

Service
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190S8FS/00 190S8FB/00 190S8FB/27

Service Manual

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SAFETY NOTICE

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

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

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

Revision List

[illegible]

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all Philips 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 Company will be referred to as Philips.

WARNING

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.

FOR PRODUCTS CONTAINING LASER:

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

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

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

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

Take care during handling the LCD module with backlight unit

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

1. Monitor Specifications

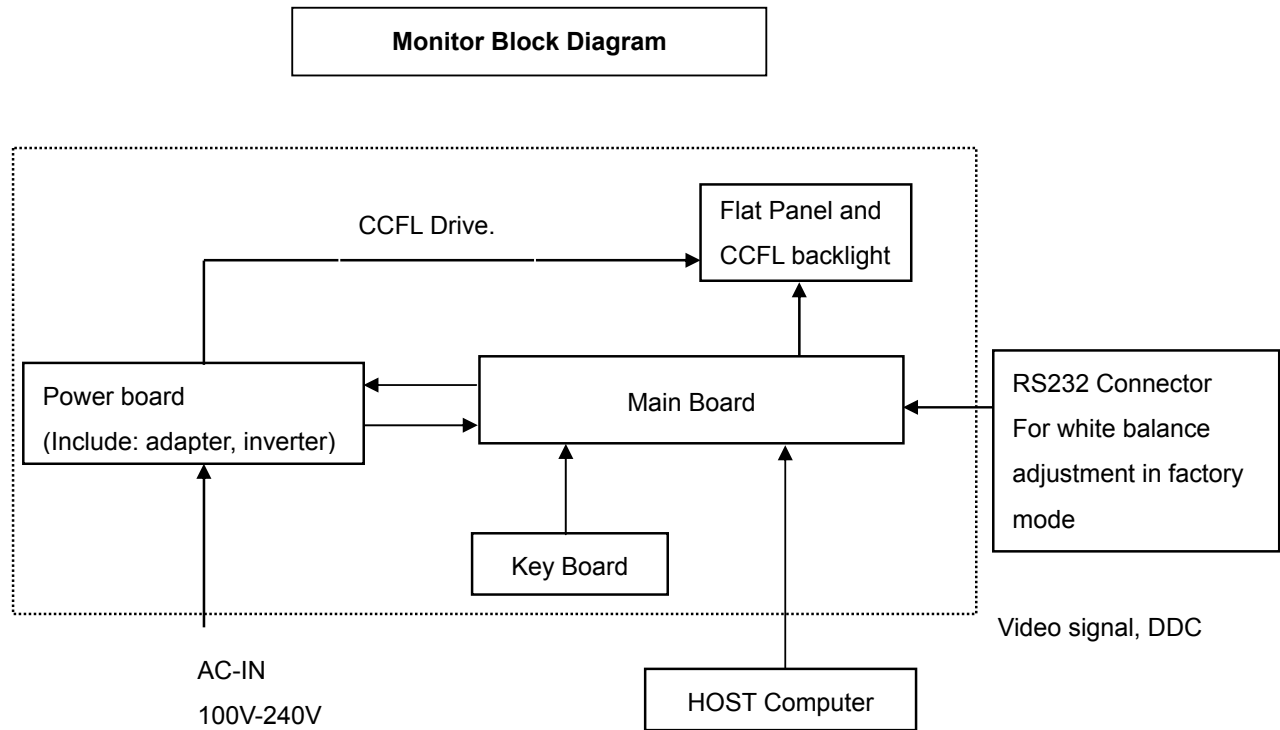
LCD PANEL	
• Type	TFT LCD
• Screen size	19" visual
• Pixel Pitch	0.294 x 0.294 mm
• LCD Panel type	1280 x 1024 pixels R.G.B. vertical stripe Anti-glare polarizer, hard coated
• Effective viewing area	376.3 x 301.1 mm
SCANNING	
• Vertical refresh rate	56 Hz-75 Hz
• Horizontal Frequency	30 kHz - 83 kHz
VIDEO	
• Video dot rate	165 MHz
• Input impedance	
- Video	75 ohm
- Sync	2.2K ohm
• Input signal levels	0.7 Vpp
• Sync input signal	Separate sync Composite sync Sync on green
• Sync polarities	Positive and negative

• Tilt	-5°+2/-0 ~+ 20°+3/-0
• Power supply	100 ~ 240 VAC, 50/60 Hz
• Power consumption	36W* (typ.)
• Temperature	0° C to 40 ° C (operating) -20° C to 60° C (storage)
• Relative humidity	20% to 80%
• System MTBF	50K hours (CCFL 40K hours)

2. LCD Monitor Description

The LCD monitor will contain a main board, a power board and a key board which house the flat panel control logic, brightness control logic and DDC.

The power board will provide AC to DC Inverter voltage to drive the backlight of panel and the main board chips each voltage.



3. Operating Instructions

3.1 General Instructions

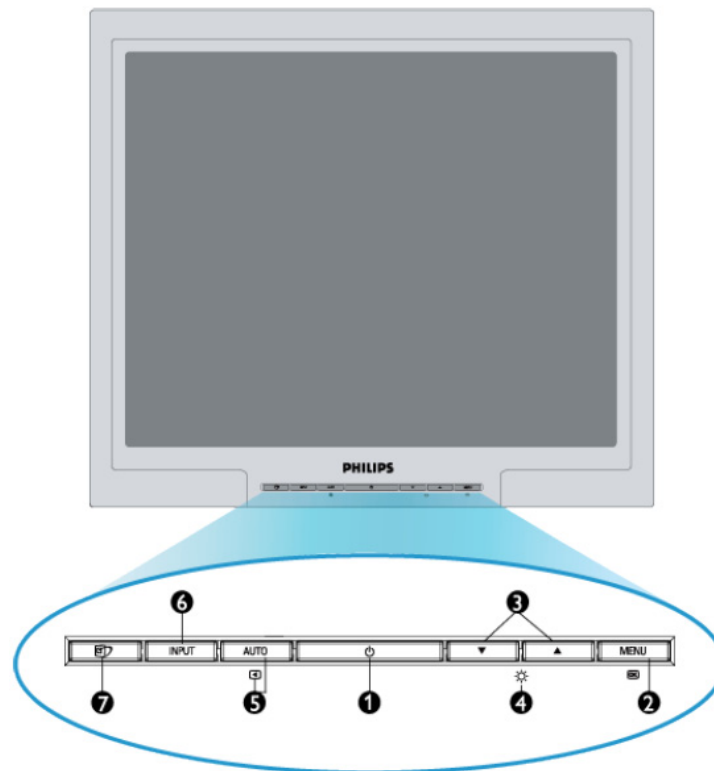
Press the power button to turn the monitor on or off. The other control buttons are located at the front of the panel of the monitor.

By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor, the power indicator will light up.

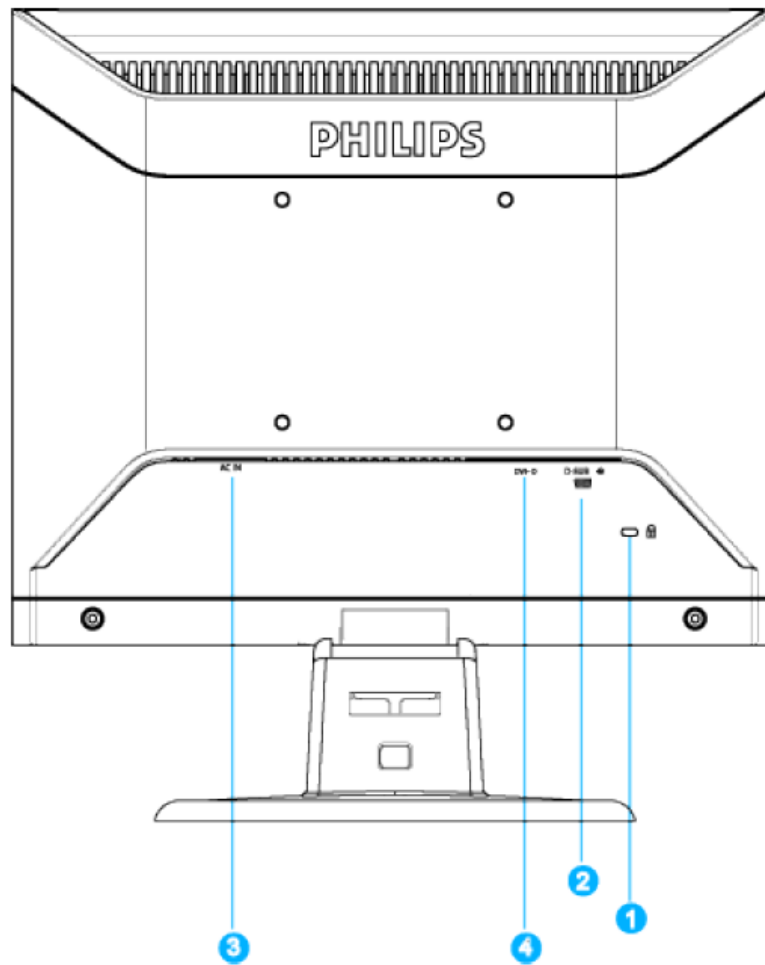
3.2 Control Buttons

Front View



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

Rear View

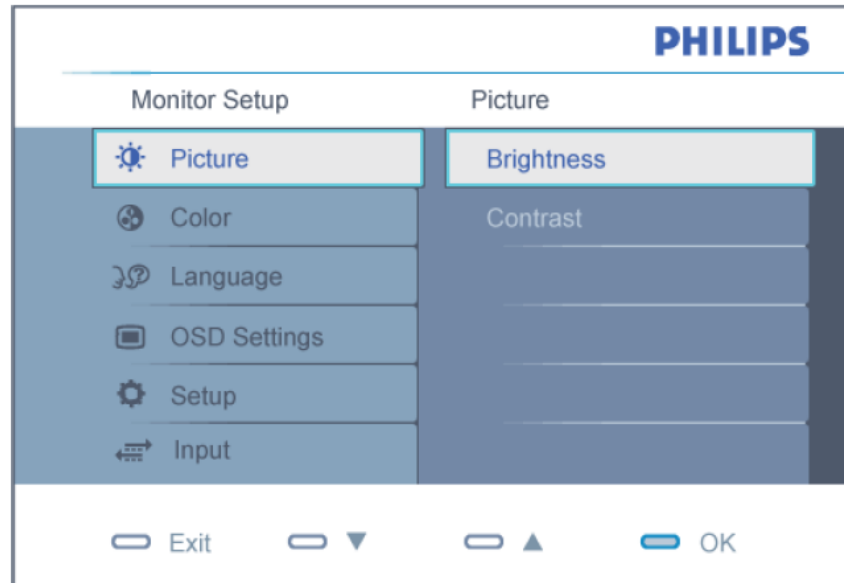


- 1 Kensington anti-theft lock
- 2 VGA input
- 3 AC power input
- 4 DVI-D input *

3.3 Adjusting the Picture

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:



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

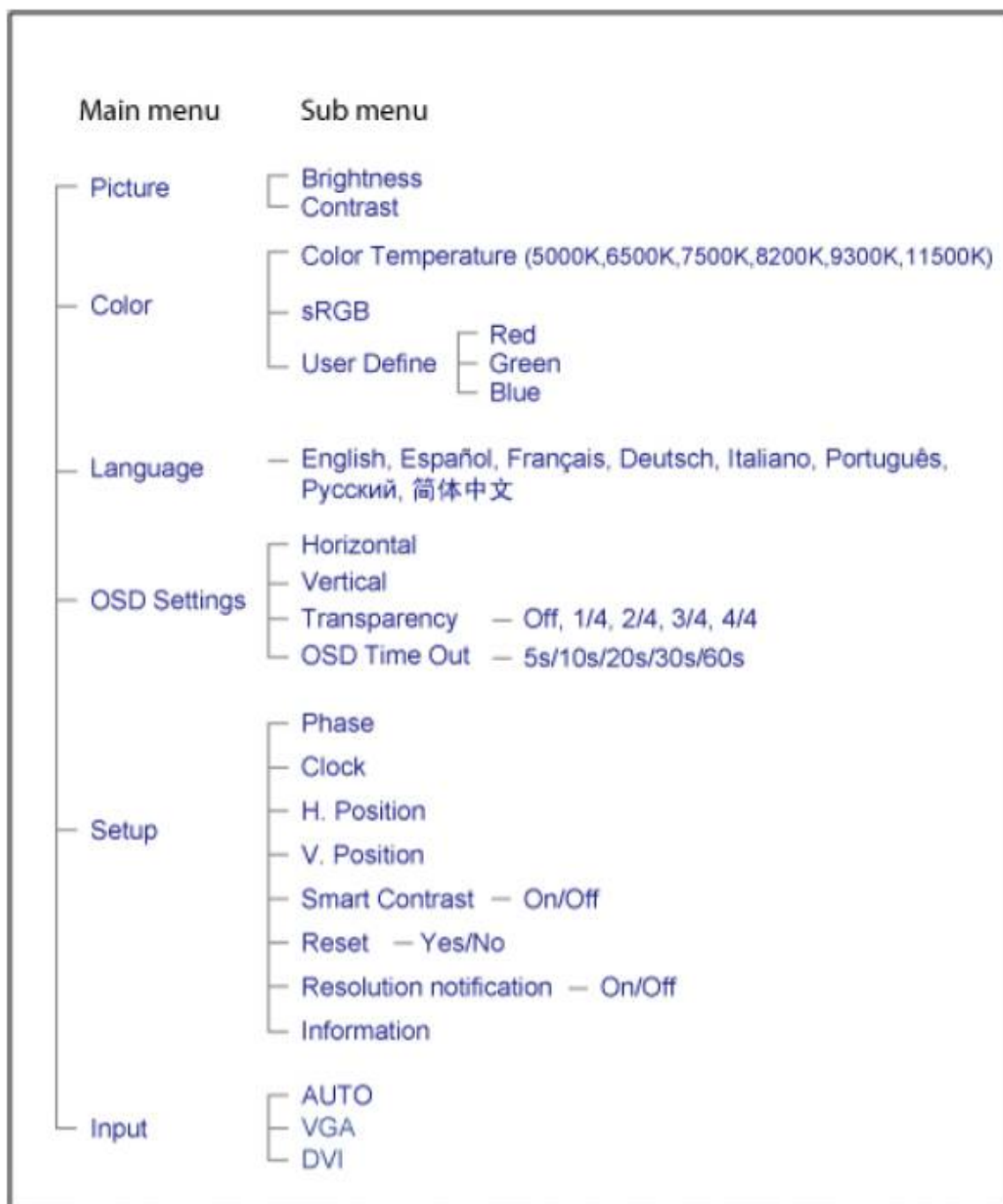
To Lock/Unlock OSD function (User Mode)

The OSD function can be locked by pressing “MENU” button for more than 10 seconds.

Locked OSD function can be released by pressing “MENU” button for more than 10 seconds again.

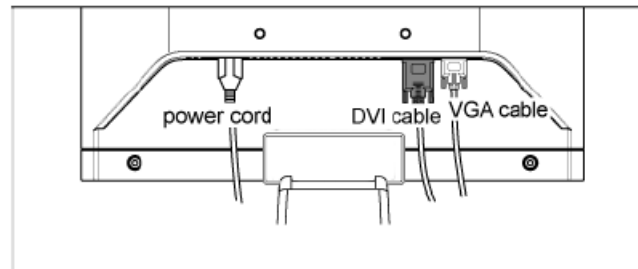
The OSD Tree

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.

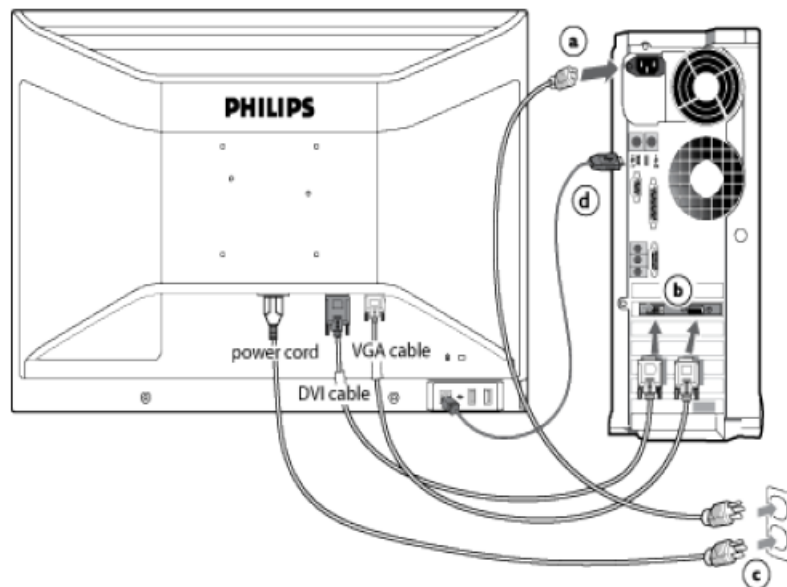


3.4 Connecting to the PC

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



*available for selective models



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.

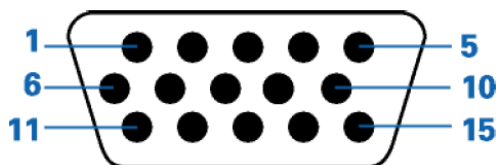
4. Input/Output Specification

4.1 Input Signal Connector

Analog connectors

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

VGA connector layout



DVI connectors

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 Data2/4+	10.	T.M.D.S Data1/3+	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 Data0/5 Shield
4.	No connector	12.	No connector	20.	No connector
5.	No connector	13.	No connector	21.	No connector
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 connector	16.	Hot Plug Detection	24.	T.M.D.S Clock-



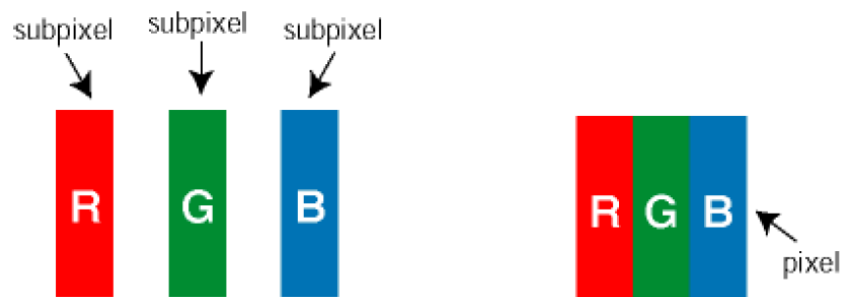
4.2 Factory Preset Display Modes

H. freq (kHz)	Resolution	V. freq (Hz)
31.469	720*400	70.087
31.469	640*480	59.940
35.000	640*480	67.000
37.500	640*480	75.000
35.156	800*600	56.250
37.879	800*600	60.317
46.875	800*600	75.000
48.363	1024*768	60.004
60.023	1024*768	75.029
63.981	1280*1024	60.020
79.976	1280*1024	75.025

4.3 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.



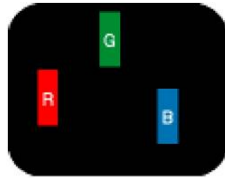
Pixels and Sub pixels

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)

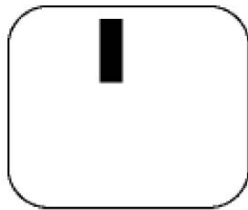


Three adjacent lit sub pixels (one white pixel)

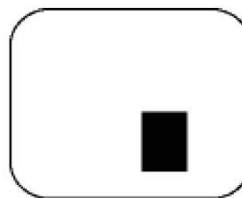


A red or blue *bright dot* must be more than 50 percent brighter than neighboring dots while a green bright dot is 30 percent brighter than neighboring dots.

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	190S8
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	>25mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190S8
1 dark subpixel	5
2 adjacent dark subpixels	2
3 adjacent dark subpixels	0
Distance between two black dot defects*	>15mm
Total black dot defects of all types	5

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190S8
Total bright or black dot defects of all types	5

Note:

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

Your Philips monitor is ISO13406-2 Compliant

4.4 Failure Mode Of Panel

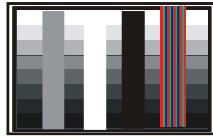
Quick reference for failure mode of LCD panel

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.

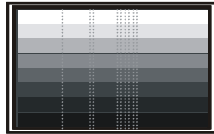
Failure description

Phenomenon

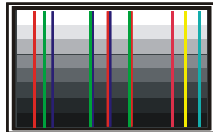
Vertical block defect



Vertical dim lines



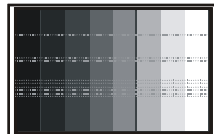
Vertical lines defect
(Always bright or dark)



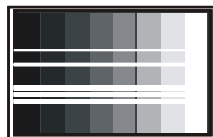
Horizontal block defect



Horizontal dim lines



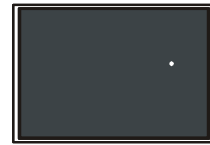
Horizontal lines defect
(Always bright or dark)



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

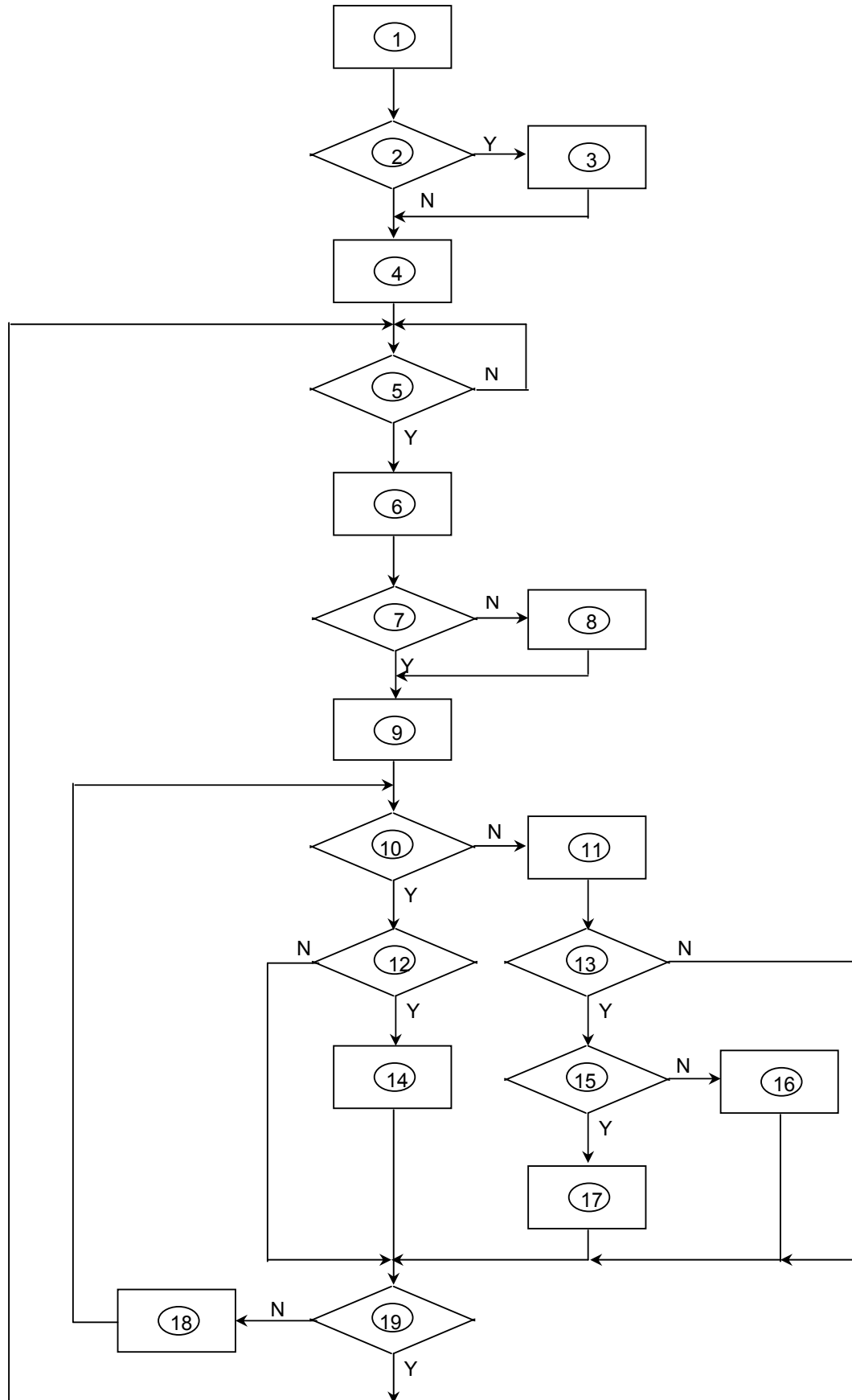


Backlight has foreign material.
Black or white color, liner or
circular type



5. Block Diagram

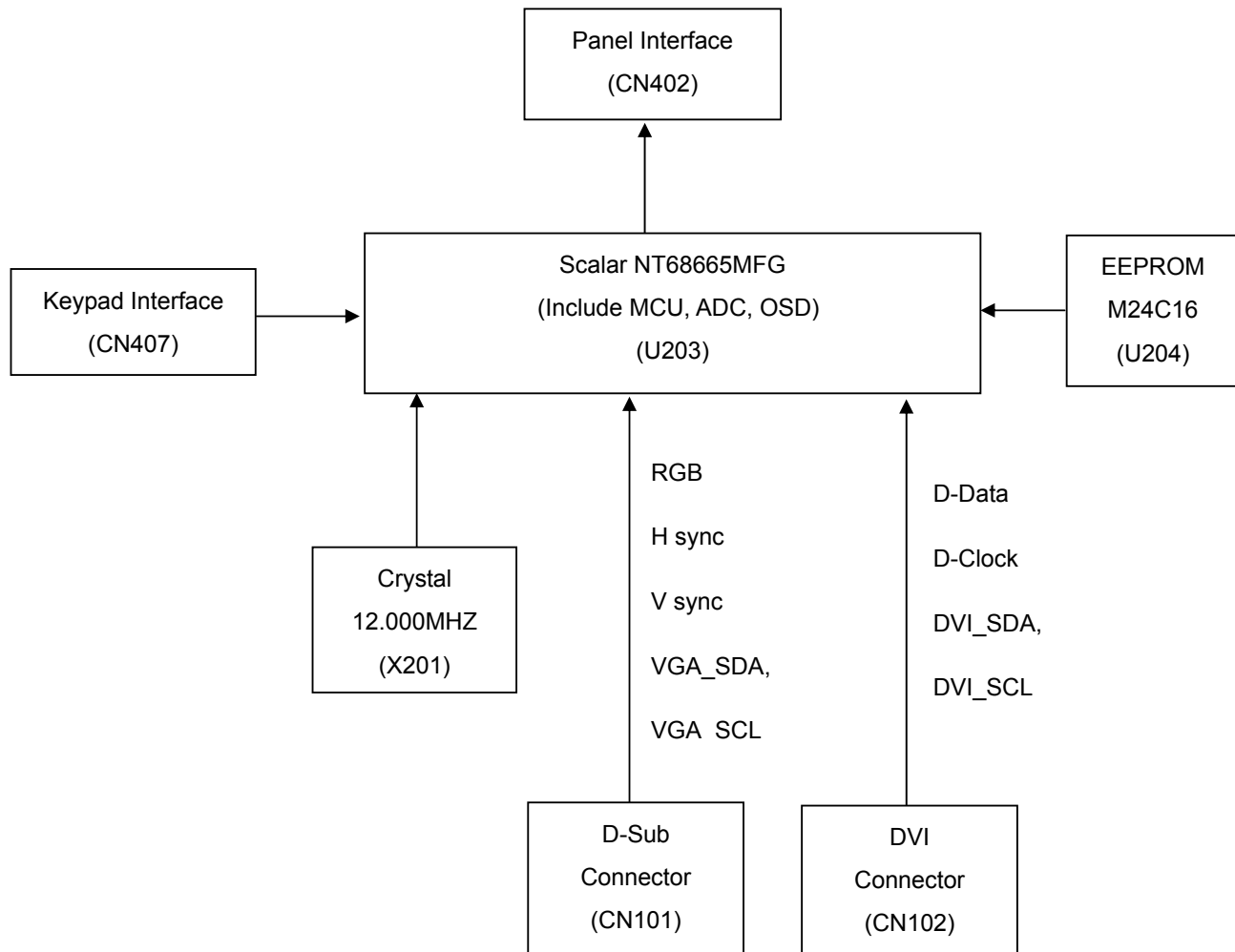
5.1 Software Flow Chat



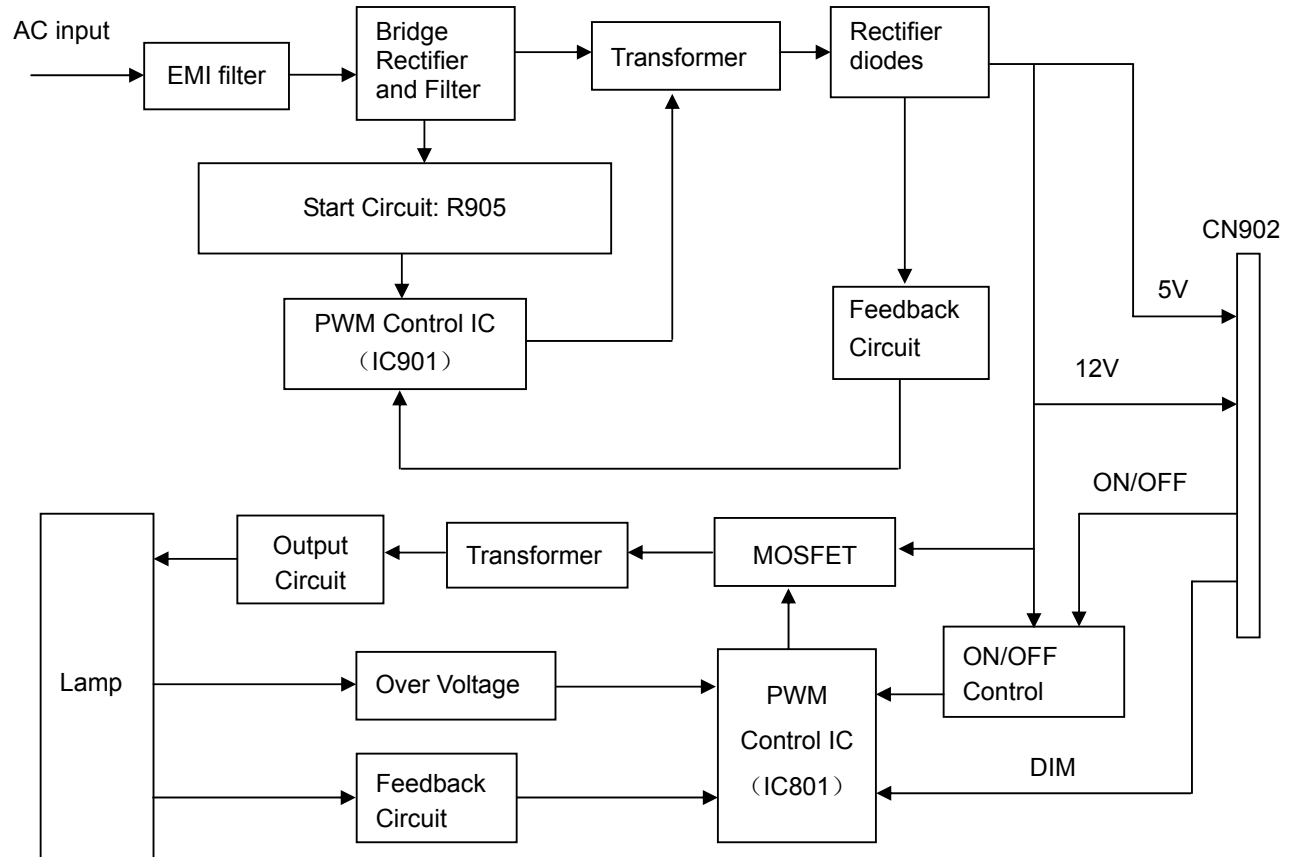
1) MCU initialize.
2) Is the EPROM blank?
3) Program the EPROM by default values.
4) Get the PWM value of brightness from EPROM.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Save the power key status into EPROM. Turn on the LED and set it to green color. Scalar initializes.
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog port, are there any signals coming?
13) Does the scalar send out an interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog port?
16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappear.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

5.2 Electrical Block Diagram

5.2.1 Main Board



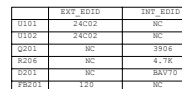
5.2.2 Inverter/Power Board



6. Schematic

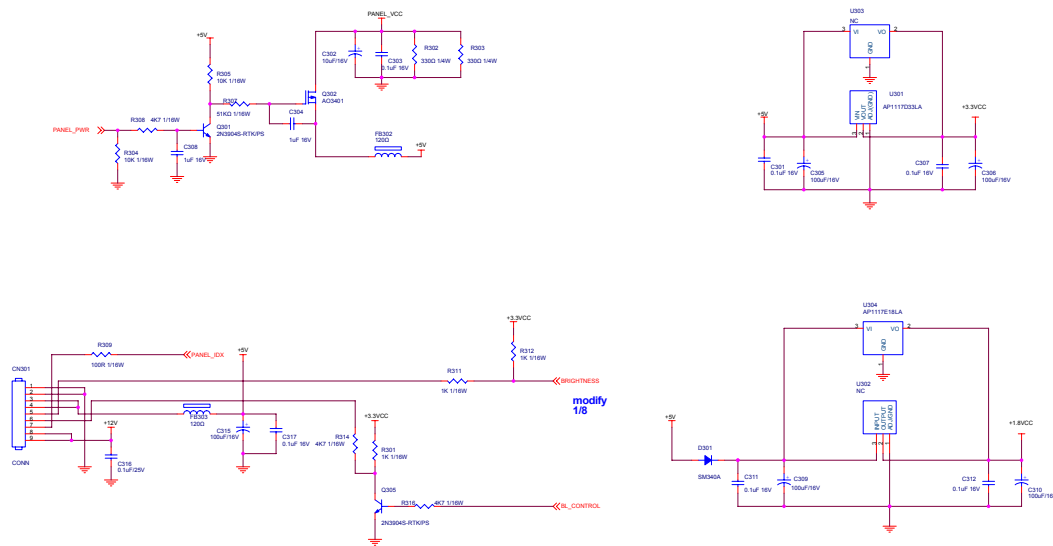
6.1 Main Board

715G2561-1





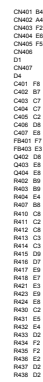
DC-DC



CN301
 D1
 C301 B7
 C302 A3
 C303 A4
 C304 B3
 C305 B7
 C306 B6
 C307 B6
 C308 B2
 C309 E7
 C310 E9
 C311 E7
 C312 E9
 C313 D3
 C314 E1
 C315 D3
 C316 E1
 C317 D3
 C318 E6
 F302 B4
 F303 D2
 Q301 B2
 Q302 B3
 Q303 E4
 R301 E4
 R302 A4
 R303 A4
 R304 B1
 R305 B2
 R306 B2
 R307 D1
 R308 D4
 R309 D4
 R310 E4
 R311 D3
 R312 E4
 R313 B6
 R314 B6
 R315 A6
 R316 D8
 R317 A6
 R318 D8

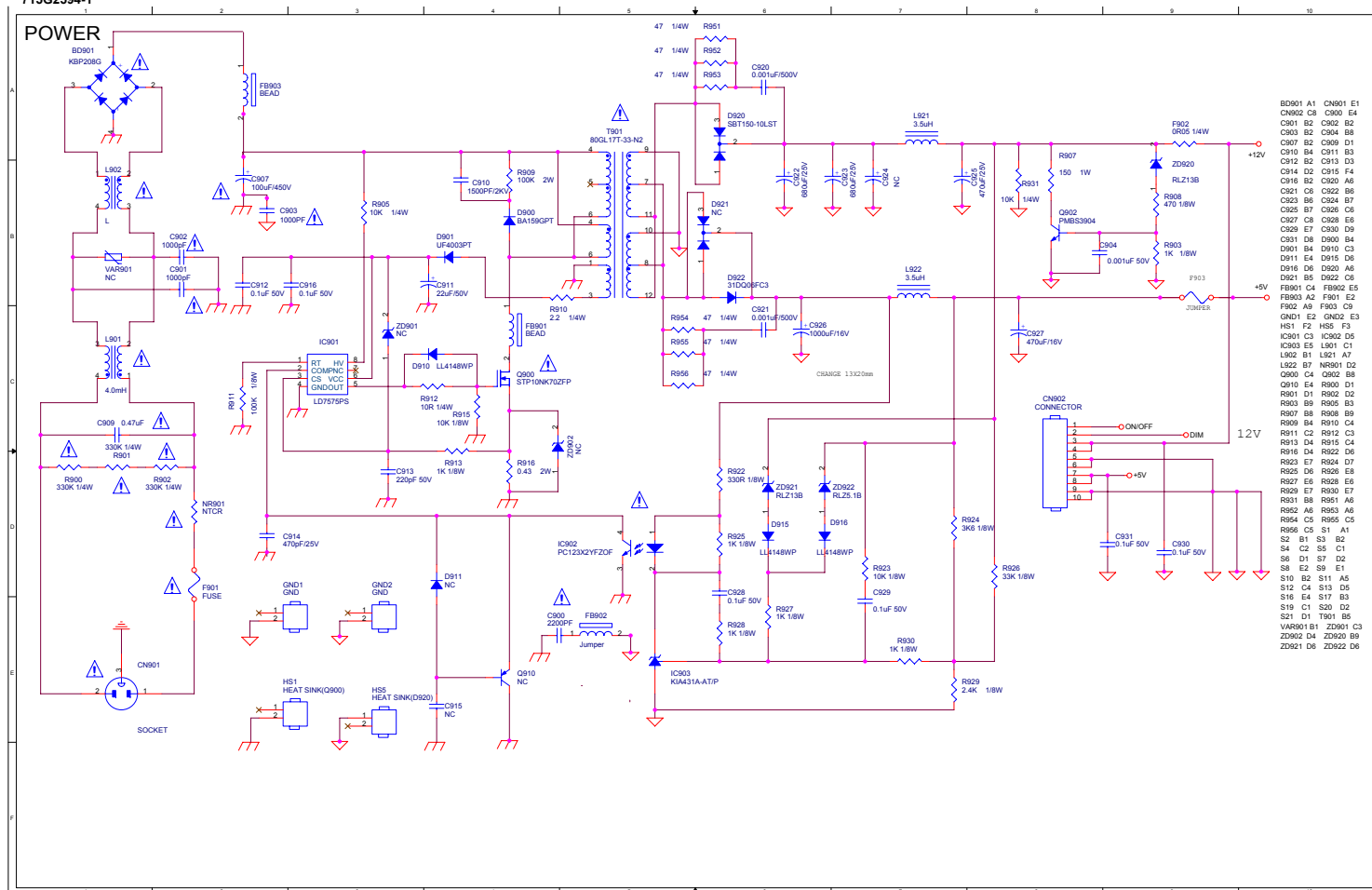
modify

1/8

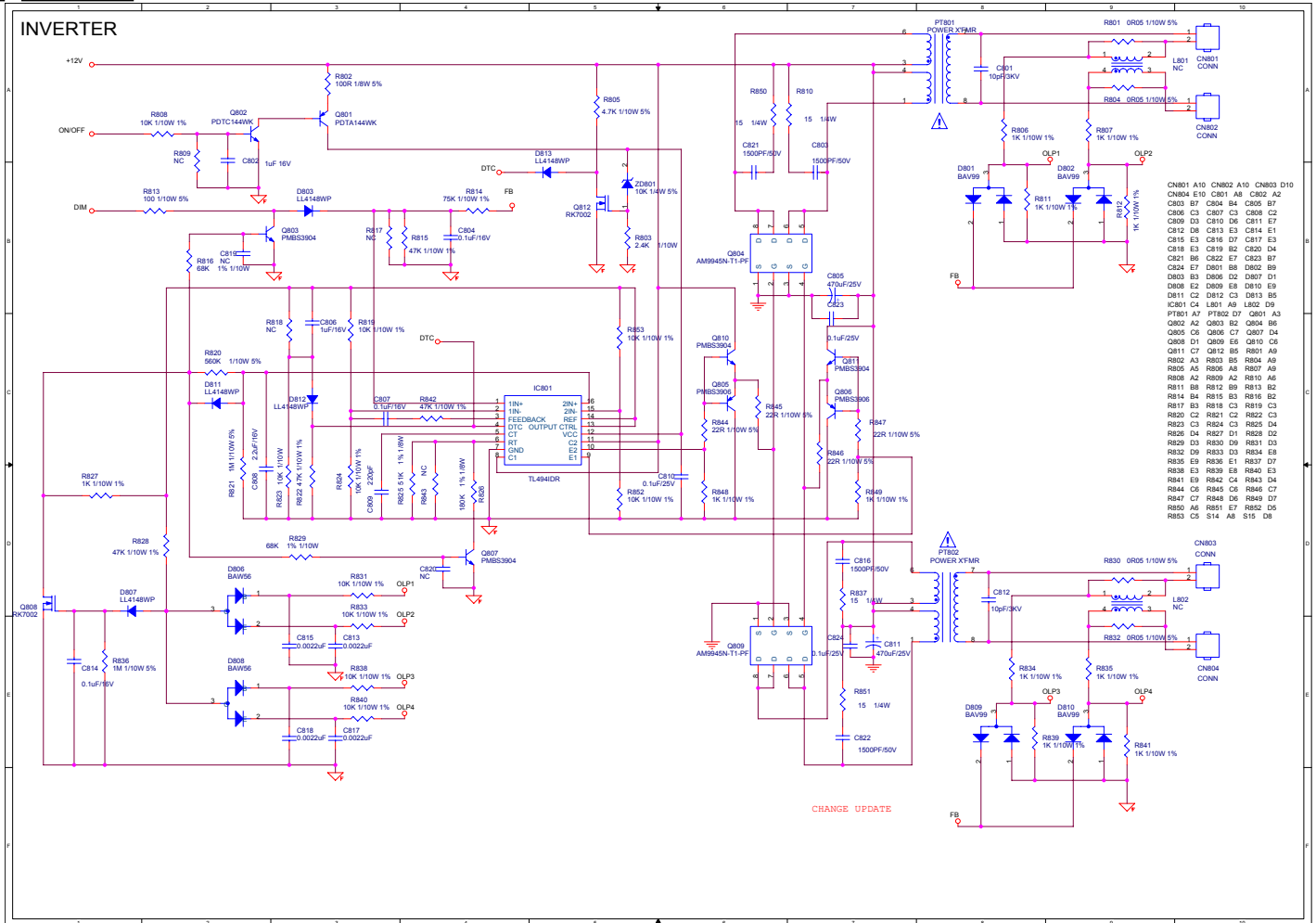


6.2 Power Board

715G2594-1

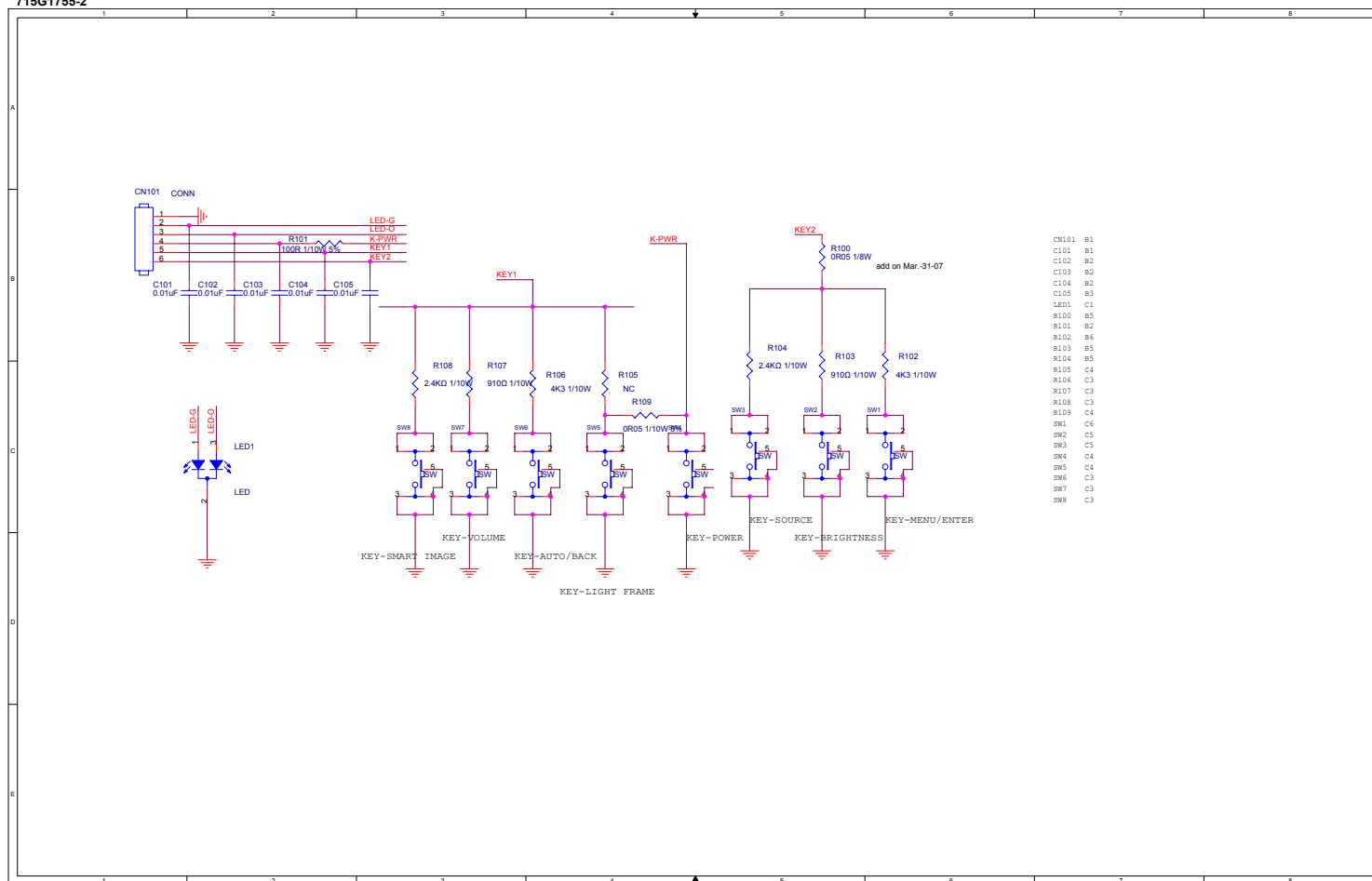


INVERTER



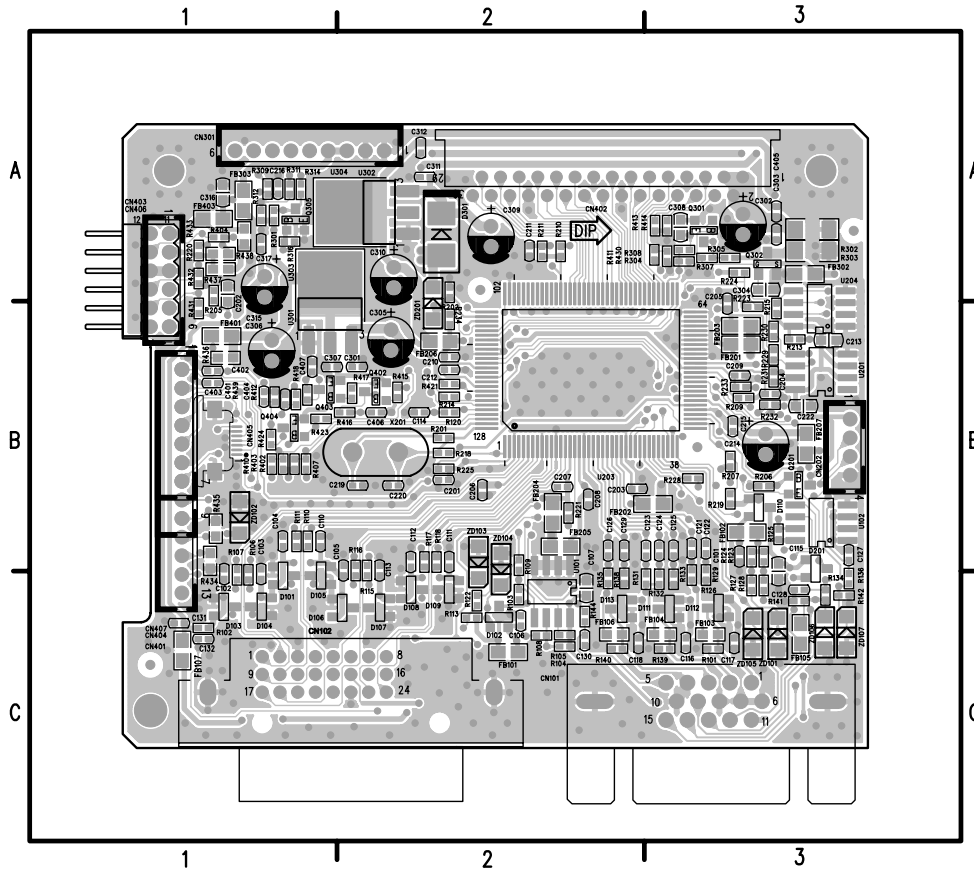
CHANGE UPDATE

6.3 Key Board 715G1755-2

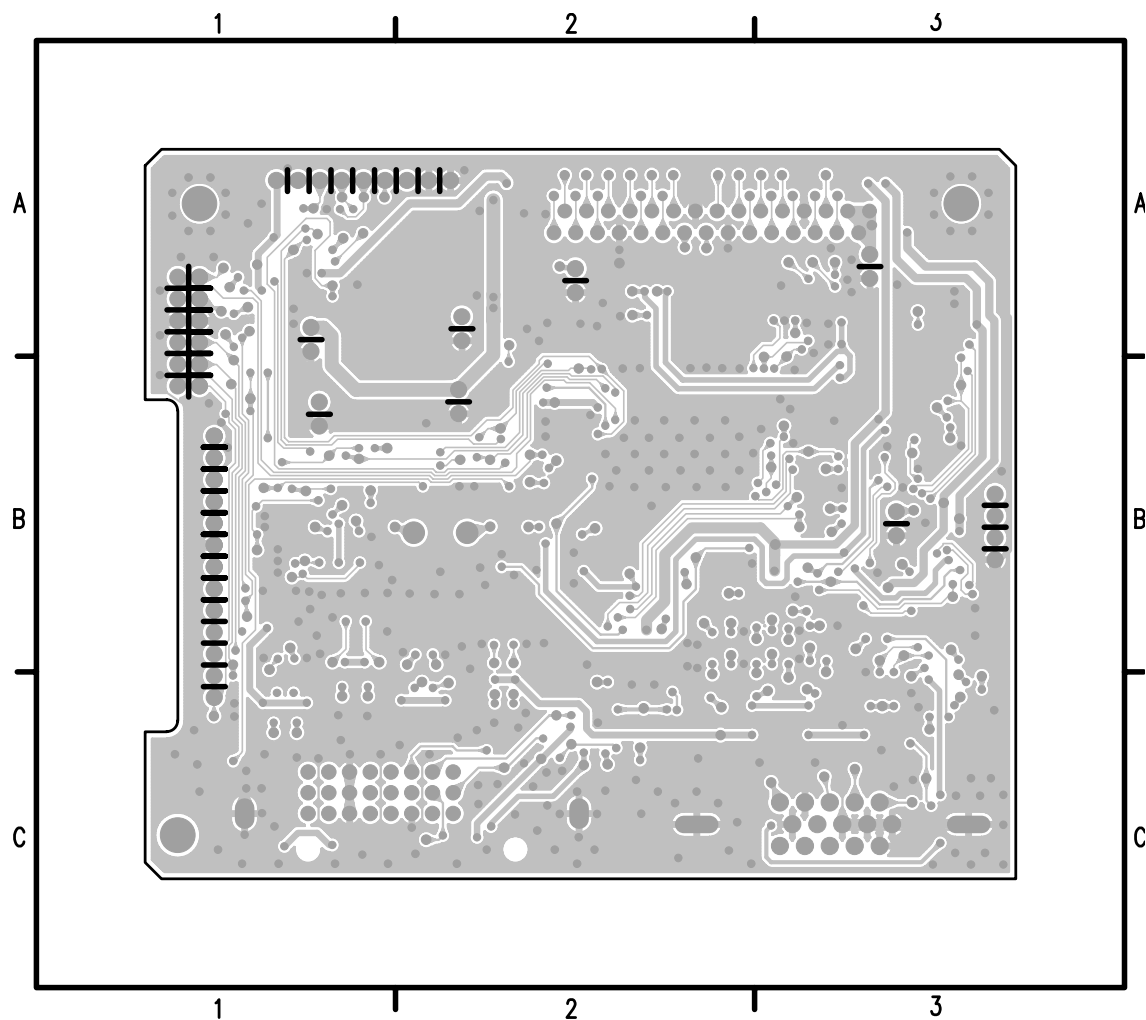


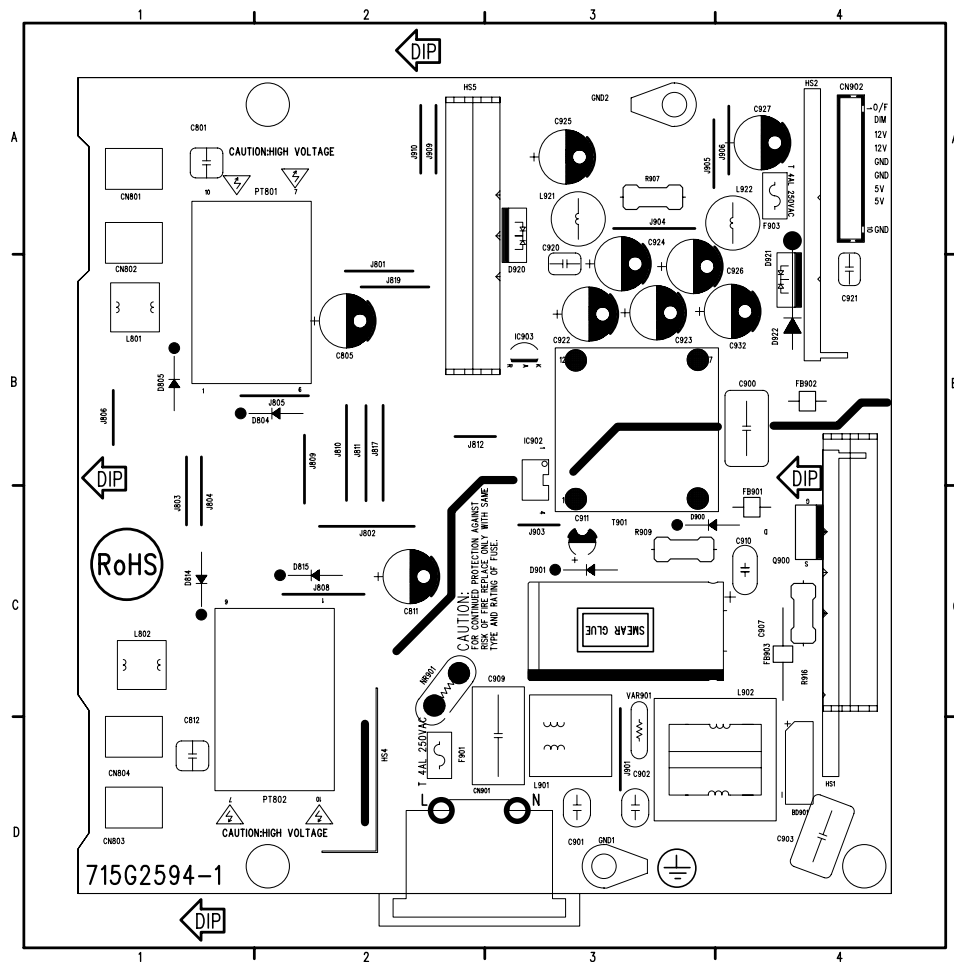
CN101	B1
C101	B1
C102	B2
C103	B2
C104	B2
C105	B3
LED1	C1
R100	B5
R101	B2
R102	B6
R103	B5
R104	B5
R105	C4
R106	C3
R107	C3
R108	C3
R109	C4
SW1	C6
SW2	C5
SW3	C5
SW4	C4
SW5	C4
SW6	C3
SW7	C3
SW8	C3

7. PCB Layout
7.1 Main Board
715G2561-1

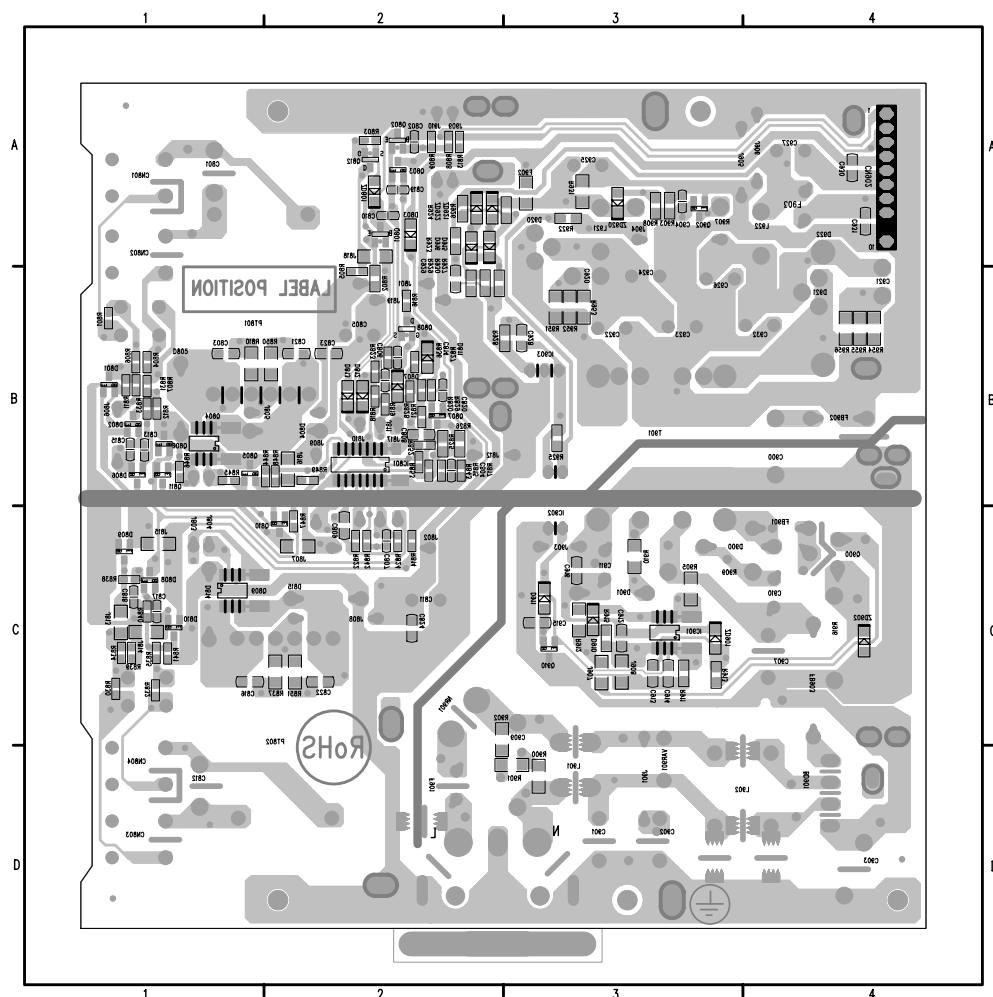


C101	B3	C215	B3	D105	C1	Q301	A3	R144	C2	R410	B1
C102	C1	C216	A1	D106	C2	Q302	A3	R201	B2	R411	A3
C103	C1	C219	B2	D107	C2	Q305	A1	R202	A2	R412	B1
C104	B1	C220	B2	D108	C2	Q402	B2	R205	A1	R413	A3
C105	C2	C222	B3	D109	C2	Q403	B2	R206	B3	R414	A3
C106	C2	C301	B2	D110	B3	Q404	B1	R207	B3	R415	B2
C107	C2	C302	A3	D111	C3	R101	C3	R209	B3	R416	B2
C110	B1	C303	A3	D112	C3	R102	C1	R210	A2	R417	B2
C111	B2	C304	A3	D113	C2	R103	C2	R211	A2	R418	B1
C112	B2	C305	B2	D201	B3	R104	C2	R213	B3	R421	B2
C113	C2	C306	B1	D301	A2	R105	C2	R214	B2	R423	B1
C114	B2	C307	B1	FB101	C2	R106	C1	R215	B3	R424	B1
C115	C3	C308	A3	FB102	B3	R107	C1	R218	B2	R430	A3
C116	C3	C309	A2	FB103	C3	R108	C2	R219	B3	R431	B1
C117	C3	C310	A2	FB104	C3	R109	B2	R220	A1	R432	A1
C118	C2	C311	A2	FB105	C3	R110	B1	R221	B2	R433	A1
C121	B3	C312	A2	FB106	C2	R111	B1	R223	B3	R434	B1
C122	B3	C315	A1	FB107	C1	R113	C2	R224	A3	R435	B1
C123	B2	C316	A1	FB201	B3	R115	C2	R225	B2	R436	B1
C124	B3	C317	A1	FB202	B3	R116	C2	R228	B3	R437	A1
C125	B3	C401	B1	FB203	B3	R117	B2	R229	B3	R438	A1
C126	B2	C402	B1	FB204	B2	R118	B2	R230	B3	R439	B1
C127	B3	C403	B1	FB205	B2	R120	B2	R231	B3	U101	B2
C128	C3	C404	B1	FB206	B2	R122	C2	R232	B3	U102	B3
C129	B2	C405	A3	FB207	B3	R123	B3	R233	B3	U201	B3
C130	C2	C406	B2	FB302	A3	R124	B3	R234	B2	U203	B2
C131	C1	C407	B1	FB303	A1	R125	B3	R301	A1	U204	B3
C132	C1	CN101	C3	FB401	B1	R126	C3	R302	A3	U301	B1
C201	B2	CN102	C2	FB403	A1	R127	C3	R303	A3	U302	A2
C202	A1	CN202	B3	FDT1	B3	R128	C3	R304	A3	U303	B1
C203	B2	CN301	A2	FDT10	<1	R129	C3	R305	A3	U304	A2
C204	B3	CN401	B1	FDT11	C8	R131	C2	R307	A3	X201	B2
C205	B3	CN402	A2	FDT12	<8	R132	C3	R308	A3	ZD101	C3
C206	B2	CN403	B1	FDT13	C1	R133	C3	R309	A1	ZD102	B1
C207	B2	CN404	B1	FDT2	A2	R134	C3	R311	A1	ZD103	B2
C208	B2	CN405	B1	FDT3	A3	R135	C2	R312	A1	ZD104	B2
C209	B3	CN406	A1	FDT4	C1	R136	C3	R314	A1	ZD105	C3
C210	B2	CN407	B1	FDT5	C1	R138	C2	R316	A1	ZD106	C3
C211	A2	D101	C1	FDT6	<1	R139	C3	R402	B1	ZD107	C3
C212	B2	D102	C2	FDT7	C8	R140	C2	R403	B1	ZD201	B2
C213	B3	D103	C1	FDT8	<8	R141	C3	R404	A1		
C214	B3	D104	C1	Q201	B3	R142	C3	R407	B1		



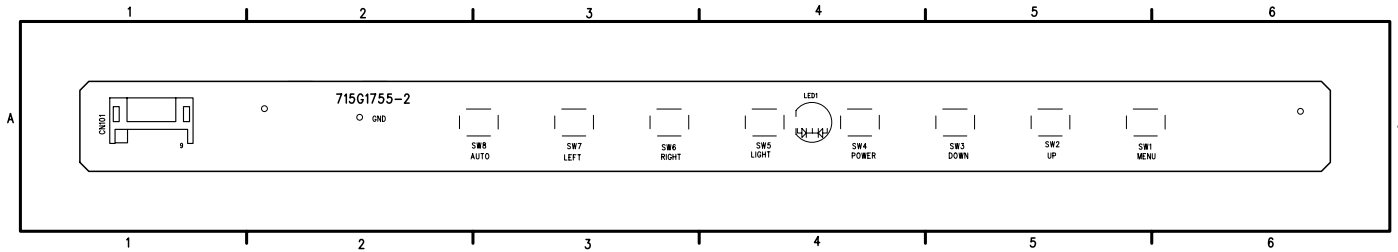


BD901	D4	J802	C2
C801	A1	J803	B1
C805	B2	J804	B1
C811	C2	J805	B2
C812	D1	J806	B1
C900	B4	J808	C2
C901	D3	J809	C2
C902	D3	J810	C2
C903	D4	J811	C2
C907	C4	J812	B2
C909	D3	J817	C2
C910	C4	J819	B2
C911	C3	J901	D3
C920	B3	J903	C3
C921	B4	J904	A3
C922	B3	J905	A3
C923	B3	J906	A4
C924	B3	J909	A2
C925	A3	J910	A2
C926	B3	L801	B1
C927	A4	L802	C1
C932	B4	L901	D3
CN801	A1	L902	D4
CN802	A1	L921	A3
CN803	D1	L922	A4
CN804	D1	NR901	C2
CN901	D2	PT801	B1
CN902	A4	PT802	C2
D804	B1	Q900	C4
D805	B1	R907	A3
D814	C1	R909	C3
D815	C2	R916	C4
D900	C3	SG11	C4
D901	C3	SG12	D2
D920	A3	SG19	D2
D921	B4	SG22	D4
D922	A4	SG25	D4
F901	D2	SG27	D3
F903	A4	SG28	C3
FB901	C4	SG31	D3
FB902	B4	SG33	A1
FB903	C4	SG34	A1
HS10	A3	SG35	A1
HS13	A3	SG36	A1
HS14	A2	SG39	A1
HS16	A2	SG40	D1
HS17	B4	SG42	D1
HS20	A8	SG44	D1
HS28	A7	SG45	D1
HS29	B1	SG46	C4
HS31	B4	SG47	C4
IC902	B3	SG49	C4
IC903	B3	T901	C3
J801	B2	VAR901	D3

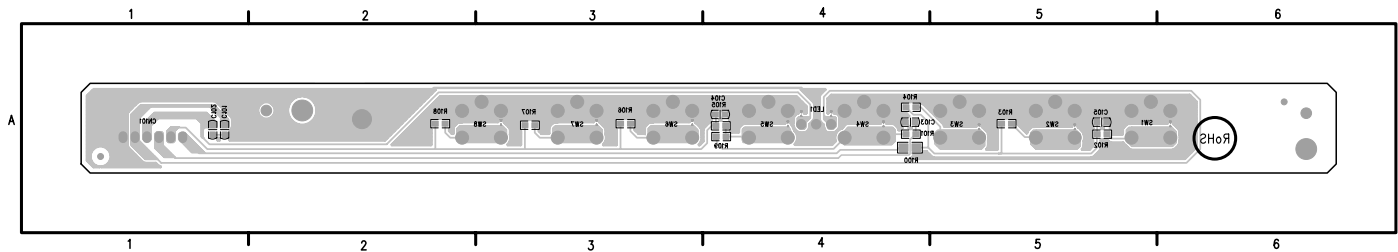


C802	A2	J907	C3	R843	B2
C803	B1	J908	C3	R844	B2
C804	B2	Q801	A2	R845	B1
C806	B2	Q802	A2	R846	B1
C807	C2	Q803	A2	R847	C2
C808	B2	Q804	B1	R848	B2
C809	C2	Q805	B1	R849	B2
C810	A2	Q806	B1	R850	B2
C813	B1	Q807	B2	R851	C2
C814	B2	Q808	B2	R852	B2
C815	B1	Q809	C1	R853	B2
C816	C1	Q810	C2	R900	D3
C817	C1	Q811	B1	R901	D3
C818	C1	Q812	A2	R902	C2
C819	A2	Q902	A3	R903	A3
C820	B2	Q910	C3	R905	C3
C821	B2	R801	B1	R908	A3
C822	C2	R802	B2	R910	C3
C823	B2	R803	A2	R911	C3
C824	C2	R804	B1	R912	C3
C904	A3	R805	B2	R913	C3
C912	C3	R806	B1	R915	C3
C913	C3	R807	B1	R922	A3
C914	C3	R808	A2	R923	A2
C915	C3	R809	A2	R924	A2
C916	C3	R810	B1	R925	B3
C928	B3	R811	B1	R926	A3
C929	B2	R812	B1	R927	B2
C930	A4	R813	A2	R928	B3
C931	A4	R814	C2	R929	B2
D801	B1	R815	B2	R930	B2
D802	B1	R816	B2	R931	A3
D803	A2	R817	B2	R951	B3
D806	B1	R818	B2	R952	B3
D807	B2	R819	B2	R953	B3
D808	C1	R820	B2	R954	B4
D809	C1	R821	B2	R955	B4
D810	C1	R822	C2	R956	B4
D811	B2	R823	B2	SG10	C3
D812	B2	R824	C2	SG15	D3
D813	B2	R825	B2	SG17	D3
D910	C3	R826	B2	SG18	D4
D911	C3	R827	B2	SG20	D4
D915	A2	R828	B2	SG21	D3
D916	A2	R829	B2	SG23	D4
F902	A3	R830	C1	SG24	D3
HS11	D4	R831	B1	SG26	D4
HS15	A1	R832	C1	SG29	C3
HS21	A7	R833	B1	SG30	D3
HS22	A1	R834	C1	SG32	D3
IC801	B2	R835	C1	SG37	D2
IC901	C3	R836	B2	SG38	D2
J807	C2	R837	C2	ZD801	A2
J813	C1	R838	C1	ZD901	C3
J814	C1	R839	C1	ZD902	C4
J815	C1	R840	C1	ZD920	A3
J816	B2	R841	C1	ZD921	A2
J818	A2	R842	C2	ZD922	A2

7.3 Key Board
715G1755-2

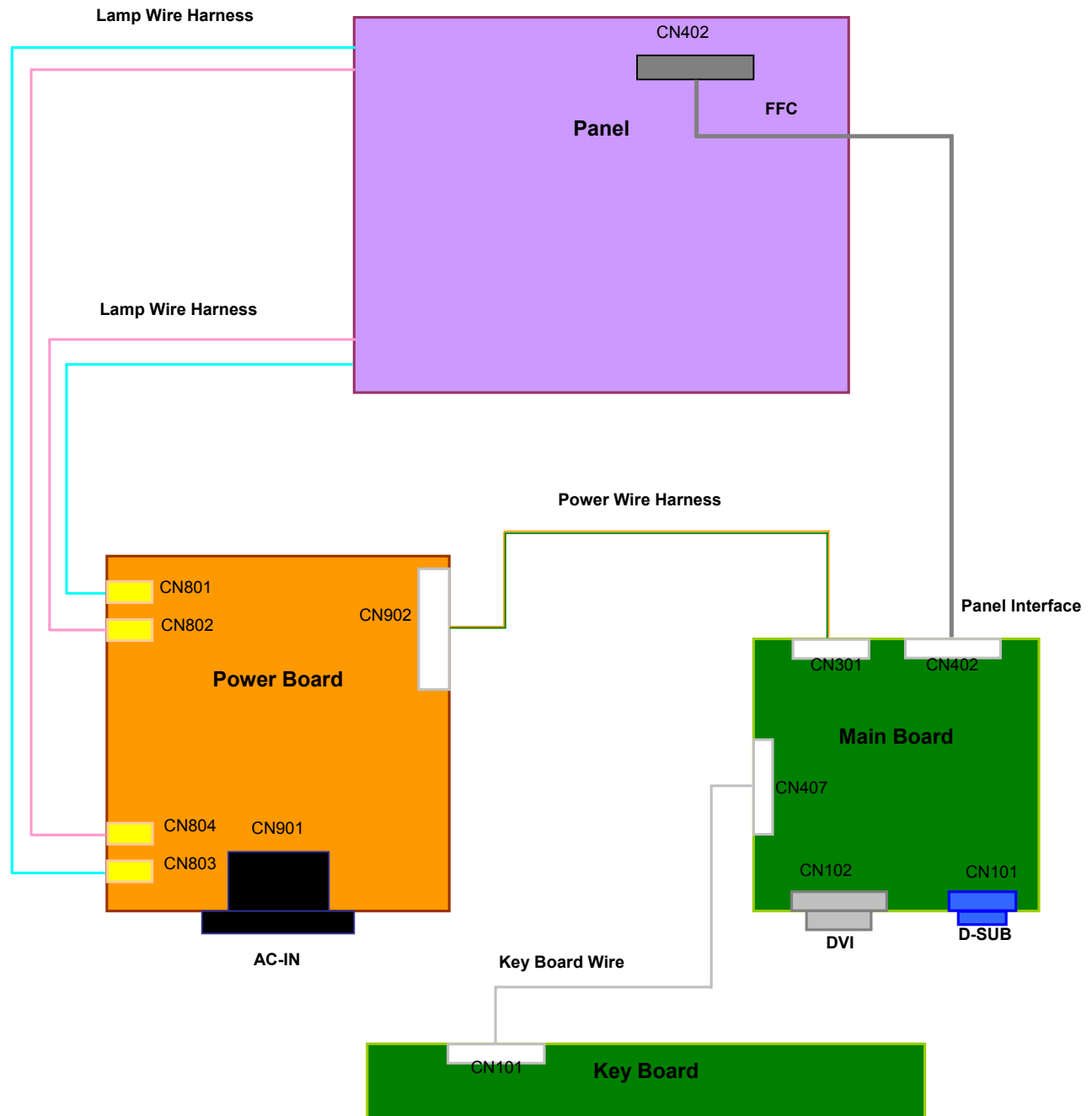


CN101	A1
LED1	A4
SW1	A5
SW2	A5
SW3	A5
SW4	A4
SW5	A4
SW6	A3
SW7	A3
SW8	A3
GND	A2



C101	A1
C102	A1
C103	A4
C104	A4
C105	A5
R100	A4
R101	A4
R102	A5
R103	A5
R104	A4
R105	A4
R106	A3
R107	A3
R108	A2
R109	A4

8. Wiring Diagram



9. Mechanical Instructions

1. Back View as Fig1

Place the monitor face down on a smooth surface as Fig 1. Be careful to avoid scratch and injury during the uninstallation.



Fig1

2. Remove the cable management as Fig2.



Fig2

3. Remove the base as Fig3~Fig4.



Fig3



Fig4

4. Remove the stand as Fig5 and Fig6.

Remove the four screws to remove the stand.



Fig5

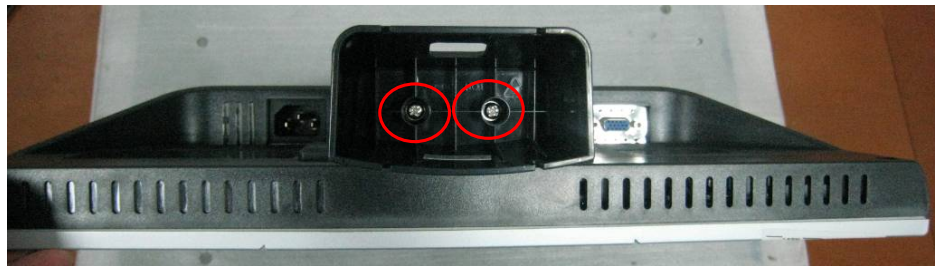


Fig6

5. Remove the hinge cover as Fig7~ Fig8.



Fig7



Fig8

5. Remove the hinge as Fig9.

Remove the four screws to remove the hinge as Fig9.



Fig9

6. Remove rear cover as Fig10.

a. Remove 3 screws to remove rear cover as Fig10.



Fig10

- b. Insert plastic putty knife into the gap between front bezel and back cover to release 3 snaps on the left, 3 snaps on the right and 5 snaps on the top as Fig11 - Fig14

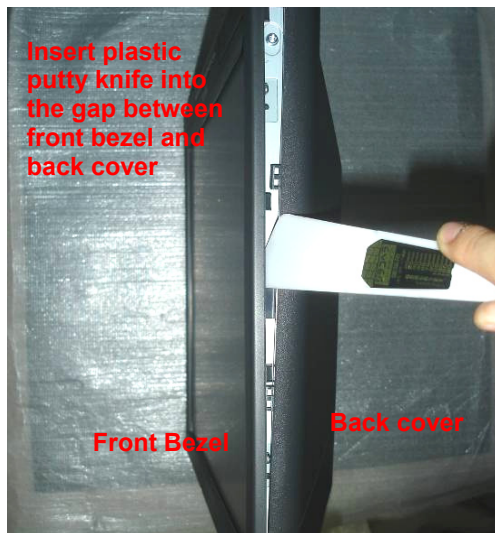
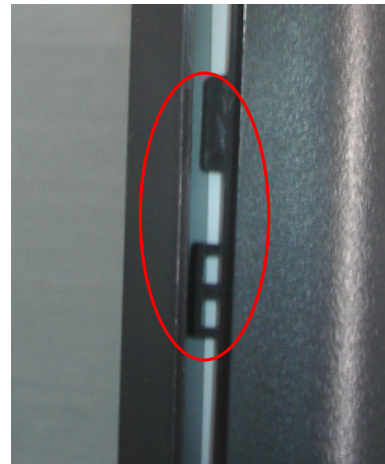


Fig11

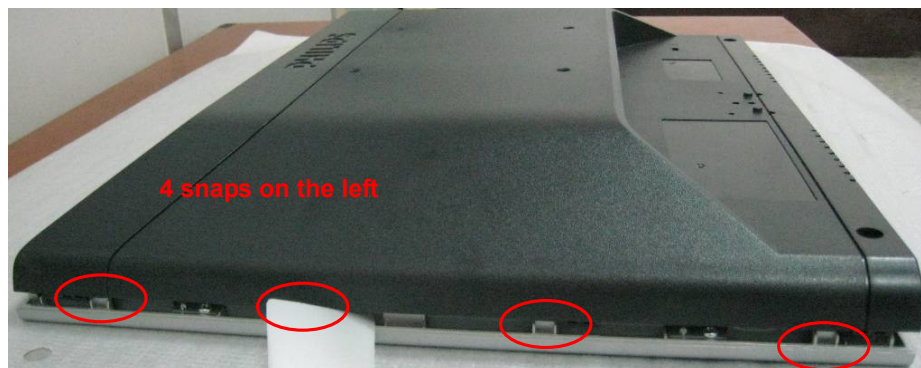


Fig13



Fig13



Fig14

7. Remove shielding as Fig15.

Remove 9 screws to remove shielding as Fig15.

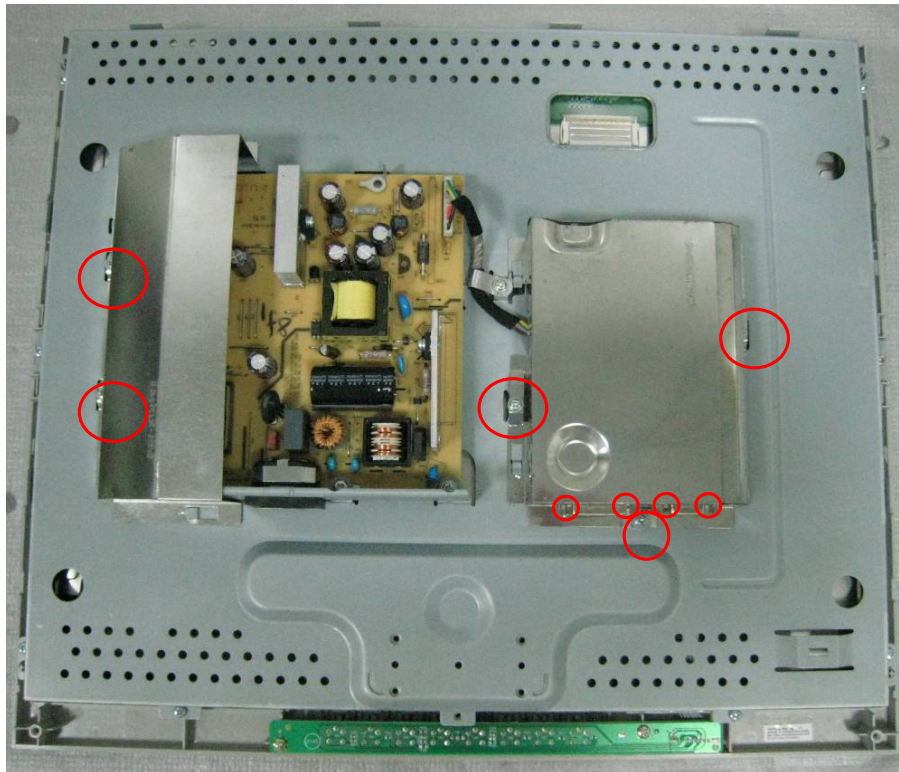


Fig15

8. Remove main board and power board as Fig16.

Remove 8 screws to remove main board and power board as Fig16.

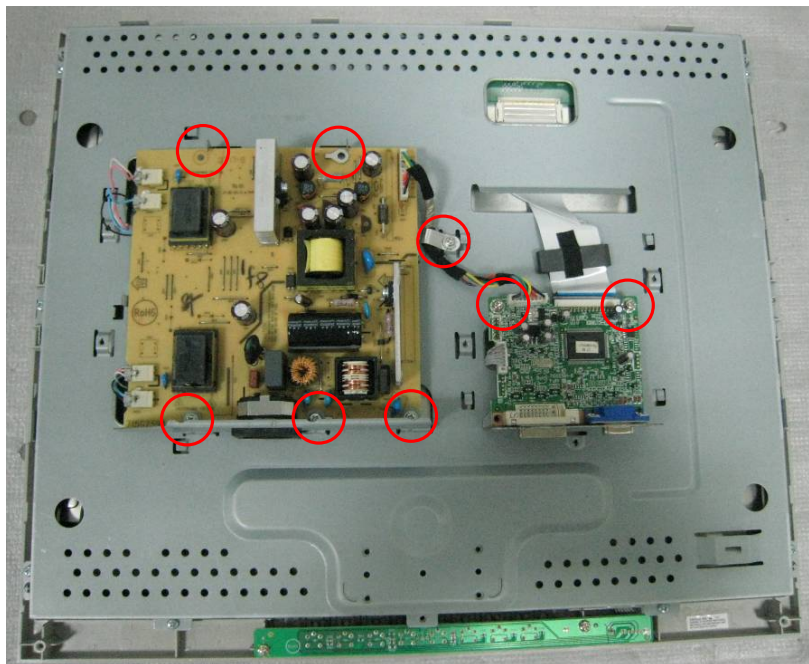


Fig16

9. Remove the bezel as Fig17- Fig19

- Remove 3 screws at the bottom of the main frame as Fig17.
- Remove 3 screws at the left of bezel as Fig18.
- Remove 3 screws at the right of bezel as Fig19.

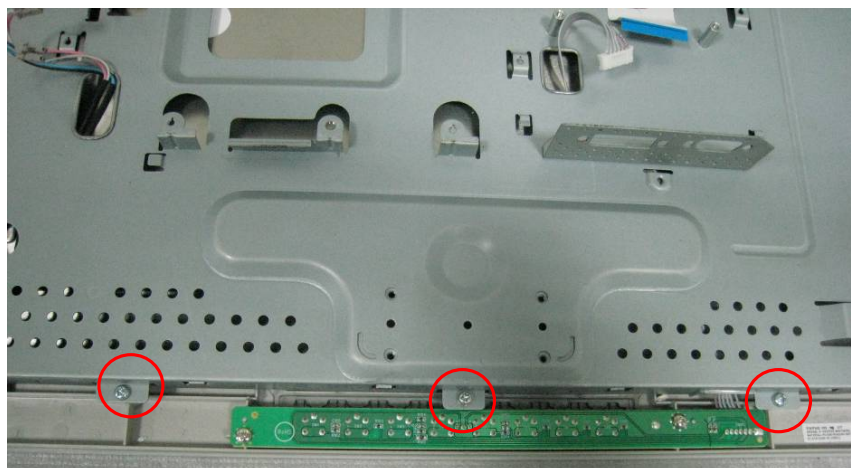


Fig17

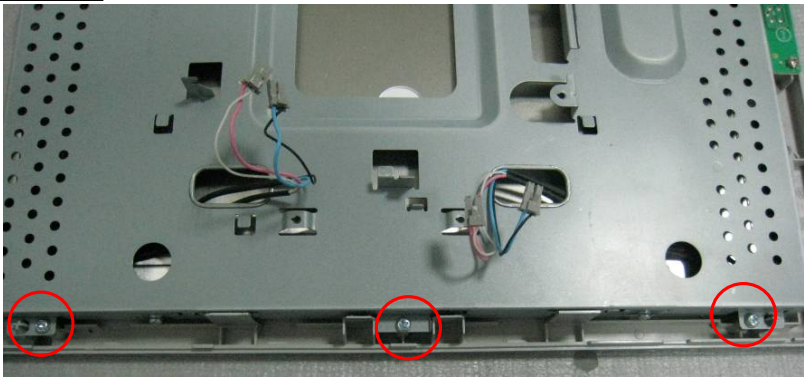


Fig18



Fig19

10. Remove the main frame as Fig20- Fig21.

- a. Remove 2 screws at the right of main frame Fig20.
- b. Remove 2 screws at the left and 1 screw at the bottom of the main frame Fig21.



Fig20

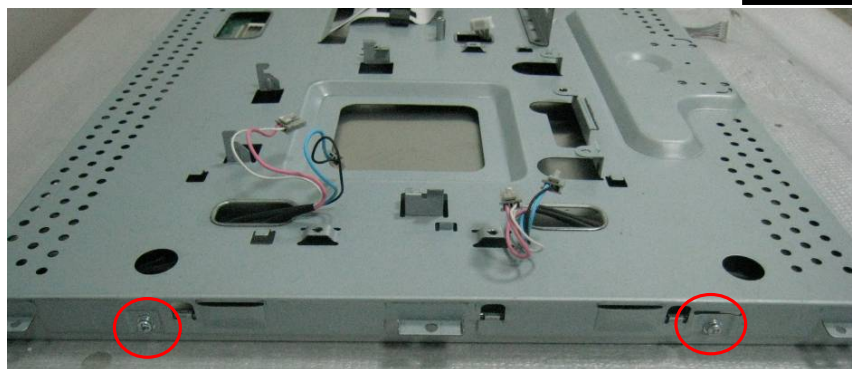


Fig21

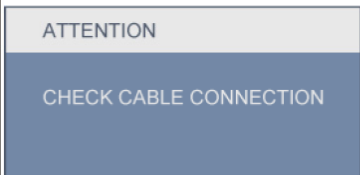
11. The end as Fig22.



Fig22

10. Trouble Shooting

This page deals with problems that can be corrected by a user. If the problem still persists after you have tried these solutions, contact Philips customer service representative.

Common Problems	
Having this problem	Check these items
No Picture (Power LED not lit)	• Make sure the power cord is plugged into the power outlet and into the back of the monitor. • First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position.
No Picture (Power LED is amber or yellow)	• Make sure the computer is turned on. • Make sure the signal cable is properly connected to your computer. • Check to see if the monitor cable has bent pins. • The Energy Saving feature may be activated
Screen says 	• Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). • Check to see if the monitor cable has bent pins. • Make sure the computer is turned on.
AUTO button not working properly	• The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. • It may not work properly if using nonstandard PC or video card.
Imaging Problems	
Display position is incorrect	• Press the Auto button. • 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.

Common Problems

Having this problem

Check these items

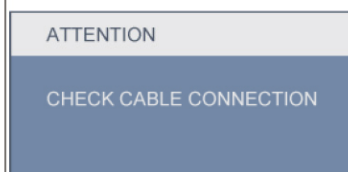
No Picture
(Power LED not lit)

- Make sure the power cord is plugged into the power outlet and into the back of the monitor.
- First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position.

No Picture
(Power LED is amber or yellow)

- Make sure the computer is turned on.
- Make sure the signal cable is properly connected to your computer.
- Check to see if the monitor cable has bent pins.
- The Energy Saving feature may be activated

Screen says



- Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide).
- Check to see if the monitor cable has bent pins.
- Make sure the computer is turned on.

AUTO button not working properly

- The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows.
- It may not work properly if using nonstandard PC or video card.

Imaging Problems

Display position is incorrect

- Press the Auto button.
- Adjust the image position using the Phase/Clock of More Settings in OSD Main Controls.

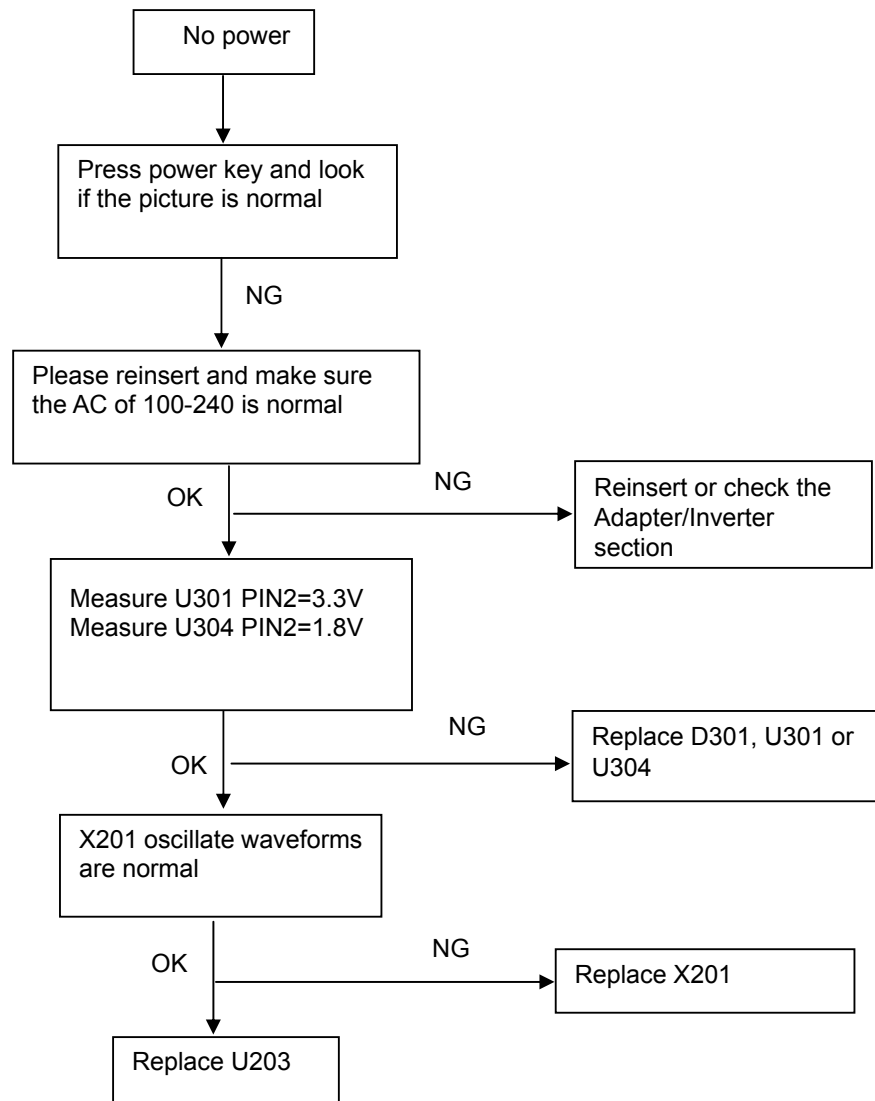
Image vibrates on the screen

- Check that the signal cable is properly connected to the graphics board or PC.

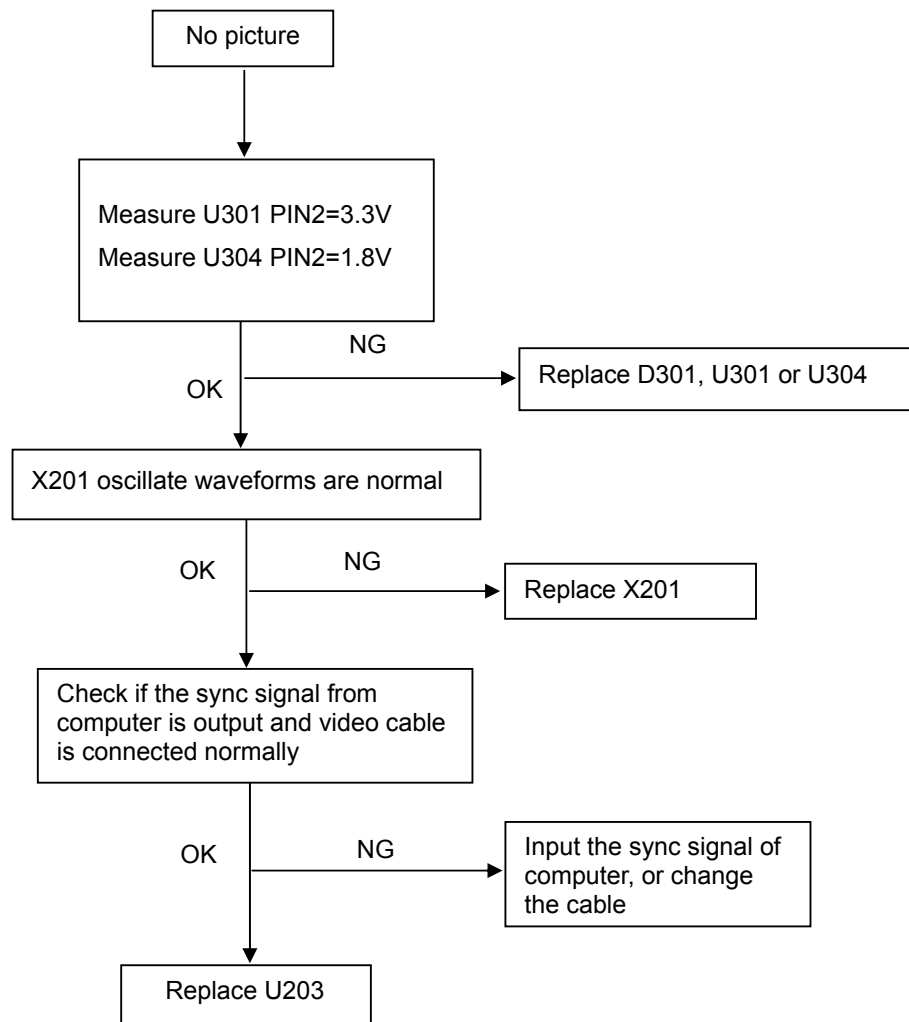
11. Repair Flow Chart

11.1 Main Board

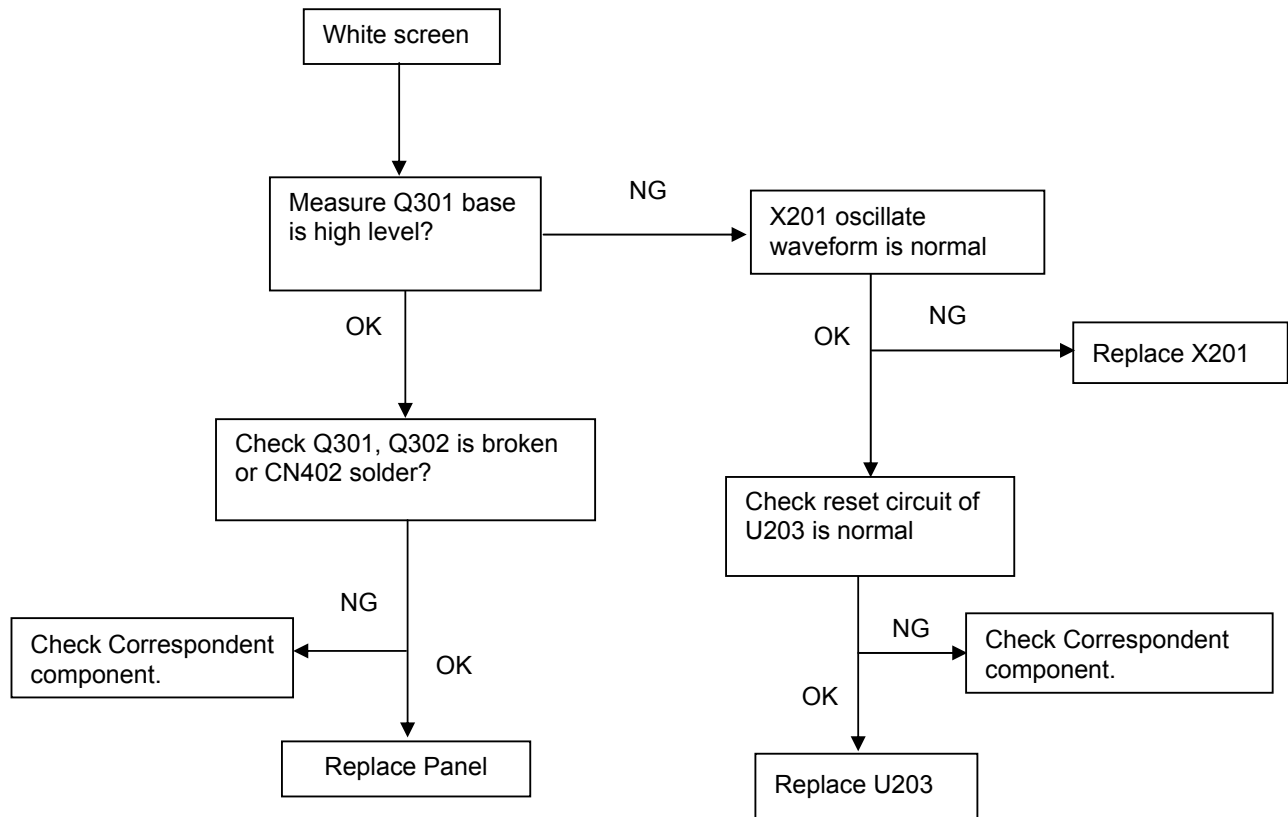
(1). No Power



(2). No Picture

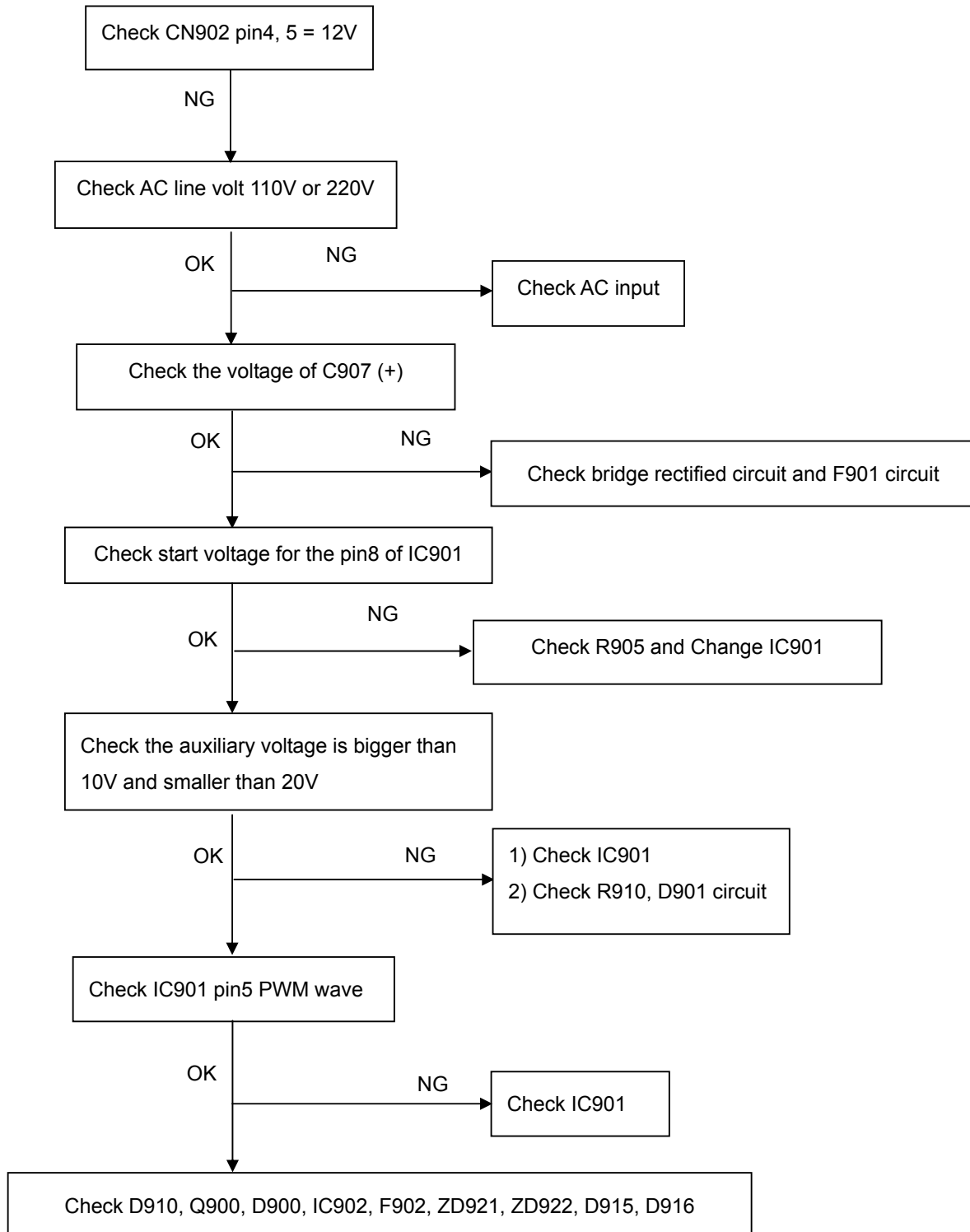


(3). White screen

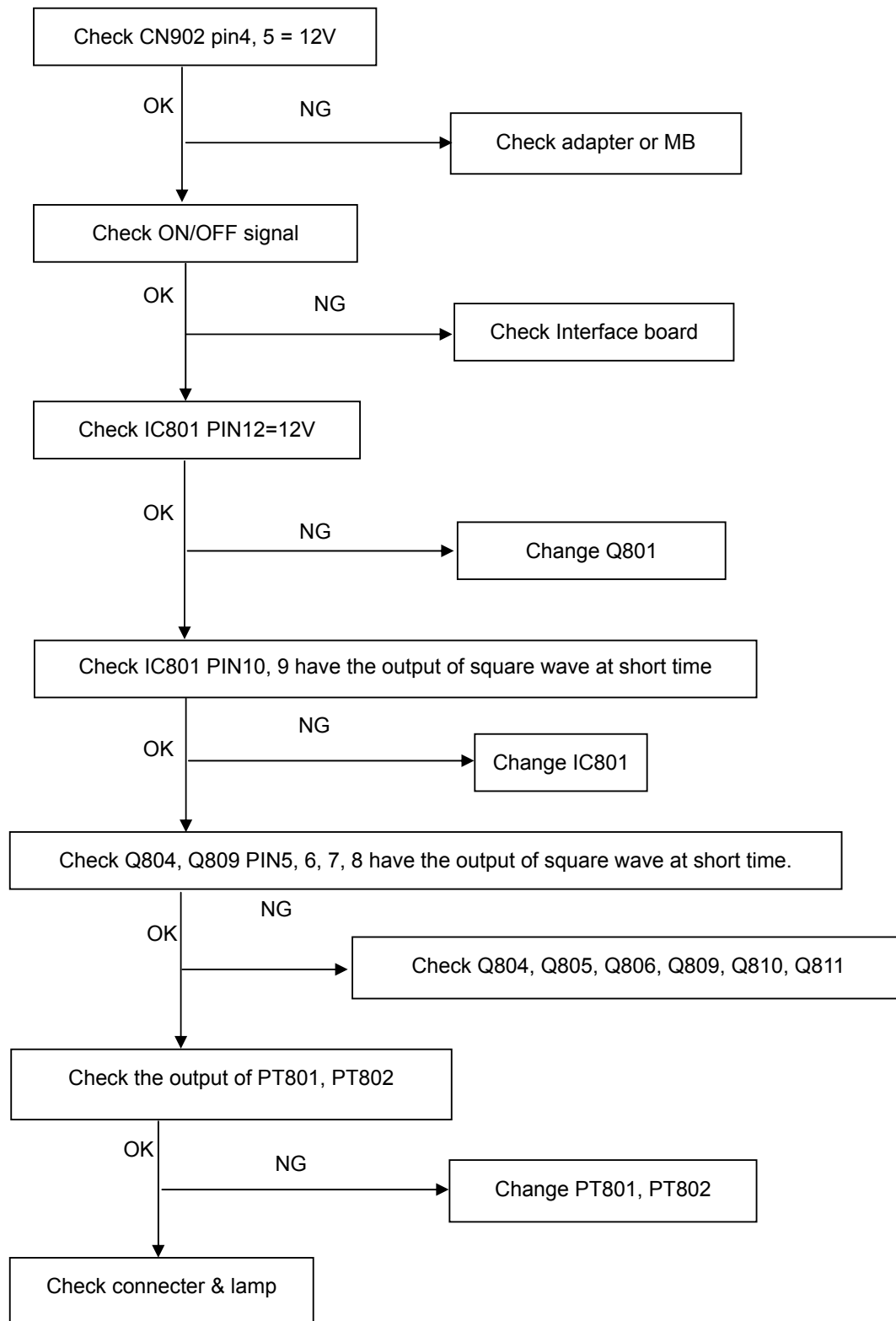


11.2. Power/Inverter Board

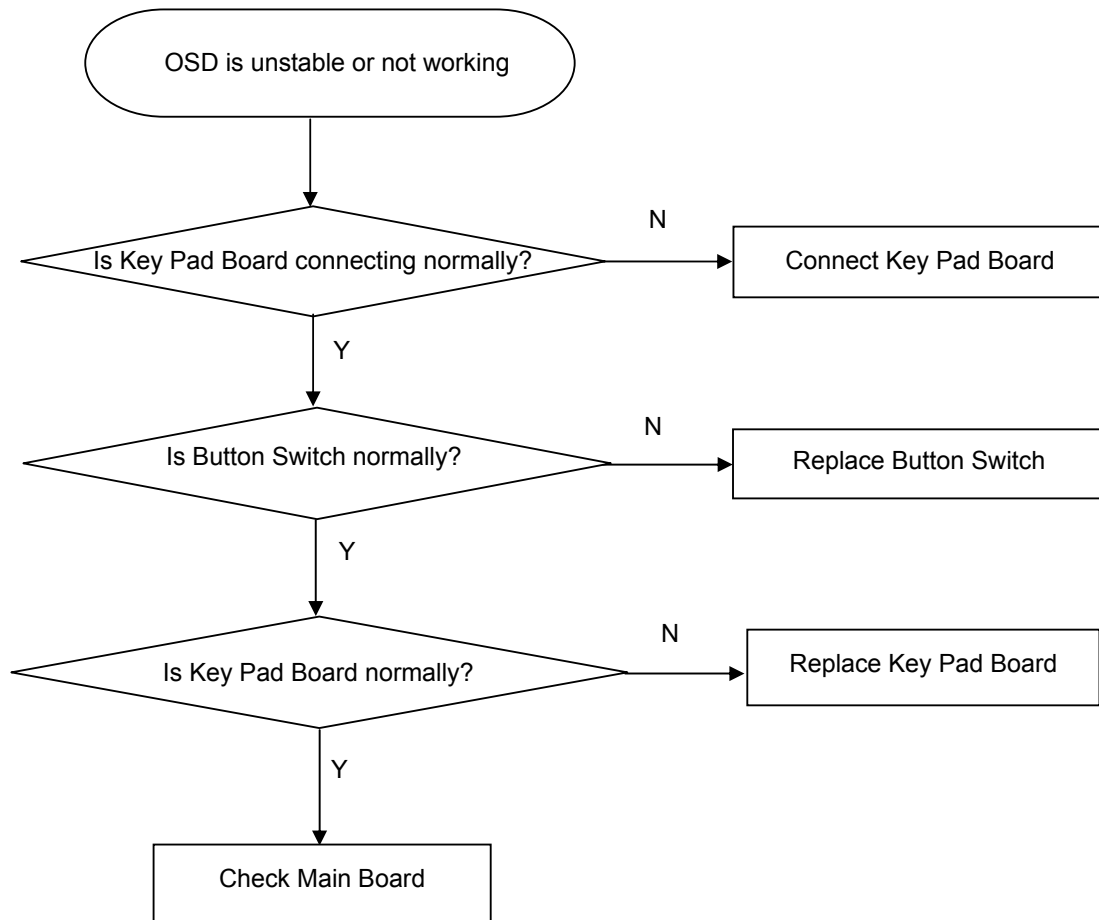
(1) No power



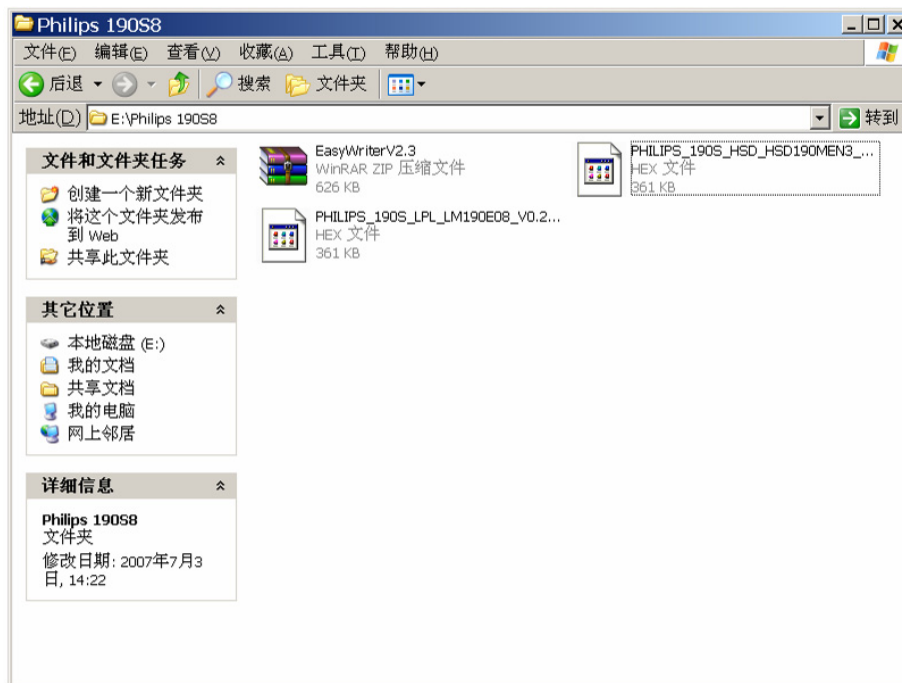
(2) W / LED, No Backlight



11.3 Key Board



12. ISP Instruction

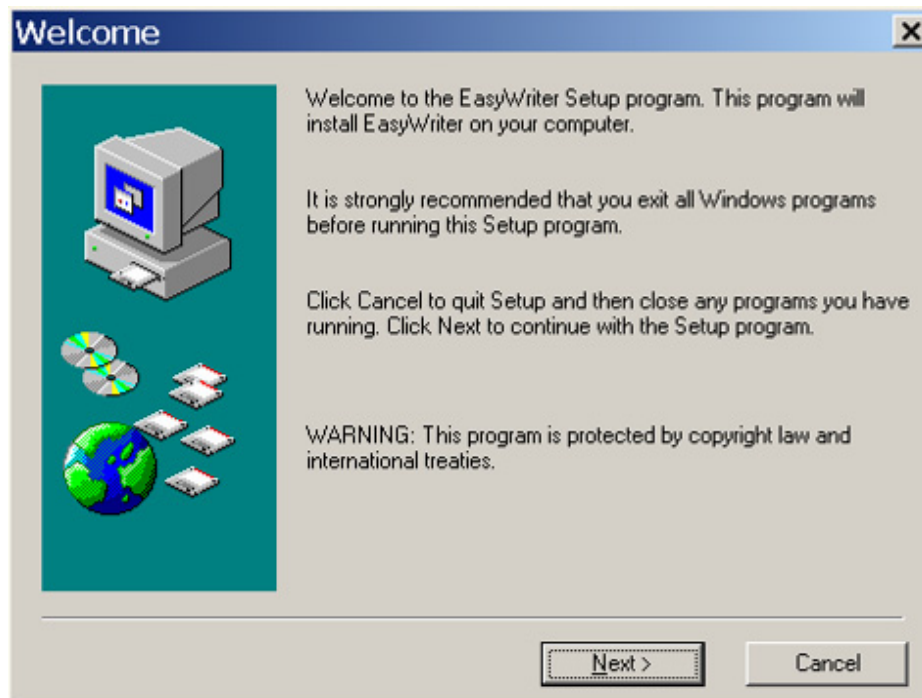
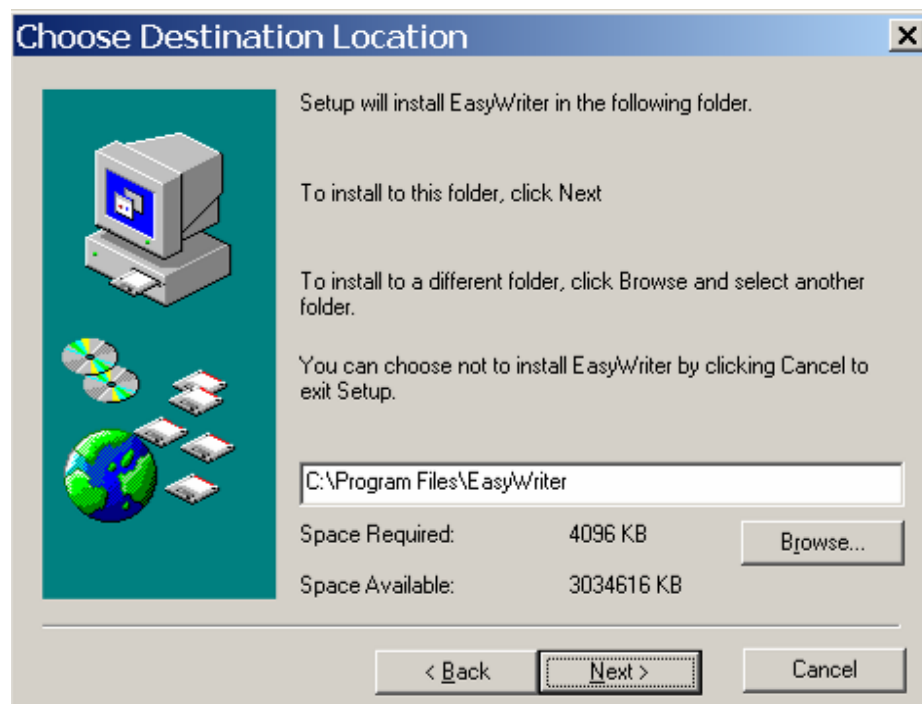


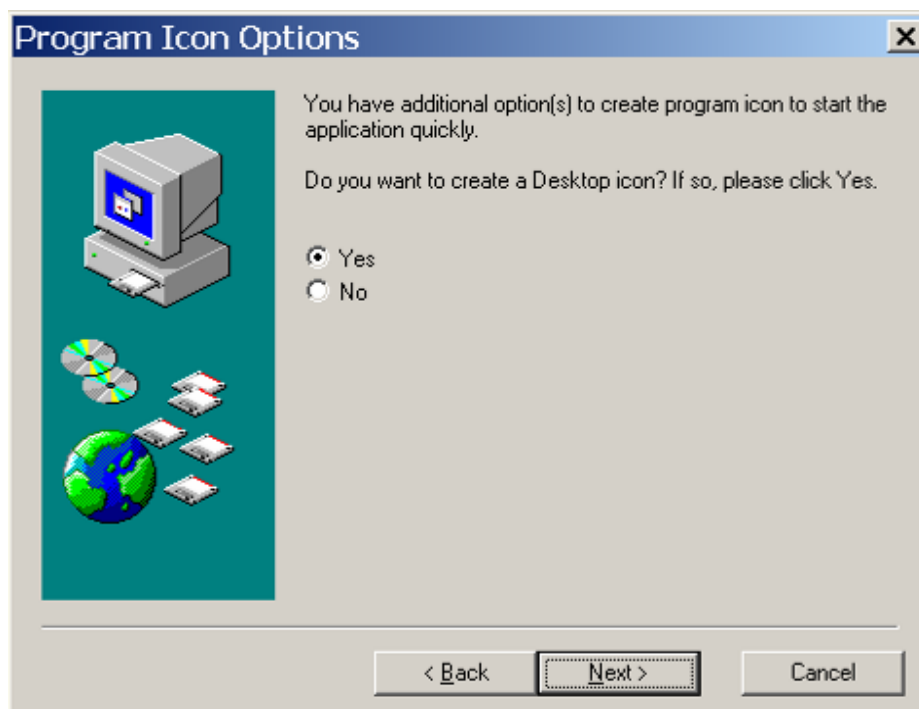
(1). Install the program software

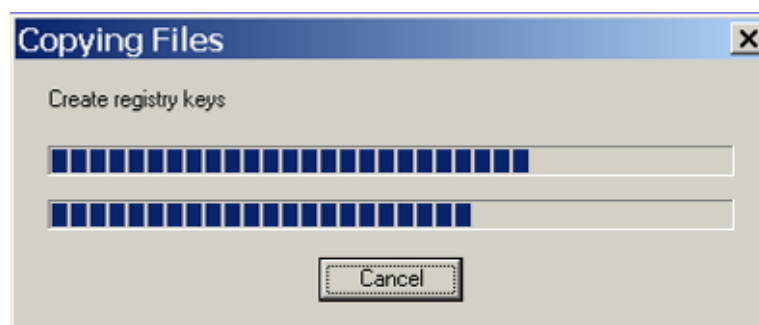
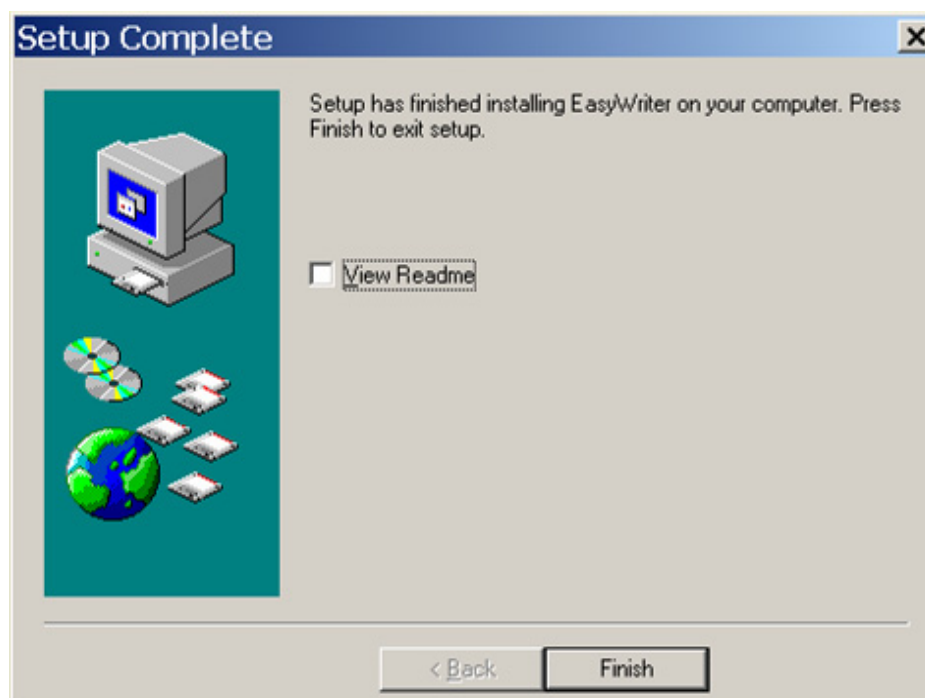
- a. First decompressing files  EasyWriterV2.3 WinRAR ZIP 压缩文件 626 KB, as follow:

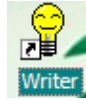


b. Double – click  EasyWriterV2...., start to install as follows:



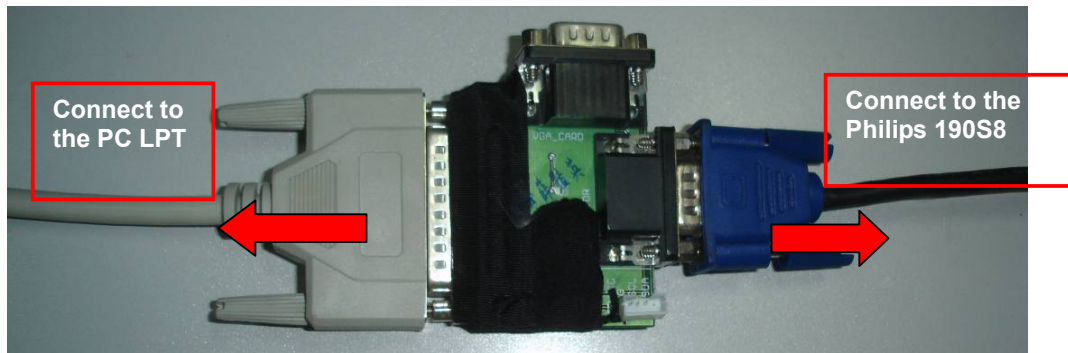
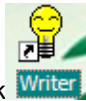




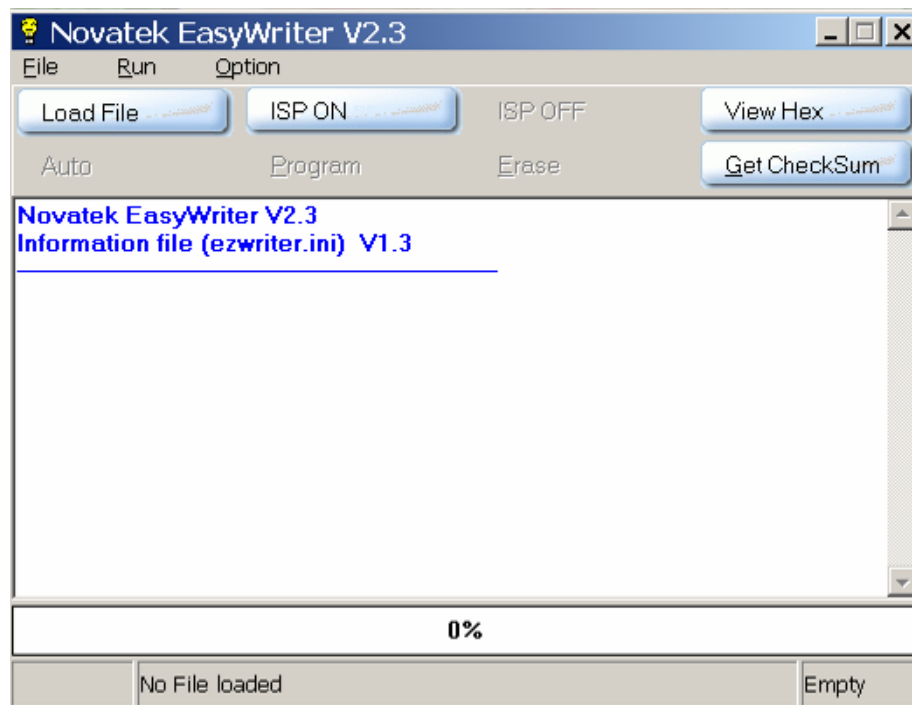


c. There will be a shortcut key  appears on the desktop.

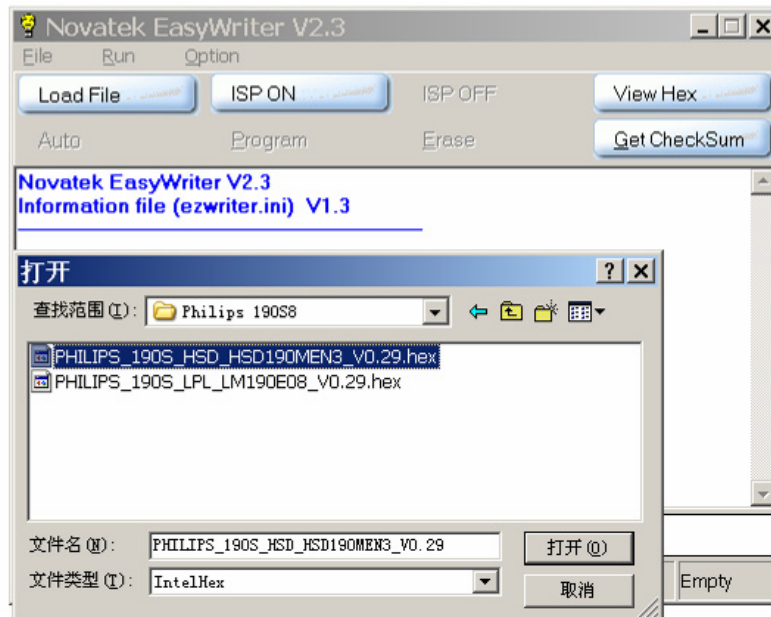
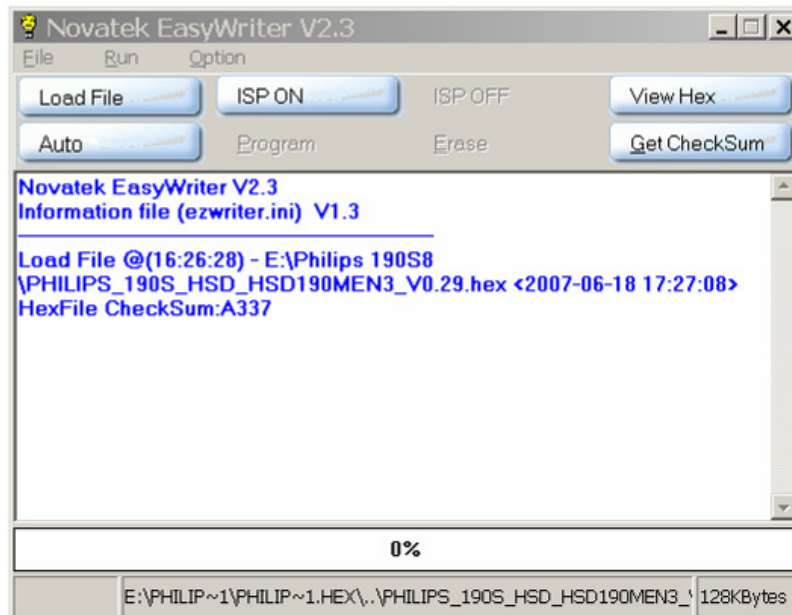
(2). Connect the ISP board as follow:



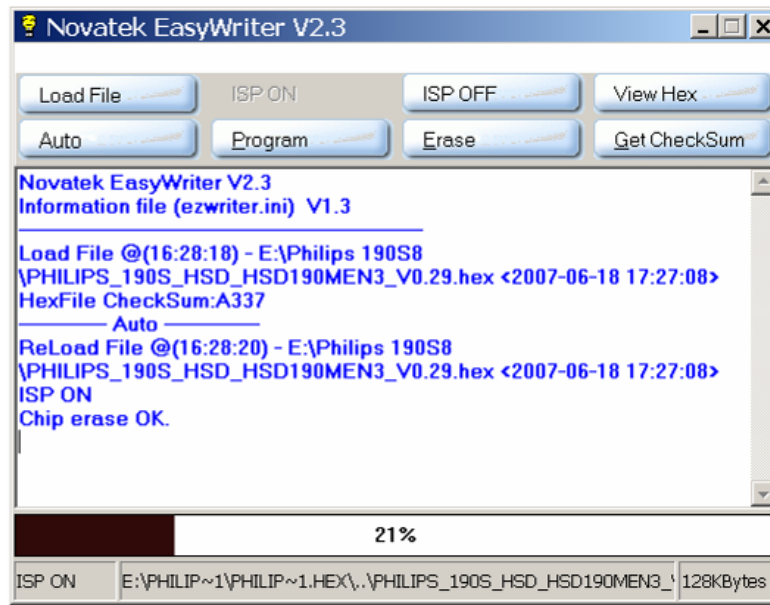
a. Double-click  , running the program as follows:



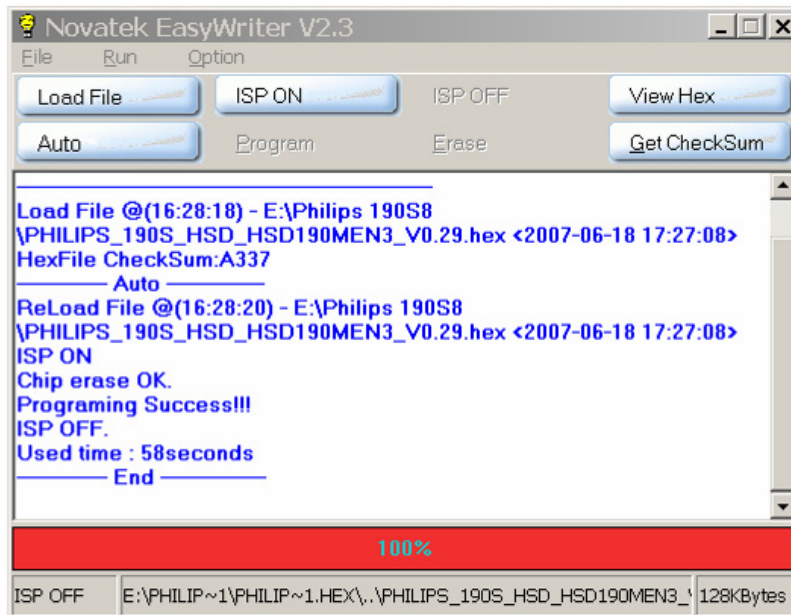
- b. Click  icon, search the program "PHILIPS_190S_HSD_HSD190MEN3_V0.29.hex", and click open:



c. Click **Auto** icon, the writer is in processing...



d. Until appears the follow Fig, writer completed.



13. DDC Instruction

General

DDC Data Re-programming

In case the main EEPROM with Software DDC which store all factory settings were replaced because a defect, repaired monitor' the serial numbers have to be re-programmed.

It is advised to re- soldered the main EEPROM with Software DDC 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 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.

1. An i486 (or above) personal computer or compatible.
2. Microsoft operation system Windows 95/98/2000/XP.
3. " PORT95NT.exe, WinDDC_ setup" program.
4. Software OSD SN Alignment kits

The kit contents:

- a. OSD SN BOARD x1
- b. Printer cablex1
- c. VGA cable x1
- d. Digital cable x1
- e. 12V DC power source

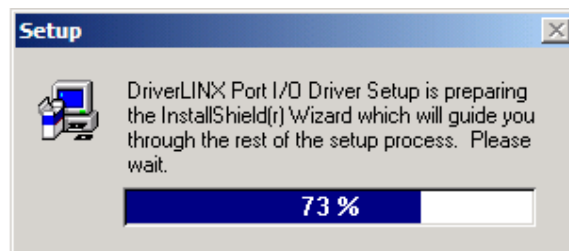
1. Install the "PORT95NT.EXE", and restart the computer.

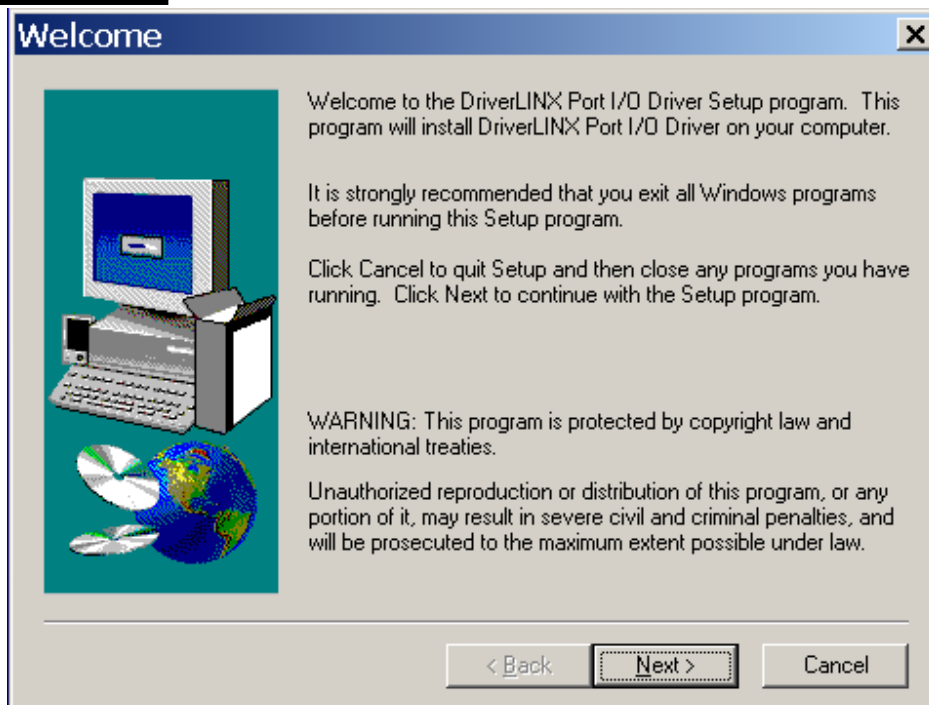
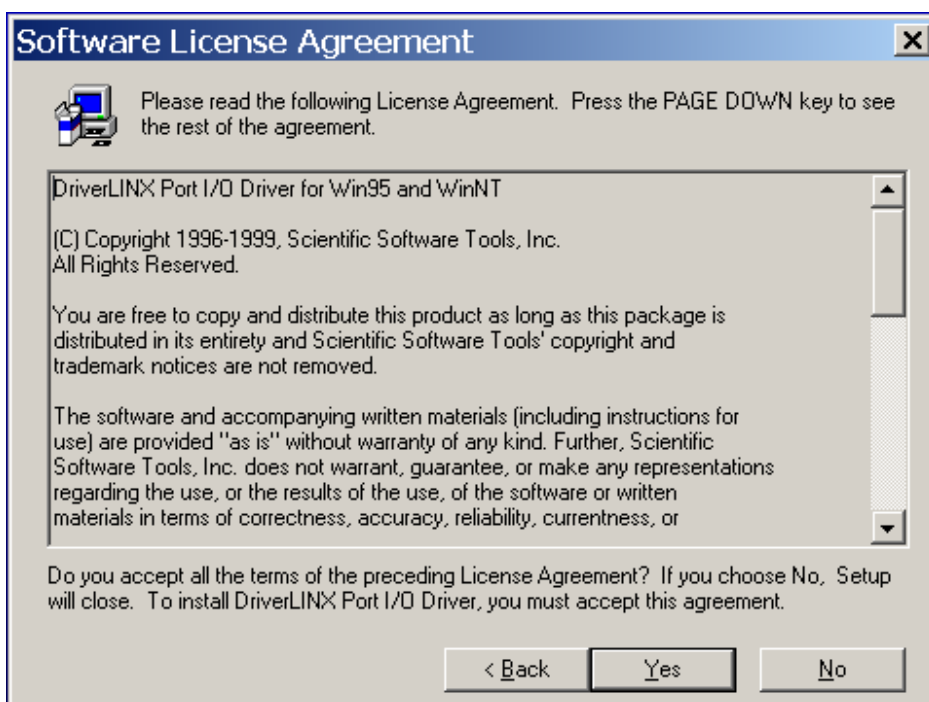
You must install the

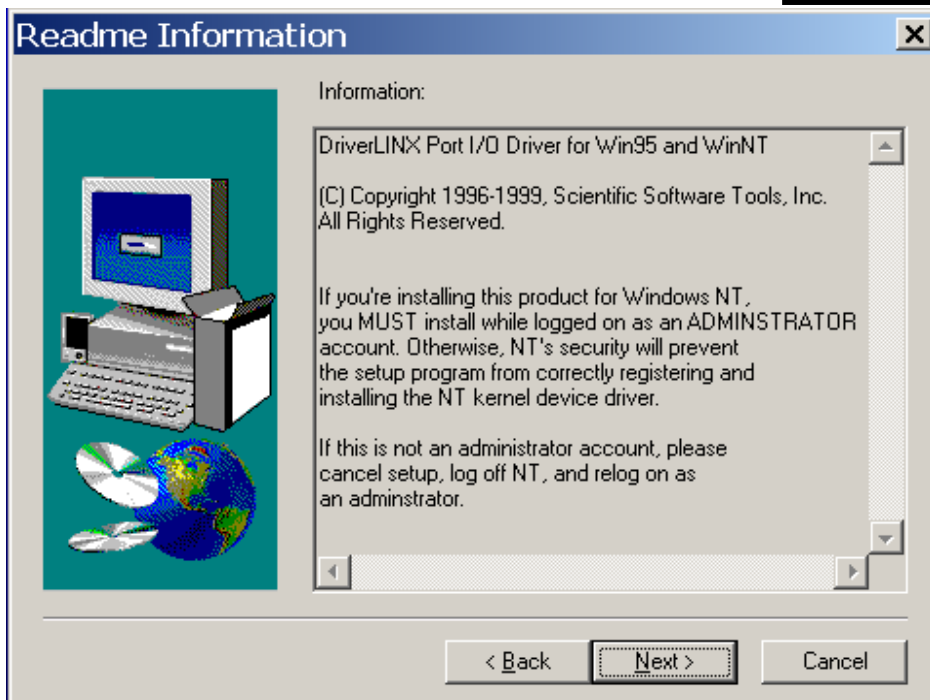
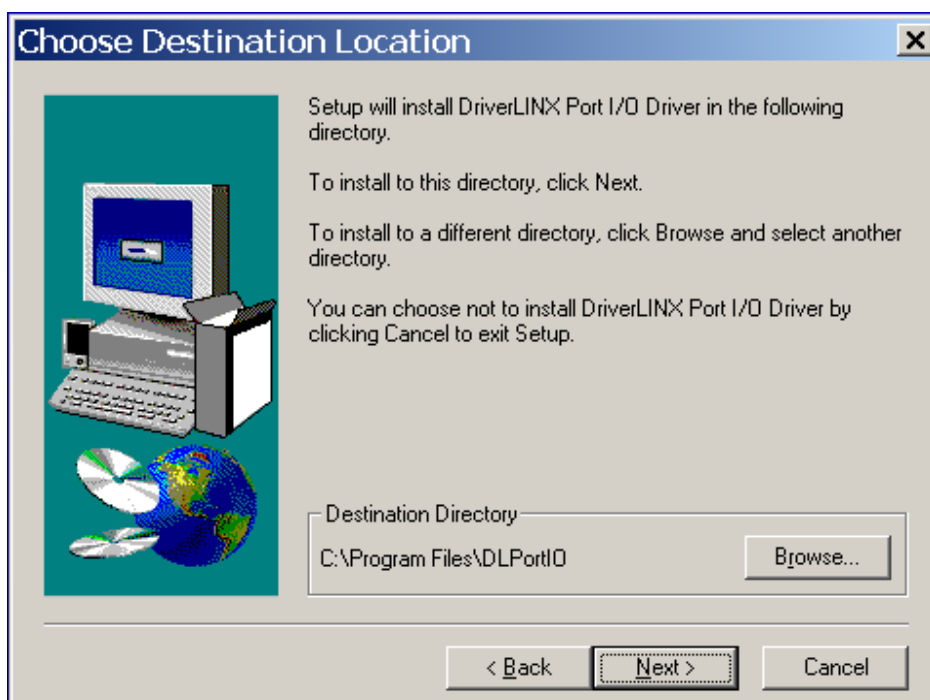


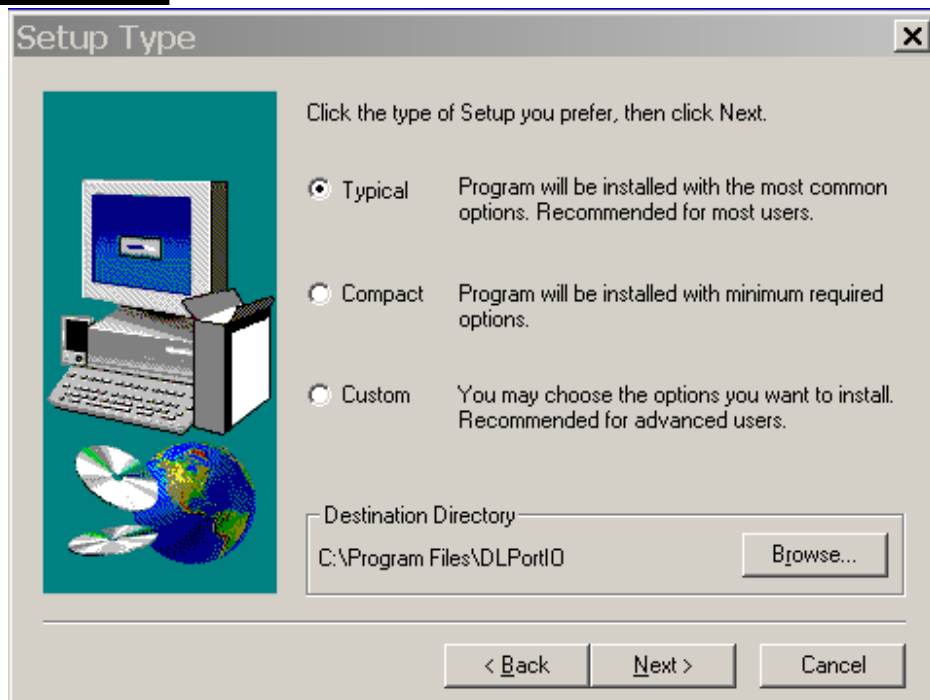
PORT95NT.EXE
PackageForTheWeb Stub
InstallShield Software Corpora...

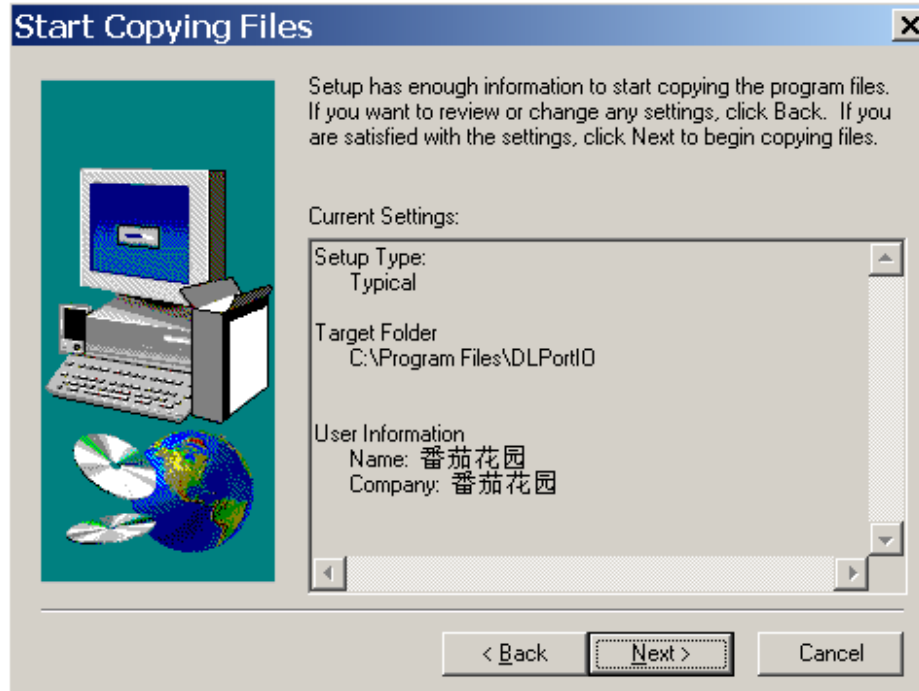
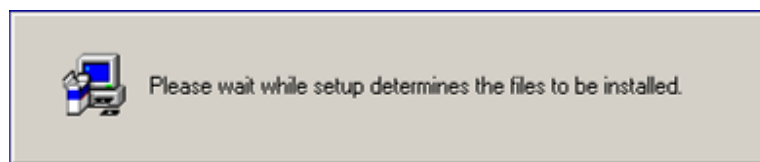
at the first. The processing as follows:



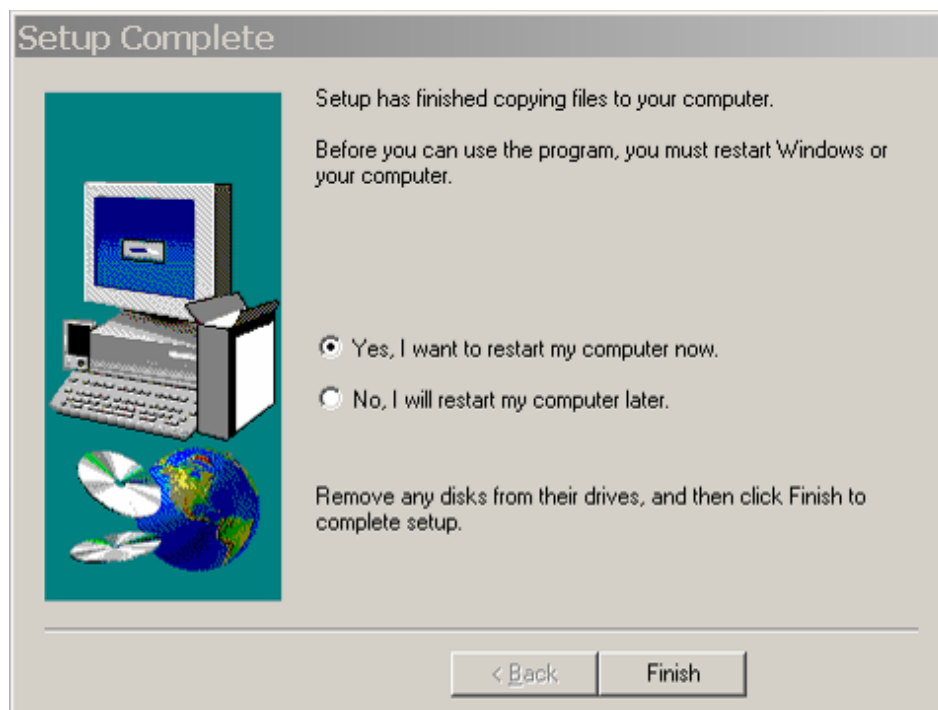








Click  to complete the installation.



Note: After installation, you must restart the PC to take the setup to effect.

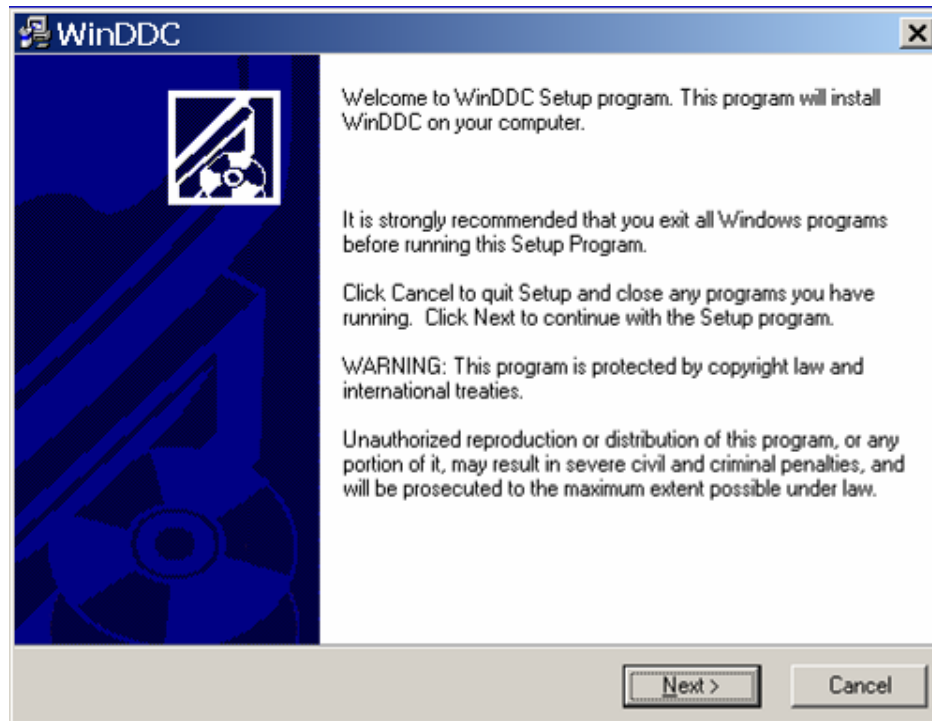
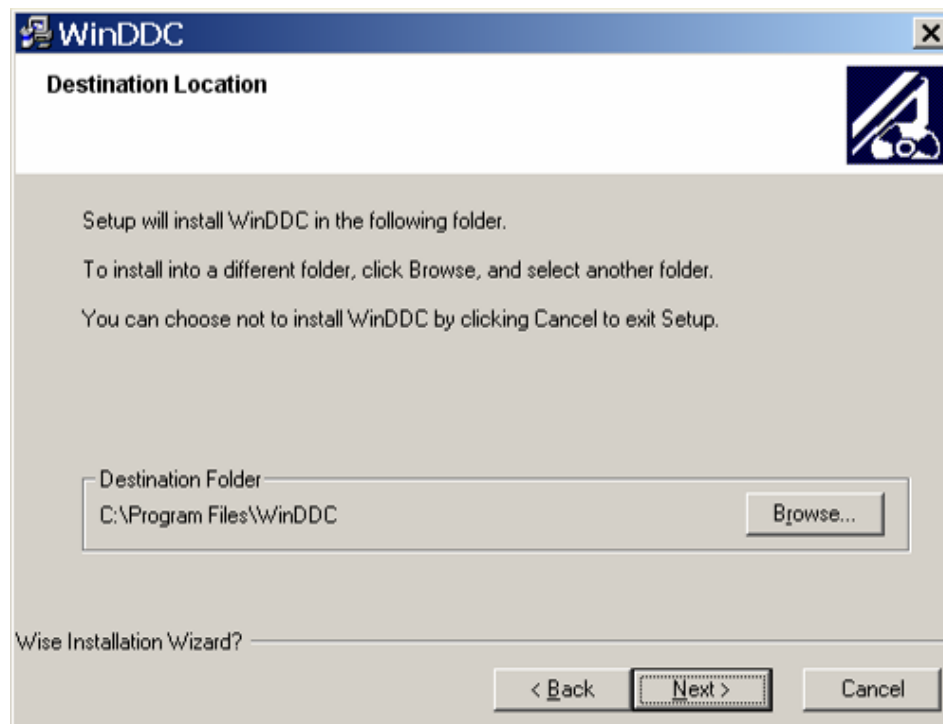
2. Install the "WinDDC_setup"

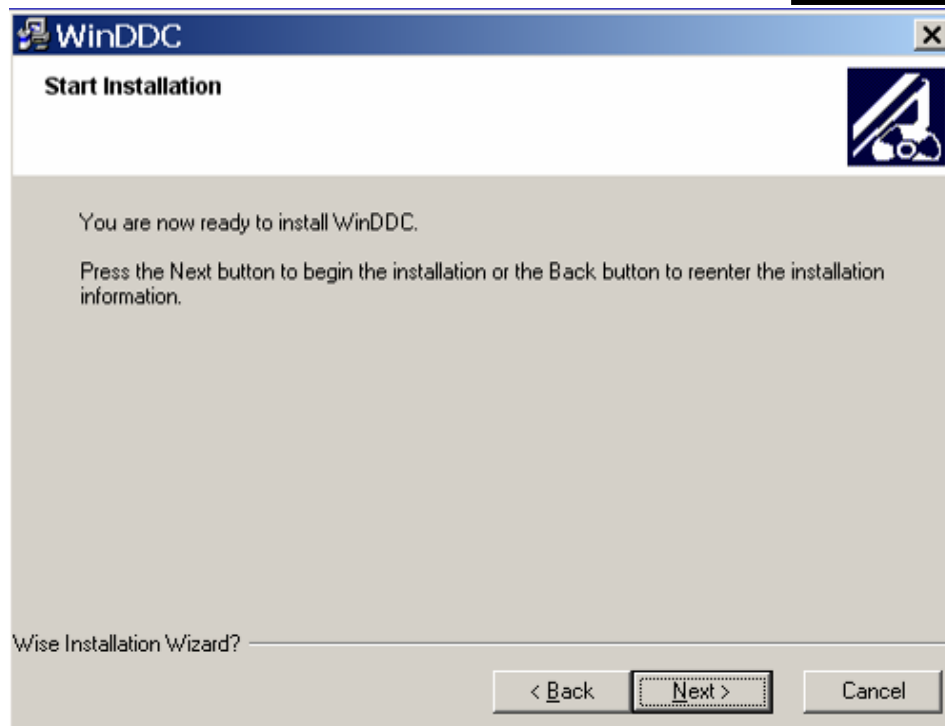
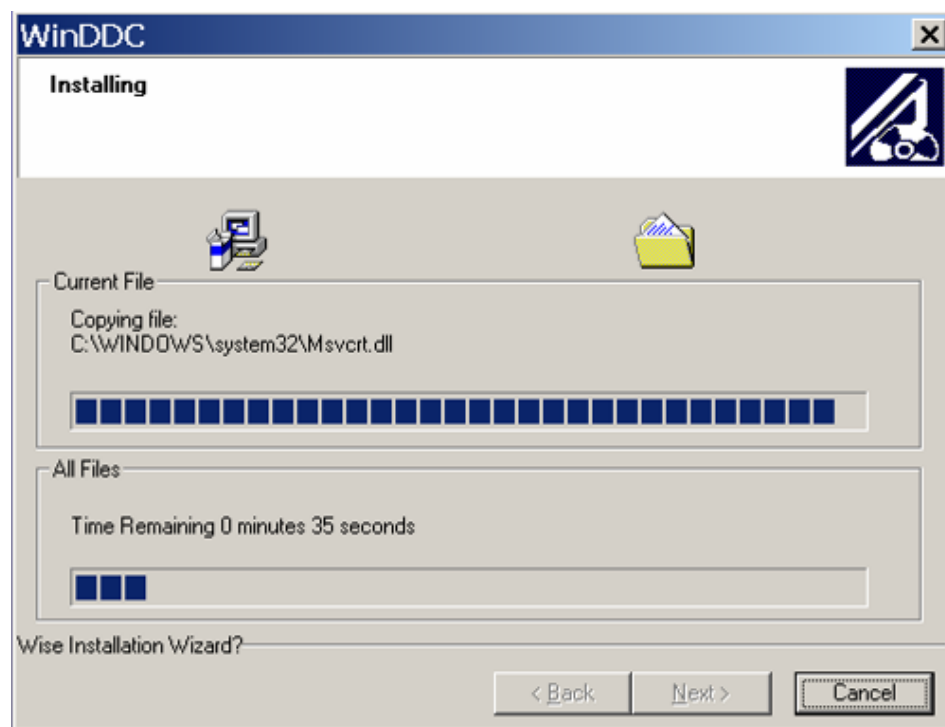
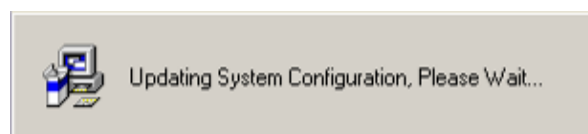


WinDDC_setup

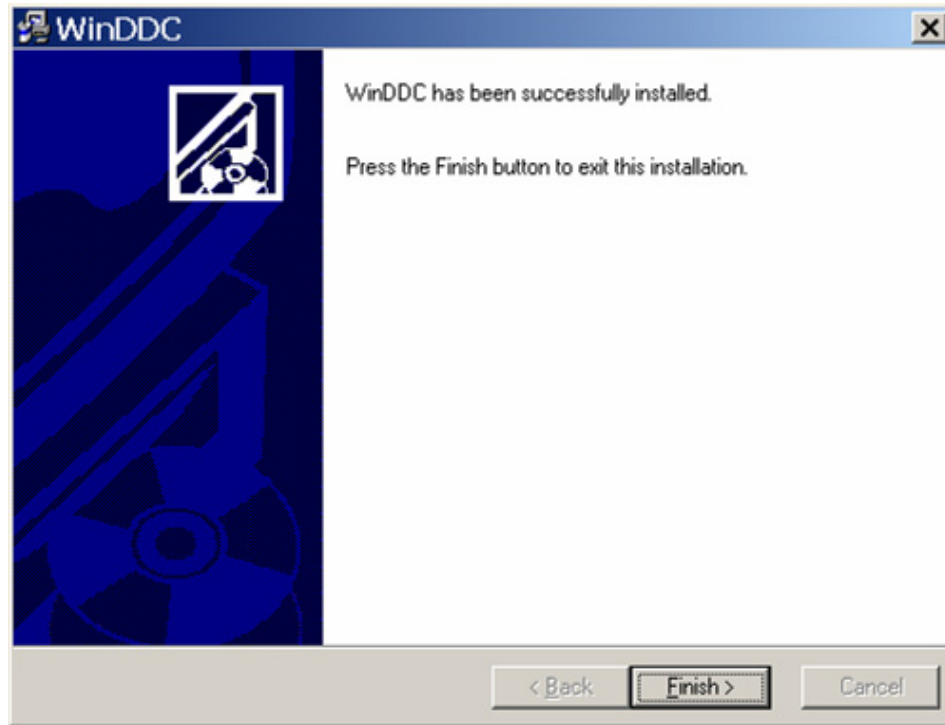
Second, you must install the

. The processing as follows:

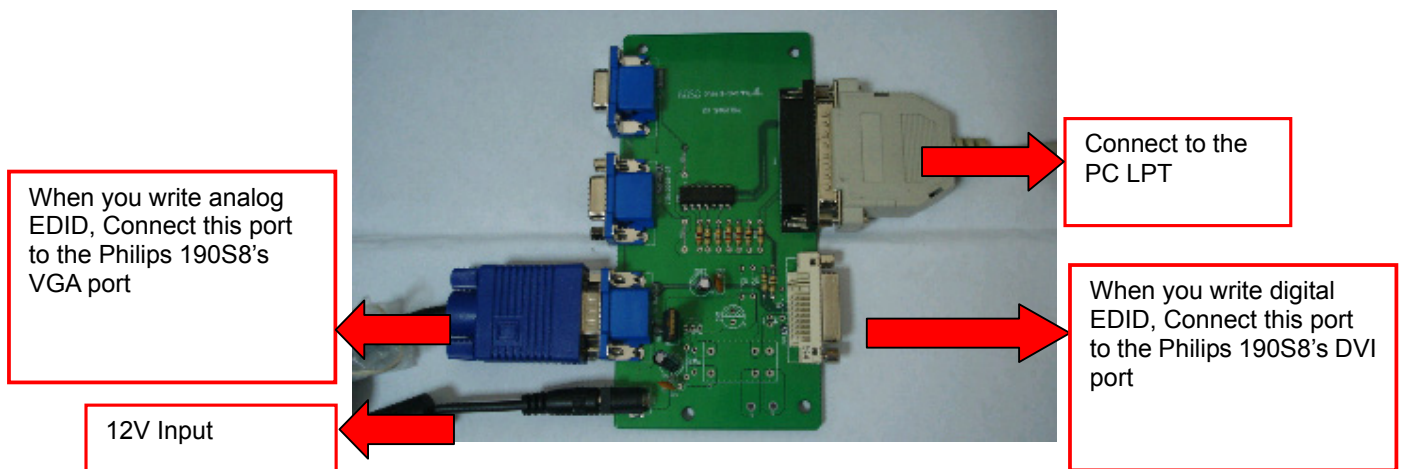




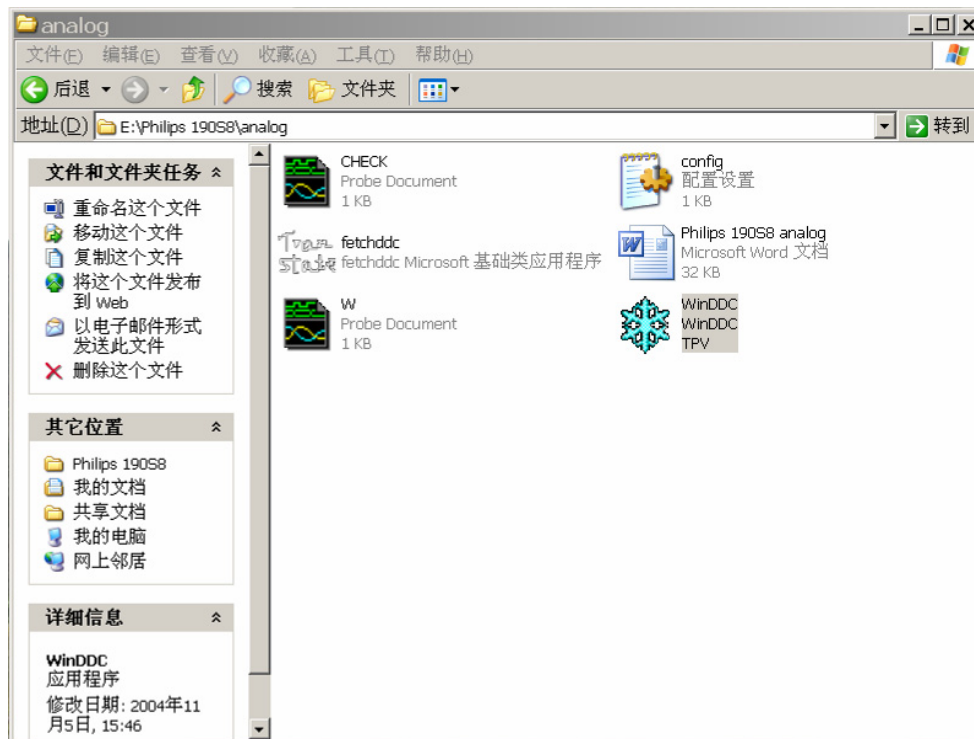
Click  to complete the installation.



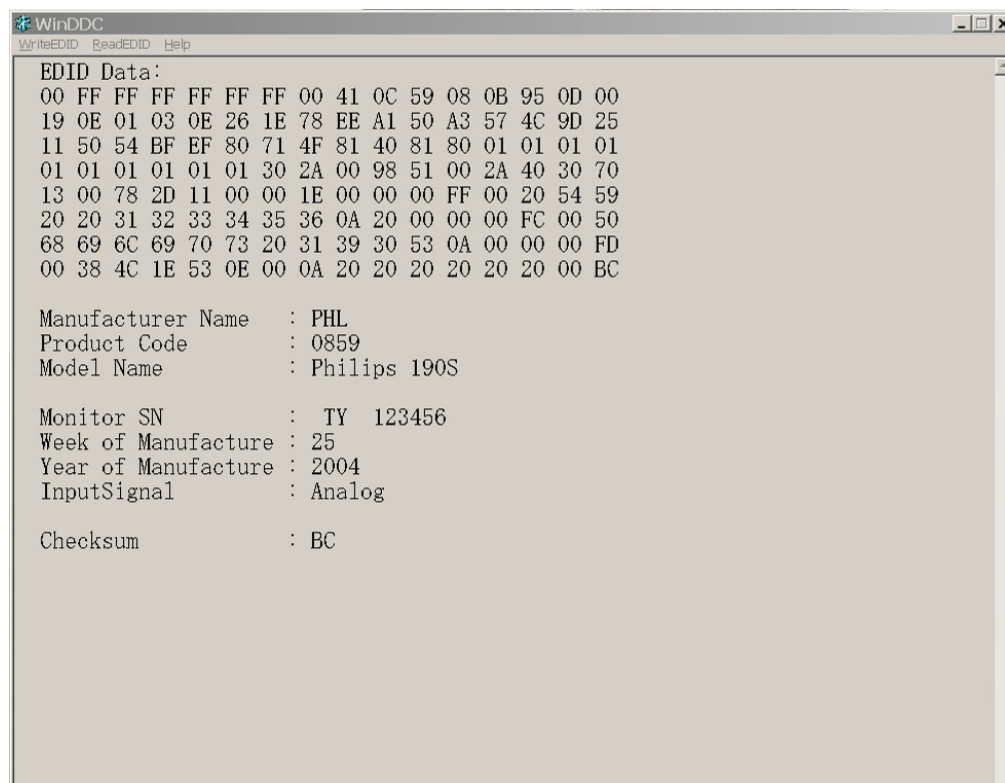
3. Connect the DDC board as follow:



4. Take analog DDC write for example, as follow

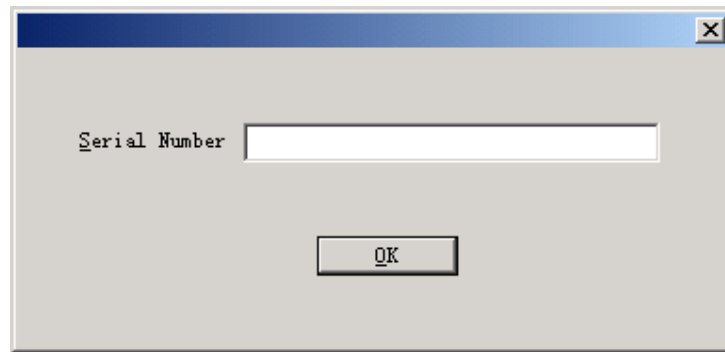


a. Double-click **WinDDC.exe**, appear as follow Figs :

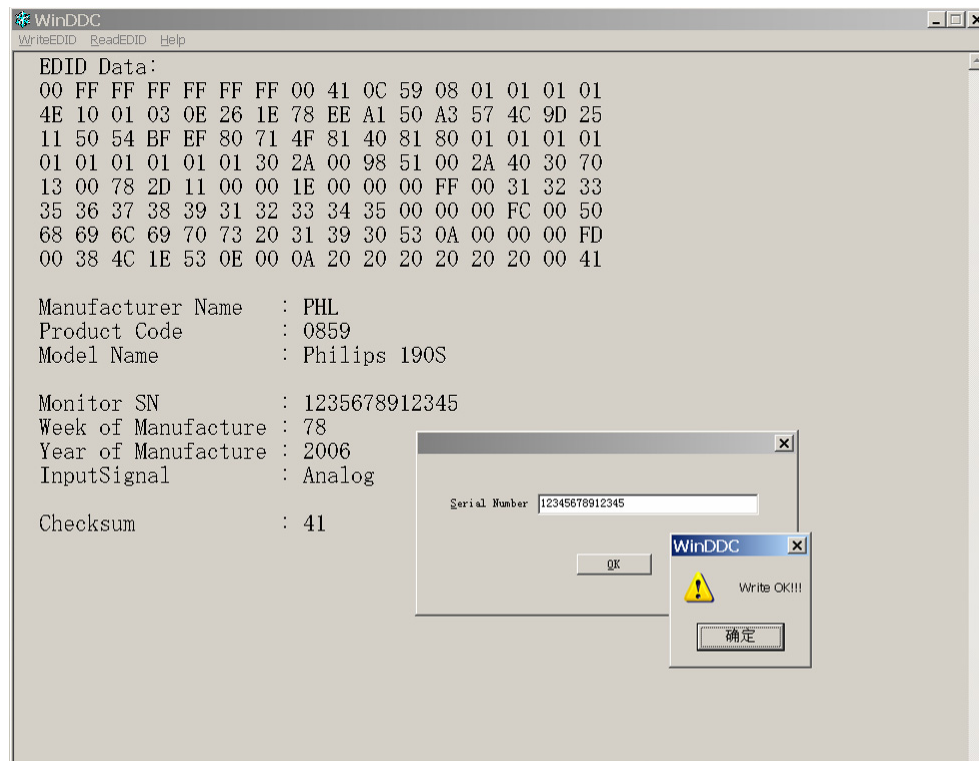


b. Click

WriteEDID



c. Key 14 numbers in the Serial Number blank, then click “OK”. Now analog DDC Write completes, as follow.



Note: The way of digital DDC write is the same as analog DDC write.

190S8 EDID**Analog**

128 bytes EDID Data (Hex):

```

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

0:  00 FF FF FF FF FF FF 00 41 0C 59 08 01 01 01 01
16: 0C 0D 01 03 0E 26 1E 78 EE A1 50 A3 57 4C 9D 25
32: 11 50 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
48: 01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
64: 13 00 78 2D 11 00 00 1E 00 00 00 FF 00 32 31 33
80: 32 33 31 32 33 32 31 33 32 33 00 00 00 FC 00 50
96: 68 69 6C 69 70 73 20 31 39 30 53 0A 00 00 00 FD
112: 00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 00 A2

```

Decoded EDID data

<---Header--->

Header: 00 FF FF FF FF FF FF 00

<-x-Header-x->

<---Vendor/Product Identification--->

```

ID Manufacturer Name:   PHL
ID Product Code:        0859
ID Serial Number:       01010101
Week of Manufacture:    12
Year of Manufacture:    2003

```

<-x-Vendor/Product Identification-x->

<---EDID Structure Version/Revision--->

```

EDID Version#:          01
EDID Revision#:         03

```

<-x-EDID Structure Version/Revision-x->

<---Basic Display Parameters/Features--->

```

Video i/p definition:   Analog
Signal Level Standard:  0.700V/0.300V(0.700Vpp)
Setup:                  Blank-to-Black not expected
Separate Sync Support:  Yes
Composite Sync Support: Yes
Sync. on green video supported: Yes
Serration of the Vsync.Pulse is not required.
Max. H. Image Size :    38cm.
Max. V. Image Size :    30cm.
Display Gamma:          2.2
DPMS Features, Stand-by: Yes.
DPMS Features, Suspend: Yes.
DPMS Features, Active off: Yes.
Display Type:           R/G/B color display.
Standard Default Color Space: Yes.
Preferred Timing Mode:  Yes.

```

<---Basic Display Parameters/Features--->

<---Color Characteristics--->

```

Red x:      0.6386718750
Red y:      0.3417968750
Green x:    0.2968750000
Green y:    0.6142578125
Blue x:     0.1455078125
Blue y:     0.0673828125
White x:    0.3125000000

```

White y: 0.3291015625

<-x-Color Characteristics-x->

<---Established Timings--->

Established Timings 1: BF

-720x400 @70Hz VGA,IBM

-640x480 @60Hz VGA,IBM

-640x480 @67Hz Apple,Mac II

-640x480 @72Hz VESA

-640x480 @75Hz VESA

-800x600 @56Hz VESA

-800x600 @60Hz VESA

Established Timings 2: EF

-800x600 @72Hz VESA

-800x600 @75Hz VESA

-832x624 @75Hz Apple,Mac II

-1024x768 @60Hz VESA

-1024x768 @70Hz VESA

-1024x768 @75Hz VESA

-1280x1024 @75Hz VESA

Established Timings 3: 80

-1152x870 @75Hz Apple,Mac II

<-x-Established Timings-x->

<---Standard Timing Identification--->

-1152x864@75

-1280x960@60

-1280x1024 @60

<-x-Standard Timing Identification-x->

<---Detailed Timing Descriptions--->

Detailed Timing: 1280x1024 @ 60Hz.

<-x-Detailed Timing Descriptions-x->

<---Detailed Timing Descriptions--->

Detailed Timing: FF (Monitor SN) '213231232132'

Detailed Timing: FC (Monitor Name) 'Philips 190S'

Detailed Timing: FD (Monitor limits)

Min. V. rate: 56Hz

Max. V. rate: 76Hz

Min. H. rate: 30KHz

Max. H. rate: 83KHz

Max. Pixel Clock: 140MHz

<-x-Detailed Timing Descriptions-x->

Extension Flag: 00

Checksum: A2

190S8 EDID**Digital**

128 bytes EDID Data (Hex):

```

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

0:  00 FF FF FF FF FF FF 00 41 0C 59 08 01 01 01 01
16: 15 0D 01 03 80 26 1E 78 EE A1 50 A3 57 4C 9D 25
32: 11 50 54 BF EF 80 71 4F 81 40 81 80 01 01 01 01
48: 01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
64: 13 00 78 2D 11 00 00 1E 00 00 00 FF 00 31 33 32
80: 32 33 32 31 33 31 32 33 33 32 00 00 00 FC 00 50
96: 68 69 6C 69 70 73 20 31 39 30 53 0A 00 00 00 FD
112: 00 38 4C 1E 53 0E 00 0A 20 20 20 20 20 20 00 27

```

Decoded EDID data

<---Header--->

Header: 00 FF FF FF FF FF FF 00

<-x-Header-x->

<---Vendor/Product Identification--->

```

ID Manufacturer Name:  PHL
ID Product Code:       0859
ID Serial Number:      01010101
Week of Manufacture:   21
Year of Manufacture:   2003

```

<-x-Vendor/Product Identification-x->

<---EDID Structure Version/Revision--->

```

EDID Version#:         01
EDID Revision#:        03

```

<-x-EDID Structure Version/Revision-x->

<---Basic Display Parameters/Features--->

```

Video i/p definition:  Digital
Max. H. Image Size :   38cm.
Max. V. Image Size :   30cm.
Display Gamma:         2.2
DPMS Features, Stand-by: Yes.
DPMS Features, Suspend: Yes.
DPMS Features, Active off: Yes.
Display Type:  R/G/B color display.
Standard Default Color Space: Yes.
Preferred Timing Mode:  Yes.

```

<---Basic Display Parameters/Features--->

<---Color Characteristics--->

```

Red x:      0.6386718750
Red y:      0.3417968750
Green x:    0.2968750000
Green y:    0.6142578125
Blue x:     0.1455078125
Blue y:     0.0673828125
White x:    0.3125000000
White y:    0.3291015625

```

<-x-Color Characteristics-x->

<---Established Timings--->

```

Established Timings 1:  BF
-720x400 @70Hz VGA,IBM

```

-640x480 @60Hz VGA,IBM
 -640x480 @67Hz Apple,Mac II
 -640x480 @72Hz VESA
 -640x480 @75Hz VESA
 -800x600 @56Hz VESA
 -800x600 @60Hz VESA

Established Timings 2: EF

-800x600 @72Hz VESA
 -800x600 @75Hz VESA
 -832x624 @75Hz Apple,Mac II
 -1024x768 @60Hz VESA
 -1024x768 @70Hz VESA
 -1024x768 @75Hz VESA
 -1280x1024 @75Hz VESA

Established Timings 3: 80

-1152x870 @75Hz Apple,Mac II

<-x-Established Timings-x->

<---Standard Timing Identification--->

-1152x864@75
 -1280x960@60
 -1280x1024 @60

<-x-Standard Timing Identification-x->

<---Detailed Timing Descriptions--->

Detailed Timing: 1280x1024 @ 60Hz.

<-x-Detailed Timing Descriptions-x->

<---Detailed Timing Descriptions--->

Detailed Timing: FF (Monitor SN) '132232131233'
 Detailed Timing: FC (Monitor Name) 'Philips 190S'
 Detailed Timing: FD (Monitor limits)
 Min. V. rate: 56Hz
 Max. V. rate: 76Hz
 Min. H. rate: 30KHz
 Max. H. rate: 83KHz
 Max. Pixel Clock: 140MHz

<-x-Detailed Timing Descriptions-x->

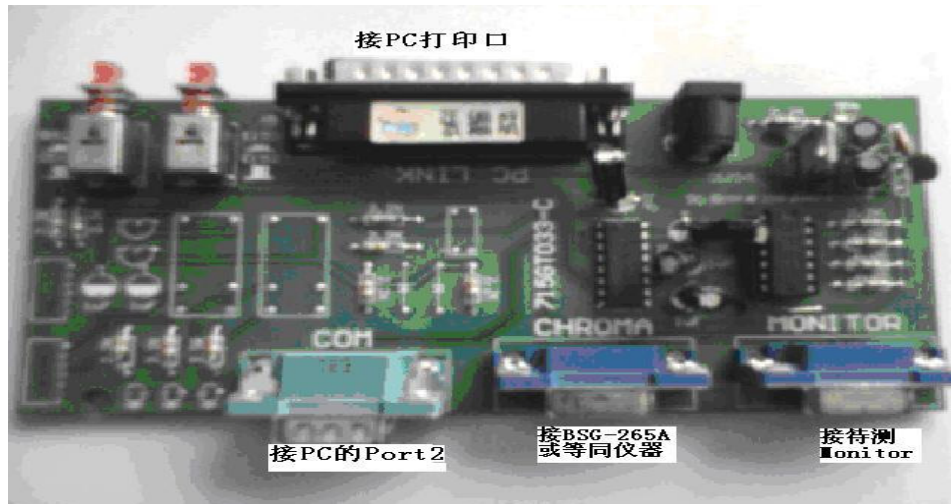
Extension Flag: 00

Checksum: 27

14. White Balance, Luminance Adjustment

1. Apparatuses and program: analyzer CA-210, PC, tool, FGA adjustment program (FGAWB0.15SN), Pattern generator.
2. Equipment installation:
  - a. Connect analyzer CA-210 to PC by USB connector, install drive program CA-SDK Ver4.00 for CA-210 and restart PC after finish installing.
  - b. Install Port95NT drive program, set PC printer connector mode as ECP mode and restart PC after finish installing.
  - c. Connect tools as follow:

(Note: It is not necessary to connect Port2)



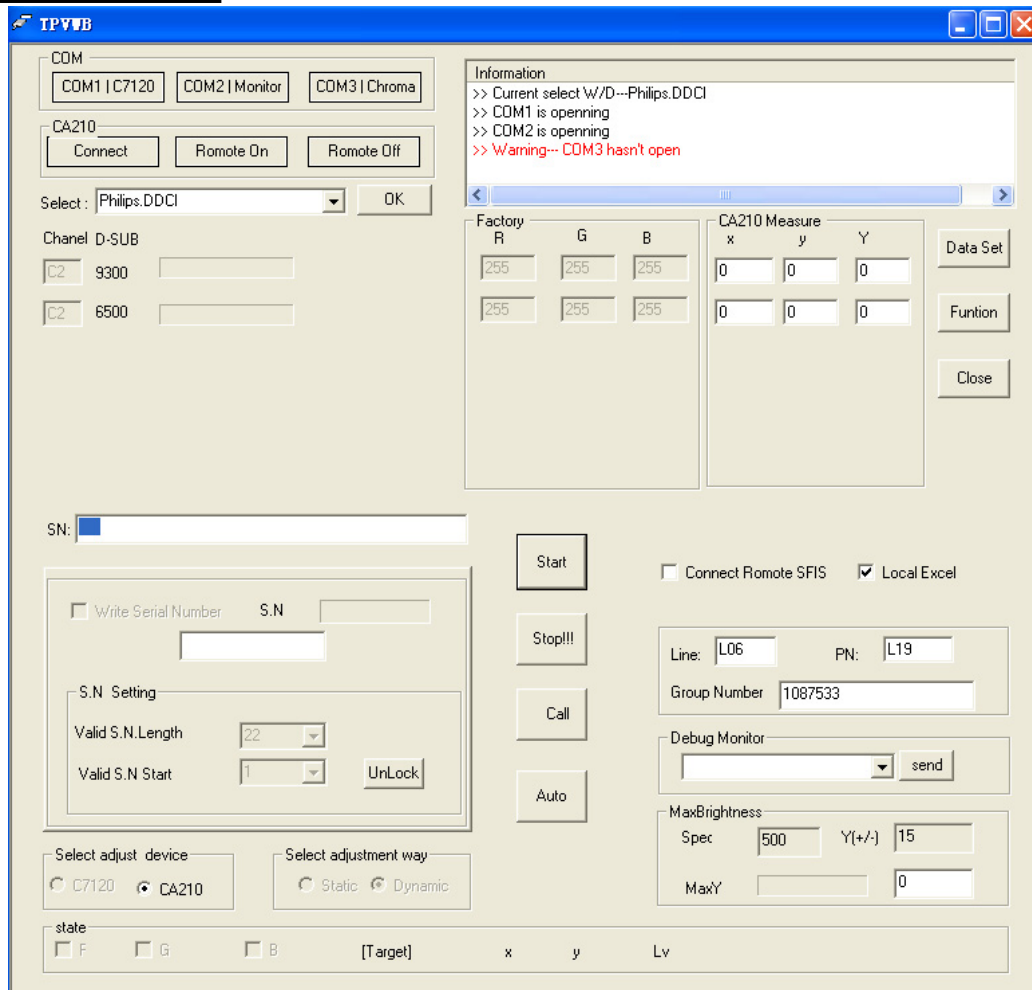
3. Adjustment

Preparation before adjustment:

- (1) Monitor should be warmed up for more than half an hour.
- (2) Make sure that the tools are connected right and drive programs have been installed OK.

Adjustment process:

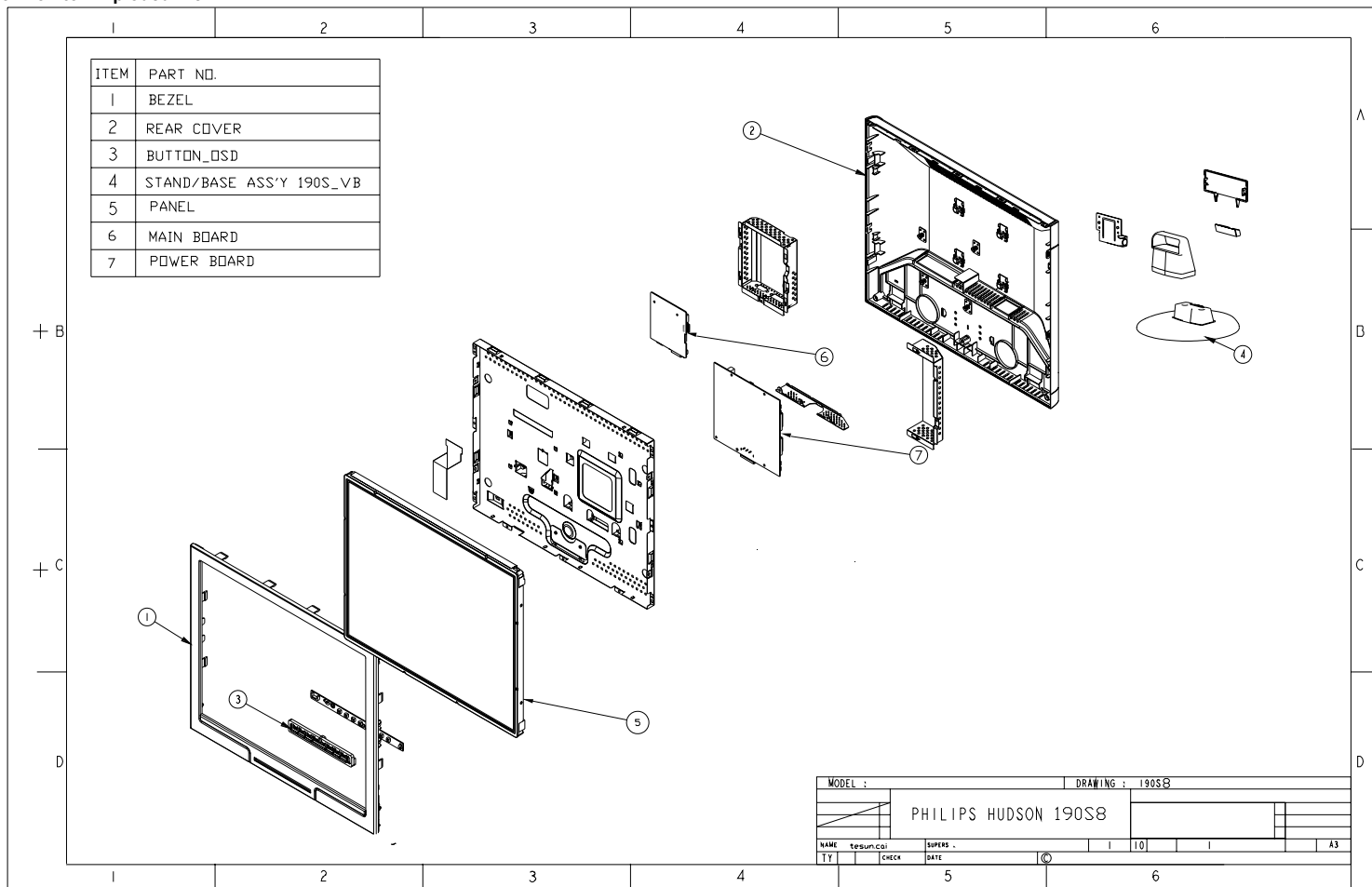
- (1) Press the power of CA-210, shut off the lens, press 0-Cal and open the lens after analyzer reset.
- (2) Start white balance adjustment program, select the right parameter according with the program and click OK.
- (3) Make sure that the lens of CA-210 aims at the center of the screen, then click Start and start adjusting.
- (4) After finish adjusting, the adjustment program displays pass, and the Start Button is changed to Next, which means you can adjust another monitor.



4. Color Temp confirmation

Connect the signal to the monitor, the monitor display white-picture, use CA-210 to measure the Color Temp of the screen center and select the OSD to make sure whether the Color Temps accord with the SPEC.

15. Monitor Exploded View



16. Recommended & Spare Parts List

Recommended Parts List

190S8FS/00

Item	Location	Part No.	Description	Philips 12NC
1	FQ003	P34G1829 VOD1T	BEZEL L19-7phb1-S3	
2	FQ004	P34G1830 VB 1T	REAR COVER	
3	FQ002	P33G4975 VPB1C	BUTTON_OSD	
4	FQ001	705GQ734241	STAND/BASE ASS'Y 190S_VB	
5	E750L	750GLG90E8L12M000F	PANEL LM190E08-TLL1 NJ PHP LPL	
5	E750L	750GLH90N3A12M000F	PANEL HSD190MEN3-A00 NJ HSD	
6	FQ012	CBPC7HNAPHQA3	MAIN BOARD(HSD)	
6	FQ013	CBPC7GNAPHQA9	MAIN BOARD (LG)	
7	FQ015	PWPC942GR1P	POWER BOARD	
	E089A	089G 728HAA 21	SIGNAL CABLE	
	E089C	089G179E30H712	FFC CABLE	
	E089B	089G404A18N YH	POWER CABLE	
	E095A	095G8014 7D514	WIRE HARNESS	
	E089C	089G179J30H712	FFC	
	FQ005	P45G 88609 37 R	EPE BAG	
	FQ006	Q40G 19N81319A	RATING LABEL	
	FQ007	Q44G9071 1	CUSHION-RIGHT	
	FQ008	Q44G9071 2	CUSHION-LEFT	
	FQ009	Q44G9071 3	EPS	
	FQ010	Q44G9071813 3A	19 LCD CARTON	
	FQ011	Q70G9000813 9A	CD MANUAL	
	FQ014	KEPC7QS5	KEY BOARD	
	U301	056G 563 52	IC AP1117D33LA TO252-3L ATC	
	U304	056G 56327A	IC AP1117E18LA SOT223-3L	
	U204	056G1133 56	M24C16-WMN6TP	
	U203	705GQ756019	MCU ASS'Y	
	U811	056G 608 10	IC OZ9938GN-B SOIC-16	
	IC902	056G 139 3A	IC PC123Y22FZ0F	
	IC902	056G 139 3B	IC PC123Y82FZ0F	
	IC902	056G 139 5A	TCET1103G	
	IC941	056G 158 4 T	H431BA	
	IC941	056G 158 10 T	IC AZ431AZ-AE1 TO-92 BY AAC	
	IC901	056G 564911	IC TEA1532AT S08	

Spare Parts List

Service Kit

Description	Part No.	Philips 12NC	Remark
DDC Kit	715L2005C2	9965 000 43197	for all model
OSD SN Kit	715GT033 C	9965 000 43252	for all model
NOVATEK ISP Kit	715LT035A	9965 000 43198	for all hudson 7
			for 170A8, 190B8, 150S8, 170S8, 190S8, 170V8, 190V8
MSTAR ISP Kit	715GT039 A	996510010027	200CW8
REALTEK ISP Kit	715GT039 A	996510010027	170CW8

190S8FS/00

Panel

Location	Part No.	Description	Philips 12NC
E750L	750GLG90E8L12M000F	PANEL LM190E08-TLL1 NJ PHP LPL	
E750L	750GLH90N3A12M000F	PANEL HSD190MEN3-A00 NJ HSD	

Board ASS'Y

Location	Part No.	Description	Philips 12NC
FQ012	CBPC7HNAPHQA3	MAIN BOARD(HSD)	
FQ013	CBPC7GNAPHQA9	MAIN BOARD (LG)	
FQ015	PWPC942GR1P	POWER BOARD	
FQ014	KEPC7QS5	KEY BOARD	

Accessory and Mechanical

Location	Part No.	Description	Philips 12NC
E089A	089G 728HAA 21	SIGNAL CABLE	
E089C	089G179E30H712	FFC CABLE	
E089B	089G404A18N YH	POWER CABLE	
E095A	095G8014 7D514	WIRE HARNESS	
FQ001	705GQ734241	STAND/BASE ASS'Y 190S_VB	
E750L	750GLG90E8L12M000F	PANEL LM190E08-TLL1 NJ PHP LPL	
E750L	750GLH90N3A12M000F	PANEL HSD190MEN3-A00 NJ HSD	
E089C	089G179J30H712	FFC	
FQ002	P33G4975 VPB1C	BUTTON_OSD	
FQ003	P34G1829 VOD1T	BEZEL L19-7phb1-S3	
FQ004	P34G1830 VB 1T	REAR COVER	
FQ005	P45G 88609 37 R	EPE BAG	
FQ006	Q40G 19N81319A	RATING LABEL	
FQ007	Q44G9071 1	CUSHION-RIGHT	
FQ008	Q44G9071 2	CUSHION-LEFT	
FQ009	Q44G9071 3	EPS	
FQ010	Q44G9071813 3A	19 LCD CARTON	
FQ011	Q70G9000813 9A	CD MANUAL	

Board Parts

Location	Part No.	Description	Philips 12NC
FQ012	CBPC7HNAPHQA3	MAIN BOARD(HSD)	
FQ013	CBPC7GNAPHQA9	MAIN BOARD (LG)	
C302	067G305V100 3	105°C 10UF +-20% 16V	
C315	067G305V101 3	105°C 100UF M 16V	
C310	067G305V101 3	105°C 100UF M 16V	
C309	067G305V101 3	105°C 100UF M 16V	
C306	067G305V101 3	105°C 100UF M 16V	
C305	067G305V101 3	105°C 100UF M 16V	
C214	067G305V101 3	105°C 100UF M 16V	
CN101	088G 35315F H	D-SUB 15PIN	
CN102	088G 35424F N	DVI 24PIN CONN F	
X201	093G 22 51	CRYSTAL 12MHz HC-49US ARG6-120	
U301	056G 563 52	IC AP1117D33LA TO252-3L ATC	
U304	056G 56327A	IC AP1117E18LA SOT223-3L	
U204	056G1133 56	M24C16-WMN6TP	
Q301	057G 417 12 T	KEC 2N3904S-RTK/PS	
Q305	057G 417 12 T	KEC 2N3904S-RTK/PS	
Q403	057G 417 13 T	KEC 2N3906S-RTK/PS	
Q402	057G 417 13 T	KEC 2N3906S-RTK/PS	
Q201	057G 417 13 T	KEC 2N3906S-RTK/PS	
Q302	057G 763 1	A03401 SOT23 BY AOS(A1)	
R211	061G0402000	RST CHIPR 0 OHM +-5% 1/16W	
R228	061G0402000	RST CHIPR 0 OHM +-5% 1/16W	
R118	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R117	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R116	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R115	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R111	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R110	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R107	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R106	061G0402100	RST CHIPR 10 OHM +-5% 1/16W	
R136	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R220	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R225	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R309	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R407	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R410	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R416	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R418	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R108	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R109	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R126	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R127	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R128	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R132	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R134	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R135	061G0402101	RST CHIPR 100 OHM +-5% 1/16W	
R412	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R312	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R311	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R301	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R144	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R122	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R120	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R113	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R102	061G0402102	RST CHIPR 1 KOHM +-5% 1/16W	
R202	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	
R304	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	

R305	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	
R415	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	
R417	061G0402103	RST CHIPR 10 KOHM +-5% 1/16W	
R201	061G0402105	RST CHIPR 1MOHM +-5% 1/16W	
R129	061G0402151	RST CHIP 150R 1/16W 5%	
R133	061G0402151	RST CHIP 150R 1/16W 5%	
R138	061G0402151	RST CHIP 150R 1/16W 5%	
R218	061G0402220	RST CHIPR 22 OHM +-5% 1/16W	
R234	061G0402221	RST CHIPR 220 OHM +-5% 1/16W	
R141	061G0402222	RST CHIPR 2.2 KOHM +-5% 1/16W	
R142	061G0402222	RST CHIPR 2.2 KOHM +-5% 1/16W	
R131	061G0402391	RST CHIPR 390 OHM +-5% 1/16W	
R402	061G0402392	RST CHIP 3.9K 1/16W 5%	
R403	061G0402392	RST CHIP 3.9K 1/16W 5%	
R221	061G0402471	RST CHIPR 470 OHM +-5% 1/16W	
R316	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R314	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R308	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R215	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R214	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R213	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R206	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R124	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R123	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R104	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R103	061G0402472	RST CHIPR 4.7 KOHM +-5% 1/16W	
R307	061G0402513	RST CHIP 51K 1/16W 5%	
R140	061G0402750	RST CHIPR 75 OHM +-5% 1/16W	
R139	061G0402750	RST CHIPR 75 OHM +-5% 1/16W	
R101	061G0402750	RST CHIPR 75 OHM +-5% 1/16W	
FB105	061G0805000	0 OHM 1/10W	
R302	061G1206331	RST CHIPR 330 OHM +-5% 1/4W	
R303	061G1206331	RST CHIPR 330 OHM +-5% 1/4W	
C123	065G0402102 32	1000PF +-10% 50V X7R	
C131	065G0402102 32	1000PF +-10% 50V X7R	
C303	065G0402104 12	CHIP 0.1UF 50V X7R	
C301	065G0402104 12	CHIP 0.1UF 50V X7R	
C216	065G0402104 12	CHIP 0.1UF 50V X7R	
C215	065G0402104 12	CHIP 0.1UF 50V X7R	
C210	065G0402104 12	CHIP 0.1UF 50V X7R	
C209	065G0402104 12	CHIP 0.1UF 50V X7R	
C208	065G0402104 12	CHIP 0.1UF 50V X7R	
C207	065G0402104 12	CHIP 0.1UF 50V X7R	
C206	065G0402104 12	CHIP 0.1UF 50V X7R	
C307	065G0402104 12	CHIP 0.1UF 50V X7R	
C311	065G0402104 12	CHIP 0.1UF 50V X7R	
C312	065G0402104 12	CHIP 0.1UF 50V X7R	
C317	065G0402104 12	CHIP 0.1UF 50V X7R	
C402	065G0402104 12	CHIP 0.1UF 50V X7R	
C403	065G0402104 12	CHIP 0.1UF 50V X7R	
C404	065G0402104 12	CHIP 0.1UF 50V X7R	
C405	065G0402104 12	CHIP 0.1UF 50V X7R	
C406	065G0402104 12	CHIP 0.1UF 50V X7R	
C407	065G0402104 12	CHIP 0.1UF 50V X7R	
C101	065G0402104 12	CHIP 0.1UF 50V X7R	
C102	065G0402104 12	CHIP 0.1UF 50V X7R	
C103	065G0402104 12	CHIP 0.1UF 50V X7R	
C104	065G0402104 12	CHIP 0.1UF 50V X7R	
C105	065G0402104 12	CHIP 0.1UF 50V X7R	
C106	065G0402104 12	CHIP 0.1UF 50V X7R	
C110	065G0402104 12	CHIP 0.1UF 50V X7R	

C111	065G0402104 12	CHIP 0.1UF 50V X7R	
C112	065G0402104 12	CHIP 0.1UF 50V X7R	
C113	065G0402104 12	CHIP 0.1UF 50V X7R	
C114	065G0402104 12	CHIP 0.1UF 50V X7R	
C116	065G0402104 12	CHIP 0.1UF 50V X7R	
C117	065G0402104 12	CHIP 0.1UF 50V X7R	
C118	065G0402104 12	CHIP 0.1UF 50V X7R	
C130	065G0402104 12	CHIP 0.1UF 50V X7R	
C201	065G0402104 12	CHIP 0.1UF 50V X7R	
C203	065G0402104 12	CHIP 0.1UF 50V X7R	
C204	065G0402104 12	CHIP 0.1UF 50V X7R	
C205	065G0402104 12	CHIP 0.1UF 50V X7R	
C220	065G0402220 31	CHIP 22PF 50V NPO	
C219	065G0402220 31	CHIP 22PF 50V NPO	
C128	065G0402330 31	33PF +-50% 50V NPO	
C127	065G0402331 32	CHIP 330PF 50V X7R	
C132	065G040247132K T	CAP CHIP 0402 470PF 50V X7R	
C129	065G0402473 12	CHIP 0.047uF 16V X7R	
C126	065G0402473 12	CHIP 0.047uF 16V X7R	
C125	065G0402473 12	CHIP 0.047uF 16V X7R	
C124	065G0402473 12	CHIP 0.047uF 16V X7R	
C122	065G0402473 12	CHIP 0.047uF 16V X7R	
C121	065G0402473 12	CHIP 0.047uF 16V X7R	
C316	065G0603104 22	CHIP 0.1UF 25V X7R	
C308	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
C304	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
C213	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
C115	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
C107	065G060310517T	MLCC 0603 CAP 1UF Z 16V Y5V	
FB207	071G 56D102 MA	CHIP HEAD 1000OHM 0805 1A	
FB107	071G 56D121	B201209D121TT	
FB205	071G 56D121	B201209D121TT	
FB204	071G 56D121	B201209D121TT	
FB203	071G 56D121	B201209D121TT	
FB102	071G 56D121	B201209D121TT	
FB101	071G 56D121	B201209D121TT	
FB202	071G 56D121 JA	CHIP BEAD 120 OHM 0805 1A	
FB206	071G 56D121 JA	CHIP BEAD 120 OHM 0805 1A	
FB302	071G 56K121 M	CHIP BEAD	
FB303	071G 56K121 M	CHIP BEAD	
FB106	071G 59B300 K	CHIP BEAD 30 OHM 0603	
FB104	071G 59B300 K	CHIP BEAD 30 OHM 0603	
FB103	071G 59B300 K	CHIP BEAD 30 OHM 0603	
D102	093G 64 42 PP	BAV70 SOT-23	
D110	093G 64 42 PP	BAV70 SOT-23	
D201	093G 64 42 PP	BAV70 SOT-23	
D113	093G 6433S	DIODE BAV99 SEMTECH	
D112	093G 6433S	DIODE BAV99 SEMTECH	
D111	093G 6433S	DIODE BAV99 SEMTECH	
D109	093G 6433S	DIODE BAV99 SEMTECH	
D108	093G 6433S	DIODE BAV99 SEMTECH	
D107	093G 6433S	DIODE BAV99 SEMTECH	
D106	093G 6433S	DIODE BAV99 SEMTECH	
D105	093G 6433S	DIODE BAV99 SEMTECH	
D104	093G 6433S	DIODE BAV99 SEMTECH	
D103	093G 6433S	DIODE BAV99 SEMTECH	
D101	093G 6433S	DIODE BAV99 SEMTECH	
ZD201	093G 39G586	RLZ2.2B	
ZD107	093G 39S 24 T	RLZ 5.6B LLDS	
ZD106	093G 39S 24 T	RLZ 5.6B LLDS	
ZD105	093G 39S 24 T	RLZ 5.6B LLDS	

ZD104	093G 39S 24 T	RLZ 5.6B LLDS	
ZD103	093G 39S 24 T	RLZ 5.6B LLDS	
ZD102	093G 39S 24 T	RLZ 5.6B LLDS	
ZD101	093G 39S 24 T	RLZ 5.6B LLDS	
D301	093G3004 3	SM340A	
U203	705GQ756019	MCU ASS'Y (LG)	
U203	705GQ756020	MCU ASS'Y (HSD)	
FQ014	KEPC7QS5	KEY BOARD	
CN101	033G3802 6H	WAFER 6P RIGHT ANGLE PITCH 2.0	
SW1	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW2	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW3	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW4	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW5	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW6	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW7	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
SW8	077G 600 1GCJ	TACT SWITCH TSPB-2 -NP	
LED1	081G 12 1F GP	LED 3Φ GP32032M/G307-ZY-50	
R109	061G0603000	RST CHIPR 0 OHM +-5% 1/10W	
R101	061G0603101	RST CHIPR 100 OHM +-5% 1/10W	
R104	061G0603242	RST CHIPR 2.4 KOHM +-5% 1/10W	
R108	061G0603242	RST CHIPR 2.4 KOHM +-5% 1/10W	
R102	061G0603432	RST CHIPR 4.3 KOHM +-5% 1/10W	
R106	061G0603432	RST CHIPR 4.3 KOHM +-5% 1/10W	
R107	061G0603911	RST CHIPR 910 OHM +-5% 1/10W	
R103	061G0603911	RST CHIPR 910 OHM +-5% 1/10W	
R100	061G0805000	0 OHM 1/10W	
C101	065G0603103 32	0.01UF +-10% 50V X7R	
C102	065G0603103 32	0.01UF +-10% 50V X7R	
C103	065G0603103 32	0.01UF +-10% 50V X7R	
C104	065G0603103 32	0.01UF +-10% 50V X7R	
C105	065G0603103 32	0.01UF +-10% 50V X7R	
FQ015	PWPC942GR1P	POWER BOARD	
Q901	057G 600 35	STP8NK80ZFP	
Q901	057G 667 22	FQPF8N80C	
D931	093G 60267	SP10100	
D931	093G 60901	MBRF10H100CT ITO-220AB	
D935	093G 60240	YG802C06R TO-220F15	
D935	093G 60526	MBRF1060CT ITO-220AB	
D935	093G1506 2	FMW-2156	
T901	S80GL17T900V	TRANSFORMER ASSY	
C908	063G 10747410S	PLASTIC FILM CAP.	
C801	065G 6J1006ET	10PF 5% SL 6KV	
C806	065G 6J1006ET	10PF 5% SL 6KV	
C820	067G215D471 4K	ED 470UF 25V	
C840	067G215D471 4K	ED 470UF 25V	
C932	067G215S102 4K	EC CAP 1000UF M 25V	
C933	067G215S102 4K	EC CAP 1000UF M 25V	
L902	071G 55 24	FERRITE BEAD	
L903	071G 55 24	FERRITE BEAD	
BD901	093G 50460 10	GBU405	
BD901	093G 50460 16	U4KB80R	
D901	093G 6026T52T	RECTIFIER DIODE FR107	
IC902	056G 139 3A	IC PC123Y22FZ0F	
IC902	056G 139 3B	IC PC123Y82FZ0F	
IC902	056G 139 5A	TCET1103G	
NR901	061G 5810T	RST NTCR 8 OHM +-20% 4A 13mm	
R905	061G152M104 64	100KOHM 5% 2W	
R920	061G152M208 64	0.20 OHM 2W	
C803	065G 3J5096ET	5PF 5% SL 3KV	
C802	065G 3J5096ET	5PF 5% SL 3KV	

C807	065G 3J5096ET	5PF 5% SL 3KV	
C808	065G 3J5096ET	5PF 5% SL 3KV	
C901	065G305M1022BP	Y2 1000PF M 250VAC Y5P	
C900	065G305M1022BP	Y2 1000PF M 250VAC Y5P	
C912	065G305M2222BP	2200PF +-20%	
C936	067G215D222 2K	105°C 2200UF M 10V	
C936	067G215D2222KV	105°C 2200UF M 10V	
C907	67G 40Z10115K	CAP 105°C 100UF M 450V	
L901	073G 174 65 H	LINE FILTER	
L901	073G 174 65 LS	LINE FILTER BY LISHIN	
L951	073G 253902 H	IND CHOKE 0.8uH MIN DADO	
L955	073G 253902 H	IND CHOKE 0.8uH MIN DADO	
L951	073G 253902 S	IND CHOKE 0.8uH MIN TAIC	
L955	073G 253902 S	IND CHOKE 0.8uH MIN TAIC	
L955	073G 253902 T	CKOLE COIL 0.8uH	
L951	073G 253902 T	CKOLE COIL 0.8uH	
L951	073G 253902 YS	IND CHOKE 0.8uH MIN TOP	
L955	073G 253902 YS	IND CHOKE 0.8uH MIN TOP	
T901	080GL17T900 L	XFMR FOR POWER LITAI	
T901	080GL17T900 N	XFMR FOR POWER YUVA	
T901	080GL17T900 T	X'FMR SRW28LEC-T93H016	
PT801	080GL19T 8DN1	X'FMR DARFONTK.2006M.101	
PT802	080GL19T 8DN1	X'FMR DARFONTK.2006M.101	
R915	061G 17210052T	100HM 5% 1/4W	
R952	061G 17210052T	100HM 5% 1/4W	
R871	061G 17210352T	CFR 10KOHM +-5% 1/4W	
R861	061G 20010452T	100K OHM 1/4W 1%	
R863	061G 20033352T	33KOHM 1% 1/4W	
R861	061G203S10452T	RST MFLM 100K 0.6W 1%	
R863	061G203S33352T	RST MFLM 33K 0.6W 1%	
R839	061G212Y625 KT	MGFR 6.2MOHM +-5% 1/2W	
R859	061G212Y625 KT	MGFR 6.2MOHM +-5% 1/2W	
RJ827	061L0805000	CHIPR 0OHM +-5% 1/10W	
RJ801	061L0805000	CHIPR 0OHM +-5% 1/10W	
RJ804	061L1206000	CHIPR 0 OHM +-5% 1/8W	
FB902	071G 55 23	BEAD	
FB903	071G 55 23	BEAD	
FB905	071G 55 23	BEAD	
FB905	071G 55 23 S	BEAD	
FB903	071G 55 23 S	BEAD	
FB902	071G 55 23 S	BEAD	
FB901	071G 55 29	FERRITE BEAD	
FB901	071G 55901	FERRITE CORE 2.5*3*1 BF3	
ZD951	093G 3990352T	ZD P6KE8.2A	
ZD951	093G 39A3552T	ZENER DIODE P6KE8.2A ZOW	
D919	093G 6038T52T	FR103	
D926	093G 6038T52T	FR103	
D926	093G 64 5152T	RGP10-DO-204AL	
IC941	056G 158 4 T	H431BA	
IC941	056G 158 10 T	IC AZ431AZ-AE1 TO-92 BY AAC	
C920	065G 1K102 5T	1000PF/1KV	
C931	065G517K332 2T	3.3NF 500V	
C927	067G 3056804KT	ELCAP 68UF M 25V 105°C K	
C952	067G215B2214KT	"LOW E,S,R 220UF +-20% 25"	
C956	067G215B2214KT	"LOW E,S,R 220UF +-20% 25"	
F902	084G 55 4	FUSE 382-5A 250V WICKMANN	
F901	084G 55 7 GP	FUSE 3.15A 250V	
IC901	056G 564911	IC TEA1532AT S08	
U811	056G 608 10	IC OZ9938GN-B SOIC-16	
Q874	057G 417 12 T	KEC 2N3904S-RTK/PS	
Q841	057G 600 55	P5506 HVG SO-8	

Q821	057G 600 55	P5506 HVG SO-8	
Q886	057G 759 2	RK7002	
Q885	057G 759 2	RK7002	
Q883	057G 759 2	RK7002	
Q881	057G 759 2	RK7002	
Q880	057G 759 2	RK7002	
Q871	057G 759 2	RK7002	
Q801	057G 759 2	RK7002	
Q873	057G 760 4B	PDTA144WK SOT346	
Q841	057G 763 6	AO4828L	
Q821	057G 763 6	AO4828L	
Q841	057G 763 14	AM9945N	
Q821	057G 763 14	AM9945N	
R829	061L0805000	CHIPR 00HM +-5% 1/10W	
R849	061L0805000	CHIPR 00HM +-5% 1/10W	
R954	061L0805100	CHIPR 10 OHM+-5% 1/10W	
R843	061L0805100	CHIPR 10 OHM+-5% 1/10W	
R842	061L0805100	CHIPR 10 OHM+-5% 1/10W	
R823	061L0805100	CHIPR 10 OHM+-5% 1/10W	
R822	061L0805100	CHIPR 10 OHM+-5% 1/10W	
R835	061L0805100 2F	CHIP 10K OHM 1/8W 1%	
R836	061L0805100 2F	CHIP 10K OHM 1/8W 1%	
R855	061L0805100 2F	CHIP 10K OHM 1/8W 1%	
R856	061L0805100 2F	CHIP 10K OHM 1/8W 1%	
R851	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R831	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R882	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R884	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R886	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R888	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R941	061L0805102	CHIPR 1K OHM +-5% 1/10W	
R801	061L0805103	CHIPR 10K OHM +-5% 1/10W	
R804	061L0805103	CHIPR 10K OHM +-5% 1/10W	
R807	061L0805103	CHIPR 10K OHM +-5% 1/10W	
R880	061L0805103	CHIPR 10K OHM +-5% 1/10W	
R802	061L0805104	CHIPR 100K OHM+-5% 1/10W	
R872	061L0805104	CHIPR 100K OHM+-5% 1/10W	
R881	061L0805104	CHIPR 100K OHM+-5% 1/10W	
R883	061L0805104	CHIPR 100K OHM+-5% 1/10W	
R885	061L0805104	CHIPR 100K OHM+-5% 1/10W	
R887	061L0805104	CHIPR 100K OHM+-5% 1/10W	
R819	061L0805105	CHIP 1M OHM 5% 1/8W	
R912	061L0805105	CHIP 1M OHM 5% 1/8W	
R946	061L0805110 3F	110KOHM 1% 1/10W	
R833	061L0805122	"1.2KOHM +-5%,1/8W,0805"	
R853	061L0805122	"1.2KOHM +-5%,1/8W,0805"	
R923	061L0805123	CHIP 12KOHM 1/8W	
R914	061L0805124 1F	CHIP 1.24K OHM 1/10W 1%	
R916	061L0805152	CHIPR 1.5K OHM +-5% 1/10	
R873	061L0805202	CHIP 2KOHM 1/8W	
R816	061L0805203	CHIPR 20KOHM +-5% 1/8W	
R865	061L0805232 0F	CHIP 232OHM	
R815	061L0805303	CHIP 30K OHM 1/8W	
R813	061L0805330 2F	CHIP 33KOHM 1/8W 1%	
R874	061L0805331	CHIP 330 OHM 5% 1/10W	
R917	061L0805333	CHIP 33KOHM 1% 1/8W	
R811	061L0805335	3.3M 0805	
R943	061L0805510 1F	CHIP 5.1K OHM 1/10W 1%	
R812	061L0805624	CHIP 620KOHM 5% 0805 1/8	
R825	061L0805752	CHIP 7.5K OHM 1/10W	
R837	061L0805752	CHIP 7.5K OHM 1/10W	

R944	061L0805910 1F	CHIP 9.1K OHM 1/10W 1%	
R945	061L0805910 1F	CHIP 9.1K OHM 1/10W 1%	
R918	061L1206000	CHIPR 0 OHM +-5% 1/8W	
R926	061L1206000	CHIPR 0 OHM +-5% 1/8W	
R907	061L1206103	CHIP 10KOHM 5% 1/4W	
R910	061L1206155	1.5M/0805	
R904	061L1206155	1.5M/0805	
R937	061L1206182	CHIP 1.8KOHM	
R931	061L1206229	CHIP 2.2OHM 5% 1/8W	
R932	061L1206229	CHIP 2.2OHM 5% 1/8W	
R927	061L1206472	CHIP 4.7KOHM 5% 1/4W	
R900	061L1206684	CHIPR 680K OHM+-5% 1/8W	
R901	061L1206684	CHIPR 680K OHM+-5% 1/8W	
R902	061L1206684	CHIPR 680K OHM+-5% 1/8W	
C838	065G0805102 31	1000PF 50V NPO	
C861	065G0805102 31	1000PF 50V NPO	
C819	065G0805103 22	CHIP 0.01uF 25V X7R 0805	
C881	065G0805103 22	CHIP 0.01uF 25V X7R 0805	
C883	065G0805103 22	CHIP 0.01uF 25V X7R 0805	
C885	065G0805103 22	CHIP 0.01uF 25V X7R 0805	
C887	065G0805103 22	CHIP 0.01uF 25V X7R 0805	
C812	065G0805104 22	0.1UF +-10% 25V X7R 080	
C832	065G0805104 22	0.1UF +-10% 25V X7R 080	
C880	065G0805104 22	0.1UF +-10% 25V X7R 080	
C913	065G0805104 22	0.1UF +-10% 25V X7R 080	
C951	065G0805104 22	0.1UF +-10% 25V X7R 080	
C955	065G0805104 22	0.1UF +-10% 25V X7R 080	
C811	065G0805105 22	CHIP 1UF 25V X7R 0805	
C821	065G0805105 22	CHIP 1UF 25V X7R 0805	
C841	065G0805105 22	CHIP 1UF 25V X7R 0805	
C846	065G0805105 22	CHIP 1UF 25V X7R 0805	
C874	065G0805105 22	CHIP 1UF 25V X7R 0805	
C914	065G0805105 22	CHIP 1UF 25V X7R 0805	
C915	065G0805123 22	CHIP 12nF 25V X7R 0805	
C860	065G0805221 22	CHIP 220PF 25V X7R 0805	
C822	065G0805222 32	CHIP 2200PF 50V X7R 0805	
C823	065G0805222 32	CHIP 2200PF 50V X7R 0805	
C842	065G0805222 32	CHIP 2200PF 50V X7R 0805	
C843	065G0805222 32	CHIP 2200PF 50V X7R 0805	
C847	065G0805223 22	CHIP 0.022UF 25V X7R 080	
C831	065G0805331 32	CHIP 330P 50V X7R 0805	
C865	065G0805333 32	CHIP 0.033UF 50V	

C917	065G0805334 22	0.33UF+-10% 25V X7R 0805	
C858	065G0805391 31	CHIP 390PF 50V	
C813	065G0805561 31	CHIP 560PF 50V NPO 0805	
C941	065G0805562 21	5600PF/25V/NPO/J	
D831	093G 64 33	DIO SIG SM BAV99 (PHSE)R	
D851	093G 64 33	DIO SIG SM BAV99 (PHSE)R	
D833	093G 64 42 PP	BAV70 SOT-23	
D853	093G 64 42 PP	BAV70 SOT-23	
ZD874	093G 39S 24 T	RLZ 5.6B LLDS	
ZD975	093G 39S 25 T	RLZ5.1B LLDS	
D881	093T 64 44 S	LL4148WP	
D883	093T 64 44 S	LL4148WP	
D885	093T 64 44 S	LL4148WP	
D887	093T 64 44 S	LL4148WP	

17. Different Parts List

Diversity of 190S8FB/00 compared with 190S8FS/00				
Location	190S8FB/00		190S8FS/00	
	Part No.	Description	Part No.	Description
FQ002	P33G4975 VQB1C	BUTTON_OSD	P33G4975 VPB1C	BUTTON_OSD
FQ003	P34G1829 VBE1T	BEZEL L19-7phb1-S3	P34G1829 VOD1T	BEZEL L19-7phb1-S3

Diversity of 190S8FB/27 compared with 190S8FS/00				
Location	190S8FB/27		190S8FS/00	
	Part No.	Description	Part No.	Description
FQ016	089G1748GAA AC	DVI CABLE(LPL)		
E089B	089G402A18N IS	POWER CORD	089G404A18N YH	POWER CABLE
FQ017	089G1748HAA AC	DVI CABLE(HSD)		
FQ002	P33G4975 VQB1C	BUTTON_OSD	P33G4975 VPB1C	BUTTON_OSD
FQ003	P34G1829 VBE1T	BEZEL L19-7phb1-S3	P34G1829 VOD1T	BEZEL L19-7phb1-S3
FQ006	Q40G 19N81320A	RATING LABEL	Q40G 19N81319A	RATING LABEL
FQ019	Q44G9071 3	EPS		
U203	705GQ756020	MCU ASS'Y(HSD)	705GQ756019	MCU ASS'Y
CN901	087G 501 32 S	AC SOCKET		

18. General Product Specification

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1. FOREWORD

This specification describes a 19" SXGA multi-scan color TFT LCD monitor with maximum resolution up to 1280 x 1024 /75 Hz non-interlaced. All optical characteristics (including WHITE-D, Brightness, and so on) are determined according to panel specification after warming up approximate 30 minutes that brightness stability is optimal, and follow strictly after panel specification.

2. PRODUCT PROFILE

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

2.1 LCD

Priority : 1. LPL/HSD 2. AUO

Type : TN + film

Supplier offer the Panel specification.

Panel incoming specification: Follow Philips' specification.

LPL

Type NR	: LM190E08-TLL1/TLL4 (TN)
Resolution	: 1280x1024 (SXGA)
Outside dimensions	:
Pitch (mm)	: 0.294 mm x 0.294 mm
Color pixel arrangement	: RGB vertical stripes
Display surface	: Hard coating (3H), Anti-glare treatment of the front polarizer
Color depth	: 16.7 M colors (6 bits+ Hi FRC)
Backlight	: CCFL edge light system
Active area(WxH)	:
View angle (CR>10)	: 160/160 (typ) for H/V
Contrast ratio	:800:1 (typ)
White luminance	: 300 nit (typ)
Color gamut	:72% (typ)
Gate IC	:
Source IC	:
Response time	: 5 ms

HSD

Type NR	: HSD190MEN3-A (TN)
Resolution	: 1280x1024 (SXGA)
Outside dimensions	:
Pitch (mm)	: 0.294 mm x 0.294 mm
Color pixel arrangement	: RGB vertical stripes
Display surface	: Anti-glare
Color depth	: 16.7 M (6 bits + Hi FRC)
Backlight	: CCFL edge-light(top*2/bottom*2)
Active area(WxH)	:

View angle (CR>10) : 160/160 (typ) for H/V

Contrast ratio : 1000:1 (typ)

White luminance	: 300 nits (typ)
Color gamut	: 72% (typ)
Gate IC	:
Source IC	:
Response time	: 5ms

2.2 Scanning frequencies

Hor. : 30 – 83 K Hz

Ver.: 56 - 76 Hz

Video dot rate: 165 MHz

Power input: 90-264 V AC, 50/60 $\pm$ 2 Hz

Power consumption : : 36 W typical

Functions:

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

(2) DVI digital Panel Link TMDS inputs

2.3 Ambient temperature: 0 °C - 35 °C

3. Electrical characteristics

3.1 Interface signals

1). D-Sub Analog

Input signal : Video, Hsync., Vsync

Video : 0.7 Vp-p, input impedance, 75 ohm @DC

Sync. : Separate sync TTL level, input impedance 2.2k ohm terminate

Hsync Positive/Negative

Vsync Positive/Negative

Composite sync TTL level, input impedance 2.2k ohm terminate (Positive/Negative)

Sync on green video 0.3 Vp-p Negative (Video 0.7 Vp-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 DDC2B pin assignments.

Blue connector thumb-operated jack screws

Pin assignment:

Pin No.	Signal
1	Red
2	Green/ SOG
3	Blue
4	Sense (GND)
5	Cable Detect (GND)
6	Red GND
7	Green GND
8	Blue GND
9	DDC +3.3V or +5V
10	Logic GND
11	Sense (GND)
12	Bi-directional data
13	H/H+V sync
14	V-sync
15	Data clock

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

3.3 Timing requirement**Factory Preset mode definition :**

1. Perfect FOS (except PHASE) while presenting all required timings.
2. Required timings need to be specified in User's Manual

Preset mode definition :

1. Need to support those timings.
2. Perfect FOS after auto adjustment.

User mode

1. Can save those timing that not in Preset mode and can be showed (not over scalar or Panel spec.)
2. It needs to reserve the 12 timings space in memory size.

3.3.1 Mode storing capacity

Factory preset modes : 11

Preset modes : 45

User define modes : 12

Note: 1. Screen displays perfect picture at 11 factory-preset modes.

2. Screen displays visible picture with OSD warning when input modes are the 45 preset modes.

3.3.2 Factory preset modes (11 modes)

Factory modes and preset modes are defined in the enclosed timing table file.

Item	H.Freq. (KHz)	Mode	Resolution	V.Freq. (Hz)	BW(MHz)	
1	31.469	IBM VGA 10H	640x350	70.086	25.175	Y
2	31.469	IBM VGA 3H	720x400	70.087	28.322	Y
3	31.469	IBM VGA 12H	640x480	59.94	25.175	Y
4	35	MACINTOSH	640x480	66.667	30.24	Y
5	37.861	VESA	640x480	72.809	31.5	Y
6	37.5	VESA	640x480	75	31.5	Y
7	43.269	VESA	640x480	85.008	36	Y
8	35.156	VESA	800x600	56.25	36	Y
9	37.879	VESA	800x600	60.317	40	Y
10	48.077	VESA	800x600	72.188	50	Y
11	46.875	VESA	800x600	75	49.5	Y
12	53.674	VESA	800x600	85.061	56.25	Y
13	49.725	MACINTOSH	832x624	74.55	57.283	Y
14	56.4	-	960x720	75		N
15	44.75	-	960x720	60		N
16	48.363	VESA	1024x768	60.004	65	Y
17	56.476	VESA	1024x768	70.069	75	Y
18	60.023	VESA	1024x768	75.029	78.75	Y
19	61.08	IBM XGA-2	1024x768	75.782	86.001	Y
20	68.677	VESA	1024x768	84.997	94.5	Y
21	47.396	CVT 2.3MA	1280 x768	59.995	68.25	Y
22	60.289	CVT 2.3MA	1280 x768	74.893	102.25	Y
23	53.7		1152x864	60	81.624	Y
24	63.851	VESA	1152x864	70.012	94.5	Y
25	67.5	VESA	1152x864	75	108	Y
26	68.681	MACINTOSH	1152x870	75.62	100	Y
27	61.82	SUN WS	1152x900	65.977	92.978	Y
28	71.713	SUN WS	1152x900	76.047	105.561	Y
29	60	VESA	1280x960	60	108	Y
30	75.171	VESA	1280x960	75.021	129.895	Y
31	63.981	VESA	1280x1024	60.02	108	Y
32	71.691	SUN WS	1280x1024	67.189	117	Y
33	76.754	DOS/V	1280x1024	72.001	129.56	Y
34	79.976	VESA	1280x1024	75.025	135	Y

35	81.13	SUN WS	1280x1024	76.107	135	Y
36	91.146	VESA	1280x1024	85.24	157.5	Y
37	44.772	-	1280x720	59.855	74.5	Y
38	56.456	-	1280x720	74.777	95.75	Y
39	64.744	CVT-reduced	1400x1050	59.948	101	N
40	82.278	CVT	1400x1050	74.867	156	N
41	93.881	CVT	1400x1050	84.96	179.5	N
42	55.469	VESA-reduced	1440x900	59.901	88.75	Y
43	55.935	VESA	1440x900	59.887	106.5	Y
44	70.635	VESA	1440x900	74.984	136.75	Y
45	75	VESA	1600x1200	60	162	Y
46	66.587	CVT 2.3MA-R	1920x1080	59.934 (for	138.5	Y
47	65.29	CVT1.76MW	1680x1050	59.954	146.25	Y
48	64.674	CVT1.76MW-R	1680x1050	59.883	119	Y
49	74.038	CVT 2.3MA-R	1920x1200	59.95 (for	154	Y
50	61.648		1600x1000	59.91	108.5	Y

3.3.3 Software control functions via OSD / control adjustable functions:

Please refer to following Hudson8 OSD definitions

Reset - No: Exit

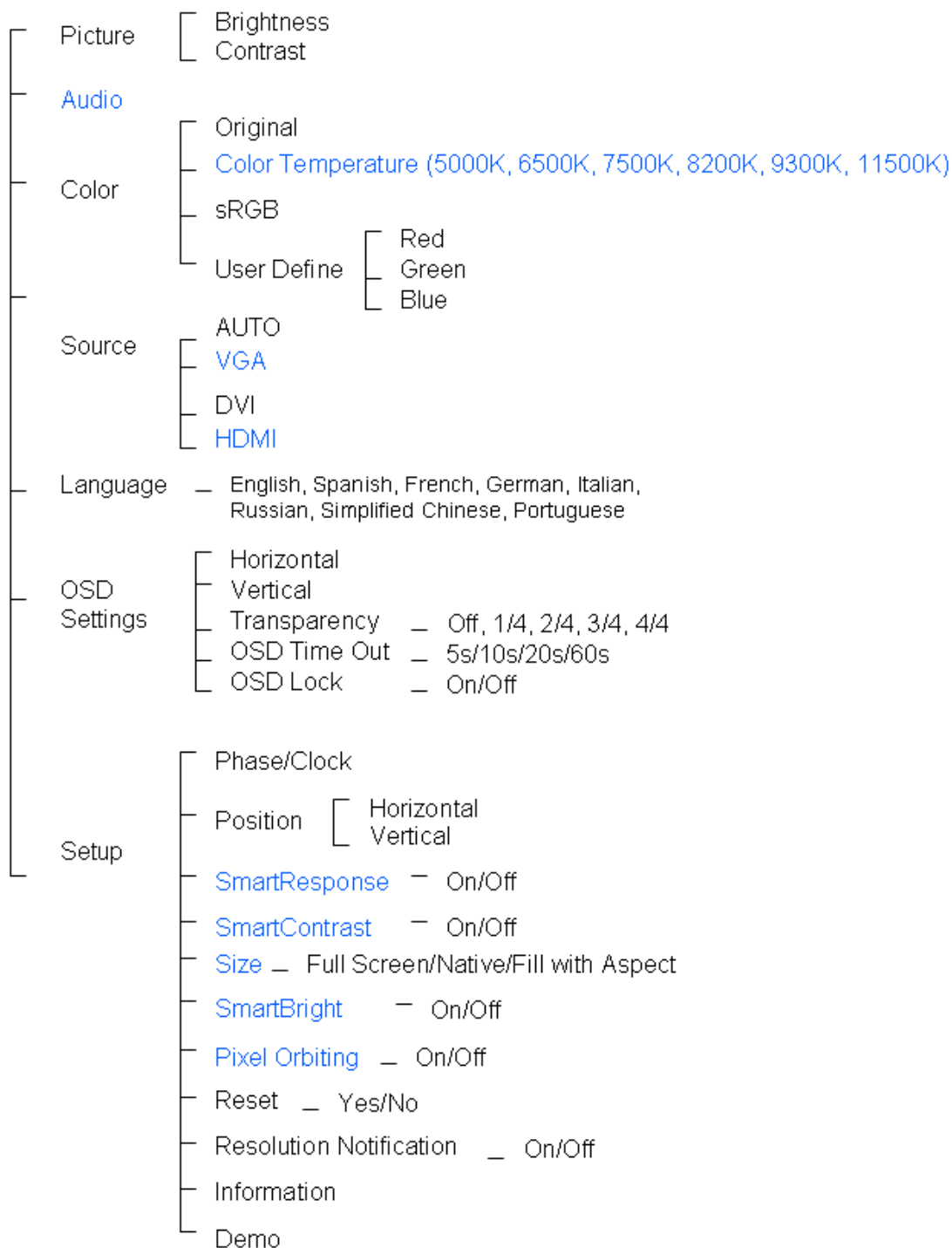
Yes: Auto adjustment for displaying timing mode and recall factory preset

OSD Languages –8

Power On Logo: Power On → show up Philips logo 3 second → change to input signal

This picture is reference only. The official drawing will send out by PM.

OSD Tree

**3.4 Horizontal scanning**

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

3.5 Vertical scanning

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

3.6 Power input connection

Power cord length : 1.8 M

Power cord type : 3 leads power cord with protective earth plug.

3.7 Power management

The monitor must comply with the Microsoft On Now specification, and meet EPA requirements.

Mode	HSYNC	VSYNC	Video	Power-cons.	Indication	Rec. time
Power-On	On	On	active	36W typical	Green LED	--
Off	Off	Off	blanked	< 1 W	Amber LED	< 3 s
DC Power Off			N/A	< 1 W	LED Off	

3.8 Display identification

In accordance with VESA Display Channel Standard Ver.1.0 and DDC 2B capability

3.9 Display identification

In accordance with DVI requirement (DDWG digital Visual Interface revision 1.0)

use DDC-2B, DDC/CI, and EDID V1.3

3.11 DDC/ CI Support

In accordance with VESA DDC/CI and MCCS ver.2.0, the monitor should be workable with Protrait Display Tune at least.

3.12 EDID

	Data for EDID & .inf file	
1	User visible strings on .inf file	Philips 190S (19inch LCD MONITOR 190S8)
2	Manufacturer ID (EDID data)	PHL
3	Product ID, "xxxx" 4 codes	MSB(byte 12): 08
		LSB (byte 11): 59
4	maximum resolution	1280x1024
5	Horizontal Frequency Range	30~83 KHz
6	Vertical Frequency Range	56~76Hz
7	Monitor Name (13 characteries max.)	Philips 190S

3.13 Hot-key definition

	Key	Key Press Time	OSD Timeout
Monitor Controls Lock	OK(Menu)	6 sec (lock/unlock)	3 sec
Factory Mode	AUTO+ OK+ Power On	Keep pressing when power on	
Demo mode for smart image	Smart Image Key	3 sec (Enter/Quit)	
DDC/CI On/OFF for VISTA	MENU+DOWN	6 sec (lock/unlock)	3 sec

3.14 Smart contrast (Dynamic contrast ratio)

Smart Contrast is a kind of dynamic backlight control.

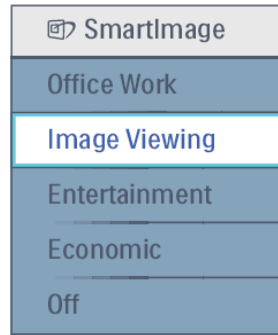
This function changes the panel backlight dynamically according to the frame brightness histogram.

the contrast ratio has to be **3000:1(typical)**.

3.15 Smart Image

3.15.1 Smart Image OSD outlook (Economic → Economy)

3.15.2 Smart Image OSD outlook



3.15.2.1 Position

Pressing the “Smart Image” button, the position is in the bottom center of the screen.

3.15.2.2 Smart Image Logo & Banner

As design to keep the Light Frame logo at header but change the name to “SmartImage” with bitmap format.

3.15.2.3 Icon of each profile

Each profile will use text instead of icon & text before.

3.15.2.4 User Operation Procedure

- A. 5 different modes are switched to next in the sequence from 1 to 5 then back to 1 while pressing this button:
1) Office Work 2) Image Viewing 3) Entertainment 4) Economy 5) Off. The default setting is ‘Off’.
- B. The FOS optimization will be changed in real time by which profile to be scrolled, users don’t need to confirm to enable.
- C. The Smart Image OSD will remain on screen for 5 seconds after user last action. Or user can also press [MENU] to close the Smart Image OSD immediately.
- D. Except using [MENU] button to scroll down profile. If Smart Image OSD already launched onscreen. User is allowed to use up/down key to choose profile and press [MENU] to confirm selection and close the Smart Image OSD.
- E. If the model has multiple inputs including VGA and DVI, each input has their own set of profiles. When user switch input, the profile to be applied will also change.
- F. Each input can memorize their individual “Smart Image” profile status.

For example, Smart Image is on with “Office” profile at VGA input, when switch to DVI input, the Smart Image will revert to previous profile of DVI. In the input switching process the “Smart Image” OSD will also show up to present which profile is selected if “Smart Image” is enabled at that input. The Smart Image status will also be stored after the monitor is resumed from AC on/off or power switch on/off.

3.15.2.5 Linkage between Smart Image OSD and main OSD

- A. Settings within main OSD have linkage with Smart Image OSD.

- i. Brightness
- ii. Contrast
- iii. Color Temperature

B. Because each preset profiles will define default setting of these 3 parameters. Users can understand what is the value of that in preset profile by open the main OSD.

C. When any SmartImage Lite profile had been enabled. The parameters in main OSD are still available for user to adjust. But these adjustments are temporary only. If users switch to another profile and then go back. The setting in main OSD will show preset values of that Smart Image profile enabled.

3.15.2.6 Profile Definitions (system integrators to input at design stages)

A. Office Work

- i Purpose: Design for general office application, like word processing, Spreadsheet and email. The screen is dominated by text.
- ii. Enhancement point:
  - 1.A little sharpness for increasing the details of e.g. an excel grid. No other type of enancement as it won't bring value.
  - 2. Color temperature remains in 6500°K.
  - 3. Brightness level should be 70%.
  - 4. Smart Response set to "Off".
  - 5. Smart Contrast set to "Off".

B. Entertainment

- i. Purpose: Design for video application, Like Microsoft Media Player or Real Player. The screen is dominated by video.
- ii Enhancement Point:
  - 1. Dynamic contrast enhancement by histogram analysis (DLC) should be implemented.
  - 2. Sharpness enhanced 90%.
  - 3. Color enhancement set as the same with Video.
  - 4. Color temperature set to 7500° (Based on final PQ settings) (if higher)
  - 5. Brightness level sets to maximum.
  - 6. SmartResponse set to "High".(N/A for this model)
  - 7. Gamma Table turn off to achieve
  - 8. Fastest response time. (N/A for this model)
  - 9. Smart Contrast set to "On"

C. Image Viewing

- i. Purpose: Design for image viewing application, especially in slide show. The screen is dominated by picture. Powerpoint presentation could use this profile also.
- ii. Enhancement Point:
  - 1.Dynamic contrast enhancement by histogram analysis (DLC) should be off.
  - 2. Sharpness and color to be enhanced 75%.
  - 3. Color temperature 6500°K
  - 4. Brightness level sets to maximum.
  - 5. Smart Response set to "Off". (N/A for this model)
  - 6. Smart Contrast set to "Off".

D. Economy

- i.Purpose: Adjust brightness level for reducing power consumptions

ii.No optimization by Smart Image.

iii.Design:

1. Brightness level set to 70%, a little higher brightness level than laptop PC, fine tune brightness level before DVT exit.
2. Color temperature set to 6500K.
3. Gamma Table is turn on.

E. Off

i. Purpose: No optimization by SmartImage.

ii. Design:

1. This will follow user OSD setting. If any change by user, it will be saved. When switch back from other SmartImage profiles, it will go back to last saved setting.
2. Gamma Table is turn on to reduce bad color tracking.

3.15.2.7 Demo mode

A. Purpose: Built-in demo mode for sales in-store demo.

B. Design:

- i. Dynamically split screen to 2 vertical frames with one vertical white line. The line width is 2 pixels. The left frame will be enhanced by SmartImage and right frame remains original performance.
- ii. There is OSD showing "SmartImage On" in left frame and "SmartImage Off " in right frame.
- iii. The OSD word color is white with transparent background.

C. The demo profile will be "entertainment profile setting.

D. Hot keys to trigger:

Press [Smart Image] 3 seconds or more to trigger the demo mode. When demo mode is On, press 3 seconds or more to turn off the demo mode. When the demo mode is enabled, the blue LED will flash until demo mode disabled.(N/A for this model)

4. Visual characteristics

4.1 Test conditions

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

- (1) Input signal : As defined in 3.3, 1280 x 1024
non-interlaced mode (1280 x 1024@60Hz 108MHz), signal
sources must have 75 ohm output impedance.
- (2) Luminance setting : controls to be set to 300 nits (typical) 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 Brightness

Follow Panel specification.

4.3 Image size

Actual display size 373.3 x 301.1 mm

4.4 Brightness uniformity

Set contrast at 100% and turn the brightness at 100%.

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

$$\frac{B_{\min}}{B_{\max}} \times 100\% > 75\%$$

Where B_max =Maximum brightness, B_min = Minimum brightness

4.5 Check Cross talk (S)

Apply Pattern 2. Set contrast and brightness at 100 %.

Measure YA. Then output Pattern 3 and measure YB.

the cross talk value :

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

4.6 White color adjustment

There are seven factory preset white color 11500K, 9300K, 8200K, 7500K, 6500K, sRGB, 5000K

Apply full gray64 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 = 0.272 ± 0.02 y = 0.283 ± 0.02	
9300K	x = 0.283 ± 0.02 y = 0.297 ± 0.02	
8200K	x = 0.292 ± 0.02 y = 0.307 ± 0.02	
7500K	x = 0.299 ± 0.02 y = 0.315 ± 0.02	
6500K/sRGB	x = 0.313 ± 0.02 y = 0.329 ± 0.02	
sRGB	x = 0.313 ± 0.02 y = 0.329 ± 0.02	
5000K	x = 0.346 ± 0.02 y = 0.359 ± 0.02	

Production alignment spec.

CIE coordinates	(x,y)	
11500K	x = 0.272 ± 0.005 y = 0.283 ± 0.005	
9300K	x = 0.283 ± 0.005 y = 0.297 ± 0.005	
8200K	x = 0.292 ± 0.005 y = 0.307 ± 0.005	
7500K	x = 0.299 ± 0.005 y = 0.315 ± 0.005	
6500K/sRGB	x = 0.313 ± 0.005 y = 0.329 ± 0.005	
sRGB	x = 0.313 ± 0.005 y = 0.329 ± 0.005	
5000K	x = 0.346 ± 0.005 y = 0.359 ± 0.005	

Quality Inspection specification:

CIE coordinates	(x,y)	
9300K	x = 0.283 ± 0.015 y = 0.297 ± 0.015	
6500K/sRGB	x = 0.313 ± 0.015 y = 0.329 ± 0.015	
sRGB	x = 0.313 ± 0.015 y = 0.329 ± 0.015	

5. Mechanical characteristics

5.1 Cosmetic -

5.2 Mechanical data files -

5.3 Location of Philips logo -

5.4 Gap between panel and front bezel

5.5 Location of Control icons -

5.6 Color for resin/paint -

5.7 Resins

- RoHS required
- WEEE required.
- Resin type/selection refer to Project Book Section 7.2 Plastic material.

Philips ID

ProE files required

Per Philips make-up sheet

< 0.8 (typ) mm

Per Philips Graphic sheet

Per Philips make-up sheet

5.8 If paint is used

- RoHS required
- WEEE require
- If new painting type need to implement, refer to UN-D 1235.

5.9 Plastic mold tooling

- Tooling to be designed to minimize cosmetic defects induced by molding process (sink, blush, weld lines, gate marks, ejector marks, etc.). Refer to "TYV61-90007".
- Painting to cover up cosmetic defects due to molding is strongly discouraged.

5.10 Plastics flammability

- All Plastics to be Flame Retardant UL 94-V0 or Better (if monitor weighs less than 18kg; UL94-V0 is OK).
- Base / Pedestal to be Flame Retardant UL 94-HB.
- All major plastic parts (bezel, back cover, base) need to be molded from same resin.
- ABS V0 is allowed to implement in China region for monitor body major plastic parts (bezel, back cover, base).
- Plastic resin type selection should be referred to "TY R83-2-9002-1"s.

5.11 Texture/Glossing of housing

- The texture area and texture no should follow Philips make-up sheet.
- The exterior surfaces shall have a uniform texture.
- Philips must approve the mold texturing.
- Detail document for texture refer to "UN-D249", "UN-D 600".
- ≤ 20 gloss units

5.12 Tilt and swivel base

- Tilt angle : $-5^\circ +2/-0^\circ$ (forward)
 $+20^\circ +3/-0^\circ$ (backward)
- Swivel angle : $\pm 45^\circ$ (not request for 190S8)
- High Adjustment : 130mm (not request for 190S8)
- Portrait Display : $-1^\circ +1/-0^\circ \sim +91^\circ +0/-1^\circ$ CCW (not request for 190S8)

5.13 Kensington Lock

- Must meet Kensington_slot.spec "TYE-M0004".
- MMD request metal plate in Kensington hole.

5.14 Label

- Regulatory label / Carton label should follow Philips requirement.
- China RoHS label
- Detail document refer to Philips Engineering Reference Book.

5.15 Product dimension / Weight (Refer to SHT 191)

- Unit dimension : 424.05mm (W) * 418.8 (H) * 210.82mm(D)
- Packed unit dimension : ???mm(W) * ???mm(H) * ??? mm(D) for WW
: 492mm(W) * 456mm(H) * 175 mm(D) for China
- Net weight : ?Kg (Including I/F cable ? g)
- Gross weight : ? Kg for WW
: ? Kg for China

5.16 Transportation

Transportation standards refer to TYE-M0002.

5.16.1 Transportation packages

Packaging and wrapping shall be sufficient to protect the product against damage or loss during shipment from the supplier to the destination specified in the purchase order. All packaging materials are subject to test and evaluation per TYE-M0002. The cushion material shall be constructed using EPS material.

5.16.2 Transportation Test

The overall test refer to TYE-M0002.

Vibration, drop test should be performed at ambient temperature(20°C to 23oC) and relative humidity (40% to 65%).

A. Transportation test specification for all regions except China/India

- Package test
  1. Random Vibration test
  2. Drop test
  3. Cold Drop test (for design reference)
- Un-package test
  1. Half sine shock test (non operation)

B. Transportation test specification for China/India

- Package test
  1. Random Vibration test
  2. Drop test
  3. Cold Drop test (for design reference)
- Un-package test
  1. Sine vibration (operating)
  2. Half sine shock test (non operation)

5.17 Pallet / Container loading

Transportation standards refer to TYE-M0002.

- Air shipment -
- Sea container 20'(pallet/slip sheet)
- Sea container 40'(pallet/slip sheet)
- Sea container 40' High Cube (pallet/slip sheet)
- Truck shipment-

Transportation request for all region except China/India

- A. Air shipment
- B. Container loading for WW

Transportation request for China and India

- A. Container loading for China and India
- B. Truck loading

6. Environmental characteristics

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

6.1 Susceptibility of display to external environment

Operating

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

Storage

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

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

6.2 Transportation tests

Refer to 5.15.2

6.3 Display disturbances from external environment

According to IEC 801-2 for ESD disturbances

6.4 Display disturbances to external environment

7. Reliability

7.1 Mean Time Between Failures

System MTBF (Including the LCD panel and CCFL) : 50,000 hrs

8. 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. Philips' Flat Panel Monitors Pixel Defect Policy

Philips' Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	190S8		
1 lit sub-pixel	3		
2 adjacent lit sub-pixels	1		
3 adjacent lit sub-pixels (one white pixel)	0		
Distance between two bright dots	15mm		
Bright dot defects within 20 mm circle	0		
Total bright dot defects of all type	3		

BLACK DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	190S8		
1 dark sub-pixel	5		
2 adjacent dark sub-pixels	2		
3 adjacent dark sub-pixels (one white pixel)	1		
Distance between two black dots	15mm		
Black dot defects within 20 mm circle*	1		
Total black dot defects of all type	5		

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL		
MODEL	190S8		
Total bright or black dot defects of all type	5		

Fig 1: Measurement locations of Brightness Uniformity

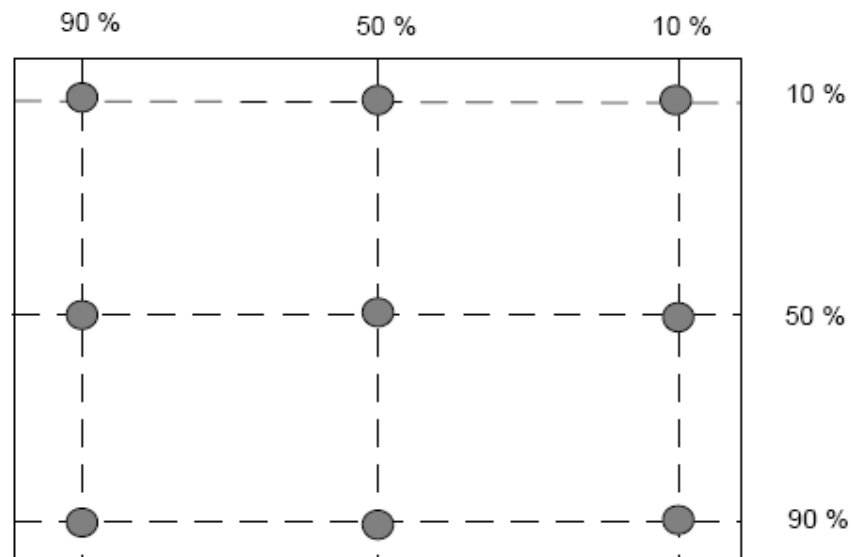


Fig 2: Cross talk pattern
Gray level 46 (64 Gray level)

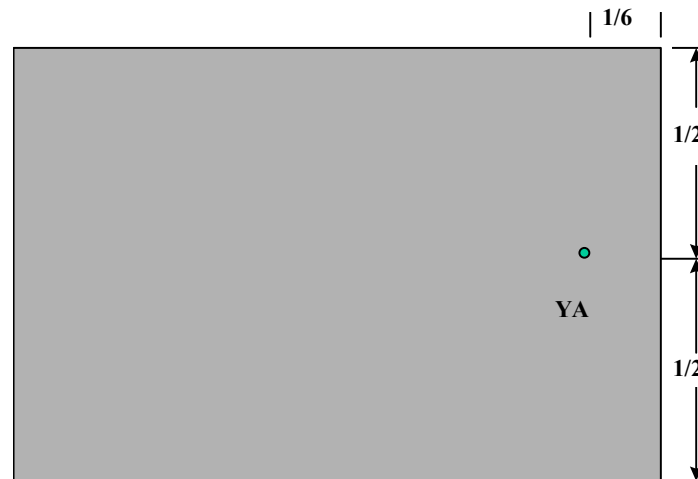
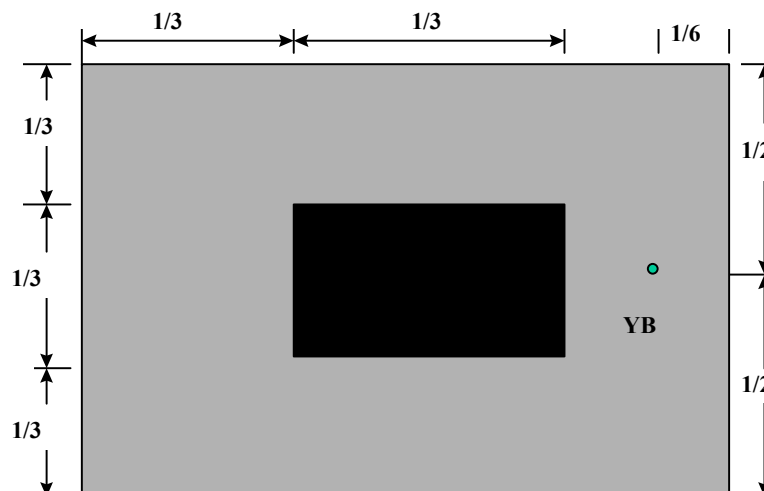


Fig 3: Cross talk Pattern
Center at Gray level 0 (Black)



SEPARATE SYNC.

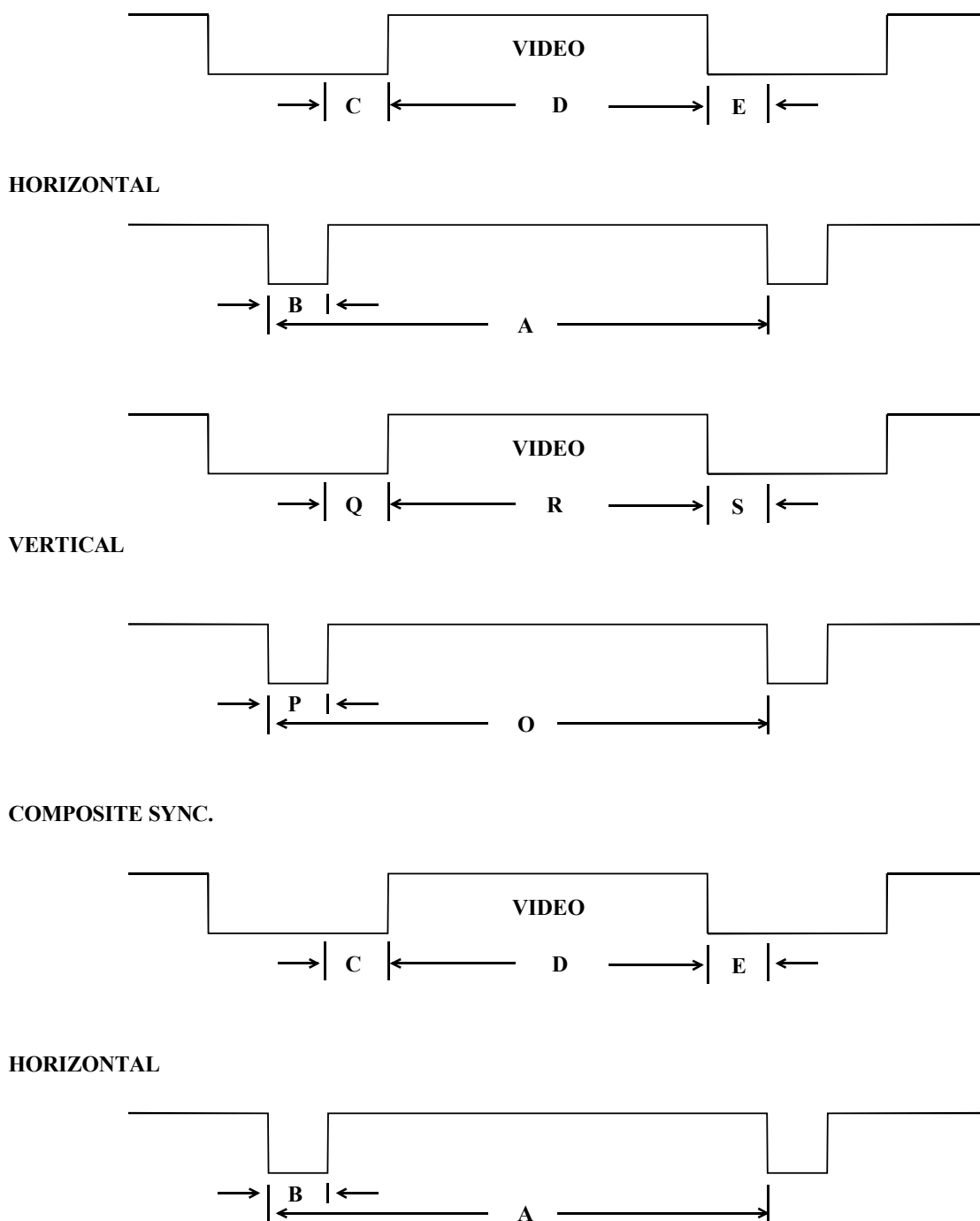


FIG-4 TIMING CHART -1

10. REGULATORY COMPLIANCE

10.1 Worldwide Regulatory

Country	Domain	Safety / EMC / Ergonomics / Standards	Documents
International	Sa	IEC60950-1:2001. Group -and national differences of all countries listed in CB Bulletin No. 107A	CB Report and CB certificate
Europe	Sa	European Low Voltage Directives 73/23/EEC and 93/68/EEC	Declaration of Conformity
	E	European Electromagnetic Compatibility Directive 89/336/EEC amended by the directive 93/68/EEC. EN 55022:1998 Class B	Declaration of Conformity and Full EMC/CE test report
		EN 55024: 1998	
		EN 61000-3-2: 2000	
		IEC 61000-3-3: 1994/EN61000-3-3: 1995	
		CISPR 22:1997 Class B International EMC standard	
Germany	Sa	EN60950-1:2001	TUV certificate
	O	ISO 13406-2: 2001 & prEN 50279:1998	TUV-ERG certificate
	O	GS-Mark / EK1-ITB 2000	TUV-GS certificate
Sweden	Sa	EN60950-1:2001	SEMKO certificate
	O	TCO 99 (TCO03)	TCO99 (TCO03) report + certificate
Russia	Sa	GOST R 50377-1992	GOST certificate

South Africa	Sa	SABS IEC 60950	Certificate of Conformity
USA	Sa	UL 60950-1: 2003	UL certificate
	E	FCC Part 15 Class B	FCC ID grant
	O	Energy Star	EPA registration
Canada	Sa	CSA C22.2 No 60950	CSA certificate
	E	ICES-003 issue 3	Statement on label
Mexico	Sa	NOM-019-SCFI-1994	NOM certificate
Korea	Sa	Korean Safety Control law IEC 60950	eK certificate
	E	Regulations laws: EMI 1996-78, 80. EMS 1996-79,81	MIC certificate
Singapore	Sa	IEC60950	PSB certificate
China	Sa	GB4943-2001	CCC certificate
	E	GB9254-1998; 17625.1-2003	
Taiwan	Sa	CNS-14336 (IEC 60950-1)	BSMI certificate
	E	CNS-13438 (CISPR22) Class B	

Sa = Safety

E = Electromagnetic Compatibility

O = Other which including recycling, energy saving, ergonomics

10.2 EMC Requirements

Supplier DVT EMI test result must be submitted prior to DVT samples delivery, and PVT EMI test result must be submitted again prior to PVT samples delivery, which also has to meet Philips' immunity testing specification.

10.3 RoHS

Restriction on the use of certain hazardous substances. Lead, Cadmium, Mercury, Hexavalent Chromium, Polybrominated Biphenyl (PBB) and Polybrominated Biphenyl Ether (PBDE)(flame retardant).

10.4 WEEE

Producer (Philips) responsible for retailer take back schemes and recycling.

--System implemented.

--Collection and recycle targets.

10.5 Ongoing Regulatory

There's a possibility that other regulatory certificates will be required during the life of the product. It is the responsibility of the supplier to provide related documentation.

TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

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

* Broken line

Implosion

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

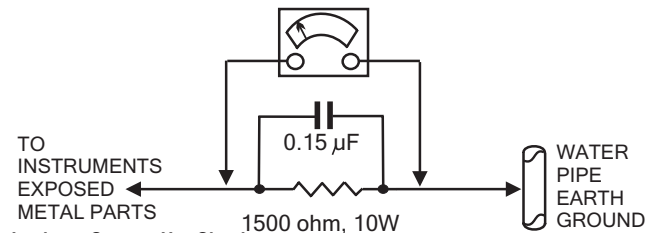
X-radiation

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

Leakage Current Cold Check

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



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10w resistor paralleled by a 0.15µf. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 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.