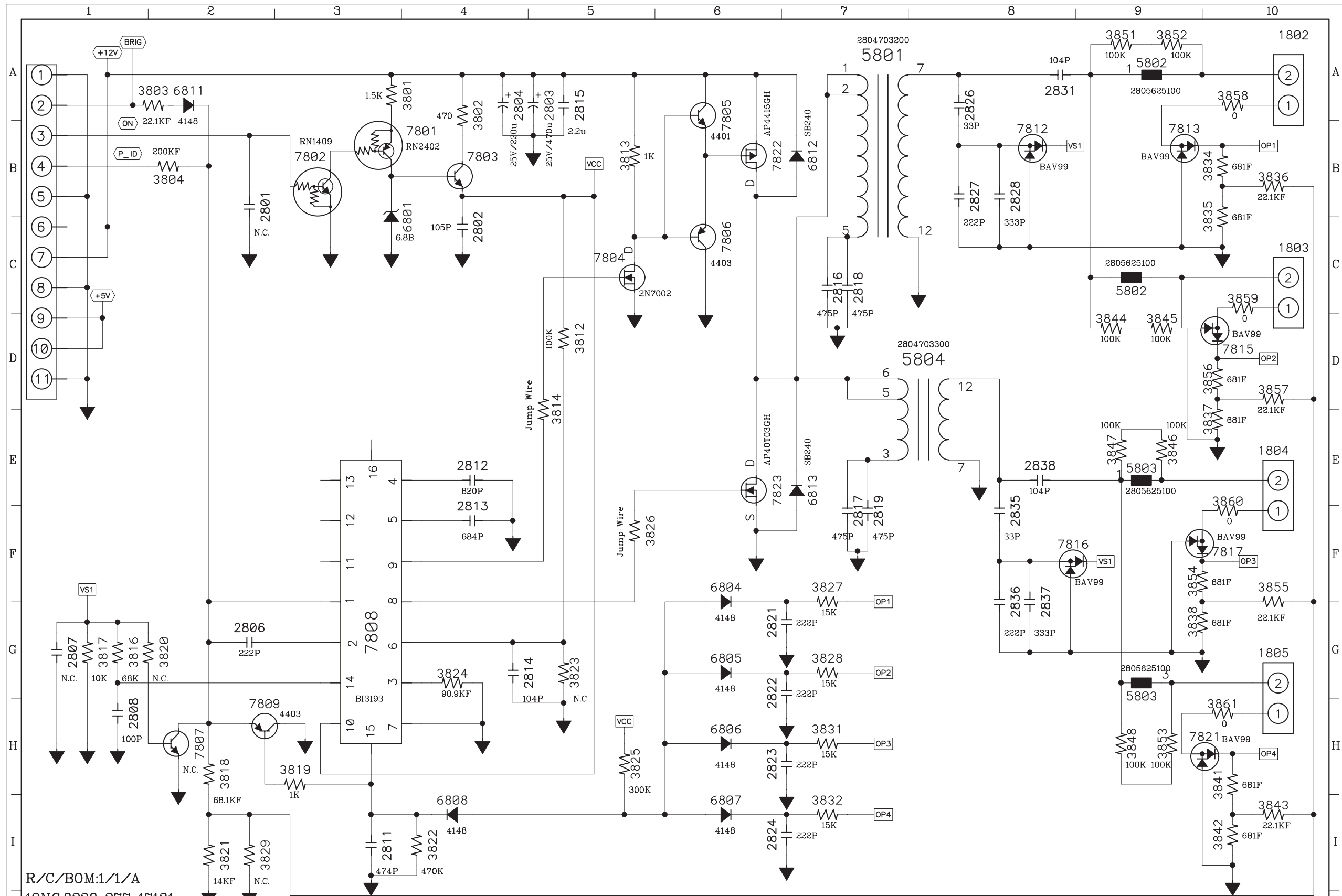
R/C/BOM:1/1/A
12NC:8238 277 17131

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Date: 12/08/04
LY.REV.(R/C) 1/0 Drawn: MAY
Checked: 鄭宇凱
Approved: 江碩桓
PART NO. EADP-43AF A
REV. S00
SHEET 01 OF 02

DESCRIPTION: SCHEMATIC OF AC --> DC ADAPTOR
12/08/04

Power Board Schematic Diagram (170S6/190S6) - Delta



R/C/BOM:1/1/A
12NC:8238 277 17131



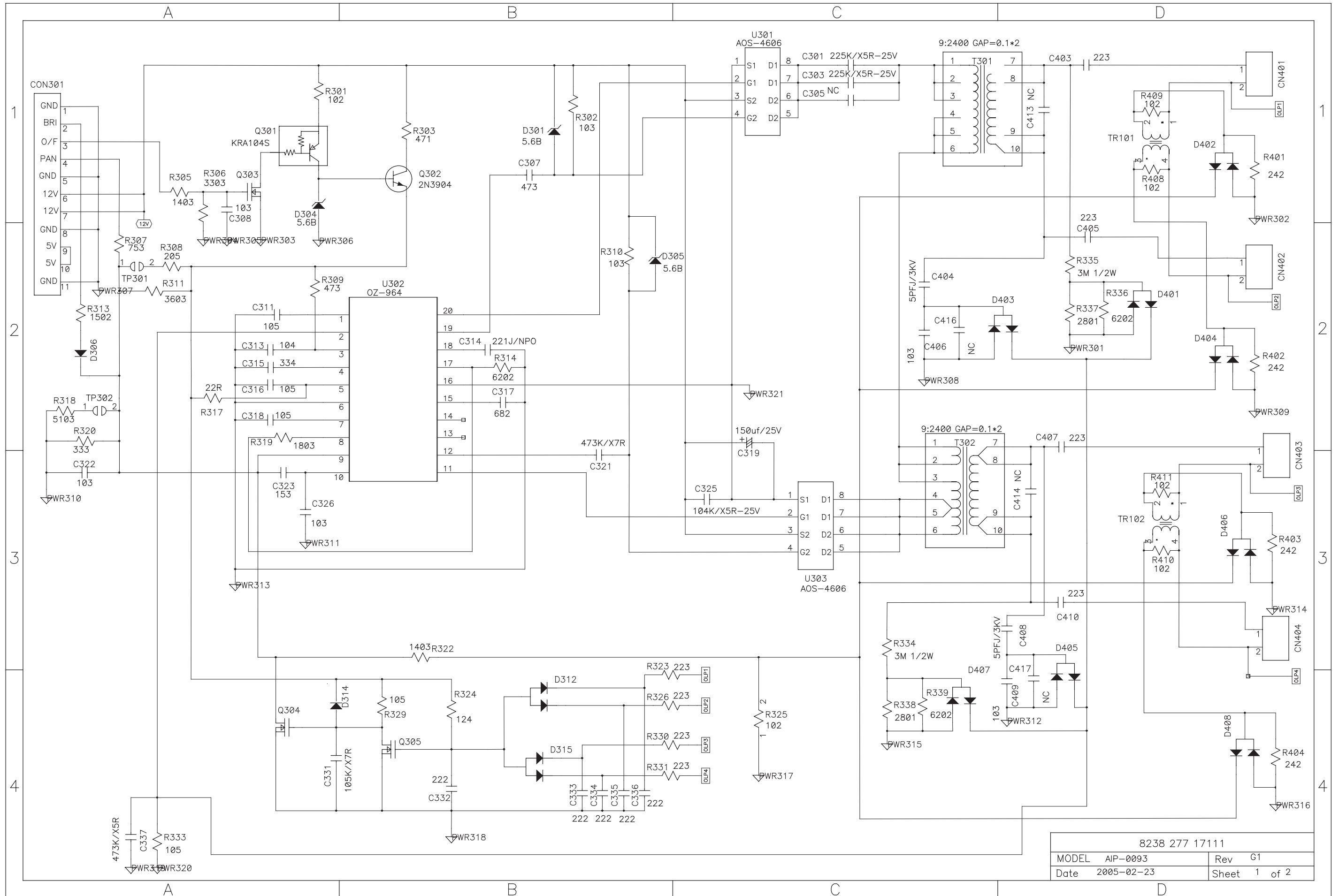
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Date: 12/08/04
LY.REV.(R/C) 1/0
Drawn: MAY
Checked
Approved
PART NO.
REV.
SHEET

鄭宇凱
江碩桓
12/08/04
12/08/04

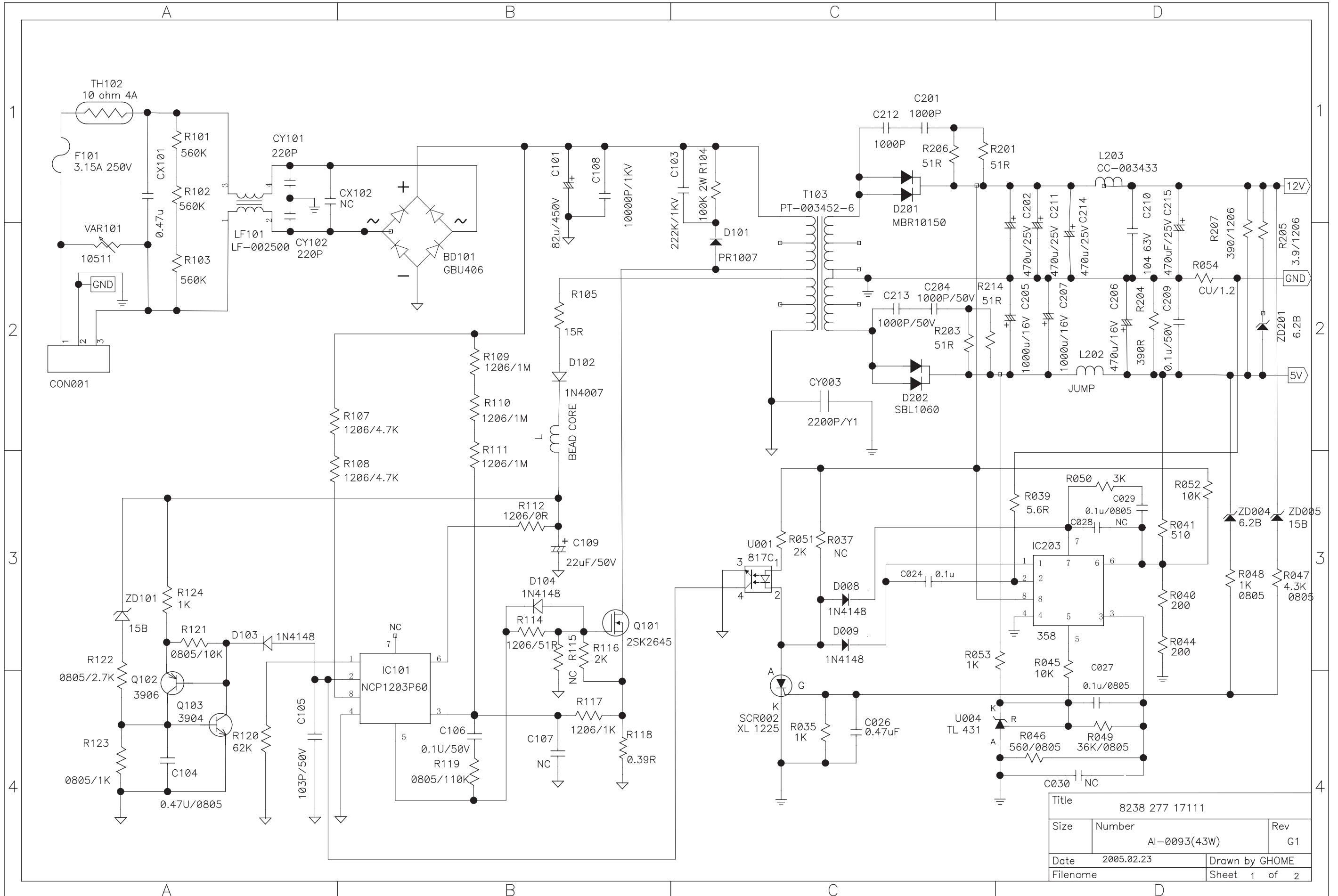
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EADP-43AF A
S00
02 OF 02

Power Schematic Diagram (170S6/190S6) - Lien Chang

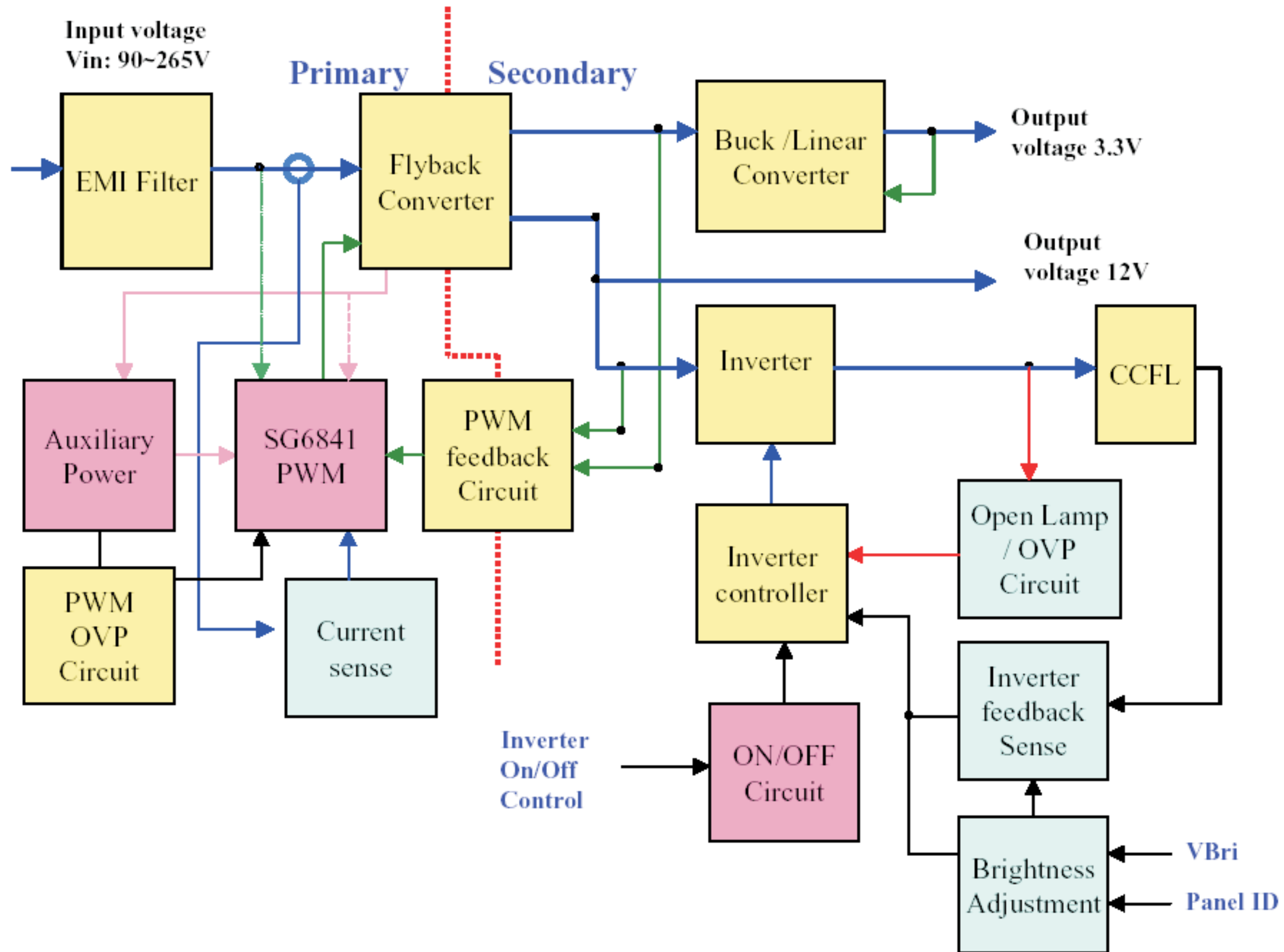


8238 277 17111			
MODEL	AIP-0093	Rev	G1
Date	2005-02-23	Sheet	1 of 2

Power Schematic Diagram (170S6/190S6) - Lien Chang

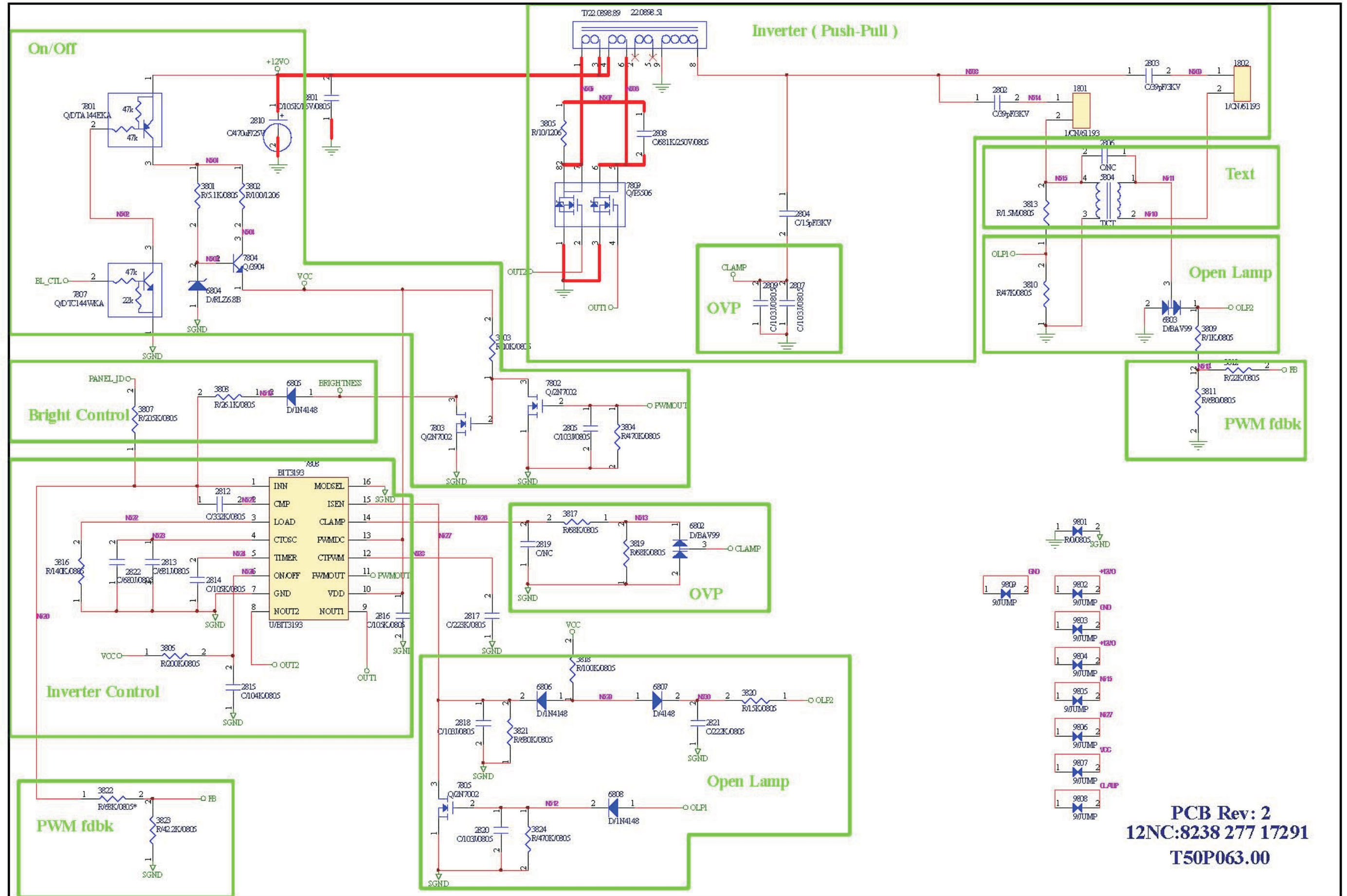


150S6 LIPS Block Diagram_Foxconn



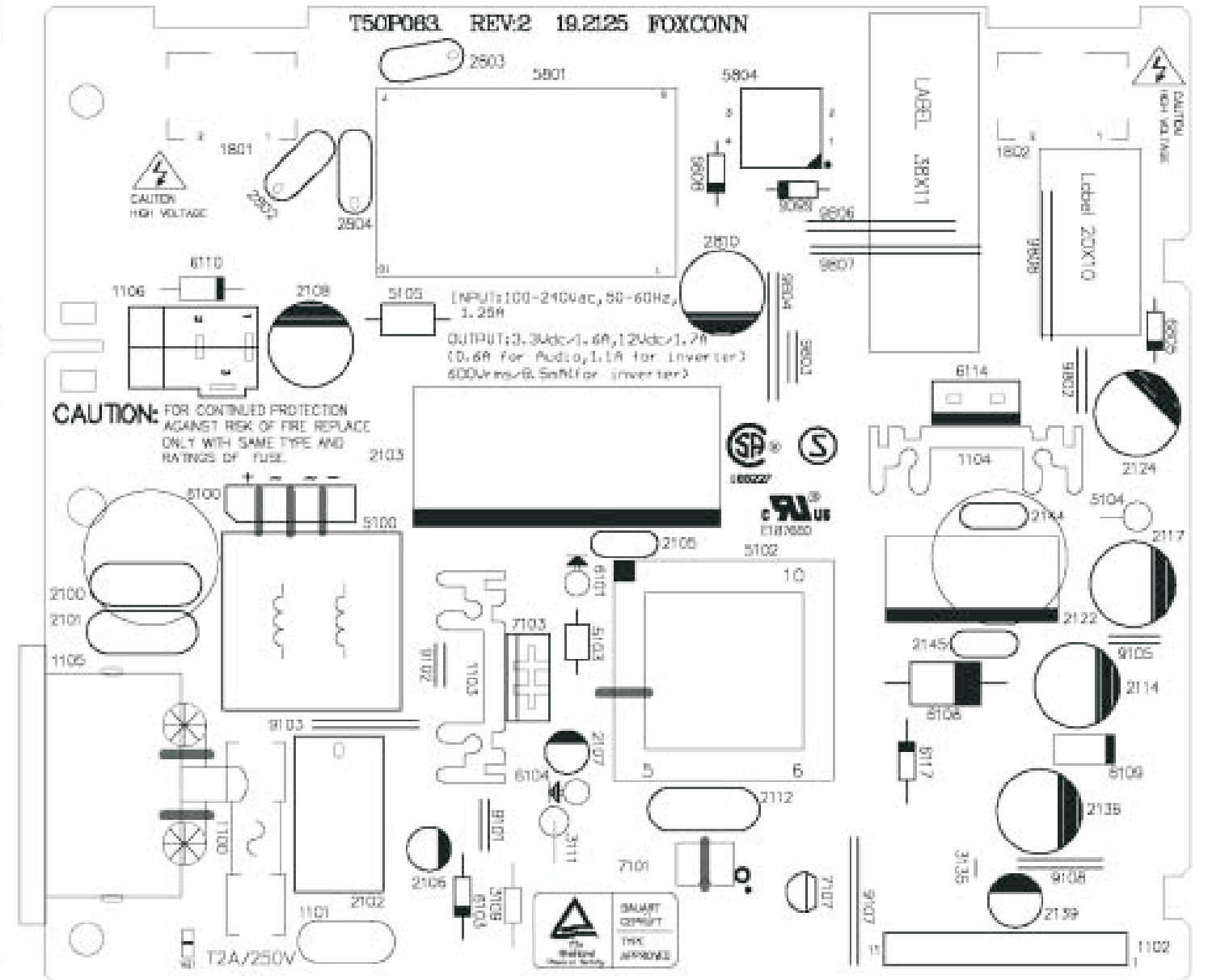
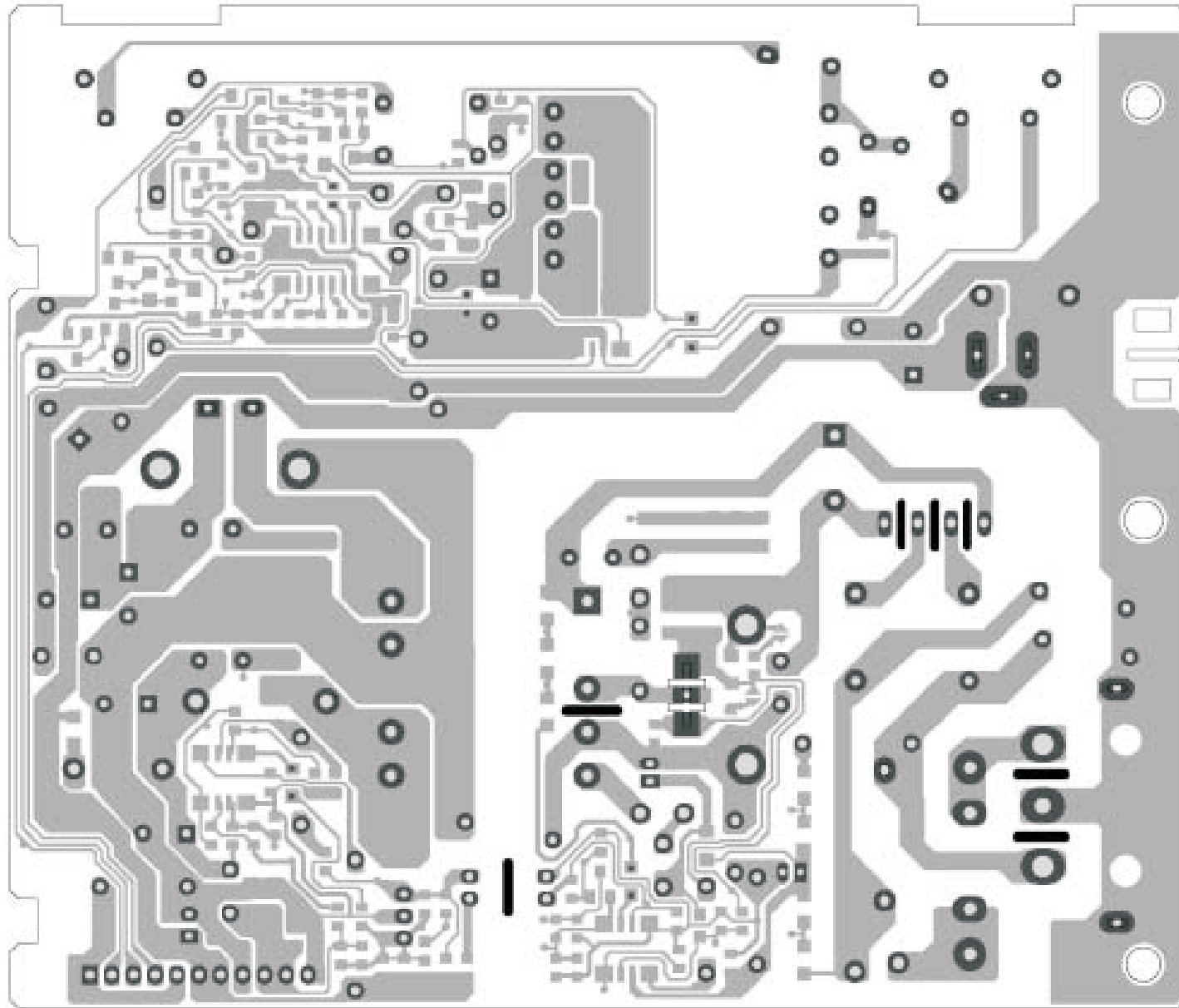
Power Schematic Diagram(150S6) - Foxconn

Inverter Function Block Schematic

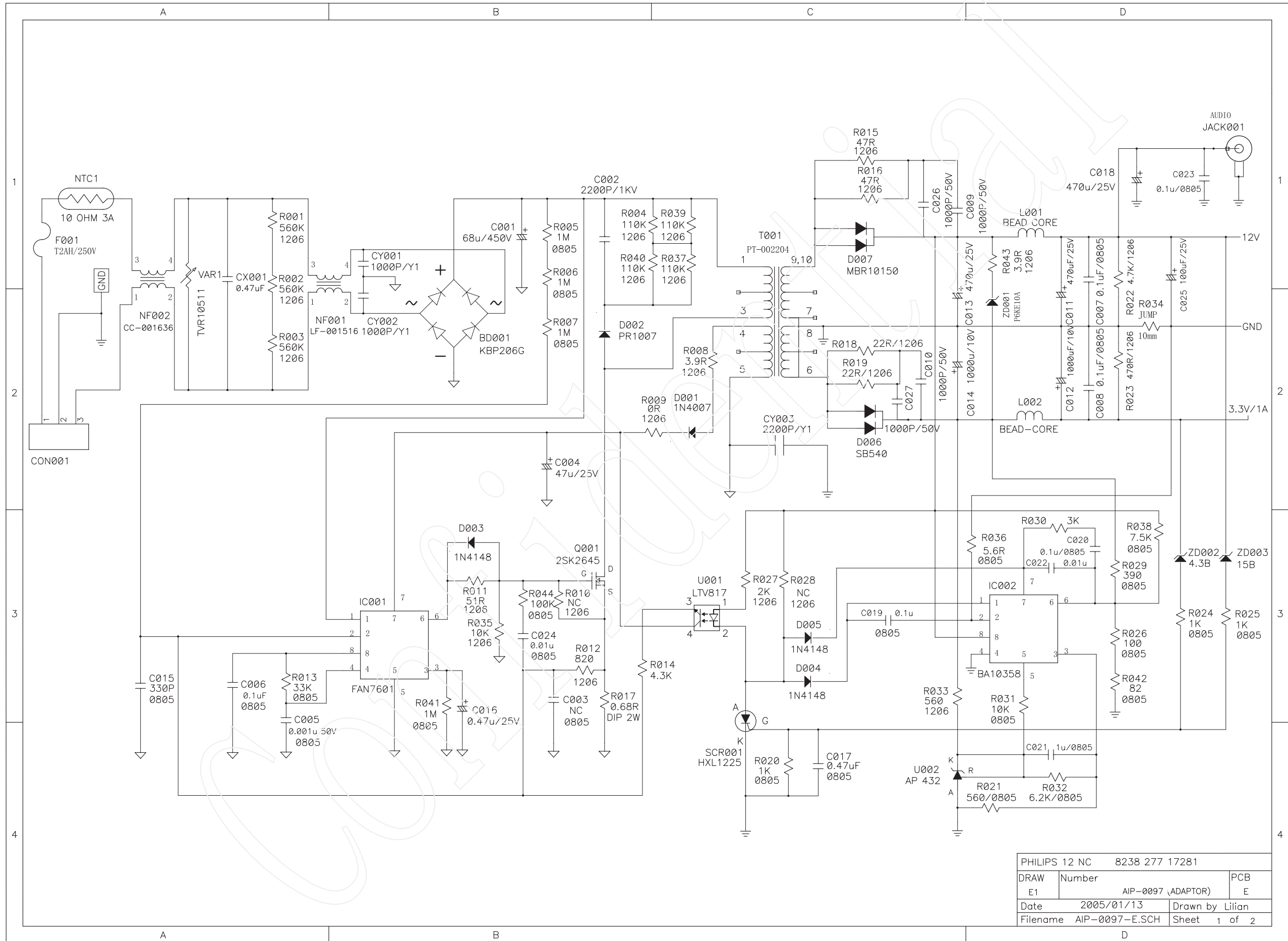


PCB Rev: 2
 12NC:8238 277 17291
 T50P063.00

T50P063

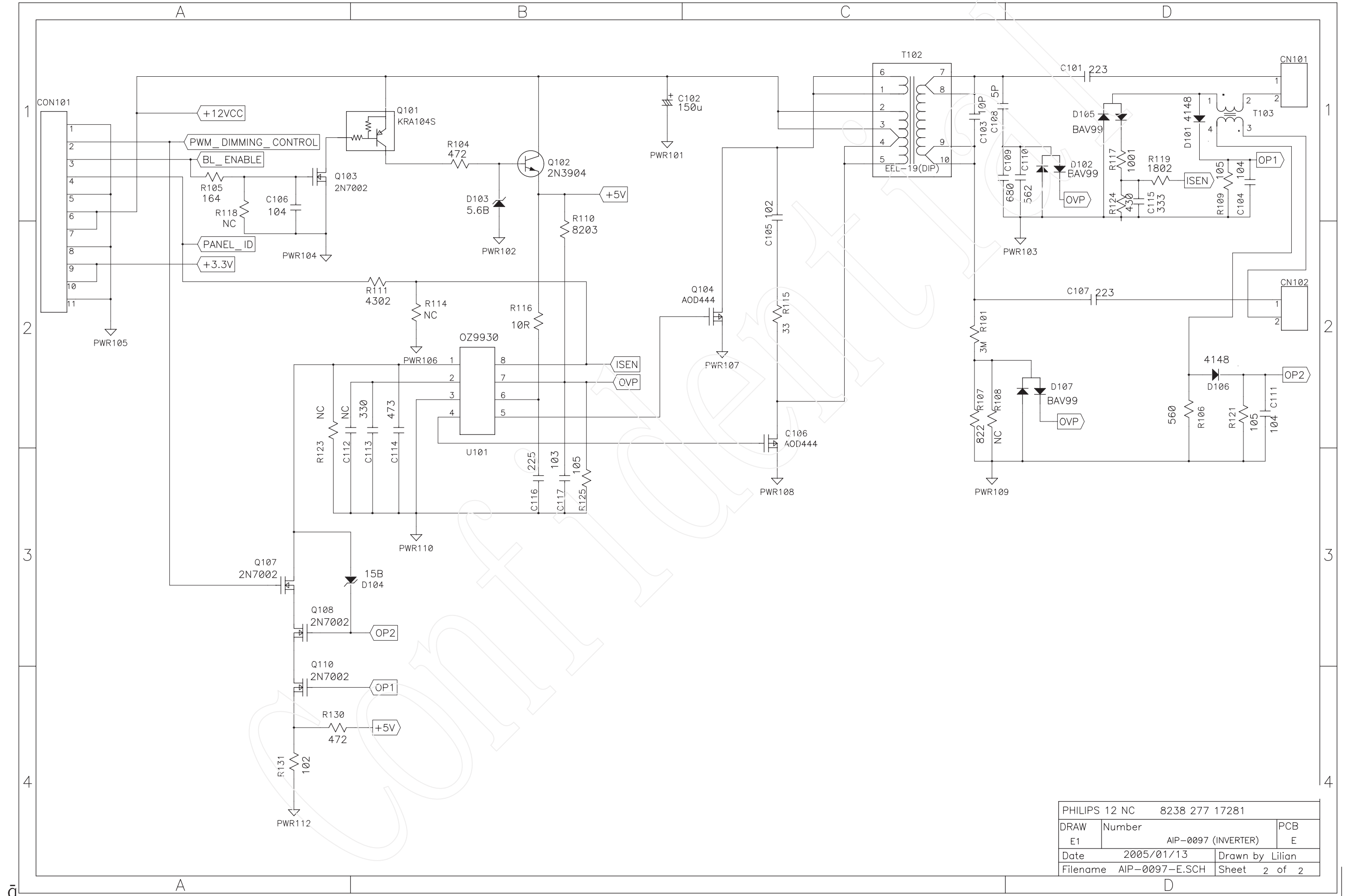


Power Schematic Diagram (150S6) - Lien Chang



PHILIPS 12 NC 8238 277 17281		
DRAW	Number	PCB
E1	AIP-0097 (ADAPTOR)	E
Date	2005/01/13	Drawn by Lilian
Filename	AIP-0097-E.SCH	Sheet 1 of 2

Power Schematic Diagram(150S6) - Lien Chang



PHILIPS 12 NC 8238 277 17281	
DRAW E1	Number AIP-0097 (INVERTER) PCB E
Date 2005/01/13	Drawn by Lilian
Filename AIP-0097-E.SCH	Sheet 2 of 2

PHILIPS



**HUDSON-6 170S6
GENERAL PRODUCT
SPECIFICATION**

- . ANALOG 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
- . TCO03
- . WALL MOUNT KIT (OPTION)
- . PROTECTIVE COVER (OPTION)

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	CLASS NO.	17 inch LCD Monitor				
		TYPE : 170S6FG/00 BRAND : PHILIPS	8639 000 16148			
2004-12-15			26	590	— 1	10
NAME Peter.V		SUPERS.				A4
TY		CHECK	DATE 2004-12-15	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



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 - 2.1 LCD
 - 2.2 Scanning frequencies
 - 2.3 Video dot rate
 - 2.4 Power input
 - 2.5 Power consumption
 - 2.6 Dimensions
 - 2.7 Weight
 - 2.8 Functions
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 - 4.5 Brightness uniformity
 - 4.6 Check cross talk
 - 4.7 White color adjustment

CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME	Peter.V	SUPERS.	26	590	— 2
TY	CHECK	DATE	2004-12-15	10	A4
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- 5.0 Mechanical characteristics
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- 5.3 Tilt and swivel base
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 - 5.4.1 Shipping dimension / weight
 - 5.4.2 Block unit / palletization
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 - 6.1 Susceptibility of display to external environment
 - 6.2 Transportation tests
 - 6.3 Display disturbances from external environment
 - 6.4 Display disturbances to external environment
 - 6.4.1 EMI
- 7.0 Reliability
 - 7.1 Mean time between failures
- 8.0 Quality assurance requirements
 - 8.1 Acceptance test
- 9.0 Serviceability
- 10.0 Philips Flat panel monitors pixel defect policy

	CLASS NO.	17 inch LCD Monitor	
		TYPE : 170S6FG/00 BRAND : PHILIPS	8639 000 16148
2004-12-15			
NAME Peter.V	SUPERS.	26	590 — 3
TY	CHECK	DATE 2004-12-15	10 A4
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- 1.0 FOREWORD
This specification describes a 17" SXGA multi-scan color TFT-LCD monitor with maximum 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. : LM170E01-A6
 - 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 vertical stripes
 - 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). : Vertical 140 degree, Horizontal 140 degree (Typ.)
 - Contrast ratio. : 500:1
 - White luminance. : 250nits (Typ.)
 - 2.1.2
 - Type NR. : QD17EL0709
 - 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). : Vertical 125 degree, Horizontal 140 degree (Typ.)
 - Contrast ratio. : 500:1
 - White luminance. : 260nits (Typ.)

CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME	Peter.V	SUPERS.	26	590	— 4 10 A4
TY	CHECK	DATE	2004-12-15	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.	

General Product Specification

PHILIPS



- 2.2 Scanning frequencies
 H-Frequency. : 30K □ 83 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. : < 35 W maximum
- 2.6 Dimensions. : 375(W) * 390(H) * 175.7(D) mm (Basic Base)
- 2.7 Weight. : 4 kg
- 2.8 Functions:
 (1) D-Sub analog R/G/B separate inputs, H/V sync separated, Composite (H+V) TTL level, SOG sync.
- 2.9 Ambient temperature: 5 °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.

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CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME Peter.V	SUPERS.	26	590	—	6
TY	CHECK	DATE 2004-12-15	10		A4
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- 3.0 Electrical characteristics
- 3.1 Interface signals
 - 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)
- 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:

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)

CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME Peter.V	SUPERS.	26	590	7	10
TY	CHECK	DATE 2004-12-15	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



3.2.2 Software control functions via OSD/control

OSD (On Screen Display) function

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	
More Settings	Language	English, Spanish, French, German, Italian, S. Chinese
	Phase/ Clock	Phase, Clock
	OSD Setting	Horizontal, Vertical
Reset	No, Yes	
Serial No.:		
(Serial No.)		
(Timing Mode)		
Move Selection Then <input type="checkbox"/> ok		

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

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CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME	Peter.V	SUPERS.	26	590	— 8
TY	CHECK	DATE	2004-12-15	10	A4
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3.3 Timing requirement

3.3.1 Mode storing capacity

- (1) Factory preset modes. : 15
- (2) Preset modes. : 34

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)	1.112(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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<small>CLASS NO.</small>	17 inch LCD Monitor	8639 000 16148
	TYPE : 170S6FG/00 BRAND : PHILIPS	
2004-12-15		
<small>NAME</small> Peter.V	<small>SUPERS.</small>	26
<small>TY</small>	<small>CHECK</small>	590 — 9
<small>DATE</small> 2004-12-15	<small>Property of</small> PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.	10 A4

General Product Specification

PHILIPS



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(509lines)	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(480lines)	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

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CLASS NO.

17 inch LCD Monitor

TYPE : 170S6FG/00
BRAND : PHILIPS

8639 000 16148

2004-12-15

NAME Peter.V

SUPERS.

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

MODE NO.	17	18	19	20
RESOLUTION	1024 x 768	1024 x 768	1152 x 864	1152 x 864
Dot clock(MHz)	83.096	94.5	79.9	94.5
f h	61.1kHz	68.7kHz	54.0kHz	63.9kHz
A (us)	16.367 (1360dots)	14.561 (1376 dots)	18.523(1480 dots)	15.661(1480 dots)
B (us)	1.348 (112 dots)	1.016 (96 dots)	1.952(156 dots)	1.016(96 dots)
C (us)	2.022 (168 dots)	2.201 (208 dots)	1.352(108 dots)	1.116(105 dots)
D (us)	12.323 (1024 dots)	10.836 (1024 dots)	14.418(1152 dots)	12.19(1152 dots)
E (us)	0.674 (56 dots)	0.508 (48 dots)	0.801(64 dots)	1.339(127 dots)
f v	76Hz	85Hz	60Hz	70Hz
O (ms)	13.142 (803 lines)	11.765 (808 lines)	16.671(900lines)	14.283(912lines)
P (ms)	0.049 (3 lines)	0.044 (3 lines)	0.148(8 lines)	0.047(3lines)
Q (ms)	0.507 (31 lines)	0.524 (36 lines)	0.445(24 lines)	0.689(44 lines)
R (ms)	12.57 (768 lines)	11.183 (768lines)	16.004(864 lines)	13.531(864 lines)
S (ms)	0.016 (1 line)	0.014 (1 line)	0.074(4 lines)	0.016(1 lines)
SYNC. H/V	+ / +	+ / +	+ / +	+ / +
POLARITY				
SEP . SYNC	Y	Y	Y	Y

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2004-12-15	TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME Peter.V	SUPERS.	26	590 — 11	10
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General Product Specification

PHILIPS



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 (1066lines)	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 ines)	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.

17 inch LCD Monitor

TYPE : 170S6FG/00
BRAND : PHILIPS

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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 (1024lines)	12.804(1024 lines)	12.622 (1024 lines)	17.972(556 lines)
S (ms)	0.012 (0 line)	0.012 (1 line)	0.024(2 lines)	0.672 (21 lines)
SYNC. H/V POLARITY	+ / +	+ / +	- / -	- / +
SEP . SYNC	Y	Y	Y	Y

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

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	TYPE : 170S6FG/00 BRAND : PHILIPS		8639 000 16148					
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A	: H-Total	O	: V-Total
B	: H- Sync width	P	: V- Sync width
C	: H- Back porch	Q	: V- Back porch
D	: H- Video width	R	: V- Video width
E	: H- Front porch	S	: V- Front porch

3.3.3 Horizontal scanning

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

3.3.4 Vertical scanning

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

3.4 Power input connection

Power-cord length. : 1.5 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	<35W	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	Off

According to VESA power saving signal. TCO.03 power saving requirement
EPA energy star requirement

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NAME Peter.V	SUPERS.	26	590	14	10
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3.6 Display identification

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

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 70 % 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 (15 modes)

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

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

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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:

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

4.6 Check Cross talk (S)

Apply Pattern 2. Set contrast at 50 % and brightness at 100 %. Measure A. Then output Pattern 3 and measure A. The cross talk value:

$$\frac{\text{ABS} (A - A_0)}{A} \times 100 \% < 1.5 \% \text{ (Max)}$$



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4.7 White color adjustment

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

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

9300K CIE coordinates	X = 0.283 +/- 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 (Volume key)
- Auto key

Rear. :

- Video signal connector
- Power cord socket

5.2 Unit dimension / Weight

Set dimension (incl. pedestal). : 375(W) * 390(H) * 175.7(D) mm
 Net weight. : 4 kg

5.3 Tilt and swivel base

Basic base:
 Tilt angle: -5 ° to +25 °
 Swivel rotation: ± 125 °

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5.4 Transportation packages

5.4.1 Shipping dimension/Weight

Carton dimension. : 375(W) * 390(H) * 175.7(D) mm
Gross weight. : 5.1 Kg

5.4.2 Block unit / Palletization

Basic Base:

<u>layers / block</u>	<u>sets/layer</u>	<u>sets/block unit</u>
12/24	4;6/12	48/72
<u>Blocks/container</u>		
<u>20 feet</u>	<u>40 feet</u>	
5/5	12/12	

6.0 Environmental characteristics

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

6.1 Susceptibility of display to external environment

Operating

- Temperature. : 5 to 40 degree C
- Humidity. : 80% max
- Altitude. : 0 to 12,000 feet

Storage

- Temperature. : -20 to 60 degree C
- Humidity. : 95% max
- Altitude. : 0 to 30,000 feet

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

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NAME	Peter.V	SUPERS.	26	590	18
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6.2 Transportation tests

Standard		Philips UAN-D1400	NSTA
Drop Test	Height	76.0 cm	76.0 cm
	Sequence	1 corner 3 edge (Room temp) 6 face	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 7 Hz, 1.05 G, 30 min. for transport direction only	
	Test Result	(2) OPERATING 7 Hz, 10.6 mm, 30 min. for transport direction only 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)		

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

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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.

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: 0.65 (major)
 2.50 (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.

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10.0 Philips Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	170P6	170B6	170S6
1 lit subpixel	0	0	4 or fewer
2 adjacent lit subpixels	0	0	2 or fewer
3 adjacent lit subpixels (one white pixel)	0	0	0
Distance between two bright dot defects*	0	0	15 mm or more
Total bright dot defects of all types	0	0	4 or fewer

BLACK DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	170P6	170B6	170S6
1 dark subpixel	0	0	4 or fewer
2 adjacent dark subpixels	0	0	2 or fewer
3 adjacent dark subpixels	0	0	0
Distance between two black dot defects*	0	0	15 mm or more
Total black dot defects of all types	0	0	4 or fewer

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	170P6	170B6	170S6
Total bright or black dot defects of all types	0	0	5 or fewer

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CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME Peter.V	SUPERS.	26	590	21	10
TY	CHECK	DATE 2004-12-15	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.		



Note:

*Bright dot: Each pixel is comprised three sub-pixels or dots, one red, one green and one blue.

A *bright dot* is a sub-pixel that stands out on the screen when the monitor displays a dark pattern. A red or blue *bright dot* is more than 50 percent brighter than neighboring dots; a green bright dot is 30 percent brighter than neighboring dots.

*Dark dot: A *dark dot* is a sub-pixel that stands out on the screen when the monitor displays a light pattern.

** 1 or 2 adjacent sub pixel defects = 1 dot defect
All Philips monitors are ISO13406-2 Compliant*

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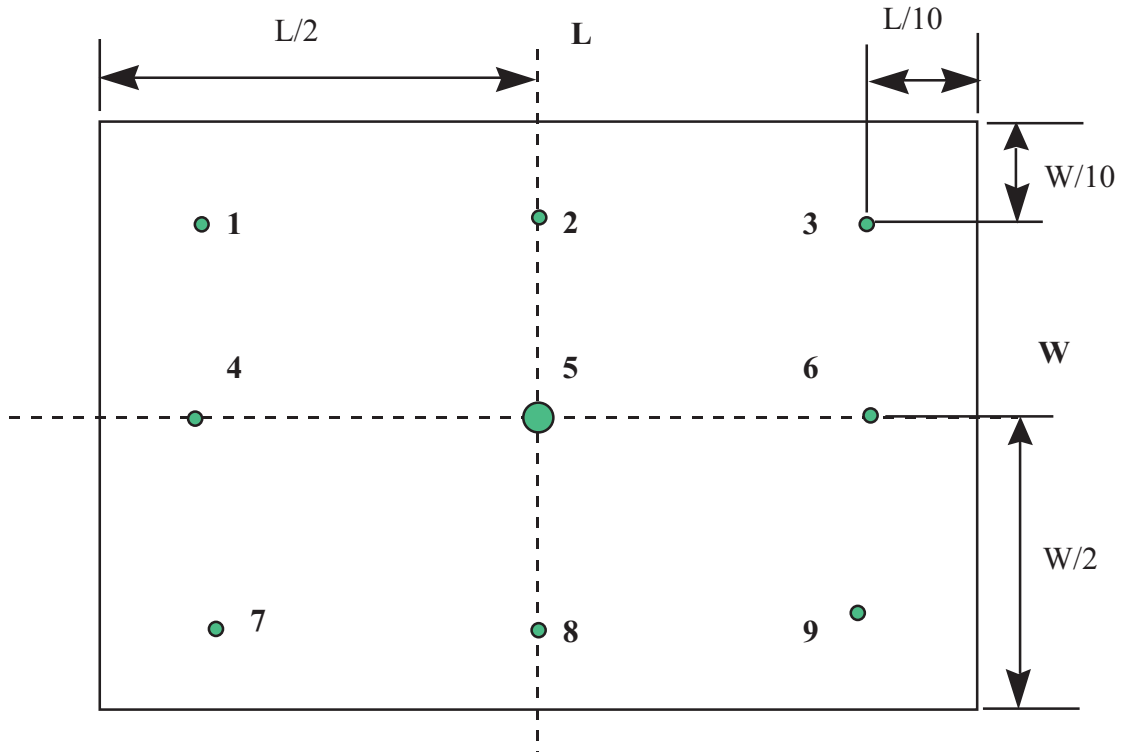


CLASS NO.		17 inch LCD Monitor		8639 000 16148				
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS						
NAME	Peter.V	SUPERS.	26	590	—	22	10	A4
TY	CHECK	DATE	2004-12-15	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.				

PHILIPS



Fig 1: Brightness and Uniformity



Position 5 = Screen center point

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CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME	Peter.V	SUPERS.	26	590	— 23
TY	CHECK	DATE	2004-12-15	10	A4
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Fig 2: Cross talk pattern
Gray level 184 (256 Gray level)

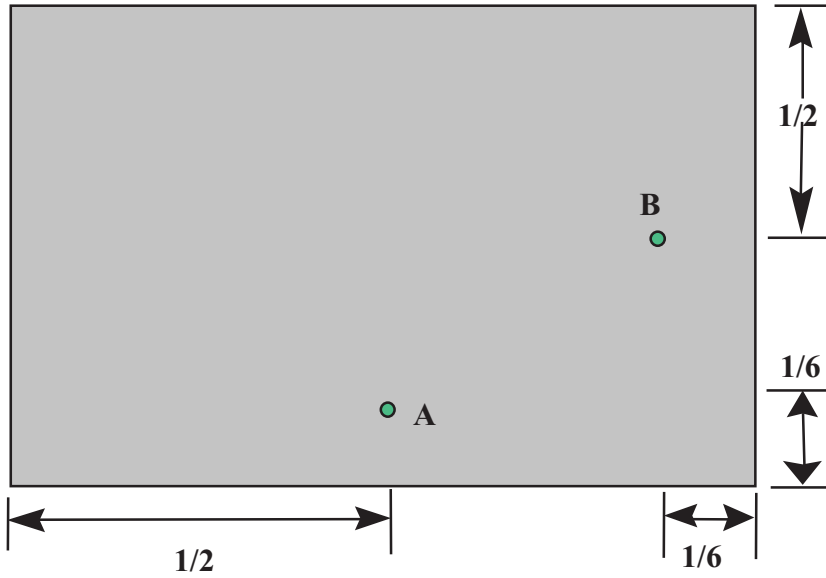
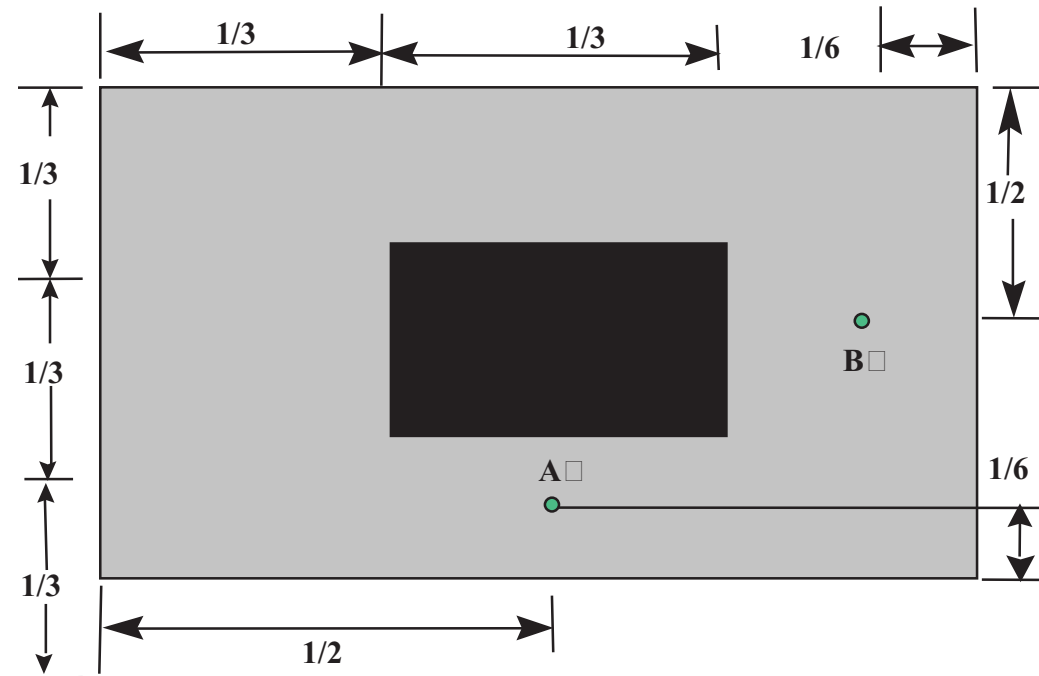


Fig 3: Cross talk pattern
Center at Gray level 0 (Black)



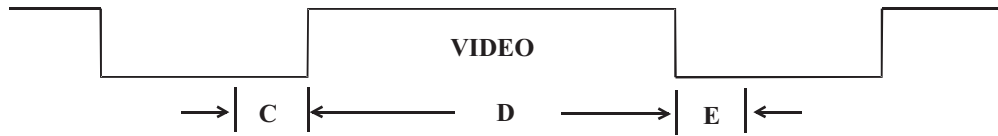
CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME	Peter.V	SUPERS.	26	590	— 24
TY	CHECK	DATE	2004-12-15	10	A4
Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.					

PHILIPS

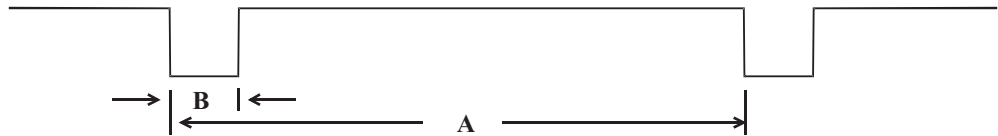


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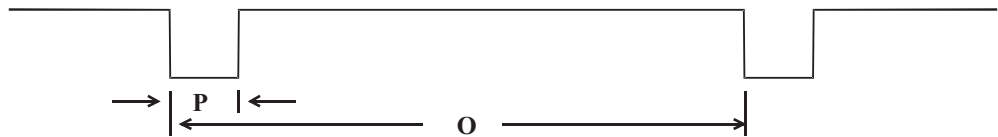
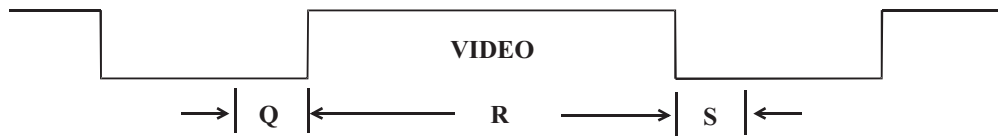
SEPARATE SYNC.



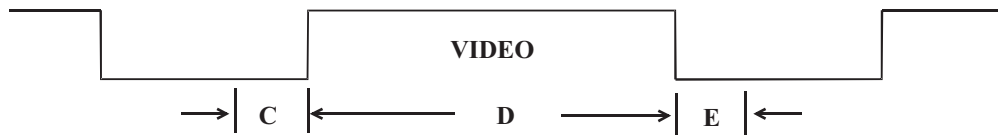
HORIZONTAL



VERTICAL



COMPOSITE SYNC.



HORIZONTAL

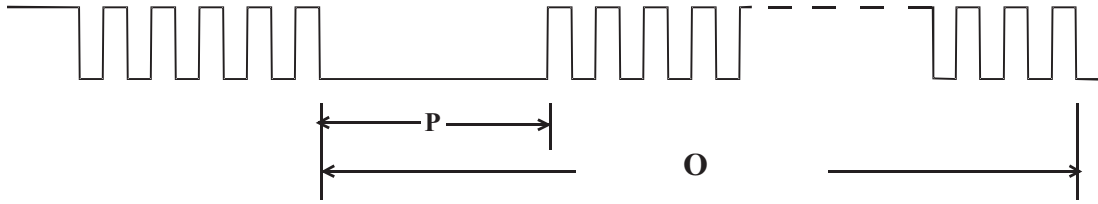
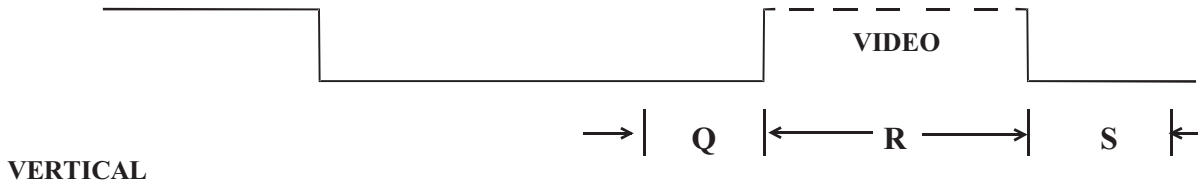


FIG-4 TIMING CHART -1

CLASS NO.		17 inch LCD Monitor		8639 000 16148			
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS					
NAME	Peter.V	SUPERS.	26	590	—	25	10
TY	CHECK	DATE	2004-12-15	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.			

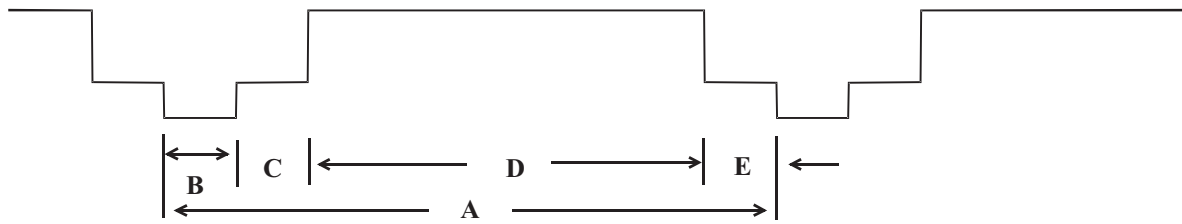


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**COMPOSITE SYNC. & VIDEO
(SYNC. ON GREEN)**

HORIZONTAL



VERTICAL

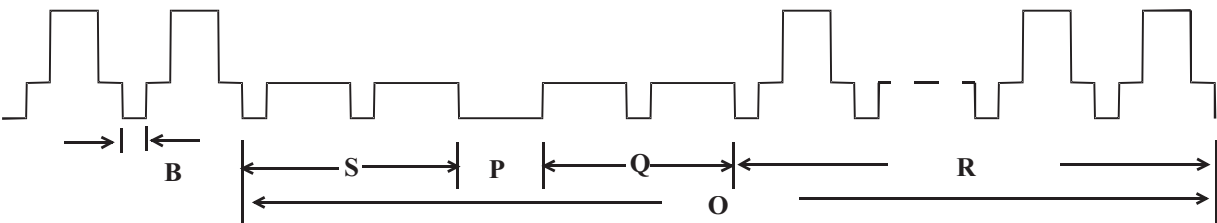
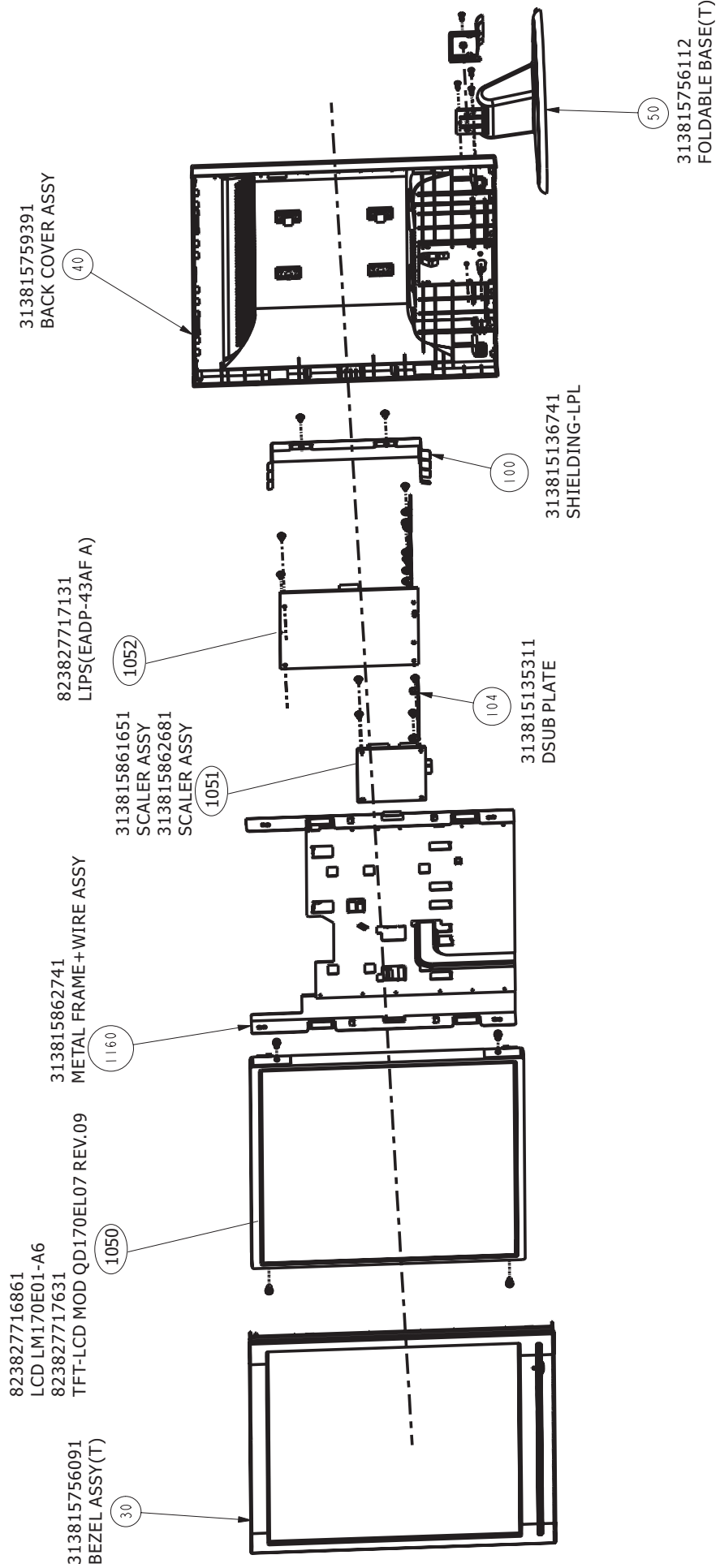


FIG-5 TIMING CHART -2

CLASS NO.		17 inch LCD Monitor		8639 000 16148	
2004-12-15		TYPE : 170S6FG/00 BRAND : PHILIPS			
NAME	Peter.V	SUPERS.	26	590	— 26
TY	CHECK	DATE	2004-12-15	10	A4
Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.					

Exploded View - 170S6



Spare Parts List - 170S6

Model: 170S6FG/00(QDI)

Mechanical Parts

0030	313815756091	BEZEL ASSY(T)
0031	313815412032	BEZEL(T)
0032	313815412731	POWER BUTTON
0033	313815412711	CONTROL BUTTON
0034	313815411561	POWER LENS
0040	313815759391	BACK COVER ASSY
0041	313815412043	BACK COVER
0042	313815135321	HINGE-PLATE
0050	313815756112	FOLDABLE BASE(T)
0090	313810440571	HOUSING COVER
0100	313815136741	SHIELDING-LPL
0101	313815411831	HINGE COVER(T)

Packing Materials

0450	313815639311	CARTON
0453	313815621491	P.E. BAG
0451	313815639811	CUSHION-R
0452	313815639801	CUSHION-L

Accessories

0602	313811708271	E-D.F.U.
1158	313819871192	CORD SUB-D 15/1M8/SUB-D 15GY
1157	313817874701	MAIN CORD (1.5M. EUROPEAN)

LCD Panel

1050	823827717631	TFT-LCD MOD QD170EL07 REV.09
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PCB ASSY

1051	313815862681	SCALER ASSY
1052	823827717131	LIPS(EADP-43AF A)
1053	313815861661	CONTROL ASSY

Others

0291	313815566231	LABEL-CPU
0295	313815566241	LABEL-EEPROM(Q)
0615	313811708131	HEX CODE OF F/W(NO MATL REQ)
1160	313815862741	METAL FRAME+WIRE ASSY
1201	242202518065	SOC SUBD H 15P F BU 900 Y
1302	243854300079	RES XTL SM 12MHZ 32P SMD-49 R
1341	243803100435	SOC IC V 8P F 2.54 DIL L
1451	242202519002	CON H 30P F 1.00 SM FFC 0.3 R
1501	242202518824	CON V 11P M 2.00 61391 B
1512	242202518999	CON V 7P M 2.00 61387 B
1901	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1902	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1903	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1904	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1905	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1906	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1907	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1910	242202518897	CON H 7P M 2.00 63367 B
8161	313819874621	CBLE-427 7/240/7-427 AWG28
8163	313819874611	FFC 30/185/30 PITCH 1.0MM

1051 313815862681 SCALER ASSY



2202	223886715339	CER1 0603 NP0 50V 33P PM5 R
2203	223886715221	CER1 0603 NP0 50V 22P PM5 R
2207	223878615649	CER2 0603 X7R 16V 100N PM10 R
2210	223878615649	CER2 0603 X7R 16V 100N PM10 R
2211	223878615649	CER2 0603 X7R 16V 100N PM10 R
2213	223878615649	CER2 0603 X7R 16V 100N PM10 R
2214	223878615649	CER2 0603 X7R 16V 100N PM10 R
2215	223878615649	CER2 0603 X7R 16V 100N PM10 R
2216	223878615649	CER2 0603 X7R 16V 100N PM10 R
2217	223878615649	CER2 0603 X7R 16V 100N PM10 R
2219	223878615649	CER2 0603 X7R 16V 100N PM10 R
2301	223878615649	CER2 0603 X7R 16V 100N PM10 R
2302	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2303	223886715229	CER1 0603 NP0 50V 22P PM5 R
2304	223886715229	CER1 0603 NP0 50V 22P PM5 R
2305	223886715101	CER1 0603 NP0 50V 100P PM5 R
2307	223886715101	CER1 0603 NP0 50V 100P PM5 R
2308	223886715101	CER1 0603 NP0 50V 100P PM5 R
2322	223878615649	CER2 0603 X7R 16V 100N PM10 R
2341	223878615649	CER2 0603 X7R 16V 100N PM10 R
2412	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2413	223878615649	CER2 0603 X7R 16V 100N PM10 R
2415	202203100378	ELCAP RGA 6V3 S 680U PM20 A
2416	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2417	223878615649	CER2 0603 X7R 16V 100N PM10 R
2421	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2422	223878615649	CER2 0603 X7R 16V 100N PM10 R
2423	223878615649	CER2 0603 X7R 16V 100N PM10 R

2424	223878615649	CER2 0603 X7R 16V 100N PM10 R
2425	223878615649	CER2 0603 X7R 16V 100N PM10 R
2431	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2432	223878615649	CER2 0603 X7R 16V 100N PM10 R
2433	223878615649	CER2 0603 X7R 16V 100N PM10 R
2434	223878615649	CER2 0603 X7R 16V 100N PM10 R
2435	223878615649	CER2 0603 X7R 16V 100N PM10 R
2436	223878615649	CER2 0603 X7R 16V 100N PM10 R
2437	223878615649	CER2 0603 X7R 16V 100N PM10 R
2438	223878615649	CER2 0603 X7R 16V 100N PM10 R
2441	223878615649	CER2 0603 X7R 16V 100N PM10 R
2442	223878615649	CER2 0603 X7R 16V 100N PM10 R
2501	223878615649	CER2 0603 X7R 16V 100N PM10 R
2502	223878615649	CER2 0603 X7R 16V 100N PM10 R
2506	223878615649	CER2 0603 X7R 16V 100N PM10 R
2507	223878615649	CER2 0603 X7R 16V 100N PM10 R
2508	202203100216	ELCAP RGA 16V S 220U PM20 A
2513	223858615623	CER2 0603 X7R 50V 1N PM10 R
2514	223858615623	CER2 0603 X7R 50V 1N PM10 R
2515	223858615623	CER2 0603 X7R 50V 1N PM10 R
2516	223858615623	CER2 0603 X7R 50V 1N PM10 R
2517	223858615623	CER2 0603 X7R 50V 1N PM10 R
2534	223858615636	CER2 0603 X7R 50V 10N PM10 R
2536	203803527501	ELCAP KM 50V S 10U PM20 A
2537	223878615649	CER2 0603 X7R 16V 100N PM10 R
2541	223878615649	CER2 0603 X7R 16V 100N PM10 R
2542	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2543	202202000903	ELCAP SM 10V S 100U PM20 A
2544	223878615649	CER2 0603 X7R 16V 100N PM10 R
2545	223878615649	CER2 0603 X7R 16V 100N PM10 R
2546	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2547	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2548	223878615649	CER2 0603 X7R 16V 100N PM10 R



3201	232270260101	RST SM 0603 RC21 100R PM5 R
3202	232270260101	RST SM 0603 RC21 100R PM5 R
3203	232270260101	RST SM 0603 RC21 100R PM5 R
3204	232270260101	RST SM 0603 RC21 100R PM5 R
3205	232270260222	RST SM 0603 RC21 2K2 PM5 R
3206	232270260222	RST SM 0603 RC21 2K2 PM5 R
3207	232270260102	RST SM 0603 RC21 1K PM5 R
3210	232270260339	RST SM 0603 RC21 33R PM5 R
3211	232270260339	RST SM 0603 RC21 33R PM5 R
3212	232270467509	RST SM 0603 RC22H 75R PM1 R
3213	232270260519	RST SM 0603 RC21 51R PM5 R
3214	232270260339	RST SM 0603 RC21 33R PM5 R
3215	232270467509	RST SM 0603 RC22H 75R PM1 R
3216	232270260519	RST SM 0603 RC21 51R PM5 R
3217	232270260339	RST SM 0603 RC21 33R PM5 R
3218	232270467509	RST SM 0603 RC22H 75R PM1 R
3219	232270260519	RST SM 0603 RC21 51R PM5 R
3241	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3243	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3302	232270260105	RST SM 0603 RC21 1M PM5 R
3303	232270260101	RST SM 0603 RC21 100R PM5 R
3304	232270260101	RST SM 0603 RC21 100R PM5 R
3306	232270260473	RST SM 0603 RC21 47K PM5 R
3307	212211805669	RST SM 0603 RC0603 10K PM5 R
3308	232270260101	RST SM 0603 RC21 100R PM5 R
3309	232270260101	RST SM 0603 RC21 100R PM5 R
3310	232270260101	RST SM 0603 RC21 100R PM5 R
3311	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3312	232270260472	RST SM 0603 RC21 4K7 PM5 R
3313	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3314	232270260472	RST SM 0603 RC21 4K7 PM5 R
3320	232270260472	RST SM 0603 RC21 4K7 PM5 R
3322	212211805669	RST SM 0603 RC0603 10K PM5 R
3323	232270260101	RST SM 0603 RC21 100R PM5 R
3324	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3325	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3342	232270260472	RST SM 0603 RC21 4K7 PM5 R
3343	232270260472	RST SM 0603 RC21 4K7 PM5 R
3345	232270260101	RST SM 0603 RC21 100R PM5 R
3346	232270260101	RST SM 0603 RC21 100R PM5 R
3401	232270260101	RST SM 0603 RC21 100R PM5 R
3402	232270260101	RST SM 0603 RC21 100R PM5 R
3403	212211805637	RST SM 0603 RC0603 22R PM5 R
3404	212211805637	RST SM 0603 RC0603 22R PM5 R
3405	212211805637	RST SM 0603 RC0603 22R PM5 R
3406	232270260101	RST SM 0603 RC21 100R PM5 R
3407	232270260101	RST SM 0603 RC21 100R PM5 R
3408	212211805637	RST SM 0603 RC0603 22R PM5 R
3411	232270468201	RST SM 0603 RC22H 820R PM1 R
3412	232270462702	RST SM 0603 RC22H 2K7 PM1 R

3501	212211805639	RST SM 0603 RC0603 47R PM5 R
3502	212211805639	RST SM 0603 RC0603 47R PM5 R
3503	212211805639	RST SM 0603 RC0603 47R PM5 R
3513	232270260101	RST SM 0603 RC21 100R PM5 R
3514	232270260101	RST SM 0603 RC21 100R PM5 R
3515	232270260102	RST SM 0603 RC21 1K PM5 R
3516	212211805647	RST SM 0603 RC0603 220R PM5 R
3517	212211805647	RST SM 0603 RC0603 220R PM5 R
3518	212211805669	RST SM 0603 RC0603 10K PM5 R
3519	212211805669	RST SM 0603 RC0603 10K PM5 R
3521	212211805669	RST SM 0603 RC0603 10K PM5 R
3522	212211805669	RST SM 0603 RC0603 10K PM5 R
3523	212211805669	RST SM 0603 RC0603 10K PM5 R
3531	212211805972	RST SM 1206 JUMP. MAX 0R05 R
3533	232270260473	RST SM 0603 RC21 47K PM5 R
3534	232270260104	RST SM 0603 RC21 100K PM5 R
3535	212211805669	RST SM 0603 RC0603 10K PM5 R



5210	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5415	242254900113	IND FXD 0603 EMI 100MHZ 1K R
5421	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5431	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5501	242254944196	IND FXD 0805 EMI 100MHZ 120R R
5502	242254944196	IND FXD 0805 EMI 100MHZ 120R R
5503	242254944196	IND FXD 0805 EMI 100MHZ 120R R
5507	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5535	242254945579	IND FXD 1206 EMI 100MHZ 100R R



6201	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6204	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6205	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6206	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6301	932205042685	DIO SIG SM BAV99LG (ONSE) R
6302	932205042685	DIO SIG SM BAV99LG (ONSE) R
6303	933976370215	DIO SIG SM BAT54C (PHSE) R



7301	313815862711	CPU IC ASSY
7301	932220582682	IC SM NT68F633L (NOVA) L
7341	313815862721	EEPROM ASSY-QDI
7341	932218650682	IC AT24C16A-10PU-2.7 (ATME) L
7401	823827716531	NT68521AEF ANALAG SXGA SCALER
7518	932217439685	TRA SIG SM BC857C (KECO) R
7519	932217439685	TRA SIG SM BC857C (KECO) R
7531	932216638668	FET POW SM SI5441DC-E3 (VISH)R
7532	934036790115	TRA SIG SM PDTCT114EK (PHSE) R
7541	932222077668	IC SM AME1117ECGTZ (ST00) R
7545	932222076668	IC SM AME1117CCGTZ (ST00) R

1053 313815861661 CONTROL ASSY

3902	232270260473	RST SM 0603 RC21 47K PM5 R
3903	212211805669	RST SM 0603 RC0603 10K PM5 R
3904	232270260102	RST SM 0603 RC21 1K PM5 R
3905	232270260473	RST SM 0603 RC21 47K PM5 R
3906	212211805669	RST SM 0603 RC0603 10K PM5 R
3907	232270260102	RST SM 0603 RC21 1K PM5 R
6910	932219981682	LED VS L-3WYGW-8.03* (KIEL) B

Diversity of 170S6FG/00(LPL) compared with 170S6FG/00(QDI)

Item	12NC	Description
0295	313815566251	LABEL-EEPROM(L)
0501	313810652591	CORNER
0505	313810652591	CORNER
0510	313815639311	CARTON

Model: 150S6FG/00(LPL)

Mechanical Parts

- 0030 313815756071 BEZEL ASSY(T)
- 0031 313815411811 BEZEL(T)
- 0032 313815411781 BUTTON-POWER
- 0033 313815411771 FUNCTION KEYS
- 0034 313815411791 LENS
- 0040 313815759211 BACK COVER ASSY
- 0041 313815411822 BACK COVER
- 0042 313815040551 SQUARE NUT-M4
- 0043 313815759221 HINGE-PLATE ASSY
- 0044 313815135171 HINGE-PLATE
- 0050 313815756062 FOLDABLE BASE(T)
- 0090 313810440571 HOUSING COVER
- 0100 313815136951 SHIELDING INVENTER
- 0101 313815411831 HINGE COVER(T)

Packing Materials

- 0450 313815639561 CARTON
- 0451 313815639731 CUSHION-R
- 0452 313815639721 CUSHION-L
- 0453 313815621481 P.E.BAG

Accessories

- 0602 313811708281 E-D.F.U
- 1157 313817874701 MAIN CORD (1.5M. EUROPEAN)
- 1158 313819871192 CORD SUB-D 15/1M8/SUB-D 15GY

LCD Panel

- 1050 823827716851 LCD LM150X08-A5

PCB ASSY

- 1051 313815862021 SCALER ASSY
- 1052 823827717281 LIPS(AIP-0097)
- 1053 313815861661 CONTROL ASSY

Others

- 0291 313815566271 LABEL-LG
- 0295 313815566271 LABEL-LG
- 0615 313811708071 HEX CODE OF F/W(LG)
- 1160 313815862061 METAL FRAME+WIRE ASSY
- 1201 242202518065 SOC SUBD H 15P F BU 900 Y
- 1302 243854300079 RES XTL SM 12MHZ 32P SMD-49 R
- 1341 243803100435 SOC IC V 8P F 2.54 DIL L
- 1452 242202505567 CON V 20P M 1.25 SM 60947 R
- 1501 242202518824 CON V 11P M 2.00 63391 B
- 1512 242202518999 CON V 7P M 2.00 61387 B
- 1901 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1902 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1903 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1904 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1905 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1906 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1907 242212803007 SWI TACT 1P 1POS 12V V 5MM B
- 1910 242202518897 CON H 7P M 2.00 63367 B
- 8161 313819871201 CBLE-207 7/160/7-207 AWG28
- 8163 313819874951 CBLE -104 20/95/20-032 AWG

1051 313815862021 SCALER ASSY



- 2202 223886715339 CER1 0603 NP0 50V 33P PM5 R
- 2203 223886715221 CER1 0603 NP0 50V 220P PM5 R
- 2207 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2210 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2211 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2213 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2214 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2215 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2216 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2217 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2219 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2301 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2302 222224119876 CER2 1206 Y5V 10V 10U P8020 R
- 2303 223886715229 CER1 0603 NP0 50V 22P PM5 R
- 2304 223886715229 CER1 0603 NP0 50V 22P PM5 R
- 2305 223886715101 CER1 0603 NP0 50V 100P PM5 R
- 2307 223886715101 CER1 0603 NP0 50V 100P PM5 R
- 2308 223886715101 CER1 0603 NP0 50V 100P PM5 R
- 2322 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2341 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2412 222224119876 CER2 1206 Y5V 10V 10U P8020 R
- 2413 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2415 202203100378 ELCAP RGA 6V3 S 680U PM20 A
- 2416 222224119876 CER2 1206 Y5V 10V 10U P8020 R
- 2417 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2421 222224119876 CER2 1206 Y5V 10V 10U P8020 R

- 2422 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2423 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2424 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2425 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2431 222224119876 CER2 1206 Y5V 10V 10U P8020 R
- 2432 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2433 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2434 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2435 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2436 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2437 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2438 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2441 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2442 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2501 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2502 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2506 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2507 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2508 203803527203 ELCAP KM 16V S 220U PM20 A
- 2513 223858615623 CER2 0603 X7R 50V 1N PM10 R
- 2514 223858615623 CER2 0603 X7R 50V 1N PM10 R
- 2515 223858615623 CER2 0603 X7R 50V 1N PM10 R
- 2516 223858615623 CER2 0603 X7R 50V 1N PM10 R
- 2517 223858615623 CER2 0603 X7R 50V 1N PM10 R
- 2534 223858615636 CER2 0603 X7R 50V 10N PM10 R
- 2536 203803527501 ELCAP KM 50V S 10U PM20 A
- 2537 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2541 223878615649 CER2 0603 X7R 16V 100N PM10 R
- 2542 222224119876 CER2 1206 Y5V 10V 10U P8020 R
- 2543 202202000903 ELCAP SM 10V S 100U PM20 A
- 2544 223878615649 CER2 0603 X7R 16V 100N PM10 R



- 3201 232270260101 RST SM 0603 RC21 100R PM5 R
- 3202 232270260101 RST SM 0603 RC21 100R PM5 R
- 3203 232270260101 RST SM 0603 RC21 100R PM5 R
- 3204 232270260101 RST SM 0603 RC21 100R PM5 R
- 3205 232270260222 RST SM 0603 RC21 2K2 PM5 R
- 3206 232270260222 RST SM 0603 RC21 2K2 PM5 R
- 3207 232270260102 RST SM 0603 RC21 1K PM5 R
- 3210 232270260339 RST SM 0603 RC21 33R PM5 R
- 3211 232270260339 RST SM 0603 RC21 33R PM5 R
- 3212 232270467509 RST SM 0603 RC22H 75R PM1 R
- 3213 232270260519 RST SM 0603 RC21 51R PM5 R
- 3214 232270260339 RST SM 0603 RC21 33R PM5 R
- 3215 232270467509 RST SM 0603 RC22H 75R PM1 R
- 3216 232270260519 RST SM 0603 RC21 51R PM5 R
- 3217 232270260339 RST SM 0603 RC21 33R PM5 R
- 3218 232270467509 RST SM 0603 RC22H 75R PM1 R
- 3219 232270260519 RST SM 0603 RC21 51R PM5 R
- 3241 232270296001 RST SM 0603 JUMP. MAX 0R05 R
- 3243 232270296001 RST SM 0603 JUMP. MAX 0R05 R
- 3301 213811291002 RST SM 0805 JUMP. MAX 0R05 R
- 3302 232270260105 RST SM 0603 RC21 1M PM5 R
- 3303 232270260101 RST SM 0603 RC21 100R PM5 R
- 3304 232270260101 RST SM 0603 RC21 100R PM5 R
- 3306 212211805678 RST SM 0603 RC0603 47K PM5 R
- 3307 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3308 232270260101 RST SM 0603 RC21 100R PM5 R
- 3309 232270260101 RST SM 0603 RC21 100R PM5 R
- 3310 232270260101 RST SM 0603 RC21 100R PM5 R
- 3311 232270296001 RST SM 0603 JUMP. MAX 0R05 R
- 3312 232270260472 RST SM 0603 RC21 4K7 PM5 R
- 3313 232270296001 RST SM 0603 JUMP. MAX 0R05 R
- 3314 232270260472 RST SM 0603 RC21 4K7 PM5 R
- 3320 232270260472 RST SM 0603 RC21 4K7 PM5 R
- 3322 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3323 232270260101 RST SM 0603 RC21 100R PM5 R
- 3324 232270296001 RST SM 0603 JUMP. MAX 0R05 R
- 3325 232270296001 RST SM 0603 JUMP. MAX 0R05 R
- 3342 232270260472 RST SM 0603 RC21 4K7 PM5 R
- 3343 232270260472 RST SM 0603 RC21 4K7 PM5 R
- 3345 232270260101 RST SM 0603 RC21 100R PM5 R
- 3346 232270260101 RST SM 0603 RC21 100R PM5 R
- 3401 232270260101 RST SM 0603 RC21 100R PM5 R
- 3402 232270260101 RST SM 0603 RC21 100R PM5 R
- 3403 212211805637 RST SM 0603 RC0603 22R PM5 R
- 3404 212211805637 RST SM 0603 RC0603 22R PM5 R
- 3405 212211805637 RST SM 0603 RC0603 22R PM5 R
- 3406 232270260101 RST SM 0603 RC21 100R PM5 R
- 3407 232270260101 RST SM 0603 RC21 100R PM5 R
- 3408 212211805637 RST SM 0603 RC0603 22R PM5 R
- 3501 212211805639 RST SM 0603 RC0603 47R PM5 R
- 3502 212211805639 RST SM 0603 RC0603 47R PM5 R
- 3503 212211805639 RST SM 0603 RC0603 47R PM5 R

- 3513 232270260101 RST SM 0603 RC21 100R PM5 R
- 3514 232270260101 RST SM 0603 RC21 100R PM5 R
- 3515 232270260102 RST SM 0603 RC21 1K PM5 R
- 3516 212211805647 RST SM 0603 RC0603 220R PM5 R
- 3517 212211805647 RST SM 0603 RC0603 220R PM5 R
- 3518 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3519 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3521 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3522 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3523 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3531 212211805972 RST SM 1206 JUMP. MAX 0R05 R
- 3533 212211805678 RST SM 0603 RC0603 47K PM5 R
- 3534 232270260104 RST SM 0603 RC21 100K PM5 R
- 3535 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3545 212211805972 RST SM 1206 JUMP. MAX 0R05 R



- 5210 242254945579 IND FXD 1206 EMI 100MHZ 100R R
- 5415 242254900113 IND FXD 0603 EMI 100MHZ 1K R
- 5421 242254945579 IND FXD 1206 EMI 100MHZ 100R R
- 5431 242254945579 IND FXD 1206 EMI 100MHZ 100R R
- 5501 242254944196 IND FXD 0805 EMI 100MHZ 120R R
- 5502 242254944196 IND FXD 0805 EMI 100MHZ 120R R
- 5503 242254944196 IND FXD 0805 EMI 100MHZ 120R R
- 5507 242254945579 IND FXD 1206 EMI 100MHZ 100R R
- 5535 242254945579 IND FXD 1206 EMI 100MHZ 100R R



- 6201 933137390215 DIO REG SM BZX84-C5V1 (PHSE) R
- 6204 933137390215 DIO REG SM BZX84-C5V1 (PHSE) R
- 6205 933137390215 DIO REG SM BZX84-C5V1 (PHSE) R
- 6206 933137390215 DIO REG SM BZX84-C5V1 (PHSE) R
- 6302 932205042685 DIO SIG SM BAV99LG (ONSE) R
- 6303 933976370215 DIO SIG SM BAT54C (PHSE) R



- 7301 313815862461 CPU IC ASSY
- 7301 932220582682 IC SM NT68F633L (NOVA) L
- 7341 313815862481 EEPROM ASSY-LPL
- 7341 932218650682 IC AT24C16A-10PU-2.7 (ATME) L
- 7401 823827716521 NT6852AXF ANALOG XGA SCALER
- 7518 932217439685 TRA SIG SM BC857C (KECO) R
- 7519 932217439685 TRA SIG SM BC857C (KECO) R
- 7531 932216638668 FET POW SM S15441DC-E3 (VISH)R
- 7532 932209265685 TRA SIG SM MUN2211JG (ONSE) R
- 7541 932222077668 IC SM AME1117ECGTZ (ST00) R

1053 313815861661 CONTROL ASSY

- 3902 212211805678 RST SM 0603 RC0603 47K PM5 R
- 3903 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3904 232270260102 RST SM 0603 RC21 1K PM5 R
- 3905 212211805678 RST SM 0603 RC0603 47K PM5 R
- 3906 212211805669 RST SM 0603 RC0603 10K PM5 R
- 3907 232270260102 RST SM 0603 RC21 1K PM5 R
- 6910 932219981682 LED VS L-3WYGW-8.03* (KIEL) B

Diversity of 150S6FG/00(QDI) compared with 150S6FG/00(LPL)

Item	12NC	Description
0291	313815566281	LABEL-QDI
0295	313815566281	LABEL-QDI
0615	313811708061	HEX CODE OF F/W(QDI)
1050	932221915682	TFT-LCD QD15XL13 REV01(QDI) B
1051	313815862441	SCALER ASSY
7301	313815862471	CPU IC ASSY
7341	313815862491	EEPROM ASSY-QDI

Spare Parts List - 190S6

Type:190S6FG/00

Mechanical Parts

0030	313815759661	FRONT BEZEL ASSY(T)
0031	313815412302	BEZEL (T)
0032	313815412321	STRIP-DECORATION(T)
0033	313815411241	BUTTON-CONTROL
0034	313815411231	LENS-POWER
0040	313815758751	BACK COVER ASSY(T)
0041	313815415411	BACK COVER(T)
0042	313815411271	PLATE-VENT
0050	313815757561	FOLDABLE BASE(T)
0092	313815413861	HINGE COVER(T)
0101	313810440571	HOUSING COVER

Packing Materials

0450	313815639321	CARTON
0451	313815639611	CUSHION-R
0452	313815639601	CUSHION-L
0453	313810656651	PE BAG

Accessories

0602	313811708291	E-DFU
1157	313817874701	MAIN CORD (1.5M. EUROPEAN)
1158	313819871192	CORD SUB-D 15/1M8/SUB-D 15GY

LCD

1050	823827717801	TFT-LCD MOD LM190E04-A4
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Others

0291	313815566461	LABEL-CPU
0295	313815566471	LABEL-EEPROM-LPL
0615	313811708141	HEX CODE OF F/W-LPL
1160	313815862771	MAIN FRAME+WIRE ASSY-LPL
1201	242202518432	SOC SUBD H 15P F SBFR Y
1302	243854300079	RES XTL SM 12MHZ 32P SMD-49 R
1341	243803100435	SOC IC V 8P F 2.54 DIL L
1451	242202519002	CON H 30P F 1.00 SM FFC 0.3 R
1501	242202518824	CON V 11P M 2.00 63391 B
1512	242202518999	CON V 7P M 2.00 61387 B
1951	242212803058	SWI TACT 1P 50MA 12V TSAA B
1952	242212803058	SWI TACT 1P 50MA 12V TSAA B
1953	242212803058	SWI TACT 1P 50MA 12V TSAA B
1954	242212803058	SWI TACT 1P 50MA 12V TSAA B
1955	242212803058	SWI TACT 1P 50MA 12V TSAA B
1956	242212803058	SWI TACT 1P 50MA 12V TSAA B
1957	242212803058	SWI TACT 1P 50MA 12V TSAA B
4444	313810610447	CD ROM - SERVICE MANUAL
4444	313810610448	SERVICE MANUAL
8161	313819875071	CBLE-267A 7/2307-267A AWG28
8163	313819875151	FCC 30/185/30 PITCH 1.0MM

PCB ASSY

1051	313815861691	SCALER ASSY
1052	823827717131	LIPS(EADP-43AF A)
1053	313815861681	CONTROL ASSY

1051 313815861691 SCALER ASSY

2202	223886715339	CER1 0603 NP0 50V 33P PM5 R
2203	223886715221	CER1 0603 NP0 50V 220P PM5 R
2207	223878615649	CER2 0603 X7R 16V 100N PM10 R
2210	223878615649	CER2 0603 X7R 16V 100N PM10 R
2211	223878615649	CER2 0603 X7R 16V 100N PM10 R
2213	223878615649	CER2 0603 X7R 16V 100N PM10 R
2214	223878615649	CER2 0603 X7R 16V 100N PM10 R
2215	223878615649	CER2 0603 X7R 16V 100N PM10 R
2216	223878615649	CER2 0603 X7R 16V 100N PM10 R
2217	223878615649	CER2 0603 X7R 16V 100N PM10 R
2219	223878615649	CER2 0603 X7R 16V 100N PM10 R
2301	223878615649	CER2 0603 X7R 16V 100N PM10 R
2302	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2303	223886715229	CER1 0603 NP0 50V 22P PM5 R
2304	223886715229	CER1 0603 NP0 50V 22P PM5 R
2305	223886715101	CER1 0603 NP0 50V 100P PM5 R
2307	223886715101	CER1 0603 NP0 50V 100P PM5 R
2308	223886715101	CER1 0603 NP0 50V 100P PM5 R
2322	223878615649	CER2 0603 X7R 16V 100N PM10 R
2341	223878615649	CER2 0603 X7R 16V 100N PM10 R
2412	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2413	223878615649	CER2 0603 X7R 16V 100N PM10 R
2415	202203100378	ELCAP RGA 6V3 S 680U PM20 A
2416	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2417	223878615649	CER2 0603 X7R 16V 100N PM10 R

2421	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2422	223878615649	CER2 0603 X7R 16V 100N PM10 R
2423	223878615649	CER2 0603 X7R 16V 100N PM10 R
2424	223878615649	CER2 0603 X7R 16V 100N PM10 R
2425	223878615649	CER2 0603 X7R 16V 100N PM10 R
2431	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2432	223878615649	CER2 0603 X7R 16V 100N PM10 R
2433	223878615649	CER2 0603 X7R 16V 100N PM10 R
2434	223878615649	CER2 0603 X7R 16V 100N PM10 R
2435	223878615649	CER2 0603 X7R 16V 100N PM10 R
2436	223878615649	CER2 0603 X7R 16V 100N PM10 R
2437	223878615649	CER2 0603 X7R 16V 100N PM10 R
2438	223878615649	CER2 0603 X7R 16V 100N PM10 R
2441	223878615649	CER2 0603 X7R 16V 100N PM10 R
2442	223878615649	CER2 0603 X7R 16V 100N PM10 R
2501	223878615649	CER2 0603 X7R 16V 100N PM10 R
2502	223878615649	CER2 0603 X7R 16V 100N PM10 R
2506	223878615649	CER2 0603 X7R 16V 100N PM10 R
2507	223878615649	CER2 0603 X7R 16V 100N PM10 R
2508	203803527203	ELCAP KM 16V S 220U PM20 A
2513	223858615623	CER2 0603 X7R 50V 1N PM10 R
2514	223858615623	CER2 0603 X7R 50V 1N PM10 R
2515	223858615623	CER2 0603 X7R 50V 1N PM10 R
2516	223858615623	CER2 0603 X7R 50V 1N PM10 R
2517	223858615623	CER2 0603 X7R 50V 1N PM10 R
2534	223858615636	CER2 0603 X7R 50V 1N PM10 R
2536	203803527501	ELCAP KM 50V S 10U PM20 A
2537	223878615649	CER2 0603 X7R 16V 100N PM10 R
2541	223878615649	CER2 0603 X7R 16V 100N PM10 R
2542	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2543	202202000903	ELCAP SM 10V S 100U PM20 A
2544	223878615649	CER2 0603 X7R 16V 100N PM10 R
2545	223878615649	CER2 0603 X7R 16V 100N PM10 R
2546	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2547	222224119876	CER2 1206 Y5V 10V 10U P8020 R
2548	223878615649	CER2 0603 X7R 16V 100N PM10 R

3201	232270260101	RST SM 0603 RC21 100R PM5 R
3202	232270260101	RST SM 0603 RC21 100R PM5 R
3203	232270260101	RST SM 0603 RC21 100R PM5 R
3204	232270260101	RST SM 0603 RC21 100R PM5 R
3205	232270260222	RST SM 0603 RC21 2K2 PM5 R
3206	232270260222	RST SM 0603 RC21 2K2 PM5 R
3207	232270260102	RST SM 0603 RC21 1K PM5 R
3210	232270260339	RST SM 0603 RC21 33R PM5 R
3211	232270260339	RST SM 0603 RC21 33R PM5 R
3212	232270467509	RST SM 0603 RC22H 75R PM1 R
3213	232270260519	RST SM 0603 RC21 51R PM5 R
3214	232270260339	RST SM 0603 RC21 33R PM5 R
3215	232270467509	RST SM 0603 RC22H 75R PM1 R
3216	232270260519	RST SM 0603 RC21 51R PM5 R
3217	232270260339	RST SM 0603 RC21 33R PM5 R
3218	232270467509	RST SM 0603 RC22H 75R PM1 R
3219	232270260519	RST SM 0603 RC21 51R PM5 R
3241	212211805631	RST SM 0603 JUMP. MAX 0R05 R
3243	212211805631	RST SM 0603 JUMP. MAX 0R05 R
3302	232270260105	RST SM 0603 RC21 1M PM5 R
3303	232270260101	RST SM 0603 RC21 100R PM5 R
3304	232270260101	RST SM 0603 RC21 100R PM5 R
3306	212211805678	RST SM 0603 RC0603 47K PM5 R
3307	212211805669	RST SM 0603 RC0603 10K PM5 R
3308	232270260101	RST SM 0603 RC21 100R PM5 R
3309	232270260101	RST SM 0603 RC21 100R PM5 R
3310	232270260101	RST SM 0603 RC21 100R PM5 R
3311	212211805631	RST SM 0603 JUMP. MAX 0R05 R
3312	232270260472	RST SM 0603 RC21 4K7 PM5 R
3313	212211805631	RST SM 0603 JUMP. MAX 0R05 R
3314	232270260472	RST SM 0603 RC21 4K7 PM5 R
3320	232270260472	RST SM 0603 RC21 4K7 PM5 R
3322	212211805669	RST SM 0603 RC0603 10K PM5 R
3323	232270260101	RST SM 0603 RC21 100R PM5 R
3324	212211805631	RST SM 0603 JUMP. MAX 0R05 R
3325	212211805631	RST SM 0603 JUMP. MAX 0R05 R
3342	232270260472	RST SM 0603 RC21 4K7 PM5 R
3343	232270260472	RST SM 0603 RC21 4K7 PM5 R
3345	232270260101	RST SM 0603 RC21 100R PM5 R
3346	232270260101	RST SM 0603 RC21 100R PM5 R
3401	232270260101	RST SM 0603 RC21 100R PM5 R
3402	232270260101	RST SM 0603 RC21 100R PM5 R
3403	212211805637	RST SM 0603 RC0603 22R PM5 R
3404	212211805637	RST SM 0603 RC0603 22R PM5 R
3405	212211805637	RST SM 0603 RC0603 22R PM5 R
3406	232270260101	RST SM 0603 RC21 100R PM5 R
3407	232270260101	RST SM 0603 RC21 100R PM5 R
3408	212211805637	RST SM 0603 RC0603 22R PM5 R

3411	232270468201	RST SM 0603 RC22H 820R PM1 R
3412	232270462702	RST SM 0603 RC22H 2K7 PM1 R
3501	212211805639	RST SM 0603 RC0603 47R PM5 R
3502	212211805639	RST SM 0603 RC0603 47R PM5 R
3503	212211805639	RST SM 0603 RC0603 47R PM5 R
3513	232270260101	RST SM 0603 RC21 100R PM5 R
3514	232270260101	RST SM 0603 RC21 100R PM5 R
3515	232270260102	RST SM 0603 RC21 1K PM5 R
3516	212211805647	RST SM 0603 RC0603 220R PM5 R
3517	212211805647	RST SM 0603 RC0603 220R PM5 R
3518	212211805669	RST SM 0603 RC0603 10K PM5 R
3519	212211805669	RST SM 0603 RC0603 10K PM5 R
3521	212211805669	RST SM 0603 RC0603 10K PM5 R
3522	212211805669	RST SM 0603 RC0603 10K PM5 R
3523	212211805669	RST SM 0603 RC0603 10K PM5 R
3531	212211805972	RST SM 1206 JUMP. MAX 0R05 R
3533	212211805678	RST SM 0603 RC0603 47K PM5 R
3534	232270260104	RST SM 0603 RC21 100K PM5 R
3535	212211805669	RST SM 0603 RC0603 10K PM5 R



5210	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5415	242254900113	IND FXD 0603 EMI 100MHZ 1K R
5421	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5431	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5501	242254944196	IND FXD 0805 EMI 100MHZ 120R R
5502	242254944196	IND FXD 0805 EMI 100MHZ 120R R
5503	242254944196	IND FXD 0805 EMI 100MHZ 120R R
5507	242254945579	IND FXD 1206 EMI 100MHZ 100R R
5535	242254945579	IND FXD 1206 EMI 100MHZ 100R R



6201	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6204	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6205	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6206	933137390215	DIO REG SM BZX84-C5V1 (PHSE) R
6301	932205042685	DIO SIG SM BAV99LG (ONSE) R
6302	932205042685	DIO SIG SM BAV99LG (ONSE) R
6303	933976370215	DIO SIG SM BAT54C (PHSE) R



7301	313815863171	CPU IC ASSY
7301	932220582682	IC SM NT68F633L (NOVA) L
7341	313815863181	EEPROM ASSY-LPL
7341	932218650682	IC AT24C16A-10PU-2.7 (ATME) L
7401	823827716531	NT68521AEF ANALAG SXGA SCALER
7518	932217439685	TRA SIG SM BC857C (KECO) R
7519	932217439685	TRA SIG SM BC857C (KECO) R
7531	932216638668	FET POW SM S15441DC-E3 (VISH)R
7532	934036790115	TRA SIG SM PDTC114EK (PHSE) R
7541	9322205077668	IC SM AME1117ECGTZ (AME0) R
7545	932222076668	IC SM AME1117CCGTZ (AME0) R

1053 313815861681 CONTROL ASSY

3952	212211805678	RST SM 0603 RC0603 47K PM5 R
3953	212211805669	RST SM 0603 RC0603 10K PM5 R
3954	232270260102	RST SM 0603 RC21 1K PM5 R
3955	212211805678	RST SM 0603 RC0603 47K PM5 R
3956	212211805669	RST SM 0603 RC0603 10K PM5 R
3957	232270260102	RST SM 0603 RC21 1K PM5 R
6950	932214603682	LED VS L-3WYGW (KIEL) B

Diversity of 170S6FB/00 compared with 170S6FG/00		
Item	12NC	Description
	863900016142	170S6FB/00
0030	313815756981	BEZEL ASSY(B)
0031	313815412762	BEZEL(B)
0040	313815759461	BACK COVER ASSY (B)
0041	313815412783	BACK COVER(B)
0043	313815410901	INSULATE PLATE
0044	313815133511	VESA PLATE
0050	313815756862	FOLDABLE BASE(B)
0101	313815412451	HINGE COVER(B)
1157	313817875311	MAINSCORD IEC 10A 1M5 DET BK
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 170S6FB/27 compared with 170S6FG/00		
Item	12NC	Description
	863900016144	170S6FB/27
0030	313815756981	BEZEL ASSY(B)
0031	313815412762	BEZEL(B)
0040	313815759461	BACK COVER ASSY (B)
0041	313815412783	BACK COVER(B)
0043	313815410901	INSULATE PLATE
0044	313815133511	VESA PLATE
0050	313815756862	FOLDABLE BASE(B)
0101	313815412451	HINGE COVER(B)
1157	313812874881	MAIN CORD
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 170S6FG/27 compared with 170S6FG/00		
Item	12NC	Description
	863900016152	170S6FG/27
1157	313811876421	MAINSCORD UL 10A 1M5 DET TDS
0043	313815410901	INSULATE PLATE
0044	313815133511	VESA PLATE

Diversity of 170S6FS/00 compared with 170S6FG/00		
Item	12NC	Description
	863900016146	170S6FS/00
0030	313815757001	BEZEL ASSY(S)
0031	313815412772	BEZEL (S)
0040	313815759461	BACK COVER ASSY (B)
0041	313815412783	BACK COVER(B)
0043	313815410901	INSULATE PLATE
0044	313815133511	VESA PLATE
0050	313815756872	FOLDABLE BASE(S)
0101	313815412881	HINGE COVER(S)
0103	313815137291	AC BRACKET
0104	313815135311	DSUB PLATE
0106	313815320891	AL EMI PLATE
0126	313815566341	RATING LABEL
1157	313817875311	MAINSCORD IEC 10A 1M5 DET BK
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 170S6FS/78 compared with 170S6FG/00		
Item	12NC	Description
	863900017063	170S6FS/78
0030	313815760081	BEZEL ASSY(S)
0031	313815416731	BEZEL(S)
0040	313815759463	BACK COVER ASSY (B)
0041	313815412785	BACK COVER(B)
0042	313815137651	HINGE-PLATE
0050	313815756872	FOLDABLE BASE(S)
0101	313815412451	HINGE COVER(B)
0126	313815569121	RATING LABEL
0141	313815523681	QUICK SETUP GUIDE
0291	313815566235	LABEL-CPU
0295	313815567222	LABEL-EEPROM(A)
0295	313815568591	LABEL-EEPROM(L)
0295	313815567933	LABEL-EEPROM(A)
0295	313815566245	LABEL-EEPROM(Q)
0295	313815567232	LABEL-EEPROM(C)
0295	313815566255	LABEL-EEPROM(L)
0450	313815640761	CARTON
0453	313815640871	P.E. BAG
0490	313815682711	PACKING ASSY-CHINA
0510	313815640761	CARTON
0602	313811708276	E-D.F.U.
0615	313811708135	HEX CODE OF F/W(NO MATL REQ)
1050	932222955682	TFT-LCD M170EG01V8 (AUOP) B
1050	932222425682	TFT-LCD LM170E01-A6 (LGPH) B
1051	313815866041	SCALER ASSY
1052	313819875992	PSU OPENFR IPS 43W(EADP-43AF A
1157	313818879601	MAINSCORD BRZ 10A 1M53 BK
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK
7341	313815866051	EEPROM ASSY

Change reason	Type	Action	Item	12NC	Description
The power cord should be changed to BSMI type for /96 model according to CA006133	170S6FB/96	From	1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
				313812874881	MAIN CORD
	170S6FS/96	To	1157	823827732108	1M5 MAINSCORD TWN 7A 3P B

Different Parts List - 150S6

Diversity of 150S6FB/00 compared with 150S6FG/00		
Item	12NC	Description
	863900016089	150S6FB/00
0030	313815756441	BEZEL ASSY(B)
0031	313815412421	BEZEL(B)
0040	313815759701	BACK COVER ASSY
0041	313815412442	BACK COVER(B)
0050	313815756432	FOLDABLE BASE(B)
0101	313815412451	HINGE COVER(B)
1157	242207000075	MAINSCORD IEC 10A 1M5 DET 3P B
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK
Diversity of 150S6FB/27 compared with 150S6FG/00		
Item	12NC	Description
	863900016099	150S6FB/27
0030	313815756441	BEZEL ASSY(B)
0031	313815412421	BEZEL(B)
0040	313815759701	BACK COVER ASSY
0041	313815412442	BACK COVER(B)
0050	313815756432	FOLDABLE BASE(B)
0101	313815412451	HINGE COVER(B)
1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 150S6FG/27 compared with 150S6FG/00		
Item	12NC	Description
0301	313815136751	MAIN FRAME
1157	313811876421	MAINSCORD UL 10A 1M5 DET TDS
Diversity of 150S6FS/00 compared with 150S6FG/00		
Item	12NC	Description
0030	313815756451	BEZEL ASSY(S)
0031	313815412431	BEZEL(S)
0040	313815759701	BACK COVER ASSY
0041	313815412442	BACK COVER(B)
0050	313815756802	FOLDABLE BASE(S)
0101	313815412881	HINGE COVER(S)

Different Parts List -190S6

Diversity of 190S6FB/00 compared with 190S6FG/00		
Item	12NC	Description
	863900016185	190S6FB/00
0030	313815759761	FRONT BEZEL ASSY(B)
0031	313815412912	BEZEL (B)
0032	313815413031	STRIP-DECORATION (B)
0033	313815411871	BUTTON-CONTROL
0040	313815759771	BACK COVER ASSY(B)
0041	313815416321	BACK COVER(B)
0042	313815411891	PLATE-VENT
0050	313815757851	FOLDABLE BASE(B)
0092	313815414271	HINGE COVER(B)
1157	313817875311	MAINSCORD IEC 10A 1M5 DET BK
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 190S6FS/27 compared with 190S6FG/00		
Item	12NC	Description
	863900016184	190S6FS/27
0030	313815759741	FRONT BEZEL ASSY(S)
0031	313815412922	BEZEL (S)
0033	313815411931	BUTTON-CONTROL
0040	313815759751	BACK COVER ASSY(S)
0041	313815416311	BACK COVER(S)
0042	313815411951	PLATE-VENT
0050	313815757861	FOLDABLE BASE(S)
0092	313815414281	HINGE COVER(S)
1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 190S6FB/27 compared with 190S6FG/00		
Item	12NC	Description
	863900016186	190S6FB/27
0030	313815759761	FRONT BEZEL ASSY(B)
0031	313815412912	BEZEL (B)
0032	313815413031	STRIP-DECORATION (B)
0033	313815411871	BUTTON-CONTROL
0040	313815759771	BACK COVER ASSY(B)
0041	313815416321	BACK COVER(B)
0042	313815411891	PLATE-VENT
0050	313815757851	FOLDABLE BASE(B)
0092	313815414271	HINGE COVER(B)
1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Diversity of 190S6FS/96 compared with 190S6FG/00		
Item	12NC	Description
	863900016261	190S6FS/96
0030	313815759741	FRONT BEZEL ASSY(S)
0031	313815412922	BEZEL (S)
0033	313815411931	BUTTON-CONTROL
0040	313815759751	BACK COVER ASSY(S)
0041	313815416311	BACK COVER(S)
0042	313815411951	PLATE-VENT
0050	313815757861	FOLDABLE BASE(S)
0092	313815414281	HINGE COVER(S)
1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK
8161	313819875072	CBLE-267A 7/230/7-267A AWG28

Diversity of 190S6FG/93 compared with 190S6FG/00		
Item	12NC	Description
	863900016177	190S6FG/93
0030	313815760001	FRONT BEZEL ASSY(T)
0031	313815416651	BEZEL(T)
0450	313815640321	CARTON
1157	242207000024	MAINSCORD CHN 10A 1M53 DET 3P
8161	313819875072	CBLE-267A 7/230/7-267A AWG28

Diversity of 190S6FS/00 compared with 190S6FG/00		
Item	12NC	Description
	863900016181	190S6FS/00
0030	313815759741	FRONT BEZEL ASSY(S)
0031	313815412922	BEZEL (S)
0033	313815411931	BUTTON-CONTROL
0040	313815759751	BACK COVER ASSY(S)
0041	313815416311	BACK COVER(S)
0042	313815411951	PLATE-VENT
0050	313815757861	FOLDABLE BASE(S)
0092	313815414281	HINGE COVER(S)
1157	313817875311	MAINSCORD IEC 10A 1M5 DET BK
1158	313819871182	CORD SUB-D 15/1M8/SUB-D 15 BK

Change reason	Type	Action	Item	12NC	Description
The power cord should be changed to BSMI type for /96 model according to CA006133	190S6FS/96	From	1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
				313812874881	MAIN CORD
		To	1157	823827732108	1M5 MAINSCORD TWN 7A 3P B

General

DDC Data Re-programming

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

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

Additional information

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

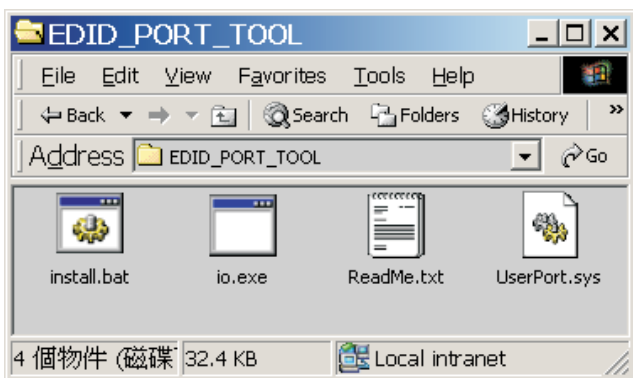
System and equipment requirements

1. An i486 (or above) personal computer or compatible.
2. Microsoft operation system Windows 95/98 .

You have to Install the EDID_PORT_Tool under Win2000/XP . As

Fig. 1 .

Fig. 1



- A. Copy the "UserPort.sys" to C:\WINNT\system32\drivers(win2000) C:\WINDOWS\system32\drivers(winXP)
 - B. Running " io.exe" everytime, Before you start to programming edid data .
3. EDID45.1.EXE program .
 4. DDC 2BI-ISP TOOL:
inclusion : a. DDC2BI-ISP TOOL(3138 106 10396) x1 (as Fig. 2)

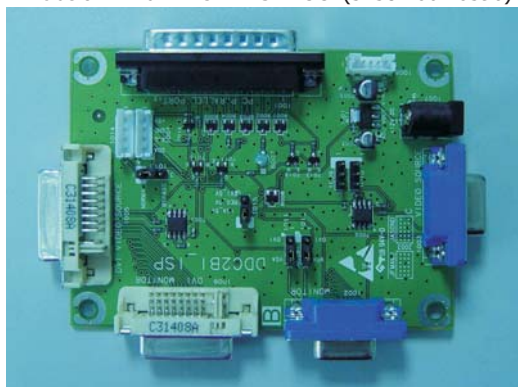


Fig. 2

- B. Printer cable x1
- c. (D-Sub) to (D-Sub) cable x2

Note: The EDID45.EXE is a windows-based program, which cannot be run in MS-DOS.

Pin assignment

- A. 15-pin D-Sub Connector

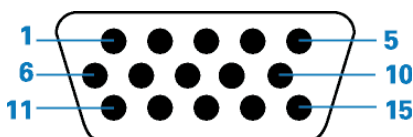


Fig. 3

PIN No.	SIGNAL
1	Red
2	Green/SOG
3	Blue
4	Sense (GND)
5	Test (GND)
6	Red GND
7	Green GND
8	Blue GND
9	+5V
10	Sync GND
11	Sense (GND)
12	Serial data (SDA)
13	H/H+V sync
14	V-sync
15	Data clock (SCL)

Re-programming Analog DDC IC

There are 2 chips contained OSD string, serial number..etc on the circuit board, main EEPROM which storage all factory settings, OSD string. DDC IC which storage 128 byte EDID data(serial number ..etc.). Following descriptions are the connection and procedure for Analog and main EEPROM can be re-programmed along with Analog/Digital IC by enable factory memory data write function on The DDC program (EDID45.1.EXE).

Following steps show you the procedures and connection.

Step 1: Connecting printer cable and D-Sub cable of monitor as Fig. 4

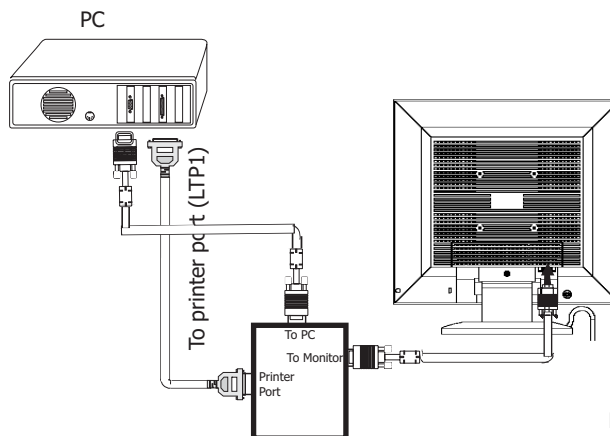


Fig. 4

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,

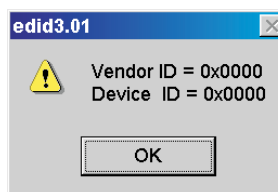


Fig. 8

Step 2: Installation of EDID45.1.EXE

Start Microsoft Windows.

1. The Program "EDID45.1.EXE" in service manual cd-rom be copied to C:\.
2. Click "Start" choose Run at start menu of Windows as shown in Fig. 5.

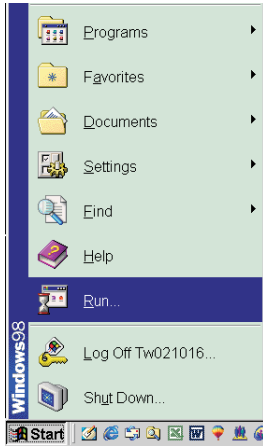


Fig. 5

3. At the submenu, type the letter of your computer's hard disk drive followed by :EDID45 (for example, C:\EDID45, as shown in Fig. 6).

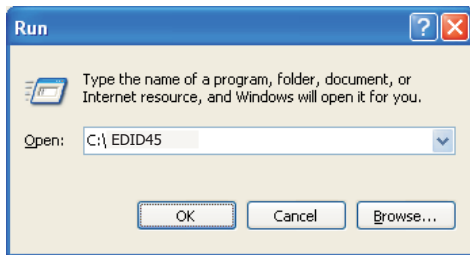


Fig. 6

4. Click OK button. The main menu appears (as shown in Fig. 7).

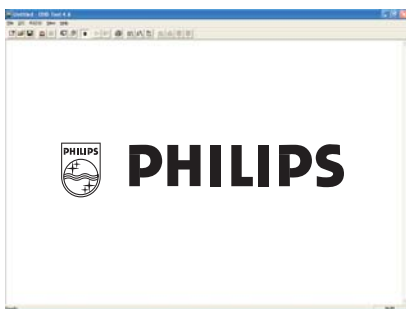


Fig. 7

Note 2: During the loading, EDID45 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.

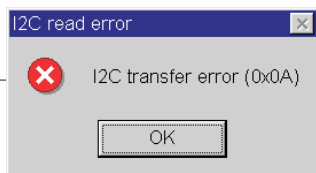


Fig. 8

Step 3: Read DDC data from monitor

1. Click icon as shown in Fig. 7 from the tool bar to bring up The Channels "Configuration Setup" windows as shown in Fig. 8
2. Select the DDC2Bi as the communication channel. As shown in Fig. 8.

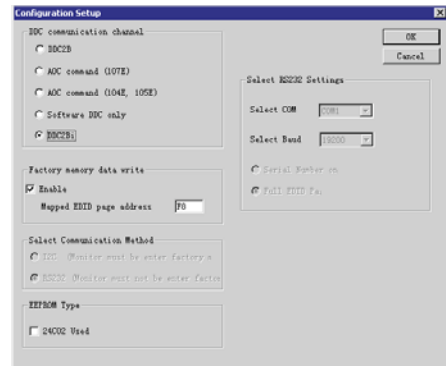


Fig. 8

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.9

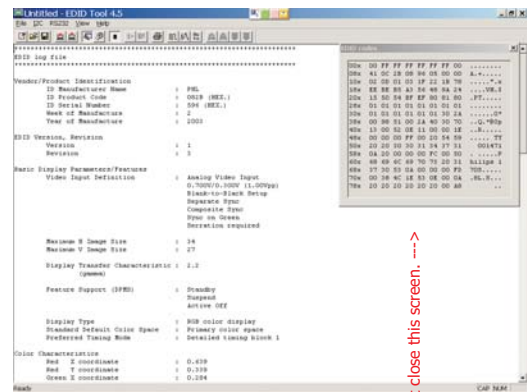


Fig. 9

Step 4: Modify DDC data (verify EDID version, week, year)

1. Click (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 10-18 . EDID45 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

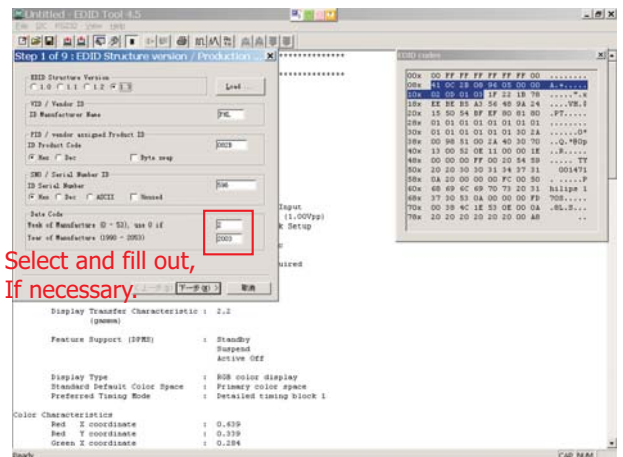


Fig. 10

Step 5: Modify DDC data (Monitor Serial No.)

1. Click Next, bring up Fig. 11.

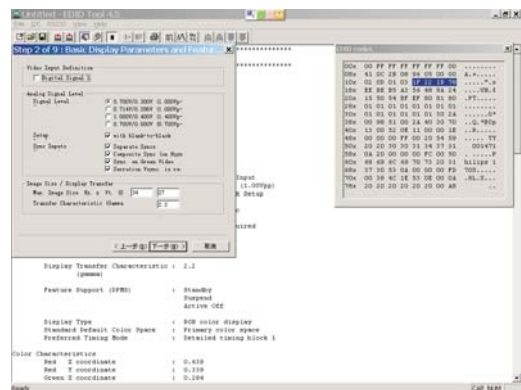


Fig. 11

2. Click Next, bring up Fig. 12.

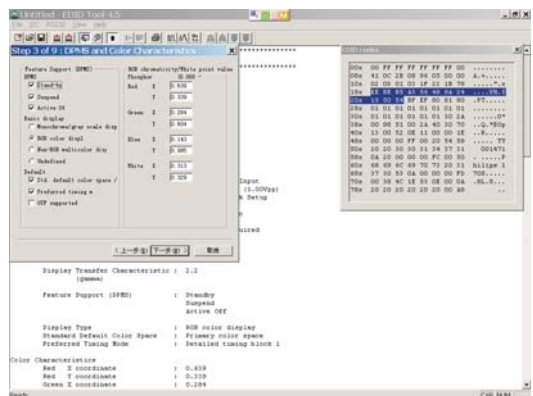


Fig. 12

3. Click Next, bring up Fig. 13.

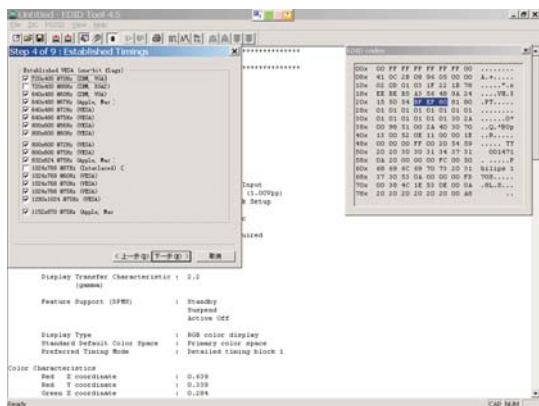


Fig. 13

4. Click Next, bring up Fig. 14.

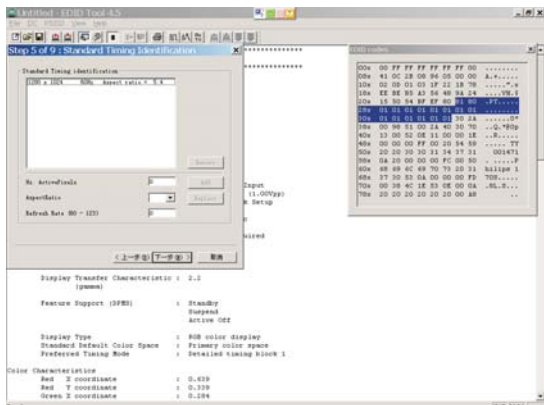


Fig. 14

5. Click Next, bring up Fig. 15.

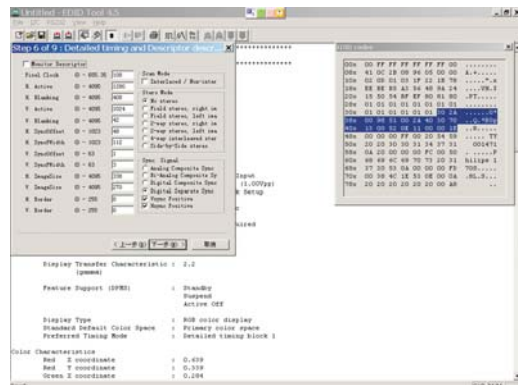


Fig. 15

6. Click Next, bring up Fig. 16.

- Serial number can be filled up or be changed at this moment.
- Click Finish to exit the Step window.

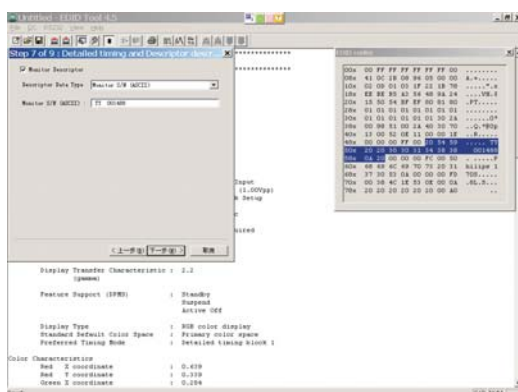


Fig. 16

7. Click Next, bring up Fig. 17.

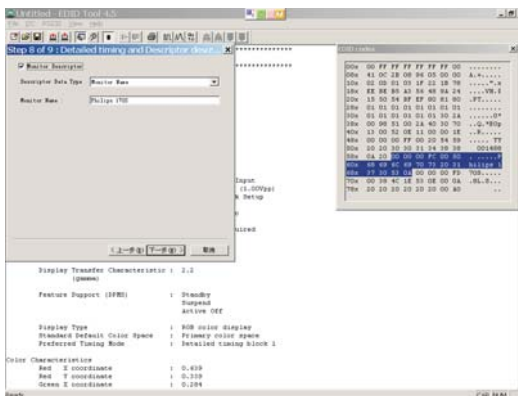


Fig. 17

8. Click Next, bring up Fig. 18. Then click finish to exit the step window

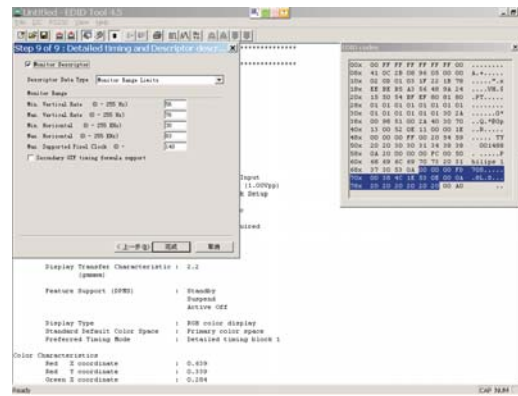


Fig. 18

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT
INCLUDING

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 082B (HEX.)
ID Serial Number : 12345 (HEX.)
Week of Manufacture : 50
Year of Manufacture : 2004

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 (gamma) : 2.2

Feature Support (DPMS) : Standby
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 : 0.339
Green X coordinate : 0.284
Green Y coordinate : 0.604
Blue X coordinate : 0.143
Blue Y coordinate : 0.085
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

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 : TY 123456

Monitor Descriptor #3

Monitor Name : Philips 170S

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

: A1 (HEX.)

DDC Data - 150S6

THE DISPLAY DATA CHANNEL (DDC) 2B CONTENT
INCLUDING (FOR LG & QDI PANEL ANALOG)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 0829 (HEX.)
ID Serial Number : 1E240 (HEX.)
Week of Manufacture : 45
Year of Manufacture : 2004

EDID Version, Revision

Version : 1
Revision : 3

Basic Display Parameters/Features

Video Input Definition : Analog Video Input
0.700V/0.300V (1.00Vpp)
without Blank-to-Black Setup
Separate Sync
Composite Sync
Sync on Green
no Serration required

Maximum H Image Size : 30
Maximum V Image Size : 23

Display Transfer Characteristic : 2.2
(gamma)

Feature Support (DPMS) : Standby
Suspend
Active Off

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

Color Characteristics

Red X coordinate : 0.631
Red Y coordinate : 0.347
Green X coordinate : 0.309
Green Y coordinate : 0.583
Blue X coordinate : 0.15
Blue Y coordinate : 0.088
White X coordinate : 0.313

White Y coordinate : 0.329

Established Timings

Established Timings : 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)

Manufacturer's timings :

Standard Timing Identification : Unused

Detailed Timing #1

Pixel Clock (MHz) : 65
H Active (pixels) : 1024
H Blanking (pixels) : 320
V Active (lines) : 768
V Blanking (lines) : 38
H Sync Offset (F Porch) (pixels): 24
H Sync Pulse Width (pixels) : 136
V Sync Offset (F Porch) (lines) : 3
V Sync Pulse Width (lines) : 6
H Image Size (mm) : 307
V Image Size (mm) : 230
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
: Normal Display, No stereo
: Digital Separate sync.
: Negative Vertical Sync.
: Negative Horizontal Sync.

Monitor Descriptor #2

Serial Number : BZ 123456

Monitor Descriptor #3

Monitor Name : Philips 150S

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 : 63
Max. Supported Pixel : 80

No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 54 (HEX.)

EDID data (128 bytes)

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 29 11: 08 12: 40 13: e2 14: 01 15: 00
16: 2d 17: 0e 18: 01 19: 03 20: 0e 21: 1e 22: 17 23: 78
24: ea 25: b1 26: a5 27: a1 28: 58 29: 4f 30: 95 31: 26
32: 16 33: 50 34: 54 35: bf 36: ee 37: 00 38: 01 39: 01
40: 01 41: 01 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: 64 55: 19
56: 00 57: 40 58: 41 59: 00 60: 26 61: 30 62: 18 63: 88
64: 36 65: 00 66: 33 67: e6 68: 10 69: 00 70: 00 71: 18
72: 00 73: 00 74: 00 75: ff 76: 00 77: 20 78: 42 79: 5a
80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36
88: 0a 89: 20 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: 35 105: 30 106: 53 107: 0a 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 3f 117: 08 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 54

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT
INCLUDING

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 082F (HEX.)
ID Serial Number : 12345 (HEX.)
Week of Manufacture : 50
Year of Manufacture : 2004

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 (gamma) : 2.2

Feature Support (DPMS) : Standby
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 : 0.638
Red Y coordinate : 0.345
Green X coordinate : 0.283
Green Y coordinate : 0.609
Blue X coordinate : 0.142
Blue Y coordinate : 0.067
White X coordinate : 0.309
White Y coordinate : 0.328

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

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 : TY 123456

Monitor Descriptor #3

Monitor Name : Philips 190S

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

: 60 (HEX.)

EDID data (128 bytes)

0: 00 1: ff 2: ff 3: ff 4: ff 5: ff 6: ff 7: 00
8: 41 9: 0c 10: 2f 11: 08 12: 45 13: 23 14: 01 15: 00
16: 32 17: 0e 18: 01 19: 03 20: 1f 21: 26 22: 1e 23: 78
24: ee 25: 58 26: 50 27: a3 28: 58 29: 48 30: 9c 31: 24
32: 11 33: 4f 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
40: 01 41: 01 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: 20 78: 54 79: 59
80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36
88: 0a 89: 20 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: 53 107: 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: 60

Firmware Upgrade for CPU

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 106 10396) 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

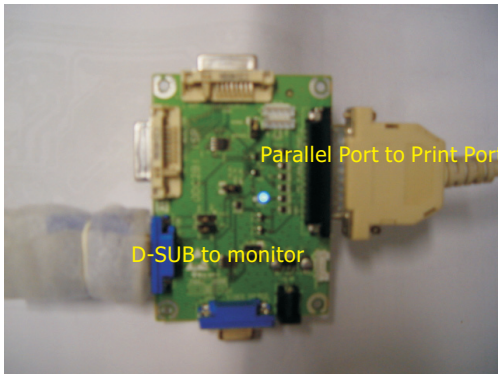


Fig. 1

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

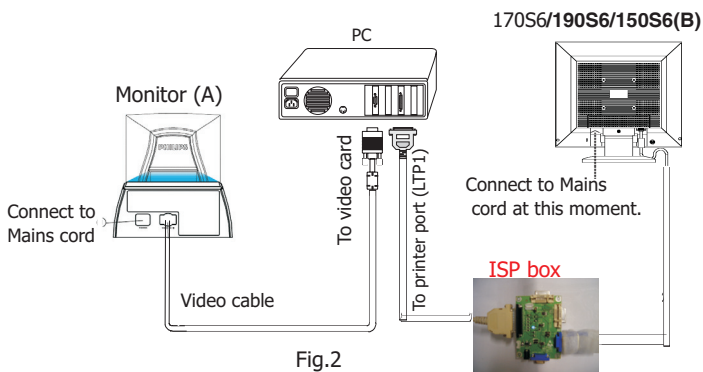


Fig.2

6. Install and setup the Easywriter program

- Step 1 : Make a folder in your PC as shown in Fig. 3.
For example : C:\170S6
- Step 2 : Copy the 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 EasywriterV2.06a_user.exe icon to install the Application as Fig. 4.

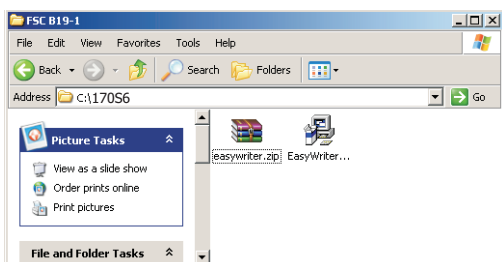


Fig. 3

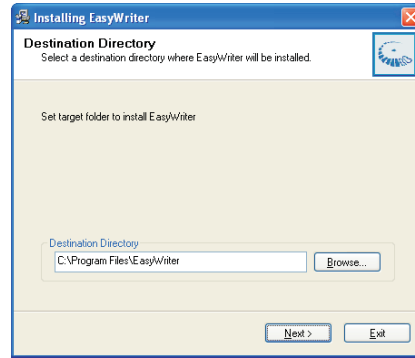


Fig. 4

Step 5 :Copy the hex file to C:\170S6 as shown in Fig. 5 .

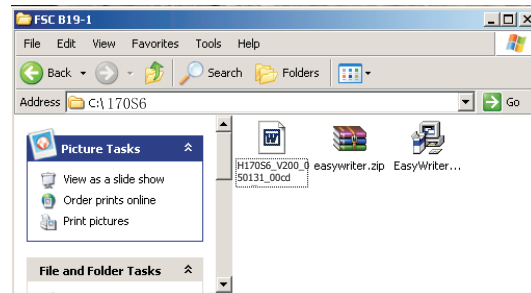


Fig. 5

Update the firmware

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



Fig. 6

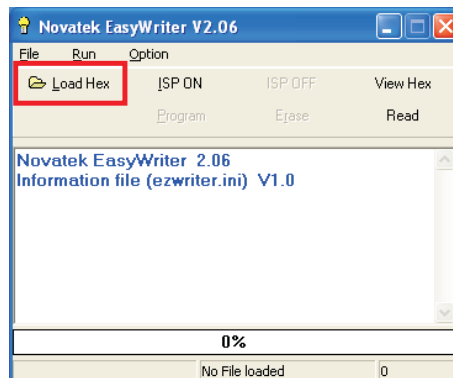


Fig. 7

2. Press the Load hex then select the hex file as shown in Fig. 8.
3. From the menu that appears, choose the "NT68F633(64K)" as shown in Fig. 9.

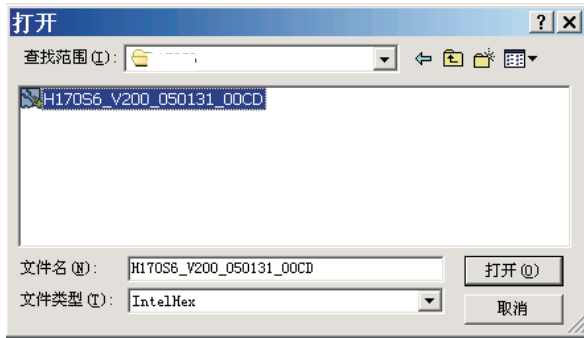


Fig. 8

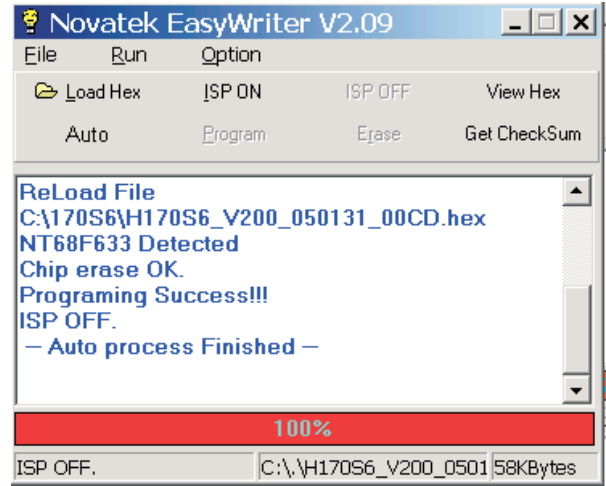


Fig. 11

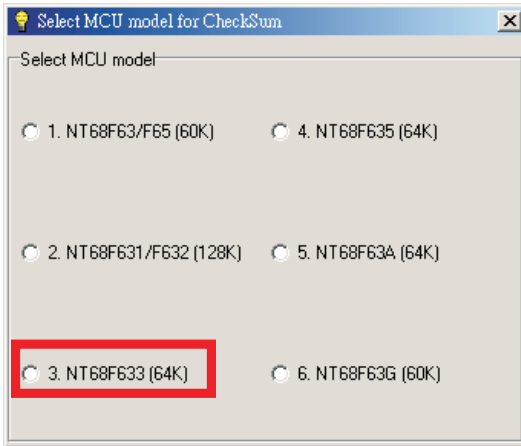


Fig. 9

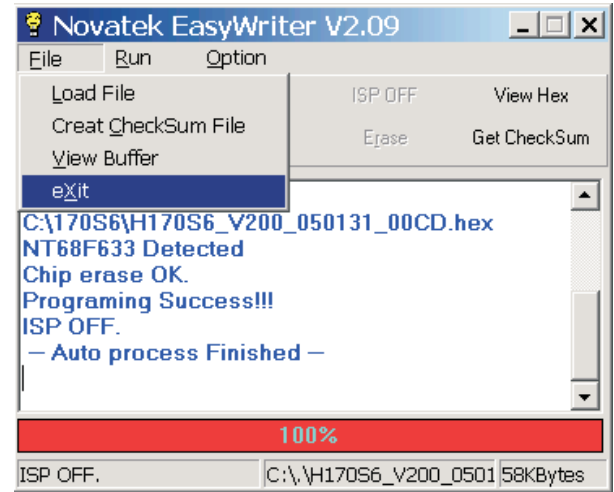


Fig. 12

4. Press the AUTO to running program , the firmware be updated as shown in Fig. 10~11.

If there is a warring message coming as shown in Fig 13. , you have to check the AC power, Video cable, or Novatek MCU.

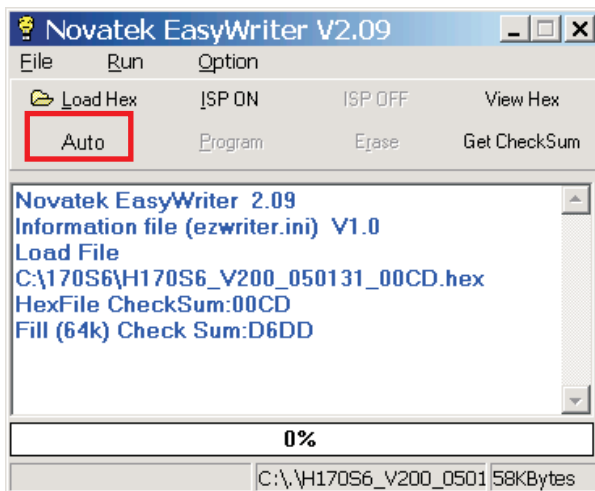


Fig. 10

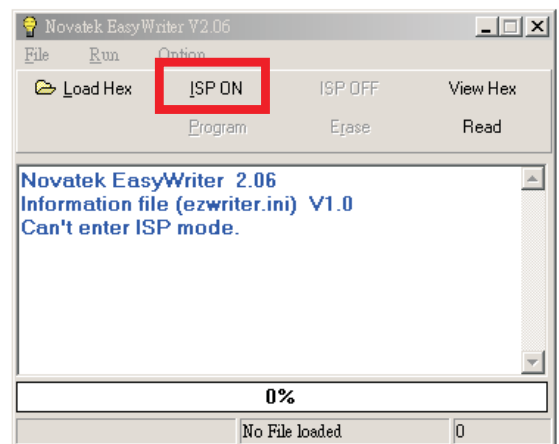


Fig. 13

4. Press the file --> exit to end program , as shown in Fig. 12.

0. Warning

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

1. Servicing of SMDs (Surface Mounted Devices)

1.1 General cautions on handling and storage

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

Do not handle SMDs with bare hands.

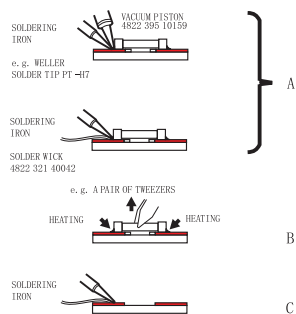
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.

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

1.2 Removal of SMDs

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

Fig. 1 DISMOUNTING



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

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

1.3 Caution on removal

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

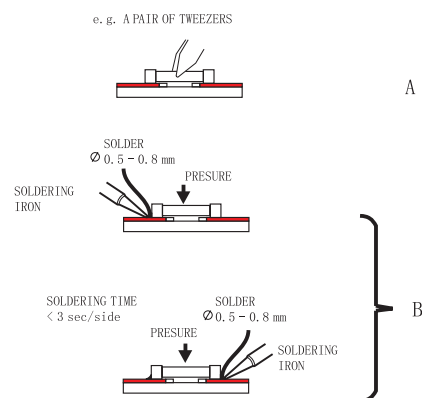
preferably be equipped with a thermal control (soldering temperature: 225 to 250 C).

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

1.4 Attachment of SMDs

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

Fig. 2 MOUNTING

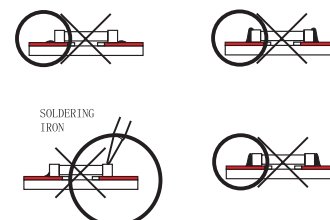


2. Caution when attaching SMDs

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



Fig.3 Examples



3. Lead-free product identification

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



4. Lead-free product repair instruction

4.1 Use only lead-free Solder Alloy 0622 149 00106(1.2mm SAC305) or 0622 149 00108(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°C, 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°C-380°C is reached and stabilized at the solder joint.

Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C 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°C.

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°C) 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.

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(min.) Resistance required: $\leq 0.09 + R_{ohm}$, R is the resistance of the mains cord.
Test time (min.)	3 seconds	1 second	
Trip current (Tester)	set at 100 uA for Max. limitation; set at 0.1 uA for Min. Limitation	5 mA	
Ramp time (Tester)	set at 2 seconds		

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

3. Equipments and Connection

3.1. Equipments

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

3.2. Connection

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

Clip

Clip

(ChenHwa 9032 tester)

Video cable

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

Grounding screw

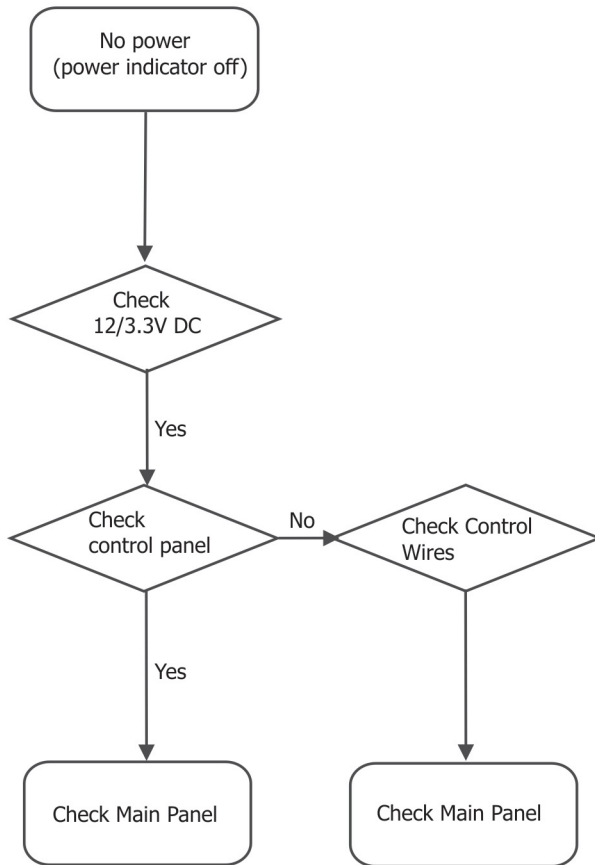
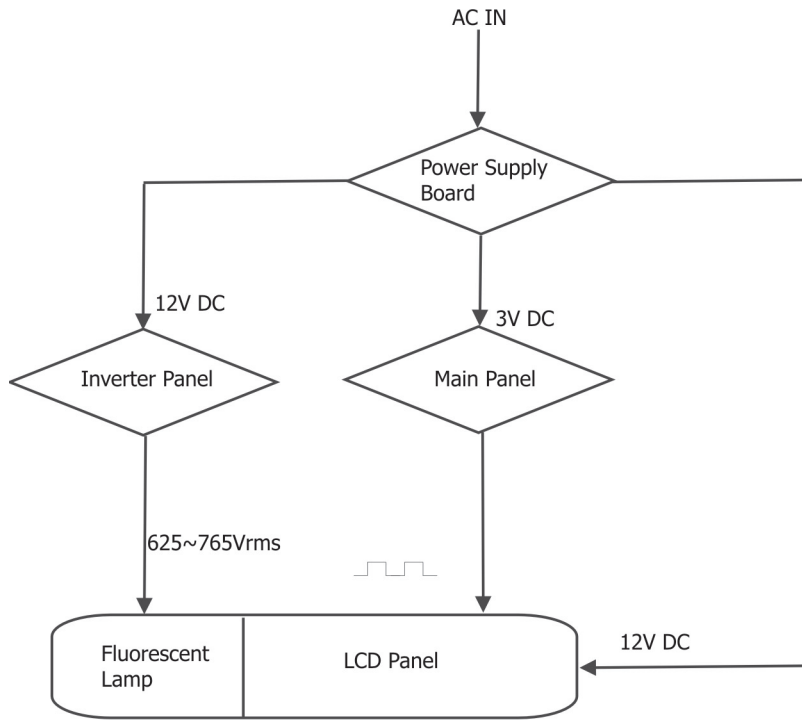
Connect the power cord to the monitor.

Power outlet

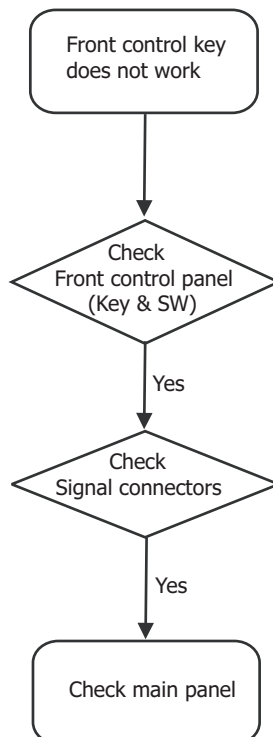
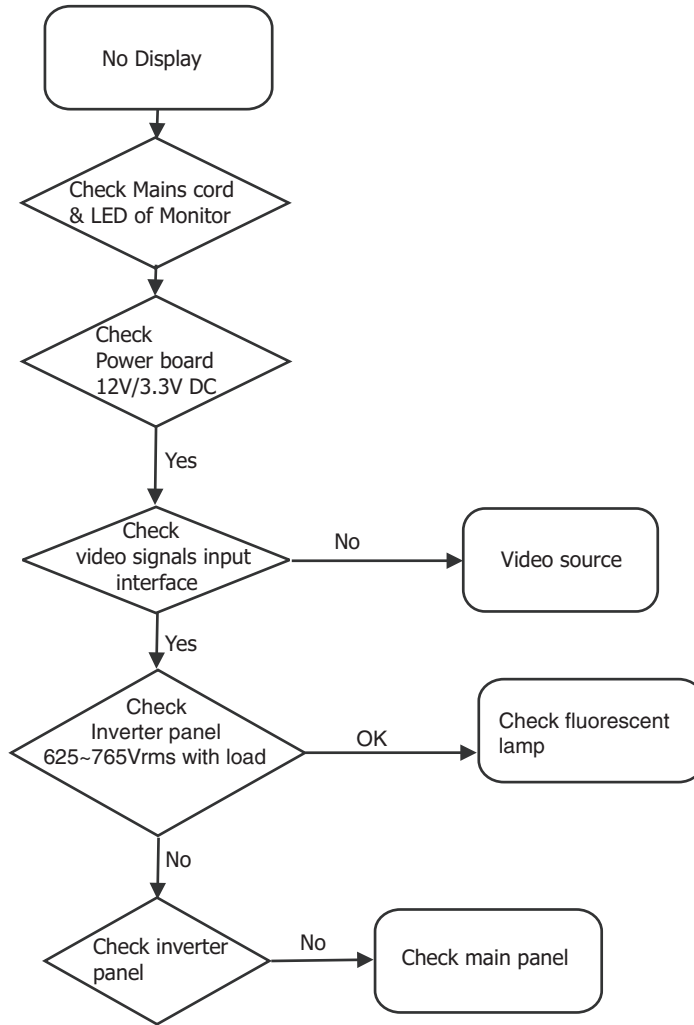
(Rear view of monitor)

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

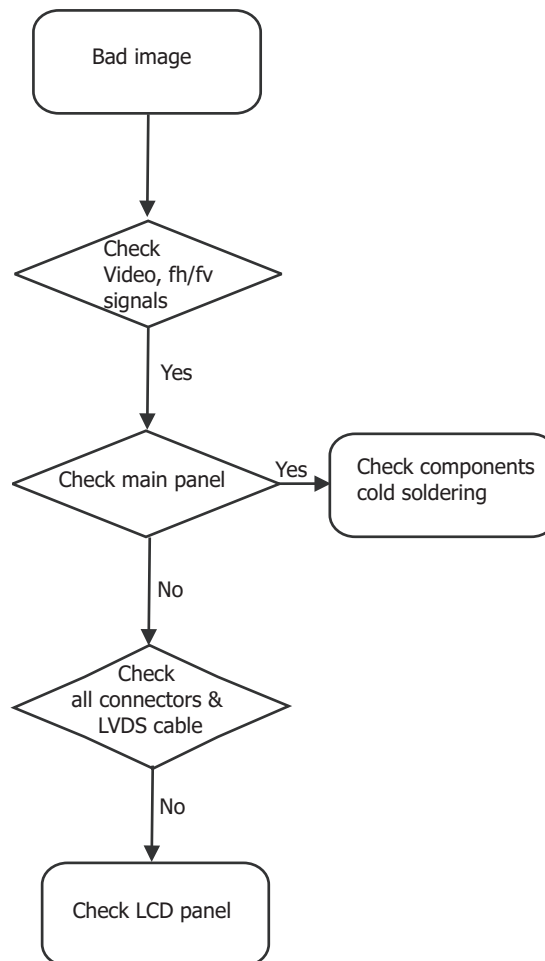
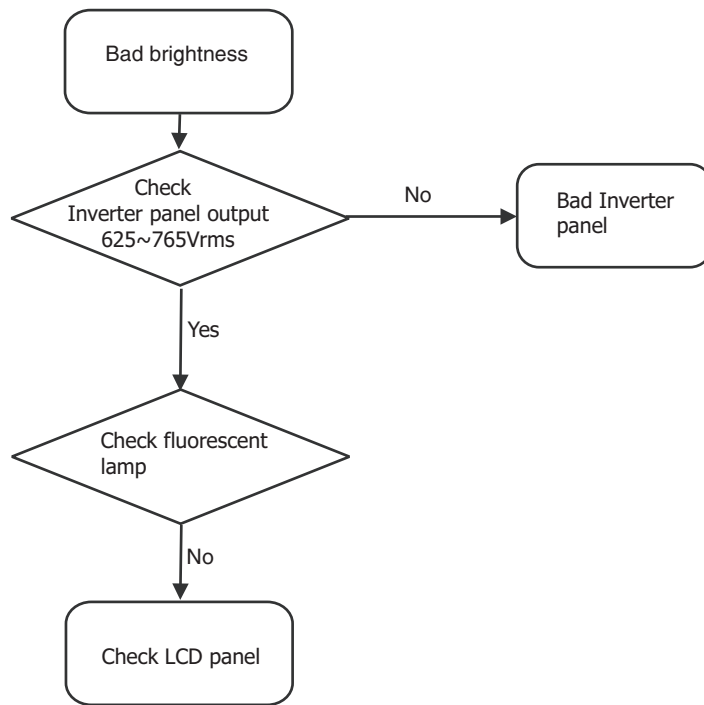
Repair Flow Chart



Repair Flow Chart



Repaire Flow Chart





Introduction

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

SmartManage Features and Benefits

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

Philips SmartManage includes the following major features:

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

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

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

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

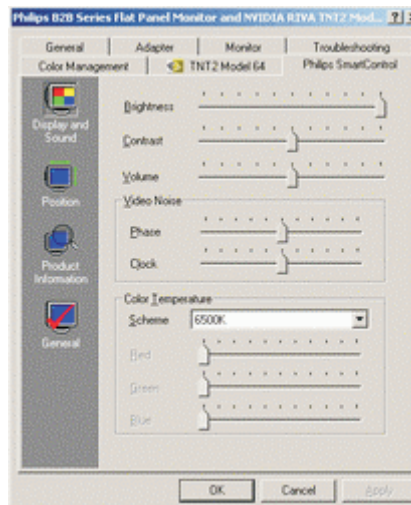
2. Installation

How to download "SmartControl Installation " file:

1. Visit [http:// www.philips.com](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.

- and color temperatures.



- 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.



- Product Information

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

TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

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

Fire and Shock Hazard

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

* 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.

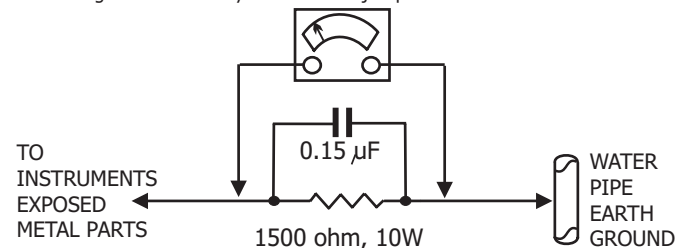
X-radiation

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 operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

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



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10w resistor paralleled by a 0.15uf. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current 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.