

Service
Service
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- 190P6ES/00
- 190P6EB/27
- 190P6EG/00
- 190P6EG/93
- 190P6EB/00
- 170P6EB/93
- 170P6EG/00
- 170P6EG/93
- 170P6ES/00
- 170P6EB/27



Service Manual

Horizontal frequencies
30 - 83kHz

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SAFETY NOTICE

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

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

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

◀◀ Go to cover page

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

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.



1. General

1.1.1 Product description

190P6 is the 6th generation of Hudson 19" TFT Flat Panel Display Monitor. The monitor featured with both DVI-D and analog signal input interface, and modularized as a display unit with embedded universal AC power supplies inside monitor main body. The power button and display control buttons (tact switch type) are on the front of the monitor. The monitor shall support an internal scaler to automatically enable the monitor to display lower resolution video modes into 1280 x 1024 full screen display. The image can be adjusted through OSD control board. These adjustments can be stored on a board memory including 34 pre-set modes and 16 factory pre-set modes.

1.1.2 Destination: AP, CN, EE, GB, LA, ME, SH, WE

1.2. Basic data

1.2.1 LCD panel

- 1.2.1.1 Type NR. : LM190E04-A4K4 (LPL)
- Number of Pixels. : 1280 (H) x1024 (V)
- Physical Size. : 396.0(w)*324.0(h)*15.5(d) mm
- Pixel Pitch. : 0.098 (per one triad) x 0.264 mm
- Color pixel arrangement : RGB vertical stripes
- Support Color. : 16.2M colors (RGB 8 bits data)
- Display Mode. : Normally White
- Backlight. : CCFL edge light system
- Active area. (WXH). : 376.32 x 301.056mm (19" diagonal)
- Viewing Angle. : Vertical 140 degree, Horizontal 140 degree (CR=10)
- Contrast ratio. : 500:1
- White luminance. : 250nits (Typ)

1.2.2. Power supply

Main Voltage: AC 90 - 135 Vrms and 170 -264 Vrms, 50/60±2 Hz
 Power consumption: 55 watts max (full loading, with 4X USB devices on downstream ports, each device consumes 0.5 Amp)
 Operating < 43W(typical value; no device loading on USB downstream port(s)) standby<1W.
 DC power switch off < 1W (no device loading on USB downstream port(s))

Power cord length: 1.5M
 Power cord type: 3 lead with earth plug
 Power indicator: LED (ON: green, Standby: amber)
 Auto power saving: EPA, Nutek, VESA, DPMS,

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<55W	Green /With Audio and full USB loading
On	On	On	Active	<35W	Green / Without Audio and USB loading
Stand-by	Off	On	Blanked	<1W	Amber LED
Suspend	On	Off	Blanked	<1W	Amber LED
Off	Off	Off	Blanked	<1W	Amber LED
DC Power off			N / A	<1W	LED Off

Note :

- A. To achieve under 1 Watt power saving, make sure there is no device load on USB downstream port(s).
- B. To achieve under 1 Watt power saving when "Stand-Alone Audio" feature is selected On and system is in Sleep Mode, follow below two conditions :
 1. Volume has to be adjusted to 0% prior to measurement.
 2. Make sure there is no device load on USB downstream port(s).

1.2.3. Horizontal scan: 30 - 83 KHz

1.2.4. Vertical scan: 56 - 76 Hz

1.2.5. Input signals

The input signals can be applied in two different modes:

1). VESA Analog

The video input consists of red, green, and blue signals. The video signals are analog levels, where 0V corresponds to black and 700mV is the maximum signal amplitude. Input impedance of video pins is 75 ohm +/- 1%.

The capability of sync signal inputs shall include separate sync, composite sync and sync on green. input impedance: 2k2 ohms

The signals are defined as follow:

- Separate sync : TTL level, Positive/Negative
- Composite sync : TTL level, Positive/Negative
- Sync on green H-sync : TTL level, Positive/Negative

2). Intel DVI Digital

Input signal: Four channel TMDS signals

Signal source: pattern generator format (Refer to the SPEC)

1.2.6 Audio

Amplifier and headphone section :

Output power: 2 x 2Wrms into 16 Ohm

Input sensitivity: 500mVrms

Frequency range: 100Hz - 20KHz

Volume control keypads are at the front control panel.

L/R input via 1.8m hard-wired cable with lime green 3.5mm plug

Headphone connection will mute speakers.

Loudspeaker section :

Rated input : 2.0W

Max. input : 3.0W

Impedance : 16 Ohm +/- 15%

Sensitivity : 76 dB +/-3 dB (at 1W/1m at 1KHz)

1.2.7 Input connectors

(1) Input analog D-sub connector pin assignment

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

◀◀ Go to cover page

(2) Input DVI-D connector pin assignment

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

Signal interface

15Pins, D-sub male with DDC-2B Pin assignments
24Pins, DVI-D male with DDC-2B Pin assignments

Sync polarity:

H-sync positive/negative
V-sync positive/negative



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.

1. General

1.1.1 Product description

170P6 is the 6th generation of Hudson 17" TFT Flat Panel Display Monitor. The monitor featured with both DVI-D and analog signal input interface, and modularized as a display unit with embedded universal AC power supplies inside monitor main body. The power button and display control buttons (tact switch type) are on the front of the monitor. The monitor shall support an internal scaler to automatically enable the monitor to display lower resolution video modes into 1280 x 1024 full screen display. The image can be adjusted through OSD control board. These adjustments can be stored on a board memory including 34 pre-set modes and 16 factory pre-set modes.

1.1.2 Destination: AP, CN, EE, GB, LA, ME, SH, WE

1.2. Basic data

1.2.1 LCD panel

Type NR. : LM170E01-A6K3/A6K4 (LPL)
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 358.5(w)*296.5(h)*17.0(d) mm
 Pixel Pitch. : 0.264 (per one triad) x 0.264 mm
 Color pixel arrangement. : RGB vertical stripes
 Support Color. : 16.2M colors (RGB 8 bits data)
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 337.92 x 270.336mm (17" diagonal)
 Viewing Angle. : Vertical 140 degree, Horizontal 140 degree (CR=10)
 Contrast ratio. : 500:1
 White luminance. : 250nits (Typ)

1.2.2. Power supply

Main Voltage: AC 90 - 135 Vrms and 170-264 Vrms, 50/60±2 Hz
 Power consumption: 55 watts max (full loading, with 4X USB devices on downstream ports, each device consumes 0.5 Amp) Operating < 35W(typical value; no device loading on USB downstream port(s)) standby<1W.
 DC power switch off < 1W (no device loading on USB downstream port(s))
 Power cord length: 1.5M
 Power cord type: 3 lead with earth plug
 Power indicator: LED (ON: green, Standby: amber)
 Auto power saving: EPA, Nutek, VESA, DPMS,

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<55W	Green /With Audio and full USB loading
On	On	On	Active	<35W	Green / Without Audio and USB loading
Stand-by	Off	On	Blanked	<1W	Amber LED
Suspend	On	Off	Blanked	<1W	Amber LED
Off	Off	Off	Blanked	<1W	Amber LED
DC Power off			N / A	<1W	LED Off

Note :

- A. To achieve under 1 Watt power saving, make sure there is no device load on USB downstream port(s).
- B. To achieve under 1 Watt power saving when "Stand-Alone" Audio feature is selected On and system is in Sleep Mode, follow below two conditions :

1. Volume has to be adjusted to 0% prior to measurement.

2. Make sure there is no device load on USB downstream port(s).

1.2.3. Horizontal scan: 30 - 83 KHz

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The input signals can be applied in two different modes:

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The video input consists of red, green, and blue signals. The video signals are analog levels, where 0V corresponds to black and 700mV is the maximum signal amplitude. Input impedance of video pins is 75 ohm +/- 1%.

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Separate sync	TTL level, Positive/Negative
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Amplifier and headphone section :

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Input sensitivity: 500mVrms

Frequency range: 100Hz - 20KHz

Volume control keypads are at the front control panel.

L/R input via 1.8m hard-wired cable with lime green 3.5mm plug

Headphone connection will mute speakers.

Loudspeaker section :

Rated input	2.0W
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Impedance	16 Ohm+/- 15%
Sensitivity	76 dB +/-3 dB (at 1W/1m at 1KHz)

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(1) Input analog D-sub connector pin assignment

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

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(2) Input DVI-D connector pin assignment

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

Signal interface

15Pins, D-sub male with DDC-2B Pin assignments

24Pins, DVI-D male with DDC-2B Pin assignments

Sync polarity:

H-sync positive/negative

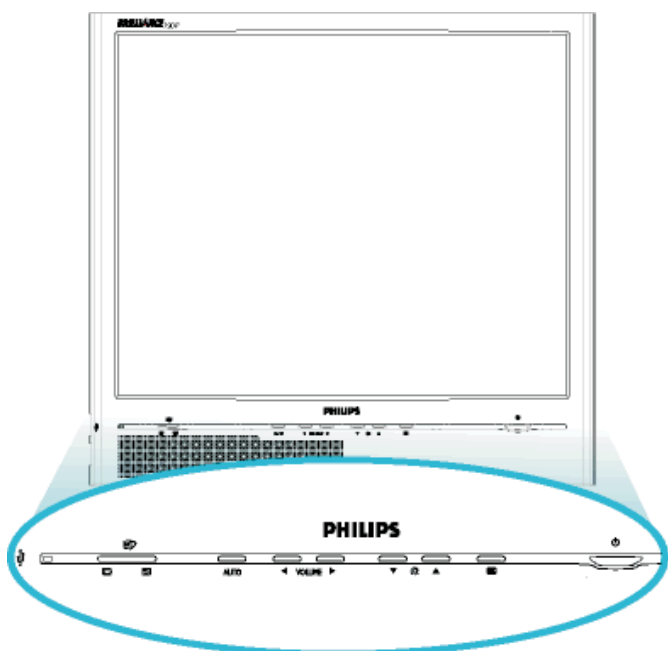
V-sync positive/negative



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.

Front view



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

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

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

VOLUME VOLUME hotkey. When the LEFT and RIGHT arrow buttons are pressed, the adjustment controls for VOLUME will show up.

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

⏻ POWER button switches your monitor on.

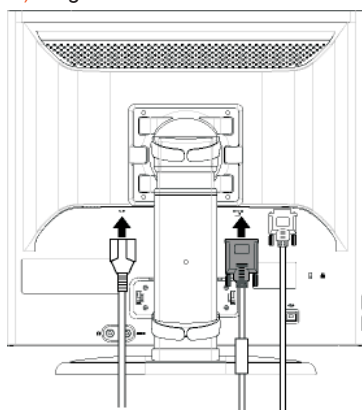
AUTO Automatically adjust the horizontal position, vertical position, phase and clock setting.

LightFrame™ hotkey for mode-switching between full-screen mode and multi-window mode.

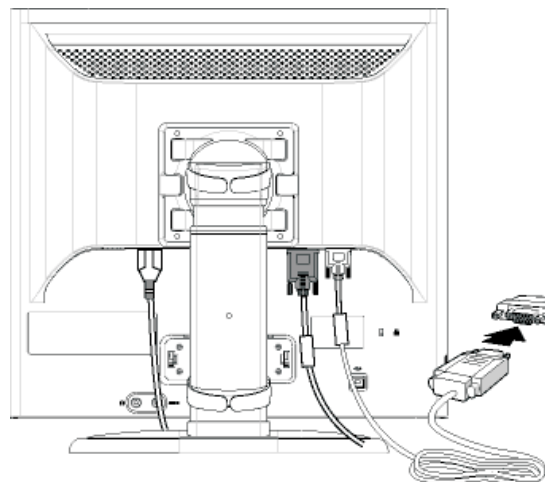
USB Hub for versatile peripheral connections

Connecting to PC

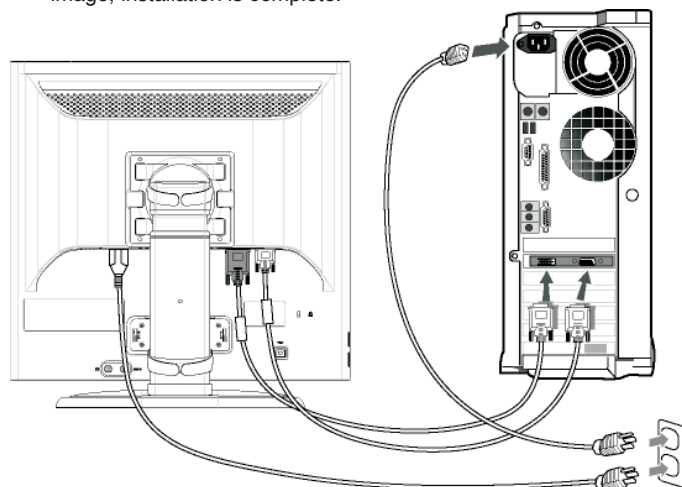
- 1) Plug in the cables into connectors



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

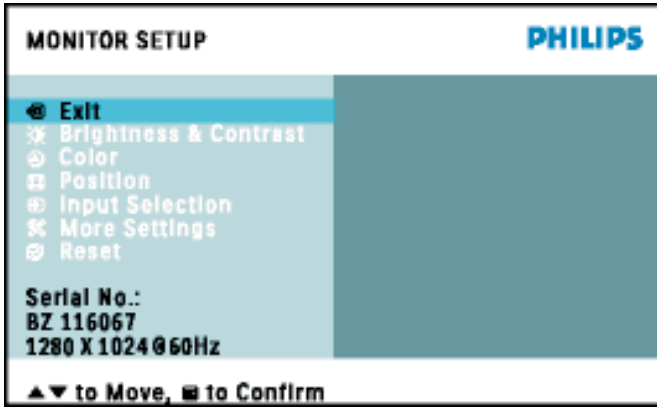


- 2) Connect to PC
 - a) Turn off your computer and unplug its power cable.
 - b) Connect the monitor signal cable to the video connector on the back of your computer.
 - c) Plug the power cord of your computer and your monitor into a nearby outlet.
 - d) Turn on your computer and monitor. If the monitor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



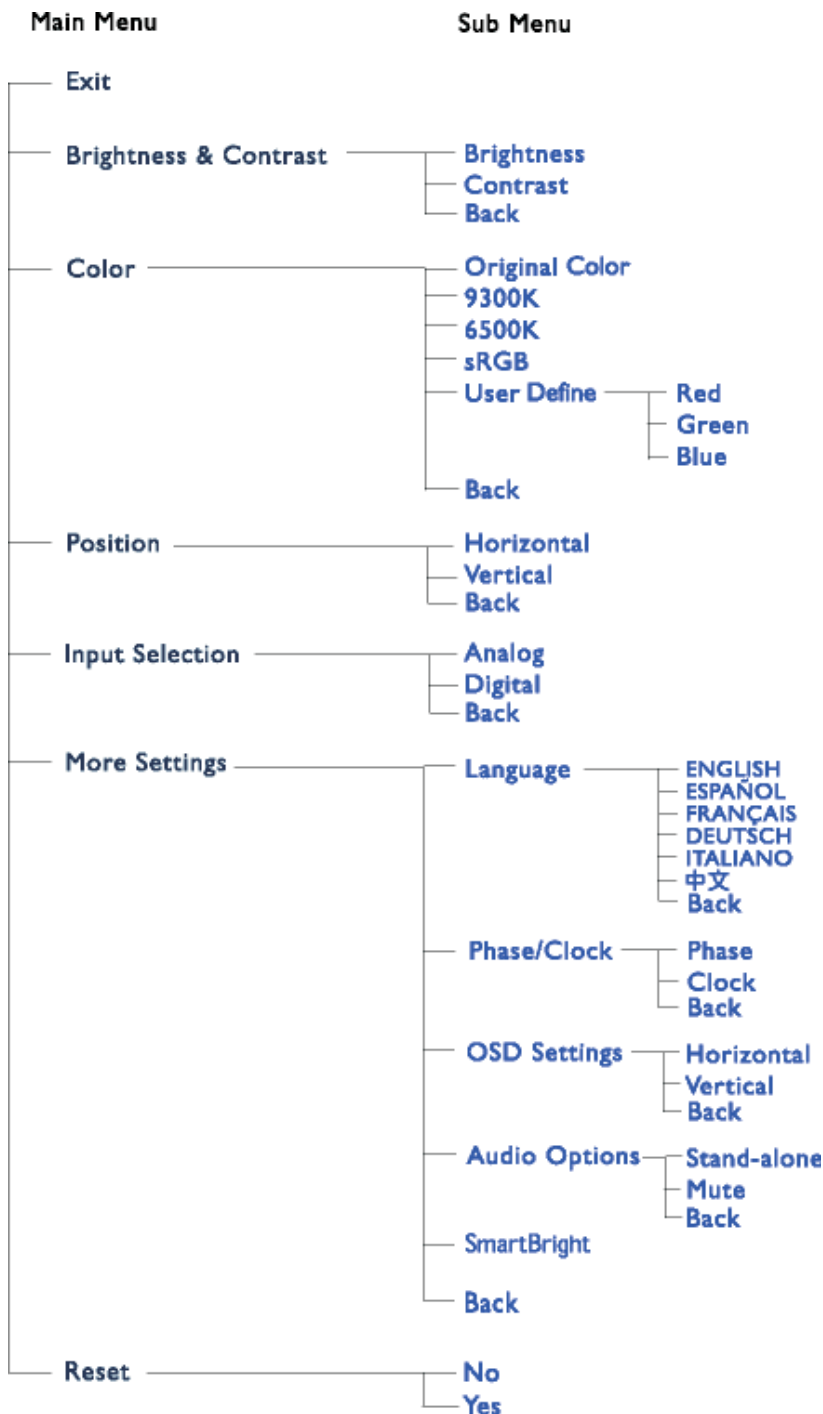
◀◀ Go to cover page

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 :

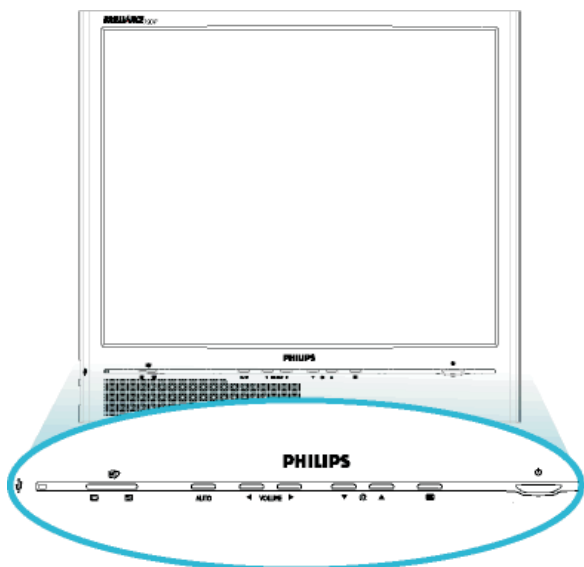


In the OSD shown left users can press ▲▼ buttons at the front bezel of the monitor to move the cursor, [OK] to confirm the choice or change, and [Left/Right] to adjust/select the change.

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.



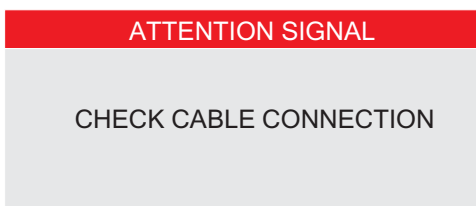
Unlock OSD function

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



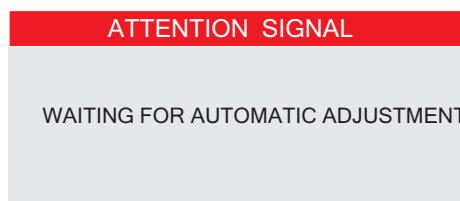
CANNOT DISPLAY THIS VIDEO MODE..

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.

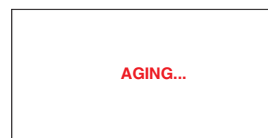
Bring up:



After 15 seconds, bring up:



After 15 seconds, bring up:



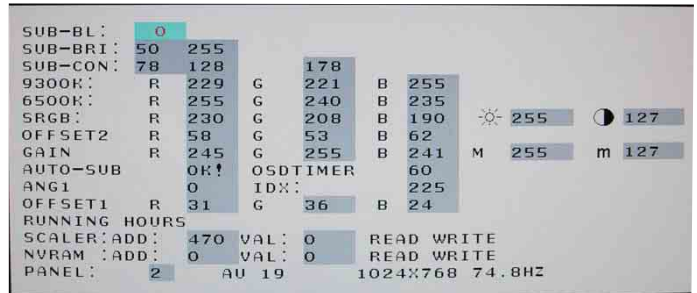
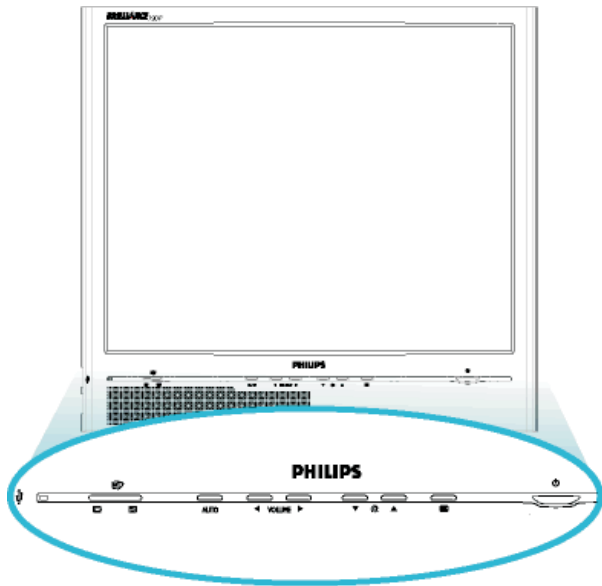
After 15 seconds, bring up:



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

Go to cover page

Front Control Panel

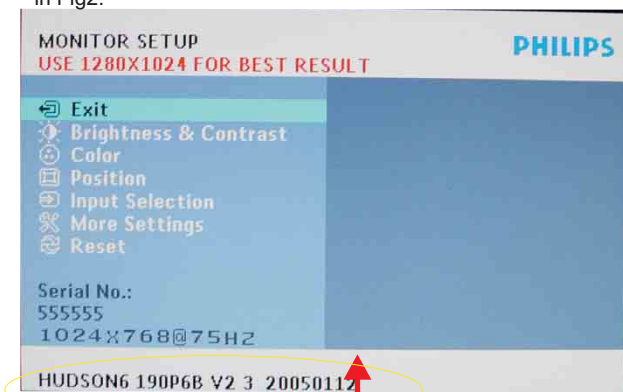


- BL : Blacklevel value
- SUB-BRI : Brightness value range(Min Max)
- SUB-CON : Contrast value range(Min Mid Max)
- SRGB-B : Brightness of sRGB
- SRGB-C : Contrast of sRGB
- Gain-m : Minimum value of User Gain
- Gain-M : Maximum value of User Gain
- AUTO-SUB: To do Auto color function when push Menu key in white pattern
- OSDTIMER : OSD time out control(sec)
- ANG1 : For analog only project control (0: Dual, 1: Analog only)
- IDX : Limit current of inverter
- SCALER : Read/Write scaler register
- NVRAM : Read/Write eeprom address
- Panel : LG (LG.Philips panel)

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 it comes out "Windows screen"] => then release all buttons
- Step3: Press OK "OK" button, bring up Factory mode indication as shown in Fig2.



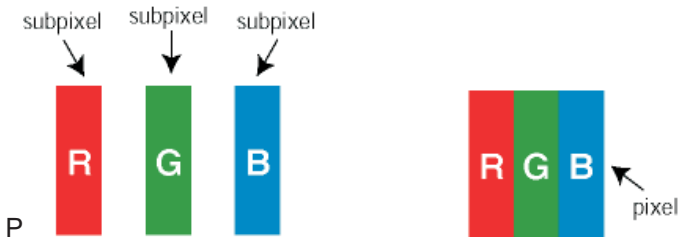
Factory Mode indicator

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

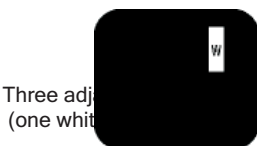
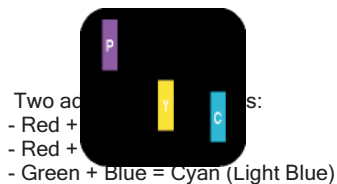
Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or subpixel defects on the TFT LCD panels used in flat panel monitors are sometimes unavoidable. No manufacturer can guarantee 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 .



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:



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:



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 DOT DEFECTS		ACCEPTABLE LEVEL		
MODEL	190P6	190B6	190S6	
1 lit subpixel	0	0	3 or fewer	
2 adjacent lit subpixels	0	0	1 or fewer	
3 adjacent lit subpixels (one white pixel)	0	0	0	
Distance between two bright dot defects*	0	0	25 mm or more	
Total bright dot defects of all types	0	0	3 or fewer	
BLACK DOT DEFECTS		ACCEPTABLE LEVEL		
MODEL	190P6	190B6	190S6	
1 dark subpixel	0	0	5 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	5 or fewer	
TOTAL DOT DEFECTS		ACCEPTABLE LEVEL		
MODEL	190P6	190B6	190S6	
Total bright or black dot defects of all types	0	0	5 or fewer	

Pixel Defect Policy

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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

Front View



Back View



Step1. Remove the base
-Remove the screws as shown in Fig.3 & Fig.4



Fig.3



Fig.4

Step2. Remove the Front Bezel
-Open the cover and remove the one screw as shown in Fig.5, Fig.6
-Use the thin " | " screw driver to open the clicks as shown in Fig.7-9



Fig.5



Fig.6



Fig.7

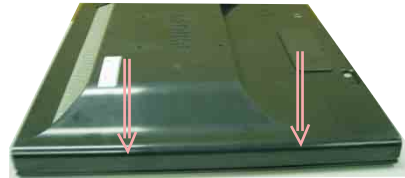


Fig.8

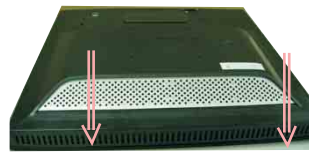


Fig.9

Step3.Remove the Back cover
- Remove the screws and disconnect the connectors as shown in Fig.10 , Fig.11 Fig.12, Fig.13 then remove the AUDIO board, USB board and control board
-Use the thin " | " type screw driver to open the clicks as shown in Fig.10



Fig.10

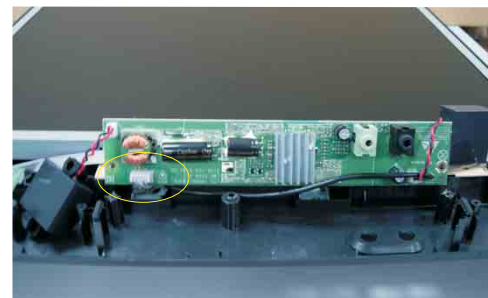


Fig.11



Fig.12

◀◀ Go to cover page



Fig. 13

Step4. Remove the Metal frame board
- Remove the screws and then remove the metal frame as shown in Fig.15 Fig.14

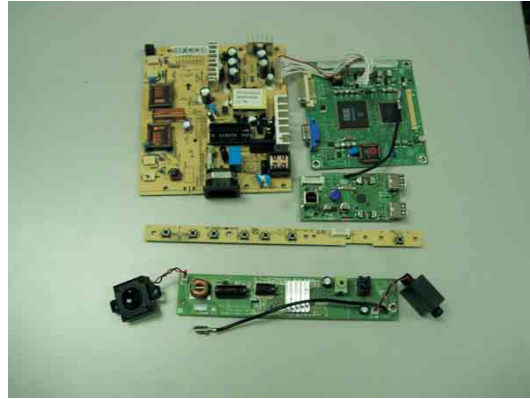


Fig.17

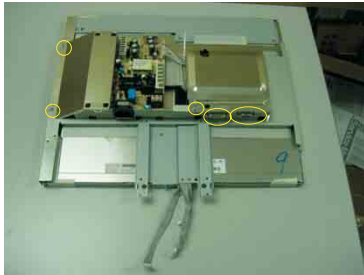


Fig.14

.....
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. 15

Step 5. Remove the scaler and power board.

- Disconnect the connectors and remove unscrew the screws as shown in Fig.15
- Remove the scaler and power board as shown in Fig.16 Fig.17



Fig. 16

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

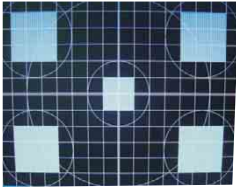


Fig. 1

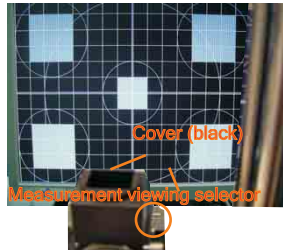


Fig. 2

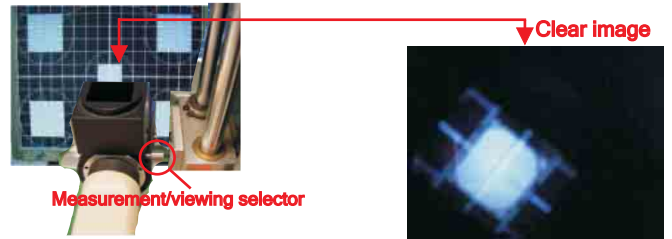
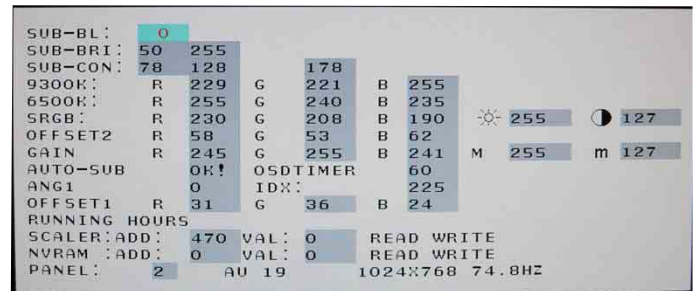


Fig.4

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:



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 "P" " button untill comes out "Windows screen"]
=> then release all buttons
- Step3:
Press OK "OK" button, bring up Factory mode indication as shown in Fig3.

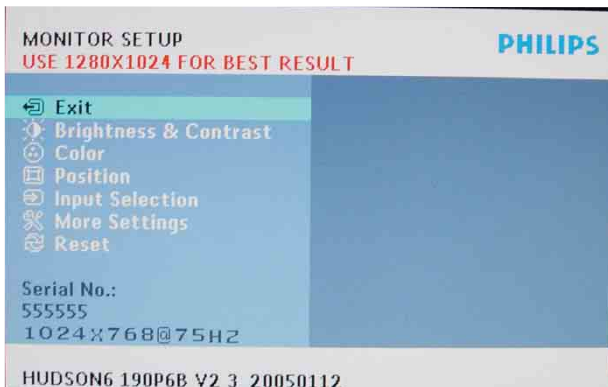


Fig. 3

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

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

- 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.

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

Warning Message Table

 Go to cover page

Item	Attention Signals	Display Time	Condition
1	CANNOT DISPLAY THIS VIDEO MODE, CHANGE COMPUTER DISPLAY INPUT TO 1280X1024 @60Hz	30 mins	This warning appears when the input signal from your computer is not in a standard video mode or is out of the monitor's scanning range. After 30 mins, monitor enters sleeping mode.
2	NO VIDEO INPUT	30mins	This message appears when there is no signal input but with cable while AC or DC power on. After 30 mins, monitor enters sleeping mode
3	CHECK CABLE CONNECTION	30mins	This message appears when a signal cable is disconnected while monitor is working, after 30 mins, monitor enters sleeping mode
4	ENTERING SLEEP MODE	3 secs	This message appears when monitor is about to enter power saving mode
5	WAITING FOR AUTOMATIC ADJUSTMENT	Till auto adjustment finished	This message displayed when the auto adjustment button is pressed. It disappears when automatic adjustments are completed
6	USE 1280X1024 FOR BEST RESULT	On top of OSD main menu	The message will show up at the top of the OSD main menu in red color when the input resolution is not the 1280x1024.
7	OSD MAIN CONTROLS LOCKED	3 secs / or Till "OSD MAIN CONTROLS UNLOCKED" appear	This message will appear 3 seconds to indicate the OSD MAIN CONTROLS status when to lock or un-lock it by pressing "MENU(OK)" button for more than 10 seconds while there is video input from PC. This function provides the alternative that user can lock all the OSD main control in case user don t want the FOS performance setting to be changed, for instance, during Commercial exhibition
8	OSD MAIN CONTROLS UNLOCKED	3 secs	This message will appear 3 seconds to indicate the OSD MAIN CONTROLS status when to un-lock it by pressing "MENU(OK)" button for more than 10 seconds while there is video input from PC
9	THIS IS 85HZ OVERSCAN, CHANGE COMPUTER DISPLAY INPUT TO 1280X1024@60HZ	10 mins	This message will appear 5 seconds in every 60 seconds for 10 minutes when the input of PC video timing is at 85Hz mode. Remark: AUTO is still functional in this mode
10	the window of " MONITOR SETUP"	60 secs	This message will appear when the " OK " button is pressed.
11	the window of "BRIGHTNESS"	60 secs	This message will appear when the BRIGHTNESS button is pressed.
12	"SELECTED INPUT NOT AVAILABLE"	3 secs	When just one input (analog or digital), press" input switch "or hot key, then after show this warning message 3 sec, return to original input
13	SECURITY PROTECTED, THIS MONITOR IS GOING TO ENTER POWER SAVING MODE IN 15 SECONDS	15 secs	This warning appears when the security was set ON and someone takes out from the client PC
14	ENTER POWER SAVING MODE	1 min	This warning appears when Asset management Server sends power saving command to client PC
15	the window of "VOLUME "	60 secs	This message will appear when the VOLUME button is pressed.

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.
Screen 	<ul style="list-style-type: none"> Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). Check to see if the monitor cable has bent pins. Make sure the computer is turned on.
Screen says 	<ul style="list-style-type: none"> Make sure the vertical sync of input signal is within the range of 56 ~ 75 Hz. 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.
Imaging Problems	
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	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 More Settings of Phase/Clock in OSD Main Controls.
Horizontal flicker appears 	<ul style="list-style-type: none"> Press the Auto button. Eliminate the vertical bars using the More Settings of Phase/Clock 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. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer).

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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, dark, and white dots remains	The remaining dots are normal characteristic of the liquid crystal used in today's technology

1. General points

- 1.1 During the test and measuring, supply a distortion voltage to the apparatus via an isolated transform internal resistance.
- 1.2 All measurements mentioned hereafter are carried mains voltage (90 - 132 VAC for USA version, 19! EUROPEAN version, or 90 - 264 VAC for the moc range power supply, unless otherwise stated.)
- 1.3 All voltages are to be measured or applied with res unless otherwise stated.
Note: do not use heat-sink as ground.
- 1.4 The test has to be done on a complete set includin after 30 minutes warm-up at least in a room with t of 25 +/- 5 degree C.
- 1.5 All values mentioned in these test instruction are c of a well aligned apparatus, with correct signal.
- 1.6 The letters symbols (B) and (S) placed behind the instruction denotes
(B): carried out 100% inspection at assembly
(S): carried out test by sampling
- 1.7 The white balance (color temperature) has to be te subdued lighted room.
- 1.8 Repetitive power on / off cycle are allowed except i avoided within 6 sec.

2. Input signal

2.1 Signal type

2.1.1 Video signal input

Signal source: pattern generator format as attachn (refer to Spec) Reference generator: QuantumDat

The input signals can be applied in two different n

1). VESA Analog

The video input consists of red, green, and blue sign
The video signal are analog levels, where 0V corres black and 700mV is the maximum signal amplitude.
Input impedance of video pins is 75 ohm +/- 1%.

2). Intel DVI Digital

Input signal: Four channel TMDS signals

2.1.2 Sync signal input

The capability of sync signal inputs shall include sep composite sync and sync on green. input impedance
The signals are defined as follow:

Separate sync TTL level, Positive/Neg
Composite sync TTL level, Positive
Sync on green H-sync TTL level, Positive

Signal source: pattern generator format as attachment (i

Reference generator: QuantumData 802G

2.2 Input signal mode Pre-set 34 modes

PRESET VIDEO RESOLUTION

#	Resolution	H-Frequency	Pixel rate	V-Frequency	Comment
1	640X350	31.5K	25.175	70Hz	IBM VGA 10h
2	720X400	31.5K	28.322	70Hz	IBM VGA 3h
3	640X480	31.5K	25.175	60Hz	
4	640X480	35.0K	30.24	67Hz	
5	640X480	37.9K	31.5	72Hz	
6	640X480	37.5K	31.501	75Hz	
7	640X480	43.3K	36	85Hz	
8	800X600	35.2K	36	56Hz	
9	800X600	37.9K	40	60Hz	
10	800X600	48.1K	50	72Hz	
11	800X600	46.9K	49.498	75Hz	
12	800X600	53.7K	56.251	85Hz	
13	832X624	49.7K	57.28	75Hz	MAC

14	1024X768	48.4K	65	60Hz	
15	1024X768	56.5K	75	70Hz	
16	1024X768	60.0K	78.75	75Hz	
17	1024X768	61.1K	83.096	76Hz	IBM XGA-2
18	1024X768	68.7K	94.5	85Hz	
19	1152X864	54.0K	79.9	60Hz	non-VESA
20	1152X864	67.5K	108	75Hz	
21	1152X864	63.9K	94.5	70Hz	non-VESA
22	1152X870	68.7K	100	75Hz	MAC
23	1152X900	61.8K	92.94	66Hz	SUN Mode IV
24	1152X900	71.8K	108	76Hz	SUN Mode II
25	1280X960	60.0K	108	60Hz	
26	1280X960	75.0K	129.895	75Hz	non-VESA
27	1280X1024	64.0K	108	60Hz	
28	1280X1024	71.7K	117	67Hz	SUN Mode V
29	1280X1024	76.0K	130.223	72Hz	DOS/V
30	1280X1024	80.0K	135	75Hz	
31	1280X1024	81.1K	135.008	76Hz	SUN Mode I
32	688X556	31.3K	27	50Hz	TV-PAL
33	960X720	44.76K	57.58	60Hz	
34	960X720	56.4K	72.42	75Hz	

2.3 Allowed 85 Hz overscan signal mode specified

Once the signal input of PC is 85Hz, this monitor is able to display at least for 10 minutes. An attention signal appears and shows THIS IS 85HZ OVERDRIVE, CHANGE COMPUTER DISPLAY INPUT TO 1280X1024 @ 60 HZ

Dot rate (MHz)	H. Freq (KHz)	Mode	Resolution	V. Freq (Hz)
36.000	43.269	VESA	640 * 480	85.008
5 56.250	53.674	VESA	800 * 600	85.061
94.500	68.677	VESA	1024 * 768	84.997

3. Power Supply (S)

3.1 Setup the AC I/P at 90VAC, and Output DC loading at 12V 3.7 Amp, 5V 2.1 Amp, The DC output voltages are 5V +/- 0.25V and 12V +/- 1.2V.

4. Display Adjustment

Note :

Prior to display adjustment, make sure Auto Brightness function is set to off (Refer to OSD tree

4.1 Access to factory mode (RS232) in auto-alignment system

The communication protocol switch to RS232 .

4.2 Auto color adjustment (B)

Apply a 640x480/31kHz/60Hz signal with 16 gray pattern, set brightness to 100%, and contrast to 50%.

Adjust the R. G. B offset, and gain to calibrate the color smoothly and 64-gray level distinguishable. Check all pre-setting 34 modes.

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4.3 Adjustment of WHITE-D (B)

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

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

Use Minolta CA-110 for color coordinates and luminance check.

Luminance is > 200 Nits in the center of the screen when brightness is set to 100% and contrast is set to 50%.

4.4 Adjustment of sRGB

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

	sRGB
x(center)	0.313 ± 0.020
y(center)	0.329 ± 0.020
Ynits	180 ± 10

4.5 EEPROM presetting (B)

After finishing all the adjustment, set:

- Brightness to 100%
- Contrast to 50%
- OSD position at middle of screen
- COLOR ADJUST to 6500K color temperature.
- Stand-Alone set to Off
- Smart Bright set to Off

1. General points

- 1.1 During the test and measuring, supply a distortion free AC mains voltage to the apparatus via an isolated transformer with low internal resistance.
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- 1.3 All voltages are to be measured or applied with respect to ground, unless otherwise stated.
Note: do not use heat-sink as ground.
- 1.4 The test has to be done on a complete set including LCD panel after 30 minutes warm-up at least in a room with temperature of 25 +/- 5 degree C.
- 1.5 All values mentioned in these test instruction are only applicable of a well aligned apparatus, with correct signal.
- 1.6 The letters symbols (B) and (S) placed behind the test instruction denotes
(B): carried out 100% inspection at assembly line
(S): carried out test by sampling
- 1.7 The white balance (color temperature) has to be tested in subdued lighted room.
- 1.8 Repetitive power on / off cycle are allowed except it should be avoided within 6 sec.

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Signal source: pattern generator format (refer to spec)

Reference generator: QuantumData 802G

The input signals can be applied in two different modes:

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Input signal: Four channel TMDS signals

2.1.2 Sync signal input

The capability of sync signal inputs shall include separate sync, composite sync and sync on green. input impedance: 2k2 ohms

The signals are defined as follow:

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Sync on green H-sync TTL level, Positive/Negative

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4. Display Adjustment

Note :

Prior to display adjustment, make sure Auto Brightness function is set to off (Refer to OSD tree)

- 4.1 Access to factory mode (RS232) in auto-alignment system
The communication protocol switch to RS232 .
- 4.2 Auto color adjustment (B)
Apply a 640x480/31kHz/60Hz signal with 16 gray pattern, set brightness to 100%, and contrast to 50%.
Adjust the R. G. B offset, and gain to calibrate the color smoothly and 64-gray level distinguishable.
Check all pre-setting 34 modes.
- 4.3 Adjustment of WHITE-D (B)
Apply a 1280*1024 / 60Hz signal with white pattern, set brightness to 100%, and contrast to 50%. Adjust the R, G, B Sub-Gain, for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be;

	9300°K	6500°K
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Use Minolta CA-110 for color coordinates and luminance check.

Luminance is > 200 Nits in the center of the screen when brightness is set to 100% and contrast is set to 50%.

4.4 Adjustment of sRGB

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

	sRGB
x(center)	0.313 ± 0.020
y(center)	0.329 ± 0.020
Ynits	180 ± 10

4.5 EEPROM presetting (B)

After finishing all the adjustment, set:

- Brightness to 100%
- Contrast to 50%
- OSD position at middle of screen
- COLOR ADJUST to 6500K color temperature
- Stand-Alone set to Off
- Smart Bright set to Off

LightFrame™ Digital Reality (LightFrame™ DR) for Windows

Introduction

Philips LightFrame™ DR feature enriches your photo and video experience with preset modes ideal for your favorite applications: Internet, TV/video viewing, photos and gaming. The LightFrame™ DR engine optimizes brightness, sharpness, contrast, color, JPG noise for photos and skin tone for videos.

Installation

First things first: Philips LightFrame™ DR only works with latest Philips LCD Monitor which is specially built to use this software. That is LightFrame™ DR can only work on 170X5, 190X5 or 170P6/190P6 or later version LCD monitor. Earlier Philips monitors or other manufacturers monitors will not work with this picture enhancement software. You can identify compatible Philips monitors by the LightFrame logo on the front of the monitor.

LightFrame™ DR works with true Windows-based programs and DOS-based programs that operate in a Windows environment. It does not work with DOS-based programs operating only in a DOS environment.

To control the LightFrame™ DR feature in your monitor, you'll want install the LightFrame™ DR application found on this CD-ROM.

To install LightFrame™ DR, place the CD in your CD-ROM drive.

When the CD menu appears on your screen,

- 1) select preferred language
- 2) select model number (17P6 or 190P6)
- 3) click on *Install LightFrame™ Digital Reality*.

Follow the on-screen prompts to properly install the program. The software checks to see if you have a compatible monitor. You must agree to the license terms in order to install the software.

After installation, the LightFrame™ DR shortcut icon automatically appears at your desktop, click it to load the control bar on screen.



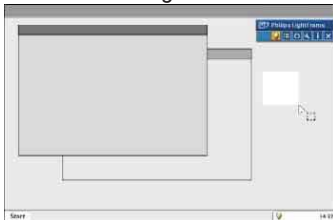
Use Tips

1. Cursor with a yellow light bulb versus a blue light bulb

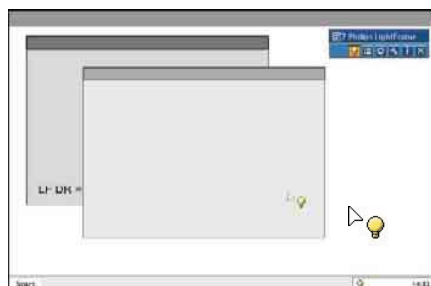
Your mouse pointer takes the shape of a light bulb to indicate that LightFrame™ DR is ready to activate or deactivate a target window that contains photos, videos or other content that can be enhanced. A yellow light bulb means that you are moving over a window where LightFrame™ DR can be activated. Click on the window to activate enhancement. A blue light bulb appears when moving over an activated window. Click on the window to de-activate LightFrame™ DR.

Cursor examples

Here is a list of LightFrame™ DR cursors.



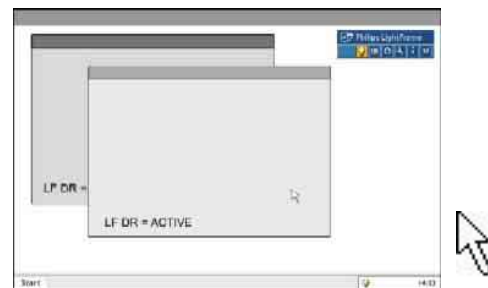
This is the default cursor displayed when you move over a non-LightFrame™ DR enhanced window or area. Clicking and dragging this cursor over a window or area activates LightFrame™ DR enhancement.



Your cursor becomes a yellow light bulb when it passes over a non-active window to indicate that LightFrame™ DR can be activated in the selected window. Click to activate LightFrame™ DR in the selected window. To activate LightFrame™ DR simultaneously in a total of up to eight windows, click on the selected windows one-by-one while pressing the *Shift* key.



Your cursor becomes a blue light bulb when it passes over an active LightFrame™ DR window. Click to deactivate LightFrame™ DR in the selected window.



The normal cursor is restored after you click on a target without pressing the shift key or after you drag a rectangle.

2. LightFrame™ DR control bar


The LightFrame™ DR control bar appears at the top of screen after any LightFrame™ DR function is activated.

The control bar is another upgrade that helps you run all LightFrame™ Digital Reality's neat, new features. The illustration below describes the tasks each button performs.

To drag the control bar to any preferred area of your screen, left click the LightFrame™ DR logo. (See examples below) This area is not a button.

	Activate or deactivate LightFrame™ DR icon	Turns LightFrame™ DR on and off. When LightFrame™ DR is active in a selected window, the icon changes from blue to yellow.
	Activate or deactivate the mode menu icon	The default mode menu icon appears when no mode is selected. When you select the photo, Internet or other mode, the icon for the selected mode appears.
	Deactivate all LightFrame™ DR windows icon	Deactivates all LightFrame™ DR windows. This function is only visible when LightFrame™ DR windows are active.
	Info mode icon	Activates and deactivates the Info mode, which provides information about toolbar and menu items as well as access to Help files.
	Exit icon	Click to exit the LightFrame™ DR control bar

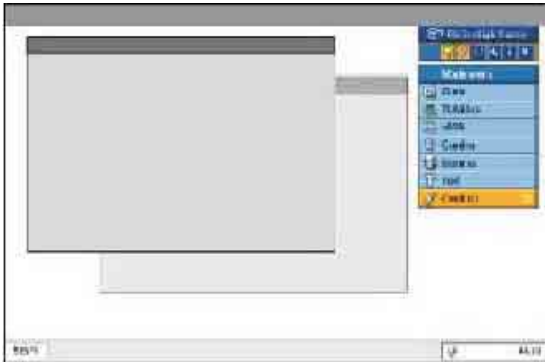
Go to cover page

	<p>Properties icon</p>	<p>Provides access to the Properties menu, which includes these options: LightFrame™ DR auto start: Yes/no Position: LightFrame™ DR Always on top Warning messages: On/off Target selection: Automatic/manual Monitor selection: Chose among two monitors connected to the same PC Place LightFrame™ DR icon in the taskbar: Yes/no</p>
--	------------------------	---

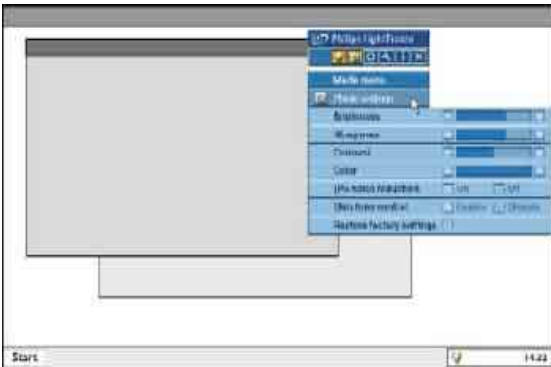
3. Optimizing LightFrame™ DR settings

Here's how to optimize LightFrame™ DR settings to your personal preferences:

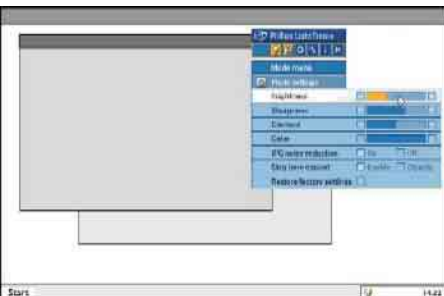
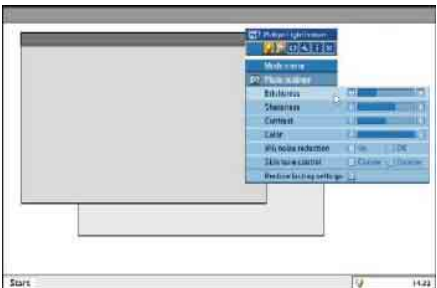
1. Select your desired mode from the mode Menu. Click to open the mode.



2. The settings menu



3. Change settings by pulling the color bar or pressing the plus (+) or minus (-) button to move incrementally to the desired levels.



When you're finished, click on the Mode icon to exit the menu.

4. LightFrame™ Hot Key

The LightFrame™ Hot Key is located at front of LightFrame™ DR monitor.

The blue LED is on when LightFrame™ is activated and off when the feature is deactivated. A touch on the Hot Key quickly provides full screen enhancement in your choice of the Internet, Photo or Video-TV mode.

When you touch the front button, a small OSD window opens on your screen directly above the button location.

Use this screen to select the best full screen mode for the application you're working with. Press continuously on the Hot Key to scroll through the available options.

- When you touch the LightFrame™ Hot Key, an OSD window opens. Touch the button continually to scroll among the available Internet, Photo and Video-TV modes. As a mode becomes available for selection, its color changes from blue to yellow. Once you reach the desired mode, remove your finger from the Hot Key. After three seconds, the mode you have selected will be confirmed and the OSD window will automatically close.



2) Touch the LightFrame™ DR Hot Key for three seconds to enter the LightFrame™ demo mode. To exit the demonstration mode, press the hot key again.

5. Language

While English is the default language of LightFrame™ DR, Dutch, French, German, Italian, Portuguese, Spanish, Simplified Chinese, Traditional Chinese and Korean are supported. LightFrame™ DR will detect the language of computer system OS and select the language automatically.

Notes

Philips LightFrame™ DR only works with monitors specially built to use this software. If LightFrame™ DR detects that your monitor is not LightFrame™ DR-compatible, a message appears on the monitor screen. If you see this message, you can abort or continue the installation; however, if you continue the installation, LightFrame™ DR will probably not work on the monitor.

How to use LightFrame™ DR

After installation, LightFrame™ DR shortcut icon appears on your screen whenever the computer is started.

To learn more about using LightFrame™ Digital Reality, please refer to the help information, which is available after installation.

Compatibility

This version of LightFrame™ DR is compatible with:

Windows® XP

Windows® 2000 Professional Edition with Service Pack 2

How to download your upgraded LF DR Installation file

Visit <http://www.philips.com/support>

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

HI-POT TEST INSTRUCTION

1. Application requirements

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

2. Test method

2.1 Connecting conditions

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

2.2 Test Requirements

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

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

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

3. Equipments and Connection

3.1. Equipments

For example :

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

3.2. Connection

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

Clip

Clip

(ChenHwa 9032 tester)

Video cable

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

Grounding screw

Connect the power cord to the monitor.

Power outlet

(Rear view of monitor)

4. Recording

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

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General

DDC Data Re-programming

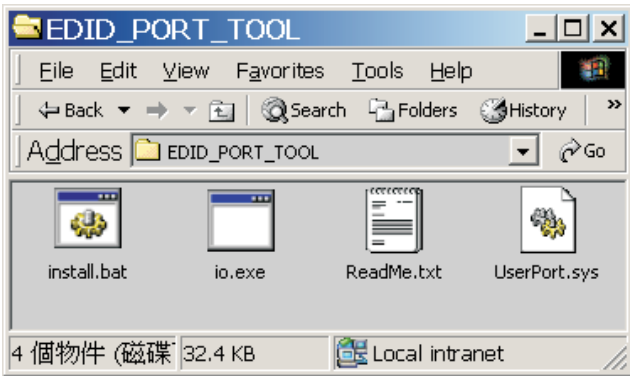
In case the DDC data memory IC or main EEPROM which storage all factory settings were replaced due to a defect, the serial numbers have to be re-programmed "Analog DDC IC, & EEPROM". It is advised to re-soldered DDC IC and main EEPROM from the old board onto the new board if circuit board have been replaced,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



- A. Copy the "UserPort.sys" to C:\WINNT\system32\drivers(win98) C:\WINDOWS\system32\drivers(winXP)
 - B. Running "io.exe" everytime, Before you start to programming edid data .
3. EDID46 Release For writing block4.EXE program .
 4. DDC 2BI-ISP TOOL:

Inclusion :

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

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

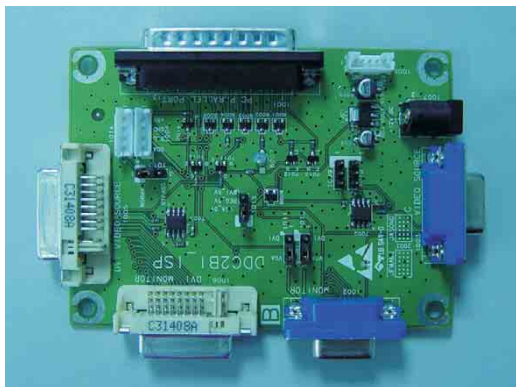


Fig. 2

Pin Assignment

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

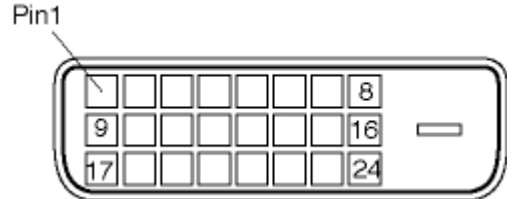


Fig. 3

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

Fig. 4

Input analog D-sub connector pin assignment

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

Configuration and procedure

There are 3 chips contained OSD string, serial number..etc on the circuit board, main EEPROM which storage all factory settings, OSD string. DDC IC which storage 128byte EDID data(serial number ..etc.). Following descriptions are the connection and procedure for Analog /Digital and main EEPROM can be re-programmed along with Analog/Digital IC by enable factory memory data write function on the DDC program (EDID45.EXE).

Initialize alignment box

In order to avoid that monitor entering power saving mode due to sync will cut off by alignment box, it is necessary to initialize alignment box before running programming software (EDID45.EXE). Following steps show you the procedures and connection.

Step 1: Supply 8-12V DC power source to the Alignment box by plugging a DC power cord or using batteries.

Step 2: Connecting printer cable and D-Sub cable of monitor as Fig. 5

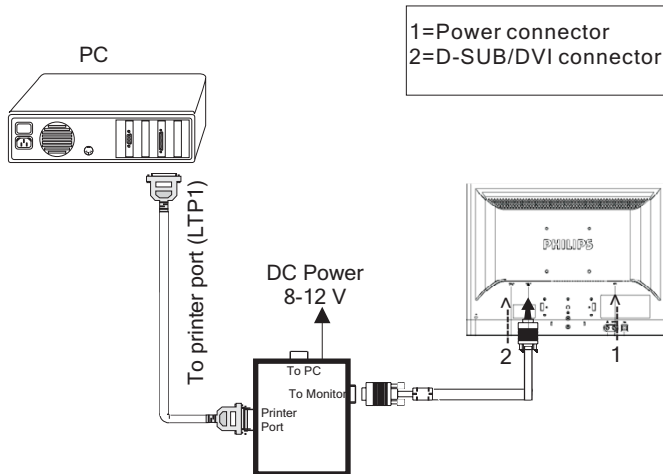


Fig. 5

Step 3: Installation of EDID45.EXE

Method 1: Start on DDC program

Start Microsoft Windows.

1. The Program"EDID45.EXE" in service manual cd-rom be copied to C:\.
2. Click Start, choose Run at start menu of Windows as shown In Fig. 6.

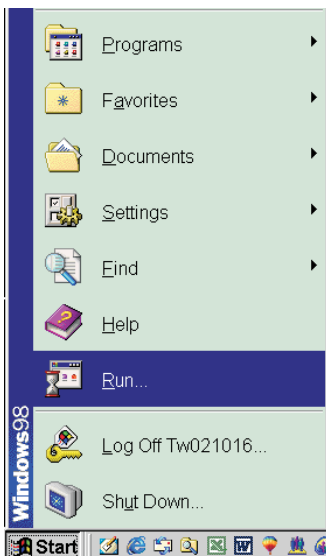


Fig. 6

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. 7).

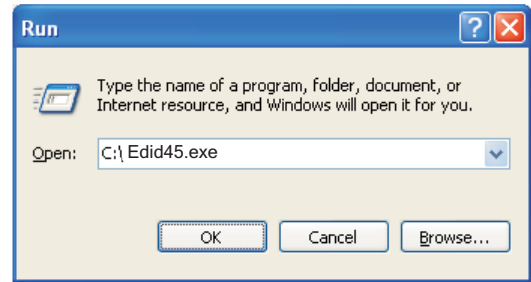


Fig. 7

4. Click OK button. The main menu appears (as shown in Fig. 8). This is for initialize alignment box.

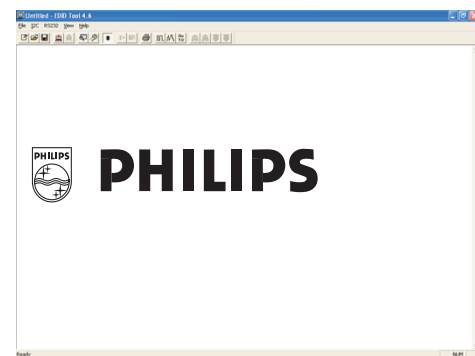


Fig. 8

Note 1: If the connection is improper, you will see the following error message (as shown in Fig. 9) before entering the main menu. Meanwhile, the (read EDID) function will be disable. At this time, please make sure all cables are connected correctly and fixedly, and the procedure has been performed properly.

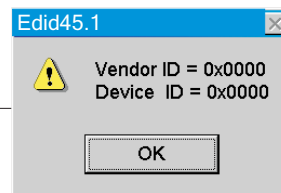


Fig. 9

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.

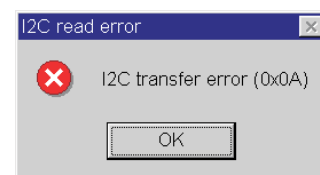


Fig. 10

Go to cover page

Re-programming Analog DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 11

1=Power connector
2=D-SUB connector

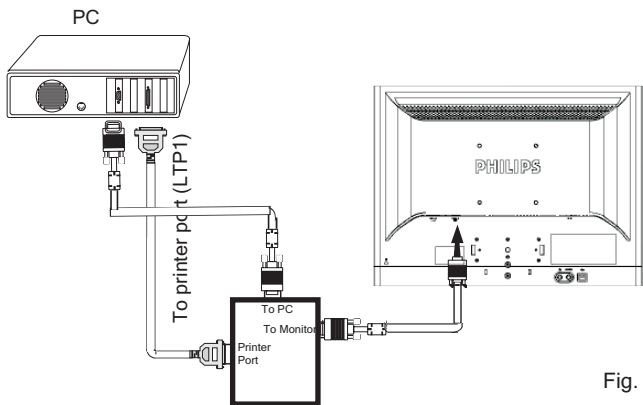


Fig. 11

Step 2: Read DDC data from monitor

- Click icon as shown in Fig. 11 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 12.



Fig. 12

- Select the DDC2Bi as the communication channel. As shown in Fig. 13.

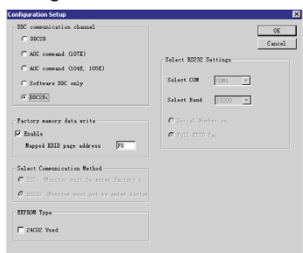


Fig. 13

- Click OK button to confirm your selection.

- Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 14.

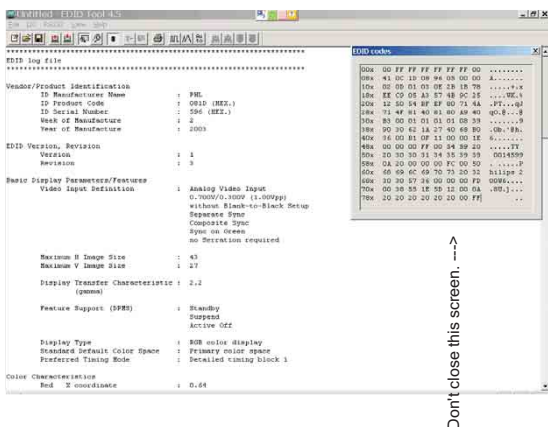


Fig. 14

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

- Click (new function) icon from the tool bar, bring up Step 7 of 9 as shown in Fig. 15. EDID45 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

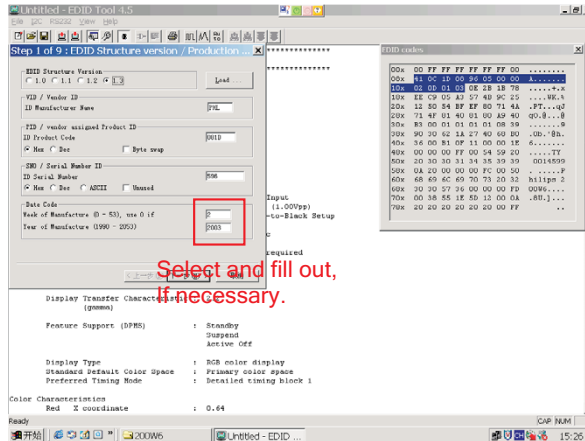


Fig. 15

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

- Click Next to step7, bring up Fig. 16.
 - Serial number can be filled up or be changed at this moment.
 - Click next, Finish to exit the Step window.

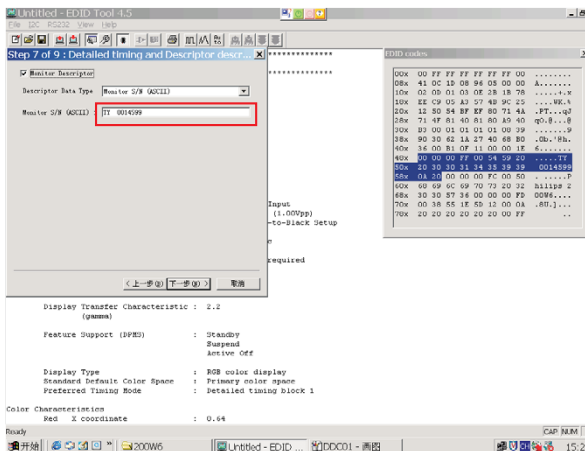


Fig. 16

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Re-programming Digital DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 17

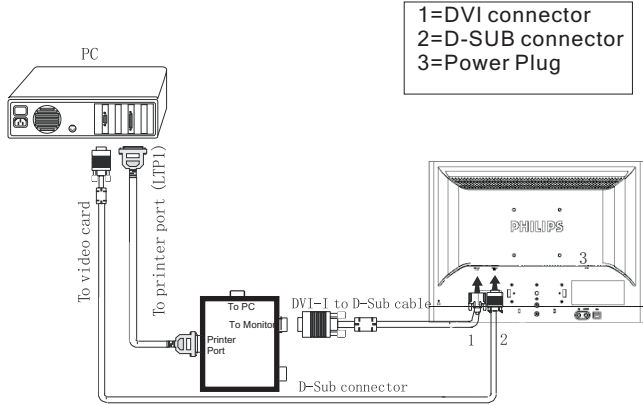


Fig.17

Step 2: Read DDC data from monitor

- Click icon as shown in Fig. 18 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 19.



Fig. 18

- Select the DDC2Bi as the communication channel. As shown in Fig. 19.

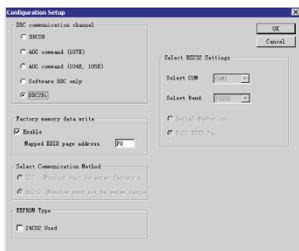


Fig. 19

- Click OK button to confirm your selection.
- Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 20.

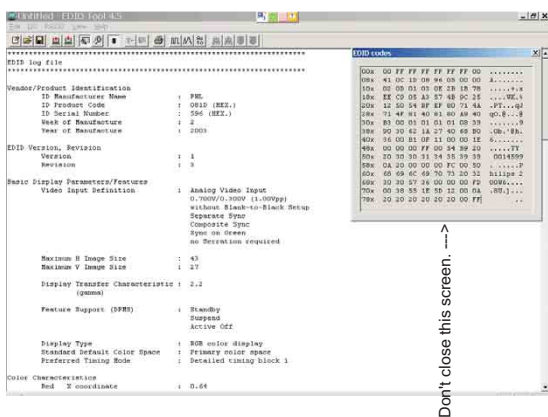


Fig. 20

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

- Click (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 21. EDID45 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

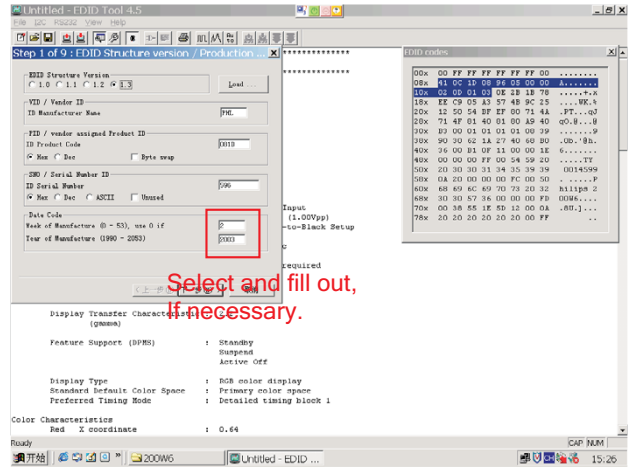


Fig. 21

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

- Click Next, bring up Fig. 22. Then select Digital Signal as below

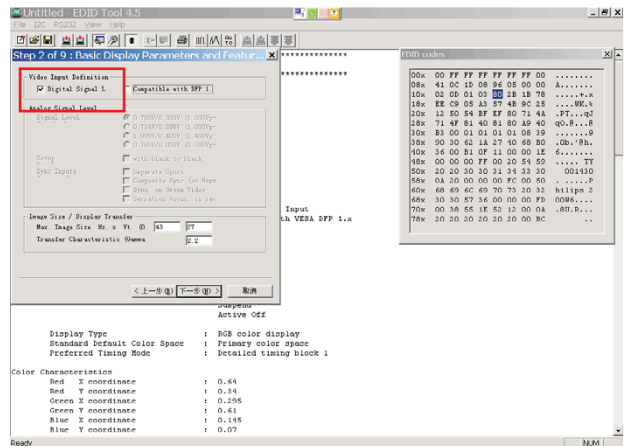


Fig. 22

- Click Next to step7, bring up Fig. 23.
 - Serial number can be filled up or be changed at this moment.
 - Click Next, Finish to exit the Step window.

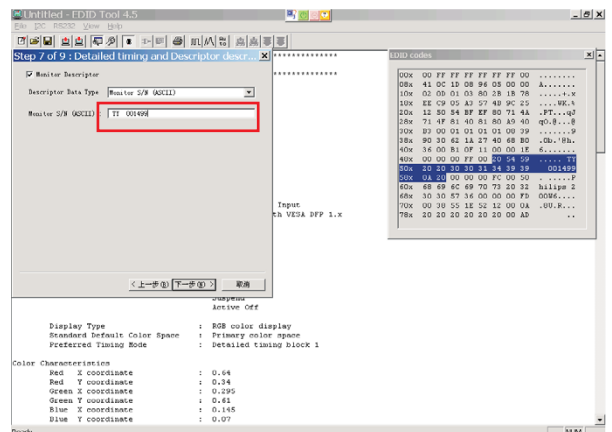


Fig. 23

Go to cover page

Step 5: Write DDC data

1. Configuration should be as Fig. 24. And press OK.

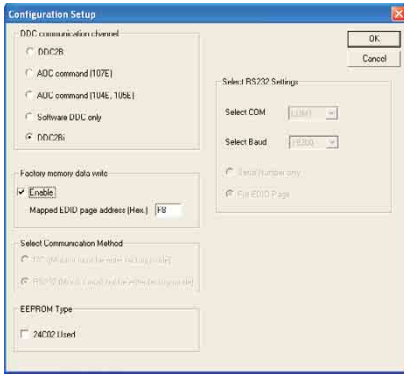


Fig. 24

2. Access Factory Mode

- Turn off monitor.
- [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 button

3. Click (Write EDID) icon from the tool bar to write DDC data.

Step 6: Save DDC data

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

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

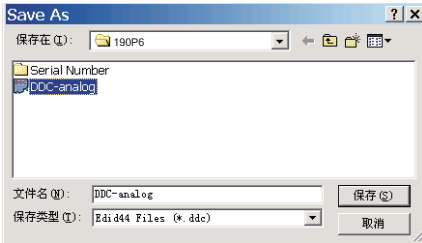


Fig. 25

2. Click Save.

Step 7: Exit DDC program

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

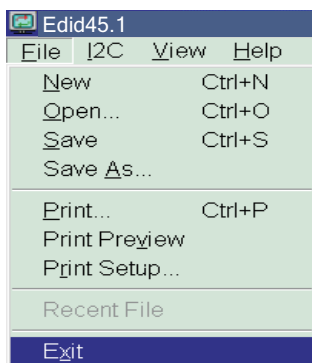


Fig. 26

Step 8: Modify serial number in OSD

- 1. Unzip the serial number.zip to your computer, then open the folder as shown in Fig.28.
- 2. If use Win98 OS, you can execute SN.exe directly. If use Win2000 or XP OS, first, you must execute install.bat, then execute SN.exe
- 3. Set I2C bus (press the left-top of operating window) as shown in Fig.28, then press "SET" button.
- 4. Set Block4 as shown in Fig.30
- 5. key in new serial number, then press "Write" button as shown in Fig.30, Click "WRITE" button.
- 6. It will appear "Serial Number Write OK", Click "Enter" to finish it.

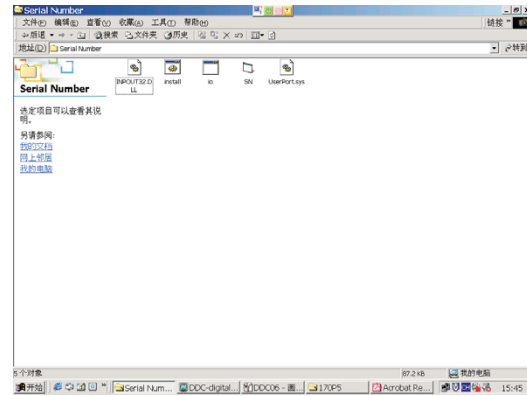


Fig.28

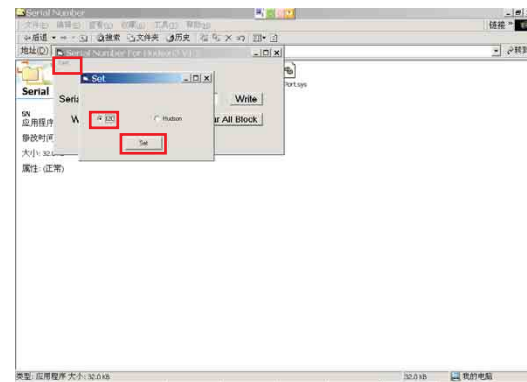


Fig.29

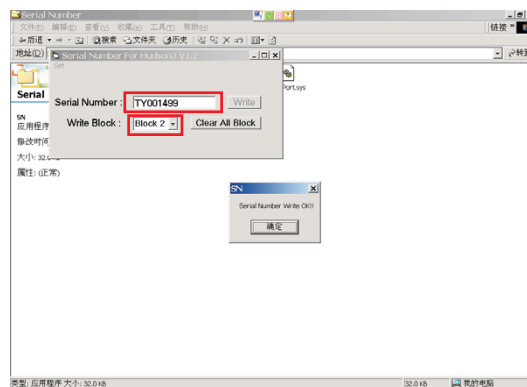


Fig.30

Step9:

- 1. Disconnect the monitor power cord and connect it again.
- 2. Press the OK button to bring up the OSD main manu.
- 3. Re-confirm the serial Number is updated as shown in Fig.31.

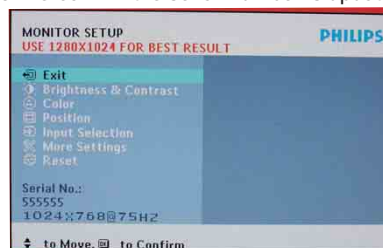


Fig.31

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT
INCLUDING (FOR 190P6 ANALOG)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 0831 (HEX.)
ID Serial Number : 1234 (HEX.)
Week of Manufacture : 20
Year of Manufacture : 2005

EDID Version, Revision

Version : 1
Revision : 3

Basic Display Parameters/Features

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

Maximum H Image Size : 38
Maximum V Image Size : 30
Display Transfer Characteristic : 2.2
(gamma)

Feature Support (DPMS) : 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 : 0.636
Red Y coordinate : 0.348
Green X coordinate : 0.292
Green Y coordinate : 0.618
Blue X coordinate : 0.142
Blue Y coordinate : 0.072
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 : 1152
Aspect Ratio : 4:3
Refresh Rate : 70

Standard Timing Identification #2

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

Standard Timing Identification #3

Horizontal active pixels : 1280

Aspect Ratio : 4:3
Refresh Rate : 60
Standard Timing Identification #4
Horizontal active pixels : 1280
Aspect Ratio : 5:4
Refresh Rate : 60

Detailed Timing #1

Pixel Clock (MHz) : 135
H Active (pixels) : 1280
H Blanking (pixels) : 408
V Active (lines) : 1024
V Blanking (lines) : 42
H Sync Offset (F Porch) (pixels): 48
H Sync Pulse Width (pixels) : 112
V Sync Offset (F Porch) (lines) : 1
V Sync Pulse Width (lines) : 3
H Image Size (mm) : 376
V Image Size (mm) : 301
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
: Normal Display, No stereo
: Digital Separate sync.
: Positive Vertical Sync.
: Positive Horizontal Sync.

Monitor Descriptor #2

Serial Number : TY 123456

Monitor Descriptor #3

Monitor Name : Philips 190P

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 : 00 (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: 31 11: 08 12: 34 13: 12 14: 00 15: 00
16: 14 17: 0f 18: 01 19: 03 20: 1f 21: 26 22: 1e 23: 78
24: ee 25: cd 26: 65 27: a2 28: 59 29: 4a 30: 9e 31: 24
32: 12 33: 50 34: 54 35: bf 36: ef 37: 80 38: 71 39: 4a
40: 71 41: 4f 42: 81 43: 40 44: 81 45: 80 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: bc 55: 34
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 78 67: 2d 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 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: 50 107: 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: 00

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THE DISPLAY DATA CHANNEL (DDC-2B) CONTENT INCLUDING
(FOR 190P6 DIGITAL)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 0831 (HEX.)
ID Serial Number : 1234 (HEX.)
Week of Manufacture : 20
Year of Manufacture : 2005

EDID Version, Revision

Version : 1
Revision : 3

Basic Display Parameters/Features

Video Input Definition : Digital Video Input
Maximum H Image Size : 38
Maximum V Image Size : 30
Display Transfer Characteristic : 2.2
(gamma)
Feature Support (DPMS) : 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 : 0.636
Red Y coordinate : 0.348
Green X coordinate : 0.292
Green Y coordinate : 0.618
Blue X coordinate : 0.142
Blue Y coordinate : 0.072

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 : 1152
Aspect Ratio : 4:3
Refresh Rate : 70

Standard Timing Identification #2

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

Standard Timing Identification #3

Horizontal active pixels : 1280
Aspect Ratio : 4:3
Refresh Rate : 60

Standard Timing Identification #4

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

Detailed Timing #1

Pixel Clock (MHz) : 135
H Active (pixels) : 1280
H Blanking (pixels) : 408
V Active (lines) : 1024
V Blanking (lines) : 42
H Sync Offset (F Porch) (pixels): 48
H Sync Pulse Width (pixels) : 112
V Sync Offset (F Porch) (lines) : 1
V Sync Pulse Width (lines) : 3
H Image Size (mm) : 376
V Image Size (mm) : 301
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
: Normal Display, No stereo
: Digital Separate sync.
: Positive Vertical Sync.
: Positive Horizontal Sync.

Monitor Descriptor #2

Serial Number : TY 123456

Monitor Descriptor #3

Monitor Name : Philips 190P

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 : 9F (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: 31 11: 08 12: 34 13: 12 14: 00 15: 00
16: 14 17: 0f 18: 01 19: 03 20: 80 21: 26 22: 1e 23: 78
24: ee 25: cd 26: 65 27: a2 28: 59 29: 4a 30: 9e 31: 24
32: 12 33: 50 34: 54 35: bf 36: ef 37: 80 38: 71 39: 4a
40: 71 41: 4f 42: 81 43: 40 44: 81 45: 80 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: bc 55: 34
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 78 67: 2d 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 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: 50 107: 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: 9f

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING
(FOR 170P6 ANALOG)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 082E (HEX.)
ID Serial Number : 1234 (HEX.)
Week of Manufacture : 16
Year of Manufacture : 2005

EDID Version, Revision

Version : 1
Revision : 3

Basic Display Parameters/Features

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

Maximum H Image Size : 34
Maximum V Image Size : 27
Display Transfer Characteristic : 2.2

(gamma)

Feature Support (DPMS) : 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 : 0.641
Red Y coordinate : 0.342
Green X coordinate : 0.292
Green Y coordinate : 0.611
Blue X coordinate : 0.147
Blue Y coordinate : 0.068
White X coordinate : 0.313
White Y coordinate : 0.329

Established Timings

Established Timings I : 720 x 400 @70Hz (IBM,VGA)
640 x 480 @60Hz (IBM,VGA)
640 x 480 @67Hz (Apple,Mac II)
640 x 480 @72Hz (VESA)
640 x 480 @75Hz (VESA)
800 x 600 @56Hz (VESA)
800 x 600 @60Hz (VESA)
Established Timings II : 800 x 600 @72Hz (VESA)
800 x 600 @75Hz (VESA)
832 x 624 @75Hz (Apple,Mac II)
1024 x 768 @60Hz (VESA)
1024 x 768 @70Hz (VESA)
1024 x 768 @75Hz (VESA)
1280 x 1024 @75Hz (VESA)
Manufacturer's timings : 1152 x 870 @75Hz (Apple,Mac II)

Standard Timing Identification #1

Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 70

Standard Timing Identification #2

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

Standard Timing Identification #3

Horizontal active pixels : 1280

Aspect Ratio : 4:3
Refresh Rate : 60
Standard Timing Identification #4
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 170P

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 : 0C (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: 2e 11: 08 12: 34 13: 12 14: 00 15: 00
16: 10 17: 0f 18: 01 19: 03 20: 1f 21: 22 22: 1b 23: 78
24: ee 25: 2e 26: e5 27: a4 28: 57 29: 4a 30: 9c 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 71 39: 4a
40: 71 41: 4f 42: 81 43: 40 44: 81 45: 80 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: 37 105: 30 106: 50 107: 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: 0c

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THE DISPLAY DATA CHANNEL (DDC-2B) CONTENT INCLUDING
(FOR 170P6 DIGITAL)

EDID log file

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 082E (HEX.)
ID Serial Number : 1234 (HEX.)
Week of Manufacture : 16
Year of Manufacture : 2005

EDID Version, Revision

Version : 1
Revision : 3

Basic Display Parameters/Features

Video Input Definition : Digital Video Input
Maximum H Image Size : 34
Maximum V Image Size : 27
Display Transfer Characteristic : 2.2
(gamma)
Feature Support (DPMS) : 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 : 0.641
Red Y coordinate : 0.342
Green X coordinate : 0.292
Green Y coordinate : 0.611
Blue X coordinate : 0.147
Blue Y coordinate : 0.068
White X coordinate : 0.313
White Y coordinate : 0.329

Established Timings

Established Timings I : 720 x 400 @70Hz (IBM,VGA)
640 x 480 @60Hz (IBM,VGA)
640 x 480 @67Hz (Apple,Mac II)
640 x 480 @72Hz (VESA)
640 x 480 @75Hz (VESA)
800 x 600 @56Hz (VESA)
800 x 600 @60Hz (VESA)
Established Timings II : 800 x 600 @72Hz (VESA)
800 x 600 @75Hz (VESA)
832 x 624 @75Hz (Apple,Mac II)
1024 x 768 @60Hz (VESA)
1024 x 768 @70Hz (VESA)
1024 x 768 @75Hz (VESA)
1280 x 1024 @75Hz (VESA)
Manufacturer's timings : 1152 x 870 @75Hz (Apple,Mac II)

Standard Timing Identification #1

Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 70

Standard Timing Identification #2

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

Standard Timing Identification #3

Horizontal active pixels : 1280
Aspect Ratio : 4:3
Refresh Rate : 60

Standard Timing Identification #4

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 170P

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

: AB (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: 2e 11: 08 12: 34 13: 12 14: 00 15: 00
16: 10 17: 0f 18: 01 19: 03 20: 80 21: 22 22: 1b 23: 78
24: ee 25: 2e 26: e5 27: a4 28: 57 29: 4a 30: 9c 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 71 39: 4a
40: 71 41: 4f 42: 81 43: 40 44: 81 45: 80 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: 37 105: 30 106: 50 107: 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: ab

Configuration and procedure

ISP (In System Program) software is provided by Genesis to upgrade the firmware of CPU.

ISP cable is for the interface between "Parallel port of PC" and "15 pin-D-SUB connector of monitor".

System and equipment requirements:

1. An i386 (or above) personal computer or compatible.
2. Microsoft operation system Win 95/98 or Win 2000
3. ISP software
4. ISP cable (3138 106 10148) as shown in Fig.1



Fig.1 ISP CABLE :12NC IS "3138 106 10148".

5.Connect ISP cable and main cord to monitor as shown in Fig.2.

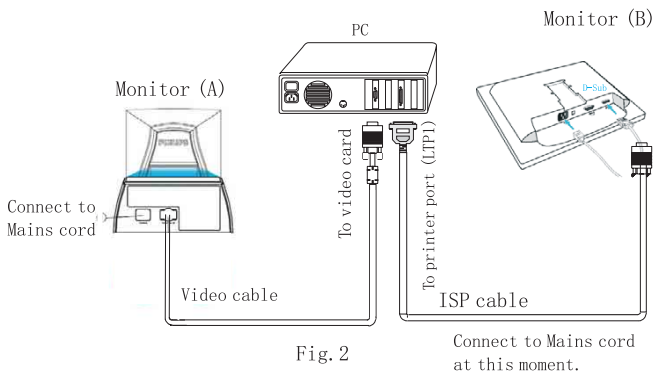


Fig. 2

6. Install and setup the Gprobe 4.5.0.5.exe program

- step 1. Create a folder in your PC .for example: D:\190P6
- step 2.Copy ISP software 190P6 software .Zip into your folder
- step 3.Unzip ISP.ZIP into your folder as shpwn in Fig.3
- step 4.Double click the Gprobe4.5.0.5.exe icon to install the application as shown Fig.4

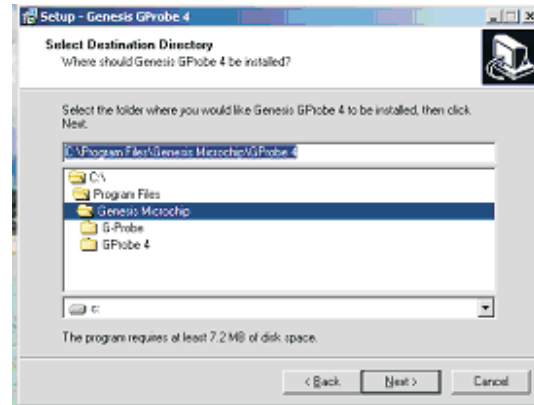


Fig.4

Step 5 . Click the next till the setup finished. And create a short cut on the desktop.

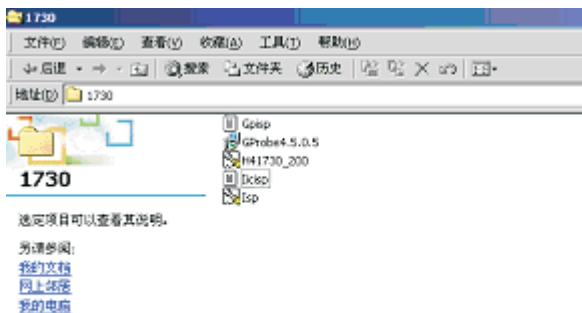


Fig.3

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Update the firmware

1. Double click the Gprobe.exe icon ,then appears window as shown in Fig.5
2. Press the options then choose configure Pin as shown in Fig.5
3. From the menu that appears, choose the number 17 in "output pin and the number 12 in " input pin as shown in Fig.6

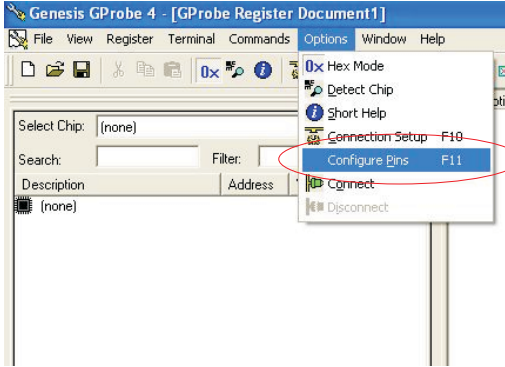


Fig.5

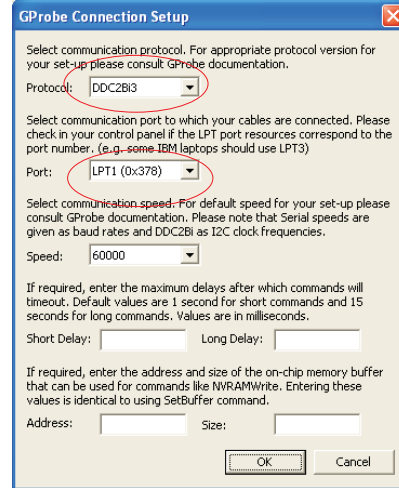


Fig.8

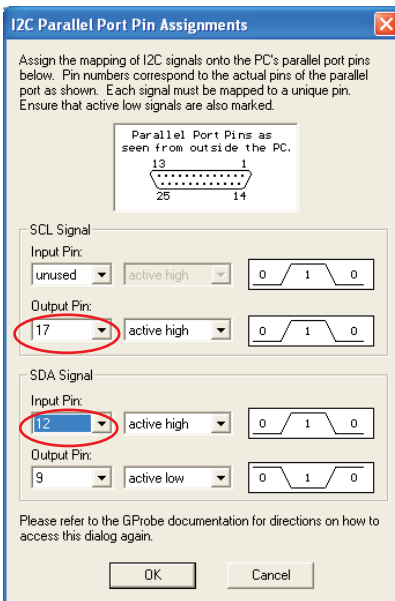


Fig.6

Update the firmware

click the commands and select the Batch, as shown in Fig.9, Fig.10

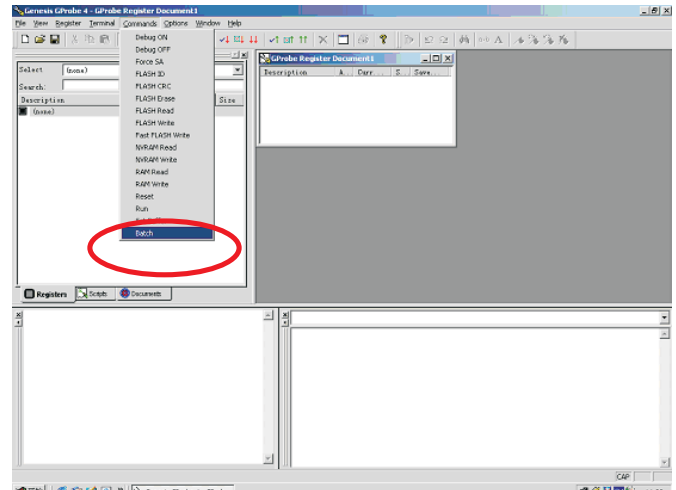


Fig.9

4. Press the options then choose connection setup as shown in Fig.7

5. From the menu that appears , choose the DDC2Bi3 in "protocol" and the LPT (0x378) in "port" as shown in Fig.8

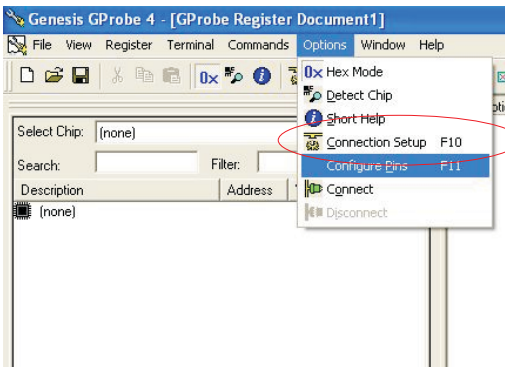


Fig.7

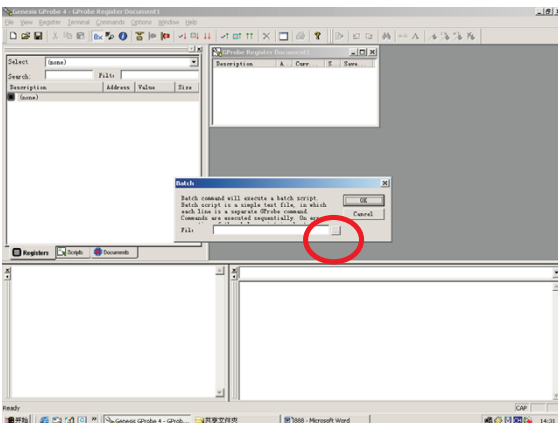


Fig.10

Click the button as shown in Fig.10 to browse the licisp.txt file in the folder that you create.

Note: you should pay attention to the path in the licisp.txt file. It is the same as the folder's path that you create.

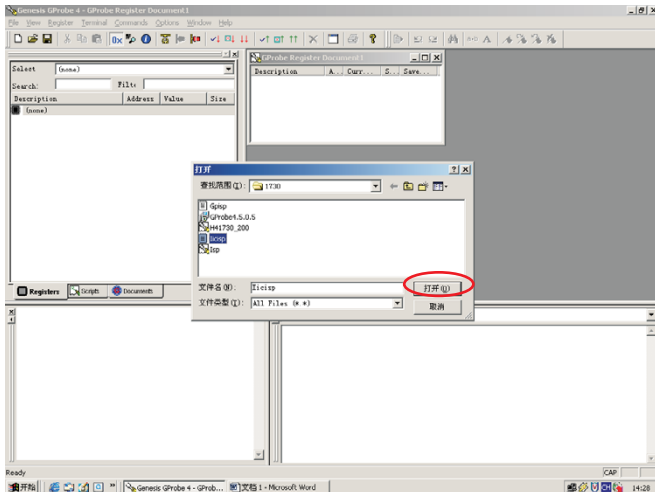
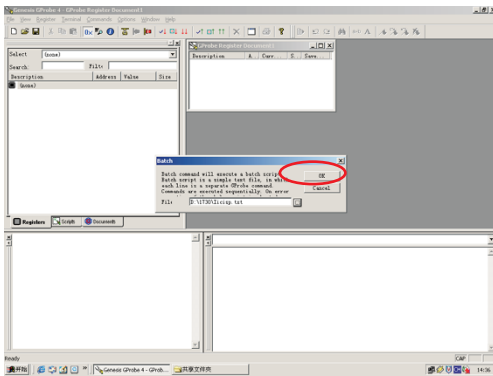
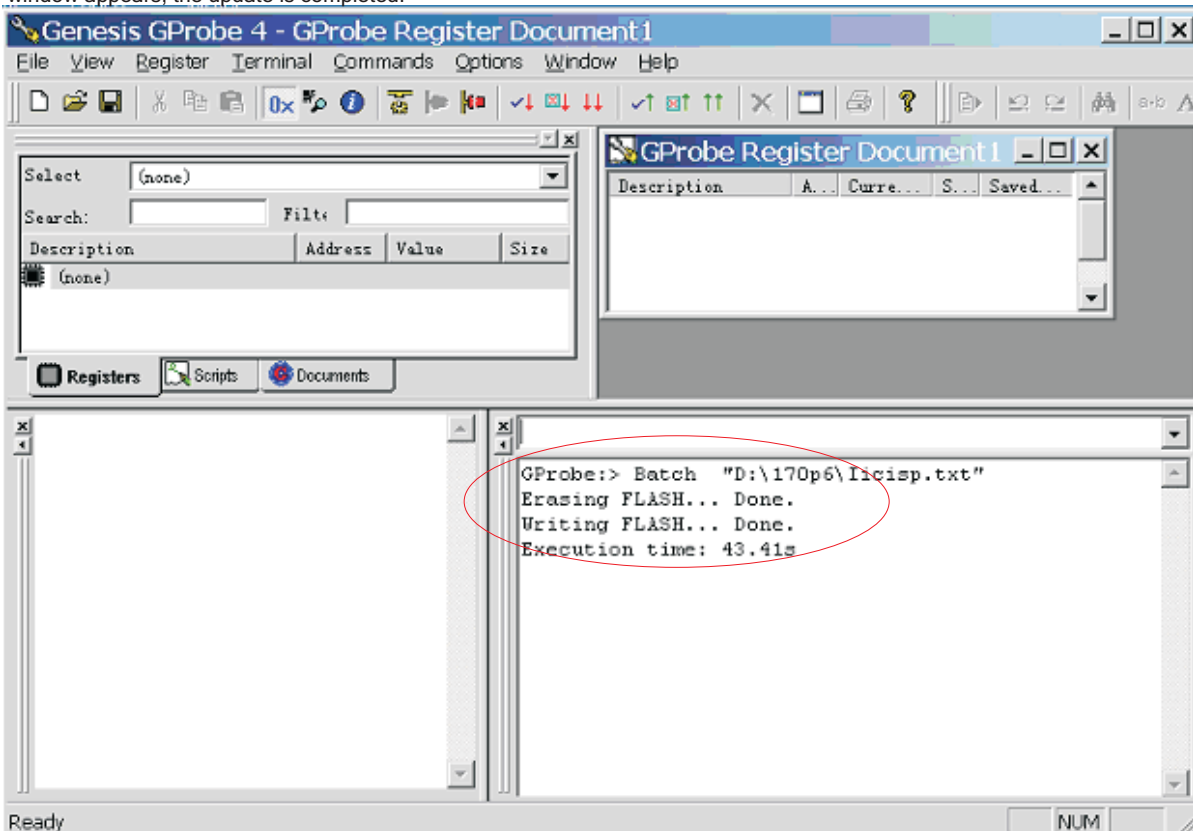


Fig.11 click "OPEN"



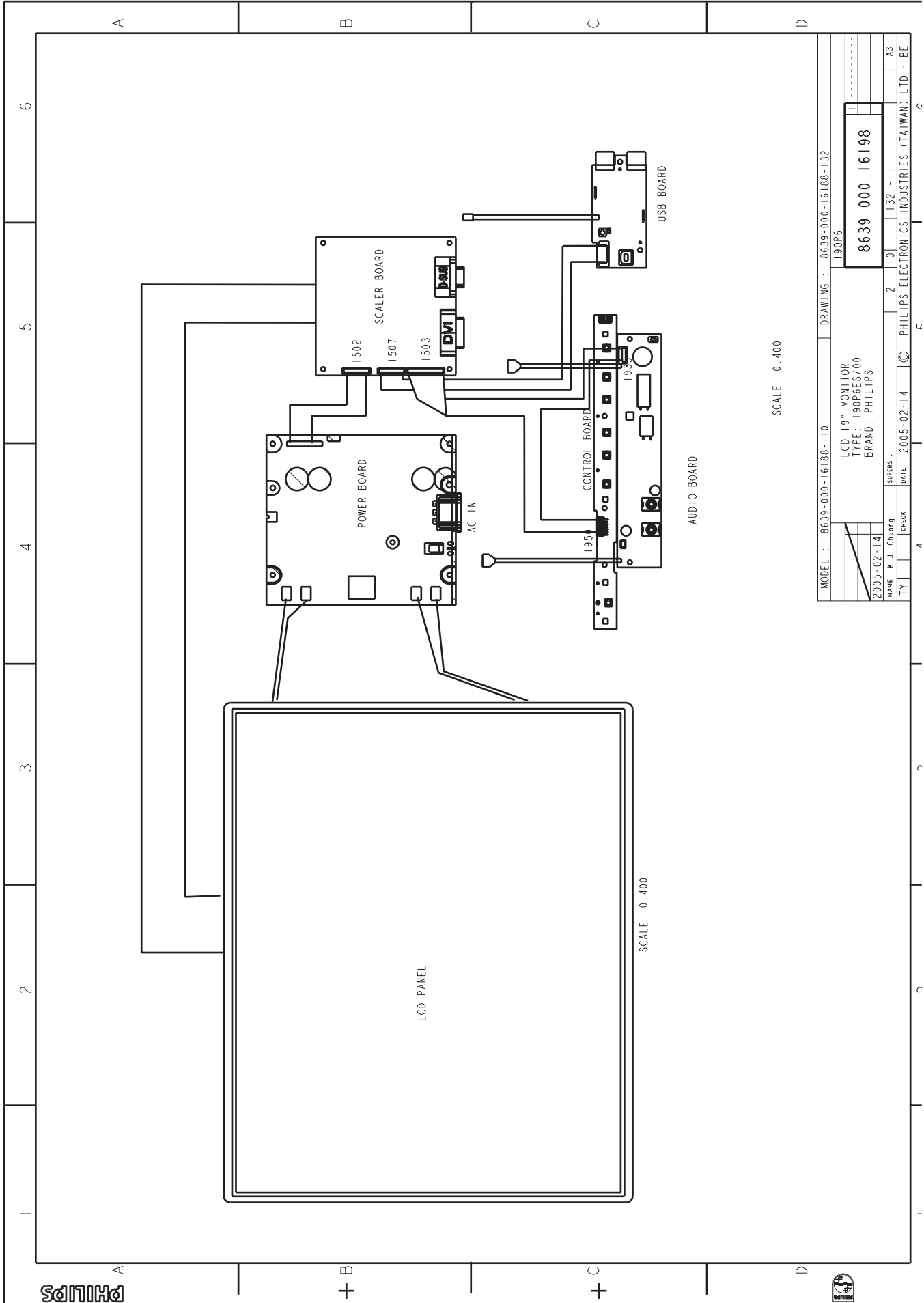
Shut of the AC power
Click the "OK" button and then connect the AC power, after the follow window appears, the update is completed.



The isp instructions between 170P6 and 190P6 is the same except the hex code

Wiring Diagram(190P6)

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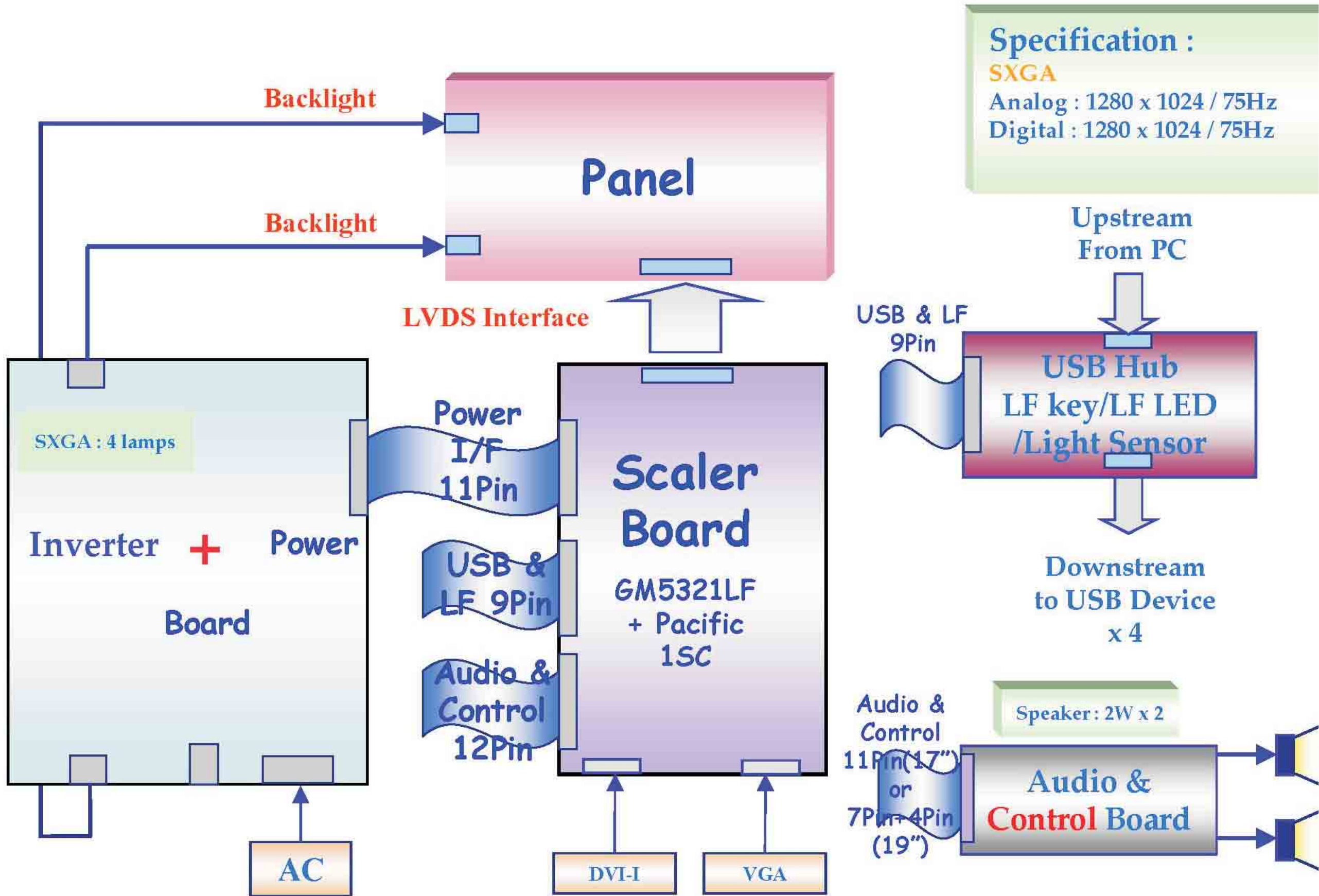
SCALE 0.400

SCALE 0.400

MODEL : 8639-000-16188-110		DRAWING : 8639-000-16188-132	
		19076	
LCD 19" MONITOR			
TYPE: 190P6S/00			
BRAND: PHILIPS			
2005-02-14			
NAME	K. J. Chiang	SUPERS	
TY	CHECK	DATE	2005-02-14
			© PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD. - BE
		2	10
		132	- 1
			A3

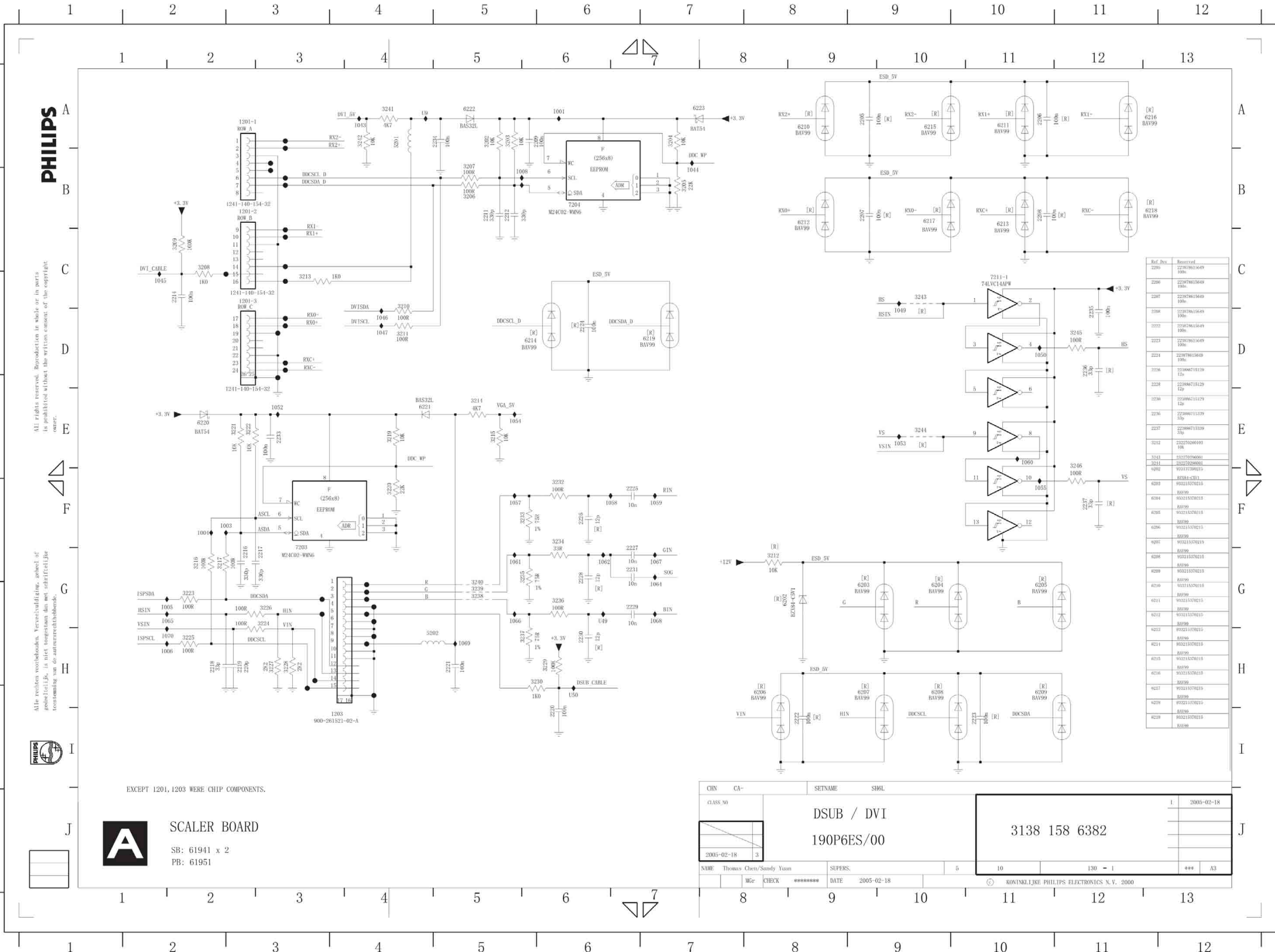
			8639 000 16198





Scaler Diagram(190P6)

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EXCEPT 1201, 1203 WERE CHIP COMPONENTS.

A SCALER BOARD
SB: 61941 x 2
PB: 61951

Ref. Des	Quantity	Remarks
2200	2200	2200
2201	2201	2201
2202	2202	2202
2203	2203	2203
2204	2204	2204
2205	2205	2205
2206	2206	2206
2207	2207	2207
2208	2208	2208
2209	2209	2209
2210	2210	2210
2211	2211	2211
2212	2212	2212
2213	2213	2213
2214	2214	2214
2215	2215	2215
2216	2216	2216
2217	2217	2217
2218	2218	2218
2219	2219	2219
2220	2220	2220
2221	2221	2221
2222	2222	2222
2223	2223	2223
2224	2224	2224
2225	2225	2225
2226	2226	2226
2227	2227	2227
2228	2228	2228
2229	2229	2229
2230	2230	2230
2231	2231	2231
2232	2232	2232
2233	2233	2233
2234	2234	2234
2235	2235	2235
2236	2236	2236
2237	2237	2237
2238	2238	2238
2239	2239	2239
2240	2240	2240
2241	2241	2241
2242	2242	2242
2243	2243	2243
2244	2244	2244
2245	2245	2245
2246	2246	2246
2247	2247	2247
2248	2248	2248
2249	2249	2249
2250	2250	2250

CHN	CA-	SETNAME	SH6L
CLASS NO		DSUB / DVI	
		190P6ES/00	
		3138 158 6382	
NAME	Thomas Chen/Sandy Yuan	SUPERS.	5
MGR	CHECK	DATE	2005-02-18
			130 - 1
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- 6222 A5
- 6223 A7
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- 7204 A6
- 7211-1 C10
- 1001 A6
- 1003 E3
- 1004 E2
- 1005 F2
- 1006 F2
- 1008 B5
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- 1044 B7
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- 1052 D9
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Scaler Diagram(190P6)

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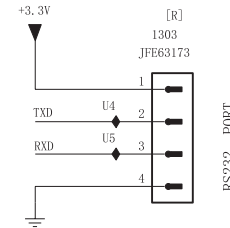
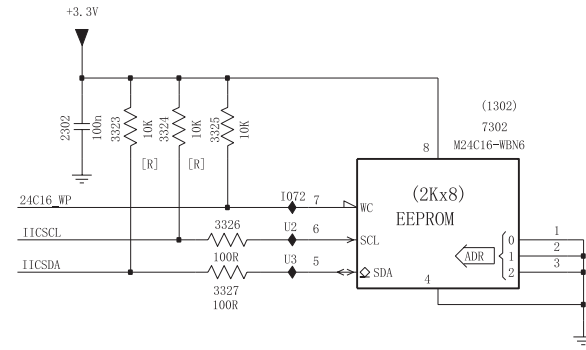
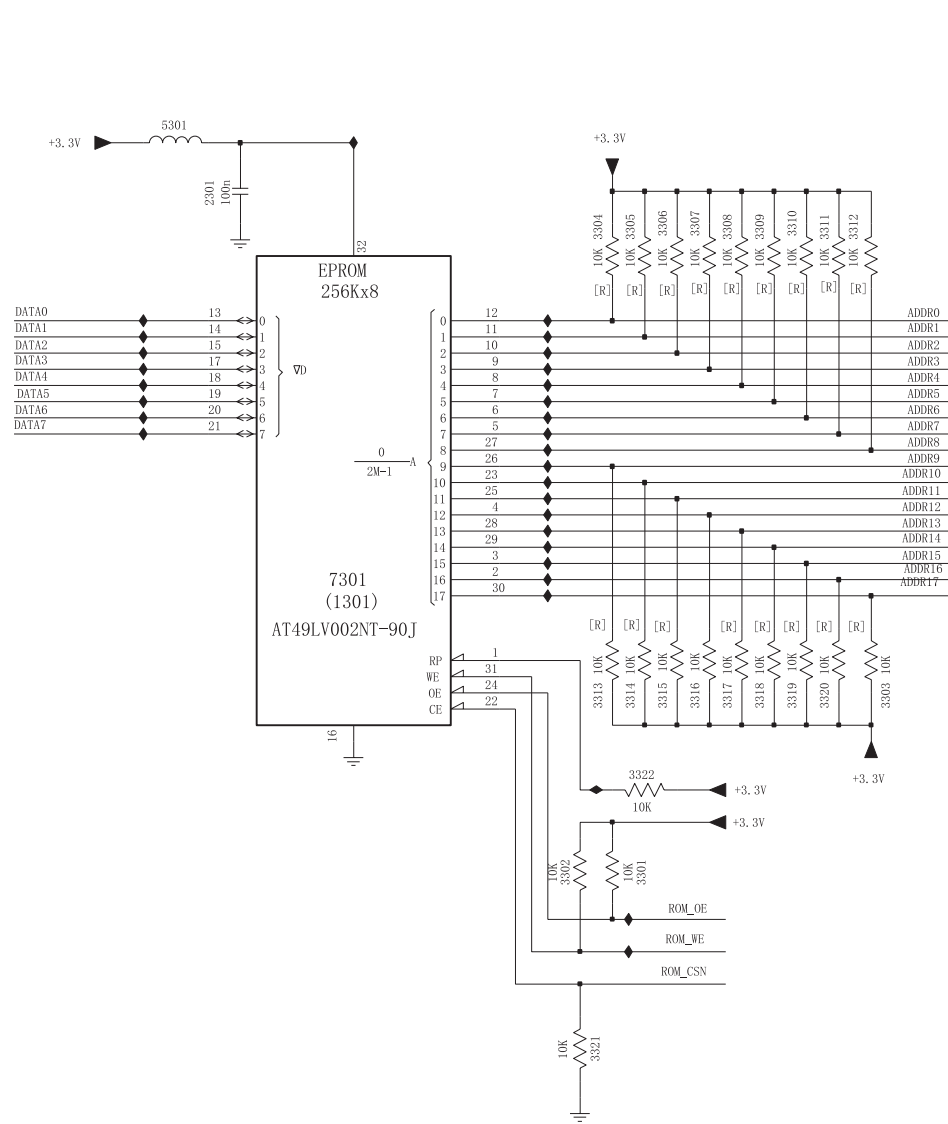
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SCALER BOARD

SB: 61941 x 2
PB: 61951



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EXCEPT 1303, 7302 WERE CHIP COMPONENTS.

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CLASS_X0	ROM		1 2005-02-18
2005-02-18		3	190P6ES/00
NAME		Thomas Chen/Sandy Yuan	SUPERS.
MGr		CHECK	*****
DATE		2005-02-18	5 10 130 - 2 *** A3
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U5 E8
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2302 B7
3301 E5
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3305 B5
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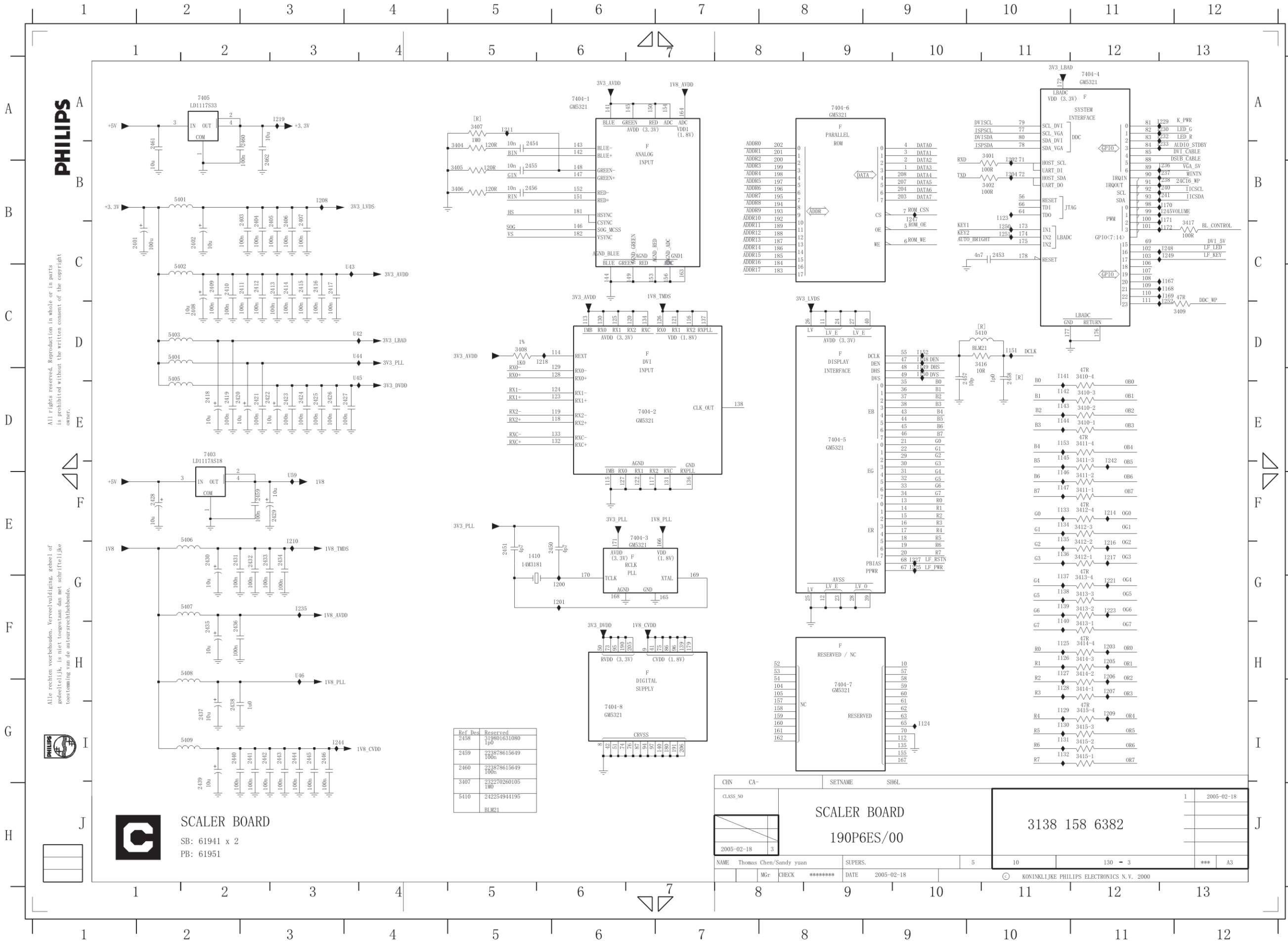
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Scaler Diagram(190P6)

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U45	D4	7404-6	A8
U46	F3	7404-7	F8
U59	E3	7404-8	F6
1410	E5	7405	A2
2401	B1	1123	B10
2402	B2	1124	G9
2403	B2	1125	F10
2404	B3	1126	F10
2405	B3	1127	F10
2406	B3	1128	G10
2407	B3	1129	G10
2408	C2	1130	G10
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2410	C2	1132	G10
2411	C2	1133	E10
2412	C3	1134	E10
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2414	C3	1136	F10
2415	C3	1137	F10
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2426	D3	1148	G9
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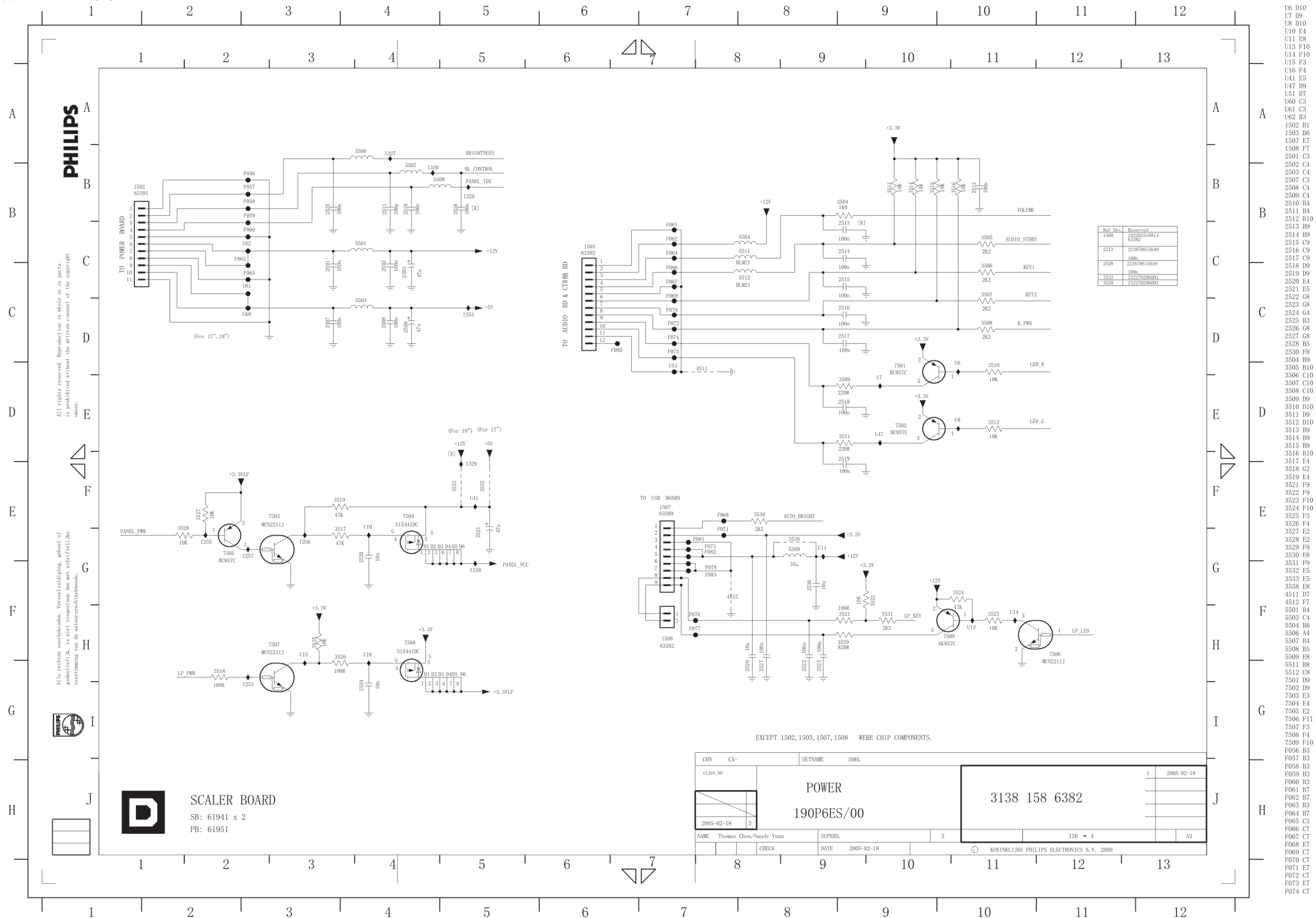
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PB: 61951

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3407	312270260105 100
5410	242254941195 BLM21

CHN	CA-	SETNAME	SH6L
CLASS_NO			
SCALER BOARD		3138 158 6382	
190P6ES/00			
NAME	Thomas Chen/Sandy yuan	SUPERS.	5
DATE	2005-02-18		
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- U10 E4
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- U16 F4
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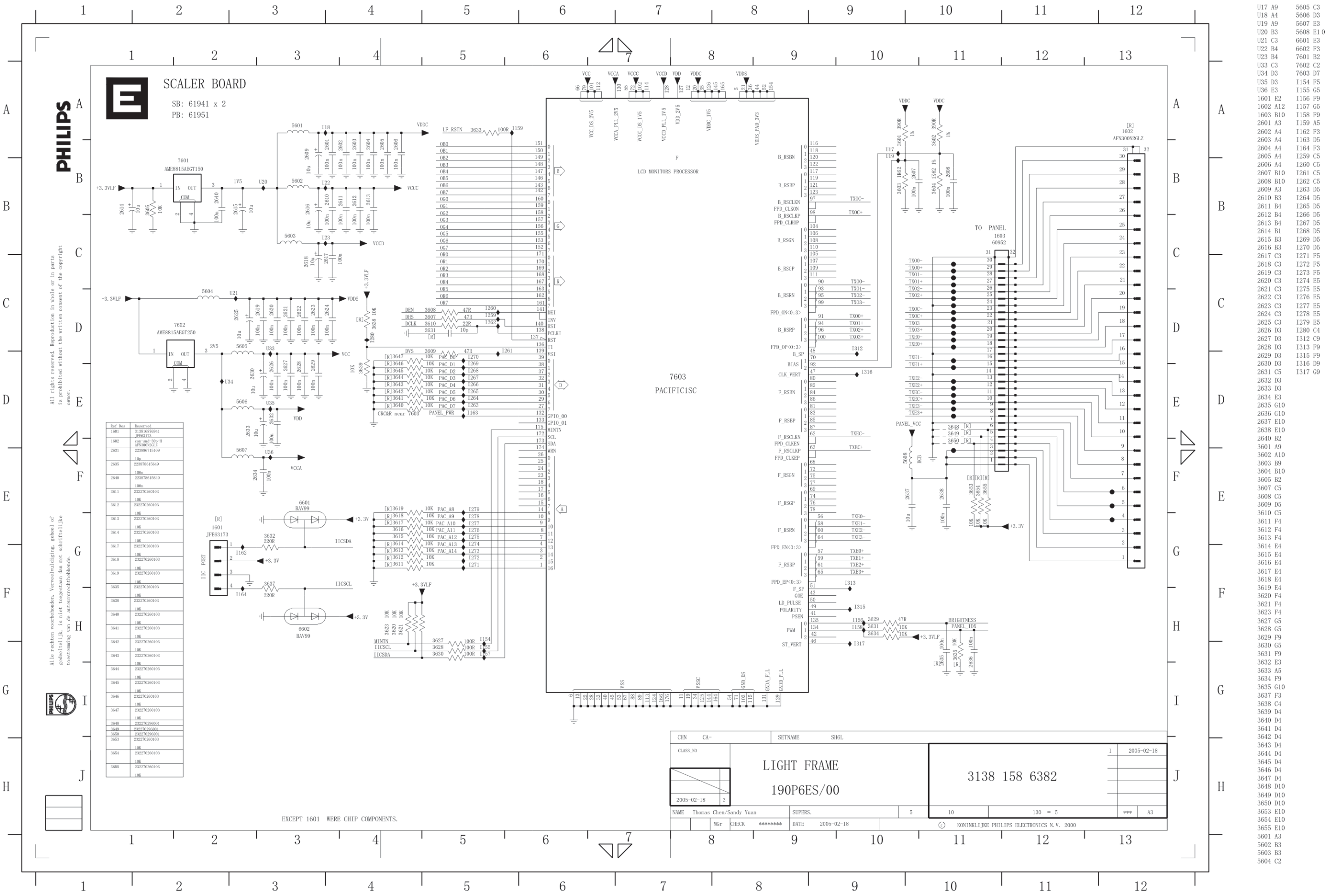
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CLASS_NO			1
POWER		3138 158 6382	
190P6ES/00			
NAME	Thomas Chen/Sandy Yuan	SUPERS.	5
CHECK		DATE	2005-02-18
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SCALER BOARD
 SB: 61941 x 2
 PB: 61951

Scaler Diagram(190P6)

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- U17 A9 5605 C3
- U18 A4 5606 D3
- U19 A9 5607 E3
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- U21 C3 6601 E3
- U22 B4 6602 F3
- U23 B4 7601 B2
- U33 C3 7602 C2
- U34 D3 7603 D7
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- 1601 E2 1156 F9
- 1602 A12 1157 G5
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- 2601 A3 1159 A5
- 2602 A4 1162 F3
- 2603 A4 1163 D5
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- 2606 A4 1260 C5
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- 5603 B3
- 5604 C2

CLASS_NO	1	2005-02-18
LIGHT FRAME 190P6ES/00		
NAME	Thomas Chen/Sandy Yuan	SUPERS.
DATE	2005-02-18	5
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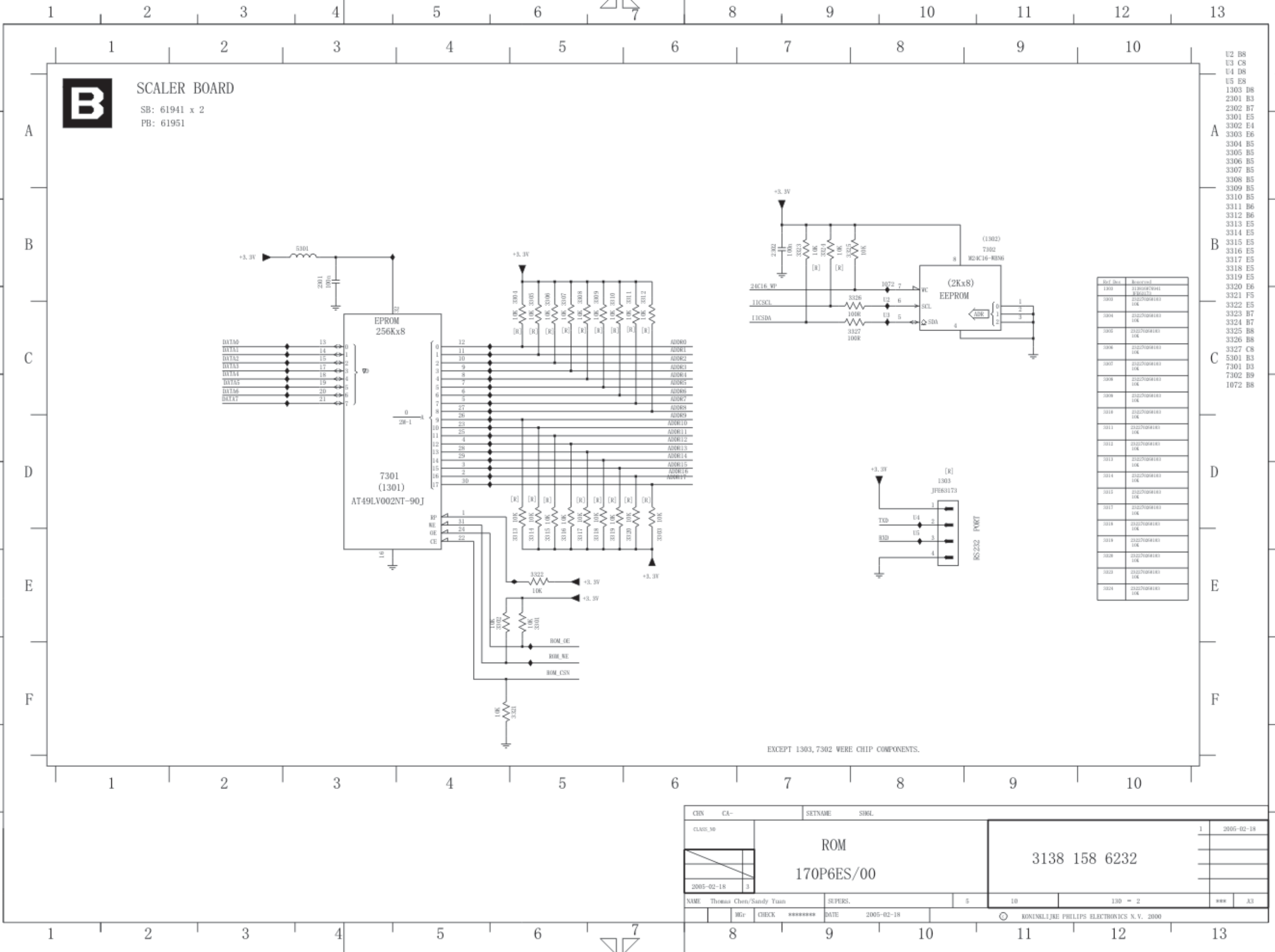
Scaler Diagram(170P6)

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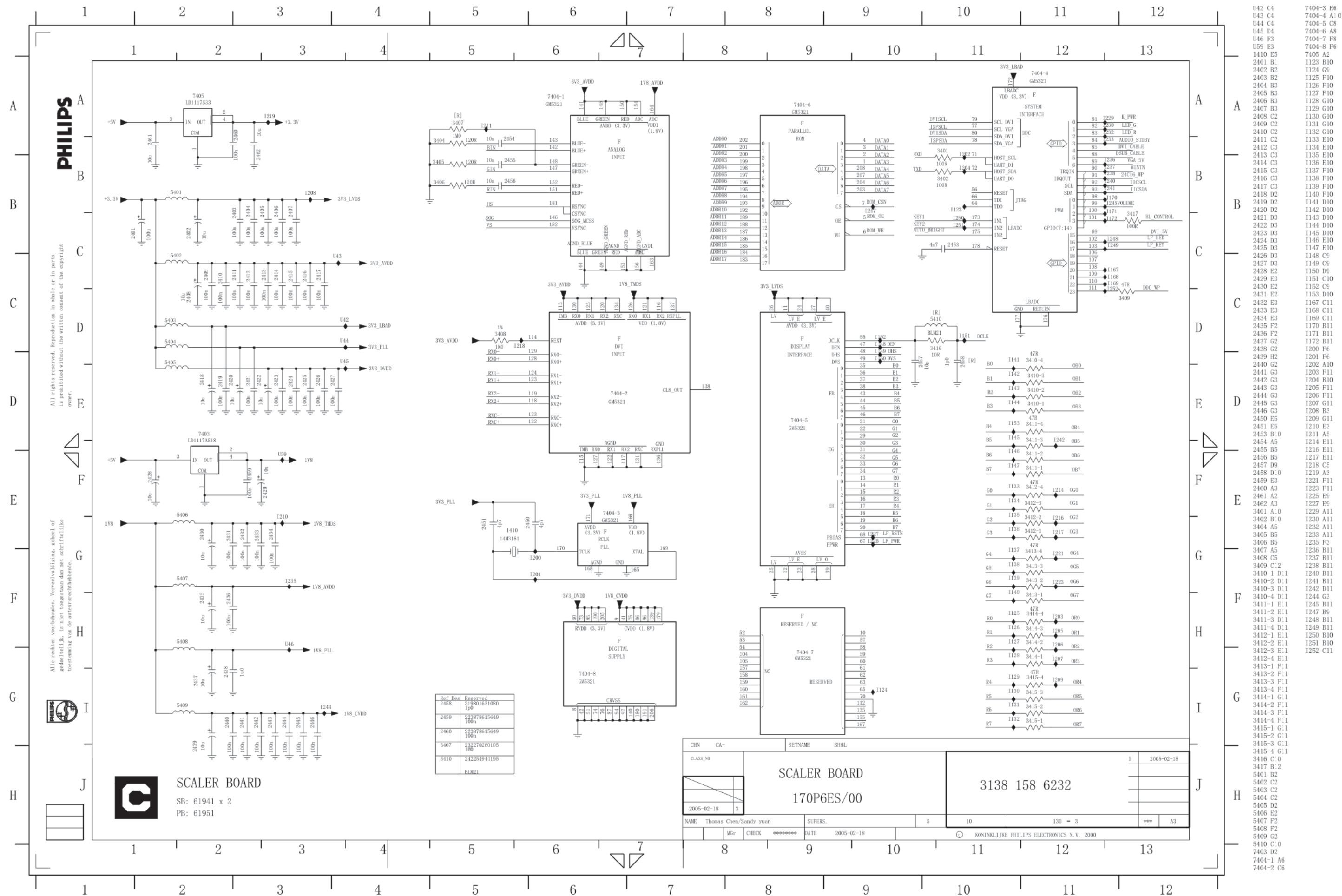
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EXCEPT 1303, 7302 WERE CHIP COMPONENTS.

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DATE	2005-02-18	3	2005-02-18
NAME	Thomas Chen/Sandy Yuan	SUPERS.	5 10 130 = 2 *** A3
CHK	CHECK *****	DATE	2005-02-18
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Scaler Diagram(170P6)

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- U44 C4
- U45 D4
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- 5402 C2
- 5403 C2
- 5404 C2
- 5405 D2
- 5406 E2
- 5407 F2
- 5408 F2
- 5409 G2
- 5410 C10
- 7403 D2
- 7404-1 A6
- 7404-2 C6
- 7404-3 E6
- 7404-4 A10
- 7404-5 C8
- 7404-6 A8
- 7404-7 F8
- 7404-8 F6
- 7405 A2
- 1123 B10
- 1124 G9
- 1125 F10
- 1126 F10
- 1127 F10
- 1128 G10
- 1129 G10
- 1130 G10
- 1131 G10
- 1132 G10
- 1133 E10
- 1134 E10
- 1135 E10
- 1136 E10
- 1137 F10
- 1138 F10
- 1139 F10
- 1140 F10
- 1141 D10
- 1142 D10
- 1143 D10
- 1144 D10
- 1145 D10
- 1146 D10
- 1147 E10
- 1148 C9
- 1149 C9
- 1150 D9
- 1151 C10
- 1152 C9
- 1153 D10
- 1167 C11
- 1168 C11
- 1169 C11
- 1170 B11
- 1171 B11
- 1172 B11
- 1200 F6
- 1201 F6
- 1202 A10
- 1203 F11
- 1204 B10
- 1205 F11
- 1206 F11
- 1207 G11
- 1208 B3
- 1209 G11
- 1210 E3
- 1211 A5
- 1214 E11
- 1216 E11
- 1217 E11
- 1218 C5
- 1219 A3
- 1221 F11
- 1223 F11
- 1225 E9
- 1227 E9
- 1229 A11
- 1230 A11
- 1232 A11
- 1233 A11
- 1235 F3
- 1237 B11
- 1238 B11
- 1240 B11
- 1241 B11
- 1242 D11
- 1244 G3
- 1245 B11
- 1247 B9
- 1248 B11
- 1249 B11
- 1250 B10
- 1251 B10
- 1252 C11

SCALER BOARD
 SB: 61941 x 2
 PB: 61951

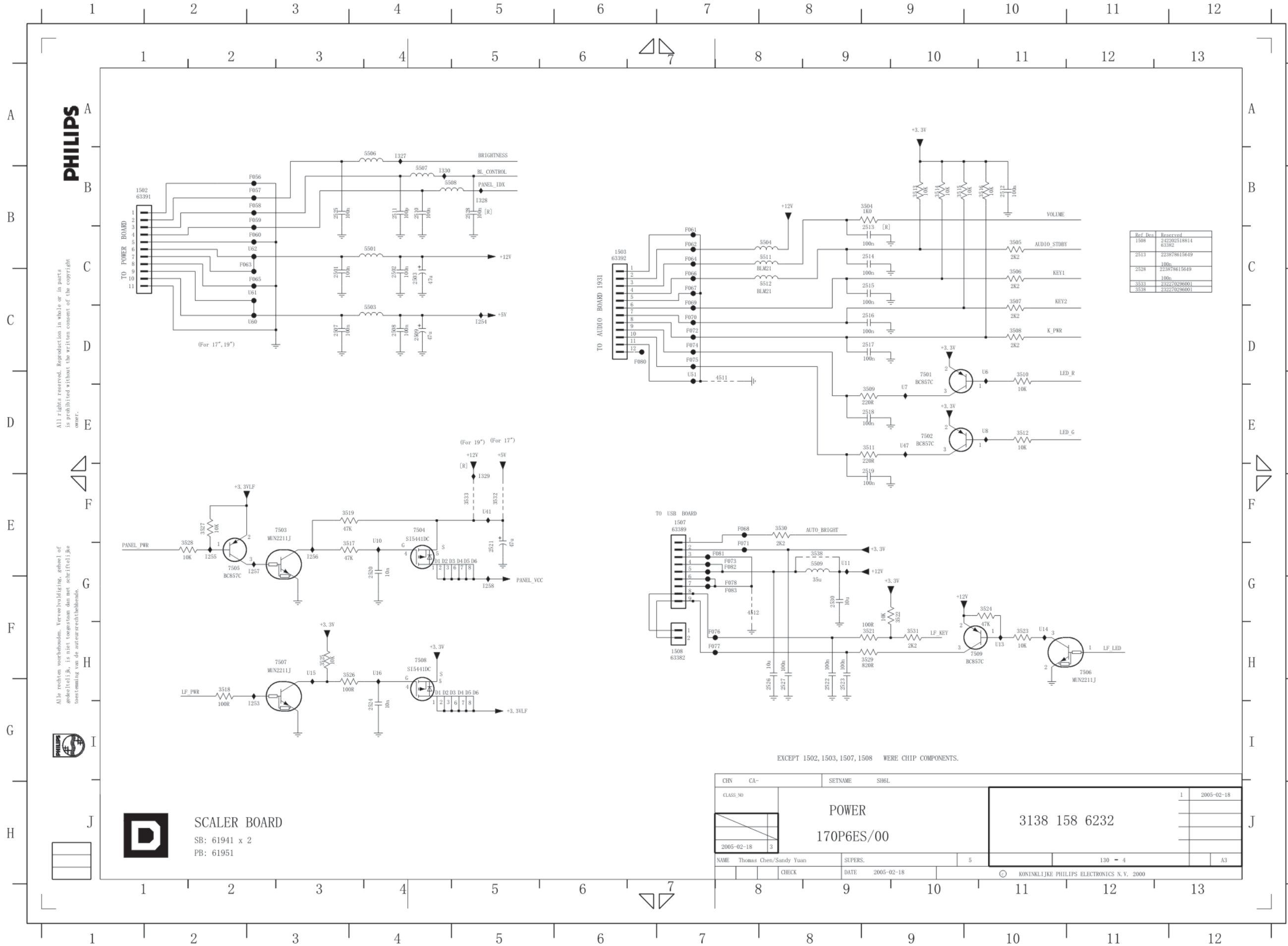
Ref	Den	Reserved
2458	319801631080	146
2459	223878615649	100n
2460	223878615649	100n
3407	232270260105	100
5410	242254944195	

CLASS No	3138 158 6232
NAME	Thomas Chen/Sandy yuan
DATE	2005-02-18
CHECK	*****
SUPERS.	5
DATE	2005-02-18
DATE	2005-02-18
DATE	2005-02-18

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Scaler Diagram(170P6)

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PHILIPS
SCALER BOARD
SB: 61941 x 2
PB: 61951

Ref. Des.	Reserved
1508	242202518814 63392
2513	223879815649 100n
2528	223879815649 100n
3533	242202518814 63392
3538	242202518814 63392

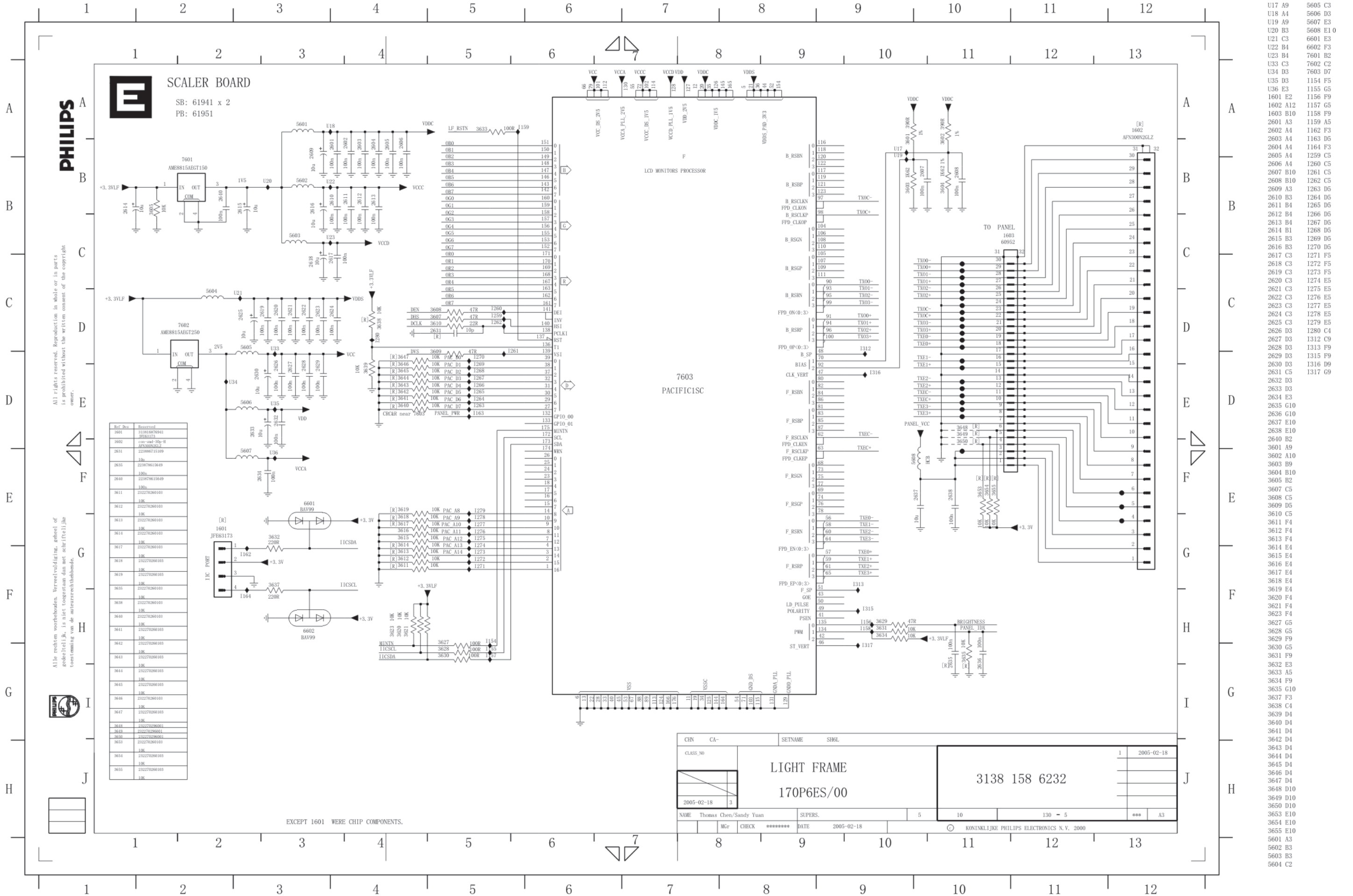
EXCEPT 1502, 1503, 1507, 1508 WERE CHIP COMPONENTS.

CHN CA-	SETNAME SH6L		
CLASS. NO	POWER	1	2005-02-18
	170P6ES/00		
2005-02-18	3		
NAME Thomas Chen/Sandy Yuan	SUPERS.	5	
CHECK	DATE 2005-02-18		
		130 - 4	A3
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- U6 D10 F075 C 7
- U7 D9 F076 F 7
- U8 D10 F077 F 7
- U10 E4 F078 F 7
- U11 E8 F080 C 6
- U13 F10 F081 E 7
- U14 F10 F082 E 7
- U15 F3 F083 F 7
- U16 F4 I253 G 3
- U41 E5 I254 C 5
- U47 D9 I255 E 2
- U51 D7 I256 E 3
- U60 C3 I257 E 3
- U62 B3 I327 A 4
- U102 B1 I328 B 5
- U103 B6 I329 E 5
- U107 E7 I330 B 4
- U108 F7
- U201 C3
- U202 C4
- U203 C4
- U207 C3
- U208 C4
- U209 C4
- U210 B4
- U211 B4
- U212 B10
- U213 B9
- U214 B9
- U215 C9
- U216 C9
- U217 C9
- U218 D9
- U219 D9
- U220 E1
- U221 E5
- U222 G8
- U223 G8
- U224 G4
- U225 B3
- U226 G8
- U227 G8
- U228 B5
- U230 F8
- U234 B9
- U235 B10
- U236 C10
- U237 C10
- U238 C10
- U239 D9
- U240 D10
- U241 D9
- U242 D10
- U243 B9
- U244 B9
- U245 B9
- U246 B10
- U247 E4
- U248 E2
- U249 E4
- U250 F9
- U251 F9
- U252 F9
- U253 F10
- U254 F10
- U255 F3
- U256 F4
- U257 E2
- U258 E2
- U259 F9
- U260 E8
- U261 F9
- U262 E5
- U263 E5
- U264 E8
- U265 E8
- U266 E8
- U267 D9
- U268 E3
- U269 E4
- U270 E2
- U271 F11
- U272 F3
- U273 F4
- U274 F4
- U275 E8
- U276 C3
- U277 C7
- U278 E7
- U279 C7
- U280 E7
- U281 E7
- U282 C7
- U283 E7
- U284 C7

Scaler Diagram(170P6)

Go to cover page

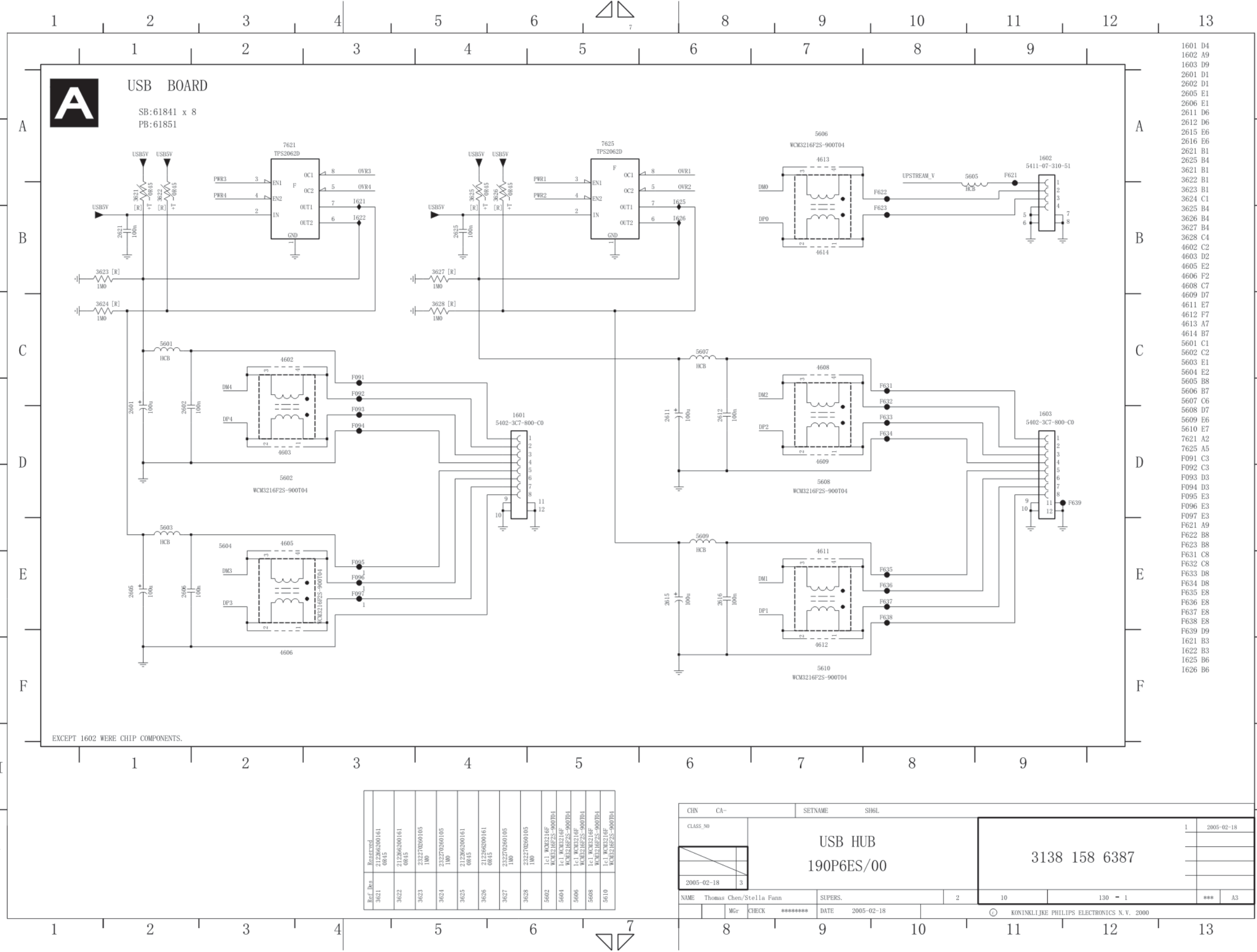


USB Diagram(190P6)

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- 1601 D4
- 1602 A9
- 1603 D9
- 2601 D1
- 2602 D1
- 2605 E1
- 2606 E1
- 2611 D6
- 2612 D6
- 2615 E6
- 2616 E6
- 2621 B1
- 2625 B4
- 3621 B1
- 3622 B1
- 3623 B1
- 3624 C1
- 3625 B4
- 3626 B4
- 3627 B4
- 3628 C4
- 4602 C2
- 4603 D2
- 4605 E2
- 4606 F2
- 4608 C7
- 4609 D7
- 4611 E7
- 4612 F7
- 4613 A7
- 4614 B7
- 5601 C1
- 5602 C2
- 5603 E1
- 5604 E2
- 5605 B8
- 5606 B7
- 5607 C6
- 5608 D7
- 5609 E6
- 5610 E7
- 7621 A2
- 7625 A5
- F091 C3
- F092 C3
- F093 D3
- F094 D3
- F095 E3
- F096 E3
- F097 E3
- F621 A9
- F622 B8
- F623 B8
- F631 C8
- F632 C8
- F633 D8
- F634 D8
- F635 E8
- F636 E8
- F637 E8
- F638 E8
- F639 D9
- 1621 B3
- 1622 B3
- 1625 B6
- 1626 B6

EXCEPT 1602 WERE CHIP COMPONENTS.

Ref. Des.	21296200161	0845	1,1	WCM3216F
	3622	21296200161	0845	1-c1 WCM3216F
	3623	232270260105	180	WCM3216F2S-900T04
	3624	232270260105	180	WCM3216F2S-900T04
	3625	21296200161	0845	1-c1 WCM3216F
	3626	21296200161	0845	1-c1 WCM3216F
	3627	232270260105	180	WCM3216F2S-900T04
	3628	232270260105	180	WCM3216F2S-900T04
	5602	1,1	WCM3216F	
	5604	1-c1 WCM3216F		
	5606	1-c1 WCM3216F		
	5608	1-c1 WCM3216F		
	5610	1-c1 WCM3216F		

CHN	CA-	SETNAME	SH6L
CLASS_NO		USB HUB	
		190P6ES/00	
		3138 158 6387	
NAME	Thomas Chen/Stella Fann	SUPERS.	2
DATE	2005-02-18		
KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000			

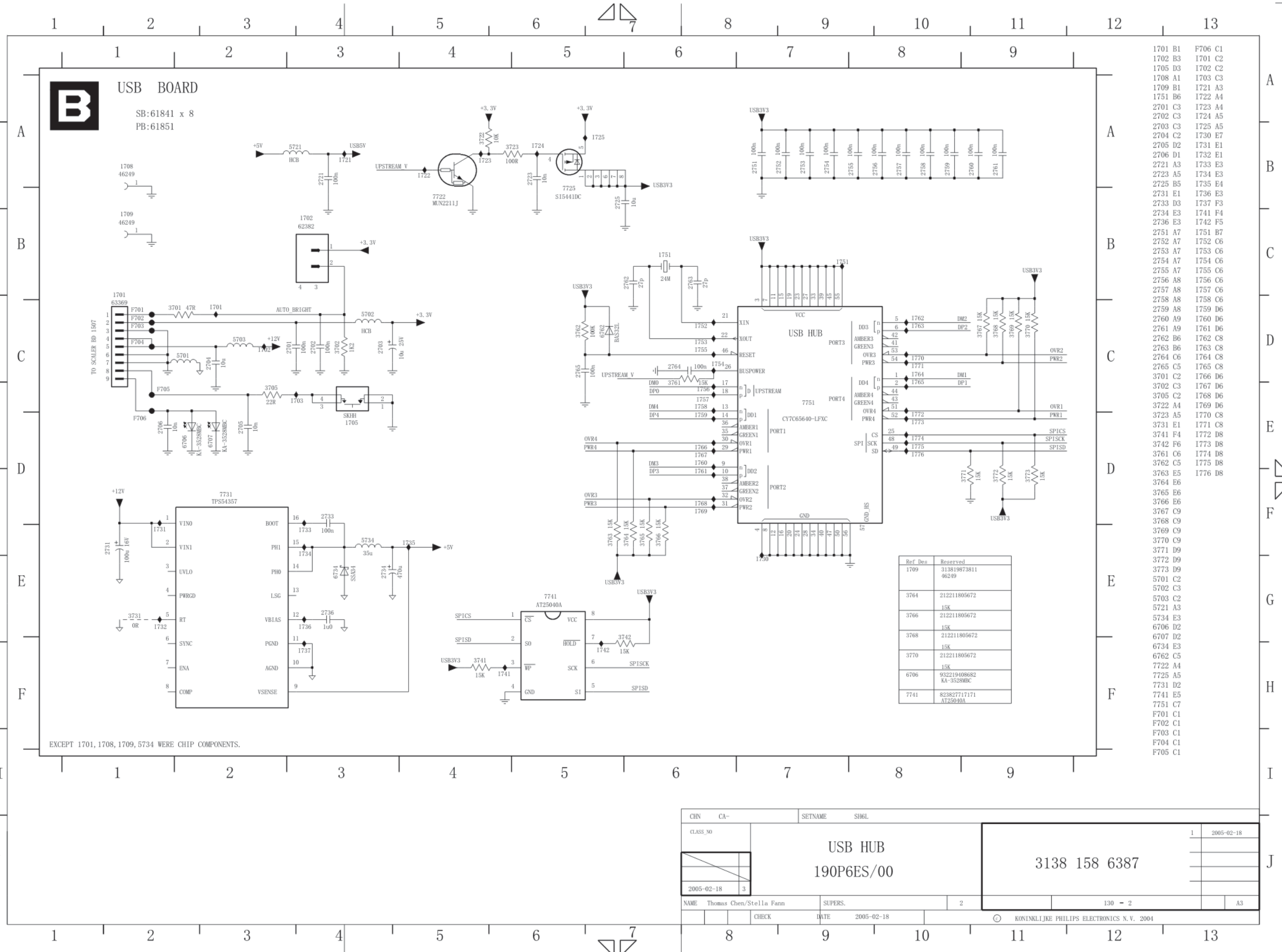
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USB Diagram(190P6)

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1701	B1	F706	C1
1702	B3	F701	C2
1705	D3	F702	C2
1708	A1	F703	C3
1709	B1	F721	A3
1751	B6	F722	A4
2701	C3	F723	A4
2702	C3	F724	A5
2703	C3	F725	A5
2704	C2	F730	E7
2705	D2	F731	E1
2706	D1	F732	E1
2721	A3	F733	E3
2723	A5	F734	E3
2725	B5	F735	E4
2731	E1	F736	E3
2733	D3	F737	F3
2734	E3	F741	F4
2736	E3	F742	F5
2751	A7	F751	B7
2752	A7	F752	C6
2753	A7	F753	C6
2754	A7	F754	C6
2755	A7	F755	C6
2756	A8	F756	C6
2757	A8	F757	C6
2758	A8	F758	C6
2759	A8	F759	D6
2760	A9	F760	D6
2761	A9	F761	D6
2762	B6	F762	C8
2763	B6	F763	C8
2764	C6	F764	C8
2765	C5	F765	C8
3701	C2	F766	D6
3702	C3	F767	D6
3705	C2	F768	D6
3722	A4	F769	D6
3723	A5	F770	C8
3731	E1	F771	C8
3741	F4	F772	D8
3742	F6	F773	D8
3761	C6	F774	D8
3762	C5	F775	D8
3763	E5	F776	D8
3764	E6		
3765	E6		
3766	E6		
3767	C9		
3768	C9		
3769	C9		
3770	C9		
3771	D9		
3772	D9		
3773	D9		
5701	C2		
5702	C3		
5703	C2		
5721	A3		
5734	E3		
6706	D2		
6707	D2		
6734	E3		
6762	C5		
7722	A4		
7725	A5		
7731	D2		
7741	E5		
7751	C7		
F701	C1		
F702	C1		
F703	C1		
F704	C1		
F705	C1		

Ref. Des	Reserved
1709	313819873811 46249
3764	212211805672 15K
3766	212211805672 15K
3768	212211805672 15K
3770	212211805672 15K
6706	932219408682 KA-3528MBC
7741	823827717171 AT25040A

EXCEPT 1701, 1708, 1709, 5734 WERE CHIP COMPONENTS.

CIN	CA-	SETNAME	SH6L
CLASS_30	USB HUB		1 2005-02-18
2005-02-18		190P6ES/00	3138 158 6387
NAME	Thomas Chen/Stella Fann	SUPERS.	2 130 - 2 A3
CHECK	DATE	2005-02-18	© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2004

USB Board C.B.A

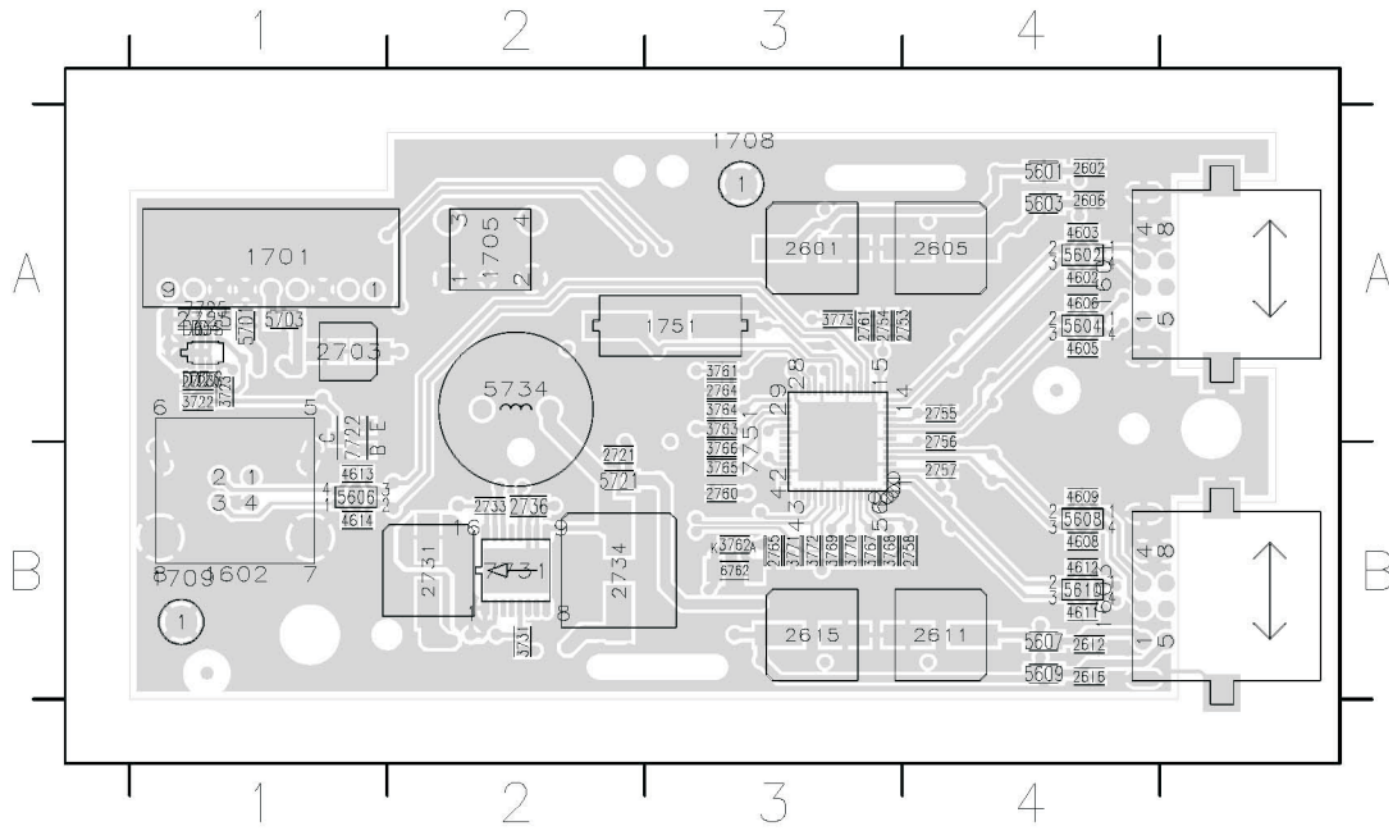
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166001	A4	226611	B4	277553	A3	377331	B2	37772	B3	56601	A4	5734	A2
166002	B4	226612	B4	277554	A3	377332	B2	37773	A3	56602	A4	6762	B3
170001	A1	226613	B4	277555	A4	377333	B2	466002	A4	56603	A4	7722	A1
170002	A2	226614	A1	277556	B4	377334	A3	466003	A4	56604	A4	7725	A1
170003	B1	226615	B2	277557	B4	377335	A3	466004	A4	56605	B1	7731	B2
170004	B2	226616	A1	277558	B3	377336	B2	466005	A4	56606	B4	7751	B3
175001	A3	226617	A1	277559	A3	377337	B2	466006	B4	56607	B4		
226601	A4	226618	B2	277560	A3	377338	B2	466007	B4	56608	B4		
226602	A4	226619	B2	277561	B3	377339	B2	466008	B4	56609	B4		
226603	A4	226620	B2	277562	A1	377340	B3	466009	B4	5701	A1		
226604	A4	226621	B2	277563	A1	377341	B3	466010	B4	5703	A1		
226605	A4	226622	B2	277564	A1	377342	B3	466011	B4	5721	B2		



Special Notes: Item 1702 and 1705 are placed on A

CN CA- LCD SH6		2005-02-04	
CLASS No. 3XX000		USB Hub BOARD	
2005-02-04		SH6 170P6/190P6	
NAME Thomas Chen/Stella		SUPERS 2	
CHECK		DATE 2005-02-04	
		© Philips Electronics N.V.	
		3138 103 6184	
		10 132 - 1	
		A3	

USB Board C.B.A

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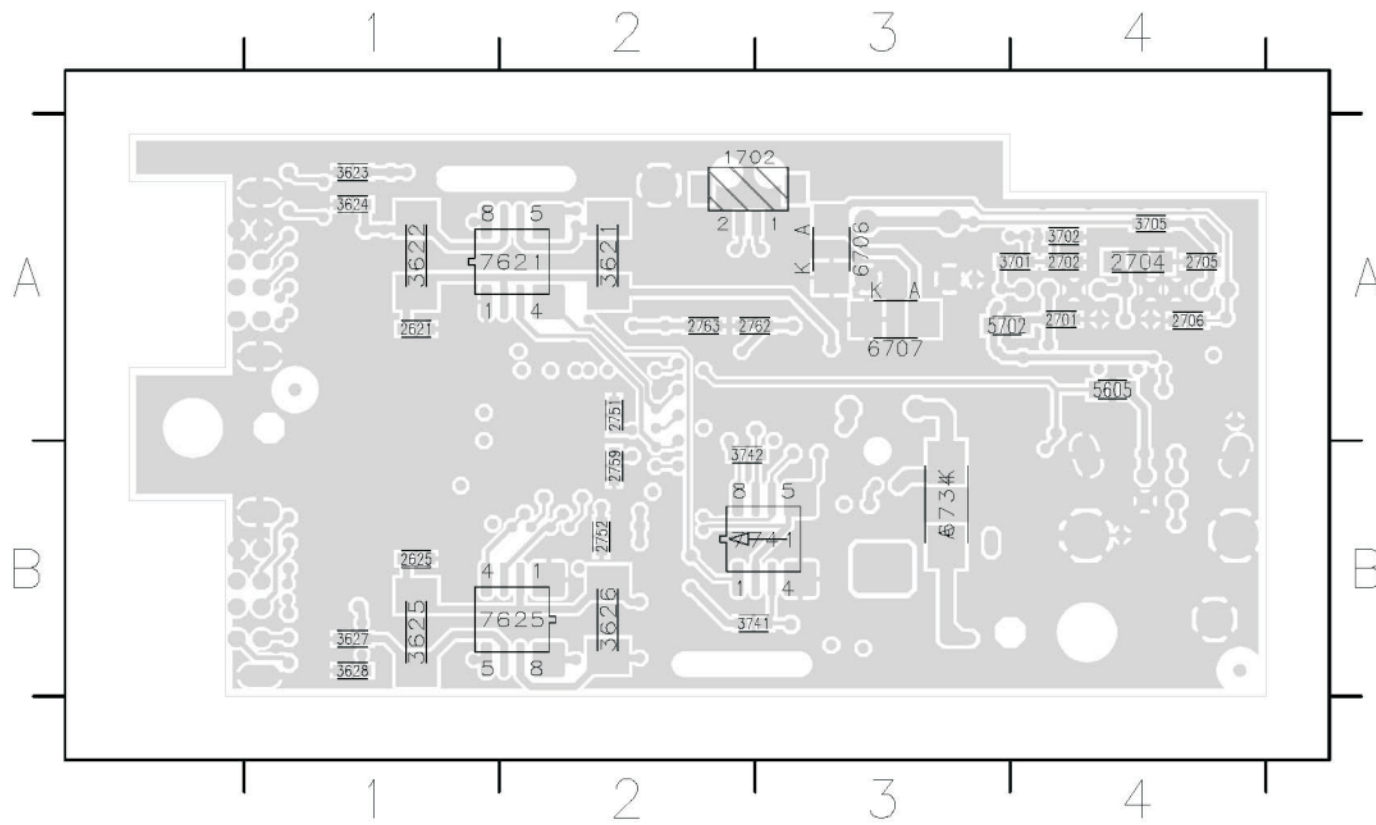
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e

f

1702	A2	2704	A4	2759	B2	3623	A1	3628	B1	3742	B2	6734	B3
2621	A1	2705	A4	2762	A2	3624	A1	3701	A4	5605	A4	7621	A2
2625	B1	2706	A4	2763	A2	3625	B1	3702	A4	5702	A3	7625	B2
2701	A4	2751	A2	3621	A2	3626	B2	3705	A4	6706	A3	7741	B3
2702	A4	2752	B2	3622	A1	3627	B1	3741	B2	6707	A3		



Special Notes: Item 1702 and 1705 are placed on A side

CM: GA-		LCD SH6	
CLASS NO. 3XX000		USB Hub BOARD	
2005-02-04 3		SH6 170P6/190P6	
NAME Thomas Chen/Stella		SUPERS	
CHECK		DATE 2005-02-04	
2		10 132 - 2	
© Philips Electronics N.V.		A3	

a
b
c
d

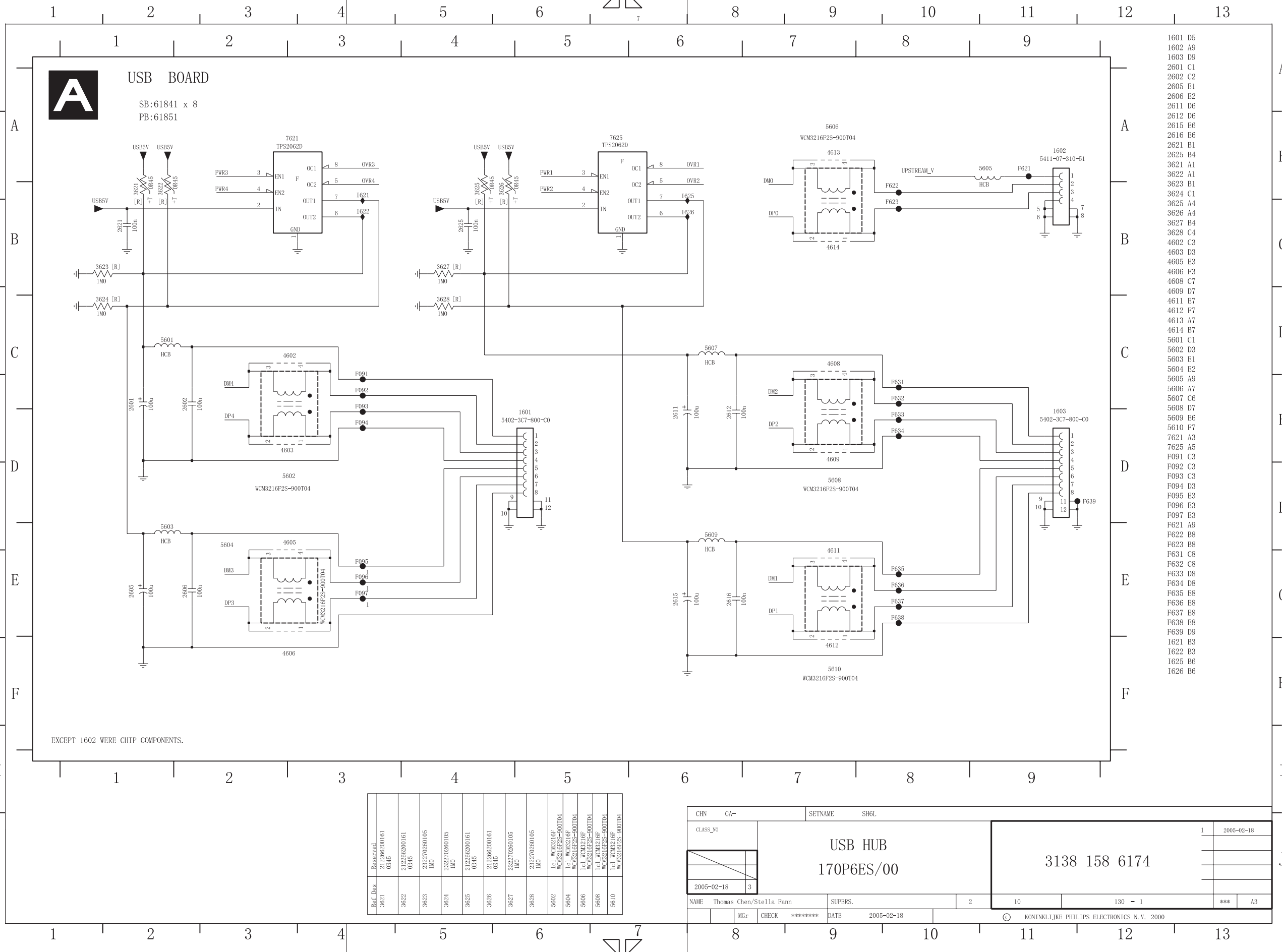
1 2 3 4

USB Diagram(170P6)

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- 1601 D5
- 1602 A9
- 1603 D9
- 2601 C1
- 2602 C2
- 2605 E1
- 2606 E2
- 2611 D6
- 2612 D6
- 2615 E6
- 2616 E6
- 2621 B1
- 2625 B4
- 3621 A1
- 3622 A1
- 3623 B1
- 3624 C1
- 3625 A4
- 3626 A4
- 3627 B4
- 3628 C4
- 4602 C3
- 4603 D3
- 4605 E3
- 4606 F3
- 4608 C7
- 4609 D7
- 4611 E7
- 4612 F7
- 4613 A7
- 4614 B7
- 5601 C1
- 5602 D3
- 5603 E1
- 5604 E2
- 5605 A9
- 5606 A7
- 5607 C6
- 5608 D7
- 5609 E6
- 5610 F7
- 7621 A3
- 7625 A5
- F091 C3
- F092 C3
- F093 C3
- F094 D3
- F095 E3
- F096 E3
- F097 E3
- F621 A9
- F622 B8
- F623 B8
- F631 C8
- F632 C8
- F633 D8
- F634 D8
- F635 E8
- F636 E8
- F637 E8
- F638 E8
- F639 D9
- I621 B3
- I622 B3
- I625 B6
- I626 B6

EXCEPT 1602 WERE CHIP COMPONENTS.

Ref. Des.	Reserved
3621	212266200161 0845
3622	212266200161 0845
3623	232270260105 180
3624	232270260105 180
3625	212266200161 0845
3626	212266200161 0845
3627	232270260105 180
3628	232270260105 180
5602	1.1 WCM3216F WCM3216F2S-900T04
5604	1.c1 WCM3216F WCM3216F2S-900T04
5606	1.c1 WCM3216F WCM3216F2S-900T04
5608	1.c1 WCM3216F WCM3216F2S-900T04
5610	1.c1 WCM3216F2S-900T04

CHN CA-	SETNAME SH6L	
CLASS_no	1	2005-02-18
USB HUB 170P6ES/00		
3138 158 6174		
NAME Thomas Chen/Stella Fann	SUPERS.	2
MGr	CHECK *****	DATE 2005-02-18
KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000		

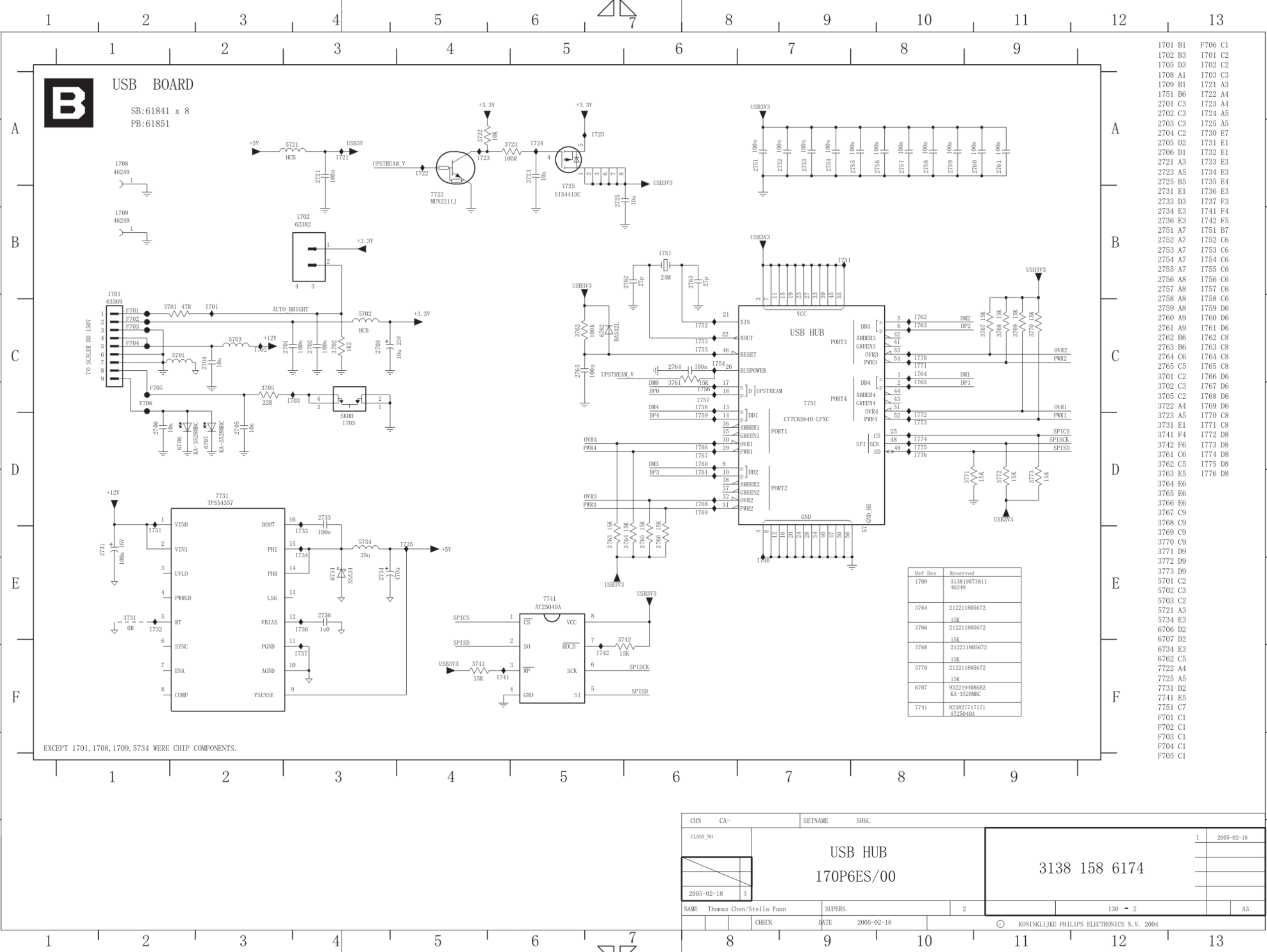
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USB Diagram(170P6)

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1701 B1	F706 C1
1702 B3	1701 C2
1705 D3	1702 C2
1708 A1	1703 C3
1709 B1	1721 A3
1751 B6	1722 A4
2701 C3	1723 A4
2702 C3	1724 A5
2703 C3	1725 A5
2704 C2	1730 E7
2705 D2	1731 E1
2706 D1	1732 E1
2721 A3	1733 E3
2723 A5	1734 E3
2725 B5	1735 E4
2731 E1	1736 E3
2733 D3	1737 F3
2734 E3	1741 F4
2736 E3	1742 F5
2751 A7	1751 B7
2752 A7	1752 C6
2753 A7	1753 C6
2754 A7	1754 C6
2755 A7	1755 C6
2756 A8	1756 C6
2757 A8	1757 C6
2758 A8	1758 C6
2759 A8	1759 D6
2760 A9	1760 D6
2761 A9	1761 D6
2762 B6	1762 C8
2763 B6	1763 C8
2764 C6	1764 C8
2765 C5	1765 C8
3701 C2	1766 D6
3702 C3	1767 D6
3705 C2	1768 D6
3722 A4	1769 D6
3723 A5	1770 C8
3731 E1	1771 C8
3741 F4	1772 D8
3742 F6	1773 D8
3761 C6	1774 D8
3762 C5	1775 D8
3763 E5	1776 D8
3764 E6	
3765 E6	
3766 E6	
3767 C9	
3768 C9	
3769 C9	
3770 C9	
3771 D9	
3772 D9	
3773 D9	
5701 C2	
5702 C3	
5703 C2	
5721 A3	
5734 E3	
6706 D2	
6707 D2	
6734 E3	
6762 C5	
7722 A4	
7725 A5	
7731 D2	
7741 E5	
7751 C7	
F701 C1	
F702 C1	
F703 C1	
F704 C1	
F705 C1	

Ref Des	Reserved
1709	313819873811 46249
3764	212211805672 15K
3766	212211805672 15K
3768	212211805672 15K
3770	212211805672 15K
6707	932219408682 KA-3528MBC
7741	823827717171 AT25040A

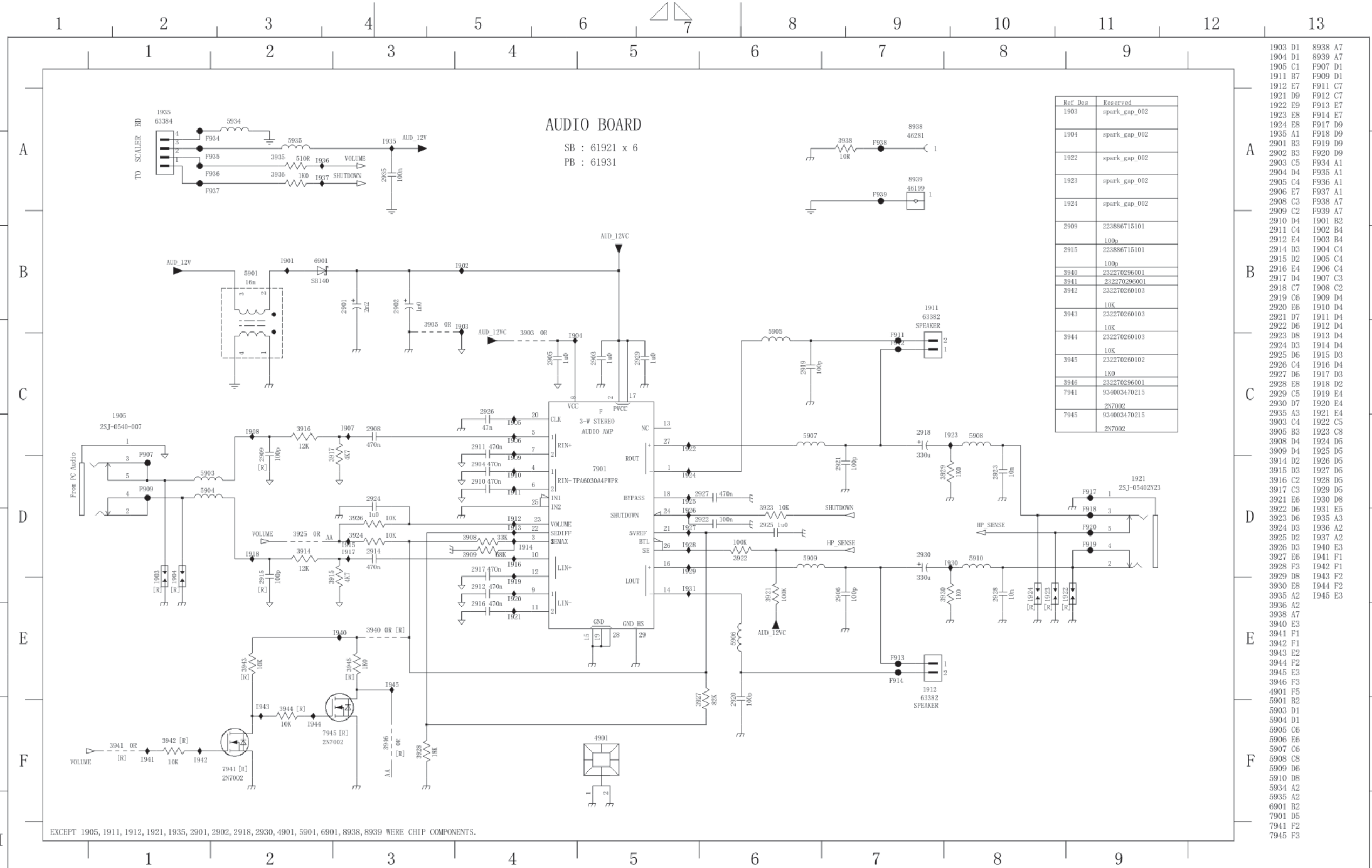
CHN	CA-	SETNAME	SH6L
CLASS_NO	USB HUB 170P6ES/00		1 2005-02-18
		3138 158 6174	
NAME	Thomas Chen/Stella Fann	SUPERS.	2 130 - 2
CHECK	DATE	2005-02-18	© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2004

Audio Diagram(190P6)

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Ref Des	Reserved
1903	spark_gap_002
1904	spark_gap_002
1922	spark_gap_002
1923	spark_gap_002
1924	spark_gap_002
2909	223886715101
2915	223886715101
3940	232270296001
3941	232270296001
3942	232270260103
3943	232270260103
3944	232270260103
3945	232270260102
3946	232270296001
7941	934003470215
7945	2N7002
	2N7002

- 1903 D1 8938 A7
- 1904 D1 8939 A7
- 1905 C1 F907 D1
- 1911 B7 F909 D1
- 1912 E7 F911 C7
- 1921 D9 F912 C7
- 1922 E9 F913 E7
- 1923 E8 F914 E7
- 1924 E8 F917 D9
- 1935 A1 F918 D9
- 2901 B3 F919 D9
- 2902 B3 F920 D9
- 2903 C5 F934 A1
- 2904 D4 F935 A1
- 2905 C4 F936 A1
- 2906 E7 F937 A1
- 2908 C3 F938 A7
- 2909 C2 F939 A7
- 2910 D4 1901 B2
- 2911 C4 1902 B4
- 2912 E4 1903 B4
- 2914 D3 1904 C4
- 2915 D2 1905 C4
- 2916 E4 1906 C4
- 2917 D4 1907 C3
- 2918 C7 1908 C2
- 2919 C6 1909 D4
- 2920 E6 1910 D4
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- 2922 D6 1912 D4
- 2923 D8 1913 D4
- 2924 D3 1914 D4
- 2925 D6 1915 D3
- 2926 C4 1916 D4
- 2927 D6 1917 D3
- 2928 E8 1918 D2
- 2929 C5 1919 E4
- 2930 D7 1920 E4
- 2935 A3 1921 E4
- 3903 C4 1922 C5
- 3905 B3 1923 C8
- 3908 D4 1924 D5
- 3909 D4 1925 D5
- 3914 D2 1926 D5
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- 3916 C2 1928 D5
- 3917 C3 1929 D5
- 3921 E6 1930 D8
- 3922 D6 1931 E5
- 3923 D6 1935 A3
- 3924 D3 1936 A2
- 3925 D2 1937 A2
- 3926 D3 1940 E3
- 3927 E6 1941 F1
- 3928 F3 1942 F1
- 3929 D8 1943 F2
- 3930 E8 1944 F2
- 3935 A2 1945 E3
- 3936 A2 1945 E3
- 3938 A7 1945 E3
- 3940 E3 1945 E3
- 3941 F1 1945 E3
- 3942 F1 1945 E3
- 3943 E2 1945 E3
- 3944 F2 1945 E3
- 3945 E3 1945 E3
- 3946 F3 1945 E3
- 4901 B1 1945 E3
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CLASS_NO			1 2005-02-18
AUDIO AMP 190P6ES/00		3138 158 6379	
NAME	Kurtz Ko/Stella Fann	SUPERS.	1 10 130 - 1 *** A3
Mr	CHECK *****	DATE	2005-02-18
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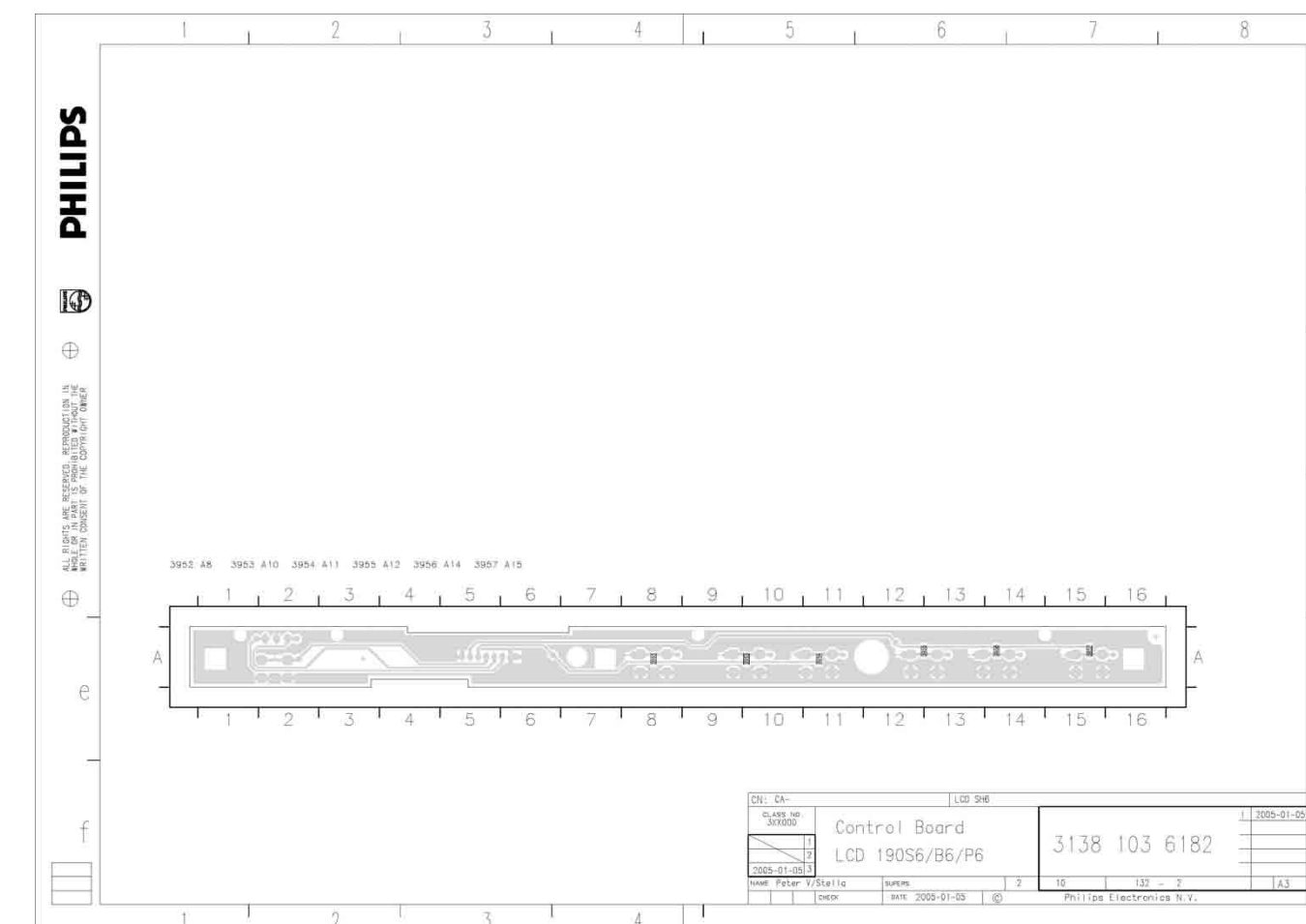
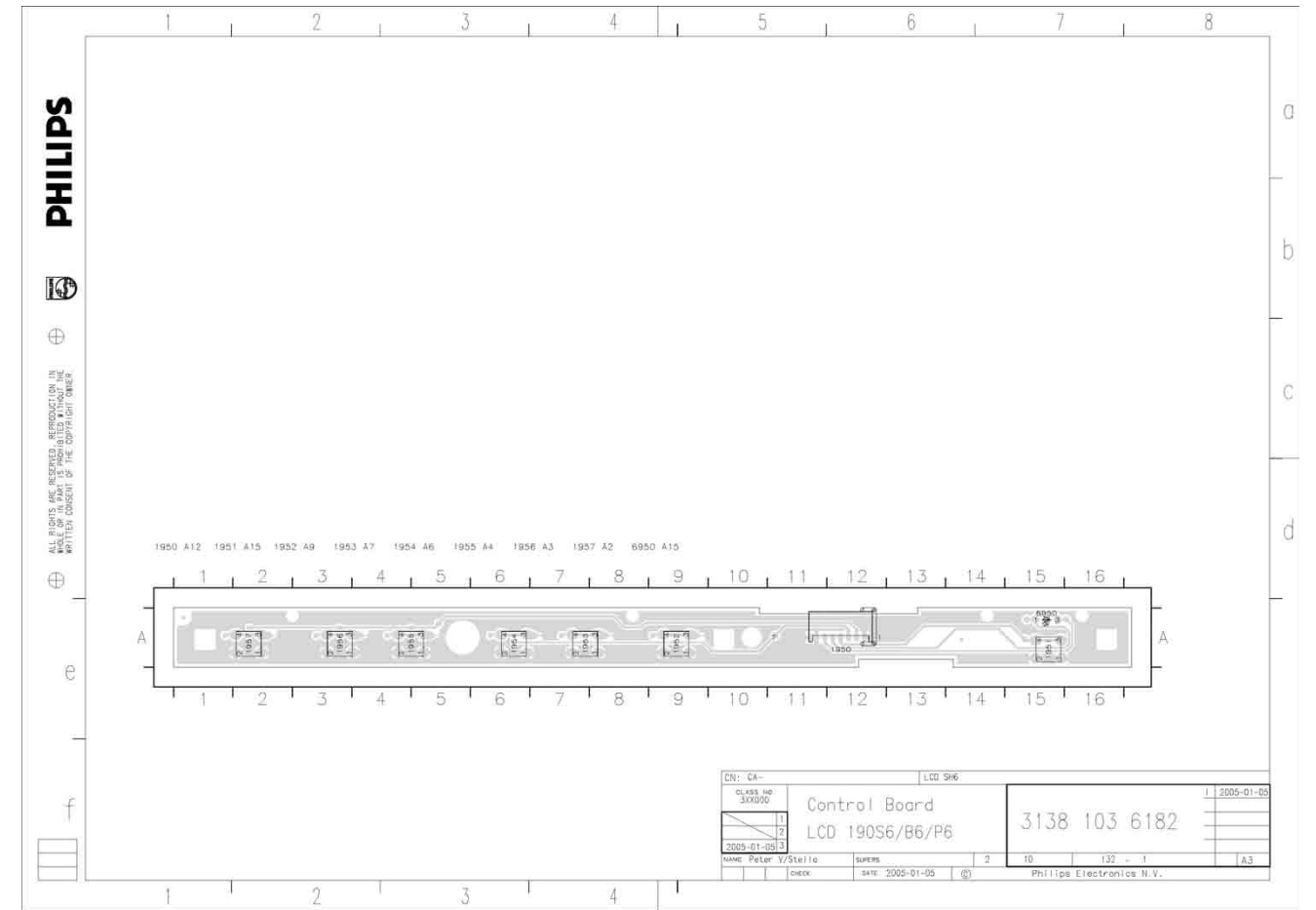
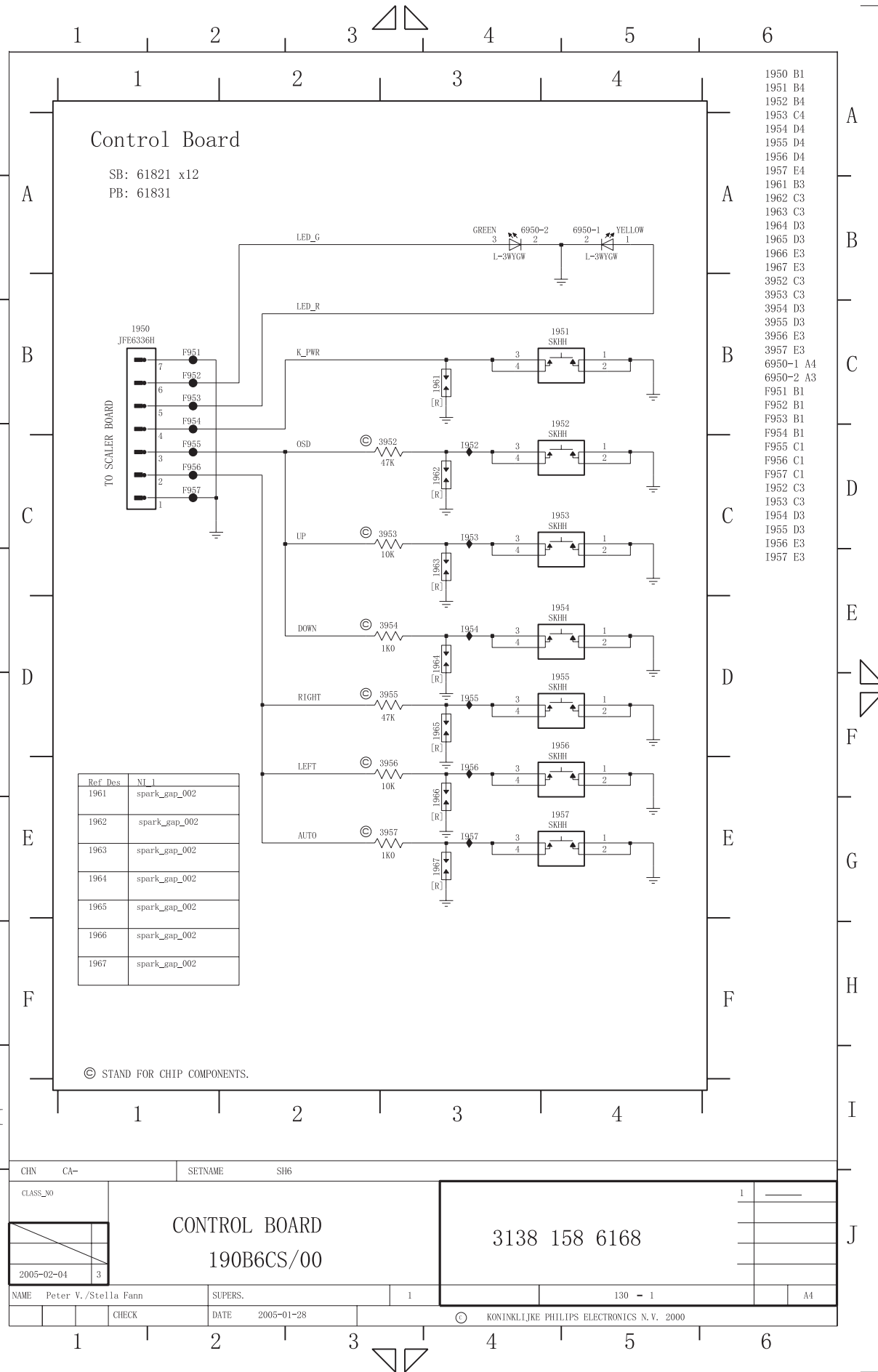
Control Diagram&C.B.A(190P6)

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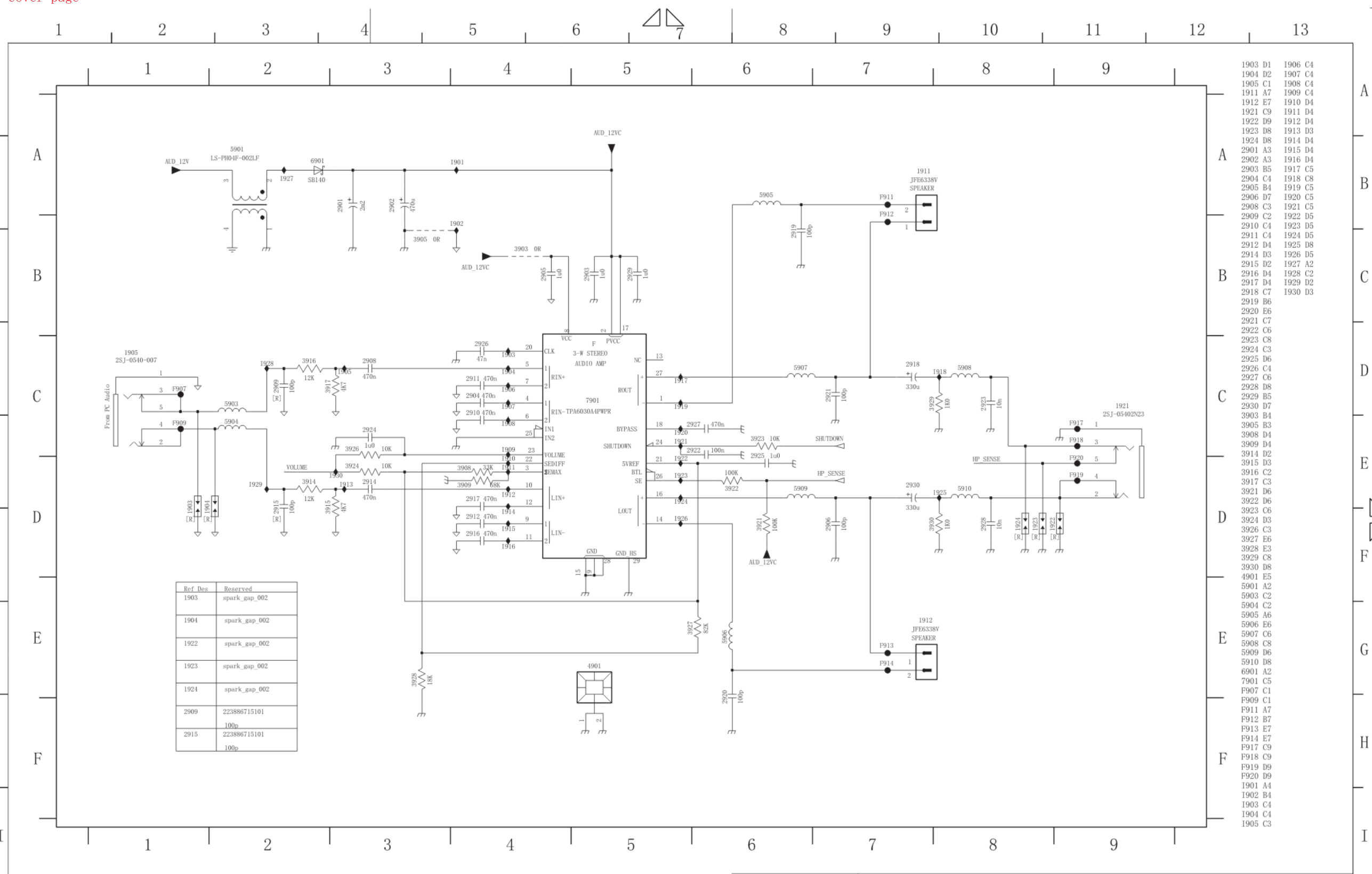
Control&Audio Diagram (170P6)

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- 1903 D1
- 1904 D2
- 1905 C1
- 1911 A7
- 1912 E7
- 1921 C9
- 1922 D9
- 1923 D8
- 1924 D8
- 2901 A3
- 2902 A3
- 2903 B5
- 2904 C4
- 2905 B4
- 2906 D7
- 2908 C3
- 2909 C2
- 2910 C4
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- 2912 D4
- 2914 D3
- 2915 D2
- 2916 D4
- 2917 D4
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- 2919 B6
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- 2922 C6
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- 2925 D6
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- 2928 D8
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- 2930 D7
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- 3908 D4
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- 3927 E6
- 3928 E3
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- 3930 D8
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- 5903 C2
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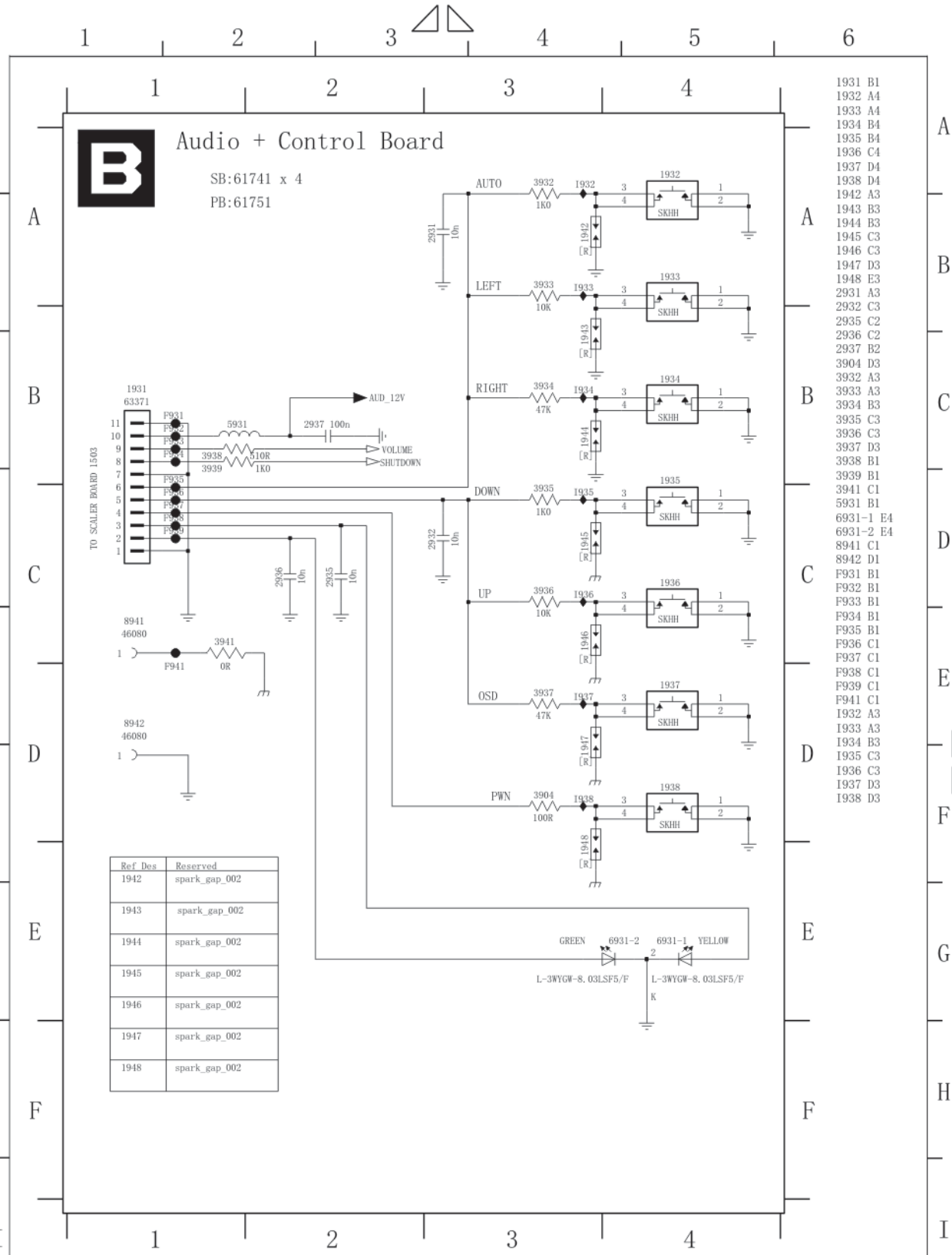
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 PB : 61751

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CLASS_NO	AUDIO AMP 170P6ES/00		1 2005-02-18
2005-02-18		3	3138 158 6378
NAME	Kurtz Ko/Stella Fann	SUPERS.	2 10 130 - 1 *** A3
MGr	CHECK	DATE	2005-02-18
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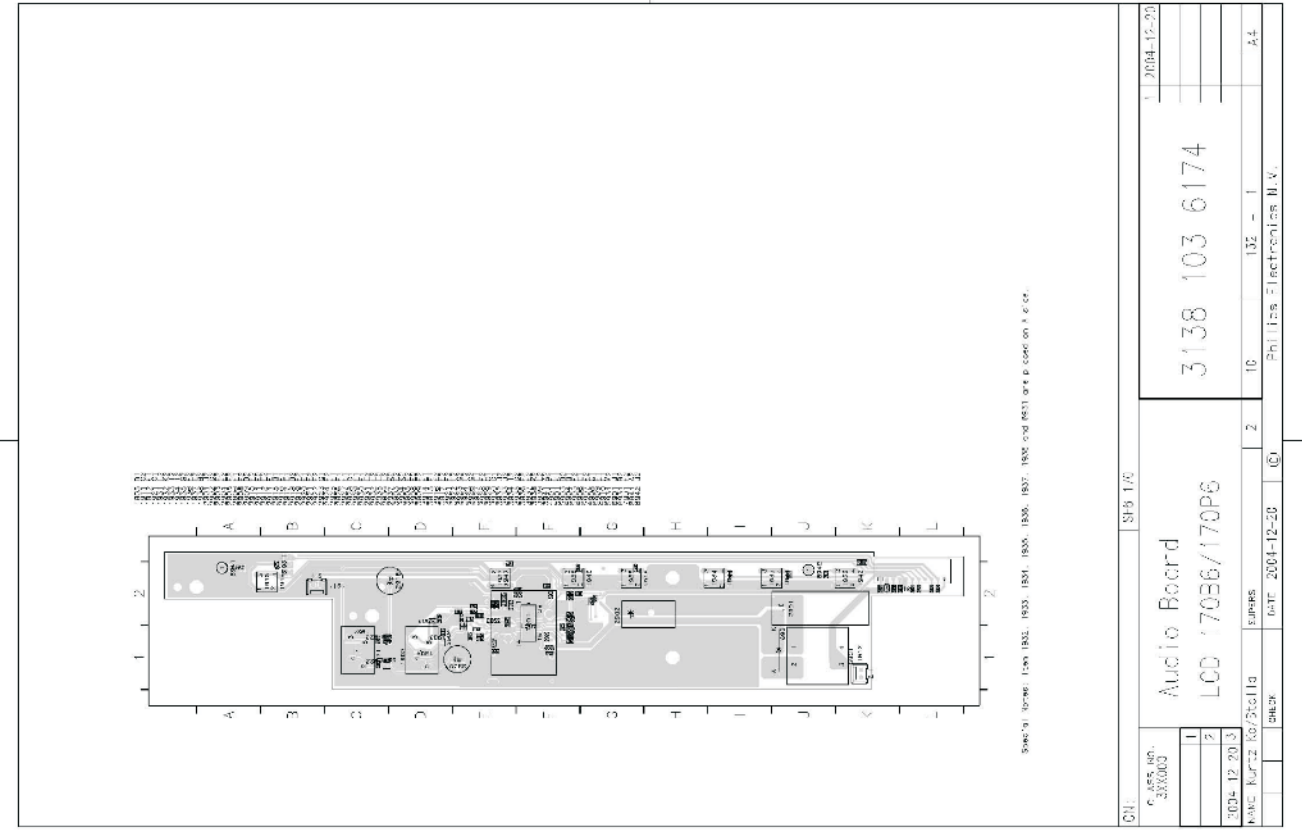
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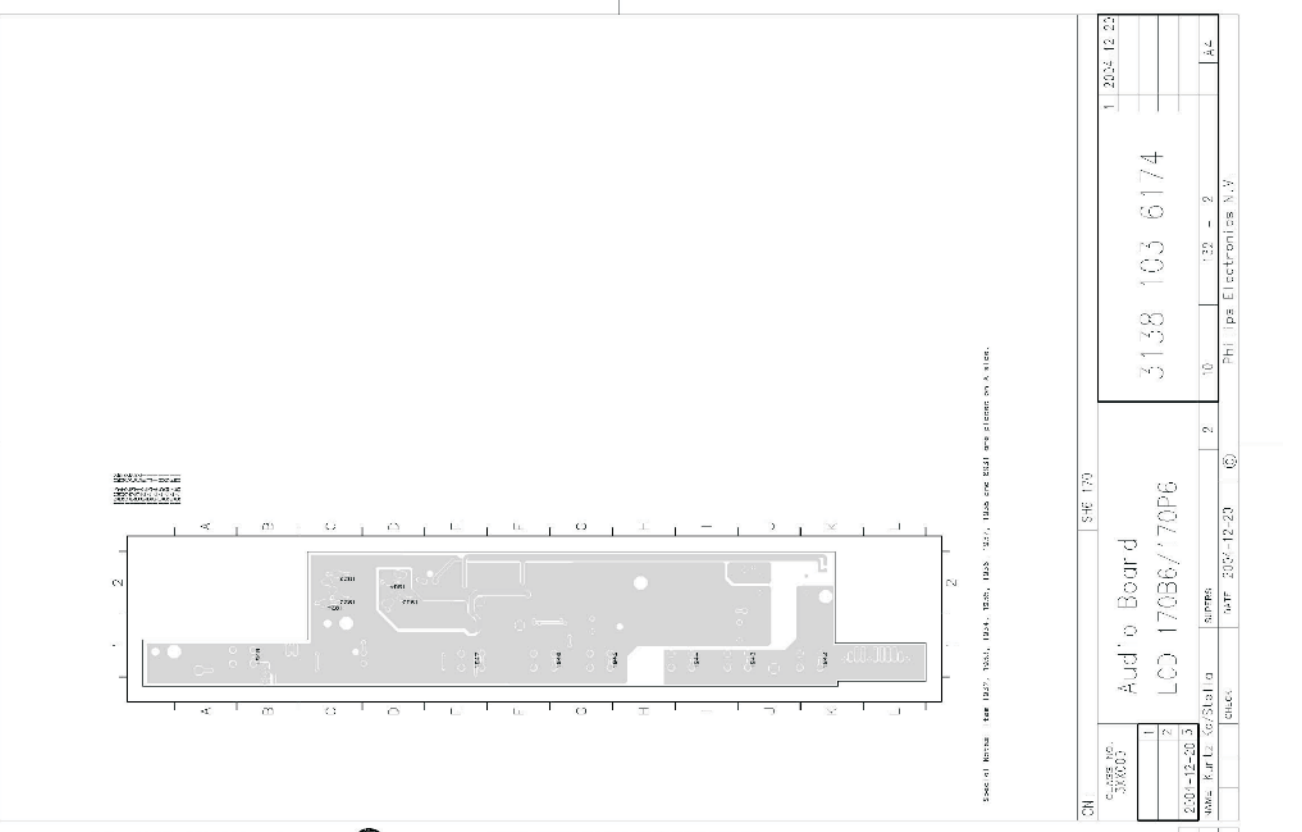


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- 1945 C3
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- 2932 C3
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- 2936 C2
- 2937 B2
- 3904 D3
- 3932 A3
- 3933 A3
- 3934 B3
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- 3937 D3
- 3938 B1
- 3939 B1
- 3941 C1
- 5931 B1
- 6931-1 E4
- 6931-2 E4
- 8941 C1
- 8942 D1
- F931 B1
- F932 B1
- F933 B1
- F934 B1
- F935 B1
- F936 C1
- F937 C1
- F938 C1
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- 1937 D3
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			3138 158 6378
NAME	Kurtz Ko/Stella Fann	SUPERS.	130 - 2
CHECK		DATE	2005-02-18
			KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000



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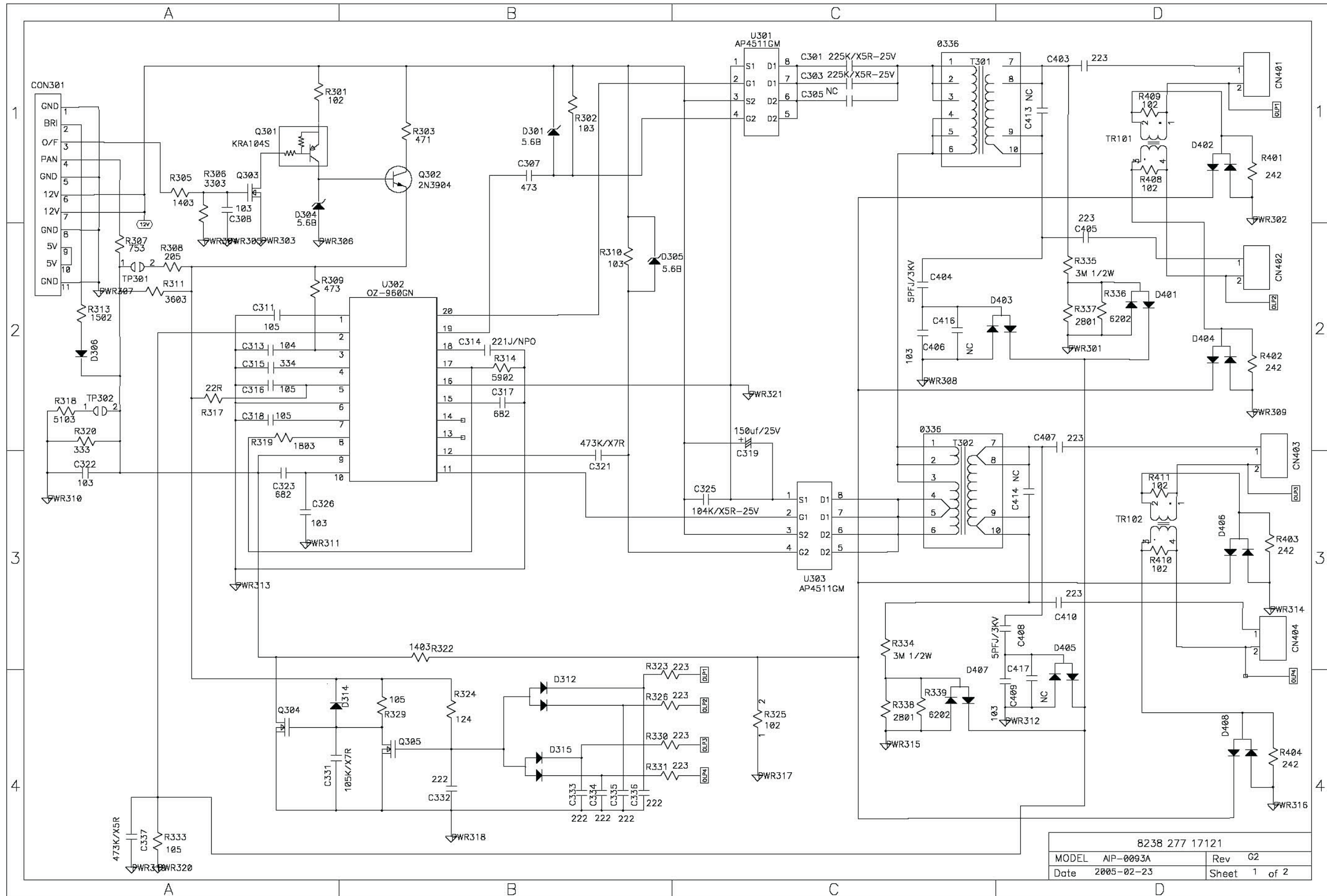


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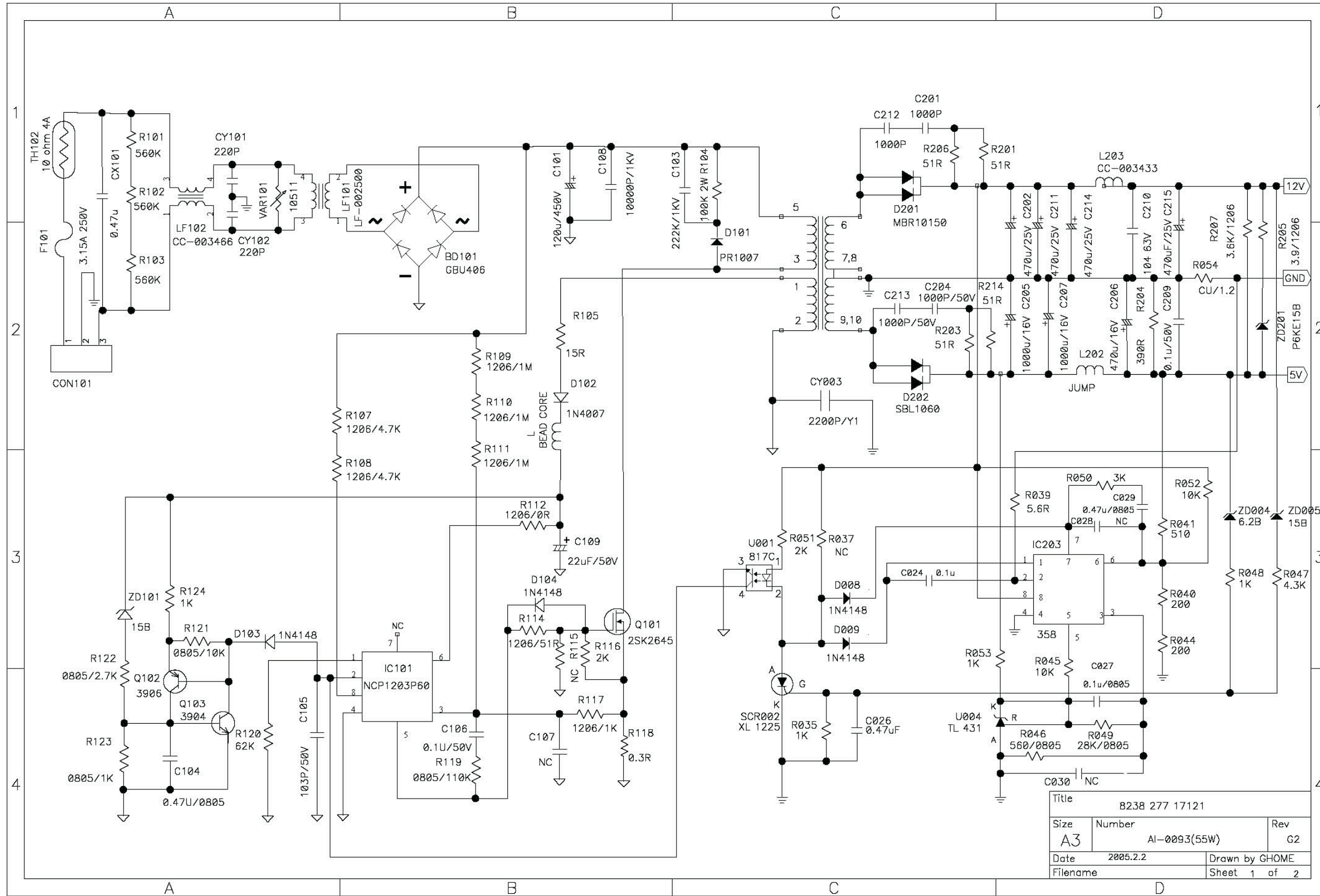
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Power Diagram

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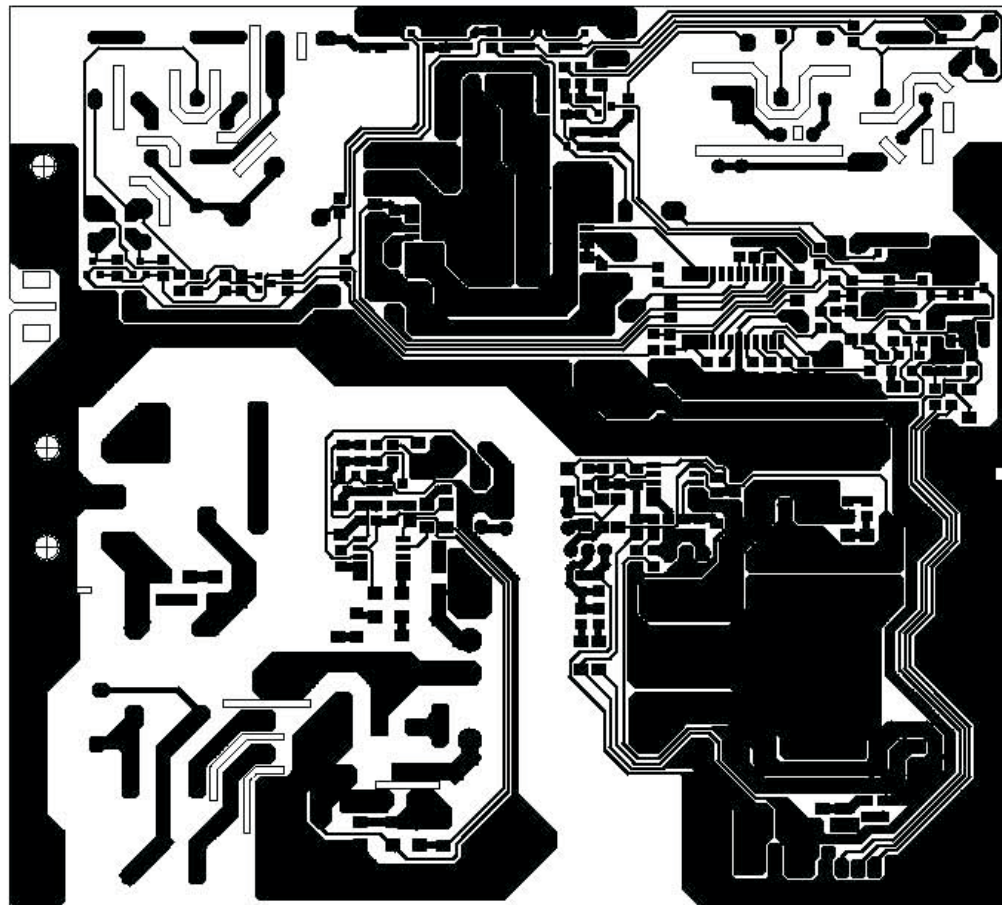
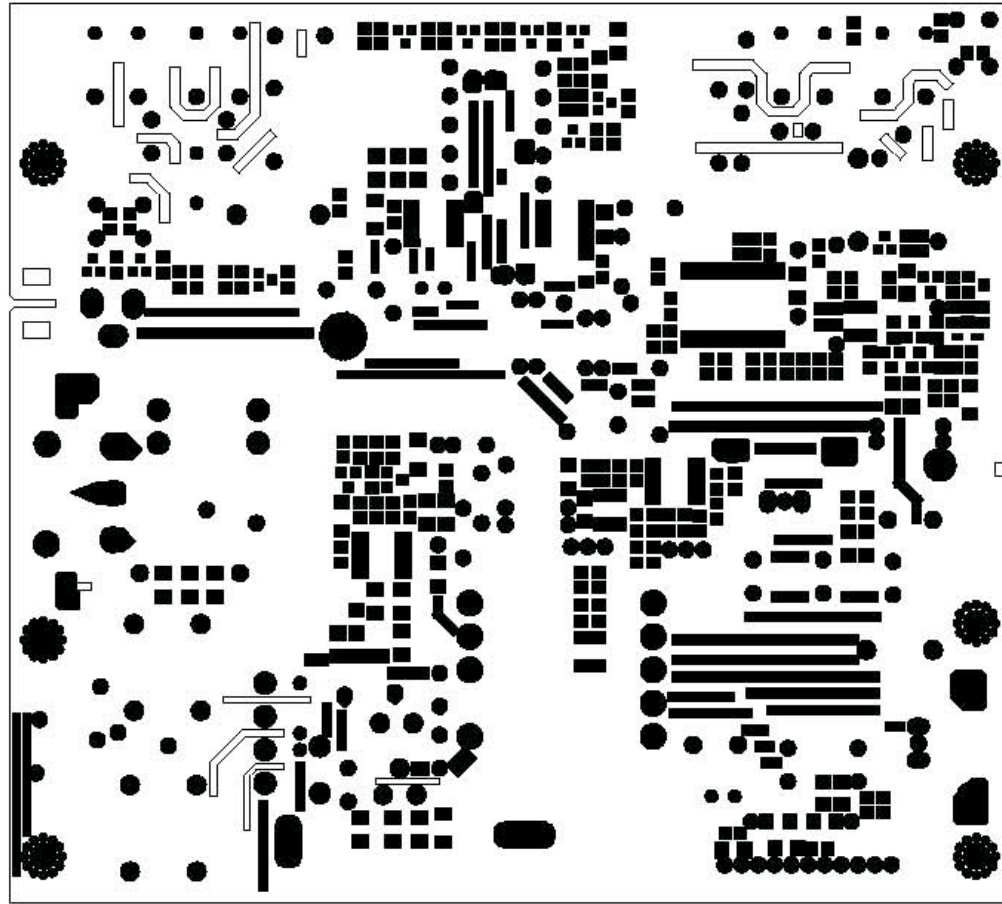


Power Diagram



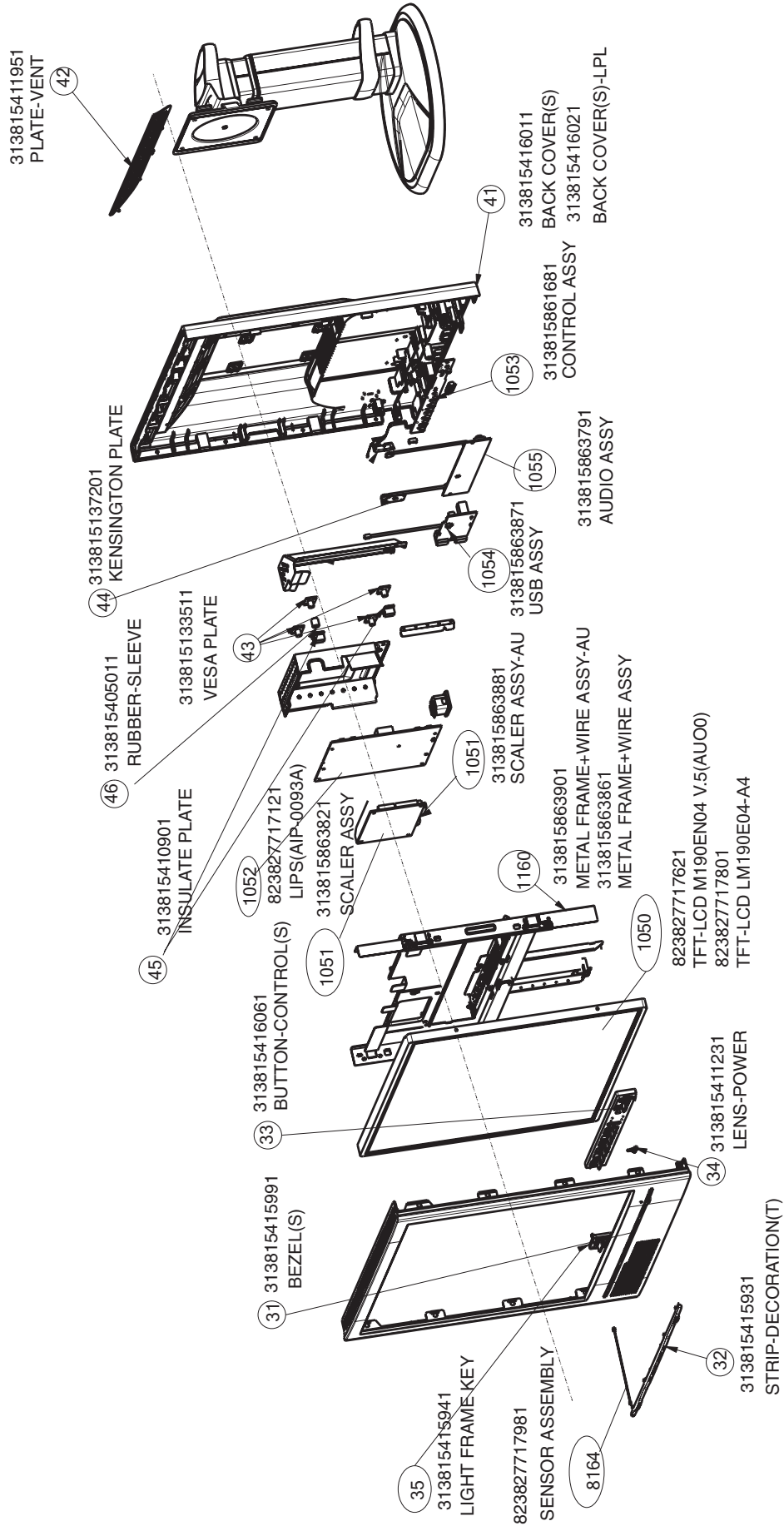
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Power Board C.B.A



Exploded View(190P6ES/00)

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


Recommended parts list

0040	313815759281	BACK COVER ASSY(S)-AU
0041	313815416011	BACK COVER(S)
0042	313815411951	PLATE-VENT
0043	313815133511	VESA PLATE
0044	313815137201	KENSINGTON PLATE
0045	313815410901	INSULATE PLATE
0046	313815405011	RUBBER-SLEEVE
0030	313815759271	FRONT BEZEL ASSY(S)
0602	313811708291	E-DFU
1161	313819871471	CORD DVI 18+1/1M8/DVI 18+1 BK
1162	313818878161	AUDIO CABLE
1163	313819875351	LSP BOX 16R 2W PS-010023
7621	932222269668	IC SM TPS2062DG4 (TI00) R
7625	932222269668	IC SM TPS2062DG4 (TI00) R
7722	932217440685	TRA SIG SM KRC102S (KECO) R
7725	932216638668	FET POW SM SI5441DC-E3 (VISH)R
7731	823827717521	IC
7751	932222162671	IC SM CY7C65640-LFXC (CYPR) Y
7203	932216972682	IC SM AT24C02N-10SC-2.7(ATME)L
7204	932216972682	IC SM AT24C02N-10SC-2.7(ATME)L
7211	935260739118	IC SM 74LVC14APW (PHSE) R
7301	313815863831	CPU IC ASSY
7301	932219106682	IC SM AT49LV002NT-90JU (ATME)L
7302	313815863891	EEPROM ASSY-AU
7302	932218650682	IC AT24C16A-10PU-2.7 (ATME) L
7403	932220099685	IC SM LD1117AS18 (ST00) R
7404	932220818671	IC SM GM5321-BC (GEMI) Y
7405	932222076668	IC SM AME1117CCGTZ (AME0) R
7501	932217439685	TRA SIG SM BC857C (KECO) R
7502	932217439685	TRA SIG SM BC857C (KECO) R
7503	932217440685	TRA SIG SM KRC102S (KECO) R
7504	932216638668	FET POW SM SI5441DC-E3 (VISH)R
7505	932217439685	TRA SIG SM BC857C (KECO) R
7506	932217440685	TRA SIG SM KRC102S (KECO) R
7507	932217440685	TRA SIG SM KRC102S (KECO) R
7508	932216638668	FET POW SM SI5441DC-E3 (VISH)R
7509	932217439685	TRA SIG SM BC857C (KECO) R
7601	932219359668	IC SM AME8815AEGT150Z (AME0) R
7602	932218246668	IC SM AME8815AEGT250Z (AME0) R
7603	823827716651	LIGHT FRAME IC

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Model:190P6ES/00(AUO PANEL)		2402	202203100182	ELCAP SM RVS 25V 10U PM20 R	2606	223878615649	CER2 0603 X7R 16V 100N PM10 R	
Mechanical Parts		2403	223878615649	CER2 0603 X7R 16V 100N PM10 R	2607	223878615649	CER2 0603 X7R 16V 100N PM10 R	
0040	313815759281	BACK COVER ASSY(S)-AU	2404	223878615649	CER2 0603 X7R 16V 100N PM10 R	2608	223878615649	CER2 0603 X7R 16V 100N PM10 R
0041	313815416011	BACK COVER(S)	2405	223878615649	CER2 0603 X7R 16V 100N PM10 R	2609	202203100182	ELCAP SM RVS 25V 10U PM20 R
0042	313815411951	PLATE-VENT	2406	223878615649	CER2 0603 X7R 16V 100N PM10 R	2610	223878615649	CER2 0603 X7R 16V 100N PM10 R
0043	313815133511	VESA PLATE	2407	223878615649	CER2 0603 X7R 16V 100N PM10 R	2611	223878615649	CER2 0603 X7R 16V 100N PM10 R
0044	313815137201	KENSINGTON PLATE	2408	202203100182	ELCAP SM RVS 25V 10U PM20 R	2612	223878615649	CER2 0603 X7R 16V 100N PM10 R
0045	313815410901	INSULATE PLATE	2409	223878615649	CER2 0603 X7R 16V 100N PM10 R	2613	223878615649	CER2 0603 X7R 16V 100N PM10 R
0046	313815405011	RUBBER-SLEEVE	2410	223878615649	CER2 0603 X7R 16V 100N PM10 R	2614	202203100182	ELCAP SM RVS 25V 10U PM20 R
0030	313815759271	FRONT BEZEL ASSY(S)	2411	223878615649	CER2 0603 X7R 16V 100N PM10 R	2615	202203100182	ELCAP SM RVS 25V 10U PM20 R
0031	313815415991	BEZEL(S)	2412	223878615649	CER2 0603 X7R 16V 100N PM10 R	2616	202203100182	ELCAP SM RVS 25V 10U PM20 R
0032	313815415931	STRIP-DECORATION(T)	2413	223878615649	CER2 0603 X7R 16V 100N PM10 R	2617	223878615649	CER2 0603 X7R 16V 100N PM10 R
0033	313815416061	BUTTON-CONTROL(S)	2414	223878615649	CER2 0603 X7R 16V 100N PM10 R	2618	202203100182	ELCAP SM RVS 25V 10U PM20 R
0034	313815411231	LENS-POWER	2415	223878615649	CER2 0603 X7R 16V 100N PM10 R	2619	223878615649	CER2 0603 X7R 16V 100N PM10 R
0035	313815415941	LIGHT FRAME KEY	2416	223878615649	CER2 0603 X7R 16V 100N PM10 R	2620	223878615649	CER2 0603 X7R 16V 100N PM10 R
8164	823827717981	SENSOR ASSEMBLY	2417	223878615649	CER2 0603 X7R 16V 100N PM10 R	2621	223878615649	CER2 0603 X7R 16V 100N PM10 R
0050	313815759231	SUPER ERGO BASE(B)	2418	202202000789	ELCAP SM LV 16V 10U PM20 R	2622	223878615649	CER2 0603 X7R 16V 100N PM10 R
0094	313815414241	LOGO COVER (S)	2419	223878615649	CER2 0603 X7R 16V 100N PM10 R	2623	223878615649	CER2 0603 X7R 16V 100N PM10 R
0107	313810440571	HOUSING COVER	2420	202202000789	ELCAP SM LV 16V 10U PM20 R	2624	223878615649	CER2 0603 X7R 16V 100N PM10 R
1157	242207000075	MAINSCORD IEC 10A 1M5 DET 3P B	2421	223878615649	CER2 0603 X7R 16V 100N PM10 R	2625	223878615649	CER2 0603 X7R 16V 100N PM10 R
1158	313819875131	CORD SUB-D 15/1M5/SUB-D 15 BK	2422	202203100182	ELCAP SM RVS 25V 10U PM20 R	2626	223878615649	CER2 0603 X7R 16V 100N PM10 R
1159	313819872531	CORD USB A.1M8/USB B BK	2423	223878615649	CER2 0603 X7R 16V 100N PM10 R	2627	223878615649	CER2 0603 X7R 16V 100N PM10 R
1160	313815863901	METAL FRAME+WIRE ASSY-AU	2424	223878615649	CER2 0603 X7R 16V 100N PM10 R	2628	223878615649	CER2 0603 X7R 16V 100N PM10 R
LCD Panel		2425	223878615649	CER2 0603 X7R 16V 100N PM10 R	2629	223878615649	CER2 0603 X7R 16V 100N PM10 R	
1050	823827717621	TFT-LCD M190EN04 V.5(AUO0)	2426	223878615649	CER2 0603 X7R 16V 100N PM10 R	2630	202203100182	ELCAP SM RVS 25V 10U PM20 R
packing		2427	223878615649	CER2 0603 X7R 16V 100N PM10 R	2632	223878615649	CER2 0603 X7R 16V 100N PM10 R	
0450	313815640061	CARTON	2428	202203100182	ELCAP SM RVS 25V 10U PM20 R	2633	202203100182	ELCAP SM RVS 25V 10U PM20 R
0451	313815640071	CUSHION-R	2429	202203100182	ELCAP SM RVS 25V 10U PM20 R	2634	223878615649	CER2 0603 X7R 16V 100N PM10 R
0452	313815640081	CUSHION-L	2430	202203100182	ELCAP SM RVS 25V 10U PM20 R	2636	223878615649	CER2 0603 X7R 16V 100N PM10 R
0453	313810656651	PE BAG	2431	223878615649	CER2 0603 X7R 16V 100N PM10 R	2637	222224119876	CER2 1206 Y5V 10V 10U P8020 R
PCB ASSY		2432	223878615649	CER2 0603 X7R 16V 100N PM10 R	2638	223878615649	CER2 0603 X7R 16V 100N PM10 R	
1051	313815863881	SCALER ASSY-AU	2433	223878615649	CER2 0603 X7R 16V 100N PM10 R	3202	212211805669	RST SM 0603 RC0603 10K PM5 R
1052	823827717121	LIPS(AIP-0093A)	2434	223878615649	CER2 0603 X7R 16V 100N PM10 R	3203	212211805669	RST SM 0603 RC0603 10K PM5 R
1053	313815861681	CONTROL ASSY	2435	202203100182	ELCAP SM RVS 25V 10U PM20 R	3204	212211805669	RST SM 0603 RC0603 10K PM5 R
1054	313815863871	USB ASSY	2436	223878615649	CER2 0603 X7R 16V 100N PM10 R	3205	232270260223	RST SM 0603 RC21 22K PM5 R
1055	313815863791	AUDIO ASSY	2437	202203100182	ELCAP SM RVS 25V 10U PM20 R	3206	232270260101	RST SM 0603 RC21 100R PM5 R
ACCESSORY		2438	223824619863	CER2 0603 Y5V 10V 1U P8020 R	3207	232270260101	RST SM 0603 RC21 100R PM5 R	
0602	313811708291	E-DFU	2439	202203100182	ELCAP SM RVS 25V 10U PM20 R	3208	232270260102	RST SM 0603 RC21 1K PM5 R
1161	313819871471	CORD DVI 18+1/1M8/DVI 18+1 BK	2440	223878615649	CER2 0603 X7R 16V 100N PM10 R	3209	232270260104	RST SM 0603 RC21 100K PM5 R
1162	313818878161	AUDIO CABLE	2441	223878615649	CER2 0603 X7R 16V 100N PM10 R	3210	232270260101	RST SM 0603 RC21 100R PM5 R
1163	313819875351	LSP BOX 16R 2W PS-010023	2442	223878615649	CER2 0603 X7R 16V 100N PM10 R	3211	232270260101	RST SM 0603 RC21 100R PM5 R
Miscellaneous		2443	223878615649	CER2 0603 X7R 16V 100N PM10 R	3213	232270260102	RST SM 0603 RC21 1K PM5 R	
0291	313815567001	LABEL-CPU	2444	223878615649	CER2 0603 X7R 16V 100N PM10 R	3214	232270260472	RST SM 0603 RC21 4K7 PM5 R
0295	313815567021	LABEL-EEPROM-AU	2445	223878615649	CER2 0603 X7R 16V 100N PM10 R	3215	212211805669	RST SM 0603 RC0603 10K PM5 R
0615	313811708361	HEX CODE OF F/W (NO MATL REQ)	2446	223878615649	CER2 0603 X7R 16V 100N PM10 R	3216	232270260101	RST SM 0603 RC21 100R PM5 R
1201	242203300521	SOC DVI H 24P F 1.91DVI-D Y	2447	223878615649	CER2 0603 X7R 16V 100N PM10 R	3217	232270260101	RST SM 0603 RC21 100R PM5 R
1203	242202518065	SOC SUBD H 15P F BU 900 Y	2450	223886715478	CER1 0603 NP0 50V 4P7 PM0P25 R	3219	212211805669	RST SM 0603 RC0603 10K PM5 R
1302	243803100435	SOC IC V 8P F 2.54 DIL L	2451	223886715478	CER1 0603 NP0 50V 4P7 PM0P25 R	3220	232270260223	RST SM 0603 RC21 22K PM5 R
1410	243854300086	RES XTL SM 14M318 18P HC49/S R	2453	223858615632	CER2 0603 X7R 50V 4N7 PM10 R	3221	212211805669	RST SM 0603 RC0603 10K PM5 R
1502	242202518824	CON V 11P M 2.00 63391 B	2454	223858615636	CER2 0603 X7R 50V 10N PM10 R	3222	212211805669	RST SM 0603 RC0603 10K PM5 R
1503	242202518089	CON V 12P M 2.00 63392 B	2455	223858615636	CER2 0603 X7R 50V 10N PM10 R	3223	232270260101	RST SM 0603 RC21 100R PM5 R
1507	242202518822	CON V 9P M 2.00 63389 B	2456	223858615636	CER2 0603 X7R 50V 10N PM10 R	3224	232270260101	RST SM 0603 RC21 100R PM5 R
1603	242202505572	CON H 30P M 1.25 SM 60952 R	2457	223886715109	CER1 0603 NP0 50V 10P PM5 R	3225	232270260101	RST SM 0603 RC21 100R PM5 R
4444	313810610459	CD ROM - SERVICE MANUAL	2461	222224119876	CER2 1206 Y5V 10V 10U P8020 R	3226	232270260101	RST SM 0603 RC21 100R PM5 R
4444	313810610460	CD ROM - SERVICE MANUAL	2462	222224119876	CER2 1206 Y5V 10V 10U P8020 R	3227	232270260222	RST SM 0603 RC21 2K2 PM5 R
8161	313819875421	CBLE 330019 9/29/90-019 AWG28	2501	223878615649	CER2 0603 X7R 16V 100N PM10 R	3228	232270260222	RST SM 0603 RC21 2K2 PM5 R
8162	313819875411	CBLE 330022 12/29/5+220/7-4	2502	223878615649	CER2 0603 X7R 16V 100N PM10 R	3229	232270260104	RST SM 0603 RC21 100K PM5 R
8163	313819871401	CBLE-030 30/135/30-012 AWG28	2503	202203100206	ELCAP SM HV 25V 47U PM20 R	3230	232270260102	RST SM 0603 RC21 1K PM5 R
8938	313819874941	CBLE FAST 5.8/100/FAST AWG18	2507	223878615649	CER2 0603 X7R 16V 100N PM10 R	3232	232270260101	RST SM 0603 RC21 100R PM5 R
8939	313819871551	CBLE FAST/70/FAST AWG18	2508	223878615649	CER2 0603 X7R 16V 100N PM10 R	3233	232270467509	RST SM 0603 RC22H 75R PM1 R
PCB ASSY		2509	202203100206	ELCAP SM HV 25V 47U PM20 R	3234	232270260339	RST SM 0603 RC21 33R PM5 R	
1051	313815863881	SCALER ASSY-AU	2510	223878615649	CER2 0603 X7R 16V 100N PM10 R	3235	232270467509	RST SM 0603 RC22H 75R PM1 R
2209	223878615649	CER2 0603 X7R 16V 100N PM10 R	2511	223886715101	CER1 0603 NP0 50V 100P PM5 R	3236	232270260101	RST SM 0603 RC21 100R PM5 R
2211	223886715331	CER1 0603 NP0 50V 330P PM5 R	2512	223878615649	CER2 0603 X7R 16V 100N PM10 R	3237	232270467509	RST SM 0603 RC22H 75R PM1 R
2212	223886715331	CER1 0603 NP0 50V 330P PM5 R	2514	223878615649	CER2 0603 X7R 16V 100N PM10 R	3238	212211805631	RST SM 0603 JUMP. MAX 0R05 R
2214	223878615649	CER2 0603 X7R 16V 100N PM10 R	2515	223878615649	CER2 0603 X7R 16V 100N PM10 R	3239	212211805631	RST SM 0603 JUMP. MAX 0R05 R
2216	223886715331	CER1 0603 NP0 50V 330P PM5 R	2518	223878615649	CER2 0603 X7R 16V 100N PM10 R	3240	212211805631	RST SM 0603 JUMP. MAX 0R05 R
2217	223886715331	CER1 0603 NP0 50V 330P PM5 R	2519	223878615649	CER2 0603 X7R 16V 100N PM10 R	3241	232270260472	RST SM 0603 RC21 4K7 PM5 R
2218	223886715339	CER1 0603 NP0 50V 33P PM5 R	2520	223858615636	CER2 0603 X7R 50V 10N PM10 R	3242	212211805669	RST SM 0603 RC0603 10K PM5 R
2219	223886715221	CER1 0603 NP0 50V 220P PM5 R	2521	202203100206	ELCAP SM HV 25V 47U PM20 R	3245	232270260101	RST SM 0603 RC21 100R PM5 R
2220	223878615649	CER2 0603 X7R 16V 100N PM10 R	2522	223878615649	CER2 0603 X7R 16V 100N PM10 R	3246	232270260101	RST SM 0603 RC21 100R PM5 R
2221	223878615649	CER2 0603 X7R 16V 100N PM10 R	2523	223878615649	CER2 0603 X7R 16V 100N PM10 R	3301	212211805669	RST SM 0603 RC0603 10K PM5 R
2225	223858615636	CER2 0603 X7R 50V 10N PM10 R	2524	223858615636	CER2 0603 X7R 50V 10N PM10 R	3302	212211805669	RST SM 0603 RC0603 10K PM5 R
2227	223858615636	CER2 0603 X7R 50V 10N PM10 R	2525	223878615649	CER2 0603 X7R 16V 100N PM10 R	3316	212211805669	RST SM 0603 RC0603 10K PM5 R
2229	223858615636	CER2 0603 X7R 50V 10N PM10 R	2526	222224119876	CER2 1206 Y5V 10V 10U P8020 R	3321	212211805669	RST SM 0603 RC0603 10K PM5 R
2231	223858615636	CER2 0603 X7R 50V 10N PM10 R	2527	223878615649	CER2 0603 X7R 16V 100N PM10 R	3322	212211805669	RST SM 0603 RC0603 10K PM5 R
2233	223878615649	CER2 0603 X7R 16V 100N PM10 R	2530	222224119876	CER2 1206 Y5V 10V 10U P8020 R	3325	2122118	

Spare Parts List

3404	232270260121	RST SM 0603 RC21 120R PM5 R	5511	242254900064	IND FXD 0805 EMI 100MHZ 220R R	3935	232270260511	RST SM 0603 RC21 510R PM5 R
3405	232270260121	RST SM 0603 RC21 120R PM5 R	5512	242254900064	IND FXD 0805 EMI 100MHZ 220R R	3936	232270260102	RST SM 0603 RC21 1K PM5 R
3406	232270260121	RST SM 0603 RC21 120R PM5 R				3938	232271161109	RST SM 1206 RC01 10R PM5 R
3408	232270461002	RST SM 0603 RC22H 1K PM1 R	6220	933742280215	DIO SIG SM BAT54 (PHSE) R	5901	242254900463	FIL MAINS 16MH 1A LS-PH04 Y
3409	212211805639	RST SM 0603 RC0603 47R PM5 R	6221	932205976685	DIO SIG SM LS4148 (VISH) R	5903	242254900126	IND FXD 0805 EMI 100MHZ 120R R
3410	235003510479	RST NETW SM ARV24 4X 47R PM5 R	6222	932205976685	DIO SIG SM LS4148 (VISH) R	5904	242254900126	IND FXD 0805 EMI 100MHZ 120R R
3411	235003510479	RST NETW SM ARV24 4X 47R PM5 R	6223	933742280215	DIO SIG SM BAT54 (PHSE) R	5905	242254944197	IND FXD 0805 EMI 100MHZ 220R R
3412	235003510479	RST NETW SM ARV24 4X 47R PM5 R	6601	932209863685	DIO SIG SM BAV99 (VISH) R	5906	242254944197	IND FXD 0805 EMI 100MHZ 220R R
3413	235003510479	RST NETW SM ARV24 4X 47R PM5 R	6602	932209863685	DIO SIG SM BAV99 (VISH) R	5907	242254944197	IND FXD 0805 EMI 100MHZ 220R R
3414	235003510479	RST NETW SM ARV24 4X 47R PM5 R				5908	242254900064	IND FXD 0805 EMI 100MHZ 220R R
3415	235003510479	RST NETW SM ARV24 4X 47R PM5 R	7203	932216972682	IC SM AT24C02N-10SC-2.7(ATMEL) L	5909	242254944197	IND FXD 0805 EMI 100MHZ 220R R
3416	212211805635	RST SM 0603 RC0603 10R PM5 R	7204	932216972682	IC SM AT24C02N-10SC-2.7(ATMEL) L	5910	242254900064	IND FXD 0805 EMI 100MHZ 220R R
3417	232270260101	RST SM 0603 RC21 100R PM5 R	7211	935260739118	IC SM 74LVC14APW (PHSE) R	5934	242254900126	IND FXD 0805 EMI 100MHZ 120R R
3504	232270260102	RST SM 0603 RC21 1K PM5 R	7301	313815863831	CPU IC ASSY	5935	242254900126	IND FXD 0805 EMI 100MHZ 120R R
3505	232270260222	RST SM 0603 RC21 2K2 PM5 R	7301	932219106682	IC SM AT49LV002NT-90JU (ATMEL) L	6901	932220628682	DIO REC SB140AL-5301 (VISH) B
3506	232270260222	RST SM 0603 RC21 2K2 PM5 R	7302	313815863891	EEPROM ASSY-AU	7901	932219970668	IC SM TPA6030A4PWP (TI00) R
3507	232270260222	RST SM 0603 RC21 2K2 PM5 R	7302	932218650682	IC AT24C16A-10PU-2.7 (ATMEL) L	1054	313815863871	USB ASSY
3508	232270260222	RST SM 0603 RC21 2K2 PM5 R	7403	932220099685	IC SM LD1117AS18 (ST00) R			
3509	212211805647	RST SM 0603 RC0603 220R PM5 R	7404	932220818671	IC SM GM5321-BC (GEMI) Y	1601	242202518957	SOC USB V 8P F 2.0/2.5 5402 R
3510	212211805669	RST SM 0603 RC0603 10K PM5 R	7405	932222076668	IC SM AME1117CCGTZ (AME0) R	1602	242202518955	SOC USB V 4P F 2.5 5411 Y
3511	212211805647	RST SM 0603 RC0603 220R PM5 R	7501	932217439685	TRA SIG SM BC857C (KECO) R	1603	242202518957	SOC USB V 8P F 2.0/2.5 5402 R
3512	212211805669	RST SM 0603 RC0603 10K PM5 R	7502	932217439685	TRA SIG SM BC857C (KECO) R	1701	242202518949	CON H 9P M 2.00 63369 B
3513	212211805669	RST SM 0603 RC0603 10K PM5 R	7503	932217440685	TRA SIG SM KRC102S (KECO) R	1705	243812800196	SWI TACT H=5 GY 160G SKHHAM B
3514	212211805669	RST SM 0603 RC0603 10K PM5 R	7504	932216638668	FET POW SM SI5441DC-E3 (VISH)R	1708	313819873811	CBLE TACT/100/FAST AWG18
3515	212211805669	RST SM 0603 RC0603 10K PM5 R	7505	932217439685	TRA SIG SM BC857C (KECO) R	1751	243854300805	RES XTL SM 24MHZ 20P SMD-49 R
3516	212211805669	RST SM 0603 RC0603 10K PM5 R	7506	932217440685	TRA SIG SM KRC102S (KECO) R	2601	202202000902	ELCAP SM LV 16V 100U PM20 R
3517	212211805678	RST SM 0603 RC0603 47K PM5 R	7507	932217440685	TRA SIG SM KRC102S (KECO) R	2602	223878615649	CER2 0603 X7R 16V 100N PM10 R
3518	232270260101	RST SM 0603 RC21 100R PM5 R	7508	932216638668	FET POW SM SI5441DC-E3 (VISH)R	2605	202202000902	ELCAP SM LV 16V 100U PM20 R
3519	212211805678	RST SM 0603 RC0603 47K PM5 R	7509	932217439685	TRA SIG SM BC857C (KECO) R	2606	223878615649	CER2 0603 X7R 16V 100N PM10 R
3521	232270260101	RST SM 0603 RC21 100R PM5 R	7601	932219359668	IC SM AME8815AEGT150Z (AME0) R	2611	202202000902	ELCAP SM LV 16V 100U PM20 R
3522	212211805669	RST SM 0603 RC0603 10K PM5 R	7602	932218246668	IC SM AME8815AEGT250Z (AME0) R	2612	223878615649	CER2 0603 X7R 16V 100N PM10 R
3523	212211805669	RST SM 0603 RC0603 10K PM5 R	7603	823827716651	LIGHT FRAME IC	2615	202202000902	ELCAP SM LV 16V 100U PM20 R
3524	212211805678	RST SM 0603 RC0603 47K PM5 R	1055	313815863791	AUDIO ASSY	2616	223878615649	CER2 0603 X7R 16V 100N PM10 R
3525	212211805669	RST SM 0603 RC0603 10K PM5 R				2621	223878615649	CER2 0603 X7R 16V 100N PM10 R
3526	232270260101	RST SM 0603 RC21 100R PM5 R	1905	242202605588	SOC PHONE V 1P F 3.5 ST B	2625	202203100182	ELCAP SM RVS 25V 100U PM20 R
3527	212211805669	RST SM 0603 RC0603 10K PM5 R	1911	242202518814	CON V 2P M 2.00 63382 B	2701	223878615649	CER2 0603 X7R 16V 100N PM10 R
3528	212211805669	RST SM 0603 RC0603 10K PM5 R	1912	242202518814	CON V 2P M 2.00 63382 B	2702	223878615649	CER2 0603 X7R 16V 100N PM10 R
3529	212211805655	RST SM 0603 RC0603 820R PM5 R	1921	242202605594	SOC PHONE V 1P F 3.5 ST BK B	2703	202203100182	ELCAP SM RVS 25V 100U PM20 R
3530	232270260222	RST SM 0603 RC21 2K2 PM5 R	1935	242202518816	CON V 4P M 2.00 63384 B	2704	222278119876	CER2 1206 Y5V 16V 10U P8020 R
3531	232270260222	RST SM 0603 RC21 2K2 PM5 R	2901	202203100261	ELCAP LZ 16V S 2200U PM20 B	2705	223858615636	CER2 0603 X7R 50V 10N PM10 R
3532	212211805631	RST SM 0603 JUMP. MAX 0R05 R	2902	202203100237	ELCAP EB 16V S 1000U PM20 B	2706	223858615636	CER2 0603 X7R 50V 10N PM10 R
3601	232270463901	RST SM 0603 RC22H 390R PM1 R	2903	222278015663	CER2 0805 X7R 16V 1U PM10 R	2721	223878615649	CER2 0603 X7R 16V 100N PM10 R
3602	232270463901	RST SM 0603 RC22H 390R PM1 R	2904	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2723	223858615636	CER2 0603 X7R 50V 10N PM10 R
3603	232270461622	RST SM 0603 RC22H 1K62 PM1 R	2905	222278015663	CER2 0805 X7R 16V 1U PM10 R	2725	222224119876	CER2 1206 Y5V 10V 10U P8020 R
3604	232270461622	RST SM 0603 RC22H 1K62 PM1 R	2906	223886715101	CER1 0603 NP0 50V 100P PM5 R	2731	202202000902	ELCAP SM LV 16V 100U PM20 R
3605	212211805669	RST SM 0603 RC0603 10K PM5 R	2908	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2733	223878615649	CER2 0603 X7R 16V 100N PM10 R
3607	212211805639	RST SM 0603 RC0603 47R PM5 R	2910	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2734	202203100375	ELCAP SM RVJ 16V 470U PM20 R
3608	212211805639	RST SM 0603 RC0603 47R PM5 R	2911	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2736	222278015663	CER2 0805 X7R 16V 1U PM10 R
3609	212211805639	RST SM 0603 RC0603 47R PM5 R	2912	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2751	223878615649	CER2 0603 X7R 16V 100N PM10 R
3610	212211805637	RST SM 0603 RC0603 22R PM5 R	2914	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2752	223878615649	CER2 0603 X7R 16V 100N PM10 R
3615	212211805669	RST SM 0603 RC0603 10K PM5 R	2916	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2753	223878615649	CER2 0603 X7R 16V 100N PM10 R
3616	212211805669	RST SM 0603 RC0603 10K PM5 R	2917	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2754	223878615649	CER2 0603 X7R 16V 100N PM10 R
3620	212211805669	RST SM 0603 RC0603 10K PM5 R	2918	202202000964	ELCAP SS-H 10V S 330U PM20 B	2755	223878615649	CER2 0603 X7R 16V 100N PM10 R
3629	212211805639	RST SM 0603 RC0603 47R PM5 R	2919	223886715101	CER1 0603 NP0 50V 100P PM5 R	2756	223878615649	CER2 0603 X7R 16V 100N PM10 R
3630	232270260101	RST SM 0603 RC21 100R PM5 R	2920	223886715101	CER1 0603 NP0 50V 100P PM5 R	2757	223878615649	CER2 0603 X7R 16V 100N PM10 R
3631	212211805669	RST SM 0603 RC0603 10K PM5 R	2921	223886715101	CER1 0603 NP0 50V 100P PM5 R	2758	223878615649	CER2 0603 X7R 16V 100N PM10 R
3632	212211805647	RST SM 0603 RC0603 220R PM5 R	2922	223878615649	CER2 0603 X7R 16V 100N PM10 R	2759	223878615649	CER2 0603 X7R 16V 100N PM10 R
3633	232270260101	RST SM 0603 RC21 100R PM5 R	2923	223858615636	CER2 0603 X7R 50V 10N PM10 R	2760	223878615649	CER2 0603 X7R 16V 100N PM10 R
3634	212211805669	RST SM 0603 RC0603 10K PM5 R	2924	222278015663	CER2 0805 X7R 16V 1U PM10 R	2761	223878615649	CER2 0603 X7R 16V 100N PM10 R
3637	212211805647	RST SM 0603 RC0603 220R PM5 R	2925	222278015663	CER2 0805 X7R 16V 1U PM10 R	2762	223886715279	CER1 0603 NP0 50V 27P PM5 R
3639	212211805669	RST SM 0603 RC0603 10K PM5 R	2926	223878615645	CER2 0603 X7R 16V 47N PM10 R	2763	223886715279	CER1 0603 NP0 50V 17P PM5 R
4511	213811291002	RST SM 0805 JUMP. MAX 0R05 R	2927	223824619858	CER2 0603 Y5V 10V 470N P8020 R	2764	223878615649	CER2 0603 X7R 16V 100N PM10 R
4512	213811291002	RST SM 0805 JUMP. MAX 0R05 R	2928	223858615636	CER2 0603 X7R 50V 10N PM10 R	2765	223878615649	CER2 0603 X7R 16V 100N PM10 R
			2929	222278015663	CER2 0805 X7R 16V 1U PM10 R	3621	212211805669	RST SM 0603 RC0603 10K PM5 R
5201	242254945582	IND FXD 0805 EMI 100MHZ 300R R	2930	202202000964	ELCAP SS-H 10V S 330U PM20 B	3623	212211805669	RST SM 0603 RC0603 10K PM5 R
5202	242254945582	IND FXD 0805 EMI 100MHZ 300R R	2935	223858619812	CER2 0603 Y5V 50V 100N P8020 R	3627	232270260101	RST SM 0603 RC21 100R PM5 R
5301	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3903	212211805972	RST SM 1206 JUMP. MAX 0R05 R	3628	232270260101	RST SM 0603 RC21 100R PM5 R
5401	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3905	212211805972	RST SM 1206 JUMP. MAX 0R05 R	3701	242254900113	IND FXD 0603 EMI 100MHZ 1K R
5402	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3908	212211805676	RST SM 0603 RC0603 33K PM5 R	3702	232270260122	RST SM 0603 RC21 1K2 PM5 R
5403	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3909	212211805681	RST SM 0603 RC0603 68K PM5 R	3705	212211805637	RST SM 0603 RC0603 22R PM5 R
5404	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3914	232270260123	RST SM 0603 RC21 12K PM5 R	3722	212211805669	RST SM 0603 RC0603 10K PM5 R
5405	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3915	232270260472	RST SM 0603 RC21 4K7 PM5 R	3723	232270260101	RST SM 0603 RC21 100R PM5 R
5406	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3916	232270260123	RST SM 0603 RC21 12K PM5 R	3731	212211805631	RST SM 0603 JUMP. MAX 0R05 R
5407	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3917	232270260472	RST SM 0603 RC21 4K7 PM5 R	3741	212211805672	RST SM 0603 RC0603 15K PM5 R
5408	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3921	232270260104	RST SM 0603 RC21 100K PM5 R	3742	212211805672	RST SM 0603 RC0603 15K PM5 R
5409	242254945582	IND FXD 0805 EMI 100MHZ 300R R	3922	232270260104	RST SM 0603 RC21 100K PM5 R	3761	212211805672	RST SM 0603 RC0603 15K PM5 R
5501	242254900451	IND FXD 1206 EMI 100MHZ 80R R	3923	212211805669	RST SM 0603 RC0603 10K PM5 R	3762	232270260104	RST SM 0603 RC21 100K PM5 R
5503	242254900451	IND FXD 1206 EMI 100MHZ 80R R	3924	212211805669	RST SM 0603 RC0603 10K PM5 R	3763	212211805672	RST SM 0603 RC0603 10K PM5 R
5504	242254900451	IND FXD 1206 EMI 100MHZ 80R R	3925	212211805631	RST SM 0603 RC0603 10K PM5 R	3765	212211805672	RST SM 0603 RC0603 15K PM5 R
5506	242254900064	IND FXD 0805 EMI 100MHZ 220R R	3926					

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3773	212211805672	RST SM 0603 RC0603	15K PM5	R
4602	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4603	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4605	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4606	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4608	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4609	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4611	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4612	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4613	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
4614	212211805631	RST SM 0603 JUMP.	MAX 0R05	R
5601	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5601	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5602	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5603	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5603	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5604	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5605	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5605	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5606	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5607	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5607	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5608	242254900451	IND FXD 1206 EMI	100MHZ 80R	R
5609	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5701	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5702	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5703	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5721	242254900126	IND FXD 0805 EMI	100MHZ 120R	R
5734	313818875771	COI CHOKE 35UH 82M OHM	DR10XB	
6707	932219408682	LED VS SM KA-3528MBC	(KIEL)	B
6734	932221745685	DIO REC SM SSA34	(VISH)	R
6762	932205976685	DIO SIG SM LS4148	(VISH)	R
7621	932222269668	IC SM TPS2062DG4	(TI00)	R
7625	932222269668	IC SM TPS2062DG4	(TI00)	R
7722	932217440685	TRA SIG SM KRC102S	(KEC0)	R
7725	932216638668	FET POW SM SI5441DC-E3	(VISH)	R
7731	823827717521	IC		
7751	932222162671	IC SM CY7C65640-LFXC	(CYPR)	Y
1053	313815861681	CONTROL ASSY		
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
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 190P6ES/00(LPL Panel) compared
with 190P6ES/00(AUO Panel)

190P6ES/00.1

0040	313815759291	BACK COVER ASSY(S)-LPL		
0041	313815416021	BACK COVER(S)-LPL		
1050	823827717801	TFT-LCD LM190E04-A4		
1051	313815863821	SCALER ASSY		
7302	313815863841	EEPROM ASSY		
0295	313815567011	LABEL-EEPROM-LPL		
1160	313815863861	METAL FRAME+WIRE ASSY		

Different parts list

Diversity of 190P6EB/27 compared with 190P6ES/00		
Item	12NC	Description
	863900016203	190P6EB/27
1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
1161	313819871491	CORD DVI 18+1/1M8/DVI 18+1 BK
1167	242203300265	CON ACC ADP V 15P F MA-002 B
0030	313815759301	FRONT BEZEL ASSY(B)
0031	313815416031	BEZEL(B)
0032	313815416001	STRIP-DECORATION(B)
0033	313815416071	BUTTON-CONTROL(B)
0094	313815414231	LOGO COVER (B)
0040	313815759311	BACK COVER ASSY(B)-AU
0041	313815416041	BACK COVER(B)
0042	313815411891	PLATE-VENT
0040	313815759321	BACK COVER ASSY(B)-LPL
0041	313815416051	BACK COVER(B)-LPL
0301	313815137271	METAL FRAME-LPL

Diversity of 190P6EG/00 compared with 190P6ES/00		
Item	12NC	Description
	863900016196	190P6EG/00
0030	313815759141	FRONT BEZEL ASSY(T)
0031	313815415951	BEZEL(T)
0033	313815415581	BUTTON-CONTROL(T)
0040	313815759161	BACK COVER ASSY(T)-AU
0040	313815759171	BACK COVER ASSY(T)-LPL
0041	313815415971	BACK COVER(T)-AU
0041	313815415981	BACK COVER(T)-LPL
0042	313815411271	PLATE-VENT
0050	313815759121	SUPER ERGO BASE(T)
0094	313815412481	LOGO COVER (T)
0301	313815137271	METAL FRAME-LPL
1157	31381874701	MAIN CORD (1.5M. EUROPEAN)
1158	313819874971	CORD SUB-D 15/1M5/SUB-D 15 GY
1161	313819871481	CORD DVI 18+1/1M8/DVI 18+1 GY
1162	313818877661	SPEAKER CABLE(GRARY)

Diversity of 190P6EG/93 compared with 190P6ES/00		
Item	12NC	Description
	863900016202	190P6EG/93
0030	313815760171	FRONT BEZEL ASSY(T)
0031	313815416771	BEZEL (T)
0033	313815415581	BUTTON-CONTROL(T)
0040	313815759171	BACK COVER ASSY(T)-LPL
0040	313815759161	BACK COVER ASSY(T)-AU
0041	313815415981	BACK COVER(T)-LPL
0041	313815415971	BACK COVER(T)-AU
0042	313815411271	PLATE-VENT
0050	313815759121	SUPER ERGO BASE(T)
0094	313815412481	LOGO COVER (T)
0301	313815137281	METAL FRAME-AU
0450	313815640601	CARTON
1157	242207000024	MAINSCORD CHN 10A 1M53 DET 3P
1158	313819874971	CORD SUB-D 15/1M5/SUB-D 15 GY
1161	313819871481	CORD DVI 18+1/1M8/DVI 18+1 GY
1162	313818877661	SPEAKER CABLE(GRARY)

Diversity of 190P6EB/00 compared with 190P6ES/00		
Item	12NC	Description
	863900016197	190P6EB/00
0030	313815759301	FRONT BEZEL ASSY(B)
0031	313815416031	BEZEL(B)
0032	313815416001	STRIP-DECORATION(B)
0033	313815416071	BUTTON-CONTROL(B)
0040	313815759311	BACK COVER ASSY(B)-AU
0040	313815759321	BACK COVER ASSY(B)-LPL
0041	313815416041	BACK COVER(B)
0041	313815416051	BACK COVER(B)-LPL
0042	313815411891	PLATE-VENT
0094	313815414231	LOGO COVER (B)
0210	313800991951	PROCESS BOX
0301	313815137281	METAL FRAME-AU
0301	313815137271	METAL FRAME-LPL
1161	313819871491	CORD DVI 18+1/1M8/DVI 18+1 BK

Diversity of 170P6EB/93 compared with 190P6ES/00		
Item	12NC	Description
	863900016208	170P6EB/93
0030	313815760141	BEZEL ASSY(B)
0031	313815416751	BEZEL(B)
0032	313815411571	POWER BUTTON
0033	313815411541	CONTROL BUTTON
0034	313815411561	POWER LENS
0035	313815415921	DECO STRIP(C)
0036	313815412161	LIGHT FRAME BUTTON
0040	313815759441	BACK COVER ASSY(B)
0041	313815416141	BACK COVER(B)
0042	313815137481	HINGE-PLATE
0043	313815135071	KINGSTON PLATE
0044	313815133511	VESA PLATE
0050	313815756661	SUPER ERGO BASE(B)
0090	313810440571	HOUSING COVER
0101	313815412811	HINGE DECO COVER(B)
0291	313815566811	LABEL-CPU
0295	313815566821	LABEL-EEPROM(L)
0450	313815640591	CARTON
0451	313815639831	CUSHION-R
0452	313815639841	CUSHION-L
0453	313815621491	P.E. BAG
0602	313811708272	E-D.F.U.
0615	313811708371	HEX CODE OF F/W (NO MATL REQ)
1051	313815862321	SCALER ASSY
1053	313815863781	AUDIO+CONTROL ASSY
1054	313815861741	USB ASSY
1056	823827716861	LCD LM170E01-A6
1157	242207000078	MAINSCORD CHN 10A 1M5 DET 3P B
1160	313815863851	METAL FRAME+WIRE ASSY
1163	823827717711	LSP 16R 2W W/WIRE ASSY
1931	242202518899	CON H 11P M 2.00 63371 B
1932	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1933	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1934	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1935	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1936	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1937	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1938	242212803007	SWI TACT 1P 1POS 12V V 5MM B
2902	202203100258	ELCAP EB 16V S 470U PM20 B
2931	223858615636	CER2 0603 X7R 50V 10N PM10 R
2932	223858615636	CER2 0603 X7R 50V 10N PM10 R
2935	223858615636	CER2 0603 X7R 50V 10N PM10 R
2936	223858615636	CER2 0603 X7R 50V 10N PM10 R
2937	223858619812	CER2 0603 Y5V 50V 100N P8020 R
3238	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3239	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3240	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3517	232270260473	RST SM 0603 RC21 47K PM5 R
3519	232270260473	RST SM 0603 RC21 47K PM5 R
3524	232270260473	RST SM 0603 RC21 47K PM5 R
3532	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3731	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3904	213811201101	RST SM 0805 RC05 100R PM5 R
3932	232270260102	RST SM 0603 RC21 1K PM5 R
3933	212211805669	RST SM 0603 RC0603 10K PM5 R
3934	232270260473	RST SM 0603 RC21 47K PM5 R
3935	232270260102	RST SM 0603 RC21 1K PM5 R
3936	212211805669	RST SM 0603 RC0603 10K PM5 R
3937	232270260473	RST SM 0603 RC21 47K PM5 R
3938	232270260511	RST SM 0603 RC21 510R PM5 R
3939	232270260102	RST SM 0603 RC21 1K PM5 R
3941	232271161109	RST SM 1206 RC01 10R PM5 R
4511	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4512	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4602	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4603	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4605	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4606	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4608	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4609	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4611	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4612	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4613	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4614	232270296001	RST SM 0603 JUMP. MAX 0R05 R

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5931	242254900126	IND FXD 0805 EMI 100MHZ 120R R
6221	933913910115	DIO SIG SM BAS32L (PHSE) R
6222	933913910115	DIO SIG SM BAS32L (PHSE) R
6601	932205042685	DIO SIG SM BAV99LG (ONSE) R
6602	932205042685	DIO SIG SM BAV99LG (ONSE) R
6706	932219408682	LED VS SM KA-3528MBC (KIEL) B
6762	933913910115	DIO SIG SM BAS32L (PHSE) R
6931	932219981682	LED VS L-3WYGW-8.03* (KIEL) B
7211	932217126668	IC SM 74LCX14T (ST00) R
7301	313815863801	CPU IC ASSY
7302	313815863811	EEPROM ASSY
8161	313819875311	CBLE-019 9/270/9-019 AWG28
8162	313819875301	CBLE-021 11/235/12-022 AWG28
8941	313819873811	CBLE FAST/100/FAST AWG18
8942	313819873811	CBLE FAST/100/FAST AWG18
Diversity of 170P6EB/93 compared with 190P6ES/00		
Item	12NC	Description
	863900016167	170P6EG/00
0030	313815759401	BEZEL ASSY(T)
0031	313815415531	BEZEL(T)
0032	313815411571	POWER BUTTON
0033	313815411541	CONTROL BUTTON
0034	313815411561	POWER LENS
0035	313815415921	DECO STRIP(C)
0036	313815412161	LIGHT FRAME BUTTON
0040	313815759431	BACK COVER ASSY(T)
0041	313815416151	BACK COVER(S)
0042	313815137481	HINGE-PLATE
0043	313815135071	KINGSTON PLATE
0044	313815133511	VESA PLATE
0050	313815756241	SUPER ERGO BASE(T)
0090	313810440571	HOUSING COVER
0101	313815412411	HINGE DECO COVER
0291	313815566811	LABEL-CPU
0295	313815566821	LABEL-EEPROM(L)
0450	313815639821	CARTON
0451	313815639831	CUSHION-R
0452	313815639841	CUSHION-L
0453	313815621491	P.E. BAG
0602	313811708272	E-D.F.U.
0615	313811708371	HEX CODE OF F/W (NO MATL REQ)
1051	313815862321	SCALER ASSY
1053	313815863781	AUDIO+CONTROL ASSY
1054	313815861741	USB ASSY
1056	823827716861	LCD LM170E01-A6
1157	313817874701	MAIN CORD (1.5M. EUROPEAN)
1158	313819874971	CORD SUB-D 15/1M5/SUB-D 15 GY
1160	313815863851	METAL FRAME+WIRE ASSY
1161	313819871481	CORD DVI 18+1/1M8/DVI 18+1 GY
1162	313818877661	SPEAKER CABLE(GRARY)
1163	823827717711	LSP 16R 2W W/WIRE ASSY
1931	242202518899	CON H 11P M 2.00 63371 B
1932	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1933	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1934	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1935	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1936	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1937	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1938	242212803007	SWI TACT 1P 1POS 12V V 5MM B
2902	202203100258	ELCAP EB 16V S 470U PM20 B
2931	223858615636	CER2 0603 X7R 50V 10N PM10 R
2932	223858615636	CER2 0603 X7R 50V 10N PM10 R
2935	223858615636	CER2 0603 X7R 50V 10N PM10 R
2936	223858615636	CER2 0603 X7R 50V 10N PM10 R
2937	223858619812	CER2 0603 Y5V 50V 100N P8020 R
3238	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3239	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3240	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3517	232270260473	RST SM 0603 RC21 47K PM5 R
3519	232270260473	RST SM 0603 RC21 47K PM5 R
3524	232270260473	RST SM 0603 RC21 47K PM5 R
3532	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3731	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3904	213811201101	RST SM 0805 RC05 100R PM5 R
3932	232270260102	RST SM 0603 RC21 1K PM5 R
3933	212211805669	RST SM 0603 RC0603 10K PM5 R

3934	232270260473	RST SM 0603 RC21 47K PM5 R
3935	232270260102	RST SM 0603 RC21 1K PM5 R
3936	212211805669	RST SM 0603 RC0603 10K PM5 R
3937	232270260473	RST SM 0603 RC21 47K PM5 R
3938	232270260511	RST SM 0603 RC21 510R PM5 R
3939	232270260102	RST SM 0603 RC21 1K PM5 R
3941	232271161109	RST SM 1206 RC01 10R PM5 R
4511	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4512	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4602	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4603	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4605	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4606	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4608	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4609	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4611	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4612	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4613	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4614	232270296001	RST SM 0603 JUMP. MAX 0R05 R
5931	242254900126	IND FXD 0805 EMI 100MHZ 120R R
6221	933913910115	DIO SIG SM BAS32L (PHSE) R
6222	933913910115	DIO SIG SM BAS32L (PHSE) R
6601	932205042685	DIO SIG SM BAV99LG (ONSE) R
6602	932205042685	DIO SIG SM BAV99LG (ONSE) R
6706	932219408682	LED VS SM KA-3528MBC (KIEL) B
6762	933913910115	DIO SIG SM BAS32L (PHSE) R
6931	932219981682	LED VS L-3WYGW-8.03* (KIEL) B
7211	932217126668	IC SM 74LCX14T (ST00) R
7301	313815863801	CPU IC ASSY
7302	313815863811	EEPROM ASSY
8161	313819875311	CBLE-019 9/270/9-019 AWG28
8162	313819875301	CBLE-021 11/235/12-022 AWG28
8941	313819873811	CBLE FAST/100/FAST AWG18
8942	313819873811	CBLE FAST/100/FAST AWG18
Diversity of 170P6EG/93 compared with 190P6ES/00		
Item	12NC	Description
	863900016209	170P6EG/93
0030	313815760151	BEZEL ASSY(T)
0031	313815416761	BEZEL (T)
0032	313815411571	POWER BUTTON
0033	313815411541	CONTROL BUTTON
0034	313815411561	POWER LENS
0035	313815416161	DECO STRIP(S)
0036	313815412161	LIGHT FRAME BUTTON
0040	313815759431	BACK COVER ASSY(T)
0041	313815416151	BACK COVER(S)
0042	313815137481	HINGE-PLATE
0043	313815135071	KINGSTON PLATE
0044	313815133511	VESA PLATE
0050	313815756241	SUPER ERGO BASE(T)
0090	313810440571	HOUSING COVER
0101	313815412411	HINGE DECO COVER
0291	313815566811	LABEL-CPU
0295	313815566821	LABEL-EEPROM(L)
0450	313815640591	CARTON
0451	313815639831	CUSHION-R
0452	313815639841	CUSHION-L
0453	313815621491	P.E. BAG
0602	313811708272	E-D.F.U.
0615	313811708371	HEX CODE OF F/W (NO MATL REQ)
1051	313815862321	SCALER ASSY
1053	313815863781	AUDIO+CONTROL ASSY
1054	313815861741	USB ASSY
1056	823827716861	LCD LM170E01-A6
1157	242207000024	MAINSCORD CHN 10A 1M53 DET 3P
1158	313819874971	CORD SUB-D 15/1M5/SUB-D 15 GY
1160	313815863851	METAL FRAME+WIRE ASSY
1161	313819871481	CORD DVI 18+1/1M8/DVI 18+1 GY
1162	313818877661	SPEAKER CABLE(GRARY)
1163	823827717711	LSP 16R 2W W/WIRE ASSY
1931	242202518899	CON H 11P M 2.00 63371 B
1932	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1933	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1934	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1935	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1936	242212803007	SWI TACT 1P 1POS 12V V 5MM B

Different parts list

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1937	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1938	242212803007	SWI TACT 1P 1POS 12V V 5MM B
2902	202203100258	ELCAP EB 16V S 470U PM20 B
2931	223858615636	CER2 0603 X7R 50V 10N PM10 R
2932	223858615636	CER2 0603 X7R 50V 10N PM10 R
2935	223858615636	CER2 0603 X7R 50V 10N PM10 R
2936	223858615636	CER2 0603 X7R 50V 10N PM10 R
2937	223858619812	CER2 0603 Y5V 50V 100N P8020 R
3238	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3239	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3240	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3517	232270260473	RST SM 0603 RC21 47K PM5 R
3519	232270260473	RST SM 0603 RC21 47K PM5 R
3524	232270260473	RST SM 0603 RC21 47K PM5 R
3532	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3731	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3904	213811201101	RST SM 0805 RC05 100R PM5 R
3932	232270260102	RST SM 0603 RC21 1K PM5 R
3933	212211805669	RST SM 0603 RC0603 10K PM5 R
3934	232270260473	RST SM 0603 RC21 47K PM5 R
3935	232270260102	RST SM 0603 RC21 1K PM5 R
3936	212211805669	RST SM 0603 RC0603 10K PM5 R
3937	232270260473	RST SM 0603 RC21 47K PM5 R
3938	232270260511	RST SM 0603 RC21 510R PM5 R
3939	232270260102	RST SM 0603 RC21 1K PM5 R
3941	232271161109	RST SM 1206 RC01 10R PM5 R
4511	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4512	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4602	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4603	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4605	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4606	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4608	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4609	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4611	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4612	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4613	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4614	232270296001	RST SM 0603 JUMP. MAX 0R05 R
5931	242254900126	IND FXD 0805 EMI 100MHZ 120R R
6221	933913910115	DIO SIG SM BAS32L (PHSE) R
6222	933913910115	DIO SIG SM BAS32L (PHSE) R
6601	932205042685	DIO SIG SM BAV99LG (ONSE) R
6602	932205042685	DIO SIG SM BAV99LG (ONSE) R
6706	932219408682	LED VS SM KA-3528MBC (KIEL) B
6762	933913910115	DIO SIG SM BAS32L (PHSE) R
6931	932219981682	LED VS L-3WYGW-8.03* (KIEL) B
7211	932217126668	IC SM 74LCX14T (ST00) R
7301	313815863801	CPU IC ASSY
7302	313815863811	EEPROM ASSY
8161	313819875311	CBLE-019 9/270/9-019 AWG28
8162	313819875301	CBLE-021 11/235/12-022 AWG28
8941	313819873811	CBLE FAST/100/FAST AWG18
8942	313819873811	CBLE FAST/100/FAST AWG18
Diversity of 170P6ES/00 compared with 190P6ES/00		
Item	12NC	Description
	863900016206	170P6ES/00
0030	313815759421	BEZEL ASSY(S)
0031	313815416131	BEZEL(S)
0032	313815411571	POWER BUTTON
0033	313815411541	CONTROL BUTTON
0034	313815411561	POWER LENS
0035	313815416161	DECO STRIP(S)
0036	313815412161	LIGHT FRAME BUTTON
0040	313815759451	BACK COVER ASSY(S)
0041	313815416151	BACK COVER(S)
0042	313815137481	HINGE-PLATE
0043	313815135071	KINGSTON PLATE
0044	313815133511	VESA PLATE
0050	313815756661	SUPER ERGO BASE(B)
0090	313810440571	HOUSING COVER
0101	313815412801	HINGE DECO COVER(S)
0291	313815566811	LABEL-CPU
0295	313815566821	LABEL-EEPROM(L)
0450	313815639821	CARTON
0451	313815639831	CUSHION-R

0452	313815639841	CUSHION-L
0453	313815621491	P.E. BAG
0602	313811708272	E-D.F.U.
1051	313815862321	SCALER ASSY
1053	313815863781	AUDIO+CONTROL ASSY
1054	313815861741	USB ASSY
1056	823827716861	LCD LM170E01-A6
1160	313815863851	METAL FRAME+WIRE ASSY
1163	823827717701	LSP 16R 2W W/WIRE ASSY
1931	242202518899	CON H 11P M 2.00 63371 B
1932	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1933	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1934	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1935	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1936	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1937	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1938	242212803007	SWI TACT 1P 1POS 12V V 5MM B
2902	202203100258	ELCAP EB 16V S 470U PM20 B
2931	223858615636	CER2 0603 X7R 50V 10N PM10 R
2932	223858615636	CER2 0603 X7R 50V 10N PM10 R
2935	223858615636	CER2 0603 X7R 50V 10N PM10 R
2936	223858615636	CER2 0603 X7R 50V 10N PM10 R
2937	223858619812	CER2 0603 Y5V 50V 100N P8020 R
3238	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3239	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3240	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3517	232270260473	RST SM 0603 RC21 47K PM5 R
3519	232270260473	RST SM 0603 RC21 47K PM5 R
3524	232270260473	RST SM 0603 RC21 47K PM5 R
3532	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3731	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3904	213811201101	RST SM 0805 RC05 100R PM5 R
3932	232270260102	RST SM 0603 RC21 1K PM5 R
3933	212211805669	RST SM 0603 RC0603 10K PM5 R
3934	232270260473	RST SM 0603 RC21 47K PM5 R
3935	232270260102	RST SM 0603 RC21 1K PM5 R
3936	212211805669	RST SM 0603 RC0603 10K PM5 R
3937	232270260473	RST SM 0603 RC21 47K PM5 R
3938	232270260511	RST SM 0603 RC21 510R PM5 R
3939	232270260102	RST SM 0603 RC21 1K PM5 R
3941	232271161109	RST SM 1206 RC01 10R PM5 R
4511	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4512	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4602	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4603	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4605	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4606	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4608	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4609	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4611	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4612	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4613	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4614	232270296001	RST SM 0603 JUMP. MAX 0R05 R
5931	242254900126	IND FXD 0805 EMI 100MHZ 120R R
6221	933913910115	DIO SIG SM BAS32L (PHSE) R
6222	933913910115	DIO SIG SM BAS32L (PHSE) R
6601	932205042685	DIO SIG SM BAV99LG (ONSE) R
6602	932205042685	DIO SIG SM BAV99LG (ONSE) R
6706	932219408682	LED VS SM KA-3528MBC (KIEL) B
6762	933913910115	DIO SIG SM BAS32L (PHSE) R
6931	932219981682	LED VS L-3WYGW-8.03* (KIEL) B
7211	932217126668	IC SM 74LCX14T (ST00) R
7301	313815863801	CPU IC ASSY
7302	313815863811	EEPROM ASSY
8161	313819875311	CBLE-019 9/270/9-019 AWG28
8162	313819875301	CBLE-021 11/235/12-022 AWG28
8941	313819873811	CBLE FAST/100/FAST AWG18
8942	313819873811	CBLE FAST/100/FAST AWG18
Diversity of 170P6EB/27 compared with 190P6ES/00		
Item	12NC	Description
	863900016166	170P6EB/27
0030	313815759411	BEZEL ASSY(B)
0031	313815416121	BEZEL(B)
0032	313815411571	POWER BUTTON
0033	313815411541	CONTROL BUTTON

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0034	313815411561	POWER LENS
0035	313815416161	DECO STRIP(S)
0036	313815412161	LIGHT FRAME BUTTON
0040	313815759441	BACK COVER ASSY(B)
0041	313815416141	BACK COVER(B)
0042	313815137481	HINGE-PLATE
0043	313815135071	KINGSTON PLATE
0044	313815133511	VESA PLATE
0050	313815756661	SUPER ERGO BASE(B)
0090	313810440571	HOUSING COVER
0101	313815412811	HINGE DECO COVER(B)
0291	313815566811	LABEL-CPU
0295	313815566821	LABEL-EEPROM(L)
0450	313815639821	CARTON
0451	313815639831	CUSHION-R
0452	313815639841	CUSHION-L
0453	313815621491	P.E. BAG
0602	313811708272	E-D.F.U.
0615	313811708371	HEX CODE OF F/W (NO MATL REQ)
1051	313815862321	SCALER ASSY
1053	313815863781	AUDIO+CONTROL ASSY
1054	313815861741	USB ASSY
1056	823827716861	LCD LM170E01-A6
1157	242207000076	MAINSCORD UL 10A 1M5 DET 3P B
1160	313815863851	METAL FRAME+WIRE ASSY
1163	823827717711	LSP 16R 2W W/WIRE ASSY
1167	242203300265	CON ACC ADP V 15P F MA-002 B
1931	242202518899	CON H 11P M 2.00 63371 B
1932	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1933	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1934	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1935	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1936	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1937	242212803007	SWI TACT 1P 1POS 12V V 5MM B
1938	242212803007	SWI TACT 1P 1POS 12V V 5MM B
2902	202203100258	ELCAP EB 16V S 470U PM20 B
2931	223858615636	CER2 0603 X7R 50V 10N PM10 R
2932	223858615636	CER2 0603 X7R 50V 10N PM10 R
2935	223858615636	CER2 0603 X7R 50V 10N PM10 R
2936	223858615636	CER2 0603 X7R 50V 10N PM10 R
2937	223858619812	CER2 0603 Y5V 50V 100N P8020 R
3238	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3239	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3240	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3517	232270260473	RST SM 0603 RC21 47K PM5 R
3519	232270260473	RST SM 0603 RC21 47K PM5 R
3524	232270260473	RST SM 0603 RC21 47K PM5 R
3532	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3731	232270296001	RST SM 0603 JUMP. MAX 0R05 R
3904	213811201101	RST SM 0805 RC05 100R PM5 R
3932	232270260102	RST SM 0603 RC21 1K PM5 R
3933	212211805669	RST SM 0603 RC0603 10K PM5 R
3934	232270260473	RST SM 0603 RC21 47K PM5 R
3935	232270260102	RST SM 0603 RC21 1K PM5 R
3936	212211805669	RST SM 0603 RC0603 10K PM5 R
3937	232270260473	RST SM 0603 RC21 47K PM5 R
3938	232270260511	RST SM 0603 RC21 510R PM5 R
3939	232270260102	RST SM 0603 RC21 1K PM5 R
3941	232271161109	RST SM 1206 RC01 10R PM5 R
4511	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4512	232273091002	RST SM 0805 JUMP. MAX 0R05 R
4602	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4603	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4605	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4606	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4608	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4609	232270296001	RST SM 0603 JUMP. MAX 0R05 R
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4612	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4613	232270296001	RST SM 0603 JUMP. MAX 0R05 R
4614	232270296001	RST SM 0603 JUMP. MAX 0R05 R
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6601	932205042685	DIO SIG SM BAV99LG (ONSE) R
6602	932205042685	DIO SIG SM BAV99LG (ONSE) R
6706	932219408682	LED VS SM KA-3528MBC (KIEL) B
6762	933913910115	DIO SIG SM BAS32L (PHSE) R
6931	932219981682	LED VS L-3WYGW-8.03* (KIEL) B
7211	932217126668	IC SM 74LCX14T (ST00) R
7301	313815863801	CPU IC ASSY
7302	313815863811	EEPROM ASSY
8161	313819875311	CBLE-019 9/270/9-019 AWG28
8162	313819875301	CBLE-021 11/235/12-022 AWG28
8941	313819873811	CBLE FAST/100/FAST AWG18
8942	313819873811	CBLE FAST/100/FAST AWG18

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.

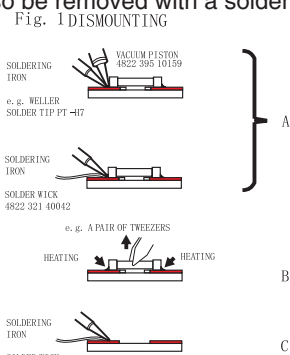
Do not handle SMDs with bare hands.

- 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)



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. 1 C).

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

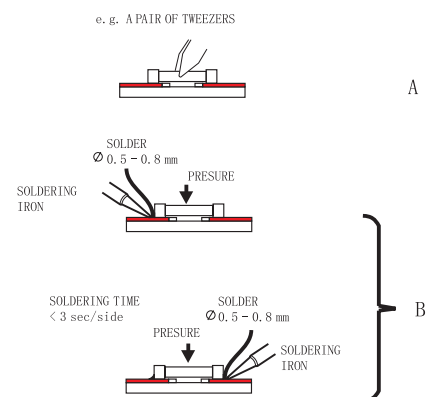
preferably be equipped with a thermal control (soldering temperature: 225 to 250 C).

- 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).

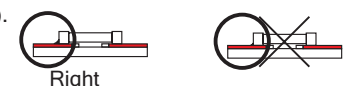
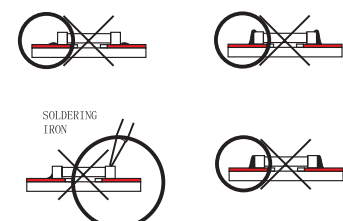


Fig.3 Examples



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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.

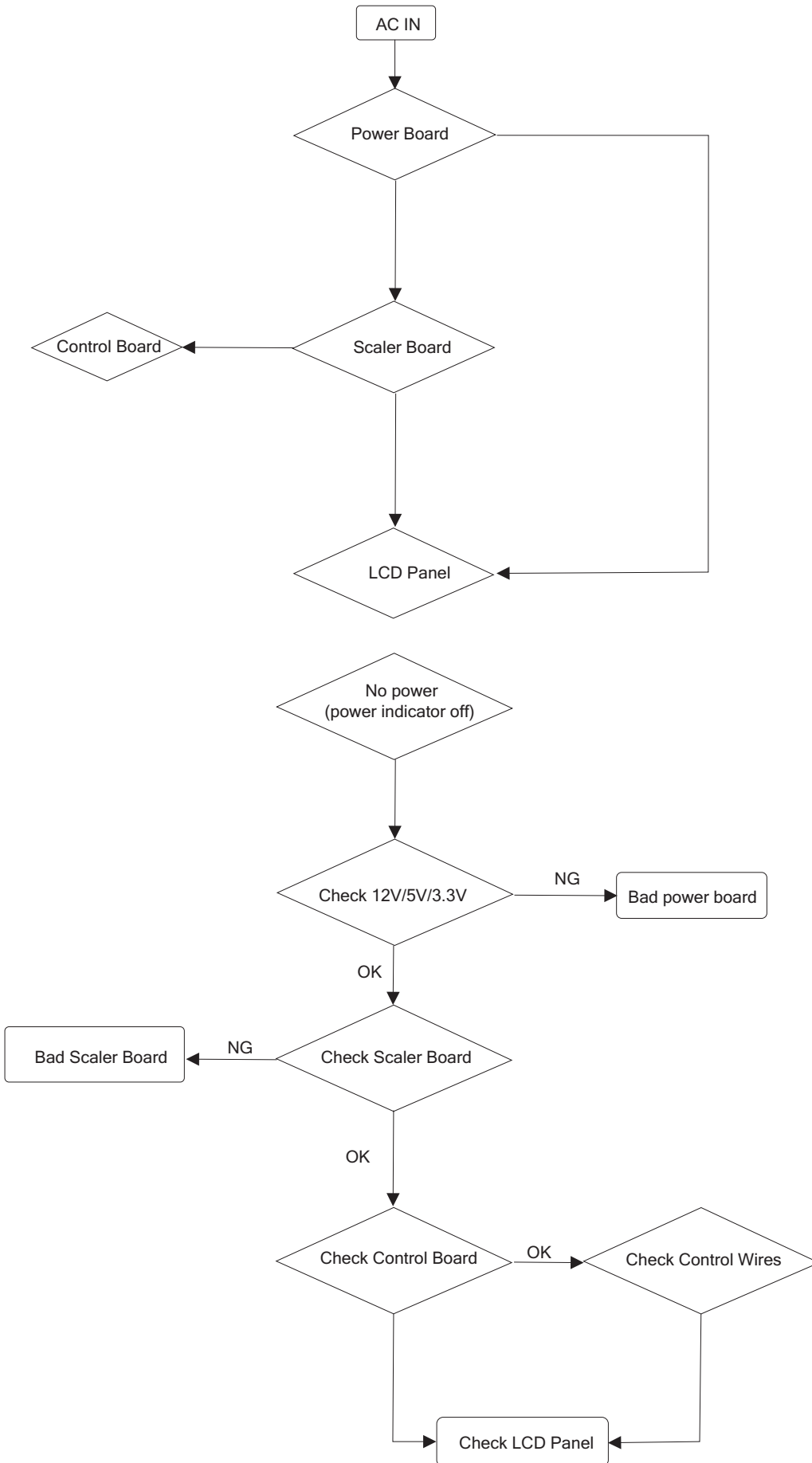
To reflow the solder, apply a temperature profile according to the IC data sheet. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

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.

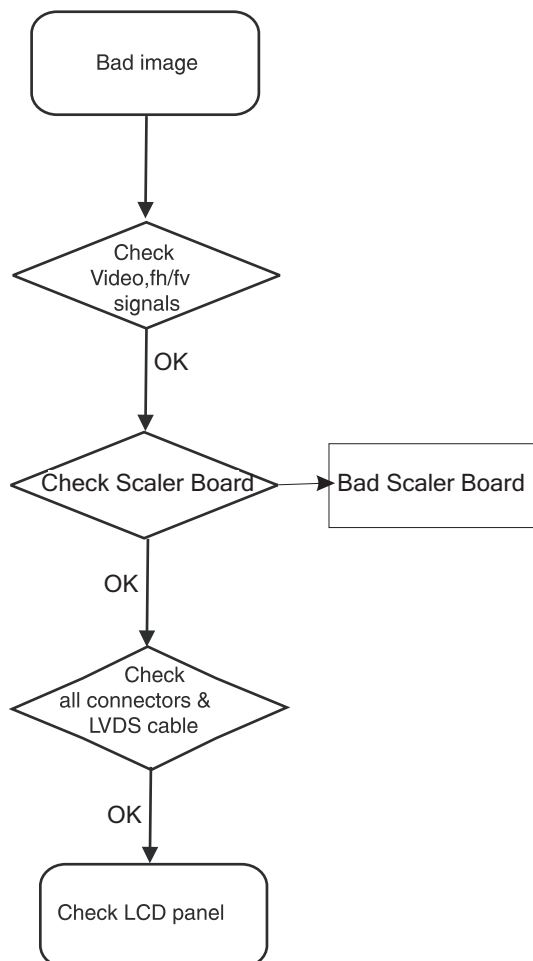
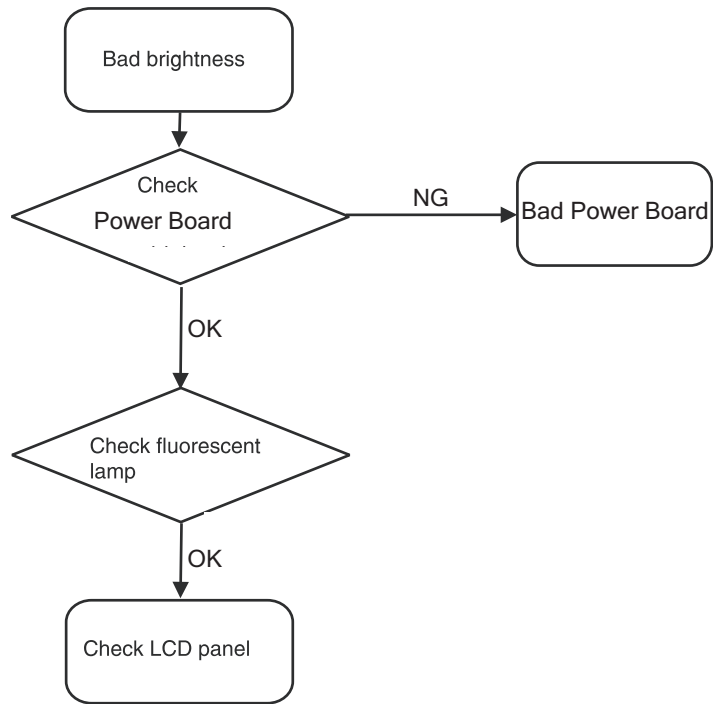
Repair Flow Chart

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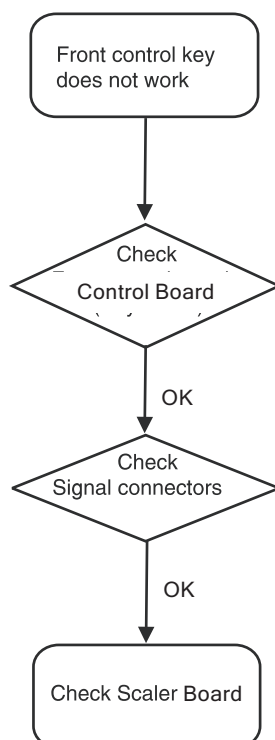
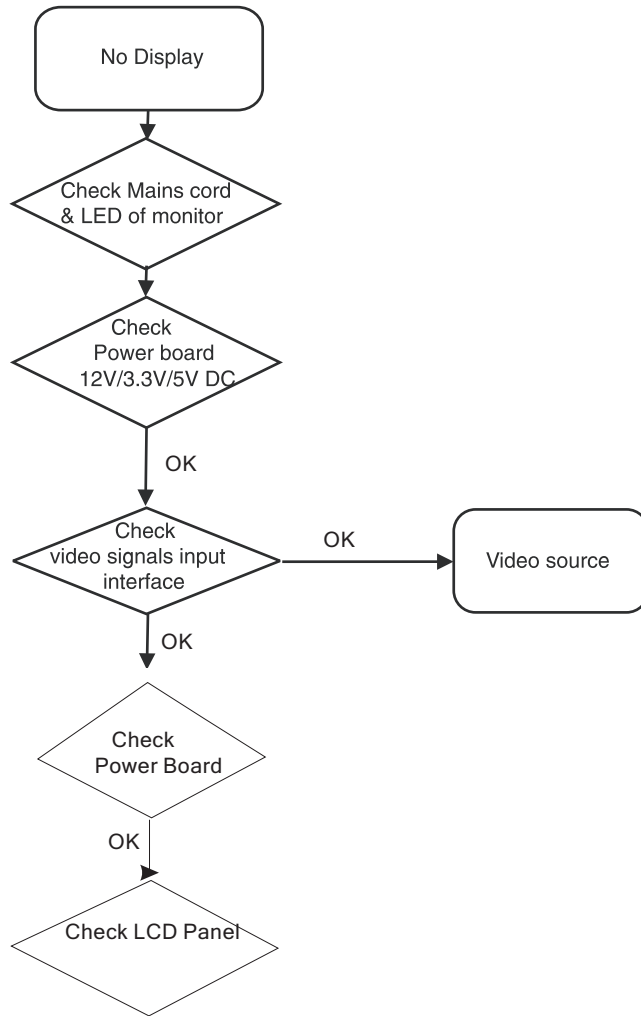


Repair Flow Chart

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Repair Flow Chart



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PHILIPS



HUDSON-6 190P6
GENERAL PRODUCT
SPECIFICATION

- . ANALOG AND DIGITAL DUAL INPUT
- . AUTO PICTURE ADJUSTMENT
- . 16 FACTORY PRESET MODES AND 34 PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES
- . USER FRIENDLY OSD DISPLAY FOR MODE IDENTIFICATION /ADJUSTMENT
- . DDC-CI COMMUNICATION CAPABILITY
- . MAX. RESOLUTION 1280*1024 NON-INTERLACED AT 75 HZ
- . 19" COLOR TFT LCD FLAT PANEL
- . SUPER ERGO BASE
- . FULL RANGE POWER SUPPLY 90 -264 VAC
- . CE ENVIRONMENTAL POLICY
- . ANTI-GLARE TO REDUCE LIGHT REFLECTION
- . POWER MANAGEMENT CAPABILITY
- . SOG SUPPORT
- . TCO 99/2003
- . AUDIO
- . PROVIDE USB HUB
- . SMART BRIGHT
- . WALL MOUNT KIT (OPTION)
- . PROTECTIVE COVER (OPTION)

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		TYPE :190P6ES/00		8639 000 16198			
		BRAND :PHILIPS					
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1.0 FOREWORD

This specification describes a 19" SXGA multi-scan color TFT LCD monitor with max resolution up to 1280*1024 /76 Hz non-interlaced.

2.0 PRODUCT PROFILE

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

LCD

- 2.1.1 Type NR. : LM190E04-A4K4 (LPL)
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 396.0(w)*324.0(h)*15.5(d) mm
 Pixel Pitch. : 0.098 (per one triad) x 0.264 mm
 Color pixel arrangement : RGB vertical stripes
 Support Color. : 16.2M colors (RGB 8 bits data)
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 376.32 x 301.056mm (19" diagonal)
 Viewing Angle. : Vertical 140 degree, Horizontal 140 degree (CR=10)
 Contrast ratio. : 500:1
 White luminance. : 250nits (Typ)

- 2.1.2 Type NR. : M190EN04-V5 (AUO)
 Number of Pixels. : 1280 (H) x1024 (V)
 Physical Size. : 396.0(w)*324.0(h)*18.0(d) mm
 Pixel Pitch. : 0.294 (per one triad) x 0.294 mm
 Color pixel arrangement : RGB vertical stripes
 Support Color. : 16.2M colors (RGB 6 bits data + FRC data)
 Display Mode. : Normally White
 Backlight. : CCFL edge light system
 Active area. (WXH). : 376.32 x 301.06mm (19" diagonal)
 Viewing Angle. : Vertical 135 degree, Horizontal 140 degree (CR=10)
 Contrast ratio. : 550:1
 White luminance. : 270nits (Typ)

- 2.2 Scanning frequencies
 H-Frequency. : 30K - 83 K Hz
 V-Frequency. : 56 -76 Hz

- 2.3 Video dot rate. : < 140 MHz

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- 2.4 Power input. : 90-264 V AC, 50/60 ± 2 Hz
- 2.5 Power consumption. : < 43 W maximum (without audio and USB loading)
: < 55 W maximum (with audio and 4x full USB loading)
- 2.6 Dimensions. : 425(W) * 431(H)* 225(D) mm
- 2.7 Weight. : 8 kg (Super Ergo Base)

2.8 Functions:

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

DVI-D digital Panel Link TMDS input

USB 2.0 HUB with one upstream port and four downstream ports

2.9 Ambient temperature: 5 °C - 35 °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
Ergonomics	E2000, MPRII(Sweden), Nutek(Sweden), TCO99/2003, TUV/GS
Compatibility	PC2001, Windows 2000, Windows 98/Me, Windows XP, NSTL

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3.0 Electrical characteristics

3.1 Interface signals

The input signals can be applied in two different modes:

1). D-shell Analog

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

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

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

H-sync Positive/Negative

V-sync Positive/Negative

Composite sync TTL level, input impedance 2k2 ohm terminate

(Positive/Negative)

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

2). Intel DVI Digital

Input signal: Single channel TMDS signal

3.1.2 Audio

Input signal level: 500mVrms

Input signal connector: 3.5 mm mini jack (lime green)

Loudspeaker (Impedance: 16 Ohm+/- 15%): 2W+2W stereo for RMS Power

Frequency range: 650Hz ~13KHz

Headphone connector: 3.5mm mini jack (black)

Headphone connection will mute speakers

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3.2 Interface

3.2.1 D-Sub Cable

Length : 1.5 M +/- 50 mm (fixed)
 Connector type : D-sub male with DDC-2B pin assignments.
 Blue connector thumb-operated jack screws

Pin Assignment:

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

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3.2.2 DVI Cable

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

- Length : 1.8 M +/- 50 mm (fixed)
- Connector type : DVI-D male with DDC-2B pin assignments
White connector thumb-operated jack screws

Pin Assignment:

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

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3.2.3 Software control functions via OSD/control

OSD (On Screen Display) function

(1) Analog interface OSD:

Adjustable functions:

MONITOR SETUP
Exit
Brightness & Contrast
Color
Position
Input Selection
More Settings
Reset
Serial No.:
(Serial No.)
Timing Mode
Up/Down to Move, ok to Confirm

BRIGHTNESS & CONTRAST : brightness and contrast adjustment.

COLOR : Original panel Color, 9300K for CAD/CAM , 6500K for image management, sRGB, User Preset: Red Green Blue adjust.

POSITION : HORIZONTAL
VERTICAL

INPUT SELECTION : select Analog D-sub, Digital DVI-D.

MORE SETTINGS : Include below five functions

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- LANGUAGE : ENGLISH , ESPANOL , FRANCAIS , DEUTSCH, ITALIANO, SIMPLIFIED CHINESE,
- PHASE/CLOCK : Phase adjustment, Clock adjustment
- OSD SETTINGS : OSD H-position, OSD V-position
- AUDIO OPTIONS : select Stand-Alone Audio OFF, Stand-Alone Audio ON
select Mute OFF, Mute ON
- SMART BRIGHT : select Smart Bright OFF, Smart Bright ON

RESET : recall to Factory preset settings.
 INFORMATION : Show Serial No./ Timing Resolution
 (2) Digital interface OSD:
 Adjustable functions:

MONITOR SETUP
Exit
Brightness & Contrast
Color
Position
Input Selection
More Settings
Reset
Serial No.:
(Serial No.)
Timing Mode
Up/Down to Move, ok to Confirm

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BRIGHTNESS & CONTRAST : brightness and contrast adjustment.

COLOR : Original panel Color, 9300K for CAD/CAM , 6500K for image management, sRGB, User Preset: Red Green Blue adjust.

POSITION : Gray out and not selectable

INPUT SELECTION : select Analog D-sub, Digital DVI-D.

MORE SETTINGS : Include below five functions

LANGUAGE : ENGLISH , ESPANOL , FRANCAIS , DEUTSCH, ITALIANO, SIMPLIFIED CHINESE,

PHASE/CLOCK : Gray out and not selectable

OSD SETTINGS : OSD H-position, OSD V-position

AUDIO OPTIONS : select Stand-Alone Audio OFF, Stand-Alone Audio ON
select Mute OFF, Mute ON

SMART BRIGHT : select Smart Bright OFF, Smart Bright ON

RESET : recall to Factory preset settings.

INFORMATION : Show Serial No./ Timing Resolution

3.3 Timing requirement

3.3.1 Mode storing capacity

- (1) Factory preset modes : 16
- (2) Preset modes : 34

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3.3.2 Factory preset timings

The factory settings of size and centering are according to the reference timing charts (See fig-4, fig-5)

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

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



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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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MODE NO.	21	22	23	24
RESOLUTION	1152 x 864	1152 x 870	1152 x 900	1152 x 900
Dot clock(MHz)	108	100	94.5	108
f h	67.5kHz	68.7kHz	61.8kHz	71.8kHz
A (us)	14.815 (1600 dots)	14.56 (1456 dots)	16.169 (1528 dots)	13.926 (1054dots)
B (us)	1.185 (128 dots)	1.28 (128 dots)	1.354 (128 dots)	1.185 (128 dots)
C (us)	2.37 (256 dots)	1.44(144 dots)	2.201 (208 dots)	1.778 (192 dots)
D (us)	10.667 (1152 dots)	11.52 (1152 dots)	12.19 (1152 dots)	10.667 (1152 dots)
E (us)	0.593 (64 dots)	0.32 (32 dots)	0.424 (40 dots)	0.296 (32 dots)
f v	75Hz	75Hz	66Hz	76Hz
O (ms)	13.333 (900 lines)	13.333 (916 lines)	15.151 (937lines)	13.132 (943 lines)
P (ms)	0.044 (3 lines)	0.044 (3 lines)	0.065 (4 lines)	0.111 (8 lines)
Q (ms)	0.474 (32 lines)	0.568(39 lines)	0.501 (31 lines)	0.46 (33 lines)
R (ms)	12.8 (864 lines)	12.678 (870 lines)	14.552 (900lines)	12.533 (900 lines)
S (ms)	0.015 (1 lines)	0.043 (4 line)	0.033 (2 line)	0.028 (2 lines)
SYNC. H/V	- / -	- / -	Serr-	+ / +
POLARITY				
SEP . SYNC	Y	Y	Y	Y

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	BRAND : PHILIPS					
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MODE NO.	25	26	27	28
RESOLUTION	1280 x 960	1280 x 960	1280 x 1024	1280 x 1024
Dot clock(MHz)	108	129.895	108	117
f h	60kHz	75kHz	64kHz	71.7kHz
A (us)	16.667(1800 dots)	13.307 (1728 dots)	15.63 (1688 dots)	13.949 (1632 dots)
B (us)	1.037(112 dots)	1.047 (136 dots)	1.037 (112 dots)	0.957 (112 dots)
C (us)	2.889(312 dots)	1.725 (224 dots)	2.296 (248 dots)	1.915 (224 dots)
D (us)	11.852(1280 dots)	9.857 (1280 dots)	11.852 (1280 dots)	10.94 (1280 dots)
E (us)	0.889(96 dots)	0.678 (88 dots)	0.445 (48 dots)	0.137 (16 dots)
f v	60Hz	75Hz	60Hz	67Hz
O (ms)	16.667(1000 lines)	13.333 (1002 lines)	16.661 (1066 lines)	14.883 (1067lines)
P (ms)	0.05(3 lines)	0.039 (3 lines)	0.047 (3 lines)	0.112 (8 lines)
Q (ms)	0.600(36 lines)	0.48 (36 lines)	0.594 (38 lines)	0.46 (33 lines)
R (ms)	16(960 lines)	12.774 (960 lines)	16.005 (1024 lines)	14.283 (1024 lines)
S (ms)	0.017(1 lines)	0.04 (3 lines)	0.015 (1 line)	0.028 (2 lines)
SYNC. H/V POLARITY	+ / +	+ / +	+ / +	+ / +
SEP . SYNC	Y	Y	Y	Y

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

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	BRAND :PHILIPS			
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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		

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

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3.3.3 Horizontal scanning

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

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.

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3.5 Power management

The power consumption and the status indication of the set with power management function are as follows,

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<55W	Green /With Audio and full USB loading
On	On	On	Active	<43W	Green / Without Audio and USB loading
Stand-by	Off	On	Blanked	<1W	Amber LED
Suspend	On	Off	Blanked	<1W	Amber LED
Off	Off	Off	Blanked	<1W	Amber LED
DC Power off			N / A	<1W	LED Off

According to VESA power saving signal, TCO99 power saving requirement And EPA energy star requirement

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

Note:

- A. To achieve under 1 Watt power saving, make sure there is no device load on USB downstream port(s).
- B. To achieve under 1 Watt power saving when [Stand-Alone Audio] feature is selected On and system is in Sleep Mode, follow below two conditions :
 1. Volume has to be adjusted to 0% prior to measurement.
 2. Make sure there is no device load on USB downstream port(s).

3.6 Display identification

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

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

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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 white screen 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 (16 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	
16	688X556	31.3KHz	27	50Hz	TV-PAL

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		TYPE :190P6ES/00			
		BRAND : PHILIPS			
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Note : 1. Screen displays perfect picture at 16 factory preset modes.
 2. Screen displays visible picture with OSD warning when input modes are other than 34 preset modes

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

4.4 Image size

4.4.1 Actual display size

376x301mm

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:

$$\frac{\text{ABS} (A - A')}{A} \times 100 \% < 1.8 \% \text{ (Max)}$$

4.7 White color adjustment

There are three factory preset white color 9300K, 6500K and 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 +/- 0.020
 Y = 0.329 +/- 0.020

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4.8 Light Frame features

4.8.1 Full screen mode --- accessed by HOT-KEY at front of panel.

Provide three options: Internet, Video and Photo

4.8.2 Multi-window mode --- accessed by Light Frame application program

- Brightness control
- Sharpness enhancement
- Contrast enhancement
- Color boosting

5.0 Mechanical characteristics

5.1 Controls

- Front side:
- DC power switch
 - OSD function key OK
 - UP / DOWN (Brightness key)
 - LEFT / RIGHT (Volume control)
 - AUTO key
 - LF Key
 - Smart Bright Sensor

- Rear side:
- D-SUB signal connector
 - DVI signal connector
 - Power cord socket
 - Audio In jack
 - Headphone jack
 - USB upstream port

Left side: 4X USB downstream ports

5.2 Unit dimension / Weight

Set dimension (incl. pedestal): 425(W) * 431(H)* 225(D) mm
 Net weight. : 8 kg

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5.3 Super-Ergo base
tilt angle : -5 ° to +25 °

5.4 Transportation packages

5.4.1 Shipping dimension/Weight

Carton dimension. : 496(W) * 500(D) * 271(H) mm
Gross weight. : 9.5 Kg

5.4.2 Block unit / Palletization

<u>layers / block</u>	<u>sets/layer</u>	<u>sets/block unit</u>
8	4	32
<u>blocks/container</u>		
<u>20 feet</u>	<u>40 feet</u>	
10	22	

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

Storage

- Temperature. : -20 to 60 degree C
- Humidity. : 100% max (< 40°C)
- Altitude. : 0 to 30,000 feet

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

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6.2 Transportation tests

Standard		Philips UAN-D1400	NSTA
Drop Test	Height	61.0 cm	61.0 cm
	Sequence	1 corner 3 edges (Room temp) 6 faces	1 corner 3 edges (Room temp) 6 faces
	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 5~500 Hz, 0.73 Grms, Truck spectrum 30 min	
		(2) OPERATING 10-55-10, 0.35 mm amplitude, 30 min. /axis. 3axes	
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance	

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

6.4 Display disturbances to external environment

6.4.1 EMI
EMI: FCC, VCCI, CE, C-Tick, MPRIII, BCIQ,

7.0 Audio

Input signal level: 500mVrms
Input signal connector: 3.5 mm mini jack (lime green)
Loudspeaker (Impedance: 16 Ohm+/- 15%): 2W+2W stereo for RMS Power
Frequency range: 650Hz ~13KHz
Headphone connector: 3.5mm mini jack (black)
Headphone connection will mute speakers

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		BRAND : PHILIPS			
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8.0 USB 2.0 Hub

The USB hub shall be self-powered by the internal power supply of the monitor. The communication protocol shall comply with USB specification revision 2.0. A single upstream connector shall serve as connection to the CPU or other USB hub. Each of the 4 downstream ports shall include current-limited power of 5VDC at 500mA for use by an attached device.

USB Signals

USB signals shall meet the timing and signal level standards for high speed devices set forth by industry standard USB specification revision 2.0. Each downstream port shall provide 5VDC at up to 500mA for use by an attached USB device.

Communication Protocol

USB connections shall be established via 4-conductor USB cables. USB cables must be shielded in accordance with the USB specification for high speed devices.

Protocol Parameters

The USB hub and associated ports shall be compliant with the USB specification for high speed devices. The USB device speed shall be 480 Mbit/sec. The maximum polling rate shall be every 256 ms.

9.0 Smart Bright

Set Smart Bright feature on (refer to 3.2.3), the monitor shall be able to detect ambient luminance and adjust its brightness to proper value according to the intensity of the ambient luminance. Brightness will be adjusted higher in light environment and adjusted lower in dark environment. Ambient luminance change must remain steady for at least 4 seconds for this feature to start to adjust monitor's brightness; in order to avoid unnecessary brightness change due to swift or random ambient luminance variation.

10.0 Reliability

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

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11.0 Quality assurance requirements

11.1 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

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

13.0 Philips' Flat Panel Monitors Pixel Defect Policy

Philips' Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL		
	190P/X	190B	190S
MODEL			
1 lit sub-pixel	0	0	4 or fewer
2 adjacent lit sub-pixels	0	0	2 or fewer
3 adjacent lit sub-pixels (one white pixel)	0	0	0
Distance between two bright dot defects*	0	0	15mm or more
Bright dot defects within 20 mm circle	0	0	3 or fewer
Total bright dot defects of all type	0	0	4 or fewer

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	BRAND : PHILIPS			
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BLACK DOT DEFECTS	ACCEPTABLE LEVEL		
	190P/X	190B	190S
MODEL			
1 dark sub-pixel	0	0	4 or fewer
2 adjacent dark sub-pixels	0	0	2 or fewer
3 adjacent dark sub-pixels (one white pixel)	0	0	0
Distance between two black dot defects*	15mm or more	15mm or more	15mm or more
Black dot defects within 20 mm circle*	0	0	3 or fewer
Total black dot defects of all type	0	0	4 or fewer

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL		
	190P/X	190B	190S
MODEL			
Total bright or black dot defects of all type	0	0	5 or fewer

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

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CLASS NO.

19 inch LCD Monitor
 TYPE :190P6ES/00
 BRAND :PHILIPS

8639 000 16198

2005-02-05

NAME Thomas chen

SUPERS.

29

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TY

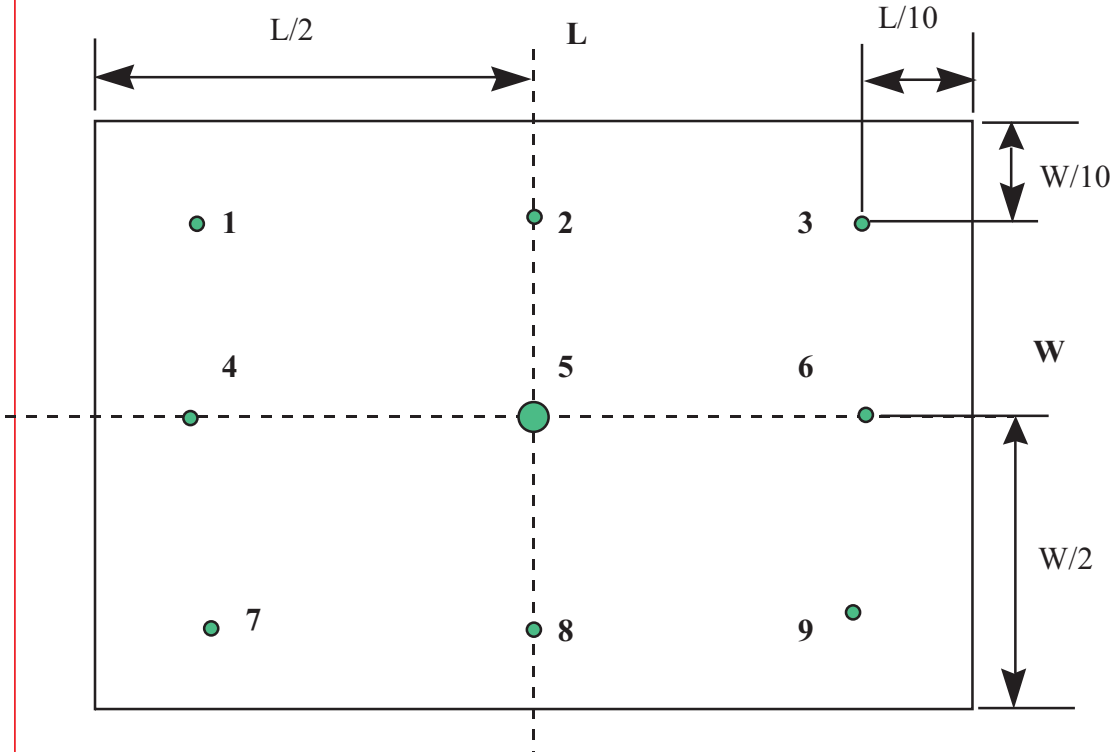
CHECK

DATE 2005-02-05

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Fig 1: Brightness and Uniformity



Position 5 = Screen center point

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		BRAND : PHILIPS			
2005-02-05					
NAME	Thomas chen	SUPERS.	29	590	26
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Fig 2: Cross talk pattern
Gray level 184 (256 Gray level)

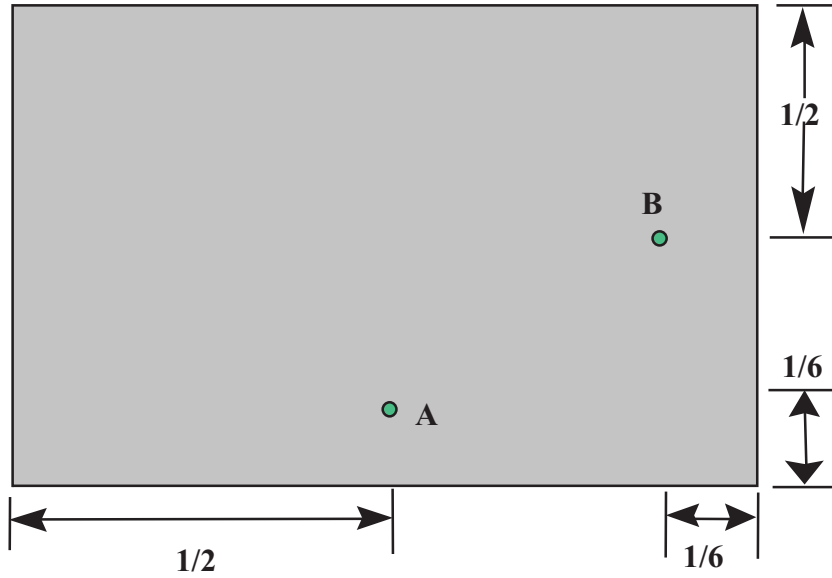
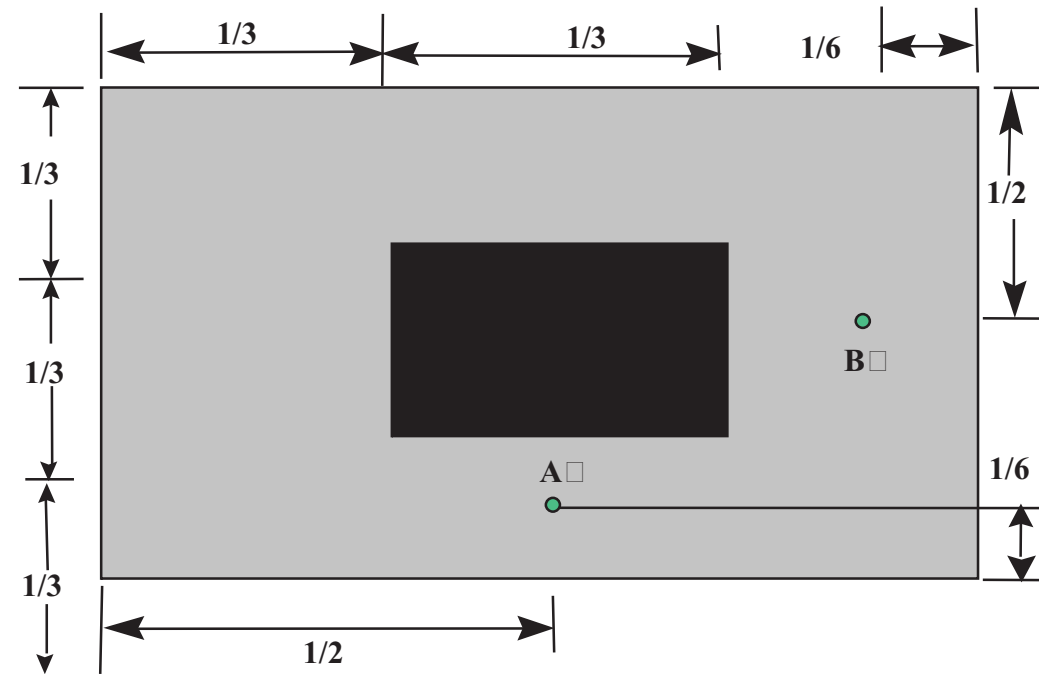


Fig 3: Cross talk pattern
Center at Gray level 0 (Black)



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		TYPE :190P6ES/00		8639 000 16198	
		BRAND :PHILIPS			
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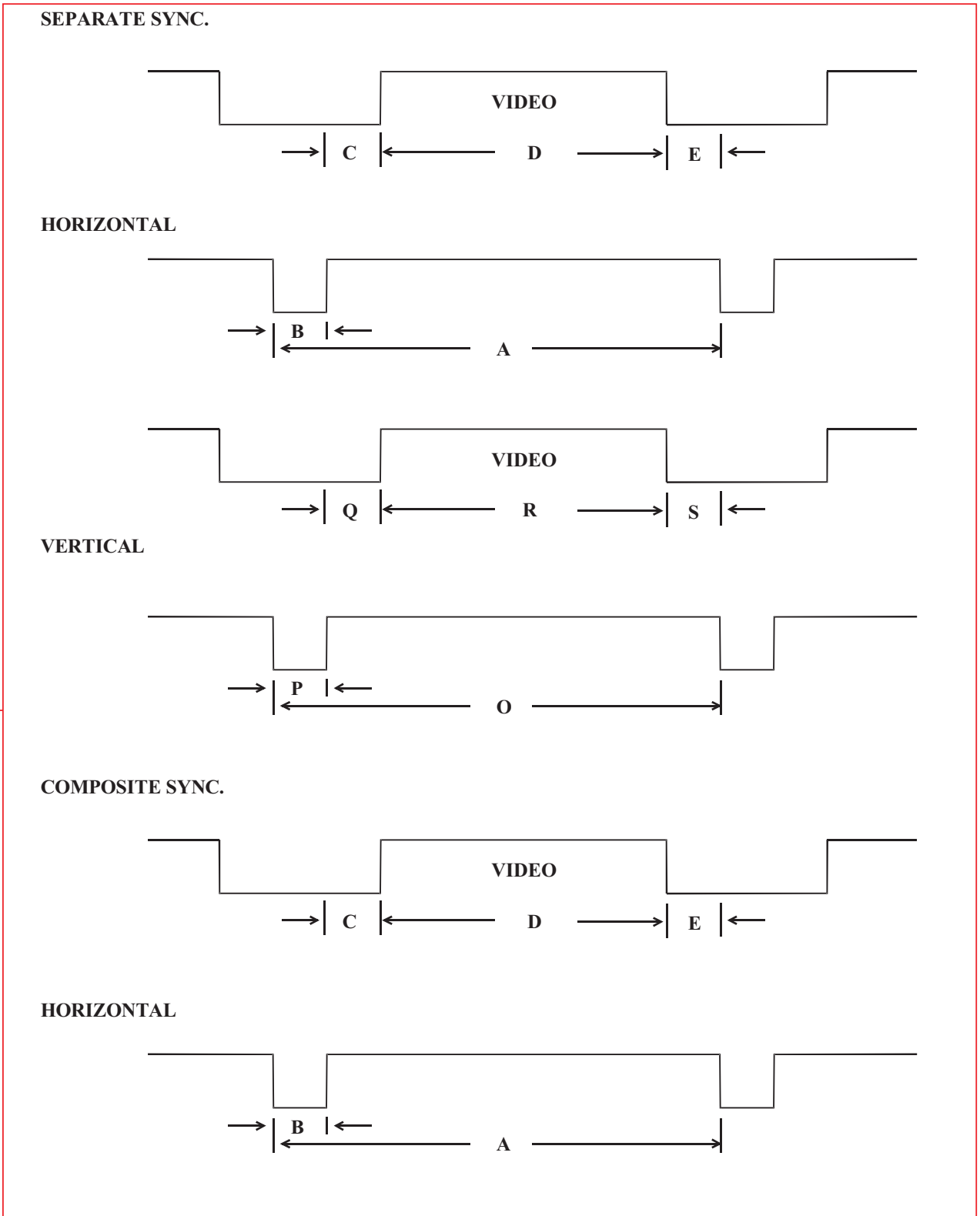


FIG-4 TIMING CHART -1

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		TYPE :190P6ES/00		8639 000 16198	
		BRAND : PHILIPS			
2005-02-05					
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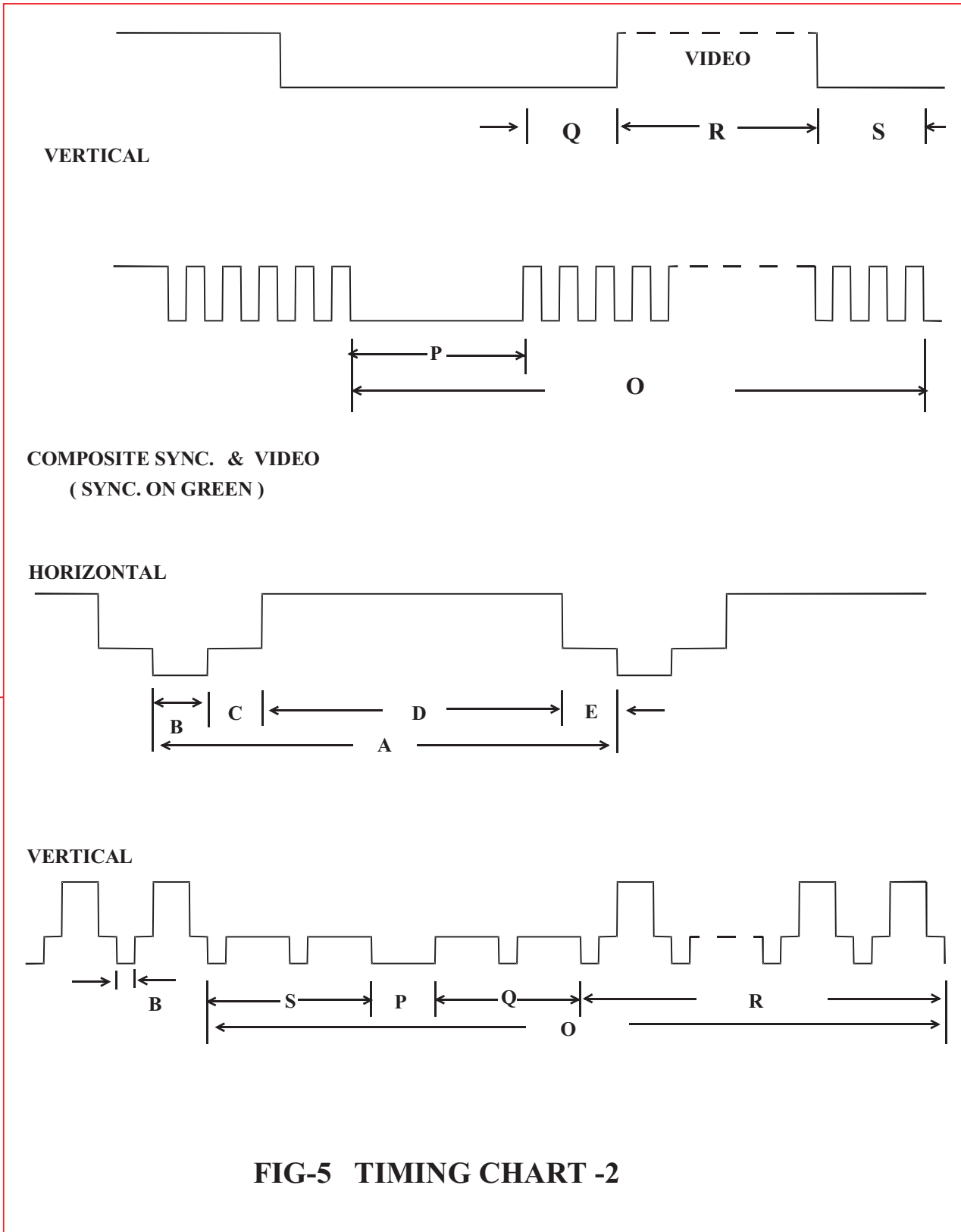


FIG-5 TIMING CHART -2

CLASS NO.		19 inch LCD Monitor			
		TYPE :190P6ES/00		8639 000 16198	
		BRAND :PHILIPS			
2005-02-05					
NAME	Thomas chen	SUPERS.	29	590	— 29
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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 an asterisk 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 other wise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

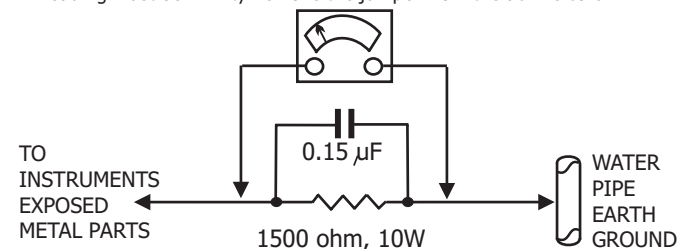
X-radiation

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 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

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 0.15µf. 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 ohmsy 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 tube.

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.