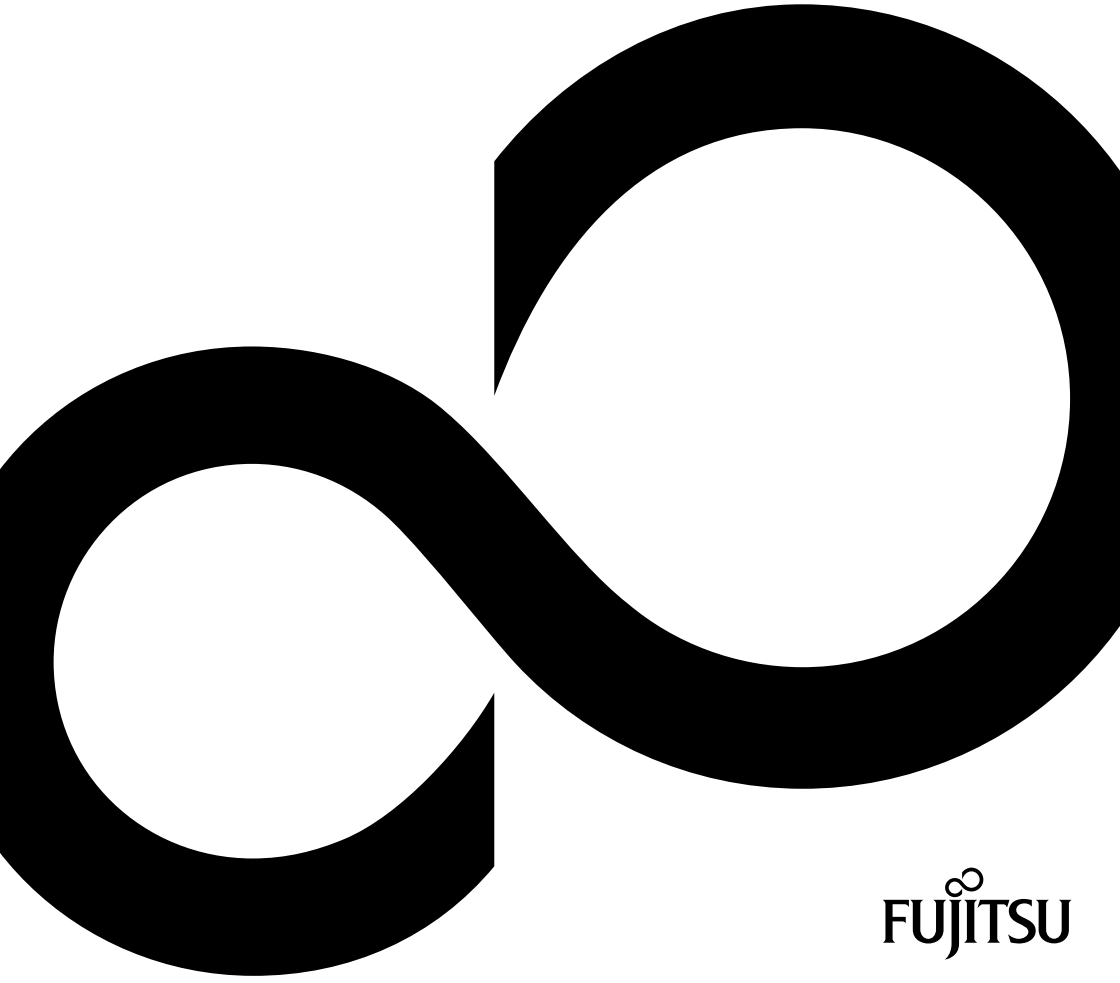
FUJITSU Display P27T-7 UHD



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FUJITSU Display P27T-7 UHD

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Your LCD screen...

has a whole range of useful features and functions, e.g.:

- TFT display (Thin Film Transistor; active matrix)
- minimal space requirements thanks to slim casing
- optimum ergonomic characteristics (totally distortion-free, excellent picture definition and colour purity right into the corners)
- high degree of brightness and good contrast
- Ultra High Definition (UHD) resolution via HDMI and Display Port DP (3840 x 2160)
- presentation of up to 16.7 million colours (in conjunction with an appropriate display adapter)
- MHL 2.0 (Mobile High Definition Link) to connect a Smartphone or other portable devices to the monitor
- USB 3.0 Hub with 2 x USB 3.0 ports
- automatic scanning of horizontal frequencies from 15.6 to 135 kHz and refresh rates (vertical frequencies) from 29 to 76 Hz (absolutely flicker-free)
- digital screen controller with microprocessor for storing 36 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
- VESA-FPMPMI compatibility (Flat Panel Monitor Physical Mounting Interface) – Mounting device for swivel arm or a similar accessory
- Plug&Play capability
- Digital Video inputs (HDMI and Display Port DP) with HDCP
- power management for reducing power consumption when the computer is not in use
- Compliance with the recommendations according to TCO 6.0 and TCO Edge
- the monitor fulfills all GS ("Geprüfte Sicherheit", Certified Security) requirements.

This operating manual contains important information you require to start up and run your LCD monitor.

A video signal source with DP or HDMI port is required to control the LCD monitor. The monitor processes the data supplied to it by the display adapter. The display adapter or the associated driver software is responsible for setting the modes (resolution and refresh rate).

When putting the monitor into operation for the first time, the screen display should be optimally adapted to the display adapter used and adjusted in accordance with your needs (see chapter "Changing the monitor settings", Page 19.

Target group

You don’t need to be an "expert" to perform the operations described here. Nonetheless, it is important to always observe the safety notes given in the operating instructions for the computer and in this manual.

In the event of any problems, please contact your sales office or our Service Desk.

Further information

Details of how you set the resolution and refresh rate are provided in the documentation for your display adapter and the associated driver software.

Because of the technology used (active matrix) an LCD monitor provides a totally flicker-free picture even with a refresh rate of 60 Hz.

Notational conventions

	Pay particular attention to text marked with this symbol. Failure to observe these warnings could pose a risk to health, damage the device or lead to loss of data. The warranty will be invalidated if the device becomes defective through failure to observe these warnings.
	Indicates important information for the proper use of the device.
►	Indicates an activity that must be performed
↳	Indicates a result
`This font`	indicates data entered using the keyboard in a program dialogue or at the command line, e.g. your password (**`Name123`**) or a command used to start a program (**`start.exe`**)
`This font`	indicates information that is displayed on the screen by a program, e.g.: `Installation is complete.`
This font	indicates • terms and texts used in a software interface, e.g.: Click on *Save* • names of programs or files, e.g. *Windows* or *setup.exe*.
"This font"	indicates • cross-references to another section, e.g. "Safety information" • cross-references to an external source, e.g. a web address: For more information, go to "http://www.fujitsu.com/fts/" • Names of CDs, DVDs and titles or designations of other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety" Manual
Key	indicates a button on the monitor, e.g: MENU
This font	indicates terms and texts that are emphasised or highlighted, e.g.: **Do not switch off the device**

Important notes

In this chapter you will find information regarding safety which it is essential to take note of when working with your device.

Safety instructions

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 about whether the device can be used in the intended environment, please contact your sales office or our Service Desk.

- The display surface of the device is sensitive to pressure and scratches. You should therefore be careful with the display surface in order to avoid lasting damage (scratches).
- 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.
- When installing and operating the device, please observe the notes on environmental conditions in Chapter "Technical specification", Page 32 as well as the instructions in Chapter "Setting up an ergonomic video workstation", Page 12.
- To ensure sufficient ventilation, the air inlet and outlet openings of the device must be kept clear.
- The device automatically sets itself to the correct voltage within the range from 100 V to 240 V. Make sure that the local mains voltage is neither higher nor lower than this range.
- Ensure that the power socket on the device and the mains outlet are freely accessible.
- The ON/OFF touch sensor does not disconnect the monitor from the mains voltage. To completely disconnect from the mains voltage, remove the mains plug from the power socket.
- The device is equipped with a power cable that complies with safety standards.
- Use the supplied power cable only.
- Lay the cables in such a way that they do not create a hazard (danger of tripping) and cannot be damaged. When connecting the device, observe the relevant notes in chapter "Connecting the device", Page 15.
- No data transfer cables should be connected or disconnected during a thunderstorm.
- Make sure that no objects (e.g. jewellery chains, paper clips, etc.) or liquids get inside the device (danger of electric shock, short circuit).
- The device is not waterproof! Never immerse the device in water and protect it from spray water (rain, sea water).
- In an emergency (e.g. damaged casing, operation controls or cables, penetration of liquids or foreign matter), switch off the device, disconnect the power plug and contact your sales outlet or our Service Desk.
- Repairs to the device must only be performed by qualified technicians. Unauthorised opening and incorrect repair may greatly endanger the user (electric shock, fire risk).
- Only use the screen resolution settings and refresh rates specified in Chapter "Technical specification", Page 32. If you are in any doubt, contact your sales outlet or our Service Desk.
- If you operate the device with the swivel arm or a similar accessory, it must not be turned through 180°.

- The device must only be operated in landscape mode (0°) and portrait mode (90°). The touch sensors of the control panel are located in the middle of bottom of the monitor in landscape mode (0°) and at the left-hand side of the monitor in portrait mode (90°).
- Store this manual close to the device. If you pass the device on to third parties, you should pass this manual on with it.
- We recommend that you place your device on a durable, non-slip surface. In view of the many different finishes and varnishes used on furniture, it is possible that the feet of the device may mark the surface they stand on.
- Warning about excessive sound pressure from headphones:
  Excessive sound pressure from headphones can cause a loss of hearing.
  Setting the equalizer to the maximum value increases the headphones output voltage and thus increases the sound pressure.

Power supply unit

- To prevent the risk of fire, this monitor must only be operated with the genuine power supply unit supplied (see Chapter "Technical specification", Page 32).
- The supplied genuine power supply must not be connected to any monitor other than this monitor.

Power cable

Use the supplied power cable only.

Use the following guidelines if it is necessary to replace the original cable set.

- The female/male receptacles of the cord set must meet IEC60320/CEE-22 requirements.
- The cable has to be HAR-certified or VDE-certified. The mark HAR or VDE will appear on the outer sheath.
- 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.
- If necessary, replace the original power cable with a regular grounded 3-core mains lead.

Transporting the device

Transport all parts separately in their original packaging or in a packaging which protects them from knocks and jolts, to the new site.

Do not unpack them until all transportation manoeuvres are completed.

If the device is brought from a cold environment into the room where it will be used, condensation may occur. Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site.

Cleaning the device

Switch off the device and unplug the power plug.

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 enters the device.

The display surface of the device is sensitive to pressure and scratches. Clean it only using a soft, slightly moistened cloth.

The surface of the casing can be cleaned with a dry cloth. If particularly dirty, use a cloth that has been moistened in mild domestic detergent and then carefully wrung out.

CE marking

The shipped version of this device complies with the requirements of European Union directives 2004/108/EC "Electromagnetic compatibility", 2006/95/EC "Low voltage directive" and 2009/125/EC "Ecodesign Directive".

Disposal and recycling

This device has been manufactured as far as possible from materials which can be recycled or disposed of in such a way that the environment is not damaged. The device may be taken back after use to be reused or recycled, provided that it is returned in a condition that befits its intended use. Any components not reclaimed will be disposed of in an environmentally acceptable manner.

The device must be disposed of in accordance with the local regulations for disposal of special waste.

If you have any questions on disposal, please contact your local sales office or our Service Desk, or contact one of the following directly:

Germany	Belgium	Switzerland
Fujitsu Technology Solutions GmbH Remarketing and Recycling D-33106 Paderborn Tel.: +49 5251 / 81 80 10 Fax: +49 5251 / 81 80 15 "http://fujitsu.com/fts/remarketing"	RECUPEL Boulevard Reyers, 80 B-1030 Brussels Tel.: +32 2 / 706 86 16 Fax: +32 2 / 706 86 13 E-Mail: info@recupel.be "http://www.recupel.be"	SWICO Schweizerischer Wirtschaftsverband der Informations-, Kommunikations- und Organisationstechnik A list of the SWICO acceptance locations can be found at: "http://www.swico.ch"
Asia	USA	
Taiwan: Environmental Protection Administration Executive Yuan R.O.C. "http://recycle.epa.gov.tw"	Fujitsu America, Inc. 1250E. Arques Avenue Sunnyvale, CA 94085 U.S.A. Phone No.: (408) 746-6000	

You can also find more information on this at "http://www.fujitsu.com/fts/about/fts/environment-care/".

Getting started

Unpacking and checking the delivery

The display surface of the device is sensitive to pressure and scratches. Always hold the device by the casing!

The complete device package includes:

- one monitor
- one data cable (HDMI)
- one data cable (DP)
- one USB 3.0 cable (USB-A to USB-B)
- one external power supply
- one power cable
- one CD with software and documentation
- one Warranty Booklet
- a flyer "Quick Start Guide"
- one "Safety/Regulations" manual

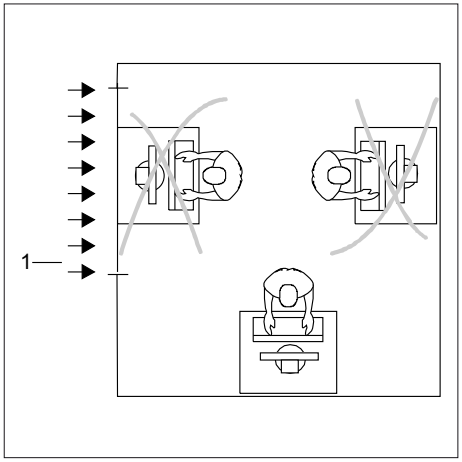
► Unpack all the individual parts.
► Check the contents of the package for any visible damage caused during transport.
► Check whether the delivery conforms to the details in the delivery note.
► Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.

Do not discard the original packing material of the devices. You may need the packaging in the future if you need to transport your device.

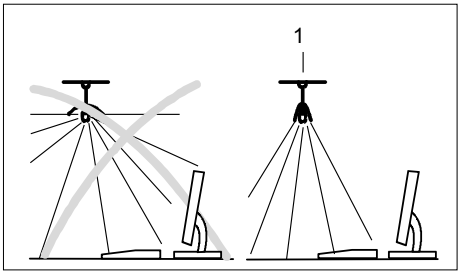
Setting up the device

To ensure sufficient ventilation, the air inlet and outlet openings of the device must be kept clear.

Setting up an ergonomic video workstation

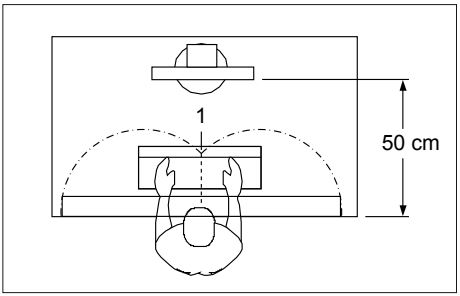


► Do not position the video workstation opposite a window (1).

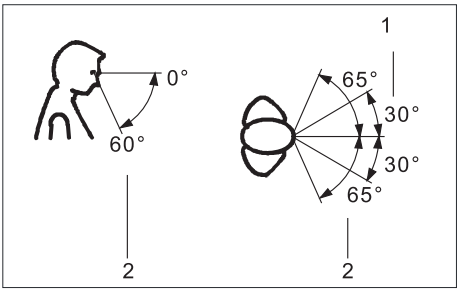


► Position the monitor outside the reach of a light source (1).

► Position the keyboard where it is easiest to reach (1).



► Position the monitor so that the eye distance to the screen (1) is around 50 cm.

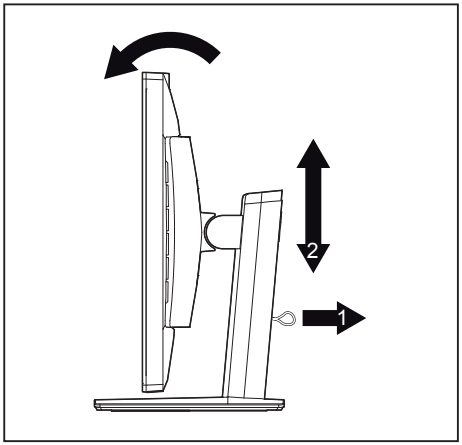


► Position the monitor for optimum viewing (1). The monitor should under no circumstances fall outside the permissible viewing space (2).

Depending on the situation, it may be advisable to use a swivel arm or a similar accessory (VESA FPMPMI), which are available from specialist dealers. For this purpose the monitor base must be removed beforehand as described in chapter "Removing monitor base", Page 15.

Adjusting height

The height adjustment is fixed in the transport position.



► To free the fixing, remove the locking pin on the flange (1).

↳ The height of the monitor can be adjusted by approximately 130 mm.

► Grasp the monitor with both hands on the right and left edge of the casing and move it up or down (2).

Adjusting the inclination

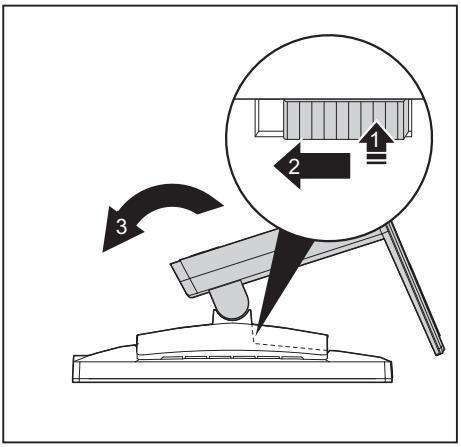
The inclination of the monitor can be adjusted by -3° (forwards) and +35° (backwards) from its vertical position.

► Hold the monitor with both hands on the left and right sides of the casing and move it to the desired angle.

Removing monitor base

Before you can use a swivel arm or a similar accessory, you must remove the monitor base.

The display surface is susceptible to scratching!



- ► Switch off the monitor and pull the power plug out of the power socket.
- ► Lay the monitor on its face on a soft surface.
- ► Remove the cover and disconnect all cables.
- ► Release the base stand by pressing the slider down (1). Move it in the direction of the arrow (2) and lift the base stand upwards (3).
- ↳ You can now mount a swivel arm or a similar accessory in accordance with VESA FPMPMI using a hole spacing of 100 mm.

For instructions on how to mount the swivel arm or a similar accessory, please see the documentation for the swivel arm or similar accessory.

Connecting the device

Please observe the safety information in "Important notes", Page 7.

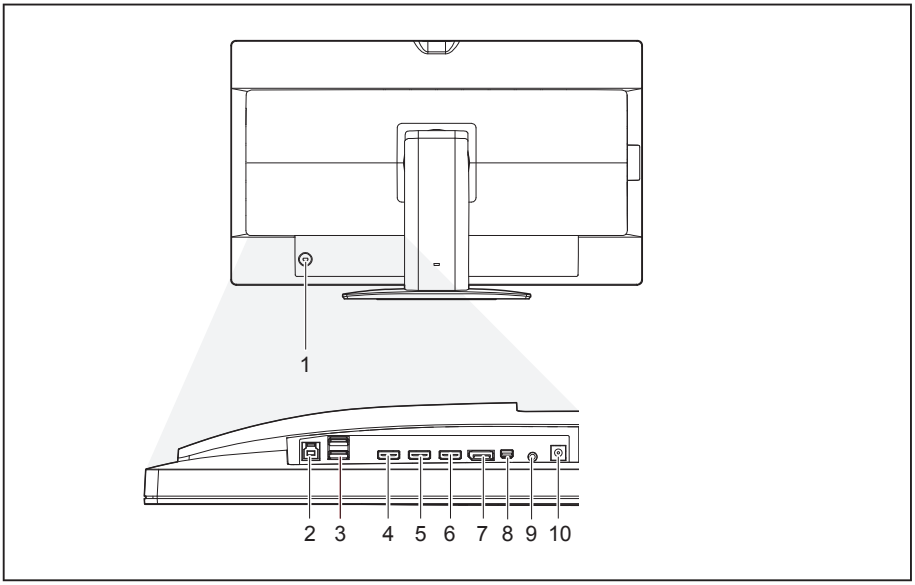
CE conformance and optimum picture quality are guaranteed only if you use the data cables supplied.

- ► Switch off the monitor and the computer.
- ► Disconnect the power plug from the computer.

Connecting cables to the monitor

The data cables supplied have two 20-pin DP plugs or two 20-pin HDMI plugs for connection to the monitor and to the computer.

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



1 = Security slot for "Security Lock"
2 = USB 3.0 (Upstream)
3 = USB 3.0 (Downstream)
4 = HDMI 1.4/MHL 2.0 socket
5 = HDMI 1.4/MHL 2.0 socket
6 = HDMI 2.0 socket
7 = DP socket
8 = Mini-DP socket
9 = AUDIO-OUT socket
10 = Port for external power supply

► Select the appropriate data cable for your computer.
► Connect the supplied power supply unit to the monitor.
► Connect a data cable plug to the DP socket, the Mini-DP socket or one of the HDMI sockets of the monitor.
↳ The following refresh rates are supported at the HDMI inputs:

Input:	HDMI1 (4)	HDMI2 (5)	HDMI3 (6)
Type:	HDMI 1.4	HDMI 1.4	HDMI 2.0
Max. resolution:	4k/30Hz	4k/30Hz	4k/60Hz

The desired signal input must be selected via the Input OSD button. This is also possible if the Signal LED lights up orange and the monitor is in power saving mode.

► Plug the supplied mains cable into the mains socket of the external power supply unit and connect this to the socket on the monitor.
► Plug the supplied USB 3.0 cable into the USB 3.0 (Upstream) socket and the other end of the cable into a USB 3.0 socket on the computer.

A lock (Kensington Lock) can be mounted in the security slot to protect the monitor against theft. A Kensington lock is not supplied with the monitor.

Connecting cables to the computer

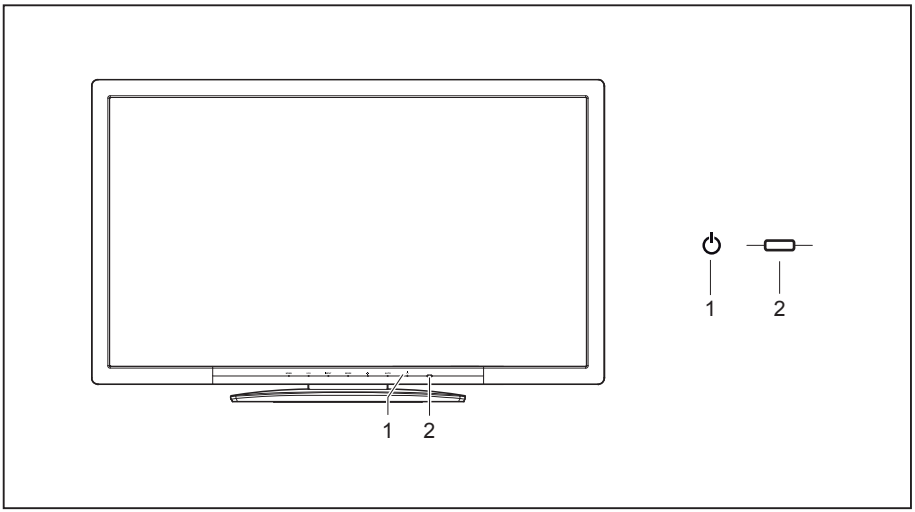
Information on the computer connections and interfaces is contained in the operating manual for your computer.

- ► Connect the data cable to the (active) monitor port on the computer and secure the plug-in connection by tightening the safety screws.
- ► Plug the power connector of the monitor into a properly grounded mains outlet.
- ► Plug the power connector of the computer into a properly grounded mains outlet.

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

Operation

Switching the device on and off



1 = On/Off touch sensor 2 = Power supply indicator

The colour of the LED indicator changes as follows:

LED indicator	Status
blue	Monitor and computer are switched on (normal mode).
green	Monitor and computer are switched on (ECO mode).
orange	Monitor is not receiving a video signal or is in power saving mode.
does not light up	Monitor is switched off

► Switch the device on with the On/Off touch sensor (1).

Notes on power management

If your computer is equipped with power management (power saving mode), the monitor can fully support this function. The monitor thereby distinguishes between the individual power saving modes of the computer (standby mode, suspend mode and OFF mode).

Stage	Operation		Power saving mode
	Normal	ECO	
Power supply indicator	Lights up blue	Lit green	illuminated orange
Display	Max. brightness	typ. 200 cd/m²	orange
Typical power consumption (without USB and audio)	44 W	23 W	reduced to < 0.5 W (for all input sources)

If the computer detects inactivity (no input) it sends an appropriate signal to the monitor to reduce the power consumption (power saving mode). The power indicator of the monitor changes colour to show the change in status. The ECO operating mode and BASIC power-saving mode are the preset factory defaults.

Once an input is made at the computer the screen contents are restored.

For detailed information on how energy-saving mode operates, please refer to the operating manual or technical manual of the computer.

Changing the monitor settings

When putting the monitor into operation for the first time, the screen display should be optimally adapted to the display adapter used.

Changing the monitor settings with the control panel touch sensors

The touch sensors on the control panel have multiple functions. When the OSD menu is active, the current meaning of the touch sensors is shown directly over the touch sensors, on the edge of the screen.

The display (softkey icon) over the touch sensors varies depending on the sub-menu chosen.

Key	Function
MENU	Call up OSD menu
ECO	Activate/deactivate ECO operating mode
INPUT	Selecting the input signal
MODE	Selecting default modes
☼	Adjust brightness
PIP	Picture in Picture
⏻	Monitor: switching on/off

Softkey icon	Function
↑	Selecting the next menu item (sub-menu)
↓	Selecting the previous menu item (sub-menu)
→	Opening the selected sub-menu Going to the next setting
←	Going to the previous setting
—	Decreasing the set value
+	Increasing the set value
✓	Accepting the applied settings and returning to main menu
⮌	Cancelling the applied settings and returning to main menu
×	Exiting OSD menu

When the OSD menu is not activated, you can apply the following settings directly:

Select OSD language

When an OSD menu touch sensor is activated for the first time, the language selection window will appear:

► Press the ↑ or ↓ touch sensor to select the desired language.

► Press the ✓ touch sensor to confirm.

After selecting the OSD language for the first time, you can change it at any time in the OSD.

Activate/deactivate ECO operating mode

The power consumption of the device can be decreased by reducing the brightness of the picture.

► Touch the ECO touch sensor to switch the ECO operating mode on or off.

↳ The message *ECO Mode on* or *ECO Mode off* is displayed.

If the ECO operating mode is activated, the following OSD settings are changed:

Mode	Office
Color	6500 K
Brightness	reduced

After the ECO operating mode is switched off, the brightness previously set by the user is restored.

Selecting the input signal

► Press the INPUT touch sensor to open the *Input select* setting window.

► Press the ↑ or ↓ touch sensor to select the desired input signal for the monitor port.

↳ The following input signals are possible:

- *DisplayPort*
- *Mini DisplayPort*
- *HDMI1*
- *HDMI2*
- *HDMI3*

► Press the ✓ touch sensor to confirm or the ↩ touch sensor to cancel.

This setting window can also be called up when the OSD menu is locked.

Adjusting the brightness

► Press the ☼ touch sensor to open the *Brightness* setting window.
► Press the — or + touch sensor to reduce or increase the brightness of the screen.
► Press the × touch sensor to close the menu.

Locking the OSD menu

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

► Press and hold the MENU touch sensor and the ON/OFF touch sensor simultaneously for several seconds.
↳ The message *OSD locked / unlocked* is displayed.

i

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

Locking the ON/OFF touch sensor

The ON/OFF touch sensor can be locked in order to prevent accidental switching off (e.g. demo mode).

► Press the ECO and INPUT touch sensors at the same time for a few seconds.
↳ The message *Power button locked / unlocked* is displayed.

i

To remove the locking of the ON/OFF touch sensor again, proceed in the same way.

Selecting the application mode

► Press the MODE touch sensor to open the *Mode* setting window.
► Press the ↑ or ↓ touch sensor to select the desired application mode.
↳ The following application modes are possible:
- *D-Mode*
- *sRGB*
- *Office*
- *Photo*
- *Video*

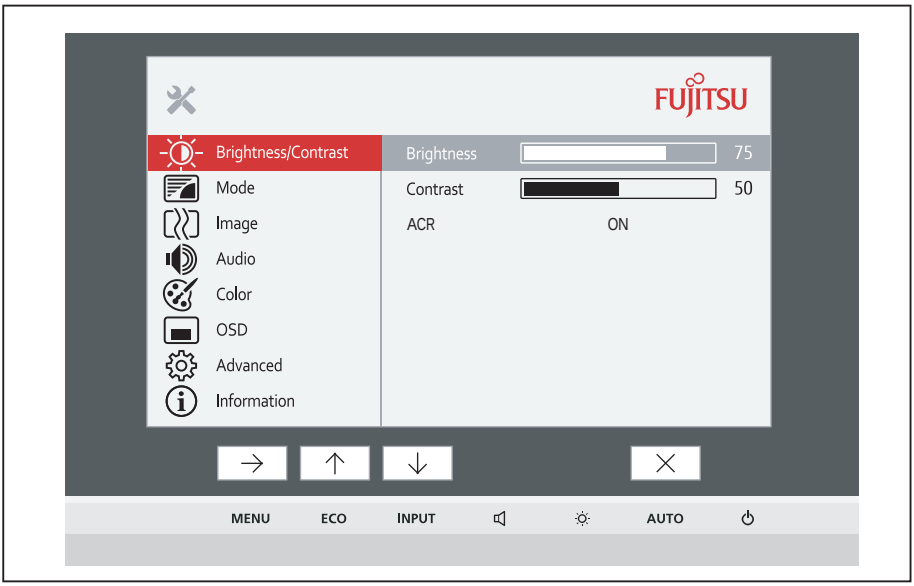
► Press the ✓ touch sensor to confirm or the ↩ touch sensor to cancel.

Changing the monitor settings using the OSD menu

With the touch sensors on the control panel, you can call up and use the integrated OSD (On-Screen Display) menu.

The English menu names are used in the following description (default setting).

The OSD menu of your device may differ in several ways from the functional scope described.



The softkey icons may deviate from those shown here.

► Press the MENU touch sensor to activate the OSD menu.

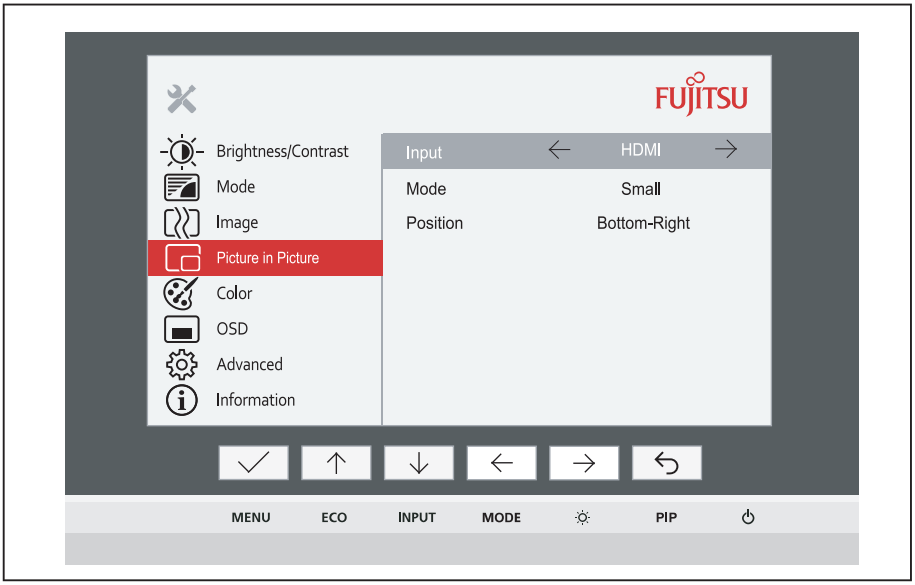
↳ The OSD menu appears, with menu items for the setting functions.
The first menu item (*Brightness/Contrast*) is highlighted and the associated functions are visible in the right-hand menu field.

► Press the ↑ or ↓ touch sensor to highlight another icon (e.g. *Picture in Picture*).

► Press the → touch sensor to select the highlighted icon.

↳ The *Picture in Picture* setting window will be displayed.

► Press the × touch sensor to close the OSD menu.



- ► Press the ↑ or ↓ touch sensor to highlight a different function.
- ► Press the ← or → touch sensor to change the setting.
- ► Press the ✓ touch sensor to save the change or the ↩ touch sensor to quit the function without making a change.

If you wish to change other settings, select the corresponding function from the OSD main menu. All the settings options in the main menu are described below.

Adjusting the brightness and contrast

	Call up the *Brightness/Contrast* setting window
Brightness	Set the brightness of the display With this function you change the brightness of the background lighting.
Contrast	Set the contrast of the display With this function you modify the contrast of bright colour tones.
ACR	Enable/disable dynamic contrast This function improves the contrast by automatically controlling the background lighting in relation to the image being displayed. This setting can only be configured in *Video* application mode.

If the contrast is set too high, bright surfaces can no longer be distinguished from very bright surfaces. If the contrast is set too low, the maximum brightness will not be achieved.

Selecting the application mode

	Call up the *Mode* setting window
D mode	DICOM simulation settings (the settings for Color and ACR are locked: Color = 7500K, ACR = off)
sRGB	Predefined settings for sRGB (reduced brightness)
Office	Office settings (the settings for *Color* and *sharpness* can be adjusted)
Photo	Predefined settings for Photo (*Color*, *Sharpness*, *Saturation*)
Video	Predefined settings for Video (*Color*, *Sharpness*, *Saturation*, *ACR*)

Setting screen display

	Open the *Image* window
Sharpness	Adjust the sharpness of the picture for the *Photo* and *Video* modes.
Saturation	Setting colour saturation This setting only applies for devices with YUV output (e.g. BluRay players).
Hue	Setting the colour tone This setting only applies for devices with YUV output (e.g. BluRay players).
Expansion	Adjust the picture size *Full screen* = selection of full screen mode *Keep aspect* = maximum picture size without distortion (only for PC image) *1:1* = image with no enlargement or distortion (only for PC image)

Picture in Picture

	Switching *Picture in Picture* mode on and off
Input	Selecting the input source for Picture in Picture
Mode	Small, large, left/right, top/bottom
Position	Bottom right, bottom left, top right, top left

Setting colour temperature and colours

	Opening the *Color* setting window
	Selecting the colour temperature (only available in Office setting mode) The "warmth" of the screen colours is set using the colour temperature. The colour temperature is measured in K (= Kelvin). You can choose between *5000 K*, *6500 K*, *7500 K*, *9300 K*, *Native* and *Custom Colour*. You can change the colour ratios of the basic colours (red, green, blue) as required using *Custom Color*. You can use → to select the colour channels. The *6500K* setting is recommended for general Windows applications. In the *Native* and *Custom Color* settings, the full colour space of the LCD panel can be used.

Setting the OSD menu

	Call up the *OSD* window
Language	Selecting the language for the OSD menu With this function you select the language for the OSD menu. The default setting is English.
Timeout	Setting the display duration of the OSD menu With this function you can select a value from 10 to 120 seconds. If the set time expires without a setting being made, the OSD menu is automatically hidden.
Rotation	Adjust the orientation of the OSD menu. This function can be used to turn the OSD menu through 90°. This function makes it easier to read the OSD menu while the pivot function is being used. This setting is available only on monitors that have a manual pivot function.

Advanced setting functions

⚙	Calling up the *Advanced* window
Input select	Select the input signal This function is used to select the input signal (DP or HDMI). This is on condition that the display adapter supports this function.
Overdrive	Activating/deactivating the overdrive function This function can be used to improve the focus in fast moving images. This setting can only be configured in *Video* application mode.
DDC-CI	Activating/deactivating the DDC-CI function DDC-CI (Display Data Channel - Command Interface) Data can be exchanged through the connection between the PC and the display.
Factory recall	Activate the factory settings With this function all settings are reset to the factory settings on reconfirmation. The function is executed using →. The *Auto Processing* message is displayed via a VGA data cable. The language selection menu appears.

Displaying information

ⓘ	Call the *Information* setting window This function displays details such as the model designation, serial number, resolution, H/V frequency and ECO mode.

Notes on ergonomic colour adjustment

If you select colours for the monitor 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

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

Troubleshooting

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 cannot solve the problem, please contact our Service Desk.

Having this problem?	**Check the following points:**
No screen display Power indicator does not light up	► Check whether the power cable of the external power supply is connected correctly. ► Check whether the connecting cable between the external power supply and the monitor is connected correctly. ► Check whether the computer is switched on.
No screen display LEDs do not light up	► Check whether you are using a DP data cable.
No screen display Power indicator is lit	► 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. ► Press any key on the computer keyboard. The computer may be in power saving mode. ► Alter the brightness and/or contrast until you get a picture. ► Check whether you have selected the correct input signal in the OSD menu.
Message: `No Signal`	► Check whether the data cable for the monitor is correctly attached to the monitor port on the computer. ► Check whether the computer is switched on.
Message: `Frequency out of range: ## kHz / ## Hz Please change the display mode to 3840 x 2160 with 60 Hz`	The input signal (horizontal frequency and refresh rate) at the displayed input does not correspond to the technical data for the monitor. ► Adjust the video frequency range using the computer software (see documentation for the computer or display adapter). ► Set a different screen resolution using the computer software (see documentation for the computer or display adapter).
Picture is shaking	► Check whether the data cable for the monitor is correctly attached to the monitor port on the computer. ► Touch the AUTO touch sensor to conduct auto-adjustment of the screen.

Having this problem?	Check the following points:
Picture is wrongly adjusted	► Run the *Factory Recall* function in the OSD menu. The *Auto Processing* message appears.
Picture disturbances (vertical lines)	► Touch the AUTO touch sensor to conduct auto-adjustment of the screen.
The screen becomes darker	The background lighting has a limited lifetime. If your monitor display should become too dark, the background lighting will have to be replaced. ► Contact our Service Desk.

Explanatory information about standard ISO 9241-307

Permanently unlit or lit pixels

Today's production techniques cannot guarantee an absolutely fault-free screen display. Depending on the total number of pixels (resolution), there may be a few constantly lit or unlit pixels or subpixels.

Pixel	A pixel consists of 3 subpixels, normally red, green and blue. A pixel is the smallest element that can be generated by complete functionality of the display.
Subpixel	A subpixel is a separately addressable internal structure within a pixel that enhances the pixel function.

The maximum permitted number of faulty pixels is stipulated in the international standard ISO 9241-307. In accordance with standard ISO 9241-3, LCD monitors by Fujitsu comply with Class II for low resolutions and Class I for resolutions of 1680 x 1050 (1764000 pixel) and higher.

Examples:

A flat-screen monitor with a resolution of 1280 x 1024 has 1280 x 1024 = 1310720 pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 3.9 million subpixels in total. According to ISO 9241-3 (Class II), a maximum of 3 lit and 3 unlit pixels plus 7 lit or 13 unlit subpixels, or a corresponding combination, may be faulty (1 lit subpixel counts as two unlit subpixels).

A flat-screen monitor with a resolution of 2560 x 1440 has 2560 x 1440 = 3686400 pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 11.1 million subpixels in total. According to ISO 9241-3 (Class I), a maximum of 2 lit and 2 unlit pixels plus 9 lit or 18 unlit subpixels, or a corresponding combination, may be faulty (1 lit subpixel counts as two unlit subpixels).

Technical specification

Condensation is not permitted, neither in the rated range of operation nor in the limit range of operation.

Product name		**P27T-7 UHD**
Model name		P27T-7
Dimensions and weight		
Visible diagonals		68.5 cm
Dot pitch		0.2331 mm
Image size	Width	596.7 mm
	Height	335.7 mm
Maximum resolution		3840 x 2160
Dimensions incl. monitor base	Width	646 mm
	Height	417 mm
	Depth	252 mm
Weight (without packaging)		approx. 8.5 kg
Storable display modes		36
Pixel fault classes according to ISO 9241-307	Class	I
Electrical data		
Video	Digital	DP/HDMI with HDCP
Horizontal frequency		15.6 kHz ... 135 kHz (multi-scanning)
Refresh rate		29 Hz ... 76 Hz
Maximum pixel rate		HDMI 1.4: 340 MHz
		HDMI 2.0: 600 MHz
		DP: 720 MHz
Power supply	Power supply unit	Delta/ADP-90MD H, 19 V
Total power consumption	Normal operation	< 45 W
	ECO operating mode	23 W
	Power saving mode	< 0.5 W

Environmental conditions	
Environment class 3K2, DIN IEC 721	
Rated range of operation	15 °C .... 35 °C
Humidity	20 % .... 85 %
Limit range of operation	5 °C .... 35 °C
Humidity	20 % .... 85 %

Preset operating modes

The picture position and size have been set to optimum values at the factory for the operating modes listed above. Depending on the display adapter used, it may be necessary to adjust the display position or size. In this case, you can change and save the settings (see chapter "Changing the monitor settings", Page 19).

For ergonomic reasons, a screen resolution of 3840 x 2160 pixels is recommended. Because of the technology used (active matrix), an LCD screen provides a totally flicker-free picture, even with a refresh rate of 60 Hz.

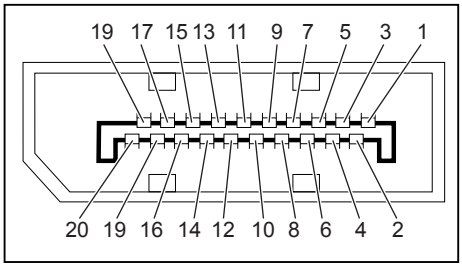
Most frequent operating modes

Horizontal frequency	Refresh rate	Screen resolution
31.5 kHz	70 Hz	720 x 400
31.5 kHz	60 Hz	640 x 480
37.5 kHz	75 Hz	640 x 480
37.9 kHz	60 Hz	800 x 600
46.9 kHz	75 Hz	800 x 600
48.4 kHz	60 Hz	1024 x 768
55.4 kHz	60 Hz	1440 x 900
60.0 kHz	75 Hz	1024 x 768
64.0 kHz	60 Hz	1280 x 1024
65.0 kHz	60 Hz	1680 x 1050
67.5 kHz	30 Hz	3840 x 2160
74.0 kHz	60 Hz	1920 x 1200
80.0 kHz	75 Hz	1280 x 1024
88.7 kHz	60 Hz	2560 x 1440
135 kHz	60 Hz	3840 x 2130 (only DP, HDMI 2.0)

Video/TV operating modes using DisplayPort and HDMI

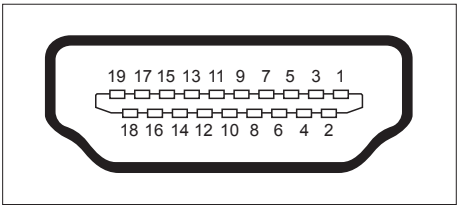
Screen resolution	Refresh rate	Aspect ratio
720 x 480 i	60 Hz	4:3 / 16:9
720 x 480 p	60 Hz	4:3 / 16:9
720 x 576 i	50 Hz	4:3 / 16:9
720 x 576 p	50 Hz	4:3 / 16:9
1280 x 720 p	50 / 60 Hz	16:9
1920 x 1080 i	50 / 60 Hz	16:9
1920 x 1080 p	50 / 60 Hz	16:9
3860 x 2160 p	30 / 60 Hz	16:9

DisplayPort socket



Pin	Meaning
1	Lane 3 (negative)
2	Earth
3	Lane 3 (positive)
4	Lane 2 (negative)
5	Earth
6	Lane 2 (positive)
7	Lane 1 (negative)
8	Earth
9	Lane 1 (positive)
10	Lane 0 (negative)
11	Earth
12	Lane 0 (positive)
13	Connected to earth
14	Connected to earth
15	Auxiliary channel (positive)
16	Earth
17	Auxiliary channel (negative)
18	Hot Plug Detect
19	Return for Power
20	Power for connector (3.3 V 500 mA)

HDMI port



Pin	Meaning
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2–
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1–
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0–
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock–
13	CEC
14	N.C.
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5 V Power
19	Hot plug detect