Instruction for Use • 05/2013

Large Monitor Manager LMM0801

display

SOLUTIONS

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Large Monitor Manager LMM0801

Instruction for Use

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.

> ⚠ **DANGER**
>
> indicates that death or severe personal injury **will** result if proper precautions are not taken.

> ⚠ **WARNING**
>
> indicates that death or severe personal injury **may** result if proper precautions are not taken.

> ⚠ **CAUTION**
>
> indicates that minor personal injury can result if proper precautions are not taken.

> **NOTICE**
>
> indicates that an unintended result or situation can occur if the relevant information is not taken into account.

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.

Proper use of EIZO products

Note the following:

> ⚠ **WARNING**
>
> 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

Introduction

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1.1 Contents of this document

This document explains the operation and appropriate use of the LMM0801 Large Monitor Manager.

The contents of this document are neither part of a previous or existing agreement, commitment or legal relationship, nor does it modify such.

1.2 LMM0801 - Overview of instruction for use

This instruction for use is organized into two main sections:

* The first section describes commissioning of the Large Monitor Manager in the chapters "Application planning", "Installation" and "Connection" from page 17 onwards.

* The second section describes the configuration and operation of the Large Monitor Manager in chapter "Configuration and operation" from page 28 onwards.

Safety notes

<div style="text-align: right; font-size: 3em;">2</div>

2.1 General safety notes

Correct transport, professional storage, installation and assembly, as well as careful operation and maintenance, are required to ensure that the devices operate safely and without faults.

For safety reasons, the following precautions must be observed:

	⚠ DANGER
	Please observe all warning information present on the device and in the Instruction Manual There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur. **Observe the safety requirements of EN 60601-1 (IEC 60601-1)** 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". **Connecting the protective earth conductor** If the device is connected to the supply mains, the device must be connected to a protective earth conductor. Only in this manner is it guaranteed that the touch leakage current in the first fault event does not exceed 500 µA. The protective earth conductor of the device is considered as a first fault event. Use the following measures to ensure that the leakage currents remain below the specified limits: • Separators for signal input or signal output unit • Use of a safety isolating transformer • Use of the additional protective earth terminal Monitor support: The arm of the monitor support must have its own protective earth conductor. This protective earth conductor guarantees, together with the protective earth conductor of the monitor, that the housing leakage current always remains less than 500 µA, even in the first fault event. **No unauthorized opening of the device / no unauthorized service or maintenance work** The device may only be opened by qualified personnel. Likewise, service or maintenance work may only be carried out by qualified personnel. There is a risk of electric shock. No liability is accepted for death and injury to persons or damage to property resulting from work carried out by non-qualified personnel. **Do not touch components in the device** If the device is connected to the supply mains, components in the device are subjected to high voltages. Touching the components may be fatal. **No contact between device and patients** The device is not suitable for direct contact with patients. Device and patient must never be touched simultaneously. Otherwise there is a danger to life and limb.

	⚠ DANGER
	Please observe all warning information present on the device and in the Instruction Manual
	There is a danger to life if warnings are not obeyed. Severe personal injury or damage to property may occur.
	Never use defective power cables
	If a damaged or unsuitable power cable is used, it could result in a fire or electric shock. Only use power cables with PE contacts approved by the manufacturer.
	Disconnect the power cable correctly
	When disconnecting the power cable, always do so by holding the plug. Ensure that your hands are dry. There is a risk of electric shock.
	Do not insert any objects into the housing
	Objects inserted into the housing may result in an electric shock or damage to the device.
	Do not place any objects on top of the device
	If you place objects on top of the device, this can lead to overheating and fire.
	Avoid penetration of liquid
	If liquid penetrates the device, this may result in an electric shock or failure of the device.

	⚠️CAUTION
	Extensive damage to property may result if the device is not connected correctly
	That is why you should observe the warning information:
	Connection must be carried out by specialists
	Please ensure that all steps are taken to avoid injuries or incorrect diagnoses. • Only use the video cables specified by the manufacturer for the connection. • Only use power cables with PE contacts. • Only use power outlets with PE contacts. • Do not connect too many devices to a power outlet or extension cable. • Observe the information provided by the respective manufacturer. • If required by the application or local regulations, QA software must be used for quality control and documentation.
	Connection in the USA and Canada
	Molded power supply plugs must comply with the requirements for "hospital grade attachments" CSA Std. C22.2 No. 21 and UL 498.
	Connection in China
	Only use power cables approved for China. These power cables are identified by the labels "CCC" or "CQC".
	Observe the country-specific regulations
	Observe all regulations of the country in which the device is used.

	NOTICE

	Extensive damage to property may result if the device is not connected correctly
	
	That is why you should observe the warning information:
	• Desktop installation:
	
	    Place the device on a solid and level surface. The attached stand, as well as the installation surface, must be suitable for the weight of the device.
	• For mounting in a wall or ceiling support:
	
	    The support must be suitable for the weight of the device.
	• For installation in a mounting frame:
	
	    Observe the installation sequence, and provide ventilation for the device.
	
	Provide adequate air circulation
	
	When installing the device, ensure that there is adequate air circulation for operation. The permissible ambient temperature range must not be violated. Otherwise the device could be destroyed by overheating.
	
	Avoid sources of heat
	
	Do not install the device in the vicinity of sources of heat, e.g. radiators, heating appliances or other devices which can generate or emit heat.
	
	Do not subject the device to jolting or shocks
	
	The device contains sensitive electronic components which could be damaged by jolting or shocks.
	
	Only switch on a cold device following adaptation to room temperature
	
	If the device is brought into a room with a higher or rising temperature, condensed water is formed in and on the device. Do not switch on the device until the condensed water has evaporated. Otherwise the device could be damaged.

	NOTICE
	Extensive damage to property may result if the device is not connected correctly
	That is why you should observe the warning information:
	Transportation only in original packaging
	Use the original packaging for transportation, and transport in the correct shipping position. Be sure to particularly protect the LCD module of monitors from shocks.
	Care of device / cleaning agents • Remove water drops immediately; extended contact with water discolors the surface. • Only clean the surfaces using the cleaning agents referred to in the Instruction Manual. • Monitor: The screen is extremely sensitive to mechanical damage. Absolutely avoid scratches, shocks, etc.
	What to do if the device is faulty
	If the following conditions exist, the device must be disconnected from the supply mains and checked by qualified personnel: • Damage to the plug or power cable. • Following the entry of liquid into the device. • If the device has been exposed to moisture. • If the device does not function or if a fault cannot be eliminated using the Instruction Manual. • If the device has been dropped and/or the housing damaged. • If the device smells of burning or makes peculiar noises.
	Be aware of the aging of monitors
	Note that monitors can fail as a result of aging, and that image properties such as brightness, contrast or color value can change.
	Do not touch the monitor screen
	Due to mechanical pressure or electrostatic discharging, touching the screen can result in brief disturbances to the image.

2.2   Product-specific safety notes

For your protection, observe the following safety notes when setting up your equipment:

- Follow all cautions and instructions marked on the equipment.

- Ensure that the voltage and frequency of your power source match the voltage and frequency stated on the device's rating plate.

- Never push objects through openings in the device.

Observe the instructions regarding the battery

The motherboard of the Large Monitor Manager has a lithium battery. This may only be replaced by the manufacturer.

The provisions of the Battery Law (BattG) must be observed when disposing of the device.

Description

<div style="text-align:right">

3

</div>

3.1 Scope of delivery

> **Note**
>
> **Packaging**
>
> Keep the original packaging for subsequent transportation.

LMM0801 variants

Product	Order number	Description
LMM0801-L	6GF6030-1AA00	Only supports the output resolution 2560 x 1600 (WQXGA)
LMM0801-FHD	6GF6030-1AA01	Only supports the output resolution 1920 x 1080 (FullHD)
LMM0801-WQHD	6GF6030-1AA02	Only supports the output resolution 2560 x 1440 (WQHD)
LMM0801-WQHD J	6GF6030-1AA03	Only supports the output resolution 2560 x 1440 (WQHD)

Check the scope of delivery for correctness and completeness.

The scope of delivery includes:

- Large Monitor Manager
- CD with instruction for use and test patterns
- Power cable for US, EU, CN, JP
- 6 adapter cables for HMDI to DVI
- 4 adhesive feet for the enclosure
- 2 mounting brackets incl. screws

3.2 Correct usage

NOTICE
Use of the device
The device may only be used by trained and qualified personnel.

Up to twelve different video sources can be connected to the LMM0801. Eight of these video sources can be displayed on one monitor simultaneously.

A keyboard and mouse can also be connected. If the video sources are PCs, they can be linked in the LMM0801 in such a way that operation with keyboard and mouse is possible.

Insofar as they are not expressly stated in these instructions, all changes to the device are the sole responsibility of the user.

3.3 Special features

The LMM0801 has the following features which permit a wide range of applications:

Flexible arrangement of different video sources on one monitor

The LMM0801 allows up to eight different video sources to be displayed on one monitor simultaneously. This means that the workflow can be simplified in the control room, for example, and several work stations can be combined into one.

Keyboard-mouse switch for operating the video sources

Up to eight different video source computers can be directly operated using one keyboard and mouse.

User-defined layouts

The user can configure the required layouts on the LMM0801 and then select one to suit the application case.

Display of analog and digital signals

The inputs of the Large Monitor Manager can process both analog and digital image signals in resolutions from VGA (640 x 480 at 60 Hz) to Full HD (1920 x 1200 at 60 Hz) as far as QXGA (2048 x 1536 at 30 Hz).

Rapid availability of video sources
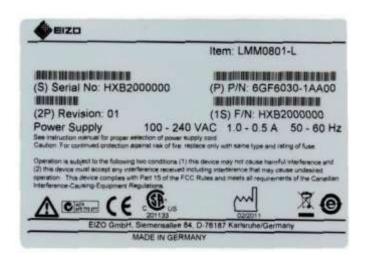
The image signals are displayed on the screen within a few seconds of switching on the Large Monitor Manager. This meets the requirement for immediate readiness following a power failure.

Designed for the medical environment

The special requirements of the medical environment have been taken into account. An ambient temperature of up to 45 °C is admissible and the electrical safety has been developed and tested in accordance with IEC 60601. Electronic components have been selected that will remain available over the long term.

3.4 Layout of rating plate, additional plate and packaging label

Rating plate

Additional plate

Packaging label

Application planning

<div style="text-align: right; font-size: 3em;">4</div>

4.1 Installation location

Note

Protect the Large Monitor Manager LMM0801 from:
- Dirt deposits
- Ingress of dust
- Moisture

Provide adequate ventilation

Ventilation slots are provided on the front and back of the device for the circulation of air. These must not be covered. The distance at the rear must be at least 10 cm from a wall or 15 cm from other units.

⚠ **CAUTION**

Overheating of the device
- Do not block or cover the openings of your product.
- Never place the device near a radiator.

Failure to follow these guidelines can cause overheating and affect the reliability of your product.

When installing the device in a rack, observe the permissible ambient temperature range

The unit must not be operated outside the permissible ambient temperature range.

Change of environment

If brought from the cold into a warm environment, water may condense inside the device. The device should not be switched on until all the condensed water has evaporated, including that inside the unit. This may take several hours, depending on the conditions.

Installation 5

5.1 Notes for positioning and mounting the device

NOTICE
Alterations to the device
Do not make mechanical or electrical modifications to the device. EIZO GmbH accepts no liability if modifications are made to the device.

Positioning the device

The Large Monitor Manager can be used as a desktop device. It can be mounted either vertically or horizontally. Make sure in both cases that the mounting surface is hard and horizontal. 4 adhesive feet are included in the scope of delivery. These can be attached to the bottom of the device.

NOTICE
Vertical mounting of the device
If the device is to be mounted vertically, the following points must always be observed:
1. Secure the device using the supplied mounting brackets. The screws for the mounting brackets are included in the scope of delivery. In the Chapter "Dimension drawings" (page 82) you can find the dimension drawings of the device with the mounting brackets.
2. Mount the device so that the power supply connection is at the top. If this is not observed, proper ventilation is not assured. In this case, EIZO will not accept liability.

Installation in a rack

The Large Monitor Manager can also be mounted in a rack. It is best to use the mounting bracket supplied. If this is not possible, observe the following:

Fastening screw specifications	
Number	4
Thread	M6
Strength	8.8
Insertion depth	Min. 7 mm/max. 9 mm
Torque	3 Nm (maximum)

NOTICE
If excessive tightening torque is applied during installation of the Large Monitor Manager, the mounting surface may be damaged. The correct tightening torque depends on the material of the type of fixing used. Use the correct tightening torque for the material of the fixing.

⚠ CAUTION
Installing the device
• For safety reasons, equipment must always be loaded from the bottom up.
• Install the equipment that will be mounted in the lowest part of the rack first, then the next higher systems, etc.
• To prevent extreme operating temperatures within the rack, ensure that the maximum temperature does not exceed the rated ambient temperature of the product.
• To prevent extreme operating temperatures due to reduced airflow, you will have to provide adequate cooling of the equipment.
• The device must be installed so that the power switch, the plug connector, and the terminal panel are accessible to the user. If this is not the case, an additional element must be provided which allows access. The installation must comply with the relevant safety standards.

Connection 6

6.1 Safety information for connection

> ⚠ **CAUTION**
>
> **Connecting to the power supply**
>
> The product is designed for a power supply with a grounded neutral conductor (with DC devices: grounded return conductor).
>
> • To reduce the risk of electric shock, never plug the device into any other type of power supply.
>
> • Contact your facility manager or a qualified electrician if you are not sure what type of power supply is connected to your building.

> ⚠ **CAUTION**
>
> **Power supply cord and extension cable**
>
> • Not all power supply cords have the same rated values.
>
> Do not use the power supply cord provided with your equipment for any other product or purpose.
>
> • Do not use household extension cords to connect the device.
>
> Household extension cords do not have overload protection and are therefore not suitable for use with computer systems.

> ⚠ **CAUTION**
>
> **Shielding measures**
>
> Observe all shielding measures described in the applicable national EMC Directive. If these guidelines are not observed, malfunction of the device may result.

Note

Cable installation
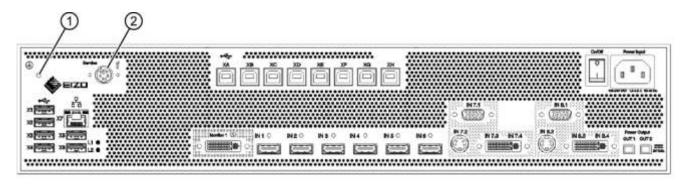
- Only shielded cables are permitted for all signal connections.
- Screw tight or lock all connectors, depending on the fixture present on the connector.
- Do not lay signal cables in the same cable duct as power supply cables.
- The device must not share a power supply circuit with motors or valves (interference!).
- Externally connected cables can represent a trip hazard. Make sure that all incoming cables are safely routed.

⚠ CAUTION

Disconnection from the power supply

Always move the power switch on the device to the "OFF" position before you disconnect it from the supply. Otherwise, the device could be damaged.

6.2   Connection panel

Connections	Name	Function
①	PE connection	Additional protective conductor connection
②	PS2 socket (6x Mini-DIN connector)	For service purposes (at EIZO)
X1 to X6	USB Type A: Downstream (6x)	For external USB devices such as keyboard, mouse, etc. with a maximum connection value of 5 V and 500 mA
X7	Network connection (RJ45)	Connection to the network (for remote PC)
L1, L2	LEDs	Indicate the status of the device
XA to XH	USB Type B: Upstream (8x)	For controlling PCs which are connected as video sources
Monitor 1	Dual-link DVI-I output	For connecting the output monitor
IN1 to IN6	DVI inputs (HDMI sockets which process video signals only)	For connecting digital video sources Use the supplied DVI-HDMI adapter
IN7.1, IN8.1	VGA input (Sub-D, 15 pins)	For connecting analog video sources with VGA connector
IN7.2, IN8.2	S-Video input (mini-DIN)	For connecting analog video sources with VGA connector
IN7.3, IN7.4, IN8.3, IN8.4	DVI-D or DVI-A input	Digital or analog DVI input. Depending on the connected DVI cable and the video source
Power Output, OUT1, OUT2	HIROSE RP34L output	For the connection of external loads with a maximum connection value of 5 V and 500 mA
Power Input	IEC 60320 C14 input	Input power supply
On/Off	Power switch	Starting up/shutting down the device

6.3 Procedure for connection

Note

Picture quality, interference immunity and emitted interference

Use high-quality cables. The picture quality, noise immunity and radiated interference of the entire system depend on the cable quality and length.

Connection of video source

- Connect the monitor with a dual-link DVI cable at the "Monitor 1" connection.

  The monitor must support the right resolution to correctly display video sources.

  – If you use the LMM0801-L, the monitor must support the resolution 2560x1600@60 Hz (4MP).

  – If you use the LMM0801-FHD, you will need a monitor that supports the resolution 1920x1080@60 Hz (FullHD).

  – For the LMM0801-WQHD, you require a monitor that supports a resolution of 2560x1440@60Hz.

- If required, connect a keyboard and mouse to connection panels X1 to X6.

● Connect the video source according to the following table:

PC video output	Large Monitor Manager video inputs (IN1 to IN8.4)
DVI-I	• If you assign the connection panels IN1 to IN6, use the HDMI - DVI adapter cable provided in the scope of delivery. • If you assign the connection panels IN7.3 and/or IN8.3, use a commercially available DVI-I cable.
DVI-A	• If you assign the connection panels IN7.4 and/or IN8.4, use a commercially available DVI-A cable. • If you assign the connection panels IN7.1 and/or IN8.1, use a commercially available DVI-VGA adapter on the PC.
VGA	• If you assign the connection panels IN7.1 and/or IN8.1, use a commercially available VGA cable. • If you assign the connection panels IN7.4 and/or IN8.4, use a commercially available VGA-DVI adapter on the Large Monitor Manager.
S-Video	• If you assign the connection panels IN7.2 and/or IN8.2, use a commercially available S-Video cable.

USB connection

Before an video source can be operated using the Large Monitor Manager, the computer for the video source must be connected to the Large Monitor Manager with a USB cable.

● Use a commercially available USB cable with USB-A and USB-B connectors.

● Connect the USB-A connector with a USB port on the computer for the video source, and the USB-B connector with one of the connection panels XA to XH.

● Note the video input and the associated USB-B port.

You will need to refer to this note to connect the video source to the Large Monitor Manager. Refer to the chapters "Configuration of digital video inputs" (page 54) and "Configuration of analog video inputs" (page 56).

Connecting the network cable

If the Large Monitor Manager is to be operated over a network, a network connection must be established between socket X7 of the Large Monitor Manager and the configuration computer (e.g. PC).

● Use commercially available network components for this purpose, such as network cables, network hubs and switches.

● If you have questions about network installation, please contact your local network administrator.

Power supply connection

⚠ DANGER
Only connect device to a supply mains with a PE conductor
NOTICE: To avoid risk of electric shock, this equipment must only be connected to supply mains with protective earth conductor.

NOTICE
Risk of damage to the device
• To connect the device, use only the supplied power cable or device connection cables with PE conductors and IEC plugs conforming to DIN 49 547, IEC 60320 (max. length 3 m, cable e.g. H05VV-F 3x1.0 mm²). The cable must adhere to the local safety regulations applicable in the respective country.
• Device fuses may only be replaced by authorized repair centers. The failure of a device fuse may result in a defect in the device. Do not use any other fuse.

Note

Installation in the USA and Canada

Molded power supply plugs must comply with the requirements for "hospital grade attachments" CSA Std. C22.2 No. 21 and UL 498.

Note

Installation in China

Power cables, power supply plugs and IEC plugs must be CCC-certified.

Connecting the power supply

Connect the power supply cable for your country (provided in the scope of delivery) to the connection panel "Power Input".

Before connecting, check the permissible power supply range.

1. Switch the device on.

2. The device is ready for use if LEDs L1 and L2 light up green.

The LMM0801 must be configured the first time it is used. Please refer to the chapter "Configuration and operation" (page 28).

6.4 Input signals

Distribution of the input signals

- The inputs IN1 to IN6 are digital inputs (HDMI) with a maximum bandwidth of 165 MHz (for example: 1600 x 1200 at 60 Hz, 1920 x 1200 at 60 Hz reduced blanking or 2048 x 1536 at 30 Hz).

- The inputs IN7.1 and IN8.1 are analog inputs (VGA) with a maximum bandwidth of 170 MHz (for example: 1600 x 1200 at 60 Hz or 1920 x 1200 at 60 Hz reduced blanking).

- The inputs IN7.2 and IN8.2 are analog S-Video inputs. All NTSC and PAL standards are supported.

- The inputs IN7.3 and IN8.3 are digital inputs (DVI-I) with a maximum bandwidth of 165 MHz (for example: 1600 x 1200 at 60 Hz or 1920 x 1200 at 60 Hz reduced blanking).

- The inputs IN7.4 and IN8.4 are analog inputs (DVI-A) with a maximum bandwidth of 170 MHz (for example: 1600 x 1200 at 60 Hz or 1920 x 1200 at 60 Hz reduced blanking).

Maximum number of pixels

- The maximum number of horizontal pixels at inputs IN1 to IN6 is 2048.

- The maximum number of horizontal pixels at inputs IN7.x to IN8.x is 1920.

Note

Restrictions to be observed for video inputs

The video inputs IN7.1, IN7.2, IN7.3 and IN7.4 as well as the video inputs IN8.1, IN8.2, IN8.3 and IN8.4 are each combined in a group.

- A video signal can be connected to each of these video inputs.

- However, only one video signal from each group can be displayed in a layout.

  If an attempt is made to display two video signals from the same group in the same layout, the channel with the highest number is hidden and the following symbol is displayed:

Image refresh rates

Any image refresh rates can be used for inputs.

EIZO recommends a refresh rate of 60 Hz, because the video output signal on the Large Monitor Manager has a refresh rate of 60 Hz.

Video bandwidth

> **Note**
>
> **Adaptation of video bandwidth**
>
> If the Large Monitor Manager detects that the maximum video bandwidth has been exceeded, the connected video signals will be automatically reduced. The video bandwidth of the video signal with the largest scaling factor is reduced first. The smallest permissible value for the scaling factor is 1.

Configuration and operation 7

When you switch on the Large Monitor Manager for the first time, you must configure the device:

The following two methods are available, depending on the application:

- Configuration via a network, known as remote operation:
  - Connect the Large Monitor Manager and a suitable configuration computer using the normal network components.
  - The configuration computer must have a browser installed.

    Recommended browsers are Microsoft Internet Explorer Version 9 or higher, or Mozilla Firefox Version 10 or higher.

- Configuration via keyboard and mouse
  - Connect a keyboard and mouse for this purpose.

7.1 Definition of terms

Before you configure the Large Monitor Manager, you should know the following terms:

Video input	Existing connection on the connection panel of the Large Monitor Manager (IN1 – IN8.4).
Video source	The source of an video signal, e.g. a PC. The video source must be connected to a video input of the Large Monitor Manager.
Video signal	The video signal contains the picture information and is sent, for example, from the graphics card of the video source to the video input of the Large Monitor Manager.
USB input	Existing connection on the connection panel of the Large Monitor Manager (XA-XH and X1-X6).

Sidebar	The sidebars contain the user menus of the Large Monitor Manager. They are located on the outer edges of the screen (i.e. top, bottom, left and right) and open as soon as you move the mouse pointer to the outer edges of the screen. When you move the mouse pointer away, the respective sidebar disappears.
	During operation via remote access, the sidebars can be opened using icons in the respective edges of the display area. Move the mouse pointer onto the respective icon for this purpose.
	Please note that some information is only visible to administrators or users with the appropriate rights. Some sidebars are therefore not visible unless a password is entered.
Permanent sidebar	Sidebars can be permanently displayed by fixing the pin.
Tooltip	A tooltip provides information about a video signal. It appears above each video input in the sidebar "Input configuration". Position the mouse pointer over the video input to display it. For additional information, see chapter Sidebar "Input configuration" (page 53).
Training	A layout describes the arrangement (position and size) of windows on the screen.
Window	A window is an area in a layout with a predefined position and size. The video source instance is displayed within a window. The contents of a window can be dragged-and-dropped into a different window.
Active window	A window is active when the connected video source is directly operated.
	The mouse pointer can then only be moved within the window limits. You are now in "Focused Mode".
	An active window is normally indicated by a green frame.
Inactive window	A window is inactive when only the video content of the linked video source is displayed. Control and operation by means of the keyboard and mouse is not possible in an inactive window.
Extended window	When several video outputs from one video source are connected to the Large Monitor Manager, they can be displayed in different windows. If one of these windows is activated, the other windows for this video source are activated automatically. You are now in "Focused Mode". It is possible to move the mouse pointer beyond the boundaries of the window.
	An active window is normally indicated by a green frame.
	Observe the information in the chapter "Video input configuration for using an extended window" (page 60).
Instance	Defined presentation of a video signal of an video source within a window of a layout. For each video input of the Large Monitor Manager, multiple instances can be displayed with different presentations, e.g. 1:1, with a border, or as a cropping area. Each instance can be assigned to one or more windows and layouts.

Overlay Mode	The Large Monitor Manager can be operated with a connected mouse and keyboard in "Overlay Mode".
Focused Mode (operating mode)	"Focused Mode" is accessed by double-clicking a window in the layout. The video source can then be operated using the mouse or keyboard or both. The mouse pointer can now only be moved within the window limits.
	To return to "Overlay mode", press the key combination "ALT+space bar".
	The key combination for leaving an active window can be changed in the chapter "System settings" (page 42).
Remote access	Operation of the Large Monitor Manager via remote control.

7.2 Basic icons

General icon	
	Click the relevant icon to move through the different menus. **Note** In menus that contain the buttons shown, scrolling is also possible. This applies both to operation on the device itself and remote operation. For scrolling, one of the buttons of the menu or another object of the menu, such as an instance, must have been selected.
	Sidebars can be permanently displayed by fixing the pin. During the layout configuration separated windows can be also be pinned and are not changeable.
	A dialog box or menu can be moved by clicking this icon and holding the mouse button down.

Mouse pointer icon	
	The video source that is displayed in a window can be controlled using the mouse and keyboard. By double-clicking with the left mouse button, the window is activated and the video source can be operated. Click on **Alt** **Space** to leave an active window. **Alt** **Space** is the factory setting for the key combination which can be changed by the administrator.
	The video source cannot be operated using the mouse or keyboard.
	Using "drag-and-drop", a window in the current layout can be exchanged with a different window.
	For selecting parameters in different menus.
	Please wait. The Large Monitor Manager is busy processing the selected function.

Title bar icon	
1:1	The video source is presented with the aspect ratio 1:1.
	The video source can be operated using the mouse.
	The video source can be operated using the keyboard.
	The video source can be operated using the keyboard and mouse.
	The video source is displayed with a lower refresh rate.
	Display with graph optimized scaling.

Instance icon	
	The instance was deactivated in the dialog box "Instance configuration of a video input".
	The instance is active, but there is no video signal.
	This symblol is only visible during remote control. The instance is active, but no miniature thumbnail was created.
	The instance has been deleted.
	It is only possible to show 8 video sources at the same time in one layout. If a layout has more than 8 windows, the symbol will be shown in all windows where an image cannot be displayed.
	In the dialog box "Instance configuration of a video input", the miniature thumbnail of the instance has not yet been configured or deleted.
	The miniature thumbnail of the instance cannot be displayed.

7.3   Procedure for setting up the Large Monitor Manager

The Large Monitor Manager can be operated in two different ways:

● Locally on the screen of the Large Monitor Manager using mouse and keyboard.

● Remotely via an operator station with a network browser. Remote access is possible either over LAN or WLAN. Please refer to chapter "Operation via remote access" (page 34).

Operation is very similar in both cases; any variations are described in the respective chapters.

To set up the Large Monitor Manager, proceed as follows:

Note

Detailed information on connection can be found in the chapter "Procedure for connection" (page 23).

---

1. Connect the monitor

2. Connect the keyboard and mouse
   Optional: Connect a configuration computer via the network.

3. Connect the video source

4. Connect the USB

5. Connect the network cable if remote operation is planned or if network resources need to be accessed.

6. Connect the power supply and switch on the device

7. Log on as administrator (chapter Sidebar "Base settings" abbreviated (page 37))

8. Make the basic settings, e.g. language, standard layout, network configuration

9. Carry out the input configuration (section "USB connection" in chapter "Procedure for connection" (page 23) and chapter "Sidebar "Input configuration"" (page 53)).

10. Create and configure instances (chapter "Creating and configuring instances" (page 61)).

11. Select a suitable layout and edit it if necessary, or create a new layout (chapter "Sidebar "Layout"" (page 67)).

12. Assign instances to the windows of the selected layout, and save the configured layout (chapter Sidebar "Instance" (page 68)).

13. If necessary, steps 11 and 12 can be repeated.

14. If several layouts have been configured, select the layout to be displayed as default after each switch-on of the Large Monitor Manager. The default layout is marked with an asterisk ⭐ in the sidebar "Layout" (chapter "Sidebar "Layout"" (page 67)).

    Note: The default layout is displayed after switch-on or within 10 seconds of voltage recovery following a power failure.

15. Log off as administrator (chapter Sidebar "Base settings" abbreviated (page 37)).

7.4 Operation via remote access

NOTICE
To avoid operating conflicts, the large Monitor manager should be operated either locally or remotely. EIZO recommends that you decide on one mode of operation.

Several settings must be made to establish remote access for the first time.

If the large Monotor Manager should be controlled via an existing network, please follow these steps:

Settings of TCP/IP protocol

1. Display the properties of the Internet protocol (TCP/IP) on the computer under network connections/local network.

2. Check that the general settings for IP address and DNS server are set to "Obtain automatically".

3. Confirm with "OK" and close the network settings dialog.

Settings of the browser

1. In the network settings for the browser, set "No proxy".

2. Confirm and close the browser settings.

Settings on the Large Monitor Manager

1. Log on as administrator and enable the setting for DHCP in the right sidebar under network settings (please refer to chapter "Setting the network connection" on page 45).

2. Confirm with "OK" and close the network settings dialog.

3. Now the DHCP server assigns an IP adress for the Large Monitor Manager.

4. Click the button to open the window containing general system information.

5. Note down the automatically generated IP address of the Large Monitor Manager. The default IP address is 169.254.213.144.

Start the remote access

1. Enter the command "IP/config" in the address line of the browser:

2. The screen of the Large Monitor Manager is now visible and can be operated.

3. Log on as administrator and perform the nesseccary settings.

<u>If the large Monotor Manager should be controlled locally, please follow these steps:</u>

Settings of TCP/IP protocol

1. Display the properties of the Internet protocol (TCP/IP) on the computer under network connections/local network.

2. Under the tab "Alternative configuration", set "User configured" and the following data:

   - IP: 169.254.213.96 (the address must lie in the address range 169.254.213.xxx, but it must not collide with other addresses, such as that of the Large Monitor Manager (169.254.213.144).

   - Subnet: 255.255.0.0

3. Confirm with "OK" and close the network settings dialog.

Settings of the browser

1. In the network settings for the browser, set "No proxy".

2. Confirm and close the browser settings.

Start the remote access

1. Enter the command "169.254.213.144/config" in the address line of the browser:

2. The screen of the Large Monitor Manager is now visible and can be operated.

3. Log on as administrator and perform the nesseccary settings.
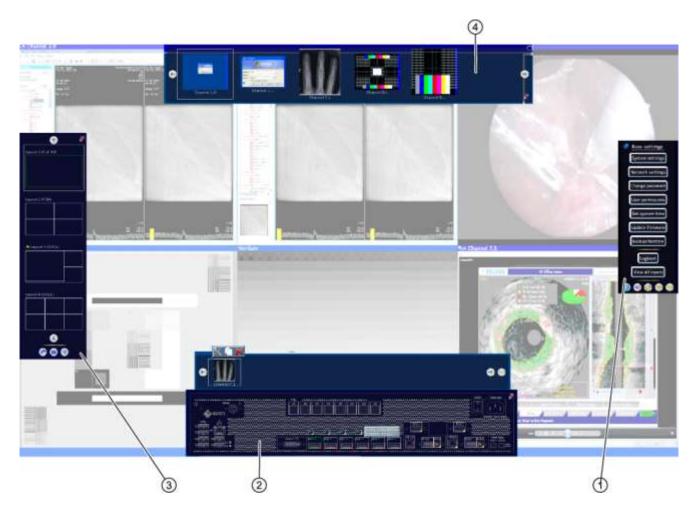

Note

During remote operation, please note that the sidebars are opened using the icons displayed at the edges.

The sidebars look slightly different for remote and local access, but they function in exactly the same manner.

For remote operation, the windows are identified by the associated thumbnail image; live images are not transferred.
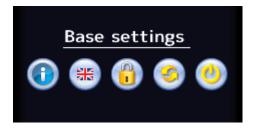
Some settings can only be checked by inspecting the changes made on the original image. This is particularly important with the function "Graph optimized scaling".

7.5 Overview of the sidebars

①	Sidebar "Base settings" complete
②	Sidebar "Input configuration"
③	Sidebar "Layout"
④	Sidebar "Instances"

7.6 Sidebar "Base settings" (abbreviated)

Note

For remote operation, the base settings are always shown in full, and elements that cannot be operated are displayed in gray.

The "Default User" role is always active following start-up of the Large Monitor Manager. As "Default User", you can only see the abbreviated sidebar "Base settings".

The sidebar opens as soon as you move the mouse to the right-hand edge of the screen.

The sidebar "Base settings" (abbreviated) can be used to perform the following functions:

● Call up general system information

● Change the language setting

● Log on as "Administrator" or "Default User with Extended Rights"

● Reboot and shutdown the Large Monitor Manager.

7.6.1 Calling up system information

To open the window containing general system information, click the button in the "Base settings" sidebar.

Device Information	Information about the hardware and software version of the Large Monitor Manager.
Monitor 1	Information about the connected monitor. The data is monitor-specific
Network	Information about the current network settings of the Large Monitor Manager.
	The MAC address of the network adapter and the IP addresses of the Large Monitor Manager are specified.
	• The delauft IP address of the Large Monitor Manager is 169.254.213.144. It cannot be changed.
	• The other IP address is either automatically assigned by the DHCP server or specified by the administrator. For information on this, see the chapter "Setting the network connection ", page 45.
	Default setting: IP address 169.254.213.144
USB board	Information about the hardware/firmware of the USB board.
Multiplexer	Information about the version of the firmware for inputs IN7.1 to IN8.4.
FPGA	Information about the version of the FPGA.

7.6.2 Changing the language setting

The following languages are available:

- German

- English

- French

- Japanese

Default language is English.

To change the language setting, click the button for the set language in the "Base settings" sidebar. Click it repeatedly until the required language is displayed.

Note

Whenever the Large Monitor Manager starts up, the default language is displayed. To change the default language, you must change the language in the "system settings" dialog box as an administrator (see chapter "System settings page 42).

7.6.3 Logging on and off

The "default user" role is always active after start-up of the Large Monitor Manager.

To log on with "Advanced" or "Service" role proceed as follows:

1. Click on . The "log on" dialog opens.

2. To log on as administrator, choose by clicking the button the user "Service" and enter the password "super".

3. To log on as default user with extended rights, choose by clicking the button the user "Advanced" and enter the password "plus".

To activate the role "Default User" again, click .

Note

It is possible to change both passwords. To do so you have to log on with the respective user ID (administrator or default user with extended rights). Please refer to chapter "

Change password" on page 47.
You can reset all passwords by using the master password. This can be created from the individual MAC address of the Large Monitor Manager.

Click on and enter the master password.

The master password can be generated and provided on request by EIZO GmbH.

7.6.4   Reboot

To reboot the Large Monitor Manager, click the button in the "Base settings" sidebar.

The dialog window for rebooting opens.

Note

The administrator can assign if a user is able to reboot the Large Monitor Manager. If the appropriated right is not allocated the button is disabled.

Please refer to chapter "User permissions" on page 47.

7.6.5   Shutdown

To shutdown the Large Monitor Manager, click the button in the "Base settings" sidebar.

The dialog window for shutdown opens.

Note

The administrator can assign if a user is able to shutdown the Large Monitor Manager.

If the appropriate right is not allocated the button is disabled.

Please refer to chapter "User permissions" on page 47.

Note

After shutting down the device, you must wait at least 15 seconds before you can switch the device on again.

7.7 Sidebar "Base settings" (complete)

Note

You must be logged on as administrator to access the sidebar "Base settings" (complete).

In the "Base settings" (complete) sidebar, you can make basic settings, such as common appearance, font color, network settings and perform a firmware update.

To open the sidebar "Base settings" (complete), move the mouse pointer to the right-hand edge of the screen.

7.7.1 System settings

If you click on the button "system settings" the following dialog box will appear:

You can make the following settings:

Setting	Description
System	**Watchdog enabled** With this setting, internal monitoring of the Large Monitor Manager is activated. In the event of a system logjam, a reboot is activated automatically and the system is returned to the preset, ready-to-operate state.
Localization settings	**Language** The language of the dialog windows and the menus can be set here. Click on ⬅ or ➡ to make the setting. Language selection: German, English, French, or Japanese *Default setting: English* **Keyboard layout** The keyboard layout can be set here. Click on ⬅ or ➡ to make the setting. Keyboard layout: QWERTY (US keyboard), QWERTZ (German keyboard), or AZERTY (French keyboard) *Default setting: QWERTY (US)*
Common appearance	**Font color** Click on the color field to change the font color of the dialog windows and the menus. *Default setting: white*
	Screen background color This color will be seen on the screen as long as no instances are displayed in the window. Click on the color box to change the color. *Default setting: black*
	Selection color The currently selected video input is displayed in the sidebar "Input configuration" in this color. The currently selected layout is displayed in the sidebar "Layout" in the same color. Click on the color field to change the color. *Default setting: green*
	Double click (ms) The speed for a double click can be set here. *Default setting: 500 ms*

Setting	Description
Active window	**Border color** The border color of an active window can be defined here. *Default setting: green*
	Window exit key(s) *Proceed as follows:* 1. Double-click a window in the layout using the left mouse button to operate an video source directly. The mouse pointer can now only be moved within the window limits. You are in "Focused Mode". 2. To return to "Overlay mode", use the "Key(s) to exit the active window". The default setting is: Alt Space **Change shortcut key** *Proceed as follows:* 1. In the "Base settings" sidebar, click Alt Space in the "System settings" menu. The menu opens. 2. Click on Delete Key(s) to erase the current shortcut key. 3. Press the keys for the new shortcut on the keyboard. This defines the new shortcut key. EIZO recommends that no more than three keys are defined, because these have to be pressed simultaneously to exit the active window. Keys must always be defined for exiting the active window. Otherwise the focus is "trapped" in an active window. **Note** When a mouse is connected, you can exit an active window by holding down the left and center mouse buttons for approximately 2 seconds. This function cannot be changed, and is available in addition to the defined shortcut key.

7.7.2   Setting the network connection

To set the network connection, click the "Network settings" button.

The "Network settings" dialog box appears.

You can make the following network settings:

Setting	Description

Network settings for client (Large Monitor Manager)	**DHCP**
	
	DHCP (Dynamic Host Configuration Protocol) allows a network configuration to be assigned to clients through a server.
	
	If DHCP is used, the automatically assigned IP address can be viewed under "General system information" 🔵.
	
	Default setting: "Use DHCP" is set
	
	"Use DHCP" is set
	• IP address and net mask are assigned automatically and cannot be changed.
	• Hostname and Domain can be assigned here.
	• Gateway and DNS server are assigned automatically and cannot be changed.
	• MTU value is assigned automatically and cannot be changed.
	
	"Use DHCP" is not set
	• IP address and net mask can be assigned here.
	  Please take into account the existing network environment.
	• Hostname and Domain can be assigned here.
	• Gateway and DNS can be assigned here.
	• MTU value
	  MTU (Maximum transmission unit) specifies the maximum size of the data packets which can be sent in the network.
	  Default setting: 1500
	  Default setting: IP address 169.254.213.144

Server	To perform a firmware update or to store configuration data on a server, you must define here which server the Large Monitor Manager should access (chapter "Connection (page 50)).

7.7.3   Change password

For the Large Monitor Manager two passwords are assigned as default. For administrator the password "super". For user with extended rights the password "plus". If you want to change one of these passwords you have either log on as administrator or as user with extended rights. Please refer to chapter "Logging on and off" on page 39.

It is only possible to change the password for the user who is logged on.

To create a new password click "Change password" button. The "Change password" dialog box appears.

Note

You may not use special characters in the password. This can cause problems.

7.7.4   User permissions

The Large Monitor Manager has a concept for rights and roles.

The following roles are available:

- Default user
- Default user with extended rights (Advanced)
- Administrator (Service)

Following start-up of the Large Monitor Managers, you are always logged on as default user.

Note

Additional roles cannot be created.

Following rights are available for the roles "Default user", "Default user with extended rights" and "Administator".

		Role		
		Default user	Default user with extended rights	Administrator
Rights	Show iput configuration bar	-	✓	✓
	Show source instance bar	-	✓	✓
	Configure the unputs	-	-	✓
	Swap source instances in layout	✓	✓	✓
	Add source instances to layouts	-	✓	✓
	Edit source instances	-	-	✓
	Activate layouts	✓	✓	✓
	Edit layouts	-	✓	✓
	Save layout	-	✓	✓
	Save default layout	-	-	✓
	Edit system settings	-	-	✓
	Change network configuration	-	-	✓
	Change system time	-	-	✓
	Backup, restore data, reset to factory defaults	-	-	✓
	Change the GUI langugage	✓	✓	✓
	Configure outputs	-	-	✓
	View info	✓	✓	✓
	Shutdown and restart	✓	✓	✓
	Update firmware	-	-	✓
	Toggle watchdog	-	-	✓
	Change password	-	✓	✓
	View all inputs	-	✓	✓
	Change user rights	-	-	✓

The administrator has all rights and can assign the rights for the two existing roles as necessary.

⚠ CAUTION
Administration and configuration rights
Administration and configuration activities should not be performed during medical procedures. Such actions can present a risk to patients as important images may no longer be displayed.

7.7.5 Setting the system time

To set the system time, click the "Set system time" button.

The "Set system time" dialog box appears.

With NTP server

When the Large Monitor Manager is operated in a network that uses an NTP server as the time basis, the system time can be synchronized with the server as follows.

1. Activate the option "Use NTP Server".

2. Enter the server address in the field "NTP Server".

Without NTP server

If an NTP server is not being used, you can set the system time as follows:

1. Use ⬆ and ⬇ to change the date and time in steps until they show the required values.

2. Click "OK"

3. For the change to take effect, you must reboot the device.

7.7.6   Update firmware

The new firmware file can be imported locally using a USB memory stick or via a network server. When updating via a network, the network connection must be set correctly beforehand (see chapter "Setting the network connection" on page 45).

NOTICE
It must be ensured that the power supply to the Large Monitor Manager is not interrupted during a firmware update. Only perform a firmware update following consultation with your local distributor, or on the advice of EIZO. Only use firmware versions that have been approved by EIZO to ensure correct functioning of the Large Monitor Manager.

Note

Before you start the firmware update, please backup all user defined settings. Please refer to chapter "Backup/Restore" on page 51.

This is how you update the firmware:

1. Click the "Update firmware" button. The "Update firmware" dialog box appears.

2. Click "Browse".

3. Select the update file, which was stored before on a USB memory stick or on a network server.

Note

The file name always starts with "UpdateFile" and has the file extension "ZIP".

4. Update the firmware.

7.7.7 Backup/Restore

In a backup/restore, you can back up and restore user data and restore the factory defaults.

To open the "Backup/Restore" dialog box, click the "Backup/Restore" button in the "Base settings" (complete) sidebar.

You can carry out the following functions.

Function	Description
Backup User Data	The user-defined settings are backed up.
	Click the "Backup User Data" button. A dialog box opens in which you can specify the storage location. Use the FTP server or a USB stick as the storage location.
Restore User Data	The previously saved settings will be restored.
Restore Factory Defaults	**Attention**
	If you reset the Large Monitor Manager to the factory defaults, all the user-defined settings are lost.
	To restore the factory defaults, click the "Restore Factory Defaults" button. A dialog box opens.

7.7.8   Create logbook

NOTICE
The information in the logbook is only intended for EIZO support personnel, and can only be evaluated by specialists from EIZO.

To create the logbook for EIZO support, proceed as follows:

1. Click the "Logbook" button.

2. Define the storage location and file name in the dialog box displayed and click OK.

7.7.9   View all inputs

When you click the "View all inputs" button the video inputs will be displayed according to following rules:
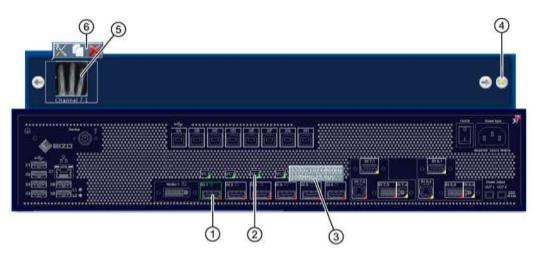
●   All inputs are displayed with the same size on the workspace.

●   A dialog box is displayed in the middle of the workspace.

●   Each window shows a live video signal of the input channels.

●   The inputs IN1-IN6 will be displayed simultaneously in 6 windows. The title bar will have a light blue background.

●   The inputs IN7.1-IN7.4 / IN8.1-IN8.4 will be toggled. This means that one of these inputs will be active for about 5 seconds and will display its live video signal in its window. During this time the title bar will be shown light blue, otherwise it is shown dark blue.

7.8   Sidebar "Input configuration"

The sidebar "Input configuration" is only visible in the administrator role. It is displayed as soon as you move the mouse to the bottom edge of the screen. The physical inputs are selected and configured here. Instances can be created, edited, and deleted.

⚠ CAUTION
Administration and configuration rights
Administration and configuration activities should not be performed during medical procedures. Such actions can present a risk to patients as important images may no longer be displayed.

①   Active inputs are indicated with 🔺 and inactive inputs with 🔺. Inputs whose information cannot be read are marked with 🔺.

If you click a video input with the left mouse button, the connected instances are displayed (one instance, in this case).

If you click a video input with the left mouse button, the dialog box "Video input configuration" is displayed.

②   Virtual channel: When the Large Monitor Manager is connected to a network, you can display images or text, for example, from an external device.

③   When you move the mouse pointer over a video input, one of the following tooltips is displayed, depending on the status of the video input:

- For an active input 🔺, the timing is displayed.
- For an inactive input 🔺, the message "Not connected" is displayed.
- For an unreadable input 🔺, the message "No information" is displayed.

④   If no instance exists for a video input, you can create an instance using this button.

⑤   Miniature thumbnail of an instance.

⑥   When you move the mouse pointer over the miniature thumbnail ⑤ of the instance, this toolbar is displayed. You can change, duplicate or delete an instance.

	If you left-click on the button, the dialog box "Instance configuration of a video input" is displayed. The selected instance can be configured here.
	If you left-click on the button, the active instance will be duplicated. All settings of the instance are copied
	If you left-click on the button, the selected instance will be deleted. If the instance was assigned to a window, the following symbol is displayed in the window:

Adjust LUT at monitor output

Note
To adjust the LUT with the Large Monitor Manager, switching of the LUT must be supported by the connected monitor.

To adjust the LUT for the connected monitor, proceed as follows:

1. Double-click in the sidebar "input configuration" on the button "Monitor 1".

2. In the displayed dialog box select the desired LUT.

3. Close the dialog box.

7.8.1 Configuration of digital video inputs

The "Video input configuration" dialog box is displayed when you double-click with the left mouse button on the video input IN1 to IN6 or IN7.3 / IN8.3 to be configured.

Setting	Description
EDID	**Select EDID** Here you can select the EDID setting for the respective video input with ⬅ and ➡. The EDID setting defines the resolution of the graphics card for the video source.
USB input	**USB input enabled** You can specify here whether the video source can be operated using the mouse and keyboard (focused mode). *Default setting: "USB input enabled" is set.*
	USB input You specify linking of the video source to a USB-B connection here. Without the correct linking, it is not possible to access the video source with the mouse and keyboard. Click ⬅ or ➡ to assign the USB-B connection. Use the notes that you made during connection (chapter "Procedure for connection" (page 23)).

7.8.2 Configuration of analog video inputs

The "Video input configuration" dialog box is displayed when you double-click with the left mouse button on the video input IN7.1, IN7.2, IN4.1, IN8.1, IN8.2 or IN8.4 to be configured.

The layout of the dialog box varies depending on the input type.

Analog video inputs VGA (IN7.1, IN8.1) and DVI-A (IN7.4, IN8.4)

For VGA (IN7.1, IN8.1) and DVI-A (IN7.4, IN8.4) inputs, the following dialog box "Video input configuration" is displayed:
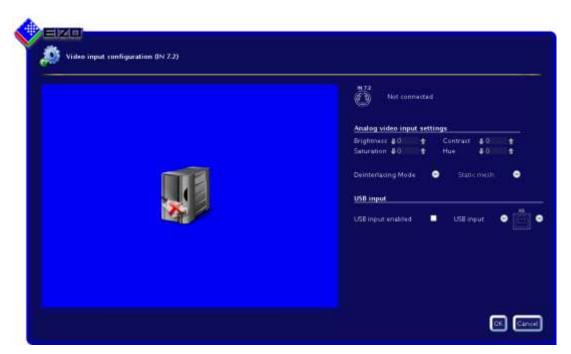
Setting	Description
	Note
	You can set the parameters step by step. To do so, click on ⬇ or ⬆.
Analog video input settings.	**Brightness**
	Adapting the representation of darker picture areas.
	Setting range: 0 to 100%
	Default setting: 50%
	Note
	If the brightness is not set correctly, this can lead to loss of gray scales. Create an SMPTE test pattern and set the brightness such that picture areas with 5% and 0% gray values visibly differ.
	Contrast
	Adapting the representation of brighter picture areas.
	Setting range: 0 to 100%
	Default setting: 50%
	Note
	If the contrast is not set correctly, this can lead to loss of gray scales. Create an SMPTE test pattern and set the contrast such that the picture areas with 95% and 100% gray values visibly differ.
	Horizontal position
	The horizontal position of the displayed image can be set with pixel accuracy.
	Setting range: 0 to 100%
	Default setting: 50%
	Vertical position
	The vertical position of the displayed image can be set with pixel accuracy.
	Setting range: 0 to 100%
	Default setting: 50%
	Frequency / Phase
	Vertical lines which are still slightly fuzzy can be corrected using the frequency and/or phase setting. The two parameters are automatically set as soon as an analog image signal is connected to the video input.
	Setting range: 0 to 100%
	Auto adjustment
	The parameters for brightness, contrast, horizontal position, vertical position, frequency and phase can be automatically adjusted. To do so a test pattern must be displayed with the correct resolution in the video source.
	The test pattern can be generated by the Large Monitor Manager. To do this, click on button "Testpattern". Save the generated image on a USB memory stick.
	Open the stored image in your source. Thereafter click on [Auto adjustment]. The automatically adjustment will be started.

Setting	Description
	ADC parameter gain/offset You can set the ADC parameters of the analog video input here. The display of the bright (gain) and dark (offset) picture areas can be set directly for the red, blue and green channels. Setting range: 0 to 255 **Note** EIZO recommends automatic ADC calibration.
	ADC calibration The ADC parameters can be set automatically. To do so a test pattern must be displayed with the correct resolution in the video source. The test pattern can be generated by the Large Monitor Manager. To do this, click on button "Testpattern". Save the generated image on a USB memory stick. Open the stored image in your source. Thereafter click on . The automatically adjustment will be started.
Deinterlacing mode	You can use this function to set deinterlacing mode.
Monochrome	By enabling this function a SoG (Sync on Green) signal will be shown as a monochrome signal.
USB input	**USB input enabled** You can specify here whether the video source can be operated using the mouse and keyboard (focused mode). *Default setting: "USB input enabled" is set.*
	USB input You specify linking of the video source to a USB-B connection here. Without the correct linking, it is not possible to access the video source with the mouse and keyboard. Click or to assign the USB-B connection. Use the notes that you made during connection (chapter "Procedure for connection" (page 23)).

S-Video (IN7.2, IN8.2)

For IN7.2 and IN8.2 (S-Video) inputs, the following dialog box "Video input configuration" is displayed. :

Setting	Description
	Note
	You can set the parameters step by step. To do so, click on ⬇ or ⬆
Analog video input settings	**Brightness**
	Adapting the representation of darker picture areas.
	Setting range: 0 to 100%
	Default setting: 50%
	Note
	If the brightness is not set correctly, this can lead to loss of gray scales. Create an SMPTE test pattern and set the brightness such that picture areas with 5% and 0% gray values visibly differ.
	Contrast
	Adapting the representation of brighter picture areas.
	Setting range: 0 to 100%
	Default setting: 50%
	Note
	If the contrast is not set correctly, this can lead to loss of gray scales. Create an SMPTE test pattern and set the contrast such that the picture areas with 95% and 100% gray values visibly differ.
	Saturation
	The color intensity can be changed here.
	Setting range: 0 to 100%
	Default setting: 50%

| Setting	Description
	Hue
	The color hue can be changed here.
	Setting range: 0 to 100%
	Default setting: 50%
Deinterlacing mode	You can use this function to set deinterlacing mode.
USB input	**USB input enabled**
	You can specify here whether the video source can be operated using the mouse and keyboard (focused mode).
	Default setting: "USB input enabled" is set.
	USB input
	You specify linking of the video source to a USB-B connection here. Without the correct linking, it is not possible to access the video source with the mouse and keyboard.
	Click ⬅ or ➡ to assign the USB-B connection.
	Use the notes that you made during connection (chapter "Procedure for connection" (page 23)).
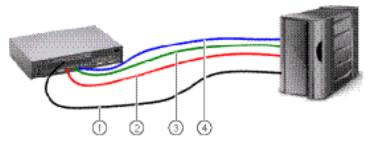
7.8.3 Video input configuration for using an extended window

If an video source supplies several video signals that are connected to the Large Monitor Manager:

- When configuring the video inputs, ensure that the same USB input is always used in the "USB input" field. Only one physical USB cable is available.

Example

Video signals from one video source are connected to the video inputs IN1, IN2 and IN3. The USB connection "XB" must be selected for each video input under "USB input" in the "Video input configuration" dialog box.
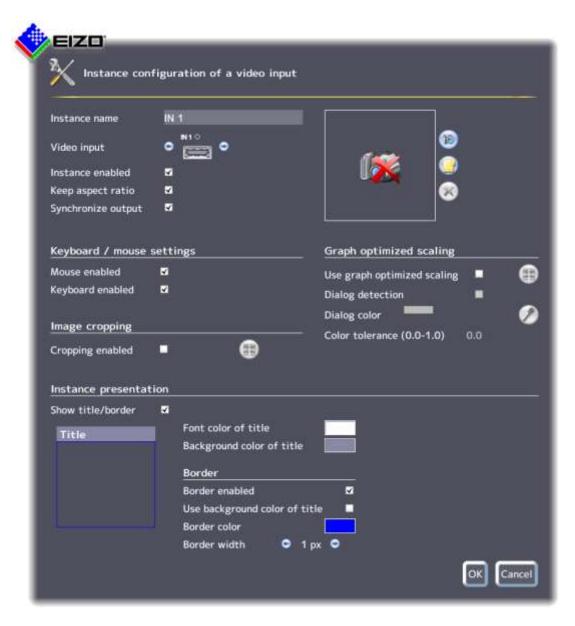

①	USB
②	Video signal 1
③	Video signal 2
④	Video signal 3

7.8.4   Creating and configuring instances

Several instances with different representations (e.g. 1:1, cropping area etc.) can be configured for each video input. One instance has already been created by default for each video input.

①   Video input
②   Miniature thumbnail of an instance

- Click the video input ① using the left mouse button. All existing instances ② of a video input ① are displayed.

- You can configure an existing instance. To do so, double-click the miniature thumbnail for the instance ②. Alternatively, you can click the ✖ symbol.

- To create a new instance, click on the button 🌐 or duplicate an existing instance by clicking once on the ⬜ symbol.

- In all cases, the dialog box "Instance configuration of a video input" is displayed.

| Setting	Description
	Instance name The instance name can be set here. It should be short and precise. *Default setting: IN xy*
	Video input The correct video input for which the instance is created already appears as default. To assign the same settings to a different video input, click the ⬅ button and ➡. The video input is selected. *Default setting: the selected video input*
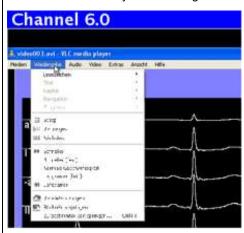
Setting	Description
	Instance enabled
	The currently selected instance can be disabled here so that it is no longer visible. If the instance was assigned to a window, the following symbol is displayed in the window: .
	Default setting: "Instance enabled" is set (instance is visible)
	Keep aspect ratio
	This property should always be enabled. The aspect ratio of the connected video source is then retained. If this property is disabled, the aspect ratio of the window in which the instance is displayed is used. This can cause a distorted picture.
	Default setting: "Keep aspect ratio" is set
	Create/delete miniature thumbnail
	A miniature thumbnail can be created for each instance. The thumbnail appears in both the "Input configuration" (bottom) and "Instances" (top) sidebars.
	If the Large Monitor Manager is contolled remotely the miniature thumbnails are displayed in the layout. A life view of the connected video inputs is not possible.
	1. Click on the button. The dialog box "Create miniature thumbnail" opens.
	2. Move the markers , , to select the matching cropping area for the thumbnail.
	3. Confirm with "OK". to load the thumbnail.
	- You can also select a symbol, e.g. from a USB stick. Click on the button
	- You can delete the thumbnail. To do so, click the button.
	Synchronize output
	Enables input/output synchronization.
	Note
	If input/output synchronization is enabled for multiple instances, the instance with the lowest video input channel number will be synchronized.
Keyboard / mouse settings	**Mouse enabled/Keyboard enabled**
	In the default setting, operation of the keyboard and mouse is enabled. This makes operation of a video source with mouse/keyboard (Focused Mode) possible. For more information on this, refer to chapter "Configuration of digital video inputs" (page 55) or "Configuration of analog video inputs" (page 56).
	If operation of a video source with mouse/keyboard (Focused Mode) is not necessary for a specific video source (e.g. video recorder), this can be disabled here.
	Default setting: "Mouse enabled" is set
	"Keyboard enabled" is set

Setting	Description
Image cropping	**Cropping enabled** If you only wish to view a certain part of an instance, you can define the cropping area here. First enable cropping and select the instance to be changed. 1. Click on the button. The dialog box "Define cropping area" opens. 2. Move the markers to select the required cropping area. 3. Confirm with "OK". The cropping area is applied. Several instances with different cropping areas can be created. *Default setting: "Cropping enabled" is not set*
Graph optimized scaling	**Use graph optimized scaling** Displaying vital functions or ECG images in a layout smaller than 1:1, for example, can result in a blurred display of (heart-rate) traces. To prevent this, proceed as follows: 1. Enable "Graph optimized scaling". 2. Click on the button. The dialog box opens. 3. Use the markers to define the required cropping area. Here the special algorithm for optimized view will be activated. 4. Confirm with "OK". Now you should have an optimized view. **Note** - "Graph optimized scaling" may be active in a maximum of two windows of a layout. - If graph optimized scaling is active in two windows of a layout, the windows must be placed on the left and right half of the screen and must not extend over the middle. *Default setting: "Use graph optimized scaling" is not set*

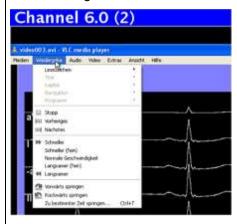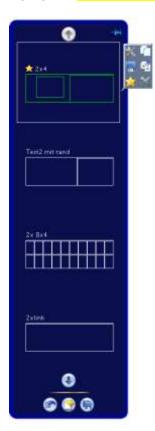| Setting	Description
	Select dialog detection/dialog color
	Once graph optimized scaling for a cropping area has been enabled, dialog boxes and menus may become illegible in this area.
	Proceed as follows to prevent this situation:
	1. Enable dialog detection.
	2. Select the background color for the dialog window.
	This ensures that graph optimized scaling cannot be used on the dialog window.
	3. Click on the color bar and pick the color directly. Alternatively, click on the button .
	The menu "Pick the dialog color" opens.
	4. Select the required color using the pipette.
	The dialog boxes and menus are legible again.
	Default setting: "Dialog detection" is not set
	Color tolerance
	If different dialog boxes/menus show slight deviations in color (e.g. white to light gray), you can ensure that the two colors are recognized as dialog boxes/menus by increasing the color tolerance.
	Default setting: 0.0 (no tolerance)

Setting	Description
Instance presentation	**Show title/border** You can define here whether a title (instance name) and a border are to be displayed for the currently selected instance. *Default setting: "Show title/border" is set*
	Font color of title/Background color of title You can change the font color and background color of the title here. To do this, click on the color box. Scale "A" can be used to set the transparency value for the color. *Default setting for font color of title: white* *Default setting for background color of title: blue*
	Border enabled You can define here whether a border is to be displayed for the currently selected instance. *Default setting: "Border enabled" is set*
	Use background color of title You can specify here whether the background color of the title should be used as the border color. *Default setting: "Use background color of title" is not set*
	Border color You can change the border color here; to do this, click on the color field. *Default setting: white*
	Border width You can change the border width here. To do so, click the button ⬅ or ➡. Setting range: 1 pixel to 10 pixels wide *Default setting: 1 pixel*
	Direct selection of the border in thumbnail Here you can define the sides on which a border is to be displayed. To do this, click on the individual border sides in the thumbnail. *Default setting: Complete border*

7.9 Sidebar "Layout"

The sidebar "Layout" is displayed as soon as you move the mouse to the left-hand edge of the screen. You can select a layout using the left mouse button here. The current layout is highlighted in color and a toolbar is shown.

7.9.1 The toolbar of the sidebar

The toolbar of the sidebar have the following buttons that you can call by clicking them with the left mouse button.

Button	Description
	Resets the user-defined settings in the layout to the original values.
	This is only possible if the settings have not already been saved.
	Creates a new layout (full screen).
	Saves the user-defined settings in the layout.

7.9.2   Toolbar of a layout

You can create new layouts or change existing ones. The toolbar of a selected layout have the following functions:

Button	Description
	Opens the layout for editing.
	Duplicates the layout. A copy is created.
	Saves changes to the layout.
	Assigns a name for the layout.
	Defines the layout as a default layout. This layout will be shown always after the switch-on of the Large Monitor Manager. If this setting is enabled, the connected video sources will be shown within a few seconds.
	Deletes the layout. **Note** If the icon is shown in gray, the layout cannot be deleted. In this case, the selected layout is defined as the default. To delete it, you must define a different layout as the default.

7.9.3 Editing an existing layout

Note

Extended user rights, e.g. administrator rights, are required for editing layouts.
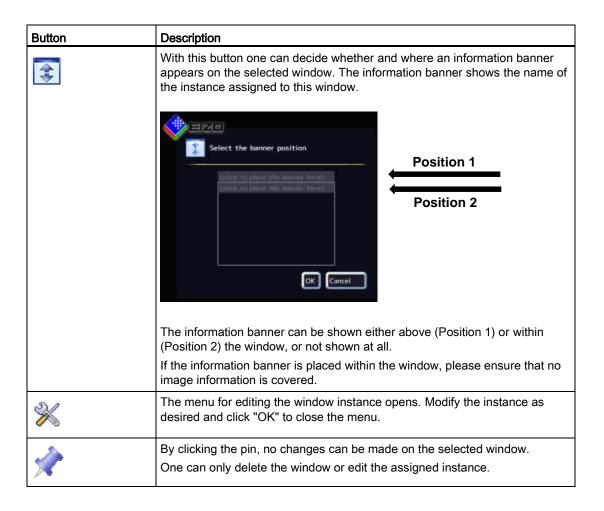

Proceed as follows:

1. To create a new layout, click on the ![button] button.

2. To change an existing layout, select it on the left sidebar. A toolbar opens above the layout.

3. Click on the ![button] button to edit the selected layout or click on the ![button] button to duplicate and edit the selected layout.

An edit toolbar appears in the upper right corner of each window.

Button	Description
![delete]	The selected window will be deleted.
![split]	The selected window can be split into several windows. To do so, click on the button and select the desired arrangement. The button is grayed out (not selectable) if the maximum number of windows has been reached.
![expand]	The window is expanded to fill the available free space in the layout. To do so, click on the button. The button is grayed out (not selectable) if there is no space available in the layout.
![1:1]	The window is set to 1:1 aspect ratio. To do this, click on the button. The button is grayed out (not selectable) if no instance has been assigned to the selected window or there is no space available in the layout.

Button	Description
	With this button one can decide whether and where an information banner appears on the selected window. The information banner shows the name of the instance assigned to this window. The information banner can be shown either above (Position 1) or within (Position 2) the window, or not shown at all. If the information banner is placed within the window, please ensure that no image information is covered.
	The menu for editing the window instance opens. Modify the instance as desired and click "OK" to close the menu.
	By clicking the pin, no changes can be made on the selected window. One can only delete the window or edit the assigned instance.

In addition to the toolbar, certain other tools are available:

Create new windows via drag & drop:

- To do so, click on an existing window. Drag it to a free space in the layout and drop it there. The new window automatically fills out the existing space. **This function requires sufficient free space.**

For changing the window size there are two ways:

- To do so, click on an existing window. Markers (e.g. ⌐, Γ, ⟩) appear around the window. Click and drag the markers to modify the length and width of the window as desired. The size and position of the surrounding windows are automatically adjusted to the modified size of the window. To prevent such automatic changes, lock in the window's position and size with the pin button.

- In the lower right-hand corner of each window a field with current size of the window in pixels as well as the height of the information banner (if this is shown above the window) is visible.

  In this example, the width is 512 pixels, the height is 770 pixels and an information banner height of 30 pixels is specified.

- Click into the field and enter the desired value for width and height of the selected window with the connected keyboard. The height of 30 pixels for the information banner is not changeable.

For changing the window position there are two ways:

- To do so, click on an existing window. The button will appear in the middle of the window. Click on it and move the window to any free position within the layout. The size and position of the surrounding windows are automatically adjusted to the modified position of the window. To prevent such automatic changes, lock in the window's position and size with the pin button.

- These values define the current position (pixels) of the top left corner of the window. If an information banner has been set for this window, the banner height is included. In this example, the horizontal position is 2048 pixels and the vertical position is 30 pixels. The zero position is the top left corner of the displayable screen area.

- Click into the field and enter the desired value for horizontal and vertical position.

Click the button in the sidebar "Layout" to save all settings.

7.10 Sidebar "Instances"

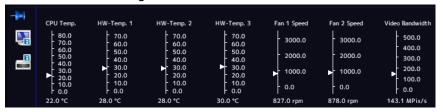
Displaying the "Instances" sidebar

Proceed as follows:

1. Move the mouse pointer to the top of the screen. The sidebar opens. It shows the miniature thumbnail or the camera icon for all available instances.

2. The instances can be assigned to the windows of the selected layout. To do this, click on the thumbnail for an instance and drag it into one of the windows.

3. Swap the contents of the windows around using drag-and-drop.

4. We recommend saving the layout when all the instances have been assigned. In the "Layout" sidebar, click the button.

Note

When switching between different layouts, the configuration is retained. After a reboot or shutdown of the Large Monitor Manager, the settings are lost if they have not been saved.

7.11 Status window

You can display the status window to obtain information about the hardware. Move the mouse to the bottom right corner of the screen.

When you move the mouse pointer over the icon or , a tooltip is displayed giving the number of errors on the monitor or system. See chapter Troubleshooting (page 77).
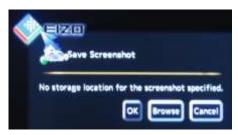
7.12   Screenshot function

The Large Monitor Manager has a screenshot function. To create a screenshot, proceed as normal under Windows.

Creating screenshots on the Large Monitor Manager

To create a screenshot, proceed as follows:

1. Press "Print" on the keyboard. The dialog for saving the screenshot is displayed.

2. Click "Browse".

3. Select the storage location.

4. Enter a file name using the keyboard.

5. Click "OK".

    The dialog closes and the file is saved.

Creating screenshots via remote control

To create a screenshot, proceed as follows:

1. Click the button .

2. Select the storage location.

3. Enter a file name.

4. Click "OK".

The dialog closes and the file is saved.

7.13 Information for developers

A software interface, the so-called common interface, is available for developing your own control software for the Large Monitor Manager. The main components of this interface are:

- Layout selection and switchover

- Scanning device status

- Saving the device configuration on memory media external to the Large Monitor Manager

- Reading the log file

- Saving the current screen contents

- Displaying text fields

The software is distributed by EIZO. Contact your local distributor with any inquiries.

Service and maintenance 8

8.1 Notes for servicing and maintenance

NOTICE
Cleaning the fan
The Large Monitor Manager is equipped with fans. Depending on the environment, these may become dirty. The fans may only be cleaned by EIZO.
Ensure that the vents are unobstructed
Ensure that the vents for air intake and expelling are not covered.

8.2 Cleaning

CAUTION
Device maintenance, cleaning and disinfecting
• The device is sensitive to mechanical influences. Mechanical shocks should be avoided.
• Avoid penetration of liquid. If liquid penetrates the device, this may result in an electric shock or failure of device.
• Clean the dirty enclosure with a damp cloth and, if necessary, with a commercially available cleaning agent.
• Residue of cleaning agents or disinfectants must be completely removed.
• The device may only be disinfected using tested disinfectants.

Recommended cleaning and disinfection agents

Agent class	Tested cleaning agents and disinfectants	Further examples
Aldehyde	Melsitt	Aldasan 2000 Kohsolin Gigasept FF Cidex
Chlorine derivatives	Terralin	Quartamon Med

Agent class	Tested cleaning agents and disinfectants	Further examples
Disinfectants	Mikrozid liquid	TaskiDS5001 (Diverseylever Labs) Morning Mist Surfanios Fraicheur Citron (Anios Labs)
Guanidine derivatives	Lysoformin	
Quaternary compounds	Incidur spray, undiluted	
Standard household dishwashing liquid	denk mit	Fairy Ultra, Pril, Palmolive
Pyridine derivatives	SprayActiv, undiluted	
Water	Tap water Distilled water	

Impermissible cleaning and disinfection agents

Agent class	Tested cleaning agents and disinfectants	Further examples
Alcohol	Ethyl alcohol, 96%	Hospiset cloth
Peroxide compounds	Perform	Dismozon pur
Gasoline	Boiling range gasoline	Benzine

These cleaning agents and disinfectants can bleach the paint after longer periods of application.

Troubleshooting 9
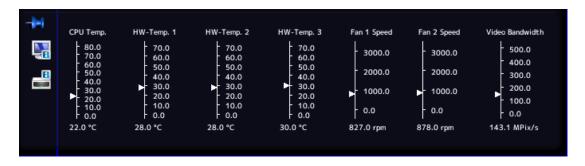
9.1 Error messages

LEDs - LED status

LEDs	Status	Measure
L1 (FPGA)	Green if loaded successfully.	
	Orange if FPGA is not loaded.	First measure: Reboot Second measure: If the LED L1 still remains orange, a hardware fault may be present. Return the device for repair.
	Red with initialization error.	First measure: Reboot Second measure: If the LED L1 still remains red, a hardware fault may be present. Return the device for repair.
L2 (µ-PC):	Orange during booting.	
	Green when software is running.	
	Red if no communication with the FPGA can be established.	First measure: Reboot Second measure: If the LED L2 still remains red, a hardware fault may be present. Return the device for repair

Status window

Certain hardware faults are indicated in the status window with a flashing red border. The status window is displayed when you move the mouse pointer to the bottom right corner of the screen.

Measures for fault rectification are described in the following table.

Display	Function	Measure
CPU Temp.	Monitoring of CPU temperature.	If the temperature is too high, turn off the device and, if possible, check the ambient temperature and reduce it if necessary.
HW-Temp1/2/3	Monitoring of remaining hardware temperature.	If the temperature is too high, turn off the device and, if possible, check the ambient temperature and reduce it if necessary.
Fan 1/2	Monitoring of fan functionality.	If fans are not working (0.0 rpm): Return the device for repair
Video bandwidth	Monitoring the total video bandwidth. (only an info display)	No measures necessary; these are automatically carried out by the Large Monitor Manager. See the chapter Input signals (page 26).

Technical specifications

<div style="text-align: right; font-size: 3em;">10</div>

10.1 Inputs/outputs

Video inputs	12
Max. number of simultaneously displayed input channels	8
Max. delay between input and output	< 16.67 ms
Number of digital inputs [HDMI] [165 MHz]	6
Number of digital inputs [DVI-I] [165 MHz]	2
Number of analog inputs [DVI-I] [170 MHz]	2
Number of analog inputs [VGA] [170 MHz]	2
Number of analog inputs [S-Video] [170 MHz]	2
Max. number of horizontal pixels per channel	2048 with IN1- IN6 1920 with IN7.x and IN8.x
Min. pixel clock at input	25 MHz (VGA at 60 Hz)
Supports programmable EDID	Yes
Video input bandwidth	**440 megapixel/s**
Interfaces	
Ethernet interface	1 [1 Gbit/s]
PS/2 Service interface (for servicing purposes only)	1
USB Type A (downstream)	6
USB Type B (upstream)	8
Video outputs	
Number of digital outputs [DVI-I Dual Link] [330 MHz]	1
Output resolution	• LMM0801-L: 2560x1600@60 Hz • LMM0801-FHD: 1920x1080@60 Hz • LMM0801-WQHD: 2560x1440@60 Hz
Voltage outputs	
Number of voltage outputs, 5 V, 500 mA	2

10.2 Power supply

Rated voltage	100 V to 240 V, 50 Hz to 60 Hz
Power consumption	1.0 A to 0.5 A

10.3   Mechanical design

Housing	19" 2HU
Degree of protection	IP20
Dimensions (W x H x D) in mm	444 x 88 x 286
Weight	5.26 kg

10.4   Climatic properties

In operation	
Temperature range	5 °C to 45 °C ambient temperature
Temperature gradient	Max. 5 °C/h, no condensation
Transport and storage (packed)	
Temperature range	-20 °C to +70 °C ambient temperature
Temperature gradient	Max. 10 °C/h, no condensation

10.5   Mechanical requirements

In operation	
Vibrations	Compliant with EN 60068-2-6 10 to 58 Hz at ±0.075 mm deflection 58 to 500 Hz at 10 m/s²
Shock	Compliant with EN 60068-2-27 150 m/s², 11 ms
Packaged unit	
Vibrations	9 ... 500 Hz at 10 m/s² compliant with EN 60068-2-6; 10 to 200 Hz at 1m/s² and 200 to 500 Hz at 0.3 m/s² compliant with EN 60068-2-64 (broad band noise)
Shock	Compliant with EN 60068-2-27 300 m/s², 6 ms (device in storage packaging)
Falls	Compliant with EN 24180-2 80 cm height

10.6   Safety regulations

Safety standards	• IEC/EN 60601-1 (Second Edition) • IEC/EN 60601-1 (Third Edition) • CAN/CSA - C 22.2 No. 601.1-M90 • CAN/CSA - C 22.2 No.60601-1-08
Protection class	Protection class I
Degree of protection according to DIN 40050	IP20
Conformity	CE declaration compliant with 2004/108/EC

10.7   Electromagnetic compatibility
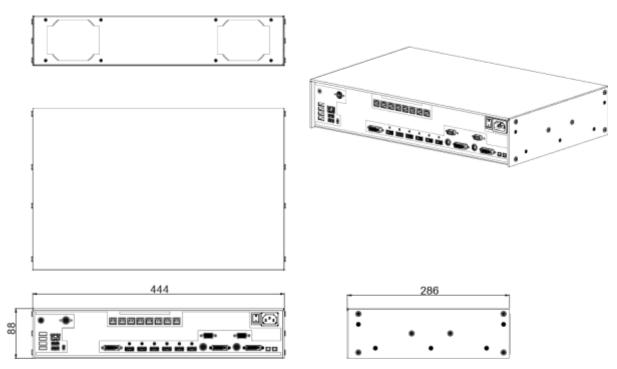
Interference voltage/emitted noise	EN 60601-1-2, EN 55011, EN55022, Subpart B of Part 15 of FCC Rules Class B
Voltage fluctuations	EN 61000-3-3
Voltage dips	EN61000-4-11
Burst on power cables	EN 61000-4-4 2 kV
Burst on signal lines	EN 61000-4-4 1 kV
Surge on power cables	EN 61000-4-5 1 kV symmetrical, 2 kV unsymmetrical
Electrostatic discharge on casing parts (ESD)	EN 61000-4-2 8 kV air, 6 kV contact
RF irradiation	EN 61000-4-3 80 MHz to 2.5 GHz, 3 V/m 80% AM 1 kHz
Constant magnetic fields Alternating magnetic fields	EN 61000-4-8 4000 Aeff/m (maximum) 1000 Aeff/m (maximum)
Line reaction to harmonics	EN 61000-3-2
Line reaction to voltage fluctuations	EN 61000-3-3

Dimension drawings
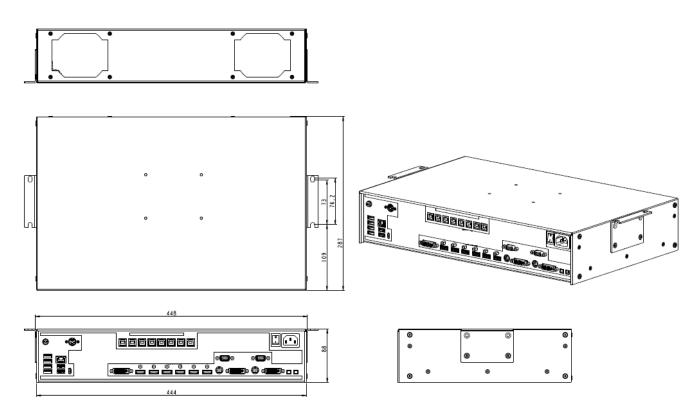
<div style="text-align: right; font-size: 3em;">11</div>

All dimensions in mm.
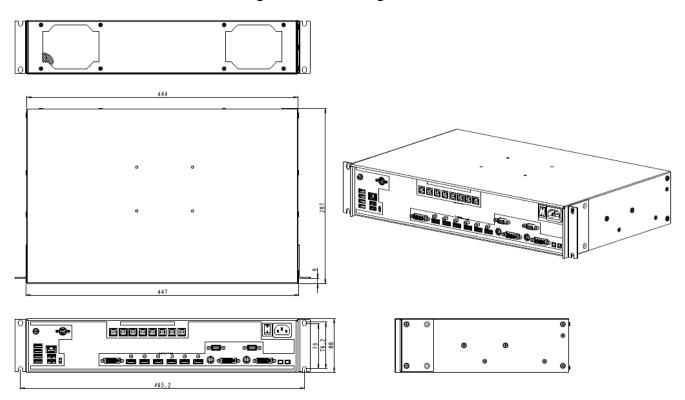
11.1   Dimension drawing without mounting bracket
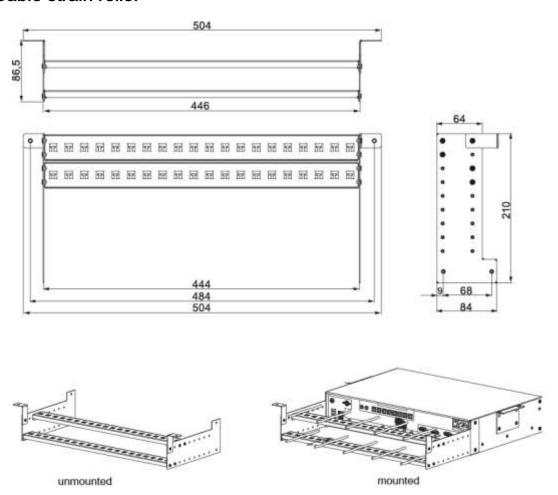
11.2 Dimension drawing with mounting bracket in center

11.3 Dimension drawing with mounting bracket at front

11.4   Cable strain relief

Spare parts/accessories

<div style="text-align: right; font-size: large;">

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</div>

12.1 Accessories

RadiForce® RX430

We recommend use of the RadiForce® RX430 monitor for the LMM0801-L.

This monitor supports the required resolution of 4MP (2560 x 1600) and has been tested and approved with the LMM0801-L.

RadiForce® LX470W

We recommend use of the RadiForce® LX470W monitor for the LMM0801-FHD.

This monitor supports the required resolution of 2MP (1920 x 1080) and has been tested and approved with the LMM0801-FHD.

RadiForce® MX270W

We recommend use of the RadiForce® MX270W monitor for the LMM0801-WQHD.

This monitor supports the required resolution of 2560 x 1440 and has been tested and approved with the LMM0801-WQHD.

Control Interface Device CID1000P

An operating monitor with a touch function, enabling the set ups of different screen layouts on the LMM0801.

Analog-DVI-Converter PDC0100

The PDC0100 converts analog video to DVI format. The integrated Force Mode function supports even unique analog input signals.

DVI Transmission Link TDL3600

Digital graphics interconnection enables data transmission of high-quality video data of up to 36 meters with no quality loss. Transmitting the data over an Ethernet cable allows robust handling and simple setup, and the cables can be easily run through small conduits and holes.

Cable strain relief

We recommend the use of a cable strain relief device for correct placement of cables and in order to prevent them from being pulled out unintentionally (order number: 6GF-6030-1AB00-0AA0).

13.1 Markings and symbols

The designations and symbols on the LMM0801 have the following meanings.

Marking/symbol	Description
	Symbol for "Caution, observe accompanying documents". Appears on the rating plate.
	CE marking (EU conformity mark). Appears on the rating plate.
	U.S. FCC marking for communication devices. Appears on the rating plate.
	CSA marking, accounting for U.S. and Canadian national regulations. Appears on the rating plate.
	Symbol for date of production for medical products. Appears on the rating plate.
	WEEE Product must be disposed of separately; materials may be recycled. Appears on the rating plate.
	Mark of the Japanese "Voluntary Control Council for Information Technology Equipment". Appears on the rating plate.
	Marking in accordance with ACPEIP (China RoHS). Appears on the rating plate.
	C-Tick marking for conformity with Australian EMC standards. Appears on the rating plate.
	Symbol for alternating current at line voltage input. Appears on the name plate.
	Symbol for protective ground Appears above the PE connection on the device housing.
	Symbol for "On" (voltage). Present on the power switch.

Marking/symbol	Description
	Symbol for "Off" (voltage). Present on the power switch.
	Input for servicing. Appears above the PS2 socket on the device housing.
	Symbol for USB. Appears above the upstream and downstream USB inputs on the device housing.
	DVI output signal. Appears above the DVI-I output on the device housing.
	Symbol for direct current. Appears next to the 5 V connectors on the device housing (for power supply to external devices).
	Symbol for network connection. Appears above the network connection on the device housing.
	Symbol for "Observe instruction manual". Present on the device.

13.2 Warranty

Opening of the housing, or electrical or mechanical changes on or in the device, void the warranty. For warranty details, please contact the sales partner from whom you purchased the product. These warranty conditions are neither extended nor limited by the contents of this instruction manual.

Warranty period

The warranty period for the LMM0801 is 24 months.

13.3 Guidance and manufacturer's declaration - Electromagnetic emissions

The LMM0801 is intended for use in an environment such as that specified below. The customer or the user of the device should ensure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – Guiding principles
RF emissions according to CISPR 11	Group 1	The device uses RF energy only for its internal functioning. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions according to CISPR 11	Class B	The device is suitable for use in all establishments, including domestic establishments, and those directly connected to the public low-voltage power supply network supplying buildings used for domestic purposes.
Harmonic emissions according to IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions according to IEC 61000-3-3	Complies	

13.4 Repairs

Please contact the sales partner from whom you purchased the product.

13.5 China RoHS (Restriction of Hazardous Substances)

LMM0801 model: 6GF6030-1AA## (##=00..99)

根据SJ/T11364-2006《电子信息产品污染控制标识要求》特提供如下有关污染控制方面的信息。

The following product pollution control information is provided according to SJ/T11364-2006 Marking for Control of Pollution caused by Electronic Information Products.

电子信息产品污染控制标志说明 Explanation of Pollution Control Label

该标志表明本产品含有超过中国标准SJ/T11363- 2006《电子信息产品中有毒有害物质的限量要求》中限量的有毒有害物质。标志中的数字为本产品的环保使用期，表明本产品在正常使用的条件下，有毒有害物质不会发生外泄或突变，用户使用本产品不会对环境造成严重污染或对其人身、财产造成严重损害的期限。单位为年。

为保证所申明的环保使用期限，应按产品手册中所规定的环境条件和方法进行正常使用，并严格遵守产品维修手册中规定的定期维修和保养要求。

产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限有可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所申明的整个产品的环保使用期限。

本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。

This symbol indicates the product contains hazardous materials in excess of the limits established by the Chinese standard SJ/T11363-2006 *Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products*. The number in the symbol is the Environment-friendly Use Period (EFUP), which indicates the period during which the toxic or hazardous substances or elements contained in electronic information products will not leak or mutate under normal operating conditions so that the use of such electronic information products will not result in any severe environmental pollution, any bodily injury or damage to any assets. The unit of the period is "Year".

In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.

Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures.

This product must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

13.5 China RoHS (Restriction of Hazardous Substances)

有毒有害物质或元素的名称及含量 Name and Concentration of Hazardous Substances

部件名称 Component Name	有毒有害物质或元素 Hazardous substances' name					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电源 Power Supply	O	O	O	O	O	O
其他 电路板 Other Circuit Boards	O	O	O	O	O	O
其他（电缆等） Others (cables, etc.)	O	O	O	O	O	O
机架、底盘 Housing, Chassis	O	O	O	O	O	O
附件（信号电缆、输电线等） Acessories (signal cable, power line, etc.)	O	O	O	O	O	O
O: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求 • 此表所列数据为发布时所能获得的最佳信息. • 由于缺少经济上或技术上合理可行的替代物质或方案，此医疗设备运用以上一些有毒有害物质来实现设备的预期临床功能，或给人员或环境提供更好的保护效果。 O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006. X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006 • Data listed in the table represents best information available at the time of publication. • Applications of hazardous substances in this medical device are required to achieve its intended clinical uses, and/or to provide better protection to human beings and/or to environment, due to lack of reasonably (economically or technically) available substitutes.						

产品中有毒有害物质或元素的名称及含量 Table of hazardous substances' name and concentration.

13.6 Accessory devices

Devices – such as displays or PCs – must also comply with the relevant safety specifications.

13.7 Brands

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Mac is a registered trademark of Apple Inc.

VESA is a registered trademark or a trademark of Video Electronics Standards Association in the United States and other countries.

All other trademarks are the property of their respective owners.

13.8 Contact
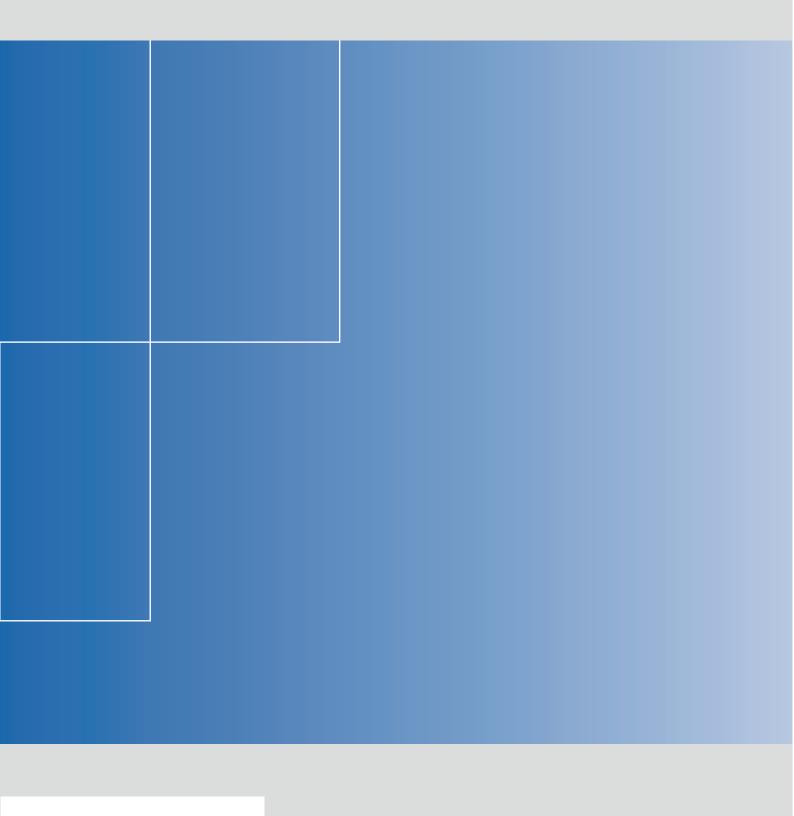
Support during installation and for technical questions

Medical monitor solutions (http://www.eizo.eu)

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