19 inch SXGA TFT LCD Monitor/TV Chassis: Hudson6

Service
Service
Service

190G6FB/00
190G6FB/93
190G6FB/96
190G6FB/97

Service Manual

Horizontal frequencies
30 - 83 kHz

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SAFETY NOTICE

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

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

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

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飛利浦 PHILIPS

Important Safety Notice

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

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

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

WARNING

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

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

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

* Broken Line

FOR PRODUCTS CONTAINING LASER :

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

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

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

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

Take care during handling the LCD module with backlight unit

- Must mount the 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.

Technical Data

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LPL panel

Type NR. : LM190E03_TLC1
Display area(mm) : 376.32(H) x 301.056(V) (19.0-inch diagonal)
Number of Pixels : 1280(H) x 1024(V)
Pitch (mm) : 0.098(H) x 0.294(V)
Color pixel arrangement : RGB vertical stripes
Display operating mode : Transmissive mode, normally white
Color depth : 16.2M colors (6 bits with FRC)
Brightness (cd/m^2) : 420(cd/m^2)(Center 1 points Typ.)
Viewing angle(CR>10) : 88°(R/L), 85°(Up) , 85°(Down), Typ
Surface treatment : Hard coating(2H) & Low reflection glare treatment of front polarizer
Electrical interface : LVDS (2 port)
Response Time : 8ms(typ.) (Tr+Tf)
Power Consumption(W) : 3.05(Max) for LCD, 22.53(Max) for inverter
Contrast ratio : Typical 700 : 1
Module size (mm) : 396.0(W) x 324.0(H) x 16.5(D)
Module weight (g) : 2700(Typ), 2840(Max)
Backlight : 4 CCFL

Power supply

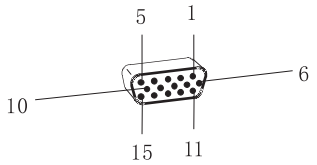
AC/DC Power adapter : +16V DC/3.95A (100V~240V)
Power consumption : 62 W (Max) w/o subwoofer, 100W(Max) with subwoofer
Power cord length and type : 1.8M, UK type
Power indicator : LED (On: Green ,Sleeping mode: Amber)
DPMS :
(OFF modes is just for PC mode)

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<100 W	Green /With Audio and sub-woofer (Note 1)
On	On	On	Active	<62W	Green / Without subwoofer
Off	Off	On	Blanked	<2W	Amber LCD (Note 2)
Off	On	Off	Blanked	<2W	Amber LCD (Note 2)
Off	Off	Off	Blanked	<2W	Amber LCD (Note 2)
DC Power off			N / A	<1W	LED Off (Note 2)

Note 1: sub-woofer uses individual power.
Note2: Upstream USB cable is disconnected to PC or PC is shut down if upstream USB cable is connected .

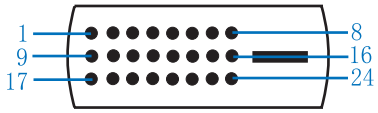
Horizontal scan : 30 - 83KHz
Vertical scan : 56 - 76 Hz

Pin Assignment



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

Input DVI-D connector pin



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

Environmental conditions

Operating
-Temperature C : 0°C to 35°C
-Humidity : 20% ~ 80 %
-Altitude : 0-3658m
-Air pressure : 600-1100mBAR

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

Note: Recommend at 0 to 35°C, Humidity less than 60 %

Mechanical

Pedestal : Detachable
Tilt angle : 0° to 20°
Swivel rotation: No

Installation

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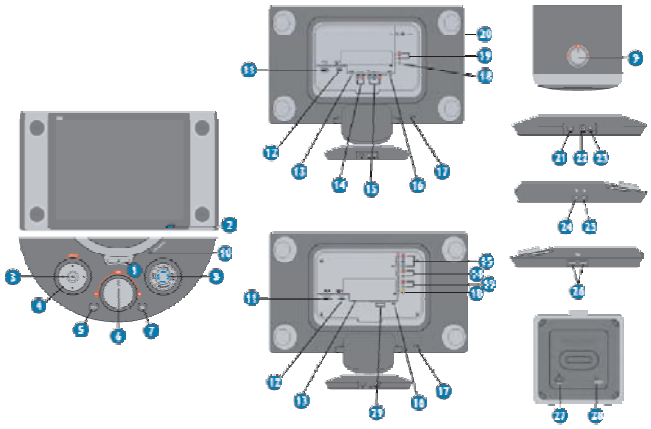
Installing your LCD Monitor/TV

Product Description



1 To switch display's power On & Off
2 Power LED
3 To access OSD menu
4 To adjust the OSD (Up, Down, Left, Right)
5 Automatically adjust horizontal position, vertical position, phase and clock setting in D-sub only
6 To adjust the speaker volume
7 To mute the audio
8 Preset hotkeys to optimize audio performance
9 To adjust the subwoofer bass
10 USB Audio LED
11 DVI-D
12 D-Sub
13 PC audio
14 HD audio jack
15 YPbPr
16 S-Video
17 Kensington lock
18 CVBS
19 Audio jack
20 Antenna
21 USB upstream port
22 Monitor DC in
23 Subwoofer out
24 Microphone in
25 Headphone out
26 USB hub
27 Subwoofer power
28 Subwoofer in
29 SCART

Connecting to Your PC

Accessory Pack
Unpack all the parts

Item	Description
	Power Cord (Monitor)
	Power Cord(Subwoofer)
	D-Sub
	DVI-D
	USB cable
	Component (YPbPr)
	Subwoofer Cable
	Subwoofer Audio
	EDFU pack

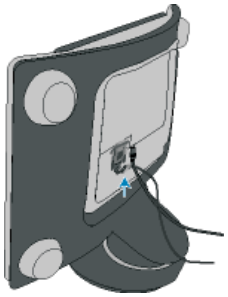
Remote Control
(Not availabe for all model)

Connecting to Your PC

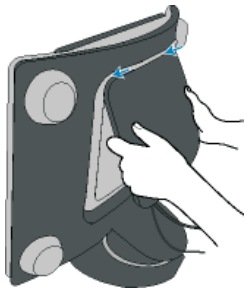
1)

Remove backcover from vertical monitor.

2)Cable management

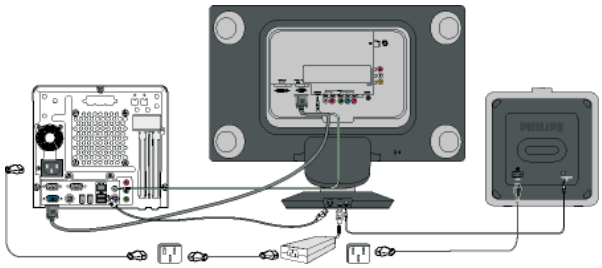


3)



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

4)Connect to PC

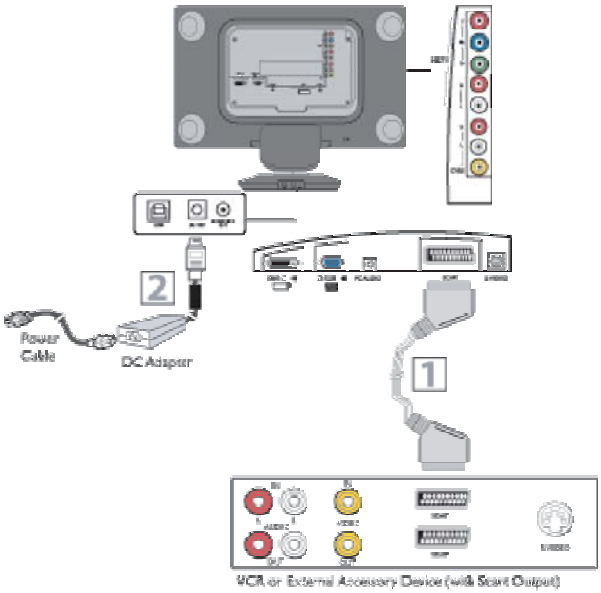


(1) Turn off your computer and unplug its power cable.
(2) Connect the monitor signal cable to the video connector on the back of your computer.
(3) Plug the power cord of your computer and your monitor into a nearby outlet.
(4) USB plug
  (a) Connect USB upstream port on monitor and the USB port on PC with a USB cable.
  (b) The USB downstream port is now ready for any USB device to plug in
(5) Turn on your computer and monitor. If the monitor displays an image, installation is complete.

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

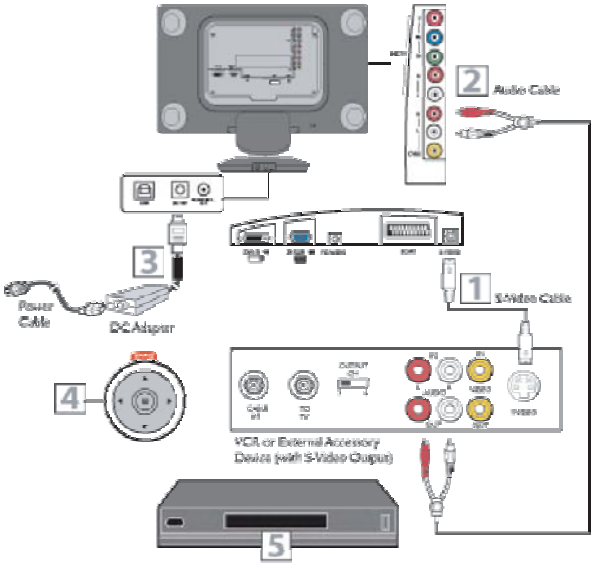
5)Connect for AV functionality (Europe Only)

SCART Connentions
This connection will supply stereo sound to the display.



(1) Using a scart cable (not supplied) connect one end of the scart cable to the scart jocket of the scart enabled device. Connect the other end of the scart cable to the scart jack on the bottom of the display.
(2) Plug the DC adapter into the DC IN 16V jack on the display. Plug the power cable into an outlet and switch the display set on.

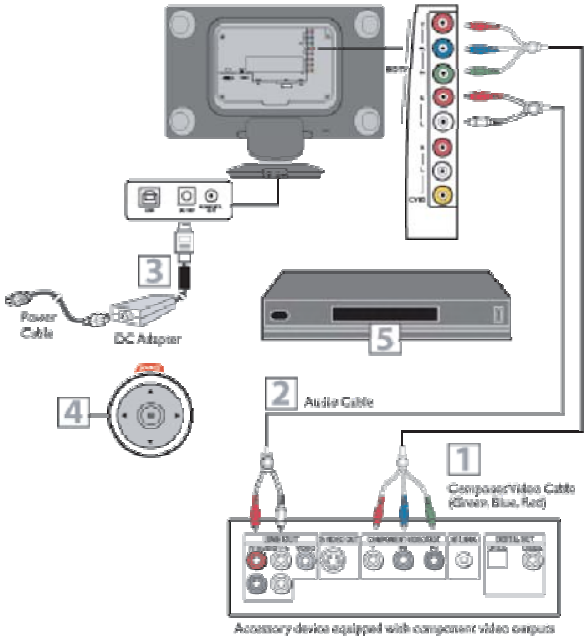
S-Video Connections
The S-Video connection on the rear of the display can provide you with better picture detail and clarity for the playback of accessory sources such as DBS (digital broadcast satellite), DVD (digital video discs), video games, and VHS VCR (video cassette recorder) tapes than the normal antenna picture connections.



(1) Connect an S-Video cable to the S-VIDEO jack of the other equipment (DVD Player, Camcorder, etc.) and to the S-VIDEO jack on the rear of the display.
(2) Connect RCA-style audio cables (usually red and white) to the AUDIO OUT (left and right) jacks on the other equipment. Connect the other end of the cables to the AUDIO jack on the side of the display.
(3) Plug the DC Adapter into the DC IN 16V jack on the display. Plug the power cable into an outlet. Turn on the display and other equipment.
(4) Press the OSD buttons until S-Video appears on the screen.
(5) Press PLAY on the other equipment to view its material on the display.

Component (HD) Connections

Component Video input provide the highest possible color and picture resolution in the playback of digital signal source material, such as with DVD players. If you are using a HD (High Definition) receiver that can transmit high definition programming, the display can accept those signals through the Component input located on the bottom of the display.



(1) Connect the component (Y, Pb, Pr) Video OUT jacks from the DVD player (or similar device) to the COMP(onent) VIDEO Input jacks on the bottom of the display.
(2) Connect the red and white AUDIO CABLES to the Audio (left and right) output jacks on the rear of the accessory device to the AUDIO IN jack. Connect the other end of the cable to the Audio jack on the rear of display.
(3) Plug the DC Adapter into the DC IN 16 V jack on the display. Plug the power cable into an outlet. Turn on the display and other equipment.
(4) Press the OSD button until HD appears on the screen.
(5) Insert a DVD disc into the DVD player and press the PLAY button on the DVD Player.

PC (Monitor) Inputs
This display can be used as a PC monitor. Your computer will have to be equipped with a VGA type video output and interface cable (supplied).

Installation

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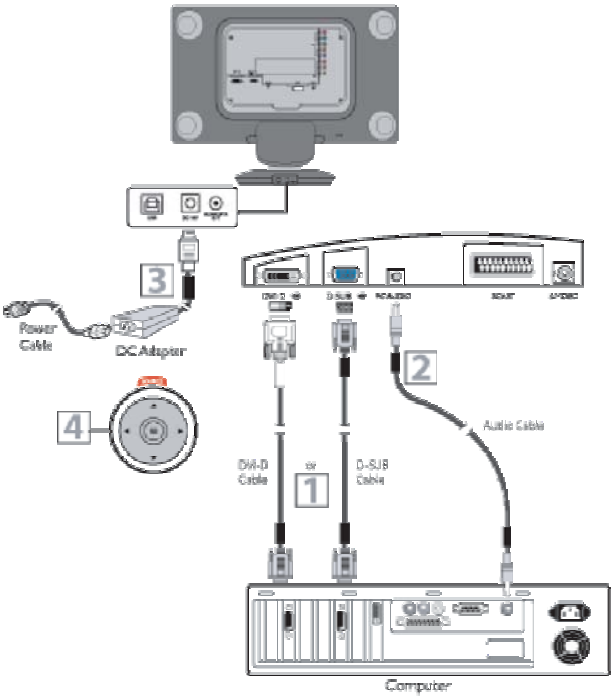
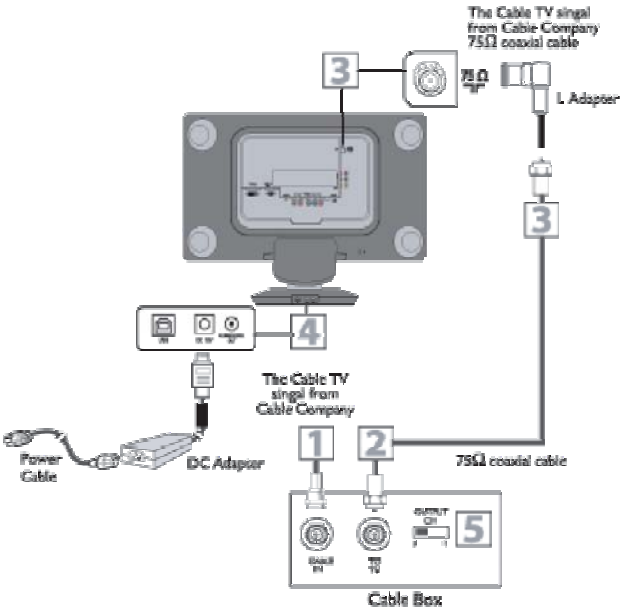


(1) Connect the VGA/DVI or DVI end of the interface cable to the computer, while connecting the other end to the D-SUB or DVI INPUT jack on the display.
(2) Although audio connections are not required, the display can reproduce the computers audio out by an AUDIO ADAPTER to the Audio output jack on the computer (if available) while connecting the other end of the Audio cables to the PC AUDIO Jacks on the bottom of the display.
(3) Plug the DC Adapter into the DC IN 16V jack on the display. Plug the power cable into an outlet. Turn on the display and PC.
(4) Press the OSD button until PC MODE appears on the screen.

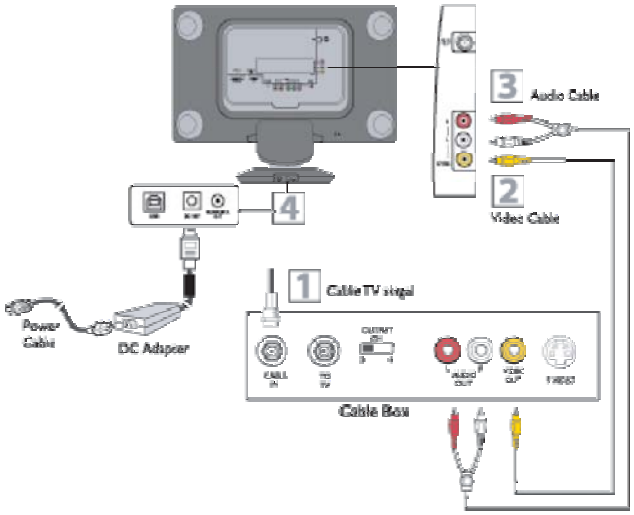
6) Connect for AV/TV functionality (Asia Pacific Only)
Cable Box (with RF in/outputs)



(1) Connect the Cable TV signal to the IN jack (or RF IN or CABLE IN) on the Cable Box.
(2) Connect an RF coaxial cable (not supplied) to the OUT jack (or TO TV or RF OUT) of the Cable Box.
(3) Connect the other end of the coaxial cable to one end of the supplied L-Adapter as shown, and connect the other end of the adapter to the TV jack on the LCD TV.
(4) Plug the DC adapter into the DC IN 16V jack on the LCD TV. Plug the power cable into an outlet and switch TV set on.
(5) Set the Channel 3/4 (or Output channel) switch of the Cable Box to 3 or 4. Set the TV to the same channel. When watching TV programming, change channels at the Cable Box, not the LCD TV.

Helpful Hint
1 Immediately after unpacking and plugging in your new television, run the auto program function to set up the TV for the broadcast or cable channels available in your area. If you do not run the auto program function to set up the channels , your television may not operate properly.
2 Please make sure that you have selected the TV mode with AV+ key on your remote control, before installing TV channels.

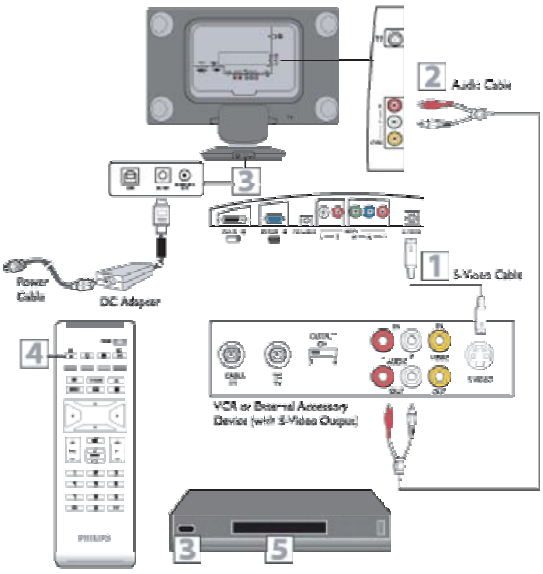
Cable Box (with Audio/Video outputs)
This connection will supply stereo sound to the LCD TV.



(1) Connect the Cable TV signal to the IN jack (or RF IN or CABLE IN) on the Cable Box.
(2) Using an RCA-type video cable (not supplied) connect one end of the video cable to the Video Out jack of the Cable Box. Connect the other end of the cable to the yellow VIDEO jack on the side of the TV. Video cables are usually marked with yellow and are available from Philips or electronics retailers. Video jacks on most equipment are yellow.
(3) Using RCA-type, stereo audio cables (not supplied), connect one end of the cables to the left and right Audio Out jacks of the Cable Box. Connect the other end of that cable to the Audio jack on the side of the LCD TV. Audio cables are usually marked with red and white and are available from Philips or electronics retailers. The right audio jack is red and the left audio jack is white. Match the cable colors to the jack colors.
(4) Plug the DC adapter into the DC IN 16V jack on the LCD TV. Plug the power cable into an outlet and switch TV set on.

Note: Use the AV+ button on the remote control to tune to the AV channel for the cable box signal. Once tuned, change channels at the cable box, not the television. When you watch programs using VCR, it s recommended to select Soft Mode via Smart picture.

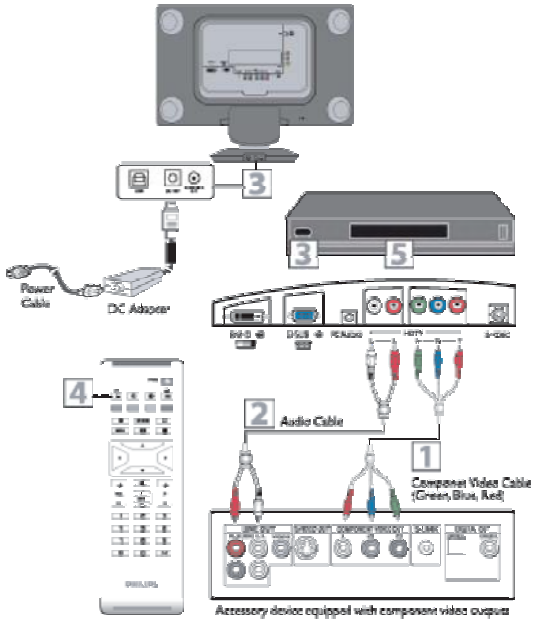
S-Video Connections
The S-Video connection on the rear of the LCD TV can provide you with better picture detail and clarity for the playback of accessory sources such as DBS (digital broadcast satellite), DVD (digital video discs), video games, and VHS VCR (video cassette recorder) tapes than the normal antenna picture connections.



(1) Connect an S-Video cable to the S-VIDEO jack of the other equipment (DVD Player, Camcorder, etc.) and to the S-VIDEO jack on the rear of the LCD TV.
(2) Connect RCA-style audio cables (usually red and white) to the AUDIO OUT (left and right) jacks on the other equipment. Connect the other end of the cables to the AUDIO jack on the side of the LCD TV.
(3) Plug the DC Adapter into the DC IN 16V jack on the LCD TV. Plug the power cable into an outlet. Turn on the LCD TV and other equipment.
(4) Press the AV buttons to set the LCD TV to its S-VIDEO mode.
(5) Press PLAY on the other equipment to view its material on the LCD TV.

Note: The Philips LCD TV remote control can not be used to operate other video/audio equipment.
The Audio jack of AV IN is shared between Video (CVBS) and S-Video signals. If Audio and Video is connected to S-Video input, you can still hear sound if you select Video via AV select, even there appears no image on screen.

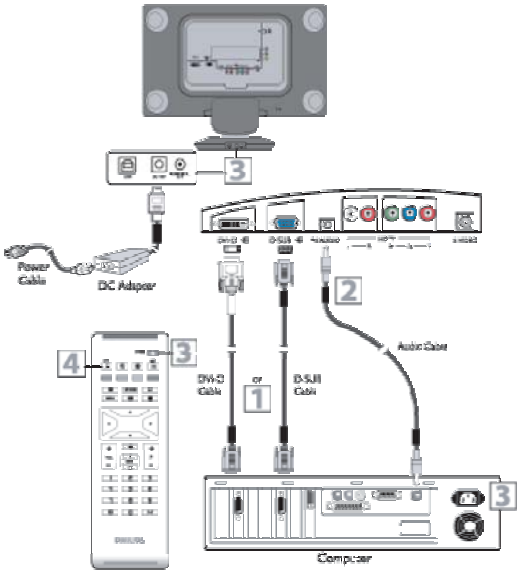
Component (HD) Connections
Component Video input provide the highest possible color and picture resolution in the playback of digital signal source material, such as with DVD players. If you are using a HD (High Definition) receiver that can transmit high definition programming, the TV can accept those signals through the Component input located on the bottom of the TV.



(1) Connect the component (Y, Pb, Pr) Video OUT jacks from the DVD player (or similar device) to the COMP(onent) VIDEO Input jacks on the bottom of the LCD TV.
(2) Connect the red and white AUDIO CABLES to the Audio (left and right) output jacks on the rear of the accessory device to the AUDIO IN jack. Connect the other end of the cable to the Audio jack on the rear of LCD TV.
(3) Plug the DC Adapter into the DC IN 16 V jack on the LCD TV. Plug the power cable into an outlet. Turn on the LCD TV and other equipment.
(4) Press the AV button on the remote control to select HD. HD will appear in the upper left corner on the TV screen.
(5) Insert a DVD disc into the DVD player and press the PLAY button on the DVD Player.

Note: The Philips LCD TV remote control can not be used to operate other video/audio equipment.

PC (Monitor) inputs
This LCD TV can be used as a PC display monitor. Your computer will have to be equipped with a VGA type video output and interface cable (supplied).



(1) Connect the VGA or DVI end of the interface cable (supplied) to the computer, while connecting the other end to the DSUB or DVI INPUT jack on the LCD TV.
(2) Although audio connections are not required, the LCD TV can reproduce the computers audio out by an AUDIO ADAPTER to the Audio output jack on the computer (if available) while connecting the other ends of the Audio cables to the PC AUDIO Jacks on the bottom of the TV.
(3) Plug the DC Adapter into the DC IN 16V jack on the LCD TV. Plug the power cable into an outlet. Turn on the LCD TV and PC.
(4) Press the AV button until PC MODE appears on the screen.

Note: USB digital audio applicable in PC mode only.

On Screen Display

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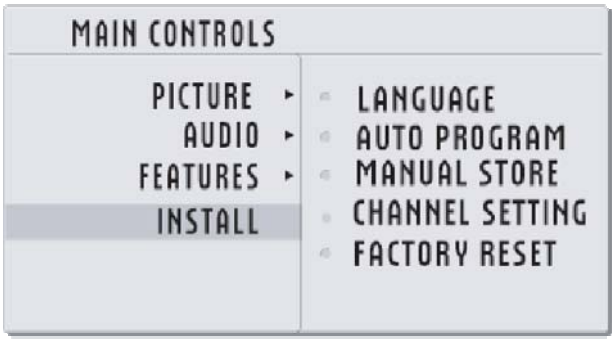
On-Screen Display

Description of the On Screen Display

What is the On-Screen Display?

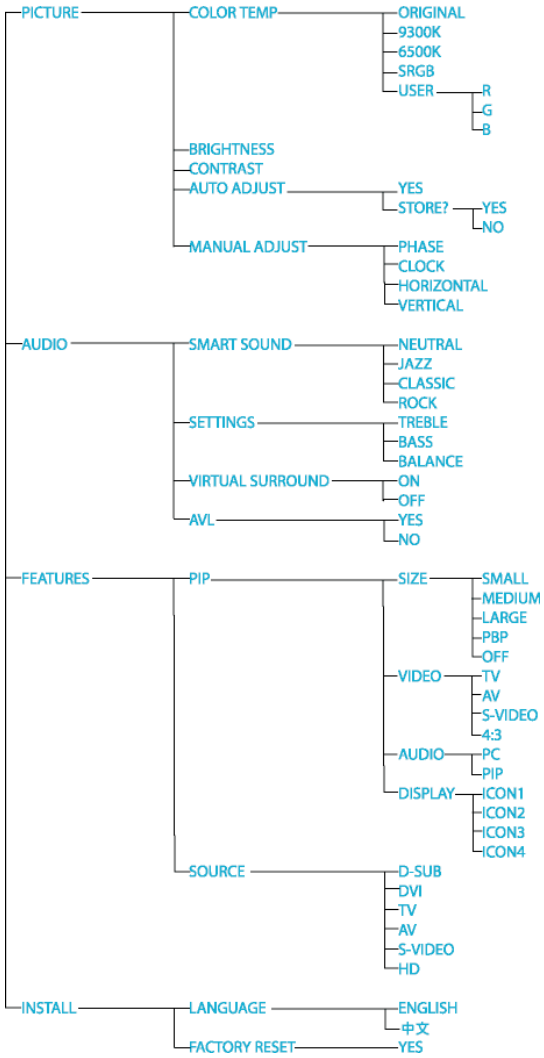
On-Screen Display (OSD) is a feature in all Philips LCD monitors. It allows an end user to adjust screen performance or select functions of the monitors directly through an on-screen instruction window. A user friendly on screen display interface is shown as below :



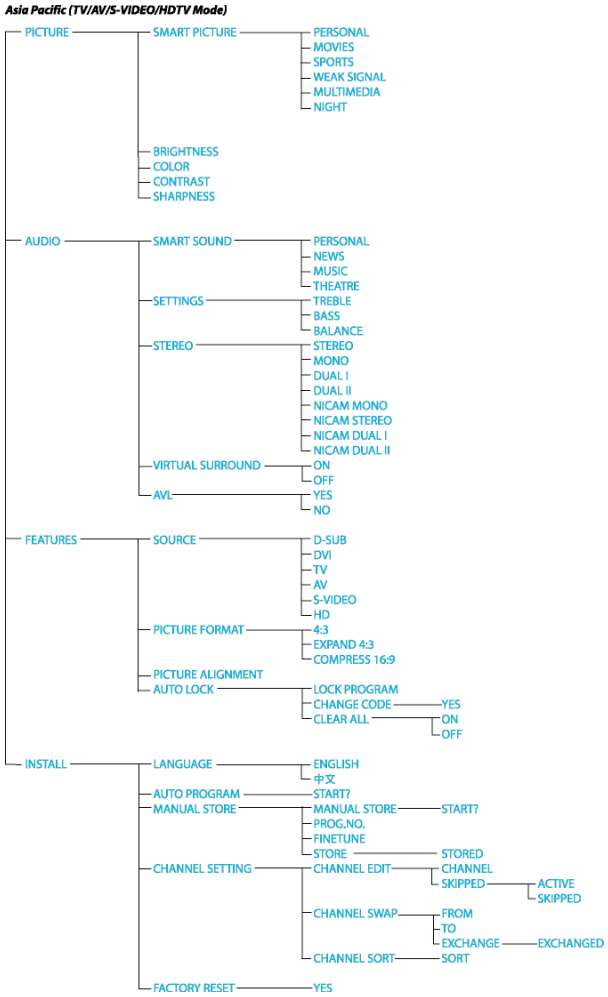
Basic and simple instruction on the control keys.
In the OSD shown above users can press ▲▼ buttons at the base of the monitor to move the cursor, OK to confirm the choice or change, and ◀▶ to adjust/select the change.

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

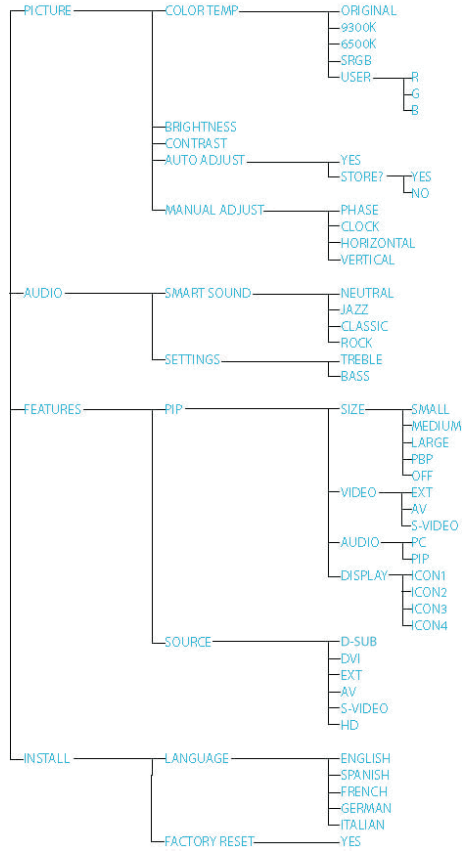
Asia Pacific (PC Mode)



Asia Pacific (TV/AV/S-VIDEO/HDTV Mode)



Europe (PC Mode)



On Screen Display

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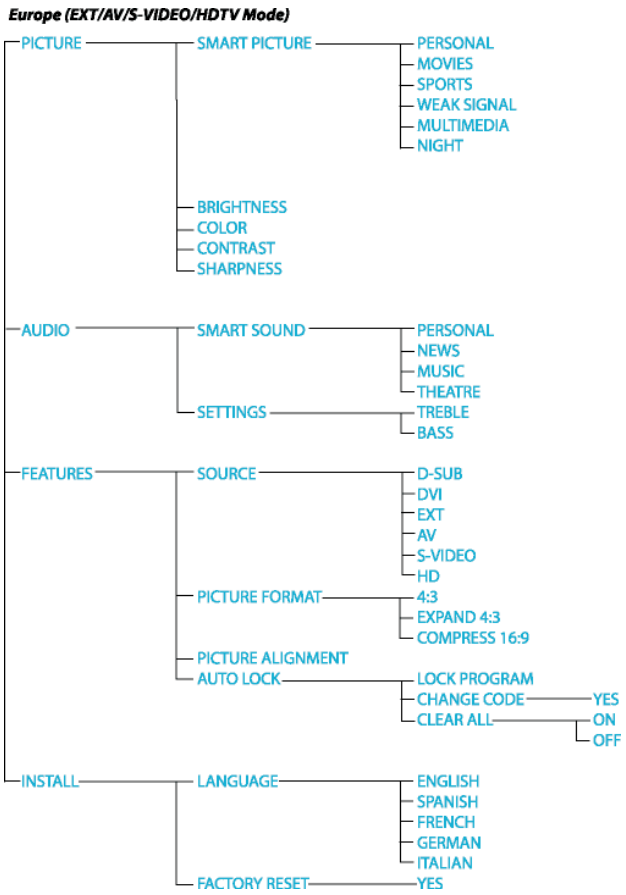

Note: sRGB is a standard for ensuring correct exchange of colors between different devices (e.g. digital cameras, monitors, printers, scanners, etc.)

Using a standard unified color space, sRGB will help represent pictures taken by an sRGB compatible device correctly on your sRGB enabled Philips monitors. In that way, the colors are calibrated and you can rely on the correctness of the colors shown on your screen.

Important with the use of sRGB is that the brightness and contrast of your monitor is fixed to a predefined setting as well as the color gamut. Therefore it is important to select the sRGB setting in the monitor's OSD.

To do so, open the OSD by pressing the OK button on the side of your monitor. Move the down button to go to Color and press OK again. Use the right button to go to sRGB. Then move the down button and press OK again to exit the OSD.

After this, please do not change the brightness or contrast setting of your monitor. If you change either of these, the monitor will exit the sRGB mode and go to a color temperature setting of 6500K.

Aging,Factory Mode

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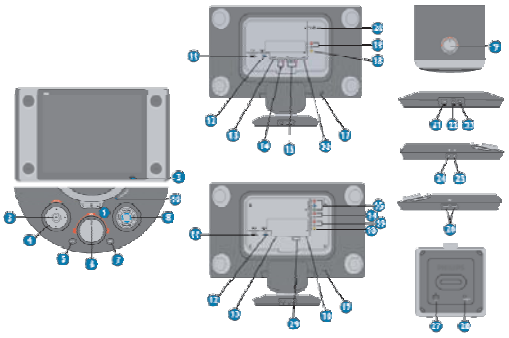
View



Access Aging Mode

Step 1 : Disconnect Interface Cable between Monitor and PC.
Step 2 : Turn off LCD monitor.Then press power " ⏻ " button.Then quickly push "OK "and "AUTO",and hold this two buttons untill comes out " AGING screen"] => then release all buttons.
Bring up:

After 50 seconds, bring up:

After 3 seconds, bring up:

After 50 seconds, bring up:

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

Access Factory Mode

1). Turn off monitor.
2). Press power " ⏻ " button.Then quickly push "OK" and "AUTO",and hold this two buttons , then the screen comes out "Waiting For Automatic Adjustment ",then the screen will be black for one second untill comes out "Windows screen"] => then release this two buttons.
3). Press "MENU" button, wait until the OSD menu with Characters "Hudson6 190G6 CHINA V0.35 0508LM190E03" (below OSD menu) come on the Screen of the monitor.

Factory Mode indicator

Factory Menu
Cursor can move on gray color area
Hot key function: by pressing " ▲ " and " ▼ " 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.

Front view

Fig.1

Back view

Fig.2

Step 1. Remove the back cover and stands.

a. Remove the PHILIPS cover as Fig.3 .
b. Remove the back cover .
1. Unscrew the 4 screws as Fig.4 .
2. Open 5 clicks on top side as Fig.5 .
3. Open 4 clicks on bottom side as Fig.6 .
4. Open 2 clicks on left and right side as Fig.7 and Fig.8 .
5. Open the back cover .

Fig.3

Fig.4

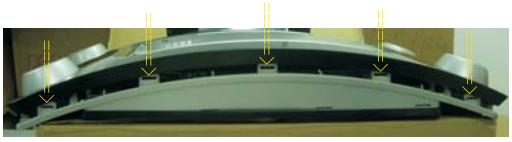


Fig.5

Fig.6

Fig.7

Fig.8

c. Remove the stands .
1. Unscrew the 6 screws and disconnect the 3 cables as Fig.9 .
2. Remove the stands as Fig.10 .

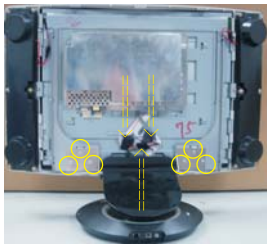


Fig.9

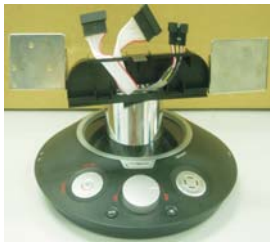


Fig.10

Step 2. Remove the Control and Audio board.
a. Unscrew the 12 screws and disconnect the 4 cables as Fig.11 and Fig.12.

Fig.11

Fig.12

Step 3. Remove the Scaler , HD , Inverter and LED board .
a. Unscrew the 7 screws and remove the shielding-upper-ap as Fig.13 and Fig.14 .

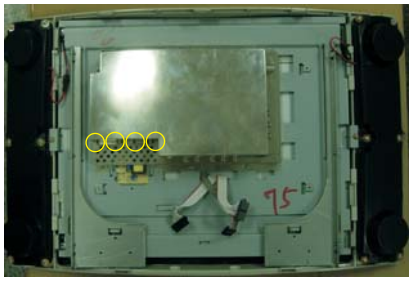


Fig.13

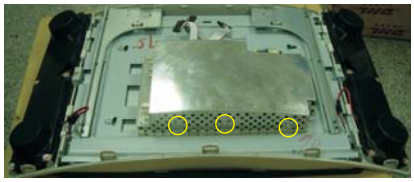


Fig.14

Mechanical Instruction

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b. Unscrew the 8 screws and disconnect the 9 cables as Fig. 15 .
c. Remove the Scaler and HD board as Fig.16 .
d. Unscrew the 3 screws and remove the shielding-lower-ap as Fig.16 and Fig.17 .
e. Unscrew the 1 screw and disconnect the 4 cables as Fig.17 .

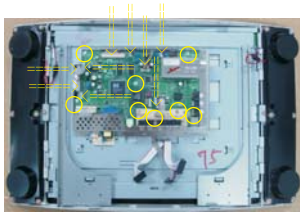


Fig. 15

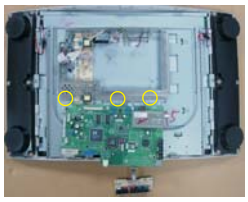


Fig. 16

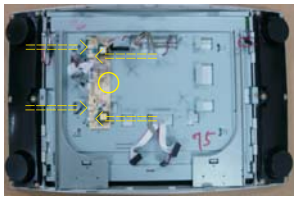


Fig. 17

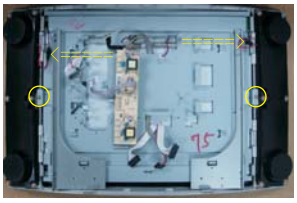


Fig. 18

Step 4. Remove the LCD panel.

a. Remove the bezel
   1. Open 4 clicks on top and bottom side as Fig.19 and Fig.20 .
   2. Open 2 clicks on left and right side as Fig.21 and Fig.22 .
   3. Remove the LED board and remove the bezel .
b. Unscrew the 4 screws and remove the metal frame as Fig.23 .

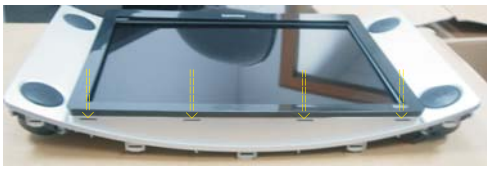


Fig. 19

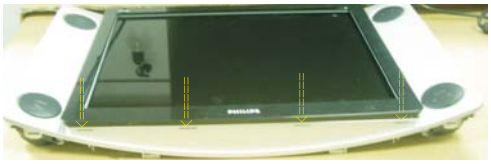


Fig. 20

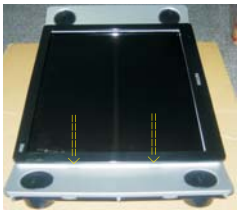


Fig. 21

Fig. 22

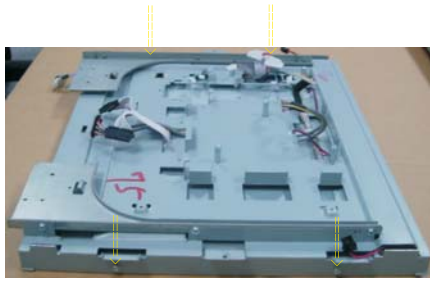


Fig. 23

LCD Panel

1050 823827718731 LCD LM190E03-TLC1.

Fig. 24

****
In warranty, it is not allowed to disassembly the LCD panel, even the backlight unit defect.

Out of warranty, the replacment of backlight unit is a correct way when the defect is cused by backlight (CCFL,Lamp).
****

Color Adjustment

Go to cover page

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

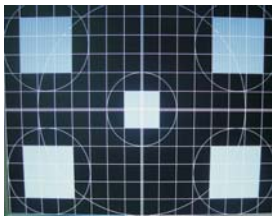


Fig. 1

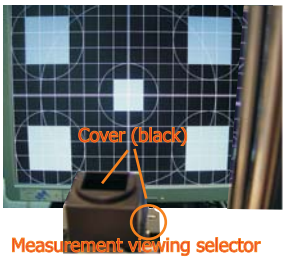


Fig. 2

4. Access Factory Mode

1). Turn off monitor.
2). Press power "⏻" button.Then quickly push "OK" and "AUTO",and hold this two buttons , then the screen comes out "Waiting For Automatic Adjustment ",then the screen will be black for one second untill comes out "Windows screen"] => then release this two buttons.
3). Press "MENU" button, wait until the OSD menu with Characters "Hudson6 190G6 CHINA V0.35 0508LM190E03" (below OSD menu) come on the Screen of the monitor.

Factory Mode indicator

Fig. 3

4). Press "MENU" button, then select factory mode indicator by"▼" button .Press"MENU" button to bring up submenu windows as below:

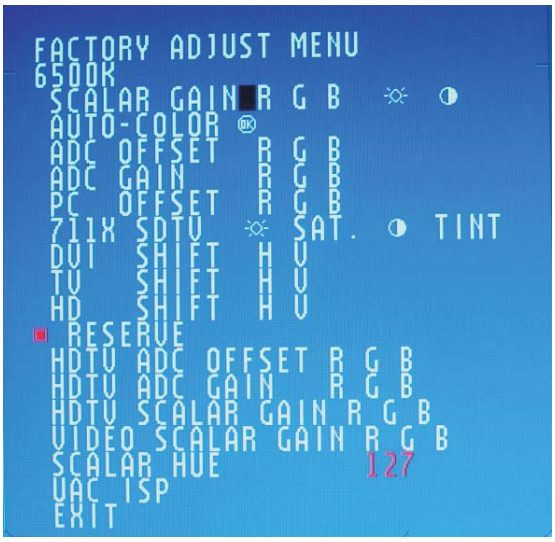


Fig. 4

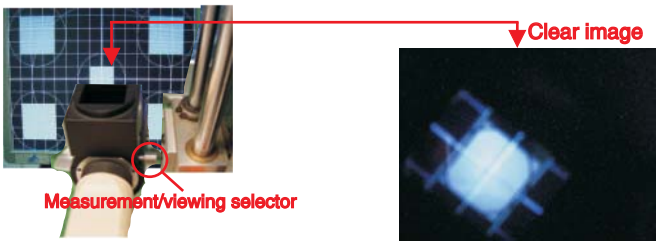


Fig.5

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

5.1 Auto color adjustment (B)
Apply a 1024*768/60Hz signal with half black white pattern, set brightness control at 50%, and contrast control at 50%. Adjust the R.G. B. offset, and gain to calibrate the color smoothly and 64-grey level distinguishable.

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

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

Use Minolta CA-210 for color coordinates and luminance check. Luminance is > 200 Nits in the center of the screen when brightness at 50% and contrast set to 50%.

5.3 Adjustment of sRGB (B)
Apply a 1280*1024/ 60Hz signal with white pattern; brightness (0) and contrast (150) will be preloaded in EEPROM. Adjust the R, G, B Sub-Gain for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be

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

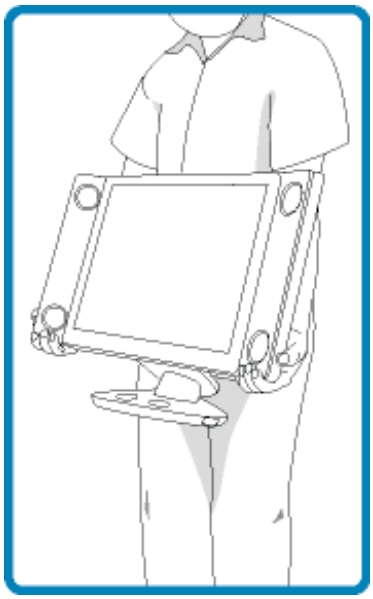
Warning Message

Go to cover page

WARNING: Use of controls, adjustments or procedures other than those specified in this documentation may result in exposure to shock, electrical hazards and/or mechanical hazards.

Read and follow these instructions when connecting and using your computer monitor:

- To protect your display from possible damage, do not put excessive pressure on the LCD panel. When moving your monitor, grasp the frame to lift; do not lift the monitor by placing your hand or fingers on the LCD panel.
- Unplug the monitor if you are not going to use it for an extensive period of time.
- Unplug the monitor if you need to clean it with a slightly damp cloth. The screen may be wiped with a dry cloth when the power is off. However, never use alcohol, solvents or ammonia-based liquids.
- Consult a service technician if the monitor does not operate normally when you have followed the instructions in this manual.
- The casing cover should be opened only by qualified service personnel.
- Keep the monitor out of direct sunlight and away from stoves or any other heat source.
- Remove any object that could fall into the vents or prevent proper cooling of the monitor s electronics.
- Do not block the ventilation holes on the cabinet.
- Keep the monitor dry. To avoid electric shock, do not expose it to rain or excessive moisture.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.
- If turning off the monitor by detaching the power cable or DC power cord, wait for 6 seconds before attaching the power cable or DC power cord for normal operation.
- To avoid the risk of shock or permanent damage to the set, do not expose the monitor to rain or excessive moisture.
- IMPORTANT: Always activate a screen saver program during your application. If a still image in high contrast remains on the screen for an extended period of time, it may leave an 'after-image' or 'ghost image' on front of the screen. This is a well-known phenomenon that is caused by the shortcomings inherent in LCD technology. In most cases, the afterimage will disappear gradually over a period of time after the power has been switched off. Be aware, that the afterimage symptom cannot be repaired and is not covered under warranty.
- Warning for lifting monitor - Do not use the area underneath the logo cover to grip or lift the monitor. Placing weight on the logo cover can cause it to break away from the body and cause the monitor to fall. When lifting the monitor, place one hand under the monitor's frame.



Consult a service technician if the monitor does not operate normally when the operating instructions given in this manual have been followed.

Troubleshooting

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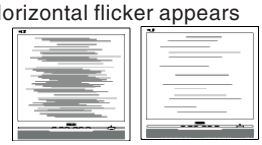
This page deals with problems that can be corrected by the user. If the problem still persists after you have tried these solutions, contact your nearest Philips dealer.

Common Problems	
Having this problem?	Check these items
No Picture (Power LED not lit)	• 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)	• Make sure the computer is turned on. • Make sure the signal cable is properly connected to your computer. • Check to see if the monitor cable has bent pins. • The Energy Saving feature may be activated
Screen says 	• Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). • Check to see if the monitor cable has bent pins. • Make sure the computer is turned on.
AUTO button not working properly	• The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. • It may not work properly if using nonstandard PC or video card. • The AUTO adjustment does not function when digital input is used for display.
Imaging Problems	
Display position is incorrect	• 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 	• Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
Horizontal flicker appears 	• Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls.
The screen is too bright or too dark	• Adjust the contrast and brightness on OSD Main Controls. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer).
An after-image appears	• If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an after-image. This usually disappears after a few hours
An after-image remains after the power has been turned off.	• This is characteristic of liquid crystal and is not caused by a malfunction or deterioration of the liquid crystal. The after-image will disappear after a peroid of time.
Green, red, blue, dark, and white dots remains	• The remaining dots are normal characteristic of the liquid crystal used in today's technology.
For further assistance, refer to the Consumer Information Centers list and contact your local Philips distributor.	

Electrical Instructions

Go to cover page

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.

1.2 All measurements mentioned hereafter are carried out at a normal mains voltage (90 - 132 VAC for USA version, 195 -264 VAC for EUROPEAN version, or 90 - 264 VAC for the model with full range power supply, unless otherwise stated.)

1.3 All voltages are to be measurement or applied with respect to ground, unless otherwise stated.

1.4 The test has to be done on a complete set including LCD panel 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.

2. Input signal

2.1.1 PC Signal type

Analog Video : 0.7 Vp-p linear, positive polarity

Separate Sync. : TTL level, separate, positive or negative polarity

Audio signal : Mini-jack audio input

Input level: 500 mVrms ((Speaker outpout 5Wx2 when Input level > 630mVrms and Volume control at 100%))

Signal source: pattern generator format as attachment (table 1 to 11) Reference generator : CHROMA 2200 or 2250

2.1.2 TV Signal type

RF Signal : Aerial input, NTSC cable and antenna system.

Video signal : Cinch input, CVBS with NTSC and PAL system.

Level: 1.0Vp-p (0.7V video + 0.3V sync.)

S video input: Y/C signal, NTSC and PAL system.

Level: Y: 1.0Vp-p (0.7V video + 0.3V sync.)

C: +/- 0.3V.

Component input: Cinch G/B/R-> YPbPr cinch input.

Level: Y: 1.0Vp-p Pb/Pr: +/- 0.35V

Audio signal : Side cinch R/L for CVBS and S-video

Bottom cinch R/L for component input.

Input level: 500 mVrms ((Speaker outpout 5Wx2 when Input level > 630mVrms and Volume control at 100%))

2.2 PC Input signal mode

2.2.1 PC signal mode:

The maximum resolution display of this monitor is up to 1280x1024, SXGA signal input with full screen display. It shall also automatically up-scale the lower resolution video modes into 1280x1024 full screen display. The display capabilities shall include the following timing modes:

(1) Preset modes (30 modes)

#	Resolution	H-freq uency	Pixel rate	V-Freq uency	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	800X600	35.2K	36	56Hz	
8	800X600	37.9K	40	60Hz	
9	800X600	48.1K	50	72Hz	
10	800X600	46.9K	49.498	75Hz	
11	832X624	49.7K/	57.28	75Hz	MAC
12	960X720	44.76K	57.58	60Hz	
13	960X720	56.4K	72.42	75Hz	
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	1152X864	54.0K	79.9	60Hz	Non-VESA
19	1152X864	63.9K	94.5	70Hz	Non-VESA
20	1152X864	67.5K	108	75Hz	
21	1152X870	68.7K	100	75Hz	MAC
22	1152X900	61.8K	92.94	66Hz	SUN Mode IV
23	1152X900	71.8K	108	76Hz	SUN Mode II
24	1280X960	60.0K	108	60Hz	
25	1280X960	75.0K	129.895	75Hz	Non-VESA
26	1280X1024	64.0K	108	60Hz	
27	1280X1024	71.7K	117	67Hz	SUN Mode V
28	1280X1024	76.0K	130.223	72Hz	DOS/V
29	1280X1024	80.0K	135	75Hz	
30	1280X1024	81.1K	135.008	76Hz	SUN Mode I

(2) Factory Preset modes (15 modes)

Monitor in the production line should 100% check following 15 modes and adjust them perfectly.

#	Resolution	H-Freq uency	Pixel rate	V-Freq uency	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	

2.3 TV input signal Channel and pattern for AP model (Table1)
Table 1. AP model: AP TV preload Channels

PRG	CH	Frequency Carriers		TV System	Pattern
		Video	Sound		
1	AU37	591.25MHz	597.25MHz	PAL I (UK)	Pure White
2	AU2	64.25MHz	69.75MHz	PAL B (Australia)	Circle Pattern
3	E7	189.25MHz	194.75MHz	PAL B (CCIR)	Circle Pattern
4	G47	679.25MHz	684.75MHz	PAL G (CCIR)	Circle Pattern
5	I23	487.25MHz	493.25MHz	PAL I (UK)	Circle Pattern
6	E12	224.25MHz	229.75MHz	PAL B (CCIR)	Color Bar
7	AU7	182.25MHz	187.75MHz	PAL B (CCIR)	Color Bar
8	G68	847.25MHz	852.75MHz	PAL G (CCIR)	100% White
9	AU9	196.25MHz	201.75MHz	PAL B (Australia) (New Zealand)	Chessboard
10	AU10	209.25MHz	214.75MHz	PAL B (Australia)	Crosshatch
11	AU0	46.25MHz	51.75MHz	PAL B (Australia)	Color Bar
12	AU2	64.25MHz	69.75MHz	PAL B (Australia)	Color Bar
13	AU5	102.25MHz	107.75MHz	PAL B (Australia)	Crosshatch
14	AU5A	138.25MHz	143.75MHz	PAL B (Australia)	Color Bar
15	AU7	182.25MHz	187.75MHz	PAL B (Australia) (New Zealand)	Pure White
16	AU9	196.25MHz	201.75MHz	PAL B (Australia) (New Zealand)	Pure White
17	AU10	209.25MHz	214.75MHz	PAL B (Australia)	Circle Pattern
18	K39	615.25MHz	NICAM 621.10MHZ / AM 621.75MHZ	SECAM K1 (France)	Circle Pattern
19	G28	527.25MHz	532.75MHz	PAL G (CCIR)	Circle Pattern
20	AU37	591.25MHz	596.75MHz	PAL G (CCIR)	Circle Pattern
21	I40	623.25MHz	629.25MHz	PAL I (UK)	Color Bar
22	K52	719.25MHz	NICAM 725.10MHZ / AM 725.75MHZ	SECAM B/G (France)	Color Bar
23	I60	783.25MHz	789.75MHz	PAL I (UK)	100% White
24	I66	831.25MHz	837.25MHz	PAL I (UK)	Checkerboard
25	K21	471.25MHz	NICAM 477.10MHZ / AM 477.74MHZ	SECAM K1 (France)	Crosshatch

Note: It is not necessary to catch good performance in SECAM.
Table 2. Signal Distribution Table (PAL D/K) for China model

PRG	CH	Frequency Carriers		TV System	Pattern
		Video	Sound		
1	C 4	65.75MHz	72.25MHz	PAL D (CCIR)	Full Write
2	E 7	184.25MHz	190.75MHz	PAL D(CCIR)	Circle Pattern
3	E12	224.25MHz	230.75MHz	PAL D(CCIR)	Color Bar
4	K21	471.25MHz	477.75MHz	PAL K (CCIR)	Full Write
5	G34	511.25MHz	517.75MHz	PAL K(CCIR)	Circle Pattern
6	G62	543.25MHz	549.75MHz	PAL K(CCIR)	Color Bar
7	M58	551.25MHz	557.75MHz	PAL K(CCIR)	Crosshatch
8	G47	615.25MHz	621.75MHz	PAL K(CCIR)	Color Bar

3. TV mode display adjustment

3.1 White balance adjustment (B)

General set-up :
Equipment Requirements: Color analyzer.
Input requirements:
Input Signal Type: PAL(B/G)) system frequency=189.25MHz (CH. 3) in AP model, with white pattern of 100 IRE (100%).
PAL(D/K)) system frequency=184.25MHz (CH. 2) in China model,with white pattern of 100 IRE (100%).
Alignment method:
Initial Set-up :
Set TV (7119) Brightness=121; Contrast=66, Saturate=63 in Factory mode (can be fine tuned)
Set Smart picture as "Personal" (Brightness=50, Color=50, Contrast =50)
Apply "100% Full White/100 IRE " pattern by TV pattern generator.
Alignment : Adjust the VIDEO SCALER GAIN R G B in Factory Mode"NORMAL". (See Fig 1.)
[Enter factory menu : press AUTO and OK keys together around six seconds]
The 1931 CIE chromaticity (X, Y) co-ordinates shall be:
Table 3.1: Reading with Minolta CA-110.

Picture Mode	x	y
Normal (Original)	0.289 ± 0.005	0.304 ± 0.005

WARM and COOL will be programmed in software as table 3.2.
Table 3.2: color temp.

	Normal/ the R'\G'\B' are gain after alignment.	WARM	COOL
R gain	R'	R'	R'-10
G gain	G'	G'-10	G'-10
B gain	B'	B'-10	B'

FACTORY ADJUST MENU

NORMAL

SCALER GAIN R G B
AUTO-COLOR (OK)
ADC OFFSET R G B
ADC GAIN R G B
PC OFFSET R G B

7119 SDTV SAT TINT
TV SHIFT H V
HD SHIFT H V
SHOW LOCK MESSAGE
HDTV ADC OFFSET R G B
HDTV ADC GAIN R G B
VIDEO SCALER GAIN R G B
SCALER HUE
UAC_ISP
EXIT

Fig-1

Electrical Instructions

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4. PC mode display adjustment

4.1 Access to factory mode (DDC2B) in auto-alignment system

The communication protocol switches to DDC2B.

4.2 Auto color adjustment (B)

Apply a 1024*768/60Hz signal with half black white pattern, set brightness control at 50%, and contrast control at 50%. Adjust the R.G. B. offset, and gain to calibrate the color smoothly and 64-grey level distinguishable.

4.3 Adjustment of WHITE-D (B)

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

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

Use Minolta CA-210 for color coordinates and luminance check.

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

4.4 Adjustment of sRGB (B)

Apply a 1280*1024/ 60Hz signal with white pattern; brightness (0) and contrast (150) will be preloaded in EEPROM. Adjust the R, G, B Sub-Gain for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be

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

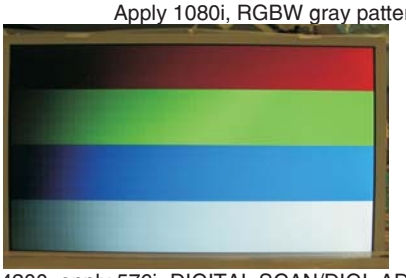
5. HDTV mode display adjustment

5.1 hite balance adjustment (B)

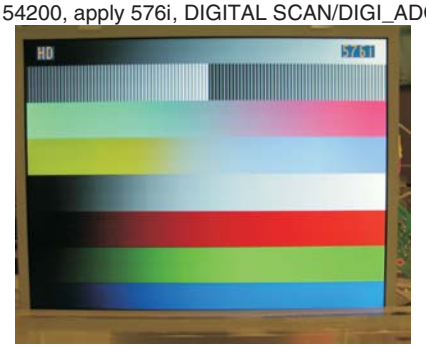
General set-up:

Equipment : Quantum Data Pattern Generator 802R.

Apply 1080i, RGBW gray pattern.



(Or FLUKE 54200, apply 576i, DIGITAL SCAN/DIGI_ADC1 pattern.)



Alignment method:

Initial Set-up : Set Smart picture as "Personal", Brightness=50, Color=50, Contrast=50) Set AUTO-COLOR process.

Alignments: Check chromaticity (X, Y) co-ordinates specification:

Picture Mode	x	y
Personal	0.289 ± 0.020	0.304 ± 0.020

If out of specification, fine-tune HDTV ADC Gain in factory mode.

Luminance is 280+/-10% Nits in the center of the screen when brightness at 50% and contrast set to 50%.

6. Preset EEPROM data

6.1 EEPROM data has to be preset data according following table.

Factory mode preset.

Function		Preset value	
SCALER GAIN		127 127 127	
ADC Offset R/G/B		127 127 127	
ADC Gain R/G/B		127 127 127	
PC OFFset R/G/B		127 127 127	
7119 brightness		121 (TV,AV,S-video)	
7119 Saturation		63 (TV,AV,S-video)	
7119 contrast		66 (TV,AV,S-video)	
7119 TINT		24 (TV,AV,S-video)	
		NTSC	PAL
TV shift H TV shift V	Regular	170	186
		20	21
HD SHIFT H HD SHIFT V		See below.	
HD ADC OFFset R G B		127 127 127	
HD ADC GAIN R G B		127 127 127	
Video Scaler Gain		127 127 127	
Scaler Hue		50	

127 means that it will be programmed after auto-adjusted.

Factory mode:

	480i	480P	576i	576P	720P/ 50Hz	720P/ 60Hz	1080i/ 50Hz	1080i/ 60Hz
HD shift H	92	94	103	103	71	74	38	38
HD shift V	39	40	50	53	39	39	61	59

In user "Picture alignment"

	480i	480P	576i	576P	720P/ 50Hz	720P/ 60Hz	1080i/ 50Hz	1080i/ 60Hz
HD shift H	78	77	75	75	48	47	28	28

6.2 Smart picture &Smart sound:
6.2.1 Final TV mode out box setting.
Smart Picture : MOVIES

Smart Picture

PERSONAL	BRIGHTNESS	50
	COLOR	50
	CONTRAST	50
	SHARPNESS	25
MOVIES	BRIGHTNESS	45
	COLOR	55
	CONTRAST	53
	SHARPNESS	30
SPORTS	BRIGHTNESS	50
	COLOR	65
	CONTRAST	46
	SHARPNESS	36
WEAK SIGNAL	BRIGHTNESS	45
	COLOR	30
	CONTRAST	40
	SHARPNESS	15
MULTIMEDIA	BRIGHTNESS	50
	COLOR	58
	CONTRAST	60
	SHARPNESS	20
NIGHT	BRIGHTNESS	50
	COLOR	55
	CONTRAST	45
	SHARPNESS	20

Smart Sound : Personal
SOUND VOLUME : 50
BASE : 50
TREBLE : 50
Balance : 0
Virtuel SURROUND : OFF
AVL : NO

6.2.2 Factory setting (B)

The OSD controls shall have the following factory default values after finishing all the adjustment.

PC MODE :
PICTURE
COLOR TEMP : 6500K
BRIGHTNESS : 50
CONTRAST : 50
AUDIO
SMART SOUND : NEUTRAL
SETTING : TREMBLE (50)
BASS (50)
BALANCE (50)

TV MODE :
PICTURE
SMART PICTURE : MOVIES
AUDIO
SMART SOUND : PERSONAL
SETTING : TREMBLE (50)
BASS (50)
BALANCE (50)
RF CHANNEL: CHANNEL 2

SOURCE : D-SUB
PIP audio source : PC Audio
PIP VIDEO SOURCE : CVBS
PICTURE FORMAT : 4:3
VOLUME : 50

DDC Instructions

Go to cover page

General

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

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

System and equipment requirements

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

Fig. 1

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

C:\WINDOWS\system32\drivers(winXP)

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

3. EDID46.EXE program

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

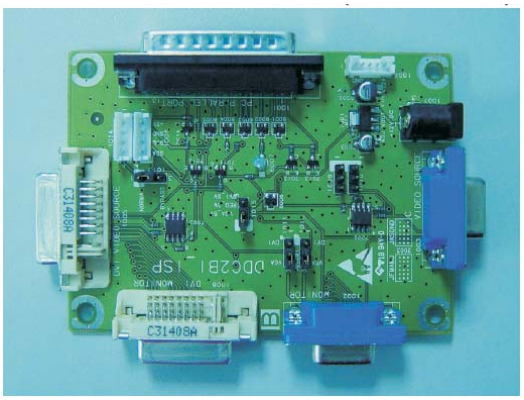


Fig. 2

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

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

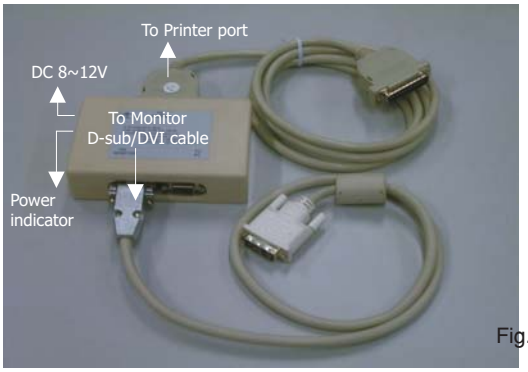
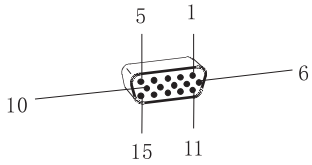


Fig. 3

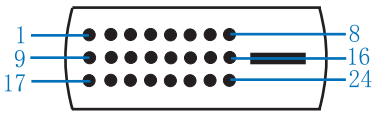
Pin assignment

A. 15-pin D-Sub Connector



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

B. Input DVI -D Connector pin



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

Configuration and procedure

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

Initialize alignment box

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

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

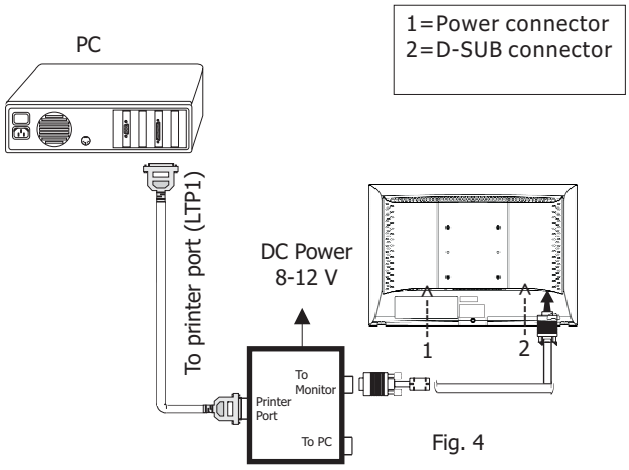


Fig. 4

Step 3: Installation of EDID46.EXE

Method 1: Start on DDC program

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

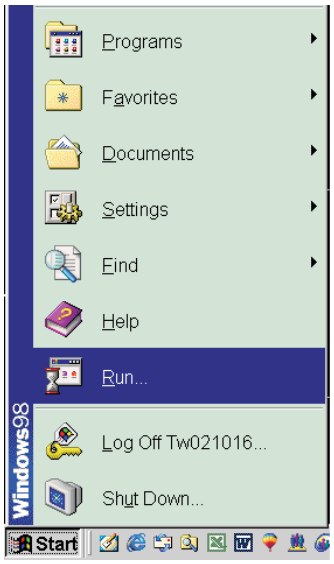


Fig. 5

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

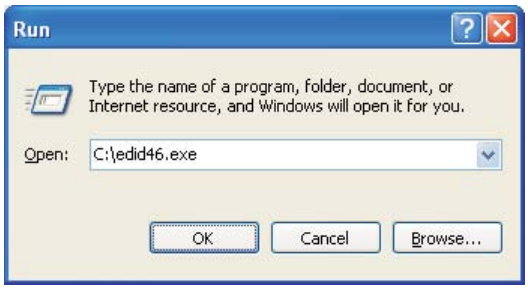


Fig. 6

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

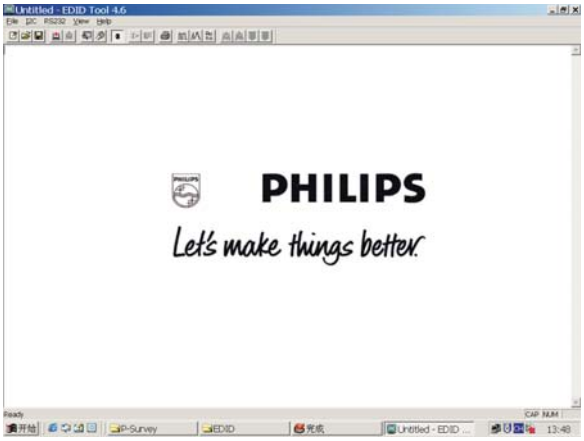


Fig. 7

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

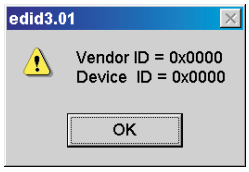


Fig. 8

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

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

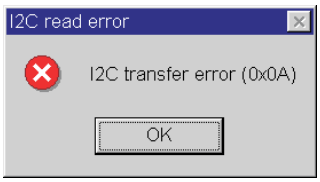


Fig. 9

DDC Instructions

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Re-programming Analog DDC IC

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

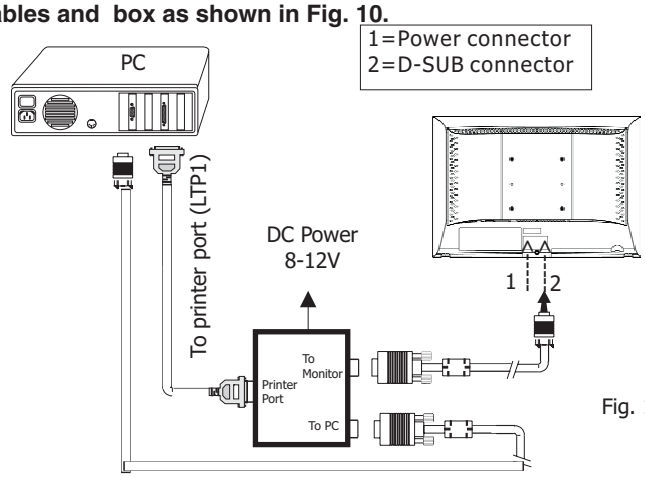

Fig. 10

Step 2: Read DDC data from monitor

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

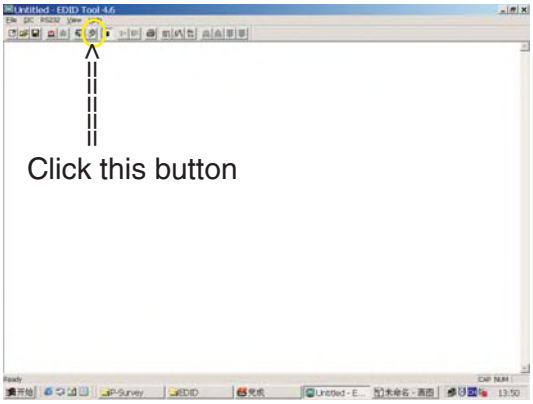

Fig. 11

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

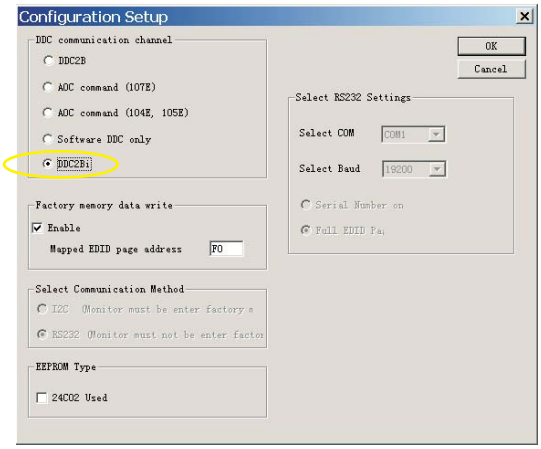

Fig. 12

3. Click OK button to confirm your selection.

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

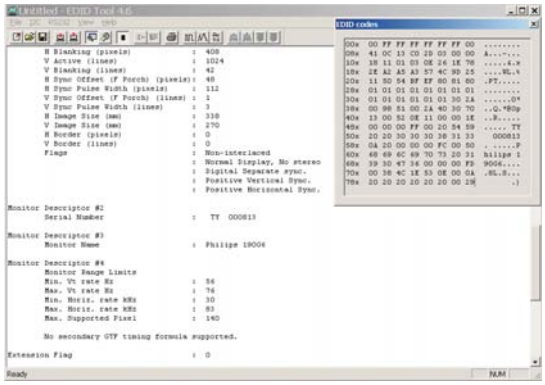

Fig. 13

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

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

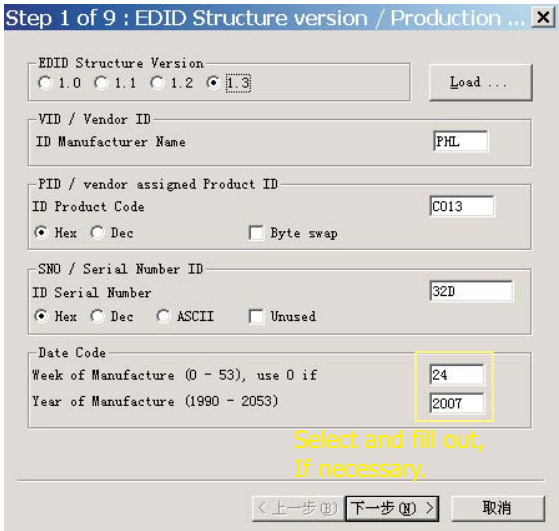

Fig. 14

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

1. Click Next , bring up Fig. 15.

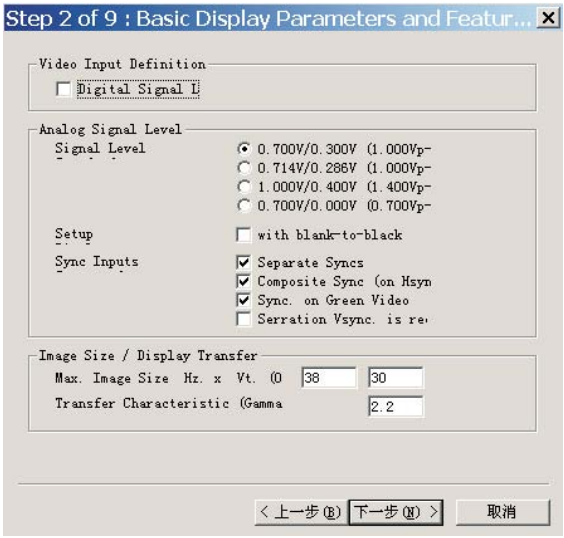

Fig. 15

2. Click Next , bring up Fig.16.

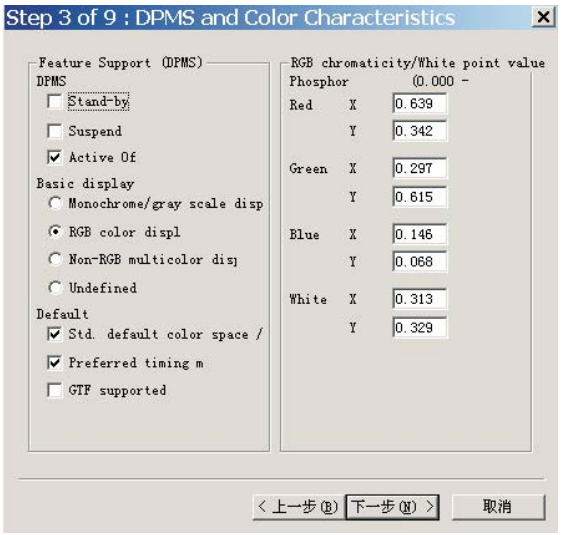

Fig. 16

3. Click Next , bring up Fig.17.

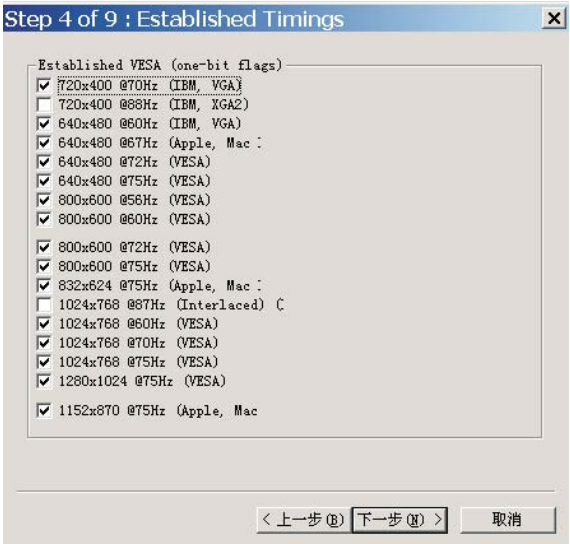

Fig. 17

4. Click Next , bring up Fig.18.

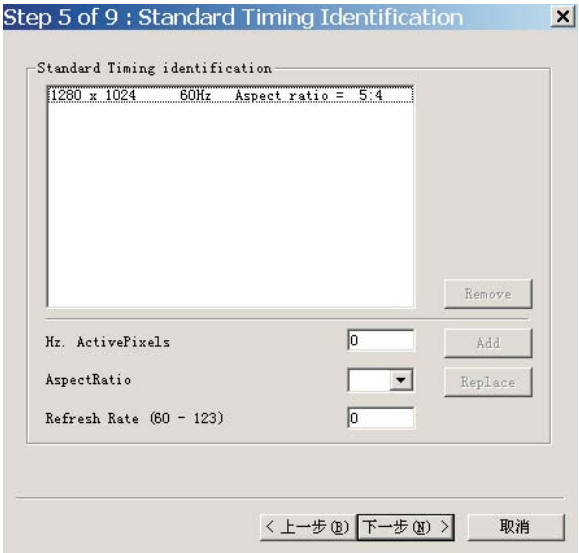

Fig. 18

5. Click Next , bring up Fig.19.

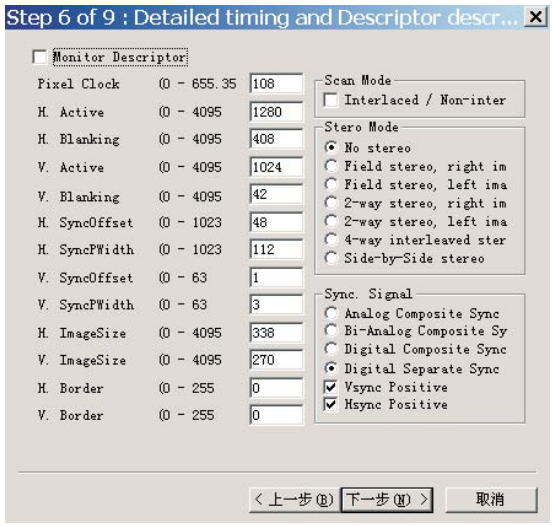

Fig. 19

6. Click Next , bring up Fig. 20.
In this step, please confirm the Descriptor Data Type is Monitor Range Limits, and all the items are same as below.

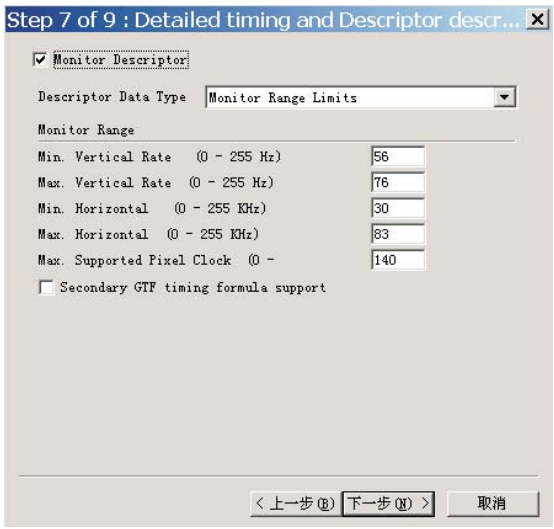

Fig. 20

7. Click Next , bring up Fig. 21.

Fig. 21

DDC Instructions

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8. Click Next , bring up Fig. 22.
   - Click Finish to exit the Step window.
   - Serial number can be filled up at this moment (for example, TY 000814).

NOTE: You must modify the Serial NO. In step 9, otherwise the Serial NO. In OSD Couldn't be modified correctly.

Fig. 22

Step 5: Write DDC data

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

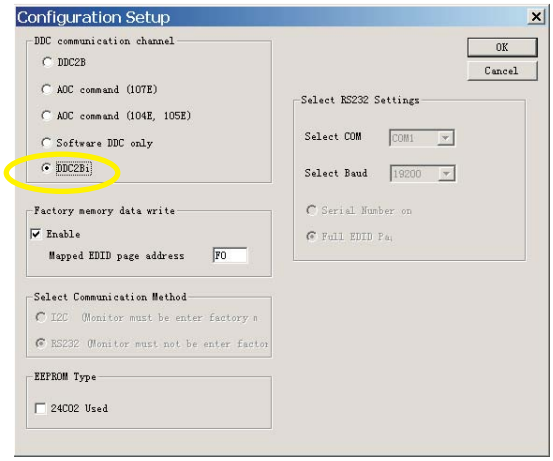

Fig. 23

2. Access Factory Mode

1). Turn off monitor.
2). Press power "⏻" button.Then quickly push "OK" and "AUTO",and hold this two buttons , then the screen comes out "Waiting For Automatic Adjustment ",then the screen will be black for one second untill comes out "Windows screen"] => then release this two buttons.
3). Press "MENU" button, wait until the OSD menu with Characters "Hudson6 190G6 CHINA V0.35 0508LM190E03" (below OSD menu) come on the Screen of the monitor.

Fig. 24

Factory Mode indicator

4) Push "Menu" to exit OSD menu.

4). Click (Write EDID) icon from the tool bar to write DDC data. Then wait for a few minutes,DDC data will be finished Writing.

Step 6: Save DDC data

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

1. Click (Save) icon (or click "file"-> "save as") from the tool bar and give a file name as shown in Fig. 25.

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

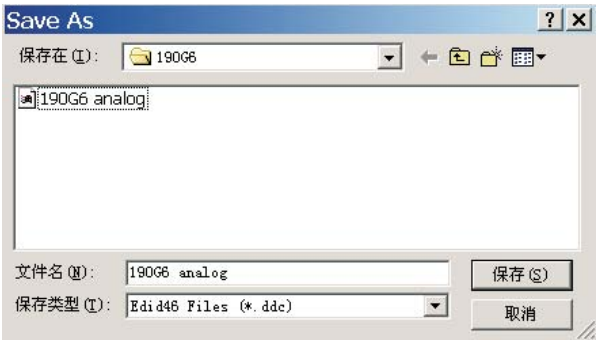

Fig. 25

2. Click Save.

Step 7: Exit DDC program

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

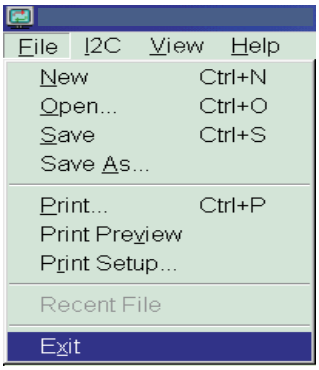

Fig. 26

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

Re-programming Digital DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 27.

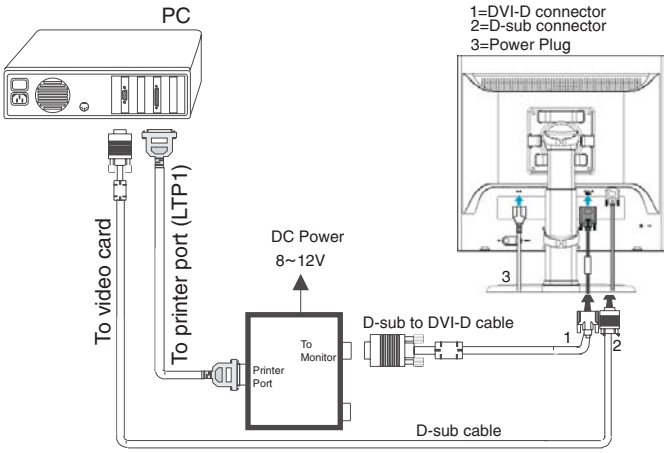

Fig. 27

Step 2: Read DDC data from monitor

1. Click icon as shown in Fig. 11 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 28.

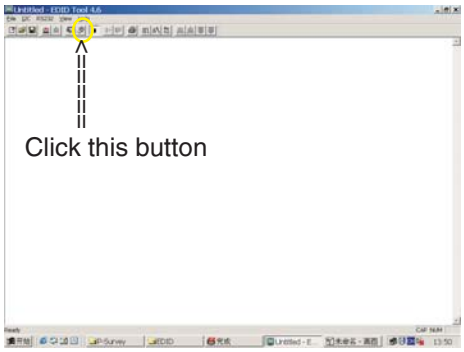

Fig. 28

2. Select the DDC2Bi as the communication channel. As shown in Fig. 29.

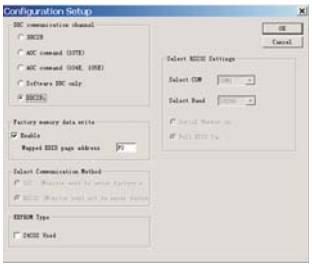

Fig. 29

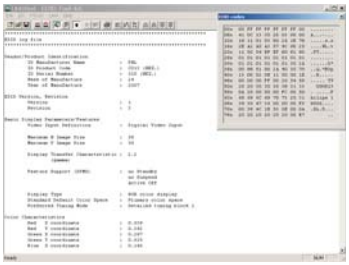

Fig. 30

3. Click OK button to confirm your selection.
4. Click icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 30.

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. 31 .
EDID46 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

Fig. 31

Fig. 32

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

1. Click Next , bring up Fig. 32.
2. Click Next , bring up Fig. 33.
3. Click Next , bring up Fig. 34.

Fig. 33

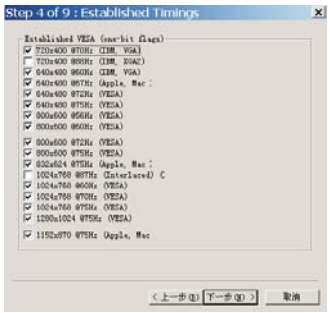

Fig. 34

4. Click Next , bring up Fig. 35.
5. Click Next , bring up Fig. 36.

Fig. 35

Fig. 36

6. Click Next , bring up Fig. 37.
   In this step, please confirm the Descriptor Data Type is Monitor Range Limits, and all the items are same as below.
7. Click Next , bring up Fig. 38.

Fig. 37

Fig. 38

DDC Instructions

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8. Click Next , bring up Fig. 39.
   - Click Finish to exit the Step window.
   - Serial number can be filled up at this moment (for example, TY 000814).

NOTE: You must modify the Serial NO. In step 9, otherwise the Serial NO. In OSD Couldn't be modified correctly.

Fig. 39

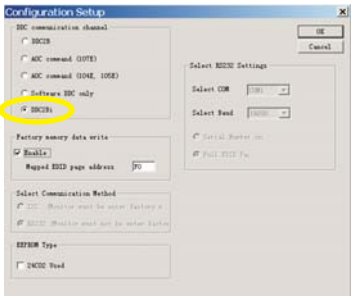

Fig. 40

Step 5: Write DDC data

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

2. Access Factory Mode

1). Turn off monitor.
2). Press power " ⏻ " button.Then quickly push " OK " and "AUTO",and hold this two buttons , then the screen comes out "Waiting For Automatic Adjustment ",then the screen will be black for one second untill comes out "Windows screen"] => then release this two buttons.
3). Press "MENU" button, wait until the OSD menu with Characters "Hudson6 190G6 CHINA V0.35 0508LM190E03" (below OSD menu) come on the Screen of the monitor.

Factory Mode indicator

Fig. 41

4) Push "Menu" to exit OSD menu.

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

Step 6: Save DDC data

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

1. Click (Save) icon (or click "file"-> "save as") from the tool bar and give a file name as shown in Fig. 42.

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

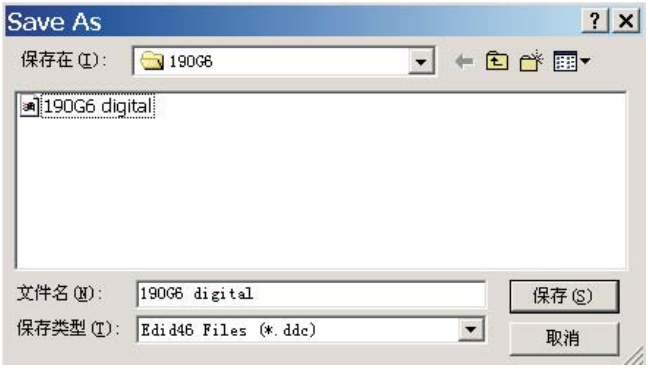

Fig.42

2. Click Save.

Step 7: Exit DDC program

Pull down the File menu and select Exit as shown in Fig. 43.

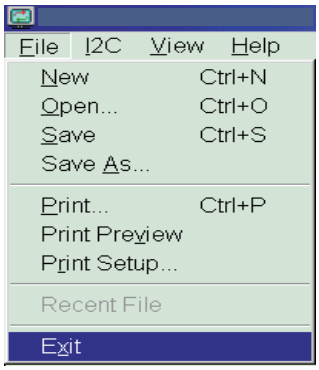

Fig. 43

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

DDC DATA

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THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 190G6 ANALOG FOR LPL PANEL)

****
EDID log file
****

Vendor/Product Identification
ID Manufacturer Name : PHL
ID Product Code : C013 (HEX.)
ID Serial Number : 1234 (HEX.)
Week of Manufacture : 27
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)
without Blank-to-Black Setup
Separate Sync
Composite Sync
Without Sync on Green
no Serration required

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

Display Transfer Characteristic : 2.2
(gamma)

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

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

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

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

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

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

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

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 190G6

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

DDC DATA

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THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 190G6 DIGITAL FOR LPL PANEL)
****

EDID log file
****

Vendor/Product Identification
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ID Product Code : C013 (HEX.)
ID Serial Number : 1234 (HEX.)
Week of Manufacture : 27
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
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(gamma)

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no Suspend
Active Off

Display Type : RGB color display
Standard Default Color Space : Primary color space
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Red X coordinate : 0.639
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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
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Aspect Ratio : 5:4
Refresh Rate : 60

Detailed Timing #1
Pixel Clock (MHz) : 108
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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 190G6

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 : 09 (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: 13 11: c0 12: 34 13: 12 14: 00 15: 00
16: 1b 17: 0f 18: 01 19: 03 20: 80 21: 26 22: 1e 23: 78
24: 2e 25: a2 26: a5 27: a3 28: 57 29: 4c 30: 9d 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 81 39: 80
40: 01 41: 01 42: 01 43: 01 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 52 67: 0e 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 20 78: 54 79: 59
80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36
88: 0a 89: 20 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 47 107: 36 108: 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: 97
```

Philips Pixel Defect Policy

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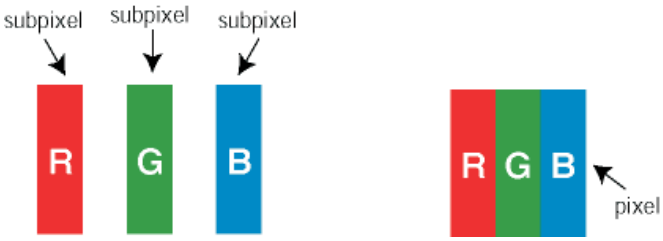
Philips' Flat Panel Monitors Pixel Defect Policy

Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or sub pixel defects on the TFT LCD panels used in flat panel monitors are sometimes unavoidable. No manufacturer can guarantee that all panels will be free from pixel defects, but Philips guarantees that any monitor with an unacceptable number of defects will be repaired or replaced under warranty. This notice explains the different types of pixel defects and defines acceptable defect levels for each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT LCD panel must exceed these acceptable levels. For example, no more than 0.0004% of the sub pixels on a 15" XGA monitor may be defective. Furthermore, Philips sets even higher quality standards for certain types or combinations of pixel defects that are more noticeable than others. This policy is valid worldwide.

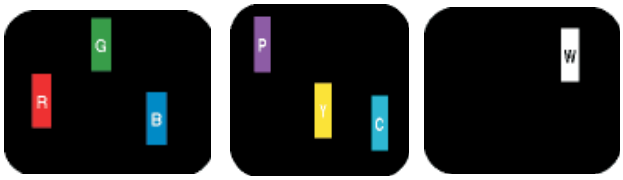


Pixels and Sub pixels

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

Types of Pixel Defects

Pixel and sub pixel defects appear on the screen in different ways. There are two categories of pixel defects and several types of sub pixel defects within each category. Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. These are the types of bright dot defects:

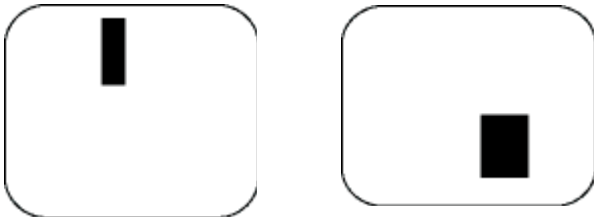


One lit red, green or blue sub pixel

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

Three adjacent lit sub pixels (one white pixel)

Black Dot Defects Black dot defects appear as pixels or sub pixels that are always dark or 'off'. These are the types of black dot defects:



One dark sub pixel Two or three adjacent dark sub pixels

Proximity of Pixel Defects

Because pixel and sub pixels defects of the same type that are near to one another may be more noticeable, Philips also specifies tolerances for the proximity of pixel defects.

Pixel Defect Tolerances

In order to qualify for repair or replacement due to pixel defects during the warranty period, a TFT LCD panel in a Philips flat panel monitor must have pixel or sub pixel defects exceeding the tolerances listed in the following tables.

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190G6
1 lit subpixel	3 or fewer
2 adjacent lit subpixels	1 or fewer
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	25 mm or more
Total bright dot defects of all types	3 or fewer

* Bright Dot is defined as dots (sub-pixels) which appeared brightly in the screen when the LCM displayed with whole pattern & Bright Dot's brightess is defined over 50% of the brightness against around. (but, Green bright dot is over 30% of brightness against around)

* Here in Tiny Bright Dot is defined as "for Red and Blue" the bright area should be no longer than 1/2 sub-pixel and for green the bright area should be no larger than 1/3 sub-pixel.

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190G6
1 dark subpixel	5 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	15 mm or more
Total black dot defects of all types	5 or fewer

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190G6
Total bright or black dot defects of all types	5 or fewer

Note:

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

All Philips monitors are ISO13406-2 Compliant

Update UAC3556 FW By USB Cable

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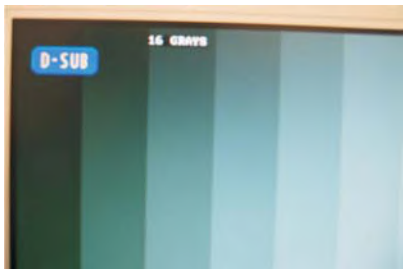
UAC ISP Tool:

There are two files in the pdf file. Firstly use "Install.exe ", then "UAC355xB-SDK.exe".

Before start to updating, Make sure you switch to "D-SUB" mode already.



Step 1. Use Factory key (Menu + Auto) from 190G6's Base. Click until Screen flashed.

Step 2. Click Menu key to enter OSD and then goes to last item to click Right key to enter Factory Menu.

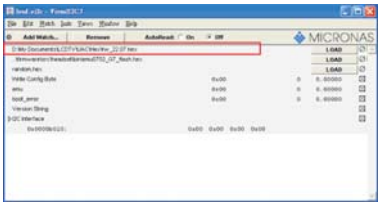
Step 3. Use Up or Down key to "UAC ISP" item. To Click Menu key and then "ON" will be showed after "UAC ISP".

Step 4. Switch-off-on AC Power. Plug USB.

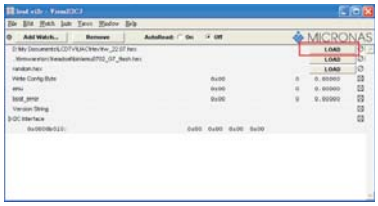
Step 5. Use Factory key (Menu + Auto) from 190G6's Base. Click until Screen flashed,again.

Step 6. To execute "load.vi2c".

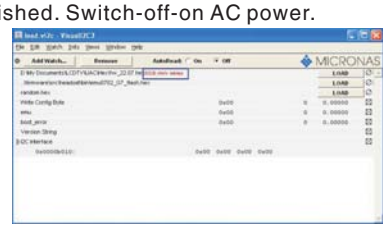
Step7. To set Hex file's folder.



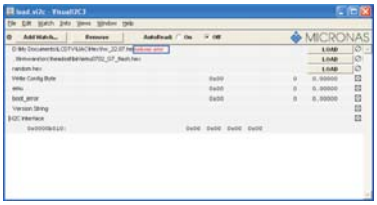
Step 8. Click Load

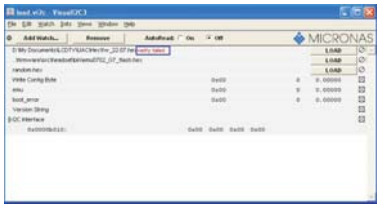


Step9.1. Finished. Switch-off-on AC power.



Step 9.2. Failed. Make sure Switch-off-on AC power from Adapter. If still cannot update,switch off power for a while. And then retry Step1~Step 7.

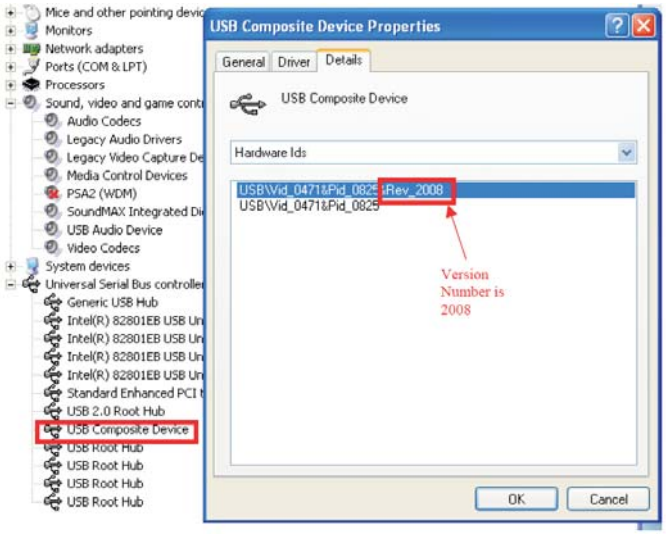




Step 10. Verify Hex file

Make sure Win XP was update with Service Pack 2.

Switch on the AC power and G6 should stay at D-SUB mode, and then plug USB cable to PC. Check the version number in Device Management window.



Configuration and procedure

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

System and equipment requirements

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

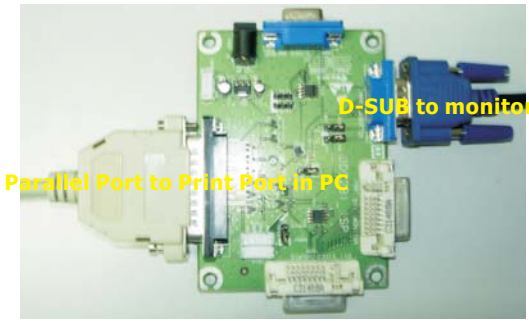


Fig. 1

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

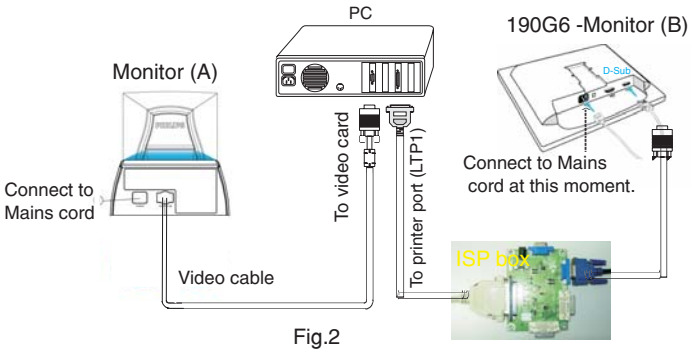


Fig.2

6. Install and setup the Easywriter program

Step 1 : Make a folder in your PC as shown in Fig. 3.
For example : C:\190G6
Step 2 : Copy ISP Software Easywriter.zip into your folder as shown in Fig.3.
Step 3 : Unzip Easywriter.zip into your folder as shown in Fig. 3.

Step 4 : Double click the EasywriterV2.09a_user.exe icon to install the Application as Fig. 4.

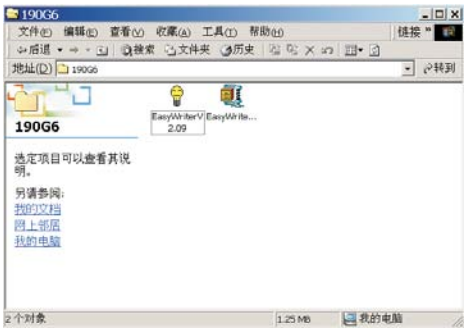


Fig. 3

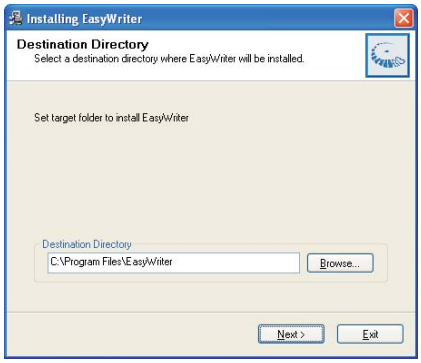


Fig. 4

Step 5 :Copy the G6_CHINA_V100_20050905 to C:\320WN6 as shown in Fig. 5 .

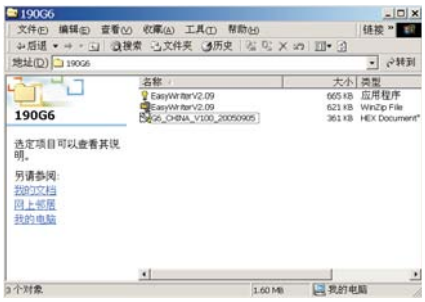


Fig. 5

Update the firmware

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

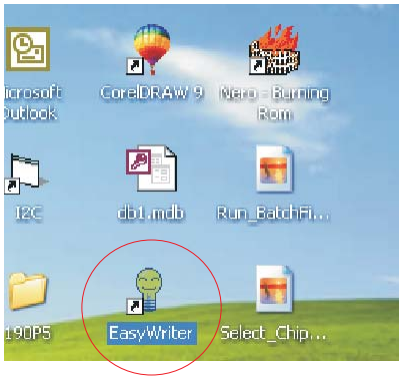


Fig. 6

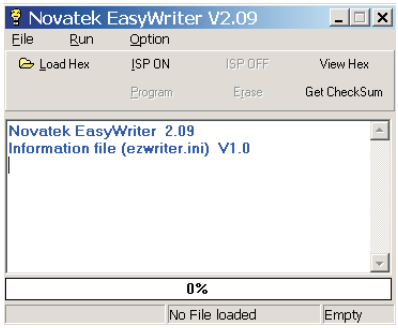


Fig. 7

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

ISP Instructions

Go to cover page

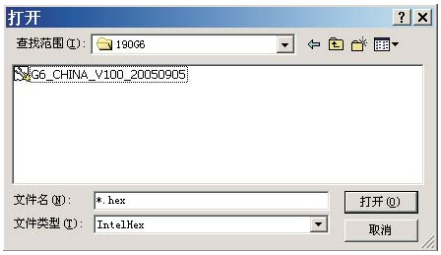


Fig. 8

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

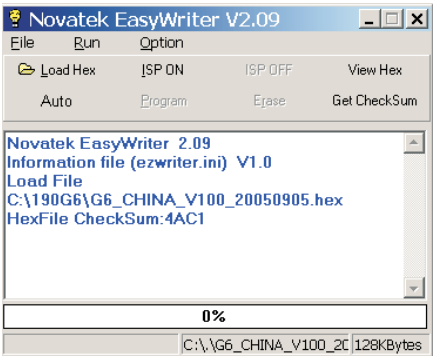


Fig. 9

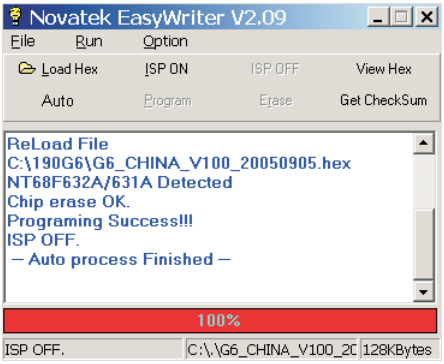


Fig. 10

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

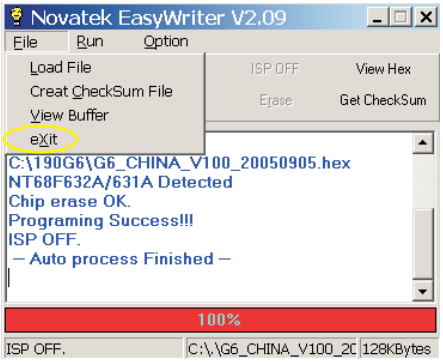


Fig. 11

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

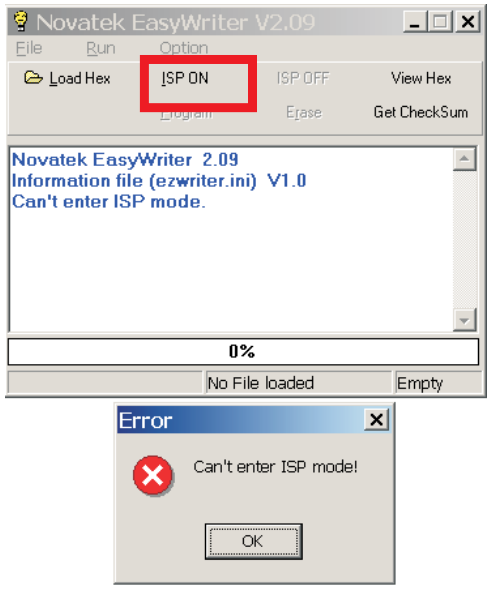


Fig. 12

Access Factory Mode

1). Turn off monitor.
2). Press power "⏻" button.Then quickly push "OK" and "AUTO",and hold this two buttons , then the screen comes out "Waiting For Automatic Adjustment ",then the screen will be black for one second untill comes out "Windows screen"] => then release this two buttons.
3). Press "OK" button, wait until the OSD menu come on the Screen of the monitor.You will find, after upgrade, the version have already changed from The former"Hudson6 190G6 CHINA V0.35 0508LM190E03" to the Present "Hudson6 190G6 CHINA V100 050905 LM190E03"as shown in Fig. 13 and Fig. 14.

Factory Mode indicator

Fig. 13

Factory Mode indicator

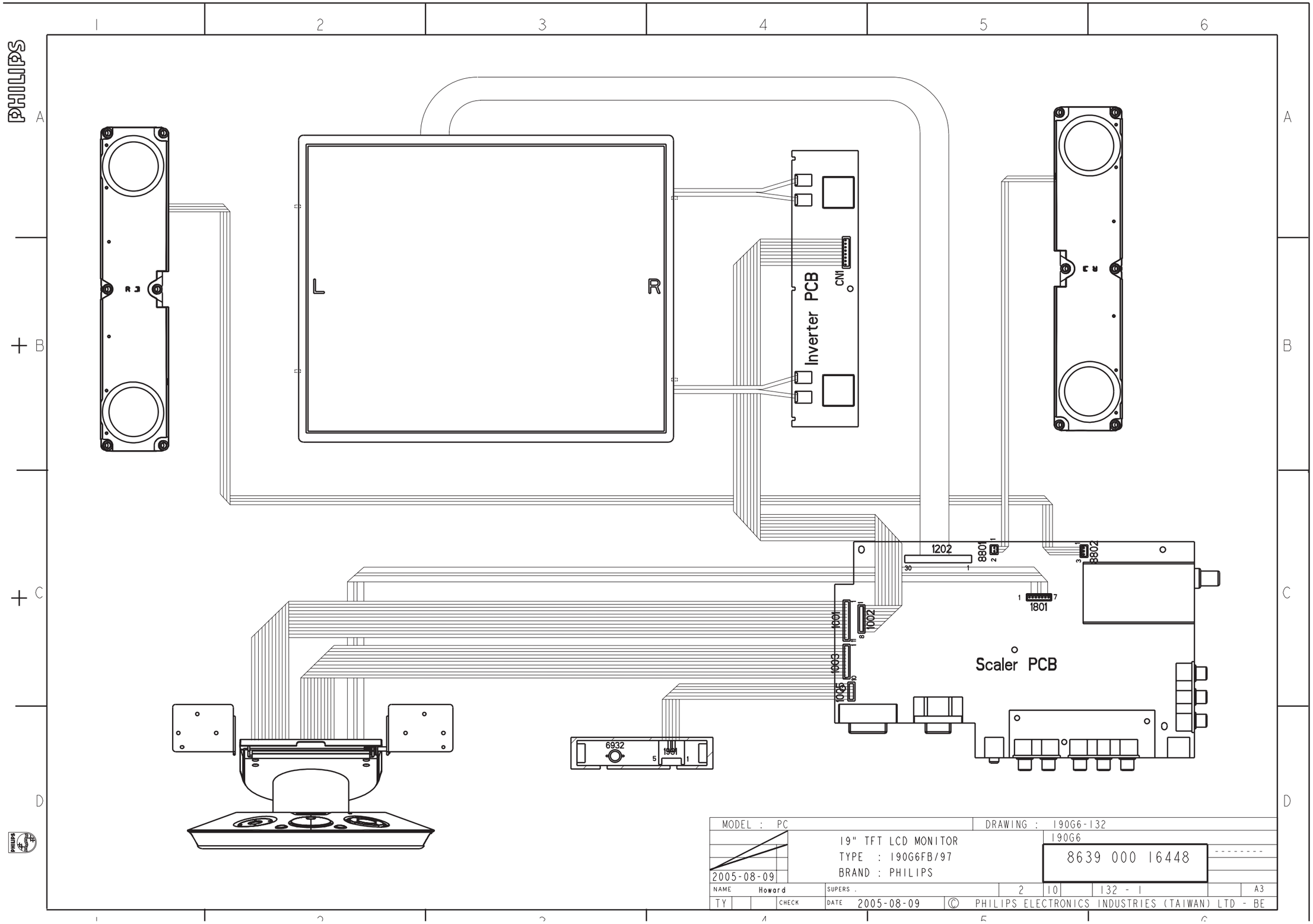
Fig. 14

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

Notes:
If you want to update the ISP hex code ,you must update the UAC3556 FW first.

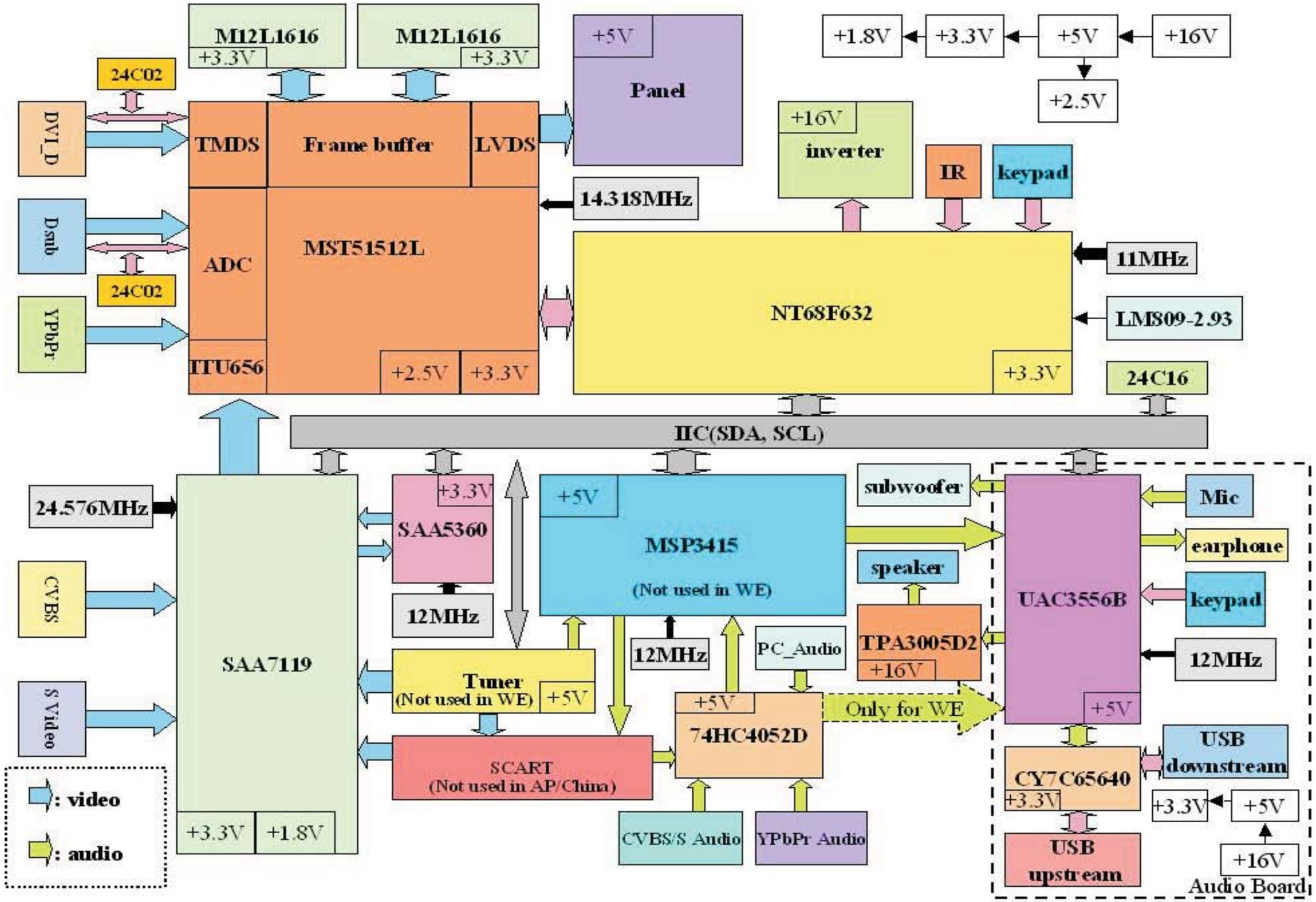
Wiring Diagram

Go to cover page

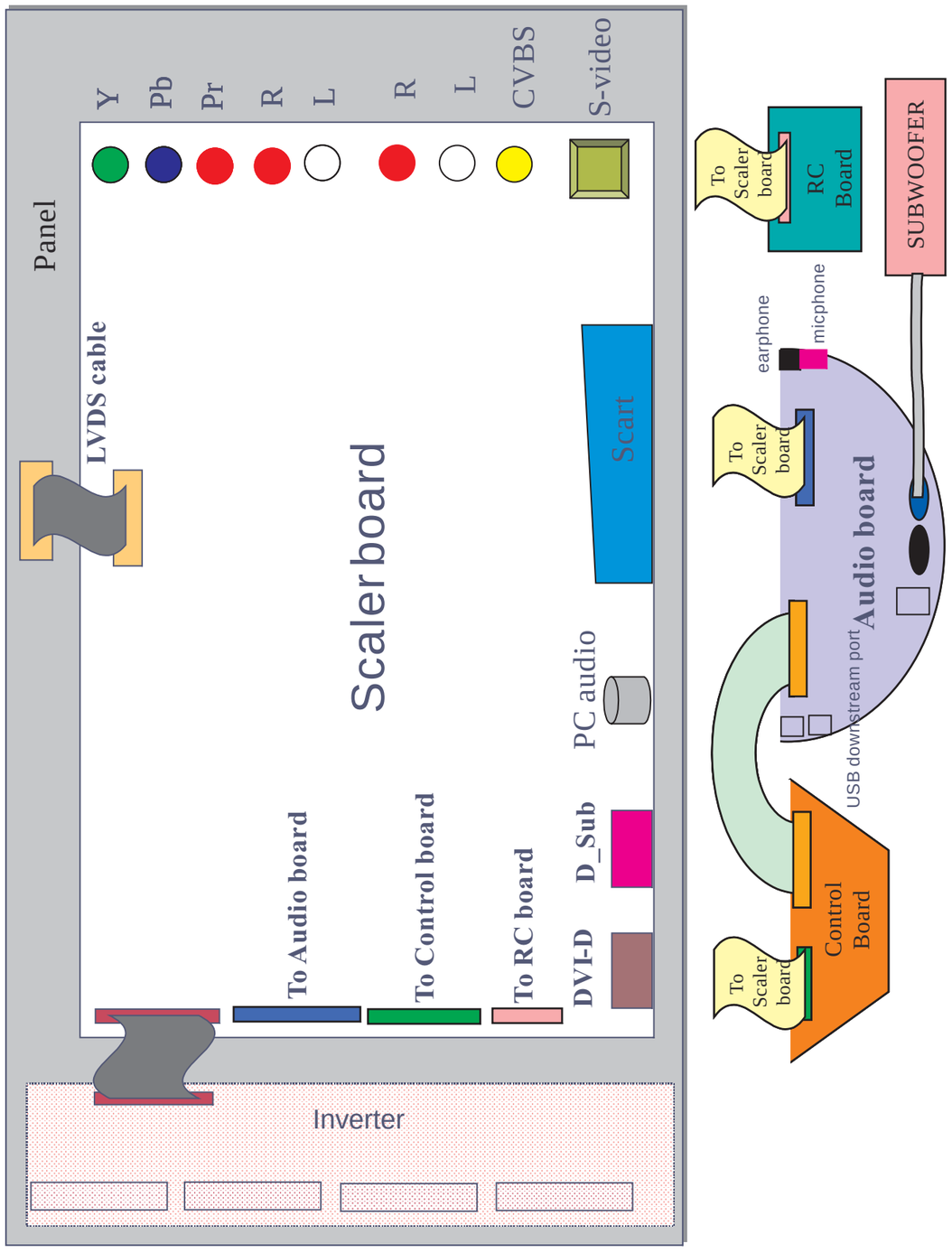


Block Diagram

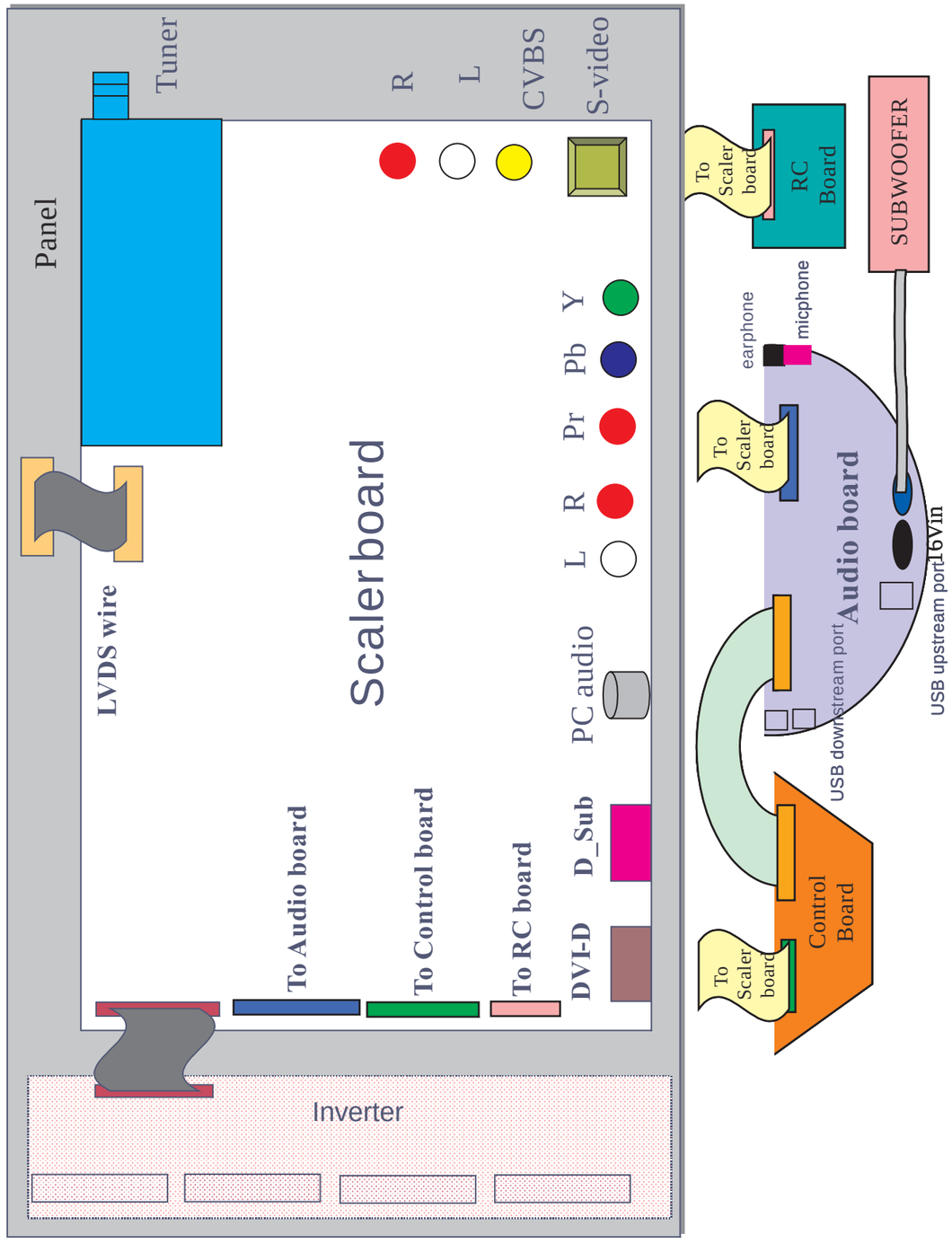
190G6 block function



Architecture of WE boards

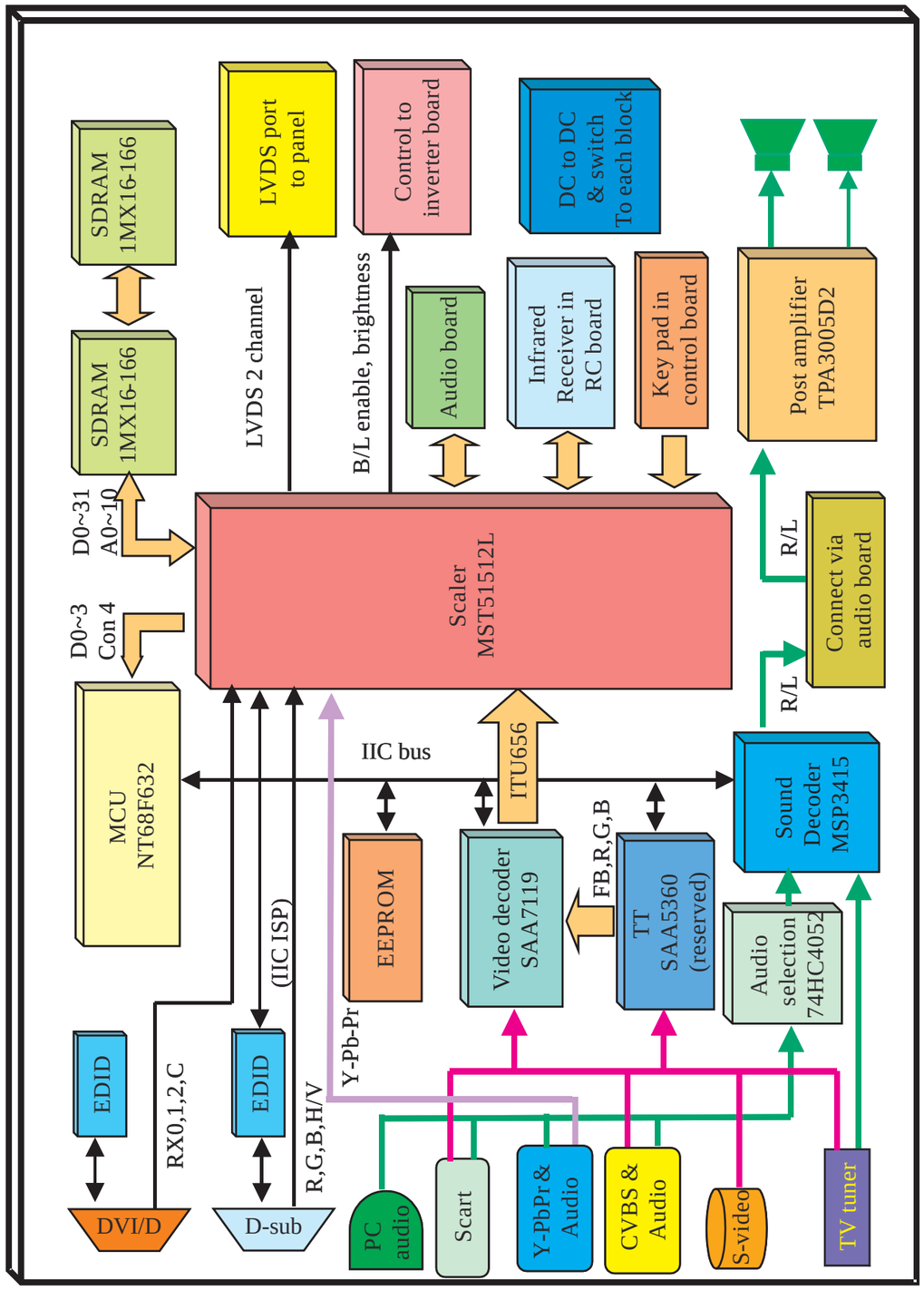


Architecture of AP/China boards

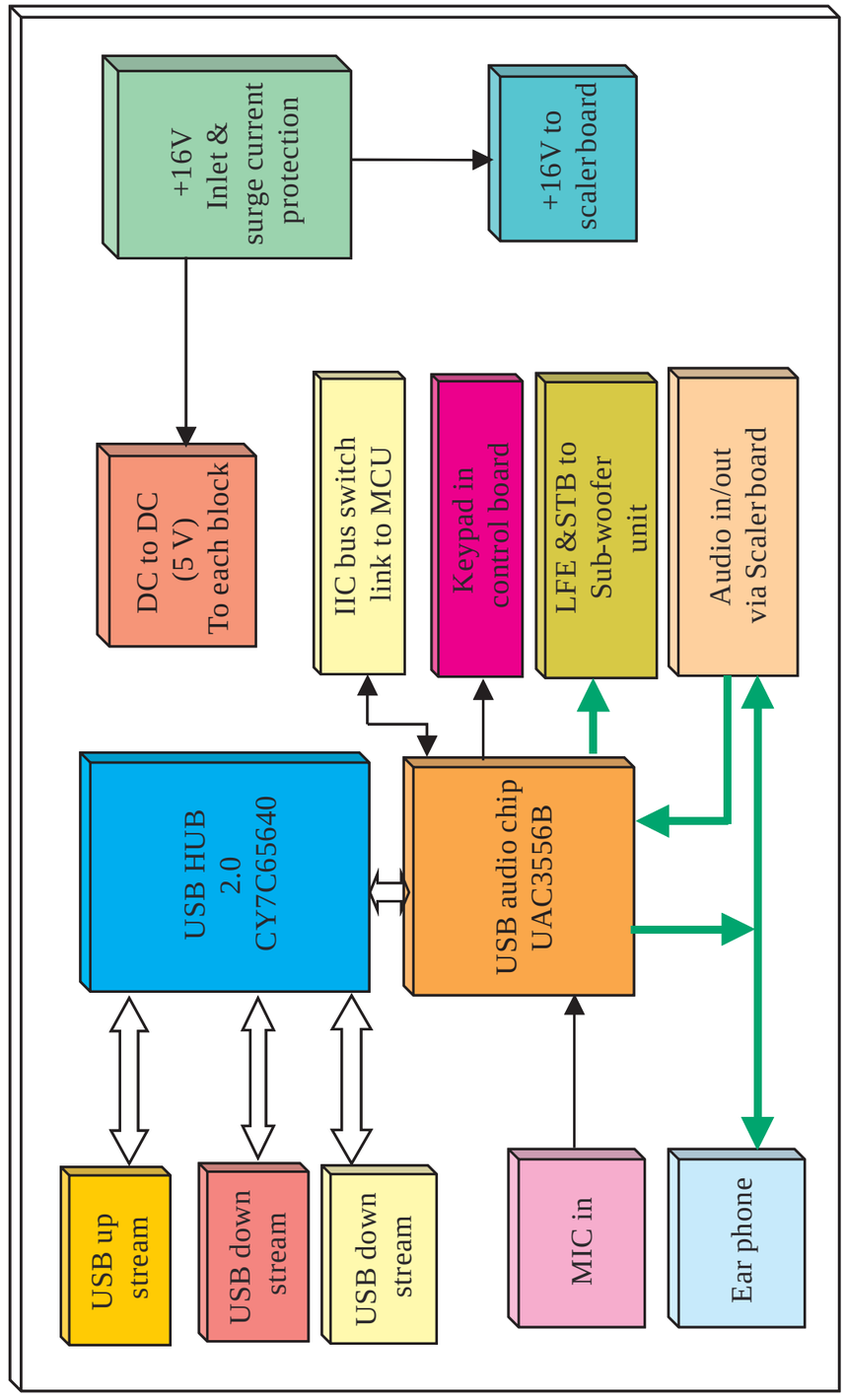


Block Diagram

Block Diagram of Scaler

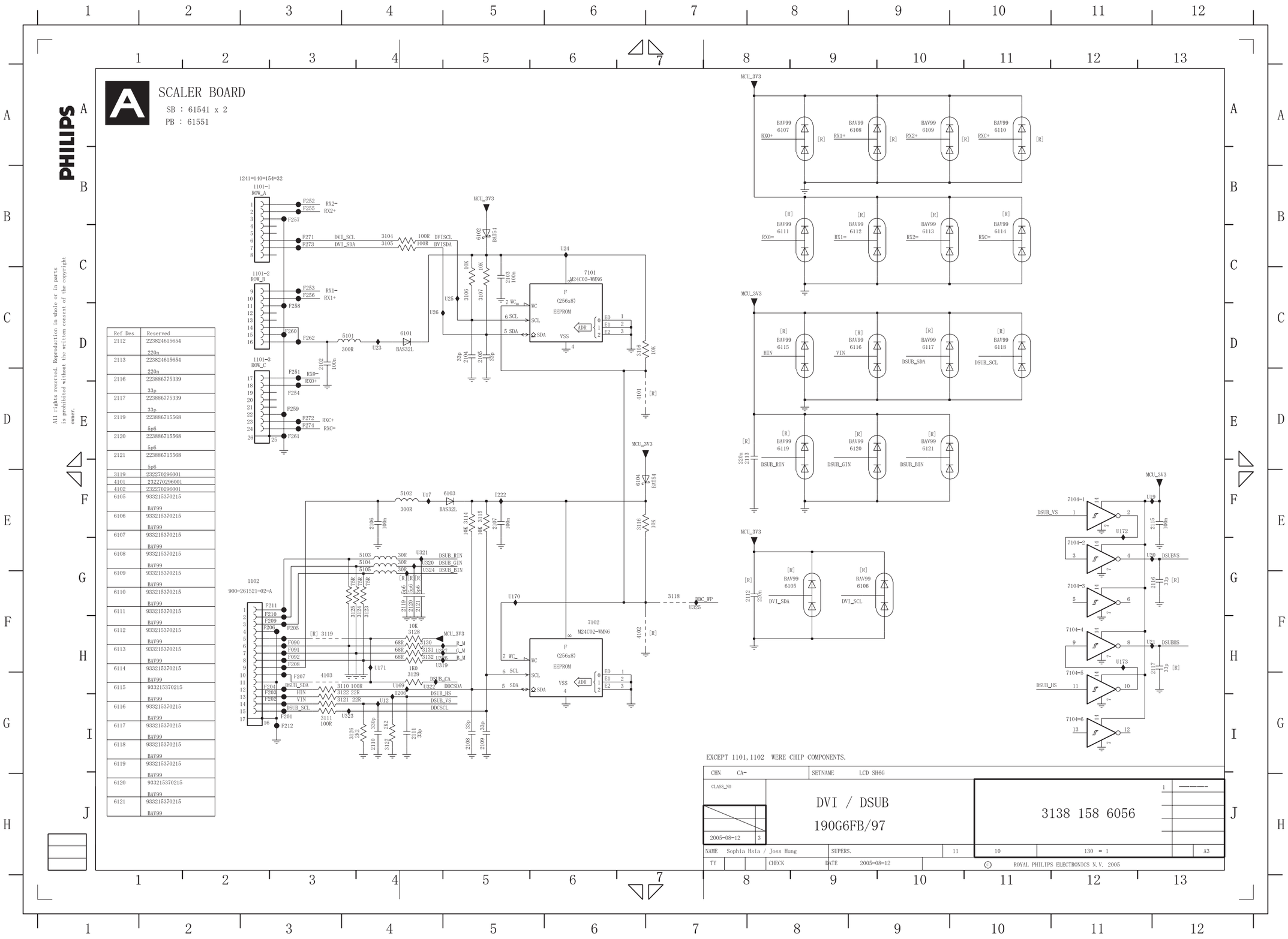


Block of Audio board



Scaler Diagram-1

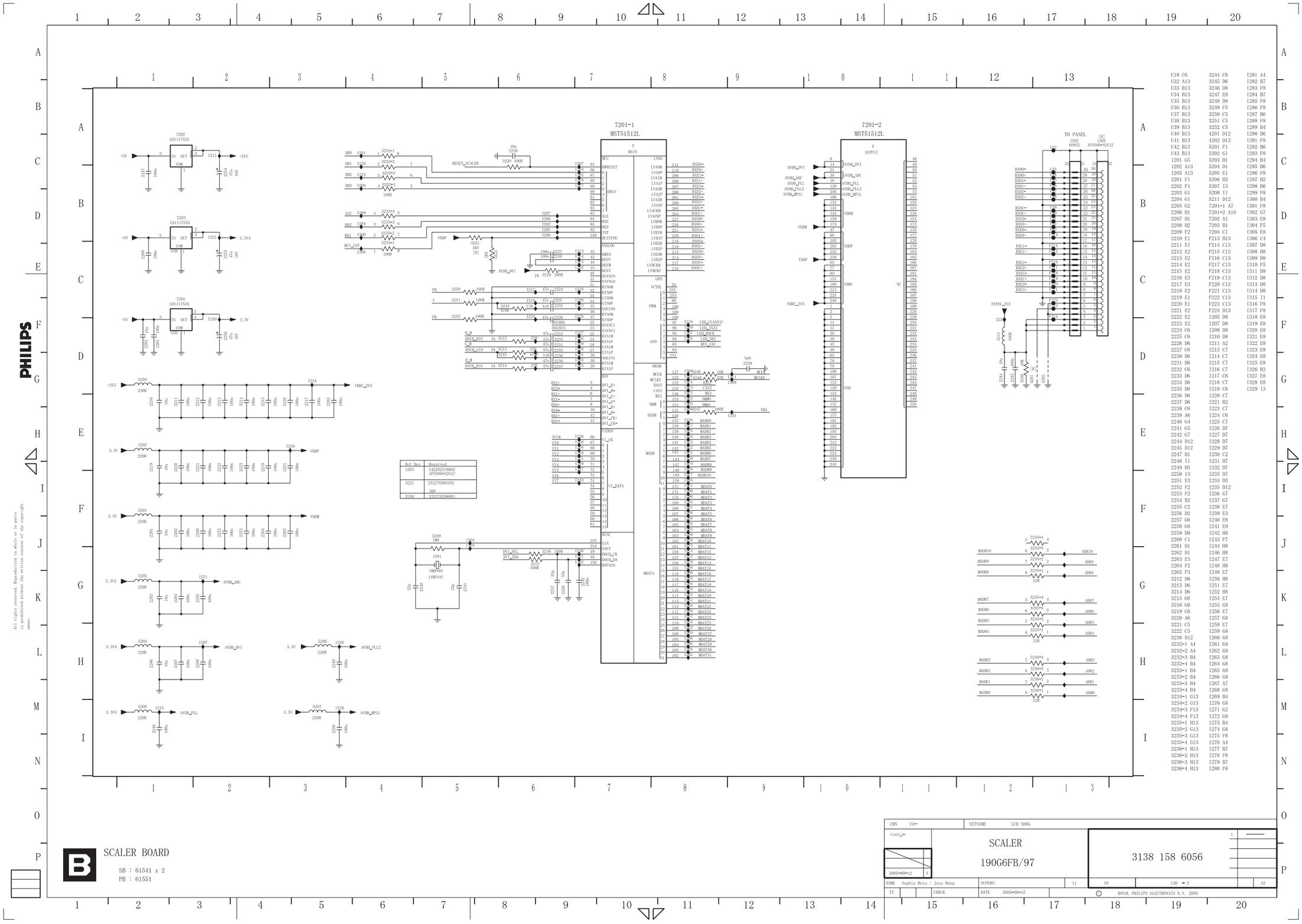
Go to cover page



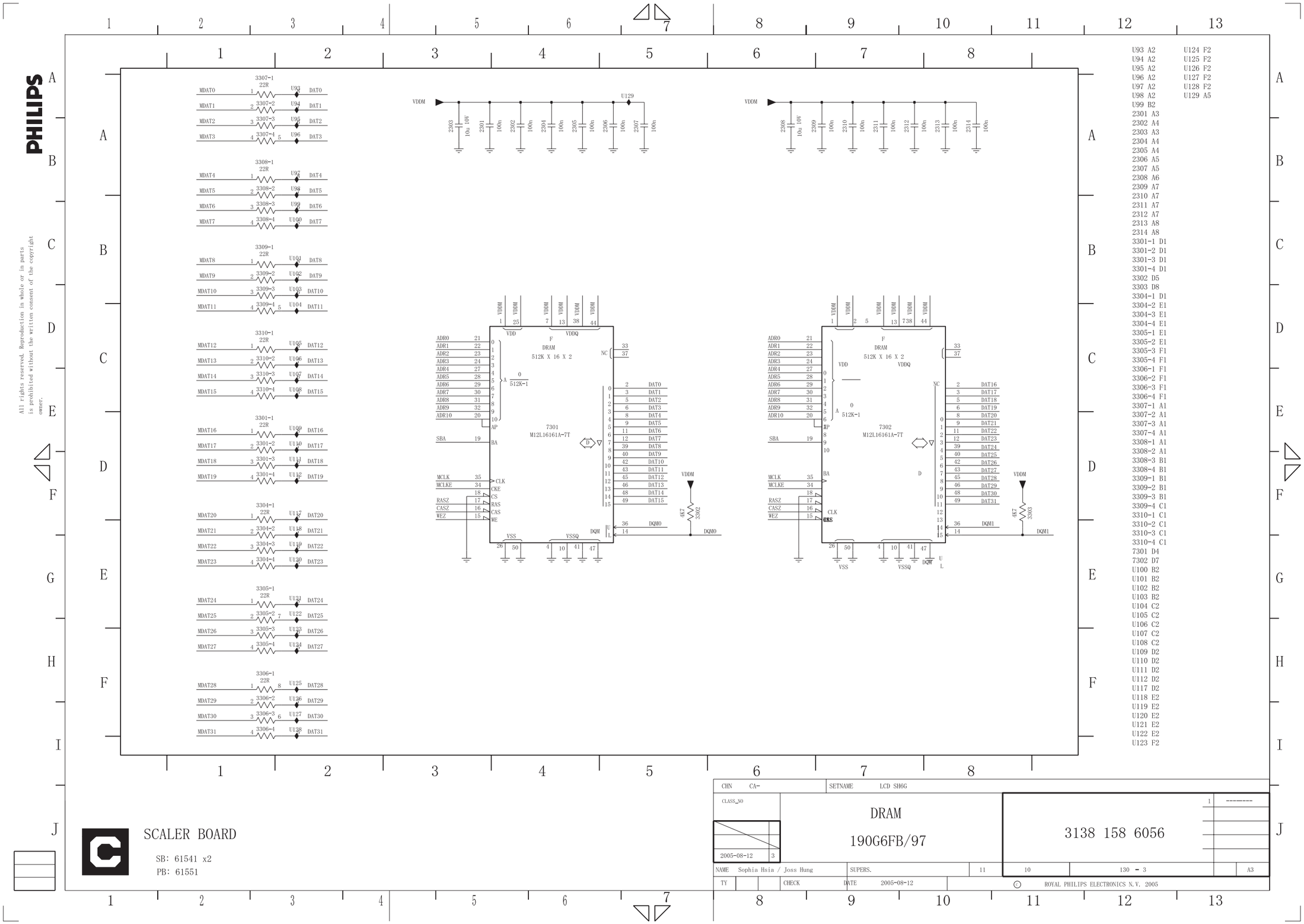
Ref Des	Reserved
2112	223824615654 220n
2113	223824615654 220n
2116	223886775339 33p
2117	223886775339 33p
2119	223886715568 5p6
2120	223886715568 5p6
2121	223886715568 5p6
3119	232270296001
4101	232270296001
4102	232270296001
6105	933215370215 BAV99
6106	933215370215 BAV99
6107	933215370215 BAV99
6108	933215370215 BAV99
6109	933215370215 BAV99
6110	933215370215 BAV99
6111	933215370215 BAV99
6112	933215370215 BAV99
6113	933215370215 BAV99
6114	933215370215 BAV99
6115	933215370215 BAV99
6116	933215370215 BAV99
6117	933215370215 BAV99
6118	933215370215 BAV99
6119	933215370215 BAV99
6120	933215370215 BAV99
6121	933215370215 BAV99

Scaler Diagram-2

Go to cover page

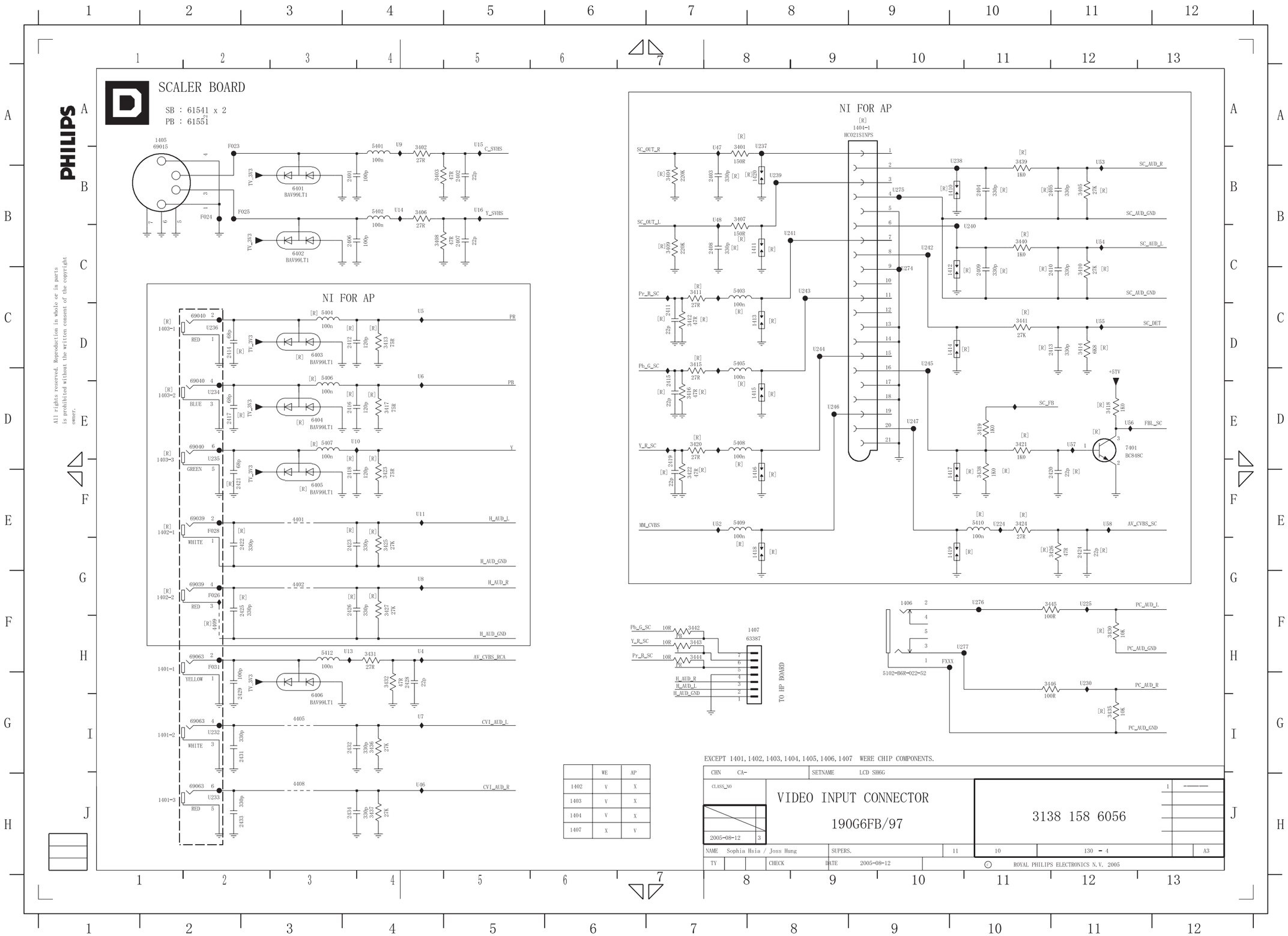


Scaler Diagram-3



Scaler Diagram-4

Go to cover page

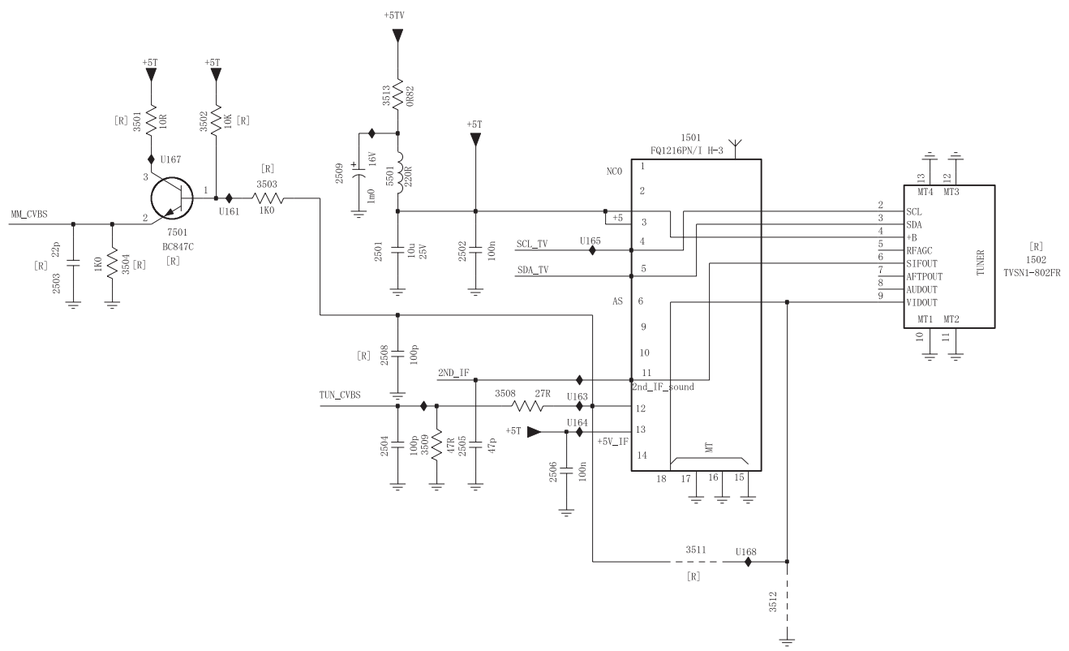


	WE	AP
1402	V	X
1403	V	X
1404	V	X
1407	X	V

SCALER BOARD

SB : 61541 x 2
PB : 61551

--All "NI" for WE--



Ref Des	Reserved
1502	313819873381 TVSN1-802FR TUNER
2503	223886715229 22p
2508	223886715101 100p
3501	232270260109 10R
3502	232270260103 10K
3503	232270260102 1K0
3504	232270260102 1K0
3511	232270296001
7501	932217438685 BC847C

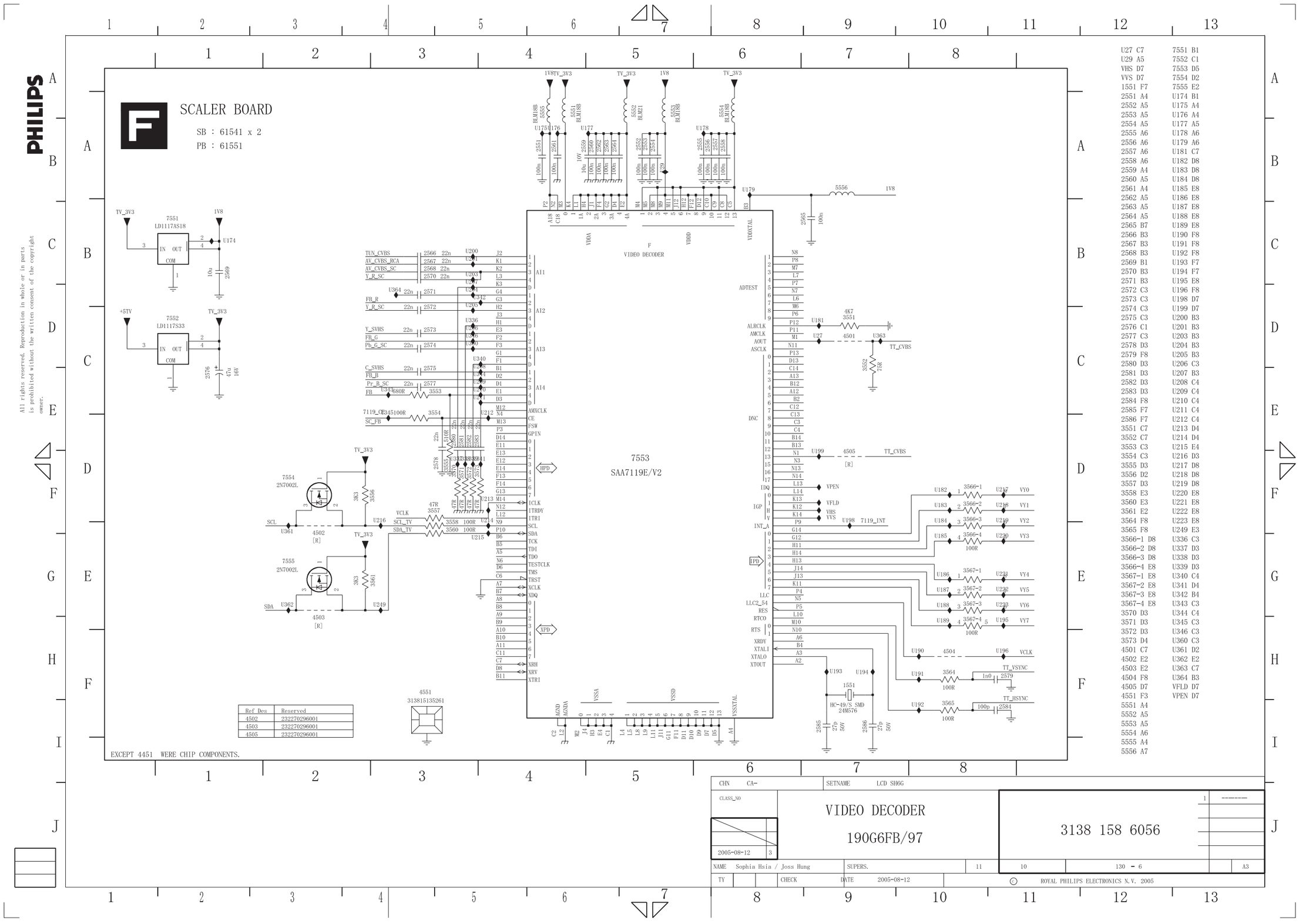
EXCEPT 1501, 1502, 2509, 3513 WERE CHIP COMPONENTS.

1501 B6
1502 B8
2501 C5
2502 C5
2503 C3
2504 D5
2505 D5
2506 D6
2508 C5
2509 B4
3501 B3
3502 B4
3503 B4
3504 C3
3508 C5
3509 D5
3511 D6
3512 E7
3513 B5
5501 B5
7501 C4
U161 B4
U163 C6
U164 D6
U165 C6
U167 B3
U168 D7

CHN CA-	SETNAME LCD SH6G		
CLASS_NO	TUNER 190G6FB/97	3138 158 6056	1
2005-08-12 3			
NAME Sophia Hsia / Joss Hung	SUPERS. 11	10 130 - 5	A3
TY	CHECK DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

Scaler Diagram-6

Go to cover page

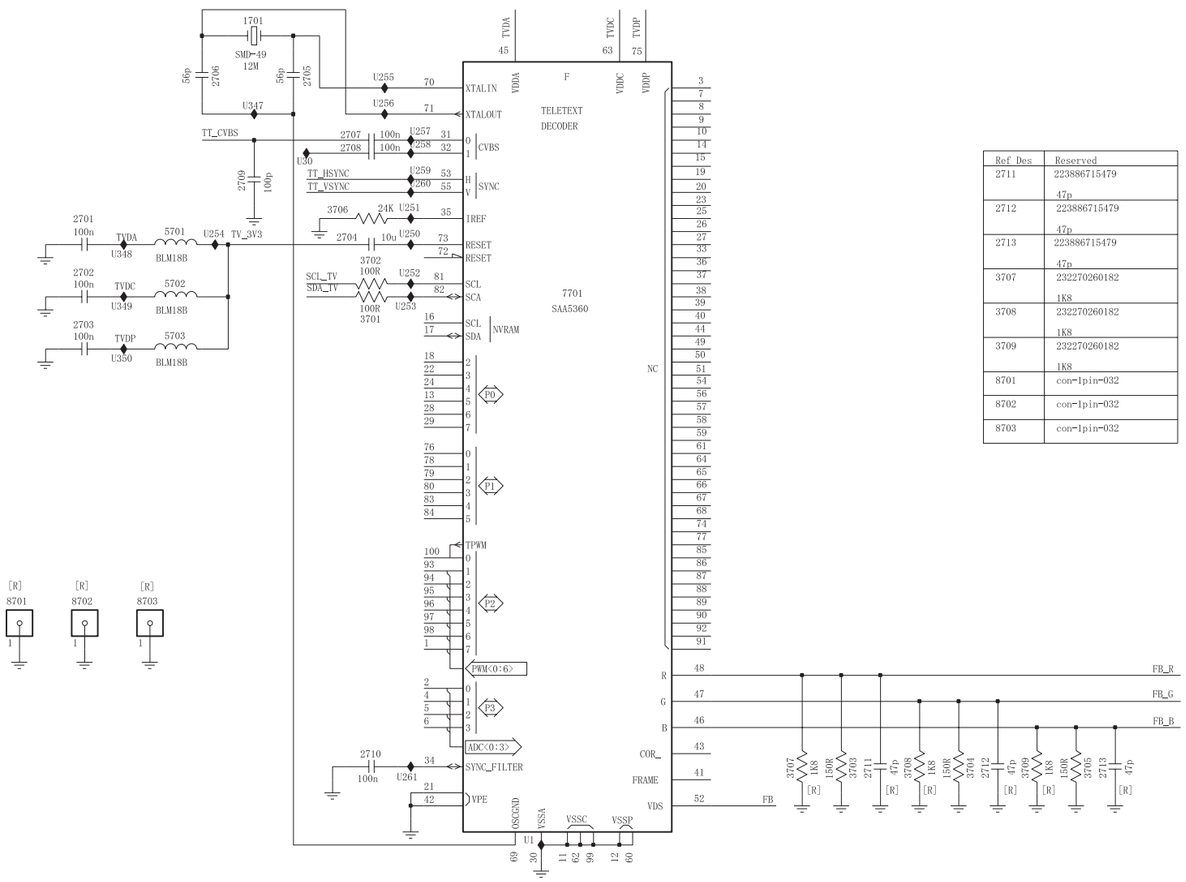


Ref Des	Reserved
4502	232270296001
4503	232270296001
4505	232270296001

U27	C7	7551	B1
U29	A5	7552	C1
VHS	D7	7553	D5
VVS	D7	7554	D2
1551	F7	7555	E2
2551	A4	U174	B1
2552	A5	U175	A4
2553	A5	U176	A4
2554	A5	U177	A5
2555	A6	U178	A6
2556	A6	U179	A6
2557	A6	U181	C7
2558	A6	U182	D8
2559	A4	U183	D8
2560	A5	U184	D8
2561	A4	U185	E8
2562	A5	U186	E8
2563	A5	U187	E8
2564	A5	U188	E8
2565	B7	U189	E8
2566	B3	U190	F8
2567	B3	U191	F8
2568	B3	U192	F8
2569	B1	U193	F7
2570	B3	U194	F7
2571	B3	U195	E8
2572	C3	U196	F8
2573	C3	U198	D7
2574	C3	U199	D7
2575	C3	U200	B3
2576	C1	U201	B3
2577	C3	U203	B3
2578	D3	U204	B3
2579	F8	U205	B3
2580	D3	U206	C3
2581	D3	U207	B3
2582	D3	U208	C4
2583	D3	U209	C4
2584	F8	U210	C4
2585	F7	U211	C4
2586	F7	U212	C4
3551	C7	U213	D4
3552	C7	U214	D4
3553	C3	U215	E4
3554	C3	U216	D3
3555	D3	U217	D8
3556	D2	U218	D8
3557	D3	U219	D8
3558	E3	U220	E8
3560	E3	U221	E8
3561	E2	U222	E8
3564	F8	U223	E8
3565	F8	U249	E3
3566-1	D8	U336	C3
3566-2	D8	U337	D3
3566-3	D8	U338	D3
3566-4	E8	U339	D3
3567-1	E8	U340	C4
3567-2	E8	U341	D4
3567-3	E8	U342	B4
3567-4	E8	U343	C3
3570	D3	U344	C4
3571	D3	U345	C3
3572	D3	U346	C3
3573	D4	U360	C3
4501	C7	U361	D2
4502	E2	U362	E2
4503	E2	U363	C7
4504	F8	U364	B3
4505	D7	VFLD	D7
4551	F3	VPEN	D7
5551	A4		
5552	A5		
5553	A5		
5554	A6		
5555	A4		
5556	A7		

SCALER BOARD

SB : 61541 x 2
PB : 61551



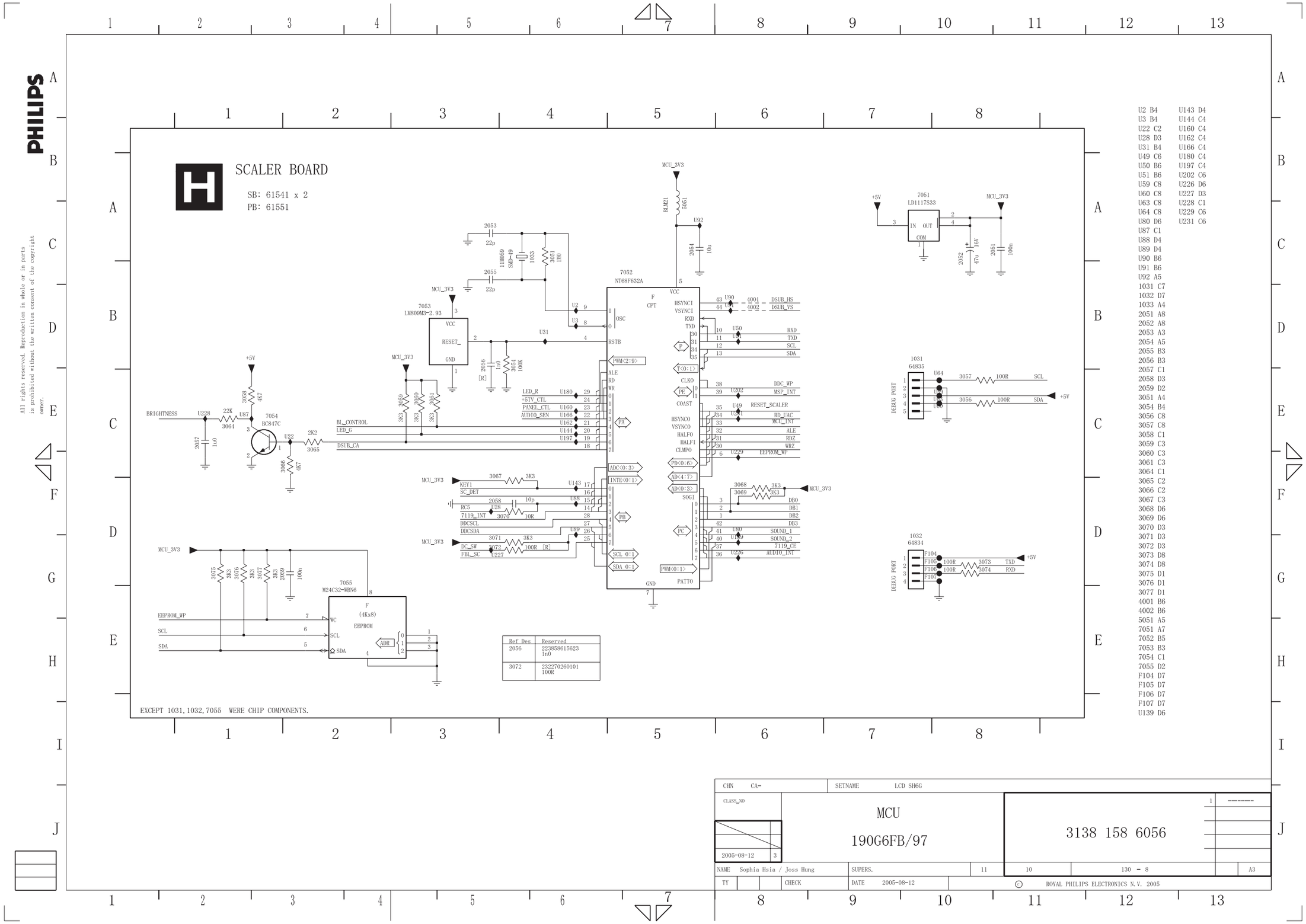
Ref Des	Reserved
2711	223886715479 47p
2712	223886715479 47p
2713	223886715479 47p
3707	232270260182 1K8
3708	232270260182 1K8
3709	232270260182 1K8
8701	con-1pin-032
8702	con-1pin-032
8703	con-1pin-032

U1 E5
U30 B3
1701 A3
2701 B2
2702 B2
2703 C2
2704 B4
2705 A3
2706 A3
2707 B4
2708 B4
2709 B3
2710 E4
2711 E7
2712 E7
2713 E8
3701 C4
3702 B4
3703 E6
3704 E7
3705 E8
3706 B4
3707 E6
3708 E7
3709 E7
5701 B3
5702 B3
5703 C3
7701 C5
8701 D2
8702 D2
8703 D3
U250 B4
U251 B4
U252 B4
U253 C4
U254 B3
U255 A4
U256 A4
U257 B4
U258 B4
U259 B4
U260 B4
U261 E4
U347 B3
U348 B2
U349 C2
U350 C2

CHN CA-	SETNAME LCD SH6G		
CLASS_NO	T/T DECODER 190G6FB/97	3138 158 6056	1 --------
2005-08-12 3			
NAME Sophia Hsia / Joss Hung	SUPERS. 11	10	130 - 7 A3
TY CHECK	DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

Scaler Diagram-8

Go to cover page



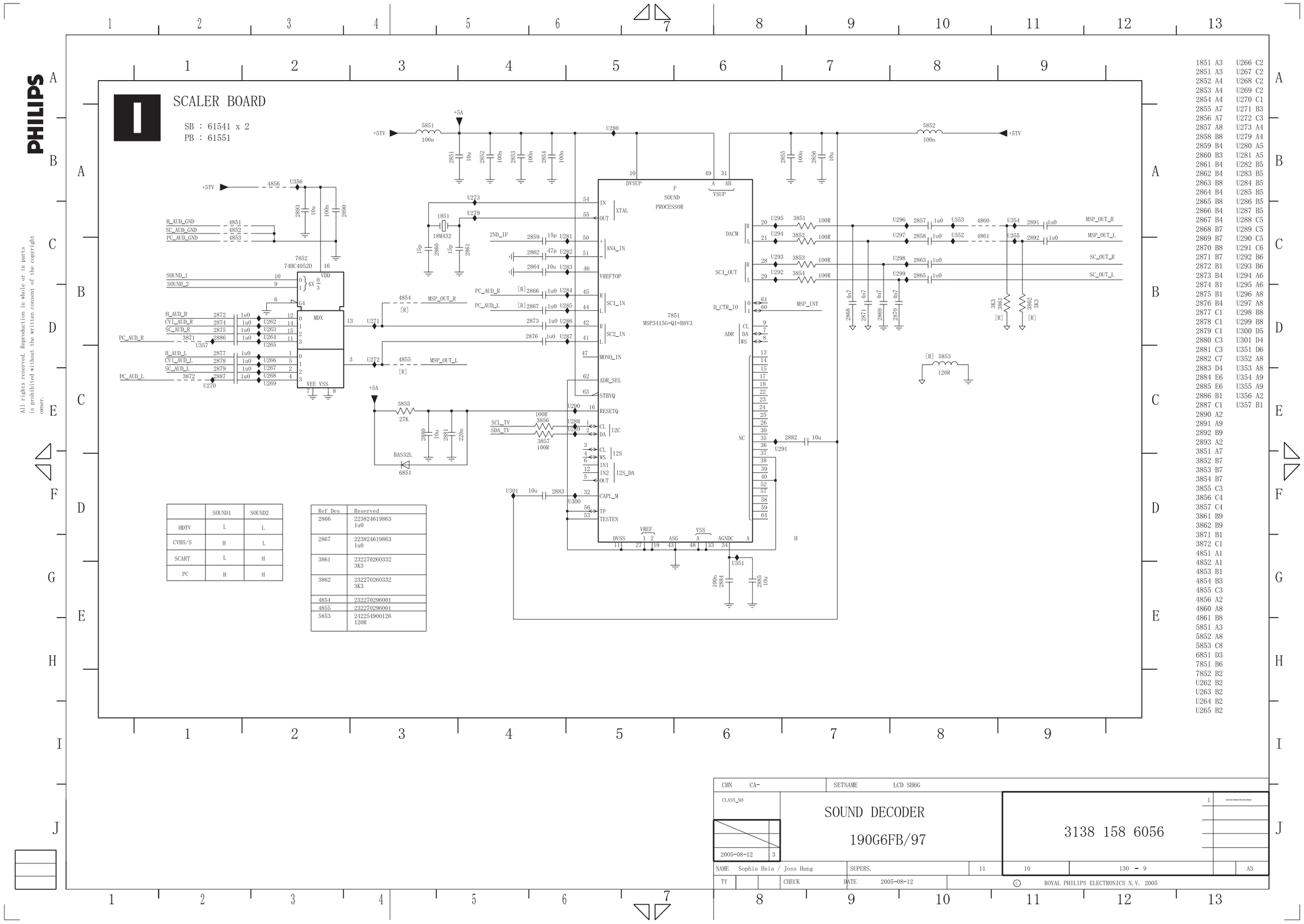
Ref Des	Reserved
2056	223858615623 1n0
3072	232270260101 100R

U2 B4
U3 B4
U22 C2
U28 D3
U31 B4
U49 C6
U50 B6
U51 B6
U59 C8
U60 C8
U63 C8
U64 C8
U80 D6
U87 C1
U88 D4
U89 D4
U90 B6
U91 B6
U92 A5
1031 C7
1032 D7
1033 A4
2051 A8
2052 A8
2053 A3
2054 A5
2055 B3
2056 B3
2057 C1
2058 D3
2059 D2
3051 A4
3054 B4
3056 C8
3057 C8
3058 C1
3059 C3
3060 C3
3061 C3
3064 C1
3065 C2
3066 C2
3067 C3
3068 D6
3069 D6
3070 D3
3071 D3
3072 D3
3073 D8
3074 D8
3075 D1
3076 D1
3077 D1
4001 B6
4002 B6
5051 A5
7051 A7
7052 B5
7053 B3
7054 C1
7055 D2
F104 D7
F105 D7
F106 D7
F107 D7
U139 D6
U143 D4
U144 C4
U160 C4
U162 C4
U166 C4
U180 C4
U197 C4
U202 C6
U226 D6
U227 D3
U228 C1
U229 C6
U231 C6

CHN CA-	SETNAME LCD SH6G		
CLASS_NO	MCU 190G6FB/97	3138 158 6056	1 --------
2005-08-12 3			
NAME Sophia Hsia / Joss Hung	SUPERS. 11	10	130 - 8 A3
TY CHECK	DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

Scaler Diagram-9

Go to cover page



	SOUND1	SOUND2
HDTV	L	L
CVBS/S	H	L
SCART	L	H
PC	H	H

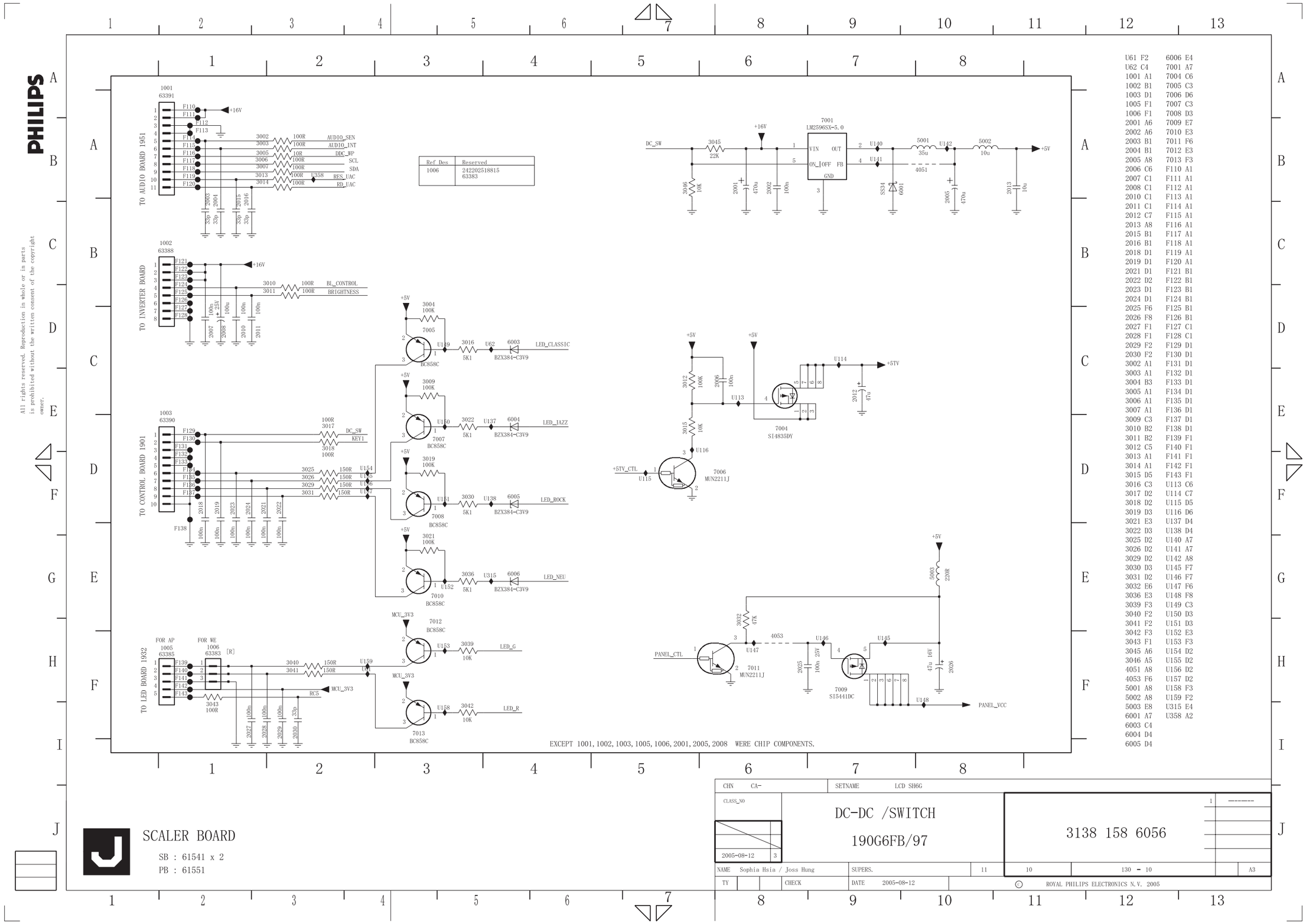
Ref Des	Reserved
2866	223824619863 1u0
2867	223824619863 1u0
3861	232270260332 3K3
3862	232270260332 3K3
4854	232270296001
4855	232270296001
5853	242254900126 120R

1851	A3
2851	A3
2852	A4
2853	A4
2854	A4
2855	A7
2856	A7
2857	A8
2858	B8
2859	B4
2860	B3
2861	B4
2862	B4
2863	B8
2864	B4
2865	B8
2866	B4
2867	B4
2868	B7
2869	B7
2870	B8
2871	B7
2872	B1
2873	B4
2874	B1
2875	B1
2876	B4
2877	C1
2878	C1
2879	C1
2880	C3
2881	C3
2882	C7
2883	D4
2884	E6
2885	E6
2886	B1
2887	C1
2890	A2
2891	A9
2892	B9
2893	A2
3851	A7
3852	B7
3853	B7
3854	B7
3855	C3
3856	C4
3857	C4
3861	B9
3862	B9
3871	B1
3872	C1
4851	A1
4852	A1
4853	B1
4854	B3
4855	C3
4856	A2
4860	A8
4861	B8
5851	A3
5852	A8
5853	C8
6851	D3
7851	B6
7852	B2
U262	B2
U263	B2
U264	B2
U265	B2
U266	C2
U267	C2
U268	C2
U269	C2
U270	C1
U271	B3
U272	C3
U273	A4
U279	A4
U280	A5
U281	A5
U282	B5
U283	B5
U284	B5
U285	B5
U286	B5
U287	B5
U288	C5
U289	C5
U290	C5
U291	C6
U292	B6
U293	B6
U294	A6
U295	A6
U296	A8
U297	A8
U298	B8
U299	B8
U300	D5
U301	D4
U351	D6
U352	A8
U353	A8
U354	A9
U355	A9
U356	A2
U357	B1

CHN CA-	SETNAME LCD SH6G		
CLASS_NO	SOUND DECODER 190G6FB/97	3138 158 6056	1 -------
2005-08-12 3			
NAME Sophia Hsia / Joss Hung	SUPERS. 11	10	130 - 9 A3
TY CHECK	DATE 2005-08-12		

Go to cover page

Scaler Diagram-10



Ref Des	Reserved
1006	242202518815 63383

U61	F2	6006	E4
U62	C4	7001	A7
1001	A1	7004	C6
1002	B1	7005	C3
1003	D1	7006	D6
1005	F1	7007	C3
1006	F1	7008	D3
2001	A6	7009	E7
2002	A6	7010	E3
2003	B1	7011	F6
2004	B1	7012	E3
2005	A8	7013	F3
2006	C6	F110	A1
2007	C1	F111	A1
2008	C1	F112	A1
2010	C1	F113	A1
2011	C1	F114	A1
2012	C7	F115	A1
2013	A8	F116	A1
2015	B1	F117	A1
2016	B1	F118	A1
2018	D1	F119	A1
2019	D1	F120	A1
2021	D1	F121	B1
2022	D2	F122	B1
2023	D1	F123	B1
2024	D1	F124	B1
2025	F6	F125	B1
2026	F8	F126	B1
2027	F1	F127	C1
2028	F1	F128	C1
2029	F2	F129	D1
2030	F2	F130	D1
3002	A1	F131	D1
3003	A1	F132	D1
3004	B3	F133	D1
3005	A1	F134	D1
3006	A1	F135	D1
3007	A1	F136	D1
3009	C3	F137	D1
3010	B2	F138	D1
3011	B2	F139	F1
3012	C5	F140	F1
3013	A1	F141	F1
3014	A1	F142	F1
3015	D5	F143	F1
3016	C3	U113	C6
3017	D2	U114	C7
3018	D2	U115	D5
3019	D3	U116	D6
3021	E3	U137	D4
3022	D3	U138	D4
3025	D2	U140	A7
3026	D2	U141	A7
3029	D2	U142	A8
3030	D3	U145	F7
3031	D2	U146	F7
3032	E6	U147	F6
3036	E3	U148	F8
3039	F3	U149	C3
3040	F2	U150	D3
3041	F2	U151	D3
3042	F3	U152	E3
3043	F1	U153	F3
3045	A6	U154	D2
3046	A5	U155	D2
4051	A8	U156	D2
4053	F6	U157	D2
5001	A8	U158	F3
5002	A8	U159	F2
5003	E8	U315	E4
6001	A7	U358	A2
6003	C4		
6004	D4		
6005	D4		

SCALER BOARD

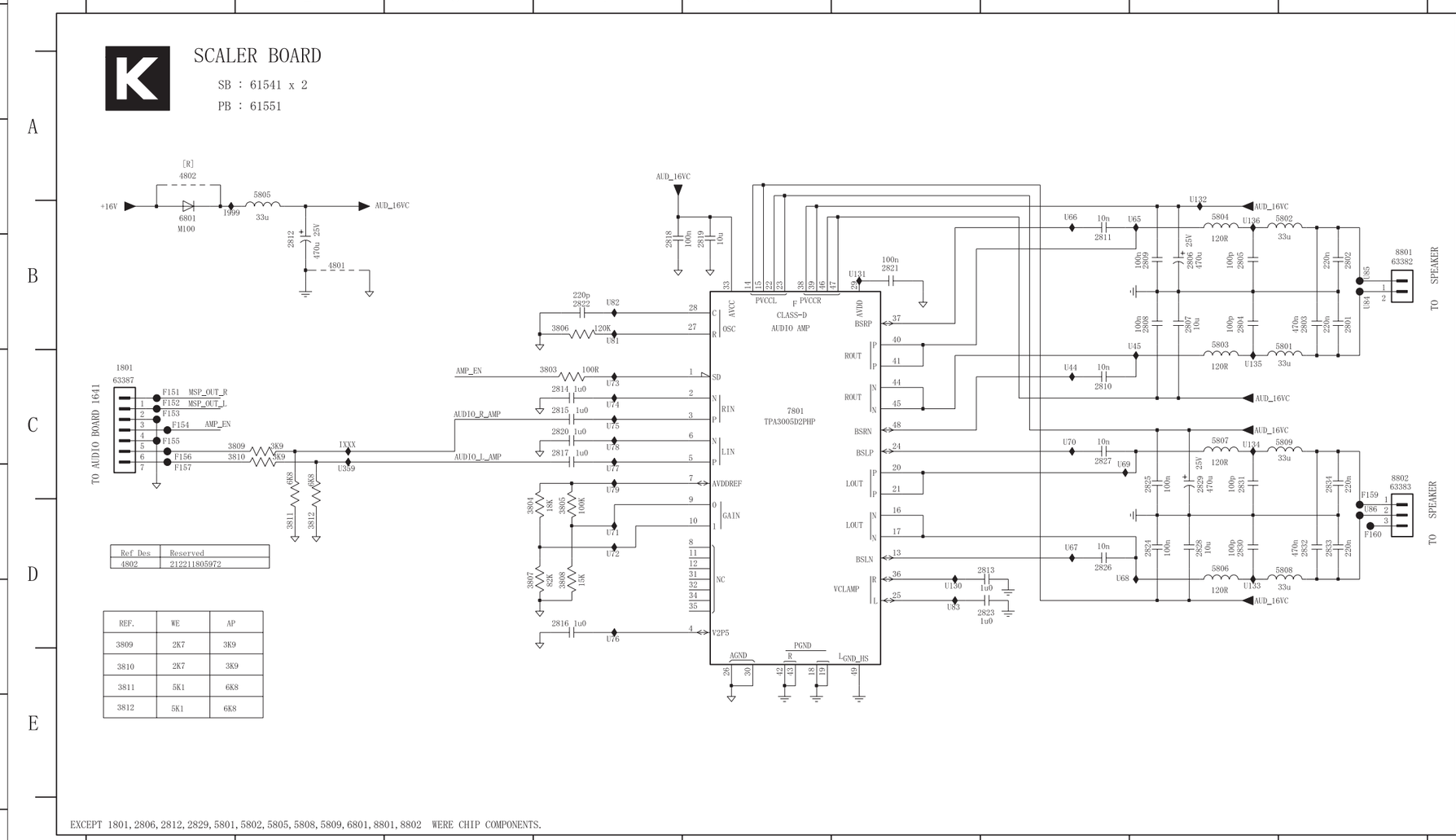
SB : 61541 x 2

PB : 61551

CHN CA-		SETNAME LCD SH6G	
CLASS_NO	DC-DC /SWITCH 190G6FB/97	3138 158 6056	1 -------
2005-08-12 3			
NAME Sophia Hsia / Joss Hung	SUPERS. 11	10	130 - 10 A3
TY CHECK	DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

Scaler Diagram-11

Go to cover page



Ref Des	Reserved
4802	212211805972

REF.	WE	AP
3809	2K7	3K9
3810	2K7	3K9
3811	5K1	6K8
3812	5K1	6K8

EXCEPT 1801, 2806, 2812, 2829, 5801, 5802, 5805, 5808, 5809, 6801, 8801, 8802 WERE CHIP COMPONENTS.

U44	C7	3811	D2
U45	B8	3812	D2
U65	B8	4801	B2
U66	B7	4802	A1
U67	D7	5801	B9
U68	D7	5802	B9
U69	C7	5803	B8
U70	C7	5804	B8
U71	D4	5805	A2
U72	D4	5806	D8
U73	C4	5807	C8
U74	C4	5808	D9
U75	C4	5809	C9
U76	D4	6801	B1
U77	C4	7801	C5
U78	C4	8801	B9
U79	C4	8802	C9
U81	B4	F151	C1
U82	B4	F152	C1
U83	D6	F153	C1
U84	B9	F154	C1
U85	B9	F155	C1
U86	D9	F156	C1
1801	C1	F157	C1
2801	B9	F159	C9
2802	B9	F160	D9
2803	B9	I999	B1
2804	B8	IXXX	C2
2805	B8	U130	D6
2806	B8	U131	B6
2807	B8	U132	A8
2808	B8	U133	D8
2809	B8	U134	C8
2810	C7	U135	C8
2811	B7	U136	B8
2812	B2	U359	C2
2813	D7		
2814	C4		
2815	C4		
2816	D4		
2817	C4		
2818	B4		
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2828	D8		
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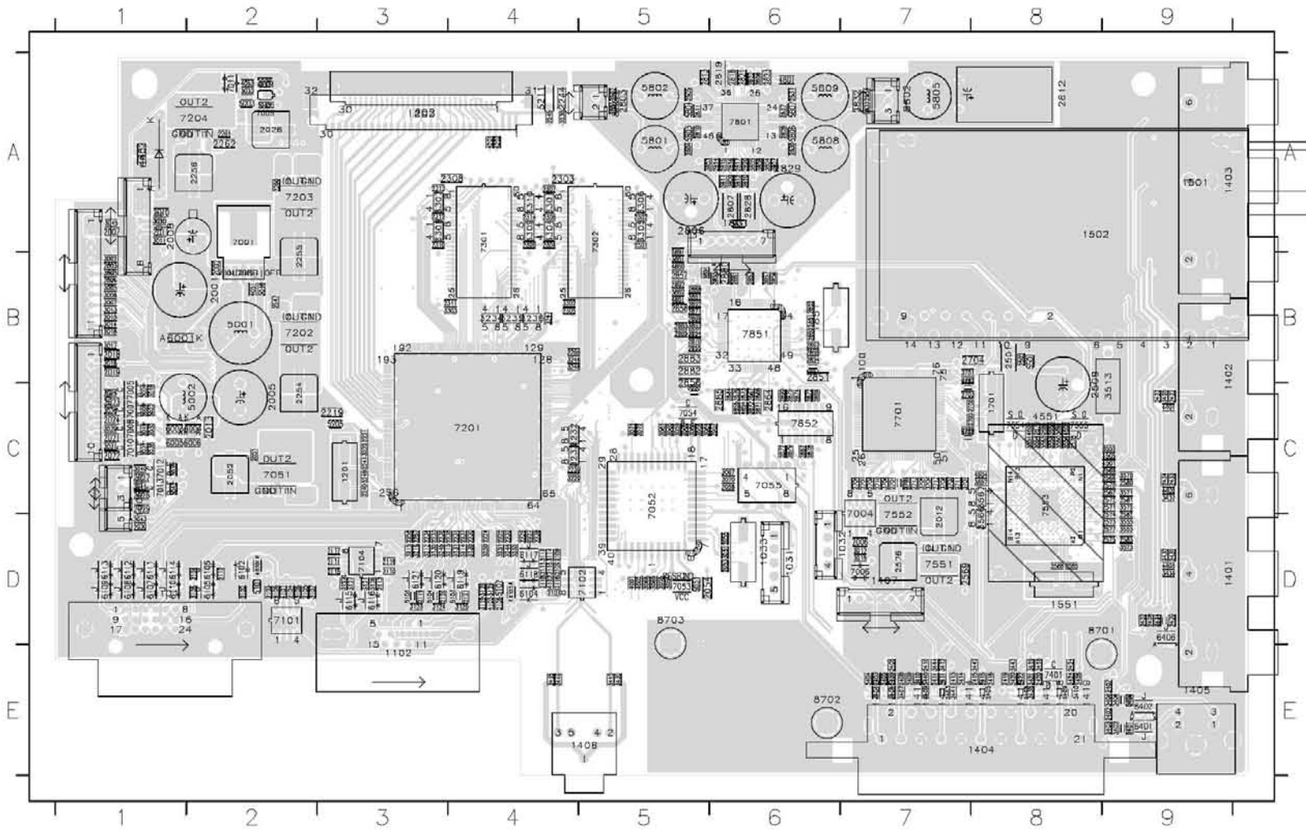
2831	C8		
2832	D9		
2833	D9		
2834	C9		
3803	C4		
3804	D3		
3805	D4		
3806	B4		
3807	D3		
3808	D4		
3809	C2		
3810	C2		

CHN CA-	SETNAME LED SH6G		
CLASS_NO	AUDIO - AMP 190G6FB/97	3138 158 6056	1 --------
2005-08-12 3			
NAME Sophia Hsia/Joss Hung	SUPERS. 11	10	130 - 11 A3
TY CHECK	DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

Scaler Board C.B.A.-1

Go to cover page

PHILIPS



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1003	C1	2119	D3	2577	D9	2882	B5	3215	D3	3571	C9	5805	A7
1005	C1	2120	D3	2578	C8	2883	B5	3216	D3	3572	C9	5806	A6
1006	C1	2121	D4	2579	C8	2884	C6	3220	C4	3573	D9	5807	A6
1031	D6	2219	C3	2580	C9	2885	C6	3221	C3	3701	B7	5808	A6
1032	D7	2224	D4	2581	C9	2886	C6	3222	C3	3702	B7	5809	A6
1033	D6	2225	D4	2582	D9	2887	C6	3230	A4	3703	C7	5851	B6
1101	D1	2226	D4	2583	D9	2890	C6	3232	C4	3704	C7	5852	C5
1102	E3	2227	D4	2584	C8	2891	A5	3233	C4	3705	C7	5853	A6
1201	C3	2230	D4	2585	D8	2892	B5	3234	B4	3706	C7	6001	B1
1202	A3	2231	D4	2586	D8	3002	B1	3235	B4	3707	C7	6003	C1
1203	A3	2232	D4	2701	C7	3003	B1	3236	B4	3708	C7	6004	C2
1401	D9	2233	D3	2702	C7	3004	C1	3244	D4	3709	C7	6005	C1
1402	B9	2234	D3	2703	C7	3005	B1	3245	D3	3803	A5	6006	C2
1403	A9	2235	D4	2704	B8	3006	B1	3246	B4	3804	A6	6101	D2
1404	E8	2236	D3	2705	C7	3007	B1	3247	B4	3805	A6	6102	D2
1405	E9	2237	D4	2706	C7	3009	C1	3248	B4	3806	A6	6103	D4
1406	E5	2238	D4	2707	C7	3010	A1	3249	C3	3807	A6	6104	D4
1407	D7	2239	C4	2708	C7	3011	A1	3250	D4	3808	A6	6105	D2
1410	E7	2240	C3	2709	C7	3012	D7	3251	D4	3809	A6	6106	D2
1411	E7	2241	C3	2710	C7	3013	B1	3252	D4	3810	A6	6107	D1
1412	E7	2244	A4	2711	C7	3014	B1	3301	A4	3811	A6	6108	D1
1413	E7	2245	A4	2712	C7	3015	D7	3302	B4	3812	A6	6109	D1
1414	E7	2247	B3	2713	C7	3016	C1	3303	B4	3851	B5	6110	D1
1415	E8	2254	C3	2801	A5	3017	B1	3304	A4	3852	B5	6111	D1
1416	E8	2255	B3	2802	A5	3018	B1	3305	A5	3853	B5	6112	D1
1417	E8	2256	A3	2803	A5	3019	C1	3306	A5	3854	B5	6113	D1
1418	E8	2257	D3	2804	A5	3021	C1	3307	A3	3855	B6	6114	D1
1419	E8	2258	D3	2805	A5	3022	C1	3308	A3	3856	B6	6115	D3
1420	E7	2259	B4	2806	A5	3025	C1	3309	A4	3857	B6	6116	D3
1501	A9	2260	A2	2807	A6	3026	C1	3310	A4	3861	B5	6117	D4
1502	A8	2261	A2	2810	A5	3029	C1	3401	E7	3862	B5	6118	D4
1551	D8	2262	A2	2811	A5	3030	C1	3402	E9	3871	C6	6119	D4
1701	C8	2301	A5	2812	A8	3031	C1	3403	E9	3872	C6	6120	D3
1801	A6	2302	A5	2813	A5	3032	A2	3404	E7	4001	D5	6121	D3
1851	B6	2303	A4	2814	A6	3036	C1	3405	E7	4002	D5	6401	E9
2001	B2	2304	A4	2815	A6	3039	C1	3406	E9	4051	B2	6402	E9
2002	B2	2305	B4	2816	A6	3040	C1	3407	E7	4053	A2	6406	D9
2003	B1	2306	A4	2817	A6	3041	C1	3408	E9	4101	D2	6801	A1
2004	B1	2307	A4	2818	A6	3042	C1	3409	E7	4102	D4	6851	B5
2005	C2	2308	A4	2819	A6	3043	D1	3410	E7	4103	D4	7001	A2
2006	D7	2309	A4	2820	A6	3045	A1	3411	E7	4201	A4	7004	C7
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2008	A1	2311	B4	2822	A6	3051	D6	3414	E7	4401	C9	7006	D7
2010	A1	2312	A3	2823	A6	3054	D5	3415	E8	4405	D9	7007	C1
2011	A1	2313	A3	2826	A6	3058	C5	3416	E8	4408	C9	7008	C1
2012	D7	2314	A4	2827	A6	3059	C5	3418	E8	4501	C9	7009	A2
2013	C2	2401	E9	2828	A6	3060	C5	3419	E8	4502	C8	7010	C1
2015	B1	2402	E9	2829	A6	3061	C5	3420	E8	4503	C8	7011	A2
2016	B1	2403	E7	2830	A6	3064	C5	3421	E8	4504	C8	7012	C1
2018	B1	2404	E7	2831	A6	3065	C5	3422	E8	4505	C9	7013	C1
2019	B1	2405	E7	2832	A7	3066	C5	3424	E8	4551	C8	7051	C2
2021	C1	2406	E9	2833	A7	3067	C6	3425	C9	4801	A6	7052	C5
2022	C1	2407	E9	2834	A7	3068	D5	3426	E8	4802	A1	7053	D5
2023	C1	2408	E7	2851	B6	3069	D5	3430	E5	4854	C6	7054	C5
2024	C1	2409	E7	2852	B6	3070	C6	3431	D9	4855	C6	7055	C6
2025	A2	2410	E7	2853	B6	3071	C5	3432	D9	4860	B5	7101	D2
2026	A2	2411	E7	2854	B5	3072	C5	3435	E4	4861	B5	7102	D5
2027	C1	2413	E7	2855	B5	3104	D2	3436	D9	5001	B2	7104	D3
2028	C1	2415	E8	2856	B5	3105	D2	3437	C9	5002	C2	7201	C4
2029	C1	2419	E8	2857	B5	3106	D2	3438	E8	5003	A2	7202	B2
2030	D1	2420	E8	2858	B5	3107	D2	3439	E7	5051	D5	7203	A2
2051	C2	2422	C9	2859	B6	3108	D2	3440	E7	5101	D2	7204	A2
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2053	D6	2424	E8	2861	B6	3111	D4	3442	E8	5103	D4	7302	A5
2054	D5	2428	D9	2862	B6	3114	D4	3443	E8	5104	D3	7401	E8
2055	D6	2429	D9	2863	B5	3115	D4	3444	E7	5105	D3	7551	D7
2056	D5	2431	D9	2864	C6	3116	D4	3445	E5	5205	C3	7552	D7
2057	C6	2432	D9	2865	B5	3118	D4	3446	E4	5211	A4	7553	C8
2058	C6	2433	C9	2866	C6	3119	D4	3513	C9	5401	E9	7554	C8
2102	D2	2434	C9	2867	C6	3121	D3	3551	C8	5402	E9	7555	C8
2103	D2	2501	B8	2868	B5	3122	D3	3552	C9	5403	E7	7701	C7
2104	D2	2502	B8	2869	B5	3123	D3	3553	D9	5405	E8	7801	A6
2105	D2	2509	C8	2870	B5	3124	D3	3554	C8	5408	E8	7851	B6
2106	D4	2566	C9	2871	B5	3125	D4	3555	D9	5409	E8	7852	C6
2107	D4	2567	C9	2872	C6	3126	D3	3556	C8	5410	E8	8701	D8
2108	D4	2568	C9	2873	C6	3127	D3	3557	C8	5412	D9	8702	E6
2109	D4	2569	D7	2874	C6	3128	D4	3558	C8	5501	B8	8703	D5
2110	D3	2570	C9	2875	C6	3129	D4	3560	C8	5701	C7	8801	A5
2111	D3	2571	C9	2876	C6	3130	D4	3561	C8	5702	C7	8802	A7
2112	D2	2572	C9	2877	C6	3131	D4	3564	C8	5703	B7		
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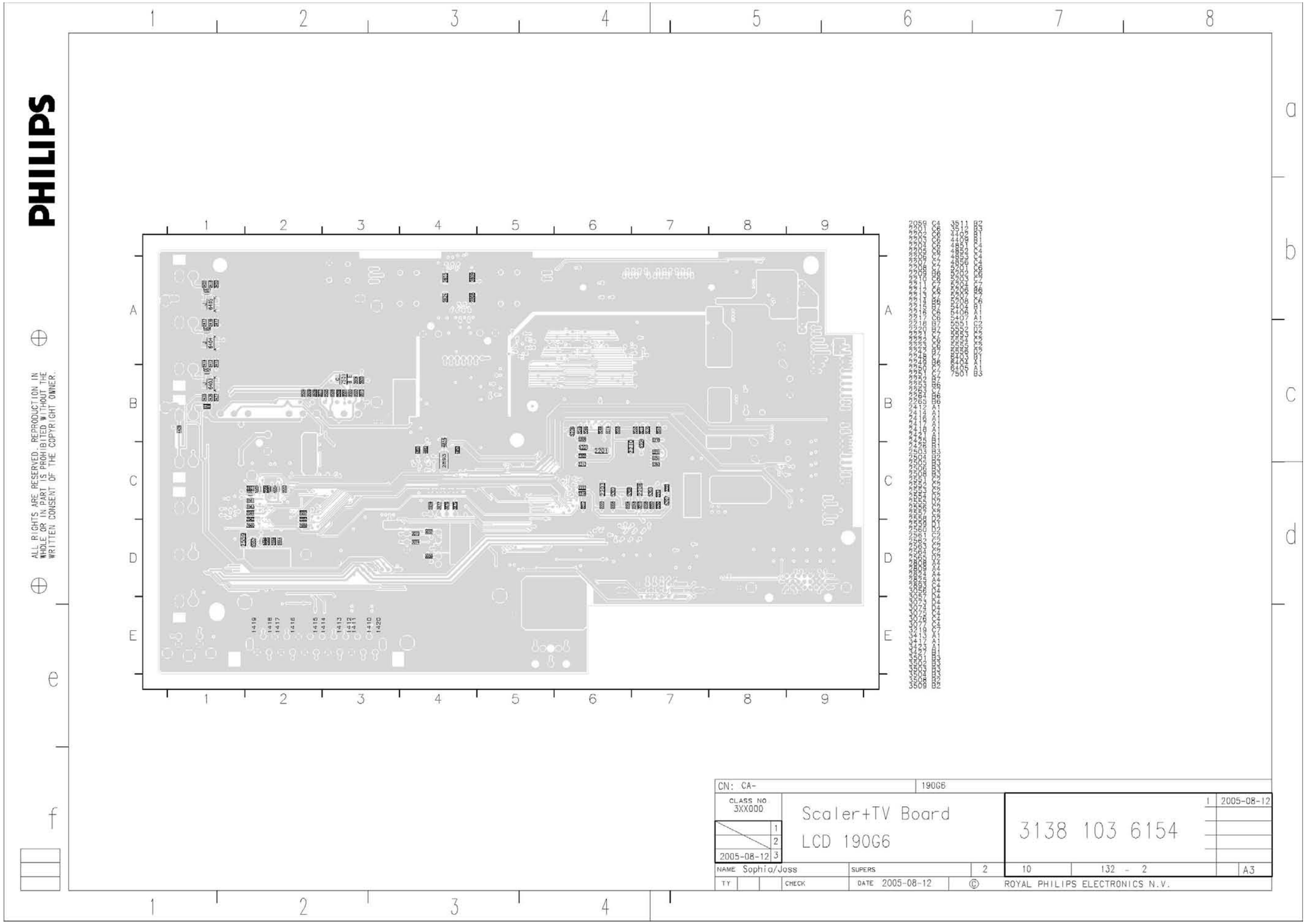
CN: CA-
190G6
CLASS NO.
3XX000
Scaler+TV Board
LCD 190G6
1
2
3
2005-08-12
3138 103 6154
1 2005-08-12
NAME Sophia/Joss
SUPERS
2
10
132 - 1
A3
TY
CHECK
DATE 2005-08-12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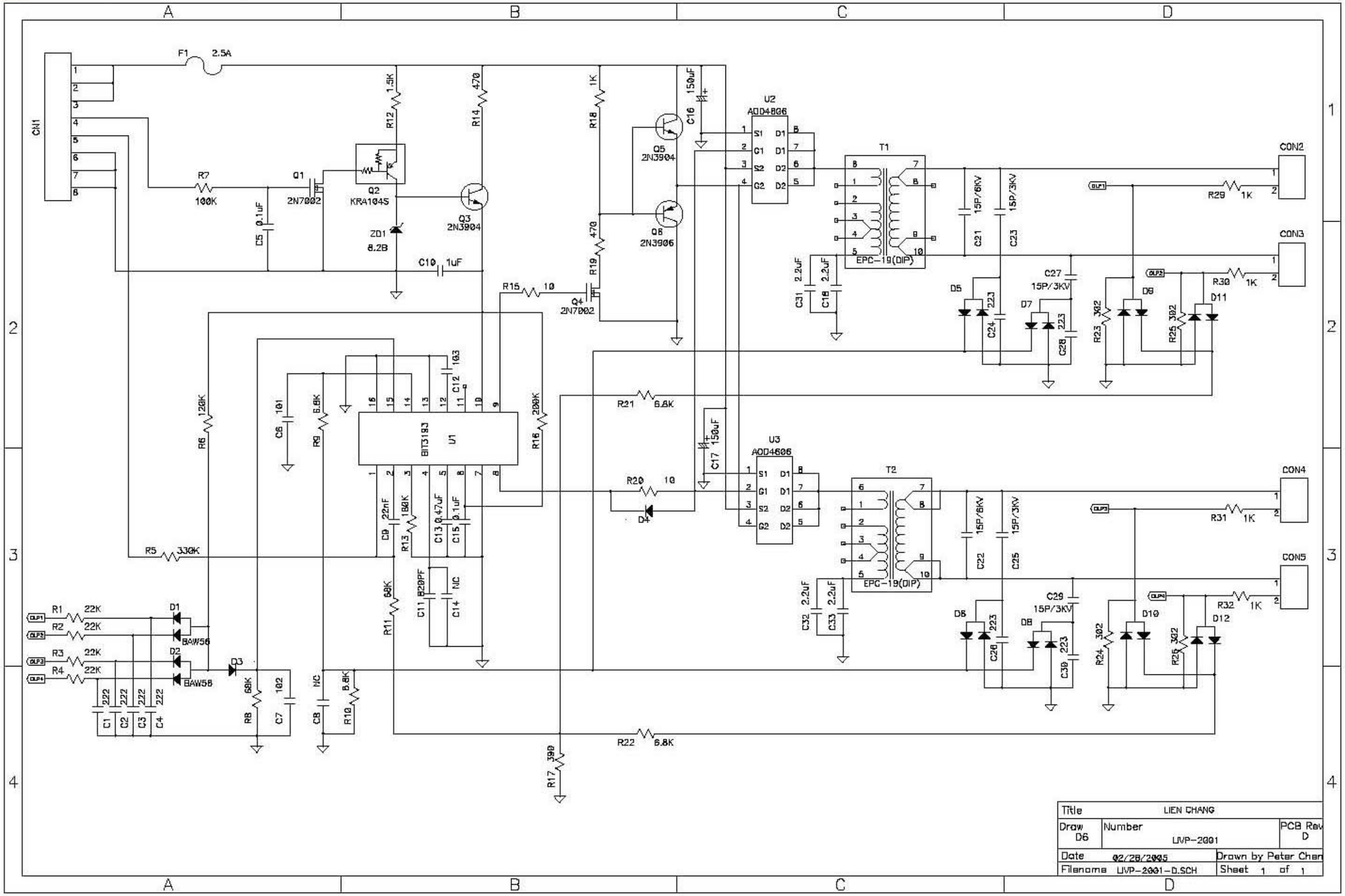
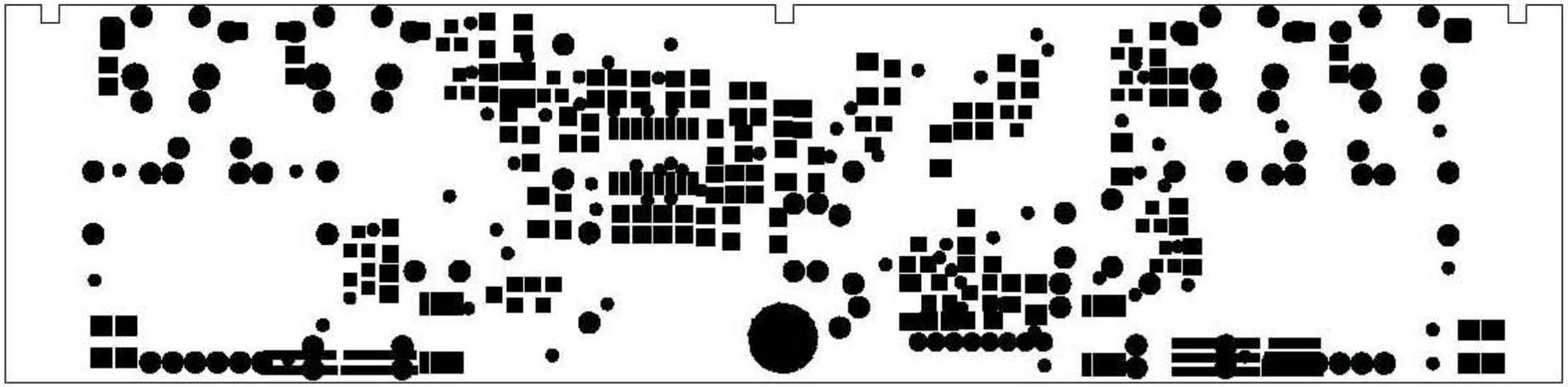
CN: CA-
190G6
CLASS NO 3XX000
Scaler+TV Board
LCD 190G6
3138 103 6154
2005-08-12
NAME Sophia/Joss
SUPERS
DATE 2005-08-12
ROYAL PHILIPS ELECTRONICS N.V.
A3

Go to cover page

Inverter Diagram



Inverter Board C.B.A.



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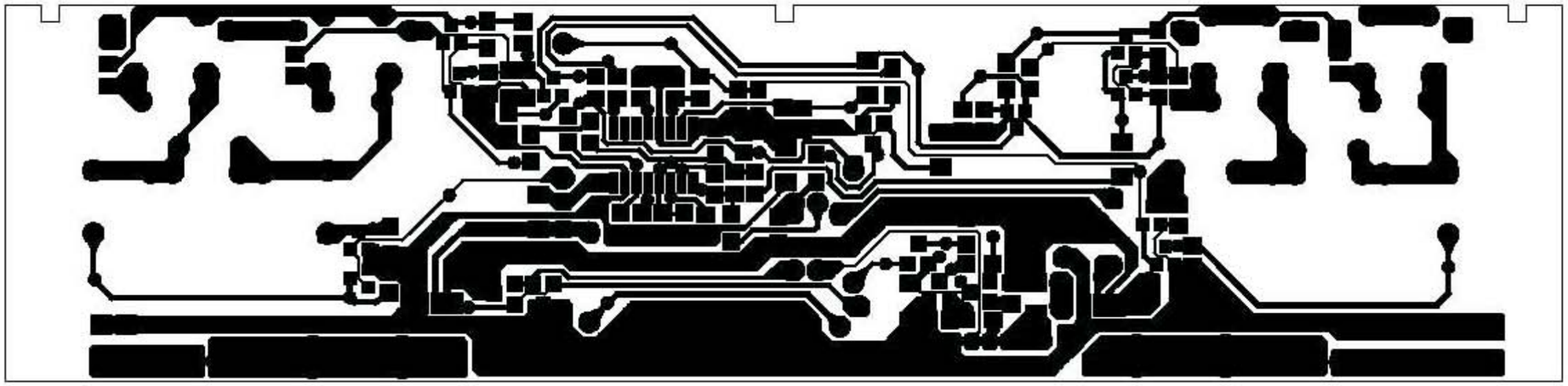

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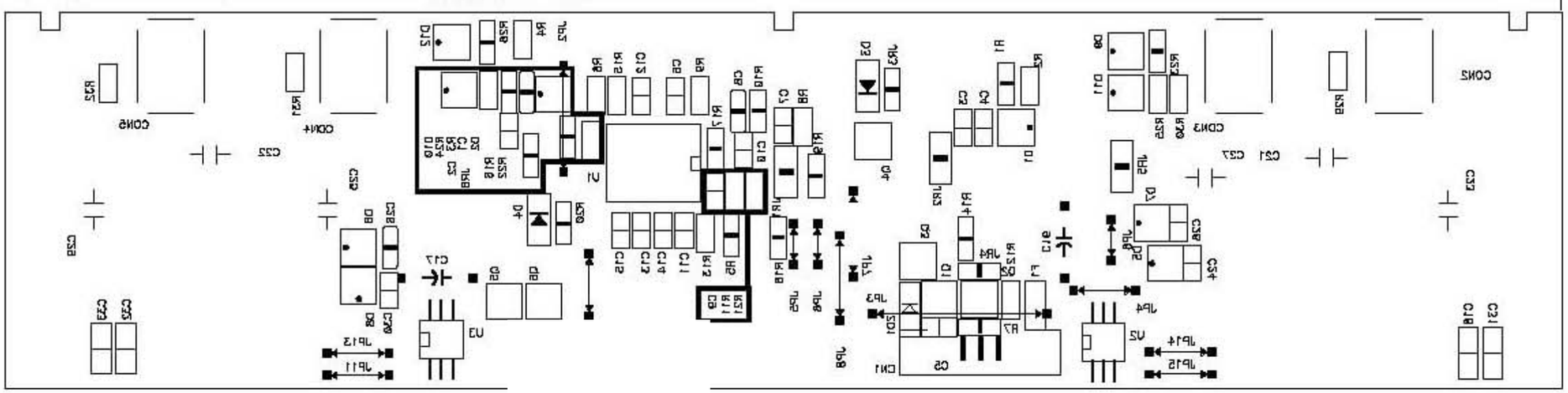
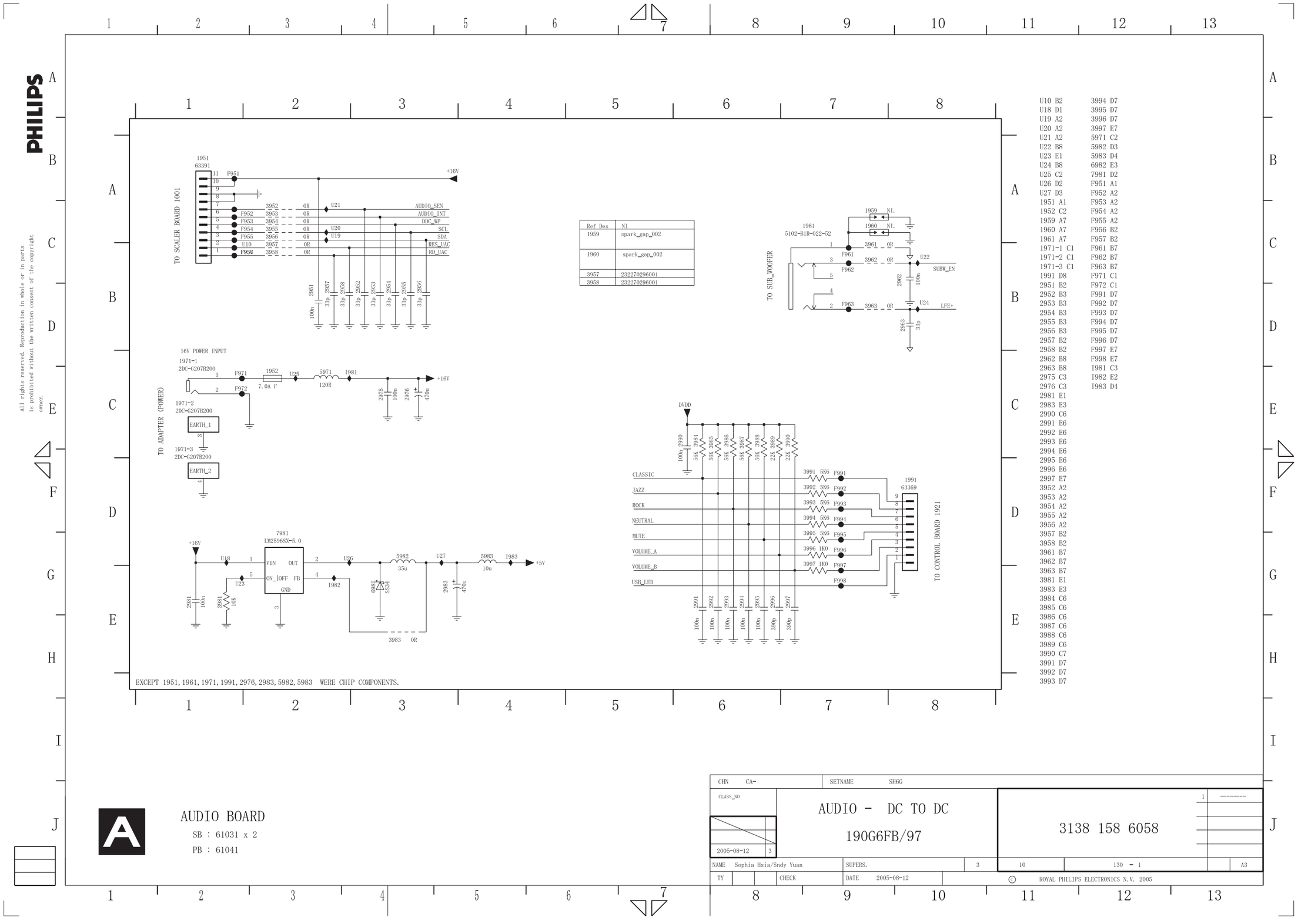


Audio Diagram-1

Go to cover page



Ref Des	NI
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1960	spark_gap_002
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3958	232270296001

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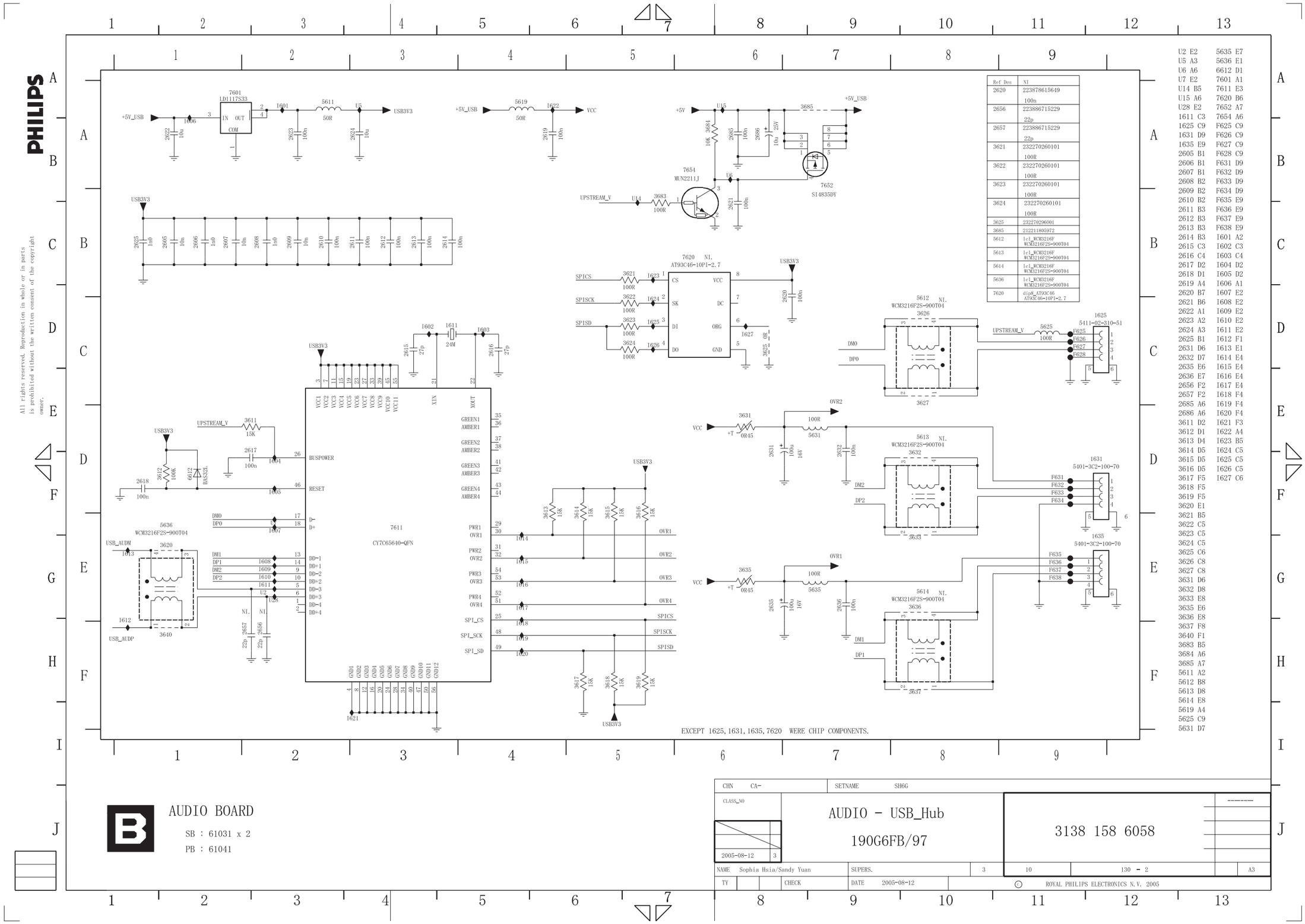
U18 D1
U19 A2
U20 A2
U21 A2
U22 B8
U23 E1
U24 B8
U25 C2
U26 D2
U27 D3
1951 A1
1952 C2
1959 A7
1960 A7
1961 A7
1971-1 C1
1971-2 C1
1971-3 C1
1991 D8
2951 B2
2952 B3
2953 B3
2954 B3
2955 B3
2956 B3
2957 B2
2958 B2
2962 B8
2963 B8
2975 C3
2976 C3
2981 E1
2983 E3
2990 C6
2991 E6
2992 E6
2993 E6
2994 E6
2995 E6
2996 E6
2997 E7
3952 A2
3953 A2
3954 A2
3955 A2
3956 A2
3957 B2
3958 B2
3961 B7
3962 B7
3963 B7
3981 E1
3983 E3
3984 C6
3985 C6
3986 C6
3987 C6
3988 C6
3989 C6
3990 C7
3991 D7
3992 D7
3993 D7
3994 D7
3995 D7
3996 D7
3997 E7
5971 C2
5982 D3
5983 D4
6982 E3
7981 D2
F951 A1
F952 A2
F953 A2
F954 A2
F955 A2
F956 B2
F957 B2
F961 B7
F962 B7
F963 B7
F971 C1
F972 C1
F991 D7
F992 D7
F993 D7
F994 D7
F995 D7
F996 D7
F997 E7
F998 E7
I981 C3
I982 E2
I983 D4

AUDIO BOARD
SB : 61031 x 2
PB : 61041

CHN CA-	SETNAME SH6G		
CLASS_NO	AUDIO - DC TO DC 190G6FB/97	3138 158 6058	
2005-08-12 3			
NAME Sophia Hsia/Sndy Yuan	SUPERS. 3	10	130 - 1 A3
TY CHECK	DATE 2005-08-12	ROYAL PHILIPS ELECTRONICS N.V. 2005	

Audio Diagram-2



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3622	232270260101 100R
3623	232270260101 100R
3624	232270260101 100R
3625	232270296001
3685	212211805972
5612	lcl_WCM3216F WCM3216F2S-900T04
5613	lcl_WCM3216F WCM3216F2S-900T04
5614	lcl_WCM3216F WCM3216F2S-900T04
5636	lcl_WCM3216F WCM3216F2S-900T04
7620	dip8_AT93C46 AT93C46-10PI-2.7

U2	E2	5635	E7
U5	A3	5636	E1
U6	A6	6612	D1
U7	E2	7601	A1
U14	B5	7611	E3
U15	A6	7620	B6
U28	E2	7652	A7
1611	C3	7654	A6
1625	C9	F625	C9
1631	D9	F626	C9
1635	E9	F627	C9
2605	B1	F628	C9
2606	B1	F631	D9
2607	B1	F632	D9
2608	B2	F633	D9
2609	B2	F634	D9
2610	B2	F635	E9
2611	B3	F636	E9
2612	B3	F637	E9
2613	B3	F638	E9
2614	B3	I601	A2
2615	C3	I602	C3
2616	C4	I603	C4
2617	D2	I604	D2
2618	D1	I605	D2
2619	A4	I606	A1
2620	B7	I607	E2
2621	B6	I608	E2
2622	A1	I609	E2
2623	A2	I610	E2
2624	A3	I611	E2
2625	B1	I612	F1
2631	D6	I613	E1
2632	D7	I614	E4
2635	E6	I615	E4
2636	E7	I616	E4
2656	F2	I617	E4
2657	F2	I618	F4
2685	A6	I619	F4
2686	A6	I620	F4
3611	D2	I621	F3
3612	D1	I622	A4
3613	D4	I623	B5
3614	D5	I624	C5
3615	D5	I625	C5
3616	D5	I626	C5
3617	F5	I627	C6
3618	F5		
3619	F5		
3620	E1		
3621	B5		
3622	C5		
3623	C5		
3624	C5		
3625	C6		
3626	C8		
3627	C8		
3631	D6		
3632	D8		
3633	E8		
3635	E6		
3636	E8		
3637	F8		
3640	F1		
3683	B5		
3684	A6		
3685	A7		
5611	A2		
5612	B8		
5613	D8		
5614	E8		
5619	A4		
5625	C9		
5631	D7		

AUDIO BOARD

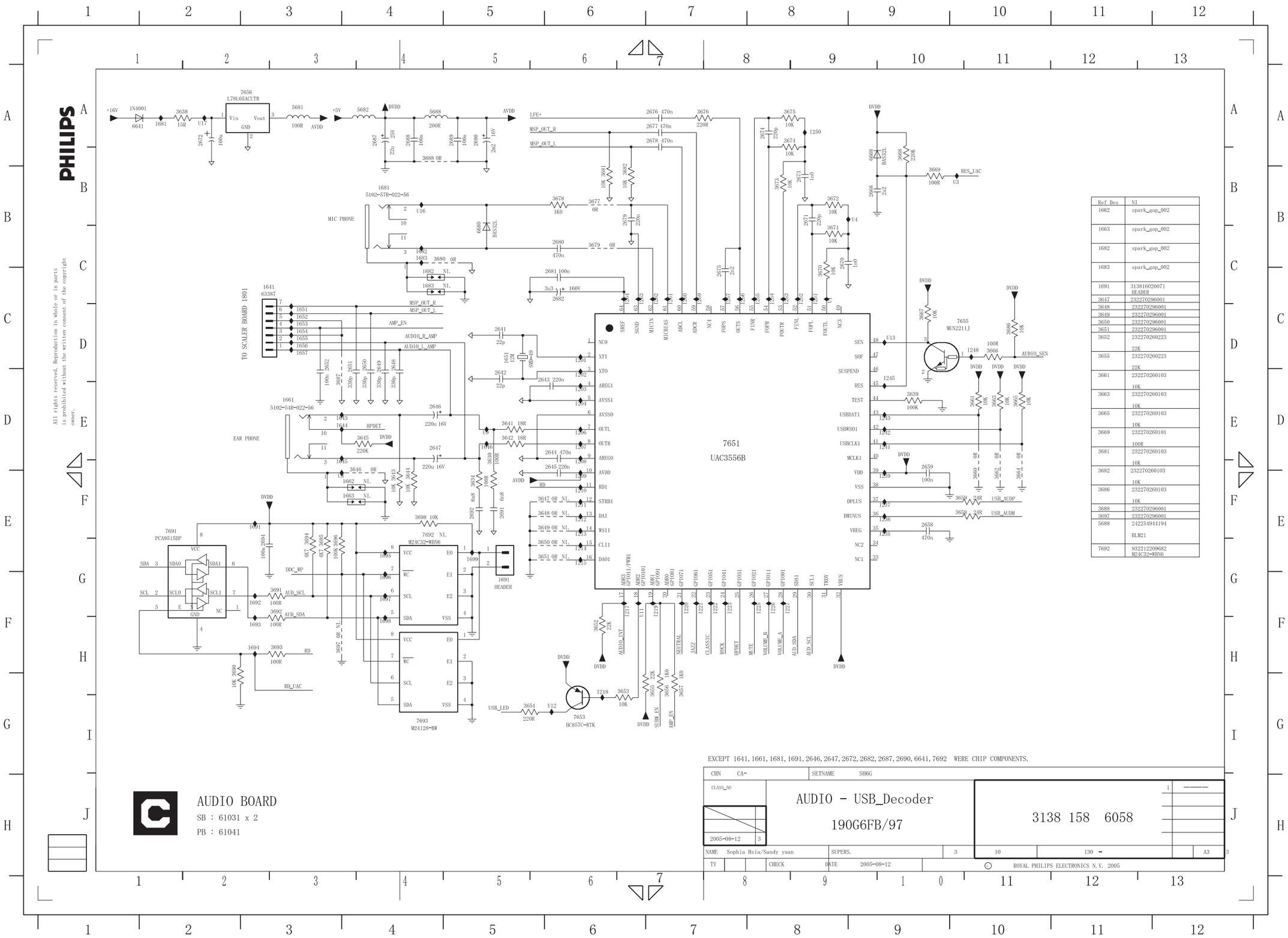
SB : 61031 x 2

PB : 61041

CHN CA-	SETNAME SH6G		
CLASS_NO	AUDIO - USB_Hub 190G6FB/97	3138 158 6058	
2005-08-12 3			
NAME Sophia Hsia/Sandy Yuan	SUPERS. 3	10	130 - 2 A3
TY CHECK	DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

Audio Diagram-3

Go to cover page



Ref Des	NI
1662	spark_gap_002
1663	spark_gap_002
1682	spark_gap_002
1683	spark_gap_002
1691	313816020071 HEADER
3647	232270296001
3648	232270296001
3649	232270296001
3650	232270296001
3651	232270296001
3652	232270260223 22K
3655	232270260223 22K
3661	232270260103 10K
3663	232270260103 10K
3665	232270260103 10K
3669	232270260101 100R
3681	232270260103 10K
3682	232270260103 10K
3686	232270260103 10K
3688	232270296001
3697	232270296001
5688	242254944194 BLM21
7692	932212209682 M24C32-WBN6

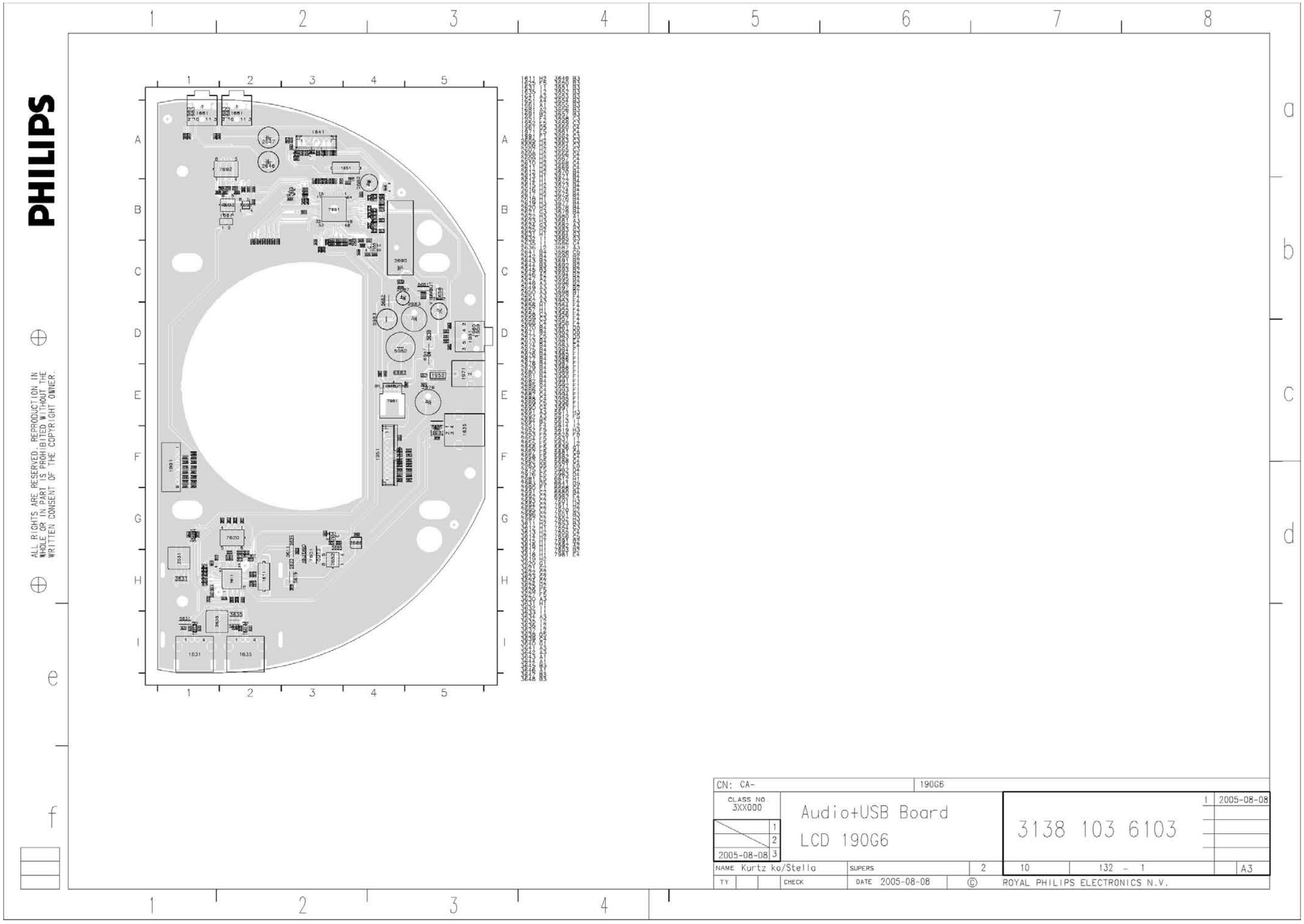
AUDIO BOARD
SB : 61031 x 2
PB : 61041

EXCEPT 1641, 1661, 1681, 1691, 2646, 2647, 2672, 2682, 2687, 2690, 6641, 7692 WERE CHIP COMPONENTS.

CHN CA-	SETNAME SH6G		
CLASS_NO	AUDIO - USB_Decoder 190G6FB/97	3138 158 6058	
2005-08-12 3			
NAME Sophia Hsia/Sandy yuan	SUPERS. 3	10	130 - A3
TY CHECK	DATE 2005-08-12	ROYAL PHILIPS ELECTRONICS N.V. 2005	

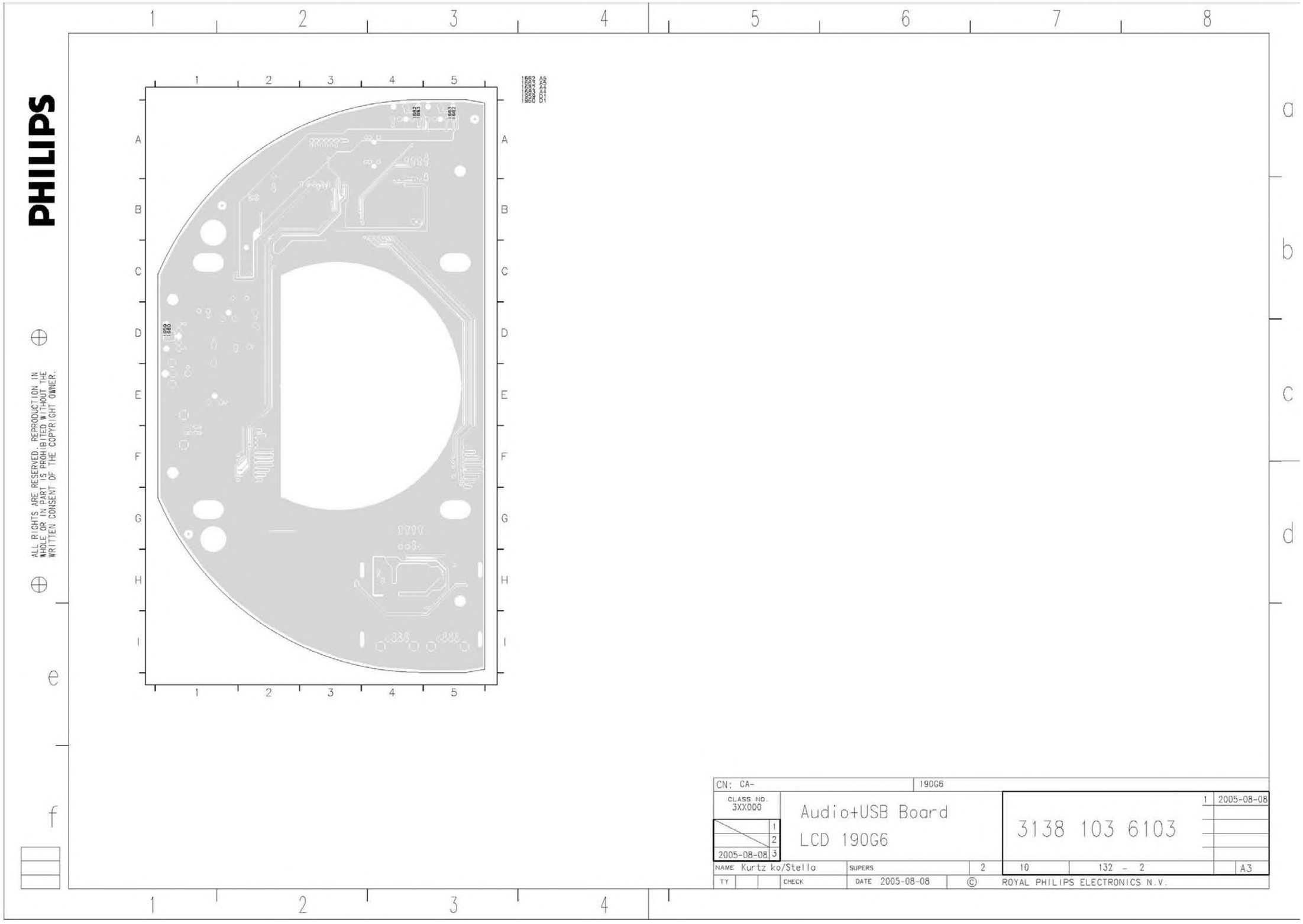
Go to cover page

Audio Board C.B.A.-1

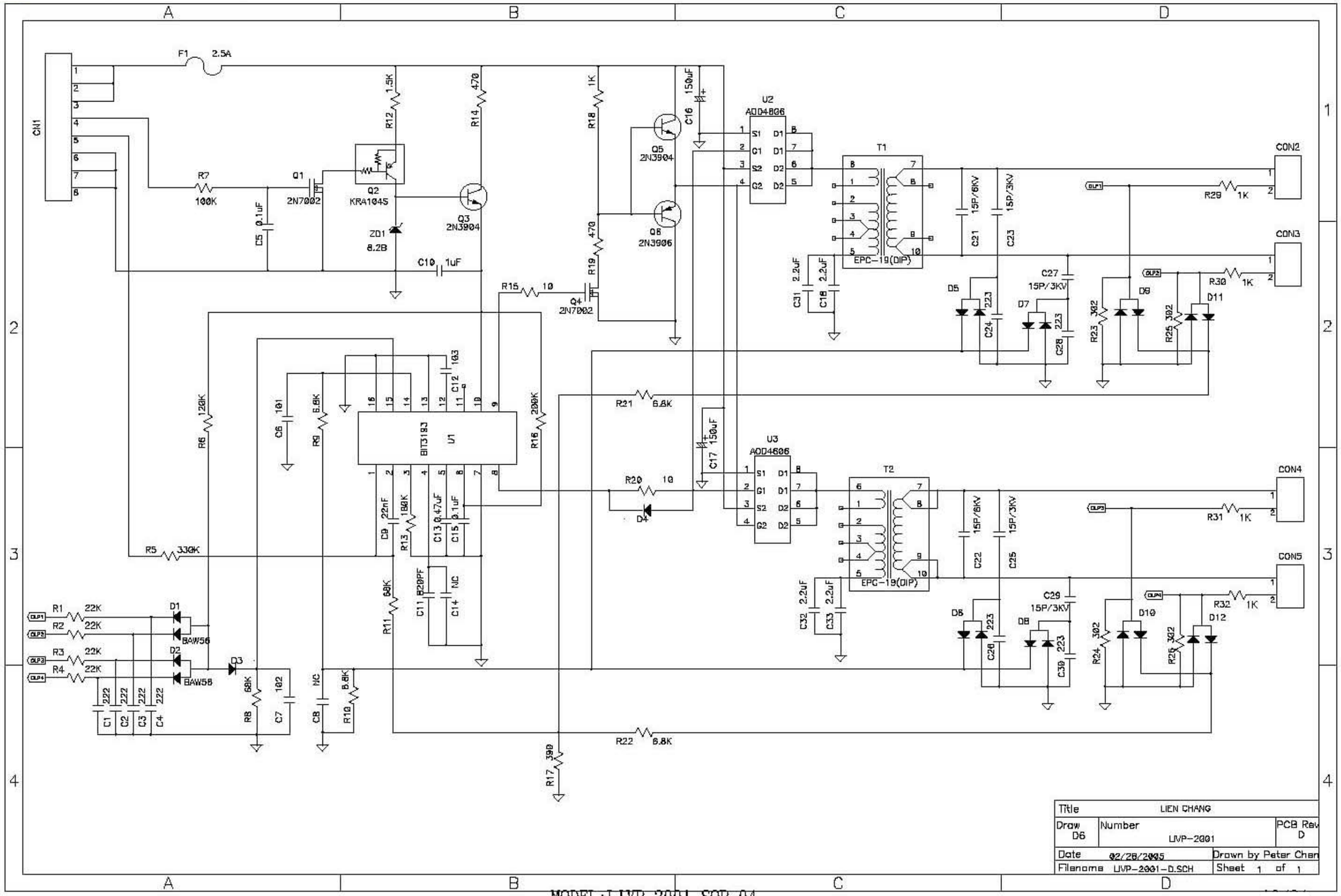


Go to cover page

Audio Board C.B.A.-2

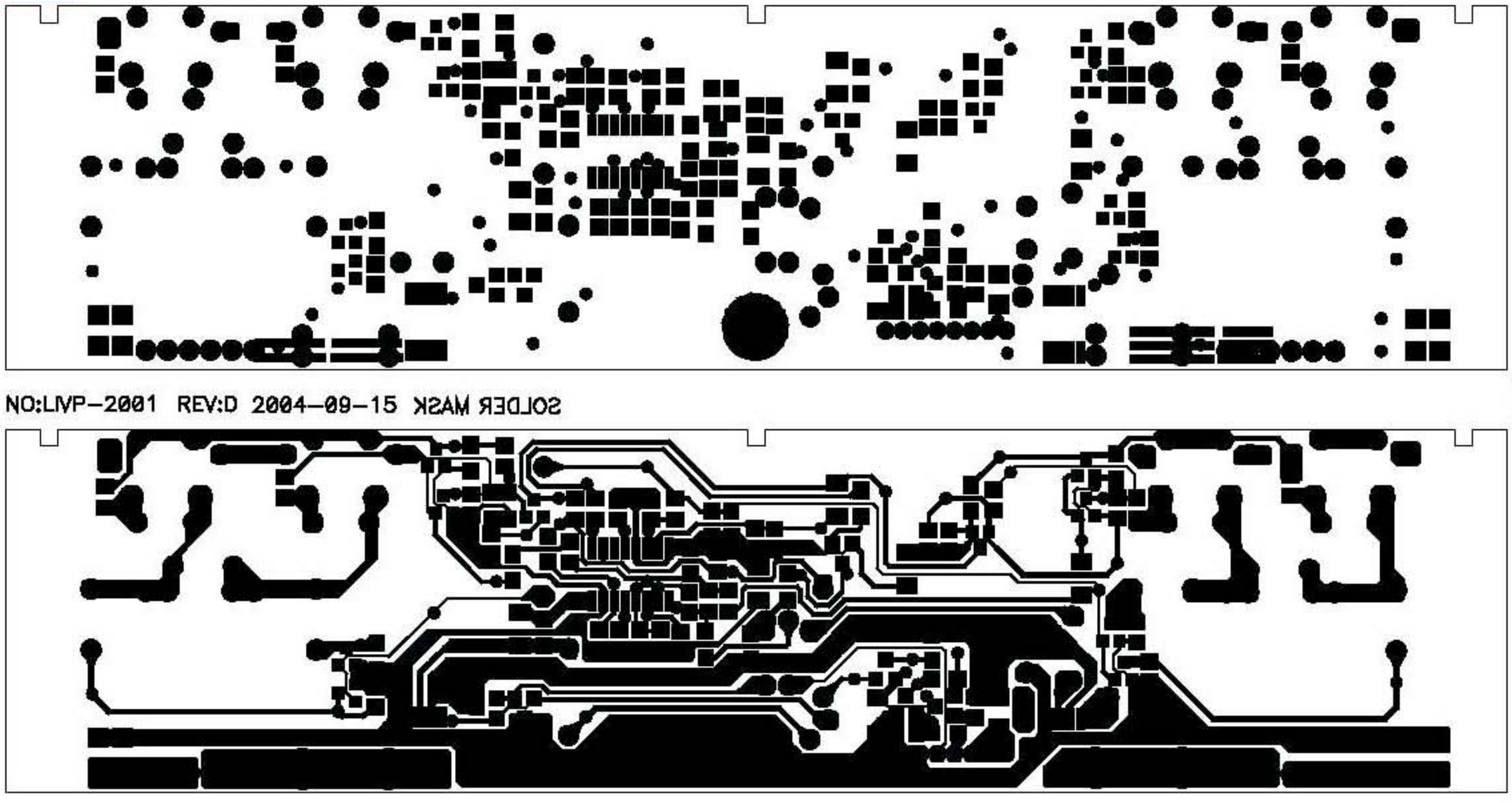


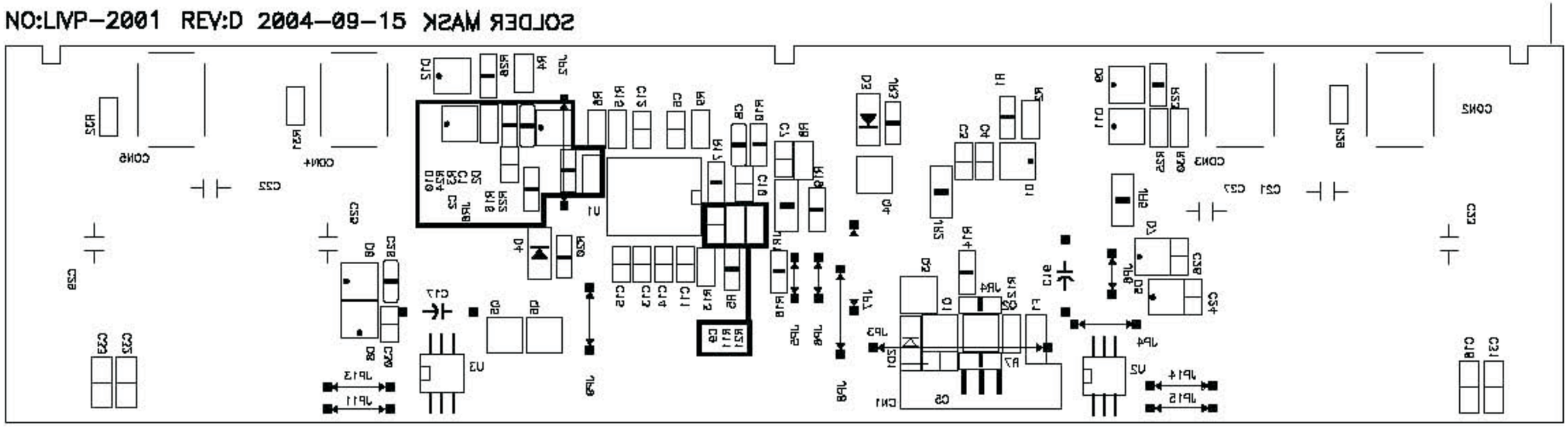
Power Diagram



MODEL:LIVP-2001_SOP_04

Power Board C.B.A.-1

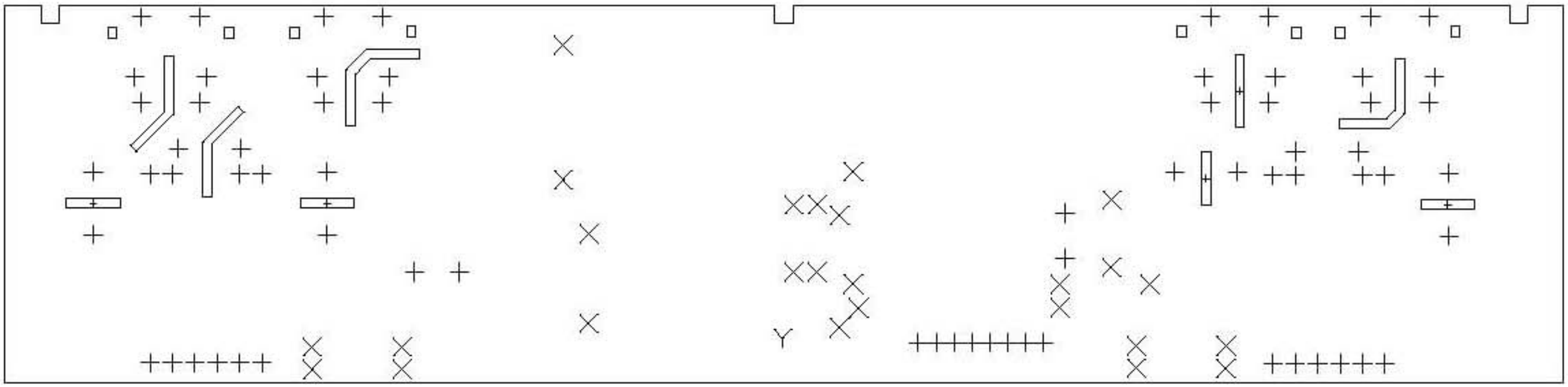



NO:LIVP-2001 REV:D 2004-09-15 SOLDER MASK

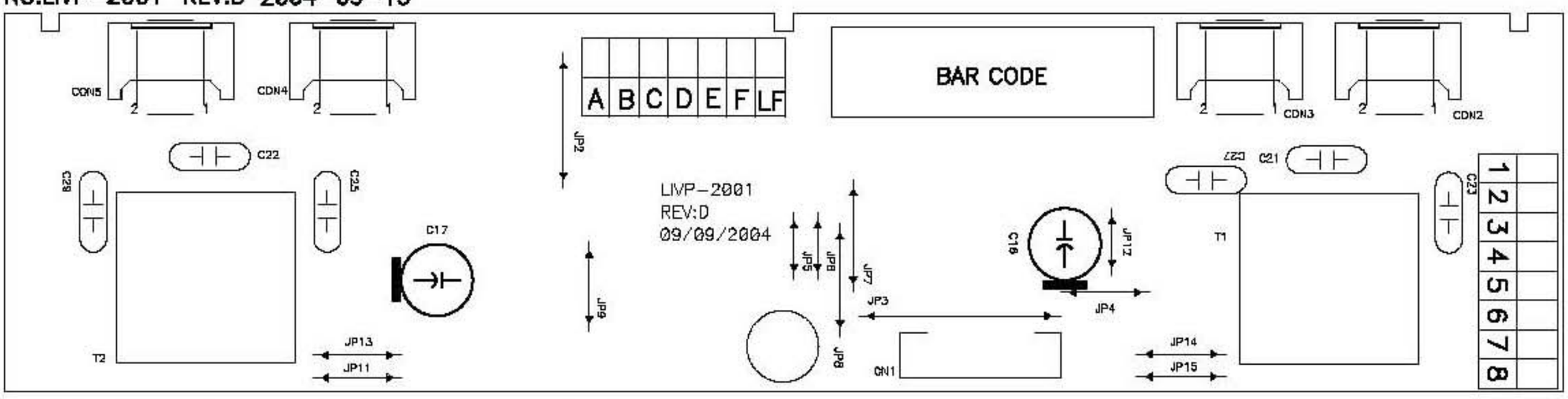
Go to cover page

Power Board C.B.A.-3

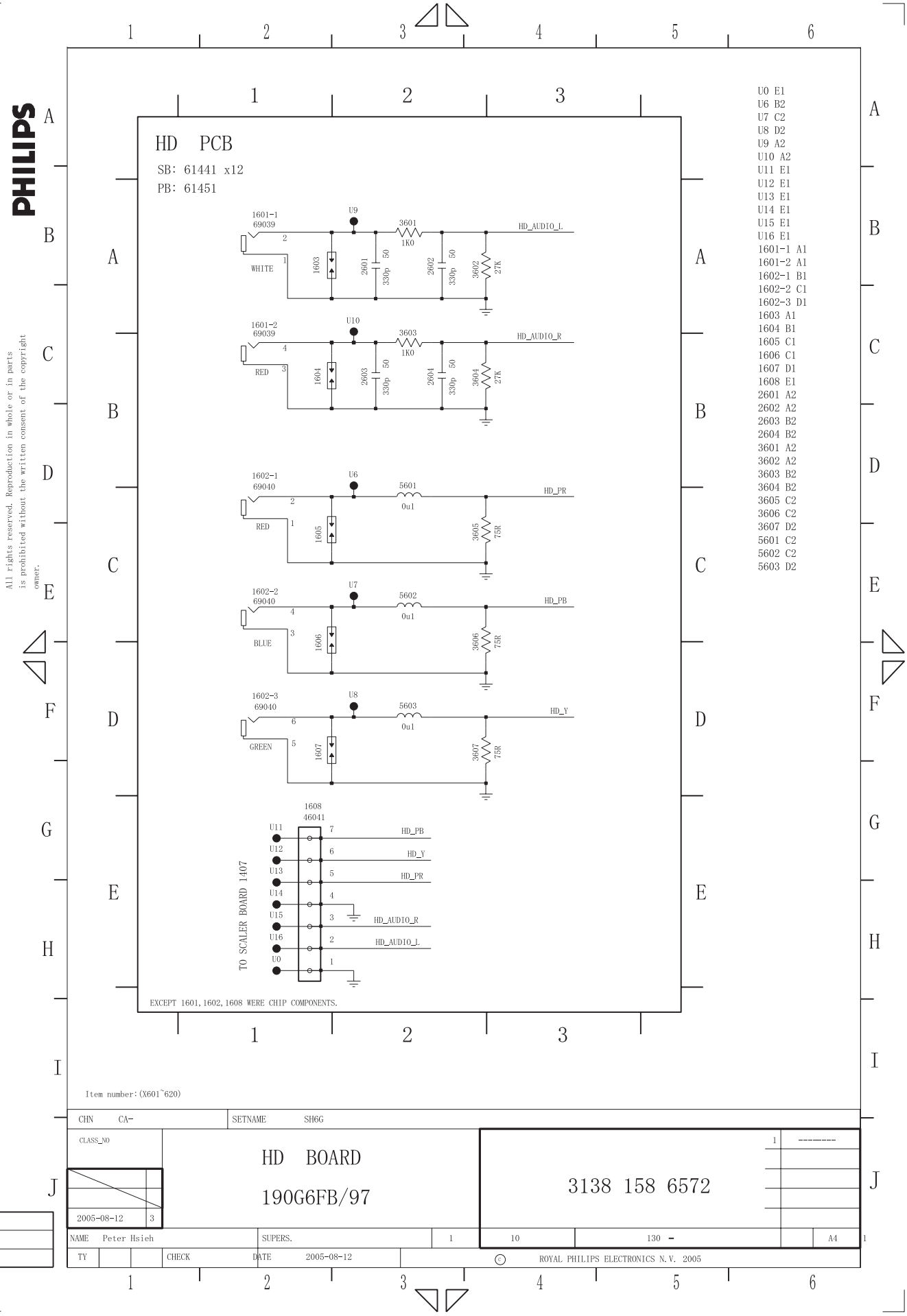
Drill Table			
Hole Dia (mm)	Symbol	Quantity	Plated
1.000	+	68	Yes
1.200	X	26	Yes
3.500	Y	1	Yes



NO:LIVP-2001 REV:D 2004-09-15



NO:LIVP-2001 REV:D 2004-09-15 SILK SCREEN COMPOMENT SIDE



HD Board C.B.A.-1

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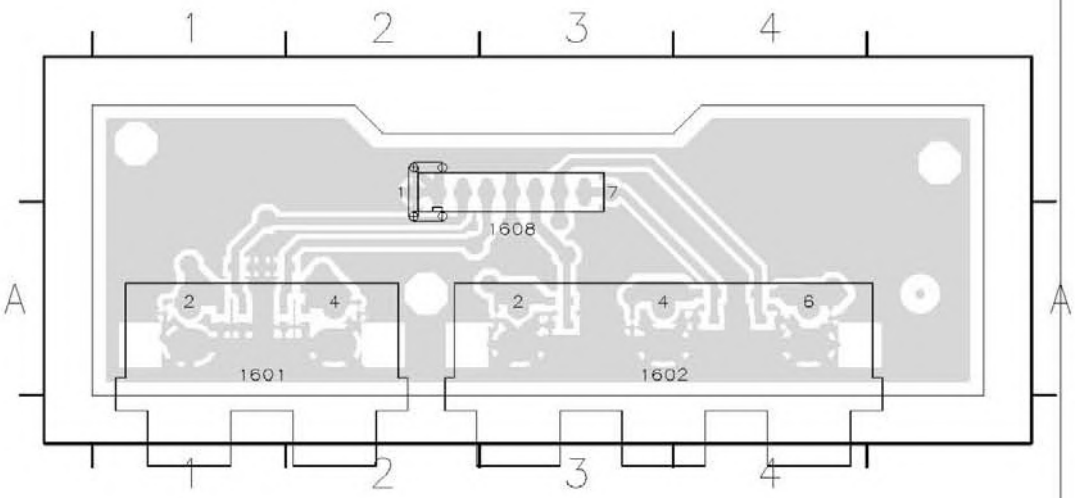
1601 A1 1602 A3 1608 A3



CN: ECO- | MMD FL1

CLASS NO. 3XX000

HD Board

FL1 26MF605W

3138 103 6144

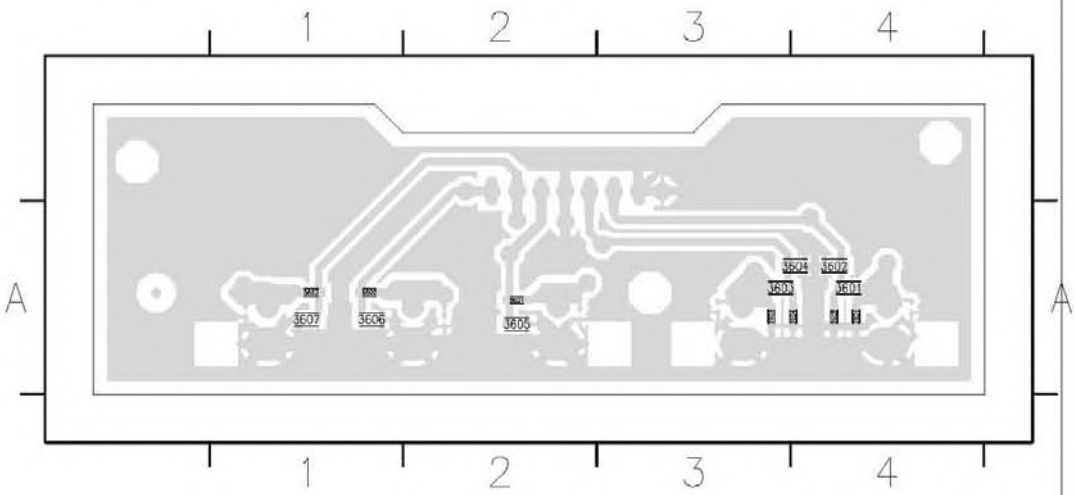
1 2004-12-10

2004-12-10 3

NAME Peter Hsieh/IF | SUPERS | 2 | 10 | 132 - 1 | A4

CHECK | DATE 2004-12-10 | © Philips Electronics N.V.

2601 A4
2602 A4
2603 A3
2604 A4
3601 A4
3602 A4
3603 A3
3604 A4
3605 A2
3606 A1
3607 A1
5601 A2
5602 A1
5603 A1



CN: ECO-

MMD FL1

CLASS NO. 3XX000

HD Board

FL1 26MF605W

3138 103 6144

1 2004-12-10

2004-12-10 3

NAME Peter Hsieh/IF | SUPERS | 2 | 10 | 132 - 2 | A4

CHECK | DATE 2004-12-10 | © Philips Electronics N.V.

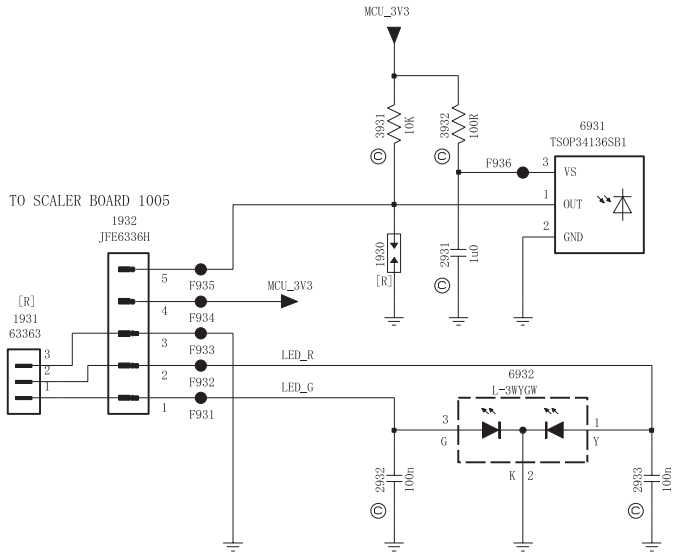
LED Diagram

Go to cover page

1930 C3
1931 C1
1932 C1
2931 C3
2932 D3
2933 D4
3931 B3
3932 B3
6931 B4
6932 C3
F931 C2
F932 C2
F933 C2
F934 C2
F935 C2
F936 B3

LED BOARD

SB : 61221 x 3
PB : 61021



Ref Des	NI
1930	spark_gap_002
1931	242202518895 63363

ITEM	AP	WE
1931	X	
1932	V	X
2931	V	X
3931	V	X
3932	V	X
6931	V	X

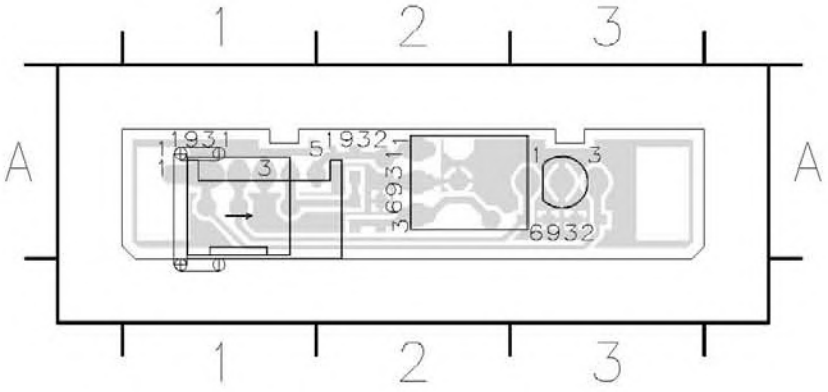
V

© STANDS FOR CHIP COMPONENTS.

CHN CA-	SETNAME SH6G		
CLASS_NO	LED BOARD 190G6FB/97	3138 158 6035	1 -------
2005-08-12 3			
NAME Sophia Hsia / Stella Fann	SUPERS. 1	10	130 - 1 A4
TY CHECK	DATE 2005-08-12	© ROYAL PHILIPS ELECTRONICS N.V. 2005	

PHILIPS

1931 A1 1932 A2 6931 A2 6932 A3



CN: CA-	190G6		
CLASS NO. 3XX000	LED Board LCD 190G6	3138 103 6122	1 2005-08-08
2005-08-08 3			
NAME Sophia/Stella	SUPERS	2	10 132 - 1 A4
TY CHECK	DATE 2005-08-08	© ROYAL PHILIPS ELECTRONICS N.V.	

LED Board C.B.A.-2

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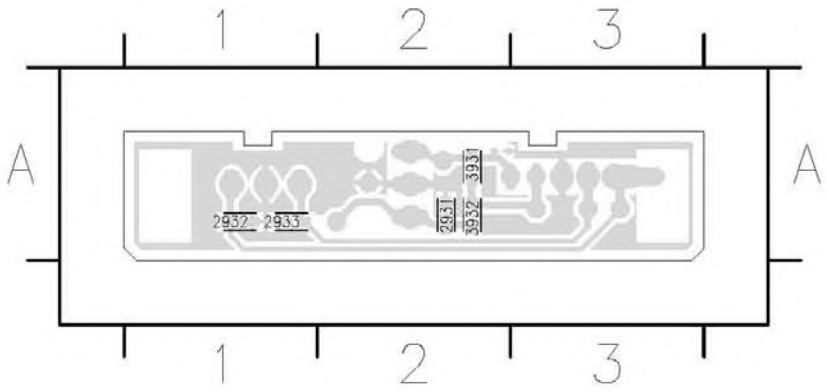
PHILIPS

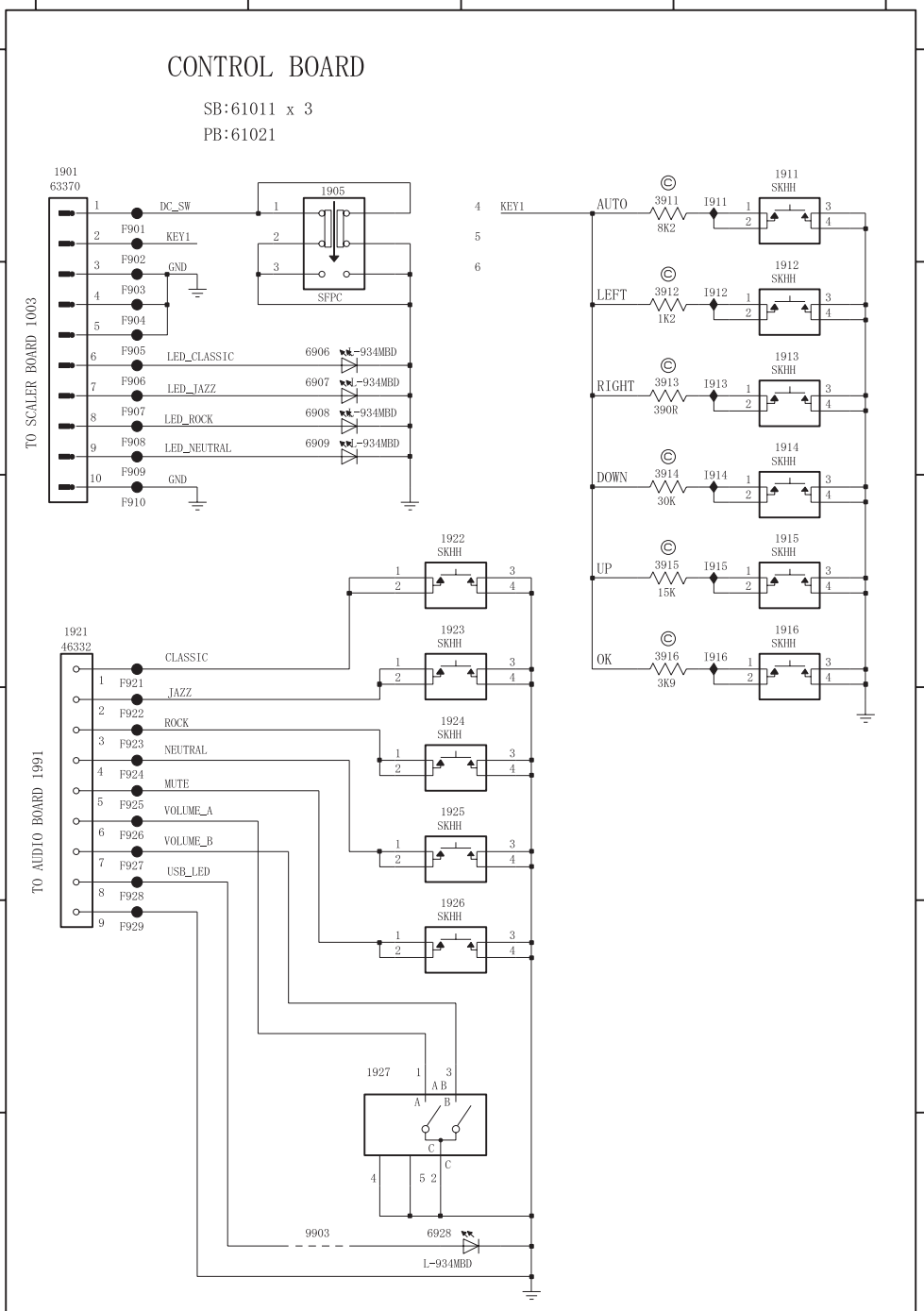
2931 A2
2932 A1
2933 A1
3931 A2
3932 A2



CN: CA-		190G6					
CLASS NO. 3XX000	LED Board LCD 190G6			3138 103 6122		1	2005-08-08
2005-08-08							
NAME Sophia/Stella	SUPERS	2	10	132 - 2			A4
TY	CHECK	DATE 2005-08-08	©	ROYAL PHILIPS ELECTRONICS N.V.			

Control Diagram

Go to cover page

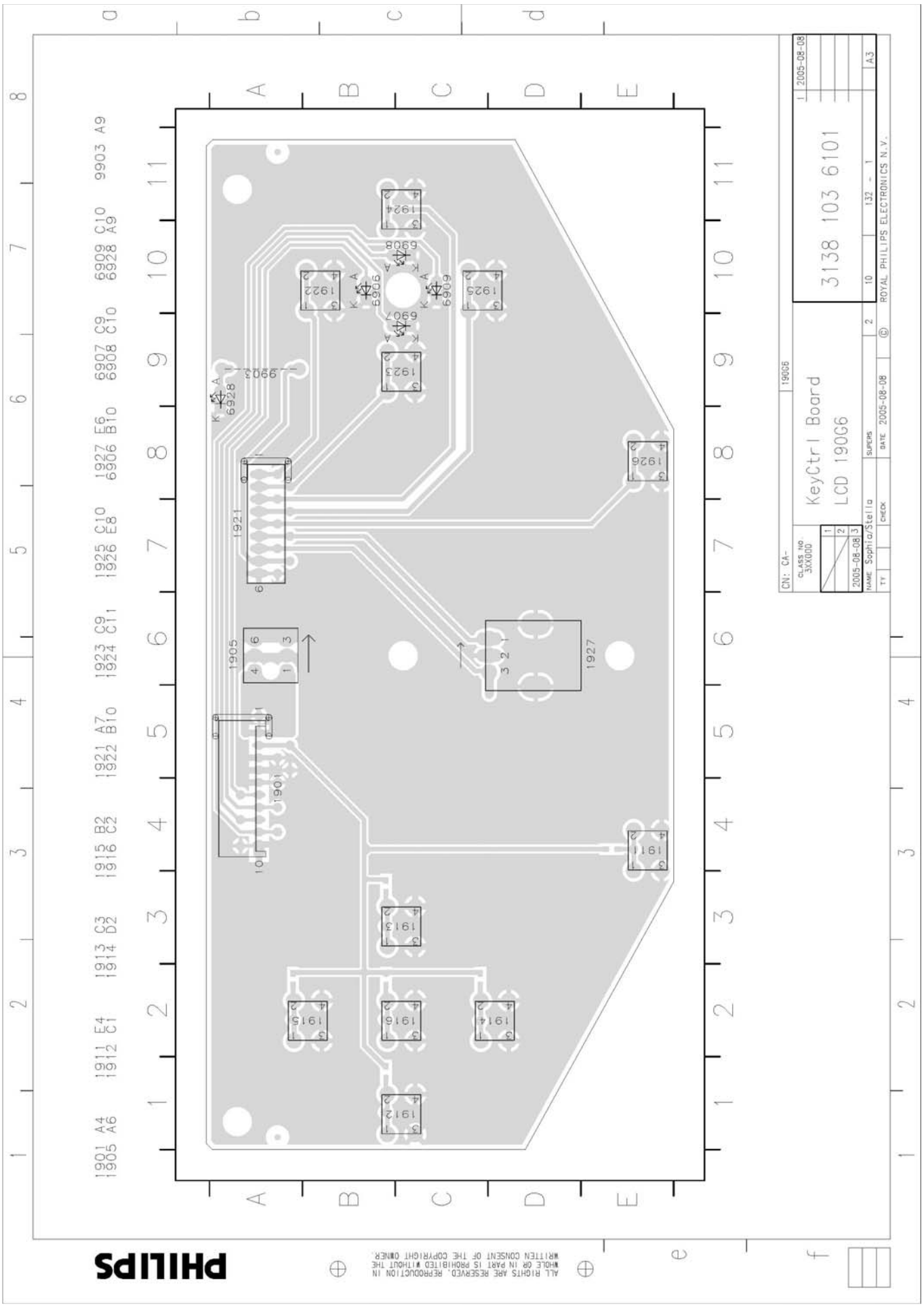


1901 A1
1905 A2
1911 A4
1912 A4
1913 B4
1914 B4
1915 C4
1916 C4
1921 C1
1922 C3
1923 C3
1924 D3
1925 D3
1926 E3
1927 F2
3911 A3
3912 B3
3913 B3
3914 C3
3915 C3
3916 C3
6906 B2
6907 B2
6908 B2
6909 B2
6928 F2
9903 F2
F901 A1
F902 A1
F903 B1
F904 B1
F905 B1
F906 B1
F907 B1
F908 B1
F909 B1
F910 C1
F921 C1
F922 D1
F923 D1
F924 D1
F925 D1
F926 D1
F927 D1
F928 D1
F929 D1
I911 A4
I912 B4
I913 B4
I914 C4
I915 C4
I916 C4

CHN CA-	SETNAME SH6G		
CLASS_NO	CONTROL BOARD 190G6FB/97	3138 158 6057	
2005-08-12 3			
NAME Sophia Hsia/Stella Fann	SUPERS.	1	10	130 -	A4
TY	CHECK	DATE 2005-08-12	

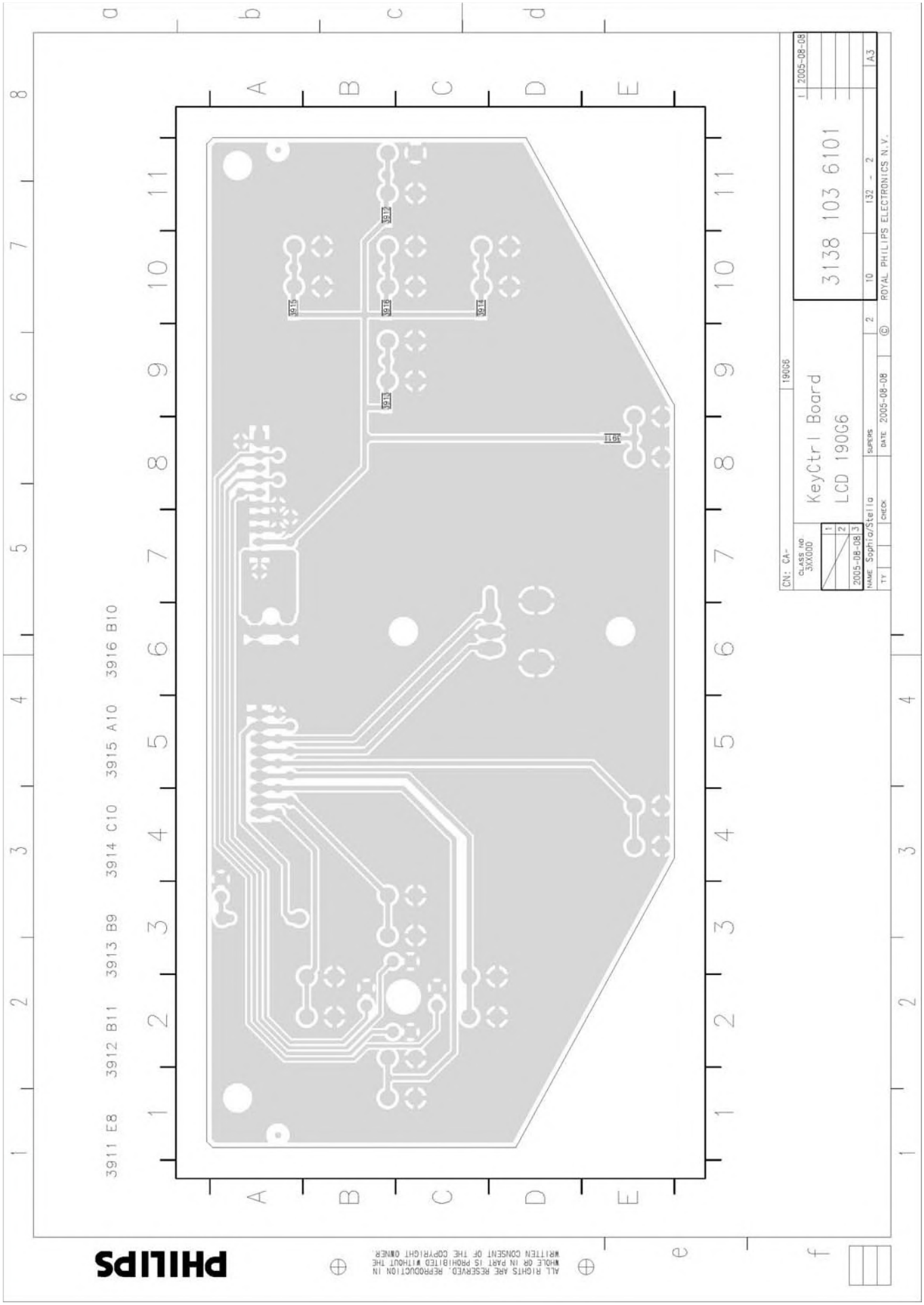
Control Board C.B.A.-1

Go to cover page



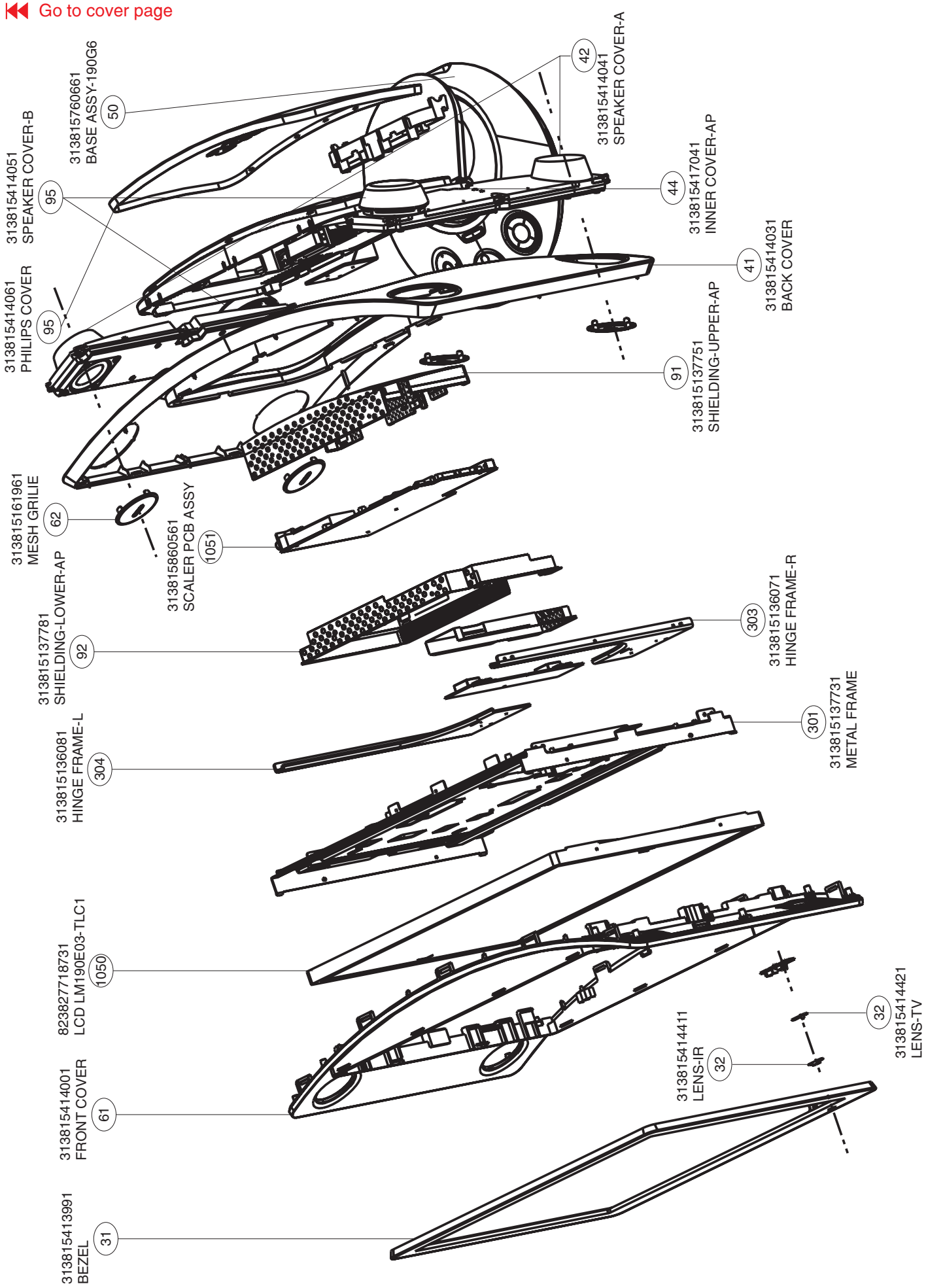
Control Board C.B.A.-2

Go to cover page



Exploded View

Go to cover page



Model: 190G6FB/97(LPL) 12NC: 8639 000 16448

Mechanical Parts

30	313815760671	FRONT BEZEL ASSY
31	313815413991	BEZEL
32	313815414421	LENS-TV
33	313815414411	LENS-IR
40	313815760681	BACK COVER ASSY
41	313815414031	BACK COVER
42	313815414041	SPEAKER COVER-A
43	313815414051	SPEAKER COVER-B
44	313815417041	INNER COVER-AP
50	313815760661	BASE ASSY-190G6
52	313815414021	HINGE COVER
60	313815760691	FRONT COVER ASSY
61	313815414001	FRONT COVER
62	313815161961	MESH GRILIE
91	313815137751	SHIELDING-UPPER-AP
92	313815137781	SHIELDING-LOWER-AP
95	313815414061	PHILIPS COVER
102	313810440571	HOUSING COVER
301	313815137731	METAL FRAME
303	313815136071	HINGE FRAME-R
304	313815136081	HINGE FRAME-L
1052	313815865641	BASE ASSY(190G6)
1057	313815865651	FRAME+WIRE ASSY

Packing Parts

450	313815641111	CARTON
451	313815641071	CUSHION-T
452	313815641081	CUSHION-B
453	313810645302	P.E. BAG
490	313815682951	PACKING ASSY-CHINA

Accessory

602	313811709101	E-D.F.U.
1055	313819872311	AC/DC ADAPTOR 16V 63W
1056	313819876451	CBLE-130 30/200/30-012 AWG28
1058	313819876501	CBLE-018 8/130/8-018 AWG28
1059	313818875051	SPEAKER CABLE(BLACK)
1060	313819871451	CORD SUB-D 15/1M8/SUB-D 15 BK
1061	313818871672	MAINSCORD UK 10A 1M8 DET BK
1063	313819872531	CORD USB A/1M8/USB B BK
1064	313818879281	CORD DVI 18+1/1M8/18+1 DVI BK

miscellanea

126	313815568561	RATING LABEL
291	313815568571	LABEL-CPU-AP
295	313815568581	LABEL-EEPROM-AP
615	313811709051	HEX CODE OF F/W (NO MATL REQ)
1001	242202518824	CON V 11P M 2.00 63391
1002	242202518821	CON V 8P M 2.00 63388
1003	242202518823	CON V 10P M 2.00 63390
1005	242202518817	CON V 5P M 2.00 63385
1031	242202518948	CON V 5P M 2.50 64835
1032	242202518947	CON V 4P M 2.50 64834
1033	242254301508	RES XTL SM 11M059 20P SMD-49
1067	313819875831	PSU OPENFR INVBL4 (LIVP-2001)
1069	313923811991	PROD ASSY RC1683803/01 PKD
1070	313818876601	CON ACC ADP V 01P M 0.00/PAL
1071	823827718771	PSP BOX 8R 5W-L
1072	823827718781	PSP BOX 8R 5W-R
1101	242203300521	SOC DVI H 24P F 1.91DVI-D
1102	242202518432	SOC SUBD H 15P F SBFR
1201	243854300086	RES XTL SM 14M318 18P HC49/S
1202	242202505572	CON H 30P M 1.25 SM 60952
1401	242202605452	SOC CINCH H 3P F 1L3 YEWHRD
1405	243803100431	SOC MDIN H 4P F 69015
1406	242202605774	SOC PHONE H 1P F 3.5 ST GN
1407	242202518819	CON V 7P M 2.00 63387
1501	313914722641	FRONTEND FQ1216ME/I H-5
1551	243854300089	RES XTL SM 24M576 16P HC49/S
1601	242202605733	SOC CINCH H 2P F 1L2 WHRD
1602	242202605453	SOC CINCH H 3P F 1L3 RDBUGR
1608	313819874751	CBLE-017 7/50/7-917 AWG28
1611	243854300085	RES XTL SM 24MHZ 20P SMD-49
1625	242202518876	SOC USB H 4P F 2.5 5411
1631	242202518875	SOC USB H 4P F 2.0 5401
1635	242202518875	SOC USB H 4P F 2.0 5401
1641	242202518819	CON V 7P M 2.00 63387
1651	243854300079	RES XTL SM 12MHZ 32P SMD-49
1661	242202605796	SOC PHONE H 1P F 3.5 ST BK
1681	242202605797	SOC PHONE H 1P F 3.5 ST PK
1701	243854300079	RES XTL SM 12MHZ 32P SMD-49
1801	242202518819	CON V 7P M 2.00 63387
1851	242254301372	RES XTL SM 18M432 16P HC49/S
1901	313818875501	CON BM H 10P M 2.0 63370
1905	243812800224	SWI PUSH 2P 0.2A 20V SFPC12
1911	242212803007	SWI TACT 1P 1POS 12V V 5MM
1912	242212803007	SWI TACT 1P 1POS 12V V 5MM
1913	242212803007	SWI TACT 1P 1POS 12V V 5MM
1914	242212803007	SWI TACT 1P 1POS 12V V 5MM
1915	242212803007	SWI TACT 1P 1POS 12V V 5MM
1916	242212803007	SWI TACT 1P 1POS 12V V 5MM
1921	313819876011	CBLE-019 9/120/9-529 AWG28
1922	242212803007	SWI TACT 1P 1POS 12V V 5MM
1923	242212803007	SWI TACT 1P 1POS 12V V 5MM
1924	242212803007	SWI TACT 1P 1POS 12V V 5MM
1925	242212803007	SWI TACT 1P 1POS 12V V 5MM
1926	242212803007	SWI TACT 1P 1POS 12V V 5MM
1927	242212916327	ROT ENCODER 20P DC11G2010*
1951	242202518824	CON V 11P M 2.00 63391
1952	242208611053	FUSE SM F 7A 125V UL
1961	242202605799	SOC PHONE H 1P F 3.5 ST WH
1971	242202605309	SOC SUPP H 1P M DC 2.5MM
1991	242202518949	CON H 9P M 2.00 63369
4444	313810610483	CD ROM - SERVICE MANUAL
4444	313810610484	SERVICE MANUAL
8061	313819876461	CBLE-017 7/310/7-076 AWG24
8062	313819876541	CBLE-020 10/520/10-080 AWG26
8063	313819876551	CBLE-021 11/510/11-081 AWG26
8064	313819876511	CBLE-012 2/250/2-017 AWG24
8065	313819876521	CBLE-013 3/250/3-078 AWG24
8066	313819876531	CBLE-015 5/320/5-015 AWG28
8071	313819876471	CBLE-077 7/340/7-017 AWG24
8072	313819876481	CBLE-030 10/290/10-020 AWG26
8073	313819876491	CBLE-031 11/250/11-021 AWG26
8801	242202518814	CON V 2P M 2.00 63382
8802	242202518815	CON V 3P M 2.00 63383

LCD Panel

1050	823827718731	LCD LM190E03-TLC1

PCB Assy

1051	313815860561	SCALER PCB ASSY
1053	313815860571	CONTROL PCB ASSY
1054	313815860351	LED ASSY
1065	313815860581	AUDIO+USB ASSY
1066	313815865721	HD PCB ASSY
1068	823827718801	SUBWOOFER ASSY 20W(SUB G6/UK)

PCB Assy

1051	313815860561	SCALER PCB ASSY

2001	202203100221	ELCAP KM 25V S 470U PM20
2002	223891015649	CER2 0805 X7R 25V 100N PM10
2003	223886715339	CER1 0603 NP0 50V 33P PM5
2004	223886715339	CER1 0603 NP0 50V 33P PM5
2005	202203100221	ELCAP KM 25V S 470U PM20
2006	223891015649	CER2 0805 X7R 25V 100N PM10
2007	223891015649	CER2 0805 X7R 25V 100N PM10
2008	203803513313	ELCAP RGA 25V S 100U PM20
2010	223891015649	CER2 0805 X7R 25V 100N PM10
2011	223891015649	CER2 0805 X7R 25V 100N PM10
2012	202203100206	ELCAP SM HV 25V 47U PM20
2013	222224119876	CER2 1206 Y5V 10V 10U P8020
2015	223886715339	CER1 0603 NP0 50V 33P PM5
2016	223886715339	CER1 0603 NP0 50V 33P PM5
2018	223891015649	CER2 0805 X7R 25V 100N PM10
2019	223891015649	CER2 0805 X7R 25V 100N PM10
2021	223891015649	CER2 0805 X7R 25V 100N PM10
2022	223891015649	CER2 0805 X7R 25V 100N PM10
2023	223891015649	CER2 0805 X7R 25V 100N PM10
2024	223891015649	CER2 0805 X7R 25V 100N PM10
2025	223891015649	CER2 0805 X7R 25V 100N PM10
2026	202203100195	ELCAP SM HV 16V 47U PM20
2027	223891015649	CER2 0805 X7R 25V 100N PM10
2028	223891015649	CER2 0805 X7R 25V 100N PM10
2029	223891015649	CER2 0805 X7R 25V 100N PM10
2030	223886715339	CER1 0603 NP0 50V 33P PM5
2051	223878615649	CER2 0603 X7R 16V 100N PM10
2052	202203100195	ELCAP SM HV 16V 47U PM20
2053	223886715229	CER1 0603 NP0 50V 22P PM5
2054	222224119876	CER2 1206 Y5V 10V 10U P8020
2055	223886715229	CER1 0603 NP0 50V 22P PM5
2057	223824619863	CER2 0603 Y5V 10V 1U P8020
2058	223886715109	CER1 0603 NP0 50V 10P PM5
2059	223878615649	CER2 0603 X7R 16V 100N PM10
2102	223878615649	CER2 0603 X7R 16V 100N PM10
2103	223878615649	CER2 0603 X7R 16V 100N PM10
2104	223886715339	CER1 0603 NP0 50V 33P PM5
2105	223886715339	CER1 0603 NP0 50V 33P PM5
2106	223878615649	CER2 0603 X7R 16V 100N PM10
2107	223878615649	CER2 0603 X7R 16V 100N PM10
2108	223886715339	CER1 0603 NP0 50V 33P PM5
2109	223886715339	CER1 0603 NP0 50V 33P PM5
2110	223886715331	CER1 0603 NP0 50V 330P PM5
2111	223886715339	CER1 0603 NP0 50V 33P PM5
2115	223878615649	CER2 0603 X7R 16V 100N PM10
2201	222224119876	CER2 1206 Y5V 10V 10U P8020
2202	223878615649	CER2 0603 X7R 16V 100N PM10
2203	222224119876	CER2 1206 Y5V 10V 10U P8020
2204	223878615649	CER2 0603 X7R 16V 100N PM10
2205	223878615649	CER2 0603 X7R 16V 100N PM10
2206	222224119876	CER2 1206 Y5V 10V 10U P8020
2207	223878615649	CER2 0603 X7R 16V 100N PM10
2208	223878615649	CER2 0603 X7R 16V 100N PM10
2209	223878615649	CER2 0603 X7R 16V 100N PM10
2210	222224119876	CER2 1206 Y5V 10V 10U P8020
2211	223878615649	CER2 0603 X7R 16V 100N PM10
2212	223878615649	CER2 0603 X7R 16V 100N PM10
2213	223878615649	CER2 0603 X7R 16V 100N PM10
2214	223878615649	CER2 0603 X7R 16V 100N PM10
2215	223878615649	CER2 0603 X7R 16V 100N PM10
2216	223878615649	CER2 0603 X7R 16V 100N PM10
2217	223878615649	CER2 0603 X7R 16V 100N PM10
2218	223878615649	CER2 0603 X7R 16V 100N PM10
2219	222224119876	CER2 1206 Y5V 10V 10U P8020
2220	223878615649	CER2 0603 X7R 16V 100N PM10
2221	223878615649	CER2 0603 X7R 16V 100N PM10
2222	223878615649	CER2 0603 X7R 16V 100N PM10
2223	223878615649	CER2 0603 X7R 16V 100N PM10
2224	223878615645	CER2 0603 X7R 16V 47N PM10
2225	223878615645	CER2 0603 X7R 16V 47N PM10
2226	223878615645	CER2 0603 X7R 16V 47N PM10
2227	223878615649	CER2 0603 X7R 16V 100N PM10
2230	223878615645	CER2 0603 X7R 16V 47N PM10
2231	223878615645	CER2 0603 X7R 16V 47N PM10
2232	223858615623	CER2 0603 X7R 50V 1N PM10
2233	223878615645	CER2 0603 X7R 16V 47N PM10
2234	223878615645	CER2 0603 X7R 16V 47N PM10
2235	223878615645	CER2 0603 X7R 16V 47N PM10
2236	223858615623	CER2 0603 X7R 50V 1N PM10
2237	223878615645	CER2 0603 X7R 16V 47N PM10
2238	223878615649	CER2 0603 X7R 16V 100N PM10
2239	223858615636	CER2 0603 X7R 50V 10N PM10
2240	223886715229	CER1 0603 NP0 50V 22P PM5
2241	223886715229	CER1 0603 NP0 50V 22P PM5
2242	223878615649	CER2 0603 X7R 16V 100N PM10
2244	222224119876	CER2 1206 Y5V 10V 10U P8020
2245	223878615649	CER2 0603 X7R 16V 100N PM10
2247	223878615649	CER2 0603 X7R 16V 100N PM10
2248	223878615649	CER2 0603 X7R 16V 100N PM10
2249	223878615649	CER2 0603 X7R 16V 100N PM10
2250	223878615649	CER2 0603 X7R 16V 100N PM10
2251	223878615649	CER2 0603 X7R 16V 100N PM10
2252	223878615649	CER2 0603 X7R 16V 100N PM10
2253	223878615649	CER2 0603 X7R 16V 100N PM10

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2254	202203100195	ELCAP SM HV 16V 47U PM20
2255	202203100195	ELCAP SM HV 16V 47U PM20
2256	202203100195	ELCAP SM HV 16V 47U PM20
2257	223886715339	CER1 0603 NP0 50V 33P PM5
2258	223886715339	CER1 0603 NP0 50V 33P PM5
2259	223886715568	CER1 0603 NP0 50V 5P6 PM0P5
2260	223878615649	CER2 0603 X7R 16V 100N PM10
2261	223878615649	CER2 0603 X7R 16V 100N PM10
2262	222224119876	CER2 1206 Y5V 10V 10U P8020
2263	223878615649	CER2 0603 X7R 16V 100N PM10
2264	223878615649	CER2 0603 X7R 16V 100N PM10
2265	223878615649	CER2 0603 X7R 16V 100N PM10
2301	223878615649	CER2 0603 X7R 16V 100N PM10
2302	223878615649	CER2 0603 X7R 16V 100N PM10
2303	222224119876	CER2 1206 Y5V 10V 10U P8020
2304	223878615649	CER2 0603 X7R 16V 100N PM10
2305	223878615649	CER2 0603 X7R 16V 100N PM10
2306	223878615649	CER2 0603 X7R 16V 100N PM10
2307	223878615649	CER2 0603 X7R 16V 100N PM10
2308	222224119876	CER2 1206 Y5V 10V 10U P8020
2309	223878615649	CER2 0603 X7R 16V 100N PM10
2310	223878615649	CER2 0603 X7R 16V 100N PM10
2311	223878615649	CER2 0603 X7R 16V 100N PM10
2312	223878615649	CER2 0603 X7R 16V 100N PM10
2313	223878615649	CER2 0603 X7R 16V 100N PM10
2314	223878615649	CER2 0603 X7R 16V 100N PM10
2401	223886715101	CER1 0603 NP0 50V 100P PM5
2402	223886715229	CER1 0603 NP0 50V 22P PM5
2406	223886715101	CER1 0603 NP0 50V 100P PM5
2407	223886715229	CER1 0603 NP0 50V 22P PM5
2428	223886715229	CER1 0603 NP0 50V 22P PM5
2429	223886715101	CER1 0603 NP0 50V 100P PM5
2431	223886715331	CER1 0603 NP0 50V 330P PM5
2432	223886715331	CER1 0603 NP0 50V 330P PM5
2433	223886715331	CER1 0603 NP0 50V 330P PM5
2434	223886715331	CER1 0603 NP0 50V 330P PM5
2501	222291219876	CER2 1210 Y5V 25V 10U P8020
2502	223878615649	CER2 0603 X7R 16V 100N PM10
2504	223886715101	CER1 0603 NP0 50V 100P PM5
2505	223886715479	CER1 0603 NP0 50V 47P PM5
2506	223878615649	CER2 0603 X7R 16V 100N PM10
2509	202203100074	ELCAP KM 16V S 1000U PM20
2551	223878615649	CER2 0603 X7R 16V 100N PM10
2552	223878615649	CER2 0603 X7R 16V 100N PM10
2553	223878615649	CER2 0603 X7R 16V 100N PM10
2554	223878615649	CER2 0603 X7R 16V 100N PM10
2555	223878615649	CER2 0603 X7R 16V 100N PM10
2556	223878615649	CER2 0603 X7R 16V 100N PM10
2557	223878615649	CER2 0603 X7R 16V 100N PM10
2558	223878615649	CER2 0603 X7R 16V 100N PM10
2559	222224119876	CER2 1206 Y5V 10V 10U P8020
2560	223878615649	CER2 0603 X7R 16V 100N PM10
2561	223878615649	CER2 0603 X7R 16V 100N PM10
2562	223878615649	CER2 0603 X7R 16V 100N PM10
2563	223878615649	CER2 0603 X7R 16V 100N PM10
2564	223878615649	CER2 0603 X7R 16V 100N PM10
2565	223878615649	CER2 0603 X7R 16V 100N PM10
2566	223858615641	CER2 0603 X7R 50V 22N PM10
2567	223858615641	CER2 0603 X7R 50V 22N PM10
2568	223858615641	CER2 0603 X7R 50V 22N PM10
2569	222224119876	CER2 1206 Y5V 10V 10U P8020
2570	223858615641	CER2 0603 X7R 50V 22N PM10
2571	223858615641	CER2 0603 X7R 50V 22N PM10
2572	223858615641	CER2 0603 X7R 50V 22N PM10
2573	223858615641	CER2 0603 X7R 50V 22N PM10
2574	223858615641	CER2 0603 X7R 50V 22N PM10
2575	223858615641	CER2 0603 X7R 50V 22N PM10
2576	202203100195	ELCAP SM HV 16V 47U PM20
2577	223858615641	CER2 0603 X7R 50V 22N PM10
2578	223858615641	CER2 0603 X7R 50V 22N PM10
2579	223858615623	CER2 0603 X7R 50V 1N PM10
2580	223858615641	CER2 0603 X7R 50V 22N PM10
2581	223858615641	CER2 0603 X7R 50V 22N PM10
2582	223858615641	CER2 0603 X7R 50V 22N PM10
2583	223878616641	CER2 0603 X7R 16V 22N PM10
2584	223886715101	CER1 0603 NP0 50V 100P PM5
2585	223886715279	CER1 0603 NP0 50V 27P PM5
2586	223886715279	CER1 0603 NP0 50V 27P PM5
2701	223878615649	CER2 0603 X7R 16V 100N PM10
2702	223878615649	CER2 0603 X7R 16V 100N PM10
2703	223878615649	CER2 0603 X7R 16V 100N PM10
2704	222224119876	CER2 1206 Y5V 10V 10U P8020
2705	223886715569	CER1 0603 NP0 50V 56P PM5
2706	223886715569	CER1 0603 NP0 50V 56P PM5
2707	223878615649	CER2 0603 X7R 16V 100N PM10
2708	223878615649	CER2 0603 X7R 16V 100N PM10
2709	223886715101	CER1 0603 NP0 50V 100P PM5
2710	223878615649	CER2 0603 X7R 16V 100N PM10
2801	223878619854	CER2 0603 Y5V 16V 220N P8020
2802	223878619854	CER2 0603 Y5V 16V 220N P8020
2803	223891119858	CER2 1206 Y5V 25V 470N P8020
2804	223886715101	CER1 0603 NP0 50V 100P PM5
2805	223886715101	CER1 0603 NP0 50V 100P PM5
2806	202203100173	ELCAP EB 25V S 470U PM20
2807	222291219876	CER2 1210 Y5V 25V 10U P8020
2808	223891015649	CER2 0805 X7R 25V 100N PM10
2809	223891015649	CER2 0805 X7R 25V 100N PM10
2810	223858615636	CER2 0603 X7R 50V 10N PM10
2811	223858615636	CER2 0603 X7R 50V 10N PM10
2812	202203100235	ELCAP EB 25V S 470U PM20
2813	222291019863	CER2 0805 Y5V 25V 1U P8020
2814	223824619863	CER2 0603 Y5V 10V 1U P8020
2815	223824619863	CER2 0603 Y5V 10V 1U P8020
2816	223824619863	CER2 0603 Y5V 10V 1U P8020
2817	223824619863	CER2 0603 Y5V 10V 1U P8020
2818	223891015649	CER2 0805 X7R 25V 100N PM10
2819	222291219876	CER2 1210 Y5V 25V 10U P8020
2820	223824619863	CER2 0603 Y5V 10V 1U P8020
2821	223891015649	CER2 0805 X7R 25V 100N PM10
2822	223886715221	CER1 0603 NP0 50V 220P PM5
2823	222291019863	CER2 0805 Y5V 25V 1U P8020
2824	223891015649	CER2 0805 X7R 25V 100N PM10
2825	223891015649	CER2 0805 X7R 25V 100N PM10
2826	223858615636	CER2 0603 X7R 50V 10N PM10
2827	223858615636	CER2 0603 X7R 50V 10N PM10
2828	222291219876	CER2 1210 Y5V 25V 10U P8020
2829	202203100173	ELCAP EB 25V S 470U PM20
2830	223886715101	CER1 0603 NP0 50V 100P PM5
2831	223886715101	CER1 0603 NP0 50V 100P PM5
2832	223891119858	CER2 1206 Y5V 25V 470N P8020
2833	223878619854	CER2 0603 Y5V 16V 220N P8020
2834	223878619854	CER2 0603 Y5V 16V 220N P8020
2851	222224119876	CER2 1206 Y5V 10V 10U P8020
2852	223878615649	CER2 0603 X7R 16V 100N PM10
2853	223878615649	CER2 0603 X7R 16V 100N PM10
2854	223878615649	CER2 0603 X7R 16V 100N PM10
2855	223878615649	CER2 0603 X7R 16V 100N PM10
2856	222224119876	CER2 1206 Y5V 10V 10U P8020
2857	222291019863	CER2 0805 Y5V 25V 1U P8020
2858	222291019863	CER2 0805 Y5V 25V 1U P8020
2859	223886715159	CER1 0603 NP0 50V 15P PM5
2860	223886715159	CER1 0603 NP0 50V 15P PM5
2861	223886715159	CER1 0603 NP0 50V 15P PM5
2862	223886715479	CER1 0603 NP0 50V 47P PM5
2863	223824619863	CER2 0603 Y5V 10V 1U P8020
2864	222224119876	CER2 1206 Y5V 10V 10U P8020
2865	223824619863	CER2 0603 Y5V 10V 1U P8020
2868	223858615632	CER2 0603 X7R 50V 4N7 PM10
2869	223858615632	CER2 0603 X7R 50V 4N7 PM10
2870	223858615632	CER2 0603 X7R 50V 4N7 PM10
2871	223858615632	CER2 0603 X7R 50V 4N7 PM10
2872	223824619863	CER2 0603 Y5V 10V 1U P8020
2873	223824619863	CER2 0603 Y5V 10V 1U P8020
2874	223824619863	CER2 0603 Y5V 10V 1U P8020
2875	223824619863	CER2 0603 Y5V 10V 1U P8020
2876	223824619863	CER2 0603 Y5V 10V 1U P8020
2877	223824619863	CER2 0603 Y5V 10V 1U P8020
2878	223824619863	CER2 0603 Y5V 10V 1U P8020
2879	223824619863	CER2 0603 Y5V 10V 1U P8020
2880	222224119876	CER2 1206 Y5V 10V 10U P8020
2881	223824615654	CER2 0603 X7R 10V 220N PM10
2882	222224119876	CER2 1206 Y5V 10V 10U P8020
2883	222224119876	CER2 1206 Y5V 10V 10U P8020
2884	223878615649	CER2 0603 X7R 16V 100N PM10
2885	222224119876	CER2 1206 Y5V 10V 10U P8020
2886	223824619863	CER2 0603 Y5V 10V 1U P8020
2887	223824619863	CER2 0603 Y5V 10V 1U P8020
2890	223878615649	CER2 0603 X7R 16V 100N PM10
2891	223824619863	CER2 0603 Y5V 10V 1U P8020
2892	223824619863	CER2 0603 Y5V 10V 1U P8020
2893	222291219876	CER2 1210 Y5V 25V 10U P8020
3002	232270260101	RST SM 0603 RC21 100R PM5
3003	232270260101	RST SM 0603 RC21 100R PM5
3004	232270260104	RST SM 0603 RC21 100K PM5
3005	212211805635	RST SM 0603 RC0603 10R PM5
3006	232270260101	RST SM 0603 RC21 100R PM5
3007	232270260101	RST SM 0603 RC21 100R PM5
3009	232270260104	RST SM 0603 RC21 100K PM5
3010	232270260101	RST SM 0603 RC21 100R PM5
3011	232270260101	RST SM 0603 RC21 100R PM5
3012	232270260104	RST SM 0603 RC21 100K PM5
3013	232270260101	RST SM 0603 RC21 100R PM5
3014	232270260101	RST SM 0603 RC21 100R PM5
3015	212211805669	RST SM 0603 RC0603 10K PM5
3016	232270260512	RST SM 0603 RC21 5K1 PM5
3017	232270260101	RST SM 0603 RC21 100R PM5
3018	232270260101	RST SM 0603 RC21 100R PM5
3019	232270260104	RST SM 0603 RC21 100K PM5
3021	232270260104	RST SM 0603 RC21 100K PM5
3022	232270260512	RST SM 0603 RC21 5K1 PM5
3025	212211805645	RST SM 0603 RC0603 150R PM5
3026	212211805645	RST SM 0603 RC0603 150R PM5
3029	212211805645	RST SM 0603 RC0603 150R PM5
3030	232270260512	RST SM 0603 RC21 5K1 PM5
3031	212211805645	RST SM 0603 RC0603 150R PM5
3032	232270260473	RST SM 0603 RC21 47K PM5
3036	232270260512	RST SM 0603 RC21 5K1 PM5
3039	212211805669	RST SM 0603 RC0603 10K PM5
3040	212211805645	RST SM 0603 RC0603 150R PM5
3041	212211805645	RST SM 0603 RC0603 150R PM5
3042	212211805669	RST SM 0603 RC0603 10K PM5
3043	232270260101	RST SM 0603 RC21 100R PM5
3045	232270260223	RST SM 0603 RC21 22K PM5
3046	212211805669	RST SM 0603 RC0603 10K PM5
3051	232270260105	RST SM 0603 RC21 1M PM5
3054	232270260104	RST SM 0603 RC21 100K PM5
3056	232270260101	RST SM 0603 RC21 100R PM5
3057	232270260101	RST SM 0603 RC21 100R PM5
3058	232270260472	RST SM 0603 RC21 4K7 PM5
3059	232270260332	RST SM 0603 RC21 3K3 PM5
3060	232270260332	RST SM 0603 RC21 3K3 PM5
3061	232270260332	RST SM 0603 RC21 3K3 PM5
3064	232270260223	RST SM 0603 RC21 22K PM5
3065	232270260222	RST SM 0603 RC21 2K2 PM5
3066	232270260472	RST SM 0603 RC21 4K7 PM5
3067	232270260332	RST SM 0603 RC21 3K3 PM5
3068	232270260332	RST SM 0603 RC21 3K3 PM5
3069	232270260332	RST SM 0603 RC21 3K3 PM5
3070	212211805635	RST SM 0603 RC0603 10R PM5
3071	232270260332	RST SM 0603 RC21 3K3 PM5
3073	232270260101	RST SM 0603 RC21 100R PM5
3074	232270260101	RST SM 0603 RC21 100R PM5
3075	232270260332	RST SM 0603 RC21 3K3 PM5
3076	232270260332	RST SM 0603 RC21 3K3 PM5
3077	232270260332	RST SM 0603 RC21 3K3 PM5
3104	232270260101	RST SM 0603 RC21 100R PM5
3105	232270260101	RST SM 0603 RC21 100R PM5
3106	212211805669	RST SM 0603 RC0603 10K PM5
3107	212211805669	RST SM 0603 RC0603 10K PM5
3108	212211805669	RST SM 0603 RC0603 10K PM5
3110	232270260101	RST SM 0603 RC21 100R PM5
3111	232270260101	RST SM 0603 RC21 100R PM5
3114	212211805669	RST SM 0603 RC0603 10K PM5
3115	212211805669	RST SM 0603 RC0603 10K PM5
3116	212211805669	RST SM 0603 RC0603 10K PM5
3118	212211805631	RST SM 0603 JUMP. MAX 0R05
3121	212211805637	RST SM 0603 RC0603 22R PM5
3122	212211805637	RST SM 0603 RC0603 22R PM5
3123	212211805964	RST SM 0603 RC0603 75R PM1
3124	212211805964	RST SM 0603 RC0603 75R PM1
3125	212211805964	RST SM 0603 RC0603 75R PM1
3126	232270260222	RST SM 0603 RC21 2K2 PM5
3127	232270260222	RST SM 0603 RC21 2K2 PM5

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3128	212211805669	RST SM 0603 RC0603 10K PM5
3129	232270260102	RST SM 0603 RC21 1K PM5
3130	232270260689	RST SM 0603 RC21 68R PM5
3131	232270260689	RST SM 0603 RC21 68R PM5
3132	232270260689	RST SM 0603 RC21 68R PM5
3212	232270462209	RST SM 0603 RC22H 22R PM1
3213	232270462209	RST SM 0603 RC22H 22R PM1
3214	232270462209	RST SM 0603 RC22H 22R PM1
3215	232270260101	RST SM 0603 RC21 100R PM5
3216	232270260101	RST SM 0603 RC21 100R PM5
3219	212211805651	RST SM 0603 RC0603 390R PM5
3220	232270260101	RST SM 0603 RC21 100R PM5
3222	232270260102	RST SM 0603 RC21 1K PM5
3230	212211805669	RST SM 0603 RC0603 10K PM5
3232	235003510101	RST NETW SM ARV24 4X100R PM5
3233	235003510101	RST NETW SM ARV24 4X100R PM5
3234	235003510229	RST NETW SM ARV24 4X 22R PM5
3235	235003510229	RST NETW SM ARV24 4X 22R PM5
3236	235003510229	RST NETW SM ARV24 4X 22R PM5
3244	232270260471	RST SM 0603 RC21 470R PM5
3245	232270260471	RST SM 0603 RC21 470R PM5
3246	212211805635	RST SM 0603 RC0603 10R PM5
3247	232270260101	RST SM 0603 RC21 100R PM5
3248	212211805639	RST SM 0603 RC0603 47R PM5
3249	232270260105	RST SM 0603 RC21 1M PM5
3250	232270260101	RST SM 0603 RC21 100R PM5
3251	232270260101	RST SM 0603 RC21 100R PM5
3252	232270260101	RST SM 0603 RC21 100R PM5
3301	235003510229	RST NETW SM ARV24 4X 22R PM5
3302	232270260472	RST SM 0603 RC21 4K7 PM5
3303	232270260472	RST SM 0603 RC21 4K7 PM5
3304	235003510229	RST NETW SM ARV24 4X 22R PM5
3305	235003510229	RST NETW SM ARV24 4X 22R PM5
3306	235003510229	RST NETW SM ARV24 4X 22R PM5
3307	235003510229	RST NETW SM ARV24 4X 22R PM5
3308	235003510229	RST NETW SM ARV24 4X 22R PM5
3309	235003510229	RST NETW SM ARV24 4X 22R PM5
3310	235003510229	RST NETW SM ARV24 4X 22R PM5
3402	232270462709	RST SM 0603 RC22H 27R PM1
3403	232270464709	RST SM 0603 RC22H 47R PM1
3406	232270462709	RST SM 0603 RC22H 27R PM1
3408	232270464709	RST SM 0603 RC22H 47R PM1
3431	232270462709	RST SM 0603 RC22H 27R PM1
3432	232270464709	RST SM 0603 RC22H 47R PM1
3436	232270260273	RST SM 0603 RC21 27K PM5
3437	232270260273	RST SM 0603 RC21 27K PM5
3442	212211805635	RST SM 0603 RC0603 10R PM5
3443	212211805635	RST SM 0603 RC0603 10R PM5
3444	212211805635	RST SM 0603 RC0603 10R PM5
3445	232270260101	RST SM 0603 RC21 100R PM5
3446	232270260101	RST SM 0603 RC21 100R PM5
3508	232270260279	RST SM 0603 RC21 27R PM5
3509	212211805639	RST SM 0603 RC0603 47R PM5
3512	212211805631	RST SM 0603 JUMP. MAX 0R05
3513	213810500082	RST MOX 1W RSS S 0R82 PM5
3551	232270260472	RST SM 0603 RC21 4K7 PM5
3552	212211805642	RST SM 0603 RC0603 75R PM5
3553	232270260681	RST SM 0603 RC21 680R PM5
3554	232270260101	RST SM 0603 RC21 100R PM5
3555	232270260511	RST SM 0603 RC21 510R PM5
3556	232270260332	RST SM 0603 RC21 3K3 PM5
3557	212211805639	RST SM 0603 RC0603 47R PM5
3558	232270260101	RST SM 0603 RC21 100R PM5
3560	232270260101	RST SM 0603 RC21 100R PM5
3561	232270260332	RST SM 0603 RC21 3K3 PM5
3564	232270260101	RST SM 0603 RC21 100R PM5
3565	232270260101	RST SM 0603 RC21 100R PM5
3566	235003510101	RST NETW SM ARV24 4X100R PM5
3567	235003510101	RST NETW SM ARV24 4X100R PM5
3570	212211805639	RST SM 0603 RC0603 47R PM5
3571	212211805639	RST SM 0603 RC0603 47R PM5
3572	212211805639	RST SM 0603 RC0603 47R PM5
3573	212211805639	RST SM 0603 RC0603 47R PM5
3701	232270260101	RST SM 0603 RC21 100R PM5
3702	232270260101	RST SM 0603 RC21 100R PM5
3703	212211805645	RST SM 0603 RC0603 150R PM5
3704	212211805645	RST SM 0603 RC0603 150R PM5
3705	212211805645	RST SM 0603 RC0603 150R PM5
3706	232270260243	RST SM 0603 RC21 24K PM5
3803	232270260101	RST SM 0603 RC21 100R PM5
3804	212211805673	RST SM 0603 RC0603 18K PM5
3805	232270260104	RST SM 0603 RC21 100K PM5
3806	212211805944	RST SM 0603 RC0603 120K PM5
3807	212211805682	RST SM 0603 RC0603 82K PM5
3808	212211805672	RST SM 0603 RC0603 15K PM5
3809	212211805664	RST SM 0603 RC0603 3K9 PM5
3810	212211805664	RST SM 0603 RC0603 3K9 PM5
3811	212211805667	RST SM 0603 RC0603 6K8 PM5
3812	212211805667	RST SM 0603 RC0603 6K8 PM5
3851	232270260101	RST SM 0603 RC21 100R PM5
3852	232270260101	RST SM 0603 RC21 100R PM5
3853	232270260101	RST SM 0603 RC21 100R PM5
3854	232270260101	RST SM 0603 RC21 100R PM5
3855	232270260273	RST SM 0603 RC21 27K PM5
3856	232270260101	RST SM 0603 RC21 100R PM5
3857	232270260101	RST SM 0603 RC21 100R PM5
3871	212211805631	RST SM 0603 JUMP. MAX 0R05
3872	212211805631	RST SM 0603 JUMP. MAX 0R05
4001	212211805631	RST SM 0603 JUMP. MAX 0R05
4002	212211805631	RST SM 0603 JUMP. MAX 0R05
4051	212211805631	RST SM 0603 JUMP. MAX 0R05
4053	212211805631	RST SM 0603 JUMP. MAX 0R05
4103	212211805631	RST SM 0603 JUMP. MAX 0R05
4202	212211805631	RST SM 0603 JUMP. MAX 0R05
4405	212211805631	RST SM 0603 JUMP. MAX 0R05
4408	212211805631	RST SM 0603 JUMP. MAX 0R05
4501	212211805631	RST SM 0603 JUMP. MAX 0R05
4504	212211805631	RST SM 0603 JUMP. MAX 0R05
4801	232273091002	RST SM 0805 JUMP. MAX 0R05
4851	212211805631	RST SM 0603 JUMP. MAX 0R05
4852	212211805631	RST SM 0603 JUMP. MAX 0R05
4853	212211805631	RST SM 0603 JUMP. MAX 0R05
4856	232273091002	RST SM 0805 JUMP. MAX 0R05
4860	212211805631	RST SM 0603 JUMP. MAX 0R05
4861	212211805631	RST SM 0603 JUMP. MAX 0R05
5001	313818875691	COI CHOKE 35UH 82M OHM DR10X8
5002	242253600428	IND FXD TSL0808 S 10U PM10
5003	242254900064	IND FXD 0805 EMI 100MHZ 220R
5051	242254944197	IND FXD 0805 EMI 100MHZ 220R
5101	242254945582	IND FXD 0805 EMI 100MHZ 300R
5102	242254945582	IND FXD 0805 EMI 100MHZ 300R
5103	242254943769	IND FXD 0603 EMI 100MHZ 30R
5104	242254943769	IND FXD 0603 EMI 100MHZ 30R
5105	242254943769	IND FXD 0603 EMI 100MHZ 30R
5201	242254900064	IND FXD 0805 EMI 100MHZ 220R
5202	242254900064	IND FXD 0805 EMI 100MHZ 220R
5203	242254900064	IND FXD 0805 EMI 100MHZ 220R
5204	242254900064	IND FXD 0805 EMI 100MHZ 220R
5205	242254900064	IND FXD 0805 EMI 100MHZ 220R
5206	242254900064	IND FXD 0805 EMI 100MHZ 220R
5207	242254900064	IND FXD 0805 EMI 100MHZ 220R
5208	242254900064	IND FXD 0805 EMI 100MHZ 220R
5211	242254945579	IND FXD 1206 EMI 100MHZ 100R
5401	242253595853	IND FXD SM 0603 0U10 PM10
5402	242253595853	IND FXD SM 0603 0U10 PM10
5412	242253595853	IND FXD SM 0603 0U10 PM10
5501	242254944197	IND FXD 0805 EMI 100MHZ 220R
5551	242254944527	IND FXD 0603 EMI 100MHZ 600R
5552	242254944197	IND FXD 0805 EMI 100MHZ 220R
5553	242254944527	IND FXD 0603 EMI 100MHZ 600R
5554	242254944527	IND FXD 0603 EMI 100MHZ 600R
5555	242254944527	IND FXD 0603 EMI 100MHZ 600R
5556	242254944527	IND FXD 0603 EMI 100MHZ 600R
5701	242254944527	IND FXD 0603 EMI 100MHZ 600R
5702	242254944527	IND FXD 0603 EMI 100MHZ 600R
5703	242254944527	IND FXD 0603 EMI 100MHZ 600R
5801	242253600782	IND FXD TSL0808 S 33U PM10
5802	242253600782	IND FXD TSL0808 S 33U PM10
5803	242254900126	IND FXD 0805 EMI 100MHZ 120R
5804	242254900126	IND FXD 0805 EMI 100MHZ 120R
5805	242253600782	IND FXD TSL0808 S 33U PM10
5806	242254900126	IND FXD 0805 EMI 100MHZ 120R
5807	242254900126	IND FXD 0805 EMI 100MHZ 120R
5808	242253600782	IND FXD TSL0808 S 33U PM10
5809	242253600782	IND FXD TSL0808 S 33U PM10
5851	242253595853	IND FXD SM 0603 0U10 PM10
5852	242253595853	IND FXD SM 0603 0U10 PM10
6001	932208282668	DIO REC SM SS34-E3 (VISH)
6003	932217950685	DIO REG SM UDZS3.9B (RHM0)
6004	932217950685	DIO REG SM UDZS3.9B (RHM0)
6005	932217950685	DIO REG SM UDZS3.9B (RHM0)
6006	932217950685	DIO REG SM UDZS3.9B (RHM0)
6101	932205976685	DIO SIG SM LS4148 (VISH)
6102	933742280215	DIO SIG SM BAT54 (PHSE)
6103	932205976685	DIO SIG SM LS4148 (VISH)
6104	933742280215	DIO SIG SM BAT54 (PHSE)
6401	932209863685	DIO SIG SM BAV99 (VISH)
6402	932209863685	DIO SIG SM BAV99 (VISH)
6406	932209863685	DIO SIG SM BAV99 (VISH)
6801	932220675682	DIO REC M100AL-5301-E3 (VISH)
6851	932205976685	DIO SIG SM LS4148 (VISH)
7001	932215923668	IC SM LM2596SX-5.0 (NSC0)
7004	932220471668	FET POW SM SI4835BDY-E3(VISH)
7005	932217439685	TRA SIG SM BC857C (KEC0)
7006	932209265685	TRA SIG SM MUN2211JG (ONSE)
7007	932217439685	TRA SIG SM BC857C (KEC0)
7008	932217439685	TRA SIG SM BC857C (KEC0)
7009	932216638668	FET POW SM SI5441DC-E3 (VISH)
7010	932217439685	TRA SIG SM BC857C (KEC0)
7011	932209265685	TRA SIG SM MUN2211JG (ONSE)
7012	932217439685	TRA SIG SM BC857C (KEC0)
7013	932217439685	TRA SIG SM BC857C (KEC0)
7051	932222076668	IC SM AME1117CCGTZ (AME0)
7052	313815865671	CPU IC ASSY(AP)
7052	932222010682	IC SM NT68F632ALG (NOVA)
7053	932219183685	IC SM LM809M3-2.93 NOPB(NSC0)
7054	932217438685	TRA SIG SM BC847C (KEC0)
7055	313815865661	EEPROM IC ASSY(AP)
7055	932210684668	IC SM AT24C32N-10SI-1.8(ATME)
7101	932220624668	IC SM M24C02-WMN6P (ST00)
7102	932220624668	IC SM M24C02-WMN6P (ST00)
7104	932217126668	IC SM 74LCX14T (ST00)
7201	932222013671	IC SM MST51512L-LF (MSTA)
7202	932222075668	IC SM AME1117BCGTZ (AME0)
7203	932222076668	IC SM AME1117CCGTZ (AME0)
7204	932222076668	IC SM AME1117CCGTZ (AME0)
7301	932216677682	IC SM M12L16161A-7TG (ESMT)
7302	932216677682	IC SM M12L16161A-7TG (ESMT)
7551	932222077668	IC SM AME1117ECGTZ (AME0)
7552	932222076668	IC SM AME1117CCGTZ (AME0)
7553	935276561518	IC SM SAA7119E/V2/G (PHSE)
7554	932215686685	FET SIG SM 2N7002LG (ONSE)
7555	932215686685	FET SIG SM 2N7002LG (ONSE)
7701	935274261518	IC SM SAA5360HL/M1/0004(PHSE)
7801	932222035668	IC SM TPA3005D2PHP (TI00)
7851	932219413671	IC SM MSP3415G-QI-B8V3(MIAS)
7852	933714830653	IC SM 74HC4052D (PHSE)
PCB Assy		
1053	313815860571	CONTROL PCB ASSY
3911	212211805668	RST SM 0603 RC0603 8K2 PM5
3912	232270260122	RST SM 0603 RC21 1K2 PM5
3913	212211805651	RST SM 0603 RC0603 390R PM5
3914	232270260303	RST SM 0603 RC21 30K PM5
3915	212211805672	RST SM 0603 RC0603 15K PM5
3916	212211805664	RST SM 0603 RC0603 3K9 PM5
6906	932219383682	LED VS L-934MBD (KIEL)
6907	932219383682	LED VS L-934MBD (KIEL)
6908	932219383682	LED VS L-934MBD (KIEL)
6909	932219383682	LED VS L-934MBD (KIEL)
6928	932219383682	LED VS L-934MBD (KIEL)
PCB Assy		
1054	313815860351	LED ASSY
2931	223824619863	CER2 0603 Y5V 10V 1U P8020
2932	223878615649	CER2 0603 X7R 16V 100N PM10
2933	223878615649	CER2 0603 X7R 16V 100N PM10

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3931	212211805669	RST SM 0603 RC0603 10K PM5
3932	232270260101	RST SM 0603 RC21 100R PM5
6931	932220313667	IR RECEIVER TSOP34136SB1
6932	932214603682	LED VS L-3WYGW (KIEL)

PCB Assy

1065	313815860581	AUDIO+USB ASSY
2605	223858615636	CER2 0603 X7R 50V 10N PM10
2606	223858615623	CER2 0603 X7R 50V 1N PM10
2607	223858615636	CER2 0603 X7R 50V 10N PM10
2608	223858615623	CER2 0603 X7R 50V 1N PM10
2609	223858615636	CER2 0603 X7R 50V 10N PM10
2610	223878615649	CER2 0603 X7R 16V 100N PM10
2611	223878615649	CER2 0603 X7R 16V 100N PM10
2612	223878615649	CER2 0603 X7R 16V 100N PM10
2613	223878615649	CER2 0603 X7R 16V 100N PM10
2614	223878615649	CER2 0603 X7R 16V 100N PM10
2615	223886715279	CER1 0603 NP0 50V 27P PM5
2616	223886715279	CER1 0603 NP0 50V 27P PM5
2617	223878615649	CER2 0603 X7R 16V 100N PM10
2618	223878615649	CER2 0603 X7R 16V 100N PM10
2619	223878615649	CER2 0603 X7R 16V 100N PM10
2621	223878615649	CER2 0603 X7R 16V 100N PM10
2622	222224119876	CER2 1206 Y5V 10V 10U P8020
2623	223878615649	CER2 0603 X7R 16V 100N PM10
2624	222224119876	CER2 1206 Y5V 10V 10U P8020
2625	223858615623	CER2 0603 X7R 50V 1N PM10
2631	202002191778	ELCAP SM RVJ 16V 100U PM20
2632	223878615649	CER2 0603 X7R 16V 100N PM10
2635	202002191778	ELCAP SM RVJ 16V 100U PM20
2636	223878615649	CER2 0603 X7R 16V 100N PM10
2641	223886715229	CER1 0603 NP0 50V 22P PM5
2642	223886715229	CER1 0603 NP0 50V 22P PM5
2643	223878619854	CER2 0603 Y5V 16V 220N P8020
2644	223824619858	CER2 0603 Y5V 10V 470N P8020
2645	223878619854	CER2 0603 Y5V 16V 220N P8020
2646	202203100229	ELCAP SZ 16V S 220U PM20
2647	202203100229	ELCAP SZ 16V S 220U PM20
2648	223886715331	CER1 0603 NP0 50V 330P PM5
2649	223886715331	CER1 0603 NP0 50V 330P PM5
2650	223886715331	CER1 0603 NP0 50V 330P PM5
2651	223886715331	CER1 0603 NP0 50V 330P PM5
2652	223878615649	CER2 0603 X7R 16V 100N PM10
2658	223824619858	CER2 0603 Y5V 10V 470N P8020
2659	223878615649	CER2 0603 X7R 16V 100N PM10
2668	222278019767	CER2 0805 Y5V 16V 2U2 PM20
2670	223858615623	CER2 0603 X7R 50V 1N PM10
2671	223858615614	CER2 0603 X7R 50V 220P PM10
2672	203803513311	ELCAP RGA 25V S 100U PM20
2673	223858615623	CER2 0603 X7R 50V 1N PM10
2674	223858615614	CER2 0603 X7R 50V 220P PM10
2675	223858615627	CER2 0603 X7R 50V 2N2 PM10
2676	223824619858	CER2 0603 Y5V 10V 470N P8020
2677	223824619858	CER2 0603 Y5V 10V 470N P8020
2678	223824619858	CER2 0603 Y5V 10V 470N P8020
2679	223878619854	CER2 0603 Y5V 16V 220N P8020
2680	223824619858	CER2 0603 Y5V 10V 470N P8020
2681	223878615649	CER2 0603 X7R 16V 100N PM10
2682	202203100436	ELCAP KM 160V S 3U3 PM20
2685	223878615649	CER2 0603 X7R 16V 100N PM10
2686	202203100179	ELCAP SM HV 25V 10U PM20
2687	202203100437	ELCAP KM 25V S 22U PM20
2688	223878615649	CER2 0603 X7R 16V 100N PM10
2689	223878615649	CER2 0603 X7R 16V 100N PM10
2690	202203100261	ELCAP LZ 16V S 2200U PM20
2691	223858615634	CER2 0603 X7R 50V 6N8 PM10
2692	223858615634	CER2 0603 X7R 50V 6N8 PM10
2694	223878615649	CER2 0603 X7R 16V 100N PM10
2951	223891619849	CER2 0603 Y5V 25V 100N P8020
2952	223886715339	CER1 0603 NP0 50V 33P PM5
2953	223886715339	CER1 0603 NP0 50V 33P PM5
2954	223886715339	CER1 0603 NP0 50V 33P PM5
2955	223886715339	CER1 0603 NP0 50V 33P PM5
2956	223886715339	CER1 0603 NP0 50V 33P PM5
2957	223886715339	CER1 0603 NP0 50V 33P PM5
2958	223886715339	CER1 0603 NP0 50V 33P PM5
2962	223878615649	CER2 0603 X7R 16V 100N PM10
2963	223886715339	CER1 0603 NP0 50V 33P PM5
2975	223891619849	CER2 0603 Y5V 25V 100N P8020
2976	202203100173	ELCAP EB 25V S 470U PM20
2981	223891619849	CER2 0603 Y5V 25V 100N P8020
2983	202203100173	ELCAP EB 25V S 470U PM20
2990	223878615649	CER2 0603 X7R 16V 100N PM10
2991	223878615649	CER2 0603 X7R 16V 100N PM10
2992	223878615649	CER2 0603 X7R 16V 100N PM10
2993	223878615649	CER2 0603 X7R 16V 100N PM10
2994	223878615649	CER2 0603 X7R 16V 100N PM10
2995	223878615649	CER2 0603 X7R 16V 100N PM10
2996	223886715391	CER1 0603 NP0 50V 390P PM5
2997	223886715391	CER1 0603 NP0 50V 390P PM5
3611	212211805672	RST SM 0603 RC0603 15K PM5
3612	232270260104	RST SM 0603 RC21 100K PM5
3613	212211805672	RST SM 0603 RC0603 15K PM5
3614	212211805672	RST SM 0603 RC0603 15K PM5
3615	212211805672	RST SM 0603 RC0603 15K PM5
3616	212211805672	RST SM 0603 RC0603 15K PM5
3617	212211805672	RST SM 0603 RC0603 15K PM5
3618	212211805672	RST SM 0603 RC0603 15K PM5
3619	212211805672	RST SM 0603 RC0603 15K PM5
3620	212211805631	RST SM 0603 JUMP. MAX 0R05
3626	212211805631	RST SM 0603 JUMP. MAX 0R05
3627	212211805631	RST SM 0603 JUMP. MAX 0R05
3630	232270260101	RST SM 0603 RC21 100R PM5
3631	212266200161	PTC SM 1812 13V2 0R45 PM
3632	212211805631	RST SM 0603 JUMP. MAX 0R05
3633	212211805631	RST SM 0603 JUMP. MAX 0R05
3634	232270260101	RST SM 0603 RC21 100R PM5
3635	212266200161	PTC SM 1812 13V2 0R45 PM
3636	212211805631	RST SM 0603 JUMP. MAX 0R05
3637	212211805631	RST SM 0603 JUMP. MAX 0R05
3638	232271161159	RST SM 1206 RC01 15R PM5
3639	232270260104	RST SM 0603 RC21 100K PM5
3640	212211805631	RST SM 0603 JUMP. MAX 0R05
3641	232270260189	RST SM 0603 RC21 18R PM5
3642	232270260189	RST SM 0603 RC21 18R PM5
3643	212211805669	RST SM 0603 RC0603 10K PM5
3644	212211805669	RST SM 0603 RC0603 10K PM5
3645	232270260224	RST SM 0603 RC21 220K PM5
3646	212211805631	RST SM 0603 JUMP. MAX 0R05
3653	212211805669	RST SM 0603 RC0603 10K PM5
3654	212211805647	RST SM 0603 RC0603 220R PM5
3656	232270260102	RST SM 0603 RC21 1K PM5
3657	232270260102	RST SM 0603 RC21 1K PM5
3658	232270462409	RST SM 0603 RC22H 24R PM1
3659	232270462409	RST SM 0603 RC22H 24R PM1
3660	212211805631	RST SM 0603 JUMP. MAX 0R05
3662	212211805631	RST SM 0603 JUMP. MAX 0R05
3664	212211805631	RST SM 0603 JUMP. MAX 0R05
3666	232270260101	RST SM 0603 RC21 100R PM5
3667	212211805669	RST SM 0603 RC0603 10K PM5
3668	232270260224	RST SM 0603 RC21 220K PM5
3670	212211805669	RST SM 0603 RC0603 10K PM5
3671	212211805669	RST SM 0603 RC0603 10K PM5
3672	212211805669	RST SM 0603 RC0603 10K PM5
3673	212211805669	RST SM 0603 RC0603 10K PM5
3674	212211805669	RST SM 0603 RC0603 10K PM5
3675	212211805669	RST SM 0603 RC0603 10K PM5
3676	212211805647	RST SM 0603 RC0603 220R PM5
3677	212211805631	RST SM 0603 JUMP. MAX 0R05
3678	232270260102	RST SM 0603 RC21 1K PM5
3679	212211805631	RST SM 0603 JUMP. MAX 0R05
3680	212211805631	RST SM 0603 JUMP. MAX 0R05
3683	232270260101	RST SM 0603 RC21 100R PM5
3684	212211805669	RST SM 0603 RC0603 10K PM5
3687	212211805631	RST SM 0603 JUMP. MAX 0R05
3690	212211805669	RST SM 0603 RC0603 10K PM5
3691	232270260101	RST SM 0603 RC21 100R PM5
3692	232270260101	RST SM 0603 RC21 100R PM5
3693	232270260101	RST SM 0603 RC21 100R PM5
3694	232270260472	RST SM 0603 RC21 4K7 PM5
3695	232270260472	RST SM 0603 RC21 4K7 PM5
3696	232270260104	RST SM 0603 RC21 100K PM5
3698	212211805669	RST SM 0603 RC0603 10K PM5
3952	212211805631	RST SM 0603 JUMP. MAX 0R05
3953	212211805631	RST SM 0603 JUMP. MAX 0R05
3954	212211805631	RST SM 0603 JUMP. MAX 0R05
3955	212211805631	RST SM 0603 JUMP. MAX 0R05
3956	212211805631	RST SM 0603 JUMP. MAX 0R05
3961	212211805631	RST SM 0603 JUMP. MAX 0R05
3962	212211805631	RST SM 0603 JUMP. MAX 0R05
3963	212211805631	RST SM 0603 JUMP. MAX 0R05
3981	212211805669	RST SM 0603 RC0603 10K PM5
3983	212211805631	RST SM 0603 JUMP. MAX 0R05
3984	232270260563	RST SM 0603 RC21 56K PM5
3985	232270260563	RST SM 0603 RC21 56K PM5
3986	232270260563	RST SM 0603 RC21 56K PM5
3987	232270260563	RST SM 0603 RC21 56K PM5
3988	232270260563	RST SM 0603 RC21 56K PM5
3989	232270260223	RST SM 0603 RC21 22K PM5
3990	232270260223	RST SM 0603 RC21 22K PM5
3991	232270260562	RST SM 0603 RC21 5K6 PM5
3992	232270260562	RST SM 0603 RC21 5K6 PM5
3993	232270260562	RST SM 0603 RC21 5K6 PM5
3994	232270260562	RST SM 0603 RC21 5K6 PM5
3995	232270260562	RST SM 0603 RC21 5K6 PM5
3996	232270260102	RST SM 0603 RC21 1K PM5
3997	232270260102	RST SM 0603 RC21 1K PM5
5611	242254943409	IND FXD 1206 EMI 100MHZ 50R
5619	242254943409	IND FXD 1206 EMI 100MHZ 50R
5625	242254945579	IND FXD 1206 EMI 100MHZ 100R
5631	242254945579	IND FXD 1206 EMI 100MHZ 100R
5635	242254945579	IND FXD 1206 EMI 100MHZ 100R
5681	242254945579	IND FXD 1206 EMI 100MHZ 100R
5682	242254945579	IND FXD 1206 EMI 100MHZ 100R
5971	242254900126	IND FXD 0805 EMI 100MHZ 120R
5982	313818875691	COI CHOKE 35UH 82M OHM DR10X8
5983	242253600428	IND FXD TSL0808 S 10U PM10
6612	932205976685	DIO SIG SM LS4148 (VISH)
6641	933400410683	DIO REC 1N4001-E3 A (VISH)
6668	932205976685	DIO SIG SM LS4148 (VISH)
6680	932205976685	DIO SIG SM LS4148 (VISH)
6982	932208282668	DIO REC SM SS34-E3 (VISH)
7601	932222076668	IC SM AME1117CCGTZ (AME0)
7611	932222162671	IC SM CY7C65640-LFXC (CYPR)
7651	823827718751	AUDIO PROCESSIOR
7652	932220471668	FET POW SM SI4835BDY-E3(VISH)
7653	932217439685	TRA SIG SM BC857C (KEC0)
7654	932209265685	TRA SIG SM MUN2211JG (ONSE)
7655	932209265685	TRA SIG SM MUN2211JG (ONSE)
7656	932217563685	IC SM L78L05ACU (ST00)
7691	935268635118	IC SM PCA9515DP (PHSE)
7693	823827718761	128K EEPROM
7981	932215923668	IC SM LM2596SX-5.0 (NSC0)

PCB Assy

1066	313815865721	HD PCB ASSY
2601	223886715331	CER1 0603 NP0 50V 330P PM5
2602	223886715331	CER1 0603 NP0 50V 330P PM5
2603	223886715331	CER1 0603 NP0 50V 330P PM5
2604	223886715331	CER1 0603 NP0 50V 330P PM5
3601	232270260102	RST SM 0603 RC21 1K PM5
3602	232270260273	RST SM 0603 RC21 27K PM5
3603	232270260102	RST SM 0603 RC21 1K PM5
3604	232270260273	RST SM 0603 RC21 27K PM5
3605	212211805642	RST SM 0603 RC0603 75R PM5
3606	212211805642	RST SM 0603 RC0603 75R PM5
3607	212211805642	RST SM 0603 RC0603 75R PM5
5601	242253595853	IND FXD SM 0603 0U10 PM10
5602	242253595853	IND FXD SM 0603 0U10 PM10
5603	242253595853	IND FXD SM 0603 0U10 PM10

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Recommended Parts List
TYPE:190G6FB/97

30	313815760671	FRONT BEZEL ASSY
31	313815413991	BEZEL
32	313815414421	LENS-TV
33	313815414411	LENS-IR
40	313815760681	BACK COVER ASSY
41	313815414031	BACK COVER
42	313815414041	SPEAKER COVER-A
43	313815414051	SPEAKER COVER-B
44	313815417041	INNER COVER-AP
50	313815760661	BASE ASSY-190G6
52	313815414021	HINGE COVER
60	313815760691	FRONT COVER ASSY
61	313815414001	FRONT COVER
62	313815161961	MESH GRILIE
91	313815137751	SHIELDING-UPPER-AP
92	313815137781	SHIELDING-LOWER-AP
95	313815414061	PHILIPS COVER
102	313810440571	HOUSING COVER
301	313815137731	METAL FRAME
303	313815136071	HINGE FRAME-R
304	313815136081	HINGE FRAME-L
450	313815641111	CARTON
451	313815641071	CUSHION-T
452	313815641081	CUSHION-B
453	313810645302	P.E. BAG
490	313815682951	PACKING ASSY-CHINA
1052	313815865641	BASE ASSY(190G6)
1057	313815865651	FRAME+WIRE ASSY
7001	932215923668	IC SM LM2596SX-5.0 (NSC0)
7004	932220471668	FET POW SM SI4835BDY-E3(VISH)
7005	932217439685	TRA SIG SM BC857C (KEC0)
7006	932209265685	TRA SIG SM MUN2211JG (ONSE)
7009	932216638668	FET POW SM SI5441DC-E3 (VISH)
7051	932222076668	IC SM AME1117CCGTZ (AME0)
7052	313815865671	CPU IC ASSY(AP)
7052	932222010682	IC SM NT68F632ALG (NOVA)
7053	932219183685	IC SM LM809M3-2.93 NOPB(NSC0)
7054	932217438685	TRA SIG SM BC847C (KEC0)
7055	313815865661	EEPROM IC ASSY(AP)
7055	932210684668	IC SM AT24C32N-10SI-1.8(ATME)
7101	932220624668	IC SM M24C02-WMN6P (ST00)
7104	932217126668	IC SM 74LCX14T (ST00)
7201	932222013671	IC SM MST51512L-LF (MSTA)
7202	932222075668	IC SM AME1117BCGTZ (AME0)
7301	932216677682	IC SM M12L16161A-7TG (ESMT)
7553	935276561518	IC SM SAA7119E/V2/G (PHSE)
7554	932215686685	FET SIG SM 2N7002LG (ONSE)
7601	932222076668	IC SM AME1117CCGTZ (AME0)
7611	932222162671	IC SM CY7C65640-LFXC (CYPR)
7651	823827718751	AUDIO PROCESSIOR
7652	932220471668	FET POW SM SI4835BDY-E3(VISH)
7653	932217439685	TRA SIG SM BC857C (KEC0)
7654	932209265685	TRA SIG SM MUN2211JG (ONSE)
7656	932217563685	IC SM L78L05ACU (ST00)
7691	935268635118	IC SM PCA9515DP (PHSE)
7693	823827718761	128K EEPROM
7701	935274261518	IC SM SAA5360HL/M1/0004(PHSE)
7801	932222035668	IC SM TPA3005D2PHP (TI00)
7851	932219413671	IC SM MSP3415G-QI-B8V3(MIAS)
7852	933714830653	IC SM 74HC4052D (PHSE)
7981	932215923668	IC SM LM2596SX-5.0 (NSC0)

GENERAL PRODUCT SPECIFICATION

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PHILIPS

GENERAL PRODUCT SPECIFICATION

. 19" Multifunction LCD monitor.

. PC 15 pins D-SUB analog and 24 pins DVI _D digital interface.

. PC audio line in with mini-Jack

. TV Tuner, S-Video, RCA AV input interface with R/L Audio-in, SCART for WE model.

. RCA connectors for YPbPr input

. NTSC, PAL TV system.

. PC graphic auto picture adjustment

. 30 user modes

. User friendly OSD menu

. User friendly remote controller

. USB Audio with A type USB connector

. USB 2.0 Hub

. DDC2B communication capability

. Typical Resolution 1280 x 1024 non-interlace at 60 Hz

. SXGA 19" color TFT LCD flat panel

. Easy tilt base

. Low reflection glare treatment of the front polarizer

. Power management capability

GENERAL PRODUCT SPECIFICATION(Continued)

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1.0 FOREWORD

This specification describes a 19" multifunction LCD Monitor, maximum resolution up to 1280x1024/60Hz non-interlaced.

2.0 PRODUCT PROFILE

Philips 19" multifunction LCD Monitor TV can connect to PC 's analog D-SUB and DVI connector, and also support TV, AV, S-Video, YPbPr/HD, and AV interface. Europe model

Meet world wide major TV system: NAFTA

2.1 LCD

2.2.1. LCD

LPL panel

Type NR.	: LM190E03_TLC1
Display area(mm)	: 376.32(H) x 301.056(V) (19.0-inch diagonal)
Number of Pixels	: 1280(H) x 1024(V)
Pitch (mm)	: 0.098(H) x 0.294(V)
Color pixel arrangement	: RGB vertical stripes
Display operating mode	: Transmissive mode, normally white
Color depth	: 16.2M colors (6 bits with FRC)
Brightness (cd/m^2)	: 420(cd/m^2)(Center 1 points Typ.)
Viewing angle(CR>10)	: 80 ° (R/L), 75° (Up) , 85° (Down), Typ
Surface treatment	: Hard coating(2H) & Low reflection glare treatment of front polarizer
Electrical interface	: LVDS (2 port)
Response Time	: 8ms(typ.) (Tr+Tf)
Power Consumption(W)	: 3.05(Max) for LCD, 22.53(Max) for inverter
Contrast ratio	: Typical 700 : 1
Module size (mm)	: 396.0(W) x 324.0(H) x 16.5(D)
Module weight (g)	: 2700(Typ), 2840(Max)
Backlight	: 4 CCFL

2.2 Scanning frequencies : Hor. : 30 - 83KHz Ver.: 56 - 76 Hz

2.3 Video dot rate : <=135 MHz

2.4 Power input : 90 - 264 Vac, 50/60 ± 2 Hz

2.5 Power consumption : max 100 W

2.6 Unit Dimensions : 590mm W x 460mm H x 265mm D (Incl. Pedestal)

2.7 Unit Weight : 10 Kg

2.8 Satellite speaker : 2 x 5 W

2.9 Subwoofer : 20 W

2.10 USB Audio : 1 USB Audio with A type USB connector

2.11 USB 2.0 Hub : 1 USB A type connector and 2 USB B type connectors

2.12 Earphone : Headphones with impedance between 8 - 600 Ω

2.13 Mic-phone : mic-phone is used only in USB audio mode.

2.14 Functions :

PC 15 pins D-sub analog interface and 24 pins DVI _D digital interface with audio mini jack input (PC line in).
TV AP /China model : Tuner, S-Video, RCA AV with L/R Audio-in and YPbPr with audio.
WE model : S-Video, RCA AV with L/R Audio-in and YPbPr with Audio, SCART.

2.15 Ambient temperature: 0 - 35 °C

2.16 Regulatory compliance :

Safety	B (Poland), CCC(China), CE(Europe), CE (NZ/Australia), CSA(Canada), Gost(Russia), IEC 950 CB Report, PSB(Singapore), NOM NYCE(Mexico), SEMKO(Nordic), UL(USA), Korea
EMI	C-tick, CE(Europe), FCC(USA), IC(Canada), BSMI, CCC(China), MIC (Korea)
Ergonomics/Power management	E2000, Nutek(Sweden), EPA, ISO13406-2
Compatibility	PC2001, Windows2000, Windows Me, Windows XP, NSTL,

3.0 Electrical characteristics

3.1 Interface signals

3.1.1 PC Signal type

Signal source: pattern generator format as attachment (Table 1 to 30) Reference generator: Quantum Data 802R
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%.

2). Intel DVI Digital
Input signal: Single TMDS link (Three channels: RX0-/+, RX1-/+, RX2-/+).

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:

Separate sync TTL level, Positive/Negative
Composite sync TTL level, Positive/Negative

Signal source: pattern generator format as attachment (Table 1 to 34)
Reference generator: Quantum Data 802R

Audio signal : Mini-jack audio input,
Input Level: 500 mVrms (Speaker outpout 5W when Input level > 630mVrms and Volume control at 100%)
USB Audio : Digital audio

3.1.2 TV Signal type:

RF Signal : Aerial input / 10mV(80dBuV)

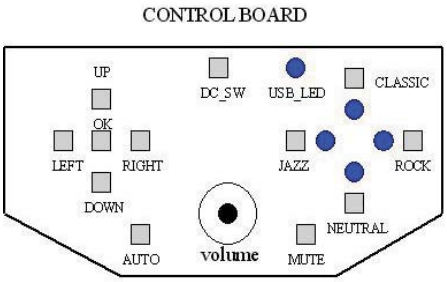
Video signal : Cinch CVBS input / 1Vpp (300mV-sync, 700mV-video.)
S video input / 1VppY-signal, 300mVpp C-signal
YPbPr input/ 1Vpp Y signal, 350mVpp Pb, Pr signal
SCART input / CVBS, S, YPbPr are included.(only for WE)
Audio signal : Cinch (1) R/L for AV and S-video.
Input Level: 500 mVrms (Speaker outpout 5W when Input level > 630mVrms and Volume control at 100%)
Cinch (2) R/L for YPbPr video.
Input Level: 500 mVrms (Speaker outpout 5W when Input level > 630mVrms and Volume control at 100%)
SCART (3) One R/L input
Input Level: 500 mVrms (Speaker outpout 5W when Input level > 630mVrms and Volume control at 100%)

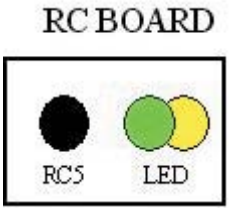
3.2 User interface

On screen display user control via keypad and remote control for PC, and TV OSD.

3.2.1 keypad Control on bass

3.2.2 RC on panel down-right





KEY	FUNCTION
DC_SW	DC power on/off
UP	Normal up / channel up
DOWN	Normal down / channel down
LEFT	Normal left
RIGHT	Normal right
OK	Normal enter / menu
AUTO	Auto adjusting
CLASSIC	Sound effect
JAZZ	Sound effect
ROCK	Sound effect
NEUTRAL	No extra effect
MUTE	Audio mute

Normal working LED indicator: Green
Power saving LED indicator : Amber.

3.2.3. At Monitor mode:

1. Press OK Key to call Monitor Menu
2. Press UP/DOWN/LEFT/RIGHT Key to select Monitor function
3. LEFT/RIGHT is Volume Hot Key. Rotary is to control volume.
4. UP/DOWN key is for switching input signal from D-SUB/DVI/TV/AV/S-Video/HD
5. Use remoter controller to select D-SUB menu function.

3.2.4. At TV mode(CVB, S-video and HD are included):

1. Press OK Key to display TV Menu
2. Press UP/DOWN/LEFT/RIGHT Key to select TV function
3. UP/DOWN Key is Channel Hot Key.
4. LEFT/RIGHT Key is Volume Hot Key.
5. Use remoter controller to select TV menu function.

3.2.5. Recalling from saving mode:

Power saving mode in Dsub or DVI: If sync is off, the monitor TV will enter "Monitor saving mode". And the LED indicator will be changed to amber. The way to wake up from power saving mode are as below:

1. "Source" key on remote control or UP/DOWN key in keypad→ change to other channel
2. Sync exists for Dsub or DVI mode.

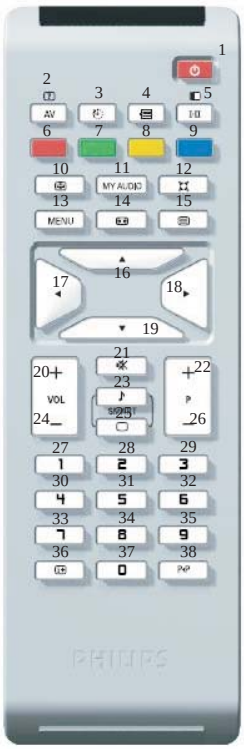
Power saving mode in TV mode: When switched off monitor TV by using RC "Standby" key or no TV signal input for 30 minutes, the monitor will enter "TV standby mode". Meanwhile the LED indicator will be changed to amber. The way to wake up from power saving mode are as below:

1. "Source" key on remote control or UP/DOWN key in keypad→ weak up in next source mode.
2. "Standby" key on remote control.

Remark :

Turn off power when the set is entered TV power saving mode. If turn on power, the set still stay in TV saving mode.

3.3 Remote control unit definition



1. Power : Power On/Standby
2. Source : Source select for PC, Tuner, CVBS, S-video, HD
3. Sleep Timer : Sleep timer 15,30,60,120,180,240 OFF
4. TT : Teletext
5. 2nd audio : Sound select in TV
6. Red : for TT
7. Green : for TT
8. Yellow : for TT
9. Cyan : for TT
10. ?
11. ?
12. surround : virtual surround
13. Menu : Main menu select and OK key
14. Display Format : Select display format (4:3, Expand 4:3,Compress 16:9)
15. .OK : OK
16. UP :UP in menu
17. LEFT :LEFT in menu
18. RIGHT :RIGHT in menu
19. DOWN :DOWN in menu
20. VOL+ : Volume Up
21. Mute : Sound mute function
22. CH+ : Channel Up
23. Smart Sound : Select sound effect
24. VOL- : Volume Down
25. Smart Picture : Select picture effect (Personal/Movie/Sports/weak signal/multimedia/Night)
26. CH- : Channel Down

27-35,37. Numerica keys : (0~9) ,Channel setting

36. ?
38. Prev-CH : Recall previous CH

GENERAL PRODUCT SPECIFICATION(Continued)

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PHILIPS

3.3 PC and TV requirement

3.3.1 PC interface

3.3.1.1 Mode storing capacity

Pre-load : 15
User modes : 30

3.3.1.2 Horizontal scanning

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

3.3.1.3 Vertical scanning

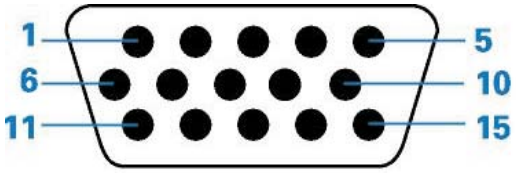
Sync polarity : Positive or Negative
Scanning frequency : 56 - 76 Hz

3.3.1.4 Input connectors

1. VGA signal cable

The input signals are applied to display through D-sub cable.
Length: 1.8 M +/- 50 mm (fixed)
Connector type: D-sub male.
With DDC_2B pin assignments.
Blue connector thumb-operated jackscrews

15-pin D-sub VGA connector of the signal cable:

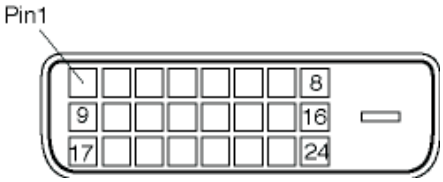


1	Red video input		9	DDC +3.3V (or 5V)
2	Green video input /SOG		10	Logic ground
3	Blue video input		11	GND
4	GND		12	Serial data line (SDA)
5	GND cable detect		13	H. Sync / H+V
6	Red video ground		14	V. Sync
7	Green video ground		15	Data clock line (SCL)
8	Blue video ground			

2. Digital signal cable

The input signals are applied to 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 jackscrews
Panel Link T.M.D.S input.

24-pin DVI-D digital connect of signal cable.



1	T.M.D.S. Data2-		9	T.M.D.S. Data1-		17	T.M.D.S. Data0-
2	T.M.D.S. Data2+		10	T.M.D.S. Data1+		18	T.M.D.S. Data0+
3	T.M.D.S. Data2/4 Shield		11	T.M.D.S. Data1/3 Shield		19	T.M.D.S. Data0/5 Shield
4	No connect		12	No connect		20	No connect
5	No connect		13	No connect		21	No connect
6	DDC Clock		14	+5V Power		22	T.M.D.S. Clock Shield
7	DDC Data		15	Ground (for +5V)		23	T.M.D.S. Clock+
8	No connect		16	Hot Plug Detect		24	T.M.D.S. Clock-

3. CVBS

The input signals are applied to display through CVBS cable

Pin assignment

PIN NO.	SIGNAL
1	GND
2	CVBS
3	CVBS
4	CVBS

4. S-Video

The input signals are applied to display through S-Video cable

Pin assignment

PIN NO.	SIGNAL
1	GND
2	GND
3	GND
4	GND
5	GND
6	LUMA
8	CHROMA

5. Component Video

The input signals are applied to display through Component Video RCA Jack pin assignment

PIN NO.	SIGNAL
1	GND
2	Red → Pr
3	GND
4	Blue → Pb
5	GND
6	Green →Y

GENERAL PRODUCT SPECIFICATION(Continued)

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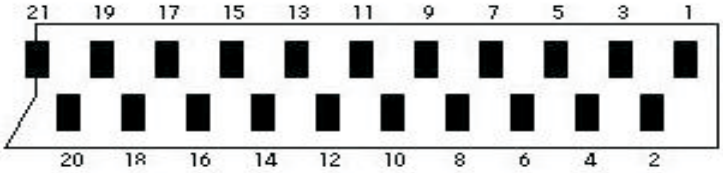
6. SCART

Scart connector is only used in WE model. The Scart (Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televiseurs) connector is used for combined audio and video connections.



Pin	TV SCART
1	N/C
2	Right audio input
3	N/C
4	Audio ground
5	Blue ground
6	Left audio input
7	Blue output
8	0-2.5 volts (low) when: TV output 4.5-7.5 volts (High-to-6v) when: -inputting picture format setting is '16:9', 9-12 volts (high-to-12v) when: -inputing picture format setting is '4:3' (
9	Green ground
10	N/C
11	Green output
12	N/C
13	Red ground
14	N/C
15	Red output
16	0 volt (low) when:- pin 8 of the TV scart is low or when: - Composite video signal 1-3 volts (high) when: - video input setting is 'RGB',
17	Composite video output ground
18	Composite video input ground
19	N/C
20	Composite video input
21	Ground

3.3.1.5 PC mode timings

The maximum resolution display of this monitor is up to 1280x1024, SXGA signal input with full screen display. It shall also automatically up-scale the lower resolution video modes into 1280x1024 full screen display. The display capabilities shall include the following timing modes:

(1) Preset modes (30 modes)

Table 2.1 Preset modes

#	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	800X600	35.2K	36	56Hz	
8	800X600	37.9K	40	60Hz	
9	800X600	48.1K	50	72Hz	
10	800X600	46.9K	49.498	75Hz	
11	832X624	49.7K/	57.28	75Hz	MAC
12	960X720	44.76K	57.58	60Hz	
13	960X720	56.4K	72.42	75Hz	
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	1152X864	54.0K	79.9	60Hz	Non-VESA
19	1152X864	63.9K	94.5	70Hz	Non-VESA
20	1152X864	67.5K	108	75Hz	
21	1152X870	68.7K	100	75Hz	MAC
22	1152X900	61.8K	92.94	66Hz	SUN Mode IV
23	1152X900	71.8K	108	76Hz	SUN Mode II
24	1280X960	60.0K	108	60Hz	
25	1280X960	75.0K	129.895	75Hz	Non-VESA
26	1280X1024	64.0K	108	60Hz	
27	1280X1024	71.7K	117	67Hz	SUN Mode V
28	1280X1024	76.0K	130.223	72Hz	DOS/V
29	1280X1024	80.0K	135	75Hz	
30	1280X1024	81.1K	135.008	76Hz	SUN Mode I

GENERAL PRODUCT SPECIFICATION(Continued)

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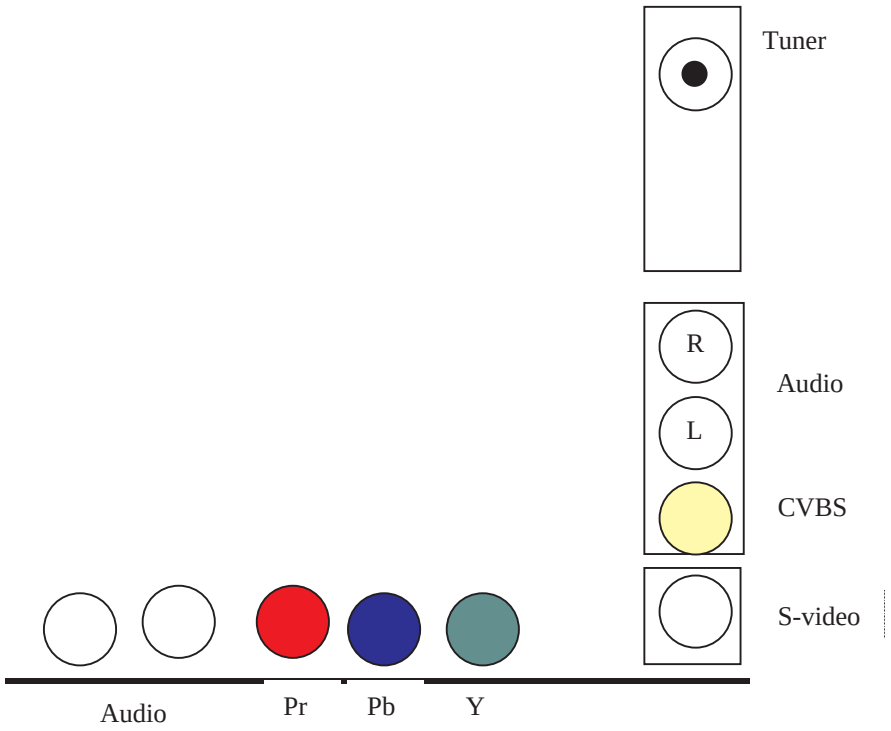
3.3.2 TV interface:

F1-19" TV function include

1. Tuner (AP model and China)
2. S-video
3. CVBS (or AV) (RCA connectors)
4. Audio R/L input (RCA connectors)
5. YPbPr and audio(RCA connectors)

Location:



Following table is the deviation of main TV system.

Item	AP	China	NAFTA
TV color system	PAL	PAL	NTSC
Tuner	FQ1216ME Intermediate Frequency 38.9MHz	FQ1256 Intermediate Frequency 38MHz	FQ1236 Intermediate Frequency 38MHz
TV system	B/G, I	D/K	M
Sound decoder	MSP3415	MSP3415	MSP3445
CVBS, YC	PAL/NTSC	PAL/NTSC	PAL/NTSC
Closed caption	N	N	Y
V-chip	N	N	Y
Teletext	Y	N	N
Remote controller	WE version	WE version	NAFTA version
Channel number	100	100	US Air 68, cable 125

Note: WE model is without tuner.

Following table is the detail TV System list.

TV system	Position of sound carrier (MHz)	Sound system	Color system	Country
M	4.5/4.724212	FM-Stereo(A2)	NTSC	Korea
	4.5	FM-FM(EIA-J)	NTSC	Japan
	4.5	BTSC-stereo+SAP	NTSC	USA
N	4.5	BTSC-stereo+SAP	PAL	Argentina
B/G	5.5/5.7421875	FM-stereo(A2)	PAL	Germany, Austria, Switzerland, Italy, Netherlands,
	5.5/5.85	FM-Mono/ NICAM	PAL	Belgium, Spain, Denmark, Finland, Norway, Sweden.
L	6.5/5.85	AM-Mono/ NICAM	SECAM-L	France
I	6.0/6.552	FM-Mono/ NICAM	PAL	Great Britain, Hong Kong, Ireland
D/K	6.5/6.2578125	FM-Stereo (A2,D/K1)	SECAM-East	Slovak. Rep.
	6.5/6.7421875	FM-Stereo (A2,D/K2)	PAL	None
	6.5/5.7421875	FM-Stereo (A2,D/K3)	SECAM-East	Poland
	6.5/5.85	FM-Mono/ NICAM(D/K,NICAM)	PAL	China, Hungary

3.3.2.1 TV special setting:

Close Caption, V-chip (NAFTA Tuner ,CVBS input source only)
- CC-1 .. CC-4 decoding and display
- TXT1..TXT4 Text mode
- No Extended Data Services (EDS)
- support violence rating and checking
- Automatic CC-1 selection at user mute

Teletext (AP model only)
- Level 1.5 teletext
- 0 and 10 pages
- Processing in hardware

3.4 Power input connection

AC/DC adapter : +16V DC/ 3.95A (AC input 100~240V)
AC Power cord length : 1.8 M
Power cord type : 3 leads power cord with protective earth plug.

3.5 Power management

OFF modes is just for PC mode.

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<100 W	Green /With Audio and sub-woofer (Note 1)
On	On	On	Active	<62W	Green / Without subwoofer
Off	Off	On	Blanked	<2W	Amber LCD (Note 2)
Off	On	Off	Blanked	<2W	Amber LCD (Note 2)
Off	Off	Off	Blanked	<2W	Amber LCD (Note 2)
DC Power off			N / A	<1W	LED Off (Note 2)

Note 1: sub-woofer uses individual power.

Note2: Upstream USB cable is disconnected to PC.

3.6 Display identification
In accordance with DDC requirement - "DDC2B".

4.0 Visual characteristics

4.1 Test conditions

4.1 Test conditions

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

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

(2) Luminance setting: controls to be set to 200 nits with full screen 70 % duty cycle white signal

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

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

(5) Ambient temperature: 20 ± 5 °C

4.2 Resolution

Factory preset modes (15 modes)

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

Note: 1.Screen displays perfect picture at 15 factory-preset modes.
2.Screen displays visible picture with OSD warning when input modes are other then 30 preset modes.

4.3 Brightness:
typical 450 nits at maximum contrast and Brightness. (at center of the screen, Fig. 1)

4.4 Image size

4.4.1 Actual display size 376.32 x 301.056mm

4.5 Brightness uniformity

Set contrast at 100% and turn the brightness to Max. (At original color)

Apply the Fig 1, it should comply with the following formula:

$$\frac{\text{Minimum luminance of five points (brightness)}}{\text{Maximum luminance of five points (brightness)}} > 75\%$$

4.6 PC White color adjustment

There are three factory preset white color 6500K

Apply full white pattern, with brightness in 50 % position and the contrast control at 50% position.

The 1931 CIE Chromaticity (color triangle) diagram (x,y) coordinate for the screen center should be:

6500K CIE coordinates X = 0.313 ± 0.020
Y = 0.329 ± 0.020

4.7 TV White color adjustment

There is one factory preset white color x=0.289 ± 0.020; y=0.304 ± 0.020 for TV RF signal with the 1931 CIE Chromaticity diagram (x,y) coordinate ,FLUKE54200 color temp pattern, Smart picture is Personal.

4.8 TV picture centering.

Use CVBS (PAL and NTSC) input with cross hatch pattern to check the picture centering and should be
Left(size)-right(size) < +/- 3mm.
Up(size)-down(size) < +/- 3mm.

5.0 Mechanical characteristics

5.1 Controls

Control keys in Base :
- Up key
- Down key
- OK key
- Right key
- Left key
- DC power switch
- Auto key
- Neutral key
- Jazz key
- Rock key
- Classic key
- Mute key

Front in panel
- RC sensor

Rear I/O
- PC D-sub
- PC DVI
- Tuner input (for AP/China model)
- Cinch CVBS input (AV)
- Cinch Audio input (S-video and CVBS use same audio)
- S-Video input
- Mini jack PC audio input
- YPbPr
- Audio for YPbPr
- SCART (for We model)

GENERAL PRODUCT SPECIFICATION(Continued)

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I/O in bass
- Earphone
- Mic_phone
- 2 x USB B type
- USB A type
- DC inlet
- Subwoofer output

5.2 Unit dimension / Weight

Set dimension (incl. pedestal): 590mm W x 460mm H x 265mm D Net weight : 10 Kg

5.3 Tilt base

tilt angle : -5 to 25 degree

5.4 Transportation packages

5.4.1 Shipping dimension/Weight

Carton dimension : 677mm W x 564mm H x 526mm D

Gross weight : 14.5 Kg

5.4.2 Block unit / Palletization (Sea shipment)

layers/block	sets/layer	sets/block unit
3 /4	4	12/16

6.0 Environmental characteristics

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

6.1 Susceptibility of display to external environment

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

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

** Note: recommend at 0 to 35°C, Humidity less than 60 %

6.2 Transportation tests

Standard		ISTA-1A
Drop Test	Height	61cm
	Sequence	1C-3E-6F (10 drops)
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance (room temp./-10℃, humidity 70 %)
Vibration Test	Sequence	--- PACKAGING 5~500 Hz , 0.73Gms , 30 min. for Each axis(X,Y.Z)
	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

7.0 Reliability

8.1 Acceptance test

according to MIL-STD-105D Control II level

AQL : 0.65 (major)
2.5 (minor)
(please also refer to annual quality agreement)

9.0 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.

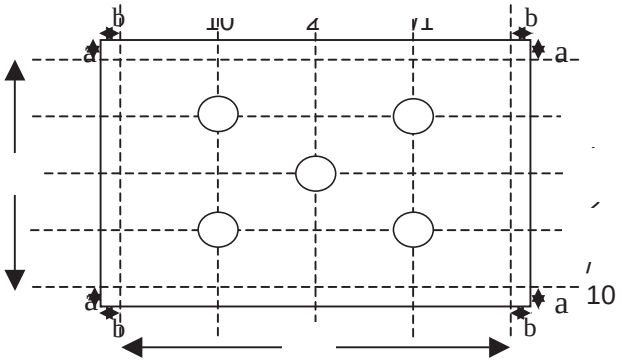

Fig 1: Brightness and Uniformity measure points

Table 1. NAFTA TV Channels

US- Air broadcast channel

Broadcast Channel	Video Carrier (MHz)	Audio Carrier (MHz)	Range (MHz)
2	55.25	59.75	54-60
3	61.25	65.75	60-66
4	67.25	71.75	66-72
5	77.25	81.75	76-82
6	83.25	87.75	82-88
7	175.25	179.75	174-180
8	181.25	185.75	180-186
9	187.25	191.75	186-192
10	193.25	197.75	192-198
11	199.25	203.75	198-204
12	205.25	209.75	204-210
13	211.25	215.75	210-216
14	471.25	475.75	470-476
15	477.25	481.75	476-482
16	483.25	487.75	482-488
17	489.25	493.75	488-494
18	495.25	499.75	494-500
19	501.25	505.75	500-506
20	507.25	511.75	506-512
21	513.25	517.75	512-518
22	519.25	523.75	518-524
23	525.25	529.75	524-530
24	531.25	535.75	530-536

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25	537.25	541.75	536-542
26	543.25	547.75	542-548
27	549.25	553.75	548-554
28	555.25	559.75	554-560
29	561.25	565.75	560-566
30	567.25	571.75	566-572
31	573.25	577.75	572-578
32	579.25	583.75	578-584
33	585.25	589.75	584-590
34	591.25	595.75	590-596
35	597.25	601.75	596-602
36	603.25	607.75	602-608
37	609.25	613.75	608-614
38	615.25	619.75	614-620
39	621.25	625.75	620-626
40	627.25	631.75	626-632
41	633.25	637.75	632-638
42	639.25	643.75	638-644
43	645.25	649.75	644-650
44	651.25	655.75	650-656
45	657.25	661.75	656-662
46	663.25	667.75	662-668
47	669.25	673.75	668-674
48	675.25	679.75	674-680
49	681.25	685.75	680-686
50	687.25	691.75	686-692
51	673.25	697.75	692-698
52	699.25	703.75	698-704
53	705.25	709.75	704-710
54	711.25	715.75	710-716
55	717.25	721.75	716-722
56	723.25	727.75	722-728
57	729.25	733.75	728-734
58	735.25	739.75	734-740
59	741.25	745.75	740-746
60	747.25	751.75	746-752
61	753.25	757.75	752-758
62	759.25	763.75	758-764
63	765.25	769.75	764-770
64	771.25	775.75	770-776
65	777.25	781.75	776-782
66	783.25	787.75	782-788
67	789.25	793.75	788-794
68	795.25	799.75	794-800
69	801.25	805.75	800-806

US-Cable channel

Cable Channel	Video carrier MHz	Audio carrier MHz	Range MHz
2	55.25	59.75	54-60
3	61.25	65.75	60-66
4	67.25	71.75	66-72
1	73.25	77.75	72-78
5	79.25	83.75	76-82
6	85.25	89.75	82-88
95	91.25	95.75	90-96
96	97.25	101.75	96-102
97	103.25	107.75	102-108
98	109.25	113.75	108-114

99	115.25	119.75	114-120
14	121.25	125.75	120-126
15	127.25	131.75	126-132
16	133.25	137.75	132-138
17	139.25	143.75	138-144
18	145.25	149.75	144-150
19	151.25	155.75	150-156
20	157.25	161.75	156-162
21	163.25	167.75	162-168
22	169.25	173.75	168-174
7	175.25	179.75	174-180
8	181.25	185.75	180-186
9	187.25	191.75	186-192
10	193.25	197.75	192-198
11	199.25	203.75	198-204
12	205.25	209.75	204-210
13	211.25	215.75	210-216
23	217.25	221.75	216-222
24	223.25	227.75	222-228
25	229.25	233.75	228-234
26	235.25	239.75	234-240
27	241.25	245.75	240-246
28	247.25	251.75	246-252
29	253.25	257.75	252-258
30	259.25	263.75	258-264
31	265.25	269.75	264-270
32	271.25	275.75	270-276
33	277.25	281.75	276-282
34	283.25	287.75	282-288
35	289.25	293.75	288-294
36	295.25	299.75	294-300
37	301.25	305.75	300-306
38	307.25	311.75	306-312
39	313.25	317.75	312-318
40	319.25	323.75	318-324
41	325.25	329.75	324-330
42	331.25	335.75	330-336
43	337.25	341.75	336-342
44	343.25	347.75	342-348
45	349.25	353.75	348-354
46	355.25	359.75	354-360
47	361.25	365.75	360-366
48	367.25	371.75	366-372
49	373.25	377.75	372-378
50	379.25	383.75	378-384
51	385.25	389.75	384-390
52	391.25	395.75	390-396
53	397.25	401.75	396-402
54	403.25	407.75	402-408
55	409.25	413.75	408-414
56	415.25	419.75	414-420
57	421.25	425.75	420-426
58	427.25	431.75	426-432
59	433.25	437.75	432-438
60	439.25	443.75	438-444
61	445.25	449.75	444-450
62	451.25	455.75	450-456
63	457.25	461.75	456-462
64	463.25	467.75	462-468
65	469.25	473.75	468-474
66	475.25	479.25	474-480

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67	481.25	485.75	480-486
68	487.25	491.75	486-492
69	493.25	497.75	492-498
70	499.25	503.75	498-504
71	505.25	509.75	504-510
72	511.25	515.75	510-516
73	517.25	521.75	516-522
74	523.25	527.75	522-528
75	529.25	533.75	528-534
76	535.25	539.75	534-540
77	541.25	545.75	540-546
78	547.25	551.75	546-552
79	553.25	557.75	552-558
80	559.25	563.75	558-564
81	565.25	569.75	564-570
82	571.25	575.75	570-576
83	577.25	581.75	576-582
84	583.25	587.75	582-588
85	589.25	593.75	588-594
86	595.25	599.75	594-600
87	601.25	605.75	600-606
88	607.25	611.75	606-612
89	613.25	617.75	612-618
90	619.25	623.75	618-624
91	625.25	629.75	624-630
92	631.25	635.75	630-636
93	637.25	641.75	636-642
94	643.25	647.75	642-648
100	649.25	653.75	648-654
101	655.25	659.75	654-660
102	661.25	665.75	660-666
103	667.25	671.75	666-672
104	673.25	677.75	672-678
105	679.25	683.75	678-684
106	685.25	689.75	684-690
107	691.25	695.75	690-696
108	697.25	701.75	696-702
109	703.25	707.75	702-708
110	709.25	713.75	708-714
111	715.25	719.75	714-720
112	721.25	725.75	720-726
113	727.25	731.75	726-732
114	733.25	737.75	732-738
115	739.25	743.75	738-744
116	745.25	749.75	744-750
117	751.25	755.75	750-756
118	757.25	761.75	756-762
119	763.25	767.75	762-768
120	769.25	773.75	768-774
121	775.25	779.75	774-780
122	781.25	785.75	780-786
123	787.25	791.75	786-792
124	793.25	797.75	792-798
125	799.25	803.75	798-804

0. Warning

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

1. Servicing of SMDs (Surface Mounted Devices)

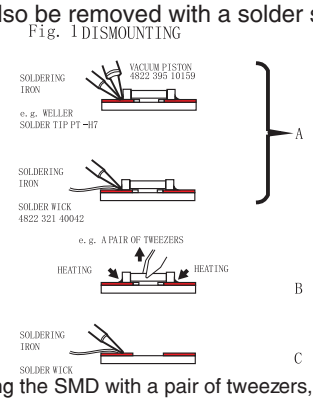
1.1 General cautions on handling and storage

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

1.2 Removal of SMDs

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

Fig. 1 DISMOUNTING



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

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

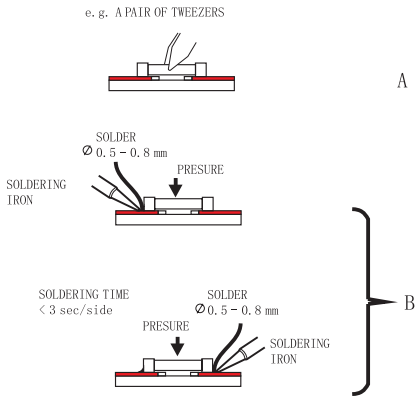
1.3 Caution on removal

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

1.4 Attachment of SMDs

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

Fig. 2 MOUNTING



2. Caution when attaching SMDs

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

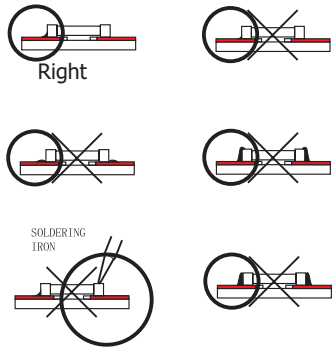


Fig.3 Examples

Repair Tips

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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 14900108(1.0mm SAC305).
Remark: For lead free soldering material, please visit www.alphametals.com website for details. This is recommended by Philips.

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

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

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

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

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

5. Rework on BGA (Ball Grid Array) ICs

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

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

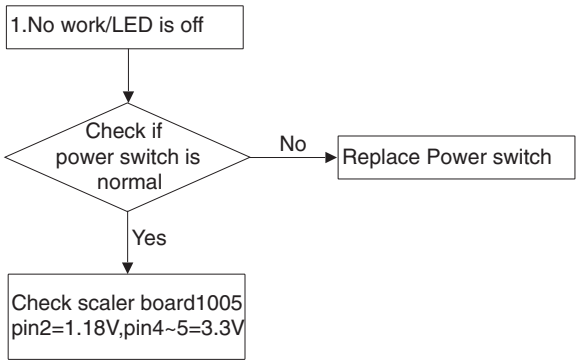
Area Preparation
When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be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

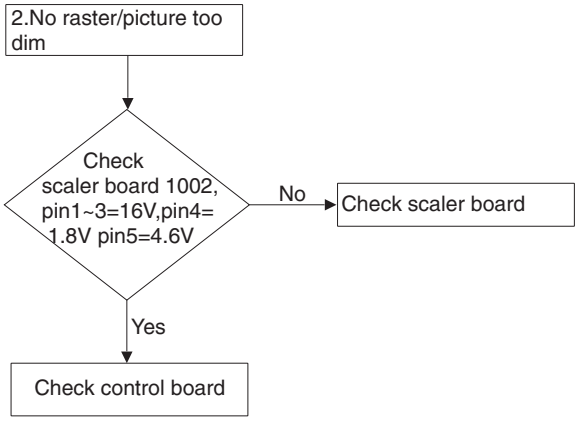
Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.
To reflow the solder, apply a temperature profile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

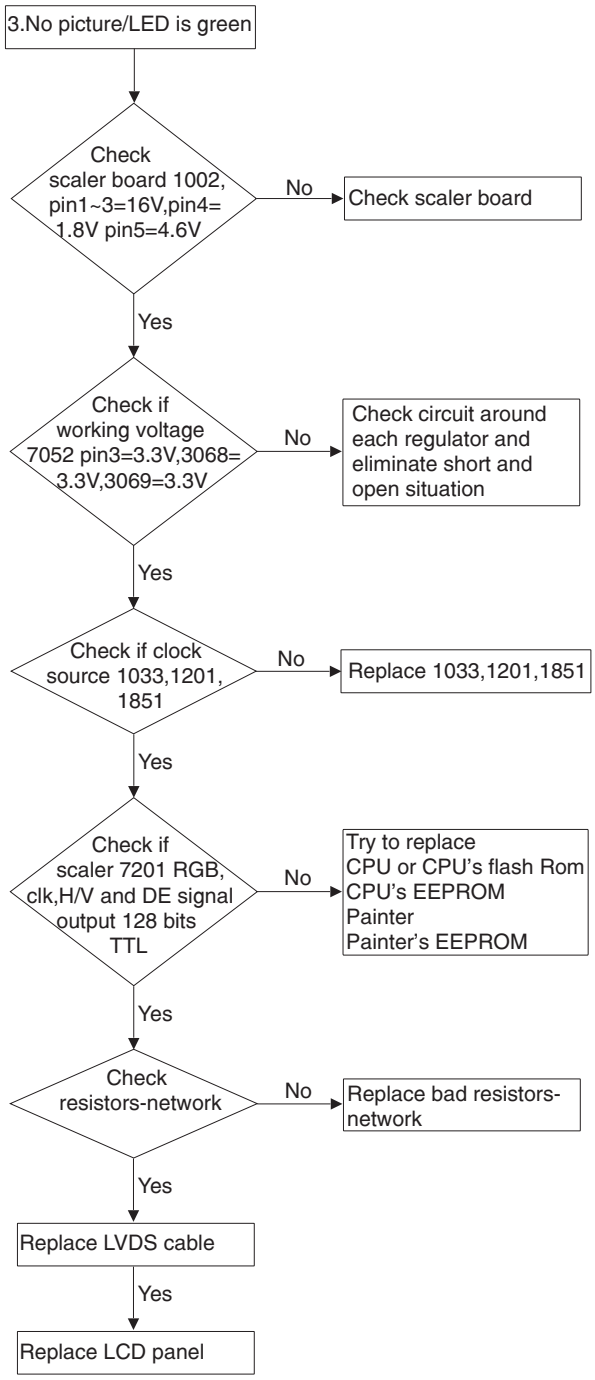
More Information
For more information on how to handle BGA devices, visit this URL: http://www.atyourservice.ce.philips.com (needs subscription). After login, select Magazine , then go to Workshop Information . Here you will find Information on how .to deal with BGA-ICs.

Repair Flow Chart

Go to cover page

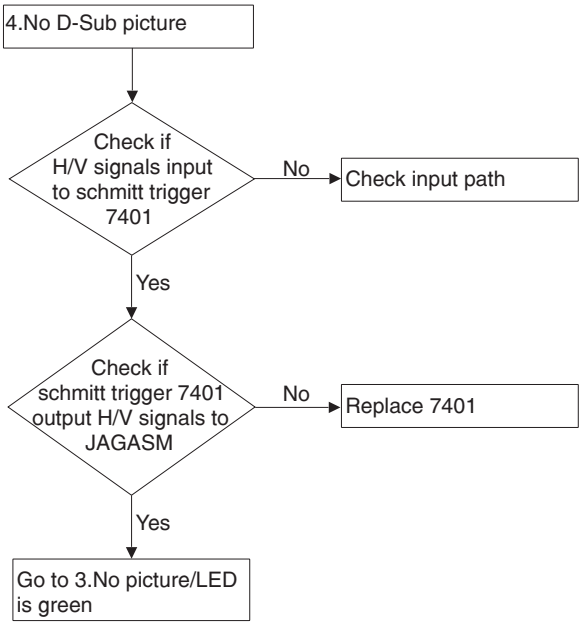


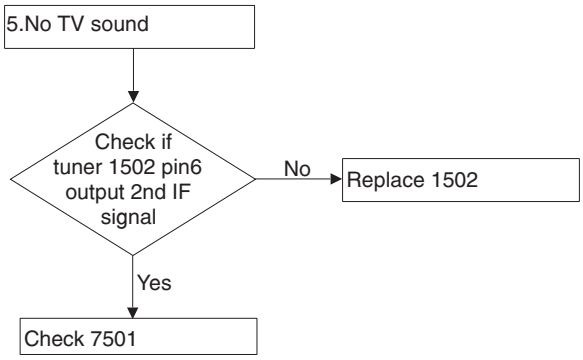


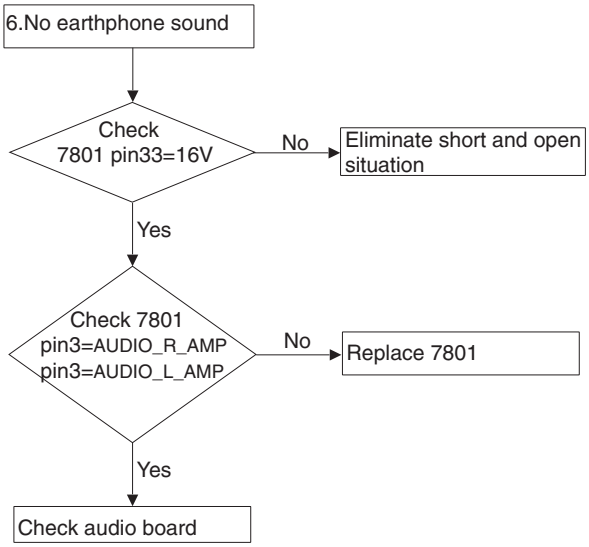


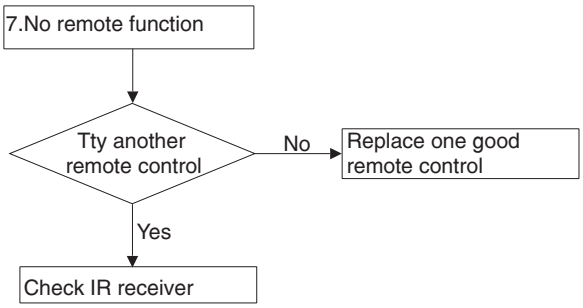
Repair Flow Chart

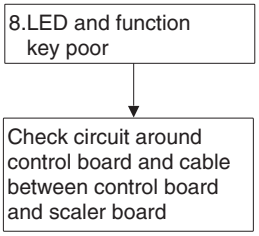
Go to cover page











Failure Mode Of Panel

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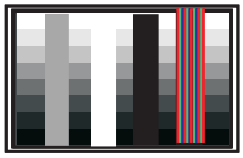
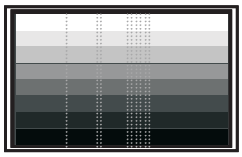
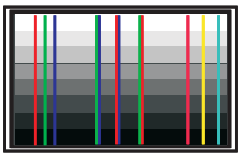
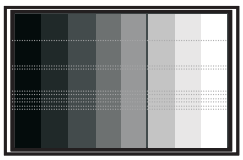
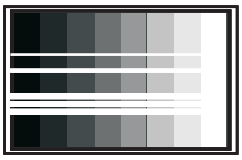
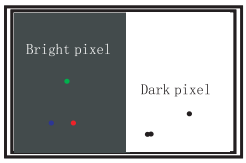
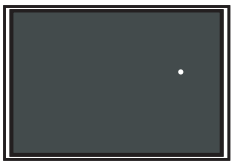
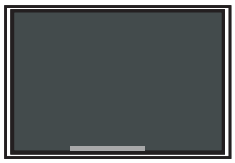
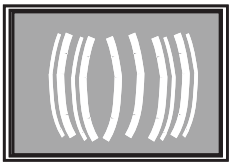
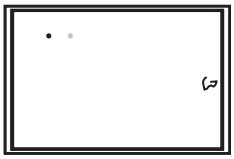
Quick reference for failure mode of LCD panel

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

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

Safety Test Requirements

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

HI-POT TEST INSTRUCTION

1.Application requirements

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

2. Test method

2.1 Connecting conditions

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

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

Condition	HiPot Test for products where the mains input range is Full range(or 220V AC)	HiPot Test for products where the mains input is 110V AC(USA type)	Ground Continuity Test requirement
Test voltage	2820VDC (2000VAC)	1700VDC (1200VAC)	Test current: 25A,AC
Test time (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: <=0.09+Rohm, 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%.

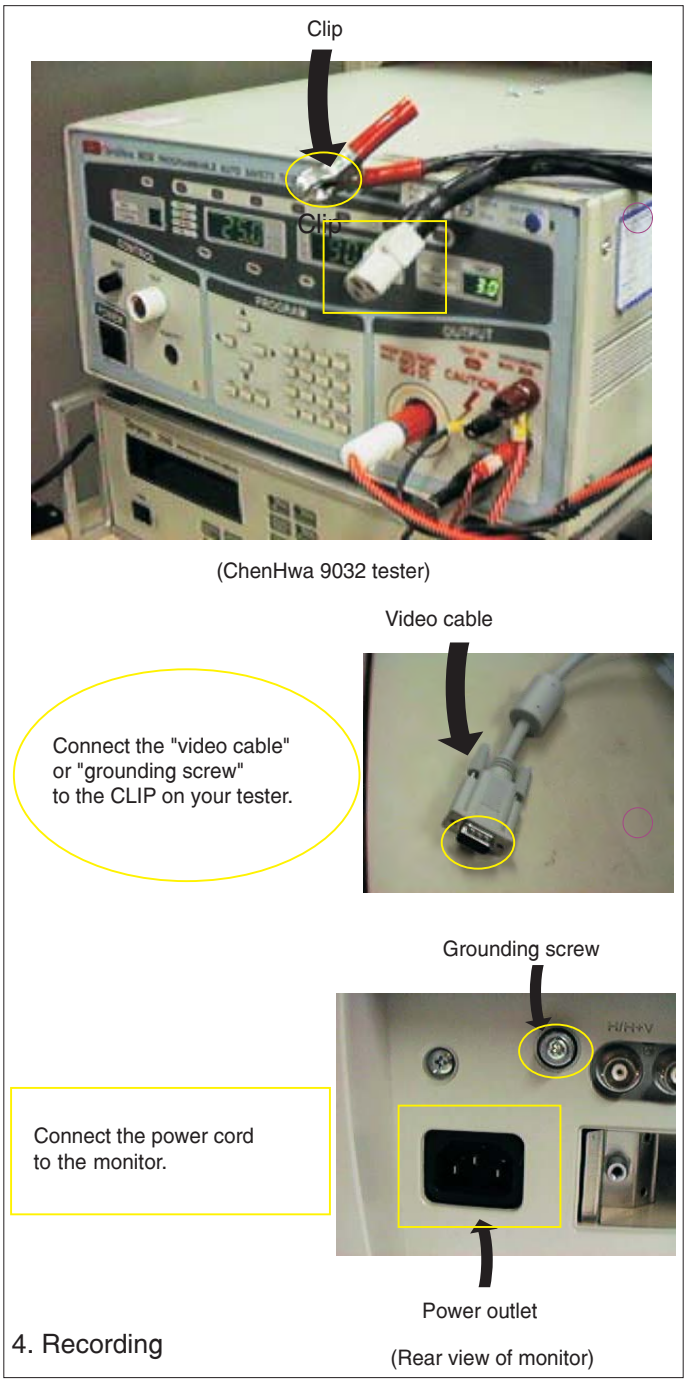
2.2.3 There must be no breakdown during the test.

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.



4. Recording

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

Different Parts List

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Diversity of 190G6FB/00 compared with 190G6FB/97

Item	12NC	Description
	863900016443	190G6FB/00
0040	313815760711	BACK COVER ASSY-WE
0044	313815417051	INNER COVER-WE
0091	313815137741	SHIELDING-UPPER-WE
0092	313815137761	SHIELDING-LOWER-WE
0291	313815568611	LABEL-CPU-WE
0295	313815568621	LABEL-EEPROM-WE
0615	313811709061	HEX CODE OF F/W-WE
1051	313815864381	SCALER ASSY(WE)
1054	313815865741	LED ASSY(WE)
1061	313812874931	MAINSCORD
1068	823827718791	SUBWOOFER ASSY 20W(SUB G6/EU)
1402	242202605451	SOC CINCH H 2P F 1L2 WHRD B
1403	242202605453	SOC CINCH H 3P F 1L3 RDBUGR B
1404	313818876611	SOC EURO H 21P F SHE L-GRND Y
2403	223886715331	CER1 0603 NP0 50V 330P PM5 R
2404	223886715331	CER1 0603 NP0 50V 330P PM5 R
2405	223886715331	CER1 0603 NP0 50V 330P PM5 R
2408	223886715331	CER1 0603 NP0 50V 330P PM5 R
2409	223886715331	CER1 0603 NP0 50V 330P PM5 R
2410	223886715331	CER1 0603 NP0 50V 330P PM5 R
2411	223886715229	CER1 0603 NP0 50V 22P PM5 R
2412	223886715121	CER1 0603 NP0 50V 120P PM5 R
2413	223886715331	CER1 0603 NP0 50V 330P PM5 R
2414	223886715689	CER1 0603 NP0 50V 68P PM5 R
2415	223886715229	CER1 0603 NP0 50V 22P PM5 R
2416	223886715121	CER1 0603 NP0 50V 120P PM5 R
2417	223886715689	CER1 0603 NP0 50V 68P PM5 R
2418	223886715121	CER1 0603 NP0 50V 120P PM5 R
2419	223886715229	CER1 0603 NP0 50V 22P PM5 R
2420	223886715229	CER1 0603 NP0 50V 22P PM5 R
2421	223886715689	CER1 0603 NP0 50V 68P PM5 R
2422	223886715331	CER1 0603 NP0 50V 330P PM5 R
2423	223886715331	CER1 0603 NP0 50V 330P PM5 R
2424	223886715229	CER1 0603 NP0 50V 22P PM5 R
2425	223886715331	CER1 0603 NP0 50V 330P PM5 R
2426	223886715331	CER1 0603 NP0 50V 330P PM5 R
3401	212211805645	RST SM 0603 RC0603 150R PM5 R
3404	232270260224	RST SM 0603 RC21 220K PM5 R
3405	232270260273	RST SM 0603 RC21 27K PM5 R
3407	212211805645	RST SM 0603 RC0603 150R PM5 R
3409	232270260224	RST SM 0603 RC21 220K PM5 R
3410	232270260273	RST SM 0603 RC21 27K PM5 R
3411	232270260279	RST SM 0603 RC21 27R PM5 R
3412	212211805639	RST SM 0603 RC0603 47R PM5 R
3413	212211805964	RST SM 0603 RC0603 75R PM1 R
3414	212211805667	RST SM 0603 RC0603 6K8 PM5 R
3415	232270260279	RST SM 0603 RC21 27R PM5 R
3416	212211805639	RST SM 0603 RC0603 47R PM5 R
3417	212211805964	RST SM 0603 RC0603 75R PM1 R
3418	232270260102	RST SM 0603 RC21 1K PM5 R
3419	232270260102	RST SM 0603 RC21 1K PM5 R
3420	232270260279	RST SM 0603 RC21 27R PM5 R
3421	232270260102	RST SM 0603 RC21 1K PM5 R
3422	212211805639	RST SM 0603 RC0603 47R PM5 R
3423	212211805964	RST SM 0603 RC0603 75R PM1 R
3424	232270260279	RST SM 0603 RC21 27R PM5 R
3425	232270260273	RST SM 0603 RC21 27K PM5 R
3426	212211805639	RST SM 0603 RC0603 47R PM5 R
3427	232270260273	RST SM 0603 RC21 27K PM5 R
3438	232270260102	RST SM 0603 RC21 1K PM5 R
3439	232270260102	RST SM 0603 RC21 1K PM5 R
3440	232270260102	RST SM 0603 RC21 1K PM5 R
3441	232270260273	RST SM 0603 RC21 27K PM5 R
3809	212211805662	RST SM 0603 RC0603 2K7 PM5 R
3810	212211805662	RST SM 0603 RC0603 2K7 PM5 R
3811	232270260512	RST SM 0603 RC21 5K1 PM5 R
3812	232270260512	RST SM 0603 RC21 5K1 PM5 R
4401	212211805631	RST SM 0603 JUMP. MAX 0R05 R
4402	212211805631	RST SM 0603 JUMP. MAX 0R05 R
4409	212211805631	RST SM 0603 JUMP. MAX 0R05 R
4854	212211805631	RST SM 0603 JUMP. MAX 0R05 R
4855	212211805631	RST SM 0603 JUMP. MAX 0R05 R
5403	242253595853	IND FXD SM 0603 0U10 PM10 R
5404	242253595853	IND FXD SM 0603 0U10 PM10 R
5405	242253595853	IND FXD SM 0603 0U10 PM10 R
5406	242253595853	IND FXD SM 0603 0U10 PM10 R
5407	242253595853	IND FXD SM 0603 0U10 PM10 R
5408	242253595853	IND FXD SM 0603 0U10 PM10 R
5409	242253595853	IND FXD SM 0603 0U10 PM10 R
5410	242253595853	IND FXD SM 0603 0U10 PM10 R
6403	932209863685	DIO SIG SM BAV99 (VISH) R
6404	932209863685	DIO SIG SM BAV99 (VISH) R
6405	932209863685	DIO SIG SM BAV99 (VISH) R
7052	313815865691	CPU IC ASSY(WE)
7055	313815865681	EEPROM ASSY(WE)
7401	933967270685	TRA SIG SM BC847CLG (ONSE) R

1. According the Ca006283, change 190G6FB/00,190G6FB/93, 190G6FB/97 Different Parts List . The difference is as the following.

REF	12NC	Description
2	863900016443	190G6FB/00
3	863900016447	190G6FB/93
1	863900016448	190G6FB/97

REF	Action	Item	12NC	Description
1	From	291	313815568572	LABEL-CPU-AP
	To	291	313815568573	LABEL-CPU-AP
2	From	291	313815568612	LABEL-CPU-WE
	To	291	313815568613	LABEL-CPU-WE
3	From	291	313815568682	LABEL-CPU-CH
	To	291	313815568683	LABEL-CPU-CH
1	From	615	313811709052	HEX CODE OF F/W (NO MATL REQ)
	To	615	313811709053	HEX CODE OF F/W(NO MATL REQ)
2	From	615	313811709062	HEX CODE OF F/W-WE
	To	615	313811709063	HEX CODE OF F/W(NO MATL REQ)
3	From	615	313811709072	HEX CODE OF F/W (NO MATL REQ)
	To	615	313811709073	HEX CODE OF F/W(NO MATL REQ)

Update for 190G6

Go to cover page

1.Accofding to the CA006798,190G6FB/00,190G6FB/93,190G6FB/97 to solve the screen of TV cannot be displaied fully.Detail as following :

REF	12NC	Description
1	313815860581	AUDIO+USB ASSY

REF	Action	Item	12NC	Description
ALL	New	216	313815570391	LABEL - UAC

Affected Sets

REF	12NC	Description
1	863900016443	190G6FB/00
1	863900016447	190G6FB/93
1	863900016448	190G6FB/97

REF	12NC	Description
1	313815865671	CPU IC ASSY(AP)
2	313815865691	CPU IC ASSY(WE)
3	313815865711	CPU IC ASSY(CHA)

Action	Item	12NC	Description
From	291	313815568573	LABEL-CPU-AP
To	291	313815568574	LABEL-CPU-AP
From	291	313815568613	LABEL-CPU-WE
To	291	313815568614	LABEL-CPU-WE
From	291	313815568683	LABEL-CPU-CH
To	291	313815568684	LABEL-CPU-CH
From	615	313811709053	HEX CODE OF F/W(NO MATL
To	615	313811709054	HEX CODE OF F/W(NO MATL
From	615	313811709063	HEX CODE OF F/W(NO MATL
To	615	313811709064	HEX CODE OF F/W(NO MATL
From	615	313811709073	HEX CODE OF F/W(NO MATL
To	615	313811709074	HEX CODE OF F/W(NO MATL

Affected Sets

REF	12NC	Description
1	313815860561	SCALER PCB ASSY
2	313815864381	SCALER ASSY(WE)
3	313815864391	SCALER ASSY(CHINA)
2	863900016443	190G6FB/00
3	863900016447	190G6FB/93
1	863900016448	190G6FB/97

2.Accofding to the CA006815,190G6FB/00,190G6FB/93,190G6FB/97 to solve the sound fragile,detail as below:

REF	12NC	Description
1	313815860581	AUDIO+USB ASSY

REF	Action	Item	12NC	Description
ALL	Del	216	313815570391	LABEL - UAC
ALL	From	7693	823827718761	128K EEPROM
	To	7693	313815869421	AUDIO PROGRAM ASSY

Affected Sets

REF	12NC	Description
1	863900016443	190G6FB/00
1	863900016447	190G6FB/93
1	863900016448	190G6FB/97

REF	12NC	Description
1	313815869421	AUDIO PROGRAM ASSY

REF	Action	Item	12NC	Description
ALL	New	216	313815570391	LABEL - UAC
ALL	New	616	313811710021	AUDIO BIN FOR 190G6
ALL	New	7693	823827718761	128K EEPROM

REF	12NC	Description
1	313815860581	AUDIO+USB ASSY
1	863900016443	190G6FB/00
1	863900016447	190G6FB/93
1	863900016448	190G6FB/97

TELEVISION/MONITOR SAFFTY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

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

Fire and Shock Hazard

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

* Broken line

Implosion

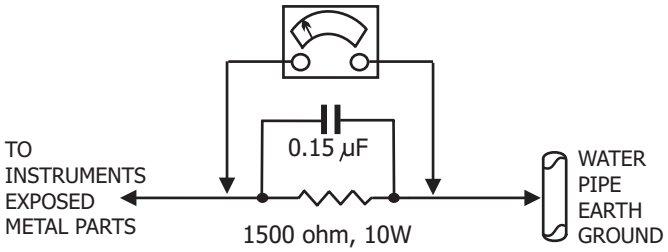
1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn,whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified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

X-radiation

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

Leakage Current Cold Check

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



Leakage Current Hot Check

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

Picture Tube Replacement

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

Parts Replacement

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

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