

# Instructions for Use

## CuratOR<sup>®</sup> Surgical Panel

Digital image and video viewing system

### **Important**

Please read the safety information and all information delivered with the product carefully to familiarize yourself with safe and effective usage.



## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.
 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.
 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.
<b>NOTICE</b>
indicates that material damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Use of EIZO products

 <b>WARNING</b>
EIZO products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by EIZO. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

### Trademarks

All names identified by ® are registered trademarks of their respective owners. Please refer to the trademarks listed in the appendix. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

### Disclaimer of liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

# Table of contents

<b>Legal information</b> .....	<b>2</b>
<b>1 Introduction</b> .....	<b>4</b>
1.1 Contents of this document .....	4
1.2 Intended use .....	4
1.3 User groups .....	4
<b>2 Safety information</b> .....	<b>5</b>
2.1 General safety instructions .....	5
<b>3 Description</b> .....	<b>7</b>
3.1 General information .....	7
3.2 Design.....	8
<b>4 Installation and start-up</b> .....	<b>10</b>
<b>5 Operation</b> .....	<b>11</b>
5.1 Switching on and off .....	11
5.1.1 Switch on .....	11
5.1.2 Shutdown .....	12
5.2 Avoiding image sticking .....	12
5.3 Check for pixel defects .....	13
5.4 Interfaces .....	13
5.5 Switching the LUT.....	13
5.6 Switching video sources .....	14
5.7 VMbasic video management (optional) .....	14
<b>6 Cleaning and Maintenance</b> .....	<b>15</b>
6.1 Cleaning.....	15
6.2 Maintenance .....	16
<b>7 Technical specifications</b> .....	<b>17</b>
7.1 Power supply .....	17
7.2 Mechanical design .....	17
7.3 Climatic conditions.....	17
7.4 Safety regulations .....	17
<b>8 Appendix</b> .....	<b>18</b>
8.1 Information on electromagnetic compatibility (EMC) .....	18
8.2 Markings and symbols .....	23
8.3 Environmental protection .....	24
8.4 Additional devices.....	24
8.5 Contact .....	24
8.6 Trademarks.....	25

# 1 Introduction

## 1.1 Contents of this document

This document explains the functions and proper use of the CuratOR Surgical Panel, which is available in a number of project-specific and standard versions:

All information provided herein applies to standard conditions, and may differ depending on the operating room and device configuration.

You are additionally advised that the contents of this document are neither part of a previous or existing agreement, commitment, or legal relationship, nor does it modify such.

Note
<ul style="list-style-type: none"><li>• The current electronic version of instructions for use can be found on the EIZO GmbH home page <a href="http://www.eizo-or.com">www.eizo-or.com</a>.</li><li>• Information regarding installation and start-up of the CuratOR Surgical Panel will be provided to you by your EIZO contact.</li></ul>



## 1.2 Intended use

CuratOR Surgical Panel are digital image and video viewing systems and are intended for use in the OR or other medical environments.

CuratOR Surgical Panel are merely intended for displaying patient-related data, images and videos.

CuratOR Surgical Panel serve as central control platforms for video distribution, recording and buffer storage of patient-specific data, images and videos.

CuratOR Surgical Panel serve as the physical interface between the operating room and the IT infrastructure of a hospital.

## 1.3 User groups

### User

In the following, healthcare personnel such as surgeons or medical technicians are referred to as the "user".

### Service / service personnel

"Service" or "Service personnel" identifies authorized personnel with knowledge of medical imaging technology, local standards for image quality requirements, and safety of medical products, for example a hospital technician or manufacturer of medical devices.

### Cleaning staff

"Cleaning staff" refers to personnel responsible for cleaning medical devices.

## 2 Safety information

### 2.1 General safety instructions

Careful operation is a prerequisite for correct and safe operation of the CuratOR Surgical Panel.

The devices may only be used for applications for which they are commonly used.

For safety reasons, the following precautions must be observed:

 <b>DANGER</b>
<p><b>Please observe all warning information present on the device and in the instructions for use</b></p> <p>There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur.</p> <p><b>Observe the safety requirements of EN 60601-1 (IEC 60601-1)</b></p> <p>To prevent injury to patients and users, connect the electrical system in accordance with the safety requirements of EN 60601-1 (IEC 60601-1) for "Safety requirements for medical electrical systems".</p> <p><b>Connecting the protective ground conductor</b></p> <p>If the device is connected to the line power, the device must be connected to a protective ground conductor. This is the only way to ensure that the touch leakage current in a first fault event does not exceed 500 µA.</p> <p>The interruption of the device's protective conductor is considered a first fault event in accordance with EN 60601-1.</p> <p>Use the following measures to ensure that the leakage currents remain below the specified limits:</p> <ul style="list-style-type: none"><li>• Separators for signal input unit or signal output unit.</li><li>• Use of a safety isolating transformer.</li><li>• Use of the additional protective ground terminal.</li></ul>

 <b>DANGER</b>
<p><b>No unauthorized opening of the device / no unauthorized service or maintenance work</b></p> <p>The device may only be opened by service personnel. Likewise, service or maintenance work may only be carried out by service personnel. There is a risk of electric shock.</p> <p>No liability is accepted for death and injury to persons or damage to property resulting from work carried out by non-qualified personnel.</p> <p><b>Do not touch components in the device</b></p> <p>If the device is connected to the line power, components in the device are subjected to high voltages. Touching the components may be fatal.</p> <p><b>No contact between device and patients</b></p> <p>The device is not suitable for direct contact with a patient. The device and patient must never be touched simultaneously. Otherwise there is a danger to life and limb.</p> <p><b>Do not insert any objects into the housing</b></p> <p>Objects inserted into the housing may result in an electric shock or damage to the device.</p> <p><b>Avoid penetration of liquid</b></p> <p>Liquids seeping into the device may result in electric shock or device failure.</p>

**CAUTION**

**Care of device / cleaning agents**

- Remove water drops immediately.
- Only clean the surfaces using the cleaning agents referred to in the Instructions for Use.

**What to do if the device is faulty**

If the following conditions exist, the device must be disconnected from line power and checked by qualified personnel:

- Damage to the device.
- After liquid seeps into the device.
- If the device does not function or if a fault cannot be eliminated using the Instructions for Use.
- If the device smells of burning or makes peculiar noises.

**Be aware of the monitors aging**

Note that monitors can fail as a result of aging, and that image properties such as brightness, contrast, and color value can change.

## 3 Description

### 3.1 General information

Each CuratOR Surgical Panel is adapted to the specific requirements of the operating room (OR). Consequently, the housing is available in a wide variety of sizes and colors, with the inner workings protected by an anti-reflective single-layer safety glass pane (ESG). The front can be fully disinfected and should be incorporated into the cleaning plan for the OR. See also [Cleaning \[▶ 15\]](#).

The inner workings of the Surgical Panel, comprising a monitor system and IT and video management components.

By default, the Surgical Panel comes with a Microsoft Windows operating system. Follow the information in the corresponding documentation.

If you are using EIZO Caliop software, please follow the information in the software documentation.

Input devices include a medical silicone keypad with or without touch pad, which is fit into a purpose-built holder, and a medical silicone mouse. The tilt of the keypad holder and special mouse pad ensure ergonomic working conditions.

Various video and USB inputs as well as suitable accessories can be connected on the front in addition to the main switch and system switch. An additional standard button on the front is used to switch the LUT.

VMBasic, available as an option, offers additional video management functions that can be operated using buttons on the front of the Surgical Panel.

### Standard versions of the CuratOR Surgical Panel

Standard version	Description
SP1-24 SP1-24T	Nurse Station with 24" FHD panel. Nurse Station with 24" FHD Touchscreen.
SP1-324K SP1-324KT	Viewing Station with 32" 4K Panel. Viewing Station with 32" 4K Touchscreen.
SP1-434K SP1-434KT	Viewing Station with 43" 4K Panel. Viewing Station with 43" 4K Touchscreen.
SP1-494K SP1-494KT	Viewing Station with 49" 4K Panel. Viewing Station with 49" 4K Touchscreen.
SP1-554K SP1-554KT	Viewing Station with 55" 4K Panel. Viewing Station with 55" 4K Touchscreen.
SP1-654K SP1-654KT	Viewing Station with 65" 4K Panel. Viewing Station with 65" 4K Touchscreen.
SP2-24-24 SP2-24T-24 SP2-24-24T SP2-24T-24T	HIS/PACS Station with two 24" FHD Panels. KIS/PACS Station with 24" FHD Touchscreen and 24" FHD Panel. KIS/PACS-Station with 24" FHD Panel and 24" FHD Touchscreen. KIS/PACS-Station with two 24" FHD touchscreens.
SP2-24-494K SP2-24T-494K SP2-24-494KT SP2-24T-494KT	KIS/PACS Station with 24" FHD a 49" 4K Panel. KIS/PACS Station with 24" FHD Touchscreen and 49" 4K Panel. KIS/PACS Station with 24" FHD Panel and 49" 4K Touchscreen. KIS/PACS Station with 24" FHD Touchscreen and 49" 4K Touchscreen.
SP2-24-554K SP2-24T-554K SP2-24-554KT SP2-24T-554KT	HIS/PACS - Station with 24" FHD and 55" 4K Panel. HIS/PACS - Station with 24" FHD Touchscreen and 55" 4K Panel. HIS/PACS - Station with 24" FHD Panel and 55" 4K Touchscreen. HIS/PACS - Station with 24" FHD Touchscreen and 55" 4K Touchscreen.

## 3.2 Design

The CuratOR Surgical Panel has the following components as standard:

- Monitor panel
- PC module
- Keyboard holder with or without mouse pad and palm rest
- Silicone keyboard and silicone mouse
- USB ports
- Main switch and system switch
- Input and output interfaces
- Button for switching the LUT

The following components can also be included as options:

- Button for switching the connected video signals (VMbasic)
- Input and output interfaces
- Blanking plate for upgrade of interfaces

### **Examples**



Fig.: CuratOR Surgical Panel SP2-24-494K / SP2-24T-494K



Fig.: CuratOR Surgical Panel SP1-494K

## 4 Installation and start-up

The CuratOR Surgical Panel is suited to surface-mounted or flush-mounted installation depending on the individual design.

In addition to mounting on the wall or in a niche, installation includes connection to power and the IT network.

Start-up includes the first intended use of the CuratOR Surgical Panel.

 <b>CAUTION</b>
<b>Installation and start-up</b> <ul style="list-style-type: none"><li>• The CuratOR Surgical Panel may only be installed and put into operation by EIZO employees or by service personnel.</li><li>• The CuratOR Surgical Panel must be installed and operated in accordance with all applicable national directives and regulations currently in effect.</li></ul>
<b>Note</b>
Information regarding installation and start-up of the CuratOR Surgical Panel will be provided to you by your EIZO contact.

## 5 Operation

### 5.1 Switching on and off

#### 5.1.1 Switch on

1. Use the switch labeled "Power Switch" to turn on the system.



⇒ Operating voltage is turned on.

2. Wait until the border of the switch labeled "PC on/off" illuminates green.

⇒ The system is ready for operation after approx. 5 seconds.



3. Press the green-bordered switch labeled "PC on/off".

⇒ The IT system boots.

4. Wait until the IT system has fully booted.

⇒ The system is fully operational after approx. 10 seconds.

### 5.1.2 Shutdown

#### NOTICE

##### Note the sequence during shutdown

The blue-bordered switch labeled “Power Switch” may not be turned off until the border of the switch labeled “PC on/off” is off.

Of necessity, any other sequence will cause the IT components to be abruptly disconnected from the power supply, which can result in hardware damage such as hard drive failure.

#### Prerequisite

All work in progress with the system is ended, so that it can be shut down and, for example, important data is not lost.

#### Procedure

1. To shut down the IT system press the green-bordered switch labeled “PC on/off”.



2. Wait until the green border of the switch labeled “PC on/off” goes off.  
⇒ Make sure the system has shut down properly.
3. Use the blue-bordered switch labeled “Power Switch” to turn off the system.



4. All components are disconnected from the operating voltage.

## 5.2 Avoiding image sticking

Image sticking may occur with LCD monitors. Image sticking is an effect whereby a faint image of the previous screen contents can be seen after the display contents have changed.

The following measures can reduce or prevent image sticking:

- Use a screen saver with regularly changing images
- Switch off the device when it is no longer needed.

## 5.3 Check for pixel defects

Pixel defects (small bright or dark dots) can occur in LCD monitors. During the manufacturing process, all monitors are checked for the permitted number of defective pixels.

Defective pixels cannot be corrected.

## 5.4 Interfaces

### USB

Two USB ports are integrated in the front of the CuratOR Surgical Panel as standard. They are intended for connecting a mouse and a USB data medium.

<b>Note</b>
<b>Data medium</b> Use trusted data media only. Observe the facility's applicable security guidelines.

### Interface extension (video)

The front can be equipped with optional interfaces. The configuration must be coordinated with EIZO on a project-by-project basis.

<b>NOTICE</b>
<b>Connecting devices</b> <ul style="list-style-type: none"><li>• During connection of devices, make sure the socket will not be damaged when inserting the connector.</li><li>• All devices connected to the Surgical Panel have to meet the respective national safety standards.</li></ul>

## 5.5 Switching the LUT

The Surgical Panel is equipped with LUT switching as standard. This allows the display of medical images and videos to be optimized.

Pressing the button selects one of the predefined LUT.



Fig.: Button for switching the LUT

## 5.6 Switching video sources

The Surgical Panel is equipped with video source switching as standard.

The video signals connected internally or to the front can be switched through for display by pressing a button.



Fig.: Button for switching the video sources

## 5.7 VMbasic video management (optional)

The modular design of the Surgical Panel enables project-specific configuration. As a result, each Surgical Panel can be equipped with the optional VMbasic video management function.

VMbasic offers additional video management functions that can be operated via buttons on the front of the Surgical Panel. VMbasic can be used to switch layouts and activate the windows within the selected layout.



Fig.: Button for switching the layouts



Fig.: Button for switching the active window within the selected layout

## 6 Cleaning and Maintenance

### 6.1 Cleaning

External cleaning of the protective front pane and housing should be incorporated into the OR cleaning plan.

<b>NOTICE</b>
<p><b>Cleaning / Disinfection</b></p> <ul style="list-style-type: none"> <li>• Clean/disinfect the surfaces of the device with a soft cloth and, if necessary, with a recommended cleaning agent/disinfectant.</li> <li>• Damp cleaning/disinfection may only be performed by wiping with a damp cloth. When doing so, make sure that no moisture enters the device at the operating elements or at any other point.</li> </ul>

#### Recommended cleaning agents and disinfectants

Agent class	Tested cleaning agents and disinfectants
Alkylamines	Incidin® PLUS, 8 vol. %
Quarternary compounds	Incidur®-Spray, undiluted
Pyridine derivatives	Octenisept®
Guanidine derivatives	Lysoformin® 2 Vol. % Biguanid® Fläche N undiluted
Chlorine derivatives	Terralin® 0.5 Vol. % Natriumhypochlorit (bleach) 10%
Peroxide compounds	Hydrogen peroxide 3%
Organic acids	Citric acid 1% (pH 2.3)
Phenol derivatives	Helipur®, undiluted
Alcohols	Isopropyl alcohol 70 %
Benzine	Petroleum benzine boiling range 100-120°C
Common household dishwashing liquids - detergent substances	Commercial detergent 1 vol. %
Aldehyde	Melsitt®, 10 vol. %
Desinfecting agents	Morning Mist (1:64) SURFANIOS® Premium, 0.25% Taski® Sprint DS 5001 0.5% 0.5% Chlorhexidine in 70% isopropyl alcohol
Water	Tap water Distilled water
Cleaning agent	Ammonium solution 1,65 vol. %
Alkaline solution	Limewash, saturated Ca(OH) <sub>2</sub> -solution

### Prohibited cleaning agents and disinfectants

The following cleaning agents and disinfectants can bleach the paint after a longer period of application:

Agent class	Tested cleaning agents and disinfectants
Light gasoline	Petroleum spirit Petroleum ether

## 6.2 Maintenance

 <b>WARNING</b>
<p><b>Maintenance</b></p> <ul style="list-style-type: none"> <li>• Maintenance may only be performed by EIZO or service personnel.</li> <li>• Maintenance may not take place during device use or ongoing treatment.</li> </ul>
<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Perform maintenance and inspection at least once per year, including the protective conductor test.</li> <li>• Perform a visual inspection every four weeks, for example for paint chips.</li> <li>• Individual service and maintenance contracts can be negotiated. For detailed information, please contact your EIZO partner. <a href="http://www.eizo-or.com/de/eizo-gmbh/kontakt/">www.eizo-or.com/de/eizo-gmbh/kontakt/</a></li> </ul>

## 7 Technical specifications

<b>Note</b>
<b>Technical specifications / product information</b> <ul style="list-style-type: none"> <li>Specifications regarding the CuratOR Surgical Panel such as data on the housing, panel, as well as dimensions of the standard versions can be found on our website.</li> <li>The product brochures with additional information can also be found on our website <a href="http://www.eizo-or.com">www.eizo-or.com</a>.</li> </ul>

### 7.1 Power supply

Line voltage	100 V to 240 V
Line frequency	50 Hz to 60 Hz
Current consumption	4 A to 2 A

### 7.2 Mechanical design

Housing components	Powder coated metal housing and protective glass pane
Ventilation openings	No fan, thermal output through housing

### 7.3 Climatic conditions

<b>In operation</b>	
Temperature range	+5 °C to +35 °C ambient temperature
Temperature gradient	Max. 10 K/h, no condensation
Humidity	10 to 85 %, non-condensing, at 25 °C
Air pressure	700 to 1060 hPa
<b>During transport and storage (in original packaging)</b>	
Temperature range	-20 °C to +60 °C ambient temperature
Temperature gradient	Max. 20 K/h, no condensation
Humidity	10 to 85 %, non-condensing, at 25 °C
Air pressure	200 to 1060 hPa

### 7.4 Safety regulations

<b>Safety regulations</b>	
Safety standards	EN IEC 62368-1 EN IEC 60601-1
Protection class	Protection class I

## 8 Appendix

### 8.1 Information on electromagnetic compatibility (EMC)

CuratOR Surgical Panel is a digital image and video viewing system and is intended for use in the OR or other medical environments.

<b>NOTICE</b>
<p>Special EMC provisions are required for use of the CuratOR Surgical Panel. Installation, assembly, and operation must take place in compliance with the following instructions:</p> <ul style="list-style-type: none"> <li>• Do not position any portable or mobile RF communication devices in the immediate vicinity of the CuratOR Surgical Panel. Otherwise, problem-free function of the device cannot be guaranteed.</li> <li>• The CuratOR Surgical Panel should not be positioned or operated in the immediate vicinity of other devices. If devices have to be operated in the immediate vicinity of one another, the Surgical Panel must be monitored to ensure proper operation for the defined configuration.</li> <li>• Operators connecting additional devices to the signal input or output in order to configure a medical system are responsible for ensuring that applicable national laws are complied with.</li> </ul>

<b>Electromagnetic radiation</b>		
<p>The CuratOR Surgical Panel is intended for use in the electromagnetic environments noted below. Operators and users of the CuratOR Surgical Panel have to ensure that the device is used in such an environment.</p>		
<b>Radiation test</b>	<b>Conformity</b>	<b>Information regarding the electromagnetic environment</b>
RF radiation CISPR11/EN 55011	Group 1	The CuratOR Surgical Panel uses RF radiation for internal operation only. For this reason, the RF radiation is very low and is therefore unlikely that the device will cause interference in electronic devices in the immediate vicinity.
RF radiation CISPR11/EN 55011 GB9254	Class B	The CuratOR Surgical Panel is approved for use in a number of environments. This includes residential areas and areas connected directly to the public low-voltage grid, such as private homes.
Harmonic currents IEC/EN 61000-3-2 GB17625.1	Class D	
Voltage fluctuations / flicker IEC/EN 61000-3-3	fulfilled	

## 8.1 Information on electromagnetic compatibility (EMC)

<b>Electromagnetic interference immunity</b>			
The CuratOR Surgical Panel was tested with the following compliance levels in accordance with the test requirements for professional healthcare facilities, as established in IEC/EN 60601-1-2. Operators and users of the device have to ensure that the device is used in such an environment.			
<b>Interference immunity test</b>	<b>Measurement level</b>	<b>Compliance level</b>	<b>Information regarding the electromagnetic environment</b>
Electrostatic discharge (ESD) IEC/EN 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	As described in the CuratOR Surgical Panel service manual, the device is suited to surface mounting or flush mounting depending on the individual version.  In addition to mounting on the wall or in a niche, installation includes connection to power and the IT network inside of the device.
Fast transient electric disturbances (bursts) IEC/EN 61000-4-4	±2 kV power lines ±1 kV input / output lines	±3 kV power lines ±2 kV input / output lines	The power supply quality has to correspond to that of typical industrial environments or hospitals.
Surge voltage IEC/EN 61000-4-5	±1 kV line against line ±2 kV line against ground	±2 kV line against line ±4 kV line against ground	The power supply quality has to correspond to that of typical industrial environments or hospitals.
Voltage dips, brief interruptions, and fluctuations of power supply lines IEC/EN 61000-4-11	0 % $V_T$ for 0.5 periods and 1 period 70 % $V_T$ for 25 / 30 periods at 50 / 60 Hz 0 % $V_T$ for 250 / 300 periods at 50 / 60Hz	0 % $V_T$ for 0.5 periods and 1 period 70 % $V_T$ for 25 periods at 50 Hz 0 % $V_T$ for 250 periods at 50 Hz	The power supply quality has to correspond to that of typical industrial environments or hospitals.  If the device has to continue operation even if the power supply is interrupted, it is recommended to connect the device to an uninterruptible power supply or battery.
Magnetic fields with energy technology frequencies IEC/EN 61000-4-8	30 A/m (50 / 60 Hz)	30 A/m (50 Hz)	The magnetic fields with energy technology frequencies must be in an area that is representative of a typical location in a typical industrial environment or hospitals.  This product should be used at least 15 cm away from the source of magnetic fields with energy technology frequencies.
<b>Note:</b> $V_T$ is the alternating current voltage before application of the measurement level.			

## Appendix

### 8.1 Information on electromagnetic compatibility (EMC)

Electromagnetic interference immunity			
<p>The CuratOR Surgical Panel was tested with the following compliance levels in accordance with the test requirements for professional healthcare facilities, as established in IEC/EN 60601-1-2. Operators and users of the device have to ensure that the device is used in such an environment.</p>			
Interference immunity test	Measurement level	Compliance level	Information regarding the electromagnetic environment
Line-based disturbances caused by RF fields IEC/EN 61000-4-6	3 V <sub>rms</sub> 150 kHz to 80 MHz	6 V <sub>rms</sub>	<p>Portable and mobile RF communications devices may only be operated in the vicinity of the device and its components (including cables) when in compliance with the recommended minimum distance. It is determined using the formula for calculating the frequency of the transmitter.</p> <p>Recommended minimum distance  <math>d = 0.6 \sqrt{P}</math>, 150 kHz to 80 MHz</p>
	6 V <sub>rms</sub> ISM bands between 150 kHz and 80 MHz	6 V <sub>rms</sub>	
Electromagnetic RF fields IEC/EN 61000-4-3	3 V/m 80 MHz to 2.7 GHz	10 V/m	<p><math>d = 2 \sqrt{P}</math>, ISM bands between 150 kHz and 80 MHz</p> <p><math>d = 0.35 \sqrt{P}</math>, 80 MHz to 800 MHz</p> <p><math>d = 0.7 \sqrt{P}</math>, 800 MHz to 2.7 GHz</p> <p>In this case, "P" stands for the measured maximum nominal output power in watts (W) of the transmitter recommended by the transmitter manufacturer, and "d" for the recommended minimum distance in meters (m).</p> <p>The field strengths of fixed transmitters according to electromagnetic location measurement<sup>a)</sup> have to be less than the compliance level in each individual frequency range.</p> <p>Interference can occur when used in the vicinity of devices identified with the following symbol.</p> 
<p><b>Note:</b> The higher frequency range applies at 80 MHz and 800 MHz.</p> <p><b>Note:</b> Guidelines with respect to line-based interference due to RF fields or electromagnetic RF fields may not apply in all situations. Absorption and reflection by structures, objects, and people impact the propagation of electromagnetic waves. .</p>			
<p><sup>a)</sup> The field strengths of fixed transmitters, for example the base station for cordless and mobile telephones, radio, land mobile radio, ham radio, and television cannot be determined precisely in advance. To evaluate the electromagnetic environment using fixed transmitters, an electromagnetic location measurement should be included. If the measured field strength in the environment where the device is used exceeds the applicable RF compliance level, observe the device to ensure its proper operation. If improper operation is observed, in some circumstances additional measures may be necessary, such as reorienting or repositioning the device.</p>			

<b>Recommended minimum distance between portable or mobile RF communications devices and the CuratOR Surgical Panel</b>			
The CuratOR Surgical Panel is intended for use in an electromagnetic environment in which interference due to electromagnetic radiation is controlled. For other portable and mobile RF communication devices (transmitters), the recommended minimum distance between the portable and mobile RF communication devices (transmitters) and the device applies as listed below. This is based on the maximum output power of the communication device.			
<b>Maximum nominal output power of the transmitter (W)</b>	<b>Recommended minimum distance according to the frequency of the transmitter (m)</b>		
	150 kHz to 80 MHz $d = 0.6 \sqrt{P}$	80 MHz to 800 MHz $d = 0.35 \sqrt{P}$	800 MHz to 2.7 GHz $d = 0.7 \sqrt{P}$
0.01	0.06	0.04	0.07
0.1	0.19	0.11	0.22
1	0.60	0.35	0.70
10	1.90	1.11	2.21
100	6.00	3.50	7.00
For transmitters whose maximum nominal output power is not shown above, the recommended minimum distance "d" in meters (m) can be determined using the formula for calculating the frequency of the transmitter. "P" here stands for the transmitter's maximum measured nominal output power in watts (W), as recommended by the transmitter's manufacturer.			
<b>Note:</b> For 80 MHz and 800 MHz, the recommended minimum distance for the higher frequency range applies.			
<b>Note:</b> This information may not be applicable in all situations. Absorption and reflection by structures, objects, and people impact the propagation of electromagnetic waves.			

Appendix

8.1 Information on electromagnetic compatibility (EMC)

<b>Recommended minimum distance between portable or mobile RF communications devices and the CuratOR Surgical Panel</b>							
<p>The CuratOR Surgical Panel is intended for use in an electromagnetic environment in which interference due to electromagnetic radiation is controlled. The operator or user of the device can help prevent electromagnetic interference by maintaining the recommended minimum distance between portable and mobile RF communications devices (transmitters) and the device.</p> <p>The interference immunity regarding adjacent fields has been confirmed for the following wireless RF communications devices:</p>							
<b>Test frequency (MHz)</b>	<b>Bandwidth<sup>a)</sup> (MHz)</b>	<b>Service<sup>a)</sup></b>	<b>Modulation<sup>b)</sup></b>	<b>Maximum power (W)</b>	<b>Minimum distance (m)</b>	<b>Measurement level (V/m)</b>	<b>Compliance level (V/m)</b>
385	380 - 390	TETRA 400	Pulse modulation <sup>b)</sup> 18 Hz	1.8	0.3	27	27
450	430 - 470	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	2	0.3	28	28
710 745 780	704 - 787	LTE band 13, 17	Pulse modulation <sup>b)</sup> 217 Hz	0.2	0.3	9	9
810 870 930	800 - 960	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE band 5	Pulse modulation <sup>b)</sup> 18 Hz	2	0.3	28	28
1720 1845 1970	1700 - 1990	GSM 1800; CDMA 1900 GSM 1900 DECT LTE band 1, 3, 4, 25 UMTS	Pulse modulation <sup>b)</sup> 217 Hz	2	0.3	28	28
2450	2400 - 2570	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE band 7	Pulse modulation <sup>b)</sup> 217 Hz	2	0.3	28	28
5240 5500 5785	5100 - 5800	WLAN 802.11 a/n	Pulse modulation <sup>b)</sup> 217 Hz	0.2	0.3	9	9
<p><sup>a)</sup> For some radio services, only the frequencies for the radio contact from the mobile communications device to the base station (uplink) is included in the table.</p> <p><sup>b)</sup> The carrier is modulated by a square wave with 50% duty cycle.</p>							

## 8.2 Markings and symbols

Marking / symbol	Meaning
	Caution symbol
	CE marking (EU conformity mark)
	UKCA marking (UK conformity mark)
	Legal manufacturer
	WEEE marking: Product must be disposed of separately; materials may be recycled
	Fuse
	Protective ground
	Equipotential bonding connection
	USB port
	Main switch
	System switch
	Dangerous voltage
	Read the operating instructions
	Button symbol for switching the LUT
	Button symbol for switching the video sources
	Button symbol for switching the layouts
	Button symbol for switching the active window within the selected layout

### **8.3 Environmental protection**

Please observe all local requirements and laws pertaining to the disposal of devices.

### **8.4 Additional devices**

Devices connected to the video inputs and USB ports of the CuratOR Surgical Panel have to meet the relevant national safety standards. The operator alone is responsible for the safe combination and use with other devices.

Additional accessories may be installed only in consultation with EIZO GmbH.

### **8.5 Contact**

#### **Support during installation and for technical questions**

[www.eizo-or.com](http://www.eizo-or.com)

## 8.6 Trademarks

The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing, LLC in the United States and other countries.

The DisplayPort Compliance Logo and VESA are registered trademarks of the Video Electronics Standards Association.

The SuperSpeed USB Trident Logo  is a registered trademark of USB Implementers Forum, Inc.

The USB Power Delivery Trident Logos ™ are trademarks of USB Implementers Forum, Inc.

USB Type-C, USB-C are registered trademarks of USB Implementers Forum, Inc.

DICOM is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.

Kensington and Microsaver are registered trademarks of ACCO Brands Corporation.

Thunderbolt is a trademark of Intel Corporation in the United States and/or other countries.

Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries.

Adobe is a registered trademark of Adobe Inc. in the United States and other countries.

Apple, macOS, Mac OS, OS X, macOS Sierra, Macintosh and ColorSync are registered trademarks of Apple Inc.

ENERGY STAR is a registered trademark of the United States Environmental Protection Agency in the United States and other countries.

EIZO, the EIZO Logo, ColorEdge, CuratOR, DuraVision, FlexScan, FORIS, RadiCS, RadiForce, RadiNET, Raptor and ScreenManager are registered trademarks of EIZO Corporation in Japan and other countries.

ColorEdge Tablet Controller, ColorNavigator, EcoView NET, EIZO EasyPIX, EIZO Monitor Configurator, EIZO ScreenSlicer, G-Ignition, i·Sound, Quick Color Match, RadiLight, Re/Vue, SafeGuard, Screen Administrator, Screen InStyle, ScreenCleaner, SwitchLink, and UniColor Pro are trademarks of EIZO Corporation.

All other company names, product names, and logos are trademarks or registered trademarks of their respective owners.



**EIZO GmbH**  
Carl-Benz-Straße 3  
76761 Rülzheim  
Germany

Copyright © 2022 EIZO GmbH. All rights reserved.



Instructions for Use, 11/2022  
CuratOR Surgical Panel  
1086062-001