LCD Colour Monitor

Chassis: HUDSON 8

Service
Service
Service

190CW8FB/00
190CW8FB/69
190CW8FB/78
190CW8FB/75
190CW8FB/93
190CW8FB/96
190CW8FB/97
190CW8FW/00
190CW8FW/93
190SW8FB/27
190SW8FB/69
190SW8FB/75
190SW8FB/97
190SW8FS/00
190SW8FS/69
190SW8FS/75
190SW8FS/78
190SW8FS/96
190SW8FS/97
190VW8FB/00
190VW8FB/96

# 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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PHILIPS

# Important Safety Notice

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

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

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

WARNING

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

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

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

* Broken Line

FOR PRODUCTS CONTAINING LASER :

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

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

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

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

Take care during handling the LCD module with backlight unit

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

# Technical Data

| | |
|---|---|
| Type NR. | : LPL, LM190WX1-TLA1 (TN) |
| Number of Pixels. | : 1440 (H) x900 (V) |
| Physical Size. | : 427.2(H) x 277.4(V) x 15.3(D) mm(Typ.) |
| Pixel Pitch. | : 0.095*RGB(H)mm x 0.285(V)mm |
| Color pixel arrangement. | : RGB vertical stripes |
| Support Color. | : 16.7M colors |
| Display Mode. | : Normally White |
| Backlight. | : CCFL edge light system |
| Active area. (WXH). | : 410.4 (H) x 256.5 (V) |
| Viewing Angle (CR>=10). | : R/L 160(Typ.), U/D 160(Typ.) |
| Contrast ratio. | : 1000:1(Typ.) 700:1(Min.) |
| White luminance. | : Original color 250 nits (Min), 300 nits (Typ.) |

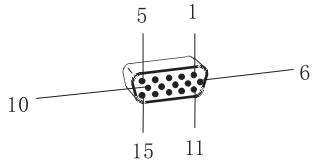
| | |
|---|---|
| Type NR. | : CMO, M190A1-L06 (TN) |
| Number of Pixels. | : 1440 (H) x900 (V) |
| Physical Size. | : 427.2(w)*277.4(h)*17.0(d) (Typ) mm |
| Pixel Pitch. | : 0.285 mm x 0.285 mm |
| Color pixel arrangement. | : RGB vertical stripes |
| Support Color. | : 16.7M colors ( 6 bits+FRC ) |
| Display Mode. | : Normally White |
| Backlight. | : CCFL edge light system |
| Active area. (WXH). | : 410.4 x 256.5mm (19.05□diagonal) |
| Viewing Angle (CR>=10). | : 75/75 (min), 85/85 (typ) for Horizontal & 70/70 (min), 80/80 (typ) for Vertical |
| Contrast ratio. | : 850:1(Typ.) 500:1(Min.) |
| White luminance. | : Original color 230 nits (Min), 300 nits (Typ.) |

| | |
|---|---|
| Scanning frequencies | |
| H-Frequency. | : 30K - 83 KHz |
| V-Frequency. | : 56 - 76 Hz |
| Video dot rate. | : < 140 MHz |
| Power input. | : 90-264 V AC, 50/60 ± 2 Hz |
| Power consumption. | : < 36W ( Typ.) |

Power Management Definition:

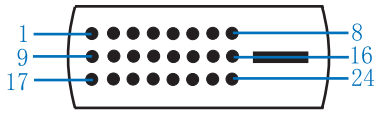
| STATUS | H-sync | V-sync | Video | Power | LED |
|---|---|---|---|---|---|
| On | On | On | Active | <36W | Green |
| Stand-by | Off | On | Blanked | <1W | Amber LCD |
| Suspend | On | Off | Blanked | <1W | Amber LCD |
| Off | Off | Off | Blanked | <1W | Amber LCD |
| DC Power off | | | N / A | <1W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

Pin Assignment




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

Input DVI-D connector pin




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

Environmental conditions

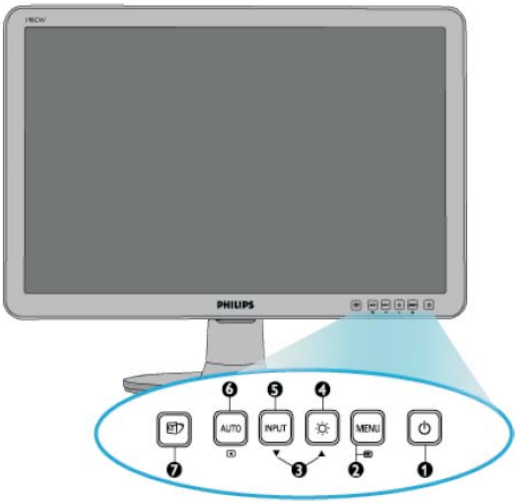
Operating
- Temperature : 0 to 35 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

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

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

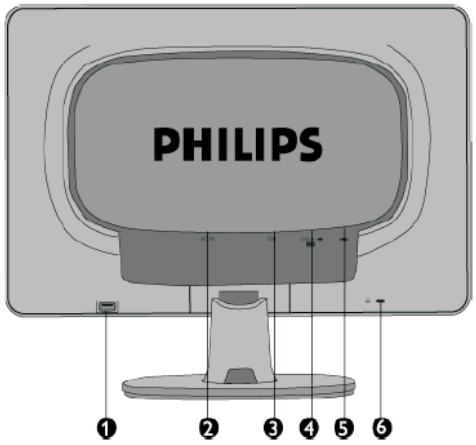
# Installation

## Front View




1. To switch monitor's power On and Off
2. MENU/OK To access OSD menu
3. To adjust the OSD
4. To adjust brightness of the display
5. AUTO/ Automatically adjust the horizontal position, vertical position, phase and clock settings / Return to previous OSD level.
6. INPUT To change the signal input source.
7. There are five modes to be selected: Office Work, Image Viewing, Entertainment, Economy, and Off.

## Rear View



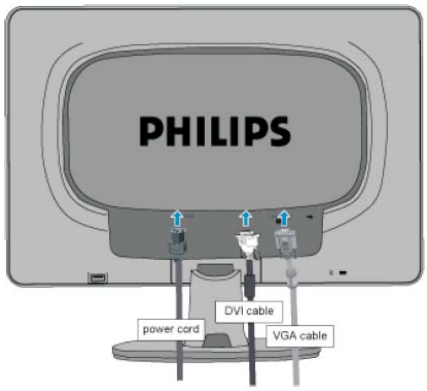

| | |
|---|---|
| 1 | USB downstream port |
| 2 | AC power input |
| 3 | DVI-D input (Available for selected countries) |
| 4 | VGA input |
| 5 | USB upstream port |
| 6 | Kensington anti-thief lock |

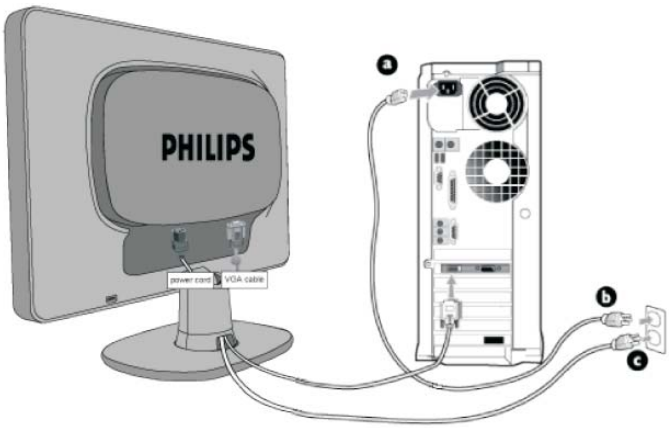
## Accessory Pack

| Item | Description |
|---|---|
| | Power cord |
| | VGA signal cable |
| | USB Cable |
| | EDFU pack |

## Connecting to Your PC

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



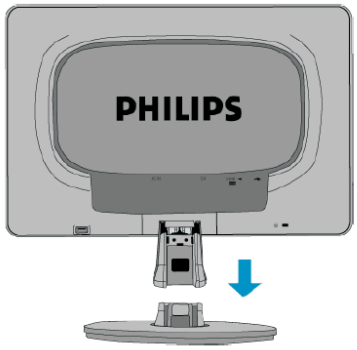

2) Connect to PC

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

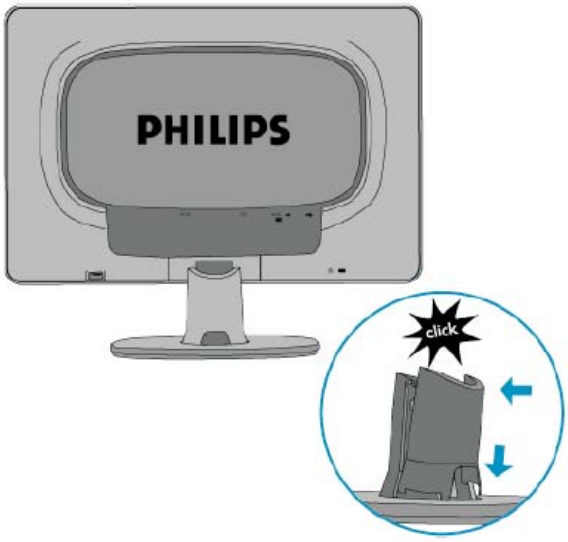
## The Base

Attach and Detach the Base
Attach the Base

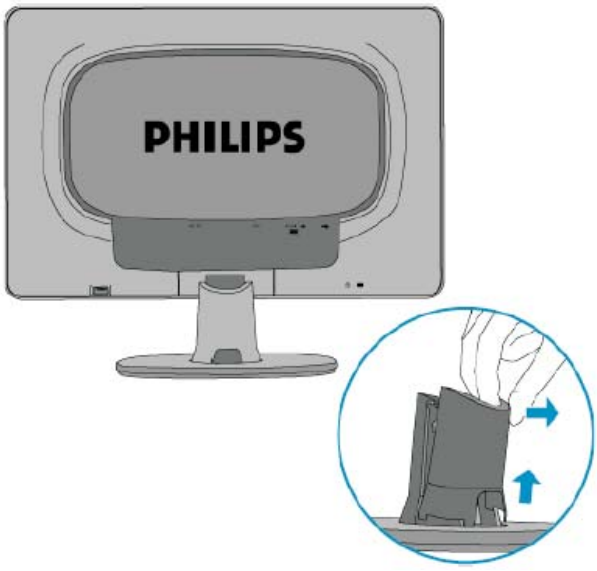
1) Place the base on flat surface, slide the monitor body onto the base.



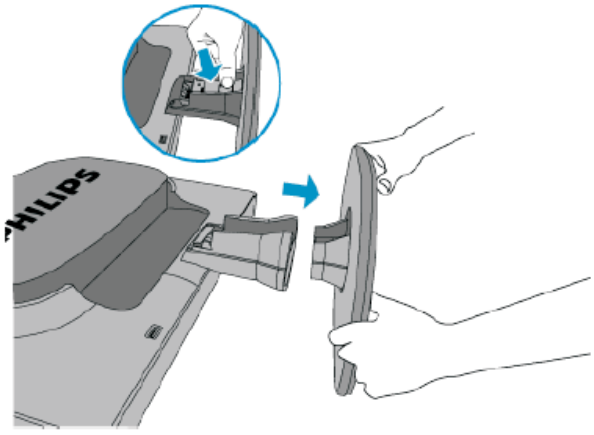
2) Install cable cover as illustrated below.




Detach the Base
Detach
1) Remove the cable cover as illustrated below.




2) Place the monitor face on a safe surface, push down on the release button and pull the base away from the monitor body.



# On Screen Display

Go to cover page

## Description of the On Screen Display

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

Basic and simple instruction on the control keys.

In the OSD shown above users can press ▲▼ buttons at the front bezel of the monitor to move the cursor, OK to confirm the choice or change,

The OSD Tree

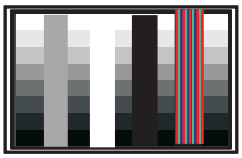
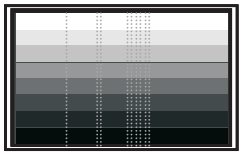
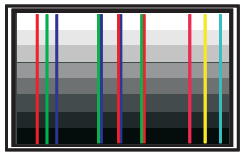
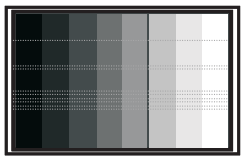
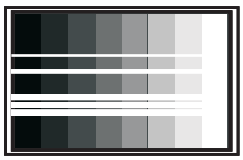
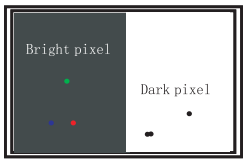
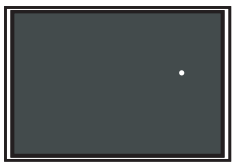
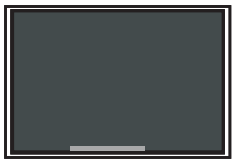
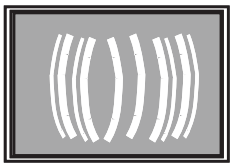
Below is an overall view of the structure of the On-Screen Display. You can use this as a reference when you want to work your way around the different adjustments later on.

- **Picture**
  - Brightness
  - Contrast
- **Color**
  - Color Temperature (5000K,6500K,7500K,8200K,9300K,11500K)
  - sRGB
  - User Define
    - Red
    - Green
    - Blue
- **Language** — English, Español, Français, Deutsch, Italiano, Português, Русский, 简体中文
- **OSD Settings**
  - Horizontal
  - Vertical
  - Transparency — Off, 1/4, 2/4, 3/4, 4/4
  - OSD Time Out — 5s/10s/20s/30s/60s
- **Setup**
  - Phase
  - Clock
  - H. Position
  - V. Position
  - Smart Response — On/Off
  - Smart Contrast — On/Off
  - Reset — Yes/No
  - Resolution notification — On/Off
  - Information
- **Input**
  - AUTO
  - VGA
  - DVI

# Failure Mode Of Panel

Quick reference for failure mode of LCD panel

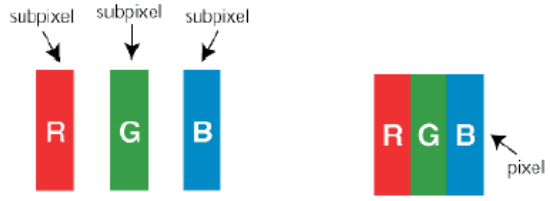
this page presents problems that could be made by LCD panel.
It is not necessary to repair circuit board. Simply follow the mechanical instruction on this manual to eliminate failure by replace LCD panel.

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

# Philips Pixel Defect Policy

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 19"XGA monitor may be defective. Furthermore, Philips sets even higher quality standards for certain types or combinations of pixel defects that are more noticeable than others. This policy is valid worldwide.




Pixels and Sub pixels

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

Types of Pixel Defects

Pixel and sub pixel defects appear on the screen in different ways. There are two categories of pixel defects and several types of sub pixel defects within each category.Bright Dot Defects Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. That is,a *bright dot* is a sub-pixel that stands out on the screen when the monitor displays a dark pattern.There are the types of bright dot defects

One lit red, green or blue sub pixel

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

Three adjacent lit sub pixels (one white pixel)

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

Black Dot Defects Black dot defects appear as pixels or sub pixels that are always dark or 'off'. That is, a *dark dot* is a sub-pixel that stands out on the screen when the monitor displays a light pattern.These are the types of black dot defects:

One dark sub pixel

Two or three adjacent dark sub pixels

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

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

| BRIGHT DOT DEFECTS | ACCEPTABLE LEVEL | |
|---|---|---|
| *MODEL* | 190SW8 | 190CW8 |
| 1 lit subpixel | 3 or fewer | 3 or fewer |
| 2 adjacent lit subpixels | 1 or fewer | 1 or fewer |
| 3 adjacent lit subpixels (one white pixel) | 0 | 0 |
| Distance between two bright dot defects* | 15 mm or more | 15 mm or more |
| Total bright dot defects of all types | 3 or fewer | 3 or fewer |

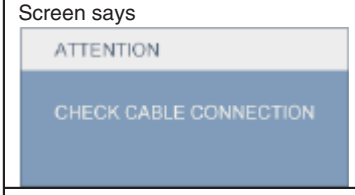
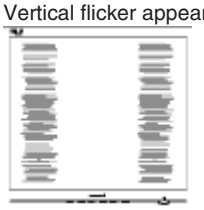
| BLACK DOT DEFECTS | ACCEPTABLE LEVEL | |
|---|---|---|
| *MODEL* | 190SW8 | 190CW8 |
| 1 dark subpixel | 5 or fewer | 5 or fewer |
| 2 adjacent dark subpixels | 2 or fewer | 2 or fewer |
| 3 adjacent dark subpixels | 0 | 0 |
| Distance between two black dot defects* | 15 mm or more | 15 mm or more |
| Total black dot defects of all types | 5 or fewer | 5 or fewer |

| BLACK DOT DEFECTS | ACCEPTABLE LEVEL | |
|---|---|---|
| *MODEL* | 190SW8 | 190CW8 |
| Total bright or black dot defects of all types | 5 or fewer | 5 or fewer |

Note:

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

All Philips monitors are ISO13406-2 Compliant

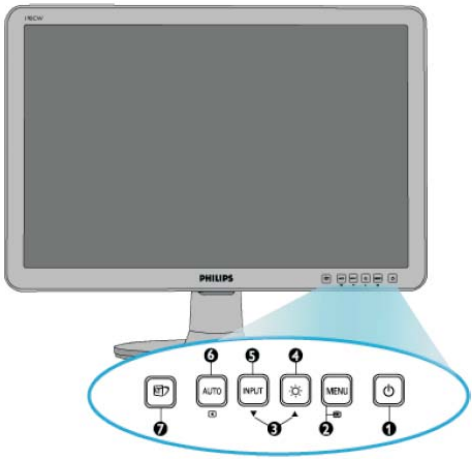
| Common Problems | |
|---|---|
| Having this problem | Check these items |
| No Picture<br>Power LED not lit) | ● Make sure the power cord is plugged into the power out let and into the back of the monitor.<br>● First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position. |
| No Picture<br>(Power LED is amber or yellow) | ●Make sure the computer is turned on.<br>●Make sure the signal cable is properly connected computer.<br>●Check to see if the monitor cable has bent pins.<br>●The Energy Saving feature may be activated |
| Screen says<br>  | ●Make sure the monitor cable is properly connected to<br>your computer. (Also refer to the Quick Set-Up Guide).<br>●Check to see if the monitor cable has bent pins.<br>●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.<br>●It may not work properly if using nonstandard PC or videocard. |
| Imaging Problems | |
| Display position is incorrect | ●Press the Auto button.<br>●Adjust the image position using the Phase/Clock of More Settings 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<br>  | ●Press the Auto button.<br>●Eliminate the vertical bars using the Phase/Clock of More Settings in OSD Main Controls. |
| Horizontal flicker appears<br> | ●Press the Auto button.<br>●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 On-Screen Display.(The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your sales representative). |
| An after-image appears | ●If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an afterimage.This usually disappears after a few hours |
| An after-image remains after the power has been turned off. | ●This is characteristic of liquid crystal and is not caused by amalfunction or deterioration of the liquid crystal. The afterimage will disappear after a peroid of time. |
| Green, red, blue, dark, and white dots | ●The remaining dots are normal characteristic of the liquid crystal |

# Warning Message

Warning message table

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

Front Control




To Lock/Unlock OSD FUNCTION(User Mode)
The OSD function can be locked by pressing"MENU"button for more than 10 seconds, the screen shows following windows for 4 seconds. Everytime when you press"MENU" button, this message appears on the screen automatically.

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

## Access Aging Mode

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

After 15 seconds, bring up:

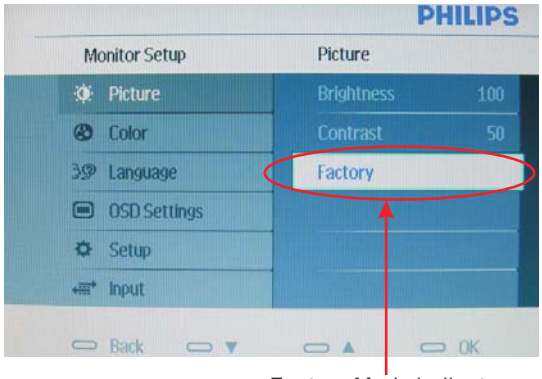
After 15 seconds, bring up:

After 15 seconds, bring up:

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

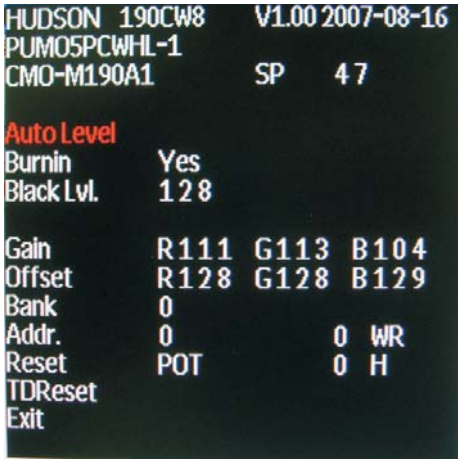
Access Factory Mode

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




Factory Mode indicator

Enter Factory Menu
Step1:Press"MENU"button.
Step2:Choose"Picture".
Step3:Press"▼▲" button and choose"factory".
Step4:Press"MENU"button.



# Mechanical Instruction

## Front View

Fig.1

## Back View

Fig.2

Step 1. Remove the Base.

1. Remove the cable cover as Fig.3.
2. Press the button as Fig.3 and pull out the base as Fig.4

Fig.3

Fig.4

3. Remove the 3 screws to remove the Column as Fig.5.
4. Remove the hinge cover as Fig.5.

Fig.5

Fig.6

5. Remove the 4 screws to remove the hinge ass'y as Fig.6.
6. Remove the 1 screw as Fig.7.

Fig.7

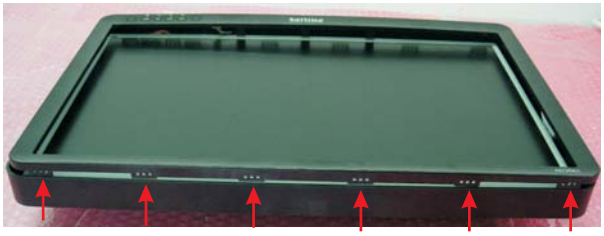


Fig.8

Step 2. Remove the Front bezel.

1. Use plastic putty knife to release 6 snaps on the top side as Fig.8.
2. Use plastic putty knife to release 4 snaps on the right side as Fig.9.
3. Use plastic putty knife to release 4 snaps on the left side as Fig.10.

Fig.9

Fig.10

4. Use plastic putty knife to release 6 snaps on the bottom side as Fig.11.
5. Disconnect the cable of Key board as Fig.12.

Fig.11

Fig.12

Step 3. Remove the Rear cover.

Fig.13

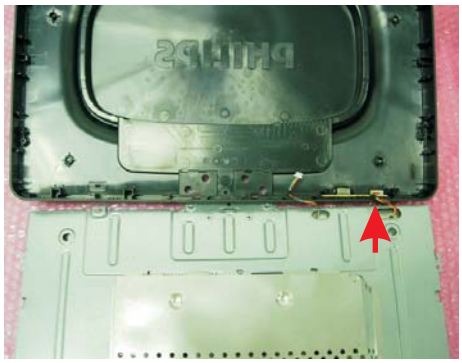


Fig.14

1. Remove the 5 screws as Fig.13
2. Disconnect the 1 cable of USB board as Fig.14

Step 4. Remove the shield ., scaler board , power board and USB board.

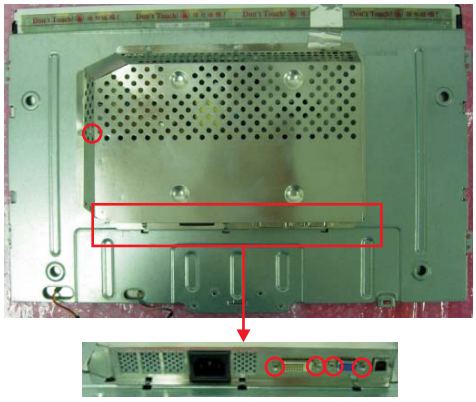


Fig.15

1. Remove the 5 screws to remove the shield as Fig.15.
2. Remove the 6 screws and disconnect 8 calbe to remove the scaler board , power board and USB board as Fig.16.

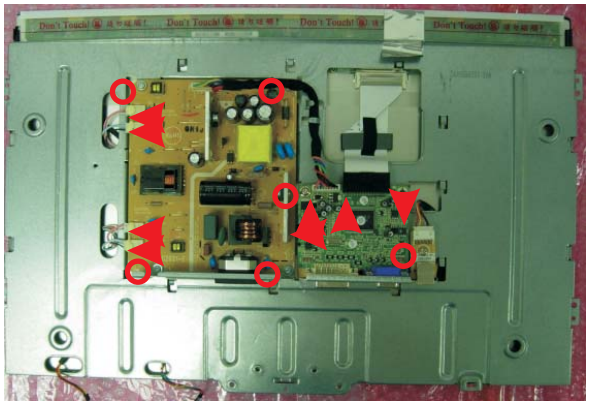


Fig.16

Step 5. Remove the main frame.
Remove the 4 screws as Fig.17.

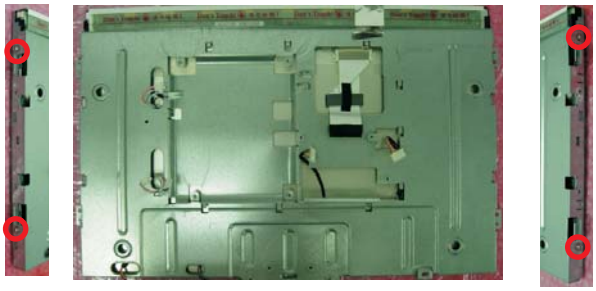


Fig.17

Fig.18

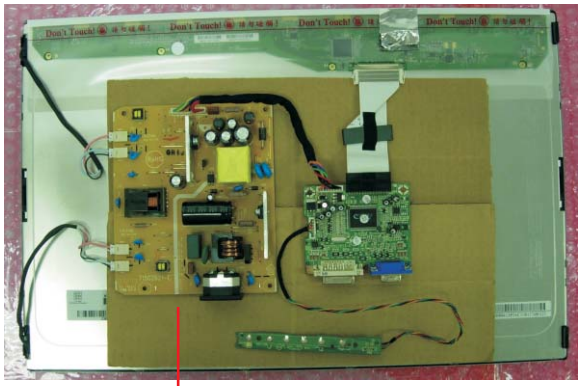


Fig.19

Insulation material

# Color Adjustment

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

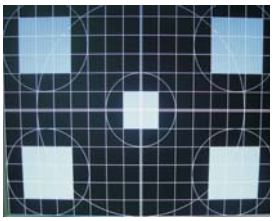


Fig. 1

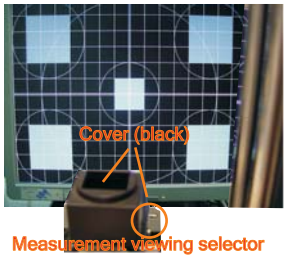



Fig. 2

## 4. Access Factory Mode

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

Fig. 3

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

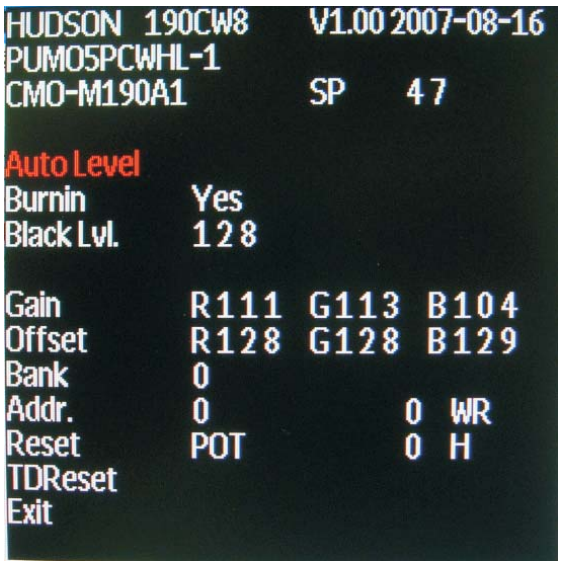



Fig. 4

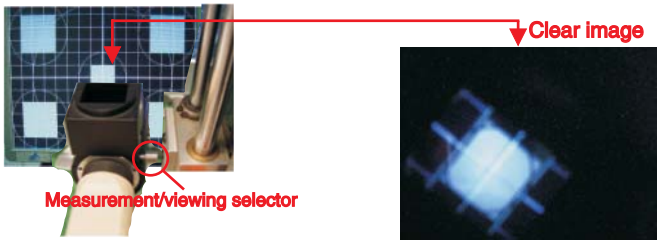



Fig.5

5. Display
Press "MENU" button to select. Change the value by "INPUT" or ☼ key until the X,Y co-ordinates as below

6. Display Adjustment

6.1 Auto color adjustment
Apply a 1440*900/60Hz signal with 32 level grey pattern, set brightness control at 100%, and contrast control at 50%. Access to factory mode, and then press "Auto Level" to adjust RGB Gain and Offset. Check 64-grey pattern distinguishable.

6.2 Adjustment of WHITE-D
WD will be adjusted by FGA function automatically. When FGA is done successfully, the colour coordinate should be as follows with 1440*900/60Hz signal and full white pattern:

| | 9300°K | 6500°K |
|---|---|---|
| x (center) | 0.283 ± 0.005 | 0.313 ± 0.005 |
| y (center) | 0.297 ± 0.005 | 0.329 ± 0.005 |

Use Minolta CA-210 for colour coordinates and luminance check.
Luminance is > 300 Nits in the center of the screen when brightness at 100% and contrast set to 100%.

6.2 Check of sRGB (B)
Apply a 1440*900/ 60Hz signal with full white pattern, set brightness control at 100%, and contrast control at 50%. For the screen center, the 1931 CIE chromaticity Y) co-ordinates shall be:

| | sRGB |
|---|---|
| x(center) | 0.313 ± 0.005 |
| y(center) | 0.329 ± 0.005 |
| Y | > 170 nits |

## Introduction

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

## SmartManage Features and Benefits

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

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

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

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

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

## Philips SmartControl

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

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

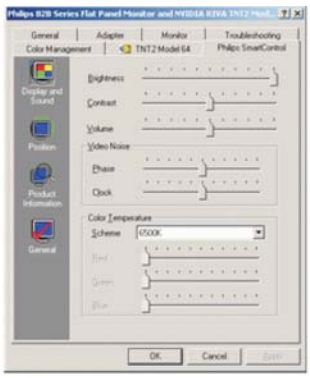
How to download "SmartControl Installation " file:

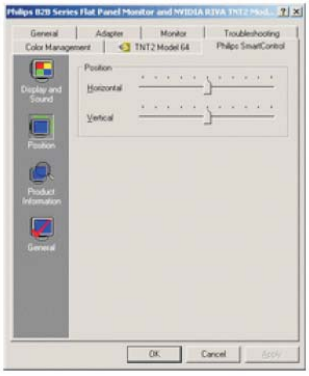
1. Visit http:// www.philips.com
2. Select "Your Country"
3. Click on "Support Center"
4. Click into "Monitors and PC Products"
5. Enter your model number
6. Enter "Software" page
7. Select "SmartControl Installation", and you can download SmartControl and its driver for installation.

Please follow the guidance in the SmartControl installation program.

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

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





3. Product Information
   Click Product Information in the left pane to view the product information stored in the monitor's memory.
4. General
   Click on General for general information including driver information, device information, and monitor control.

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

# DDC Instructions

## General

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

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

## System and equipment requirements

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

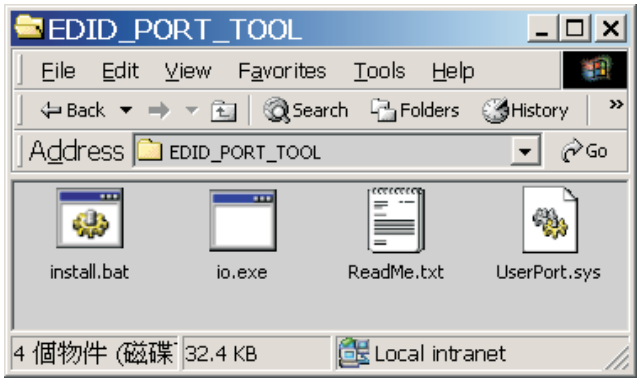



Fig. 1

A. Copy the "UserPort.sys" to C:\WINNT\system32\drivers(win2000)
   C:\WINDOWS\system32\drivers(winXP)
B. Running " io.exe" everytime, Before you start to programming edid data .

3. EDID45.exe program .
4. DDC 2BI-ISP TOOL:

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

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

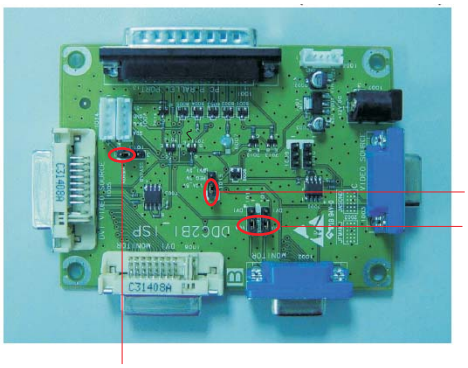



Fig. 2

## Pin Assignment

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

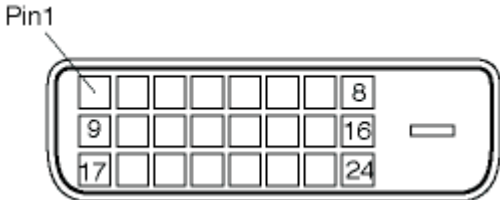



Fig. 3

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

Fig. 4

Input analog D-sub connector pin assignment

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

## Configuration and procedure

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

### Initialize alignment box

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

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

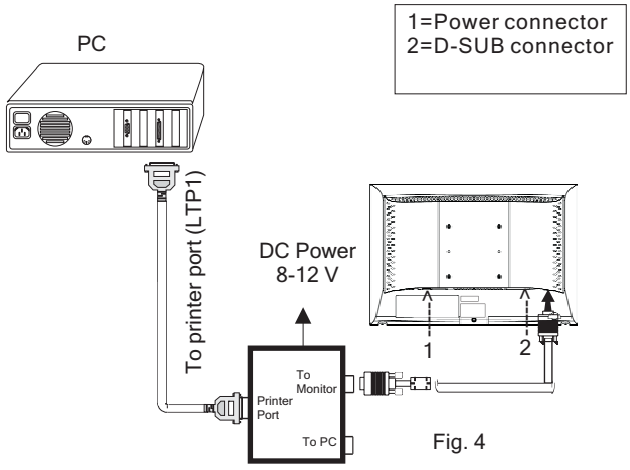



Fig. 4

Step 3: Installation of EDID46.EXE

Method 1: Start on DDC program

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

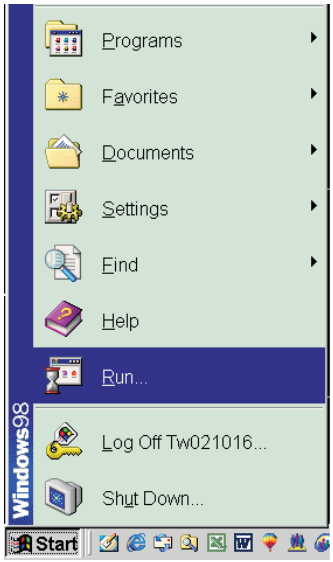



Fig. 5

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

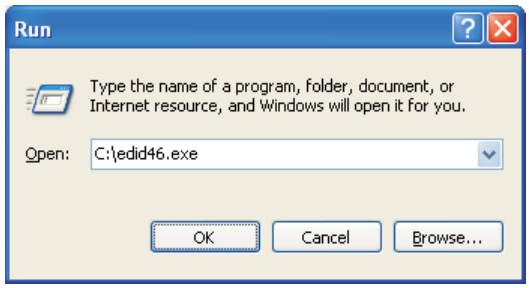



Fig. 6

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

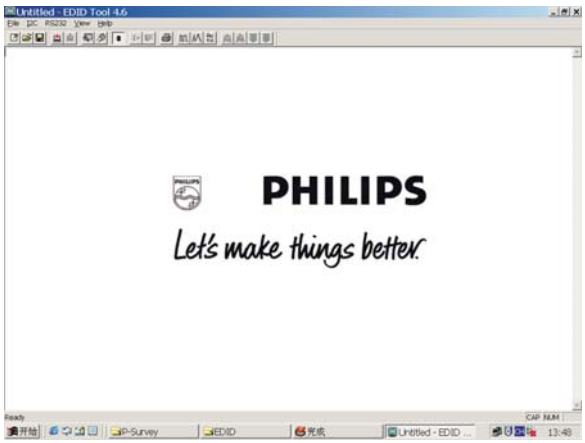



Fig. 7

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

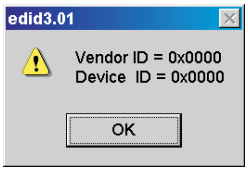



Fig. 8

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

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

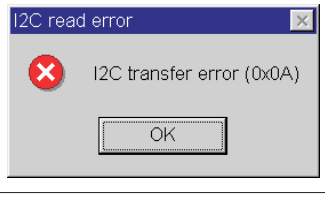
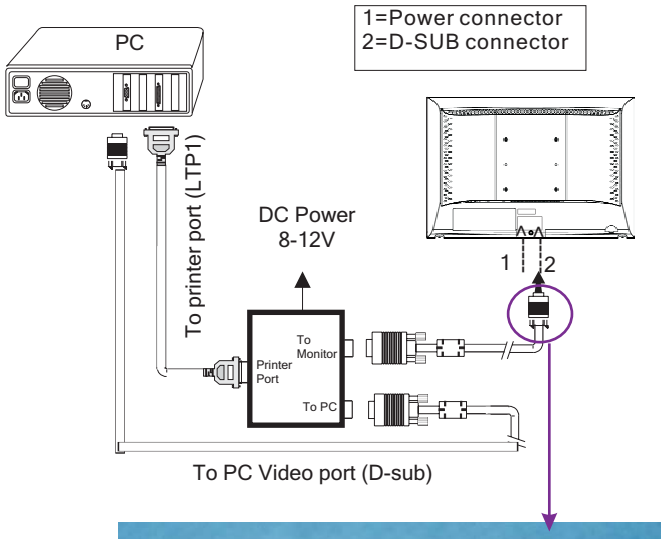
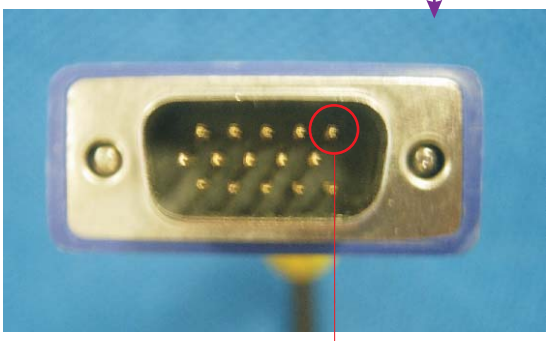



Fig. 9

## Re-programming Analog DDC IC

**Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 10(unplug the 15th pin of the D-SUB cable connecting with monitor).**



Unplug the 5th pin of D-SUB cable connecting with monitor

**Step 2: Read DDC data from monitor**

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

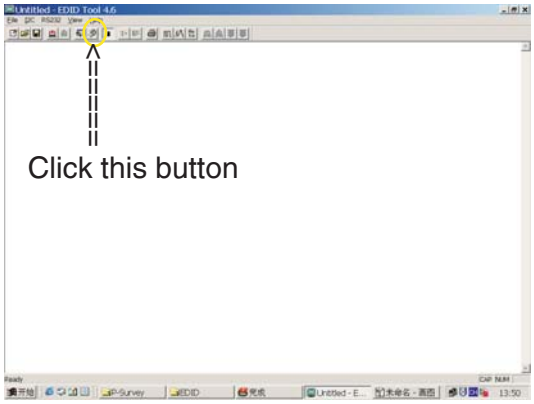



Fig. 11

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

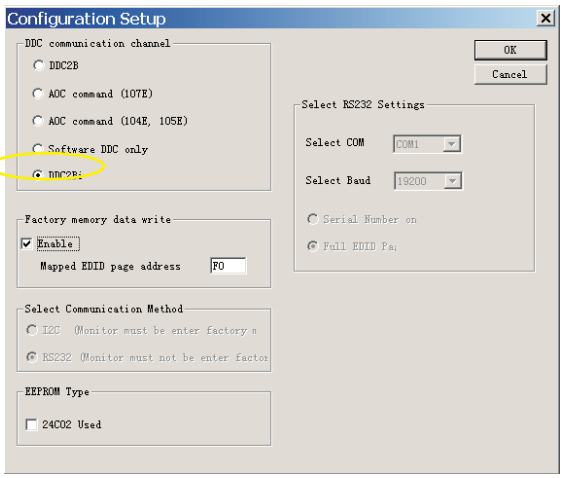



Fig. 12

3. Click OK button to confirm your selection.

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

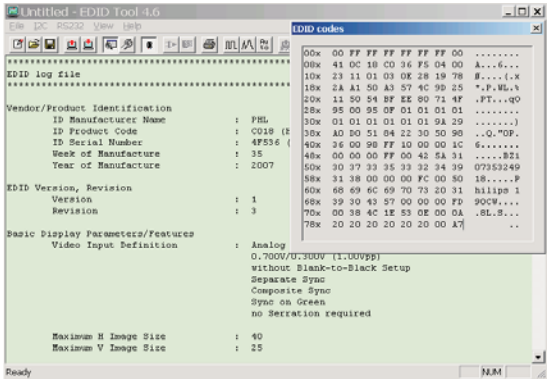



Fig. 13

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

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

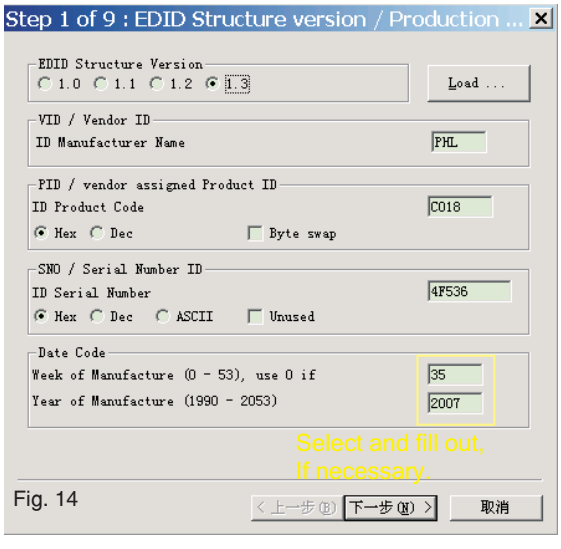



Fig. 14

Fig. 14

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

1. Click Next , bring up Fig. 15.

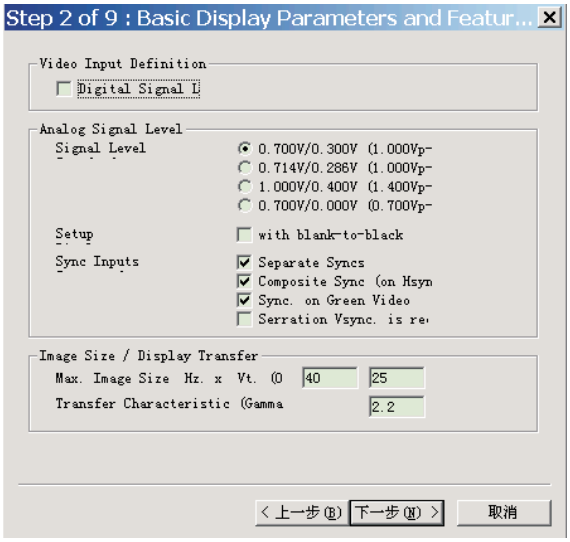



Fig. 15

2. Click Next , bring up Fig.16.

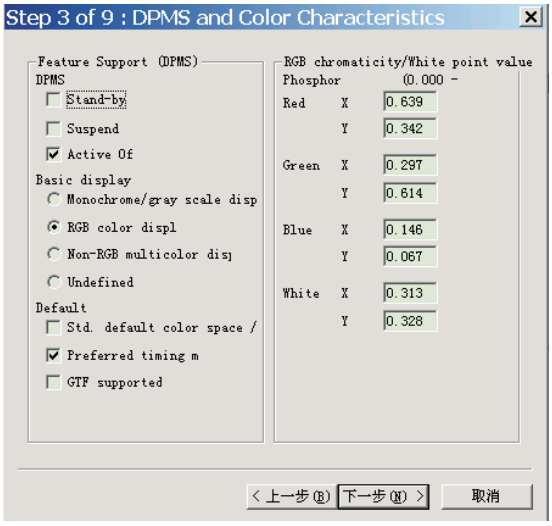



Fig. 16

3. Click Next , bring up Fig.17.

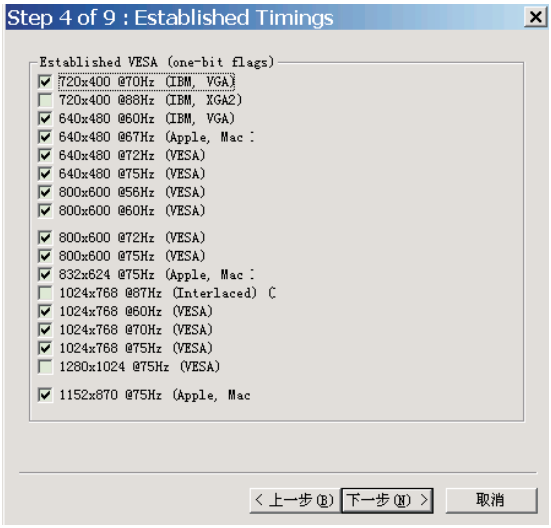



Fig. 17

4. Click Next , bring up Fig.18.

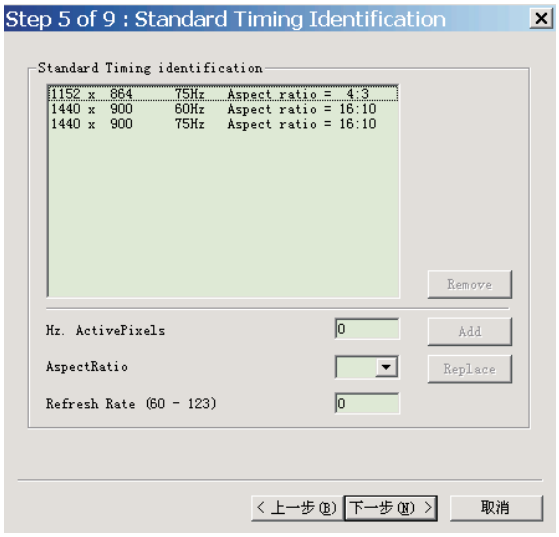



Fig. 18

5. Click Next , bring up Fig.19.

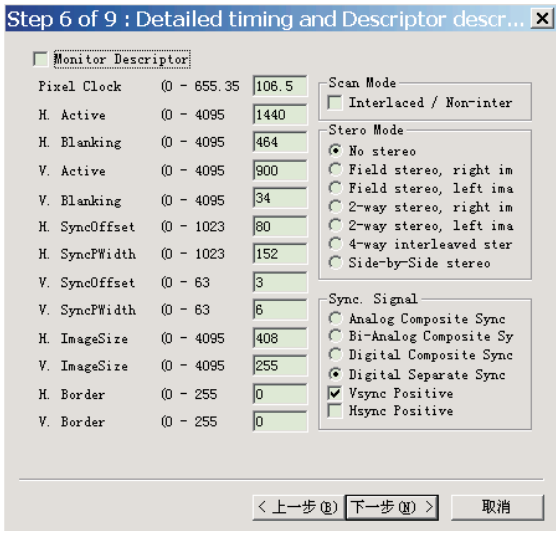



Fig. 19

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.

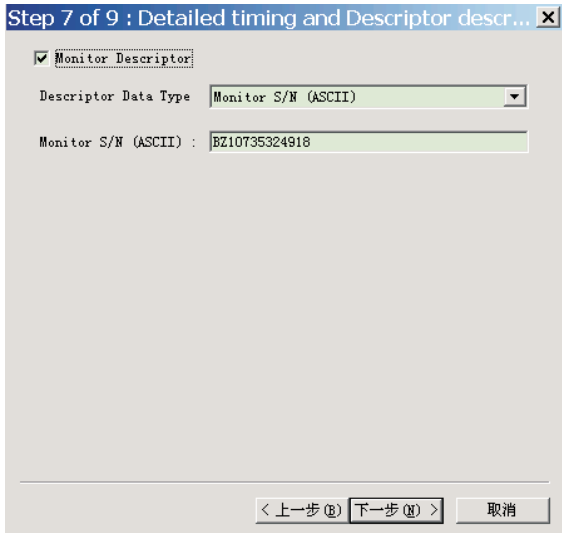



Fig. 20

NOTE: You must modify the Serial NO. In step 7, otherwise the Serial NO. In OSD Couldn't be modified correctly.

# DDC Instructions

7. Click Next , bring up Fig. 21.

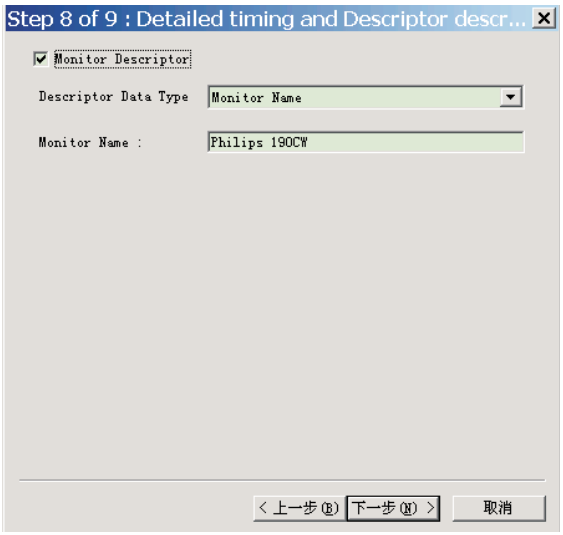



Fig. 21

8. Click Next , bring up Fig. 22, then click "finish".

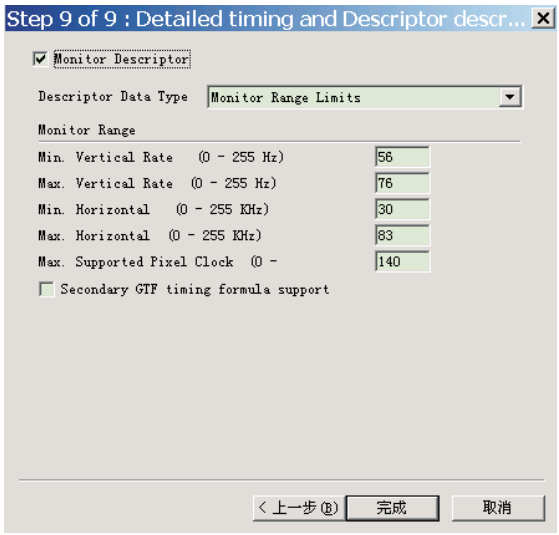



Fig. 22

## Step 5: Write DDC data

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

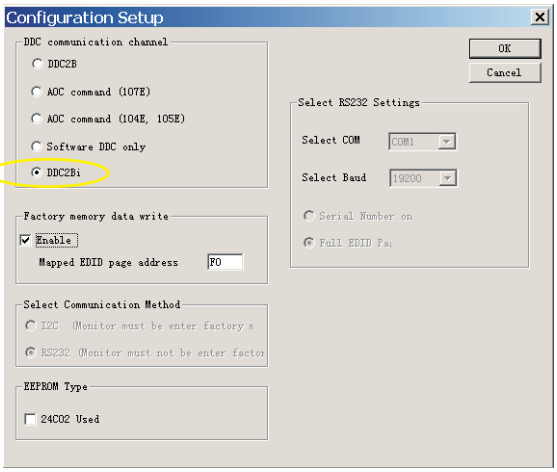



Fig. 23

2. Click (Write EDID) icon from the tool bar to write DDC data. Then wait for 20-30 seconds ,DDC data will be finished Writing.
3. Turn off the monitor, press "INPUT" button and hold it , then press power button to turn on the monitor.(If the power indicator light flicker twice, it means the S/N has been refreshed into the EEPROM.)
4 Press "MENU" button . The S/N is refreshed in the OSD menu as Fig.24.

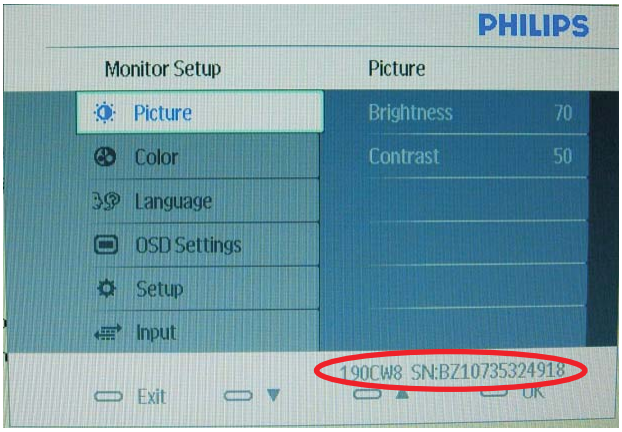



Fig. 24

## 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.

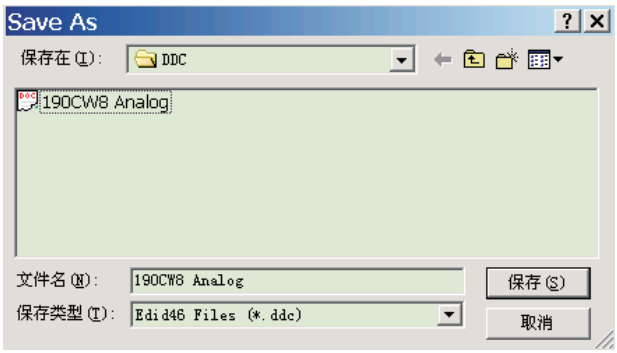



Fig. 25

2. Click Save.

## Step 7: Exit DDC program

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

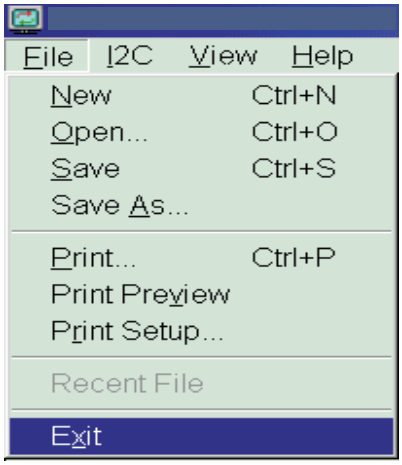
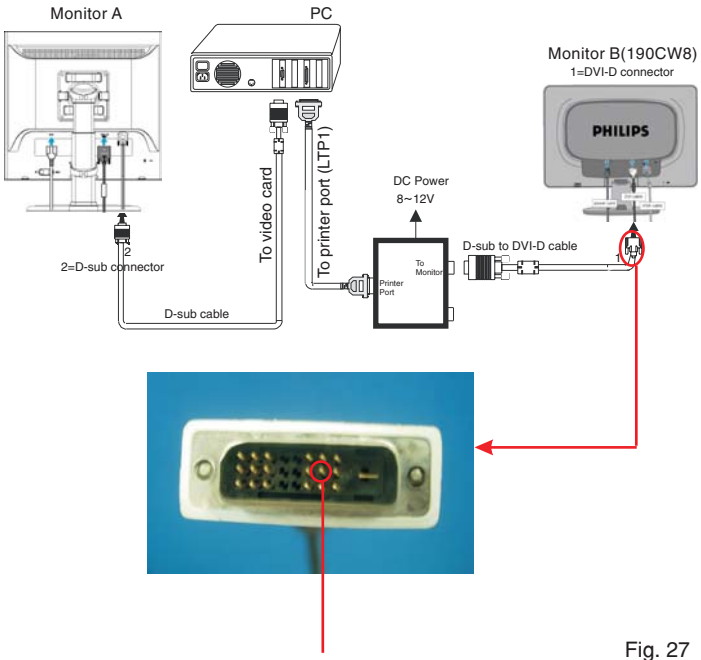



Fig. 26

## Re-programming Digital DDC IC

**Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 27(Unplug the 15th pin of The DVI cable connecting with monitor).**




Unplug the 15th pin of DVI cable connecting with monitor

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.

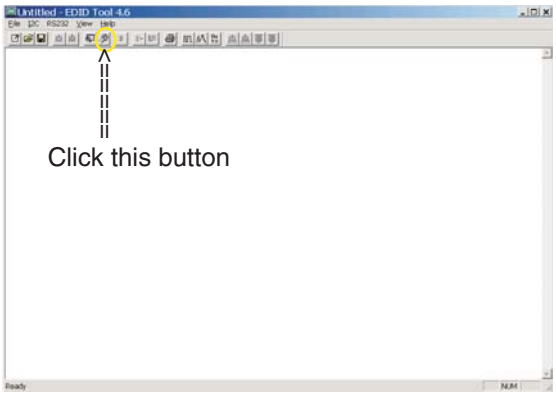



Fig. 28

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

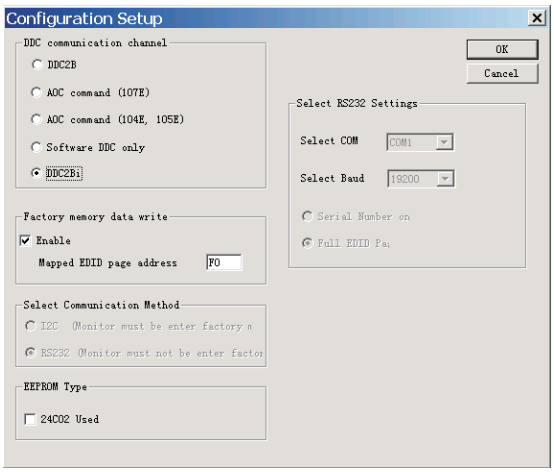



Fig. 29

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.

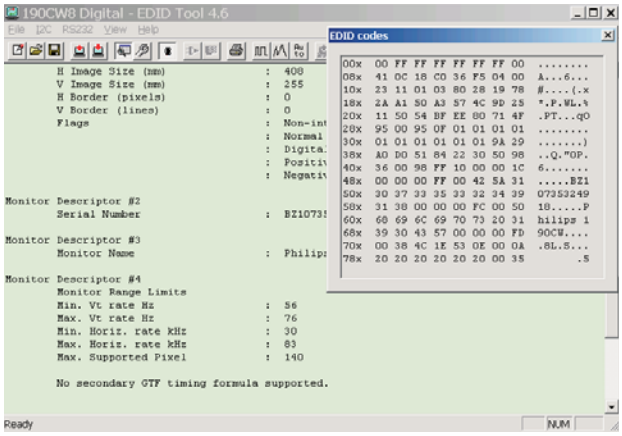



Fig. 30

**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.

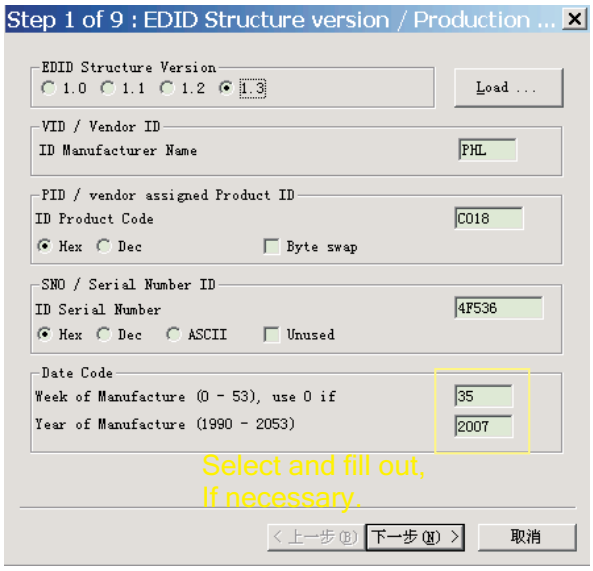



Fig. 31

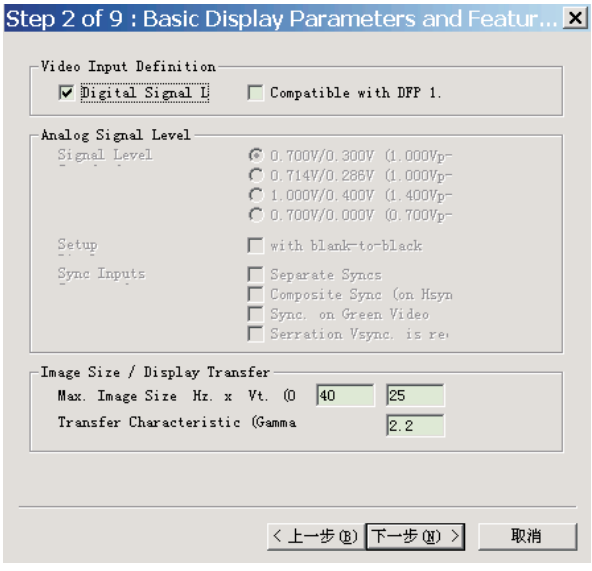



Fig. 32

**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.

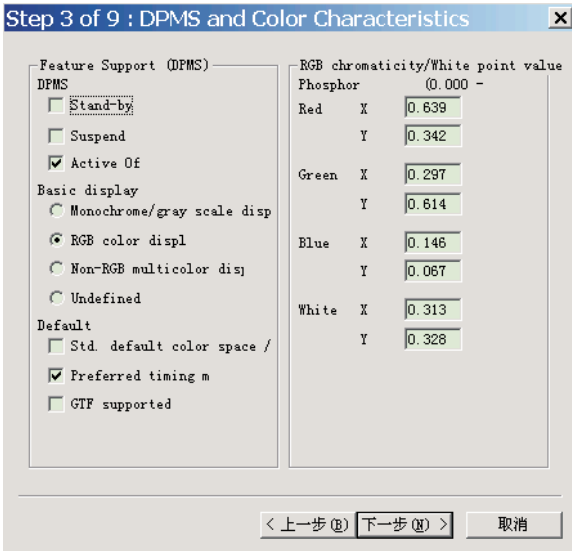



Fig. 33

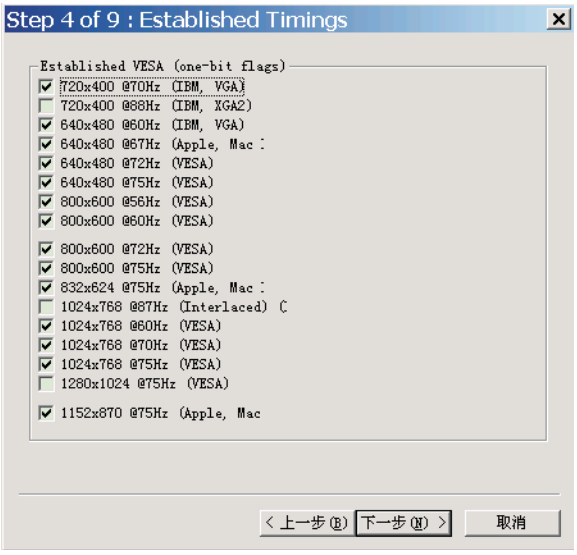



Fig. 34

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

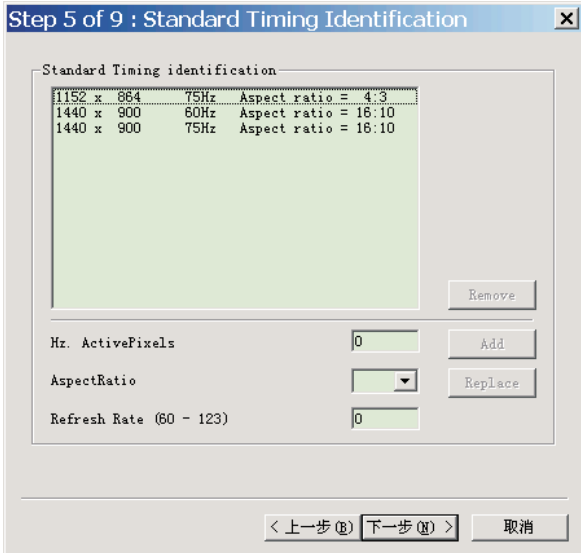



Fig. 35

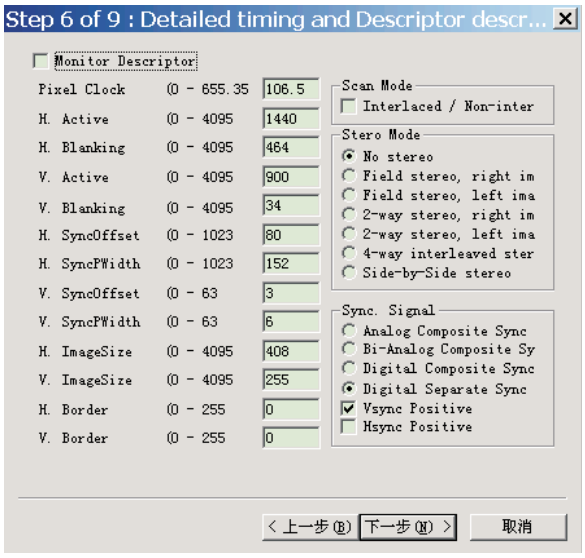



Fig. 36

6. Click Next , bring up Fig. 37.

NOTE: You must modify the Serial NO. In step 7, otherwise the Serial NO. In OSD Couldn't be modified correctly.

7. Click Next , bring up Fig. 38.

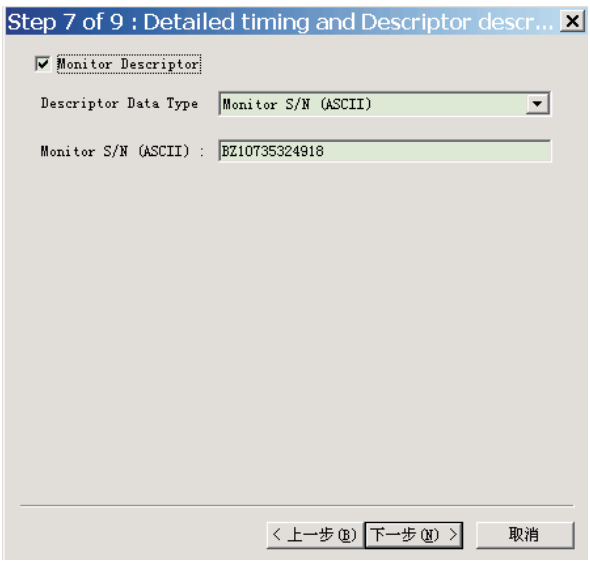



Fig. 37

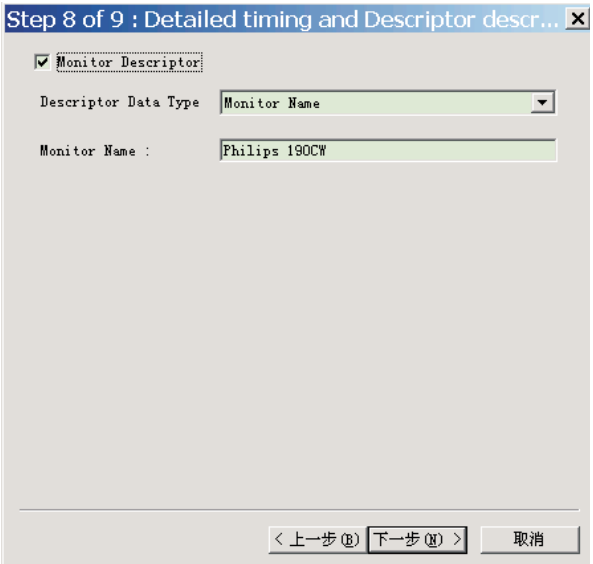



Fig. 38

8. Click Next , bring up Fig. 39.
In this step, please confirm the Descriptor Data Type is Monitor Range Limits, and all the items are same as below.

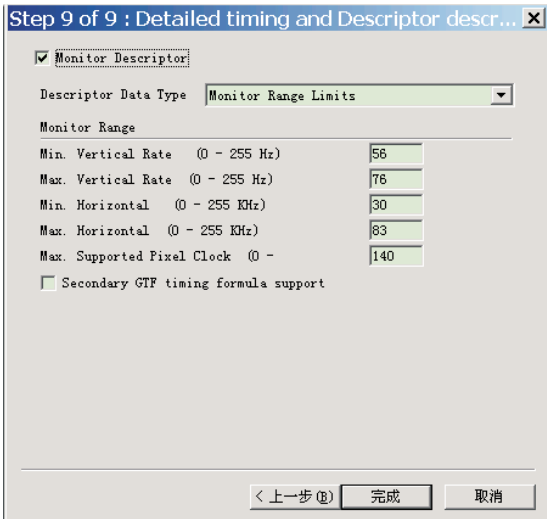



Fig.39

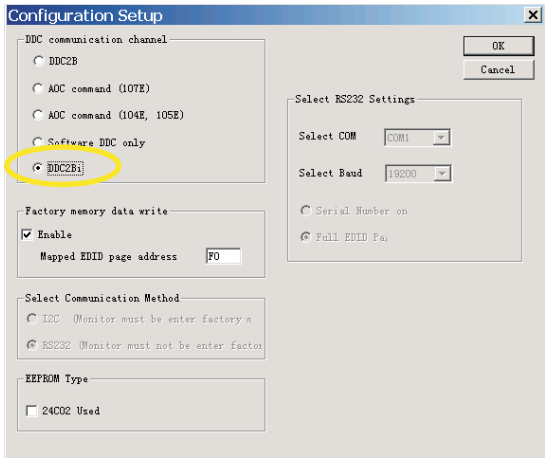



Fig.40

Step 5: Write DDC data
1. Configuration should be as Fig. 40. And press OK.
2. Click (Write EDID) icon from the tool bar to write DDC data. Then wait for 20-30 seconds ,DDC data will be finished Writing.
3. Turn off the monitor, press □INPUT□ button and hold it , then press power button to turn on the monitor.(If the power indicator light flicker twice, it means the S/N has been refreshed into the EEPROM.)

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. 41.
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.

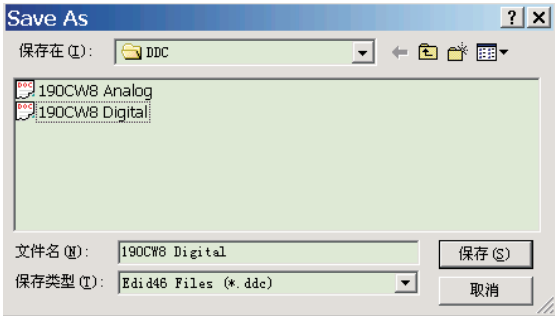



Fig.41

2. Click Save.

Step 7: Exit DDC program
Pull down the File menu and select Exit as shown in Fig. 42.

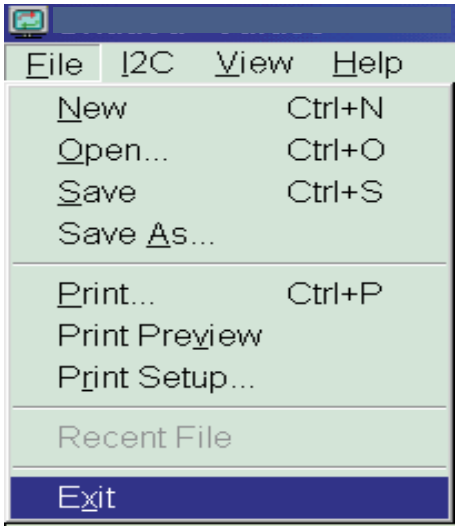


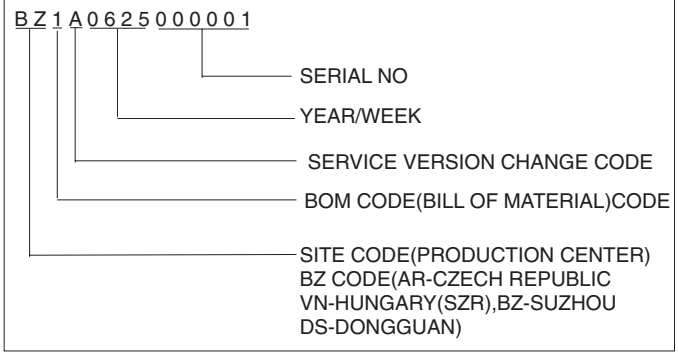

Fig.42

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

## Serial Number Definition

BOM Code

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



# DDC DATA

For 190CW8 CMO panel (analog DDC)

**********

EDID log file

**********

Vendor/Product Identification
ID Manufacturer Name : PHL
ID Product Code : C018 (HEX.)
ID Serial Number : 4F536 (HEX.)
Week of Manufacture : 35
Year of Manufacture : 2007

EDID Version, Revision
Version : 1
Revision : 3

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

Maximum H Image Size : 40
Maximum V Image Size : 25

Display Transfer Characteristic : 2.2
(gamma)

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

Display Type : RGB color display
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 : 0.614
Blue X coordinate : 0.146
Blue Y coordinate : 0.067
White X coordinate : 0.313
White Y coordinate : 0.328

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

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

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

Standard Timing Identification #1
Horizontal active pixels : 1152
Aspect Ratio : 4:3
Refresh Rate : 75

Standard Timing Identification #2
Horizontal active pixels : 1440
Aspect Ratio : 16:10
Refresh Rate : 60

Standard Timing Identification #3
Horizontal active pixels : 1440
Aspect Ratio : 16:10
Refresh Rate : 75

Detailed Timing #1
Pixel Clock (MHz) : 106.5
H Active (pixels) : 1440
H Blanking (pixels) : 464
V Active (lines) : 900
V Blanking (lines) : 34
H Sync Offset (F Porch) (pixels): 80
H Sync Pulse Width (pixels) : 152
V Sync Offset (F Porch) (lines) : 3
V Sync Pulse Width (lines) : 6
H Image Size (mm) : 408
V Image Size (mm) : 255
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
: Normal Display, No stereo
: Digital Separate sync.
: Positive Vertical Sync.
: Negative Horizontal Sync.

Monitor Descriptor #2
Serial Number : BZ10735324918

Monitor Descriptor #3
Monitor Name : Philips 190CW

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 : A7 (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: 18 11: c0 12: 36 13: f5 14: 04 15: 00
16: 23 17: 11 18: 01 19: 03 20: 0e 21: 28 22: 19 23: 78
24: 2a 25: a1 26: 50 27: a3 28: 57 29: 4c 30: 9d 31: 25
32: 11 33: 50 34: 54 35: bf 36: ee 37: 80 38: 71 39: 4f
40: 95 41: 00 42: 95 43: 0f 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 9a 55: 29
56: a0 57: d0 58: 51 59: 84 60: 22 61: 30 62: 50 63: 98
64: 36 65: 00 66: 98 67: ff 68: 10 69: 00 70: 00 71: 1c
72: 00 73: 00 74: 00 75: ff 76: 00 77: 42 78: 5a 79: 31
80: 30 81: 37 82: 33 83: 35 84: 33 85: 32 86: 34 87: 39
88: 31 89: 38 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 43 107: 57 108: 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: a7

For 190CW8 CMO panel (digital DDC)

**********
EDID log file
**********

Vendor/Product Identification
- ID Manufacturer Name : PHL
- ID Product Code : C018 (HEX.)
- ID Serial Number : 4F536 (HEX.)
- Week of Manufacture : 35
- Year of Manufacture : 2007

EDID Version, Revision
- Version : 1
- Revision : 3

Basic Display Parameters/Features
- Video Input Definition : Digital Video Input
- Maximum H Image Size : 40
- Maximum V Image Size : 25
- Display Transfer Characteristic : 2.2 (gamma)
- Feature Support (DPMS) : no Standby, no Suspend, Active Off
- Display Type : RGB color display
- 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 : 0.614
- Blue X coordinate : 0.146
- Blue Y coordinate : 0.067
- White X coordinate : 0.313
- White Y coordinate : 0.328

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

Standard Timing Identification #1
- Horizontal active pixels : 1152
- Aspect Ratio : 4:3
- Refresh Rate : 75

Standard Timing Identification #2
- Horizontal active pixels : 1440
- Aspect Ratio : 16:10
- Refresh Rate : 60

Standard Timing Identification #3
- Horizontal active pixels : 1440
- Aspect Ratio : 16:10
- Refresh Rate : 75

Detailed Timing #1
- Pixel Clock (MHz) : 106.5
- H Active (pixels) : 1440
- H Blanking (pixels) : 464
- V Active (lines) : 900
- V Blanking (lines) : 34
- H Sync Offset (F Porch) (pixels) : 80
- H Sync Pulse Width (pixels) : 152
- V Sync Offset (F Porch) (lines) : 3
- V Sync Pulse Width (lines) : 6
- H Image Size (mm) : 408
- V Image Size (mm) : 255
- H Border (pixels) : 0
- V Border (lines) : 0
- Flags : Non-interlaced
  : Normal Display, No stereo
  : Digital Separate sync.
  : Positive Vertical Sync.
  : Negative Horizontal Sync.

Monitor Descriptor #2
- Serial Number : BZ10735324918

Monitor Descriptor #3
- Monitor Name : Philips 190CW

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 : 35 (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: 18 11: c0 12: 36 13: f5 14: 04 15: 00
16: 23 17: 11 18: 01 19: 03 20: 80 21: 28 22: 19 23: 78
24: 2a 25: a1 26: 50 27: a3 28: 57 29: 4c 30: 9d 31: 25
32: 11 33: 50 34: 54 35: bf 36: ee 37: 80 38: 71 39: 4f
40: 95 41: 00 42: 95 43: 0f 44: 01 45: 01 46: 01 47: 01
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 9a 55: 29
56: a0 57: d0 58: 51 59: 84 60: 22 61: 30 62: 50 63: 98
64: 36 65: 00 66: 98 67: ff 68: 10 69: 00 70: 00 71: 1c
72: 00 73: 00 74: 00 75: ff 76: 00 77: 42 78: 5a 79: 31
80: 30 81: 37 82: 33 83: 35 84: 33 85: 32 86: 34 87: 39
88: 31 89: 38 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 43 107: 57 108: 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: 35
```

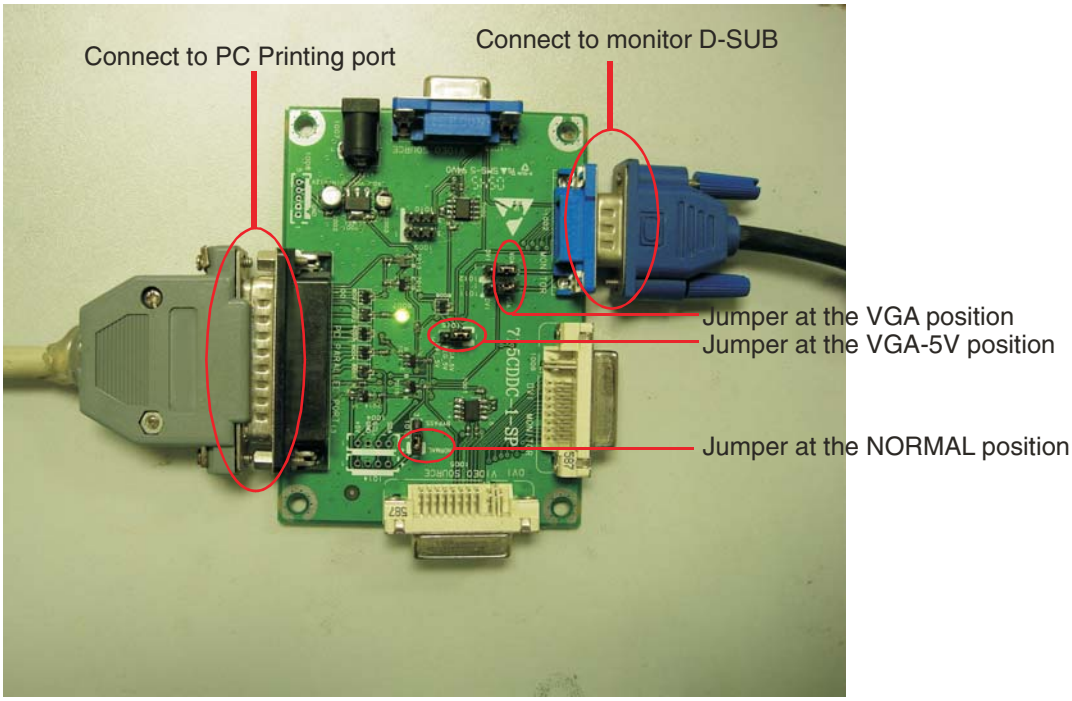
# ISP Instructions

Step 1. Save the MST ISP tool to your computer.
ISP_TOOL V4.2.0 TPV (958KB,Created day: 2007.01.26)

ISP_TOOL V4.2.0 TPV

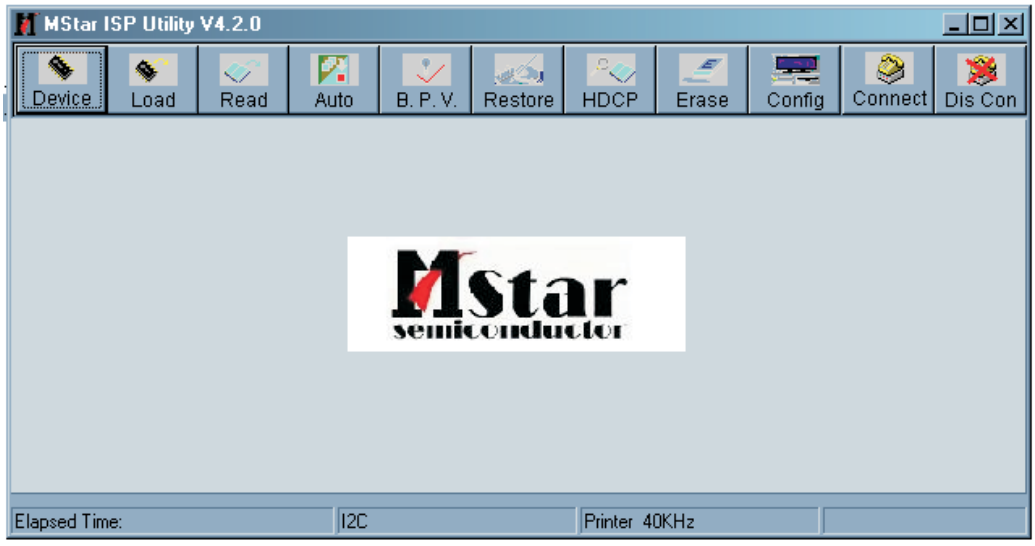
2. Save the BIN files(hexcode) to your computer,

Step 2: Connect to ISP Board,P/N:3138 106 10396.

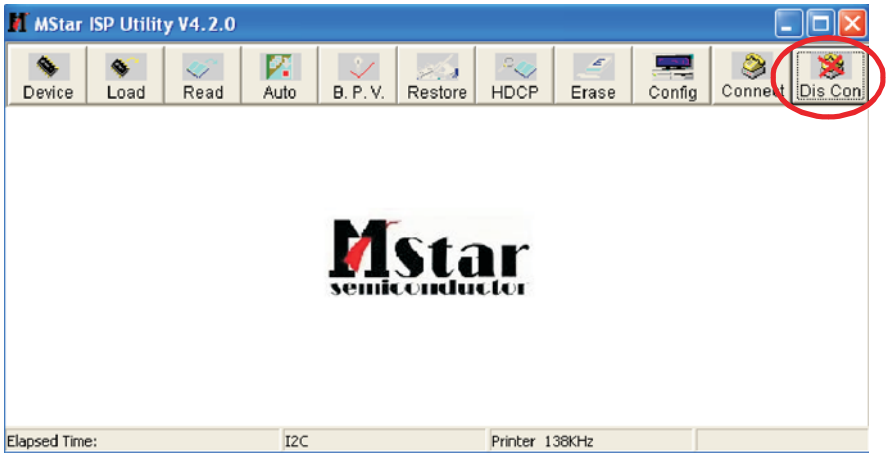



Step 3: Update TV.

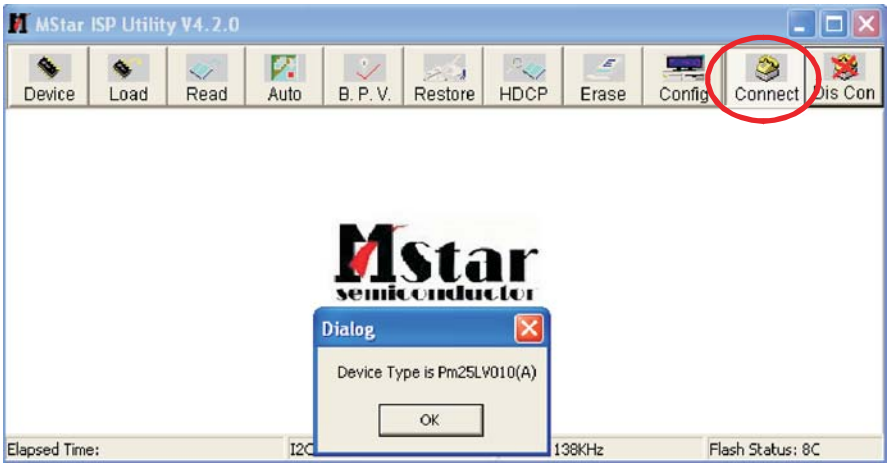
I. Open the ISP_TOOL V4.2.0 TPV.EXE



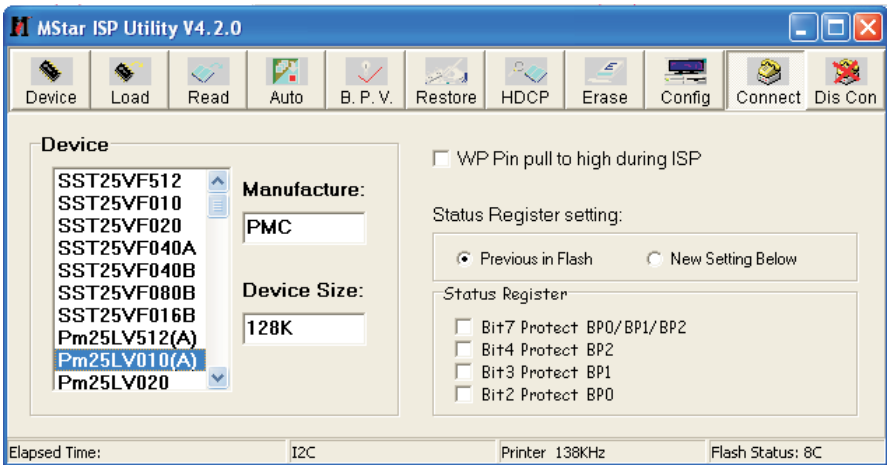
2. Click "Dis Con"




3. Click "connect",

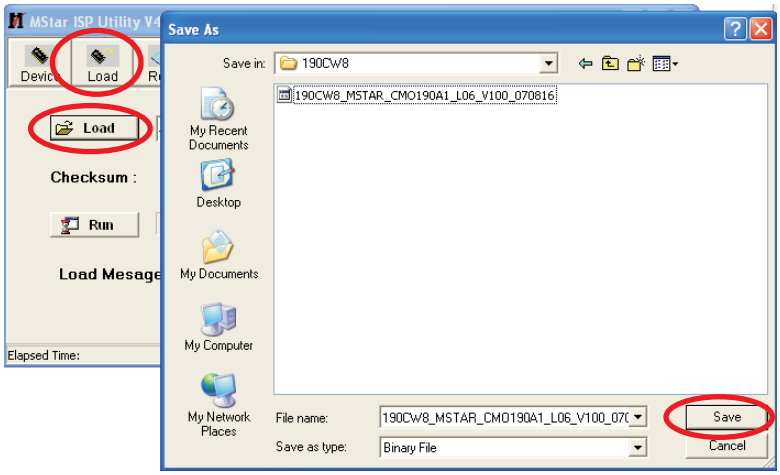



4. Click "Device" to choose the device type Pm25LV010(A).

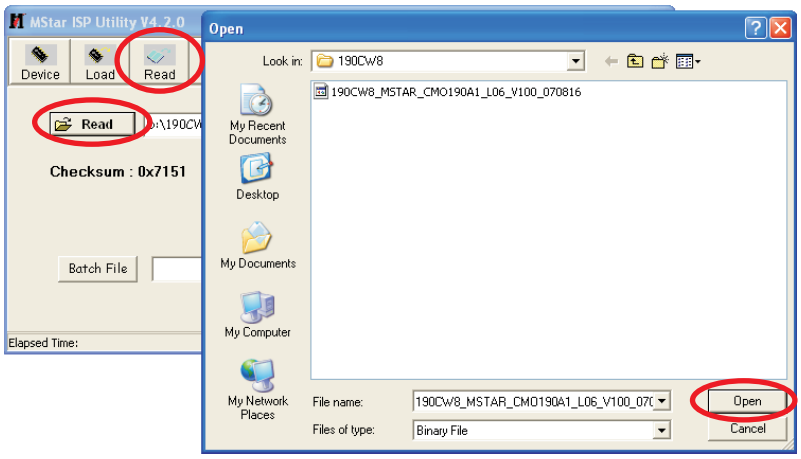


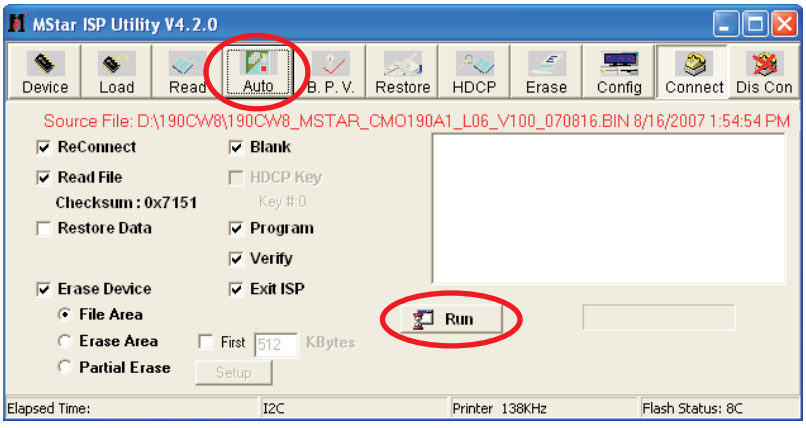

5. Click "Load" to choose the corresponding ISP software according the model. .

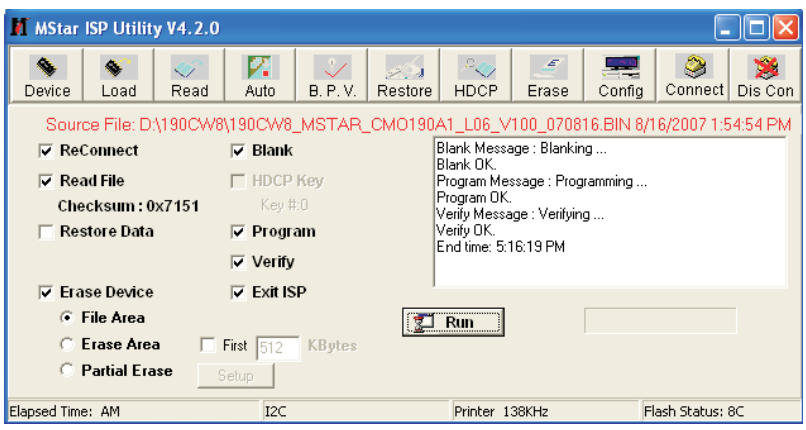
# ISP Instruction




6. Click "Read", then click "Read" to choose the corresponding ISP software according the model. Then click "Auto", and run it until OK.



General FAQs

Q: When I install my monitor what should I do if the screen shows 'Cannot display this video mode'?

A: Recommended video mode for Philips 19": 1440x900 @60Hz.

1. Unplug all cables, then connect your PC to the monitor that you used previously.
2. In the Windows Start Menu, select Settings/Control Panel. In the Control Panel Window, select the Display icon. Inside the Display Control Panel, select the 'Settings' tab. Under the setting tab, in box labeled 'desktop area', move the slidebar to 1440x900 pixels (19").
3. Open 'Advanced Properties' and set the Refresh Rate to 60Hz, then click OK.
4. Restart your computer and repeat step 2 and 3 to verify that your PC is set at 1440x900@60Hz (19").
5. Shut down your computer, disconnect your old monitor and reconnect your Philips LCD monitor.
6. Turn on your monitor and then turn on your PC.

Q: What does 'refresh rate' mean in connection with an LCD monitor?

A:The refresh rate is of much less relevance for LCD monitors. LCD monitors display a stable, flicker-free image at 60Hz. There is no visible difference between 85Hz and 60Hz.

Q: What are the .inf and .icm files on the CD-ROM? How do I install the drivers (.inf and .icm)?

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

Q: How do I adjust the resolution?

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

Q: What if I get lost when I am making monitor adjustments?

A: Simply press the OK button, then select 'Reset' to recall all of the original factory settings.

Q: What is the Auto function?

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

Q: My Monitor has no power (Power LED does not light up). What should I do?

A: Make sure the AC power cord is connected between the monitor and AC outlet,and click a key on keyboard/mouse to wake up the PC.

Q: Will the LCD monitor accept an interlaced signal under PC models?

A: No. If an Interlace signal is used, the screen displays both odd and even horizontal scanning lines at the same time, thus distorting the picture.

Q:What does the Refresh Rate mean for LCD?

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

Q: Will the LCD screen be resistant to scratches?

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

Q: How should I clean the LCD surface?

A: For normal cleaning, use a clean, soft cloth. For extensive cleaning, please use isopropyl alcohol. Do not use other solvents such as ethyl alcohol, ethanol, acetone, hexane, etc

Q:Can I change the color setting of my monitor?

A:Yes, you can change your color setting through OSD control as the followingprocedures,

1. Press "OK" to show the OSD (On Screen Display) menu
2. Press "Down Arrow" to select the option "Color" then press "OK" to enter colorsetting, there are four settings as below.

a. Color Temperature; The six settings are 5000K, 6500K, 7500K, 8200K, 9300K and 11500K. With settings in the 5000K range the panel appears
'warm', with a red-white color tone, while a 11500K temperature yields 'cool,blue-white toning."
b. sRGB; this is a standard setting for ensuring correct exchange of colors between different device (e.g. digital cameras, monitors, printers, scanners,etc)
c. User Define; the user can choose his/her preference color setting by adjusting red, green blue color.
*A measurement of the color of light radiated by an object while it is being heated.This measurement is expressed in terms of absolute scale, (degrees Kelvin). Lower 。 Kevin temperatures such as 2004K are red; higher temperatures such as 9300K are blue. Neutral temperature is white, at 6504K.

Q: Can the Philips LCD Monitor be mounted on the wall?

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

Screen Adjustments

Q: When I install my monitor, how do I get the best performance from the monitor?

A:For best performance, make sure your display settings are set at 1440x900@60Hz for 19". Note: You can check the current display settings by pressing the OSD OK button once. The current display mode is shown in OSD first page.

# FAQs (Frequently Asked Questions)

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

Compatibility with other Peripherals

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

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

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

Q: What is a USB hub ?
A: A USB hub provides additional connections to the Universal Serial Bus. A hub's upstream port connects a hub to the host, usually a PC. Multiple downstream ports in a hub allows connection to another hub or device, such as a USB keyboard, camera or printer.

LCD Panel Technology

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

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

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

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

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

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

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

Ergonomics, Ecology and Safety Standards

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

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

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

## HI-POT TEST INSTRUCTION

### 1.Application requirements

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

### 2. Test method

2.1 Connecting conditions

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

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

| Condition | HiPot Test for products where the mains input range is Full range(or 220V AC) | HiPot Test for products where the mains input is 110V AC(USA type) | Ground Continuity Test requirement |
|---|---|---|---|
| Test voltage | 2820VDC (2000VAC) | 1700VDC (1200VAC) | Test current: 25A,AC |
| Test time | 3 seconds | 1 second | Test time: 3 seconds(min.) |
| Trip current (Tester) | set at 100 uA 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%.

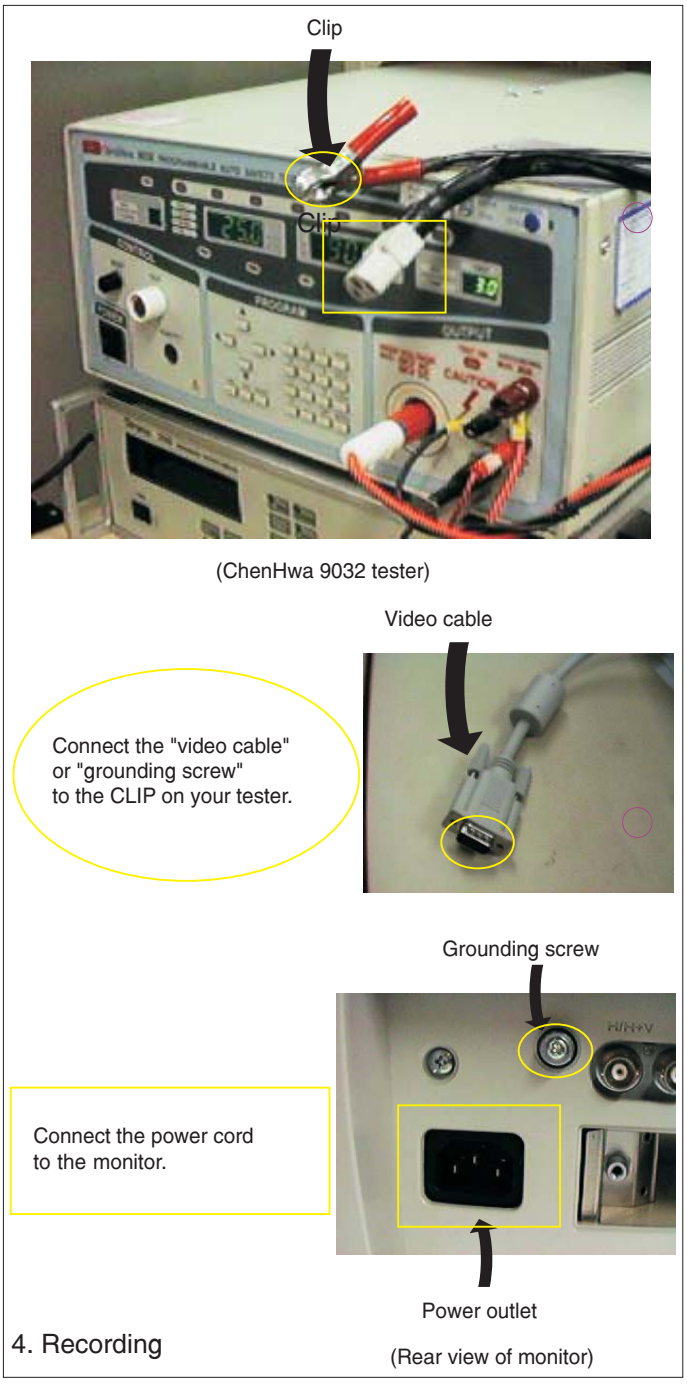
2.2.3 There must be no breakdown during the test.

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

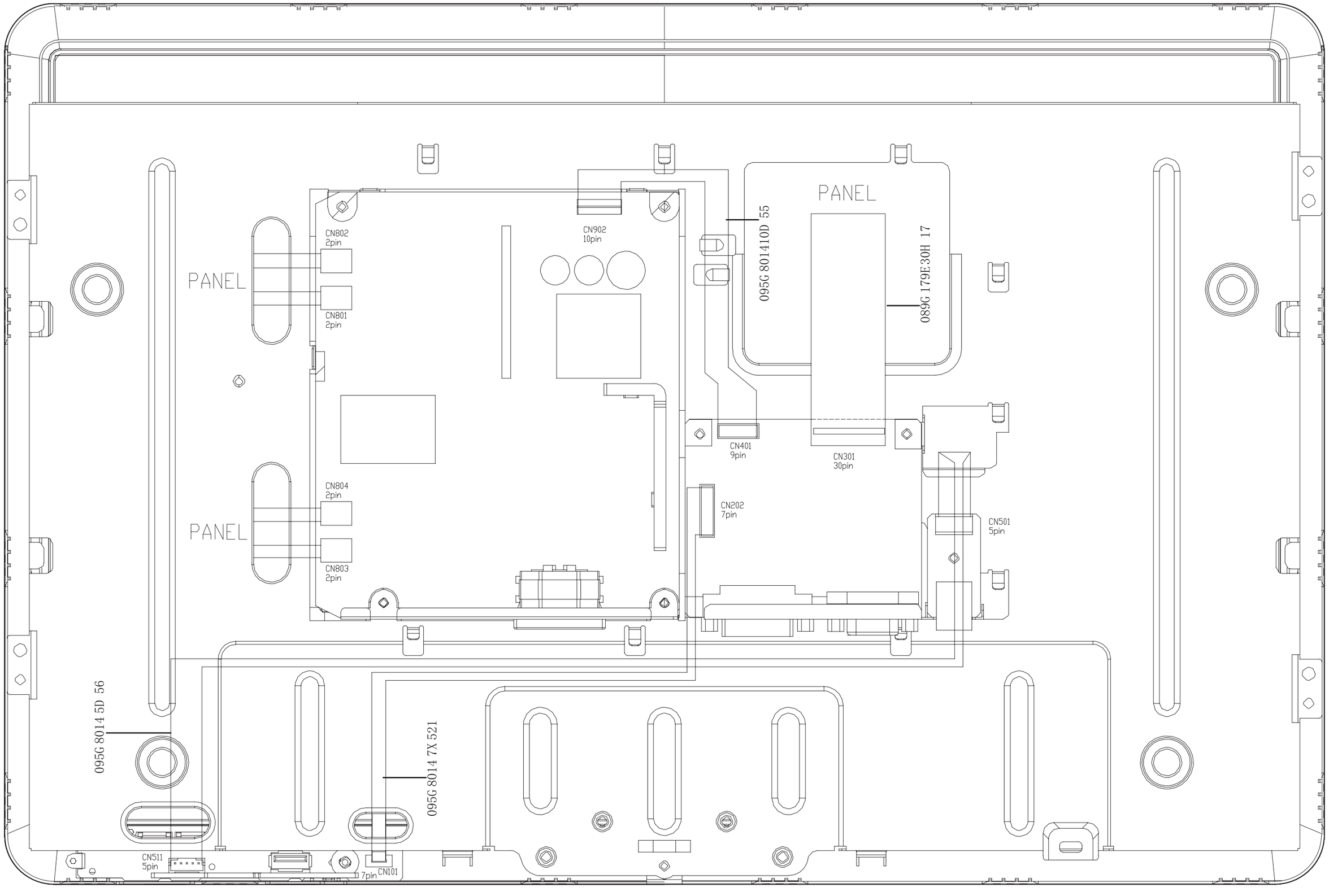
3.2. Connection
* Turn on the power switch of monitor before Hipot and Ground Continuity testing.



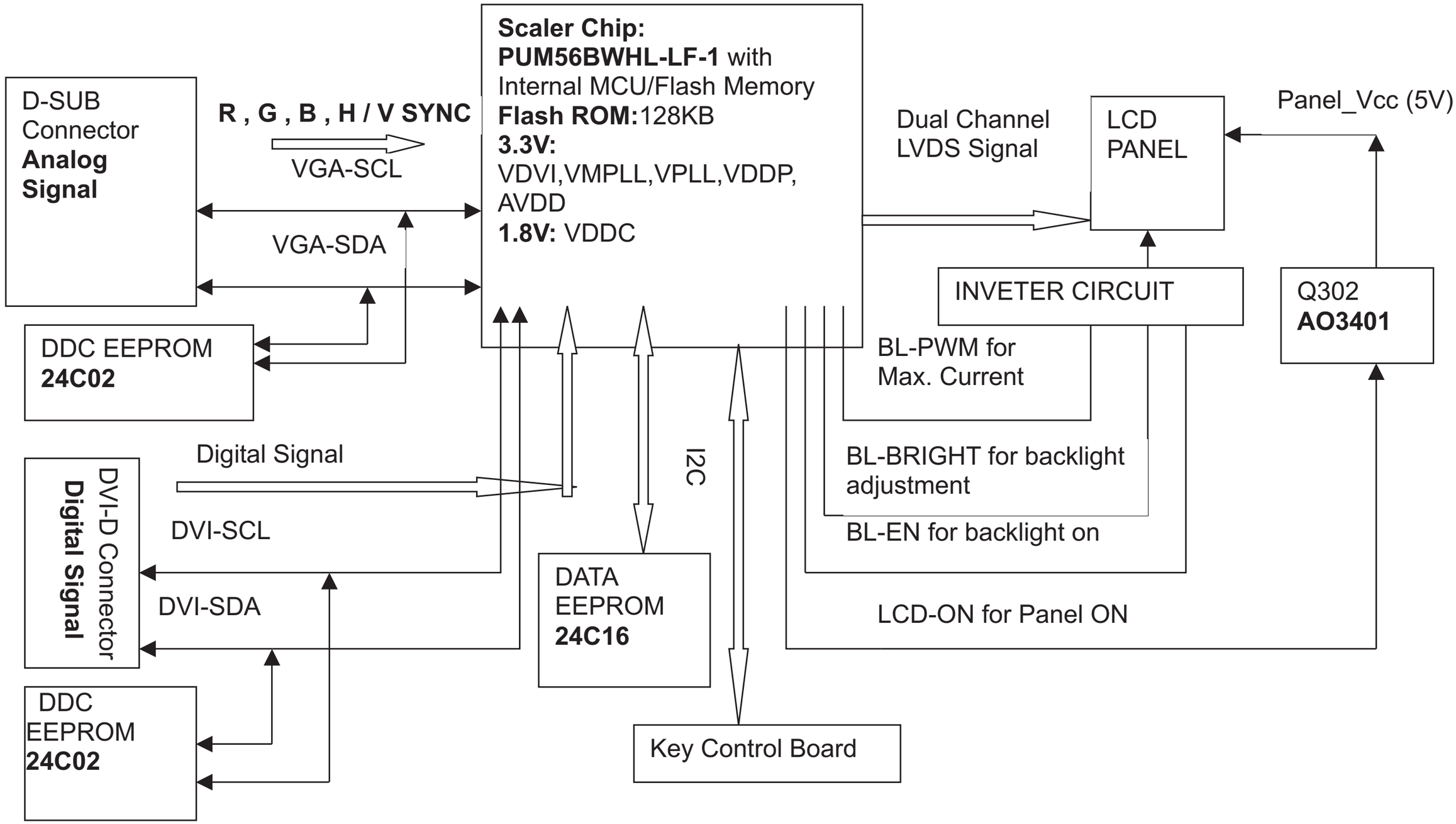

### 4. Recording

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

# Wiring Diagram

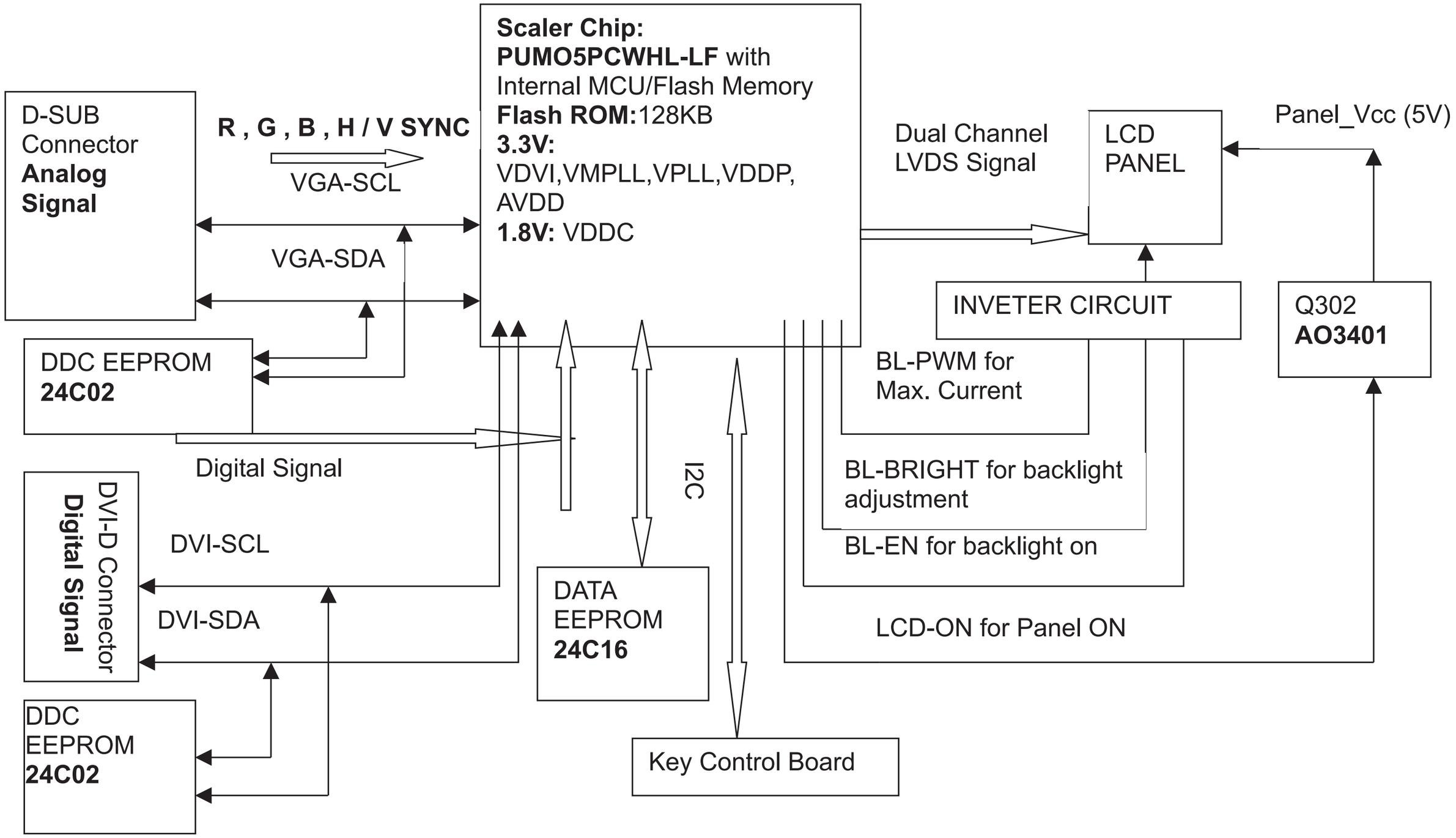


Hudson 8 : PHILIPS 190CW8 MAIN BOARD BLOCK DIAGRAM

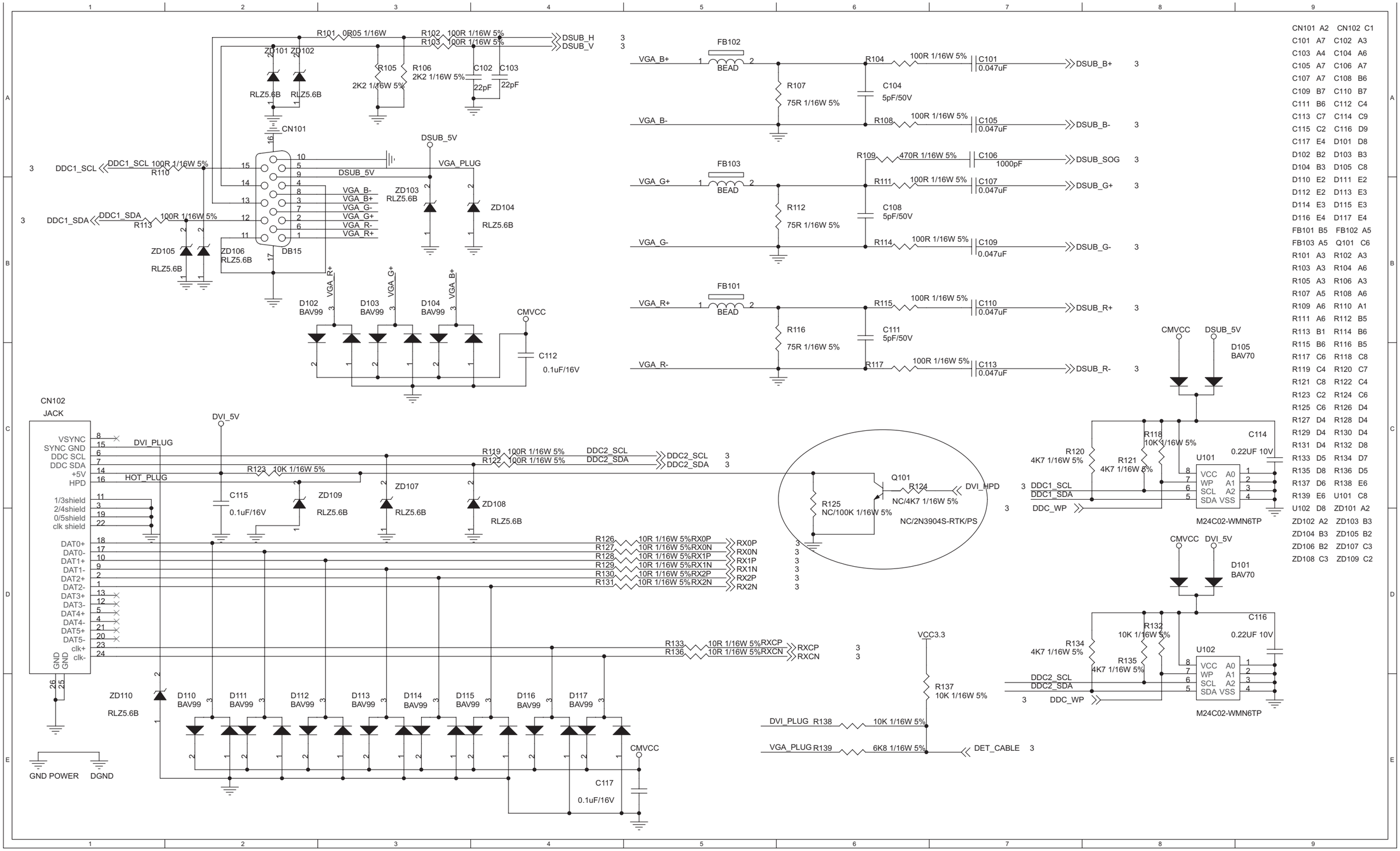


# Block Diagram

Hudson 8 : PHILIPS 190SW8 MAIN BOARD BLOCK DIAGRAM

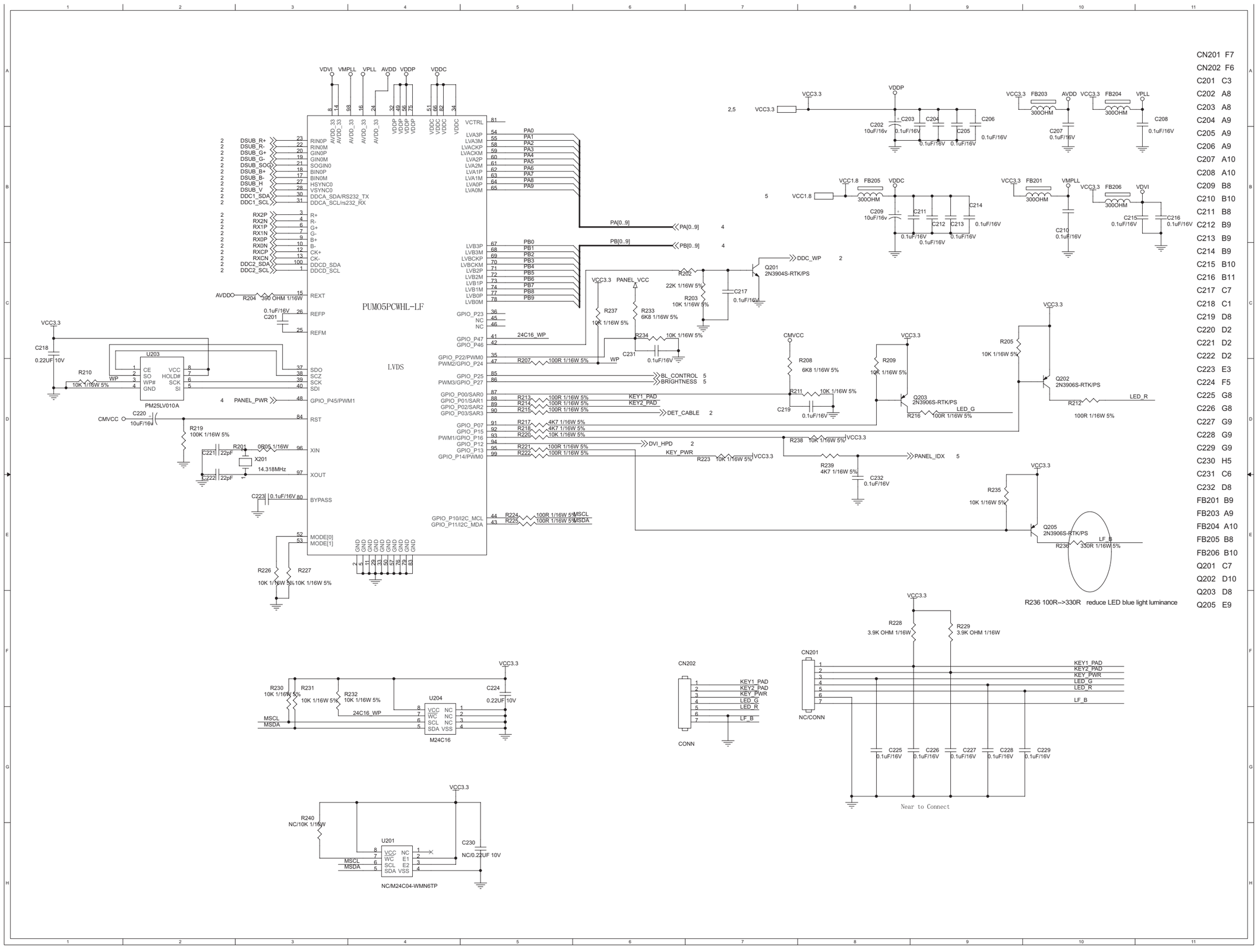


# Scaler Board Diagram(190CW8)-1



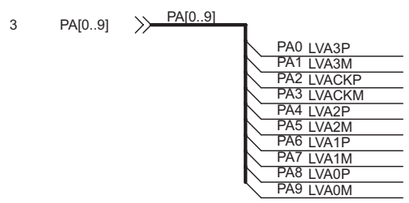

| | | | |
|---|---|---|---|
| CN101 | A2 | CN102 | C1 |
| C101 | A7 | C102 | A3 |
| C103 | A4 | C104 | A6 |
| C105 | A7 | C106 | A7 |
| C107 | A7 | C108 | B6 |
| C109 | B7 | C110 | B7 |
| C111 | B6 | C112 | C4 |
| C113 | C7 | C114 | C9 |
| C115 | C2 | C116 | D9 |
| C117 | E4 | D101 | D8 |
| D102 | B2 | D103 | B3 |
| D104 | B3 | D105 | C8 |
| D110 | E2 | D111 | E2 |
| D112 | E2 | D113 | E3 |
| D114 | E3 | D115 | E3 |
| D116 | E4 | D117 | E4 |
| FB101 | B5 | FB102 | A5 |
| FB103 | A5 | Q101 | C6 |
| R101 | A3 | R102 | A3 |
| R103 | A3 | R104 | A6 |
| R105 | A3 | R106 | A3 |
| R107 | A5 | R108 | A6 |
| R109 | A6 | R110 | A1 |
| R111 | A6 | R112 | B5 |
| R113 | B1 | R114 | B6 |
| R115 | B6 | R116 | B5 |
| R117 | C6 | R118 | C8 |
| R119 | C4 | R120 | C7 |
| R121 | C8 | R122 | C4 |
| R123 | C2 | R124 | C6 |
| R125 | C6 | R126 | D4 |
| R127 | D4 | R128 | D4 |
| R129 | D4 | R130 | D4 |
| R131 | D4 | R132 | D8 |
| R133 | D5 | R134 | D7 |
| R135 | D8 | R136 | D5 |
| R137 | D6 | R138 | E6 |
| R139 | E6 | U101 | C8 |
| U102 | D8 | ZD101 | A2 |
| ZD102 | A2 | ZD103 | B3 |
| ZD104 | B3 | ZD105 | B2 |
| ZD106 | B2 | ZD107 | C3 |
| ZD108 | C3 | ZD109 | C2 |

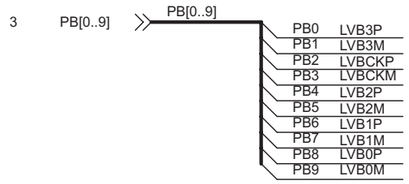
# Scaler Board Diagram(190CW8)-2

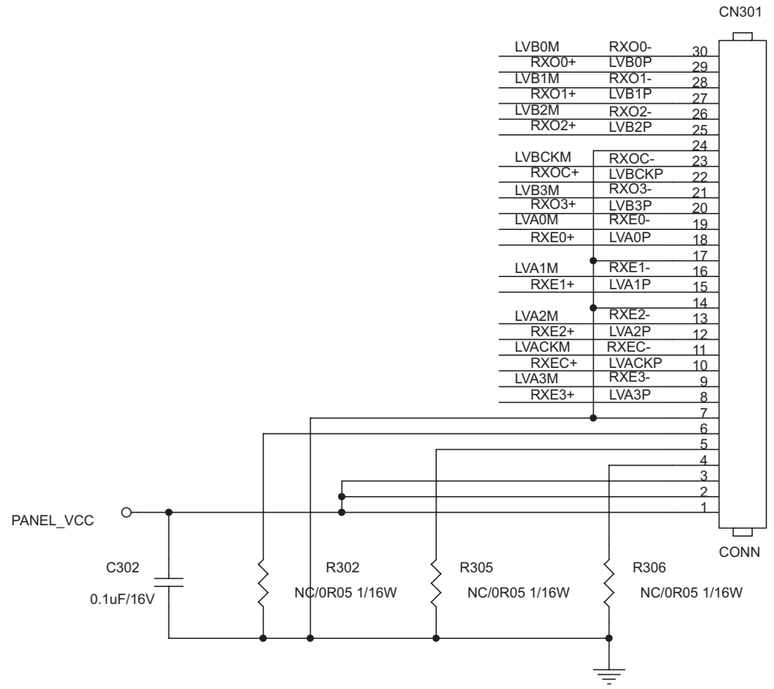



CN201 F7
CN202 F6
C201 C3
C202 A8
C203 A8
C204 A9
C205 A9
C206 A9
C207 A10
C208 A10
C209 B8
C210 B10
C211 B8
C212 B9
C213 B9
C214 B9
C215 B10
C216 B11
C217 C7
C218 C1
C219 D8
C220 D2
C221 D2
C222 D2
C223 E3
C224 F5
C225 G8
C226 G8
C227 G9
C228 G9
C229 G9
C230 H5
C231 C6
C232 D8
FB201 B9
FB203 A9
FB204 A10
FB205 B8
FB206 B10
Q201 C7
Q202 D10
Q203 D8
Q205 E9

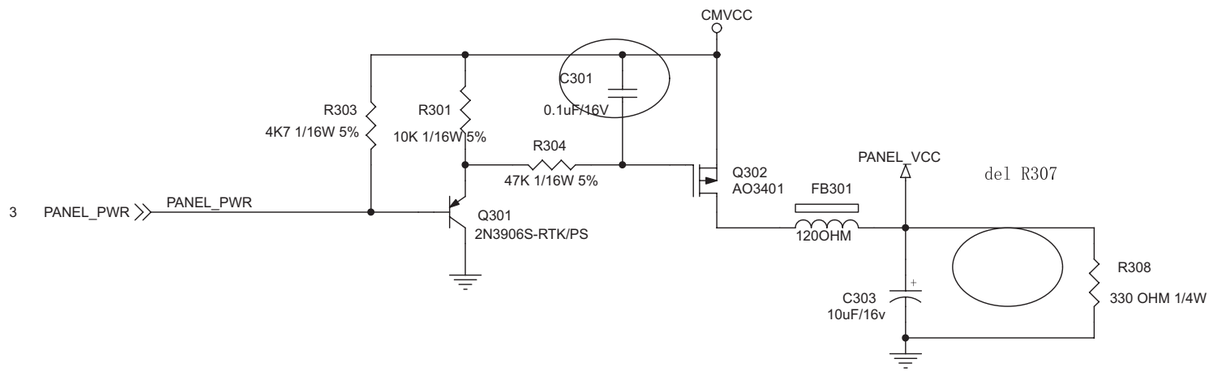
# Scaler Board Diagram(190CW8)-3



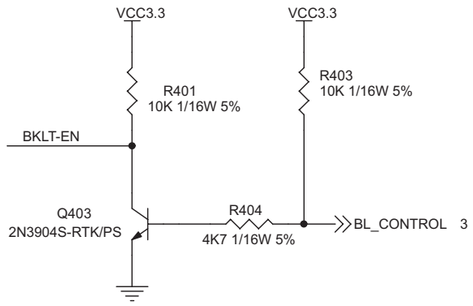



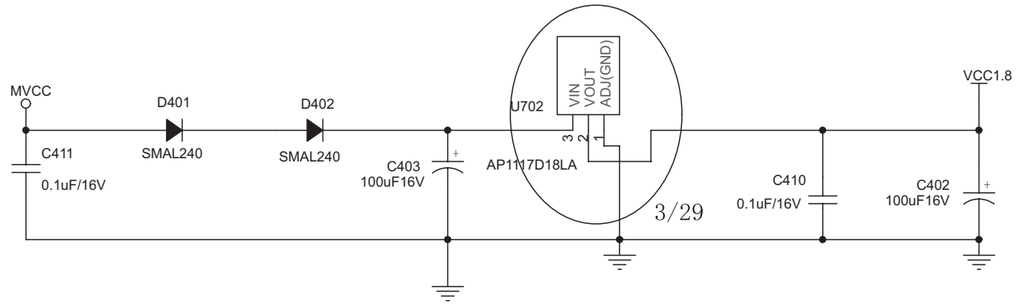



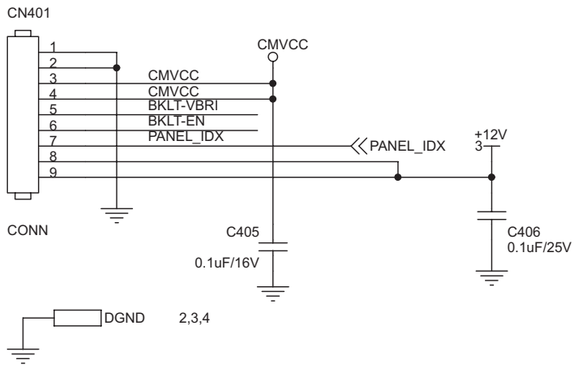

CN301 A5
C301 D3
C302 C3
C303 E4
FB301 D4
Q301 D2
Q302 D3
R301 D2
R302 C4
R303 D2
R304 D3
R305 C4
R306 C5
R308 D4

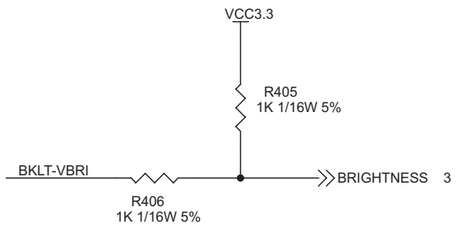


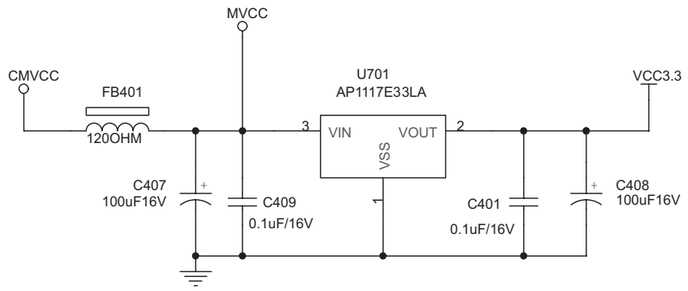
# Scaler Board Diagram(190CW8)-4



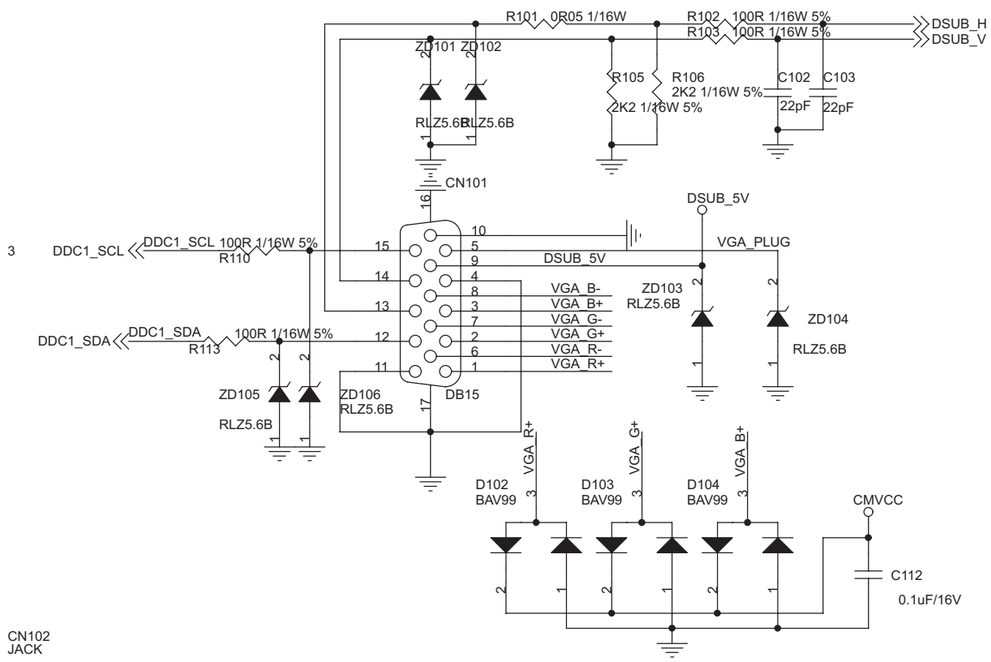



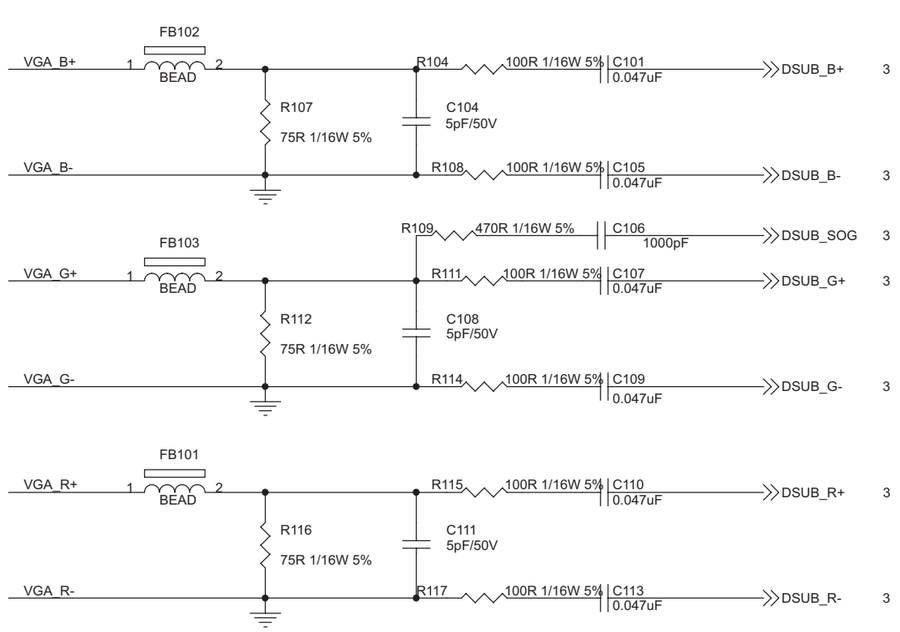



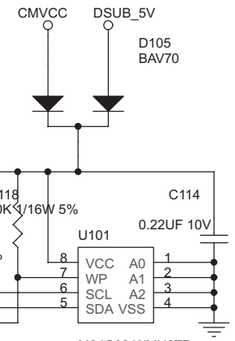



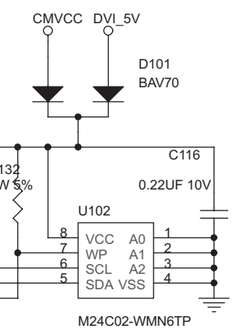



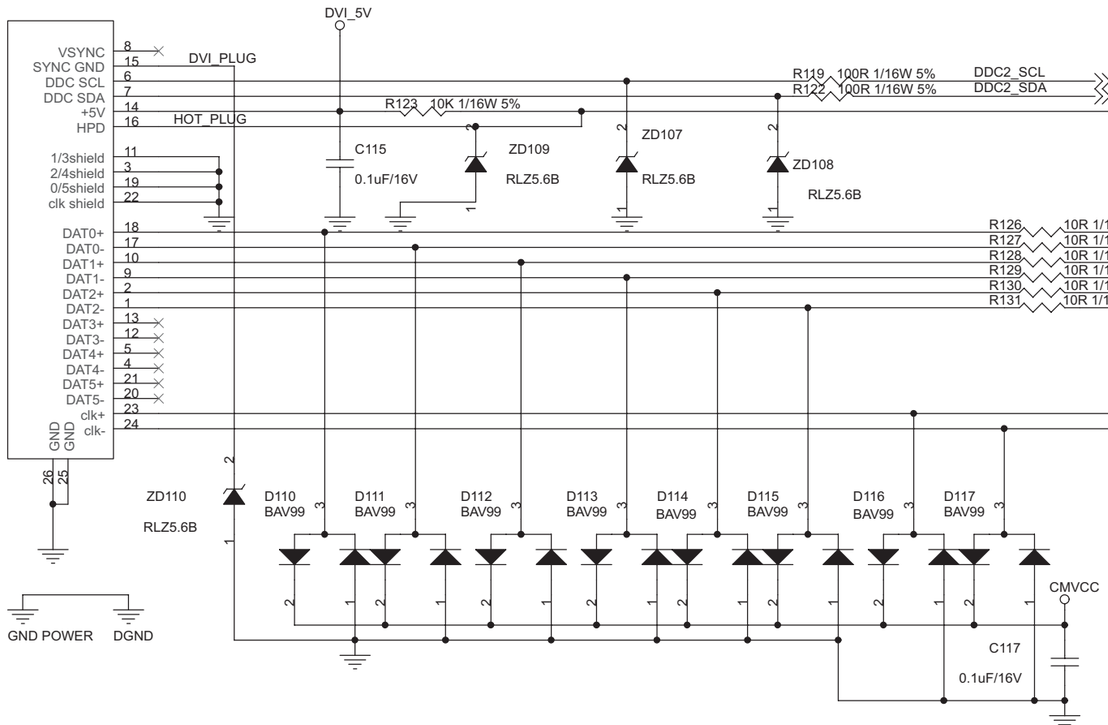

| | |
|---|---|
| CN401 | C1 |
| C401 | C7 |
| C402 | B7 |
| C403 | B6 |
| C405 | C2 |
| C406 | C2 |
| C407 | C6 |
| C408 | C7 |
| C409 | C6 |
| C410 | B7 |
| C411 | B4 |
| D401 | B5 |
| D402 | B5 |
| FB401 | C5 |
| Q403 | B3 |
| R401 | B3 |
| R403 | B3 |
| R404 | B3 |
| R405 | C4 |
| R406 | C3 |
| U701 | C6 |
| U702 | A6 |

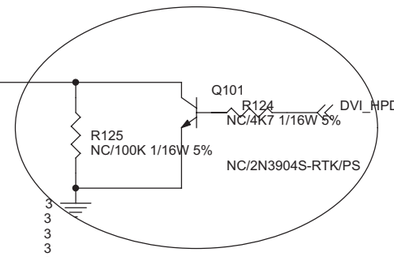


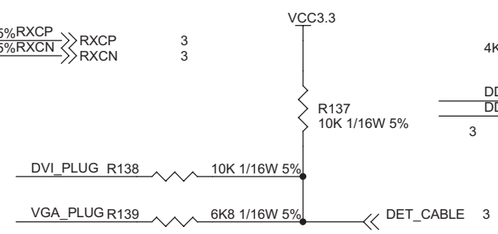



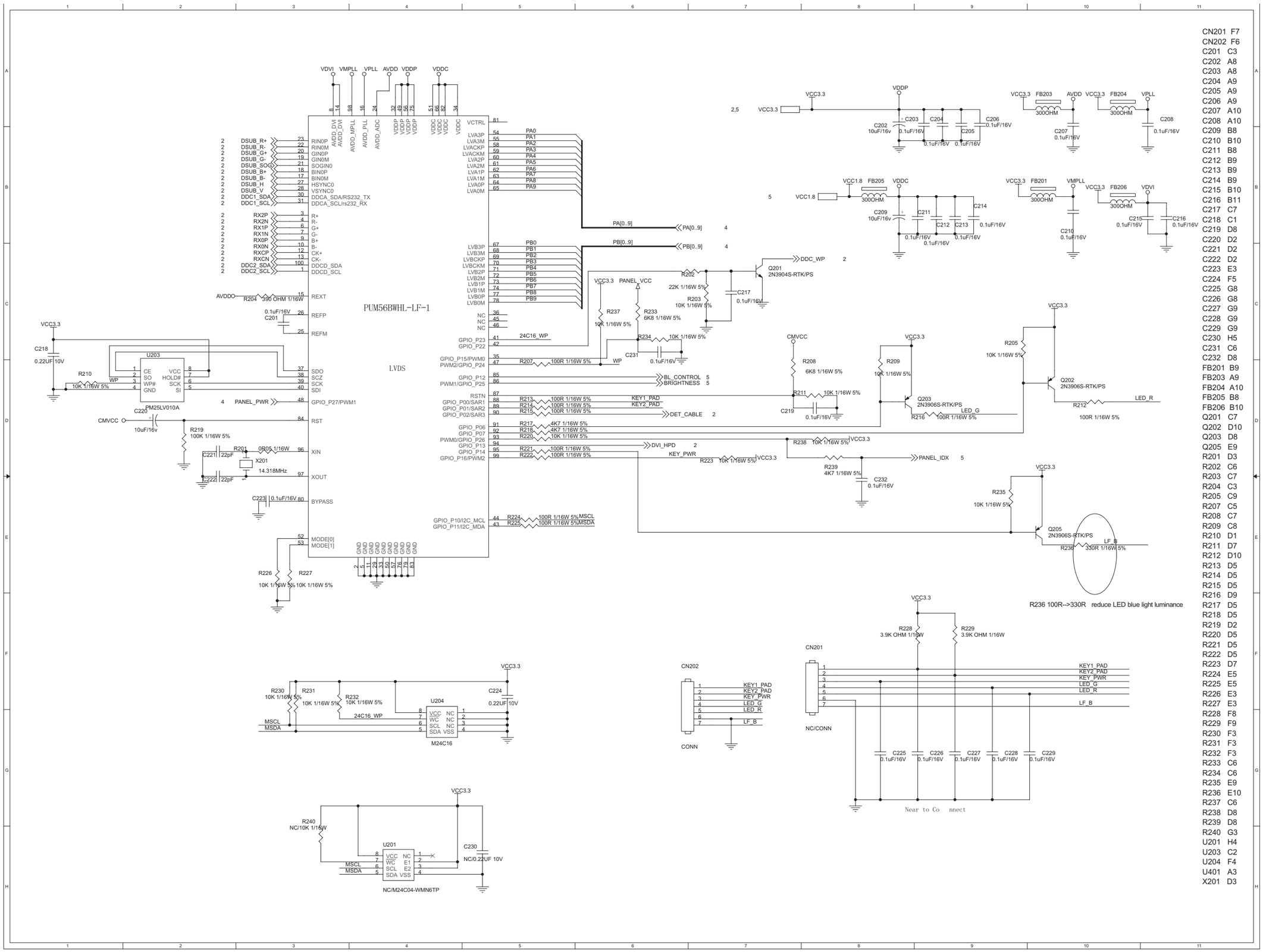



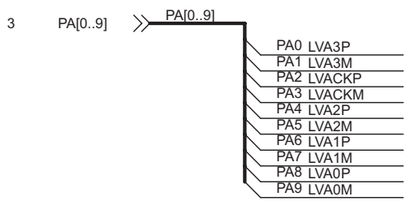

| | | | |
|---|---|---|---|
| CN101 | A2 | CN102 | C1 |
| C101 | A7 | C102 | A3 |
| C103 | A4 | C104 | A6 |
| C105 | A7 | C106 | A7 |
| C107 | A7 | C108 | B6 |
| C109 | B7 | C110 | B7 |
| C111 | B6 | C112 | C4 |
| C113 | C7 | C114 | C9 |
| C115 | C2 | C116 | D9 |
| C117 | E4 | D101 | D8 |
| D102 | B2 | D103 | B3 |
| D104 | B3 | D105 | C8 |
| D110 | E2 | D111 | E2 |
| D112 | E2 | D113 | E3 |
| D114 | E3 | D115 | E3 |
| D116 | E4 | D117 | E4 |
| FB101 | B5 | FB102 | A5 |
| FB103 | A5 | Q101 | C6 |
| R101 | A3 | R102 | A3 |
| R103 | A3 | R104 | A6 |
| R105 | A3 | R106 | A3 |
| R107 | A5 | R108 | A6 |
| R109 | A6 | R110 | A1 |
| R111 | A6 | R112 | B5 |
| R113 | B1 | R114 | B6 |
| R115 | B6 | R116 | B5 |
| R117 | C6 | R118 | C8 |
| R119 | C4 | R120 | C7 |
| R121 | C8 | R122 | C4 |
| R123 | C2 | R124 | C6 |
| R125 | C6 | R126 | D4 |
| R127 | D4 | R128 | D4 |
| R129 | D4 | R130 | D4 |
| R131 | D4 | R132 | D8 |
| R133 | D5 | R134 | D7 |
| R135 | D8 | R136 | D5 |
| R137 | D6 | R138 | E6 |
| R139 | E6 | U101 | C8 |
| U102 | D8 | ZD101 | A2 |
| ZD102 | A2 | ZD103 | B3 |
| ZD104 | B3 | ZD105 | B2 |
| ZD106 | B2 | ZD107 | C3 |
| ZD108 | C3 | ZD109 | C2 |

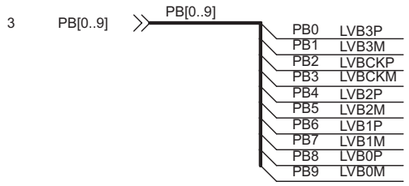
# Scaler Board Diagram(190SW8)-2

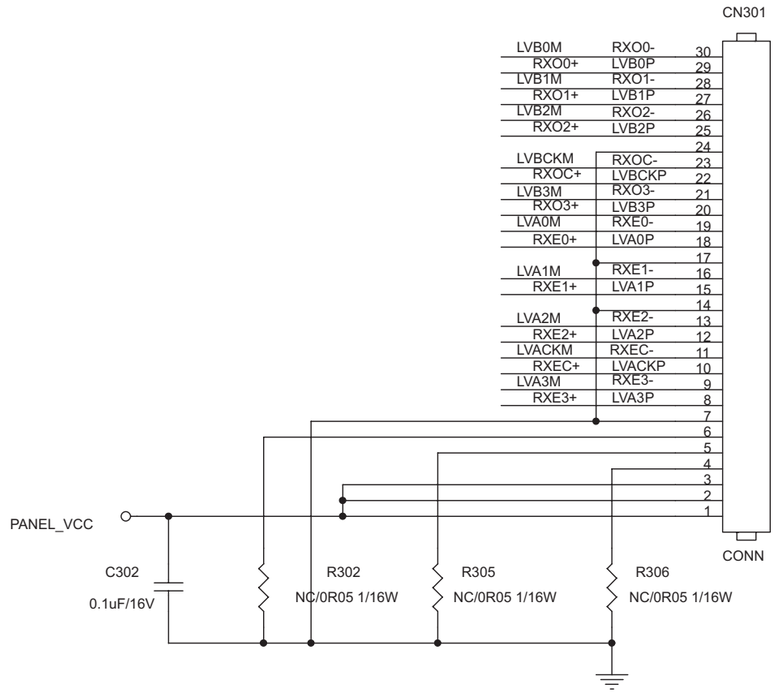



| | |
|---|---|
| CN201 | F7 |
| CN202 | F6 |
| C201 | C3 |
| C202 | A8 |
| C203 | A8 |
| C204 | A9 |
| C205 | A9 |
| C206 | A9 |
| C207 | A10 |
| C208 | A10 |
| C209 | B8 |
| C210 | B10 |
| C211 | B8 |
| C212 | B9 |
| C213 | B9 |
| C214 | B9 |
| C215 | B10 |
| C216 | B11 |
| C217 | C7 |
| C218 | C1 |
| C219 | D8 |
| C220 | D2 |
| C221 | D2 |
| C222 | D2 |
| C223 | E3 |
| C224 | F5 |
| C225 | G8 |
| C226 | G8 |
| C227 | G9 |
| C228 | G9 |
| C229 | G9 |
| C230 | H5 |
| C231 | C6 |
| C232 | D8 |
| FB201 | B9 |
| FB203 | A9 |
| FB204 | A10 |
| FB205 | B8 |
| FB206 | B10 |
| Q201 | C7 |
| Q202 | D10 |
| Q203 | D8 |
| Q205 | E9 |
| R201 | D3 |
| R202 | C6 |
| R203 | C7 |
| R204 | C3 |
| R205 | C9 |
| R207 | C5 |
| R208 | C7 |
| R209 | C8 |
| R210 | D1 |
| R211 | D7 |
| R212 | D10 |
| R213 | D5 |
| R214 | D5 |
| R215 | D5 |
| R216 | D9 |
| R217 | D5 |
| R218 | D5 |
| R219 | D2 |
| R220 | D5 |
| R221 | D5 |
| R222 | D5 |
| R223 | D7 |
| R224 | E5 |
| R225 | E5 |
| R226 | E3 |
| R227 | E3 |
| R228 | F8 |
| R229 | F9 |
| R230 | F3 |
| R231 | F3 |
| R232 | F3 |
| R233 | C6 |
| R234 | C6 |
| R235 | E9 |
| R236 | E10 |
| R237 | C6 |
| R238 | D8 |
| R239 | D8 |
| R240 | G3 |
| U201 | H4 |
| U203 | C2 |
| U204 | F4 |
| U401 | A3 |
| X201 | D3 |

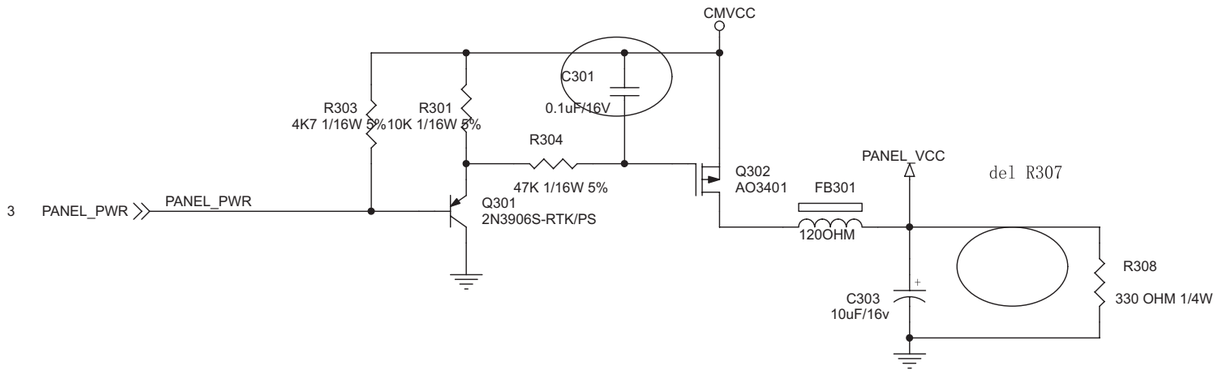
# Scaler Board Diagram(190SW8)-3



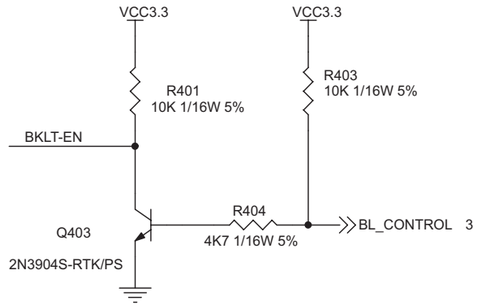



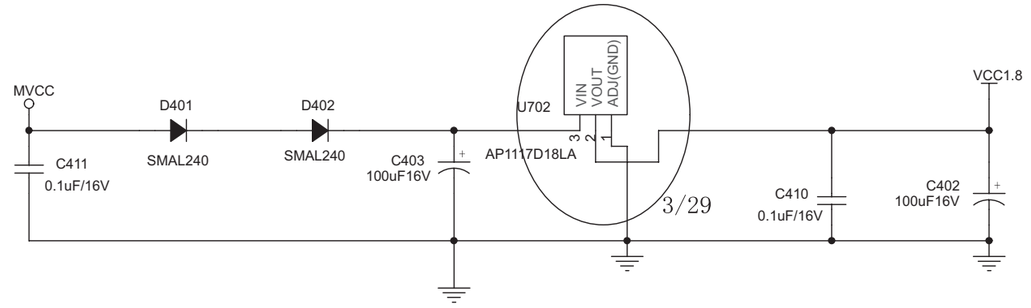




CN301 A5
C301 D3
C302 C3
C303 E4
FB301 D4
Q301 D2
Q302 D3
R301 D2
R302 C4
R303 D2
R304 D3
R305 C4
R306 C5
R308 D4

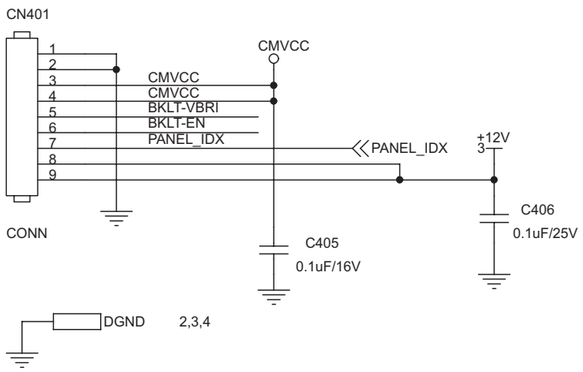


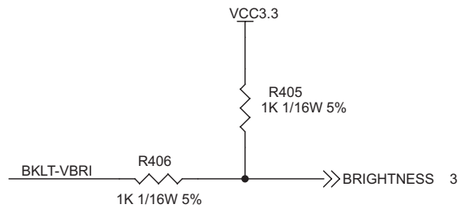
# Scaler Board Diagram(190SW8)-4

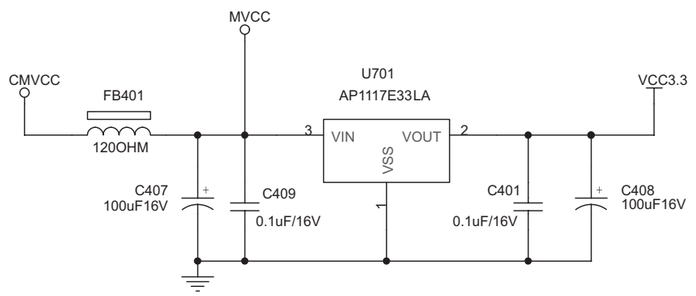


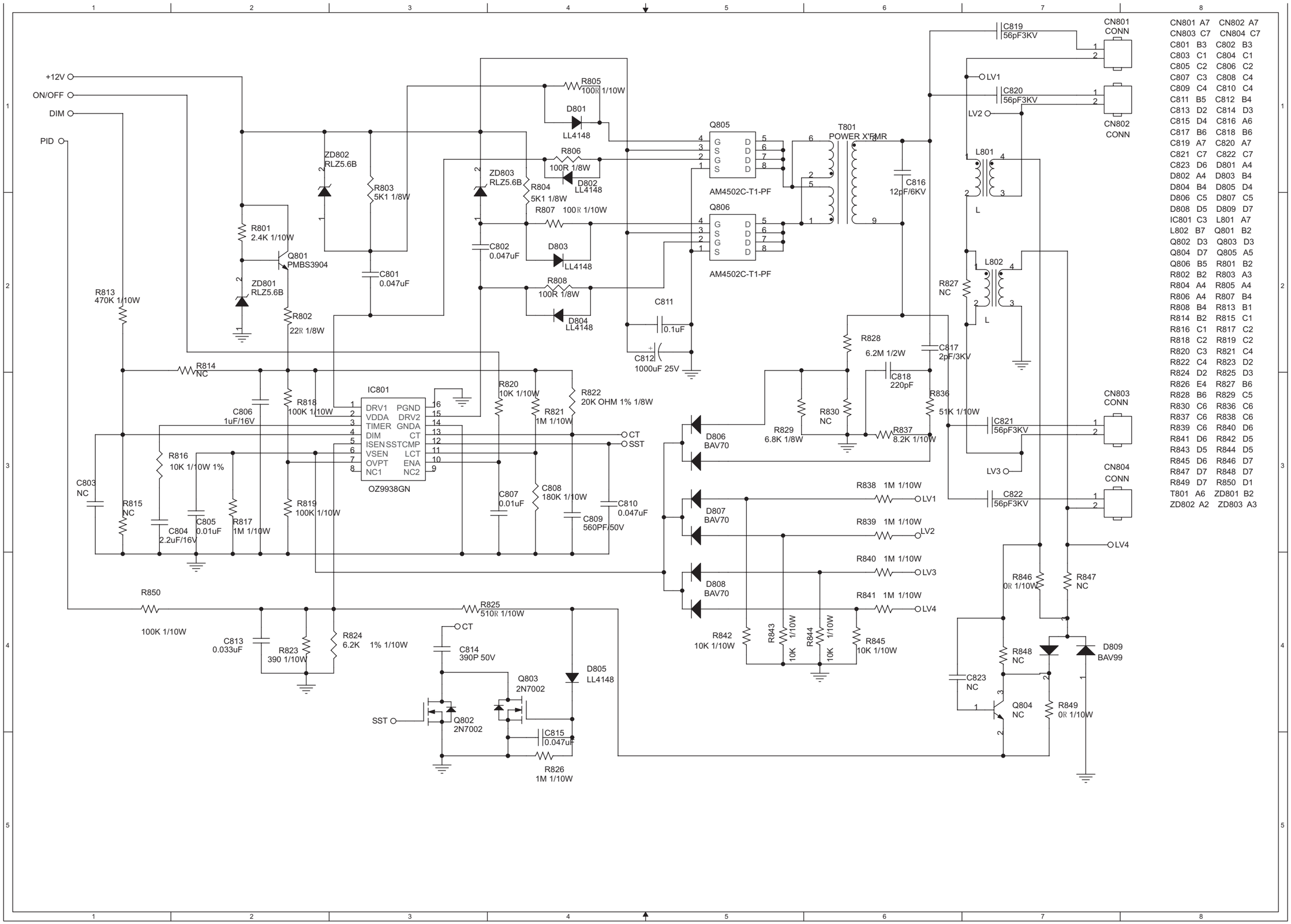

CN401 C1
C401 C7
C402 B7
C403 B5
C405 C2
C406 C2
C407 C6
C408 C7
C409 C6
C410 B7
C411 B4
D401 B4
D402 B5
FB401 C5
Q403 B3
R401 A3
R403 A3
R404 B3
R405 C4
R406 C3
U701 C6
U702 A6



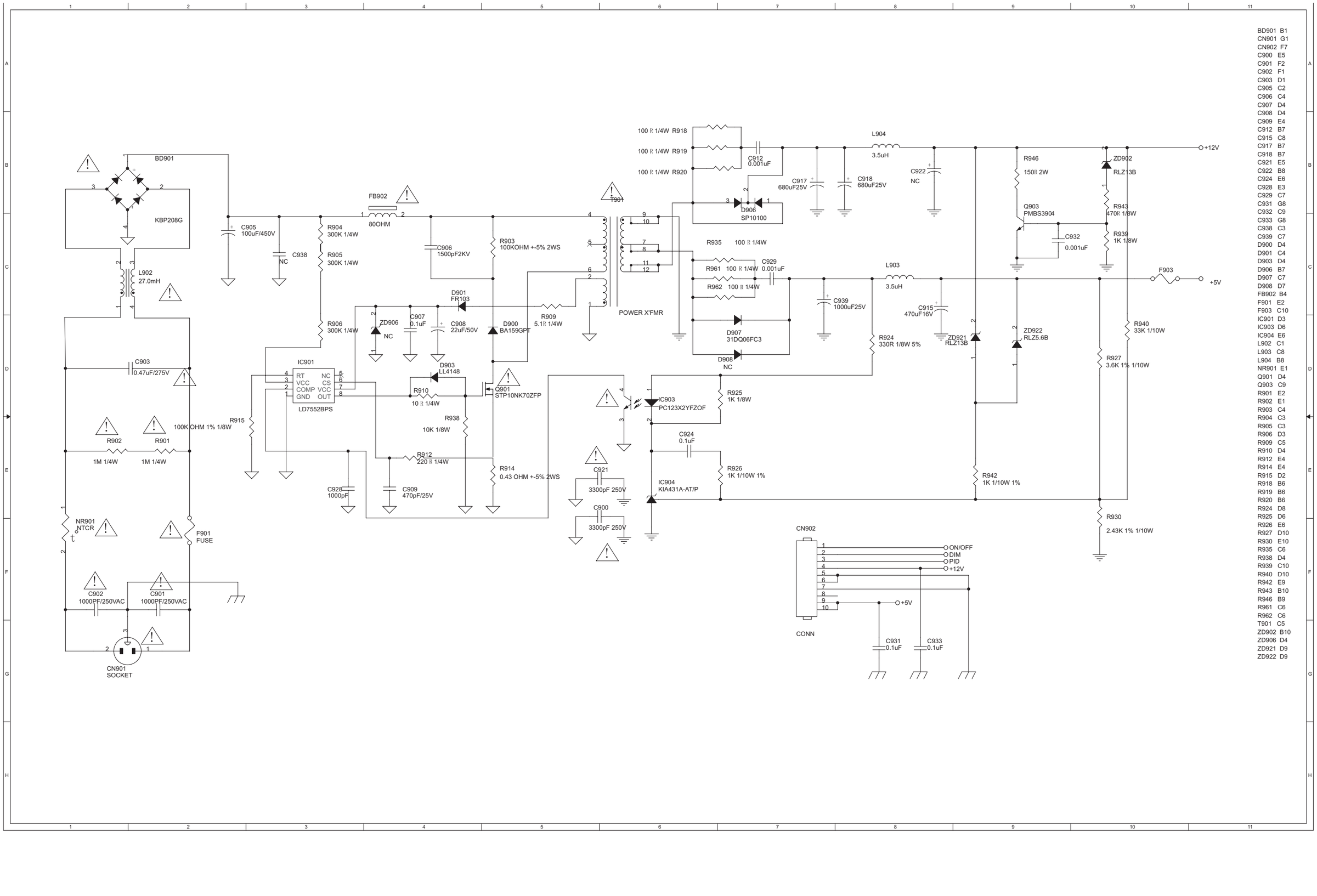



# Power Board Diagram(for CMO panel)-1



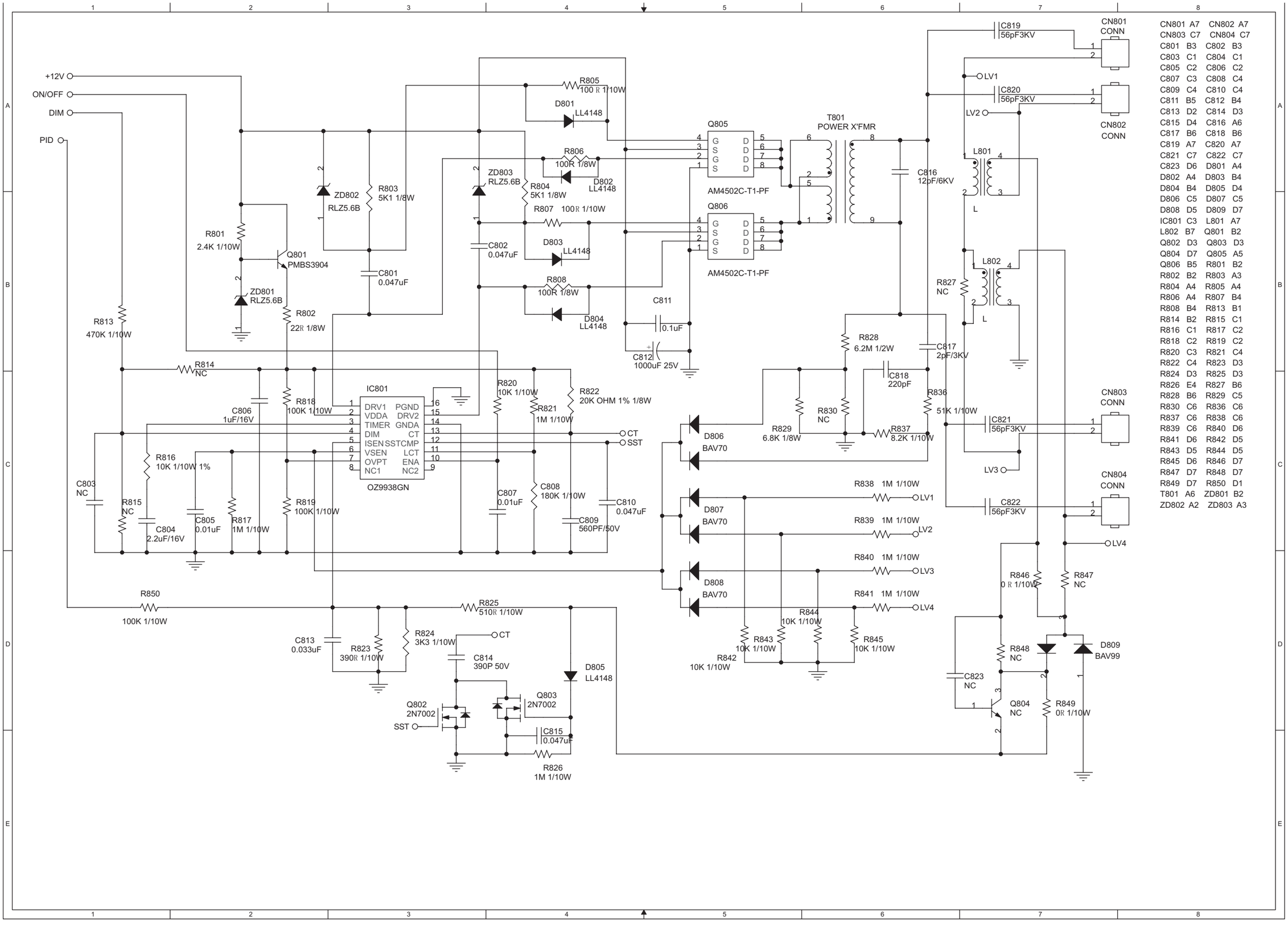

| | | | |
|---|---|---|---|
| CN801 | A7 | CN802 | A7 |
| CN803 | C7 | CN804 | C7 |
| C801 | B3 | C802 | B3 |
| C803 | C1 | C804 | C1 |
| C805 | C2 | C806 | C2 |
| C807 | C3 | C808 | C4 |
| C809 | C4 | C810 | C4 |
| C811 | B5 | C812 | B4 |
| C813 | D2 | C814 | D3 |
| C815 | D4 | C816 | A6 |
| C817 | B6 | C818 | B6 |
| C819 | A7 | C820 | A7 |
| C821 | C7 | C822 | C7 |
| C823 | D6 | D801 | A4 |
| D802 | A4 | D803 | B4 |
| D804 | B4 | D805 | D4 |
| D806 | C5 | D807 | C5 |
| D808 | D5 | D809 | D7 |
| IC801 | C3 | L801 | A7 |
| L802 | B7 | Q801 | B2 |
| Q802 | D3 | Q803 | D3 |
| Q804 | D7 | Q805 | A5 |
| Q806 | B5 | R801 | B2 |
| R802 | B2 | R803 | A3 |
| R804 | A4 | R805 | A4 |
| R806 | A4 | R807 | B4 |
| R808 | B4 | R813 | B1 |
| R814 | B2 | R815 | C1 |
| R816 | C1 | R817 | C2 |
| R818 | C2 | R819 | C2 |
| R820 | C3 | R821 | C4 |
| R822 | C4 | R823 | D2 |
| R824 | D2 | R825 | D3 |
| R826 | E4 | R827 | B6 |
| R828 | B6 | R829 | C5 |
| R830 | C6 | R836 | C6 |
| R837 | C6 | R838 | C6 |
| R839 | C6 | R840 | D6 |
| R841 | D6 | R842 | D5 |
| R843 | D5 | R844 | D5 |
| R845 | D6 | R846 | D7 |
| R847 | D7 | R848 | D7 |
| R849 | D7 | R850 | D1 |
| T801 | A6 | ZD801 | B2 |
| ZD802 | A2 | ZD803 | A3 |

# Power Board Diagram(for CMO panel)-2



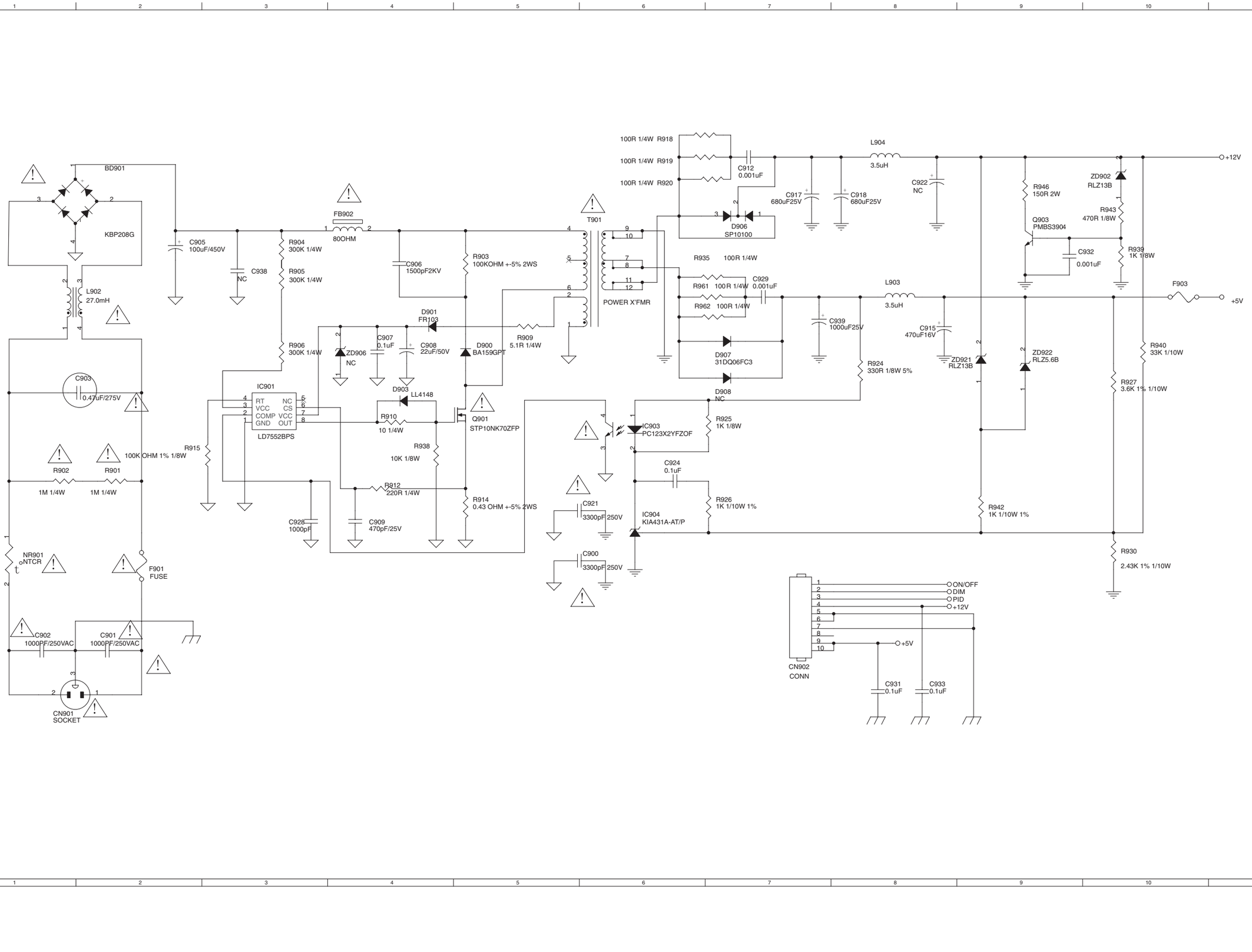

BD901 B1
CN901 G1
CN902 F7
C900 E5
C901 F2
C902 F1
C903 D1
C905 C2
C906 C4
C907 D4
C908 D4
C909 E4
C912 B7
C915 C8
C917 B7
C918 B7
C921 E5
C922 B8
C924 E6
C928 E3
C929 C7
C931 G8
C932 C9
C933 G8
C938 C3
C939 C7
D900 D4
D901 C4
D903 D4
D906 B7
D907 C7
D908 D7
FB902 B4
F901 E2
F903 C10
IC901 D3
IC903 D6
IC904 E6
L902 C1
L903 C8
L904 B8
NR901 E1
Q901 D4
Q903 C9
R901 E2
R902 E1
R903 C4
R904 C3
R905 C3
R906 D3
R909 C5
R910 D4
R912 E4
R914 E4
R915 D2
R918 B6
R919 B6
R920 B6
R924 D8
R925 D6
R926 E6
R927 D10
R930 E10
R935 C6
R938 D4
R939 C10
R940 D10
R942 E9
R943 B10
R946 B9
R961 C6
R962 C6
T901 C5
ZD902 B10
ZD906 D4
ZD921 D9
ZD922 D9

# Power Board Diagram(for LPL panel)-1



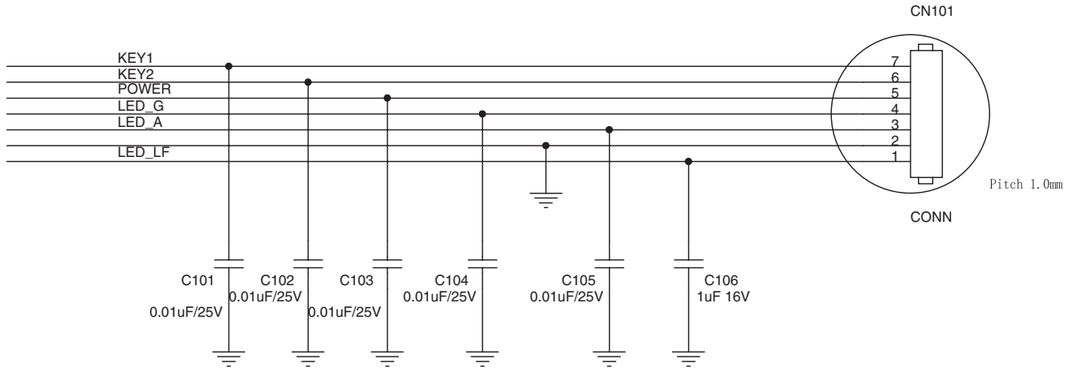

| | | | |
|---|---|---|---|
| CN801 | A7 | CN802 | A7 |
| CN803 | C7 | CN804 | C7 |
| C801 | B3 | C802 | B3 |
| C803 | C1 | C804 | C1 |
| C805 | C2 | C806 | C2 |
| C807 | C3 | C808 | C4 |
| C809 | C4 | C810 | C4 |
| C811 | B5 | C812 | B4 |
| C813 | D2 | C814 | D3 |
| C815 | D4 | C816 | A6 |
| C817 | B6 | C818 | B6 |
| C819 | A7 | C820 | A7 |
| C821 | C7 | C822 | C7 |
| C823 | D6 | D801 | A4 |
| D802 | A4 | D803 | B4 |
| D804 | B4 | D805 | D4 |
| D806 | C5 | D807 | C5 |
| D808 | D5 | D809 | D7 |
| IC801 | C3 | L801 | A7 |
| L802 | B7 | Q801 | B2 |
| Q802 | D3 | Q803 | D3 |
| Q804 | D7 | Q805 | A5 |
| Q806 | B5 | R801 | B2 |
| R802 | B2 | R803 | A3 |
| R804 | A4 | R805 | A4 |
| R806 | A4 | R807 | B4 |
| R808 | B4 | R813 | B1 |
| R814 | B2 | R815 | C1 |
| R816 | C1 | R817 | C2 |
| R818 | C2 | R819 | C2 |
| R820 | C3 | R821 | C4 |
| R822 | C4 | R823 | D3 |
| R824 | D3 | R825 | D3 |
| R826 | E4 | R827 | B6 |
| R828 | B6 | R829 | C5 |
| R830 | C6 | R836 | C6 |
| R837 | C6 | R838 | C6 |
| R839 | C6 | R840 | D6 |
| R841 | D6 | R842 | D5 |
| R843 | D5 | R844 | D5 |
| R845 | D6 | R846 | D7 |
| R847 | D7 | R848 | D7 |
| R849 | D7 | R850 | D1 |
| T801 | A6 | ZD801 | B2 |
| ZD802 | A2 | ZD803 | A3 |

# Power Board Diagram(for LPL panel)-2

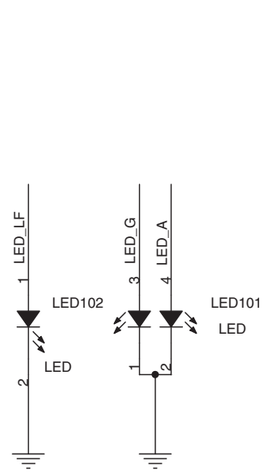


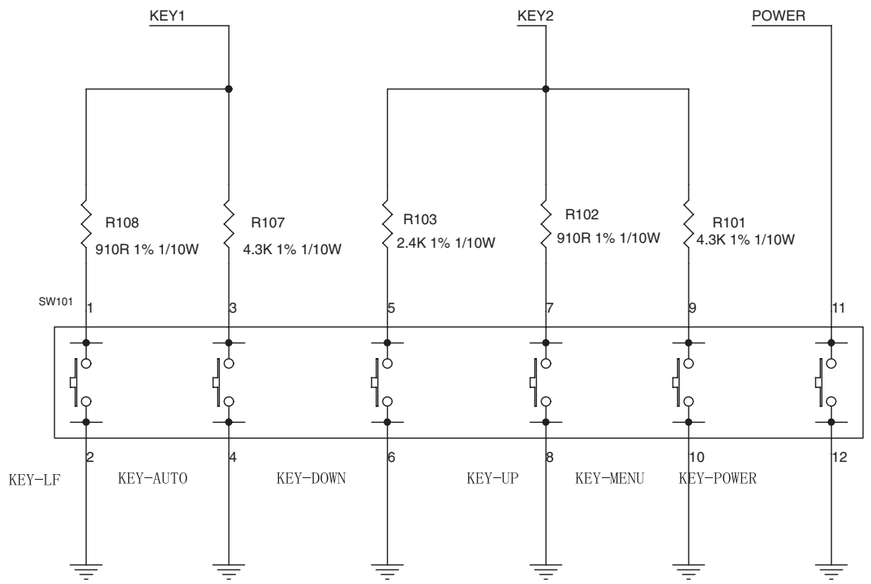

BD901 B1
CN901 G1
CN902 F7
C900 E5
C901 F2
C902 F1
C903 D1
C905 C2
C906 C4
C907 D4
C908 D4
C909 E4
C912 B7
C915 C8
C917 B7
C918 B7
C921 E5
C922 B8
C924 E6
C928 E3
C929 C7
C931 G8
C932 C9
C933 G8
C938 C3
C939 C7
D900 D4
D901 C4
D903 D4
D906 B7
D907 C7
D908 D7
FB902 B4
F901 E2
F903 C10
IC901 D3
IC903 D6
IC904 E6
L902 C1
L903 C8
L904 B8
NR901 E1
Q901 D4
Q903 C9
R901 E2
R902 E1
R903 C4
R904 C3
R905 C3
R906 D3
R909 C5
R910 D4
R912 E4
R914 E4
R915 D2
R918 B6
R919 B6
R920 B6
R924 D8
R925 D6
R926 E6
R927 D10
R930 E10
R935 C6
R938 D4
R939 C10
R940 D10
R942 E9
R943 B10
R946 B9
R961 C6
R962 C6
T901 C5
ZD902 B10
ZD906 D4
ZD921 D9
ZD922 D9

# Key Board Diagram

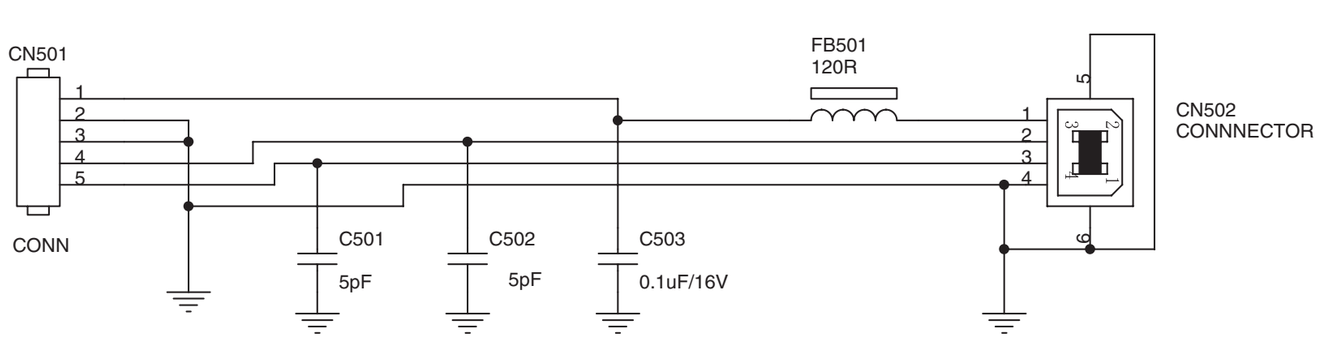



CN101 A5
C101 A2
C102 A3
C103 A3
C104 A3
C105 A4
C106 A4
LED101 C2
LED102 C1
R101 C5
R102 C5
R103 C4
R107 C4
R108 C3
SW101 C3



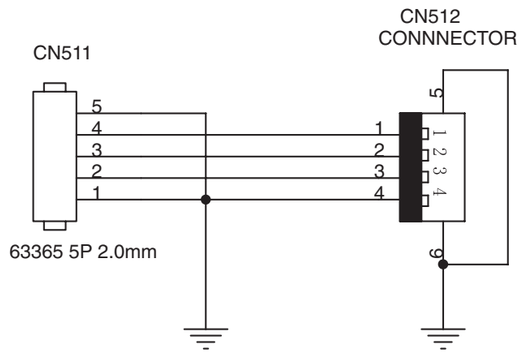



# USB-PLUG-IN Board Diagram



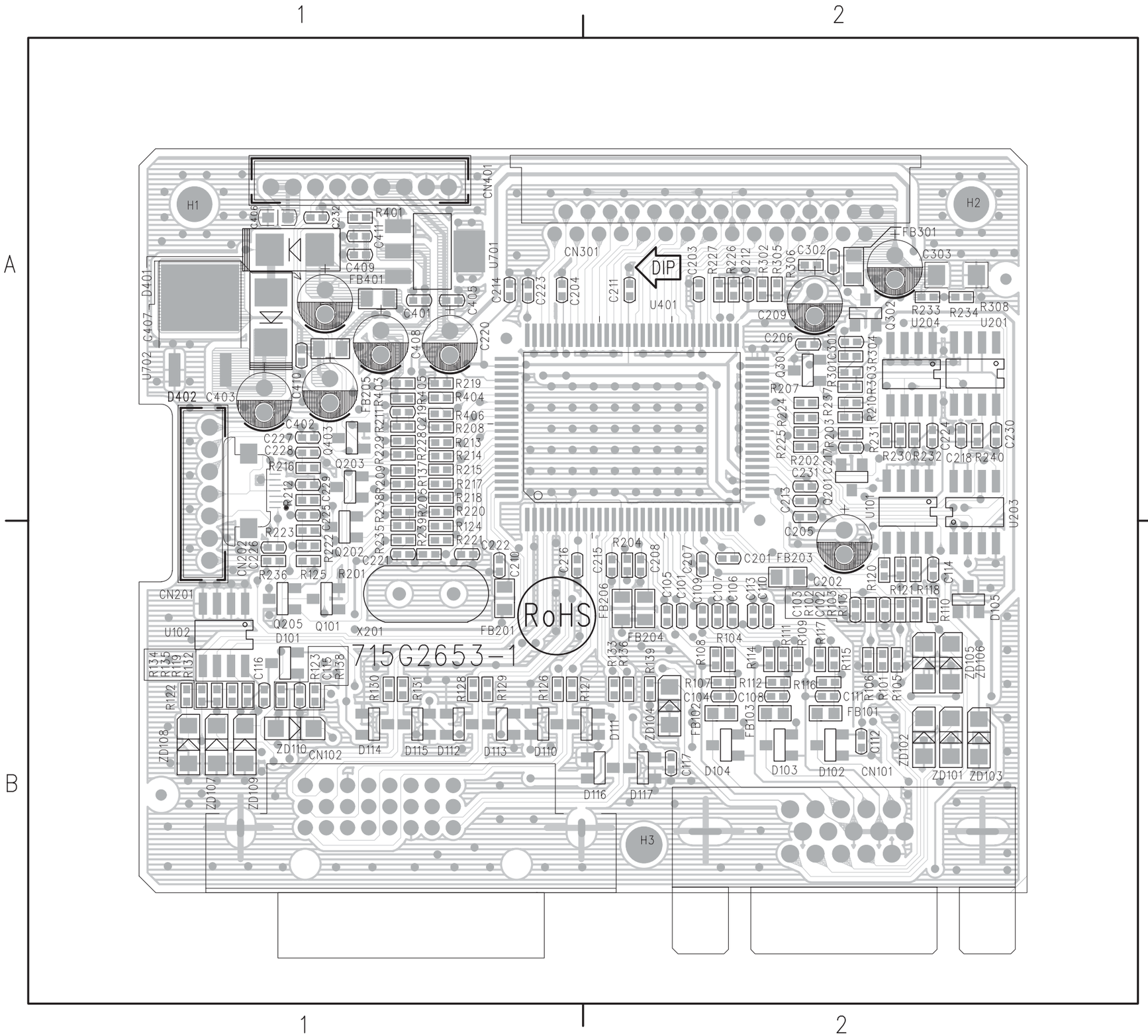

CN501 B1
CN502 C4
C501 C2
C502 C2
C503 C3
FB501 B3

# USB-PLUG-OUT Board Diagram



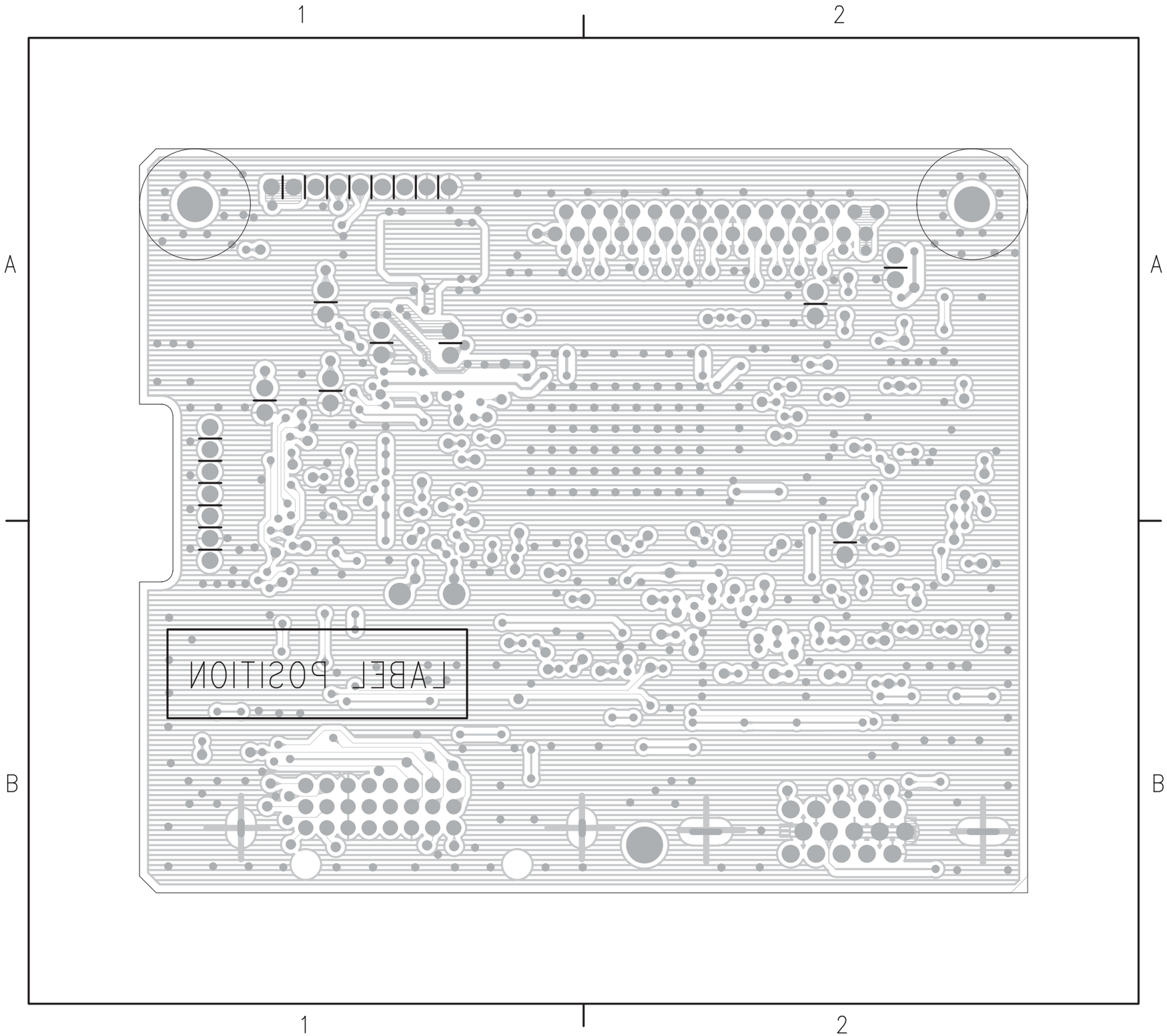

CN511 B2
CN512 C3

# Scaler Board C.B.A.-1

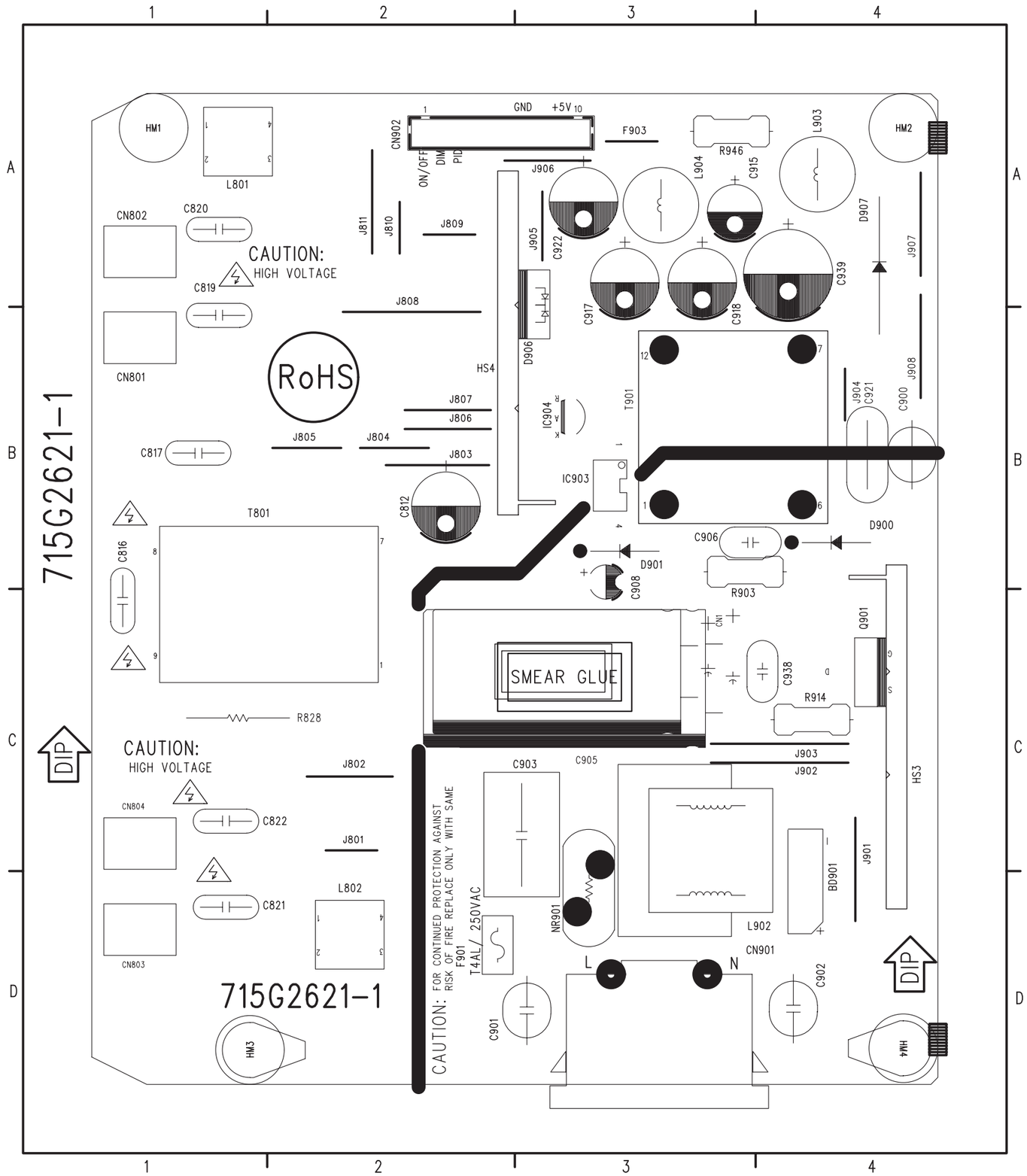



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| C101 | B2 | C226 | B1 | FB102 | B2 | R126 | B1 | R230 | A2 |
| C102 | B2 | C227 | A1 | FB103 | B2 | R127 | B1 | R231 | A2 |
| C103 | B2 | C228 | A1 | FB201 | B1 | R128 | B1 | R232 | A2 |
| C104 | B2 | C229 | A1 | FB203 | B2 | R129 | B1 | R233 | A2 |
| C105 | B2 | C230 | A2 | FB204 | B2 | R130 | B1 | R234 | A2 |
| C106 | B2 | C231 | A2 | FB205 | A1 | R131 | B1 | R235 | B1 |
| C107 | B2 | C232 | A1 | FB206 | B2 | R132 | B1 | R236 | B1 |
| C108 | B2 | C301 | A2 | FB301 | A2 | R133 | B2 | R237 | A2 |
| C109 | B2 | C302 | A2 | FB401 | A1 | R134 | B1 | R238 | A1 |
| C110 | B2 | C303 | A2 | Q101 | B1 | R135 | B1 | R239 | B1 |
| C111 | B2 | C401 | A1 | Q201 | A2 | R136 | B2 | R240 | A2 |
| C112 | B2 | C402 | A1 | Q202 | B1 | R137 | A1 | R301 | A2 |
| C113 | B2 | C403 | A1 | Q203 | A1 | R138 | B1 | R302 | A2 |
| C114 | B2 | C405 | A1 | Q205 | B1 | R139 | B2 | R303 | A2 |
| C115 | B1 | C406 | A1 | Q301 | A2 | R201 | B1 | R304 | A2 |
| C116 | B1 | C407 | A1 | Q302 | A2 | R202 | A2 | R305 | A2 |
| C117 | B2 | C408 | A1 | Q403 | A1 | R203 | A2 | R306 | A2 |
| C201 | B2 | C409 | A1 | R101 | B2 | R204 | B2 | R308 | A2 |
| C202 | B2 | C410 | A1 | R102 | B2 | R205 | A1 | R401 | A1 |
| C203 | A2 | C411 | A1 | R103 | B2 | R207 | A2 | R403 | A1 |
| C204 | A1 | CN101 | B2 | R104 | B2 | R208 | A1 | R404 | A1 |
| C205 | A2 | CN102 | B1 | R105 | B2 | R209 | A1 | R405 | A1 |
| C206 | A2 | CN201 | A1 | R106 | B2 | R210 | A2 | R406 | A1 |
| C207 | B2 | CN202 | A1 | R107 | B2 | R211 | A1 | U101 | A2 |
| C208 | B2 | CN301 | A2 | R108 | B2 | R212 | A1 | U102 | B1 |
| C209 | A2 | CN401 | A1 | R109 | B2 | R213 | A1 | U201 | A2 |
| C210 | B1 | D101 | B1 | R110 | B2 | R214 | A1 | U203 | B2 |
| C211 | A2 | D102 | B2 | R111 | B2 | R215 | A1 | U204 | A2 |
| C212 | A2 | D103 | B2 | R112 | B2 | R216 | A1 | U401 | A2 |
| C213 | A2 | D104 | B2 | R113 | B2 | R217 | A1 | U701 | A1 |
| C214 | A1 | D105 | B2 | R114 | B2 | R218 | A1 | U702 | A1 |
| C215 | B2 | D110 | B1 | R115 | B2 | R219 | A1 | X201 | B1 |
| C216 | B1 | D111 | B2 | R116 | B2 | R220 | A1 | ZD101 | B2 |
| C217 | A2 | D112 | B1 | R117 | B2 | R221 | B1 | ZD102 | B2 |
| C218 | A2 | D113 | B1 | R118 | B2 | R222 | B1 | ZD103 | B2 |
| C219 | A1 | D114 | B1 | R119 | B1 | R223 | B1 | ZD104 | B2 |
| C220 | A1 | D115 | B1 | R120 | B2 | R224 | A2 | ZD105 | B2 |
| C221 | B1 | D116 | B2 | R121 | B2 | R225 | A2 | ZD106 | B2 |
| C222 | B1 | D117 | B2 | R122 | B1 | R226 | A2 | ZD107 | B1 |
| C223 | A1 | D401 | A1 | R123 | B1 | R227 | A2 | ZD108 | B1 |
| C224 | A2 | D402 | A1 | R124 | B1 | R228 | A1 | ZD109 | B1 |
| C225 | A1 | FB101 | B2 | R125 | B1 | R229 | A1 | ZD110 | B1 |

# Scaler Board C.B.A.-2

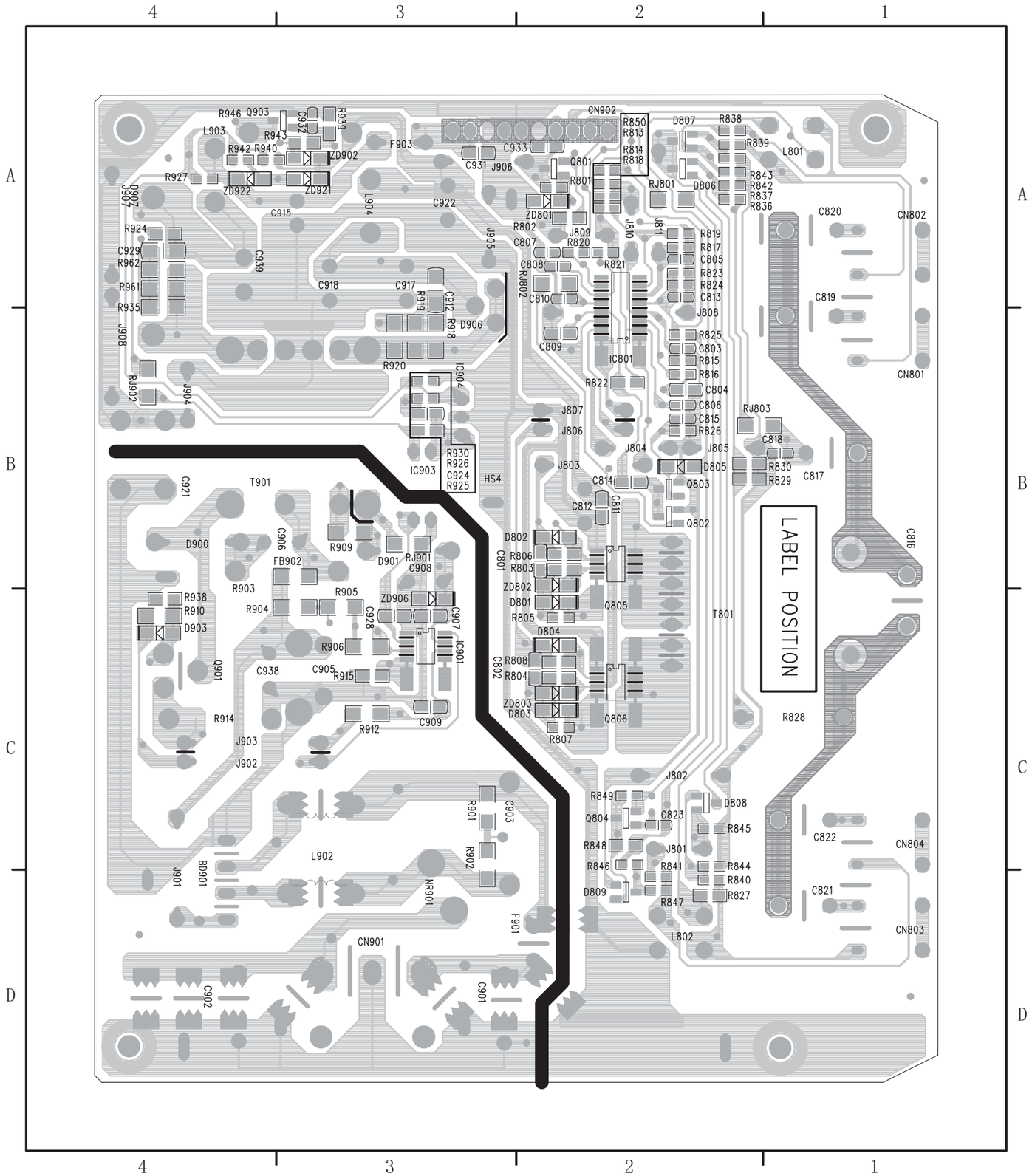


# Power Board C.B.A.-1



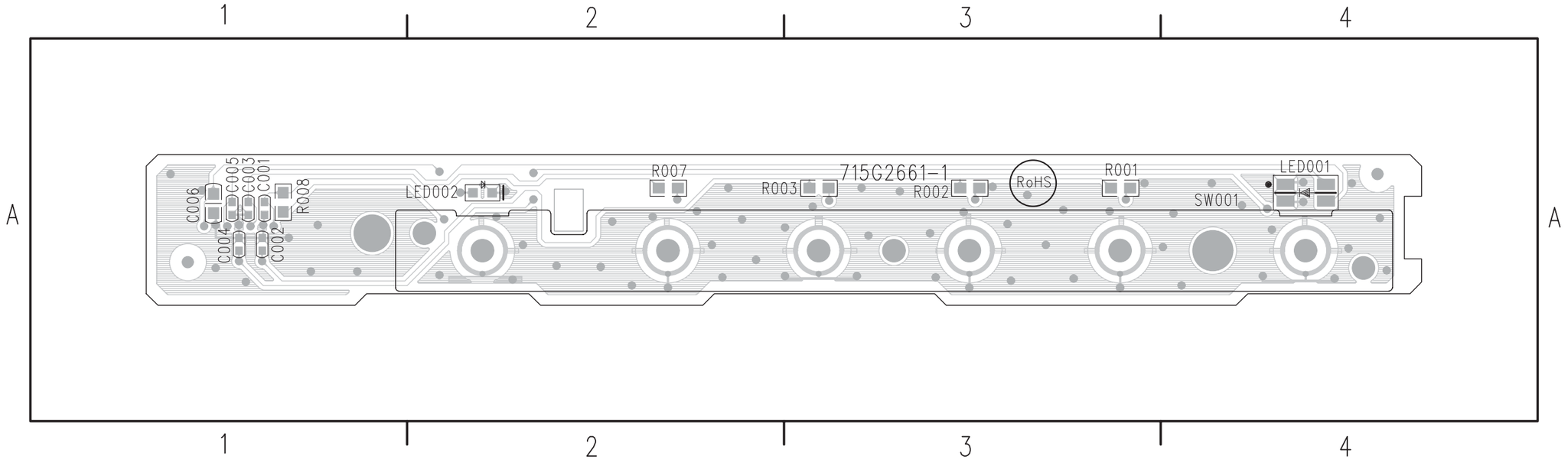

BD901 D4 J803 B2
C812 B2 J804 B2
C816 C1 J805 B2
C817 B1 J806 B2
C819 B1 J807 B2
C820 A1 J808 B2
C821 D1 J809 A2
C822 C1 J810 A2
C900 B4 J811 A2
C901 D3 J901 D4
C902 D4 J902 C3
C903 C3 J903 C3
C905 C3 J904 B4
C906 B3 J905 A3
C908 B3 J906 A2
C915 A3 J907 A4
C917 A3 J908 B4
C918 A3 L801 A1
C921 B4 L802 D2
C922 A3 L902 C3
C938 C4 L903 A4
C939 A4 L904 A3
CN801 B1 NR901 D3
CN802 A1 Q901 C4
CN803 D1 R828 C1
CN804 C1 R903 B3
CN901 D3 R914 C4
CN902 A2 R946 A4
D900 B4 SEN1 A1
D901 B3 SEN10 C1
D906 A3 SEN11 C4
D907 A4 SEN12 B1
F901 D2 SEN13 D1
F903 A3 SEN14 B2
HM10 D4 SEN15 D2
HM11 D3 SEN16 C1
HM12 D2 SEN2 A1
HM13 C3 SEN3 A1
HM14 D4 SEN4 B1
HM15 D2 SEN5 A2
HM16 B4 SEN6 B1
HM17 B4 SEN7 C1
HM36 D3 SEN8 D1
IC903 B3 SEN9 D1
IC904 B3 T801 C2
J801 C2 T901 B3
J802 C2

# Power Board C.B.A.-2

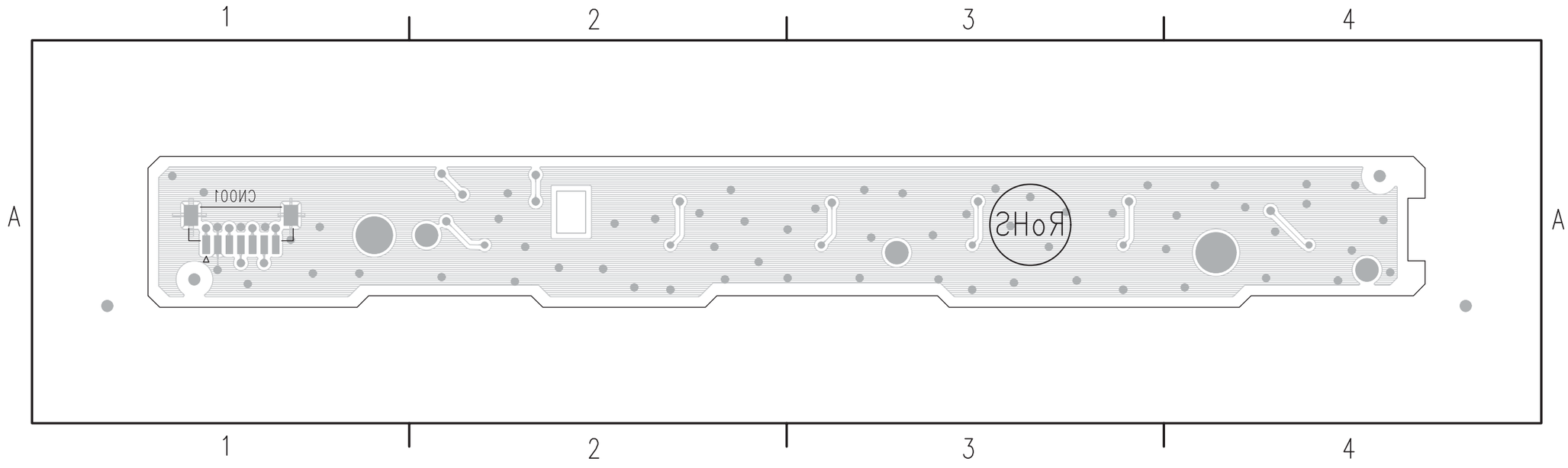



C801 B2 R837 A2
C802 C2 R838 A2
C803 B2 R839 A2
C804 B2 R840 D2
C805 A2 R841 D2
C806 B2 R842 A2
C807 A2 R843 A2
C808 A2 R844 C2
C809 B2 R845 C2
C810 A2 R846 C2
C811 B2 R847 D2
C813 A2 R848 C2
C814 B2 R849 C2
C815 B2 R850 A2
C818 B1 R901 C3
C823 C2 R902 C3
C907 C3 R904 C3
C909 C3 R905 C3
C912 A3 R906 C3
C924 B3 R909 B3
C928 C3 R910 C4
C929 A4 R912 C3
C931 A3 R915 C3
C932 A3 R918 B3
C933 A2 R919 B3
D801 C2 R920 B3
D802 B2 R924 A4
D803 C2 R925 B3
D804 C2 R926 B3
D805 B2 R927 A4
D806 A2 R930 B3
D807 A2 R935 A4
D808 C2 R938 C4
D809 D2 R939 A3
D903 C4 R940 A4
FB902 B3 R942 A4
IC801 B2 R943 A3
IC901 C3 R961 A4
Q801 A2 R962 A4
Q802 B2 RJ801 A2
Q803 B2 RJ802 A2
Q804 C2 RJ803 B2
Q805 B2 RJ901 B3
Q806 C2 RJ902 B4
Q903 A3 SG10 D4
R801 A2 SG11 D4
R802 A2 SG12 D4
R803 B2 SG13 D3
R804 C2 SG14 D3
R805 C2 SG15 D2
R806 B2 SG16 D2
R807 C2 SG17 A8
R808 C2 SG18 D1
R813 A2 SG19 D4
R814 A2 SG20 D4
R815 B2 SG21 A1
R816 B2 SG22 D4
R817 A2 SG23 D2
R818 A2 SG24 D3
R819 A2 SG25 D3
R820 A2 SG26 C3
R821 A2 SG27 C3
R822 B2 SG28 D2
R823 A2 ZD801 A2
R824 A2 ZD802 B2
R825 B2 ZD803 C2
R826 B2 ZD902 A3
R827 D2 ZD906 C3
R829 B2 ZD921 A3
R830 B2 ZD922 A4
R836 A2

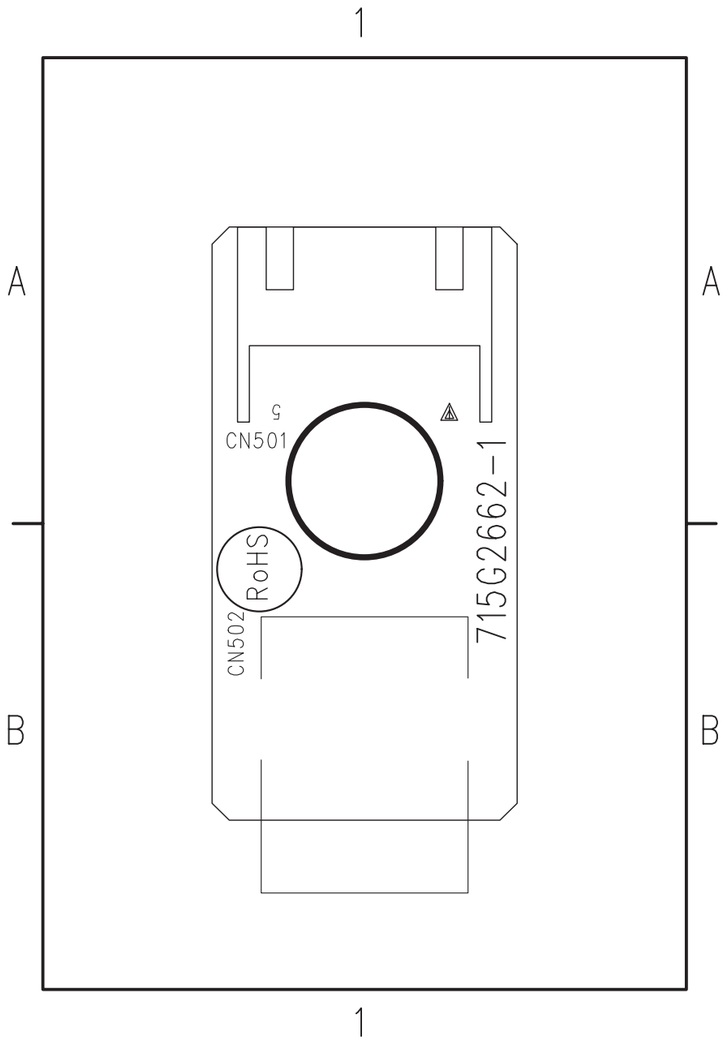
# KEY Board C.B.A.



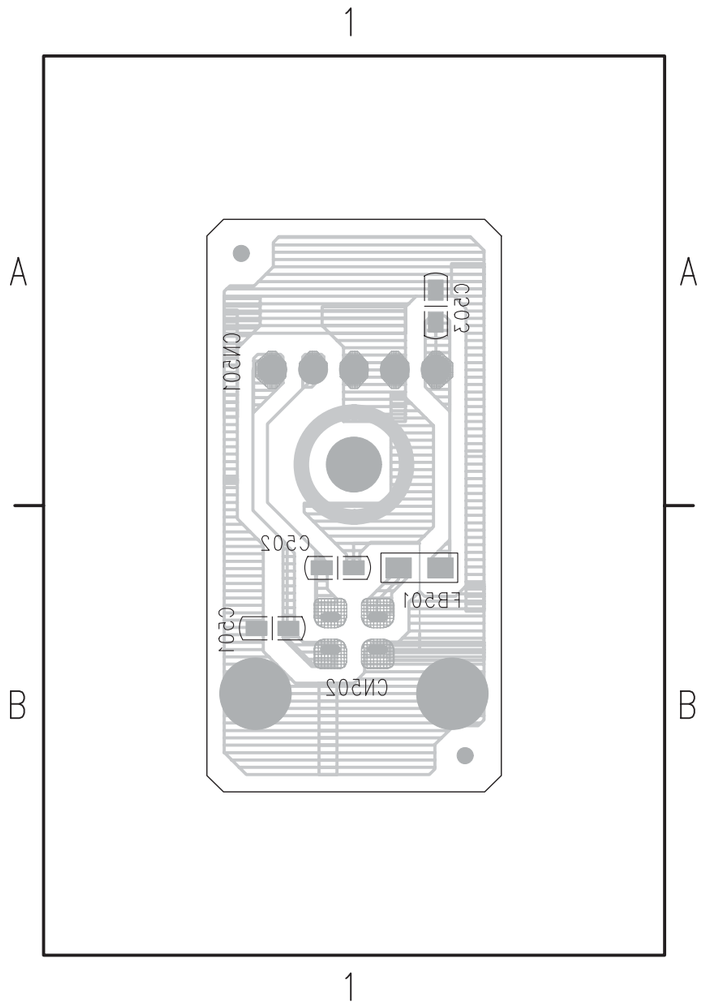

| | |
|---|---|
| R001 | A3 |
| R002 | A3 |
| R003 | A3 |
| R007 | A2 |
| R008 | A1 |
| C001 | A1 |
| C002 | A1 |
| C003 | A1 |
| C004 | A1 |
| C005 | A1 |
| C006 | A1 |
| LED101 | A4 |
| LED102 | A2 |
| SW001 | A4 |




CN001 A1

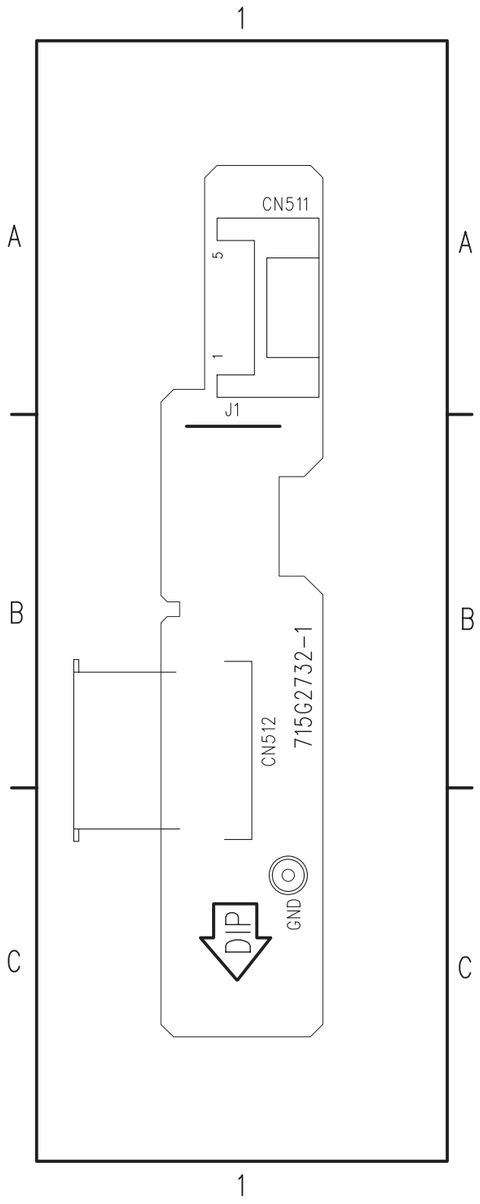



CN501 A1
CN502 B1

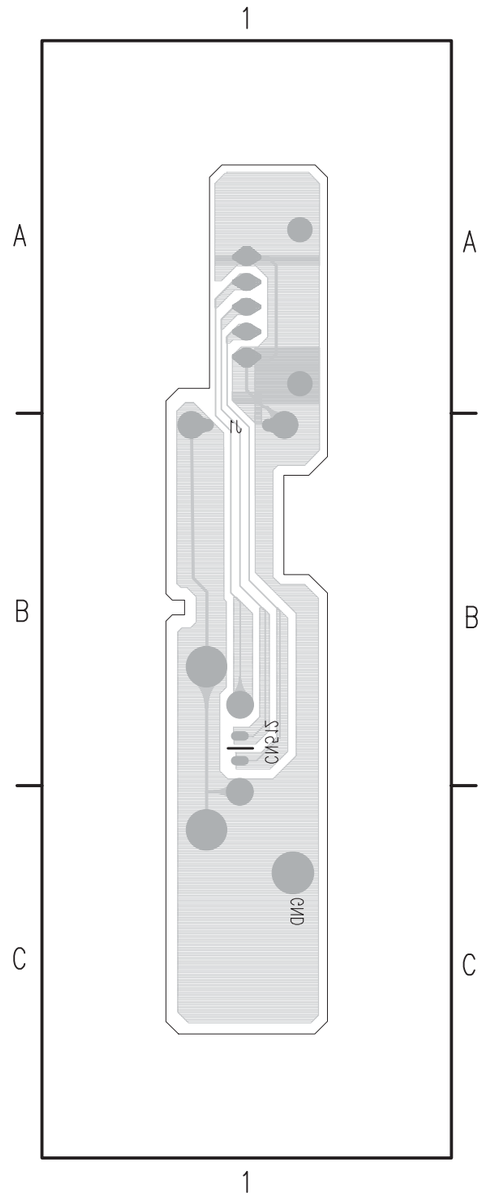



C501 B1
C502 B1
C503 A1
FB501 B1

# USB-PLUG-OUT Board C.B.A.




CN511 A1
CN512 B1
GND C1
J1 B1



PHILIPS

# HUDSON-8 190CW8 GENERAL PRODUCT SPECIFICATION

. ANALOG AND DIGITAL DUAL INPUT

. AUTO PICTURE ADJUSTMENT

. 13 FACTORY PRESET MODES AND 48PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES

. NEW OSD STYLING DISPLAY FOR MODE IDENTIFICATION /ADJUSTMENT

. DDC 2B & DDC/CI COMMUNICATION CAPABILITY

. MAX. RESOLUTION 1440*900 NON-INTERLACED AT 76 HZ

. 19" COLOR TFT LCD FLAT PANEL

. EASY TILT & SWIVEL BASE

. FULL RANGE POWER SUPPLY 90 - 264 VAC

. CE ENVIRONMENTAL POLICY

. LEAD-FREE PRODUCT POLICY

. ANTI-GLARE TO REDUCE LIGHT REFLECTION

. POWER MANAGEMENT CAPABILITY

. SOG SUPPORT

. TCO'03

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4.3 Brightness
4.4 Image size
4.4.1 Actual display size
4.4.2 Max scan size


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CLASS NO.

19 inch LCD Monitor
TYPE : 190CW8
BRAND : PHILIPS

2007-08-01

NAME SUPERS. 590 — 2 10 A4

TY CHECK DATE 2007-08-01 Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

2838 100 05424

8.0 Quality assurance requirements
8.1 Acceptance test

9.0 Serviceability

10.0 Philips Flat panel monitors pixel defect policy

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# GENERAL PRODUCT SPECIFICATION(Continued)

PHILIPS

1.0 FOREWORD

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

2.0 PRODUCT PROFILE

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

2.1 LCD

2.1.1

| | |
|---|---|
| Type NR. | : LPL, LM190WX1-TLA1 (TN) |
| Number of Pixels. | : 1440 (H) x900 (V) |
| Physical Size. | : 427.2(H) x 277.4(V) x 15.3(D) mm(Typ.) |
| Pixel Pitch. | : 0.095*RGB(H)mm x 0.285(V)mm |
| Color pixel arrangement. | : RGB vertical stripes |
| Support Color. | : 16.7M colors |
| Display Mode. | : Normally White |
| Backlight. | : CCFL edge light system |
| Active area. (WXH). | : 410.4 (H) x 256.5 (V) |
| Viewing Angle (CR>=10). | : R/L 160(Typ.), U/D 160(Typ.) |
| Contrast ratio. | : 1000:1(Typ.) 700:1(Min.) |
| White luminance. | : Original color 250 nits (Min), 300 nits (Typ.) |

2.1.2

| | |
|---|---|
| Type NR. | : CMO, M190A1-L06 (TN) |
| Number of Pixels. | : 1440 (H) x900 (V) |
| Physical Size. | : 427.2(w)*277.4(h)*17.0(d) (Typ) mm |
| Pixel Pitch. | : 0.285 mm x 0.285 mm |
| Color pixel arrangement. | : RGB vertical stripes |
| Support Color. | : 16.7M colors ( 6 bits+FRC ) |
| Display Mode. | : Normally White |
| Backlight. | : CCFL edge light system |
| Active area. (WXH). | : 410.4 x 256.5mm (19.05□diagonal) |
| Viewing Angle (CR>=10). | : 75/75 (min), 85/85 (typ) for Horizontal & 70/70 (min), 80/80 (typ) for Vertical |
| Contrast ratio. | : 850:1(Typ.) 500:1(Min.) |
| White luminance. | : Original color 230 nits (Min), 300 nits (Typ.) |

2.2 Scanning frequencies

| | |
|---|---|
| H-Frequency. | : 30K - 83 KHz |
| V-Frequency. | : 56 - 76 Hz |

2.3 Video dot rate. : < 140 MHz

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

2.5 Power consumption. : < 36W ( Typ.)

2.6 Dimensions. :

2.7 Weight. :

2.8 Functions:

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

(2) DVI-D digital Panel Link TMDS input

2.9 Ambient temperature: 0 °C - 40 °C

2.10 Regulatory compliance:

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

* Medical compliance only applies for dedicated models.

3.0 Electrical characteristics

3.1 Interface signals

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

1). D-shell Analog

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

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

Sync. : Separate sync — TTL level, input impedance 2k2 ohm terminate
H-sync — Positive/Negative
V-sync — Positive/Negative
Composite sync — TTL level, input impedance 2k2 ohm terminate (Positive/Negative)

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

2). DVI-D Digital

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

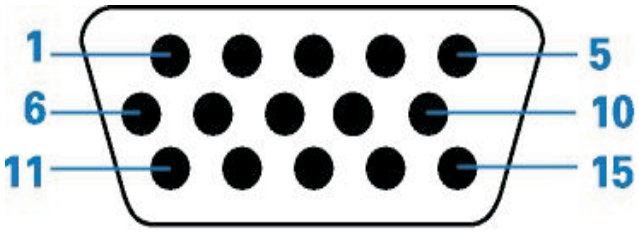
3.2 Interface

3.2.1 D-Sub Cable

Length. : 1.8 M +/- 50 mm

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

Pin Assignment:

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CLASS NO.

19 inch LCD Monitor
TYPE :190CW8
BRAND : PHILIPS

2007-08-01

NAME SUPERS. 590 — 5 10 A4

TY CHECK DATE 2007-08-01 Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

2838 100 05424

| PIN No. | SIGNAL | PIN No. | SIGNAL |
|---|---|---|---|
| 1 | Red video input | 9 | DDC +3.3V or +5V |
| 2 | Green video input / sync on green | 10 | Logic GND |
| 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 GND | 14 | V-sync |
| 7 | Green video GND | 15 | Data clock line (SCL) |
| 8 | Blue video GND | | |

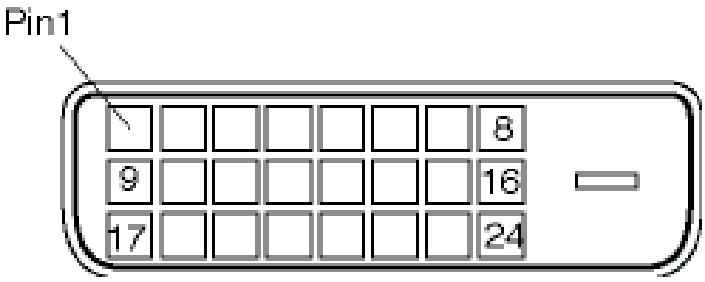
3.2.2 DVI Cable

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

Length. : 1.8 M +/- 50 mm

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

Pin Assignment:




| Pin No. | Description | Pin No. | Description | Pin No. | Description |
|---|---|---|---|---|---|
| 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 shield | 11 | T.M.D.S. data1 shield | 19 | T.M.D.S. data0 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- |

3.2.5 Software control functions via OSD/control

OSD (On Screen Display) function

| MAIN MENU | Sub Menu | Sub Menu 2 | Description |
|---|---|---|---|
| Picture | Brightness | | Sliding bar |
| | Contrast | | Sliding bar |
| Color | Original | | |
| | Color Temperature | | |
| | | 5000K | |
| | | 6500K | |
| | | 7500K | |
| | | 8200K | |
| | | 9300K | |
| | | 11500K | |
| | sRGB | | |

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| | | | |
|---|---|---|---|
| | User Define | | |
| | | Red(0-100) | Sliding bar |
| | | Green(0-100) | Sliding bar |
| | | Blue(0-100) | Sliding bar |
| | AUTO | | |
| Source | VGA | | |
| | DVI | | |
| | HDMI | | |
| | | | Left/right arrow to select |
| Language | English | | |
| | Spanish | | |
| | French | | |
| | German | | |
| | Italian | | |
| | Portuguese | | |
| | Russian | | |
| | Simplified Chinese | | |
| | | | |
| OSD Settings | Horizontal | 0-100 | Sliding bar |
| | Vertical | 0-100 | Sliding bar |
| | Transparency | Off, 1/4, 2/4, 3/4, 4/4 | |
| | OSD Time out | 5s, 10s, 20s, 30s, 60s | |
| | | | |
| | Phase | 0~100 | Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out) |
| Setup | Clock | 0~100 | Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out) |
| | H.Position | 0~100 | Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out) |
| | V.Position | 0~100 | Sliding bar(If the signal source is coming from DVI, this function should be disabled, and be grayed out) |
| | Smart Response | On, Off | |
| | Smart Contrast | On, Off | |
| | Size | Full Screen, Native, Fill with Aspect | |
| | Smart Bright | On, Off | |
| | Pixel Orbiting | On, Off | |
| | Reset | Yes, No | |
| | Resolution Notification | On, Off | |
| | Information | | |

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

3.3 Timing requirement

3.3.1 Mode storing capacity

(1) Factory preset modes. : 13
(2) Preset modes. : 48
(3)User define modes : 10

3.3.2 Factory/ Preset timings

The factory settings of size and centering are according to the reference timing charts(See as below)

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

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

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| MODE NO. | 9 | 10 | 11 | 12 |
|---|---|---|---|---|
| RESOLUTION | 800 x 600 | 800 x 600 | 800 x 600 | 800 x 600 |
| Dot clock(MHz) | 40 | 50 | 49.498 | 56.251 |
| f h | 37.9kHz | 48.077kHz | 46.9kHz | 53.7kHz |
| A ( us ) | 26.4 (1056 dots) | 20.80 (1040dots) | 21.333 (1056 dots) | 18.631 (1048 dots) |
| B ( us ) | 3.2 (128 dots) | 2.400 ( 120 dots) | 1.616 ( 80 dots) | 1.138 ( 64 dots) |
| C ( us ) | 2.2 ( 88 dots) | 1.280 ( 64 dots) | 3.232 ( 160 dots) | 2.702 ( 152 dots) |
| D ( us ) | 20 ( 800 dots) | 16.00 ( 800 dots) | 16.162 ( 800 dots) | 14.222 ( 800 dots) |
| E ( us ) | 1 ( 40 dots) | 1.120 ( 56 dots) | 0.323 ( 16 dots) | 0.569 ( 32 dots) |
| f v | 60Hz | 72Hz ( 72.188) | 75Hz | 85Hz |
| O (ms ) | 16.579 (628 lines) | 13.85 (666 lines) | 13.333 (625 lines) | 11.756(631 lines) |
| P ( ms ) | 0.106 ( 4 lines) | 0.125 ( 6 lines) | 0.064 ( 3 lines) | 0.056 ( 3 lines) |
| Q (ms ) | 0.607 ( 23 lines) | 0.478 ( 23 lines) | 0.448 ( 21 lines) | 0.503 ( 27 lines) |
| R ( ms ) | 15.84 (600lines) | 12.48 (600 lines) | 12.8 (600 lines) | 11.179 (600 lines) |
| S ( ms ) | 0.026 (1 line ) | 0.770 ( 37 line ) | 0.021 (1 line ) | 0.018 ( 1 lines) |
| SYNC. H/V POLARITY | + / + | + / + | + / + | + / + |
| SEP . SYNC | Y | Y | Y | Y |

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

| MODE NO. | 17 | 18 | 21 | 22 |
|---|---|---|---|---|
| RESOLUTION | 1024 x 768 | 1024 x 768 | 1152 x 864 | 1152 x 864 |
| Dot clock(MHz) | 83.096 | 94.5 | 79.9 | 94.5 |
| f h | 61.1kHz | 68.7kHz | 54.0kHz | 63.9kHz |
| A ( us ) | 16.367 (1360dots) | 14.561(1376 dots) | 18.523(1480 dots) | 15.661(1480 dots) |
| B ( us ) | 1.348 ( 112 dots) | 1.016( 96 dots) | 1.952(156 dots) | 1.016(96 dots) |
| C ( us ) | 2.022 ( 168 dots) | 2.201 ( 208 dots) | 1.352(108 dots) | 1.116(105 dots) |
| D ( us ) | 12.323 (1024 dots) | 10.836(1024 dots) | 14.418(1152 dots) | 12.19(1152 dots) |
| E ( us ) | 0.674 ( 56 dots) | 0.508( 48 dots) | 0.801(64 dots) | 1.339(127 dots) |
| f v | 76Hz | 85Hz | 60Hz | 70Hz |
| O (ms ) | 13.142 (803 lines) | 11.765 (808 lines) | 16.671(900lines) | 14.283(912lines) |
| P ( ms ) | 0.049 ( 3 lines) | 0.044 ( 3 lines) | 0.148(8 lines) | 0.047(3lines) |
| Q (ms ) | 0.507 ( 31 lines) | 0.524 ( 36 lines) | 0.445(24 lines) | 0.689(44 lines) |
| R ( ms ) | 12.57 (768 lines) | 11.183 (768lines) | 16.004(864 lines) | 13.531(864 lines) |
| S ( ms ) | 0.016 ( 1 line ) | 0.014( 1 line ) | 0.074(4 lines) | 0.016(1 lines) |

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CLASS NO.

19 inch LCD Monitor
TYPE :190CW8
BRAND : PHILIPS

2007-08-01

NAME SUPERS.

590 — 9 10 A4

TY CHECK DATE 2007-08-01

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2838 100 05424

# GENERAL PRODUCT SPECIFICATION(Continued)

| | | | | |
|---|---|---|---|---|
| SYNC. H/V POLARITY | + / + | + / + | +/+ | +/+ |
| SEP . SYNC | Y | Y | Y | Y |

| MODE NO. | 23 | 24 | 25 | 26 |
|---|---|---|---|---|
| RESOLUTION | 1152 x 864 | 1152 x 870 | 1152 x 900 | 1152 x 900 |
| Dot clock(MHz) | 108 | 100 | 94.5 | 108 |
| f h | 67.5kHz | 68.7kHz | 61.8kHz | 71.8kHz |
| A ( us ) | 14.815 (1600 dots) | 14.56 (1456 dots) | 16.169(1528 dots) | 13.926 (1054dots) |
| B ( us ) | 1.185 (128 dots) | 1.28 ( 128 dots) | 1.354 (128 dots) | 1.185 ( 128 dots) |
| C ( us ) | 2.37 ( 256 dots) | 1.44( 144 dots) | 2.201 ( 208 dots) | 1.778 ( 192 dots) |
| D ( us ) | 10.667 ( 1152 dots) | 11.52 ( 1152 dots) | 12.19 (1152 dots) | 10.667(1152 dots) |
| E ( us ) | 0.593 ( 64 dots) | 0.32 ( 32 dots) | 0.424( 40 dots) | 0.296 ( 32 dots) |
| f v | 75Hz | 75Hz | 66Hz | 76Hz |
| O (ms ) | 13.333 (900 lines) | 13.333 (916 lines) | 15.151 (937lines) | 13.132 (943 lines) |
| P ( ms ) | 0.044 (3 lines) | 0.044 ( 3 lines) | 0.065 ( 4 lines) | 0.111( 8 lines) |
| Q (ms ) | 0.474 ( 32 lines) | 0.568( 39 lines) | 0.501 (31 lines) | 0.46( 33 lines) |
| R ( ms ) | 12.8 (864 lines) | 12.678 (870 lines) | 14.552 (900lines) | 12.533 (900 lines) |
| S ( ms ) | 0.015 ( 1 lines) | 0.043 ( 4 line ) | 0.033(2 line ) | 0.028 (2 lines) |
| SYNC. H/V POLARITY | - / - | - / - | Serr- | + / + |
| SEP . SYNC | Y | Y | Y | Y |

| MODE NO. | 27 | 28 | 29 | 30 |
|---|---|---|---|---|
| RESOLUTION | 1280 x 960 | 1280 x 960 | 1280 x 1024 | 1280 x 1024 |
| Dot clock(MHz) | 108 | 129.895 | 108 | 117 |
| f h | 60kHz | 75kHz | 64kHz | 71.7kHz |
| A ( us ) | 16.667(1800 dots) | 13.307 (1728 dots) | 15.63 (1688 dots) | 13.949(1632 dots) |
| B ( us ) | 1.037(112 dots) | 1.047 ( 136 dots) | 1.037 (112 dots) | 0.957 (112 dots) |
| C ( us ) | 2.889(312 dots) | 1.725 ( 224 dots) | 2.296 ( 248 dots) | 1.915 (224 dots) |
| D ( us ) | 11.852(1280 dots) | 9.857(1280 dots) | 11.852(1280 dots) | 10.94 (1280 dots) |
| E ( us ) | 0.889(96 dots) | 0.678(88 dots) | 0.445(48 dots) | 0.137 (16 dots) |
| f v | 60Hz | 75Hz | 60Hz | 67Hz |
| O (ms ) | 16.667(1000 lines) | 13.333(1002 lines) | 16.661(1066 lines) | 14.883(1067lines) |
| P ( ms ) | 0.05(3 lines) | 0.039(3 lines) | 0.047(3 lines) | 0.112(8 lines) |
| Q (ms ) | 0.600(36 lines) | 0.48 ( 36 lines) | 0.594 (38 lines) | 0.46 ( 33 lines) |
| R ( ms ) | 16(960 lines) | 12.774 (960 lines) | 16.005(1024 lines) | 14.283(1024 lines) |
| S ( ms ) | 0.017(1 lines) | 0.04 ( 3 lines ) | 0.015 (1 line) | 0.028 (2 lines ) |
| SYNC. H/V POLARITY | +/+ | + / + | + / + | + / + |
| SEP . SYNC | Y | Y | Y | Y |

| MODE NO. | 31 | 32 | 33 | 34 |
|---|---|---|---|---|
| RESOLUTION | 1280 x 1024 | 1280 x 1024 | 1280 x 1024 | 1280*1024 |
| Dot clock(MHz) | 130.223 | 135 | 138.008 | 157.5 |
| F h | 76kHz | 80kHz | 81.1kHz | 91.146z |
| A ( us ) | 13.158(1712 dots) | 12.504(1688 dots) | 12.326(1664 dots) | 10.971(1728 dots) |
| B ( us ) | 1.024 (133 dots) | 1.067(144 dots) | 0.474 (64 dots) | 1.016(160 dots) |
| C ( us ) | 1.905(248 dots) | 1.837(248 dots) | 2.133(288 dots) | 1.422(224 dots) |
| D ( us ) | 9.83 (1280 dots) | 9.481(1280 dots) | 9.481(1280 dots) | 8.127(1280 dots) |
| E ( us ) | 0.399( 51 dots) | 0.119(16 dots) | 0.238(32 dots) | 0.406(64 dots) |
| F v | 72Hz | 75Hz | 76Hz | 85Hz |
| O (ms ) | 14 (1064 lines) | 13.329(1066 lines) | 13.139(1066 lines) | 11.761(1072 lines) |
| P ( ms ) | 0.02 ( 2 lines) | 0.038(3 lines) | 0.099 (8 lines) | 0.033(3 lines) |
| Q (ms ) | 0.5(38 lines) | 0.475(38 lines) | 0.394 (32 lines) | 0.483(44 lines) |

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CLASS NO.

19 inch LCD Monitor
TYPE : 190CW8
BRAND : PHILIPS

2007-08-01

NAME | SUPERS. | 590 — 10 | 10 | A4

TY | CHECK | DATE 2007-08-01

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| | | | | |
|---|---|---|---|---|
| R ( ms )<br>S ( ms ) | 13.468(1024 lines)<br>0.012(0 line) | 12.804(1024 lines)<br>0.012 (1 line) | 12.622(1024 lines)<br>0.024(2 lines ) | 11.234(1024 lines)<br>0.011(1 lines) |
| SYNC. H/V POLARITY | + / + | +/+ | - / - | +/+ |
| SEP . SYNC | Y | Y | Y | Y |

| MODE NO. | 35 | 36 | 37 | 38 |
|---|---|---|---|---|
| RESOLUTION | 1280x720 | 1280*720 | 1440*900 | 1440*900 |
| Dot clock(MHz) | 74.5 | | 88.75 | 106.5 |
| F h | 44.772KHz | 56.456KHz | 55.469KHz | 55.935KHz |
| A ( us ) | 22.335 | 17.713 | 18.028(1600 dots) | 17.878(1904 dots) |
| B ( us ) | 1.718 | 1.337 | 0.361(32 dots) | 1.427(152 dots) |
| C ( us ) | 2.577 | 2.172 | 0.901(80 dots) | 2.178(232 dots) |
| D ( us ) | 17.181 | 13.368 | 16.225(1440 dots) | 13.521(1440 dots) |
| E ( us ) | 0.859 | 0.836 | 0.541 | 0.752 |
| F v(Hz) | 59.855 | 75 | 59.901 | 59.887 |
| O (ms ) | 16.707 | 13.373 | 16.694(926 lines) | 16.698(934 lines) |
| P ( ms ) | 0.112 | 0.089 | 0.108(6 lines) | 0.107(6 lines) |
| Q (ms ) | 0.447 | 0.478 | 0.306(17 lines) | 0.447(25 lines) |
| R ( ms ) | 16.082 | 12.753 | 16.225(900 lines) | 16.090(900 lines) |
| S ( ms ) | 0.067 | 0.053 | 0.055 | 0.054 |
| SYNC. H/V POLARITY | -/+ | -/+ | +/- | -/+ |
| SEP . SYNC | Y | Y | Y | Y |

| MODE NO. | 39 | 40 | 41 | 42 |
|---|---|---|---|---|
| RESOLUTION | 1440*900 | 1600*1200 | 1920*1080 | 1680*1050 |
| Dot clock(MHz) | 136.75 | 162 | 138.5 | 146.25 |
| F h | 70.635KHz | 75KHz | 66.587KHz | 65.29KHz |
| A ( us ) | 14.157(1936 dots) | 13.333(2160 dots) | 15.018(2080 dots) | 15.316(2240 dots) |
| B ( us ) | 1.112(152 dots) | 1.185(192 dots) | 0.231(32 dots) | 1.203(176 dots) |
| C ( us ) | 1.814(248 dots) | 1.877(304 dots) | 0.587(80 dots) | 1.915(280 dots) |
| D ( us ) | 10.530(1440 dots) | 9.877(1600 dots) | 13.863(1920 dots) | 11.487(1680 dots) |
| E ( us ) | 0.701 | 0.395(64 dots) | 0.337 | 0.711 |
| F v(Hz) | 74.984 | 60 | 59.934 | 59.954 |
| O (ms ) | 13.336(942 lines) | 16.667(1250 lines) | 16.685(1111 lines) | 16.679(1089 lines) |
| P ( ms ) | 0.085(6 lines) | 0.040(3 lines) | 0.075(5 lines) | 0.092(6 lines) |
| Q (ms ) | 0.467(33 lines) | 0.613(46 lines) | 0.360(24 lines) | 0.459(30 lines) |
| R ( ms ) | 12.741(900 lines) | 16.000(1200 lines) | 16.219(1080 lines) | 16.082(1050 lines) |
| S ( ms ) | 0.043 | 0.013(1 lines) | 0.031 | 0.046 |
| SYNC. H/V POLARITY | -/+ | +/+ | -/- | -/- |
| SEP . SYNC | Y | Y | Y | Y |

| MODE NO. | 43 | 44 | 45 | 19 | 20 |
|---|---|---|---|---|---|
| RESOLUTION | 1680*1050 | 960*720 | 960*720 | 1280 x 768 | 1280 x 768 |
| Dot clock(MHz) | 119.00 | 72.42 | 57.58 | 68.25 | 102.25 |
| F h | 64.674KHz | 56.4KHz | 44.75KHz | 47.396kHz | 60.289kHz |
| A ( us ) | 15.462 | 17.730 | 22.334 | 21.099 | 16.587 |
| B ( us ) | 0.269 | 1.436 | 1.719 | 0.469 | 1.252 |
| C ( us ) | 0.672 | 2.209 | 2.57 | 1.172 | 2.034 |
| D ( us ) | 14.118 | 13.256 | 16.672 | 18.755 | 12.518 |
| E ( us ) | 0.403 | 0.829 | 1.373 | 0.703 | 0.782 |
| F v(Hz) | 60 | 75 | 60 | 59.995Hz | 74.893Hz |

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CLASS NO.

19 inch LCD Monitor
TYPE :190CW8
BRAND : PHILIPS

2007-08-01

NAME | SUPERS. | 590 — 11 | 10 | A4

TY | CHECK | DATE 2007-08-01 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

# GENERAL PRODUCT SPECIFICATION(Continued)

| | | | | | |
|---|---|---|---|---|---|
| O (ms )<br>P ( ms )<br>Q (ms )<br>R ( ms )<br>S ( ms ) | 16.699<br>0.093<br>0.340<br>16.235<br>0.031 | 13.333<br>0.053<br>0.496<br>12.766<br>0.018 | 16.661<br>0.067<br>0.491<br>16.080<br>0.023 | 16.668<br>0.148<br>0.253<br>16.204<br>0.063 | 13.352<br>0.116<br>0.448<br>12.739<br>0.05 |
| SYNC. H/V POLARITY | -/- | -/- | -/- | +/- | -/ + |
| SEP . SYNC | Y | Y | Y | Y | Y |

| MODE NO. | 46 | 47 | 48 |
|---|---|---|---|
| RESOLUTION | 1400*1050 | 1400*1050 | 1400*1050 |
| Dot clock(MHz) | | | |
| F h<br>A ( us )<br>B ( us )<br>C ( us )<br>D ( us )<br>E ( us ) | 64KHz | 80KHz | 91.1KHz |
| F v(Hz)<br>O (ms )<br>P ( ms )<br>Q (ms )<br>R ( ms )<br>S ( ms ) | 60 | 75 | 85 |
| SYNC. H/V POLARITY | | | |
| SEP . SYNC | | | |

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

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

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

3.5 Power management
The power consumption and the status indication of the set with power management

function are as below:

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

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

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

3.6 Display identification

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

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

4.0 Visual characteristics

4.1 Test conditions

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

(1) Input signal: As defined in 3.3, 1440*900 non-interlaced mode (1440*900@60Hz 146.25MHz),, signal sources must have 75 ohm output impedance.
(2) Luminance setting: controls to be set to 300 nits with full screen 100 % duty cycle white signal
(3) Warm up: more than 30 minutes after power on with signal supplied.
(4) Ambient light: 400 -- 600 lux.
(5) Ambient temperature: 20 ± 5 °C

4.2 Resolution

Factory preset modes (13 modes)

| Item | Resolution | V.Freq. (Hz) | H.Freq. (KHz) | Mode |
|---|---|---|---|---|
| 1 | 720x400 | 70.087 | 31.469 | IBM VGA 3H |
| 2 | 640x480 | 59.94 | 31.469 | IBM VGA 12H |
| 3 | 640x480 | 67 | 35 | MACINTOSH |
| 4 | 640x480 | 75 | 37.5 | VESA |
| 5 | 800x600 | 60.317 | 37.879 | VESA |
| 6 | 800x600 | 75 | 46.875 | VESA |
| 7 | 832x624 | 75 | 49.7 | MACINTOSH |
| 8 | 1024x768 | 60.004 | 48.363 | VESA |
| 9 | 1024x768 | 75.029 | 60.023 | VESA |
| 10 | 1280x1024 | 60.02 | 63.981 | VESA |
| 11 | 1280x1024 | 75.025 | 79.976 | VESA |
| 12 | 1440x900 | 59.887 | 55.935 | VESA |
| 13 | 1440x900 | 74.984 | 70.635 | VESA |

Note: 1. Screen displays perfect picture at 13 factory-preset modes.
2. Screen displays visible picture with OSD warning when input modes are other then 45 preset modes

4.3 Brightness: 300 nits (at panel color temperature, Screen center point, Fig. 1)
To follow Panel specification.

4.4 Image size

4.4.1 Actual display size
410.4 x 256.5mm

4.5 Brightness uniformity

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

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

4.6 Check Cross talk (S)

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

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

4.7 White color adjustment

There are six factory preset white color 11500K, 9300K, 8200K, 7500K, 6500K, sRGB, 5000K. Align by FGA function.

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

**Product specification**

| CIE coordinates | (x,y) | |
|---|---|---|
| 11500K | x = 0.270 ± 0.02<br>y = 0.281 ± 0.02 | |
| 9300K | x = 0.283 ± 0.02<br>y = 0.297 ± 0.02 | |
| 8200K | x = 0.291 ± 0.02<br>y = 0.306 ± 0.02 | |
| 7500K | x = 0.298 ± 0.02<br>y = 0.314 ± 0.02 | |
| 6500K/sRGB | x = 0.313 ± 0.02<br>y = 0.329 ± 0.02 | |
| sRGB | x = 0.313 ± 0.02<br>y = 0.329 ± 0.02 | |
| 5000K | x = 0.345 ± 0.02<br>y = 0.357 ± 0.02 | |

**Production alignment spec.**

| CIE coordinates | (x,y) | |
|---|---|---|
| 11500K | x = 0.270 ± 0.005<br>y = 0.281 ± 0.005 | |
| 9300K | x = 0.283 ± 0.005<br>y = 0.297 ± 0.005 | |
| 8200K | x = 0.291 ± 0.005<br>y = 0.306 ± 0.005 | |
| 7500K | x = 0.298 ± 0.005<br>y = 0.314 ± 0.005 | |
| 6500K/sRGB | x = 0.313 ± 0.005<br>y = 0.329 ± 0.005 | |
| sRGB | x = 0.313 ± 0.005<br>y = 0.329 ± 0.005 | |
| 5000K | x = 0.345 ± 0.005<br>y = 0.357 ± 0.005 | |

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**Quality Inspection specification:**

| CIE coordinates | (x,y) | |
|---|---|---|
| 9300K | x = 0.283 ± 0.015<br>y = 0.297 ± 0.015 | |
| 6500K/sRGB | x = 0.313 ± 0.015<br>y = 0.329 ± 0.015 | |
| sRGB | x = 0.313 ± 0.015<br>y = 0.329 ± 0.015 | |

5.0 Mechanical characteristics

5.1 Controls
Front. :
DC power switch
OSD function key
UP/DOWN (Brightness key)
LEFT/RIGHT
Auto key
Rear.:
Video signal connector
DVI signal connector
Power cord socket

5.2 Unit dimension / Weight
Set dimension (incl. pedestal). : 375(W) * 431(H) * 210(D) mm
Net weight. :

5.3 Tilt and swivel base
Basic base:
Tilt angle: -5 ° +2/- 0 ° (forward)
+20 °+3/- 0 ° (backward)
Swivel rotation:

5.4 Transportation packages
5.4.1 Shipping dimension/Weight
Carton dimension. : 407(W) * 460(H) * 114(H) mm
Gross weight. :
5.4.2 Block unit / Palletization
Basic Base:

| layers / block | sets/layer | sets/block unit |
|---|---|---|
| 20/19 | 6/6 | 120/114 |

| Blocks/container | |
|---|---|
| 20 feet | 40 feet |
| 9/2 | 20/2 |

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

6.1 Susceptibility of display to external environment
Operating
- Temperature : 0 to 40 degree C
- Humidity : 80% max
- Altitude : 0-3658m
- Air pressure : 600-1100 mBAR

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

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

6.2 Transportation tests

| Standard | | Philips UAN-D1400 | NSTA |
|---|---|---|---|
| Drop Test | Height | 67/25 cm | 76.0 cm |
| | Sequence | 1 face(btm-67cm)<br>5 faces(others-25cm)<br>Btm->Btm->Btm->L->F->Rt->Rr->Top | 1 corner<br>3 edge<br>(Room temp) 6 face |
| | Test Result | Electrical function ok<br>Mechanical function ok<br>No serious damage on set appearance<br>(Room temp 20°C~23°C, humidity 40%~65%) | |
| Vibration Test | Sequence | (1) PACKAGING<br>7 Hz, 1.05 G, 30 min. for transport direction only | |
| | | (2) OPERATING<br>7 Hz, 10.6 mm, 30 min. for transport direction only | |
| | Test Result | Electrical function ok<br>Mechanical function ok<br>No serious damage on set appearance | |
| Bump Test | | For design evaluation only<br>Operating<br>10 G, 11 msec, 1000 cycles<br>Temperature : 23°C<br>Humidity : 60 %<br>Air pressure : 100 kpa<br>(According to DSD draft standard UAN-D636) | |

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

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

7.0 Reliability
7.1. Mean Time Between Failures
System MTBF (Including the LCD panel and CCFL) : 50,000 hrs

8.0 Quality assurance requirements

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

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

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

10.0 Philips Flat Panel Monitors Pixel Defect Policy

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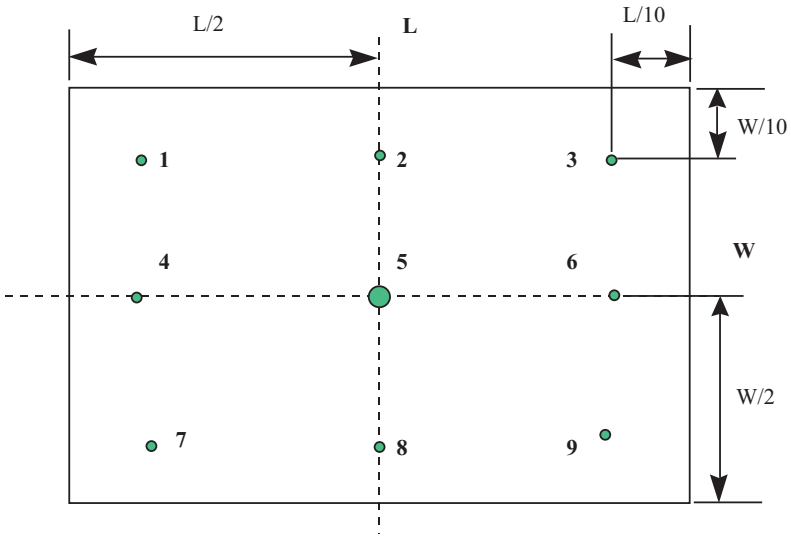
| BRIGHT DOT DEFECTS | ACCEPTABLE LEVEL | | |
|---|---|---|---|
| MODEL | 190CW8 | | |
| 1 lit sub-pixel | 3 | | |
| 2 adjacent lit sub-pixels | 1 | | |
| 3 adjacent lit sub-pixels (one white pixel) | 0 | | |
| Distance between two bright dot defects* | ≧25mm | | |
| Bright dot defects within 20 mm circle | 0 | | |
| Total bright dot defects of all type | 3 | | |

| BLACK DOT DEFECTS | ACCEPTABLE LEVEL | | |
|---|---|---|---|
| MODEL | 190CW8 | | |
| 1 dark sub-pixel | 5 | | |
| 2 adjacent dark sub-pixels | 2 | | |
| 3 adjacent dark sub-pixels (one white pixel) | 0 | | |
| Distance between two black dot defects* | ≧15mm | | |
| Black dot defects within 20 mm circle* | 1 | | |
| Total black dot defects of all type | 5 | | |

| TOTAL DOT DEFECTS | ACCEPTABLE LEVEL | | |
|---|---|---|---|
| MODEL | 190CW8 | | |
| Total bright or black dot defects of all type | 5 | | |

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

**Fig 1: Brightness and Uniformity**




Position 5 = Screen center point

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CLASS NO.

19 inch LCD Monitor
TYPE :190CW8
BRAND : PHILIPS

2007-08-01

NAME SUPERS.

590 — 17 10 A4

TY CHECK DATE 2007-08-01

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2838 100 05424

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

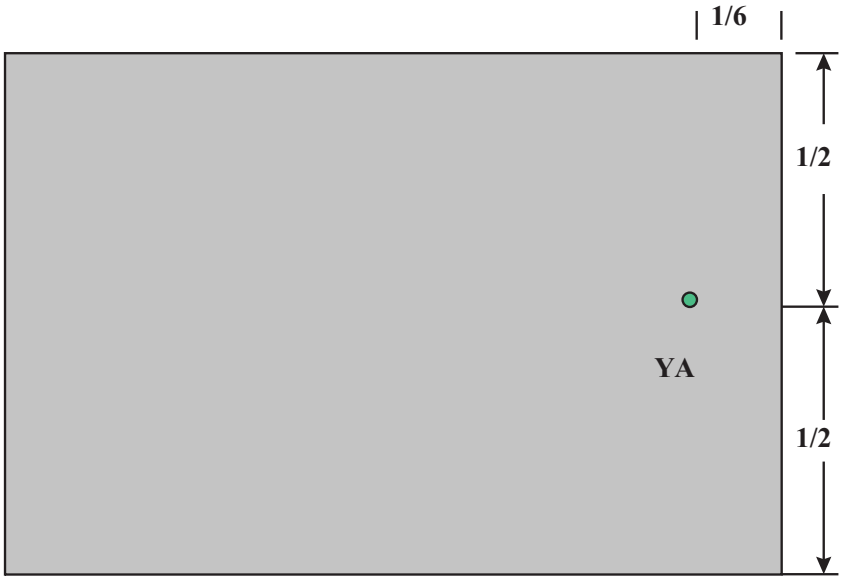
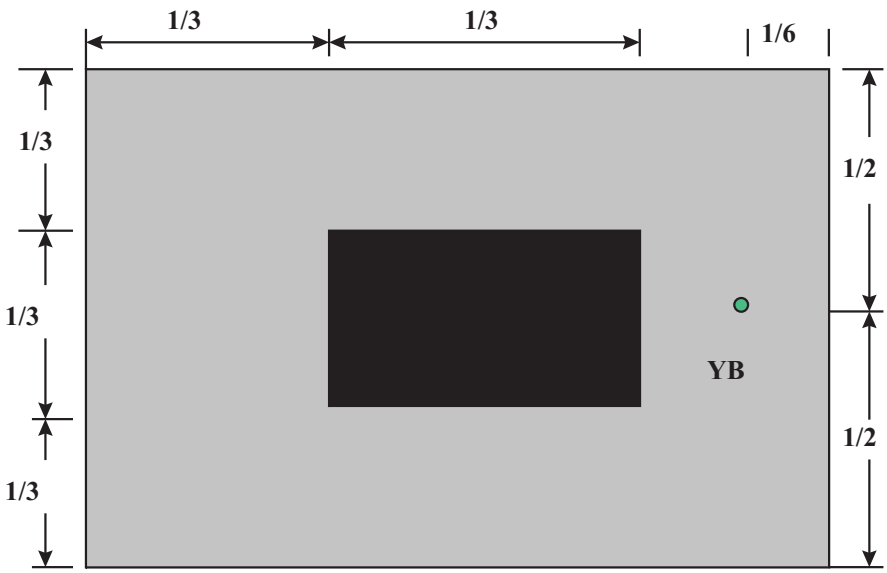



Fig 3: Cross talk pattern
Center at Gray level 0 (Black)

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CLASS NO.

19 inch LCD Monitor
TYPE : 190CW8
BRAND : PHILIPS

2007-08-01

NAME SUPERS. 590 — 18 10 A4

TY CHECK DATE 2007-08-01

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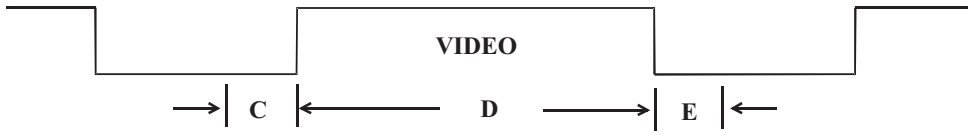
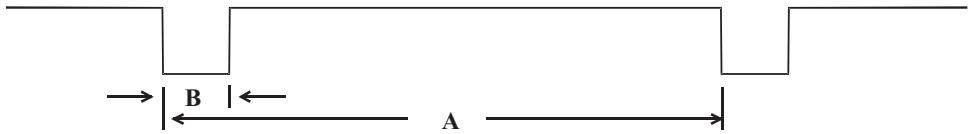
2838 100 05424

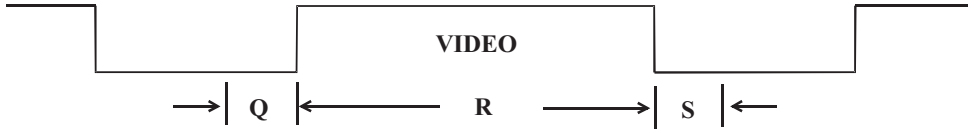
PHILIPS

**SEPARATE SYNC.**

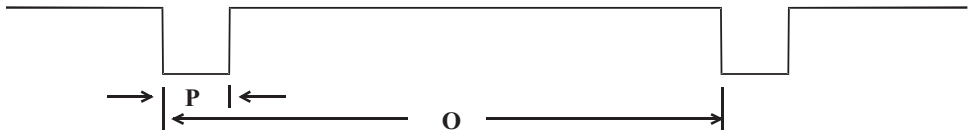



**HORIZONTAL**

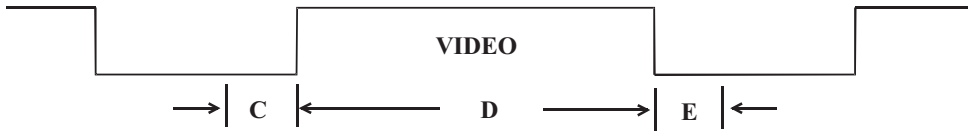


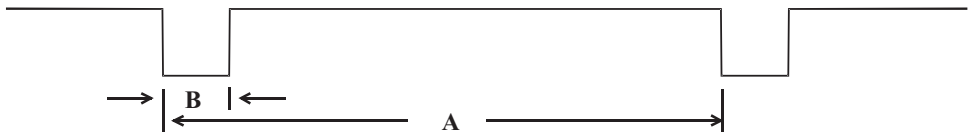

**VERTICAL**




**COMPOSITE SYNC.**




**HORIZONTAL**




## FIG-4 TIMING CHART -1

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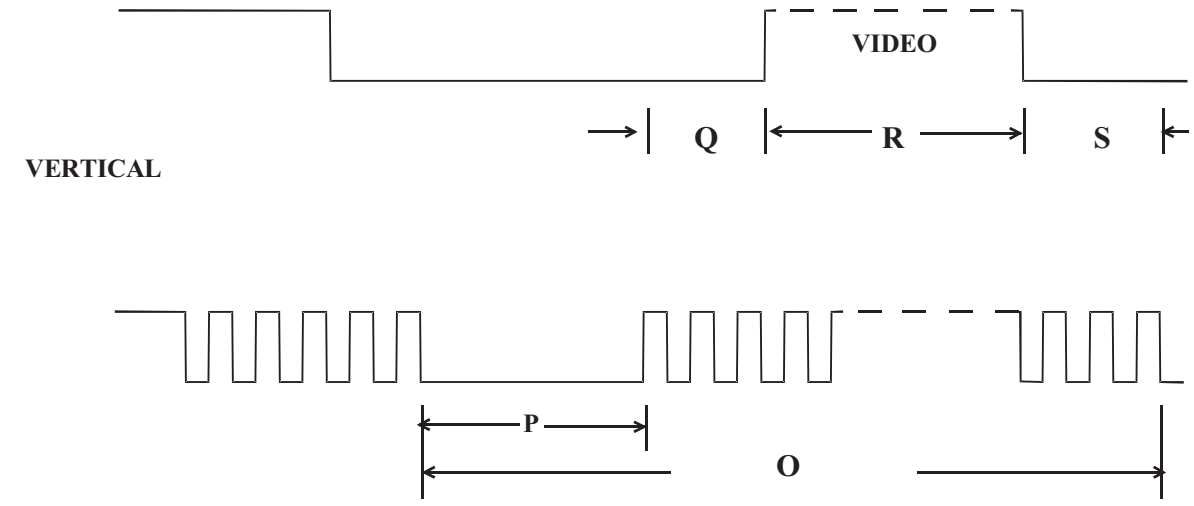
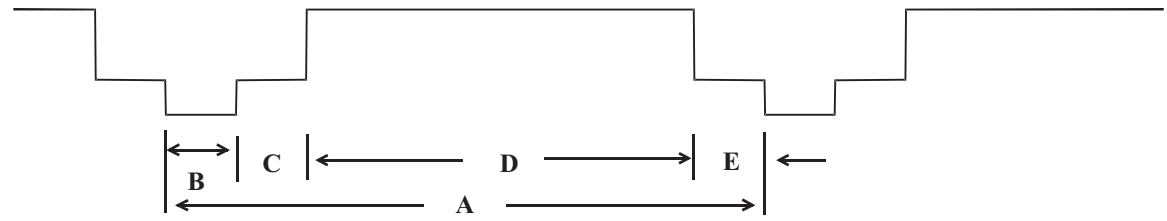
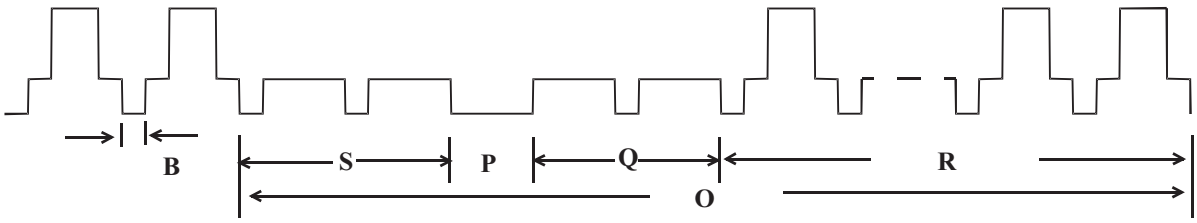
| | | | | | |
|---|---|---|---|---|---|
| CLASS NO. | 19 inch LCD Monitor<br>TYPE :190CW8<br>BRAND : PHILIPS | | | | |
| 2007-08-01 | | | | | |
| NAME | SUPERS. | | 590 — 19 | 10 | A4 |
| TY / CHECK | DATE 2007-08-01 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E. | | | |




COMPOSITE SYNC. & VIDEO
( SYNC. ON GREEN )




## FIG-5 TIMING CHART -2

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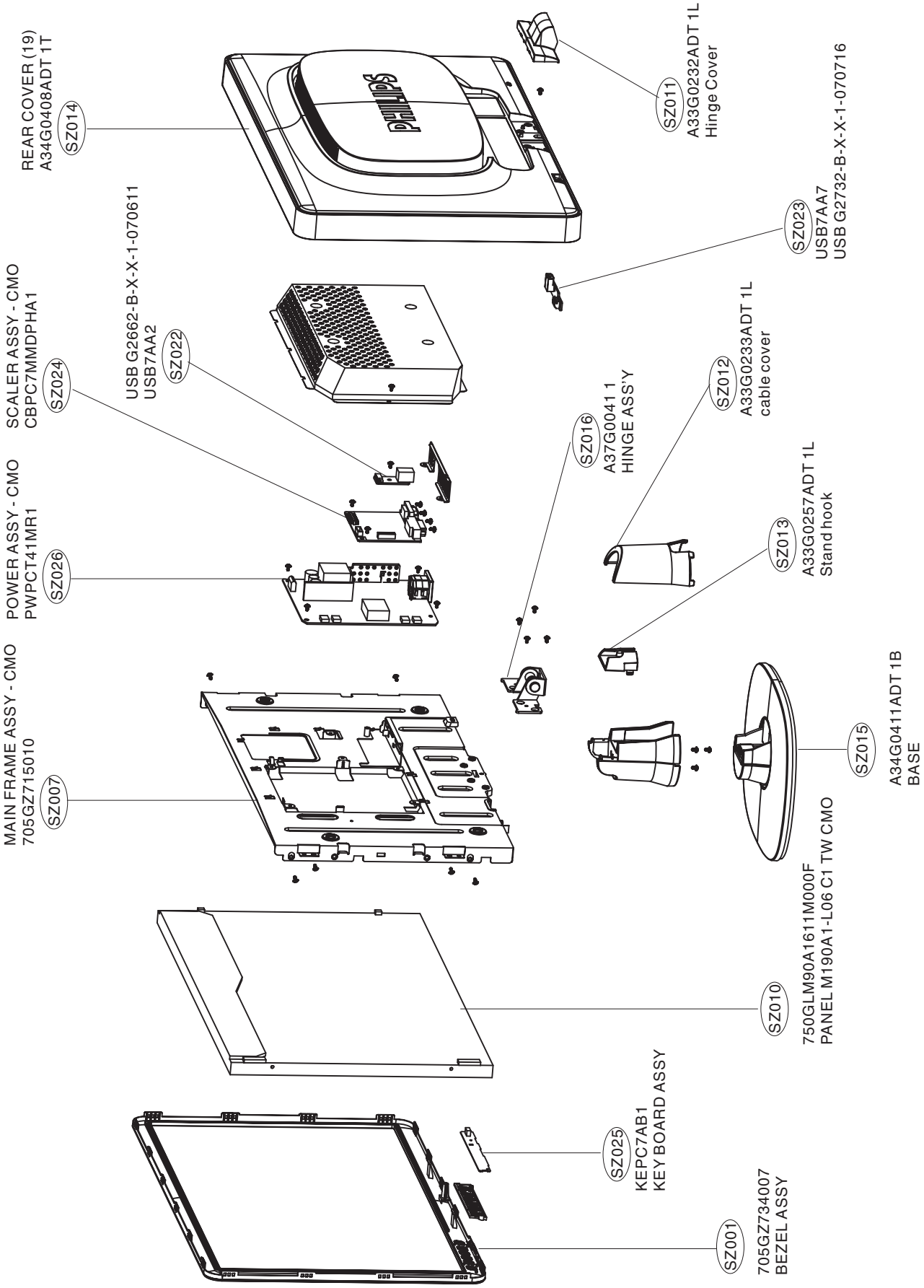
| | | | |
|---|---|---|---|
| CLASS NO. | 19 inch LCD Monitor<br>TYPE : 190CW8<br>BRAND : PHILIPS | | |
| 2007-08-01 | | | |
| NAME | SUPERS. | 590 — 20 | 10 A4 |
| TY CHECK | DATE 2007-08-01 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E. | |

# Exploded View

Type: 190CW8FB/97(CMO)



# Repair Tips

## 0. Warning

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

## 1. Servicing of SMDs (Surface Mounted Devices)

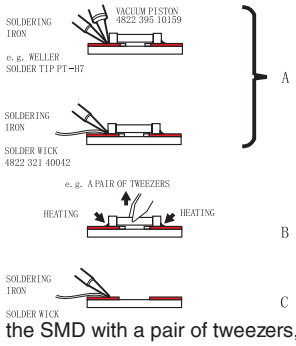
### 1.1 General cautions on handling and storage

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

### 1.2 Removal of SMDs

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

Fig. 1 DISMOUNTING




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

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

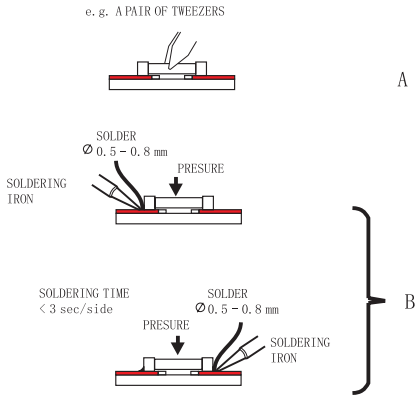
### 1.3 Caution on removal

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

### 1.4 Attachment of SMDs

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

Fig. 2 MOUNTING




## 2. Caution when attaching SMDs

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

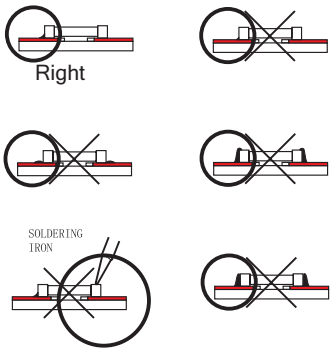



Fig.3 Examples

3. Lead-free product identification

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

4. Lead-free product repair instruction

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

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

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

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

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

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

5. Rework on BGA (Ball Grid Array) ICs

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

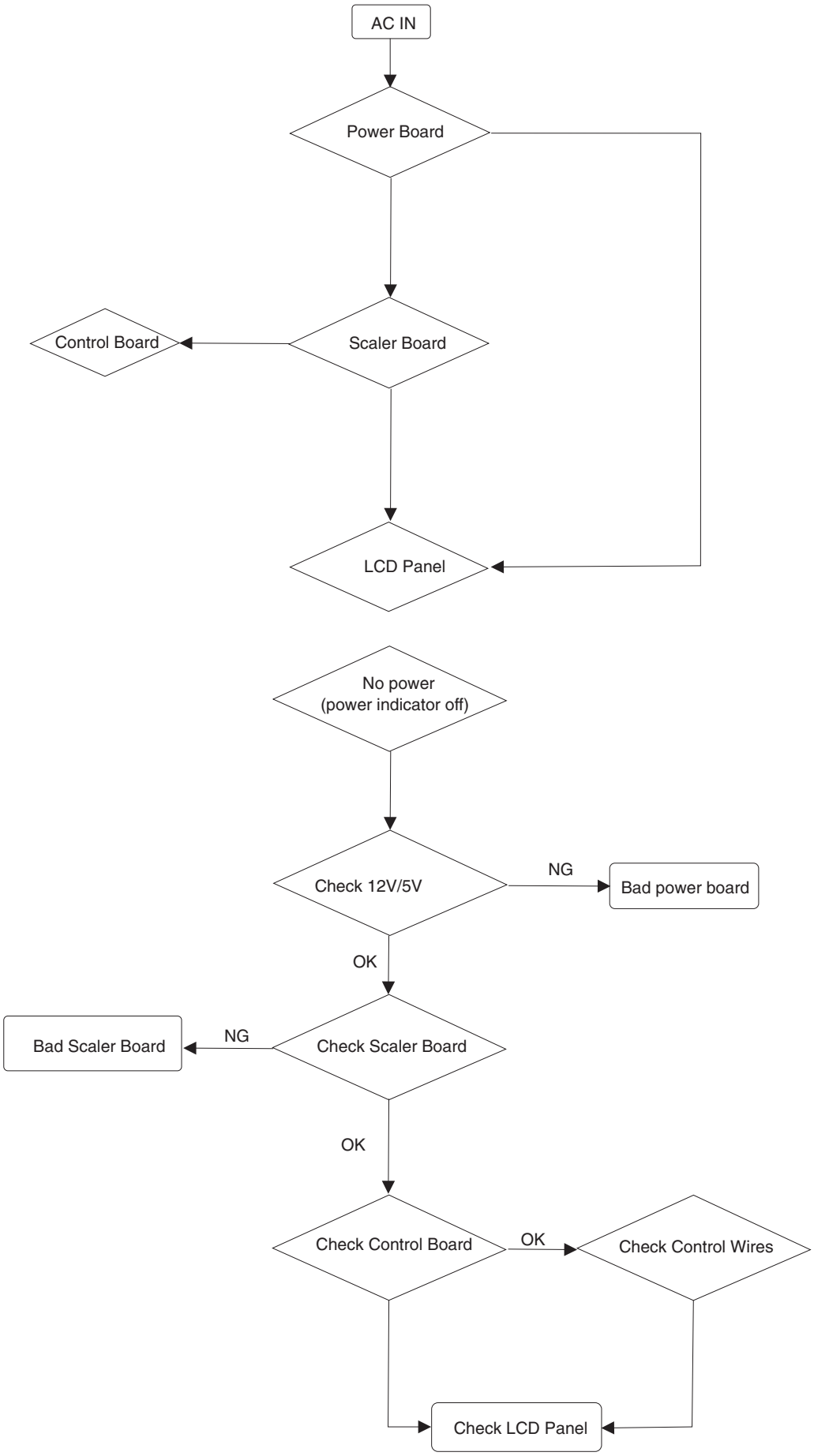
Device Removal
As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature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

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

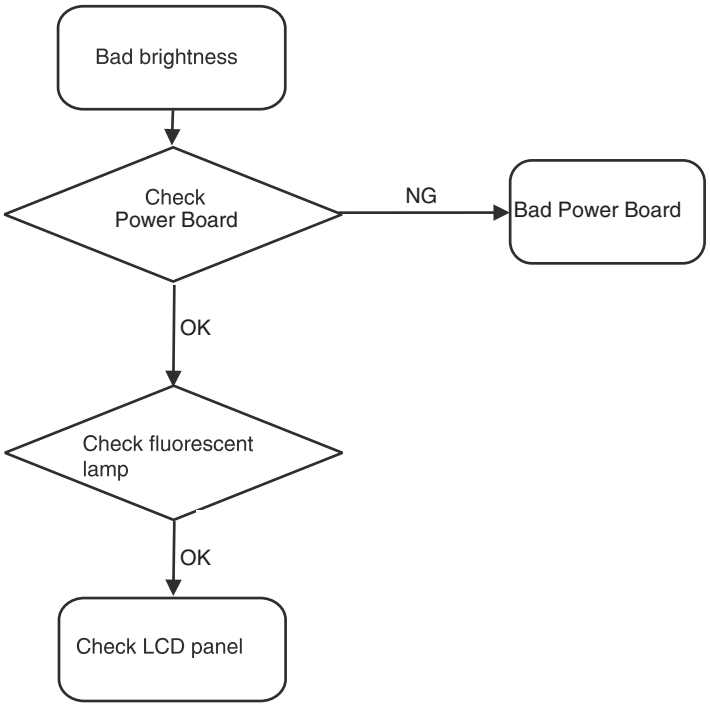
Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.
To reflow the solder, apply a temperature profile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

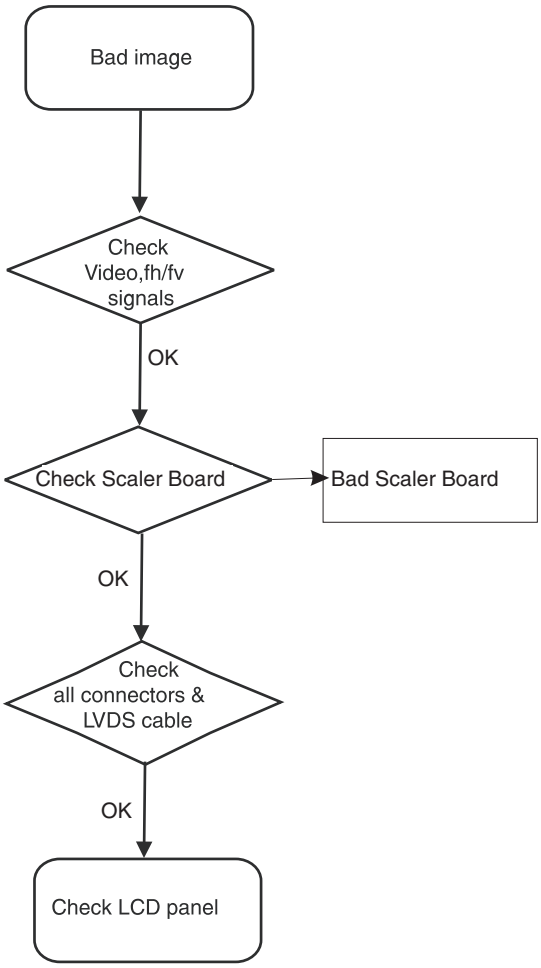
More Information
For more information on how to handle BGA devices, visit this URL: http://www.atyourservice.ce.philips.com (needs subscription). After login, select Magazine , then go to Workshop Information . Here you will find Information on how .to deal with BGA-ICs.

# Repair Flow Chart

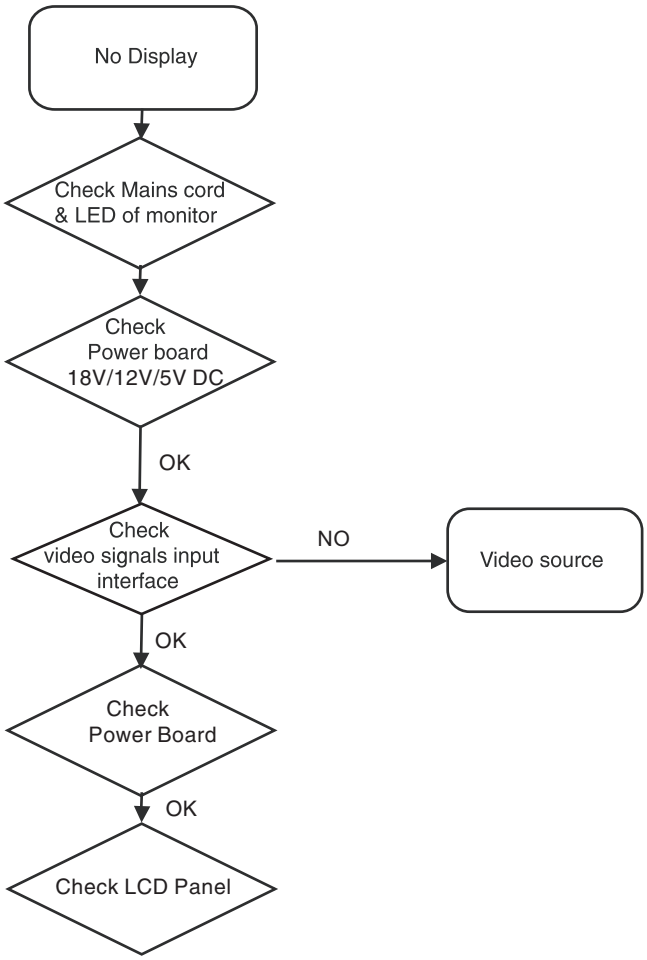


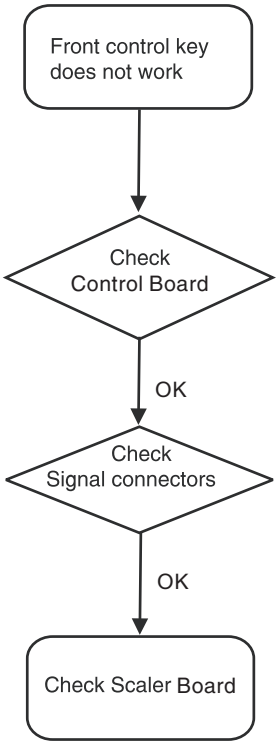
# Repair Flow Chart



# Repair Flow Chart



Model: 190CW8FB/97(CMO)

| Item | Philips 12NC | Part No. | Description |
|---|---|---|---|
| SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| SZ003 | 996510005679 | 089G 728HAA 21 | SIGNAL CABLE |
| SZ004 | 996510007185 | 089G1748HAA AC | DVI CABLE |
| SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ016 | 996510007197 | A37G0041 1 | HINGE ASS'Y |
| SZ018 | 996510007198 | Q44G9077 1 | EPS |
| SZ019 | 996510007199 | Q44G9077 2 | EPS |
| SZ020 | 996510007200 | Q44G9077624 1A | 19 CARTON |
| SZ021 | 996510007201 | Q45G 88609 40 R | EPE COVER |
| U101 | 996500035965 | 056G1133 34 | M24C02-WMN6TP |
| U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U204 | 996500037783 | 056G1133 56 | M24C16-WMN6TP |
| U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| U701 | 996500042624 | 056G 1334PH | LD1117S33 SOT-223 |
| U701 | 996500042209 | 056G 563921 | IC AME1117CCGTZ SOT223 |
| U701 | 996500042629 | 056G 585 4A | AP1117E33LA |
| U702 | 996510007208 | 056G 563 50 | IC AP1117D18LA TO252-3L ATC |

# Spare Parts List

Model: 190CW8FB/97(CMO)

Mechanical parts

| | | | |
|---|---|---|---|
| SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ016 | 996510007197 | A37G0041 1 | HINGE ASS'Y |

Packing parts

| | | | |
|---|---|---|---|
| SZ018 | 996510007198 | Q44G9077 1 | EPS |
| SZ019 | 996510007199 | Q44G9077 2 | EPS |
| SZ020 | 996510007200 | Q44G9077624 1A | 19 CARTON |
| SZ021 | 996510007201 | Q45G 88609 40 R | EPE COVER |

Accessory

| | | | |
|---|---|---|---|
| SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| SZ004 | 996510007185 | 089G1748HAA AC | DVI CABLE |
| SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |

Miscellanea

| | | | |
|---|---|---|---|
| SZ003 | 996510005679 | 089G 728HAA 21 | SIGNAL CABLE |
| SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |

LCD panel

| | | | |
|---|---|---|---|
| SZ010 | 996510007191 | 750GLM90A1611M000F | PANEL M190A1-L06 C1 TW CMO |

PCB Assy

| | | | |
|---|---|---|---|
| SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| SZ026 | 996510007229 | PWPCT41MR1 | POWER ASSY - CMO |
| SZ025 | 996510007225 | KEPC7AB1 | KEY BOARD ASSY |
| SZ022 | 996510007202 | USB7AA2 | USB G2662-B-X-X-1-070611 |
| SZ023 | 996510007203 | USB7AA7 | USB G2732-B-X-X-1-070716 |

PCB Assy

| | | | |
|---|---|---|---|
| SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |

Various

| | | | |
|---|---|---|---|
| CN101 | 996500035960 | 088G 35315F H | D-SUB 15PIN |
| CN102 | 996510005695 | 088G 35424F N | DVI 24PIN CONN F |
| CN301 | 996510007205 | 033G801930F CH JS | CONNECTOR |
| X201 | 996510007206 | 093G 22 53 | CRYSTAL 14.318MHzHC-49US |

| | | | |
|---|---|---|---|
| C101 | 996510005721 | 065G0402473 12 | CHIP 0.047uF 16V X7R |
| C101 | 996500035991 | 065G040247312T | 0402 MLCC 47NF K 16V |
| C102 | 996510005717 | 065G0402220 31 | CHIP 22PF 50V NPO |
| C103 | 996510005717 | 065G0402220 31 | CHIP 22PF 50V NPO |
| C104 | 996510007217 | 065G0402509 31 | CHIP 5pF 50V NPO |
| C105 | 996510005721 | 065G0402473 12 | CHIP 0.047uF 16V X7R |
| C105 | 996500035991 | 065G040247312T | 0402 MLCC 47NF K 16V |
| C106 | 996510005715 | 065G0402102 32 | 1000PF +10% 50V X7R |
| C107 | 996510005721 | 065G0402473 12 | CHIP 0.047uF 16V X7R |
| C107 | 996500035991 | 065G040247312T | 0402 MLCC 47NF K 16V |
| C108 | 996510007217 | 065G0402509 31 | CHIP 5pF 50V NPO |
| C109 | 996510005721 | 065G0402473 12 | CHIP 0.047uF 16V X7R |
| C109 | 996500035991 | 065G040247312T | 0402 MLCC 47NF K 16V |
| C110 | 996510005721 | 065G0402473 12 | CHIP 0.047uF 16V X7R |
| C110 | 996500035991 | 065G040247312T | 0402 MLCC 47NF K 16V |
| C111 | 996510007217 | 065G0402509 31 | CHIP 5pF 50V NPO |
| C112 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C113 | 996510005721 | 065G0402473 12 | CHIP 0.047uF 16V X7R |
| C113 | 996500035991 | 065G040247312T | 0402 MLCC 47NF K 16V |
| C114 | 996510007216 | 065G0402224 A5 | MLCC 0402 CAP 0.22UF K 10V X5R |
| C114 | 996500035990 | 065G0402224A5T | MLCC 0402 0.22UF K 10V X 5R |
| C115 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C116 | 996510007216 | 065G0402224 A5 | MLCC 0402 CAP 0.22UF K 10V X5R |
| C116 | 996500035990 | 065G0402224A5T | MLCC 0402 0.22UF K 10V X 5R |
| C117 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C201 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C202 | 996510006450 | 067G405V100 3P | 10UF 16V |
| C203 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C204 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C205 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C206 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C207 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C208 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C209 | 996510006450 | 067G405V100 3P | 10UF 16V |
| C210 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
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| C215 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
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| C217 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C218 | 996510007216 | 065G0402224 A5 | MLCC 0402 CAP 0.22UF K 10V X5R |
| C218 | 996500035990 | 065G0402224A5T | MLCC 0402 0.22UF K 10V X 5R |
| C219 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C220 | 996510006450 | 067G405V100 3P | 10UF 16V |
| C221 | 996510005717 | 065G0402220 31 | CHIP 22PF 50V NPO |
| C222 | 996510005717 | 065G0402220 31 | CHIP 22PF 50V NPO |
| C223 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C224 | 996510007216 | 065G0402224 A5 | MLCC 0402 CAP 0.22UF K 10V X5R |
| C224 | 996500035990 | 065G0402224A5T | MLCC 0402 0.22UF K 10V X 5R |
| C225 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C226 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C227 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C228 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C229 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C231 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C232 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C301 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C302 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C303 | 996510006450 | 067G405V100 3P | 10UF 16V |
| C401 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C402 | 996510006451 | 067G405V101 3P | CAP 105℃ 100UF M 16V |
| C403 | 996510006451 | 067G405V101 3P | CAP 105℃ 100UF M 16V |
| C405 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C406 | 996500042674 | 065G0603104 22 | CHIP 0.1UF 25V X7R |
| C406 | 996500043488 | 065G060310422K | CAP CHIP 0603 100N 25V X7R 10% |
| C407 | 996510006451 | 067G405V101 3P | CAP 105℃ 100UF M 16V |
| C408 | 996510006451 | 067G405V101 3P | CAP 105℃ 100UF M 16V |
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| C410 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |
| C411 | 996510007215 | 065G0402104 15 | MLCC 0402 0.1UF K 16V X5R |

| | | | |
|---|---|---|---|
| R101 | 996510005699 | 061G0402000 | RST CHIPR 0 OHM +5% 1/16W |
| R102 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R103 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R104 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R105 | 996510007210 | 061G0402220 1F | RST CHIPR 2.2KOHM +1% 1/16W |
| R106 | 996510007210 | 061G0402220 1F | RST CHIPR 2.2KOHM +1% 1/16W |
| R107 | 996510005713 | 061G0402750 | RST CHIPR 75 OHM +5% 1/16W |
| R108 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R109 | 996510005710 | 061G0402471 | RST CHIPR 470 OHM +5% 1/16W |
| R110 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R111 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R112 | 996510005713 | 061G0402750 | RST CHIPR 75 OHM +5% 1/16W |
| R113 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R114 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R115 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R116 | 996510005713 | 061G0402750 | RST CHIPR 75 OHM +5% 1/16W |
| R117 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R118 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R119 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R120 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R121 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R122 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R123 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R124 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R125 | 996510007209 | 061G0402104 | RST CHIPR 100 KOHM +5% 1/16W |
| R126 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R127 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R128 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R129 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R130 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R131 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R132 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R133 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R134 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R135 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R136 | 996510005700 | 061G0402100 | RST CHIPR 10 OHM +5% 1/16W |
| R137 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R138 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R139 | 996510007214 | 061G0402682 | RST CHIP 6K8 1/16W 5% |
| R201 | 996510005699 | 061G0402000 | RST CHIPR 0 OHM +5% 1/16W |
| R202 | 996510007211 | 061G0402223 | RST CHIPR 22 KOHM +5% 1/16W |
| R203 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R204 | 996510007212 | 061G0402390 0F | RST CHIP 390R 1/16W 1% |
| R205 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R207 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R208 | 996510007214 | 061G0402682 | RST CHIP 6K8 1/16W 5% |
| R209 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R210 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R211 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R212 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R213 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R214 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |

| | | | |
|---|---|---|---|
| R215 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R216 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R217 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R218 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R219 | 996510007209 | 061G0402104 | RST CHIPR 100 KOHM +5% 1/16W |
| R220 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R221 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R222 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R223 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R224 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R225 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R226 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R227 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R228 | 996510005709 | 061G0402392 | RST CHIP 3.9K 1/16W 5% |
| R229 | 996510005709 | 061G0402392 | RST CHIP 3.9K 1/16W 5% |
| R230 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R231 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R232 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R233 | 996510007214 | 061G0402682 | RST CHIP 6K8 1/16W 5% |
| R234 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R235 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| R237 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R238 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R239 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R301 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R303 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R304 | 996510007213 | 061G0402473 | RST CHIPR 47 KOHM +5% 1/16W |
| R307 | 996510005714 | 061G1206331 | RST CHIPR 330 OHM +5% 1/4W |
| R308 | 996510005714 | 061G1206331 | RST CHIPR 330 OHM +5% 1/4W |
| R401 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R403 | 996500044984 | 061G0402103 | RST CHIPR 10 KOHM +5% 1/16W |
| R404 | 996510005711 | 061G0402472 | RST CHIPR 4.7 KOHM +5% 1/16W |
| R405 | 996510005702 | 061G0402102 | RST CHIPR 1 KOHM +5% 1/16W |
| R406 | 996510005702 | 061G0402102 | RST CHIPR 1 KOHM +5% 1/16W |
| | | | |
| FB101 | 996510007220 | 071G 59K190 B | 19 OHM BEAD |
| FB102 | 996510007220 | 071G 59K190 B | 19 OHM BEAD |
| FB103 | 996510007220 | 071G 59K190 B | 19 OHM BEAD |
| FB201 | 996510007218 | 071G 56V301 B | CHIP BEAD FCM2012VF-301T07 bullwill |
| FB201 | 996510007219 | 071G 56V301 TA | CHIP BEAD 300R/700mA FCM2012VF-301T07 |
| FB203 | 996510007218 | 071G 56V301 B | CHIP BEAD FCM2012VF-301T07 bullwill |
| FB203 | 996510007219 | 071G 56V301 TA | CHIP BEAD 300R/700mA FCM2012VF-301T07 |
| FB204 | 996510007218 | 071G 56V301 B | CHIP BEAD FCM2012VF-301T07 bullwill |
| FB204 | 996510007219 | 071G 56V301 TA | CHIP BEAD 300R/700mA FCM2012VF-301T07 |
| FB205 | 996510007218 | 071G 56V301 B | CHIP BEAD FCM2012VF-301T07 bullwill |
| FB205 | 996510007219 | 071G 56V301 TA | CHIP BEAD 300R/700mA FCM2012VF-301T07 |
| FB206 | 996510007218 | 071G 56V301 B | CHIP BEAD FCM2012VF-301T07 bullwill |
| FB206 | 996510007219 | 071G 56V301 TA | CHIP BEAD 300R/700mA FCM2012VF-301T07 |
| FB301 | 996500036567 | 071G 56K121 M | CHIP BEAD |
| FB301 | 996500043339 | 071G 56K121 TA | CHIP BEAD 120R/6000mA HCB2012KF-121T60 |
| FB401 | 996500036567 | 071G 56K121 M | CHIP BEAD |
| FB401 | 996500043339 | 071G 56K121 TA | CHIP BEAD 120R/6000mA HCB2012KF-121T60 |
| | | | |
| D101 | 996500035995 | 093G 64 42 PP | BAV70 SOT-23 |
| D101 | 996510007221 | 093G 64S 9 | DIODE BAV70PT SOT-23 CHENMKO |
| D102 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D102 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D103 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D103 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D104 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D104 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D105 | 996500035995 | 093G 64 42 PP | BAV70 SOT-23 |
| D105 | 996510007221 | 093G 64S 9 | DIODE BAV70PT SOT-23 CHENMKO |
| D110 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D110 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D111 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D111 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D112 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D112 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D113 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D113 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D114 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D114 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D115 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D115 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D116 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D116 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D117 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D117 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D402 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT |
| ZD101 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD101 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD102 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD102 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD103 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD103 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD104 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD104 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD105 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD105 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD106 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD106 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD107 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD107 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD108 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD108 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD109 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD109 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD110 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD110 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| | | | |
| Q101 | 996500035966 | 057G 417 4 | PMBS3904/PHILIPS-SMT(04) |
| Q101 | 996500036961 | 057G 417 12 T | KEC 2N3904S-RTK/PS |
| Q201 | 996500035966 | 057G 417 4 | PMBS3904/PHILIPS-SMT(04) |
| Q201 | 996500036961 | 057G 417 12 T | KEC 2N3904S-RTK/PS |
| Q202 | 996510002478 | 057G 417 6 | PMBS3906/PHILIPS-SMT(06) |
| Q202 | 996500035967 | 057G 417 13 T | KEC 2N3906S-RTK/PS |
| Q203 | 996510002478 | 057G 417 6 | PMBS3906/PHILIPS-SMT(06) |
| Q203 | 996500035967 | 057G 417 13 T | KEC 2N3906S-RTK/PS |
| Q205 | 996510002478 | 057G 417 6 | PMBS3906/PHILIPS-SMT(06) |
| Q205 | 996500035967 | 057G 417 13 T | KEC 2N3906S-RTK/PS |
| Q301 | 996510002478 | 057G 417 6 | PMBS3906/PHILIPS-SMT(06) |
| Q301 | 996500035967 | 057G 417 13 T | KEC 2N3906S-RTK/PS |
| Q302 | 996500035968 | 057G 763 1 | AO3401 SOT23 BY AOS(A1) |
| Q403 | 996500035966 | 057G 417 4 | PMBS3904/PHILIPS-SMT(04) |
| Q403 | 996500036961 | 057G 417 12 T | KEC 2N3904S-RTK/PS |
| U101 | 996500035965 | 056G1133 34 | M24C02-WMN6TP |
| U102 | 996500035965 | 056G1133 34 | M24C02-WMN6TP |
| U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U203 | 996510007224 | 056G1133713 | IC PM25LV010A-100SCE SOIC-8 |
| U204 | 996500037783 | 056G1133 56 | M24C16-WMN6TP |
| U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| U701 | 996500042624 | 056G 1334PH | LD1117S33 SOT-223 |
| U701 | 996500042209 | 056G 563921 | IC AME1117CCGTZ SOT223 |
| U701 | 996500042629 | 056G 585 4A | AP1117E33LA |
| U702 | 996510007208 | 056G 563 50 | IC AP1117D18LA TO252-3L ATC |
| | | | |
| PCB Assy | | | |
| SZ025 | 996510007225 | KEPC7AB1 | KEY BOARD ASSY |
| | | | |
| C101 | 996510007226 | 065G0402103 22 | CHIP 0.01UF 25V X7R |
| C102 | 996510007226 | 065G0402103 22 | CHIP 0.01UF 25V X7R |
| C103 | 996510007226 | 065G0402103 22 | CHIP 0.01UF 25V X7R |
| C104 | 996510007226 | 065G0402103 22 | CHIP 0.01UF 25V X7R |
| C105 | 996510007226 | 065G0402103 22 | CHIP 0.01UF 25V X7R |
| C106 | 996510005722 | 065G060310517T | MLCC 0603 CAP 1UF Z 16V Y5V |
| | | | |
| R101 | 996510005736 | 061G0603430 1F | RST CHIPR 4.3 KOHM +-1% 1/10W |
| R102 | 996510005737 | 061G0603910 0F | RST CHIPR 910 OHM +-1% 1/10W |
| R103 | 996510005735 | 061G0603240 1F | ST CHIPR 2.4 KOHM +-1% 1/10W |
| R107 | 996510005736 | 061G0603430 1F | RST CHIPR 4.3 KOHM +-1% 1/10W |
| R108 | 996510005737 | 061G0603910 0F | RST CHIPR 910 OHM +-1% 1/10W |
| | | | |
| LED101 | 996510007227 | 081G 14501 KT | CHIP LED |
| LED102 | 996510007228 | 081G0603 B KB | KP-1608QBC-C-AOC 5MA |
| | | | |
| PCB Assy | | | |
| SZ026 | 996510007229 | PWPCT41MR1 | POWER ASSY - CMO |
| Various | | | |
| BD901 | 996500039742 | 093G 50460 28 | BRIDGE DIODE KBP208G LITEON |
| CN902 | 996510007248 | 095G801410D 55 | HARNESS 9P-10P 180mm |
| T801 | 996510007246 | 080GL19T 28 V | X'FMR 460uH SRW24LQL-T15H016 |
| T801 | 996510007247 | 080GL19T 28 DN | X'FMR 890mH TK.2017R.101.070302 |
| T901 | 996510007244 | 080GL19T 26 T | X'FMR 460uH SRW24LQL-T15H016 |
| T901 | 996510007245 | 080GL19T 26 V | X'FMR 460uH SRW24LQL-T15H016 |
| T901 | | 006G 31502 | 1.5MM RIVET |
| | | | |
| C801 | 996500036045 | 065G0805473 32 | CHIP 0.047UF 50V X7R |
| C802 | 996500036045 | 065G0805473 32 | CHIP 0.047UF 50V X7R |
| C804 | 996510006267 | 065G0805225 12 | CHIP 2.2UF 16V X7R 0805 |
| C805 | 996510007262 | 065G0603103 12 | chip 0.01uf 16v x7r |
| C805 | 996510007263 | 065G060310312K Y | CAP CHIP 0603 10NF K 16V X7R |
| C806 | 996510002499 | 065G0603105 12 | CHIP 1UF 16VX7R 0603 |
| C807 | 996510007262 | 065G0603103 12 | chip 0.01uf 16v x7r |
| C807 | 996510007263 | 065G060310312K Y | CAP CHIP 0603 10NF K 16V X7R |
| C808 | 996510007252 | 061G0603184 | RST CHIPR 180 KOHM +5% 1/10W |
| C809 | 996500043890 | 065G080556131G | MLCC 0805 560PF G 50V NPO |
| C809 | 996500043889 | 065G080556131J | CAP CHIP 0805 560P 50V NPO 5% |
| C810 | 996500036921 | 065G0603473 32 | CHIP 0.047UF 50V X7R |
| C811 | 996500036041 | 065G0805104 32 | CHIP 0.1U 50V X7R |
| C812 | 996510007237 | 067G215S6814KV | CAP 105℃ 680uF M 25V |
| C813 | 996510007265 | 065G060333321J S | CAP CHIP 0603 33NF J 25V NPO |
| C813 | 996510007266 | 065G060333322K Y | CAP CHIP 0603 33NF K 25V X7R |
| C814 | 996510007267 | 065G080539131J Y | CAP CHIP 0805 390P 50V NPO 5% |
| C815 | 996500036921 | 065G0603473 32 | CHIP 0.047UF 50V X7R |
| C816 | 996510004372 | 065G 3J1006ET | 10PF,J,3KV,SL |
| C816 | 996500044846 | 065T 3J1006ET | 10PF 5% SL 3KV TDK |
| C817 | 996500036005 | 065G 3J2096ET | 2PF 5% SL 3KV |
| C818 | 996500037789 | 065G0603221 31 | CER1 0603 NP0 50V 220P P M5 R |
| C818 | 996510007264 | 065G060322131J Y | CAP CHIP 0603 220P 50V NPO 5% |
| C819 | 996510007232 | 065G 3J5606ET | CAP CER 56PF J 3KV |
| C820 | 996510007232 | 065G 3J5606ET | CAP CER 56PF J 3KV |
| C821 | 996510007232 | 065G 3J5606ET | CAP CER 56PF J 3KV |
| C822 | 996510007232 | 065G 3J5606ET | CAP CER 56PF J 3KV |
| C900 | 996510007234 | 065G306M3322BP | 3300PF 20% |
| C901 | 996510007233 | 065G306M1022B3 | Y1 CAP 1000PF M 250VAC TDK |
| C901 | 996500039730 | 065G306M1022BM | Y1.CAP.001UF 250VAC MURATA |
| C901 | 996510006237 | 065G306M1022BP | 1000PF Y1.CAP |
| C902 | 996510007233 | 065G306M1022B3 | Y1 CAP 1000PF M 250VAC TDK |
| C902 | 996500039730 | 065G306M1022BM | Y1.CAP.001UF 250VAC MURATA |
| C902 | 996510006237 | 065G306M1022BP | 1000PF Y1.CAP |
| C903 | 996500043838 | 063G 107474 U | MPX-474K27B15L3 |
| C903 | 996500043821 | 063G 107474 HS | 0.47UF 275VAC |
| C903 | 996500037794 | 063G 10747410S | 0.47UF 275VAC ARCO |
| C905 | 996510006238 | 067G 40J10115K | EC CAP 100uF 450V 18*35mm |

# Spare Parts List

| | | | |
|---|---|---|---|
| C905 | 996510006243 | 067G305T10115H | ELCAP 105℃ 100UF M 450V |
| C906 | 996510007275 | 065G 2K152 1T6213 | CAP CER 1500PF K 2KV |
| C907 | 996500036041 | 065G0805104 32 | CHIP 0.1U 50V X7R |
| C908 | 996500036048 | 067G215Y2207KT | CAP 105℃ 22UF M 50V KINGNICHI |
| C909 | 996510002754 | 065G0805471 21 | CHIP 470PF 25V NPO |
| C912 | 996500039773 | 065G1206102 72 | CHIP 1000PF 500V X7R |
| C915 | 996510007235 | 067G215D4713KV | ELCAP 105℃ 470UF M 16V |
| C917 | 996510007237 | 067G215S6814KV | CAP 105℃ 680uF M 25V |
| C918 | 996510007237 | 067G215S6814KV | CAP 105℃ 680uF M 25V |
| C921 | 996510007234 | 065G306M3322BP | 3300PF 20% |
| C924 | 996500036041 | 065G0805104 32 | CHIP 0.1U 50V X7R |
| C928 | 996500036991 | 065G0805102 31 | 1000PF 50V NPO |
| C929 | 996500039773 | 065G1206102 72 | CHIP 1000PF 500V X7R |
| C931 | 996500036041 | 065G0805104 32 | CHIP 0.1U 50V X7R |
| C932 | 996500037517 | 065G0603102 32 | 1000PF +10% 50V X7R |
| C932 | 996510007261 | 065G060310232K Y | CAP CHIP 0603 1N 50V X7R 10% |
| C933 | 996500036041 | 065G0805104 32 | CHIP 0.1U 50V X7R |
| C939 | 996510007236 | 067G215S1024KV | EC 105℃ CAP 1000UF M 25V |
| | | | |
| NR901 | 996510007230 | 061G 58100 W | RST NTCR 10 OHM +20% 5A THINKING |
| NR901 | | 006G 31502 | 1.5MM RIVET |
| R801 | 996510006258 | 061G0603242 | RST CHIPR 2.4 KOHM +5% 1/10W |
| R802 | 996500043388 | 061G0805220 | 22&8 1/10W |
| R803 | 996510007256 | 061G0805512 | RST CHIPR 5.1 KOHM +5% 1/8W |
| R804 | 996510007256 | 061G0805512 | RST CHIPR 5.1 KOHM +5% 1/8W |
| R805 | 996500042213 | 061G0603101 | RST CHIPR 100 OHM +5% 1/10W |
| R806 | 996500043379 | 061G0805101 | RST CHIPR 100 OHM +5% 1/8W |
| R807 | 996500042213 | 061G0603101 | RST CHIPR 100 OHM +5% 1/10W |
| R808 | 996500043379 | 061G0805101 | RST CHIPR 100 OHM +5% 1/8W |
| R813 | 996500042665 | 061G0603474 | RST CHIPR 470 KOHM +5% 1/10W |
| R816 | 996500042395 | 061G0603100 2F | RST CHIPR 10 KOHM +1% 1/10W |
| R817 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R818 | 996500042215 | 061G0603104 | RST CHIPR 100 KOHM +5% 1/10W |
| R819 | 996500042215 | 061G0603104 | RST CHIPR 100 KOHM +5% 1/10W |
| R820 | 996500042214 | 061G0603103 | RST CHIPR 10 KOHM +5% 1/10W |
| R821 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R822 | 996500043871 | 061G0805200 2F | RST CHIPR 20 KOHM +1% 1/8W |
| R823 | 996500044263 | 061G0603390 0F | RST CHIPR 390 OHM +1% 1/10W |
| R824 | 996510007255 | 061G0603620 1F | RST CHIPR 6.2KOHM +1% 1/10W |
| R825 | 996500043967 | 061G0603511 | RST CHIPR 510 OHM +5% 1/10W |
| R826 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R828 | 996500036083 | 061G212Y625 KT | MGFR 6.2MOHM +5% 1/2W |
| R828 | 996510007272 | 061G212Y62552T SY | RST MGFR 6.2MOHM +5% 1/2W FUTABA |
| R829 | 996510007257 | 061G0805682 | ST CHIPR 6.8 KOHM +5% 1/8W |
| R836 | 996510007254 | 061G0603513 | RST CHIPR 51 KOHM +5% 1/10W |
| R837 | 996500043972 | 061G0603822 | RST CHIPR 8.2 KOHM +5% 1/10W |
| R838 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R839 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R840 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R841 | 996500042216 | 061G0603105 | RST CHIPR 1 MOHM +5% 1/10W |
| R842 | 996500042214 | 061G0603103 | RST CHIPR 10 KOHM +5% 1/10W |
| R843 | 996500042214 | 061G0603103 | RST CHIPR 10 KOHM +5% 1/10W |
| R844 | 996500042214 | 061G0603103 | RST CHIPR 10 KOHM +5% 1/10W |
| R845 | 996500042214 | 061G0603103 | RST CHIPR 10 KOHM +5% 1/10W |
| R846 | 996500042212 | 061G0603000 | RST CHIPR 0 OHM +5% 1/10W |
| R849 | 996500042212 | 061G0603000 | RST CHIPR 0 OHM +5% 1/10W |
| R850 | 996500042215 | 061G0603104 | RST CHIPR 100 KOHM +5% 1/10W |
| R901 | 996510004386 | 061G1206105 | 1M 1206 |
| R902 | 996510004386 | 061G1206105 | 1M 1206 |
| R903 | 996500036939 | 061G152M104 64 | 100KOHM 5% 2W |
| R904 | 996510007259 | 061G1206304 | 300 KOHM 1/8W |
| R905 | 996510007259 | 061G1206304 | 300 KOHM 1/8W |
| R906 | 996510007259 | 061G1206304 | 300 KOHM 1/8W |
| R909 | 996510007260 | 061G1206519 | RST CHIPR 5.1 OHM +5% 1/4W |
| R910 | 996500043976 | 061G1206100 | RST CHIP 10R 1/4W 5% |
| R912 | 996510007258 | 061G1206221 | RST CHIPR 220 OHM +5% 1/4W |
| R914 | 996510006234 | 061G152M43864B | RST MOFR 0.43 OHM +5% 2WS |
| R915 | 996510006227 | 061G0805100 3F | RST CHIPR 100KOHM +1% 1/8W |
| R918 | 996500045142 | 061G1206101 | 100 1206 |
| R919 | 996500045142 | 061G1206101 | 100 1206 |
| R920 | 996500045142 | 061G1206101 | 100 1206 |
| R924 | 996500043393 | 061G0805331 | RST CHIPR 330 OHM +5% 1/8W |
| R925 | 996500043380 | 061G0805102 | RST CHIPR 1KOHM +5% 1/8W |
| R926 | 996500043955 | 061G0603100 1F | RST CHIPR 1 KOHM +1% 1/10W |
| R927 | 996500043477 | 061G0603360 1F | RST CHIPR 3.6 KOHM +1% 1/10W |
| R930 | 996510002743 | 061G0603243 1F | RST CHIPR 2.43 KOHM +1% 1/10W |
| R935 | 996500045142 | 061G1206101 | 100 1206 |
| R938 | 996500043381 | 061G0805103 | 10 KOHM 1/10W |
| R939 | 996500043380 | 061G0805102 | RST CHIPR 1KOHM +5% 1/8W |
| R940 | 996510007253 | 061G0603330 2F | RST CHIPR 33 KOHM +1% 1/10W |
| R942 | 996500043955 | 061G0603100 1F | RST CHIPR 1 KOHM +1% 1/10W |
| R943 | 996500043397 | 061G0805471 | RST CHIPR 470 OHM +5% 1/8W |
| R946 | 996510007231 | 061G152M151 64 | RST MOFR 150 OHM +5% 2WS |
| R961 | 996500045142 | 061G1206101 | 100 1206 |
| R962 | 996500045142 | 061G1206101 | 100 1206 |
| RJ801 | 996500039751 | 061G1206000 | RST CHIPR 0 OHM +5% 1/4W |
| RJ802 | 996500039751 | 061G1206000 | RST CHIPR 0 OHM +5% 1/4W |
| RJ803 | 996500039751 | 061G1206000 | RST CHIPR 0 OHM +5% 1/4W |
| RJ901 | 996500039751 | 061G1206000 | RST CHIPR 0 OHM +5% 1/4W |
| RJ902 | 996500039751 | 061G1206000 | RST CHIPR 0 OHM +5% 1/4W |
| | | | |
| F901 | 996510006276 | 084G 56 4W | FUSE 4.0A 250V |
| F903 | 996510006276 | 084G 56 4W | FUSE 4.0A 250V |
| FB902 | 996510007268 | 071G 57G800 B | CHIP BEAD HCB3216KF-800T30 bullwill |
| FB902 | 996510007269 | 071G 57G800 TA | CHIP BEAD 80R/3000mA HCB3216KF-800T30 |
| L801 | 996510007238 | 073G 174 63 HA | IND FILTER 150mH DADON |
| L801 | 996510007239 | 073G 174 63DNA | LINE FILTER BY DARFON LK.3711D.101 |
| L801 | 996510007240 | 073G 174 63YSA | IND FILTER 150mH Top nation |
| L802 | 996510007238 | 073G 174 63 HA | IND FILTER 150mH DADON |
| L802 | 996510007239 | 073G 174 63DNA | LINE FILTER BY DARFON LK.3711D.101 |
| L802 | 996510007240 | 073G 174 63YSA | IND FILTER 150mH Top nation |
| L902 | 996510007242 | 073L 174 26H1G | LINE FILTER |
| L902 | 996510007243 | 073L 174 26LSG | LINE FILTER 27mH |
| L903 | 996500036026 | 073G 253 91 H | CHOKE COIL |
| L903 | 996500036089 | 073G 253 91 L | CHOKE BY LI TA |
| L903 | 996510007241 | 073G 253 91 L GP | CHOKE BY LI TA |
| L904 | 996500036026 | 073G 253 91 H | CHOKE COIL |
| L904 | 996500036089 | 073G 253 91 L | CHOKE BY LI TA |
| L904 | 996510007241 | 073G 253 91 L GP | CHOKE BY LI TA |
| | | | |
| D801 | 996510003321 | 093G 6432V | LL4148-GSO8 |
| D801 | 996510007271 | 093G 64S522SEM | LL4148 |
| D802 | 996510003321 | 093G 6432V | LL4148-GSO8 |
| D802 | 996510007271 | 093G 64S522SEM | LL4148 |
| D803 | 996510003321 | 093G 6432V | LL4148-GSO8 |
| D803 | 996510007271 | 093G 64S522SEM | LL4148 |
| D804 | 996510003321 | 093G 6432V | LL4148-GSO8 |
| D804 | 996510007271 | 093G 64S522SEM | LL4148 |
| D805 | 996510003321 | 093G 6432V | LL4148-GSO8 |
| D805 | 996510007271 | 093G 64S522SEM | LL4148 |
| D806 | 996500035995 | 093G 64 42 PP | BAV70 SOT-23 |
| D807 | 996500035995 | 093G 64 42 PP | BAV70 SOT-23 |
| D808 | 996500035995 | 093G 64 42 PP | BAV70 SOT-23 |
| D809 | 996500035994 | 093G 64 33 | DIO SIG SM BAV99 (PHSE)R |
| D809 | 996510005726 | 093G 6433S | DIODE BAV99 SEMTECH |
| D900 | 996510007274 | 093G1100 1052T | BA159GPT DO-41 CHENMKO |
| D901 | 996510007273 | 093G1020 752T | UF4003PT DO-41 CHENMKO |
| D903 | 996510003321 | 093G 6432V | LL4148-GSO8 |
| D903 | 996510007271 | 093G 64S522SEM | LL4148 |
| D906 | 996500036957 | 093G 60267 | SP10100 |
| D906 | 996510007249 | 093G 60288 | DIODE MBRF10100CT 10A/100V ITO-220AB |
| D906 | 996500043372 | 093G 60908 | DIO REC STPS10H100CFP (ST00) L |
| D907 | 996510006253 | 093G3006 1 1 | 31DQ06FC3 NIHON INTER |
| ZD801 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD801 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD802 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD802 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD803 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD803 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| ZD902 | 996510006270 | 093G 39GA28 T | ZENER DIODE RLZ13B SEMTECH |
| ZD902 | 996500039777 | 093G 39S 40 T | RLZ 13B LLDS |
| ZD906 | 996510007270 | 093G 39S 20 T | RLZ22B LLDS |
| ZD921 | 996510006270 | 093G 39GA28 T | ZENER DIODE RLZ13B SEMTECH |
| ZD921 | 996500039777 | 093G 39S 40 T | RLZ 13B LLDS |
| ZD922 | 996500040620 | 093G 39GA01 T | RLZ5.6B |
| ZD922 | 996500036079 | 093G 39S 24 T | RLZ 5.6B LLDS |
| | | | |
| IC801 | 996500036059 | 056G 608 10 | IC OZ9938GN-B SOIC-16 |
| IC901 | 996510007250 | 056G 379 76 | IC LD7552BPS SOP-8 |
| IC903 | 996500036055 | 056G 139 3A | IC PC123Y22FZ0F |
| IC903 | 996500040055 | 056G 139 3B | IC PC123Y82FZ0F |
| IC904 | 996500036054 | 056G 158 12 | KIA431A-AT/P TO-92 |
| Q801 | 996500035966 | 057G 417 4 | PMBS3904/PHILIPS-SMT(04) |
| Q801 | 996500036961 | 057G 417 12 T | KEC 2N3904S-RTK/PS |
| Q802 | 996500042650 | 057G 758 1 | 2N7002ESOT23 SILICONIX |
| Q802 | 996500036033 | 057G 759 2 | RK7002 |
| Q802 | 996500042651 | 057G 763904 | TRA FET 2N7002 SOT-23 PHILIPS |
| Q803 | 996500042650 | 057G 758 1 | 2N7002ESOT23 SILICONIX |
| Q803 | 996500036033 | 057G 759 2 | RK7002 |
| Q803 | 996500042651 | 057G 763904 | TRA FET 2N7002 SOT-23 PHILIPS |
| Q805 | 996510007251 | 057G 600 61 | AM4502C-TI-PF S0-8 |
| Q806 | 996510007251 | 057G 600 61 | AM4502C-TI-PF S0-8 |
| Q901 | 996500039743 | 057G 667 21 | STP10NK70ZFP |
| Q903 | 996500035966 | 057G 417 4 | PMBS3904/PHILIPS-SMT(04) |
| Q903 | 996500036961 | 057G 417 12 T | KEC 2N3904S-RTK/PS |

| Diversity of 190CW8FB/97(LPL) compared with 190CW8FB/97(CMO) | | | | | | |
|---|---|---|---|---|---|---|
| Item | 190CW8FB/97(LPL) | | | 190CW8FB/97(CMO) | | |
| | Philips 12NC | TPV Code | Description | Philips 12NC | TPV Code | Description |
| SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ010 | 996510002573 | 750GLG90W1A11N | PANEL LM190WX1-TLA1 LPL | 996510007191 | 750GLM90A1611M000F | PANEL M190A1-L06 C1 TW CMO |
| SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| SZ026 | 996510007278 | PWPCT41GR1 | POWER Assy - LPL | 996510007229 | PWPCT41MR1 | POWER ASSY - CMO |
| C816 | 996510007279 | 065G 3J1206ET | 12PF 5% SL 3KV TDK | 996510004372 | 065G 3J1006ET | 10PF,J,3KV,SL |
| R824 | 996500044831 | 061G0603330 1F | RST CHIPR 3.3KOHM +1% 1/10W | 996510007255 | 061G0603620 1F | RST CHIPR 6.2KOHM +1% 1/10W |

| Diversity of 190CW8FB/69(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | |
|---|---|---|---|---|---|---|
| Item | 190CW8FB/69(CMO,LPL) | | | 190CW8FB/97(CMO,LPL) | | |
| | Philips 12NC | TPV Code | Description | Philips 12NC | TPV Code | Description |
| SZ001 | | 705TZ701033 | DFU Assy | | | |
| SZ006 | 996500037340 | 089G410A18N IS | POWER CORD WALL-OUT FOR UK | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ007 | 996500041057 | 089G410A18NLSB | POWER CORD 1.8M PY8B1V6CC0A-060 | | | |
| SZ024 | | Z40G9N0081340A | RATING LABEL | | | |
| SZ025 | 996510007344 | Z44G9012813 1A | CARTON | 996510007200 | Q44G9077624 1A | 19 CARTON |

| Diversity of 190CW8FB/75(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | |
|---|---|---|---|---|---|---|
| Item | 190CW8FB/75(CMO,LPL) | | | 190CW8FB/97(CMO,LPL) | | |
| | Philips 12NC | TPV Code | Description | Philips 12NC | TPV Code | Description |
| SZ001 | | 705TZ701033 | DFU Assy | | | |
| SZ006 | 996500044230 | 089G412A18NIS1 | MAINSCORD AUS/NZ 10A 1M8 BK | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ007 | 996500044524 | 089G412A18NLS1 | MAINSCORD AUS/NZ 7A5 1M8 BK | | | |
| SZ025 | | Z40G9N0081340A | RATING LABEL | | | |
| SZ026 | 996510007344 | Z44G9012813 1A | CARTON | 996510007200 | Q44G9077624 1A | 19 CARTON |

| Diversity of 190SW8FB/69(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | |
|---|---|---|---|---|---|---|
| Item | 190SW8FB/69(CMO,LPL) | | | 190CW8FB/97(CMO,LPL) | | |
| | Philips 12NC | TPV Code | Description | Philips 12NC | TPV Code | Description |
| SZ007 | 996510007424 | 705GZ715008 | MAIN FRAME ASSY - LPL | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| SZ006 | 996500037340 | 089G410A18N IS | POWER CORD WALL-OUT FOR UK 32E1818020 | 996510003520 | 089G404A18N IS | POWER CORD |
| | 996500041057 | 089G410A18NLSB | POWER CORD 1.8M PY8B1V6CC0A-060 | | | |
| SZ007 | 996520032184 | 705GZ715009 | MAIN FRAME ASSY- CMO | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ001 | 996510007415 | 705GZ734008 | BEZEL ASSY | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ014 | 996510007416 | 705GZ734009 | REAR_COVER ASSY | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | | 705TZ701034 | DFU Assy | | | |
| SZ011 | 996510007417 | A33G0232 VB 1L | Hinge Cover | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ012 | 996510007418 | A33G0233 VB 1L | Cable Cover | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | 996510007419 | A33G0257 VB 1L | Stand hook | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ015 | 996510007420 | A34G0411 VB 1B | BASE | 996510007196 | A34G0411ADT 1B | BASE |
| | | Z40G9N0081343A | RATING LABEL | | | |
| SZ020 | 996510007428 | Z44G9013813 1A | CARTON | 996510007200 | Q44G9077624 1A | 19 CARTON |
| | 996510007421 | CBPC7MMDPHA2 | SCALER ASSY - CMO | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | |
| U203 | 996510007423 | 705GQ756038 | U203 MCU ASS'Y | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | 996510007425 | CBPC7GMDPHA2 | SCALER ASSY - LPL | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | |
| U203 | 996510007426 | 705GQ756037 | U203 MCU ASS'Y | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190SW8FB/75(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FB/75(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | 996520032186 | 705TZ701034 | DFU Assy | | | | |
| SZ004 | 996500044230 | 089G412A18NIS1 | MAINSCORD AUS/NZ 10A 1M8 BK | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ005 | 996500044524 | 089G412A18NLS1 | MAINSCORD AUS/NZ 7A5 1M8 BK | | | | |
| SZ006 | 996510007424 | 705GZ715008 | MAIN FRAME ASSY - LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| SZ006 | 996520032184 | 705GZ715009 | MAIN FRAME ASSY | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ008 | 996510007415 | 705GZ734008 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ009 | 996510007416 | 705GZ734009 | REAR_COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ011 | 996510007417 | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ012 | 996510007418 | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | 996510007419 | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ014 | 996510007420 | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| | 996510007421 | CBPC7MMDPHA2 | SCALER ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007423 | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | 996510007425 | CBPC7GMDPHA2 | SCALER ASSY - LPL | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007426 | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

# Different Parts List

| Diversity of 190SW8FB/97(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FB/97(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ005 | 996520032184 | 705GZ715009 | MAIN FRAME ASSY - CMO | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ008 | 996510007415 | 705GZ734008 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ009 | 996510007416 | 705GZ734009 | REAR_COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ011 | 996510007417 | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ012 | 996510007418 | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | 996510007419 | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ014 | 996510007420 | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ025 | 996510007424 | 705GZ715008 | MAIN FRAME ASSY - LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| | 996510007421 | CBPC7MMDPHA2 | SCALER ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007423 | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | 996510007425 | CBPC7GMDPHA2 | SCALER ASSY - LPL | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007426 | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190SW8FS/69(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FS/69(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | 996520032186 | 705TZ701034 | DFU Assy | | | | |
| SZ005 | 996500037340 | 089G410A18N IS | POWER CORD WALL-OUT FOR UK | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ006 | 996500041057 | 089G410A18NLSB | POWER CORD 1.8M PY8B1V6CC0A-060 | | | | |
| SZ007 | 996520032184 | 705GZ715009 | MAIN FRAME ASSY - C MO | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ007 | 996510007424 | 705GZ715008 | MAIN FRAME ASSY- LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| SZ009 | 996510007416 | 705GZ734009 | REAR_COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ010 | 996510007427 | 705GZ734010 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ012 | 996510007417 | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ013 | 996510007418 | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ014 | 996510007419 | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ015 | 996510007420 | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ023 | 996510007428 | Z44G9013813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | 996510007421 | CBPC7MMDPHA2 | SCALER ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007423 | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | 996510007425 | CBPC7GMDPHA2 | SCALER ASSY - LPL | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007426 | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190CW8FB/96(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190CW8FB/96(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ002 | 996510008562 | 089G 175923 | CORD USB A/1M8/USB B BK | SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| SZ004 | 996510008551 | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| SZ005 | 996510008563 | 089G420A18N IS | POWER CORD 32-D001922 | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ006 | 996510008564 | 089G420A18N LS | POWER CORD | | | | |
| SZ001 | | 705GZ701007 | DFU Assy | | | | |
| SZ012 | 996510008566 | 705GZ734011 | SMART ACCESSORY | | | | |
| SZ024 | 996510008567 | Z34G0038ADT 1T | REAR COVER 19 | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ026 | 996510008568 | Z44G9014813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| SZ027 | 996510008569 | CBPC7MMDPHSA2 | Scaler board ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | 996510008570 | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| SZ027 | 996510008560 | CBPC7GMDPHSA2 | Scaler board ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | 996510008570 | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |

| Diversity of 190SW8FS/75(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FS/75(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | 996520032186 | 705TZ701034 | DFU Assy | | | 705TZ701033 | DFU Assy |
| SZ004 | 996500044230 | 089G412A18NIS1 | MAINSCORD AUS/NZ 10A 1M8 BK | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| SZ005 | 996500044524 | 089G412A18NLS1 | MAINSCORD AUS/NZ 7A5 1M8 BK | | | | |
| SZ006 | 996520032184 | 705GZ715009 | MAIN FRAME ASSY | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ006 | 996510007424 | 705GZ715008 | MAIN FRAME ASSY - LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| SZ008 | 996510007416 | 705GZ734009 | REAR_COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ009 | 996510007427 | 705GZ734010 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ011 | 996510007417 | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ012 | 996510007418 | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | 996510007419 | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ014 | 996510007420 | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ022 | 996510007421 | CBPC7MMDPHA2 | SCALER ASSY - CMO | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007423 | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| SZ022 | 996510007425 | CBPC7GMDPHA2 | SCALER ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007426 | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190SW8FS/97(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FS/97(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | | 705TZ701034 | DFU Assy | | | 705TZ701033 | DFU Assy |
| SZ003 | 996510008551 | 089G179E30H 17 | FFC CABLE 30P 110mm | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| SZ006 | 996520032184 | 705GZ715009 | MAIN FRAME ASSY | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ006 | 996510007424 | 705GZ715008 | MAIN FRAME ASSY - LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| SZ009 | 996510007416 | 705GZ734009 | REAR_COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ010 | 996510007427 | 705GZ734010 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ012 | 996510007417 | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ013 | 996510007418 | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ014 | 996510007419 | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ015 | 996510007420 | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ021 | 996510007428 | Z44G9013813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| SZ022 | 996510007421 | CBPC7MMDPHA2 | SCALER ASSY - CMO | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007423 | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| SZ022 | 996510007425 | CBPC7GMDPHA2 | SCALER ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | 996510007426 | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190SW8FS/00(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FS/00(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | | 705GZ734010 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ007 | | 705GZ715009 | MAIN FRAME ASSY- CMO | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| SZ007 | | 705GZ715008 | MAIN FRAME ASSY - LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY- LPL |
| SZ014 | | 705TZ734014 | REAR COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ012 | | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ013 | | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ015 | | 705GZ734020 | BASE ASSY | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ011 | | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ024 | | CBPC7MMDPHSA1 | SCALER ASSY - CMO | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GZ756030 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| SZ024 | | CBPC7GMDPHSA1 | SCALER ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190CW8FB/00(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190CW8FB/00(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G 175923 | CORD USB A/1M8/USB B BK | SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | Z44G9014813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | | CBPC7MMDPHSA2 | Scaler board ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| | | CBPC7GMDPHSA2 | Scaler board ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |

| Diversity of 190CW8FB/78(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190CW8FB/78(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G 175923 | CORD USB A/1M8/USB B BK | SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | 089G402A18NIS1 | MAINSCORD(220V)-1.5M-CM3000 | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| | | 705GZ701004 | DFU Assy | | | 705TZ701033 | DFU Assy |
| | | Z40G9N0081345A | RATING LABEL | | | Z40G9N0081340A | RATING LABEL |
| | | Z44G9015813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |

| Diversity of 190CW8FW/00(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190CW8FW/00(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G 175923 | CORD USB A/1M8/USB B BK | SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | 705GZ734013 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| | | Z34G0042AWX 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| | | Z33G0006AWX 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| | | Z33G0007AWX 1L | cable cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| | | Z33G0009AWX 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| | | Z34G0039AWX 2T | REAR COVER 19 | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | | Z40G9N0081347A | RATING LABEL | | | Z40G9N0081340A | RATING LABEL |

# Different Parts List

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Z44G9014813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | | CBPC7MMDPHSA2 | Scaler board ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| | | CBPC7GMDPHSA2 | Scaler board ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |

| Diversity of 190SW8FB/27(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FB/27(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G 728HAA 21 | SIGNAL CABLE | SZ002 | 996500037753 | 089G 175921 | USB CABLE |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 鎷樺□ | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | 089G402A18NIS5 | MAINSCORD UL 10A 1M8 DET BK | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| | | 705GZ701006 | DFU ASSY | | | 705TZ701033 | DFU Assy |
| | | 705GZ715009 | MAIN FRAME ASSY | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| | | 095G8014 7D521 | HARNESS | SZ008 | | 095G8014 5D 56 | HARNESS 5P-5P 460mm |
| | | 095G8014 7X521 | HARNESS | SZ009 | | 095G8014 7D521 | HARNESS |
| | | 705GZ734008 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| | | A34G0409 VB 1T | REAR COVER 19 | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| | | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| | | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| | | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| | | Z40G9N0081344A | RATING LABEL | | | Z40G9N0081340A | RATING LABEL |
| | | Z44G9013813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | | 705GZ715008 | MAIN FRAME ASSY | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| | | CBPC7MMDPHA2 | SCALER ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | | 040G 457624 1B | LABEL-CPU | | | | |
| | | CBPC7GMDPHA2 | SCALER ASSY - LPL | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | | 040G 457624 1B | LABEL-CPU | | | | |

| Diversity of 190SW8FS/78(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FS/78(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | 089G402A18NIS1 | MAINSCORD(220V)-1.5M-CM3000 | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| | | 705GZ701005 | DFU ASSY | | | 705TZ701033 | DFU Assy |
| | | 705GZ715009 | MAIN FRAME ASSY | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| | | 705GZ715008 | MAIN FRAME ASSY | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| | | 095G8014 7D521 | HARNESS | SZ008 | | 095G8014 5D 56 | HARNESS 5P-5P 460mm |
| | | 095G8014 7X521 | HARNESS | SZ009 | | 095G8014 7D521 | HARNESS |
| | | A34G0409 VB 1T | REAR COVER 19 | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | | 705GZ734010 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| | | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| | | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| | | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| | | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| | | Z40G9N0081346A | RATING LABEL | | | Z40G9N0081340A | RATING LABEL |
| | | Z44G9016813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | | CBPC7MMDPHA2 | SCALER ASSY - CMO | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | | 705GQ756038 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | | 040G 457624 1B | LABEL-CPU | | | | |
| | | CBPC7GMDPHA2 | SCALER ASSY - LPL | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| U203 | | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190SW8FS/96(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190SW8FS/96(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | 089G420A18N IS | POWER CORD 32-D001922 | SZ006 | 996510003520 | 089G404A18N IS | POWER CORD |
| | | 705GZ701006 | DFU ASSY | | | 705TZ701033 | DFU Assy |
| | | 705GZ715009 | MAIN FRAME ASSY-CMO | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| | | 705GZ715008 | MAIN FRAME ASSY-LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| | | 095G8014 7D521 | HARNESS | SZ008 | | 095G8014 5D 56 | HARNESS 5P-5P 460mm |
| | | 095G8014 7X521 | HARNESS | SZ009 | | 095G8014 7D521 | HARNESS |
| | | 705GZ734010 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| | | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 705TZ734014 | REAR COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| | | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| | | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| | | Z40G9N0081343A | RATING LABEL | | | Z40G9N0081340A | RATING LABEL |
| | | Z44G9011813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| SZ024 | | CBPC7MMDPHSA1 | SCALER ASSY - CMO | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GZ756030 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | | 040G 457624 1B | LABEL-CPU | | | | |
| SZ024 | | CBPC7GMDPHSA1 | SCALER ASSY - LPL | SZ024 | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | D401 | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GQ756037 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190VW8FB/00(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190VW8FB/00(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | 996510008551 | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | 996510008774 | 705GZ701009 | DFU Assy | | | 705TZ701033 | DFU Assy |
| | | 705GZ715009 | MAIN FRAME ASSY-CMO | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| | 996510007424 | 705GZ715008 | MAIN FRAME ASSY-LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| | 996510008775 | 705GZ734020 | BASE ASSY | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| | 996510008776 | 705GZ734021 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| | 996510008777 | 705TZ734014 | REAR COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | 996510007417 | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| | 996510007418 | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| | 996510007419 | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| | 996510008780 | Z44G9018813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | | CBPC7MMDPHSA3 | Scaler board PCBA G2653 | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| CN201 | | 033G3802 7 | WAFER EH 7 | | | | |
| CN401 | | 033G3802 9 | WAFER 9P RIGHT ANELE PITCH | | | | |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | 996510008570 | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GZ756037 | MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | 996510008782 | CBPC7GMDPHSA3 | Scaler board PCBA G2653 | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| CN201 | | 033G3802 7 | WAFER EH 7 | | | | |
| CN401 | | 033G3802 9 | WAFER 9P RIGHT ANELE PITCH | | | | |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | 996510008570 | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | 996510008783 | 705GZ756036 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | 996510007422 | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

| Diversity of 190VW8FB/96(CMO,LPL) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190VW8FB/96(CMO,LPL) | | | | 190CW8FB/97(CMO,LPL) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| | | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 ## | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| | | 705GZ701009 | DFU Assy | | | 705TZ701033 | DFU Assy |
| | | 705GZ715009 | MAIN FRAME ASSY-CMO | SZ007 | 996510007187 | 705GZ715010 | MAIN FRAME ASSY - CMO |
| | | 705GZ715008 | MAIN FRAME ASSY-LPL | SZ007 | 996510007276 | 705GZ715007 | MAIN FRAME ASSY-LPL |
| | | A34G0411 VB 1B | BASE | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| | | 705GZ734021 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| | | 705TZ734014 | REAR COVER ASSY | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| | | A33G0232 VB 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| | | A33G0233 VB 1L | Cable Cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| | | A33G0257 VB 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| | | Z44G9018813 1A | CARTON | SZ020 | | Z44G9012813 1A | CARTON |
| | | CBPC7MMDPHSA3 | Scaler board PCBA G2653 | | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| CN201 | | 033G3802 7 | WAFER EH 7 | | | | |
| CN401 | | 033G3802 9 | WAFER 9P RIGHT ANELE PITCH | | | | |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GZ756037 | MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |
| | | CBPC7GMDPHSA3 | Scaler board PCBA G2653 | | 996510007277 | CBPC7GMDPHA1 | SCALER ASSY - LPL |
| CN201 | | 033G3802 7 | WAFER EH 7 | | | | |
| CN401 | | 033G3802 9 | WAFER 9P RIGHT ANELE PITCH | | | | |
| D401 | | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +5% 1/16W |
| U203 | | 705GZ756036 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASS'Y |
| U401 | | 056G 562178 | IC PUM56BWHL-LF-1 PQFP-100 | U401 | 996510007207 | 056G 562181 | IC PUMO5PCWHL-LF PQFP-100 |

# Different Parts List

| Diversity of 190CW8FB/93(CMO,LPL,MTD) compared with 190CW8FB/97(CMO,LPL) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190CW8FB/93(CMO,LPL,MTD) | | | | 190CW8FB/97(CMO) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | | 705GZ741001 | DFU Assy | | | | |
| SZ002 | | Z41T9024813 1A | QSG | | | | |
| SZ005 | | Z40G9N0081340B | RATING LABEL | | | | |
| SZ101 | | 0Q1G 930 12120 | SCREW for BACK COVER | | | | |
| SZ102 | | 0Q1G1830 8120 | SCREW for USB PCB(REAR) | | | | |
| SZ103 | | N02G6008 1 | SCREW for DVI CONNECT | | | | |
| SZ018 | 996510011026 | 750GLM90A1711N | PANEL M190A1-L07 C2(C1) TW CMO | SZ010 | 996510007191 | 750GLM90A1611M000F | PANEL M190A1-L06 C1TW CMO |
| SZ201 | 996510015371 | 750GLJ190WW111N000 | PANEL M190MWW1 401 KS MTD | | | | |
| SZ204 | 996510007797 | Q44G9077 3 | EPS | | | | |
| SZ205 | 996510011027 | Z44G9019813 1A | CARTON | SZ020 | 996510007200 | Q44G9077624 1A | 19 CARTON |
| SZ206 | | Z45G 46004 | PE BAG (600mmx500mm) | | | | |
| SZ207 | | 705GZ734011 | SMART ACCESSORY | | | | |
| SZ302 | 996510008551 | 089G179E30H 17 | FFC CABLE 30P 110mm P1.0 | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| SZ303 | | 705TZ815002 | MAIN FRAME ASSY-MTD | | | | |
| SZ304 | | 095G8014 5D 56 | HARNESS 5P-5P 460mm | | | | |
| SZ305 | | 095G8014 7D521 | HARNESS | | | | |
| SZ306 | | 095G8014 7X521 | HARNESS | | | | |
| sz307 | 996510011025 | 705GZ734029 | BASE ASSY | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ308 | | 705GZ734027 | BEZEL ASSY | SZ001 | 996510007190 | 705GZ734007 | BEZEL ASSY |
| SZ309 | | A37G0041 1 | HINGE ASS'Y | SZ016 | 996510007197 | A37G0041 1 | HINGE ASSY |
| SZ313 | | Z34G0055ADT 1B | Rear cover 19 | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ401 | 996500037422 | 089G414A18N IS | POWER CORD 32E1818021 | SZ006 | 996510003520 | 089G404A18NIS | POWER CORD |
| SZ031 | 996510011030 | CBPC7MMDPHSA4 | CONVERSION PCB ASSY-CMO | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | 996510008570 | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +-5% 1/16W |
| U203 | 996510011032 | 705GZ756038 | U203 MCU ASSY | U203 | 996510007223 | 705GQ756036 | U203 MCU ASSY |
| CN301 | 996500036924 | 033G801930F H | FPC CONN. 1.0MM 30P | CN301 | 996510007205 | 033G801930F CH JS | CONNECTOR |
| CN301 | 996510006211 | 033G801930F BH U | CONNECTOR 30PIN | | | | |
| SZ802 | 996510015372 | CBPC8TMDPHSA3 | MAIN BOARD ASSY-MTD | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| SZ802 | 996510015372 | CBPC8TMDPHSA3 | MAIN BOARD ASSY | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| CN301 | 996500036924 | 033G801930F H | FPC CONN. 1.0MM 30P | CN301 | 996510007205 | 033G801930F CH JS | CONNECTOR |
| CN301 | 996510006211 | 033G801930F BH U | CONNECTOR 30PIN | | | | |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| FB101 | | 071T 59K190 TA | BEAD 19 OHM 500mA FCB1608KF-190T05 | FB101 | 996510007220 | 071G 59K190 B | 19 OHM BEAD |
| R236 | 996510008570 | 061G0402331 | RST 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +-5% 1/16W |
| U203 | | 705GZ856001 | U203 MCU ASS'Y | U203 | 996510007223 | 705GQ756036 | U203 MCU ASSY |

| Diversity of 190CW8FW/93(CMO) compared with 190CW8FB/97(CMO) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190CW8FW/93(CMO) | | | | 190CW8FB/97(CMO) | | | |
| Item | Philips 12NC | TPV Code | Description | Item | Philips 12NC | TPV Code | Description |
| SZ001 | 996520033005 | 705GZ741001 | DFU Assy | | | | |
| SZ002 | | P41T1800813 4A | CHINA WARRANTY CARD | | | | |
| SZ003 | | Q45G7628B05 | PE BAG FOR MANUAL | | | | |
| SZ004 | | Z41T9018813 1B | QSG | | | | |
| SZ005 | | Z40G9N0081347B | RATING LABEL | | | | |
| SZ018 | 996510011026 | 750GLM90A1711N | PANEL M190A1-L07 C2(C1) TW CMO | SZ010 | 996510007191 | 750GLM90A1611M000F | PANEL M190A1-L06 C1TW CMO |
| SZ027 | 996510007797 | Q44G9077 3 | EPS | | | | |
| SZ101 | | 0Q1G 930 12120 | SCREW for BACK COVER | | | | |
| SZ102 | | 0Q1G1830 8120 | SCREW for USB PCB(REAR) | | | | |
| SZ103 | | N02G6008 1 | SCREW for DVI CONNECT | | | | |
| SZ202 | 996510007198 | Q44G9077 1 | EPS | SZ018 | 996510007198 | Q44G9077 1 | EPS |
| SZ203 | 996510007199 | Q44G9077 2 | EPS | SZ019 | 996510007199 | Q44G9077 2 | EPS |
| SZ205 | 996510011027 | Z44G9019813 1A | CARTON | SZ020 | 996510007200 | Q44G9077624 1A | 19 CARTON |
| SZ206 | 996510008781 | Z45G 46004 | PE□ BAG (600mmx500mm) | | | | |
| SZ207 | 996510013999 | 705GZ734014 | SMART ACCESSORY | | | | |
| SZ302 | 996510008551 | 089G179E30H 17 | FFC CABLE 30P 110mm | SZ005 | 996510007186 | 089G179J30N503 | FFC CABLE |
| SZ304 | | 095G8014 5D 56 | HARNESS 5P-5P 460mm | | | | |
| SZ305 | | 095G8014 7D521 | HARNESS | | | | |
| SZ306 | | 095G8014 7X521 | HARNESS | | | | |
| SZ307 | 996510014000 | 705GZ734018 | BASE ASSY | SZ015 | 996510007196 | A34G0411ADT 1B | BASE |
| SZ308 | 996510014001 | 705GZ734028 | BEZEL ASSY | | | | |
| SZ310 | 996510014005 | Z33G0006AWX 1L | Hinge Cover | SZ011 | 996510007192 | A33G0232ADT 1L | Hinge Cover |
| SZ311 | 996510014006 | Z33G0007AWX 1L | cable cover | SZ012 | 996510007193 | A33G0233ADT 1L | cable cover |
| SZ312 | 996510014007 | Z33G0009AWX 1L | Stand hook | SZ013 | 996510007194 | A33G0257ADT 1L | Stand hook |
| SZ313 | 996510014008 | Z34G0060AWX 2B | Rear cover 19 | SZ014 | 996510007195 | A34G0408ADT 1T | REAR COVER (19) |
| SZ401 | 996500037422 | 089G414A18NIS | POWER CORD | SZ006 | 996510003520 | 089G404A18NIS | POWER CORD |
| SZ802 | 996510011030 | CBPC7MMDPHSA4 | CONVERSION PCB ASSY | SZ024 | 996510007204 | CBPC7MMDPHA1 | SCALER ASSY - CMO |
| D401 | 996510007222 | 093G2004 1 | SMAL240LVXRO-SMT | | | | |
| R236 | 996510008570 | 061G0402331 | RST CHIP 330R 1/16W 5% | R236 | 996510005701 | 061G0402101 | RST CHIPR 100 OHM +-5% 1/16W |
| U203 | 996510011032 | 705GZ756038 | U203 MCU ASSY | U203 | 996510007223 | 705GQ756036 | U203 MCU ASSY |
| CN301 | 996500036924 | 033G801930F H | FPC CONN. 1.0MM 30P | CN301 | 996510007205 | 033G801930F CH JS | CONNECTOR |
| CN301 | 996510006211 | 033G801930F BH U | CONNECTOR 30PIN | | | | |

| | | | | |
|---|---|---|---|---|
| 190SW8FS/97 | SZ009 | 996510013970 | REAR COVER ASSY | 705GZ734025 |
| 190SW8FS/97 | SZ010 | 996510013971 | BEZEL ASSY | 705GZ734024 |
| 190SW8FB/69 | SZ008 | 996510013969 | BEZEL ASSY | 705GZ734023 |
| 190SW8FB/69 | SZ009 | 996510013970 | REAR COVER ASSY | 705GZ734025 |

# Revision List

Manual 3122 785 17400
-First release
-ALL chapters

1. According to the CP SZ00524 and SZ00574, some materials of the below projects need to be changed.

| | Was | | | Is | | |
|---|---|---|---|---|---|---|
| Model name | Philips 12NC | Code No. | Description | Philips 12NC | Code No. | Description |
| 190CW8FB/00<br>190CW8FB/69<br>190CW8FB/75<br>190CW8FB/78<br>190CW8FB/97 | 996510007196 | A34G0411ADT 1B | BASE | 996510011025 | 705GZ734029 | BASE ASSY |
| | 996510007190 | 705GZ734007 | BEZEL ASSY | 996510014806 | 705GZ734027 | BEZEL ASSY |
| | 996510007195 | A34G0408ADT 1T | REAR COVER (19) | 996510014807 | Z34G0055ADT 1B | REAR COVER 19 |
| 190CW8FB/00/96 | 996510007196 | A34G0411ADT 1B | BASE | 996510011025 | 705GZ734029 | BASE ASSY |
| | 996510007190 | 705GZ734007 | BEZEL ASSY | 996510014806 | 705GZ734027 | BEZEL ASSY |
| | 996510008567 | Z34G0038ADT 1T | REAR COVER 19 | 996510014854 | Z34G0056AWV 1B | REAR COVER 19 |

# 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**

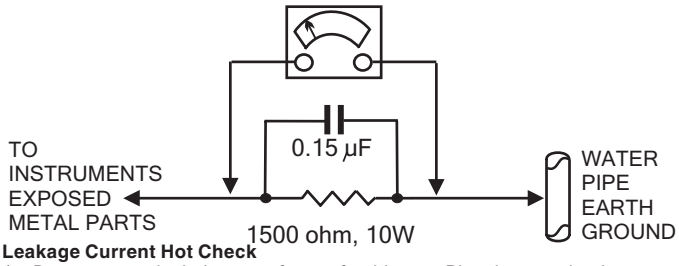
1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn,whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified 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 not operate the chassis longer than necessary to locate the cause of the excessive HV.
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.