Contents

Introduction

Your new 21P4 monitor supplies you with a high-quality colour image with high resolution and ergonomic refresh rates. It possesses a whole range of useful features and functions, e.g.:

- 50 cm (21") high-resolution CRT (0.26 mm dot pitch)
- automatic scanning of all horizontal frequencies from 30 to 115 kHz and all refresh rates (vertical frequencies) from 50 to 160 Hz
- digital screen controller with microprocessor for storing 18 different display modes
- freely adjustable colour alignment for matching the screen colours to the colours of various input and output devices
- convenient operation via integrated OSD (On-Screen-Display) menu
- VESA-DDC compatibility
- power management for reducing power consumption by up to 95 % when the computer system is not in use
- compliance with the latest ergonomic standards (ISO 9241-3)
- compliance with the recommendations in accordance with TCO '99

This Operating Manual contains important information you require to start up and run your monitor. The monitor interacts closely with the graphics card (screen controller) of your computer. The monitor processes the data supplied to it by the screen controller. The screen controller/the associated driver software is responsible for setting the modes (resolution and refresh rate).

Target group

You don't need to be an "expert" to perform the operations described here. Do, however, read the chapter "Important notes" in the Operating Manual of the computer and in this Operating Manual.

In the event of any problems occurring, please contact your sales outlet or our Help Desk.

Further information

Details of how you set the resolution and refresh rate are provided in the documentation on your screen controller/the associated driver software.

Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:

Pay particular attention to text marked with this symbol. Failure to observe this warning endangers your life, destroys the device, or may lead to loss of data.

Supplementary information, remarks, and tips follow this symbol.

► Text which follows this symbol describes activities that must be performed in the order shown.

"Quotation marks" indicate names of chapters or terms.

Important notes

In this chapter you will find information regarding safety which is essential to take note of with your monitor.

Safety

This device complies with the relevant safety regulations for data processing equipment, including electronic office machines for use in an office environment. If you have any questions, contact your sales outlet or our Help Desk.

- If the device is brought into the installation site from a cold environment, condensation can form. Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site.
- During installation and before operating the device, please observe the instructions on environmental conditions in the "Technical data" chapter as well as the instructions in the "Installing an ergonomic video workstation" chapter.
- To ensure adequate ventilation the monitor may only be operated with the monitor foot installed.
- The colour monitor must not be exposed to strong magnetic fields (e.g. caused by magnetic paper clip holders or loudspeakers). Strong magnetic fields could result in a permanent blotchy image.
- The monitor is automatically degaussed when switched on. This results in a magnetic field around the metal edge of the picture tube, which may damage the data on data carriers nearby. Therefore, never keep magnetic data carriers near the monitor.
- The device automatically sets itself to the correct voltage within the range from 220 V to 240 V. Ensure that the local mains voltage lies within these limits.
- The device must be installed in such a way that the user has good access to the appliance socket.
- The ON/OFF switch does not disconnect the device from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the socket.
- Lay all cables so that nobody can stand on them or trip over them. When attaching the device, observe the relevant notes in the chapter "Connecting the monitor".
- No data transmission cable should be connected or disconnected during a thunderstorm.
- Please ensure that no objects (e.g. necklaces, paperclips etc.) or liquids can get into the interior of the device (this may cause an electrical shock or short circuit).
- In emergencies (e.g. damaged casing, elements or cables, penetration of liquids or foreign matter), switch off the unit, disconnect the power plug and contact your sales outlet or our Help Desk.
- Only qualified technicians should repair the device. Unauthorised opening and incorrect repair may greatly endanger the user (electric shock, fire risk).

- Tampering with the device, in particular adjusting the high voltage or installing a different type of CRT tube, may result in a large amount of X-ray radiation being emitted. Devices modified in this way no longer comply with their licence and may not be used.
- You may set only those resolutions and refresh rates specified in the "Technical data" chapter. Otherwise you may damage your monitor. If you are in any doubt, contact your sales outlet or our Help Desk.
- Keep this operating manual together with your device. If you pass on the device to third parties, you should include this manual.

Cleaning

- Always pull out the power plug before you clean the monitor.
- Do not clean any interior parts yourself, leave this job to a service technician.
- Do not use any cleaning agents that contain abrasives or may corrode plastic.
- Ensure that no liquid will run into the system.
- Ensure that the ventilation areas of the monitor are free.
- When cleaning the surface of the screen, always use a soft, slightly damp cloth in order to avoid scratching the glass.

Wipe the monitor casing with a dry cloth. If the monitor is particularly dirty, use a cloth which has been moistened in mild domestic detergent and then carefully wrung out.

Transport

- When transporting the monitor ensure that it is not exposed to strong magnetic fields.
- Transport the monitor with care and only in its original packaging or another corresponding packaging fit to protect it against knocks and jolts.
- Above all, never drop the monitor. If the CRT is damaged, there is a risk of implosion!

X-ray radiation

This device complies with the German X-ray regulations (Röntgenverordnung - RöV). The local dosage emitted is less than 1 µSv/h (micro-Sievert per hour) at a distance of 0.1m.

Power cable

To guarantee safe operation, use the cable supplied. Use the following guidelines if it is necessary to replace the original cable set.

- The female/male receptacles of the cord set must meet CEE-22 requirements.
- The cable has to be HAR-certified or VDE-certified. The mark HAR or VDE will appear on the outer sheath or on the insulation of one of the inner conductors.
- For devices which are mounted on a desk or table, type SVT or SJT cable sets may be used. For devices which sit on the floor, only SJT type cable sets may be used.
- The cable set must be selected according to the rated current for your device.

Energy Star Guidelines

The Fujitsu Siemens colour monitor 21P4 is designed to conserve electricity by dropping to less than 3 W when it goes OFF mode. With this new power management the 21P4 qualifies for the U.S. Environmental Protection Agency's (EPA) Energy Star Computers award.

The EPA estimates that computer equipment uses 5 percent of all business electricity and that this is growing rapidly. If all desktop computers and peripherals enter a low-power mode when not in use, the overall savings in electricity could amount to $ 2 thousand million annually. These savings could also prevent the emission of 20 million tons of carbon dioxide into the atmosphere - the equivalent of 5 million automobiles.

As an Energy Star Partner, Fujitsu Siemens Computers GmbH has determined that this product meets the Energy Star guidelines for energy efficiency.

CE marking

CE The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

FCC Class B Compliance Statement

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

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 and meets all requirements of the Canadian Interference-Causing Equipment Regulations. 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 strict 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 equipment and the 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.

Fujitsu Siemens Computers GmbH is not responsible for any radio or television interference caused by unauthorised modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu Siemens Computers GmbH. The correction of interference caused by such unauthorised modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC rules.

Declaration of Conformity

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.

Product name:	Colour CRT Monitor
Trade name:	Fujitsu Siemens Computers Inc.
Model number(s):	21P4
Name of responsible party:	Siemens Information and Communication Products LLC 3860 N. First Street San Jose, CA 95134-1702 U.S.A.
Contact person:	Schroettle-Henning, Bernd
Phone No.:	(408) 571-6051
Fax No.:	(408) 571-6196

We, Siemens Information and Communication Products LLC, hereby declare that the equipment bearing the trade name and model number specified above was tested confirming to the applicable FCC Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the Commissions requirements.

Disposal and recycling

This device has been manufactured to the highest possible degree from materials which can be recycled or disposed of in a manner that is not environmentally damaging. The CRT contains no cadmium

The device may be taken back after use to be recycled, provided that it is returned in a condition that is the result of normal use. Any components not reclaimed will be disposed of in an environmentally acceptable manner.

If you have any questions on disposal, please contact your local office, our Help Desk, or:

Fujitsu Siemens Computers GmbH
Recyclingcenter
D-33106 Paderborn
Tel.: ++ 49 5251 - 818 010/ Fax: ++ 49 5251 - 818 015

Checking the contents of the consignment

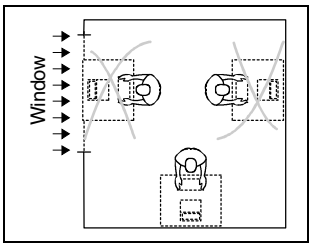
- ► Unpack all the individual parts.
- ► Remove any plastic caps from the plugs for the cables in the consignment.
- ► Check the delivery for damage incurred during transportation.
- ► Check whether the delivery agrees with the details in the delivery note.
  The complete shipment comprises:
  - one monitor
  - one data cable (D-SUB)
  - one power cable
  - one monitor base
  - one Warranty Booklet
  - this Operating Manual

Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.

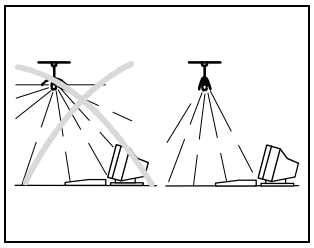
i It is recommended not to throw away the original packaging material. Keep it for future transportation.

Installing an ergonomic video workstation

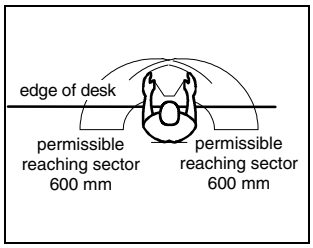
Before you set up your equipment, you should select a suitable position for working at the monitor. Please observe the following advice when installing a video workstation.



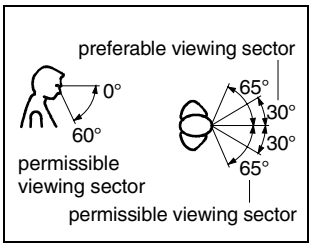
Avoid direct and reflected glare.



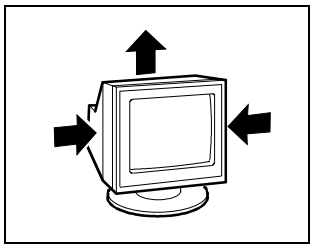
Avoid glare from electric lighting.



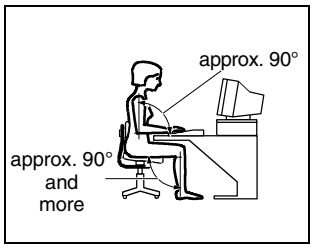
Position the keyboard where it is easiest to reach.



Position the monitor for optimum viewing. The viewing distance to the monitor should be approximately 50 cm.



Keep ventilated areas clear.



Remember to maintain correct posture.

Connecting the monitor

Information on the computer connections is contained in the operating manual for your computer.

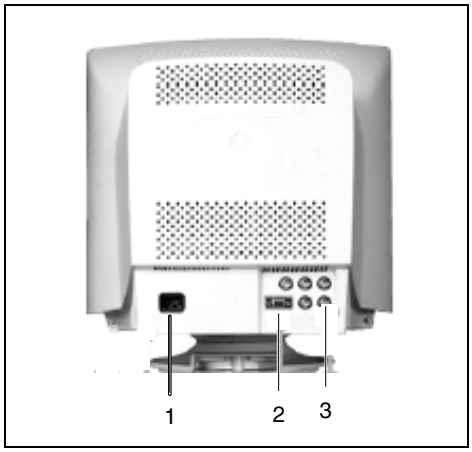
Observe the safety precautions in the chapter "Important notes" in this operating manual.

Do not cover the ventilation openings of the monitor.

If you are assembling monitors beside each other, there must be a minimum distance of 30 cm between monitors of the same constructional type, to avoid image distortion. With different monitors, the distance must be increased, if necessary.

Because of its weight, the monitor must be placed on a stable surface. Do not place the monitor on your computer.

► Be sure that the monitor and the computer are switched off.



1 = Power connector
2 = D-SUB connector
3 = BNC connectors

The computer power plug must be pulled out!

The data cable supplied has two 15-pin D-SUB connectors for connection to the monitor and to the system unit.

CE conformance and optimum picture quality are guaranteed only if you use the data cable supplied.

► Connect one of the connectors of the data cable to the D-SUB connector on the monitor (2) and secure the plug-in connection by tightening the safety screws.

i If you use a data cable with BNC connectors instead of the supplied data cable, you should perform the following step:

- ► Connect the BNC connectors of the data cable to the appropriate BNC connectors on the monitor (3), correct order from left to right: Red-Green-Blue-H-V, and secure the plug-in connections by locking the bayonet catches.
- ► Change the video signal in the OSD menu (function *D-SUB/BNC*).

► Connect the 15-pin connector of the data cable to the (active) monitor port on the computer and secure the plug-in connection by tightening the safety screws.

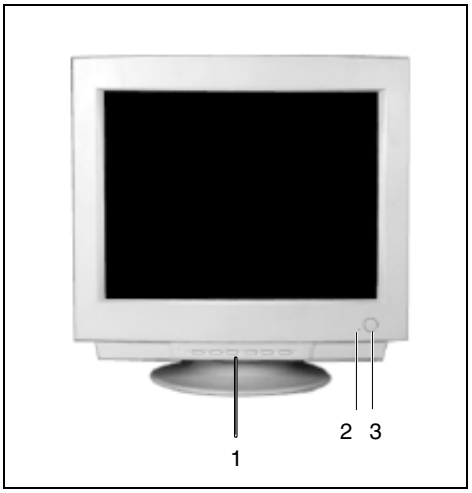
i If your computer has two monitor ports ("onboard" screen controller and separate graphics card), the monitor port for the separate graphics card is usually active.

► Plug the power cable supplied into the power connector of the monitor.

► Plug the power connector of the computer into a properly grounded mains outlet.

i When you start working with your monitor for the first time you should install the appropriate graphics drivers for your application software. Details of how to do this are provided in the documentation on your graphics card/the associated driver software.

Operation of the monitor



1 = Buttons for the OSD menu (On-Screen-Display)
2 = Power indicator
3 = Power button

Switching the monitor on

► Press the ON/OFF switch (3).

The power indicator (2) lights up green when the computer is turned on.

i If your computer has a power management function (energy-saving mode), you should read the "Notes on power management" of the monitor in this chapter.

When you start your system, several mode changes will usually be carried out when various programmes are called automatically (different settings for resolution and image refresh rate). Do not be confused by the unusual displays. They are not error messages.

Switching the monitor off

► Press the ON/OFF switch (3).

The power indicator (2) is dark.

Notes on power management

If your computer is equipped with power management, the monitor can support this function fully. Here the monitor does not distinguish between the individual energy-saving modes of the computer (standby mode, suspend mode and OFF mode), as it is capable of immediately switching into the mode with the highest energy-saving effect.

Stage	ON	Energy-saving mode
Power indicator	lights green	flashes green
Function	Monitor operating normally	Monitor is dark
Power consumption	normal 120 W	reduced to < 3 W

If your computer detects inactivity (no input) it sends an appropriate signal to the monitor to reduce the power consumption. The power indicator of the monitor changes colour to indicate the status change.
If there is still no input, power consumption is further reduced (OFF mode).

Once an input is made at the computer the screen contents are redrawn and full power is restored.

The length of the individual stages is determined by the power management system of the computer. For detailed information on how energy-saving mode operates refer to the Operating Manual or Technical Manual of the computer.

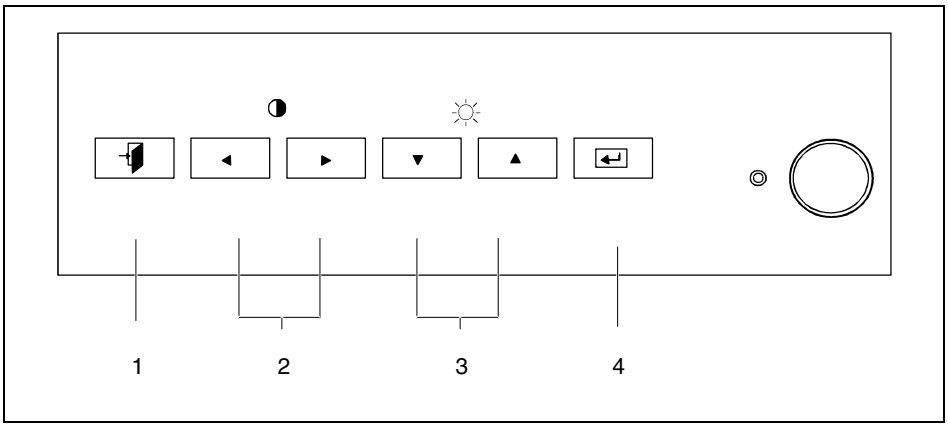
i The service life of your monitor will be extended if the OFF mode is switched to after 30 minutes at the earliest (setting in screen saver or in your computer's BIOS setup).

When the monitor is switched to OFF mode by the power management system a power consumption of up to 3 W is maintained to feed the circuit for redrawing the screen contents.

Changing the monitor settings

With the buttons on the control panel, you can change the monitor settings. Contrast and brightness are adjusted directly with the corresponding buttons. The other settings are carried out via an integrated OSD menu (On-Screen Display).

The OSD menu is available in different languages. The English menu names are used in the following description (default setting). The language can be set in the OSD menu (*Languages*).



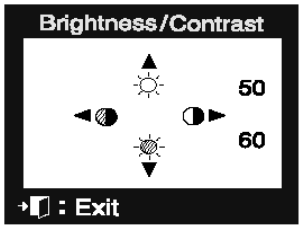
1 = EXIT button
2 = Arrow buttons ◀ ▶ (contrast)
3 = Arrow buttons ▼ ▲ (brightness)
4 = MENU button

MENU button	The menu button switches on the OSD menu and activates the selected function.
▼ ▲	With the buttons ▼ or ▲ you mark the icon for a function.
▼ ▲ ◀ ▶	You make the settings for the selected function with the arrow keys ▼, ▲, ◀ or ▶ respectively shown in the OSD menu.
EXIT button	The EXIT button deactivates the OSD menu or returns you from a submenu to its superior menu.

Adjusting the brightness and contrast

If the OSD menu is not displayed, you can use the arrow buttons to directly call the setting windows for brightness and contrast and make the required settings.

i You will increase the life of your screen if you adjust the contrast and brightness to medium.



Setting brightness and contrast (*Brightness / Contrast*)

▼ ▲ = Setting the brightness of the background

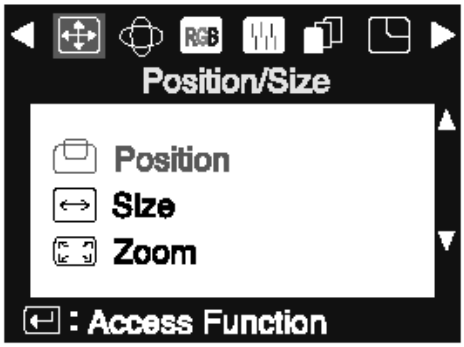
◀ ▶ = Setting the contrast between the foreground and background

Settings with the OSD menu

To make a setting, perform the following steps:

► Press the MENU button to activate the OSD menu.

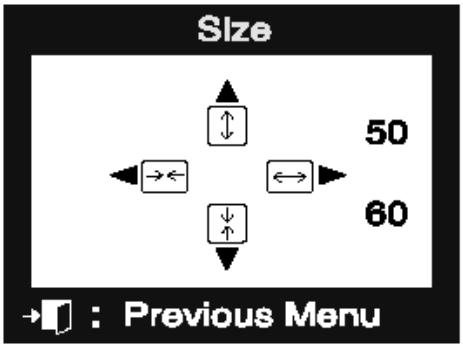
The main menu appears on the screen with icons for the setting functions. The last icon set is marked (in this case *Position/Size*). A setting window with selection options is displayed for the highlighted icon (here: *Position*, *Size*, *Zoom*).



► If necessary, use the ◀ or ▶ button to mark another icon in the main menu or select another symbol in the sub menu with the ▼ oder ▲ button, e. g. *Size*.

► Press the MENU button to activate the selected function.

The setting window for the selected function appears (in this case: *Size*).



In the setting window the arrow keys (▼ , ▲ , ◀ and ▶) which you can use to make your selection are now displayed.

- ► Press the relevant arrow key to make define your setting.
- ► Press the EXIT button to exit the setting window.

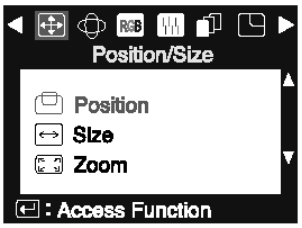
All modifications are automatically stored if no button is pressed for several seconds.

The OSD menu disappears after a short time (e.g. 10 seconds). The time can be set in the OSD menu (*Menu Duration*).

The OSD menu can be hidden by pressing the EXIT button.

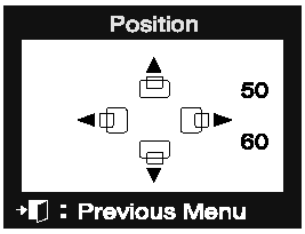
All possible adjustments of the monitor using the OSD menu are described in the following.

Setting picture size and position (position/Size)



Calling the *Position/Size* setting window

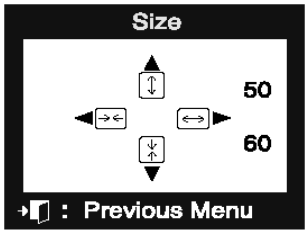
▼ ▲ = Selecting function



Adjusting picture position (*Position*)

◀ ▶ = Shifting the picture to the left or to the right

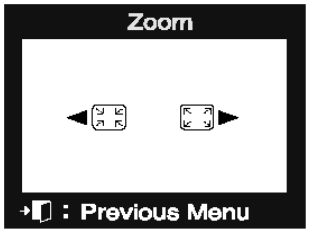
▼ ▲ = Shifting the picture down or up



Setting picture size (*Size*)

◀ ▶ = Making the picture narrower or wider

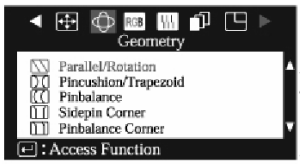
▼ ▲ = Making the picture shorter or longer



Adjusting proportional picture size (*Zoom*)

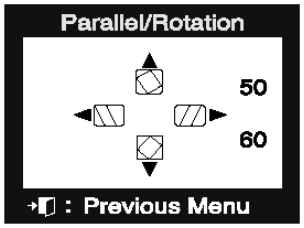
◀ ▶ = Increasing or reducing picture size while retaining the side ratios

Setting the picture geometry (Geometry)



Calling the *Geometry* setting window

▼ ▲ = Selecting function

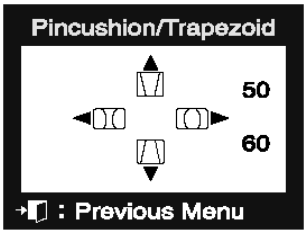


Correcting parallelogram and tilt distortion (*Parallel/Rotation*)

Parallelogram distortion means that the sides of the picture bend to the left or right. Tilt distortion must be set when the screen display is not axially symmetrical.

◀ ▶ = Reducing the angle of the left and right sides

▼ ▲ = Rotating the picture in a clockwise or counter-clockwise direction

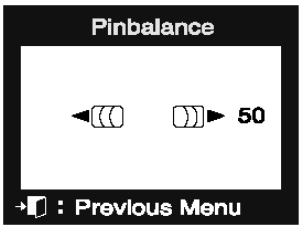


Correcting pincushion and trapezoid distortion (*Pincushion/Trapezoid*)

Trapezoid distortion is when the top or bottom of the screen display is too wide or too narrow.

◀ ▶ = Bending the right and left side inward or outward

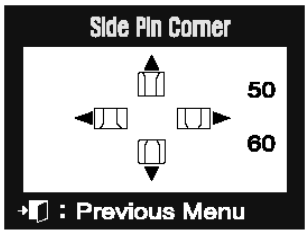
▼ ▲ = Making the bottom edge narrower and the top edge wider or making the top edge narrower and the bottom edge wider



Correcting unsymmetrical pincushion distortion (*Pinbalance*)

Unsymmetrical pin balance is when the sides of the screen displays are bent inward or outward on one side.

◀ ▶ = Setting the sides so that they are symmetrical

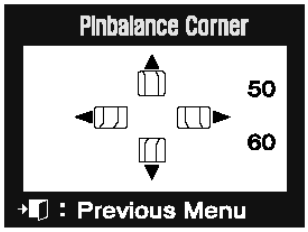


Correcting corner distortion (*Side Pin Corner*)

Corner distortion is when the corner edges of the screen display are bent inward or outward.

◀ ▶ = Correcting lower corner edges of screen display

▼ ▲ = Correcting upper corner edges of screen display



Correcting unsymmetrical corner distortion (*Pinbalance Corner*)

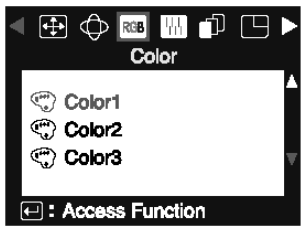
Unsymmetrical corner distortion is when the corner edges of the screen display are bent inward on one side and outward on the other side.

◀ ▶ = Correcting lower corner edges of screen display

▼ ▲ = Correcting upper corner edges of screen display

Setting colours (Color)

The "warmth" of the screen colours is set using the colour temperature. The monitor has three fixed colour temperatures (K = Kelvin).



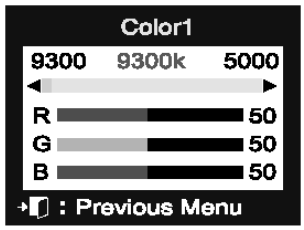
Calling the *Color* setting window

▼ ▲ = Selecting function

Color 1 = 9300 K (factory setting)

Color 2 = 6500 K (factory setting)

Color 3 = 5000 K (factory setting)



Setting the colour temperature and colour (*Color 1*, *Color 2*, *Color 3*)

◀ ▶ = Setting colour temperature

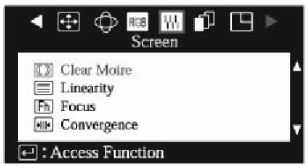
You can adjust the colour temperature in 100 K steps in the range from 5000 K to 9300 K. The current colour temperature is displayed in the middle position of the scale.

▼ ▲ = Selecting colour (*R*, *G*, *B*)

◀ ▶ = Setting colour ratios

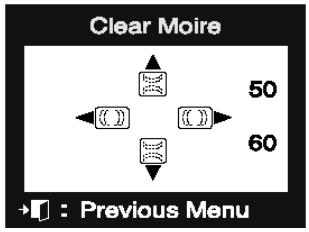
Making picture corrections (Screen)

Set the picture size, brightness, etc. before you switch on moiré reduction.
Only switch moiré reduction on if you can see light and dark stripes on your screen, or if the picture is dull and blurred.
In some cases, moiré reduction may cause the picture quality to deteriorate (reduced picture definition, slight flickering). To optimally restore the picture focus in the horizontal and vertical picture area, use the function *Focus*.



Calling the *Screen* setting window

▼ ▲ = Selecting function



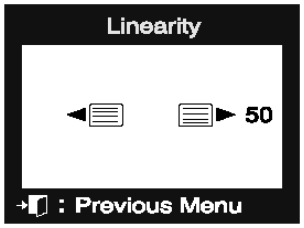
Setting or switching off moiré reduction (*Clear Moiré*)

If the picture you see on screen has light and dark stripes or appears dull and blurred, this may be due to what is known as the moiré effect. This effect usually has physical causes, being triggered by interference between the pixels in the matrix and the video signal. The intensity of the moiré effect is dependent on the screen resolution and horizontal frequency.

◀ ▶ = Setting the horizontal moiré reduction intensity

▼ ▲ = Setting the vertical moiré reduction intensity

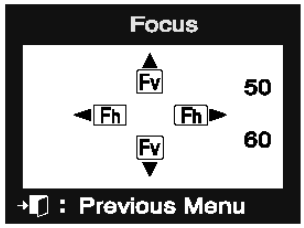
With a value of 0 the moiré reduction is switched off.



Adjusting the vertical linearity (*Linearity*)

Vertical linearity must be set when the screen display appears distorted at the top or bottom.

◀ ▶ = Correcting compression distortion at the top or bottom of the display

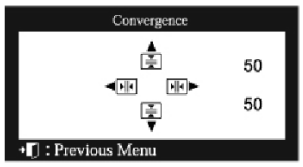


Setting the picture definition (*Focus*)

This function enables you to improve focus – e. g. after the moiré reduction.

◀ ▶ = Improving focus right and left range

▼ ▲ = Improving focus up and down range



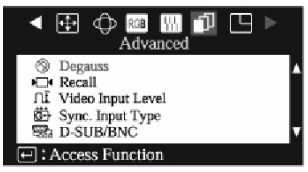
Setting convergence (*Convergence*)

If objects on the screen have red or blue shadows, the convergence of the monitor is incorrectly adjusted.

◄ ► = Setting horizontal convergence

▼ ▲ = Setting the vertical convergence

Setting advanced options (Advanced)



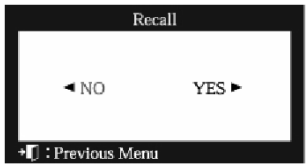
Calling the *Advanced* setting window

▼ ▲ = Selecting function

Degaussing the monitor (*Degauss*)

When colour shifts occur in the screen display due to the influence of magnetic fields (e.g. after transporting or turning the screen), the screen must be degaussed.

Do not use the feature more than once within a 15-minute period!

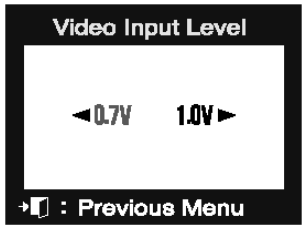


Activating the factory settings (*Recall*)

Factory settings are provided for picture size, picture position and geometry in the predefined operating modes.

◄ = Rejecting function

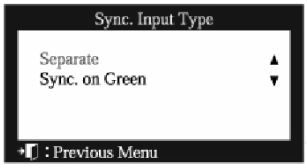
► = Activating factory settings



Setting entry level of video signal (*Video Input Level*)

If required, the entry level of the video signal can be changed from 0.7 V (default) to 1 V. If the monitor is operated on a PC, use the default setting.

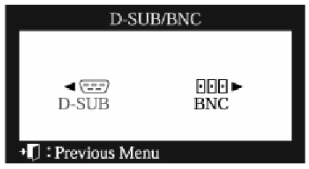
◄ ► = Selecting entry level



Setting synchronisation (*Sync.*) *Input Type*)

This function allows you to set synchronisation – (depending on the graphics card used).

◄ ► = Selecting synchronisation type

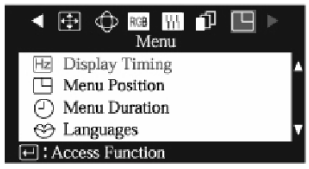


Setting video signal (*D-SUB/BNC*)

This function allows you to set video signal – (depending on the connections used).

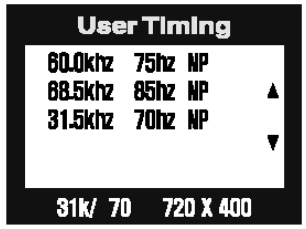
◄ ► = Selecting video signal

Setting the OSD menu and displaying monitor information (Menu)



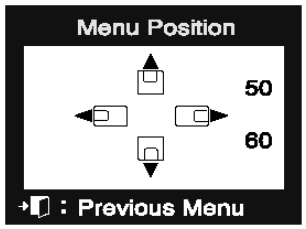
Calling the *Menu* setting window

▼ ▲ = Selecting function



Display information on the current and available modes (*Display Timing*)

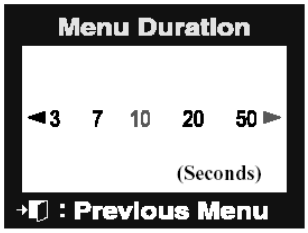
▼ ▲ = Display default (*Factory Timing*) and user modes (*User Timing*)



Setting position of OSD menu (*Menu Position*)

◄ ► = Shifting OSD menu to the left or to the right

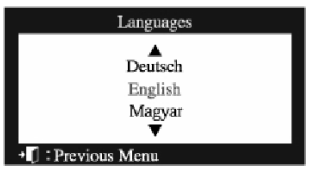
▼ ▲ = Shifting OSD menu down or up



Setting display time for OSD menu (*Menu Duration*)

With this function you can set how long the OSD menu is to be displayed each time (3, 7, 10, 20 or 50 seconds).

◄ ► = Selecting value



Setting language for the OSD menu (*Languages*)

The OSD menu is available in different languages (default setting: English).

▼ ▲ = Selecting language

Locking the OSD menu

The OSD menu can be locked to prevent accidental or unauthorised changes to the monitor settings.

► Press MENU button for at least 10 seconds.

The OSD menu is locked.

Please proceed in the same manner to release the locked OSD menu again.

Notes on ergonomic colour adjustment

If you select colours for the display in your application programmes, take note of the information below.

The primary colours blue and red on a dark background do not produce the minimum required contrast of 3:1 and are therefore not suitable for continuous text and data entry.

When using several colours for characters and background and giving the primary colours full modulation, you can obtain very suitable colour combinations (see the following table):

Background	Characters							
	black	white	purple	blue	cyan	green	yellow	red
black		+	+	–	+	+	+	–
white	+		+	+	–	–	–	+
purple	+	+		–	–	–	–	–
blue	–	+	–		+	–	+	–
cyan	+	–	–	+		–	–	–
green	+	–	–	+	–		–	–
yellow	+	–	+	+	–	–		+
red	–	+	–	–	–	–	+	

\+ Colour combination very suitable; light background colours are only suitable for devices which are operated with a refresh rate of at least 75 Hz.

– Colour combination not suitable because colour locations are too close together, thin characters are not identifiable or rigorous focusing is demanded of the human eye.

Technical data

Dimensions and weight

CRT:	53 cm (21“)
Visible diagonals:	50 cm
Dot pitch:	0.26 mm
Maximal resolution:	1920 x 1440 pixels
Dimensions (W x H x D):	504 mm x 506 mm x 482 mm
Weight:	25.7 kg
Accessories:	Power cable (1.8 m), Data cable (1.8 m)
Storable display modes:	18 (8 of which are preset)

Electrical data

Video:	analogue, positive, 0.7 V_{pp}, 75 Ohm
Synchronisation:	TTL
Horizontal frequency:	30 kHz .... 115 kHz (multi-scanning)
Refresh rate:	50 Hz .... 160 Hz
Maximum pixel rate:	320 MHz
Power supply:	100 V - 240 V± 10%, 60 Hz/50 Hz ± 3 Hz, < 2 A
Power consumption (see power management):	< 120 W (ON, Normal mode) < 3 W (OFF mode)

Environmental conditions

Environment class 3K2, IEC 721

Rated range of operation: Humidity:	10 °C .... 40 °C 10 % .... 80 %
Limit range of operation: Humidity:	0 °C .... 60 °C 5 % .... 90 %

Condensation must be avoided.

VESA-DDC-compatible VGA interface

Your monitor is equipped with a VESA-DDC-compatible VGA interface. VESA-DDC (Video Electronics Standard Association, Display Data Channel) is used as the communications interface between the monitor and the computer. If your computer is equipped with a VESA-DDC-compatible VGA interface, it can automatically read the data for ensuring optimum operation from your monitor and select the appropriate settings.

If the monitor 21P4 is not yet displayed in the list of monitors, you can select one of the following monitors instead:
Fujitsu Siemens, Siemens or Siemens Nixdorf 21P3, 21T1, MCM 2110, MCM 2111

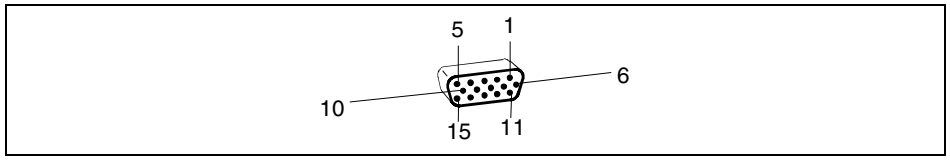
Preset operating modes

i The picture position and size have been set to optimum values at the factory for the operating modes listed above. Depending on the screen controller used, it may be necessary to adjust the display position and size. In this case, you can change and save the settings (see "Changing the monitor settings").

Horizontal frequency	Refresh rate	Screen resolution
31.5 kHz ±0.5 kHz	60 Hz ± 2 Hz	640 x 480
31.5 kHz ±0.5 kHz	70 Hz ± 2 Hz	720 x 400
43.3 kHz ±0.5 kHz	85 Hz ± 2 Hz	640 x 480
53.7 kHz ±0.5 kHz	85 Hz ± 2 Hz	800 x 600
68.7 kHz ±0.5 kHz	85 Hz ± 2 Hz	1024 x 768
80.0 kHz ±0.5 kHz	85 Hz ± 2 Hz	1280 x 1024
91.2 kHz ±0.5 kHz	85 Hz ± 2 Hz	1280 x 1024
106.0 kHz ±0.5 kHz	85 Hz ± 2 Hz	1600 x 1200

For ergonomic reasons we recommend a refresh rate of at least 75 Hz and a maximum resolution of 1280 x 1024 pixels.

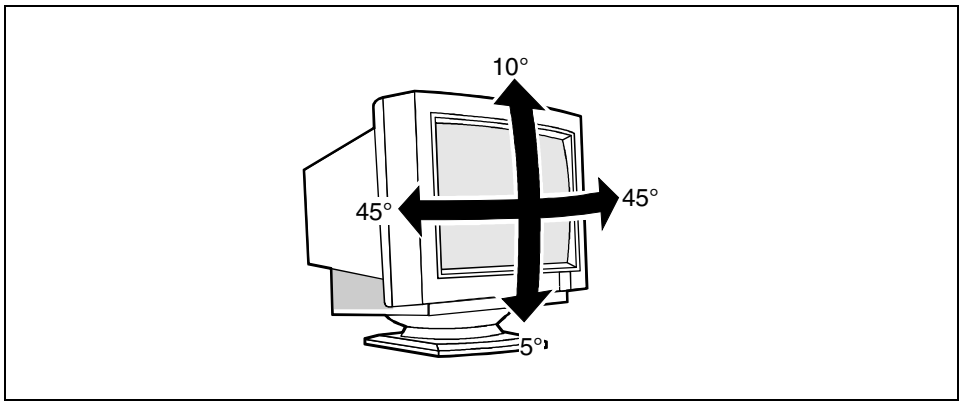
Pin assignment D-SUB



Pin	Meaning
1	Video input red
2	Video input green
3	Video input blue
4	not assigned
5	DDC Return
6	Red video ground
7	Green video ground
8	Blue video ground

Pin	Meaning
9	+5V for DDC
10	Logic ground
11	not assigned
12	DDC data (SDA)
13	H. sync
14	V. sync
15	DDC Clock (SCL)

Tilting and turning area



The specified tilting area refers to the zero position of the monitor foot marked with an arrow.

Trouble shooting

Should an error occur, first check the following points. If the distortion is still not eliminated, the monitor should, if possible, be checked on another computer.

If you are unable to solve the problem, please inform our Help Desk.

The display is too small or not centred

The monitor recognises an undefined mode.

- ► Adjust the picture size, position and edges (see "Operation of the monitor").

Colour displacements

- ► Degauss the monitor (see "Operation of the monitor").
- ► Ensure that there are no devices or objects near the monitor which generate magnetic fields (e.g. loudspeakers, plug-in power supply units).

Flickering picture

- ► Set an ergonomic refresh rate (≥ 75 Hz) using the computer software (see documentation for your computer or your graphics card).
- ► Ensure that the monitor is kept at a distance of at least 30 cm from other monitors of the same construction type. With different monitors, the distance must be increased, if necessary.

No display (power indicator does not light)

- ► Check whether the monitor is switched on.
- ► Check whether the power cable on the monitor is connected correctly.
- ► Check whether the computer is switched on.

No display (power indicator lights)

- ► Check whether the computer is switched on.
- ► Check whether the data cable for the monitor is correctly attached to the monitor port on the computer.
- ► Check whether the monitor connection of the computer used is active.
- ► Press any key on the computer keyboard – the computer may be in energy saving mode.
- ► Change the brightness and/or the contrast; the monitor may be adjusted to the maximum dark setting.

Error messages on the screen

`Sync. Out of Range`

The input signal (horizontal frequency and refresh rate) does not correspond to the technical monitor data.

- ► Adjust the video frequency range using the computer software (see documentation for your computer or your graphics card).

`No Connection`
`Check Signal Cable`

The monitor does not recognise an input signal.

- ► Check whether the computer is switched on.
- ► Check whether the power cable on the computer is connected to a mains outlet with earthing contact.