

NEC

User's Guide

Guide de l'utilisateur

Guida per l'utente

Bedienerhandbuch

Guía del usuario

U.S.A.

**U.S.FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT
INFORMATION TO THE USER**

NOTE : 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 of a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

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

Connecting of peripherals requires the use of grounded, shielded signal cables.

TCO '99

Congratulations! You have just purchased a TCO '99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also, to the further development of environmentally adapted electronics products.



Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work(internal) and natural(external) environments. Since all methods of conventional electricity generation have a negative effect on the environment(acidic and climate-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

What does labelling involve?

This product meets the requirements for the TCO '99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user. Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

On the back page of this folder, you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development Unit

S-114 94 Stockholm

Sweden

Fax: +46 8 782 92 07

Email (Internet) : development @ tco.se

Current information regarding TCO 99 approved and labelled products may also be obtained via the Internet, using the address:

<http://www.tco-info.com/>

TCO 99 is a co-operative project between TCO (The Swedish Confederation of Professional Employees), **Naturskyddsforeningen** (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

Environmental Requirements

Brominated flame retardants

Brominated flame retardants are present in printed wiring boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. These are related to another group of environmental toxins, PWBs, which are suspected to give rise to similar harm, including reproductive damage in fish eating birds and mammals, due to the bio-accumulative processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

TCO 99 demand requires that plastic components weighing more than 25 grams must not contain organically bound chlorine and bromine.

Lead**

Lead can be found in picture tubes, display screens; solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.

TCO 99 requirement permits the inclusion of lead since no replacement has yet been developed.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

TCO 99 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The colour-generating layers of display screens must not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses.

TCO 99 requirement states that batteries may not contain more than 25 ppm (parts per million) of mercury. It also demands that no mercury is present in any of the electrical or electronics components concerned with the display unit.

CFCs (freons)

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacturing of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).

The relevant TCO 99 requirement: Neither CFCs nor HCFCs may be used during the manufacturing of the product or its packaging.

* Bio-accumulative is defined as substances which accumulate within living organisms

** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

■ ENGLISH

Please check your power cord before installation if it is UL listed one.

■ FRANÇAIS

Veillez vérifier que votre cordon d'alimentation soit homologué UL avant l'installation.

■ ITALIANO

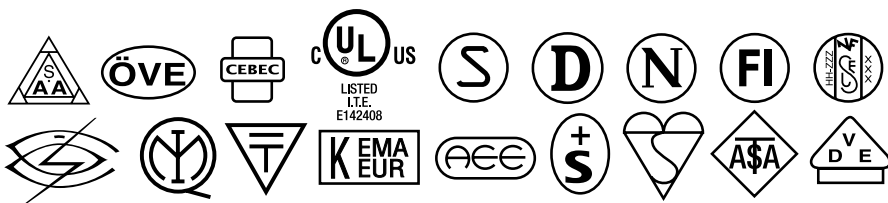
Prima di installare controllare che il cavo di alimentazione sia approvato UL.

■ DEUTSCH

Bitte prüfen Sie vor der Installation des Netzkabels, ob es in der UL-Liste aufgeführt ist.

■ ESPAÑOL

Compruebe el cable de potencia antes de la instalación si es uno de la lista UL.



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Introduction

This manual contains instructions for installing and operating LT15u.

LT15u is a highly ergonomic color display unit.

- 15" viewable XGA LCD
- Supporting full scan flicker-free picture quality
- With On Screen Display menus for user control
- 100-240V AC input voltage
- VESA DPMS (Display Power Management Signaling)
- VESA DDC1/2B compatibility
- High quality screen re-scaling capability
- Fast and accurate auto adjustment
- Most advanced image scaling

Safety Information

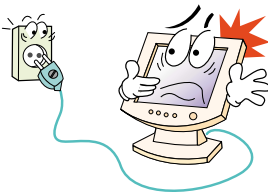
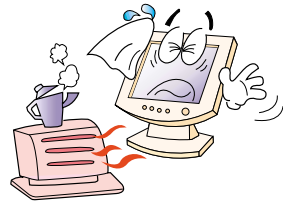
This Monitor has been engineered and manufactured to assure your safety. You can prevent serious electrical shock and other hazards by keeping in mind the following:



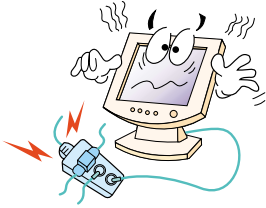
Do not place anything wet on the monitor or the power cord. Never cover the ventilation openings with any material and never touch them with metallic or inflammable materials.

Avoid operating the monitor in extreme heat, humidity or areas affected by dust.

- Temperature : 5~35°C
- Humidity : 30~80RH

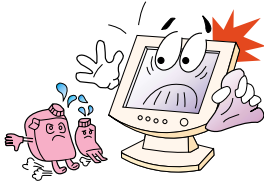


Be sure to turn the monitor off before plugging the power cord into the socket. Make sure that the power cord and the other cords are securely and rightly connected.



Overloaded AC outlets and extension cords are dangerous, as are frayed power cords and broken plugs, which may cause electric shock or fire. Call your service technician for replacement.

Do not use sharp tools such as a pin or a pencil near the monitor, as they may scratch the LCD surface.



Do not use a solvent, such as benzene, to clean the monitor, as it will damage the LCD surface.

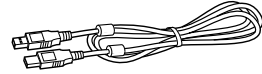
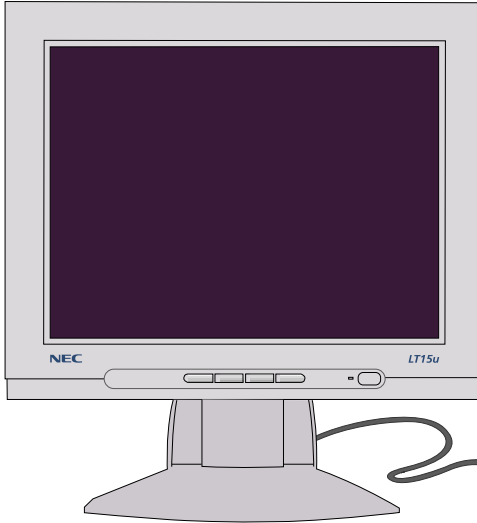
Cleaning and maintenance

- To avoid risk of electric shock, do not disassemble the display unit cabinet. The unit is not user-serviceable. Remember to unplug the display unit from the power outlet before cleaning.
- Do not use alcohol (methyl, ethyl or isopropyl) or any strong dissolvent. Do not use thinner or benzene, abrasive cleaners or compressed air.
- Do not wipe the screen with a cloth or sponge that could scratch the surface.
- To clean your antistatic screen, use water and a special microfiber screen cleaning tissue used in optical lens cleaning, or lightly dampen a soft, clean cloth with water or a mild detergent.
- If the instructions above do not help in removing stains, contact an authorized service agent.

Installing the monitor

Packing List

The following items should be found in the packaging.



USB Cable



User's Guide



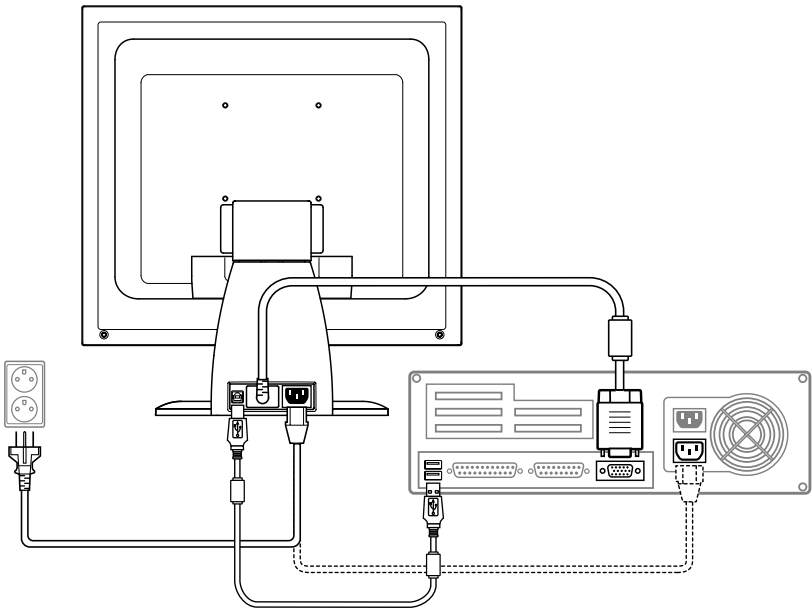
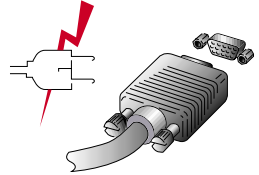
Above power cord can be changed upon different voltage areas. Please contact your dealer if anything is missing or damaged.

Selecting a suitable location

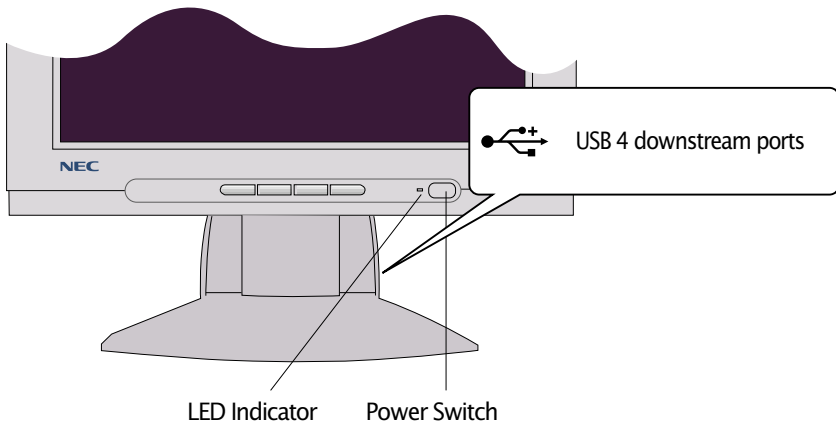
- Place the monitor at least 30cm from other electrical or heat-emitting equipment and allow at least 10cm on each side for ventilation.
- Place the monitor in a position where no light shines directly onto or is reflected on the screen.
- To reduce eye strain, avoid installing the display unit against a bright background such as a window.
- Position the monitor so that the top of the screen is no higher than eye level.
- Position the monitor directly in front of you at a comfortable reading distance (around 45 to 90cm)

Connecting the monitor

! Before you start cabling your monitor, check that the power is off on all units. To avoid any possibility of electric shock, always connect your equipment to properly earthed outlets.



1. Insert the other 15-pin signal cable connector into the 15-pin VGA connection on your computer and screw it down.
2. Plug the power cord connection to connection on the monitor.
3. Plug the other end of the power cord to your computer's main supply or to a 100V-240V earthed electrical outlet.
4. Turn on the monitor using the power switch and check that the power LED is on. If not, repeat steps 1,2,3 and 4 or refer to the Troubleshooting section of this guide.



5. Turn on the power to the computer. The picture will appear within about 10 seconds. Adjust the picture to obtain optimum picture quality. See section Adjusting the picture in this guide for more information.

USB hub


The USB hub have 1 upstream port and 4 downstream ports. The upstream port can be connected to the root hub of host PC or other downstream port. Four(4) downstream ports allow to connect another USB device such as USB mouse, joystick, printer etc.

Setting the refresh rate

Follow the instructions below to set your refresh rate in Windows 98.

1. Go to the configuration window(Start-Settings-Configuration window).
2. Double click on the 'Display' icon.
3. Click on the 'Settings' tab.
4. Click on the 'Advanced' button.
5. Click on 'Adapter' and select 60Hz from the list.
6. Click on 'Apply' to accept the selected value.

Preset Timing Table

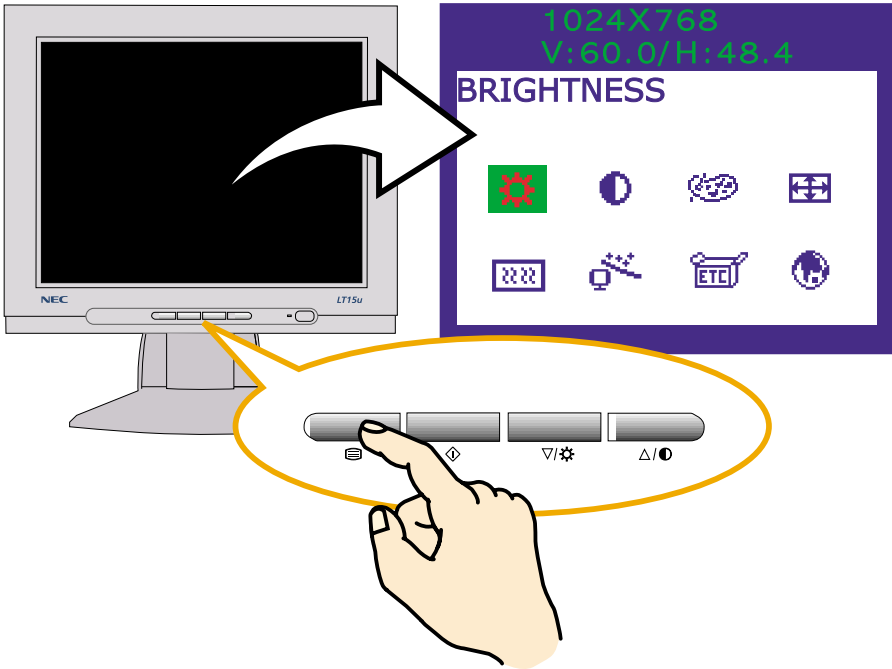
 If the signal from the system doesn't equal to the preset timing mode, adjust the mode with reference to the user guide of videocard because the screen may not be displayed.

The recommended setting is a resolution of 1024x768 and a refresh rate of 60Hz.

No.	Resolution	Horizontal Frequency	Refresh rate
1	720 × 400	31.5 KHz	70 .1 Hz
2	640 × 480	31.5 KHz	59.9 Hz
3	640 × 480	37.9 KHz	72.8 Hz
4	800 × 600	37.9 KHz	60.3 Hz
5	800 × 600	46.9 KHz	75.0 Hz
6	1024 × 768	48.4 KHz	60.0 Hz
7	1024 × 768	56.5 KHz	70.1 Hz
8	1024 × 768	60.0 KHz	75.0 Hz

Adjusting the picture

You can adjust the screen display by using the buttons located below the screen.



Using the On Screen Display

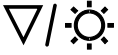
1. Push the MENU button to call the OSD to the screen. The resolution and frequency are displayed at the top of the menu box for your information.
2. Push the ∇/gear or Δ/circle button to choose the item you want to adjust. The selected item is highlighted.
3. Push the SELECT button to adjust the highlighted item.
4. Use the ∇/gear or Δ/circle button to adjust the selection.
5. Push the MENU button to return to the previous menu if you are in a submenu.
6. The display unit automatically saves the new settings in 1 second after your last adjustments and the menu disappears. You can also push the MENU button to make the menu disappear.

Direct access buttons



AUTO ADJUST

Push the button SELECT (AUTO) to adjust the shape of screen automatically.



BRIGHTNESS

Use the button ∇/\odot to select the brightness adjustment. Adjust with ∇/\odot or Δ/\bullet button.



CONTRAST

Use the button \blacktriangle to select the contrast adjustment. Adjust with ∇/\odot or Δ/\bullet button.

OSD Adjustments

The OSD adjustments available to you are listed below.



BRIGHTNESS

Adjusts the brightness of the screen.



CONTRAST

Adjusts the contrast of the screen.



COLOR CONTROL

Color temperature affects the tint of the image. With lower color temperatures the image turns reddish and with higher temperatures bluish.

There are three color settings available: Mode 1(a warm white), Mode 2(a cool white) or USER. With the USER setting you can set individual values for red, green and blue.



H/V POSITION

H-POSITION

Adjusts the horizontal position of the entire screen image.

V-POSITION

Adjusts the vertical position of the entire screen image.



CLOCK PHASE

PHASE

Adjust the noise of the screen image.

CLOCK

Adjust the horizontal size of the entire screen image.



AUTO ADJUST

You can adjust the shape of screen automatically at the full screen pattern.



MISCELLANEOUS

RECALL

Recall the saved color data.

OSD TIMER

You can set the displayed time of OSD Menu window on the screen by using this adjustment.

OSD POSITION

Adjust the OSD menu's horizontal or vertical position on the screen.



LANGUAGE

You can select the language in which adjustment menus are displayed. The following languages are available : English, French, German, Italian, Spanish, Swedish, Finnish, Danish, Portuguese and Dutch.

Display power management

If the power management function of your computer is enabled, your monitor turns on and off automatically. You can control power management features from your computer.

Reducing power consumption

Your computer may have power management features which enable the computer or monitor to enter a power saving mode when the system is idle. You can reactivate the system by pressing any key or moving the mouse.

Mode	LED	Power consumption
Normal	Green	40 W
Suspend	Orange	10 W
Off	Orange	≤ 5 W
Unplugged	Not illuminated	0 W



The power button does not disconnect the monitor from the mains. The only way to isolate the monitor completely from the mains supply is to unplug the mains cable.

Troubleshooting

If your monitor is not functioning properly, you may be able to solve the problem by following the suggestions below :

Problem	Possible solution
<p>Blank screen</p> <p><i>Error message: Video mode not supported</i></p>	<p>If the power LED is not lit, push the Soft power switch to turn the monitor on. If the display unit is powered through the computer, check that the computer is switched on.</p> <p>The display unit might be in power saving mode. Push one of the keyboard keys. Check that the keyboard is properly connected to the computer.</p> <p>Check that the signal cable connector is properly connected and that the connection pins are not bent or damaged. If the connector is loose, tighten the connector's screws.</p> <p>Check that the power cable is correctly connected to the display unit and to the power outlet.</p> <p>Check the resolution and the frequency on the video port of your computer.</p> <p>Compare these values with the data in the Preset Timing Table.</p>
<p>The display does not enter power management mode</p>	<p>The video signal from the computer does not comply with VESA DPMS standard. Either the computer or the graphics adapter is not using the VESA DPMS power management function.</p>
<p>Color defects</p>	<p>Check that the signal cable connector is properly connected and that the connection pins are not bent or damaged. Try another color temperature.</p>
<p>Size, position, shape or quality unsatisfactory</p>	<p>Adjust the picture characteristics as described in the section <i>OSD Adjustment(4-3)</i>.</p>
<p>Duplicated images</p>	<p>A problem with your graphics adapter or display unit. Contact your service representative.</p>

Problem	Possible solution
Image is not stable	<p>Check that the display resolution and frequency from your PC or graphic adapter is an available mode for your monitor. In your PC, you can check through Control panel, Display, Settings.</p> <p>If the setting is not correct, use your computer utility program to change the display settings.</p>
Message : <i>No signal</i>	<p>Check that the signal cable connector is properly connected and that the connection pins are not bent or damaged. If the connector is loose, tighten the connector's screws. Check that the computer is switched on.</p>
The power LED is a orange color	<p>To enter a power saving mode. You can reactivate the system by pressing any key or moving the mouse.</p> <p>LED Indicator can be orange color on changing of video mode or Input Signal.</p> <p>Check the Resolution and the frequency on the video part of your computer. Compare these values with the data in the Preset Timing Table.</p>

Contacting service

If the above troubleshooting hints do not help you find a solution to the problem, contact an authorized service agent. If the monitor is sent for service, use the original package if possible.

Unplug the display unit from the power outlet and contact a service agent when:

- The monitor does not operate normally according to the operating instructions.
- The monitor exhibits a distinct change in performance.
- The monitor has been dropped or the cabinet has been damaged.
- The monitor has been exposed to rain, or water or liquid has been spilled onto the monitor.

Specifications

LCD	15"viewable, Diagonal, Pixel pitch 0.297 mm, A-Si TFT
Brightness	220cd/m ² (Min.), 250cd/m ² (Typ.)
Response Time	25msec
Display area	304 X 228 mm
Number of color	16.2 Million colors
Input signals	R.G.B Analog, 15 pin D-sub
Frequency rate	Horizontal : 31.0 to 60.0KHz, Vertical : 56 to 75Hz
Maximum bandwidth	78.75 MHz
Maximum resolution	1024X768@75Hz
Input voltage	100 - 240 V AC 1.2A
Power consumption	40W
Power Management	VESA DPMS
Plug & Play	VESA DDC 1/2B
OSD menu	BRIGHTNESS, CONTRAST, COLOR CONTROL, MISCELLANEOUS, AUTO ADJUST, LANGUAGE, H/V POSITION, CLOCK PHASE
Ergonomics, Safety and EMC	TCO'99, FCC Class B, CE, cULus, TÜV-GS, FIMKO, SEMKO
Operating Temperature	5 ~ 35°C
Weight	4.8Kg unpacked, 6.7Kg packed
Dimensions (W X H X D mm)	442 X 482 X 256 mm

- *Specification is subject to change without notice for performance improvement.*