PHILIPS

Philips LCD Monitor Electronic User's Manual

LCD Monitor

220X1

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www.philips.com/welcome

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Safety and Troubleshooting Information

Safety precautions and maintenance

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

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

Operation:

- Keep the monitor out of direct sunlight and away from stoves or any other heat source.
- Remove any object that could fall into ventilation holes or prevent proper cooling of the monitor s electronics.
- Do not block the ventilation holes on the cabinet.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.
- If turning off the monitor by detaching the power cable or DC power cord, wait for 6 seconds before attaching the power cable or DC power cord for normal operation.
- Please use approved power cord provided by Philips all the time. If your power cord is missing, please contact with your local service center. (Please refer to Customer Care Consumer Information Center)
- Do not subject the LCD monitor to severe vibration or high impact conditions during operation.
- Do not knock or drop the monitor during operation or transportation.

Maintenance:

- To protect your display from possible damage, do not put excessive pressure on the LCD panel. When moving your monitor, grasp the frame to lift; do not lift the monitor by placing your hand or fingers on the LCD panel.
- Unplug the monitor if you are not going to use it for an extensive period of time.
- Unplug the monitor if you need to clean it with a slightly damp cloth. The screen may be wiped with a dry cloth when the power is off. However, never use organic solvent, such as, alcohol, or ammonia-based liquids to clean your monitor.
- To avoid the risk of shock or permanent damage to the set, do not expose the monitor to dust, rain, water, or excessive moisture environment.
- If your monitor gets wet, wipe it with dry cloth as soon as possible.
- If foreign substance or water gets in your monitor, please turn the power off immediately and disconnect the power cord. Then, remove the foreign substance or water, and send it to the maintenance center.
- Do not store or use the LCD monitor in locations exposed to heat, direct sunlight or

extreme cold.

- In order to maintain the best performance of your monitor and use it for a longer lifetime, please use the monitor in a location that falls within the following temperature and humidity ranges.
  - Temperature: 0-40°C 32-95°F
  - Humidity: 20-80% RH

IMPORTANT: Always activate a moving screen saver program when you leave your monitor unattended. Always activate a periodic screen refresh application if your LCD monitor will display unchanging static content. Uninterrupted display of still or static images over an extended period may cause “burn in”, also known as “after-imaging” or “ghost imaging”, on your screen. "Burn-in", "after-imaging", or "ghost imaging" is a well-known phenomenon in LCD panel technology. In most cases, the “burned in” or “after-imaging” or “ghost imaging” will disappear gradually over a period of time after the power has been switched off.

WARNING: Severe” burn-in” or “after-image” or “ghost image” symptoms will not disappear and cannot be repaired. The damage mentioned above is not covered under your warranty.

Service:

- The casing cover should be opened only by qualified service personnel.
- If there is any need for any document for repair or integration, please contact with your local service center. (please refer to the chapter of "Consumer Information Center")
- For transportation information, please refer to "Physical Specifications".
- Do not leave your monitor in a car/trunk under direct sun light.

Consult a service technician if the monitor does not operate normally, or you are not sure what procedure to take when the operating instructions given in this manual have been followed.

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FAQs (Frequently Asked Questions)

General FAQs

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

A: Recommended video mode for Philips 22": 1680x1050 @60Hz.

1. Unplug all cables, then connect your PC to the monitor that you used previously.
2. In the Windows Start Menu, select Settings/Control Panel. In the Control Panel Window, select the Display icon. Inside the Display Control Panel, select the 'Settings' tab. Under the setting tab, in box labeled 'desktop area', move the slidebar to 1680x1050 pixels (22").
3. Open 'Advanced Properties' and set the Refresh Rate to 60Hz, then click OK.
4. Restart your computer and repeat step 2 and 3 to verify that your PC is set at 1680x1050@60Hz (22").
5. Shut down your computer, disconnect your old monitor and reconnect your Philips LCD monitor.
6. Turn on your monitor and then turn on your PC.

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

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

Q: How do I adjust the resolution?

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

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

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

Q: What is the Auto function?

A: The *AUTO adjustment* key restores the optimal screen position, phase and clock settings by pressing of a single button – without the need to navigate through OSD (On Screen Display) menus and control keys.

Note: Auto function is available in selected models only.

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

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

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

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

Q: What does the Refresh Rate mean for LCD?

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

Q: Will the LCD screen be resistant to scratches?

A: A protective coating is applied to the surface of the LCD, which is durable to a

certain extent (approximately up to the hardness of a 2H pencil). In general, it is recommended that the panel surface is not subject to any excessive shocks or scratches.

Q: How should I clean the LCD surface?

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

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

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

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

a. Color Temperature; The six settings are 5000K, 6500K, 7500K, 8200K, 9300K and 11500K. With settings in the 5000K range the panel appears ‘warm,' with a red-white color tone, while a 11500K temperature yields ‘cool, blue-white toning."

b. sRGB; this is a standard setting for ensuring correct exchange of colors between different device (e.g. digital cameras, monitors, printers, scanners, etc)

c. User Define; the user can choose his/her preference color setting by adjusting red, green blue color.

d. Gamma; The five settings are 1.8, 2.0, 2.2, 2.4, and 2.6.

*A measurement of the color of light radiated by an object while it is being heated. This measurement is expressed in terms of absolute scale, (degrees Kelvin). Lower Kelvin temperatures such as 2004K are red; higher temperatures such as 9300K are blue. Neutral temperature is white, at 6504K.

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Screen Adjustments

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

A: For best performance, make sure your display settings are set at 1680x1050@60Hz for 22".

Q: How do LCDs compare to CRTs in terms of radiation?

A: Because LCDs do not use an electron gun, they do not generate the same amount of radiation at the screen surface.

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Compatibility with other Peripherals

Q: Can I connect my LCD monitor to any PC, workstation or Mac?

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

Q: Are Philips LCD monitors Plug-and-Play?

A: Yes, the monitors are Plug-and-Play compatible with Windows® 95, 98, 2000, XP and Vista.

Q: What is USB (Universal Serial Bus)?

A: Think of USB as a smart plug for PC peripherals. USB automatically determines resources (like driver software and bus bandwidth) required by peripherals. USB makes necessary resources available without user intervention. There are three main benefits of USB. USB eliminates "case anxiety," the fear of removing the computer case to install circuit board cards -- that often requires adjustment of complicated IRQ settings -- for add-on peripherals. USB does away with "port gridlock." Without USB,

PCs are normally limited to one printer, two Com port devices (usually a mouse and modem), one Enhanced Parallel Port add-on (scanner or video camera, for example), and a joystick. More and more peripherals for multimedia computers come on the market every day. With USB, up to 127 devices can run simultaneously on one computer. USB permits "hot plug-in." No need to shut down, plug in, reboot and run set up to install peripherals. No need to go through the reverse process to unplug a device. Bottom line: USB transforms today's "Plug-and-Pray" into true Plug-and-Play!

Please refer to glossary for more information about USB.

Q: What is a USB hub ?

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

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LCD Panel Technology

Q: What is a Liquid Crystal Display?

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

Q: What differentiates passive matrix LCDs from active matrix LCDs?

A: An LCD is made with either a passive matrix or an active matrix display grid. An active matrix has a transistor located at each pixel intersection, requiring less current to control the luminance of a pixel. For this reason, the current in an active matrix

display can be switched on and off more frequently, improving the screen refresh time (your mouse pointer will appear to move more smoothly across the screen, for example). The passive matrix LCD has a grid of conductors with pixels located at each intersection in the grid.

Q: What are the advantages of TFT LCD compared with CRT?

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

Q: Why is vertical frequency of 60Hz optimal for an LCD monitor?

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

Q: What kind of wide-angle technology is available? How does it work?

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

Q: Why is there no flicker on an LCD Monitor?

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

Q: Why is an LCD monitor virtually low of Electro Magnetic Interference?

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

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Ergonomics, Ecology and Safety Standards

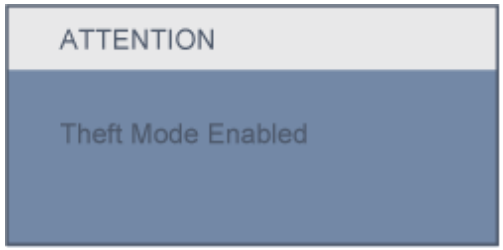
Q: What is the CE mark?

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

Q: Does the LCD monitor conform to general safety standards?

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

Q: After I change new PC, I found this information on screen, how can I do?



A: Because you activate Theft Deterrence function in SmartControl II. Please contact IT manager or Philips Service Center.

More information is provided in the Regulatory Information section.

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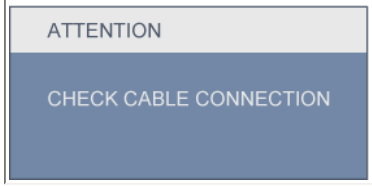
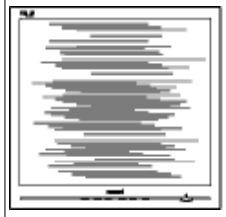
Troubleshooting

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

Common Problems

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

Imaging Problems

Display position is incorrect	• Press the Auto button. • Adjust the image position using the Phase/Clock of Setup in OSD Main Controls.
Image vibrates on the screen	• Check that the signal cable is properly connected to the graphics board or PC.
Vertical flicker appears 	• Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of Setup in OSD Main Controls.
Horizontal flicker appears 	• Press the Auto button. • Eliminate the vertical bars using the Phase/Clock of Setup in OSD Main Controls.
The screen is too bright or too dark	• Adjust the contrast and brightness on On-Screen Display. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your sales representative).
An after-image appears	• If an image remains on the screen for an extended period of time, it may be imprinted in the screen and leave an 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 period of time.

Green, red, blue, dark, and white dots remains	• The remaining dots are normal characteristic of the liquid crystal used in today s technology.
Adjust blue "power on" light	• Adjust blue "power on" light using the power LED of Setup in OSD Main Controls.

For further assistance, refer to the Consumer Information Centers list and contact Philips customer service representative.

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Available for selective models

Recycling Information for Customers

There is currently a system of recycling up and running in the European countries, such as The Netherlands, Belgium, Norway, Sweden and Denmark.

In Asia Pacific, Taiwan, the products can be taken back by Environment Protection Administration (EPA) to follow the IT product recycling management process, detail can be found in web site www.epa.gov.tw

The monitor contains parts that could cause damage to the nature environment. Therefore, it is vital that the monitor is recycled at the end of its life cycle.

For help and service, please contact Consumers Information Center or F1rst Choice Contact Information Center in each country.

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Waste Electrical and Electronic Equipment-WEEE

Attention users in European Union private households

This marking on the product or on its packaging illustrates that, under European Directive 2002/96/EG governing used electrical and electronic appliances, this product may not be disposed of with normal household waste. You are responsible for disposal of this equipment through a designated waste electrical and electronic equipment collection. To determine the locations for dropping off such waste electrical and electronic, contact your local government office, the waste disposal organization that serves your household or the store at which you purchased the product.

Attention users in United States:

Like all LCD products, this set contains a lamp with Mercury. Please dispose of according to all Local, State and Federal laws. For the disposal or recycling information, contact www.mygreenelectronics.com or www.eiae.org.

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CE Declaration of Conformity

This product is in conformity with the following standards
- EN60950-1:2001 (Safety requirement of Information Technology Equipment)
- EN55022:2006 (Radio Disturbance requirement of Information Technology Equipment)
- EN55024:1998 (Immunity requirement of Information Technology Equipment)
- EN61000-3-2:2006 (Limits for Harmonic Current Emission)
- EN61000-3-3:1995 (Limitation of Voltage Fluctuation and Flicker)
following provisions of directives applicable
- 2006/95/EC (Low Voltage Directive)
- 2004/108/EC (EMC Directive)
and is produced by a manufacturing organization on ISO9000 level.

The product also comply with the following standards
- ISO13406-2 (Ergonomic requirement for Flat Panel Display)
- GS EK1-2000 (GS specification)
- prEN50279:1998 (Low Frequency Electric and Magnetic fields for Visual Display)
- MPR-II (MPR:1990:8/1990:10 Low Frequency Electric and Magnetic fields)

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Energy Star Declaration

This monitor is equipped with a function for saving energy which supports the VESA Display Power Management Signaling (DPMS) standard. This means that the monitor must be connected to a computer which supports VESA DPMS. Time settings are adjusted from the system unit by software.

	VESA State	LED Indicator	Power Consumption
Normal operation	ON (Active)	Blue	< 45 W (Typ.)
Power Saving Alternative 2 One step	Sleep	Blue Blinking	< 1 W
	Switch Off	Off	< 0.8 W

As an ENERGY STAR® Partner, we have determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

We recommend you switch off the monitor when it is not in use for a long time.

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Federal Communications Commission (FCC) Notice (U.S. Only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Use only RF shielded cable that was supplied with the monitor when connecting this monitor to a computer device.

To prevent damage which may result in fire or shock hazard, do not expose this appliance to rain or excessive moisture.

THIS CLASS B DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

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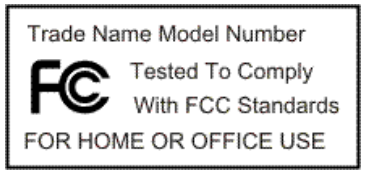
FCC Declaration of Conformity

Declaration of Conformity for Products Marked with FCC Logo,
United States Only



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Commission Federale de la Communication (FCC Declaration)

Cet équipement a été testé et déclaré conforme auxlimites des appareils numériques de class B,aux termes de l'article 15 Des règles de la FCC. Ces limites sont conçues de façon à fourir une protection raisonnable contre les interférences nuisibles dans le cadre d'une installation résidentielle. CET appareil produit, utilise et peut émettre des hyperfréquences qui, si l'appareil n'est pas installé et utilisé selon les consignes données, peuvent causer des interférences nuisibles aux communications radio. Cependant, rien ne peut garantir l'absence d'interférences dans le cadre d'une installation particulière. Si cet appareil est la cause d'interférences nuisibles pour la réception des signaux de radio ou de télévision, ce qui peut être décelé en fermant l'équipement, puis en le remettant en fonction, l'utilisateur pourrait essayer de corriger la situation en prenant les mesures suivantes:

- Réorienter ou déplacer l'antenne de réception.
- Augmenter la distance entre l'équipement et le récepteur.
- Brancher l'équipement sur un autre circuit que celui utilisé par le récepteur.
- Demander l'aide du marchand ou d'un technicien chevronné en radio/télévision.

Toutes modifications n'ayant pas reçu l'approbation des services compétents en matière de conformité est susceptible d'interdire à l'utilisateur l'usage du présent équipement.

N'utiliser que des câbles RF armés pour les connections avec des ordinateurs ou périphériques.

CET APPAREIL NUMERIQUE DE LA CLASSE B RESPECTE TOUTES LES EXIGENCES DU REGLEMENT SUR LE MATERIEL BROUILLEUR DU CANADA.

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EN 55022 Compliance (Czech Republic Only)

This device belongs to category B devices as described in EN 55022, unless it is specifically stated that it is a Class A device on the specification label. The following applies to devices in Class A of EN 55022 (radius of protection up to 30 meters). The user of the device is obliged to take all steps necessary to remove sources of interference to telecommunication or other devices.

Pokud není na typovém štítku počítače uvedeno, že spadá do do třídy A podle EN 55022, spadá automaticky do třídy B podle EN 55022. Pro zařízení zařazená do třídy A (chranné pásmo 30m) podle EN 55022 platí následující. Dojde-li k rušení telekomunikačních nebo jiných zařízení je uživatel povinnen provést taková opatřgní, aby rušení odstranil.

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Polish Center for Testing and Certification Notice

The equipment should draw power from a socket with an attached protection circuit (a three-prong socket). All equipment that works together (computer, monitor, printer, and so on) should have the same power supply source.

The phasing conductor of the room's electrical installation should have a reserve short-circuit protection device in the form of a fuse with a nominal value no larger than 16 amperes (A).

To completely switch off the equipment, the power supply cable must be removed from the power supply socket, which should be located near the equipment and easily accessible.

A protection mark "B" confirms that the equipment is in compliance with the protection usage requirements of standards PN-93/T-42107 and PN-89/E-06251.

Wymagania Polskiego Centrum Badań i Certyfikacji

Urządzenie powinno być zasilane z gniazda z przyłączonym obwodem ochronnym (gniazdo z kołkiem). Współpracujące ze sobą urządzenia (komputer, monitor, drukarka) powinny być zasilane z tego samego źródła.

Instalacja elektryczna pomieszczenia powinna zawierać w przewodzie fazowym rezerwową ochronę przed zwarciami, w postaci bezpiecznika o wartości znamionowej nie większej niż 16A (amperów).

W celu całkowitego wyłączenia urządzenia z sieci zasilania, należy wyjąć wtyczkę kabla zasilającego z gniazdka, które powinno znajdować się w pobliżu urządzenia i być łatwo dostępne.

Znak bezpieczeństwa "B" potwierdza zgodność urządzenia z wymaganiami bezpieczeństwa użytkowania zawartymi w PN-93/T-42107 i PN-89/E-06251.

Pozostałe instrukcje bezpieczeństwa

- Nie należy używać wtyczek adapterowych lub usuwać kołka obwodu ochronnego z wtyczki. Jeżeli konieczne jest użycie przedłużacza to należy użyć przedłużacza 3-żyłowego z prawidłowo połączonym przewodem ochronnym.
- System komputerowy należy zabezpieczyć przed nagłymi, chwilowymi wzrostami lub spadkami napięcia, używając eliminatora przepięć, urządzenia dopasowującego lub bezzakłóceniowego źródła zasilania.
- Należy upewnić się, aby nic nie leżało na kablach systemu komputerowego, oraz aby kable nie były umieszczone w miejscu, gdzie można byłoby na nie nadeptywać lub potykać się o nie.
- Nie należy rozlewać napojów ani innych płynów na system komputerowy.
- Nie należy wpychać żadnych przedmiotów do otworów systemu komputerowego, gdyż może to spowodować pożar lub porażenie prądem, poprzez zwarcie elementów wewnętrznych.
- System komputerowy powinien znajdować się z dala od grzejników i źródeł ciepła. Ponadto, nie należy blokować otworów wentylacyjnych. Należy unikać kładzenia luźnych papierów pod komputer oraz umieszczania komputera w ciasnym miejscu bez możliwości cyrkulacji powietrza wokół niego.

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North Europe (Nordic Countries) Information

Placering/Ventilation

VARNING:

FÖRSÄKRA DIG OM ATT HUVUDBRYTARE OCH UTTAG ÄR LÄTÅTKOMLIGA, NÄR DU STÄLLER DIN UTRUSTNING PÅPLATS.

Placering/Ventilation

ADVARSEL:

SØRG VED PLACERINGEN FOR, AT NETLEDNINGENS STIK OG STIKKONTAKT ER NEMT TILGÆNGELIGE.

Paikka/Ilmankierto

VAROITUS:

SIJOITA LAITE SITEN, ETTÄ VERKKOJOHTO VOIDAAN TARVITTAESSA HELPOSTI IRROTTAA PISTORASIASTA.

Plassering/Ventilasjon

ADVARSEL:

NÅR DETTE UTSTYRET PLASSERES, MÅ DU PASSE PÅ AT KONTAKTENE FOR STØMTILFØRSEL ER LETTE Å NÅ.

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BSMI Notice (Taiwan Only)

符合乙類資訊產品之標準

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Ergonomie Hinweis (nur Deutschland)

Der von uns gelieferte Farbmonitor entspricht den in der "Verordnung über den Schutz vor Schäden durch Röntgenstrahlen" festgelegten Vorschriften.

Auf der Rückwand des Gerätes befindet sich ein Aufkleber, der auf die Unbedenklichkeit der Inbetriebnahme hinweist, da die Vorschriften über die Bauart von Störstrahlern nach Anlage III ¤ 5 Abs. 4 der Röntgenverordnung erfüllt sind.

Damit Ihr Monitor immer den in der Zulassung geforderten Werten entspricht, ist darauf zu achten, daß

1. Reparaturen nur durch Fachpersonal durchgeführt werden.
2. nur original-Ersatzteile verwendet werden.
3. bei Ersatz der Bildröhre nur eine bauartgleiche eingebaut wird.

Aus ergonomischen Gründen wird empfohlen, die Grundfarben Blau und Rot nicht auf dunklem Untergrund zu verwenden (schlechte Lesbarkeit und erhöhte Augenbelastung bei zu geringem Zeichenkontrast wären die Folge).

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 beträgt 70dB (A) oder weniger.

ACHTUNG: BEIM AUFSTELLEN DIESES GERÄTES DARAUF ACHTEN, DAß NETZSTECKER UND NETZKABELANSCHLUß LEICHT ZUGÄNGLICH SIND.

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End-of-Life Disposal

Your new monitor contains materials that can be recycled and reused. Specialized companies can recycle your product to increase the amount of reusable materials and to minimize the amount to be disposed of.

Please find out about the local regulations on how to dispose of your old monitor from your sales representative.

(For customers in Canada and U.S.A.)

This product may contain lead and/or mercury. Dispose of in accordance to local-state and federal regulations.
For additional information on recycling contact www.eia.org (Consumer Education Initiative)

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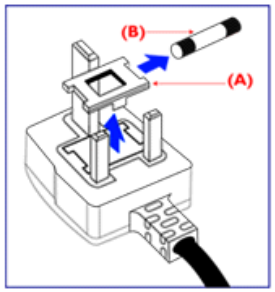
Information for UK only

WARNING - THIS APPLIANCE MUST BE GROUNDING.

Important:

This apparatus is supplied with an approved moulded 13A plug. To change a fuse in this type of plug proceed as follows:

1. Remove fuse cover and fuse.



2. Fit new fuse which should be a BS 1362 5A,A.S.T.A. or BSI approved type.

3. Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate 3-pin plug fitted in its place.

If the mains plug contains a fuse, this should have a value of 5A. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5A.

Note: The severed plug must be destroyed to avoid a possible shock hazard should it be inserted into a 13A

socket elsewhere.

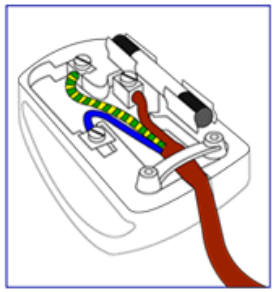
How to connect a plug

The wires in the mains lead are coloured in accordance with the following code:

BLUE - "NEUTRAL" ("N")

BROWN - "LIVE" ("L")

GREEN & YELLOW - "GROUND" ("G")



1. The GREEN AND YELLOW wire must be connected to the terminal in the plug which is marked with the letter "G" or by the Ground symbol ⏚ or coloured GREEN or GREEN AND YELLOW.

2. The BLUE wire must be connected to the terminal which is marked with the letter "N" or coloured BLACK.

3. The BROWN wire must be connected to the terminal which marked with the letter "L" or coloured RED.

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the three wires.

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China RoHS

The People's Republic of China released a regulation called "Management Methods for Controlling Pollution by Electronic Information Products" or commonly referred to as China RoHS. All products including CRT and LCD monitor which are produced and sold for China market have to meet China RoHS request.

中国大陆RoHS

根据中国大陆《电子信息产品污染控制管理办法》（也称为中国大陆RoHS），
以下部分列出了本产品中可能包含的有毒有害物质或元素的名称和含量

本表适用之产品

显示器（液晶及CRT）

有毒有害物质或元素

部件名称	有毒有害物质或元素					
	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr6+）	多溴联苯（PBB）	多溴二苯醚（PBDE）
外壳	○	○	○	○	○	○
CRT显示屏	×	○	○	○	○	○
液晶显示屏/灯管	×	×	○	○	○	○
电路板组件*	×	○	○	○	○	○
电源适配器	×	○	○	○	○	○
电源线/连接线	×	○	○	○	○	○

*： 电路板组件包括印刷电路板及其构成的零部件，如电阻、电容、集成电路、连接器等
○：表示该有毒有害物质在该部件所有均质材料中的含量均在
《电子信息产品中有毒有害物质的限量要求标准》规定的限量要求以下
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出
《电子信息产品中有毒有害物质的限量要求标准》规定的限量要求；但是上表中打“×”的部件，
符合欧盟RoHS法规要求（属于豁免的部分）

中国能源效率标识

根据中国大陆《能源效率标识管理办法》本显示器符合以下要求：

能源效率(cd/W)	> 0.85
能效等级	2 级
能效标准	GB 21520-2008

详细有关信息请查阅中国能效标识网：http://www.energylabel.gov.cn/

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Lead-free Product

Lead free display promotes environmentally sound recovery and disposal of waste from electrical and electronic equipment. Toxic substances like Lead has been eliminated and compliance with European community's stringent RoHs directive mandating restrictions on hazardous substances in electrical and electronic equipment have been adhered to in order to make Philips monitors safe to use throughout its life cycle.

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Safety and Troubleshooting

FAQs

Troubleshooting

Regulatory Information

Information
for Users in the U.S
Information
for Users Outside the U.S

Other Related Information

Information for Users in the U. S.

For units set at 115 V :

Use a UL Listed Cord Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cord a maximum of 15-feet long and a parallel blade, grounding type attachment plug rated 15 A, 125 V.

For units set at 230 V:

Use a UL Listed Cord Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cord a maximum of 15-feet long and a tandem blade, grounding type attachment plug rated 15 A, 250 V.

Information for Users outside the U.S.

For units set at 230 V:

Use a Cord Set consisting of a minimum 18 AWG cord and grounding type attachment plug rated 15 A, 250 V. The Cord Set should have the appropriate safety approvals for the country in which the equipment will be installed and / or be marked HAR.

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About This Guide

Notational Descriptions

About This Manual

About This Guide

This electronic user's guide is intended for anyone who uses the Philips LCD Monitor. It describes the LCD monitor's features, setup, operation and other important information. Its contents are identical to the information in our printed version.

It includes the following sections:

- Safety and Troubleshooting Information provides tips and solutions for common problems as well as other related information you may need.
- About This Electronic User's Manual gives an overview of information included, along with notation icon descriptions and other documentation for your reference.
- Product Information gives an overview of the monitor's features as well as the technical specifications for this monitor.
- Installing Your Monitor describes the initial setup process and gives an overview of how to use the monitor.
- On-Screen Display provides information on adjusting the settings on your monitor.
- Customer Care and Warranty contains a list of worldwide Philips Consumer Information Centers along with help desk phone numbers and information on the warranty applicable to your product.
- Glossary defines technical terms.
- Download and Print Option transfers this entire manual to your hard drive for easy reference.

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Notational Descriptions

The following subsections describe notational conventions used in this document.

Notes, Cautions and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold or italic type. These blocks contain notes, cautions or warnings. They are used as follows:

NOTE: This icon indicates important information and tips that help you make better use of your computer system.

CAUTION: This icon indicates information that tells you how to avoid either potential damage to hardware or loss of data.

WARNING: This icon indicates the potential for bodily harm and tells you how to avoid the problem.

Some warnings may appear in alternate formats and may not be accompanied by an icon. In such cases, the specific presentation of the warning is mandated by the relevant regulatory authority.

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Your LCD Monitor
Smartimage
SmartContrast
SmartSaturate
SmartSharpness
Technical Specifications
Resolution & Preset Modes
Philips Pixel Defect Policy
Automatic Power Saving
Physical Specification
Pin Assignment
Product Views
Physical Function
SmartControl II

Product Information

Your LCD monitor

Congratulations on your purchase and welcome to Philips. To fully benefit from the support that Philips offers, register your product at. www.philips.com/welcome

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SmartImage

What is it?

SmartImage provides presets that optimize display for different types of content, dynamically adjusting brightness, contrast, color and sharpness in real time. Whether you're working with text applications, displaying images or watching a video, Philips SmartImage delivers great optimized LCD display performance.

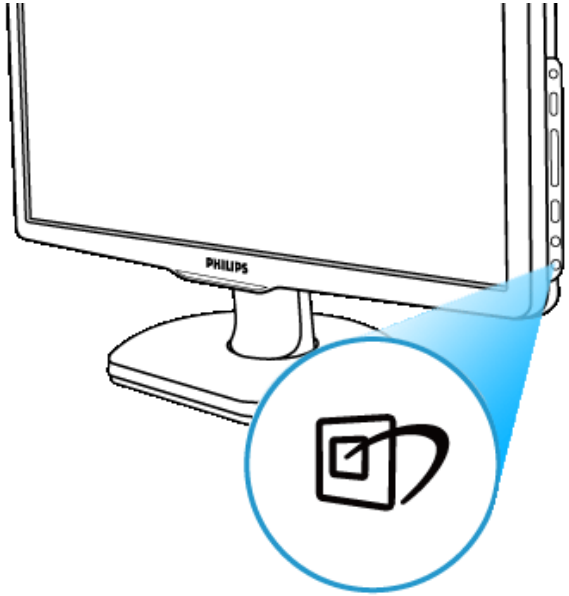
Why do I need it?

You want a LCD display that delivers optimized display all your favorite types of content, SmartImage software dynamically adjust brightness, contrast, color and sharpness in real time to enhance your LCD viewing experience.

How does it work?

SmartImage - software based on Philips award-winning LightFrame™ technology - analyzes the content displayed on your screen. Based on a scenario you select, SmartImage dynamically enhances the contrast, color saturation and sharpness of images and video for ultimate display performance - all in real time with the press on a single button.

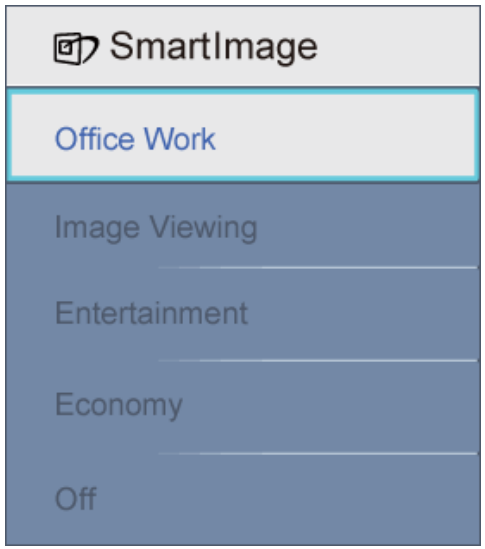
How to enable SmartImage?



1. Press to launch the SmartImage on screen display;
2. Keep press to toggle between Office Work, Image Viewing, Entertainment, Economy, and Off;
3. The SmartImage on screen display will remain on screen for 5 seconds or you can also press ”OK” to make confirmation.
4. When SmartImage is enabled, the sRGB scheme is disabled automatically. To use sRGB you need to disable SmartImage with the button at the front bezel of your monitor.

Except using key to scroll down, you can also press ▼▲ buttons to choose and press “OK” to confirm selection and close the SmartImage OSD. There are five modes to be selected: Office Work, Image Viewing, Entertainment, Economy, and Off.

There are five modes to be selected: Office Work, Image Viewing, Entertainment, Economy, and Off.



1. Office Work: Enhances text and dampens brightness to increase readability and reduce eye strain. This mode significantly enhances readability and productivity when you're working with spreadsheets, PDF files, scanned articles or other general office applications.
2. Image Viewing: This profile combines color saturation, dynamic contrast and sharpness enhancement to display photos and other images with outstanding clarity in vibrant colors - all without artifacts and faded colors.
3. Entertainment: Ramped up luminance, deepened color saturation, dynamic contrast and razor sharpness displays every details in darker areas of your videos without color washout in brighter areas maintaining a dynamic natural values for the ultimate video display.
4. Economy: Under this profile, brightness, contrast are adjusted and backlighting fine-tuned for just right display of everyday office applications and lower power consumption.
5. Off: No optimization by SmartImage.

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SmartContrast

What is it?

Unique technology that dynamically analyzes displayed content and automatically optimizes a LCD monitor's contrast ratio for maximum visual clarity and viewing enjoyment, stepping up backlighting for clearer, crisper and brighter images or dimming backlighting for clear display of images on dark backgrounds.

Why do I need it?

You want the very best visual clarity and viewing comfort for every type of content. SmartContrast dynamically controls contrast and adjusts backlighting for clear, crisp, bright gaming and video images or displays clear, readable text for office work. By reducing your monitor's power consumption, you save on energy costs and extend the lifetime of your monitor.

How does it work?

When you active SmartContrast which will analysis the content you are displaying in real time to adjust colors and control backlight intensity. This function can obviously enhance contrast in dynamic for more entertainment fun when viewing videos or playing games.

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SmartSaturate

What is it?

Smart technology that controls color saturation - the degree to which one on screen color is diluted by neighboring colors - to deliver rich and vibrant images for more entertainment fun when you are viewing videos.

Why do I need it?

You want rich, vibrant images for more entertainment fun when viewing photos or videos.

How does it work?

SmartSaturate dynamically controls color saturation - the degree to which on-screen color is diluted by neighboring colors - to deliver rich, vibrant display for more entertainment fun when you are viewing images or videos in your display's Entertainment mode and is turned off for top quality display of office application and in the Economy mode to reduce power consumption.

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SmartSharpness

What is it?

Smart technology that enhances sharpness when you need it for ultimate display performance and more entertainment fun when you are viewing videos or photos.

Why do I need it?

You want the ultimate in sharpness for more entertainment fun when viewing photos or videos.

How does it work?

Smart technology enhances sharpness when you need it for ultimate display performance and more entertainment fun when you are viewing videos or photos in the Entertainment mode and is turned off for top quality display of office applications and in the Economy mode to reduce power consumptions.

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Technical Specifications*

LCD PANEL	
Type	TFT LCD
Screen size	22" visual
Pixel Pitch	0.282 x 0.282 mm
LCD Panel type	1680 x 1050 pixels R.G.B. vertical stripe Anti-glare polarizer, hard coated
Effective viewing area	473.76 x 296.1 mm
SCANNING	
Vertical refresh rate	56 Hz-75 Hz
Horizontal Frequency	30 kHz - 83 kHz
VIDEO	
Video dot rate	165 MHz
Input impedance	
- Video	75 ohm

- Sync	2.2K ohm
Input signal levels	0.7 Vpp
Sync input signal	Separate sync Composite sync Sync on green
Sync polarities	Positive and negative

** This data is subject to change without notice.*

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Resolution & Preset Modes

A. Maximum Resolution

- For 220X1
  1680 x 1050 at 75 Hz (analog input)
  1680 x 1050 at 60 Hz (digital input)

B. Recommended Resolution

- For 220X1
  1680 x 1050 at 60 Hz (digital input)

18 factory preset modes:

H. freq (kHz)	Resolution	V. freq (Hz)
31.469	640*350	70.086
31.469	720*400	70.087
31.469	640*480	59.940
35.000	640*480	67.000
37.500	640*480	75.000
35.156	800*600	56.250
37.879	800*600	60.317

46.875	800*600	75.000
48.363	1024*768	60.004
60.023	1024*768	75.029
63.981	1280*1024	60.020
79.976	1280*1024	75.025
55.469	1440*900	59.901
55.935	1440*900	59.887
70.635	1440*900	74.984
65.290	1680*1050	60.000
64.674	1680*1050	60.000
66.587	1920*1080	60.000

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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
Active	ON	Yes	Yes	< 45 W (Typ.)	Blue
Sleep	OFF	No	No	< 1 W	Blue Blinking
Switch Off	OFF	-	-	< 0.8 W	Off

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

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Physical Specifications

Tilt	-5°+2/-0 ~+ 20°+3/-0
Power supply	90 ~ 264 VAC, 48 ~ 62 Hz
Power consumption	< 45 W* (Typ.)
Temperature	0° C to 40° C (operating) -20° C to 60° C (storage)
Relative humidity	20% to 80% (operating) 5% to 95% (non-operating)
System MTBF	50K hours (CCFL 50K hours)

** This data is subject to change without notice.*

The native resolution of the monitor is 1680 x 1050. By default, your monitor has 100% brightness (max.), 50% contrast, and 6500K color temperature, with a full white pattern.

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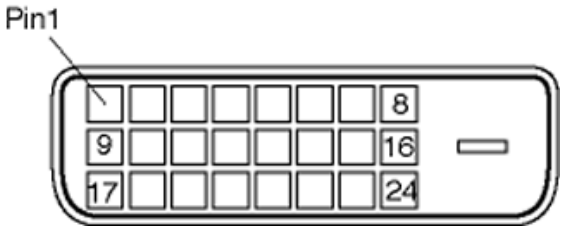
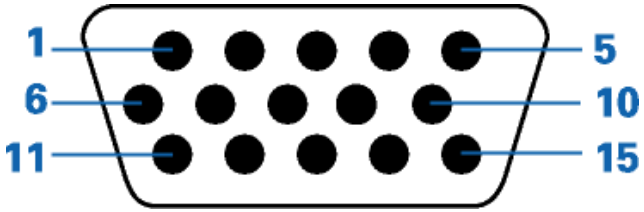
Pin Assignment

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	Ground (for +5V)		23	T.M.D.S. Clock+
8	No connect		16	Hot Plug Detect		24	T.M.D.S. Clock-



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



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

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Product Views

Follow the links to see various views of the monitor and its components.

Front View Product Description

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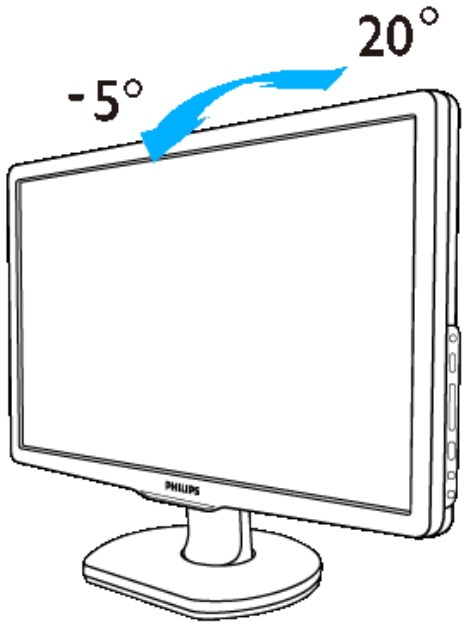
Physical Function

Tilt



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Product Features

Technical Specifications

Resolution & Preset Modes

Automatic Power Saving

Physical Specification

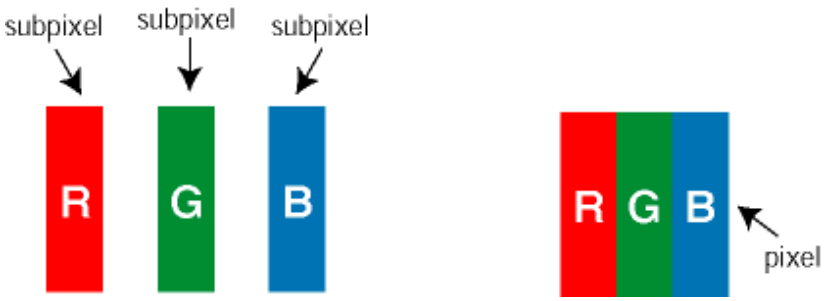
Pin Assignment

Product Views

Philips Pixel Defect Policy

Philips' Flat Panel Monitors Pixel Defect Policy

Philips strives to deliver the highest quality products. We use some of the industry's most advanced manufacturing processes and practice stringent quality control. However, pixel or sub pixel defects on the TFT LCD panels used in flat panel monitors are sometimes unavoidable. No manufacturer can guarantee that all panels will be free from pixel defects, but Philips guarantees that any monitor with an unacceptable number of defects will be repaired or replaced under warranty. This notice explains the different types of pixel defects and defines acceptable defect levels for each type. In order to qualify for repair or replacement under warranty, the number of pixel defects on a TFT LCD panel must exceed these acceptable levels. For example, no more than 0.0004% of the sub pixels on a 19" XGA monitor may be defective. Furthermore, Philips sets even higher quality standards for certain types or combinations of pixel defects that are more noticeable than others. This policy is valid worldwide.



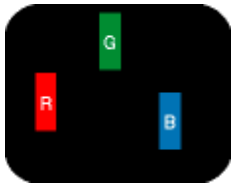
Pixels and Sub pixels

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

Types of Pixel Defects

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

Bright Dot Defects Bright dot defects appear as pixels or sub pixels that are always lit or 'on'. That is, a *bright dot* is a sub-pixel that stands out on the screen when the monitor displays a dark pattern. There are the types of bright dot defects:



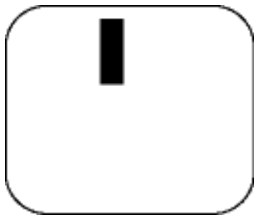
One lit red, green or blue sub pixel

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

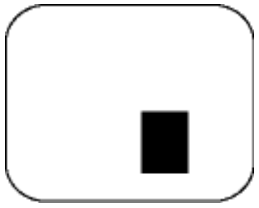
Three adjacent lit sub pixels (one white pixel)

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

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



One dark sub pixel



Two or three adjacent dark sub pixels

Proximity of Pixel Defects

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

Pixel Defect Tolerances

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

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	220X1
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	>15mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	220X1
1 dark subpixel	5
2 adjacent dark subpixels	2
3 adjacent dark subpixels	0
Distance between two black dot defects*	>15mm
Total black dot defects of all types	5

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	220X1
Total bright or black dot defects of all types	5

Note:

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

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Product Information

Philips Pixel Defect Policy

Philips SmartControl II

System support and requirement

Installation

Start to use

Q&A

SmartControl II (Selective Models)

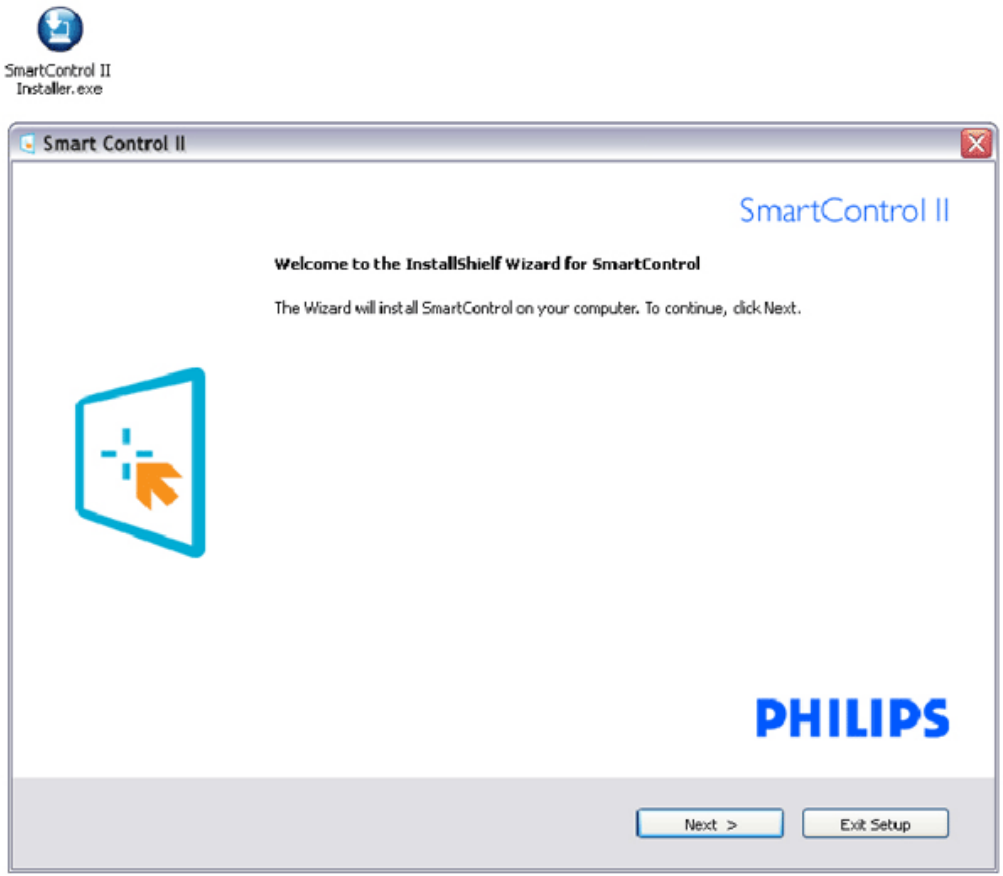
Philips SmartControl II

SmartControl II is monitor-based software with an easy-to-use on-screen graphic interface that guides you through fine-tuning resolution, color calibration and other display settings including brightness, contrast, clock & phase, position, RGB, white point and - on models with onboard speakers - volume adjustments.

System support and requirement:

1. Sytem support: 2000, XP, NT 4.0, XP 64 Edition, Vista 32/64. IE Support 6.0/7.0.
2. Language support: English, Simplified Chinese, German, Spanish, French, Italian, Russian, Portuguese.
3. Philips Monitor support DDC/CI Interface.

Installation:



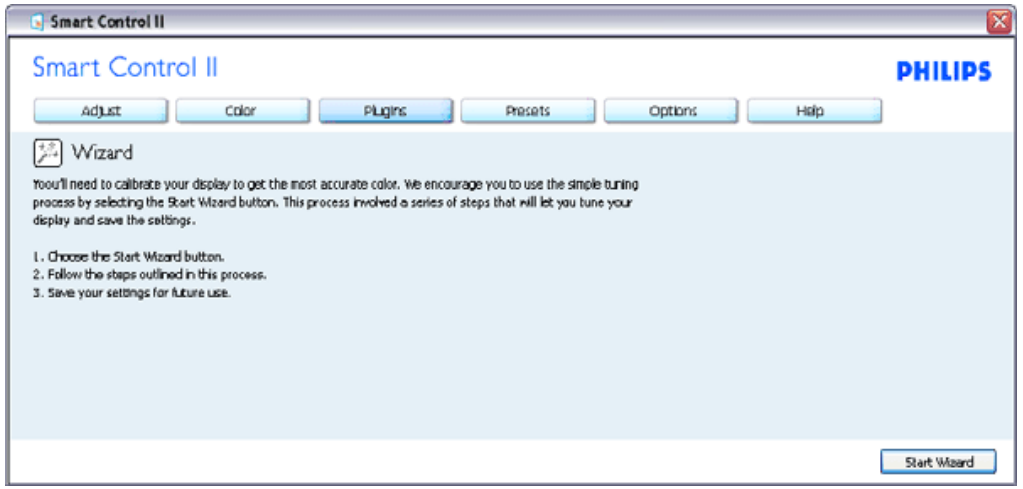
- Follow the instruction and complete the installation.
- You can lauch after installation complete.
- If you want to launch later, you can either click the shortcut on desktop or toolbar.

Start to use:

1. First launch -Wizard

- The first time after installation of SmartControl II, it will automatically go to Wizard for first time launch.
- The wizard will guide you through adjustment your monitor performance step by step.
- You can go to Plug-in menu to launch wizard later on as well.
- You can adjust more options without wizard by Standard pane.

Wizard Analog Sequence	Wizard Digital Sequence
Resolution	Resolution
Focus	Contrast
Brightness	Brightness
Contrast	White Point (Color Temp)
Position	File
White Point (Color Temp)	
File	

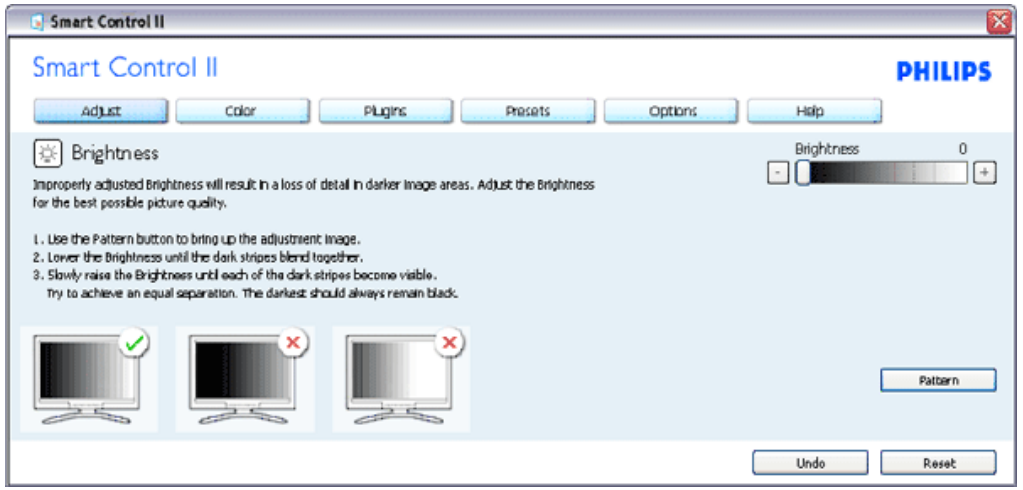


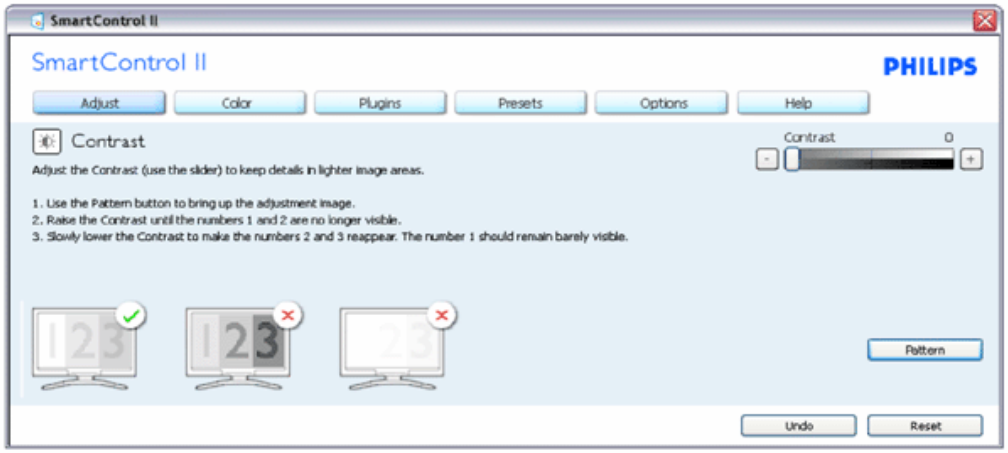
2. Start with Standard pane:

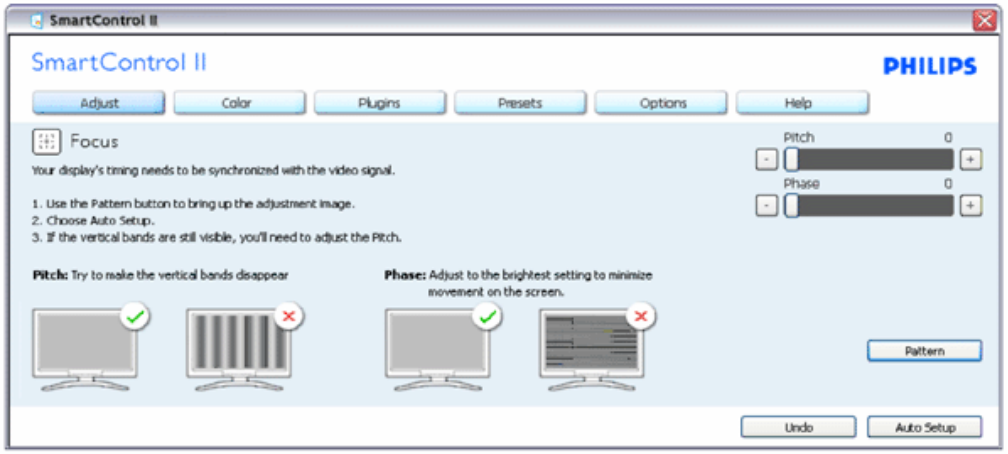
Adjust menu:

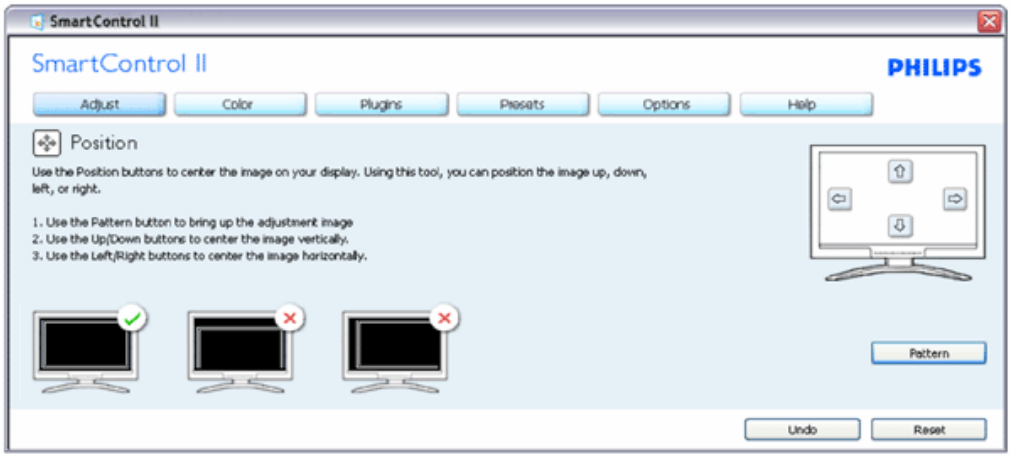
- Adjust Menu allow you to adjust Brightness, Contrast, Focus, Position and Resolution.
- You can follow the instruction and do the adjustment.
- Cancel prompts user if you want to cancel installation.

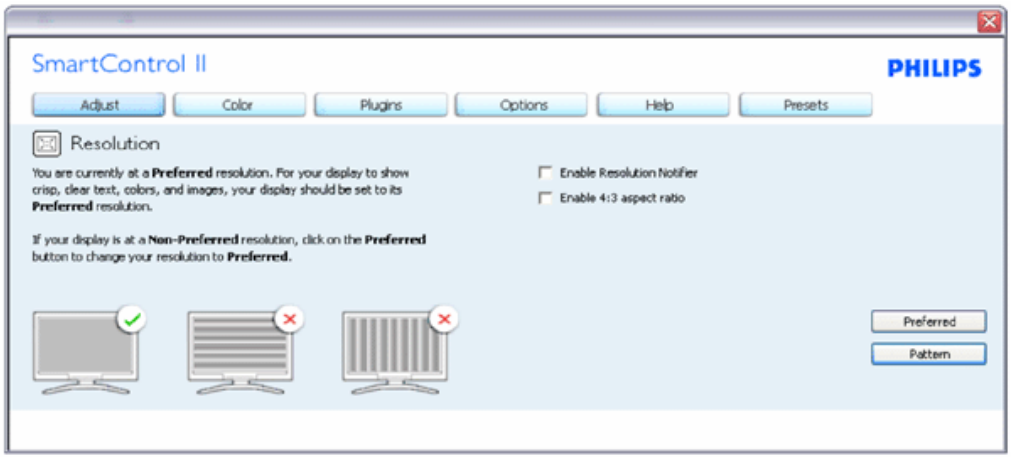
Tab Heading	Sub Menu	Display in Analog	Display in Digital
Adjust	Brightness	Yes	Yes
Adjust	Contrast	Yes	Yes
Adjust	Focus (Clock & Clock Phase)	Yes	No
Adjust	Position	Yes	No
Adjust	Resolution	Yes	Yes






SmartControl II
SmartControl II
PHILIPS
Adjust
Color
Plugins
Presets
Options
Help
Focus
Your display's timing needs to be synchronized with the video signal.
1. Use the Pattern button to bring up the adjustment image.
2. Choose Auto Setup.
3. If the vertical bands are still visible, you'll need to adjust the Pitch.
Pitch: Try to make the vertical bands disappear
Phase: Adjust to the brightest setting to minimize movement on the screen.
Pitch
0
Phase
0
Pattern
Undo
Auto Setup

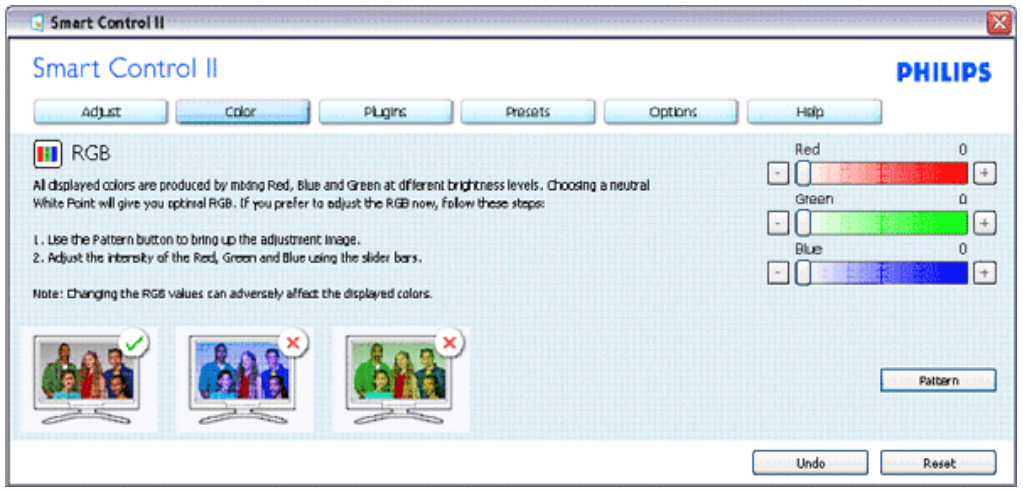

SmartControl II
SmartControl II
PHILIPS
Adjust
Color
Plugins
Presets
Options
Help
Position
Use the Position buttons to center the image on your display. Using this tool, you can position the image up, down, left, or right.
1. Use the Pattern button to bring up the adjustment image
2. Use the Up/Down buttons to center the image vertically.
3. Use the Left/Right buttons to center the image horizontally.
Pattern
Undo
Reset

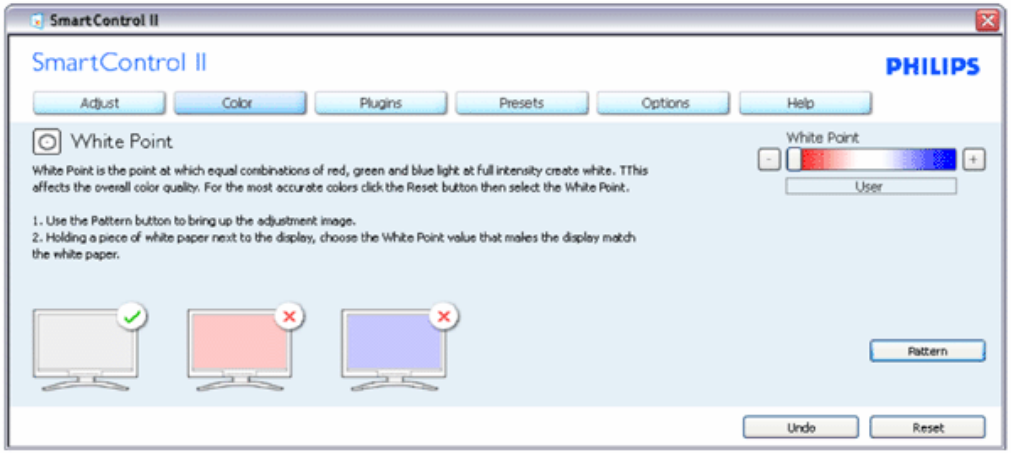

SmartControl II
PHILIPS
Adjust
Color
Plugins
Options
Help
Presets
Resolution
You are currently at a Preferred resolution. For your display to show crisp, clear text, colors, and images, your display should be set to its Preferred resolution.
If your display is at a Non-Preferred resolution, click on the Preferred button to change your resolution to Preferred.
Enable Resolution Notifier
Enable 4:3 aspect ratio
Preferred
Pattern

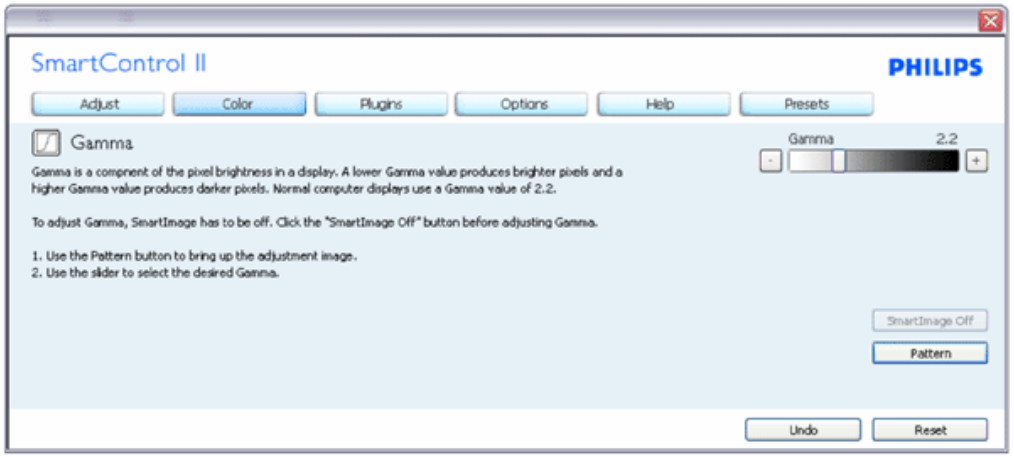
Color menu:

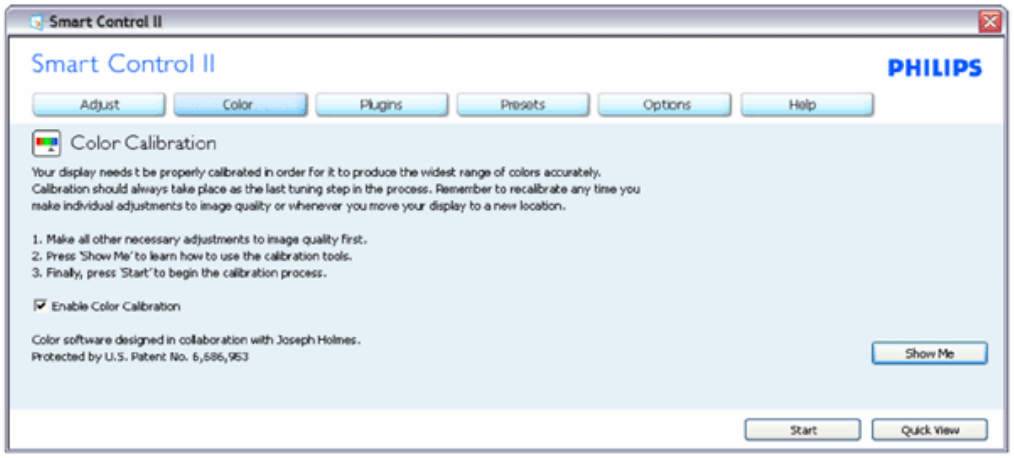
- Color Menu allow you to adjust RGB, Black Level, White Point, Color Calibration, and SmartImage (Please refer to SmartImage section).
- You can follow the instruction and do the adjustment.
- Refer to below table for sub-menu item base on your input.
- Example for Color Calibration

Tab Heading	Sub Menu	Display in Analog	Display in Digital
Color	RGB	Yes	Yes
Color	Black Level	Yes	Yes
Color	White Point	Yes	Yes
Color	Color Calibration	Yes	Yes
Color	Viewing Mode	Yes	Yes









1. "Show Me" starts color calibration tutorial.
2. Start - starts the 6-step color calibration sequence.
3. Quick View loads the before/after images.
4. To return to Color home pane, click the Cancel button.
5. Enable color calibration - by default is on. If unchecked, does not allow for color calibration to happen, dimes out start and quick view buttons.
6. Must have patent info in calibration screen.

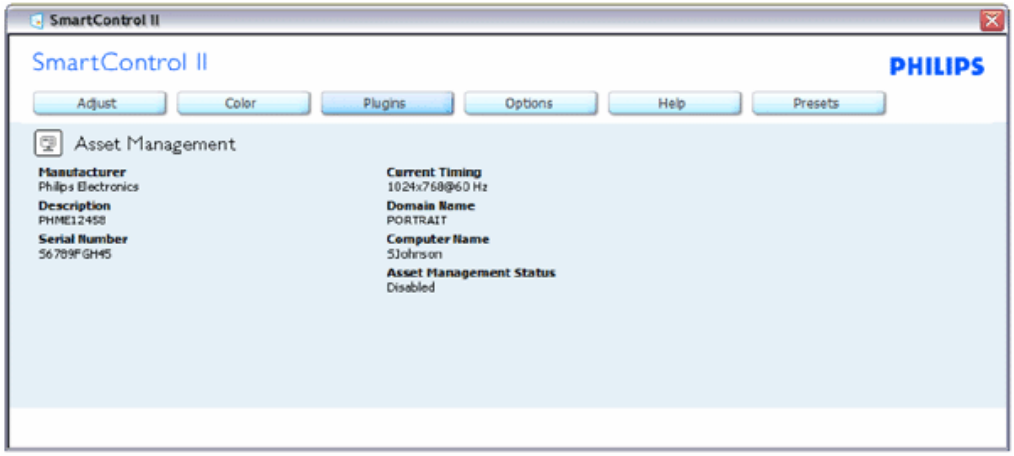
First color Calibration Screen:

1. Previous button is disabled until the second color screen.
2. Next goes to the succeeding target (6-targets).
3. Final next goes File>Presets pane.
4. Cancel closes the UI and returns to the plug in page.

SmartImage - Allows user to change setting for better display setting based on content.

When Entertainment is set, SmartContrast and SmartResponse are enabled.

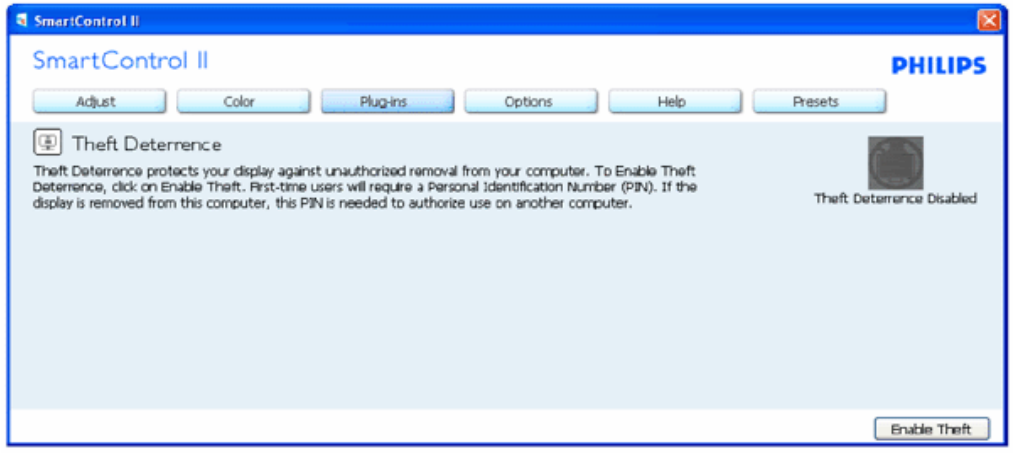
Plug-Ins - Asset Management Pane will only be active when selecting Asset Management from the drop-down Plug Ins menu.



Displays Assent Management information on Managment, Description, Serial Number, Current Timing, Domain Name, and Asset Management Status.

To return to Plug-in home pane select the plug-in tab.

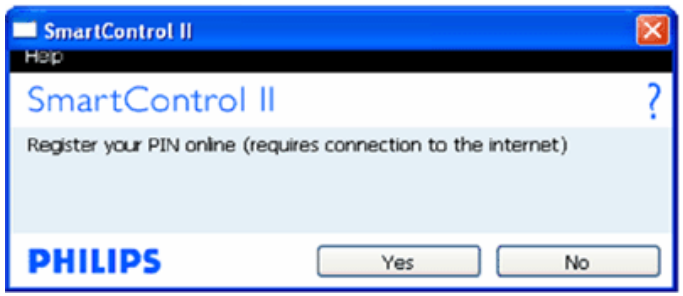
Plug-Ins - Theft Deterrence Pane will only be active when selecting Theft Deterrence Mode from the drop-down Plug Ins menu.



To enable Theft Deterrence, clicking Enable Theft Mode button brings up the following screen:

1. User can enter PIN between 4 and 9 digits numbers only.
2. After entering PIN, Accept button takes user to the pop-up dialog box on the following page.
3. Minimum minutes set to 5. Slider set to 5 by default.
4. Does not require the display be attached to a different host to go into theft mode.

Once a PIN is entered and accepted, the following dialog box appears:



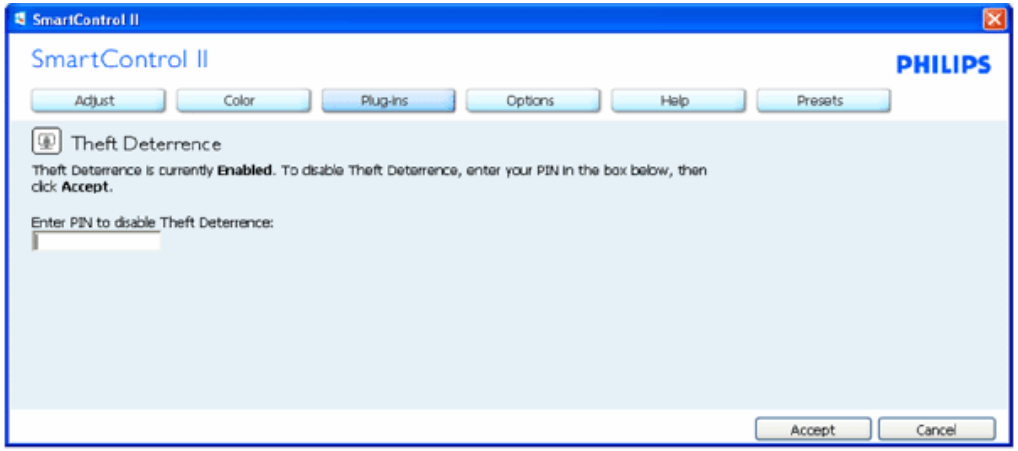
- Click on No button takes user to the following screen.

- Click on Yes button takes user to secure web site landing page.

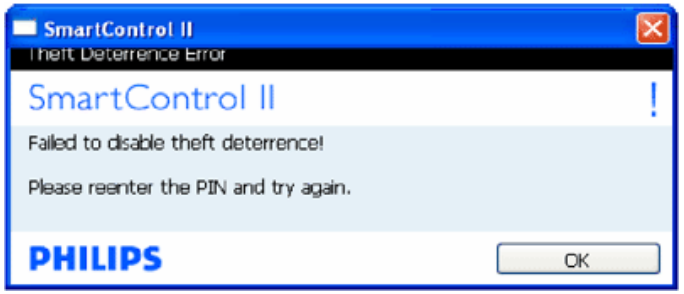
After creating PIN, the Theft Deterrence pane will indicate Theft Deterrence Enabled and provide PIN Options button:

1. Theft Deterrence Enabled is displayed.
2. Disable Theft Mode opens pane screen on next page.
3. PIN Options button only available after user creates PIN, button opens secure PIN web site.

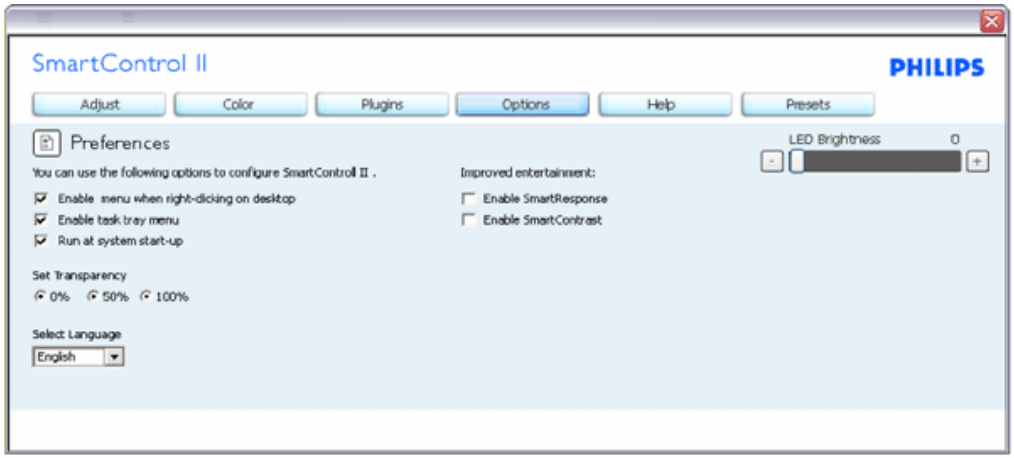
Disable Theft button opens the following pane:



1. After entering PIN, Accept button disables PIN.
2. Cancel button opens up main Theft Deterrence pane, displaying Theft Deterrence Disabled. Enable Theft Mode and PIN Options buttons.
3. Entering incorrect PIN results in the following dialog box:

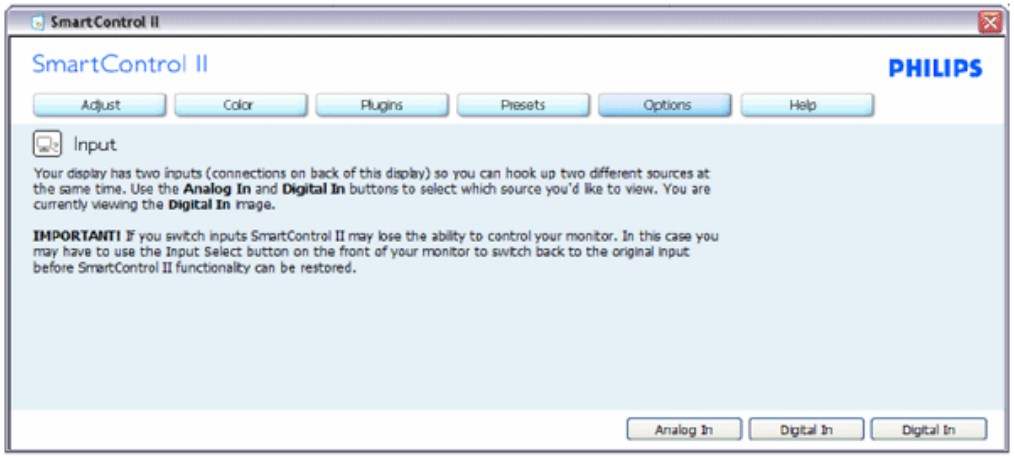


Options>Preferences - Will only be active when selecting Preferences from the drop-down Options menu. On a non-supported display capable of DDC/CI, only the Help and Options tabs are available.



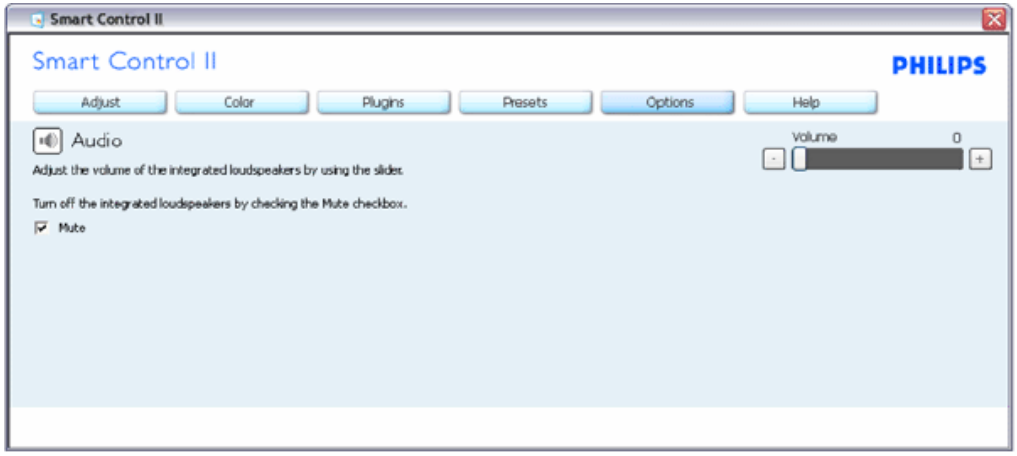
1. Displays current preference settings.
2. A checked box enables the feature. The check box is a toggle.
3. Enable Context Menu on desktop is checked (On) by default. Enable Context menu displays SmartControl II selections for Select Preset and Tune Display in the desktop right-click context menu. Disabled removes SmartControl II from the right click context menu.
4. Enable Task Tray icon is checked (On) by default. Enable context menu shows the task tray menu for SmartControl II. A right click on the task tray icon displays the menu options for Help, Technical Support. Check for Upgrade, About, and Exit. When Enable task tray menu is disabled, the task tray icon will only display EXIT.
5. Run at Startup is checked (On) by default. When disabled, SmartControl II will not launch at start or be in the task tray. The only way to launch SmartControll II is either from the desktop short cut or from the program file. Any preset set to run at startup will not load when this box is unchecked (Disabled).
6. Enable transparency mode (Vista, XP, and 2k only). Default is 0% Opaque.

Options>Input - Will only be active when selecting Input from the drop-down Options menu. On a non-supported display capable of DDC/CI, only the Help and Options tabs are available. All other SmartControl II tabs are not available.

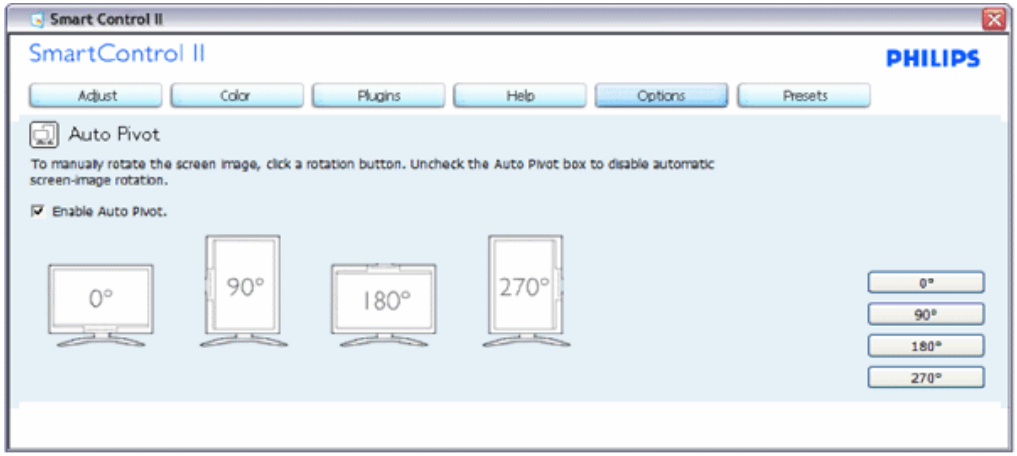


1. Display the Source instruction pane and current input source setting.
2. On single input displays, this pane will not be visible.

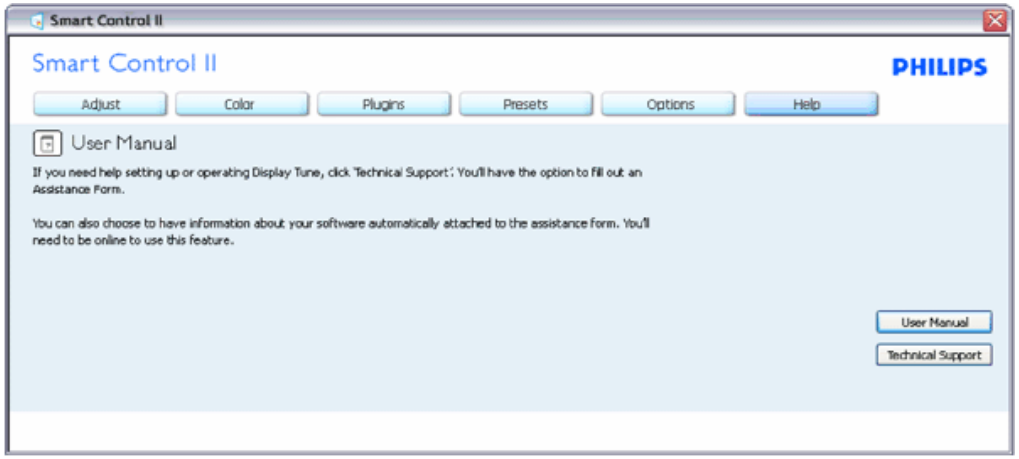
Options>Audio - Will only be active when selecting Volume from the drop-down Options menu. On a non-supported display capable of DDC/CI, only the Help and Options tabs are available.



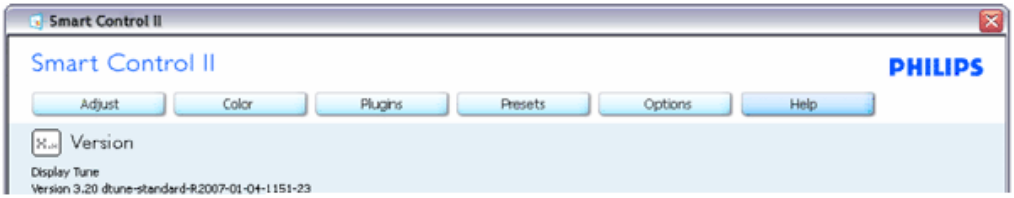
Option>Auto Pivot



Help>User Manual - Will only be active when selecting User Manual from the drop-down Help menu. On a non-supported display capable of DDC/CI, only the Help and Options tabs are available.



Help>Version - Will only be active when selecting Version from the drop- down Help menu. On a non-supported display capable of DDC/CI, only the Help and Options tabs are available.



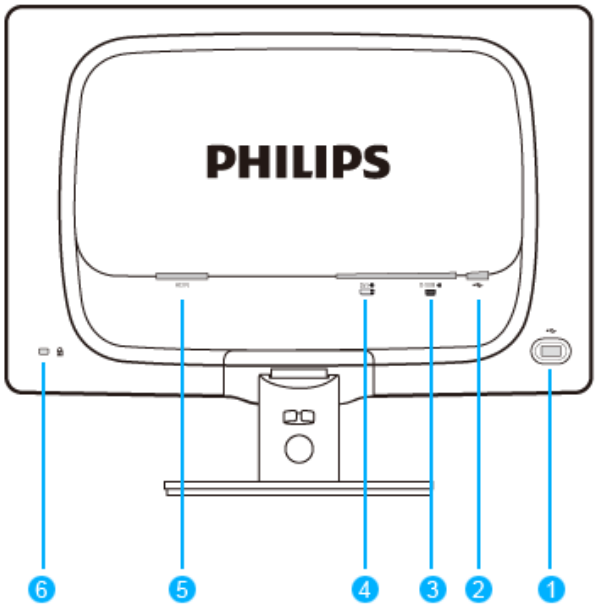
Context Sensitive menu

The Context Sensitive menu is Enabled by default. If Enable Context Menu has been checked in the Options>Preferences pane, then the menu will be visible.

The Context Menu has four entries:

1. SmartControll II - When selected the About Screen is displayed.
2. Select Preset - Provides a hierarchical menu of saved presets for immediate use. A check mark shows the currently selected preset. Facoty Preset can also be called from the drop down menu.
3. Tune Display - Opens the SmartControl II control panel.
4. Fly off for SmartImage - Check current settings, Off, Office Work, ImageViewing, Entertainment, Economy.

Task Tray Menu Enabled



1	USB downstream port
2	USB upstream port
3	VGA input
4	DVI-D input
5	AC power input
6	Kensington anti-thief lock

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Optimizing Performance

- For best performance, ensure that your display settings are set at 1680x1050, 60Hz.

Note: ***You can check the current display settings by pressing the 'OK' button once. The current display mode is shown in OSD main controls called RESOLUTION.***

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Front View Product Description
Accessory Pack
Connecting to Your PC
Getting Started
Optimizing Performance
The Base

Connecting to Your PC

Accessory Pack

Unpack all the parts.

Power cord

DVI cable

VGA cable

EDFU pack

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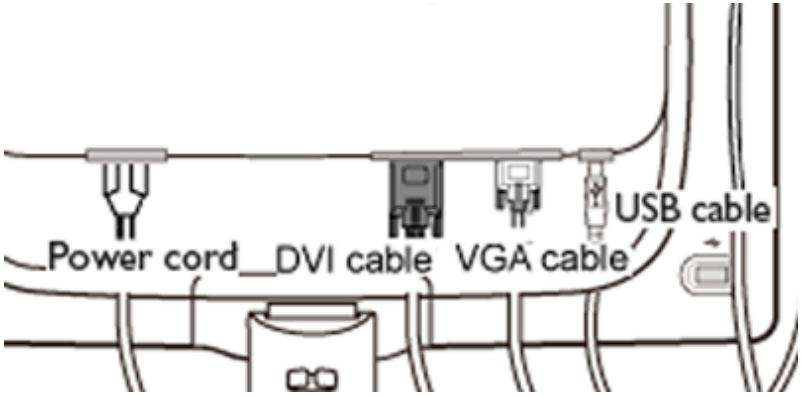
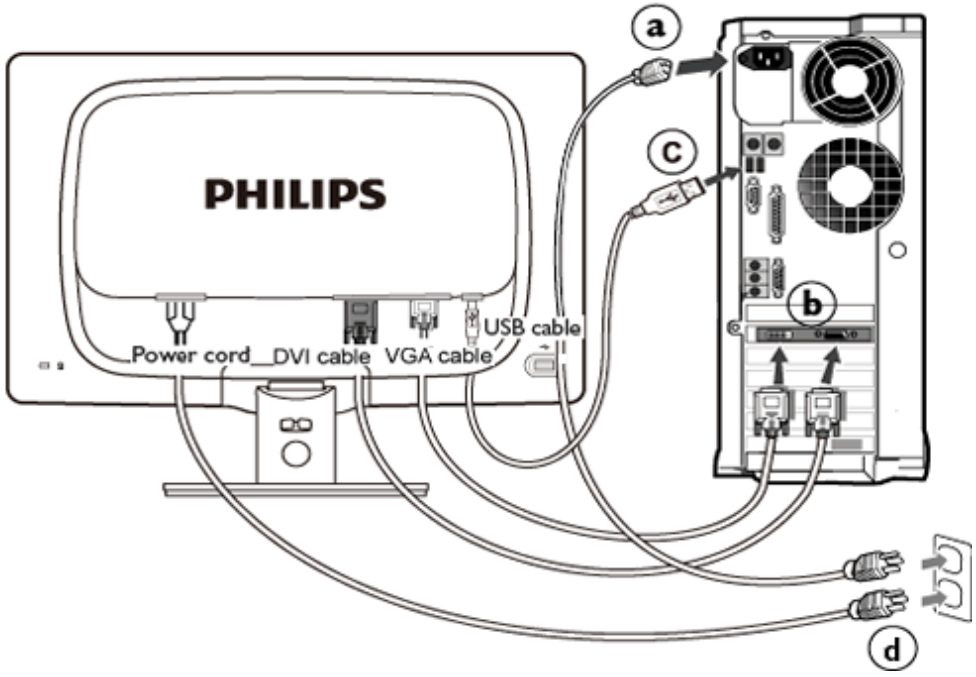
Connecting to Your PC

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





2) Connect to PC

(a) Turn off your computer and unplug its power cable.

(b) Connect the monitor signal cable to the video connector on the back of your computer.

(c) Connect the USB cable to the USB port of your computer.

(d) Plug the power cord of your computer and your monitor into a nearby outlet.

(e) Turn on your computer and monitor. If the monitor displays an image, installation is complete.

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Front View Product Description
Accessory Pack

Connecting to your PC

Getting Started

Optimizing Performance

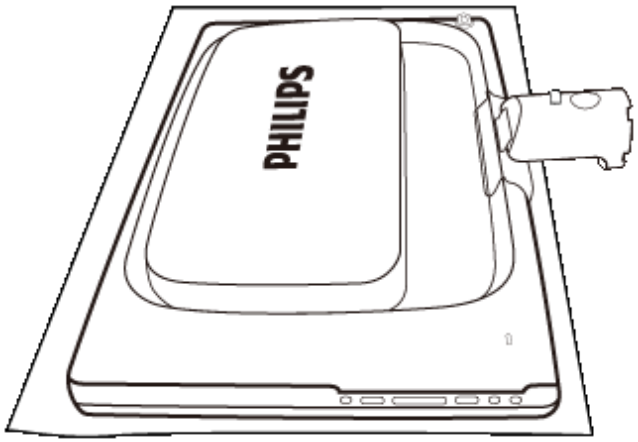
Attach the Base Stand

Detach the Base Stand

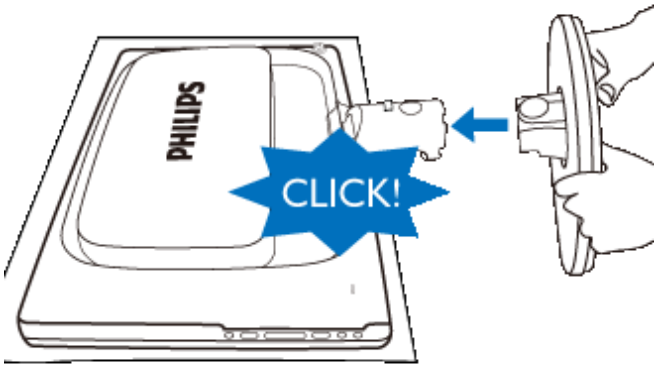
The Base

Attach the Base Stand

1) Place the monitor face down on a smooth surface taking care to avoid scratching or damaging the screen.



2) Hold the monitor base with both hands and firmly insert the base stand into the base column.



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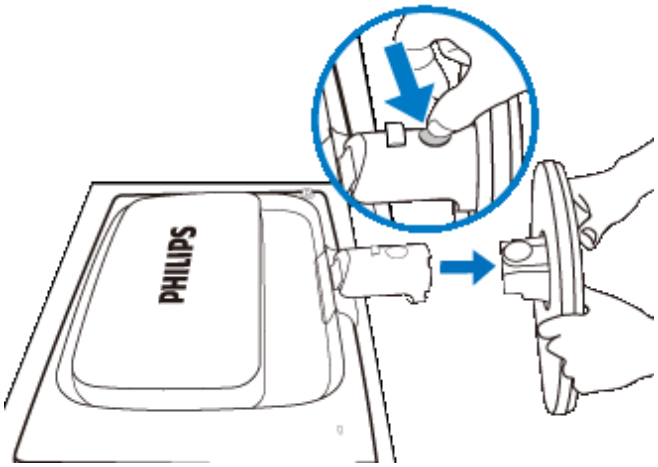
Detach the Base Stand

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



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Your LCD Monitor :

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Setting Up and Connecting Your Monitor
Getting Started

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Getting Started

Getting Started

Use the information file (.inf) for Windows® 2000/XP/Vista or later

The built-in VESA DDC2B feature in Philips Monitors supports Plug & Play requirements for Windows® 2000/XP/Vista. This information file (.inf) should be installed in order that your Philips monitor can be enabled from the 'Monitor' dialog box in Windows® 2000/XP/Vista and the Plug & Play application can be activated. The installation procedure based on Windows® 2000 , XP and Vista is specified as follows.

For Windows® 2000

1. Start Windows® 2000.
2. Click on the 'Start' button, point to 'Settings', and then click on 'Control Panel'.
3. Double click on the 'Display' Icon.
4. Select the 'Settings' tab then click on 'Advanced...'.
5. Select 'Monitor'.
   - If the 'Properties' button is inactive, it means your monitor is properly configured. Please stop installation.
   - If the 'Properties' button is active. Click on 'Properties' button. Please follow the steps given below.
6. Click on 'Driver' and then click on 'Update Driver...' then click on the 'Next' button.
7. Select 'Display a list of the known drivers for this device so that I can choose a specific driver', then click on 'Next' and then click on 'Have disk...'.
8. Click on the 'Browse...' button then select the appropriate drive F: (CD-ROM Drive).
9. Click on the 'Open' button, then click on the 'OK' button.
10. Select your monitor model and click on the 'Next' button.
11. Click on the 'Finish' button then the 'Close' button.
    If you can see the 'Digital Signature Not Found' window, click on the 'Yes' button.

For Windows® XP

1. Start Windows® XP.
2. Click on the 'Start' button and then click on 'Control Panel'.
3. Select and click on the category 'Printers and Other Hardware'
4. Click on the 'Display' Item.
5. Select the 'Settings' tab then click on the 'Advanced' button.
6. Select 'Monitor' tab.
   - If the 'Properties' button is inactive, it means your monitor is properly configured. Please stop installation.

- If the 'Properties' button is active, click on 'Properties' button.
Please follow the steps below.

7. Click on the 'Driver' tab and then click on 'Update Driver...' button.
8. Select the 'Install from a list or specific location [advanced]' radio button and then click on the 'Next' button.
9. Select the 'Don't Search. I will choose the driver to install' radio button. Then click on the 'Next' button.
10. Click on the 'Have disk...' button, then click on the 'Browse...' button and then select the appropriate drive F: (CD-ROM Drive).
11. Click on the 'Open' button, then click the 'OK' button.
12. Select your monitor model and click on the 'Next' button.
    - If you can see the 'has not passed Windows® Logo testing to verify its compatibility with Windows® XP' message, please click on the 'Continue Anyway' button.
13. Click on the 'Finish' button then the 'Close' button.
14. Click on the 'OK' button and then the 'OK' button again to close the Display_Properties dialog box.

For Windows® Vista

1. Start Windows® Vista.
2. Click the Start button; select and click on 'Control Panel'.
3. Select and click on 'Hardware and Sound'.
4. Choose 'Device Manager' and Click on 'Update device drivers'.
5. Select 'Monitor' and then right click on 'Generic PnP Monitor'.
6. Click on 'Update Driver Software'.
7. Select 'Browse my computer for driver software'.
8. Click the 'Browse'button and choose the drive in which you've placed the disk. Example: (CD-ROM Drive:\\Lcd\PC\drivers\).
9. Click the 'Next' button.
10. Wait few minutes for installing the driver, and then click 'Close' button.

If your Windows® 2000/XP/Vista version is different or you need more detailed installation information, please refer to your Windows® 2000/XP/Vista user's manual.

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Description of the On-Screen Display
The OSD Tree

On-Screen Display

Description of the On Screen Display

What is the On-Screen Display?

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

Basic and simple instruction on the control keys.

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

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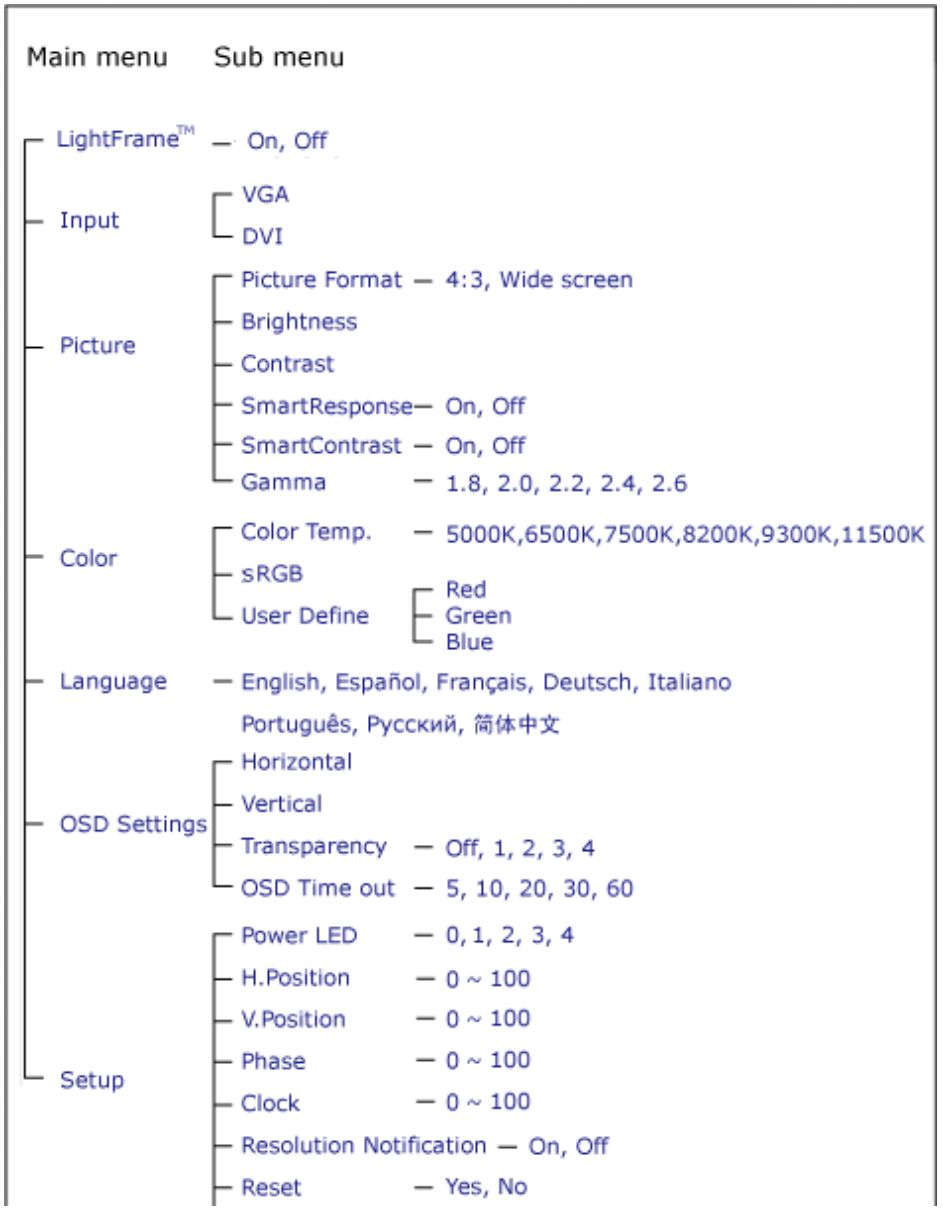
The OSD Tree

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



└ Information

Resolution notification

This monitor is designed for optimal performance at its native resolution, 1680X1050@60Hz. When the monitor is powered on at a different resolution, an alert is displayed on screen: Use 1680x1050@60Hz for best results.

Display of the native resolution alert can be switched off from Setup in the OSD (On Screen Display) menu.

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Customer Care & Warranty

For warranty coverage information and additional support requirement valid for your region, please visit www.philips.com/support website for details. You may also contact your local Philips Customer Care Center number listed below.

Contact Information for WESTERN EUROPE region:

Country	ASC	Consumer care number	Price
Germany	Siemens I&S	+49 01803 386 853	€ 0.09
United Kingdom	Invec Scotland	+44 0207 949 0069	Local call tariff
Ireland	Invec Scotland	+353 01 601 1161	Local call tariff
Spain	Eatsa Spain	+34 902 888 785	€ 0.10
Finland	A-novo	+358 09 2290 1908	Local call tariff
France	A-novo	+33 082161 1658	€ 0.09
Greece	Allman Hellas	+30 00800 3122 1223	Free of charge
Italy	A-novo	+39 840 320 041	€ 0.08
Netherlands	E Care	+31 0900 0400 063	€ 0.10
Denmark	A-novo	+45 3525 8761	Local call tariff
Norway	A-novo	+47 2270 8250	Local call tariff
Sweden	A-novo	+46 08 632 0016	Local call tariff
Poland	Zolter	+48 0223491505	Local call tariff
Austria	Siemens I&S	+43 0810 000206	€ 0.07
Belgium	E Care	+32 078 250851	€ 0.06
Luxembourg	E Care	+352 26 84 30 00	Local call tariff
Portugal	Eatsa Spain	+351 2 1359 1440	Local call tariff
Switzerland	A-novo	+41 02 2310 2116	Local call tariff

Contact Information for CENTRAL AND EASTERN EUROPE region:

Country	Call center	ASC	Consumer care number
Belarus	NA	IBA	+375 17 217 3386

Bulgaria	NA	LAN Service	+359 2 960 2360
Croatia	NA	Renoprom	+385 1 333 0974
Estonia	NA	FUJITSU	+372 6519900
Latvia	NA	‘‘ServiceNet LV’’ Ltd.	+371 7460399
Lithuania	NA	UAB "Servicenet"	+370 7400088
Romania	NA	Blue Ridge Intl.	+40 21 2101969
Serbia & Montenegro	NA	Kim Tec d.o.o.	+381 11 20 70 684
Slovenia	NA	PC H.and	+386 1 530 08 24
Ukraine	NA	Comel	+380 562320045
	NA	Topaz-Service Company	+38 044 245 73 31
Russia	NA	CPS	+7 (495) 645 6746 (for repair)
	NA	CEEE Partners	+7 (495) 645 3010 (for sales)
Slovakia	NA	Datalan Service	+421 2 49207155
Turkey	NA	Techpro	+90 212 444 4 832
Czech Rep.	NA	Asupport	800 100 697
Hungary	NA	Serware	+36 1 2426331
	NA	Profi Service	+36 1 814 8080

Contact Information for LATIN AMERICA region:

Country	Call center	Consumer care number
Brazil	Vermont	0800-7254101
Argentina		0800 3330 856

Contact Information for China:

China Consumer care number : 4008 800 008

Contact Information for NORTH AMERICA :

Country	Call center	ASC	Consumer care number
U.S.A.	TOS	Teleplan	(877) 835-1838
Canada	Supercom	Supercom	(800)479-6696

Contact Information for APMEA region:

Country	Call center	ASC	Consumer care number
Australia	NA	AGOS NETWORK PTY LTD	1300 360 386
New Zealand	NA	Visual Group Ltd.	0800 657447
Hong Kong / Macau	NA	Smart Pixels Technology Ltd.	Hong Kong:Tel: +852 2619 9639 Macau: Tel: (853)-0800-987
India	NA	REDINGTON INDIA LTD	Tel: 1 800 425 6396 SMS: PHILIPS to 56677
Indonesia	NA	PT. Gadingsari elektronika Prima	Tel: 62 21 75909053, 75909056, 7511530
South Korea	NA	PCS One Korea Ltd.	080-600-6600
Malaysia	NA	After Market Solutions (CE) Sdn Bhd	603 7953 3370
Pakistan	NA	Philips Consumer Service	(9221) 2737411-16
Singapore	NA	Philips Electronics Singapore Pte Ltd (Philips Consumer Care Center)	(65) 6882 3999
Taiwan	PCCW Teleservices Taiwan	FETEC.CO	0800-231-099
Thailand	NA	Axis Computer System Co., Ltd.	(662) 934-5498
South Africa	NA	Sylvara Technologies Pty Ltd	086 0000 888
United Arab Emirates	NA	AL SHAHD COMPUTER L.L.C	00971 4 2276525
Israel	NA	Eastronics LTD	1-800-567000
Vietnam	NA	FPT Service Informatic Company Ltd.	+84 8 38248007 Ho Chi Minh City +84 5113.562666 Danang City +84 5113.562666 Can tho Province
Philippines	NA	Glee Electronics, Inc.	(02) 633-4533 to 34, (02) 637-6559 to 60
Sri Lanka	NA	no distributor and/or service provider currently	
Bangladesh	NA	Distributor: Computer Source Ltd (warranty buy-out)	880-2-9141747, 9127592 880-2-8128848 / 52
Nepal	NA	Distributor: Syakar Co. Ltd (warranty buy-out)	977-1-4222395
Cambodia	NA	Distributor: Neat Technology Pte Ltd (Singapore) (warranty buy-out)	855-023-999992

Glossary

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

Active matrix

This is a kind of liquid crystal display structure in which switching transistors are attached to each pixel to control the on/off voltage. It produces a brighter and sharper display with a broader viewing angle than a passive matrix display. Also refer to TFT (thin film transistor).

Amorphous silicon (a-Si)

A semiconductor material that is used to make the thin film transistors (TFTs) layer of an active matrix LCD.

Aspect ratio

The width-to-height ratio of the active area of a display. In general, most monitors have an aspect ratio of 4:3. Wide monitors or TVs have an aspect ratio of 16:9 or 16:10.

B

Backlight

The light source for a transmissive LCD. There are two techniques used in nowaday LCD designs. Most TFT LCD panels use CCFLs (cold cathode fluorescent light) and a diffuser panel directly behind the liquid crystal layer. New technology using Light Emitting Diodes (LED) are still under development.

Brightness

The dimension of color that is referred to an achromatic scale, ranging from black to white, also called lightness or luminous reflectance. Because of confusion with saturation, the use of this term should be discouraged.

C

CCFL(cold cathode fluorescent light)

These are the fluorescent light tubes providing the light for the LCD module. These tubes are generally very thin, approximately 2 mm in diameter.

Chromaticity

That part of color specification, which does not involve illuminance. Chromaticity is two-dimensional and specified by pairs of numbers such as dominant wavelength and purity.

CIE (Commission International de l'Eclairage)

The International Commission on Illumination, the primary international organization concerned with color and color measurement.

Color temperature

A measurement of the color of light radiated by an object while it is being heated. This measurement is express in terms of absolute scale, (degrees Kelvin). Lower Kelvin temperatures such as 2400° K are red; higher temperatures such as 9300° K are blue. Neutral temperature is white, at 6504° K. Philips monitors generally offers 9300° K, 6500° K, and user define.

Contrast

The luminance variation between light and dark areas in an image.

Contrast ratio

The ratio of luminance between the brightest white pattern and the darkest black pattern.

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D

D-SUB

A VGA Analog input connector. Your monitor comes with a D-Sub cable.

Digital Visual Interface (DVI)

The Digital Visual Interface (DVI) specification provides a high-speed digital connection for visual data types that is display technology independent. The interface is primarily focused at providing a connection between a computer and its display device. The DVI specification meets the needs of all segments of the PC industry (workstation, desktop, laptop, etc.) and will enable these different segments to unite around one monitor interface specification.

The DVI interface enables:

1. Reduce signal loss and video noise in signal due to less signal conversion.
2. Independent from display technology, and can be used on LCD, Plasma, LCOS, etc.
3. Plug and play through hot plug detection, EDID and DDC2B.
4. Digital and Analog support in a single connector (DVI-I only).

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E

Energy Star Computers Program

An energy conservation program launched by the US Environmental Protection Agency (EPA), promotes the manufacture and marketing of energy-efficient office automation equipment. Companies joining this program, must be willing to commit themselves to manufacture one or more products capable of going into a low -power state (< 30 W) either after a period of inactivity, or after a predetermined time selected by the user.

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G

Gamma

Screen luminance as a function of video voltage approximately follows a mathematical power function of the input video signal, the exponent of which is called gamma.

Grayscale

An achromatic scale ranging from black through a series of successively lighter grays to white. Such a series may be made up of steps, which appear to be equally distant from one another. If the Analog/ Digital converter is 8 bit, then the monitor can display at most 2^8 = 256 levels. For a color monitor, R.G.B. each color hads 256 levels. Thus, total color can display is 256x256x256= 16.7 million.

H

Hue

The main attribute of a color that distinguishes it from other colors. For example, a color may have a green, yellow, or purple hue. Color defined as having hue are know as chromatic colors. White, black, and grays possess no hue.

I

IPS (In Plane Switching)

A technique of improving the viewing angle of an LCD where the liquid crystal molecules are switched in the plane of the LCD layer rather than vertical to it.

L

LCD (liquid crystal display)

A display composed of liquid crystal suspended between two transparent sheets. The display is composed thousands of pixels which can be turned on or off with electrical stimulation. Thus, colorful images/texts can be generated.

Liquid crystal

The compound found in liquid crystal displays. Liquid crystal reacts predictably when electrically stimulated. This makes it the ideal compound to turn LCD pixels "on" or "off." Liquid crystal is sometimes abbreviated as LC.

Luminance

A measure of the brightness or luminous intensity of light, usually expressed in units of Candelas per square meter (cd/m2) or foot Lamberts. 1 fL=3.426 cd/m2.

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N

Nit

A unit of luminance equal to 1 cd/m2 or 0.292 ftL.

P

Pixel

PICture Element; the smallest element on a computerized CRT or LCD image, and hence a display.

Polarizer

A light filter which only allows light waves of a certain rotation through. Polarized material with perpendicular filtering is used in LCDs to enclose the liquid crystal. The liquid crystal is then used as the medium which twists the light waves 90° in order to allow the light to pass through or not.

R

Refresh rate

The number of times per second the screen is refreshed or redrawn. This number is usually stated in Hz (Hertz) or cycles per second. A rate of 60 Hz is equal to 60 tomes per second.

S

SmartContrast

Unique technology that dynamically analyzes displayed content and automatically optimizes a LCD monitor's contrast ratio for maximum visual clarity and viewing enjoyment, stepping up backlighting for clearer, crisper and brighter images or dimming backlighting for clear display of images on dark backgrounds.

SmartControl II

SmartControl II is monitor-based software with an easy-to-use on-screen graphic interface that guides you through fine-tuning resolution, color calibration and other display settings including brightness, contrast, clock & phase, position, RGB, white point and - on models with onboard speakers - volume adjustments.

SmartImage

SmartImage provides presets that optimize display for different types of content, dynamically adjusting brightness, contrast, color and sharpness in real time. Whether you're working with text applications, displaying images or watching a video, Philips SmartImage delivers great optimized LCD display performance.

SmartResponse

SmartResponse is exclusive Philips technology that adjusts response time to application requirements, delivering faster response times for gaming and videos or better color saturation for viewing photos and static images.

SmartManage Lite

SmartManage Lite is a system for monitoring, managing and checking status of display devices designed to meet the specific needs of growing small and medium-size businesses that minimizes costs and maximizes IT staff efficiency by remotely controlling key display settings, providing status reports, compiling usage data, overseeing energy consumption and deterring thefts.

sRGB

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

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

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

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

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

Other:
USB plug: An upstream and a downstream USB plug is provide for user's convenience.

T

TFT(thin film transistor)

Usually made from amorphous silicon (a-Si) and used as a switch to a charge storage device located below each sub-pixel on an active matrix LCD.

TrueVision

TrueVision is industry-leading, proprietary Philips testing and algorithm technology for monitor adjustment and fine tuning, an extensive process that ensures ultimate display performance in compliance with a standard four-times more stringent than Microsoft's Vista requirements from each and every monitor that leaves the factory - not just a few review samples. Only Philips goes to these lengths to deliver this exacting level of color accuracy and display quality in every new monitor.

U

USB or Universal Serial Bus

A smart plug for PC peripherals. USB automatically determines resources (like driver software and bus bandwidth) required by peripherals. USB makes necessary resources available without user intervention.

- USB eliminates "case anxiety" -- the fear of removing the computer case to install add-on peripherals. USB also eliminates adjustment of complicated IRQ settings when installing new peripherals.
- USB does away with "port gridlock." Without USB, PCs are normally limited to one printer, two Com port devices (usually a mouse and modem), one Enhanced Parallel Port add-on (scanner or video camera, for example) and a joystick. More and more peripherals for multimedia computers arrive on the market every day. With USB, up to 127 devices can run simultaneously on a computer.
- USB permits "hot plug-in." There's no need to shut down, plug in, reboot and run set-up to install peripherals. And no need to go through the reverse process to unplug a device.

In short, USB transforms today's "Plug-and-Pray" into true Plug-and-Play!

Hub

A Universal Serial Bus device that provides additional connections to the Universal Serial Bus.

Hubs are a key element in the plug-and-play architecture of USB. The Figure shows a typical hub. Hubs serve to simplify USB connectivity from the user's perspective providing low cost and complexity.

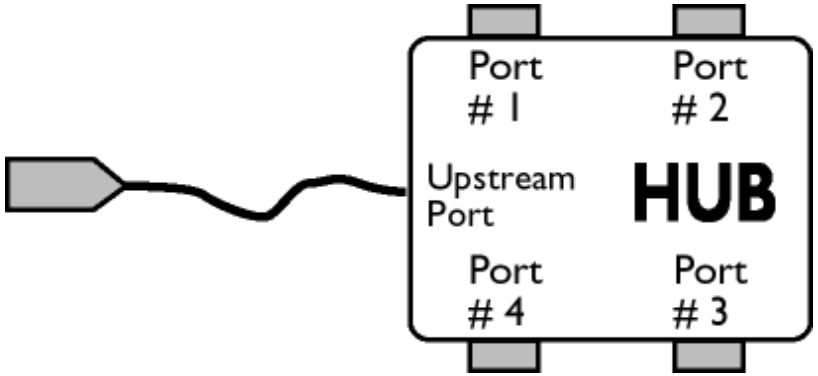
Hubs are wiring concentrators and enable the multiple attachment characteristics of USB. Attachment points are referred to as ports. Each hub converts a single attachment point into multiple attachment points. The architecture supports concatenation of multiple hubs.

The upstream port of a hub connects the hub towards the host. Each of the other downstream ports of a hub allows connection to another hub or function. Hubs can detect, attach and detach at each downstream port and enable the distribution of power to downstream devices. Each downstream port can be individually enabled and configured at either full or low speed. The hub isolates low speed ports from full speed signaling.

A hub consists of two portions: the Hub Controller and Hub Repeater. The repeater is a protocol-controlled switch between the upstream port and downstream ports. It also has hardware support for reset and suspend/resume signaling. The controller provides the interface registers to allow communication to/from the host. Hub specific status and control commands permit the host to configure a hub and to monitor and control its ports.

Device

A logical or physical entity that performs a function. The actual entity described depends on the context of the reference. At the lowest level, device may refer to a single hardware component, as in a memory device. At a higher level, it may refer to a collection of hardware components that perform a particular function, such as a Universal Serial Bus interface device. At an even higher level, device may refer to the function performed by an entity attached to the Universal Serial Bus; for example, a data/FAX modem device. Devices may be physical, electrical, addressable, and logical.



Downstream

The direction of data flow from the host or away from the host. A downstream port is the port on a hub electrically farthest from the host that generates downstream data traffic from the hub. Downstream ports receive upstream data traffic.

Upstream

The direction of data flow towards the host. An upstream port is the port on a device electrically closest to the host that generates upstream data traffic from the hub. Upstream ports receive downstream data traffic.

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V

Vertical refresh rate

Expressed in Hz, it is the number of frames (complete pictures) written to the screen every second.

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Installing your LCD monitor driver
Download and Printing Instructions

Download and Print

Installing Your LCD monitor driver

System requirements:

- PC running Windows 95, Windows® 98, Windows® 2000 , Windows® Me, Windows® XP, Windows® Vista or later
- Find your driver ".inf/.icm/.cat" at : /PC/drivers/

Read the "Readme.txt" file before installing.

This page provides an option to read the manual in .pdf format. PDF files can be downloaded into your hard disk, then viewed and printed with Acrobat Reader or through your browser.

If you do not have Adobe® Acrobat Reader installed, click on the link to install the application.
Adobe® Acrobat Reader for PC / Adobe® Acrobat Reader for Apple Macintosh.

Download instructions:

To download the file:

1. Click-and-hold your mouse over the icon below. (Windows® 95/98/2000/Me/XP/Vista users right-click)

Download 220X1.pdf

2. From the menu that appears, choose 'Save Link As...', 'Save Target As...' or 'Download Link to Disk'.

3. Choose where you would like to save the file; click 'Save' (if prompted to save as either 'text' or 'source', choose 'source').

Printing instructions:

To print the manual:

With the manual file open, follow your printer's instructions and print the pages you need.

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