Service
Service
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190B5CG/00
190B5CB/00
190B5CB/27
190B5CS/00
190B5CS/27

Service Manual

Horizontal frequencies
30 - 82KHz

TABLE OF CONTENTS

SAFETY NOTICE

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

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

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

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Important Safety Notice

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

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

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

WARNING

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

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

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

* Broken Line

FOR PRODUCTS CONTAINING LASER :

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

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

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

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

Take care during handling the LCD module with backlight unit

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

Technical Specifications

LCD PANEL

Type	TFT LCD
Screen size	19" / 48.26 cm diagonal
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	376.32 x 301.06 mm
Display Colors	16M colors

SCANNING

Vertical refresh rate	56 Hz-76 Hz
Horizontal Frequency	30k Hz-82 kHz

VIDEO

Video dot rate	135 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
Video interface	Dual input: D-Sub (analog) and DVI-D (digital) are available and user selectable

Audio

Loudspeaker	4W Stereo Audio (2W/channel RMSx2, 300 Hz-12 kHz, 16 ohm, THD=10%, PMPO 32 Watts)
Headphone connector	3.5mm mini jack
Input signal connector	3.5mm mini jack
Stand-alone audio output	Audio output can still function whenever there is an audio source playing, even there is no video input. *Note: The volume adjustment can not function under the following conditions:* *1. A warning message appears on screen* *2. No audio input*

Optical characteristics

Contrast ratio	500:1 (typ.)
Brightness	250 cd/m^2 (typ.)
Peak contrast angle	6 o'clock
White Chromaticity	x: 0.283 y: 0.297 (at 9300°K) x: 0.313 y: 0.329 (at 6500°K) x: 0.313 y: 0.329 (at sRGB)
Viewing Angle (C/R>10)	Upper ≥88° (typ.) Lower ≥88° (typ.) Left ≥88° (typ.) Right ≥88° (typ.)
Response time	≤25 ms (typ.)

Physical Specifications

Dimension (WxHxD) *	425 x 377 x 235 mm (in lowest position)
Weight	8.6 Kg
Tilt / Swivel	-5° ~ 30° / + - 135°
Height adjustment rang	40 mm
Power supply	100 — 240 VAC, 50/60 Hz
Power consumption	40 W* (typ.)
Temperature	5° C to 35° C (operating) -20° C to 60° C (storage)
Relative humidity	20% to 80%
System MTBF	50K hours
Cabinet color	190B5CG: Light Gray 190B5CB: Black 190B5CS: Silver

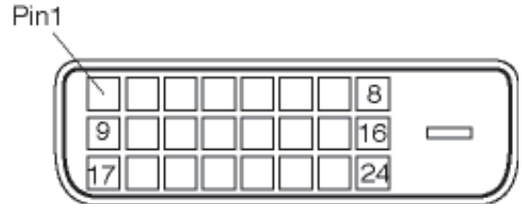
Resolution & Preset Modes

Maximum	1280 x 1024 at 75 Hz
Recommended	1280 x 1024 at 60 Hz

Pin Assignment

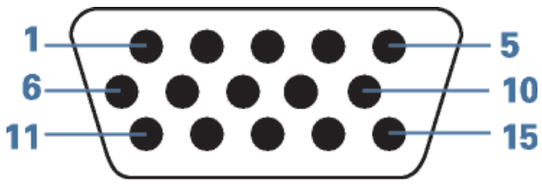
1. The digital only connector contains 24 signal contacts organized in three rows of eight contacts. Signal pin assignments are listed in the following table:

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



Technical Data

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



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

15 user definable modes

15 factory preset modes:

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

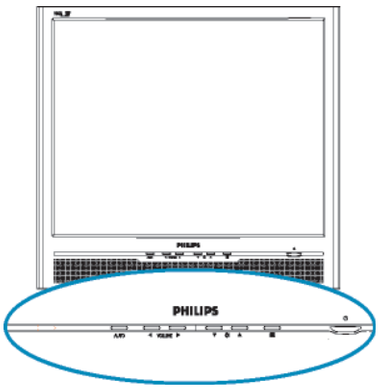
Automatic Power Saving

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

Power Management Definition					
VESA Mode	Video	H-sync	V-sync	Power Used	LED color
ON	Active	Yes	Yes	40 W (typ.)	Blue
OFF	Blanked	No	No	< 1 W	Amber

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

Front View Product Description



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

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

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

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

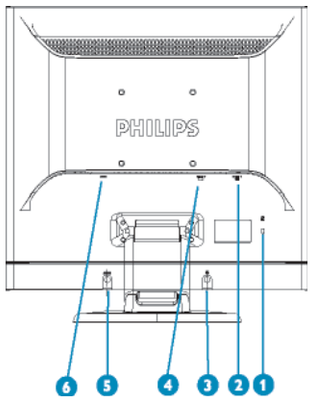
OK button which when pressed will take you to the OSD controls.

POWER button switches your monitor on.

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

Rear View

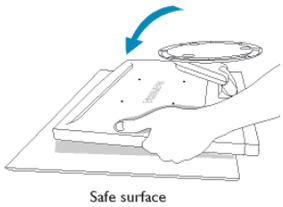
1	Kensington anti-thief lock
2	VGA input
3	Earphone jack
4	DVI-D input
5	PC audio input
6	AC power input



The Base

Unfold and Fold the Base

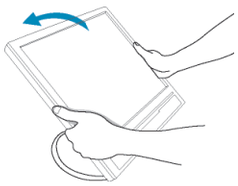
Unfold the Base



1) Put monitor face down on the safe surface.

2) Pull up the base.

Fold the Base

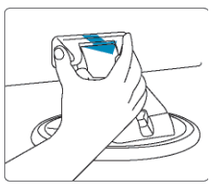


1) Push down the head

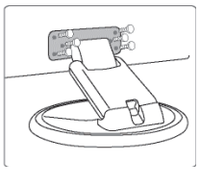
of monitor.

Remove the Base

Condition:for VESA standard mounting applications



1) Remove the top cover.



2) Remove the 6 screws and then remove the base from the LCD monitor.

Installation

Accessory Pack

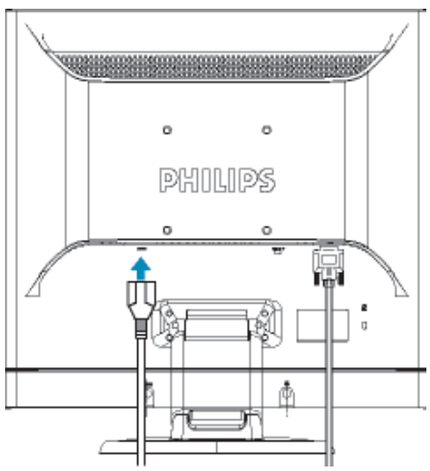
Unpack all the parts.

Power cord	VGA signal cable	EDFU pack

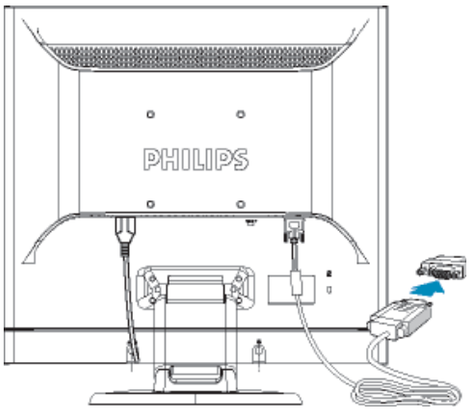
PC audio cable (lime)	Mac adaptor (optional)

Connecting to Your PC

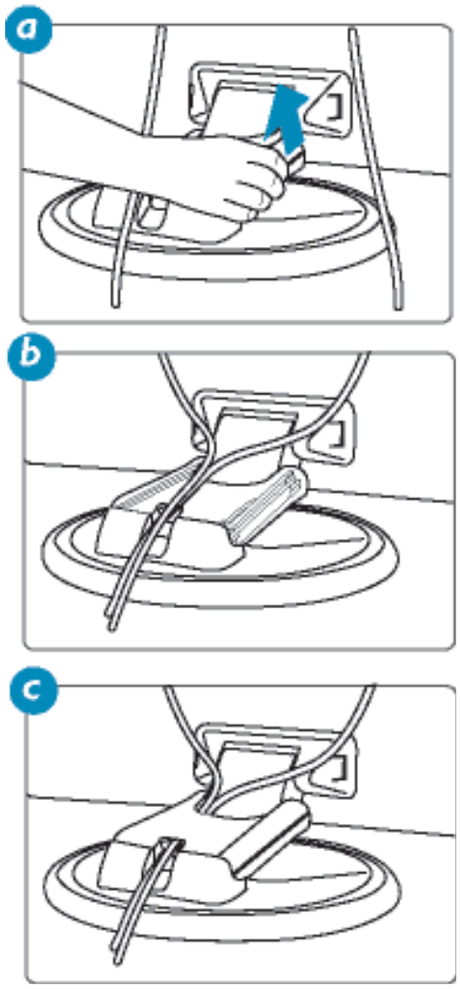
1) Plug the cables into connectors.



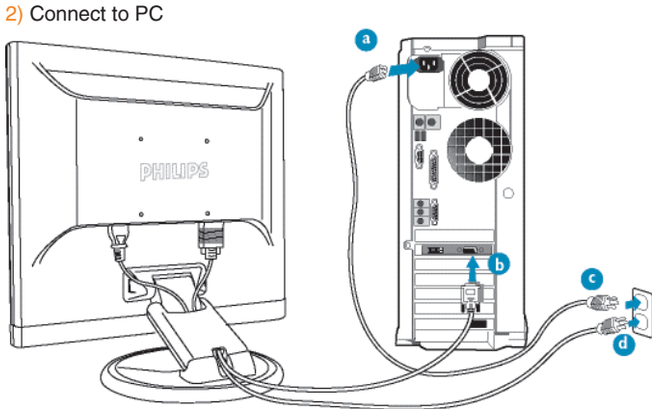
If you use an Apple Macintosh, you need to connect the special Mac adapter to one end of the monitor signal cable.



2) Cable Management



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.

On-screen Display

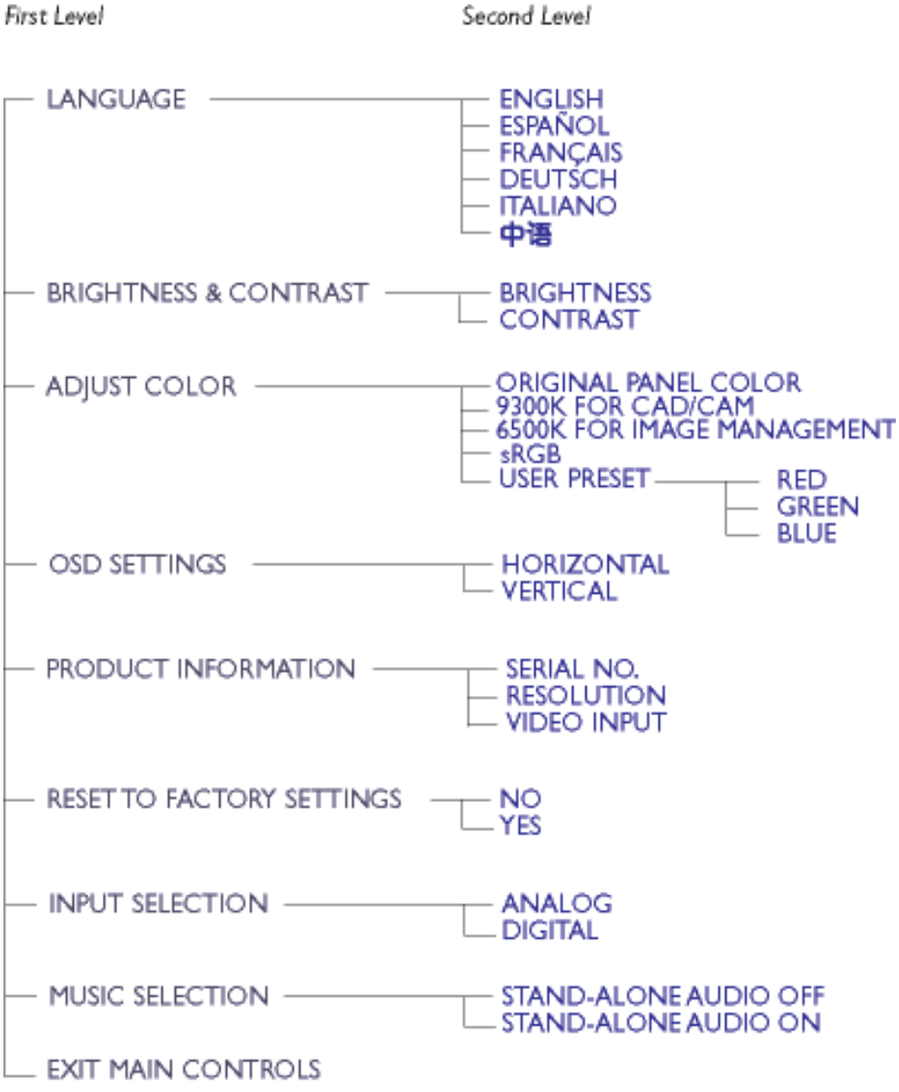
On-Screen Display

This is a feature in all Philips LCD monitors. It allows an end user to adjust screen performance of the monitors directly through an on-screen instruction window. The user interface provides user-friendliness and ease-of-use when operating the monitor.

When you press the OK button on the front control of your monitor, the On-Screen Display (OSD) Main Controls window will pop up and you can then start making adjustments to your monitor's various features. Use the ◀ ▶ or the ▲ ▼ keys to make your adjustments.

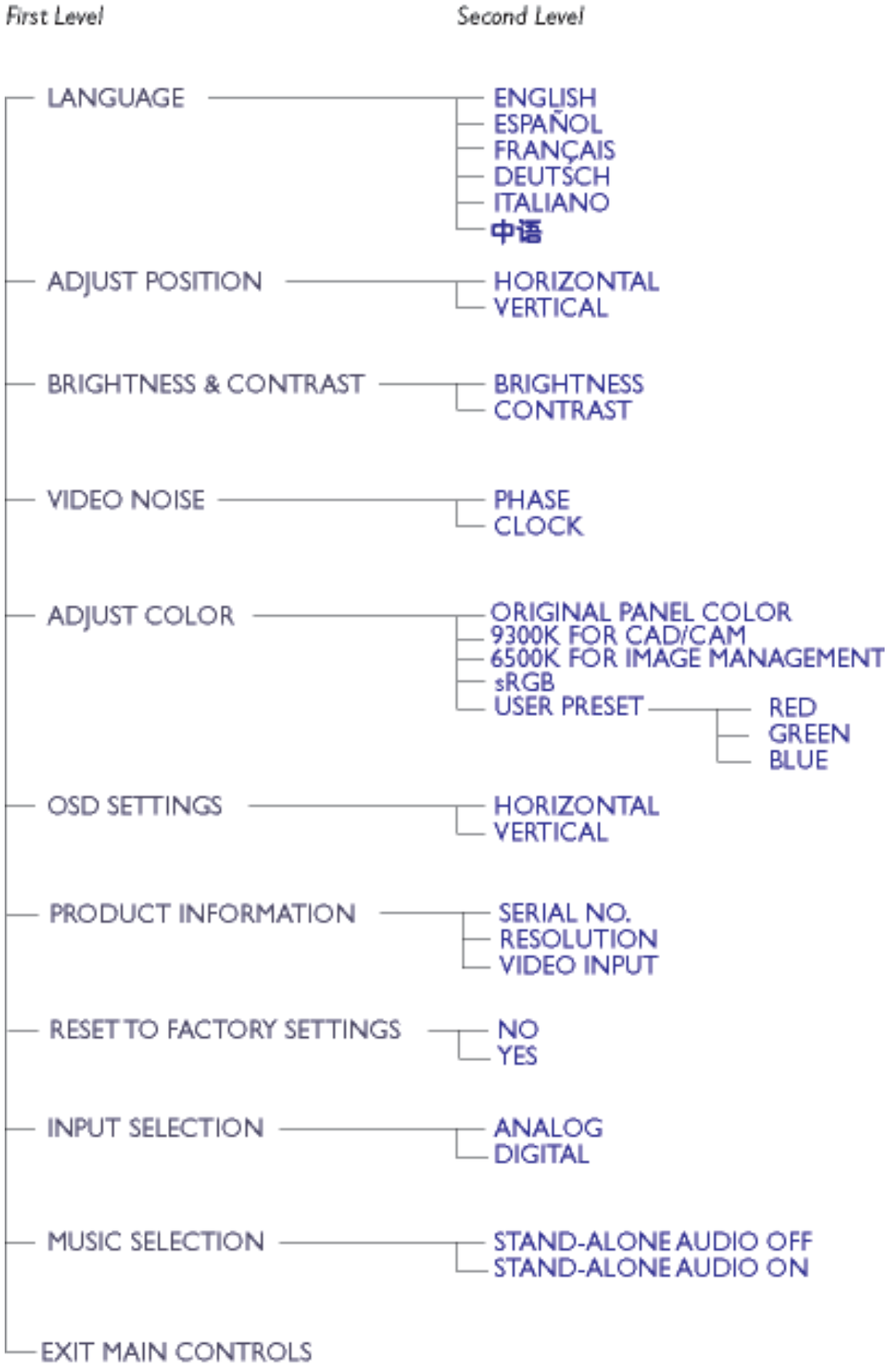
The OSD Tree

Digital signal input:



On-screen Display

Analog signal input:



OSD Lock/Unlock, Aging Mode

To Lock/Unlock OSD FUNCTION(User Mode)

The OSD function can be locked by pressing"OK"button for more than 10 seconds, the screen shows following windows for 3 seconds. Everytime when you press"AUTO" or "OK" button, this message appears on the screen automatically.

ATTENTION SIGNAL

OSD MAIN CONTROLS LOCKED

Unlock OSD function

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

ATTENTION SIGNAL

OSD MAIN CONTROLS UNLOCKED

NO VIDEO INPUT

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

ATTENTION SIGNAL

CHECK CABLE CONNECTION

CANNOT DISPLAY THIS VIDEO MODE..

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

ATTENTION SIGNAL

CANNOT DISPLAY THIS VIDEO MODE,CHANGE COMPUTER DISPLAY INPUT TO 1280*1024@60HZ!

WAIT FOR AUTOMATIC ADJUSTMENT

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

ATTENTION SIGNAL

WAITING FOR AUTOMATIC ADJUSTMENT

Access Aging.. Mode

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

Bring up:

After 15 seconds, bring up:

After 15 seconds, bring up:

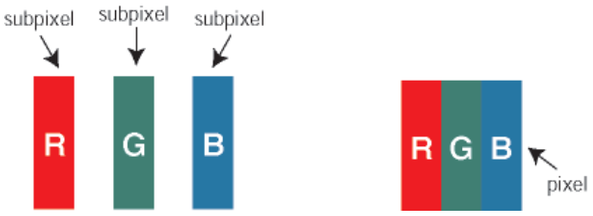
After 15 seconds, bring up:

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

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



Pixels and Sub pixels

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

Types of Pixel Defects

Pixel and sub pixel defects appear on the screen in different ways. There are two categories of pixel defects and several types of sub pixel defects within each category.

Bright Dot Defects Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. These are the types of bright dot defects:

One lit red, green or blue sub pixel

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

Three adjacent lit sub pixels (one white pixel)

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

One dark sub pixel

Two or three adjacent dark sub pixels

Proximity of Pixel Defects

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

Pixel Defect Tolerances

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

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

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

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

Note:

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

All Philips monitors are ISO13406-2 Compliant

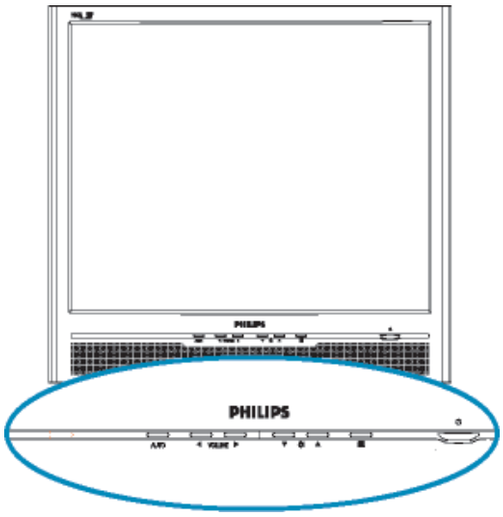
Warning Message Table

Warning message table

Item	Attention Signals	Display Time	Condition	Attention off
1	CANNOT DISPLAY THIS VIDEO MODE, CHANGE COMPUTER DISPLAY INPUT TO 1024X768 @ 60HZ	30 mins	This warning appears when the input signal from your computer is not in a standard video mode or is out of the monitor's scanning range. After 30 mins, monitor enters sleeping mode.	No
2	NO VIDEO INPUT	30 mins	This message appears when there is no signal input but with cable while AC or DC while power on. After 30 mins, monitor enters sleeping mode.	Yes Show floating menu ATTENTION SIGNAL OFF
3	CHECK CABLE CONNECTION	30 mins	This message appears when a signal cable is disconnected while monitor is working. After 30 mins, monitor enters sleeping mode.	Yes Show floating menu ATTENTION SIGNAL OFF
4	ENTERING SLEEP MODE	3 secs	This message appears when monitor is about to enter power saving mode.	No
5	WAITING FOR AUTOMATIC ADJUSTMENT	till auto adjustment finished	This message is displayed when the auto adjustment button is pressed. It disappears when automatic adjustments are completed.	No
6	USE 1024 X 768 FOR BEST RESULT	On top of OSD main menu	The message will show up at the top of the OSD main menu in red color when the input resolution is not the 1024x768.	Yes
7	OSD MAIN CONTROLS LOCKED	3 secs / or Till OSD MAIN CONTROLS UNLOCKED appear	This message will appear 3 seconds to indicate the OSD MAIN CONTROLS status when to lock or un-lock it by pressing MENU(OK) button for more than 10 seconds while there is video input from PC. This function provides the alternative that user can lock all the OSD main control in case user don't want the FOS performance setting to be changed, for instance, during commercial exhibition.	No function when push 10 secs (If OSD lock then attention off, not any message and only attention on)
8	OSD MAIN CONTROLS UNLOCKED	3 secs	This message will appear 3 seconds to indicate the OSD MAIN CONTROLS status when to un-lock it by pressing MENU(OK) button for more than 10 seconds while there is video input from PC.	No function when push 10 secs
9	ATTENTION SIGNAL ON ATTENTION SIGNAL OFF	3 secs 3 secs	This message will appear 3 seconds to indicate the attention signals in ON or OFF status when to switch this function on or off by pressing the AUTO button for more than 10 seconds while at no video input from PC.	Yes
10	THIS IS 85HZ OVERSCAN, CHANGE COMPUTER DISPLAY INPUT TO 1024X768@60HZ	10 mins	This message will appear 5 seconds in every 60 seconds for 10 minutes when the input of PC video timing is at 85Hz mode. Remark: AUTO is still functional in this mode	No
11	the window of OSD MAIN CONTROLS	60 secs	This message will appear when the OK button is pressed.	Yes
12	the window of BRIGHTNESS	60 secs	This message will appear when the BRIGHTNESS button is pressed.	Yes
13 (Not for 150S project)	SELECTED INPUT NOT AVAILABLE	5 secs	When just one input (analog or digital), press input switch or hot key, then after show this warning message 5 sec, return to original input.	TBD

Factory Mode

Front Control Panel



Hudson												
BL :	0											
SUB - BRI :	166	255										
SUB - CON :	78	128	178									
9300K	R	Xxx	G	xxx	B	xxx						
6500K	R	Xxx	G	xxx	B	xxx						
SRGB	R	Xxx	G	xxx	B	xxx	B	255	C	178		
OFFSET2	R	Xxx	G	xxx	B	xxx						
GAIN	R	Xxx	G	xxx	B	xxx	M	255	m	0		
AUTO-SUB		OK!	OSDTIMER			60						
		Xxx	IDX :			0						
OFFSET1	R	Xxx	G	xxx	B	xxx						
SCALER:ADD:			VAL:		READ		WRITE					
NVRAM:ADD:			VAL:		READ		WRITE					
PANEL:		HS										
	1024x768		48.3KHz @60Hz									

Access Factory Mode

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

Mean: it is not 1280*1024 resolution now

Factory Mode indicator

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

Factory Menu
Cursor can move on gray color area
Hot key function: by pressing " up " and " DOWN " key
Simultaneously at User Mode (or Factory Mode)
(PS: The Offset R G B function can be used on reduce or eliminate snowy noise on the background when the resolution of video signal is 1280*1024 vertical 60Hz. Slightly increase or decrease the value until snowy noise completely disappear

Satety Test Requirements

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

HI-POT TEST INSTRUCTION

1.Application requirements

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

2. Test method

2.1 Connecting conditions

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

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

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

2.2.1 The minimum test duration for Quality Control Inspector must be 1 minute.

2.2.2 The test voltage must be maintained within the specified voltage + 5%.

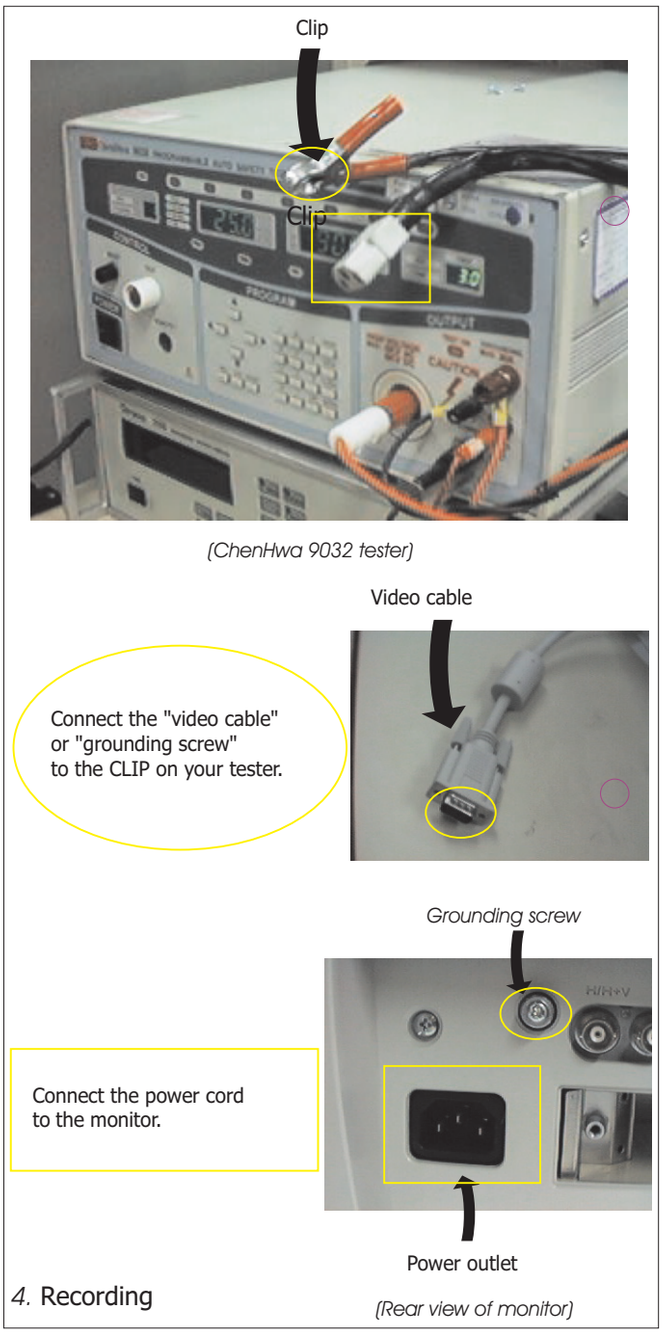
2.2.3 There must be no breakdown during the test.

2.2.4 The grounding blade or pin of mains plug must be conducted with accessible metal parts.

3. Equipments and Connection

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

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



4. Recording

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

Electrical Instructions

1. General points

1.1 During the test and measuring, supply a distortion free AC mains voltage to the apparatus via an isolated transformer with low internal resistance.

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

1.3 All voltages are to be measured or applied with respect to ground, unless otherwise stated.
Note: don□t use heat-sink as ground.

1.4 The test has to be done on a complete set including LCD panel after 30 minutes warm-up at least in a room with temperature of 25 +/- 5 degree C.

1.5 All values mentioned in these test instruction are only applicable of a well aligned apparatus, with correct signal.

1.6 The letters symbols (B) and (S) placed behind the test instruction denotes
(B): carried out 100% inspection at assembly line
(S): carried out test by sampling

1.7 The white balance (color temperature) has to be tested in subdued lighted room.

1.8 Repetitive power on / off cycle are allowed except it should be avoided within 6 sec.

2. Input signal

2.1 Signal type

2.1.1 Video signal input

Signal source: pattern generator format as attachment. (Table 1 to 33) Reference generator: QuantumData 802G The inp t signals can be applied in two different modes:

1). VESA Analog

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

2). Intel DVI Digital

Input signal: Four channel TMDS signals

2.1.2 Sync signal input

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

Separate sync TTL level, Positive/Negative
Composite sync TTL level, Positive/Negative
Sync on green H-sync TTL level, Positive/Negative
Signal source: pattern generator format as attachment (Table 1 to 33) Reference generator: QuantumData 802G

2.2 Input signal mode

Pre-set 33 modes

PRESET VIDEO RESOLUTION

#	Resolution	H-Frequency	Pixel rate	V-Frequency	Comment
1	640X350	31.5K	25.175	70Hz	IBM VGA 10h
2	720X400	31.5K	28.322	70Hz	IBM VGA 3h
3	640X480	31.5K	25.175	60Hz	
4	640X480	35.0K	30.24	67Hz	
5	640X480	37.9K	31.5	72Hz	
6	640X480	37.5K	31.501	75Hz	
7	640X480	43.3K	36	85Hz	
8	800X600	35.2K	36	56Hz	
9	800X600	37.9K	40	60Hz	
10	800X600	48.1K	50	72Hz	
11	800X600	46.9K	49.498	75Hz	
12	800X600	53.7K	56.251	85Hz	
13	832X624	49.7K	57.28	75Hz	MAC
14	1024X768	48.4K	65	60Hz	
15	1024X768	56.5K	75	70Hz	
16	1024X768	60.0K	78.75	75Hz	
17	1024X768	61.1K	83.096	76Hz	IBM XGA-2
18	1024X768	68.7K	94.5	85Hz	
19	1152X864	54.0K	79.9	60Hz	non-VESA
20	1152X864	67.5K	108	75Hz	
21	1152X864	63.9K	94.5	70Hz	non-VESA
22	1152X870	68.7K	100	75Hz	MAC
23	1152X900	61.8K	92.94	66Hz	SUN Mode IV
24	1152X900	71.8K	108	76Hz	SUN Mode II
25	1280X960	60.0K	108	60Hz	
26	1280X960	75.0K	129.895	75Hz	non-VESA
27	1280X1024	64.0K	108	60Hz	
28	1280X1024	71.7K	117	67Hz	SUN Mode V
29	1280X1024	76.0K	130.223	72Hz	DOS/V
30	1280X1024	80.0K	135	75Hz	
31	1280X1024	81.1K	135.008	76Hz	SUN Mode I
32	960X720	44.76K	57.58	60Hz	
33	960X720	56.4K	72.42	75Hz	

2.3 Allowed 85 Hz overscan signal mode specified
Once the signal input of PC is 85Hz, this monitor is able to display at least for10 minutes. An attention signal appears and shows " This is 85Hz over scan, change computer display input to 1280*1024 @ 60 Hz "

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

3. POWER SUPPLY (Buy in power board)

3.1 Setup the AC I/P at 90VAC, add 2.6A loading to +12V O/P and DC O/P voltage is 12V +/- 1.2V, 1A loading to 3.3V O/P and DC O/P voltage is 3.3V +/- 0.165V, 1.5A loading to 5V O/P and DC O/P voltage is 5V +/- 0.5V (B).

3.2 Check voltage at 3.3V O/P should be within the range 3.3V +/- 0.165V.
5.0V O/P should be within the range 5.0V +/- 0.5V.
12V O/P should be within the range 12V +/- 1.2V (B)

4. Display Adjustment

Access to factory mode (RS232) in auto-alignment system
The communication protocol switch to RS232 .

4.1 Auto color adjustment (B)
Apply a 640 * 480 / 60Hz signal with 16 level grey test pattern, set brightness control at 100%, and contrast control at 70%. Adjust the R. G. B offset, and gain to calibrate the color smoothly and 64-grey level distinguishable.

4.3 Adjustment of WHITE-D (B)
Apply a 1280*1024 / 60Hz signal with white pattern, set brightness control at 100%, and contrast control at 70%. Adjust the R, G, B Sub-Gain, for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be:

	9300°K	6500°K
x (center)	0.283 ± 0.008	0.313 ± 0.008
y (center)	0.297 ± 0.008	0.329 ± 0.008

Use Minolta CA-110 for color coordinates and luminance check. Luminance is > 200 Nits in the center of the screen when brightness at 100% and contrast set to 100%.

4.4 Adjustment of sRGB
Apply a 1280*1024/ 60Hz signal with white pattern, set brightness control at 100%, and contrast control at 70%. Adjust the R, G, B Sub-Gain, for the screen center, the 1931 CIE chromaticity (X, Y) co-ordinates shall be:

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

4.5 EEPROM presetting (B)
After finishing all the adjustment, set:Brightness control t 100% Contrast control to 70% OSD position at middle of screen COLOR ADJUST to 6500K color.

4.6 When adjustment is finished, monitor should be set to 6500Kcolor.

Mechanical Instructions

Front View

Fig.1

Back View

Fig.2

Step1. Remove the base as shown in Fig. 3-4
-Remove the hinge cover
-Remove the six screws

Fig.3

Fig.4

Step2. Remove the Front Bezel
-Remove the two screws as shown in Fig.5
-Use the thin " | " screw driver to open the clicks as shown in Fig.6-8.

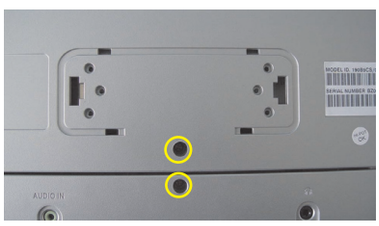


Fig.5

Fig.6

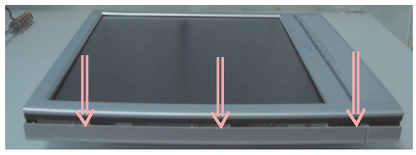


Fig.7

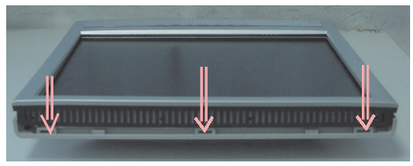


Fig.8

Step3.Remove the BacK cover
- Remove the three threws as shown in Fig.9
- remove the five clicks as shown in Fig.9 and disconnect 1931 from Audio-board and 1712 from Control-board
- Use the thin " | " type screw driver to open the clicks as shown in Fig.10

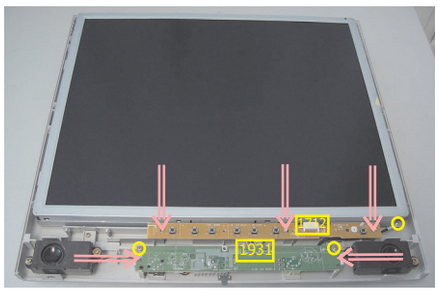


Fig.9

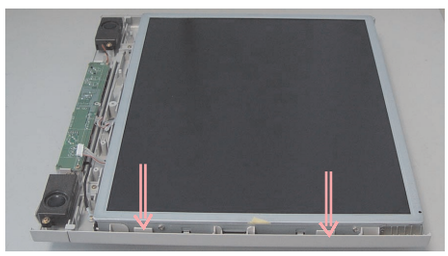


Fig.10

Step4. Remove the Matel frame board
- Remove the ten screws as shown in Fig.11
- Disconnect D-SUB & DVI hexagonal screws as shown in Fig.11
- Remove the matel frame board as shown in Fig.12

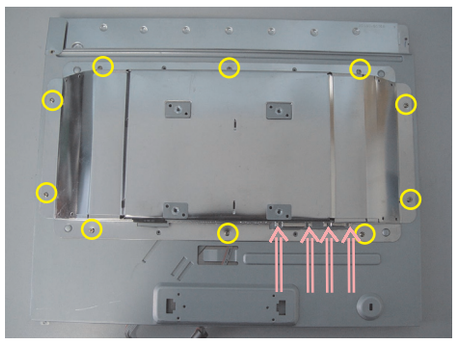


Fig.11

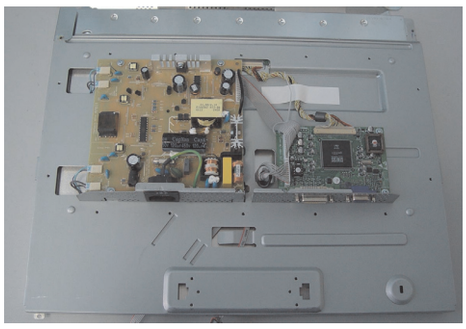


Fig.12

Step 5. Remove the sclar and power board.
- RemoveDisconnect the 1503,1505,1412 and 4 backlight cables as shown in Fig.13
- Remove the scaler and power board as shown in Fig.14

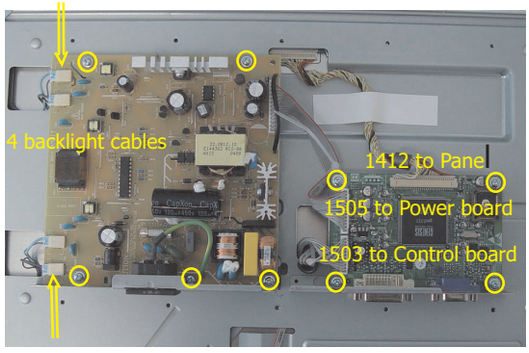


Fig.13

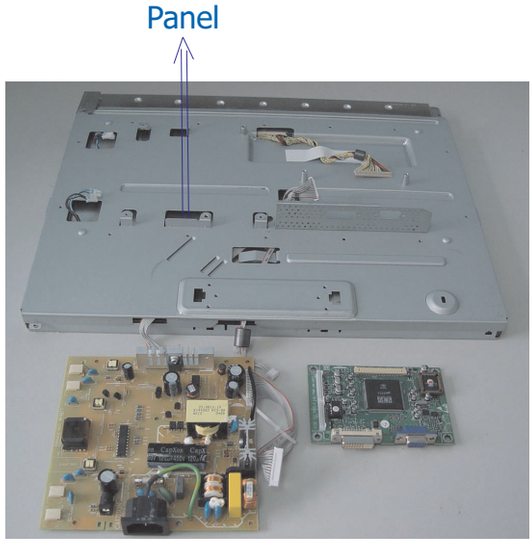


Fig.14

****
In warranty, it is not allowed to disassembly the LCD panel, even the backlight unit defect.
Out of warranty, the replacement of backlight units is a correct way when the defect is caused by backlight (CCFL, Lamp).
****

ISP Cable for CPU

Configuration and procedure

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

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

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

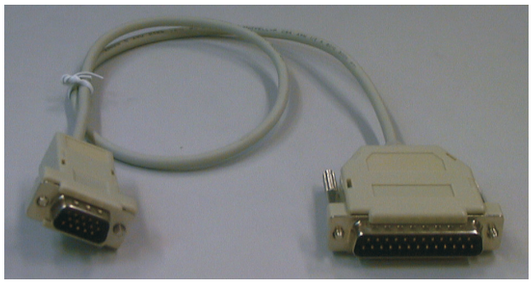


Fig.1 ISP CABLE :12NC IS "3138 106 10148".

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

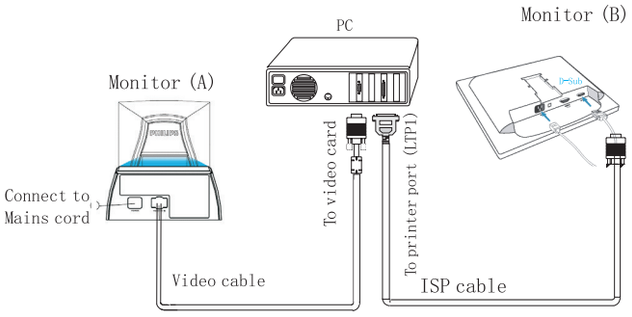


Fig. 2

6. Install and setup the Gprobe 4.5.0.5.exe program

step 1. Create a folder in your PC .for example: D:\190B5
step 2.Copy ISP software 190B5 software .Zip into your folder
step 3.Unzip ISP.ZIP into your folder as shpwn in Fig.3
step 4.Double click the Gprobe4.5.0.5.exe icon to install the application as shown Fig.4

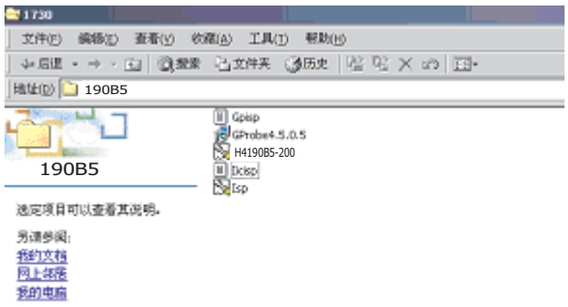


Fig.3

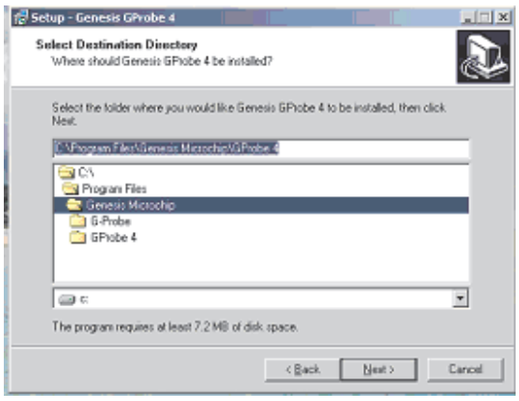


Fig.4

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

ISP CABLE FOR CPU

Update the firmware

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

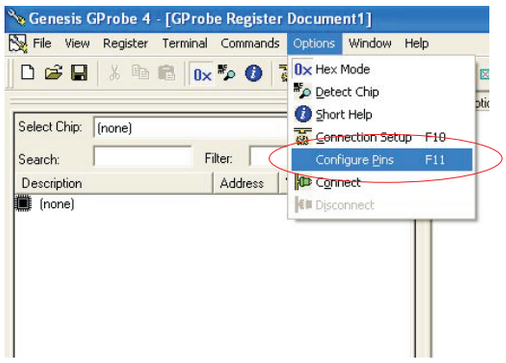


Fig.5

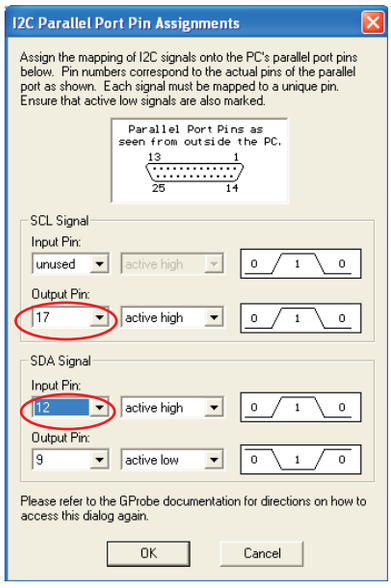


Fig.6

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

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

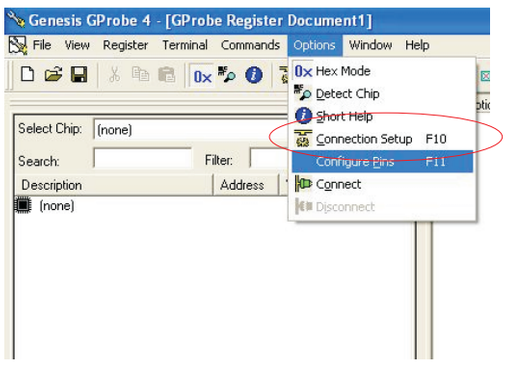


Fig.7

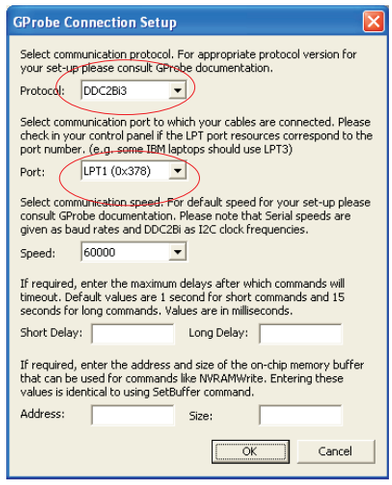


Fig.8

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

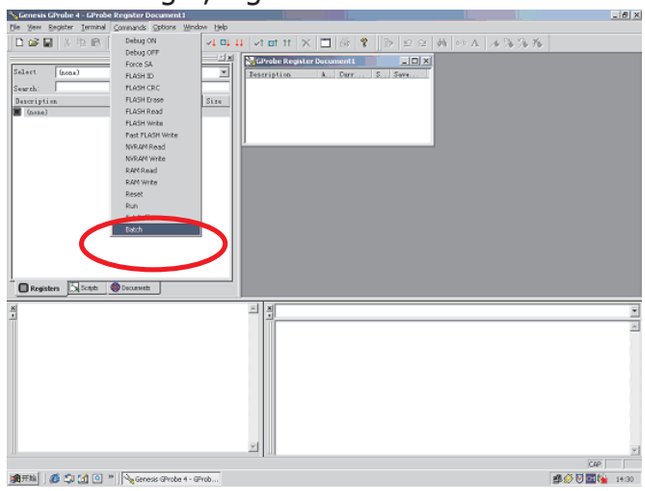


Fig.9

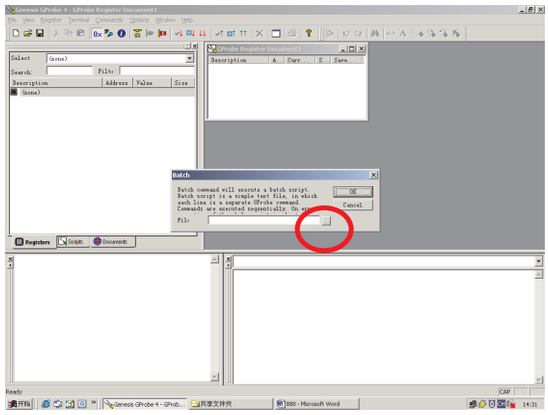


Fig.10

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

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

ISP Cable for CPU

Go to cover page

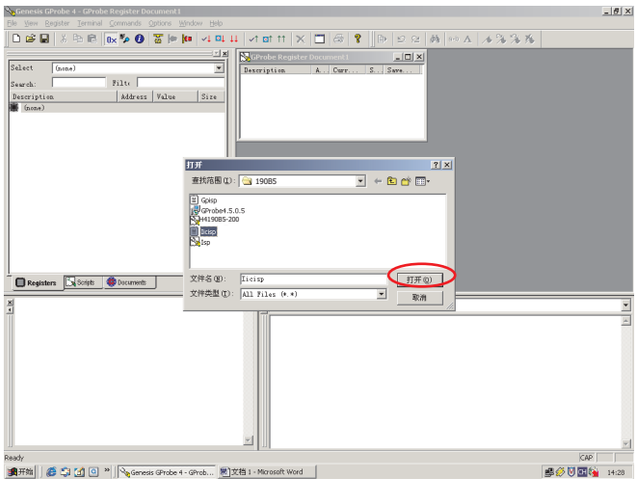
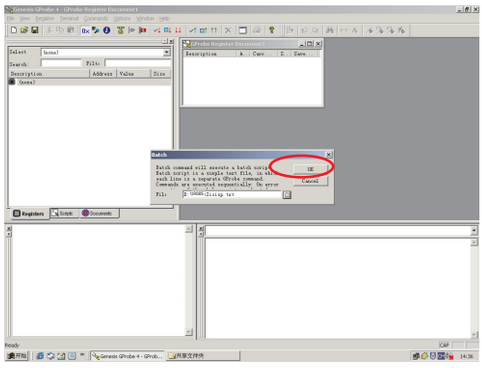
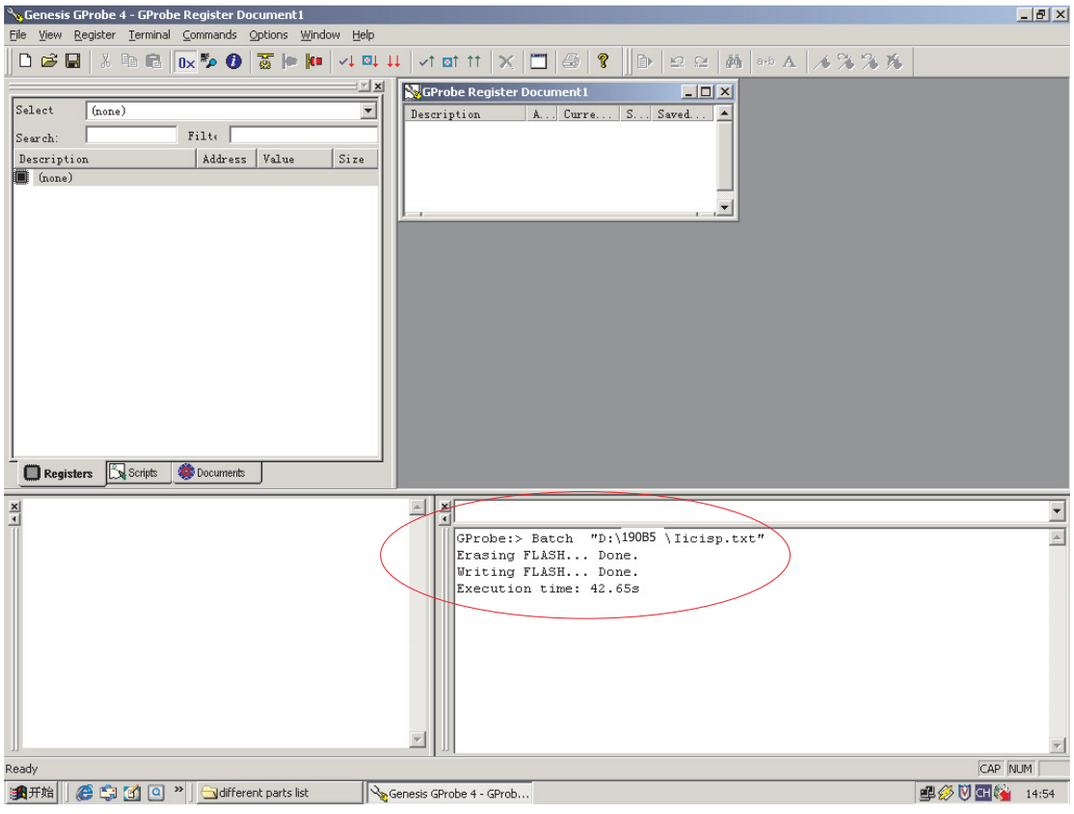


Fig.11 click "OPEN"



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



General

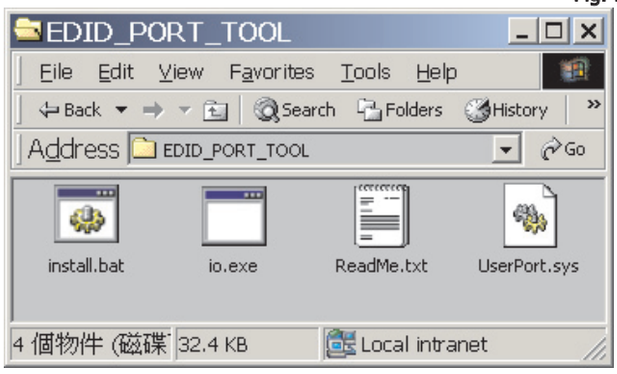
DDC Data Re-programming
In case the DDC data memory IC or main EEPROM which storage all factory settings were replaced due to a defect, the serial numbers have to be re-programmed"Analog DDC IC, & EEPROM".
It is advised to re-soldered DDC IC and main EEPROM from the old board onto the new board if circuit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

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

System and equipment requirements

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

Fig. 1



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

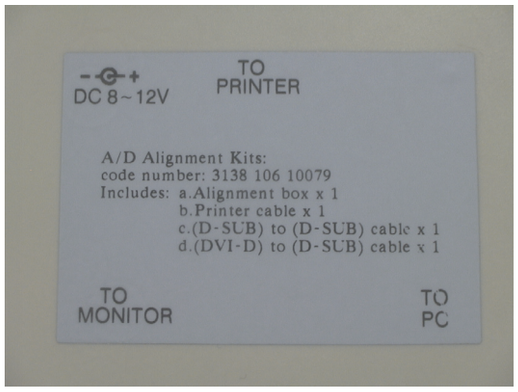
C:\WINDOWS\system32\drivers(winXP)

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

3. EDID46.EXE program .

4. A/D Alignment kits (3138 106 10079):
   inclusion : a. Alignment box x1 (as Fig. 2)

Fig. 2



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

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

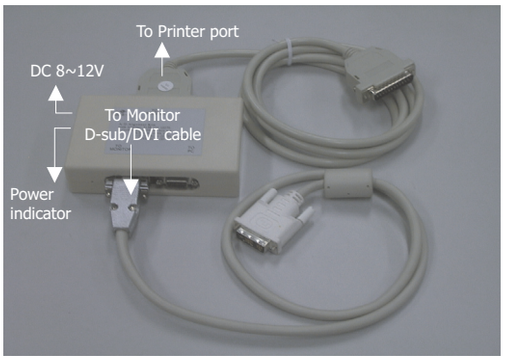
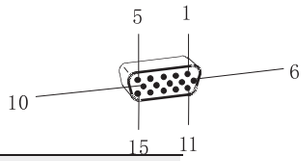


Fig. 3

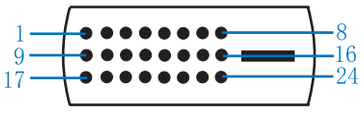
Pin assignment

A. 15-pin D-Sub Connector



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

B. Input DVI -D Connector pin



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

DDC Instructions

Configuration and procedure

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

Initialize alignment box

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

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

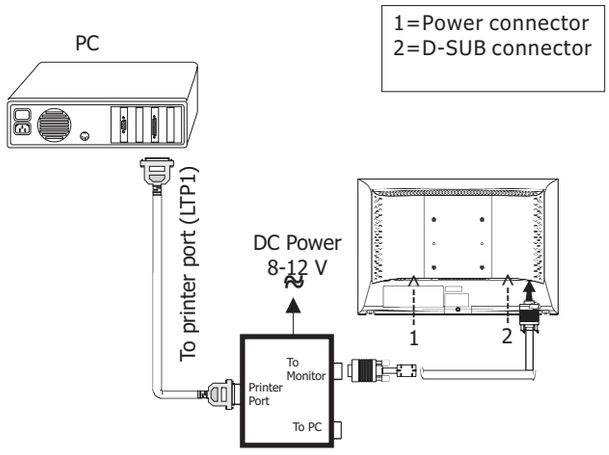


Fig. 4

Step 3: Installation of EDID46.EXE

Method 1: Start on DDC program

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

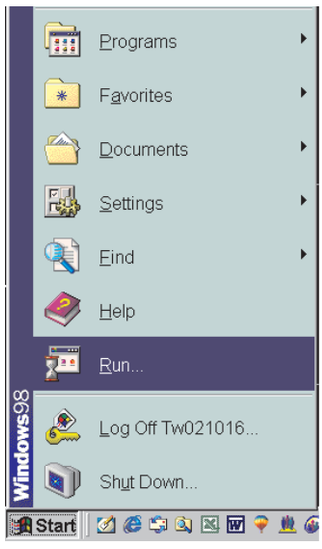


Fig. 5

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

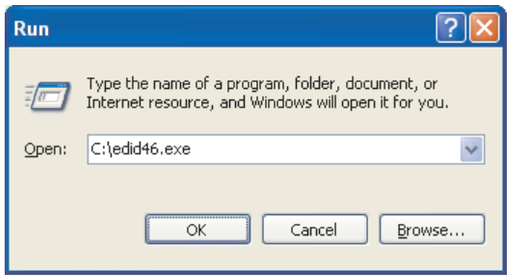


Fig. 6

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

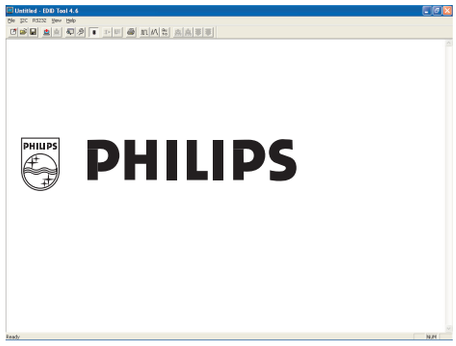


Fig. 7

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

Fig. 8

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

1. The data structure of EDID was incorrect.
2. DDC IC that you are trying to load data is empty.
3. Wrong communication channel has set at configuration setup

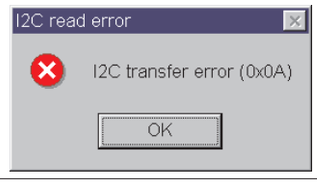


Fig. 9

Re-programming Analog DDC IC

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

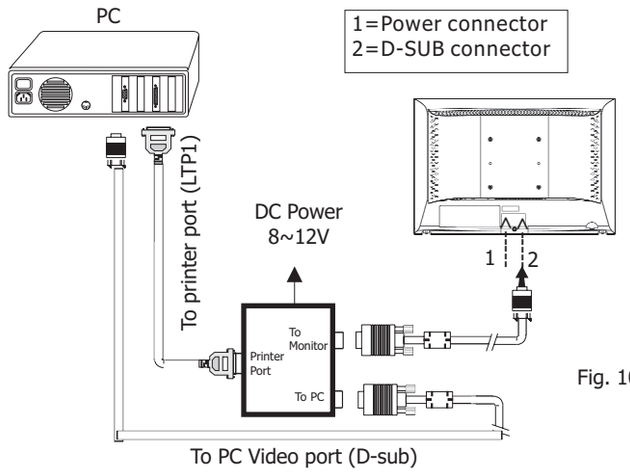


Fig. 10

Step 2: Read DDC data from monitor

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

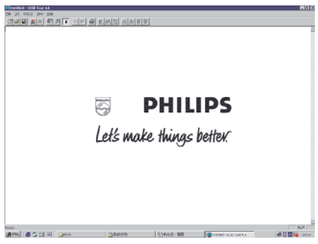


Fig. 11

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

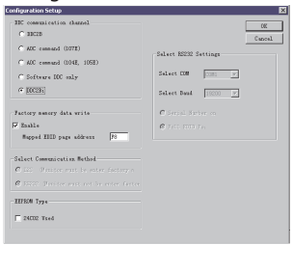


Fig. 12

3. Click OK button to confirm your selection.

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

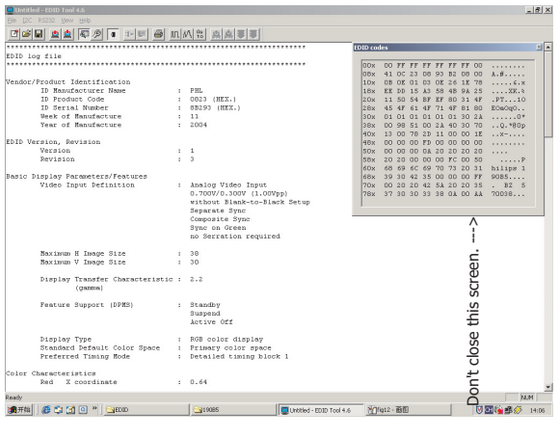


Fig. 13

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

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

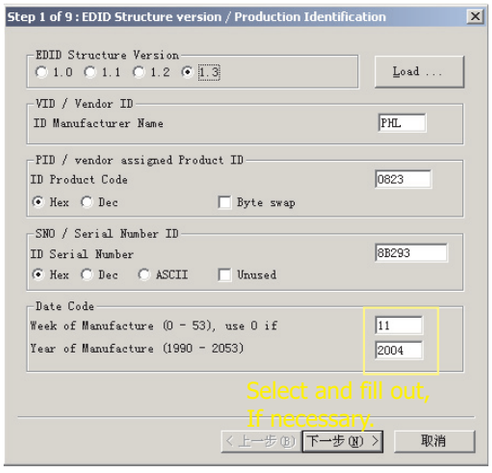


Fig. 14

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

1. Click Next , bring up Fig. 15.

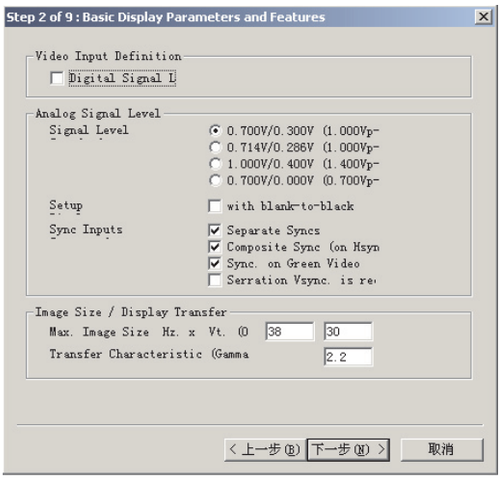


Fig. 15

2. Click Next , bring up Fig. 16.

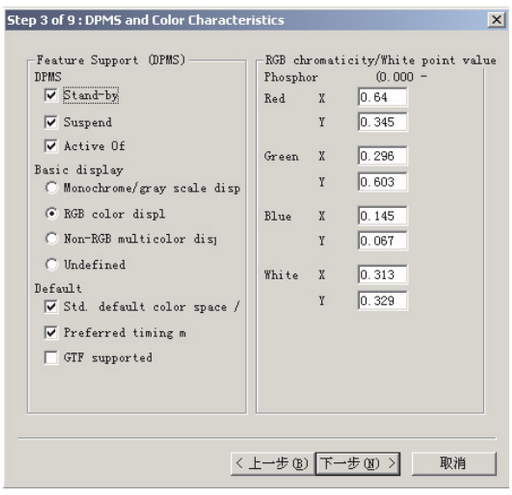


Fig. 16

DDC Instructions

3. Click Next , bring up Fig. 17.

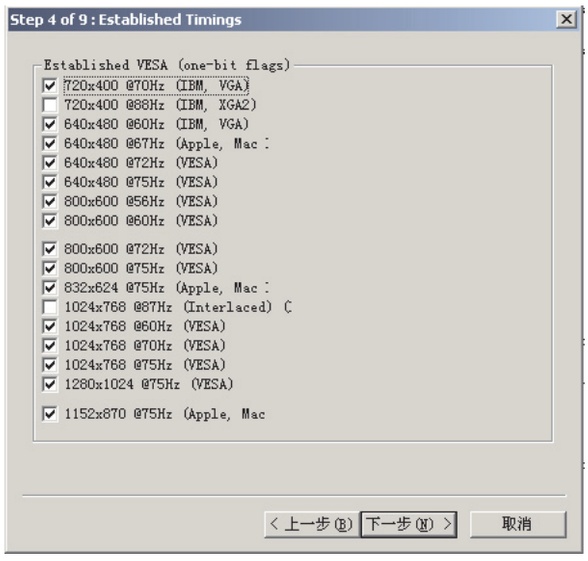


Fig. 17

4. Click Next , bring up Fig. 18.

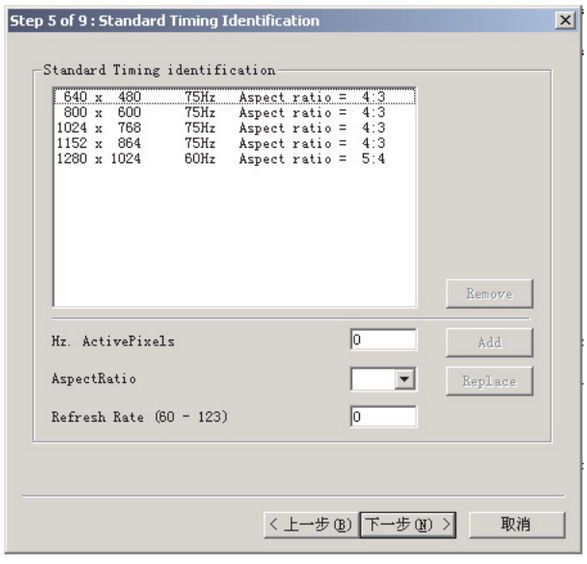


Fig. 18

5. Click Next , bring up Fig. 19.

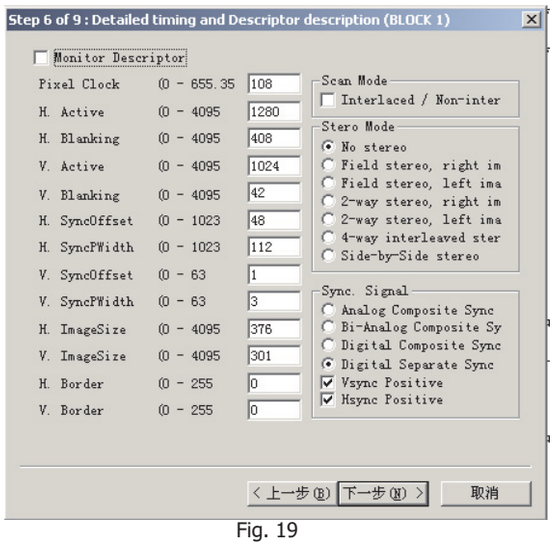


Fig. 19

6. Click Next , bring up Fig. 20.

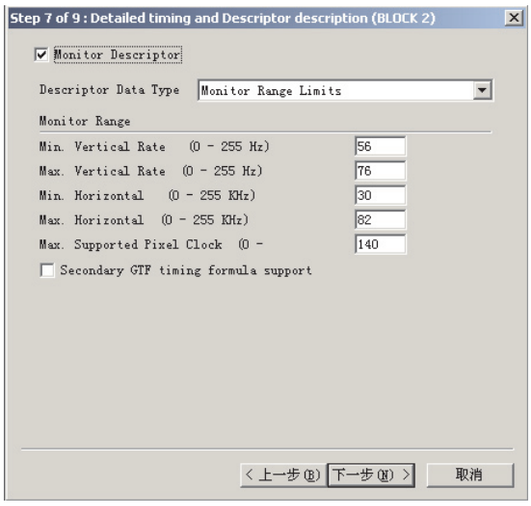


Fig. 20

7. Click Next , bring up Fig. 21.

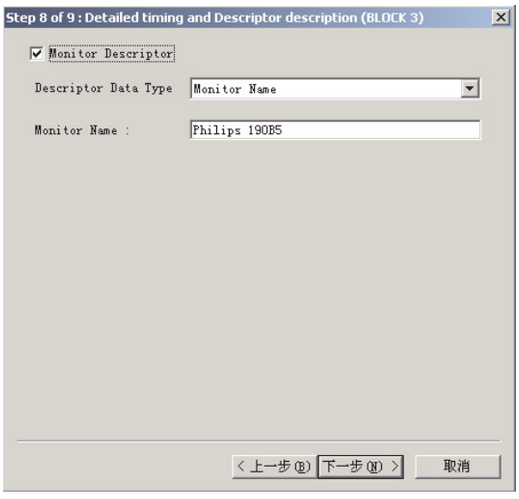


Fig. 21

8. Click Next , bring up Fig. 22.
   - Serial number can be filled up or be changed at this moment.
   - Click Finish to exit the Step window.

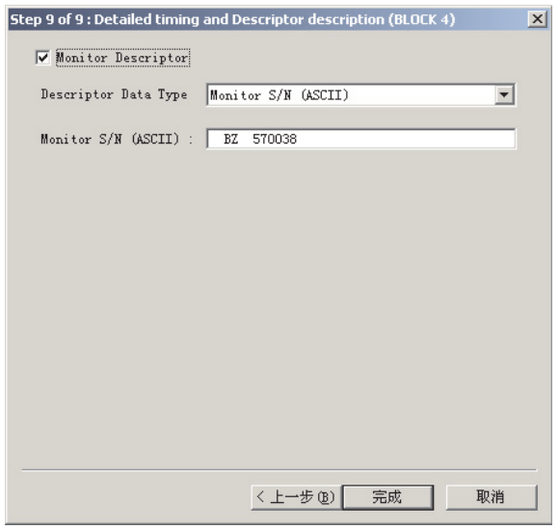


Fig. 22

Re-programming Digital DDC IC

Step 1: After initialize alignment box, connecting all cables and box as shown in Fig. 23

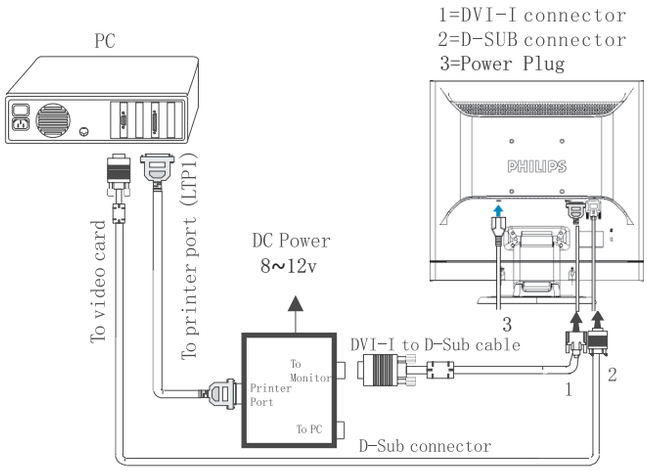


Fig.23

Step 2: Read DDC data from monitor

1. Click  icon as shown in Fig. 24 from the tool bar to bring up the Channels "Configuration Setup" windows as shown in Fig. 25.

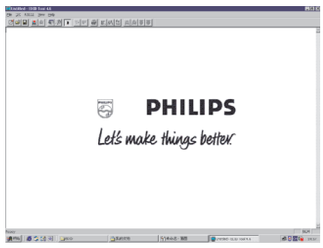


Fig. 24

2. Select the DDC2Bi as the communication channel. As shown in Fig. 25.

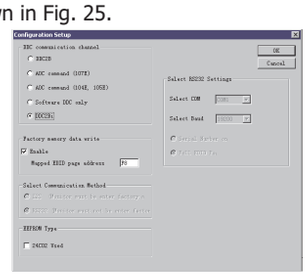


Fig. 25

3. Click OK button to confirm your selection.

4. Click  icon (Read EDID function) to read DDC EDID data from monitor. The EDID codes will display on screen as shown in Fig. 26.

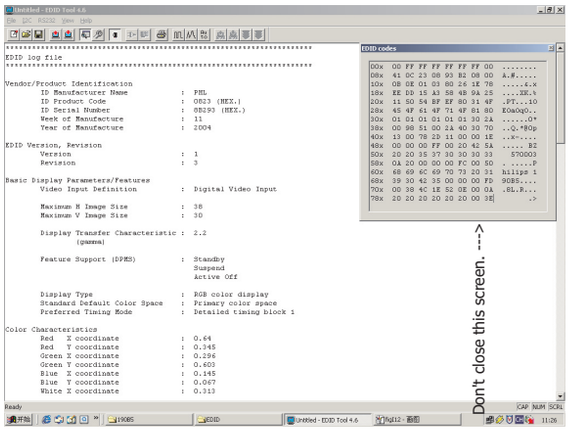


Fig. 26

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

1. Click  (new function) icon from the tool bar, bring up Step 1 of 9 as shown in Fig. 27 .
EDID46 DDC application provides the function selection and text change (select & fill out) from Step 1 to Step 9.

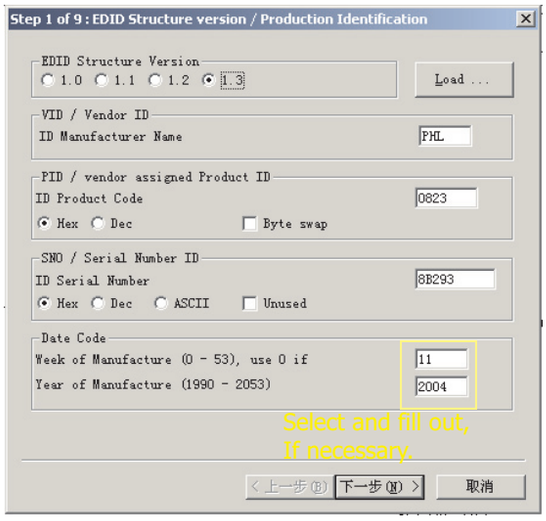


Fig. 27

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

1. Click Next , bring up Fig. 28.

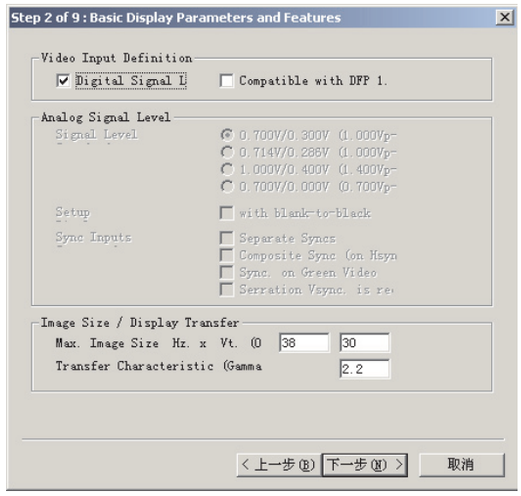


Fig. 28

2. Click Next , bring up Fig. 29.

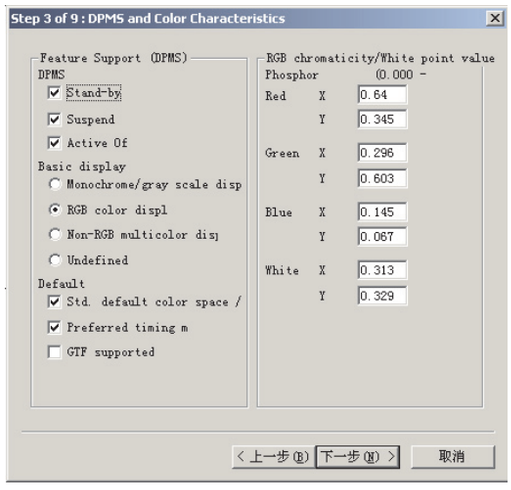


Fig. 29

DDC Instructions

3. Click Next , bring up Fig. 30.

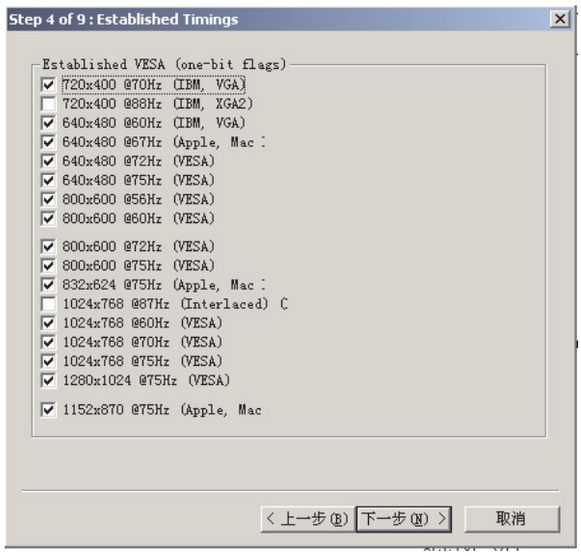


Fig. 30

4. Click Next , bring up Fig. 31.

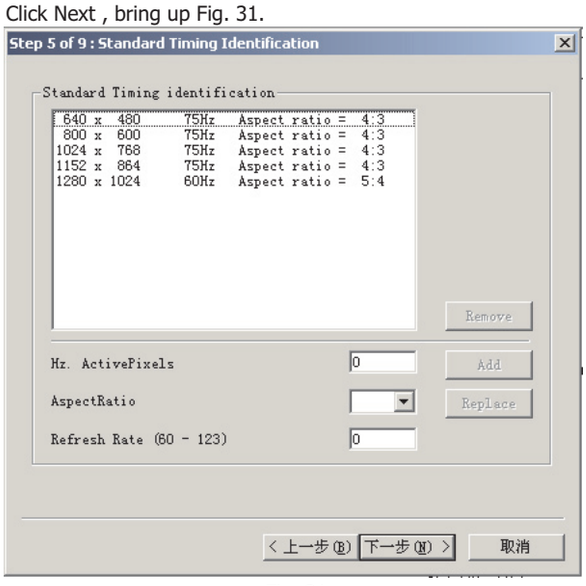


Fig. 31

5. Click Next , bring up Fig. 32.

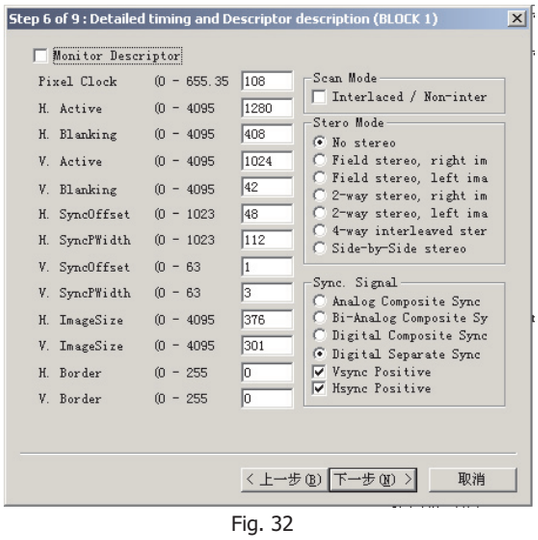


Fig. 32

6. Click Next , bring up Fig. 32.

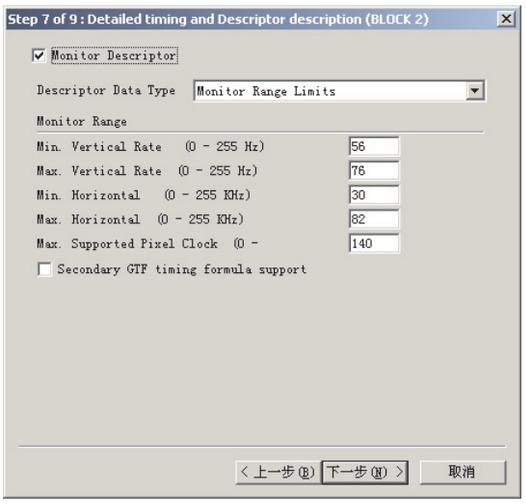


Fig. 32

7. Click Next , bring up Fig. 33.

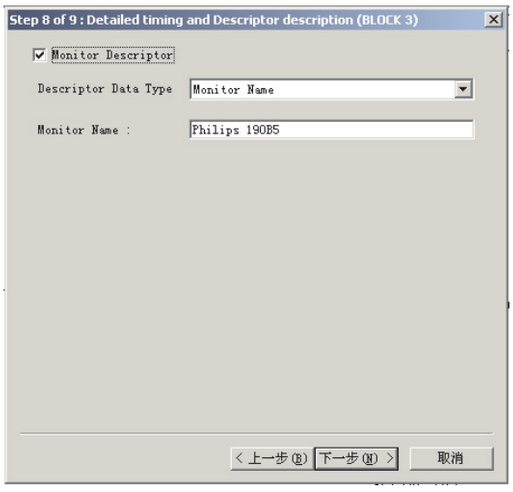


Fig. 33

8. Click Next , bring up Fig. 34.
   - Serial number can be filled up or be changed at this moment.
   - Click Finish to exit the Step window.

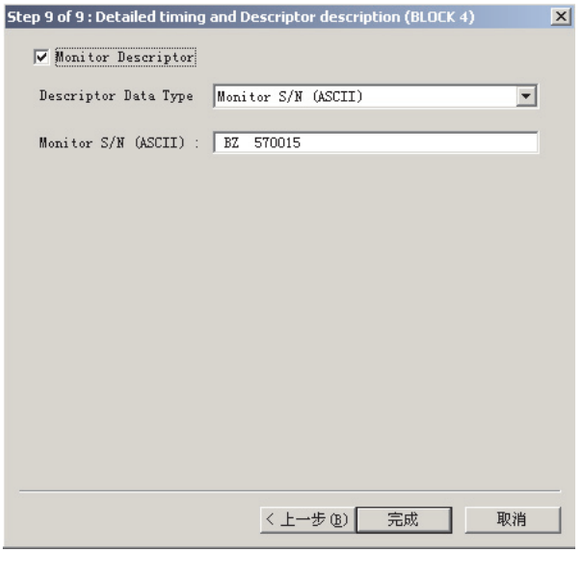


Fig. 34

Step 5: Write DDC data

1. Configuration should be as Fig. 35. And press OK.

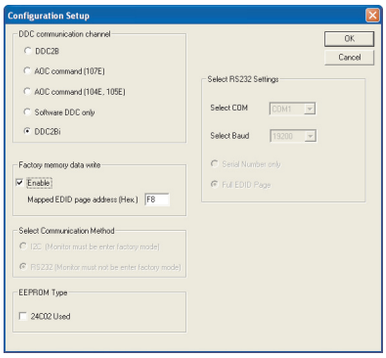


Fig. 35

2. Access Factory Mode

Step 1 :
Turn off monitor.

Step 2 :
[Push AUTO " AUTO " & OK " OK " buttons at the same time and hold it] + [Press power " ⏻ " button untill comes out "Windows screen"] => then release all button

3. Click (Write EDID) icon from the tool bar to write DDC data. Bring up " ready" a progressing bar on the left, then bring up the Window as shown in Fig.36, click the " enter" button to finish Writing
4. Turn off/on monitor

Fig.36

5. Press the OK button to bring up the OSD main manu.

6. Press the DOWN button to select PRODUCTION INFORMATION press the OK button to confirm our selection.

7. Re-confirm the serial Number is updated.

Step 6: Save DDC data

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

1. Click (Save) icon (or click "file"-> "save as") from the tool bar And give a file name as shown in Fig. 24.
The file type is EDID46 file (*.ddc) which can be open in WordPad. By using WordPad, the texts of DDC data & table (128 bytes, hex code) can be modified. If DDC TEXTS & HEX Table are completely correct, it can be saved as .ddc flie to re-load it into DDC IC for DDC Data application.

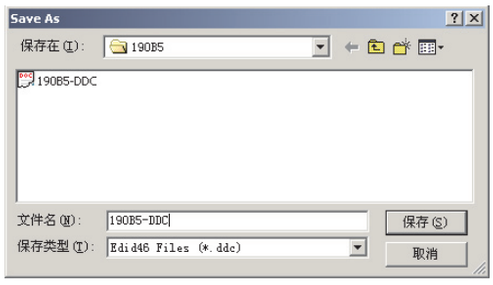


Fig. 37

2. Click Save.

Step 7: Exit DDC program

Pull down the File menu and select Exit as shown in Fig. 38.

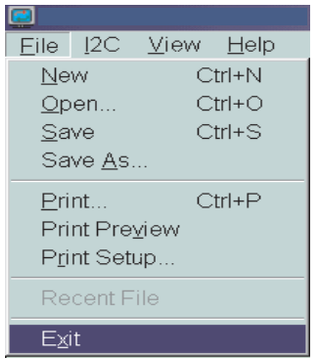


Fig. 38

DDC Data

Go to cover page

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING:
(FOR 190B5 ANALOG FOR LPL PANEL)
****
EDID log file
****

Vendor/Product Identification
- ID Manufacturer Name : PHL
- ID Product Code : 0823(HEX.)
- ID Serial Number : 1234 (HEX.)
- Week of Manufacture : 5
- Year of Manufacture : 2004

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

Basic Display Parameters/Features
- Video Input Definition : Analog Video Input
  0.700V/0.300V (0.70 Vpp)
  Without Blank-to-Black Setup

  Separate Sync
  Composite Sync
  Sync on Green
  No Serration required

- Maximum H Image Size : 38
- Maximum V Image Size : 30
- Display Transfer Characteristic: 2.2 (gamma)
- Feature Support (DPMS) : Standby
  Suspend
  Active Off

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

Color Characteristics
- Red X coordinate : 0.640
- Red Y coordinate : 0.345
- Green X coordinate : 0.296
- Green Y coordinate : 0.603
- Blue X coordinate : 0.145
- Blue Y coordinate : 0.067
- White X coordinate : 0.313
- White Y coordinate : 0.329

Established Timings

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

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

Manufacturer's timings: 1152 x 870 @75Hz (VESA)

Standard Timing Identification #1
- Horizontal active pixels : 640
- Aspect Ratio : 4:3
- Refresh Rate : 75

Standard Timing Identification #2
- Horizontal active pixels : 800
- Aspect Ratio : 4:3
- Refresh Rate : 75

Standard Timing Identification #3
- Horizontal active pixels : 1024
- Aspect Ratio : 4:3
- Refresh Rate : 75

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

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

Detailed Timing #1
- Pixel Clock (MHz) : 108
- H Active (pixels) : 1280
- H Blanking (pixels) : 408
- V Active (lines) : 1024
- V Blanking (lines) : 42
- H Sync Offset (F Porch) (pixels): 48
- H Sync Pulse Width (pixels) : 112
- V Sync Offset (F Porch) (lines) : 1
- V Sync Pulse Width (lines) : 3
- H Image Size (mm) : 376
- V Image Size (mm) : 301
- H Border (pixels) : 0
- V Border (lines) : 0
- Flags : Non-interlaced
  : Normal Display, No stereo
  : Digital Separate sync.
  : Positive Vertical Sync.
  : Positive Horizontal Sync.

Monitor Descriptor #2
- Serial Number : TY 123456

Monitor Descriptor #3
- Monitor Name : Philips 190B5

Monitor Descriptor #4
- Monitor Range Limits
- Min. Vt rate Hz : 56
- Max. Vt rate Hz : 76
- Min. Horiz. rate kHz : 30
- Max. Horiz. rate kHz : 82
- Max. Supported Pixel : 140
- No secondary GTF timing formula supported.

Extension Flag : 0
Check sum : A6 (HEX.)

****
EDID data (128 bytes)
****

```
 0: 00  1: ff  2: ff  3: ff  4: ff  5: ff  6: ff  7: 00
 8: 41  9: 0c 10: 23 11: 08 12: 34 13: 12 14: 00 15: 00
16: 05 17: 0e 18: 01 19: 03 20: 0e 21: 26 22: 1e 23: 78
24: ee 25: dd 26: 15 27: a3 28: 58 29: 4b 30: 9a 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 31 39: 4f
40: 45 41: 4f 42: 61 43: 4f 44: 71 45: 4f 46: 81 47: 80
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 78 67: 2d 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 20 78: 54 79: 59
80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36
88: 0a 89: 20 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 42 107: 35 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 52 117: 0e 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: a6
```

DDC Data

THE DISPLAY DATA CHANNEL (DDC_2B) CONTENT INCLUDING (FOR 190B5 DVI FOR LPL PANEL)

****

EDID log file

****

Vendor/Product Identification
- ID Manufacturer Name : PHL
- ID Product Code : 0823(HEX.)
- ID Serial Number : 1234 (HEX.)
- Week of Manufacture : 5
- Year of Manufacture : 2004

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

Basic Display Parameters/Features
- Video Input Definition : Digital Video Input
  Compatible with VESA DFP 1.x
- Maximum H Image Size : 38
- Maximum V Image Size : 30
- Display Transfer Characteristic: 2.2 (gamma)
- Feature Support (DPMS) : Standby
  Suspend
  Active Off
- Display Type : RGB color display
- Standard Default Color Space: Primary Color Space
- Preferred Timing Mode : Detailed timing block 1

Color Characteristics
- Red X coordinate : 0.640
- Red Y coordinate : 0.345
- Green X coordinate : 0.296
- Green Y coordinate : 0.603
- Blue X coordinate : 0.145
- Blue Y coordinate : 0.067
- White X coordinate : 0.313
- White Y coordinate : 0.329

Established Timings

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

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

Manufacturer's timings: 1152 x 870 @75Hz (VESA)

Standard Timing Identification #1
- Horizontal active pixels : 640
- Aspect Ratio : 4:3
- Refresh Rate : 75

Standard Timing Identification #2
- Horizontal active pixels : 800
- Aspect Ratio : 4:3
- Refresh Rate : 75

Standard Timing Identification #3
- Horizontal active pixels : 1024
- Aspect Ratio : 4:3
- Refresh Rate : 75

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

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

Detailed Timing #1
- Pixel Clock (MHz) : 108
- H Active (pixels) : 1280
- H Blanking (pixels) : 408
- V Active (lines) : 1024
- V Blanking (lines) : 42
- H Sync Offset (F Porch) (pixels): 48
- H Sync Pulse Width (pixels) : 112
- V Sync Offset (F Porch) (lines) : 1
- V Sync Pulse Width (lines) : 3
- H Image Size (mm) : 376
- V Image Size (mm) : 301
- H Border (pixels) : 0
- V Border (lines) : 0
- Flags : Non-interlaced
  : Normal Display, No stereo
  : Digital Separate sync.
  : Positive Vertical Sync.
  : Positive Horizontal Sync.

Monitor Descriptor #2
- Serial Number : TY 123456

Monitor Descriptor #3
- Monitor Name : Philips 190B5

Monitor Descriptor #4
- Monitor Range Limits
- Min. Vt rate Hz : 56
- Max. Vt rate Hz : 76
- Min. Horiz. rate kHz : 30
- Max. Horiz. rate kHz : 82
- Max. Supported Pixel : 140
- No secondary GTF timing formula supported.

Extension Flag : 0

Check sum : 34 (HEX.)

****

EDID data (128 bytes)

****

```
 0: 00  1: ff  2: ff  3: ff  4: ff  5: ff  6: ff  7: 00
 8: 41  9: 0c 10: 23 11: 08 12: 34 13: 12 14: 00 15: 00
16: 05 17: 0e 18: 01 19: 03 20: 80 21: 26 22: 1e 23: 78
24: ee 25: dd 26: 15 27: a3 28: 58 29: 4b 30: 9a 31: 25
32: 11 33: 50 34: 54 35: bf 36: ef 37: 80 38: 31 39: 4f
40: 45 41: 4f 42: 61 43: 4f 44: 71 45: 4f 46: 81 47: 80
48: 01 49: 01 50: 01 51: 01 52: 01 53: 01 54: 30 55: 2a
56: 00 57: 98 58: 51 59: 00 60: 2a 61: 40 62: 30 63: 70
64: 13 65: 00 66: 78 67: 2d 68: 11 69: 00 70: 00 71: 1e
72: 00 73: 00 74: 00 75: ff 76: 00 77: 20 78: 54 79: 59
80: 20 81: 20 82: 31 83: 32 84: 33 85: 34 86: 35 87: 36
88: 0a 89: 20 90: 00 91: 00 92: 00 93: fc 94: 00 95: 50
96: 68 97: 69 98: 6c 99: 69 100: 70 101: 73 102: 20 103: 31
104: 39 105: 30 106: 42 107: 35 108: 00 109: 00 110: 00 111: fd
112: 00 113: 38 114: 4c 115: 1e 116: 52 117: 0e 118: 00 119: 0a
120: 20 121: 20 122: 20 123: 20 124: 20 125: 20 126: 00 127: 34
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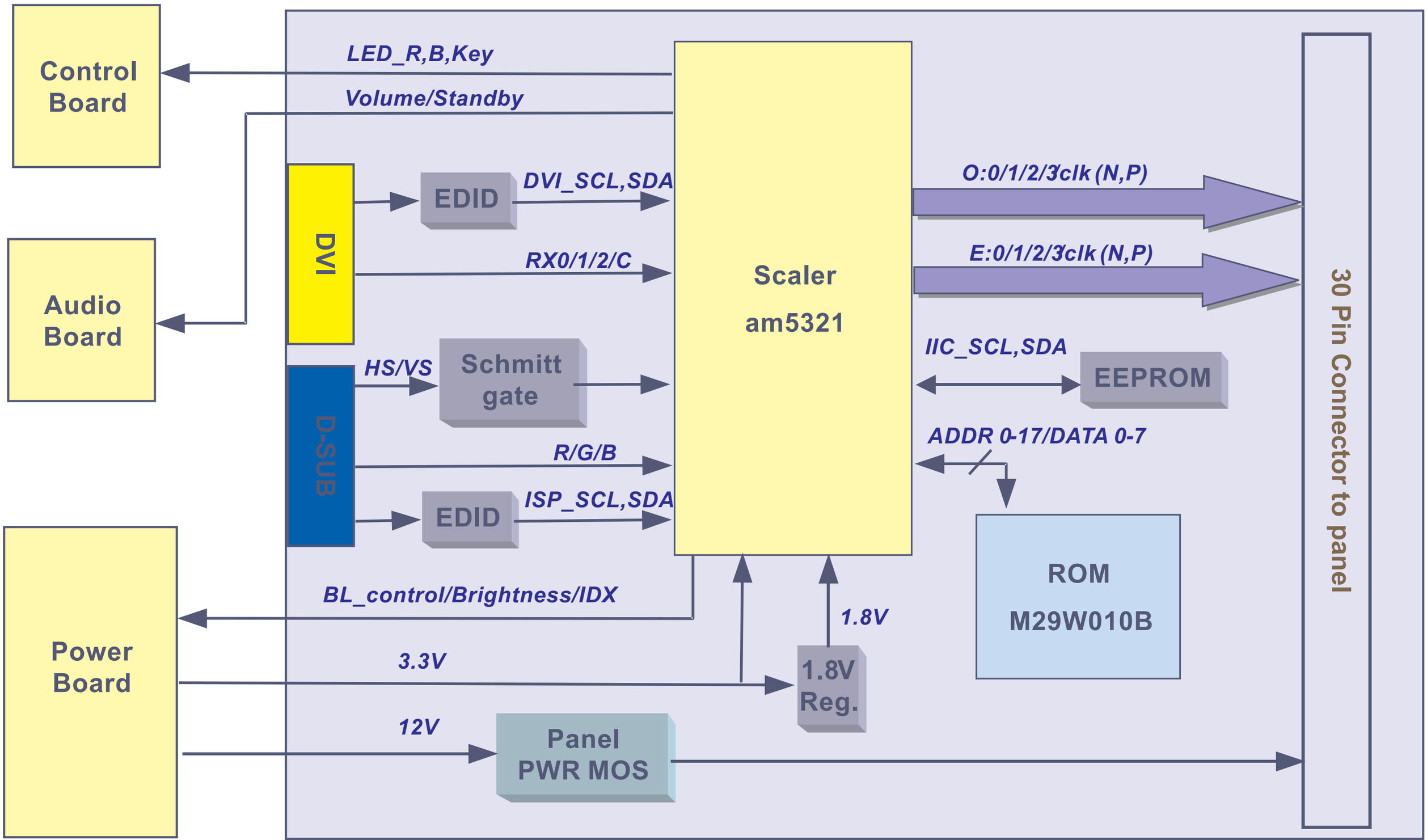
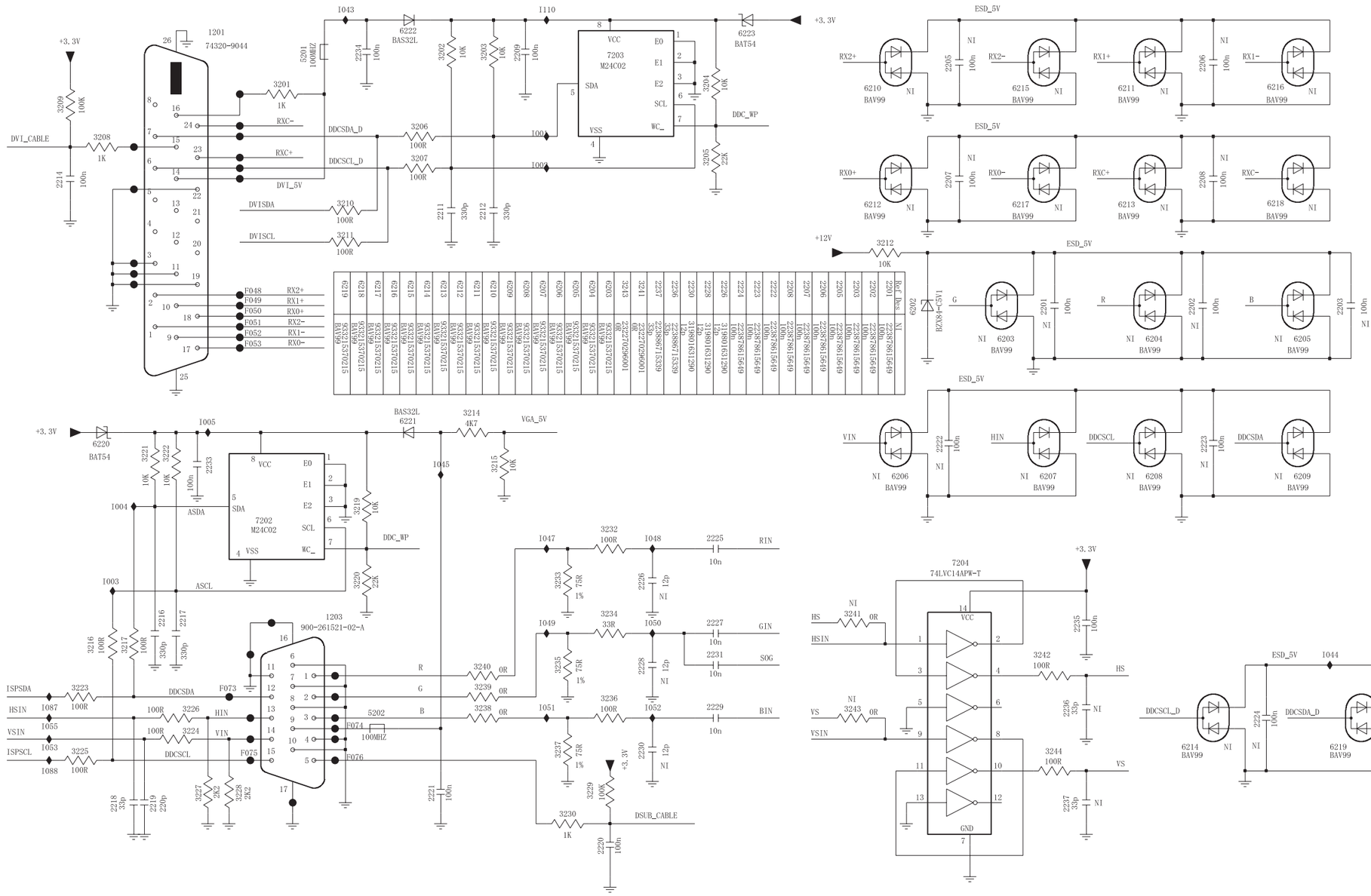
Block Diagram



Scaler Diagram-1



1201 A2
1203 E3
2201 C7
2202 C8
2203 C9
2205 A7
2206 A8
2207 B7
2208 B8
2209 A4
2211 B3
2212 B4
2214 B1
2216 E1
2217 E2
2218 F1
2219 F1
2220 F4
2221 F3
2222 C7
2223 C9
2224 E9
2225 D5
2226 D5
2227 E5
2228 E5
2229 E5
2230 F5
2231 E5
2233 D2
2234 A3
2235 E8
2236 E8
2237 F8
3201 A2
3202 A3
3203 A4
3204 A5
3205 B5
3206 A3
3207 B3
3208 A1
3209 A1
3210 B3
3211 B3
3212 B6
3214 C4
3215 D4
3216 E1
3217 E1
3219 D3
3220 D3
3221 D1
3222 D2
3223 E1
3224 E2
3225 F1
3226 E2
3227 F2
3228 F2
3229 F4
3230 F4
3232 D4
3233 D4
3234 E4
3235 E4
3236 E4
3237 F4
3238 E4
3239 E4
3240 E4
3241 E6
3242 E7
3243 E6
3244 F7
5201 A2
5202 E3
6202 C7
6203 C7
6204 C8
6205 C9
6206 D6
6207 D7
6208 D8
6209 D9
6210 A6
6211 A8
6212 B6
6213 B8
6214 F8
6215 A7
6216 A9
6217 B7
6218 B9
6219 F9
6220 C1
6221 C3
6222 A3
6223 A5
7202 D2
7203 A5
7204 D7
F048 B2
F049 B2
F050 C2
F051 C2
F052 C2
F053 C2
F073 E2
F074 E3
F075 F2
F076 F3
1001 A4
1002 B4
1003 D1
1004 D1
1005 C2
1043 A3
1044 E9
1045 D3
1047 D4
1048 D5
1049 E4
1050 E5
1051 E1
1055 E1
1087 E1
1088 F1
1110 A4

CHN TYT12-
CLASS_NO
2004-02-27 3
NAME JERRY CHEN / JOSS HUNG
MGr CHECK ******** DATE 2004-02-27
SUPERS. 4 10 130 - 1 *** A3
1

Scaler Diagram-2

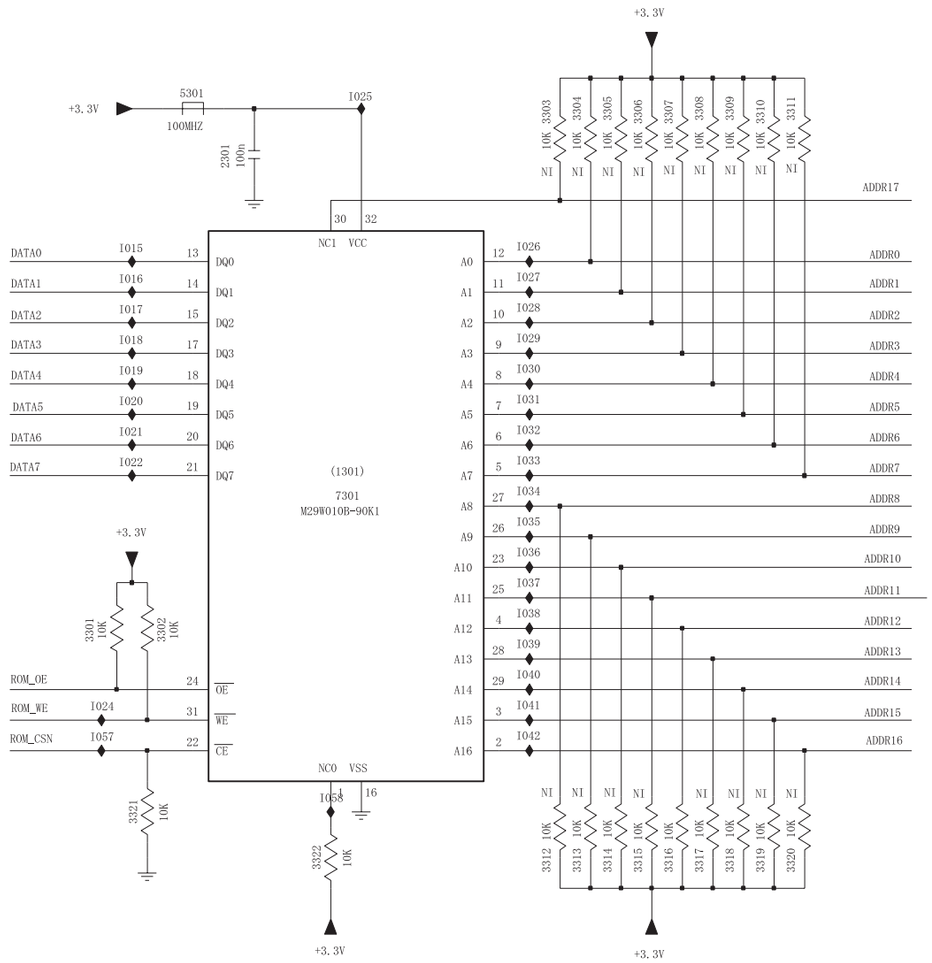
PHILIPS

B

SCALER BOARD

SB: 59601 x 6

PB: 59611

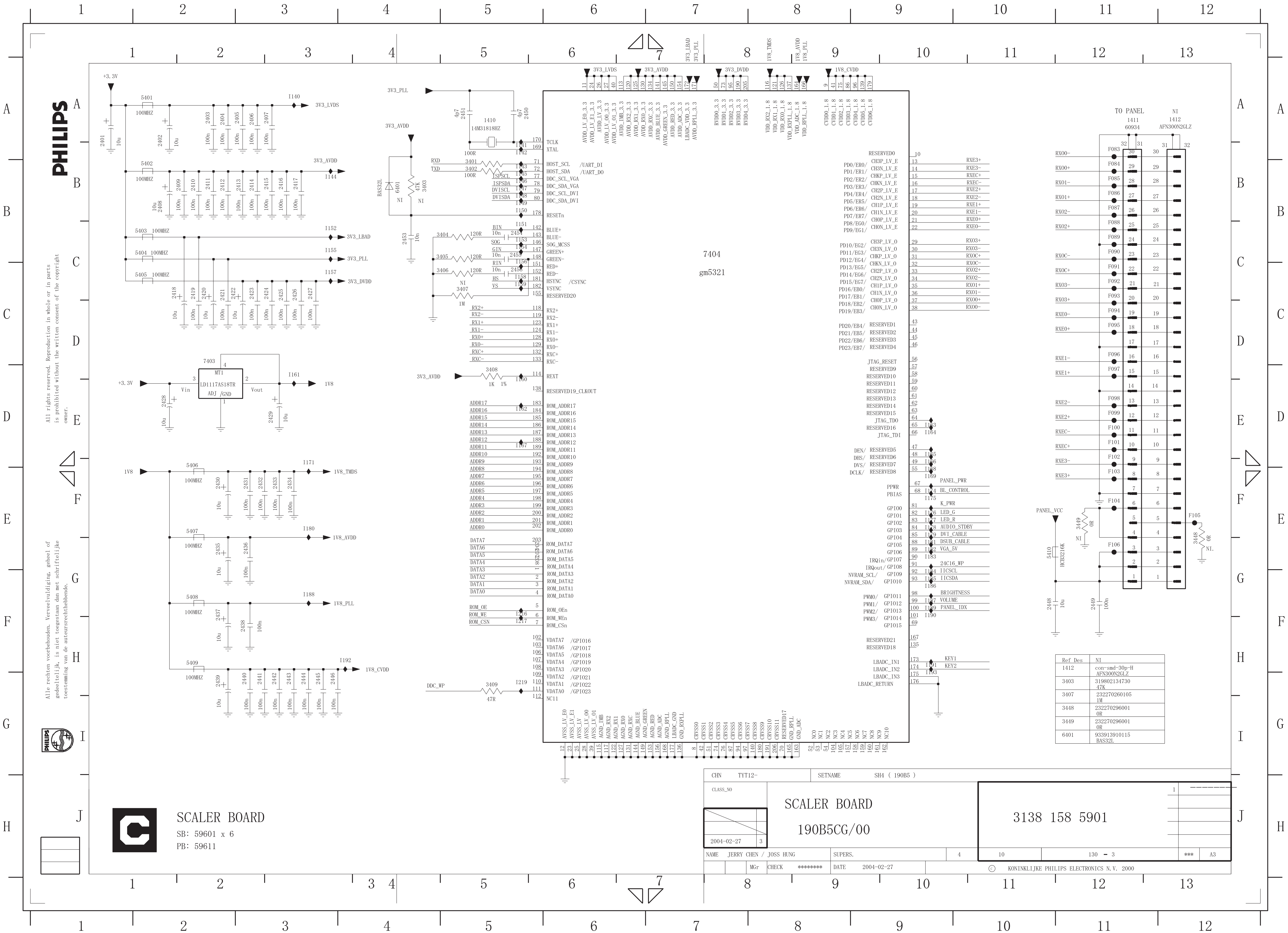


Ref Des	NI
3303	232270260103 10K
3304	232270260103 10K
3305	232270260103 10K
3306	232270260103 10K
3307	232270260103 10K
3308	232270260103 10K
3309	232270260103 10K
3310	232270260103 10K
3311	232270260103 10K
3312	232270260103 10K
3313	232270260103 10K
3314	232270260103 10K
3315	232270260103 10K
3317	232270260103 10K
3318	232270260103 10K
3319	232270260103 10K
3320	232270260103 10K

EXCEPT 1303,7302 WERE CHIP COMPONENTS.

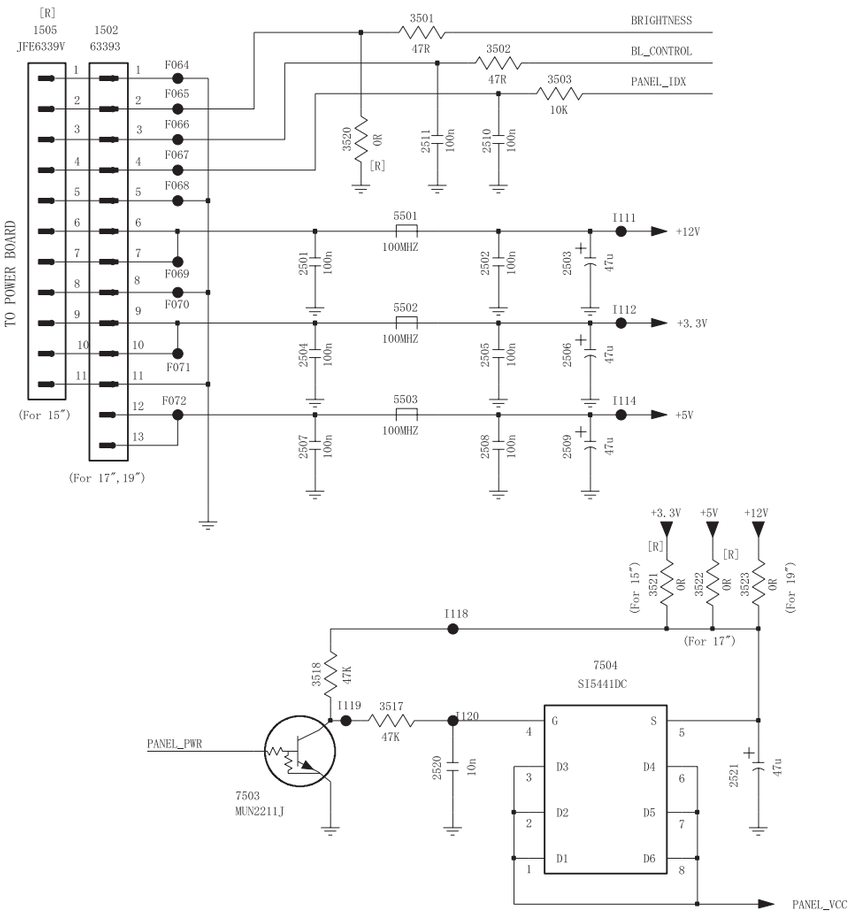
1303 D8
2301 B3
2302 B7
3301 D2
3302 D2
3303 B4
3304 B4
3305 B4
3306 B5
3307 B5
3308 B5
3309 B5
3310 B5
3311 B5
3312 E4
3313 E4
3314 E4
3315 E5
3316 E5
3317 E5
3318 E5
3319 E5
3320 E5
3321 E2
3322 E3
3323 B7
3324 B7
3325 B8
3326 C8
3327 C8
5301 B3
7301 D3
7302 B8
I015 B2
I016 C2
I017 C2
I018 C2
I019 C2
I020 C2
I021 C2
I022 C2
I024 E2
I025 B3
I026 B4
I027 C4
I028 C4
I029 C4
I030 C4
I031 C4
I032 C4
I033 C4
I034 D4
I035 D4
I036 D4
I037 D4
I038 D4
I039 D4
I040 D4
I041 E4
I042 E4
I057 E2
I058 E3
I126 C8
I127 C8
I128 C8
I129 D8
I130 D8

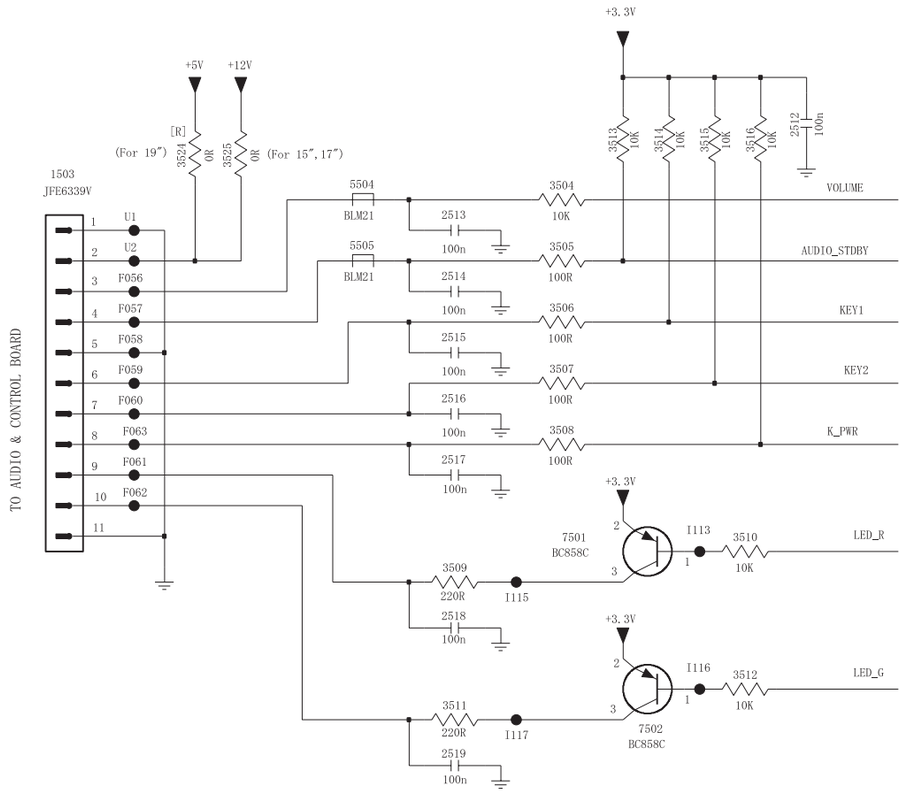
CHN TYT12-		SETNAME SH4 (190B5)	
CLASS_NO	ROM	3138 158 5901	1
2004-02-27 3	190B5CG/00		
NAME JERRY CHEN / JOSS HUNG	SUPERS. 4	10	130 - *** A3 2
MGr CHECK ********	DATE 2004-02-27	© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000	



1410	A5
1411	A11
1412	A12
2401	A1
2402	A2
2403	A2
2404	A2
2405	A2
2406	A3
2407	A3
2408	B2
2409	B2
2410	B2
2411	B2
2412	B2
2413	B3
2414	B3
2415	B3
2416	B3
2417	B3
2418	C2
2419	C2
2420	C2
2421	C2
2422	C2
2423	C3
2424	C3
2425	C3
2426	C3
2427	C3
2428	D2
2429	D3
2430	E2
2431	E3
2432	E3
2433	E3
2434	E3
2435	E2
2436	E3
2437	F2
2438	F3
2439	G2
2440	G3
2441	G3
2442	G3
2443	G3
2444	G3
2445	G3
2446	G3
2448	F10
2449	F11
2450	A5
2451	A5
2453	B4
2454	B5
2455	B5
2456	C5
3401	B5
3402	B5
3403	B4
3404	B5
3405	B5
3406	C5
3407	C5
3408	D5
3409	G5
3448	E12
3449	E11
5401	A2
5402	B2
5403	B2
5404	B2
5405	C2
5406	D2
5407	E2
5408	F2
5409	F2
5410	E10
6401	B4
7403	C2
7404	B7
F083	A11
F084	B11
F085	B11
F086	B11
F087	B11
F088	B11
F089	B11
F090	B11
F091	C11
F092	C11
F093	C11
F094	C11
F095	C11
F096	C11
F097	D11
F098	D11
F099	D11
F100	D11
F101	D11
F102	D11
F103	E11
F104	E11
F105	E12
F106	E11
I140	A3
I141	A5
I142	A5
I143	B5
I144	B3
I145	B5
I146	B5
I147	B5
I148	B5
I149	B5
I150	B5
I151	B5
I152	B3
I153	B5
I154	B5
I155	B3
I156	B5
I157	C3
I158	C5
I159	C5
I160	D5
I161	D3
I162	D5
I163	D9
I164	D9
I165	D9
I166	D9
I167	D5
I168	E9
I169	E9
I171	D3
I174	E9
I175	E9
I176	E9
I177	E9
I178	E9
I179	E9
I180	E3
I181	E9
I182	E9
I183	E9
I184	F9
I185	F9
I186	F9
I187	F9
I188	F3
I189	F9
I190	F9
I191	F9
I192	F4
I193	F9
I216	F5
I217	F5
I219	G5

Scaler Diagram-4





Ref_Des	NI
1505	313816872071 JFE6339V
3520	232270296001 0R
3521	232270296001 0R
3522	232270296001 0R
3524	232270296001 0R

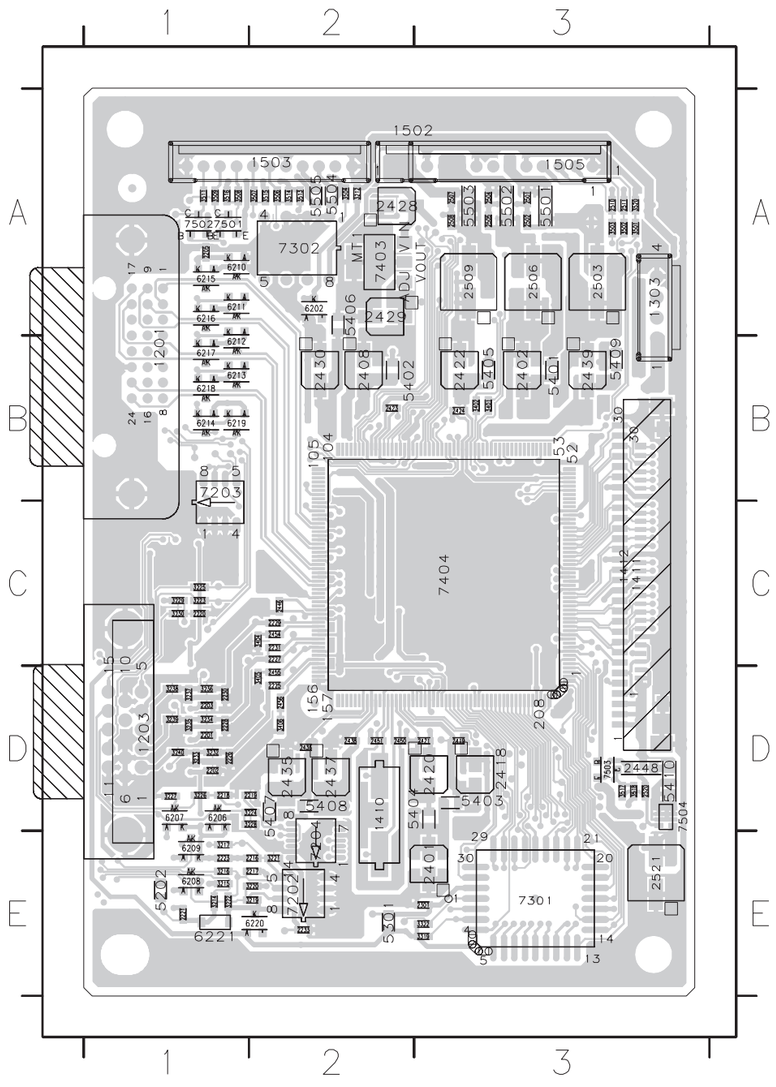
EXCEPT 1502, 1503, 1505 WERE CHIP COMPONENTS.

U1 B5
U2 B5
1502 A1
1503 A5
1505 A1
2501 B2
2502 B3
2503 B3
2504 C2
2505 C3
2506 C3
2507 C2
2508 C3
2509 C3
2510 B3
2511 B2
2512 A8
2513 B7
2514 B7
2515 B7
2516 B7
2517 C7
2518 C7
2519 D7
2520 E2
2521 E4
3501 A2
3502 B3
3503 B3
3504 A7
3505 B7
3506 B7
3507 B7
3508 C7
3509 C7
3510 C8
3511 D7
3512 D8
3513 A7
3514 A8
3515 A8
3516 A8
3517 E2
3518 D2
3520 B2
3521 D3
3522 D4
3523 D4
3524 A5
3525 A6
5501 B2
5502 C2
5503 C2
5504 A6
5505 B6
7501 C7
7502 D8
7503 E1
7504 D3
F056 B5
F057 B5
F058 B5
F059 B5
F060 B5
F061 C5
F062 C5
F063 C5
F064 B1
F065 B1
F066 B1
F067 B1
F068 B1
F069 C1
F070 C1
F071 C1
F072 C1
I111 B3
I112 C3
I113 C8
I114 C3
I115 C7
I116 D8
I117 D7
I118 D2
I119 E2
I120 E2

SCALER BOARD
SB: 59601 x 6
PB: 59611

CHN TYT12-	SETNAME SH4 (190B5)		
CLASS_NO	POWER 190B5CG/00		3138 158 5901
2004-02-27 3			
NAME JERRY CHEN / JOSS HUNG	SUPERS. 4		130 - A3 4
	CHECK DATE 2004-02-27	© KONINKLIJKE PHILIPS ELECTRONICS N.V. 2000	

Scaler Board C.B.A.-1

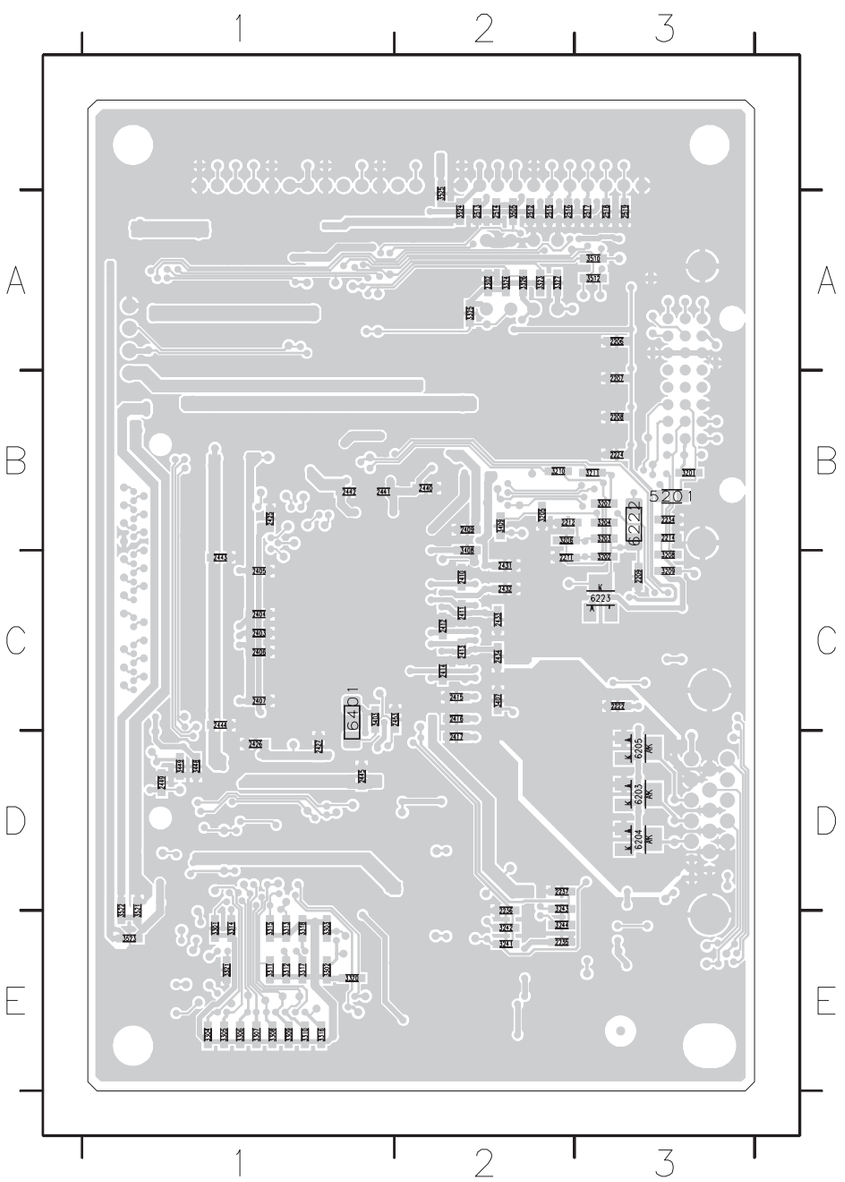


1201	B1	3215	E1	6210	A1
1203	D1	3216	E1	6211	A1
1303	A3	3217	E1	6212	B1
1410	D2	3219	E2	6213	B1
1411	C3	3220	E2	6214	B1
1412	C3	3221	E2	6215	A1
1502	A2	3222	E1	6216	A1
1503	A2	3223	C1	6217	B1
1505	A3	3224	D2	6218	B1
2201	D1	3225	C1	6219	B1
2202	D1	3226	D1	6220	E2
2203	D1	3227	D1	6221	E1
2205	A1	3228	D2	7202	E2
2216	E2	3229	C1	7203	B1
2217	E2	3230	C1	7204	E2
2218	D1	3232	D1	7301	E3
2219	D2	3233	D1	7302	A2
2220	C1	3234	D1	7403	A2
2221	E1	3235	D1	7404	C3
2223	E1	3236	D1	7501	A1
2225	D2	3237	D1	7502	A1
2226	D1	3238	D1	7503	D3
2227	C2	3239	D1	7504	D3
2228	D1	3240	D1		
2229	C2	3319	E3		
2230	D1	3322	E3		
2231	C2	3401	B3		
2233	E2	3402	B3		
2301	E3	3404	C2		
2401	E3	3405	D2		
2402	B3	3406	D2		
2408	B2	3501	A3		
2418	D3	3502	A3		
2419	D3	3503	A3		
2420	D3	3504	A2		
2421	D3	3506	A2		
2422	B3	3507	A2		
2423	B2	3508	A1		
2424	B3	3509	A1		
2428	A2	3511	A1		
2429	A2	3513	A2		
2430	B2	3514	A2		
2435	D2	3515	A2		
2436	D2	3516	A1		
2437	D2	3517	D3		
2438	D2	3518	D3		
2439	B3	3520	A3		
2446	C2	5202	E1		
2448	D3	5301	E2		
2450	D2	5401	B3		
2451	D2	5402	B2		
2454	C2	5403	D3		
2455	D2	5404	D2		
2456	D2	5405	B3		
2501	A3	5406	A2		
2502	A3	5407	D2		
2503	A3	5408	D2		
2504	A3	5409	B3		
2505	A3	5410	D3		
2506	A3	5501	A3		
2507	A3	5502	A3		
2508	A3	5503	A3		
2509	A3	5504	A2		
2510	A3	5505	A2		
2511	A3	6202	A2		
2520	D3	6206	D1		
2521	E3	6207	D1		
3212	A2	6208	E1		
3214	E1	6209	E1		

CN: TYT12-4270,4301		LCD 150B5/170B5/190B5	
CLASS NO. 3XX000	Scaler Board LCD 150B5/170B5/190B5	3138 103 5960	2 2004-02-23 1 2003-12-19
2003-12-19			
NAME Sophia/Mei Chiu	SUPERS 2 10	132 - 1	A3
CHECK	DATE 2003-12-19	© Philips Electronics N.V.	

Scaler Board C.B.A.-2

Go to cover page



2206	A3	3304	E1
2207	B3	3305	E1
2208	B3	3306	E1
2209	C3	3307	E1
2211	C2	3308	E1
2212	B2	3309	E1
2214	B3	3310	E1
2222	C3	3311	E1
2224	B3	3312	E1
2234	B3	3313	E1
2235	E2	3314	E1
2236	D2	3315	E1
2237	D2	3316	E1
2302	A2	3317	E1
2403	C1	3318	E1
2404	C1	3320	E1
2405	C1	3321	E1
2406	C1	3323	A2
2407	C1	3324	A2
2409	B2	3325	A2
2410	C2	3326	A2
2411	C2	3327	A2
2412	C2	3403	C1
2413	C2	3407	C2
2414	C2	3408	B2
2415	C2	3409	B2
2416	C2	3448	D1
2417	D2	3449	D1
2425	B1	3505	A2
2426	D1	3510	A3
2427	D1	3512	A3
2431	C2	3521	D1
2432	C2	3522	D1
2433	C2	3523	E1
2434	C2	3524	A2
2440	B2	3525	A2
2441	B1	5201	B3
2442	B1	6203	D3
2443	C1	6204	D3
2444	C1	6205	D3
2445	D1	6222	B3
2449	D1	6223	C3
2453	C2	6401	C1
2512	A2		
2513	A2		
2514	A2		
2515	A2		
2516	A2		
2517	A3		
2518	A3		
2519	A3		
3201	B3		
3202	C3		
3203	B3		
3204	B3		
3205	B2		
3206	B2		
3207	B3		
3208	C3		
3209	C3		
3210	B2		
3211	B3		
3241	E2		
3242	E2		
3243	D2		
3244	E2		
3301	E1		
3302	E1		
3303	E1		

CN: TYT12-4270,4301 | LCD 150B5/170B5/190B5

CLASS NO. 3XX000

2003-12-19

Scaler Board
LCD 150B5/170B5/190B5

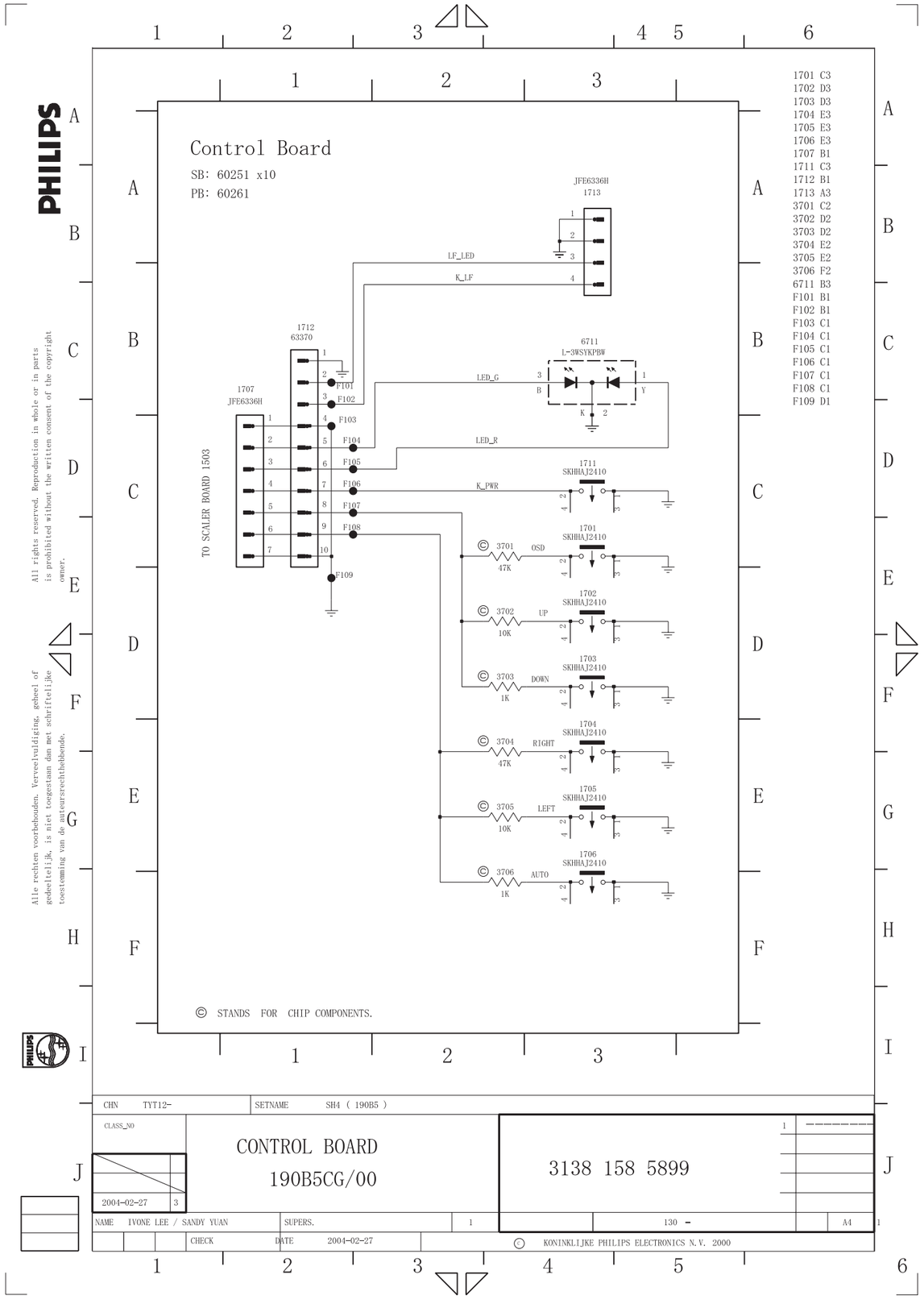
3138 103 5960

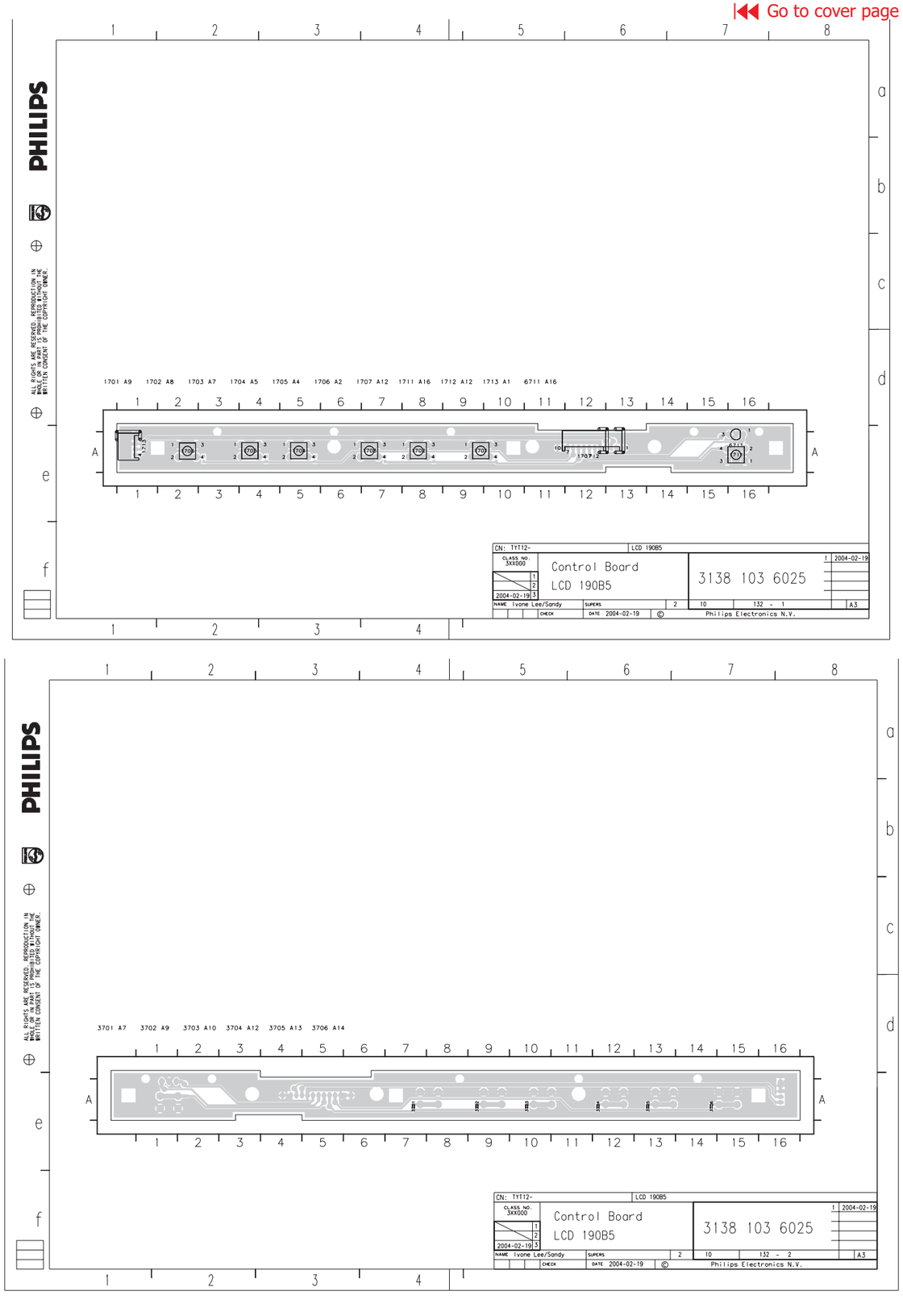
2	2004-02-23
~~1~~	~~2003-12-19~~

NAME Sophia/Mei Chiu | SUPERS | 2 | 10 | 132 - 2 | A3

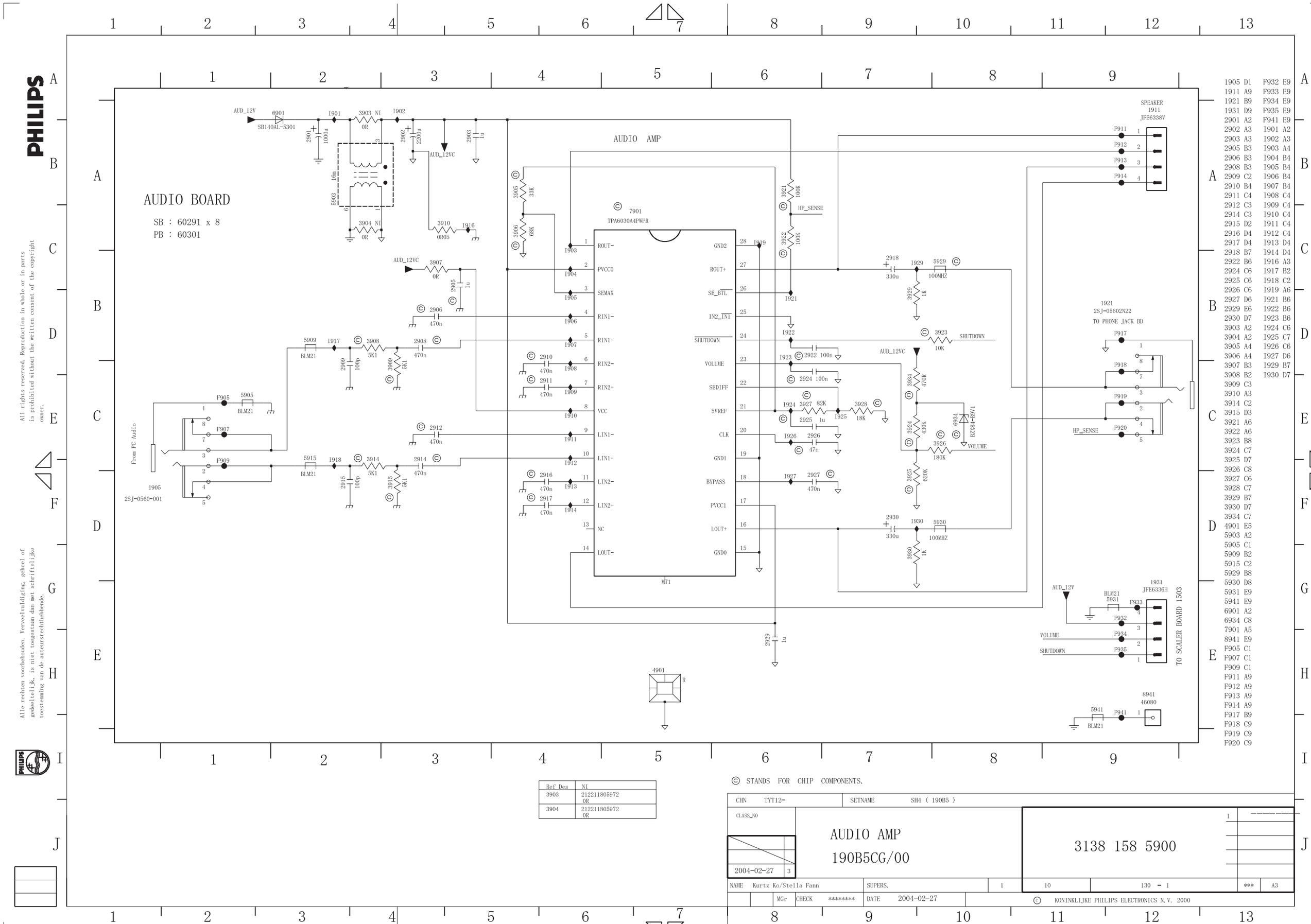
CHECK | DATE 2003-12-19 | © Philips Electronics N.V.

Control Diagram & C.B.A.





Audio Diagram



Ref Des	NI
3903	212211805972 0R
3904	212211805972 0R

© STANDS FOR CHIP COMPONENTS.

CHN TYT12-	SETNAME SH4 (190B5)		
CLASS_NO	AUDIO AMP 190B5CG/00	1	3138 158 5900
2004-02-27 3			
NAME Kurtz Ko/Stella Fann	SUPERS.	1	10 / 130 - 1 / *** / A3
MGr CHECK ********	DATE 2004-02-27		

Audio Board C.B.A.-1

1905 A4
1911 B12
1921 A13
1931 A7
2901 B2
2902 B8
2905 B8
2906 B9
2908 B9
2910 B9
2911 B9
2912 B9
2914 B9
2916 B9
2917 B9
2918 B11
2922 B10
2924 B10
2925 B10
2926 B10
2927 B10
2930 B12
3905 B9
3906 B9
3908 B8
3909 B8
3914 B8
3915 B8
3921 A10
3922 A10
3923 A10
3924 B11
3925 B11
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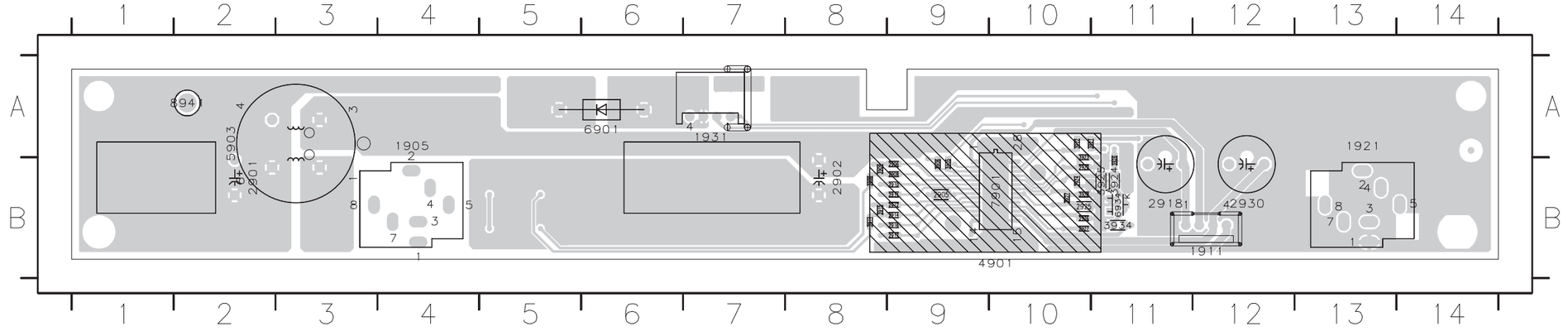
5903 A2
6901 A6
6934 B11
7901 B10
8941 A2



CN: TYT12-		LCD 190B5	
CLASS NO. 3XX000	Audio Board LCD 190B5	3138 103 6029	1 2004-02-19
1 / 2 / 2004-02-19 3			
NAME Kurtz Ko/Sandy	SUPERS	2 / 10 / 132 - 1	A3
CHECK	DATE 2004-02-19	© Philips Electronics N.V.	

Audio Board C.B.A.-2

Go to cover page

2903 A5
2909 B10

2915 B10
2929 B5

3903 A12
3904 B12

3907 B6
3910 B7

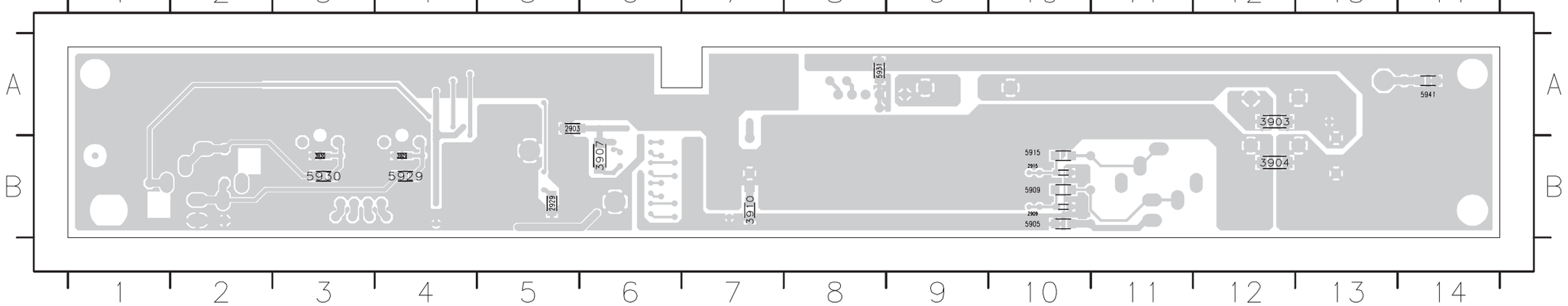
3929 B4
3930 B3

5905 B10
5909 B10

5915 B10
5929 B4

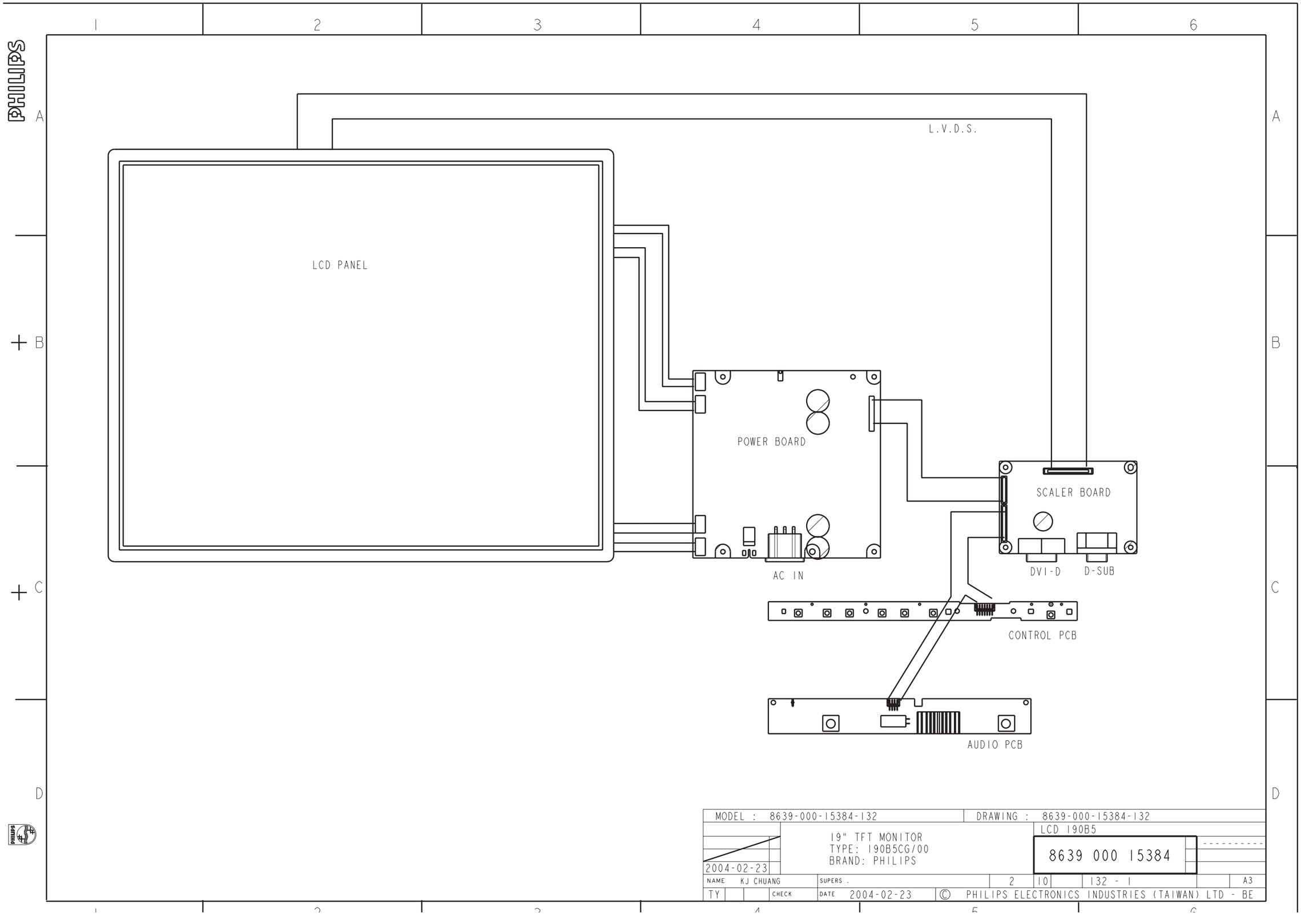
5930 B3
5931 A8

5941 A14



CN: TYT12-		LCD 190B5	
CLASS NO. 3XX000	Audio Board LCD 190B5	3138 103 6029	1 2004-02-19
1 2 2004-02-19 3			
NAME Kurtz Ko/Sandy	SUPERS	2 10 132 - 2	A3
CHECK	DATE 2004-02-19	© Philips Electronics N.V.	

Wiring Diagram



MODEL : 8639-000-15384-132		DRAWING : 8639-000-15384-132	
2004-02-23	19" TFT MONITOR TYPE: 190B5CG/00 BRAND: PHILIPS	LCD 190B5	8639 000 15384
NAME KJ CHUANG	SUPERS .	2 | 10 | 132 - 1	A3
TY CHECK	DATE 2004-02-23	© PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD - BE	

Power Diagram-1

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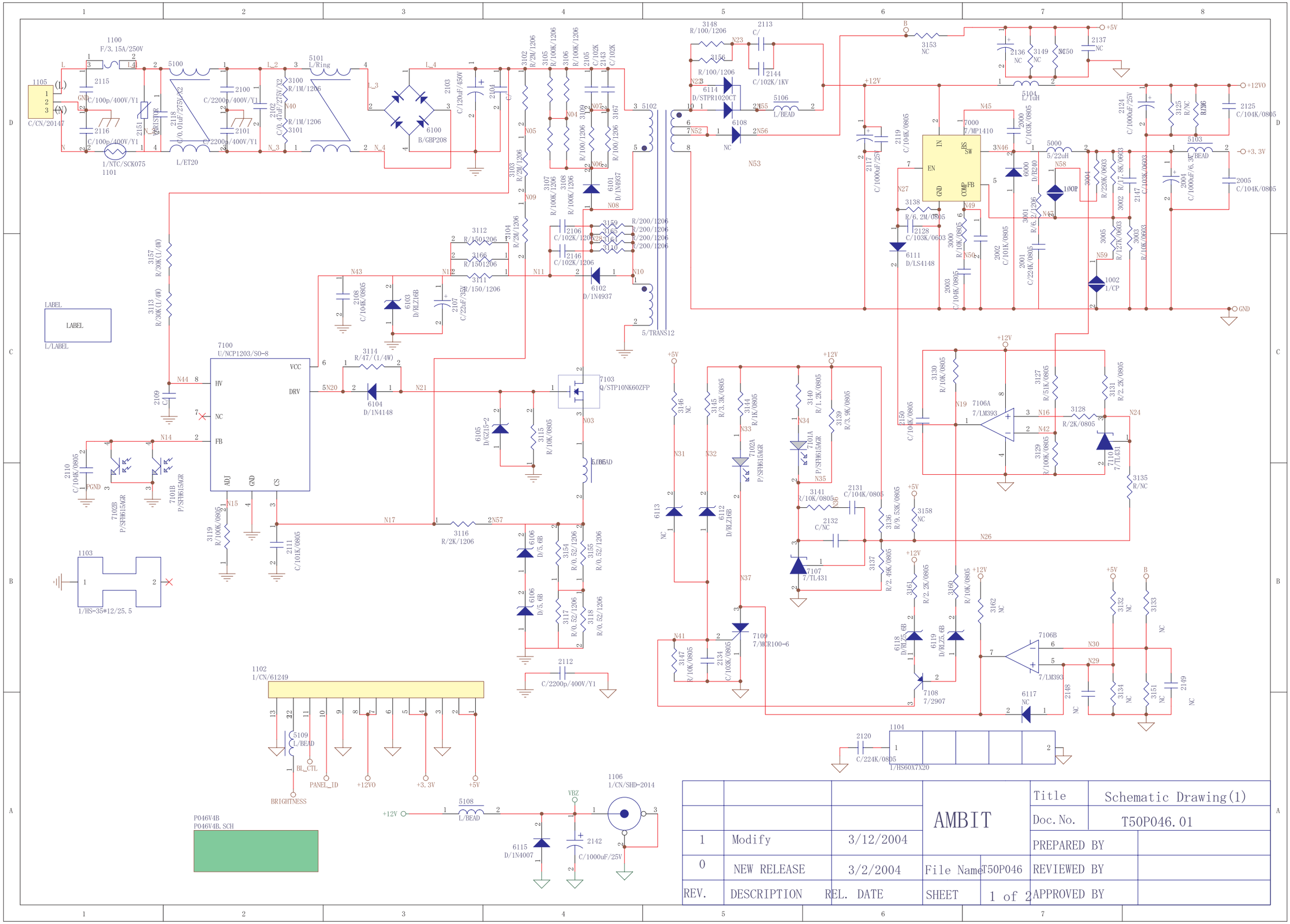
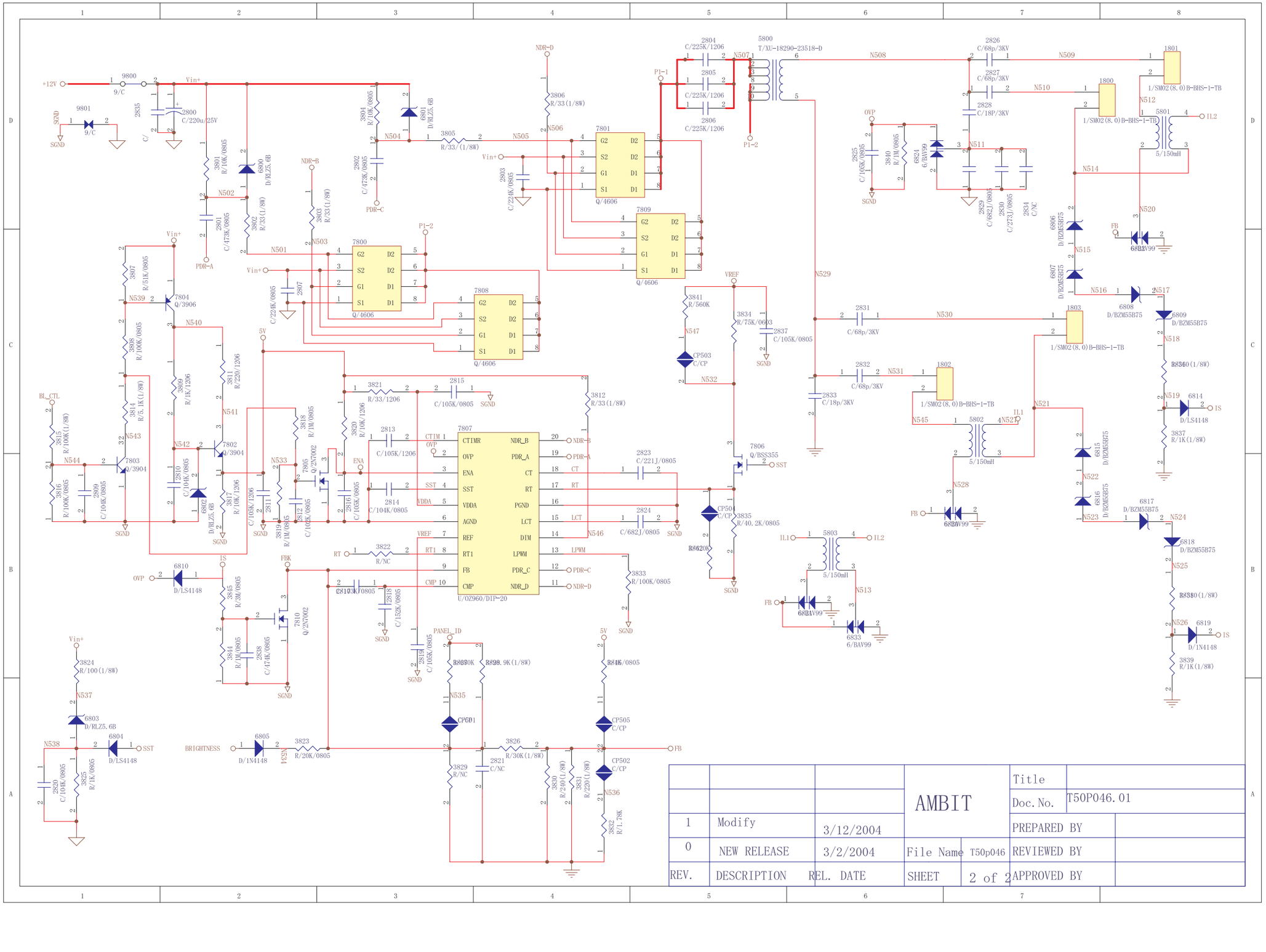


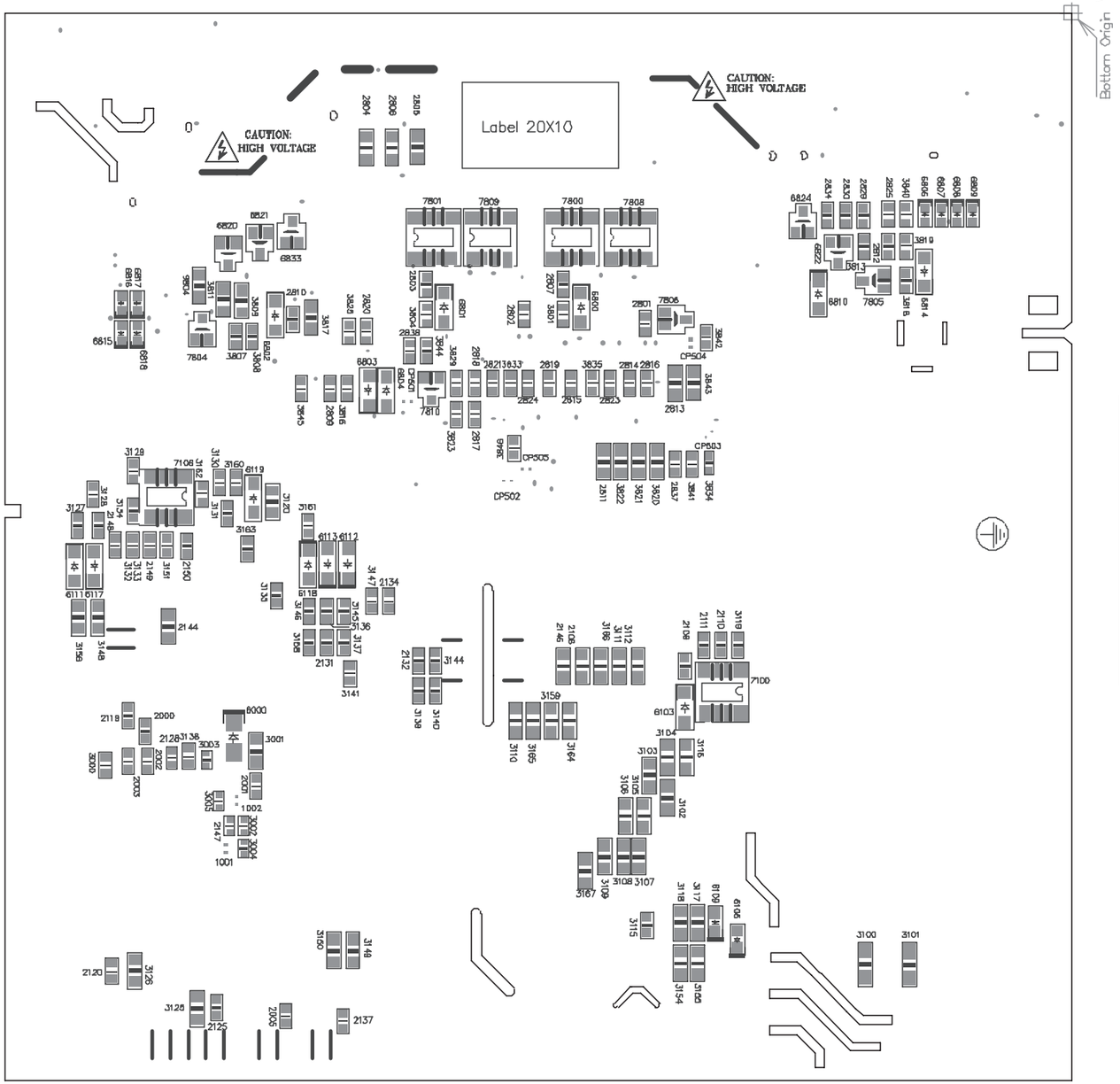
			AMBIT	Title	Schematic Drawing(1)
				Doc. No.	T50P046.01
1	Modify	3/12/2004		PREPARED BY	
0	NEW RELEASE	3/2/2004	File Name T50P046	REVIEWED BY	
REV.	DESCRIPTION	REL. DATE	SHEET 1 of 2	APPROVED BY	

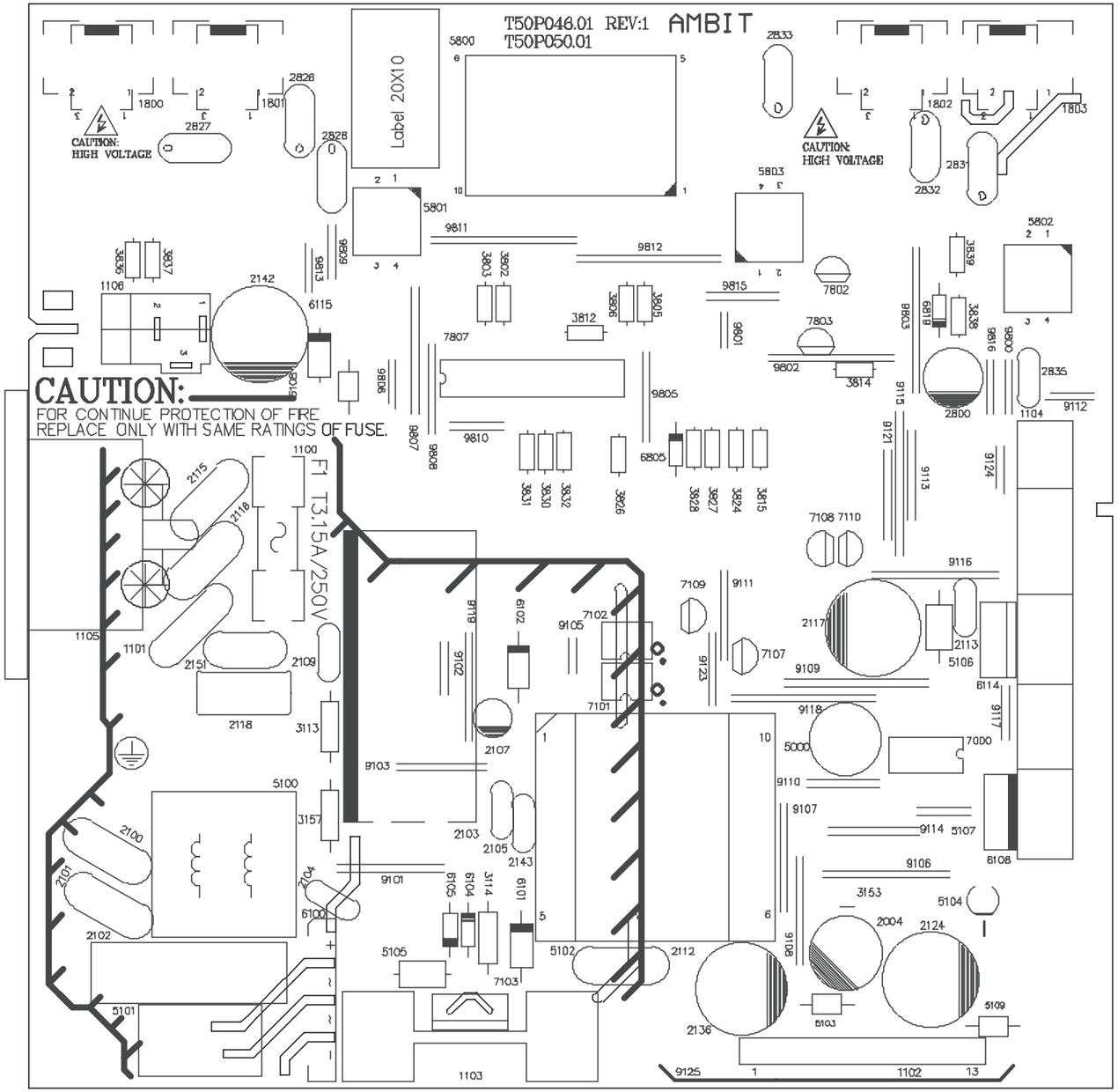
Power Diagram-2



			AMBIT	Title	
				Doc. No.	T50P046.01
1	Modify	3/12/2004		PREPARED BY	
0	NEW RELEASE	3/2/2004	File Name T50p046	REVIEWED BY	
REV.	DESCRIPTION	REL. DATE	SHEET 2 of 2	APPROVED BY	

Power Board C.B.A

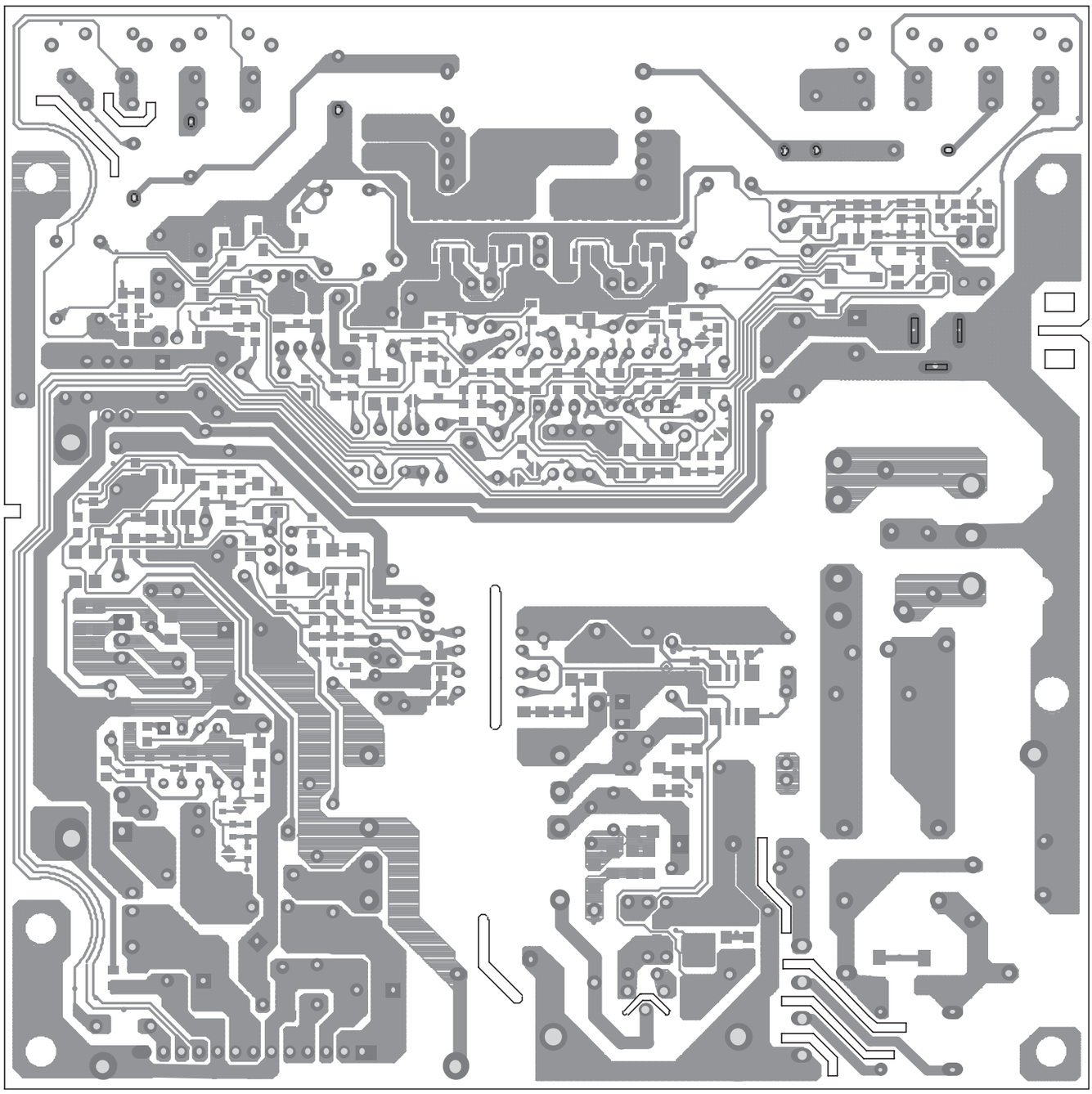




AMBIT	FILM NUMBER	T50P046-01-1TF -1
SCALE 10MM	Mechanical Layer 1	
	P/N	19.xxxx.01
	Rev. 1	12-Mar-2004

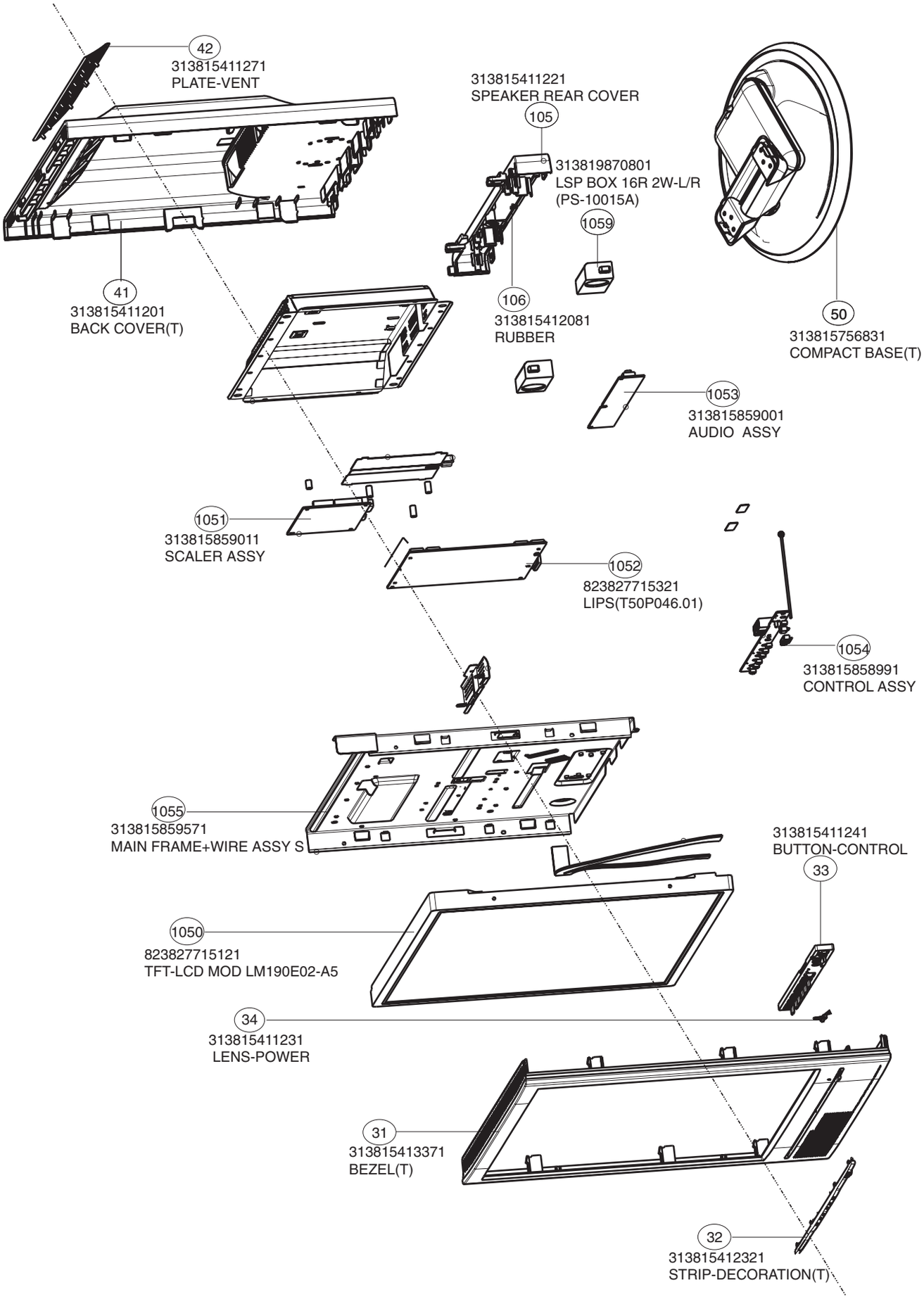
AMBIT	FILM NUMBER	T50P046-01-1TB -1
SCALE 10MM	Mechanical Layer 1	
	P/N	19.xxxx.01
	Rev. 1	12-Mar-2004

Power Board C.B.A.-2



AMBIT	FILM NUMBER	750P046-01-1C1 -1
SCALE 1DMM	Mechanical Layer 1	
	P/N	19.xxxx.01
	Rev. 1	12-Mar-2004

Exploded view



Model: 190B5CG/00

0030	313815756901	FRONT BEZEL ASSY(T)
0031	313815413371	BEZEL (T)
0032	313815412321	STRIP-DECORATION(T)
0033	313815411241	BUTTON-CONTROL
0034	313815411231	LENS-POWER
0091	313815756951	METAL SHIELDING ASSY
0450	313815637251	CARTON
0451	313815637231	CUSHION-R
0452	313815637221	CUSHION-L
0453	313810656651	PE BAG
1051	313815859011	SCALER ASSY
1052	823827715321	LIPS(T50P046.01)
1053	313815859001	AUDIO ASSY
1054	313815858991	CONTROL ASSY
1055	313815859571	MAIN FRAME+WIRE ASSY S
1056	313819872341	CBLE-030 30/155/30-012 AWG28
1058	313819871441	CORD SUB-D 15/1M8/15 D-SUB G
1058	313819871441	CORD SUB-D 15/1M8/15 D-SUB G
1060	313819870941	CBLE 3.55MM/1M8/3.5MM M/M GY
6202	933137390215	DIO REG SM BZX84-C5V1 (PHSE)
6220	933742280215	DIO SIG SM BAT54 (PHSE)
6221	933913910115	DIO SIG SM BAS32L (PHSE)
6222	933913910115	DIO SIG SM BAS32L (PHSE)
6223	933742280215	DIO SIG SM BAT54 (PHSE)
6711	932219382682	LED VS L-3WSYKPBW (KIEL)
6901	932220628682	DIO REC SB140AL-5301 (VISH)
6934	932220641685	DIO REG SM BZX84-B9V1 (VISH)
7202	932214526668	IC SM M24C02-WMN6 (ST00)
7203	932214526668	IC SM M24C02-WMN6 (ST00)
7204	935260739118	IC SM 74LVC14APW (PHSE)
7301	932219386682	IC SM M29W022BT55K1 (ST00)
7302	932214725682	IC M24C16-WBN6 (ST00)
7403	932220099685	IC SM LD1117AS18 (ST00)
7404	823827714911	SCALER IC
7501	933967380685	TRA SIG SM BC858C (ONSE)
7502	933967380685	TRA SIG SM BC858C (ONSE)
7503	932209265685	TRA SIG SM MUN2211J (ONSE)
7504	932216638668	FET POW SM SI5441DC (VISH)
7901	932219970668	IC SM TPA6030A4PWP (TI00)
8941	313819870981	CBLE RING TERM/90/FAST AWG18

Spare Parts List

Model: 190B5CG/00

Mechanical Parts

0030	313815756901	FRONT BEZEL ASSY(T)
0031	313815413371	BEZEL (T)
0032	313815412321	STRIP-DECORATION(T)
0033	313815411241	BUTTON-CONTROL
0034	313815411231	LENS-POWER
0040	313815756051	BACK COVER ASSY(T)
0041	313815411201	BACK COVER(T)
0042	313815411271	PLATE-VENT
0050	313815756831	COMPACT BASE(T)
0091	313815756951	METAL SHIELDING ASSY
0094	313815411261	HINGE COVER(T)
0095	313815561991	PLASTIC COVER
0105	313815411221	SPEAKER REAR COVER
0106	313815412081	RUBBER
0291	313815563621	LABEL - LPL
0295	313815563621	LABEL - LPL
1055	313815859571	MAIN FRAME+WIRE ASSY S
1057	313816874231	MAINS CORD

LCD Panel

1050	823827715121	TFT-LCD MOD LM190E02-A5

Packing

0450	313815637251	CARTON
0451	313815637231	CUSHION-R
0452	313815637221	CUSHION-L
0453	313810656651	PE BAG

PCB ASSY

1051	313815859011	SCALER ASSY
1052	823827715321	LIPS(T50P046.01)
1053	313815859001	AUDIO ASSY
1054	313815858991	CONTROL ASSY

Accessory

0602	313811706592	E-D.F.U.
1056	313819872341	CBLE-030 30/155/30-012 AWG28
1058	313819871441	CORD SUB-D 15/1M8/15 D-SUB G
1060	313819870941	CBLE 3.55MM/1M8/3.5MM M/M GY

Miscellanea

0615	313811707091	HEX CODE OF F/W(NO MATL REQ)
1059	313819870801	LSP BOX 16R 2W-L/R(PS-10015A
4444	313810610371	CD ROM - SERVICE MANUAL
4444	313810610372	SERVICE MANUAL

PCB Assy

1051	313815859011	SCALER ASSY

1410	243854300093	RES XTL SM 14M31818 7P SMD49
1411	242202505572	CON H 30P M 1.25 SM 60952

2209	223878615649	CER2 0603 X7R 16V 100N PM10
2211	223886715331	CER1 0603 NP0 50V 330P PM5
2212	223886715331	CER1 0603 NP0 50V 330P PM5
2214	223878615649	CER2 0603 X7R 16V 100N PM10
2216	223886715331	CER1 0603 NP0 50V 330P PM5
2217	223886715331	CER1 0603 NP0 50V 330P PM5
2218	223886715339	CER1 0603 NP0 50V 33P PM5
2219	223886715221	CER1 0603 NP0 50V 220P PM5
2220	223878615649	CER2 0603 X7R 16V 100N PM10
2221	223878615649	CER2 0603 X7R 16V 100N PM10
2225	223858615636	CER2 0603 X7R 50V 10N PM10
2227	223858615636	CER2 0603 X7R 50V 10N PM10
2229	223858615636	CER2 0603 X7R 50V 10N PM10
2231	223858615636	CER2 0603 X7R 50V 10N PM10
2233	223878615649	CER2 0603 X7R 16V 100N PM10
2234	223878615649	CER2 0603 X7R 16V 100N PM10
2235	223878615649	CER2 0603 X7R 16V 100N PM10
2301	223878615649	CER2 0603 X7R 16V 100N PM10
2302	223878615649	CER2 0603 X7R 16V 100N PM10
2401	202001293721	ELCAP SM RV2 16V 10U PM20
2402	202001293721	ELCAP SM RV2 16V 10U PM20
2403	223878615649	CER2 0603 X7R 16V 100N PM10
2404	223878615649	CER2 0603 X7R 16V 100N PM10
2405	223878615649	CER2 0603 X7R 16V 100N PM10
2406	223878615649	CER2 0603 X7R 16V 100N PM10
2407	223878615649	CER2 0603 X7R 16V 100N PM10
2408	202001293721	ELCAP SM RV2 16V 10U PM20
2409	223878615649	CER2 0603 X7R 16V 100N PM10
2410	223878615649	CER2 0603 X7R 16V 100N PM10
2411	223878615649	CER2 0603 X7R 16V 100N PM10
2412	223878615649	CER2 0603 X7R 16V 100N PM10
2413	223878615649	CER2 0603 X7R 16V 100N PM10
2414	223878615649	CER2 0603 X7R 16V 100N PM10
2415	223878615649	CER2 0603 X7R 16V 100N PM10
2416	223878615649	CER2 0603 X7R 16V 100N PM10
2417	223878615649	CER2 0603 X7R 16V 100N PM10
2418	202001293721	ELCAP SM RV2 16V 10U PM20
2419	223878615649	CER2 0603 X7R 16V 100N PM10
2420	202001293721	ELCAP SM RV2 16V 10U PM20
2421	223878615649	CER2 0603 X7R 16V 100N PM10
2422	202001293721	ELCAP SM RV2 16V 10U PM20
2423	223878615649	CER2 0603 X7R 16V 100N PM10
2424	223878615649	CER2 0603 X7R 16V 100N PM10
2425	223878615649	CER2 0603 X7R 16V 100N PM10
2426	223878615649	CER2 0603 X7R 16V 100N PM10
2427	223878615649	CER2 0603 X7R 16V 100N PM10
2428	202001293721	ELCAP SM RV2 16V 10U PM20
2429	202001293721	ELCAP SM RV2 16V 10U PM20
2430	202001293721	ELCAP SM RV2 16V 10U PM20
2431	223878615649	CER2 0603 X7R 16V 100N PM10
2432	223878615649	CER2 0603 X7R 16V 100N PM10
2433	223878615649	CER2 0603 X7R 16V 100N PM10
2434	223878615649	CER2 0603 X7R 16V 100N PM10
2435	202001293721	ELCAP SM RV2 16V 10U PM20
2436	223878615649	CER2 0603 X7R 16V 100N PM10
2437	202001293721	ELCAP SM RV2 16V 10U PM20
2438	223878615649	CER2 0603 X7R 16V 100N PM10
2439	202001293721	ELCAP SM RV2 16V 10U PM20
2440	223878615649	CER2 0603 X7R 16V 100N PM10
2441	223878615649	CER2 0603 X7R 16V 100N PM10
2442	223878615649	CER2 0603 X7R 16V 100N PM10
2443	223878615649	CER2 0603 X7R 16V 100N PM10
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2445	223878615649	CER2 0603 X7R 16V 100N PM10
2446	223878615649	CER2 0603 X7R 16V 100N PM10
2448	222224119876	CER2 1206 Y5V 10V 10U P8020
2449	223878615649	CER2 0603 X7R 16V 100N PM10
2450	223886715478	CER1 0603 NP0 50V 4P7 PM0P25
2451	223886715478	CER1 0603 NP0 50V 4P7 PM0P25
2453	223858615636	CER2 0603 X7R 50V 10N PM10
2454	223858615636	CER2 0603 X7R 50V 10N PM10
2455	223858615636	CER2 0603 X7R 50V 10N PM10
2456	223858615636	CER2 0603 X7R 50V 10N PM10
2501	223878615649	CER2 0603 X7R 16V 100N PM10
2502	223878615649	CER2 0603 X7R 16V 100N PM10
2503	202001293747	ELCAP SM RV2 25V 47U PM20
2504	223878615649	CER2 0603 X7R 16V 100N PM10
2505	223878615649	CER2 0603 X7R 16V 100N PM10
2506	202001293747	ELCAP SM RV2 25V 47U PM20
2507	223878615649	CER2 0603 X7R 16V 100N PM10
2508	223878615649	CER2 0603 X7R 16V 100N PM10
2509	202001293747	ELCAP SM RV2 25V 47U PM20
2510	223878615649	CER2 0603 X7R 16V 100N PM10
2511	223878615649	CER2 0603 X7R 16V 100N PM10
2512	223878615649	CER2 0603 X7R 16V 100N PM10
2513	223878615649	CER2 0603 X7R 16V 100N PM10
2514	223878615649	CER2 0603 X7R 16V 100N PM10
2515	223878615649	CER2 0603 X7R 16V 100N PM10
2516	223878615649	CER2 0603 X7R 16V 100N PM10
2517	223878615649	CER2 0603 X7R 16V 100N PM10
2518	223878615649	CER2 0603 X7R 16V 100N PM10
2519	223878615649	CER2 0603 X7R 16V 100N PM10
2520	223858615636	CER2 0603 X7R 50V 10N PM10
2521	202001293747	ELCAP SM RV2 25V 47U PM20

3201	232270260102	RST SM 0603 RC21 1K PM5
3202	232270260103	RST SM 0603 RC21 10K PM5
3203	232270260103	RST SM 0603 RC21 10K PM5
3204	232270260103	RST SM 0603 RC21 10K PM5
3205	232270260223	RST SM 0603 RC21 22K PM5
3206	232270260101	RST SM 0603 RC21 100R PM5
3207	232270260101	RST SM 0603 RC21 100R PM5
3208	232270260102	RST SM 0603 RC21 1K PM5
3209	232270260104	RST SM 0603 RC21 100K PM5
3210	232270260101	RST SM 0603 RC21 100R PM5
3211	232270260101	RST SM 0603 RC21 100R PM5
3212	232270260103	RST SM 0603 RC21 10K PM5
3214	232270260472	RST SM 0603 RC21 4K7 PM5
3215	232270260103	RST SM 0603 RC21 10K PM5
3216	232270260101	RST SM 0603 RC21 100R PM5
3217	232270260101	RST SM 0603 RC21 100R PM5
3219	232270260103	RST SM 0603 RC21 10K PM5
3220	232270260223	RST SM 0603 RC21 22K PM5
3221	232270260103	RST SM 0603 RC21 10K PM5
3222	232270260103	RST SM 0603 RC21 10K PM5
3223	232270260101	RST SM 0603 RC21 100R PM5
3224	232270260101	RST SM 0603 RC21 100R PM5
3225	232270260101	RST SM 0603 RC21 100R PM5
3226	232270260101	RST SM 0603 RC21 100R PM5
3227	232270260222	RST SM 0603 RC21 2K2 PM5
3228	232270260222	RST SM 0603 RC21 2K2 PM5
3229	232270260104	RST SM 0603 RC21 100K PM5
3230	232270260102	RST SM 0603 RC21 1K PM5
3232	232270260101	RST SM 0603 RC21 100R PM5
3233	232270467509	RST SM 0603 RC22H 75R PM1
3234	232270260339	RST SM 0603 RC21 33R PM5
3235	232270467509	RST SM 0603 RC22H 75R PM1
3236	232270260101	RST SM 0603 RC21 100R PM5
3237	232270467509	RST SM 0603 RC22H 75R PM1
3238	232270296001	RST SM 0603 JUMP. MAX 0R05
3239	232270296001	RST SM 0603 JUMP. MAX 0R05
3240	232270296001	RST SM 0603 JUMP. MAX 0R05
3242	232270260101	RST SM 0603 RC21 100R PM5
3244	232270260101	RST SM 0603 RC21 100R PM5
3301	232270260103	RST SM 0603 RC21 10K PM5
3302	232270260103	RST SM 0603 RC21 10K PM5
3316	232270260103	RST SM 0603 RC21 10K PM5
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3322	232270260103	RST SM 0603 RC21 10K PM5
3323	232270260103	RST SM 0603 RC21 10K PM5
3324	232270260103	RST SM 0603 RC21 10K PM5
3325	232270260103	RST SM 0603 RC21 10K PM5
3326	232270260101	RST SM 0603 RC21 100R PM5
3327	232270260101	RST SM 0603 RC21 100R PM5
3401	232270260101	RST SM 0603 RC21 100R PM5
3402	232270260101	RST SM 0603 RC21 100R PM5
3404	232270260121	RST SM 0603 RC21 120R PM5
3405	232270260121	RST SM 0603 RC21 120R PM5
3406	232270260121	RST SM 0603 RC21 120R PM5
3408	232270461002	RST SM 0603 RC22H 1K PM1
3409	232270260479	RST SM 0603 RC21 47R PM5
3501	232270260479	RST SM 0603 RC21 47R PM5
3502	232270260479	RST SM 0603 RC21 47R PM5
3503	232270260103	RST SM 0603 RC21 10K PM5
3504	232270260103	RST SM 0603 RC21 10K PM5
3505	232270260101	RST SM 0603 RC21 100R PM5
3506	232270260101	RST SM 0603 RC21 100R PM5
3507	232270260101	RST SM 0603 RC21 100R PM5
3508	232270260101	RST SM 0603 RC21 100R PM5
3509	232270260221	RST SM 0603 RC21 220R PM5
3510	232270260103	RST SM 0603 RC21 10K PM5
3511	232270260221	RST SM 0603 RC21 220R PM5
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3513	232270260103	RST SM 0603 RC21 10K PM5
3514	232270260103	RST SM 0603 RC21 10K PM5
3515	232270260103	RST SM 0603 RC21 10K PM5
3516	232270260103	RST SM 0603 RC21 10K PM5
3517	232270260473	RST SM 0603 RC21 47K PM5
3518	232270260473	RST SM 0603 RC21 47K PM5
3523	232270296001	RST SM 0603 JUMP. MAX 0R05
3525	232270296001	RST SM 0603 JUMP. MAX 0R05

5201	242254945582	IND FXD 0805 EMI 100MHZ 300R
5202	242254945582	IND FXD 0805 EMI 100MHZ 300R
5301	242254945582	IND FXD 0805 EMI 100MHZ 300R
5401	242254945582	IND FXD 0805 EMI 100MHZ 300R
5402	242254945582	IND FXD 0805 EMI 100MHZ 300R
5403	242254945582	IND FXD 0805 EMI 100MHZ 300R
5404	242254945582	IND FXD 0805 EMI 100MHZ 300R
5405	242254945582	IND FXD 0805 EMI 100MHZ 300R
5406	242254945582	IND FXD 0805 EMI 100MHZ 300R
5407	242254945582	IND FXD 0805 EMI 100MHZ 300R
5408	242254945582	IND FXD 0805 EMI 100MHZ 300R
5409	242254945582	IND FXD 0805 EMI 100MHZ 300R
5410	242254945579	IND FXD 1206 EMI 100MHZ 100R
5501	242254945579	IND FXD 1206 EMI 100MHZ 100R
5502	242254945579	IND FXD 1206 EMI 100MHZ 100R
5503	242254945579	IND FXD 1206 EMI 100MHZ 100R
5504	242254944196	IND FXD 0805 EMI 100MHZ 120R
5505	242254944196	IND FXD 0805 EMI 100MHZ 120R

6202	933137390215	DIO REG SM BZX84-C5V1 (PHSE)
6220	933742280215	DIO SIG SM BAT54 (PHSE)
6221	933913910115	DIO SIG SM BAS32L (PHSE)
6222	933913910115	DIO SIG SM BAS32L (PHSE)
6223	933742280215	DIO SIG SM BAT54 (PHSE)

7202	932214526668	IC SM M24C02-WMN6 (ST00)
7203	932214526668	IC SM M24C02-WMN6 (ST00)
7204	935260739118	IC SM 74LVC14APW (PHSE)
7301	932219386682	IC SM M29W022BT55K1 (ST00)
7302	932214725682	IC M24C16-WBN6 (ST00)
7403	932220099685	IC SM LD1117AS18 (ST00)
7404	823827714911	SCALER IC
7501	933967380685	TRA SIG SM BC858C (ONSE)
7502	933967380685	TRA SIG SM BC858C (ONSE)
7503	932209265685	TRA SIG SM MUN2211J (ONSE)
7504	932216638668	FET POW SM SI5441DC (VISH)

1053	313815859001	AUDIO ASSY

2901	202203100245	ELCAP LZ 16V S 1000U PM20
2902	202203100257	ELCAP EB 16V S 2200U PM20
2903	222291019863	CER2 0805 Y5V 25V 1U P8020
2905	222291019863	CER2 0805 Y5V 25V 1U P8020
2906	223824619858	CER2 0603 Y5V 10V 470N P8020
2908	223824619858	CER2 0603 Y5V 10V 470N P8020
2909	223886715101	CER1 0603 NP0 50V 100P PM5
2910	223824619858	CER2 0603 Y5V 10V 470N P8020
2911	223824619858	CER2 0603 Y5V 10V 470N P8020
2912	223824619858	CER2 0603 Y5V 10V 470N P8020
2914	223824619858	CER2 0603 Y5V 10V 470N P8020
2915	223886715101	CER1 0603 NP0 50V 100P PM5
2916	223824619858	CER2 0603 Y5V 10V 470N P8020
2917	223824619858	CER2 0603 Y5V 10V 470N P8020
2918	202203100177	ELCAP RGA 16V S 330U PM20
2922	223878615649	CER2 0603 X7R 16V 100N PM10
2924	223878615649	CER2 0603 X7R 16V 100N PM10
2925	222291019863	CER2 0805 Y5V 25V 1U P8020
2926	223878615645	CER2 0603 X7R 16V 47N PM10
2927	223824619858	CER2 0603 Y5V 10V 470N P8020
2929	222291019863	CER2 0805 Y5V 25V 1U P8020
2930	202203100177	ELCAP RGA 16V S 330U PM20

3905	212211805676	RST SM 0603 RC0603 33K PM5
3906	212211805681	RST SM 0603 RC0603 68K PM5
3907	212211805972	RST SM 1206 JUMP. MAX 0R05
3908	232270260512	RST SM 0603 RC21 5K1 PM5
3909	232270260512	RST SM 0603 RC21 5K1 PM5
3910	213811291002	RST SM 0805 JUMP. MAX 0R05
3914	232270260512	RST SM 0603 RC21 5K1 PM5
3915	232270260512	RST SM 0603 RC21 5K1 PM5
3921	212211805683	RST SM 0603 RC0603 100K PM5
3922	212211805683	RST SM 0603 RC0603 100K PM5
3923	212211805669	RST SM 0603 RC0603 10K PM5
3924	232273464304	RST SM 0805 RC12H 430K PM1
3925	232273466204	RST SM 0805 RC12H 620K PM1
3926	232270260184	RST SM 0603 RC21 180K PM5
3927	212211805682	RST SM 0603 RC0603 82K PM5
3928	212211805673	RST SM 0603 RC0603 18K PM5
3929	212211805656	RST SM 0603 RC0603 1K PM5
3930	212211805656	RST SM 0603 RC0603 1K PM5
3934	213811201471	RST SM 0805 RC05 470R PM5

5903	313818877801	FIL MAINS 16MH 1A LS-PH03F-0
5905	242254942103	IND FXD 0805 EMI 100MHZ 2K2
5909	242254942103	IND FXD 0805 EMI 100MHZ 2K2
5915	242254942103	IND FXD 0805 EMI 100MHZ 2K2
5929	242254944195	IND FXD 0805 EMI 100MHZ 220R
5930	242254944195	IND FXD 0805 EMI 100MHZ 220R
5931	242254942103	IND FXD 0805 EMI 100MHZ 2K2
5941	242254942103	IND FXD 0805 EMI 100MHZ 2K2

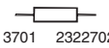
6901	932220628682	DIO REC SB140AL-5301 (VISH)
6934	932220641685	DIO REG SM BZX84-B9V1 (VISH)

7901	932219970668	IC SM TPA6030A4PWP (TI00)

8941	313819870981	CBLE RING TERM/90/FAST AWG18

1054	313815858991	CONTROL ASSY

1701	243812900043	SWI TACT H=4.3 BK 100G SKHH
1702	243812900043	SWI TACT H=4.3 BK 100G SKHH
1703	243812900043	SWI TACT H=4.3 BK 100G SKHH
1704	243812900043	SWI TACT H=4.3 BK 100G SKHH
1705	243812900043	SWI TACT H=4.3 BK 100G SKHH
1706	243812900043	SWI TACT H=4.3 BK 100G SKHH
1711	243812900043	SWI TACT H=4.3 BK 100G SKHH



3701	232270260473	RST SM 0603 RC21 47K PM5
3702	232270260103	RST SM 0603 RC21 10K PM5
3703	232270260102	RST SM 0603 RC21 1K PM5
3704	232270260473	RST SM 0603 RC21 47K PM5
3705	232270260103	RST SM 0603 RC21 10K PM5
3706	232270260102	RST SM 0603 RC21 1K PM5

6711	932219382682	LED VS L-3WSYKPBW (KIEL)

Different parts list

Diversity of 190B5CB/00 comparing with 190B5CG/00		
Item	12NC	Description
	863900015385	190B5CB/00
30	313815756911	FRONT BEZEL ASSY(B)
31	313815413361	BEZEL (B)
40	313815756031	BACK COVER ASSY(B)
41	313815411881	BACK COVER(B)
42	313815411891	PLATE-VENT
50	313815756841	COMPACT BASE (B)
94	313815413011	HINGE COVER (B)
105	313815411901	SPEAKER REAR COVER
1057	313812874931	MAINSCORD
1057	313818870471	MAINSCORD IEC 10A 1M8 DET BK
1058	313819871431	CORD SUB-D 15/1M8/15 D-SUB BK
1058	313819871451	CORD SUB-D 15/1M8/SUB-D 15 BK
1060	313819870931	CBLE 3.55MM/1M8/3.5MM M/M BK
1060	313819870971	CBLE 891184 1/1800/1 891184

Diversity of 190B5CB/27 comparing with 190B5CG/00		
Item	12NC	Description
	863900015387	190B5CB/27
30	313815756911	FRONT BEZEL ASSY(B)
31	313815413361	BEZEL (B)
40	313815756031	BACK COVER ASSY(B)
41	313815411881	BACK COVER(B)
42	313815411891	PLATE-VENT
50	313815756841	COMPACT BASE (B)
94	313815413011	HINGE COVER (B)
105	313815411901	SPEAKER REAR COVER
1057	313812874901	MAINSCORD
1057	313818870491	MAINSCORD UL 10A 1M8 DET BK
1058	313819871431	CORD SUB-D 15/1M8/15 D-SUB BK
1058	313819871451	CORD SUB-D 15/1M8/SUB-D 15 BK
1060	313819870931	CBLE 3.55MM/1M8/3.5MM M/M BK
1060	313819870971	CBLE 891184 1/1800/1 891184
1062	242203300265	CON ACC ADP V 15P F MA-002 B

Diversity of 190B5CS/00 comparing with 190B5CG/00		
Item	12NC	Description
	863900015386	190B5CS/00
30	313815756891	FRONT BEZEL ASSY(S)
31	313815413381	BEZEL (S)
40	313815756011	BACK COVER ASSY(S)
41	313815411941	BACK COVER(S)
42	313815411951	PLATE-VENT
50	313815756851	COMPACT BASE (S)
94	313815413021	HINGE COVER (S)
105	313815411961	SPEAKER REAR COVER
1057	313812874931	MAINSCORD
1057	313818870471	MAINSCORD IEC 10A 1M8 DET BK
1058	313819871431	CORD SUB-D 15/1M8/15 D-SUB BK
1058	313819871451	CORD SUB-D 15/1M8/SUB-D 15 BK
1060	313819870931	CBLE 3.55MM/1M8/3.5MM M/M BK
1060	313819870971	CBLE 891184 1/1800/1 891184

Diversity of 190B5CS/27 comparing with 190B5CG/00		
Item	12NC	Description
	863900015388	190B5CS/27
30	313815756891	FRONT BEZEL ASSY(S)
31	313815413381	BEZEL (S)
40	313815756011	BACK COVER ASSY(S)
41	313815411941	BACK COVER(S)
42	313815411951	PLATE-VENT
50	313815756851	COMPACT BASE (S)
94	313815413021	HINGE COVER (S)
105	313815411961	SPEAKER REAR COVER
1057	313812874901	MAINSCORD
1057	313818870491	MAINSCORD UL 10A 1M8 DET BK
1058	313819871431	CORD SUB-D 15/1M8/15 D-SUB BK
1058	313819871451	CORD SUB-D 15/1M8/SUB-D 15 BK
1060	313819870931	CBLE 3.55MM/1M8/3.5MM M/M BK
1060	313819870971	CBLE 891184 1/1800/1 891184
1062	242203300265	CON ACC ADP V 15P F MA-002 B

PHILIPS

HUDSON-4 190B5
GENERAL PRODUCT
SPECIFICATION

. ANALOG AND DIGITAL DUAL INPUT

. AUTO PICTURE ADJUSTMENT

. 15 FACTORY PRESET MODES AND 33 PRESET MODES WHICH CAN BE RECOVERED TO PRESET MODES

. USER FRIENDLY OSD DISPLAY FOR MODE IDENTIFICATION /ADJUSTMENT

. DDC 2B COMMUNICATION CAPABILITY

. MAX. RESOLUTION 1280*1024 NON-INTERLACED AT 75 HZ

. 19 " COLOR TFT LCD FLAT PANEL

. FULL RANGE POWER SUPPLY 90 □ 264 VAC

. CE ENVIRONMENTAL POLICY

. ANTI-GLARE TO REDUCE LIGHT REFLECTION

. POWER MANAGEMENT CAPABILITY

. SOG SUPPORT

. TCO 03

. AUDIO SUPPORT

. PROTECTIVE COVER

CLASS NO.

19 inch TFT SXGA LCD Monitor

TYPE :190B5CG/00

BRAND : PHILIPS

8639 000 15384

2004-02-19

NAME IVONE LEE | SUPERS. | 27 | 590 — 1 | 10 | A4

TY | CHECK | DATE 2004-02-19 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

2838 100 05424

GENERAL PRODUCT SPECIFICATION(Continued)

PHILIPS

CONTENTS

CLASS NO.

19 inch TFT SXGA LCD Monitor
TYPE : 190B5CG/00
BRAND : PHILIPS

8639 000 15384

2004-02-19

NAME IVONE LEE | SUPERS. | 27 | 590 — 2 | 10 | A4

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PHILIPS

GENERAL PRODUCT SPECIFICATION(Continued)

PHILIPS

1.0 FOREWORD

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

2.0 PRODUCT PROFILE

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

2.1 LCD

2.1.1 Type NR. : LM190E02 (LPL.)
Number of Pixels. : 1280 (H) x1024 (V)
Physical Size. : 404.2(H)*330.0(V)*20.0(D) mm
Pixel Pitch. : 0.294 (per one triad) x 0.294 mm
Color pixel arrangement.: RGB vertical stripes
Support Color. : 16.2M colors
Display Mode. : Normally White
Backlight. : CCFL edge light system
Active area. (WXH). : 376.320 x 301.056mm (19 " diagonal)
Viewing Angle. : Vertical 176 degree, Horizontal 176 degree (CR=10)
Contrast ratio. : 500:1
White luminance. : 250nits (Typ)

PHILIPS

2.2 Scanning frequencies
H-Frequency. : 30K - 82 K Hz
V-Frequency. : 56 - 76 Hz

2.3 Video dot rate. : < 140 MHz

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

2.5 Power consumption. : < 40 W typical (with audio)
: < 45 W maximum (with audio)

2.6 Dimensions. : 375(W) * 431(H) * 210(D) mm

2.7 Weight. : 7.4 kg

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

(2) DVI-D digital Panel Link TMDS input

2.9 Ambient temperature: 5 Degree C - 35 Degree C

2.10 Regulatory compliance:

Safety	B (Poland), CCC(China), CE(Europe), CSA(Canada), Gost(Russia), IEC 950 CB Report, PSB(Singapore), SEMKO(Nordic), TUV/GS TUV(Germany), UL(USA), KTL (Korea)
EMI	C-tick, CE(Europe), FCC(USA), IC(Canada), VCCI(Japan), BSMI, CCC(China), MIC (Korea)
Ergonomics	E2000, Nutek(Sweden), TCO03, TUV/GS, EPA, ISO13406-2
Compatibility	PC2001, Windows2000, Windows Me, Windows XP, NSTL,

GENERAL PRODUCT SPECIFICATION(Continued)

PHILIPS

3.0 Electrical characteristics

3.1 Interface signals
The input signals can be applied in two different modes:
1). D-shell Analog

Input signal: Video, H-sync, V-sync,
Video: 0.7 V p-p, input impedance, 75 ohm

Sync. : Separate sync TTL level, input impedance 2k2 ohm terminate
H-sync Positive/Negative
V-sync Positive/Negative
Composite sync TTL level, input impedance 2k2 ohm terminate
(Positive/Negative)
Sync on green video 0.3V p-p Negative. (Video 0.7 V p-p Positive)

2). Intel DVI Digital
Input signal: Single channel TMDS signal

3.2 Interface
3.2.1 D-Sub Cable
Length : 1.8 M +/- 50 mm (fixed)
Connector type : D-sub male with DDC-2B pin assignments.
Blue connector thumb-operated jack screws

Pin Assignment:

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

PHILIPS

3.2.2 DVI Cable

The input signals are applied to the display through DVI-D cable.
Length : 1.8 M +/- 50 mm (fixed)
Connector type : DVI-D male with DDC-2B pin assignments
White connector thumb-operated jack screws

Pin Assignment:

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

GENERAL PRODUCT SPECIFICATION(Continued)

3.2.3 Software control functions via OSD/control

OSD (On Screen Display) function
(1) Analog interface OSD:
Adjustable functions:

MAIN CONTROLS
LANGUAGE
ADJUST POSITION
BRIGHTNESS & CONTRAST
VIDEO NOISE
ADJUST COLOR
OSD SETTINGS
PRODUCT INFORMATION
RESET TO FACTORY SETTINGS
INPUT SELECTION
EXIT MAIN CONTROLS
MOVE SELECTION THEN ok

LANGUAGE : ENGLISH , ESPANOL , FRANCAIS , DEUTSCH, ITALIANO, SIMPLE CHINSES,

ADJUST POSITION : HORIZONTAL
VERTICAL

BRIGHTNESS & CONTRAST : brightness and contrast adjustment.

VIDEO NOISE : Phase adjustment, Clock adjustment

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

OSD SETTING: OSD H-position, OSD V-position

PHILIPS

PRODUCT INFORMATION: Show Serial No./ Resolution / Video input.
RESET TO FACTORY SETTING: recall to Factory preset settings.
INPUT SELECTION : select Analog D-sub, Digital DVI-D.

(2) Digital interface OSD:
Adjustable functions:

MAIN CONTROLS
LANGUAGE
BRIGHTNESS & CONTRAST
ADJUST COLOR
OSD SETTINGS
PRODUCT INFORMATION
RESET TO FACTORY SETTINGS
INPUT SELECTION
EXIT MAIN CONTROLS
MOVE SELECTION THEN ok

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

BRIGHTNESS & CONTRAST: brightness and contrast adjustment.
ADJUST COLOR :Original Panel color, 9300K for CAD/CAM ,
6500K for image management,
sRGB, User Preset: Red Green Blue adjust.
OSD SETTING : OSD H-position, OSD V-position
PRODUCT INFORMATION : Show Serial No./ Resolution / Video input.
RESET TO FACTORY SETTING: return to Factory preset timings and settings.
INPUT SELECTION : select Analog D-sub, Digital DVI-D.

GENERAL PRODUCT SPECIFICATION(Continued)

PHILIPS

3.3 Timing requirement

3.3.1 Mode storing capacity
(1) Factory preset modes : 15
(2) Preset modes : 33

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

ODE NO.	1	2	3	4
RESOLUTION	640 x 350	720 x 400	640 x 480	640 x 480
Dot clock(MHz)	25.175	28.321	25.175	30.24
f h	31.469kHz	31.468kHz	31.5kHz	35 kHz
A (us)	31.778(800 dots)	31.78(900dots)	31.778(800 dots)	28.571 (864 dots)
B (us)	3.813(96 dots)	3.813(108dots)	3.813(96 dots)	2.116 (64 dots)
C (us)	1.907(48 dots)	1.907(54dots)	1.907(48 dots)	3.175(96 dots)
D (us)	25.422(640 dots)	25.42(720dots)	25.422(640 dots)	21.164(640 dots)
E (us)	0.636(16 dots)	0.636(18dots)	0.636(16 dots)	2.116(64 dots)
f v	70Hz(70.09)	70Hz(70.085)	60Hz	67Hz
O (ms)	14.27(449 lines)	14.27(449 lines)	16.683 (525 lines)	15 (525 lines)
P (ms)	0.064(2 lines)	0.064(2 lines)	0.064 (2 lines)	0.086(3 lines)
Q (ms)	1.907(60 lines)	1.112(34 lines)	1.049 (33 lines)	1.114(39 lines)
R (ms)	11.12(350 lines)	12.71(400 lines)	15.253 (480 lines)	13.714(480 lines)
S (ms)	1.175(37 lines)	0.381(13 lines)	0.317 (10 line)	0.086(3 line)
SYNC. H/V POLARITY	+/-	-/+	- / -	- / -
SEP . SYNC	Y	Y	Y	Y

CLASS NO.

19 inch TFT SXGA LCD Monitor
TYPE : 190B5CG/00
BRAND : PHILIPS

8639 000 15384

2004-02-19

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

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

CLASS NO.

19 inch TFT SXGA LCD Monitor

TYPE :190B5CG/00

BRAND : PHILIPS

8639 000 15384

2004-02-19

NAME IVONE LEE | SUPERS. | 27 | 590 — 11 | 10 | A4

TY | CHECK | DATE 2004-02-19 | Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.

2838 100 05424

GENERAL PRODUCT SPECIFICATION(Continued)

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

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

CLASS NO.

19 inch TFT SXGA LCD Monitor
TYPE : 190B5CG/00
BRAND : PHILIPS

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2838 100 05424

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

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

CLASS NO.

19 inch TFT SXGA LCD Monitor

TYPE :190B5CG/00

BRAND : PHILIPS

8639 000 15384

2004-02-19

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2838 100 05424

GENERAL PRODUCT SPECIFICATION(Continued)

MODE NO.	29	30	31	32
RESOLUTION	1280 x 1024	1280 x 1024	1280 x 1024	960X720
Dot clock(MHz)	130.223	135	138.008	57.58
F h	76kHz	80kHz	81.1kHz	44.76kHz
A (us)	13.158(1712 dots)	12.504(1688 dots)	12.326(1664 dots)	22.34(1286 dots)
B (us)	1.024 (133 dots)	1.067(144 dots)	0.474 (64 dots)	1.72(99 dots)
C (us)	1.905 (248 dots)	1.837(248 dots)	2.133 (288 dots)	2.58(148 dots)
D (us)	9.83 (1280 dots)	9.481(1280 dots)	9.481 (1280 dots)	16.67(960 dots)
E (us)	0.399(51 dots)	0.119(16 dots)	0.238 (32 dots)	0.856(49 dots)
F v	72Hz	75Hz	76Hz	60Hz
O (ms)	14 (1064 lines)	13.329(1066 lines)	13.139(1066 lines)	16.667(746 lines)
P (ms)	0.02 (2 lines)	0.038(3 lines)	0.099 (8 lines)	0.067(2.9 lines)
Q (ms)	0.5 (38 lines)	0.475(38 lines)	0.394 (32 lines)	0.495(22 lines)
R (ms)	13.468 (1024 lines)	12.804(1024 lines)	12.622(1024 lines)	16.081(720 lines)
S (ms)	0.012 (0 line)	0.012 (1 line)	0.024(2 lines)	0.0228(1 lines)
SYNC. H/V POLARITY	+ / +	+/+	- / -	-/ +
SEP . SYNC	Y	Y	Y	Y

MODE NO.	33			
RESOLUTION	960X720			
Dot clock(MHz)	72.42			
F h	56.4kHz			
A (us)	17.73(1284 dots)			
B (us)	1.44(104 dots)			
C (us)	2.21(160 dots)			
D (us)	13.256(960 dots)			
E (us)	0.780(56 dots)			
F v	75Hz			
O (ms)	13.333(752 lines)			
P (ms)	0.053(3 lines)			
Q (ms)	0.5(28 lines)			
R (ms)	12.766(720 lines)			
S (ms)	0.0184(1 lines)			
SYNC. H/V POLARITY	-/ +			
SEP . SYNC	Y			

CLASS NO.

19 inch TFT SXGA LCD Monitor
TYPE : 190B5CG/00
BRAND : PHILIPS

8639 000 15384

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A	: H-Total	O	: V-Total
B	: H- Sync width	P	: V- Sync width
C	: H- Back porch	Q	: V- Back porch
D	: H- Video width	R	: V- Video width
E	: H- Front porch	S	: V- Front porch

3.3.3Horizontal scanning

Sync polarity : Positive or Negative
Scanning frequency : 30 - 82 K Hz

3.3.4 Vertical scanning

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

3.4 Power input connection

Power cord length : 1.8 M
Power cord type : 3 leads power cord with protective earth plug.

3.5 Power management

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

STATUS	H-sync	V-sync	Video	Power	LED
On	On	On	Active	<45W	Blue /With Audio
On	On	On	Active	<35W	Blue/ Without Audio
Stand-by	Off	On	Blanked	<1W	Amber LCD
Suspend	On	Off	Blanked	<1W	Amber LCD
Off	Off	Off	Blanked	<1W	Amber LCD
DC Power off			N / A	<1W	LCD Off

GENERAL PRODUCT SPECIFICATION(Continued)

According to VESA power saving signal. TCO99 power saving requirement EPA energy star requirement

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

3.6 Display identification

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

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

4.0 Visual characteristics

4.1 Test conditions

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

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

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

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

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

(5) Ambient temperature: 20 +/- 5 Degree C

4.2 Resolution

Factory preset modes (16 modes)

#	Resolution	H-Frequency	Pixel rate	V-Frequency	Comment
1	640X350	31.5KHz	25.175	70Hz	IBM VGA 10h
2	720X400	31.5KHz	28.322	70Hz	IBM VGA 3h
3	640X480	37.5KHz	31.501	75Hz	
4	640X480	35.0KHz	30.24	67Hz	

5	640X480	31.5KHz	25.175	60Hz	
6	800X600	35.2KHz	36	56Hz	
7	800X600	46.9KHz	49.498	75Hz	
8	800X600	37.9KHz	40	60Hz	
9	832X624	49.7KHz	57.28	75Hz	MAC
10	1024X768	60.0KHz	78.75	75Hz	
11	1024X768	48.4KHz	65	60Hz	
12	1152X870	68.7KHz	100	75Hz	MAC
13	1152X900	71.8KHz	108	76Hz	SUN Mode II
14	1280X1024	64.0KHz	108	60Hz	
15	1280X1024	80.0KHz	135	75Hz	

Note: 1. Screen displays perfect picture at 15 factory-preset modes.
2. Screen displays visible picture with OSD warning when input modes are other then 33 preset modes

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

4.4 Image size
4.4.1 Actual display size
376x301mm

4.5 Brightness uniformity

Set contrast at 70% and turn the brightness to get average above 200 nits at center of the screen.
Apply the Fig 1. It should comply with the following formula:

$$\frac{\text{Minimum luminance of five points (brightness)}}{\text{Maximum luminance of five points (brightness)}} >= 0.8 \text{ (Min)}$$

GENERAL PRODUCT SPECIFICATION(Continued)

4.6 Check Cross talk (S)

Apply Pattern 2. Set contrast at 70 % and brightness at 100 %. Measure A. Then output Pattern 3 and measure A′ . The cross talk value:

$$\frac{ABS\ (A - A')}{A} X\ 100\ \% < 1.5\ \%\ (Max)$$

4.7 White color adjustment

There are two factory preset white color 9300K, 6500K.

Apply full white pattern, with brightness in 100 % position and the contrast control at 70 % position. The 1931 CIE Chromaticity (color triangle) diagram (x,y) coordinate for the screen center should be:

9300K CIE coordinates X = 0.283 +/- 0.020
Y = 0.297 +/- 0.020

6500K CIE coordinates X = 0.313 +/- 0.020
Y = 0.329 +/- 0.020

5.0 Mechanical characteristics

5.1 Controls
Front side:
- DC power switch
- OSD function key
- UP/DOWN (Brightness key)
- LEFT/RIGHT (Input Select)
- Auto key

Rear:
- Video signal cable
- DVI signal cable
- Power cord socket

5.2 Unit dimension / Weight

Set dimension (incl. pedestal): 425(W) * 456(H) * 235(D) mm
Net weight. : 7.4 kg

5.3 Tilt and swivel base

Basic base:

Tilt angle: -5 Degree to +25 Degree

Swivel rotation: +/- 175 Degree

5.4 Transportation packages

5.4.1 Shipping dimension/Weight

Carton dimension. : 457(W) * 461(H) * 169(H) mm
506(W) * 491(H) * 197(D) mm (China model)

Gross weight. : 8.5 Kg
8.7 Kg (China model)

5.4.2 Block unit / Palletization

Compact Base:

Layers / block	sets/layer	sets/block unit
13/(4)	4/(12)	52/(48)

Blocks/container	
20 feet	40 feet
24/(9)	12/(21)

(*) For China model

6.0 Environmental characteristics

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

6.1 Susceptibility of display to external environment

Operating

- Temperature. : 5 to 35 degree C
- Humidity. : 80% max
- Altitude. : 0 to 12,000 feet

Storage

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

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

GENERAL PRODUCT SPECIFICATION(Continued)

6.2 Transportation tests

6.2.1 For all models excluded India and China

Standard		Philips CE	
Drop Test	Height	53 cm/25 cm	
	Sequence	Bottom (3X), L, F, R, Rear and Top	
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance (Room temp. /-10Degree C, humidity 70 %)	
Vibration Test	Sequence	7 Hz 10.6 mm 1.05 G 30 min. for Transport direction only.	
	Test Result	Electrical function ok Mechanical function ok No serious damage on set appearance	

6.2.2 For India and China models

6.2.2.1 Vibration test

Test should be carried out with packed product.

Test parameters:

Frequency	Amplitude	Sweep	Duration	Direction
10-30-10 Hz	0.75 mm	5 cycles	15 minutes	X,Y,Z
30-55-30 Hz	0.25 mm	5 cycles	9 minutes	

Source: GB9384-97

6.2.2.2 Bump test

Bump test should be carried out according below stated parameters with packed product.

Test parameters:

Acceleration	100 m/s^2
Pulse duration	16 ms
Number of pulses	1000
Bump frequency	60 ~ 80 times/min

Source: GB9384-97

6.2.2.3 Drop test

Drop sequence.
Face: bottom - front - left - rear- right
Edge: front-bottom edge, right-bottom edge, front-right edge.
Corner: right-bottom-front corner.
Total number of drops: 9.
Drop height table.

Mass [kg]	Drop Height [m]		
	Face	Edge	Corner
1 -9	0.80	0.60	0.60
10 - 19	0.60	0.50	0.50
20 -29	0.50	0.40	0.40
30 -39	0.40	0.30	0.30
40 - 49	0.30	0.20	0.20
≥ 50	0.20	0.10	0.10

6.2.2.4 Multiple drop test

Drop test on bottom side should be done twice on sets up to 50 kg.

Mass [kg]	Drop height [m]	Direction	Number of drops
1 - 50	0.70	bottom	2x

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

6.4 Display disturbances to external environment

6.4.1 EMI
EMI: FCC, VCCI, CE, C-Tick, BSMI, CCC, MIC

GENERAL PRODUCT SPECIFICATION(Continued)

PHILIPS

7.0 Reliability

7.1. Mean Time Between Failures
System MTBF (Excluding the LCD panel and CCFL): 50,000 hrs
CCFL MTBF: 40,000 hrs (50% of original brightness)

8.0 Quality assurance requirements

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

AQL: 0.65 (major)
2.50 (minor)
(Please also refer to annual quality agreement)
Customer acceptance criteria: UAW0377/00

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

PHILIPS

10.0 Philips' Flat Panel Monitors Pixel Defect Policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
1 lit sub pixel	3 of fewer
2 adjacent lit sub pixel	1 of fewer
3 adjacent lit sub pixel (one white pixel)	0
Distance between two bright dot defects*	25mm or more
Bright dot defects within 20mm circle	0 of fewer
Total bright dot defects of all types	3 of fewer

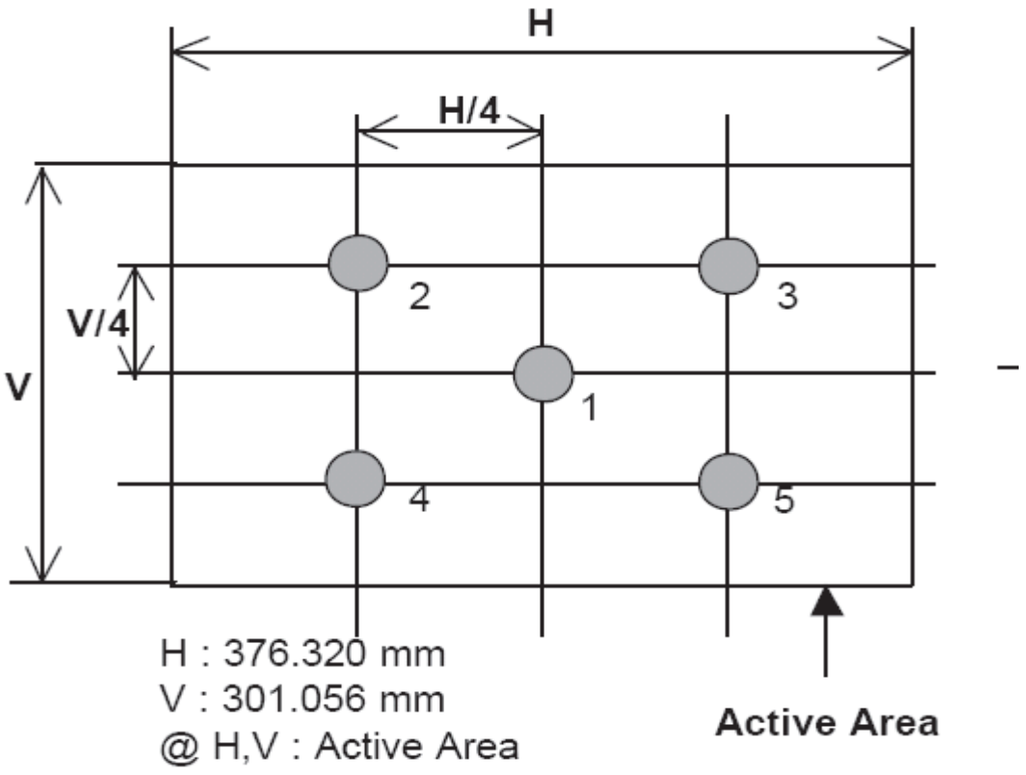
BLACK DOT DEFECTS	ACCEPTABLE LEVEL
1 dark sub pixel	5 of fewer
2 adjacent dark sub pixel	2 of fewer
3 adjacent dark sub pixel (one white pixel)	0
Distance between two black dot defects*	15mm or more
Black dot defects within 20mm circle	0 of fewer
Total black dot defects of all types	5 of fewer

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
Total bright or block dot defects of all type	5 of fewer

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

GENERAL PRODUCT SPECIFICATION(Continued)

Fig 1: Brightness and Uniformity



Position 5 = Screen center point

CLASS NO.	19 inch TFT SXGA LCD Monitor TYPE : 190B5CG/00 BRAND : PHILIPS		8639 000 15384					
2004-02-19								
NAME IVONE LEE	SUPERS.	27	590 — 24	10		A4		
TY / CHECK	DATE 2004-02-19	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.						

Fig 2: Cross talk pattern
Gray level 184 (256 Gray level)

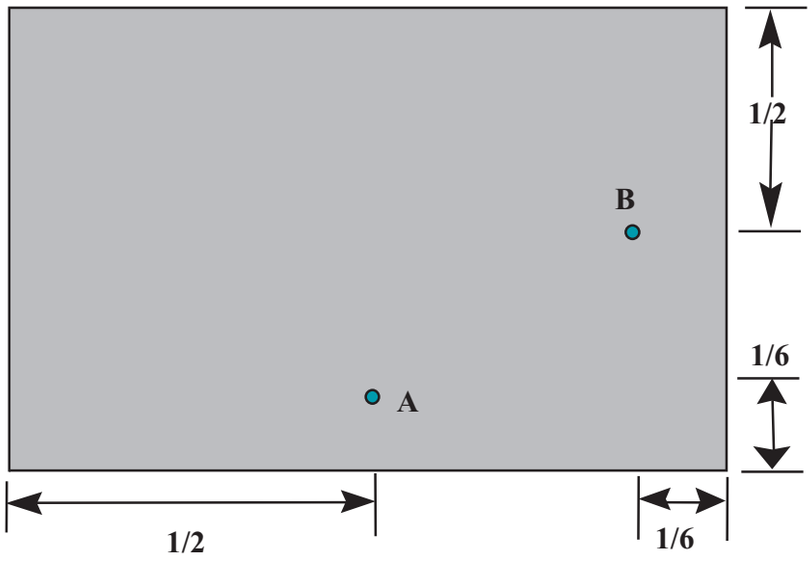
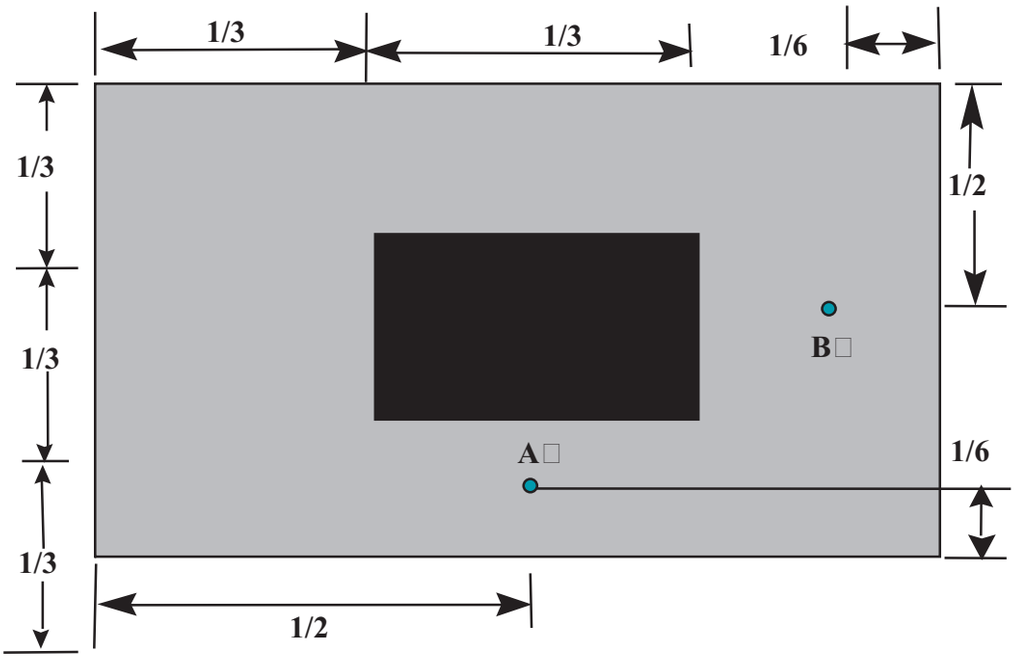


Fig 3: Cross talk pattern
Center at Gray level 0 (Black)

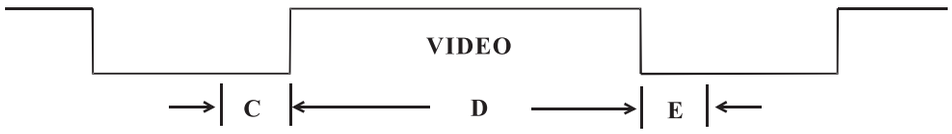


CLASS NO.	19 inch TFT SXGA LCD Monitor TYPE :190B5CG/00 BRAND : PHILIPS				8639 000 15384				
2004-02-19									
NAME IVONE LEE	SUPERS.		27	590 — 25		10		A4	
TY	CHECK	DATE 2004-02-19	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.						

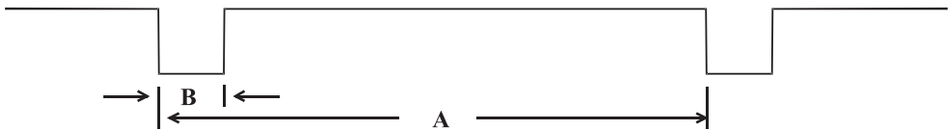
GENERAL PRODUCT SPECIFICATION(Continued)

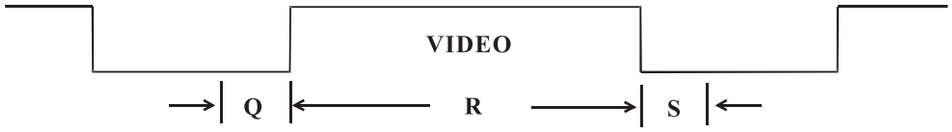
PHILIPS

SEPARATE SYNC.

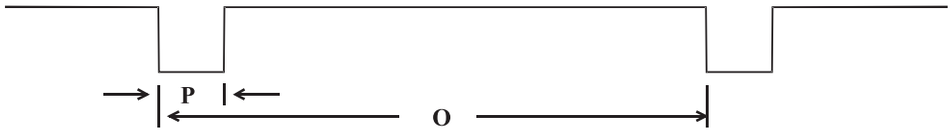


HORIZONTAL

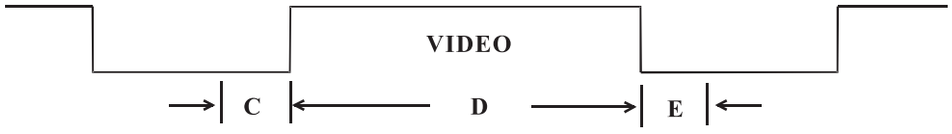




VERTICAL



COMPOSITE SYNC.



HORIZONTAL

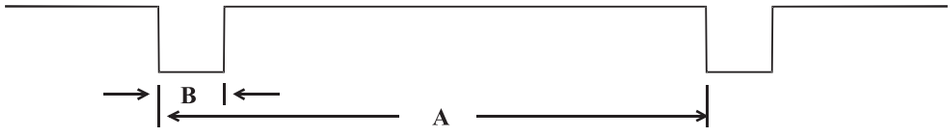


FIG-4 TIMING CHART -1

CLASS NO.	19 inch TFT SXGA LCD Monitor TYPE : 190B5CG/00 BRAND : PHILIPS			8639 000 15384				
2004-02-19								
NAME IVONE LEE	SUPERS.		27	590 — 26		10		A4
TY / CHECK	DATE 2004-02-19	Property of PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.-B.E.						

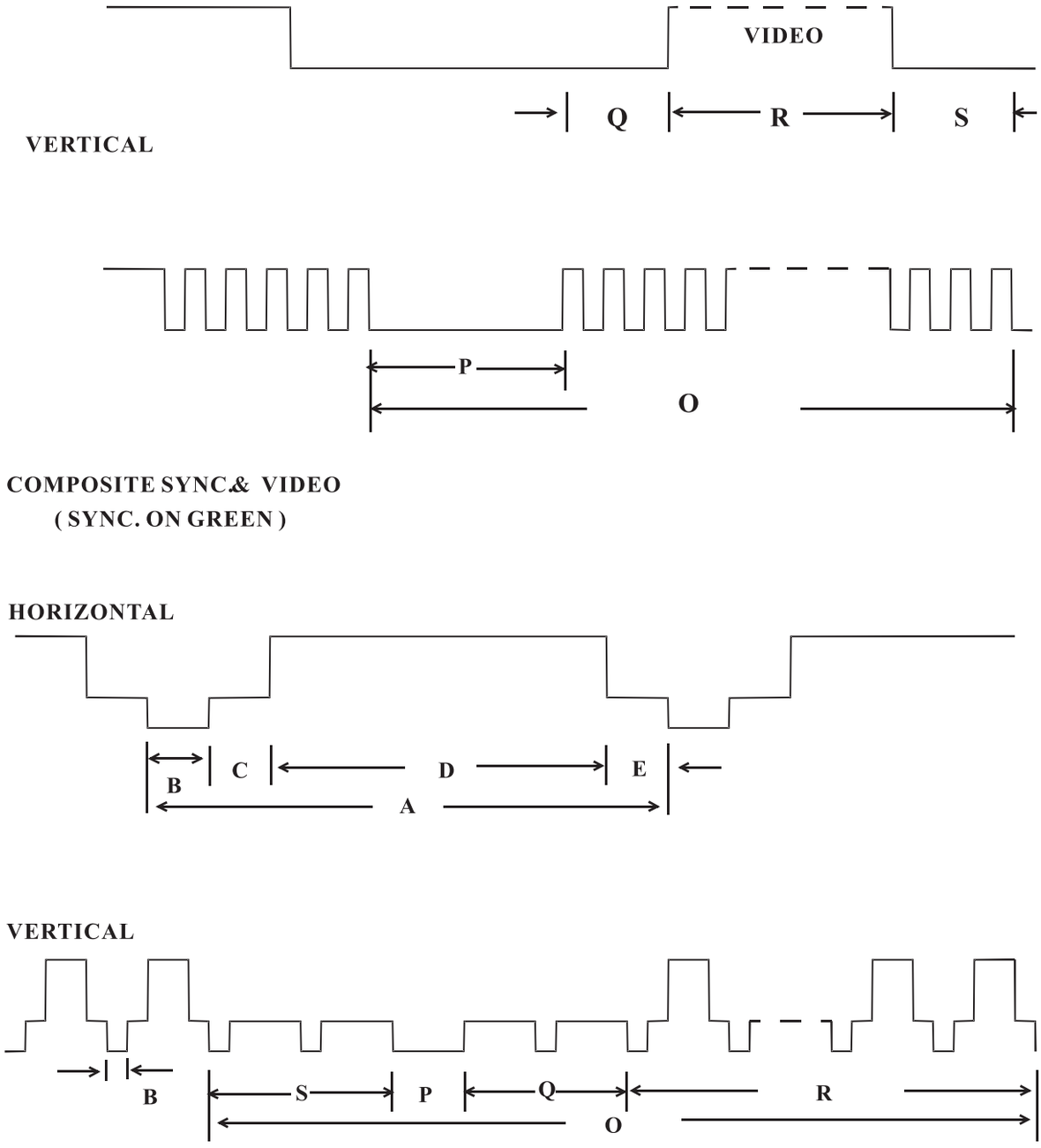


FIG-5 TIMING CHART -2

CLASS NO.	19 inch TFT SXGA LCD Monitor TYPE :190B5CG/00 BRAND : PHILIPS			8639 000 15384				
2004-02-19								
NAME IVONE LEE	SUPERS.	27	590 — 27	10		A4		
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Trouble Shooting

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

Common Problems

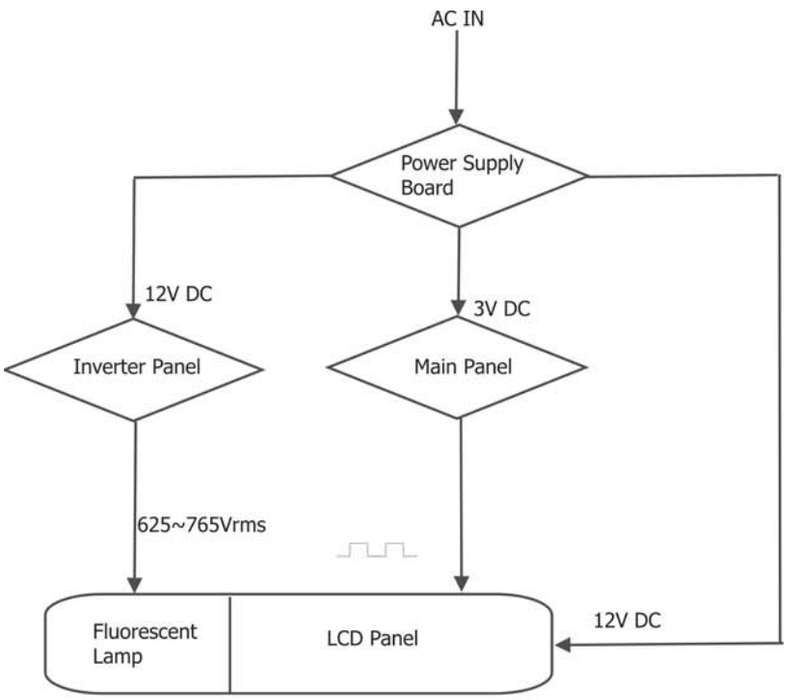
Having this problem?	Check these items
No Picture (Power LED not lit)	• Make sure the power cord is plugged into the power outlet and into the back of the monitor. • First, ensure that the power button on the front of the monitor is in the OFF position, then press it to the ON position.
No Picture (Power LED is amber or yellow)	• Make sure the computer is turned on. • Make sure the signal cable is properly connected to your computer. • Check to see if the monitor cable has bent pins. • The Energy Saving feature may be activated
Screen says 	• Make sure the monitor cable is properly connected to your computer. (Also refer to the Quick Set-Up Guide). • Check to see if the monitor cable has bent pins. • Make sure the computer is turned on.
Screen says 	• Make sure the vertical sync of input signal is within the range of 56 ~ 75 Hz. • Change the refresh rate to 56~75Hz within 10 minutes. • Re-power on monitor to start over again if you failed to change the refresh rate within 10 minutes.
AUTO button not working properly	• The Auto Function is designed for use on standard Macintosh or IBM-compatible PCs running Microsoft Windows. • It may not work properly if using nonstandard PC or video card. • The AUTO adjustment does not function when digital input is used for display.

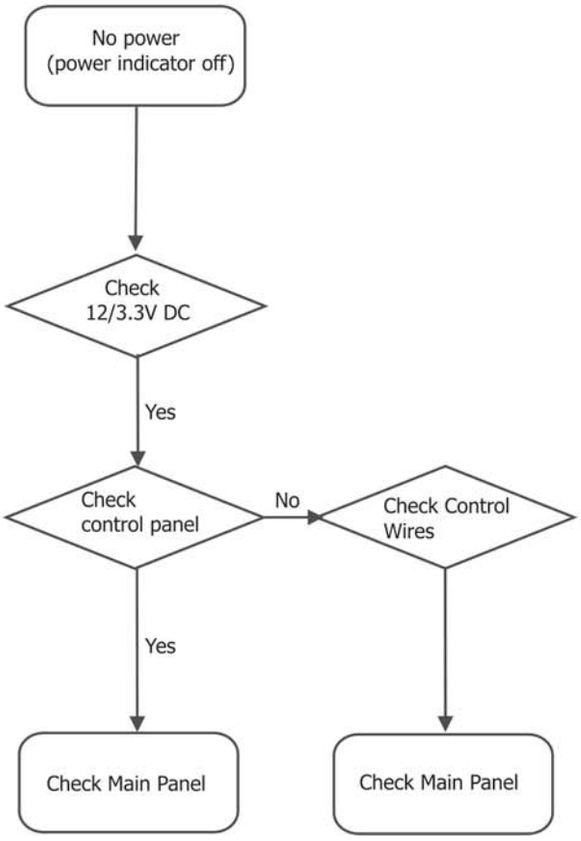
Imaging Problems

Display position is incorrect	• Press the Auto button. • Adjust the image position using the Horizontal Position and/or Vertical Position in OSD Main Controls.

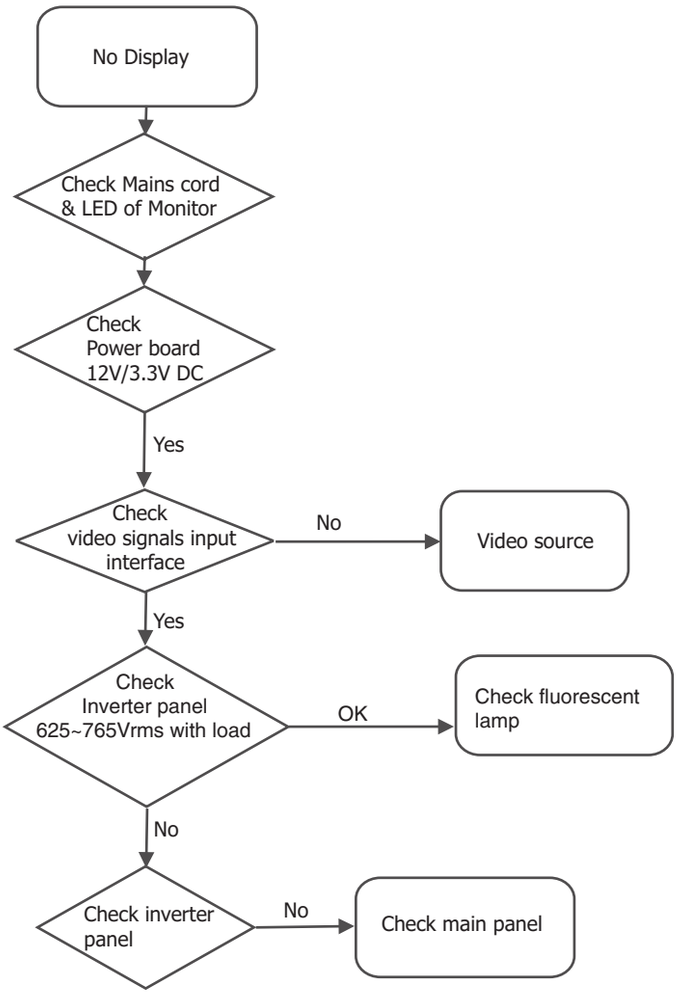
Display position is incorrect	• Press the Auto button. • Adjust the image position using the Horizontal Position and/or Vertical Position in OSD Main Controls.
Image vibrates on the screen	• Check that the signal cable is properly connected to the graphics board or PC.
Vertical flicker appears 	• Press the Auto button. • Eliminate the vertical bars using the Clock Adjustment of VIDEO NOISE in OSD Main Controls.
Horizontal flicker appears  	• Press the Auto button. • Eliminate the horizontal bars using the Phase Adjustment of VIDEO NOISE in OSD Main Controls.
The screen is too bright or too dark	• Adjust the contrast and brightness on OSD Main Controls. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer).
An after-image appears	• If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an after-image. This usually disappears after a few hours
An after-image remains after the power has been turned off.	• This is characteristic of liquid crystal and is not caused by a malfunction or deterioration of the liquid crystal. The after-image will disappear after a peroid of time.
Green, red, blue, dark, and white dots remains	• The remaining dots are normal characteristic of the liquid crystal used in today's technology.

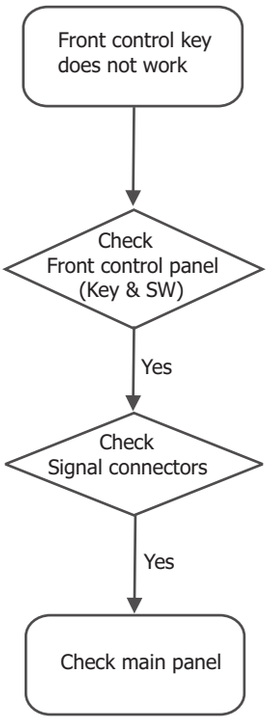
Repair Flow Chart



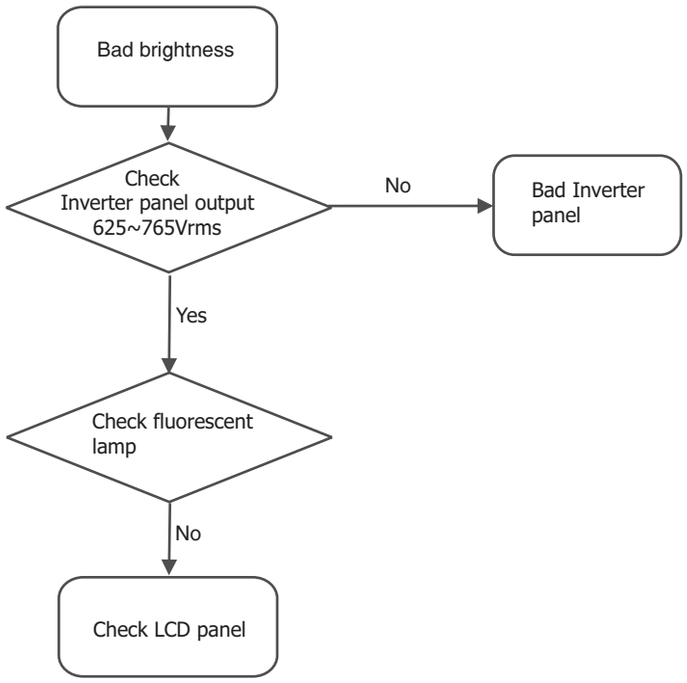


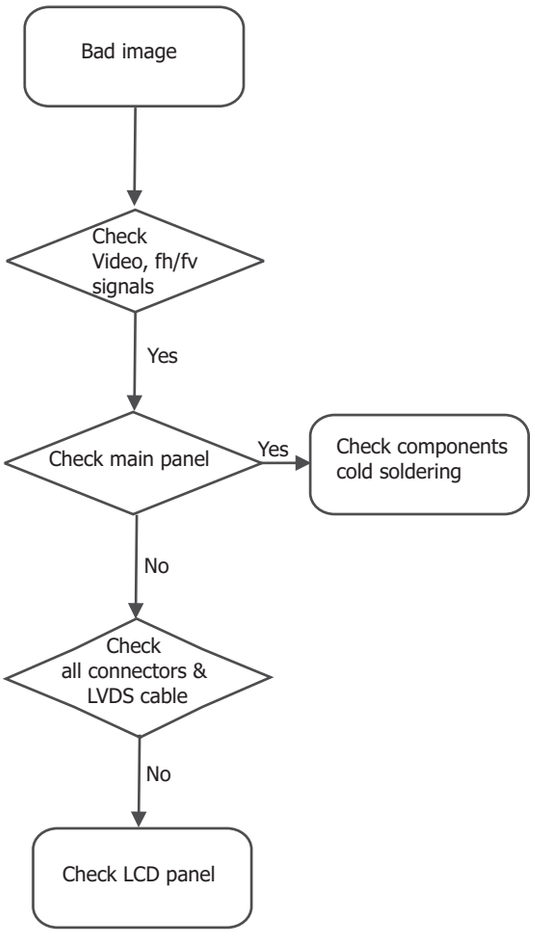
Repair Flow Chart





Repaire Flow Chart





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TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

After the original swevice 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 H azard

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

* Broken line

Implosion

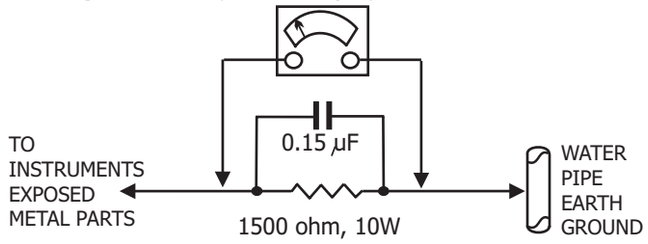
1. All picture tubes used in current model receivers are equipped with an intergral implosion system. Care should always be used, and safety glassesworn,whenever handling any picture tube. Avoid scratching or other rwise damaging the picture tube during installation.
2. Use only replacement tubes specified 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 isoperating properly there is no possibility of an x-radiation problem. High voltage should always be kept at the anufacture,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 requlated correctlv and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV requation are always checked as a standard servicing procedure, and the reason for this prudent routine is cleary understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with
6. New picture tubes are specifically designed to withstand higher operathng voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service.Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types,as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-diation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to pervent 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 thr chassis, the reading must be infinity.Remove the jumper from the ac line cord.



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10w resistor paralleled by a 0.15uf. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohmsy volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5 milliamps. If a measutement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before retutning 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 picturetube 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 tupe.

Parts Replacement

Many electrical and mechanical parts in Philips television sets have special safety related charcteristics. 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.