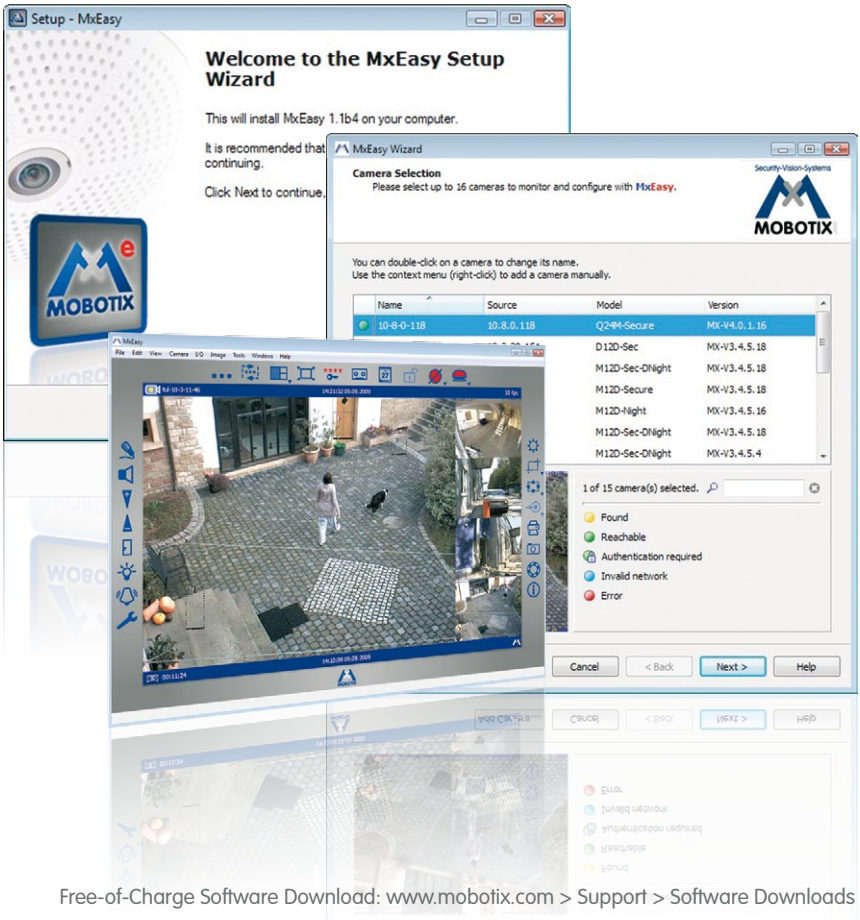
EN

MxEasy User Manual

The HiRes Video Company

MxEasy: Point & Shoot



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HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost efficient.

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MOBOTIX

HiRes
3 Megapixel
2048 x 1536
Software zoom

Skyline
Format free
Each image format freely definable

30 Frames/s
VGA (640 x 480)
30 F/s Mega

Virtual PTZ
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Safe using CMOS without mechanical iris

Internal DVR
Internal via Flash, external via Network

Win/Lin/Mac
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IP Telephony
Alarm notify, cam remote control

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Multiple windows precision pixel-based

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Weatherproof
-30 to +60 °C, IP65, no heating necessary

IEEE 802.3af
PoE
Network power even in winter

Robust
No moving parts fiber glass housing

MxCC/MxEasy
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Notes and Copyright

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CONTENTS

1 INTRODUCTION TO MXEASY

Congratulations on your decision to select video security products from MOBOTIX. MOBOTIX offers you intelligent, high-resolution camera technology ***Made in Germany***. The **MxEasy** software provides you with full control of your video security system.

1.1 General Information

MOBOTIX are pleased to introduce you to the concepts and ideas behind MxEasy. In the following chapters we will guide you through the simple installation of the program onto your PC, Mac or Linux system, inform you how to integrate your MOBOTIX cameras into the system and even give you some examples of how MxEasy can give a professional Video Management System view of some SOHO (small office, home office) & business applications.

What Is MxEasy?

MxEasy allows you to quickly and efficiently configure and control a video security system of up to 16 MOBOTIX cameras, making it the perfect choice for all small and mid-sized surveillance systems. The program automatically finds all available MOBOTIX cameras (even in non-administered newtworks) and carries out the initial configuration for the selected cameras. You are not required to have an in-depth knowledge of network technology.

Once the cameras are integrated into the system, you can use MxEasy to comfortably control the most important functions of the connected cameras. Virtual zooming, panning and tilting in the live image is just as easy as activating manual or scheduled recording times. This way, it makes no difference whether you choose to monitor the screen constantly or just occasionally check up on the most recent events.

The video data recorded by the cameras can then be viewed and exported in different formats (e.g. MxPEG, AVI with different codecs) as required.

Easy Operation

To keep MxEasy simple and easy to use, camera operation has been streamlined to include only the absolute necessities. MxEasy is easy to understand and simple to use, so the risk of operating errors is minimal. The buttons are marked with easy-to-understand symbols and descriptions of each button ("tool tips") are displayed automatically. All other control elements are intuitive to use. In addition, the user interface has been optimized for mobile devices and touch panels.

If any problems occur, you can quickly and easily undo any incorrect settings using the automatic configuration backup feature.

Security

MxEasy provides you with four different access levels (*guest*, *user*, *owner*, *administrator*), allowing people with different levels of authorization to access the camera images. This makes it possible to install MxEasy on several computers at the same time without causing access-related conflicts. Optional HTTPS encryption (using certificates generated by the camera or created by the administrator) helps you to prevent unauthorized users from accessing MxEasy.

Operation Modes

The different operation modes allow for easily adjusting MxEasy to the current application scenario. The **Switched Off Mode** does not record anything, but still transmits the live images. The **Alarm Planner Mode** detects alarms and starts recording according to the times and the alarm sensors specified in the weekly schedule. The **Alert Mode** records the audio/video data of all cameras controlled by MxEasy.

In addition, you can trigger the **Manual Alarm** in case of an alarm, which records the audio/video data of all cameras for a specific time. The **Privacy Mode** is used to guarantee absolute confidentiality. For this purpose, MxEasy changes the passwords on all attached cameras and thus effectively prevents all attempts to access the cameras.

Why MxEasy And Not MxControlCenter?

MxEasy is the perfect choice for all small and mid-sized video security systems using cameras connected in a network. MxEasy has fewer functions than the professional video management software **MxControlCenter**, because, as its name implies, MxEasy

is specially developed for ease of use. All of the main features of the MOBOTIX software are available in MxEasy.

Note

When planning your MOBOTIX system, make sure to note that with MxEasy you can integrate and manage up to 16 cameras. For larger video security systems, we recommend that you use **MxControlCenter** (`www.mobotix.com` under `Support > Software Downloads > MxControlCenter`).

1.2 Sample Scenarios

The following examples are possible ways to use MxEasy. They contain information about the required components and setup for the individual scenarios:

- **House** with two cameras
- **Gas Station** with four cameras
- **Hotel** with nine cameras

The application scenario and the components required to set up the system will be described for each of the examples.

For more information on the individual components of a complete surveillance system, see *Appendix B.1, System Components* in the MOBOTIX product descriptions and the manuals of the individual camera models at `www.mobotix.com`.

For a brief overview of all important steps for installing and configuring this type of surveillance system, see *Section 1.3, "Setting Up A Video Surveillance System – Overview"*. These steps are described in more detail in Chapters 3 to 5.

1.2.1 House With Two Cameras

This scenario consists of two MOBOTIX cameras that guard the entrance and the rear of a house. When the homeowner is away for the weekend, these cameras use integrated video and infrared motion detectors to detect unwanted movements around the house. In the case of an alarm, the video sequences are recorded in the cameras. In addition, this triggers a call to the homeowner's cellular phone and sends the images to the homeowner via e-mail.

MxEasy is the user interface in this example. Using this software, the user can conveniently and easily set up and operate their MOBOTIX cameras.

Required Components

- 1 x **MOBOTIX Q24M** (entrance)
- 1 x **MOBOTIX D24M** with L22 lens and Outdoor Wall Mount (rear of house)

- 2 x **MOBOTIX NPA-PoE-Set**
- Switch with at least four ports
- Network patch cables
- Computer installed with a Windows, Mac OS X or Linux operating system
- Configured DSL router registered with a VoIP provider (required for telephone and e-mail notification and external access via DynDNS)

1.2.2 Gas Station With Four Cameras

In this scenario, a gas station is guarded using a MOBOTIX system. The video sequences are recorded in the cameras.

Two cameras record the events at the pumps, the camera in the shop records any unauthorized access, and the camera above the register records the entire cash register area.

The cameras are set up to record video and audio data at a continuous rate of 2 frames per second during business hours. This ***continuous recording*** is deactivated outside of the opening hours. If motion is detected (using a video motion window), the camera will record at a higher frame rate for a specified period of time and send e-mails to predefined recipients. Different opening times can be set for the cash register and the shop areas of the gas station.

In the event of a dangerous situation, continuous recording at a higher frame rate and other actions (e.g. a telephone call) can be triggered by clicking **Manual Alarm**.

Required Components

- 1 x **MOBOTIX Q24M-Sec** (cash register area)
- 2 x **MOBOTIX D24M-Sec** (pumps)
- 1 x **MOBOTIX M24M-R16** (shop)
- 1 x PoE switch for supplying power to four cameras
- Uninterruptible power supply (UPS) units for supplying the cameras, the switch and, if desired, the computer
- Professionally laid Ethernet cables guided to the mounting positions of the cameras (no separate power cables required)
- Computer installed with a Windows, Mac OS X or Linux operating system
- Configured DSL router registered with a VoIP provider (required for telephone and e-mail notification and external access via DynDNS)

1.2.3 Hotel With Nine Cameras

In this scenario, an entire hotel is guarded using a MOBOTIX system. The video sequences are recorded in the cameras.

The cameras at the main entrance and the delivery entrance are event-controlled. Each of these cameras is connected to a **MOBOTIX ExtIO**. Additionally, these cameras can be used as a door intercom and to remotely open the doors. In the underground garage, there are two event-controlled cameras that record cars entering the garage or persons present in the area. Cameras in both hallways on the second floor and the third floor, in the gym and in the swimming pool area record all events when persons are present in these areas. A camera located in the lobby makes continuous recordings with a variable frame rate of all events in the entire reception area (lower frame rate for normal operation, max. frame rate in case of an alarm).

Hotel staff can trigger an alarm at the reception desk using the **Manual Alarm** feature. This alarm can be configured to trigger notification via VoIP telephone call (and/or e-mail) to be sent to predefined recipients.

Hotel staff can use the following additional features with the connected ExtIO modules for the cameras at both entrances:

- **Door Opener:** Opens the door connected to the corresponding camera.
- **Light:** Switches on the light located near the camera.
- **Speaker:** Switches on the camera microphone and the ExtIO on the speakers of the computer. When the cameras are displayed one after another using the **Camera Sequencer**, the software plays the sound from the active camera.
- **Microphone:** Activates the sound on your computer microphone and feeds it to the camera speaker (or the connected ExtIO), allowing your voice to be heard.
- **Acoustic Alarm:** Plays a preselected audio file over the camera speaker (or the connected ExtIO).

Required Components

- 6 x **MOBOTIX Q24M-Sec**, 5 with **In-Ceiling Set**
- 1 x **MOBOTIX D12D-Sec** with 1 L22 lens, 1 L43 (parking lot)
- 2 x **MOBOTIX M24M** with L22 lens
- 1 x PoE switch with at least nine PoE ports
- Uninterruptible power supply (UPS) units for supplying the cameras and the switch
- Professionally laid Ethernet cables guided to the mounting positions of the cameras (no separate power cables required)
- Computer installed with a Windows, Mac OS X or Linux operating system
- Configured DSL router registered with a VoIP provider (required for telephone and e-mail notification and external access via DynDNS)

1.3 Setting Up A Video Surveillance System – Overview

We will describe the most important steps for basic installation in this section. These steps are the same for all scenarios.

For thorough instructions regarding camera installation, see the section *Installation* in the corresponding *Camera Manual*. For information on the power supply and connecting cameras to the network, see the section *Connecting The Camera To The Network And To The Power Supply* in the corresponding *Camera Manual*.

Mounting And Connecting The Cameras

- **Installing the Ethernet cable and mounting the cameras:** Determine where you want to mount the cameras. Run the Ethernet cable to the mounting position of the camera. Mount the cameras and connect the Ethernet cable to the corresponding camera:
  - In the **House** example, one camera (Q24M) is mounted over the front door and the other camera is mounted behind the house under the roof overhang.
  - In the **Gas Station** example, two D24M-Sec cameras monitor the pumps in order to record persons and vehicles in the area. The shop camera is mounted in one corner of the room and the register camera is mounted on the ceiling above the cash register area so as to monitor both customers and the register.
  - In the **Hotel** example, one Q24M-Sec is mounted at the main entrance of the hotel and the corresponding ExtIO is mounted next to the door of the main entrance where it serves as a door intercom. Two M24M-R16 cameras monitor the entrance and the rear side of the underground garage. The remaining five Q24M-Sec cameras are installed in the planned positions using In-Ceiling Sets (in the hallways of the second and third floors, in the swimming pool area, in the gym, and above the reception desk). The camera above the reception desk is mounted in the ceiling so as to monitor the entire reception area.
- **Setting up the power supply:** Set up the power supply of the camera. Use either a commercial PoE switch, MOBOTIX Network Power Racks/Boxes or **MOBOTIX power supply units** in conjunction with **Network Power Adapters**.
- **Connecting the cameras:** Connect the Ethernet cable from the cameras to the PoE switch (or the Network Power Rack/Network Power Adapter). The PoE switch is connected to the local area network (LAN) via another Ethernet cable.
- **Checking the cameras:** Inspect the LEDs of the operating cameras to make sure that they indicate that the camera is operating normally.

The MOBOTIX cameras are now ready to use and available in the local area network. They can now be integrated into MxEasy.

Integrating The Cameras Into MxEasy

- **Installing MxEasy:** Insert the MxEasy CD (if available) or download the MxEasy software for your operating system. Install the application (see *Section 2.3, "Installing MxEasy"*).
- **Automatic search for cameras:** Launch MxEasy. The application automatically finds all MOBOTIX cameras in the local network and shows a preview image for each camera that is directly accessible. You can manually add cameras later on, which are outside of the local network (e.g. in your summer cottage). At this point, you can assign specific names to the individual cameras and set new access data (see *Section 3.1.1, "Searching MOBOTIX Cameras"*, as well as *Section 3.1.3, "Adding Remote Cameras Using DynDNS"*).
- **Network configuration for the cameras:** MxEasy will prompt you to enter the IP addresses to be used for the cameras in the network (or you may select the option *DHCP*). If there is a DSL router in the network, MxEasy automatically selects *DHCP* (see *Section 3.1.2, "Selecting And Adding New Cameras"*).
- **Resetting to MxEasy defaults:** When prompted, you may choose whether or not you wish to reset the cameras back to MxEasy defaults. You may also choose to retain the current settings if you have already configured the cameras using MxEasy or if MxEasy is to be installed on several computers. MxEasy automatically recognizes whether or not these settings have been applied and recommends the appropriate option.

After you have completed these steps, the cameras are displayed in MxEasy.

Further Steps

- **Displaying live images:** Click **Next Camera** to display each camera one after another in the main window of MxEasy and select the desired image section (see *Section 3.3, "Displaying Live Images And Monitoring Alarms"*).
- **Using image sections and zoom functions:** If necessary, define different image sections and change the zoom settings (see *Section 3.5, "Image Sections And Digital Zoom Functions (PTZ)"*).
- **Setting up alarms and recordings in the alarm planner:** Define the time period during which alarms are to be detected and select the events for which the camera alarms are to be triggered (see *Section 3.6, "Setting Up Alarms And Recordings"*).
- **Selecting the operation mode:** Select how MxEasy should record video and audio data - **Alert Mode** records continuously and **Alarm Planer Mode** records according to the times defined in the weekly time table. **Switched Off Mode** stops recording (see *Section 3.6.1, "Operation Modes Of MxEasy"*).
- **Creating manual alarms:** Click this button to trigger a manual alarm (this feature can also be used to test the recording functions).
- **Evaluating recordings:** Evaluate the recorded video sequences (see *Section 3.8, "Playing Back And Evaluating The Recordings"*).
- **Creating users and passwords:** If the computer is accessible to several users, make sure to set up passwords for the **Administrator**, **Owner**, **User** and **Guest** access levels (see *Section 3.9, "Creating Users And Passwords"*) once you have finished the

configuration of the system. *Appendix B, "Access Rights For User Access Levels"*, contains a list of the rights assigned to each user level.

When you have completed these steps, see *Chapter 4, "Advanced Operation"*, for further configuration options:

- **Printing and saving images and exporting recordings:** You can print and save images from the camera at any time (live images or recordings) and even export recorded video sequences separately (see *Section 4.1, "Saving, Printing And Exporting"*) using the print feature and the convenient preview option.
- **Saving the settings:** Save your settings so that you can easily restore the selected settings later (for example, after experimenting with the image settings) (see *Section 4.2, "Saving And Restoring Settings"*).
- **Activating the "Privacy Mode":** Activate this mode to stop all recording features and to prevent anyone from accessing the cameras controlled by MxEasy. While this lock can be deactivated directly from the current computer, you will need the user name and password set in this dialog to deactivate the lock from a different computer (see *Section 3.7, "System Shutoff - Privacy Mode"*).

Note

All MOBOTIX cameras controlled by MxEasy can use different ***recording targets***. Depending on the model and type of camera used, they can store the audio/video data on internal storage media (SD cards) or on file servers.

Newer cameras (Q22M, Q24M, D24M, M24M, all except ***Basic*** and ***Web*** models) and ***R models*** have factory-installed SD cards and are preconfigured for recording "out-of-the-box". At present, MxEasy cannot change the recording target of the cameras. To change this basic configuration setting, you need to change the configuration on the camera itself (see *Section 4.7, "Recording Targets - SD Cards And File Servers"*). This section also contains more information on the different recording targets.

2 SYSTEM INSTALLATION

2.1 System Requirements

Computer System

The computer system on which MxEasy is installed must meet the following criteria in order to ensure optimum operation of your MOBOTIX system:

- Computer with a current operating system (Windows XP or higher, Mac OS X 10.4 or higher with Intel processor, Linux with latest kernel available). Macintosh computers with PowerPC architecture are no longer supported.
- Monitor with a minimum resolution of 1024 x 768 pixels. The resolution should be higher (at least 1280 x 1024 pixels) in order to be able to use the full-screen display of one or more cameras.
- 2-button mouse with scroll wheel. MxEasy also supports joysticks and devices with a touch panel.
- To create the network connections, you need a switch or router with switch functionality.

2.2 Power Supply And Network Connection Of Cameras

For the Q24M, you should use the new blue MX-NPA-PoE-Set. Previous MOBOTIX network power accessories such as the NPA Set, Power Box and Power Rack (MX-NPA-Set, MX-NPR-4 and MX-NPR8/20) are not suitable for use with the Q24M

The MOBOTIX cameras can be supplied with power using a Network Power Adapter (**MX-NPA-PoE**) or a switch that supports the PoE standard IEEE 802.3af. Both of these methods will be briefly described here. For information about additional power supply options and for more details, see the section *Network And Power Connection* in the corresponding camera manual.

2.2.1 Power Supply When Connected Directly To A Computer

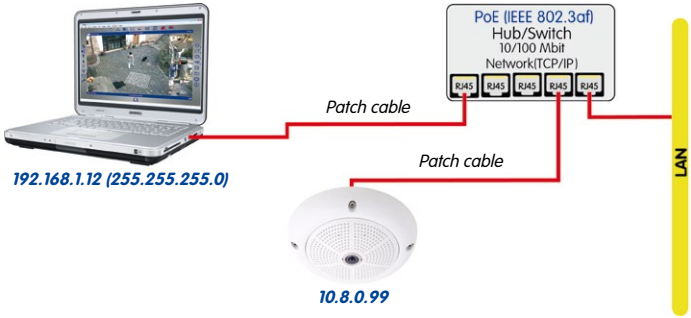
1. Connect the factory pre-installed cable of the camera to the **Camera** connector of the Network Power Adapter.
2. Connect the **PC/Power** connector of the Network Power Adapter to the Ethernet port of the computer.
3. Plug the RJ45 connector of the external power unit into the **LAN/Power** connector of the Network Power Adapter.

The IP addresses in the diagram are shown only as an example

2.2.2 Power Supply And Network Connection With A PoE Switch

Connect the factory pre-installed cable of the camera to the Ethernet connector of the PoE switch/router. The switch/router must support the PoE standard IEEE 802.3af.

The IP addresses in the diagram are shown only as an example



2.3 Installing MxEasy

The current version of MxEasy is available for download on the MOBOTIX website (**www.mobotix.com** under **Support > Software Downloads > MxEasy**).

Note

Only registered users are permitted to download MOBOTIX software from the website. If you are not yet a registered user with MOBOTIX, why not register now? Registered users have the following benefits:

- Access to the entire range of the freely accessible MOBOTIX software.
- Automatic subscription to the newsletter (if desired) to inform you about the latest MOBOTIX products.

2.3.1 Installation On Windows Computers

- Open the file for automatic installation (`MxEasy_*_Setup.exe`). You receive this file:
  - Download the file (`MxEasy_*_Setup.exe`) from the MOBOTIX website (release: **MxEasy Windows**), and save the file to your computer (for example, on the **Desktop**).
  - If you have received installation media (CD, DVD, USB stick), you can launch the installation file directly from the storage device (the installation file may be opened automatically after you have inserted the storage device).
- Follow the instructions of the installation assistant.

2.3.2 Installation On Mac OS X Computers

- Open the file for automatic installation (`MxEasy *.mpkg`). You receive this file:
  - Download the file (`MxEasy *.mpkg.zip`) from the MOBOTIX website (release: **MxEasy Macintosh**), and save the file to your computer (for example, on the **Desktop**). Unpack the file by double-clicking it.
  - If you have received installation media (CD, DVD, USB stick), you can launch the installation file directly from the storage device.
- Follow the instructions of the installation assistant.

2.3.3 Installation On Linux Computers

Because there are a number of different distributions available for Linux computers, MOBOTIX offers several different installation files. The supported distributions are listed for each release on **www.mobotix.com**.

Automatic Installation With Package Manager

- Install the file for automatic installation that corresponds ***to your distribution*** (`MxEasy*.deb/rpm`). You receive this file:
  - Download the file (`MxEasy*.deb/rpm`) ***for your distribution*** from the MOBOTIX website (release: **`MxEasy Linux`**) and save the file to your computer (for example, in the `/tmp` directory).
  - If you have received installation media (CD, DVD, USB stick), you can open installation file directly from the storage device.
- Please note the documentation of the applicable Package Manager.

Manual Installation

- Unpack the file for manual installation (`MxEasy*.tar.bz2`). You may obtain this file using one of the following options:
  - Download the file (`MxEasy*.tar.bz2`) ***for your distribution*** from the MOBOTIX website (release: **`MxEasy Linux`**), and save the file to your computer (for example, in the `/tmp` directory).
  - If you have received installation media (CD, DVD, USB stick), copy the installation file ***for your distribution*** onto your computer, for example to the `/tmp` directory).
- Open the file `PLATFORM NOTES` in the unpacked directory and follow the installation instructions described.

Note

By factory default, MxEasy checks at startup whether a new program version has been released on the MOBOTIX website and offers to update the software. For more information, see *Section 5.6, "Software Update"*.

3 GETTING STARTED

The previous chapter described the installation of MxEasy. In this chapter, you will learn everything you need to know to get started with MxEasy.

When you launch the program for the first time, **MxEasy Wizard** automatically finds all MOBOTIX cameras that are available in the network and guides you through the initial configuration for the selected cameras. You can then set up the cameras quickly and easily using MxEasy.

- *Section 3.1, "Using MxEasy For The First Time"*
- *Section 3.2, "Elements In The Program Window And Program View Modes"*
- *Section 3.3, "Displaying Live Images And Monitoring Alarms"*
- *Section 3.4, "The Most Important Camera Views And Image Settings"*
- *Section 3.5, "Image Sections And Digital Zoom Functions (PTZ)"*
- *Section 3.6, "Setting Up Alarms And Recordings"*
- *Section 3.7, "System Shutoff - Privacy Mode"*
- *Section 3.8, "Playing Back And Evaluating The Recordings"*
- *Section 3.9, "Creating Users And Passwords"*

See *Appendix B, "Access Rights For User Access Levels"*, for a list of the rights assigned to each user level (Administrator, Owner, User, Guest). For additional information on saving, printing and exporting recorded audio and video data as well as saving and restoring settings, see *Chapter 4, "Advanced Operation"*.

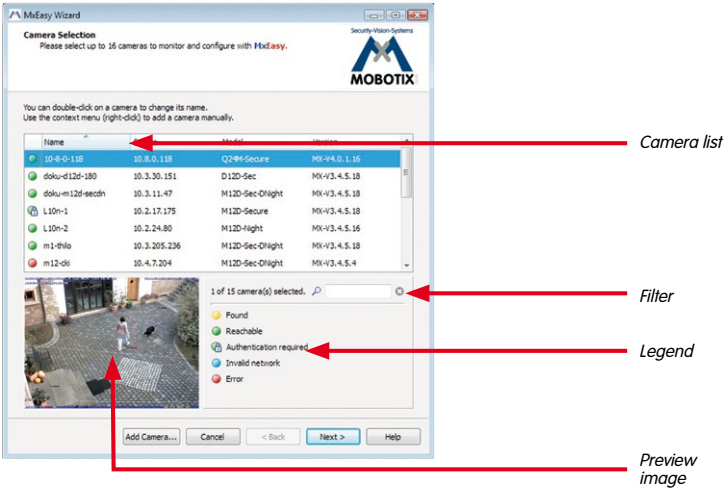
3.1 Using MxEasy For The First Time

3.1.1 Searching MOBOTIX Cameras

When you launch MxEasy for the first time, **MxEasy Wizard** automatically starts searching for MOBOTIX cameras and displays all detected cameras in a list. The camera list will be updated automatically as soon as new MOBOTIX cameras are connected to or removed from the network.

Note

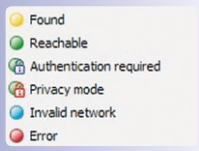
If MxEasy does not find any cameras (the camera selection list contains no entries in this case), check the firewall settings of your computer. If necessary, customize the settings for MxEasy to allow connections to and from MxEasy. If you do not have permission to modify these settings on your computer, contact your system administrator for assistance.



MxEasy Wizard: Selecting Cameras

In this dialog, MxEasy lists all detected cameras and displays the current operating status of each camera. In order to select the correct cameras, this dialog shows a preview image of the last selected camera and the camera information listed in the columns:

- **Camera list/name:** Click one of the columns to sort the camera list accordingly. You can change the order in which the cameras are sorted by clicking again. Double-click the camera name to change it or click **Edit** in the pop-up menu.
- **Filter:** You can enter any filter criterion in this field to narrow the list of cameras displayed (for example, if you enter `3.4.4.7`, the list will be narrowed down to the cameras that use this particular software version).
- **Legend:** MxEasy also automatically monitors and displays the operating status of all cameras. There are five statuses that MxEasy cameras can display. These statuses are displayed as colored circles listed before the names of the cameras:



  - **Green:** The camera is ready, responding and can thus be integrated immediately.
  - **Green with blue lock:** The camera can be integrated, but it is password-protected and the password has not yet been entered into MxEasy. Right-click the camera, select **Authenticate** and enter the correct user name and password. Once a valid user name and password have been entered, the symbol changes to a green circle and the lock disappears.
  - **Green with red lock:** This camera is in **Privacy Mode**. A camera in this mode cannot be accessed in any way until the camera is unlocked again. Note that this mode deactivates the audio channel as well as all event and recording features of the camera.
  - **Blue:** Besides the cameras in the same subnet as your computer that have already been added, MxEasy also finds new MOBOTIX cameras with factory IP addresses

using the Bonjour service. Since new cameras are usually in a different subnet, it is not possible to establish a video connection.

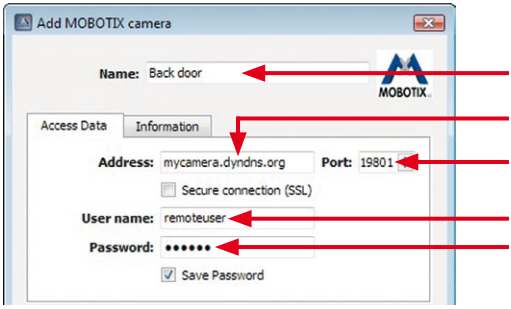
This usually happens if the IP addresses in the network are automatically assigned by a DHCP server (e.g. in the DSL router). The computer (and the cameras already added) are in a different subnet (e.g. `192.168.178.x`) than the MOBOTIX cameras with factory IP addresses (always `10.x.x.x`). If such a camera is added to the system, MxEasy can automatically integrate them into the subnet of the computer.

- **Yellow:** The camera has been found, but it cannot be integrated at this time. This is the case if MxEasy is busy determining the status of the selected camera, for example. The yellow circle will be replaced by a green or red circle after a short time.
- **Red:** The camera has been found but is not responding. This status occurs when a camera has been restarted but can also be caused during normal operation by a disruption in the HTTP connection (network error, firewall).

- **Preview image:** MxEasy displays the live images from the selected camera in this field ***as long as this camera is reachable*** (if more than one camera is selected, the preview window displays the images from the last camera to be selected).

Adding MOBOTIX Cameras Manually

Click the **Add Cameras** button in the MxEasy Wizard or on the **Add** command in the context menu of the camera list to add cameras located outside the network (e.g. on the Internet) as MxEasy cannot find these cameras automatically.

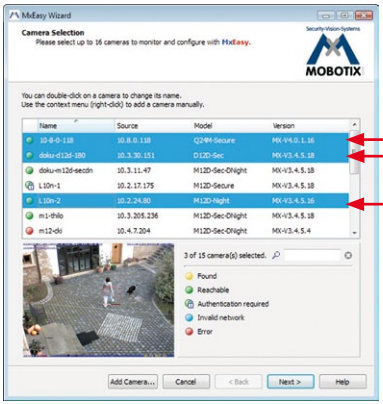


For more information on DynDNS and how to add "remote cameras", see *Section 3.1.3, "Adding Remote Cameras Using DynDNS"*.

3.1.2 Selecting And Adding New Cameras

Selecting Cameras

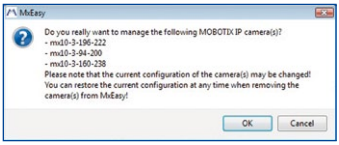
You can now select the cameras that you would like to add to MxEasy. To select more than one camera, simply use SHIFT-CLICK for a block selection or the COMMAND KEY and left-click for individual selection. COMMAND KEY + A selects all cameras. The preview always displays live images from the selected camera (if more than one camera is selected, this window always displays the live images from the last camera to be selected).



Select multiple cameras using the Shift or Command key

Adding Cameras

Once have you selected the desired cameras, click **Continue** and confirm the security prompt by clicking **OK**.

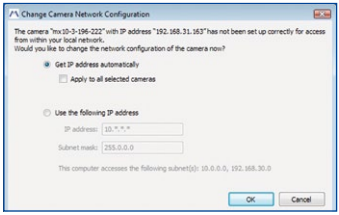


If some of the selected cameras are password-protected (status: **Authentication required**), MxEasy will prompt you to enter the corresponding user name and password.

In this step, **MxEasy Wizard** also saves the entire configuration of all selected cameras. As a result, this configuration can be easily restored at a later time.

Network Configuration

Network configuration for MxEasy Wizard will only be carried out if one of the selected cameras displays the status (**Invalid network**).



If your computer automatically obtains its IP address from a DHCP server (e.g. from a DSL router), then this is certainly the best choice for that specific camera and most likely for all other cameras that have been found in a different subnet (**Get IP address automatically** option). If you have assigned a fixed IP address to your computer, you will probably want to assign fixed IP addresses (issued by your system administrator) to every camera (the **Use this IP address** option). Normally, you enter the same configuration used for the network settings of your computer.

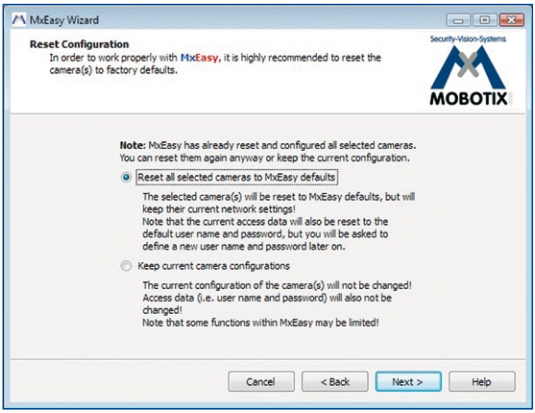
Once you click **OK**, the selected cameras will be reconfigured automatically. The cameras are now in the same subnet as your computer and are marked as **Reachable** in the camera list.

Resetting The Camera Configuration

You can choose whether to reset the cameras to MxEasy defaults in the next step.

Note

We highly recommend that you ***always reset the configuration of the cameras to MxEasy defaults***.



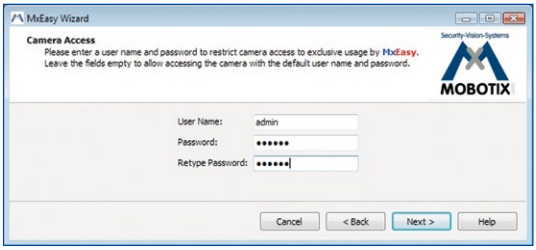
Click **Continue** to proceed.

Setting A User Name And Password

If you opted to reset all cameras to MxEasy defaults in the previous dialog, you can now set one user name and a password for all cameras. Note that doing so will also disable public access to the cameras. Leave the fields empty if you would like to skip this step.

Caution

For security reasons, it is highly recommended to assign a user name and password to protect the cameras from unauthorized access. If you would like to set a user name and password later on, please see *Section 5.3, "Setting Up A Global User For All MOBOTIX Cameras"*.



Caution

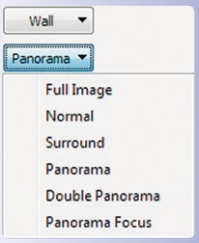
Make sure that you store information on user names and passwords in a secure location. If the administrator password is lost, the passwords for the cameras must be reset at the factory. This service is subject to a service charge!

If no user name and password have been entered, MxEasy uses the factory defaults (user `admin`, password `meinsm`). This automatically enables public access to the Guest screen via a browser window.

Click **Continue** to proceed.

Determining The Mounting Position And The Image View (Hemispheric Cameras Only)

If MOBOTIX Hemispheric cameras (e.g. a Q24M) are selected in the selection list, MxEasy Wizard displays the following dialog for each of the cameras, one after another. Here, you can determine the mounting position and the desired view of each camera (wall or ceiling). Depending on its mounting position, the camera provides different views.



Closing MxEasy Wizard

The cameras are displayed in the following dialog after the integrated cameras have been reconfigured:

Click **Continue** and **Finish** in the the next dialog to close the Wizard and display the selected cameras in MxEasy.

MxEasy saves the configuration of the cameras before they have been integrated into the system for the first time (and each time the program is launched). This way, you can safely change the camera settings when integrating the cameras into MxEasy. The **Backup Configuration** button offers you the option to undo changes you have made. For more information on saving and restoring configurations, see *Section 4.2, "Saving And Restoring Settings"*.

Notes On Closing MxEasy Wizard

- Cameras that are no longer needed should be deleted from MxEasy. This way, you can reset the connection to the MxEasy computers. Before these cameras are deleted, they should be restored to the settings they had prior to initial integration in MxEasy (the **Camera > Remove Camera** menu command). MxEasy will prompt you to do this when removing the cameras. This process can take place fully automatically.
- In addition to integrating cameras that are available in the local network, you can also use remote cameras in MxEasy (for example, a camera available online via DynDNS; see *Section 3.1.3, "Adding Remote Cameras Using DynDNS"*, on how to do this).
- When there are a large number of cameras in the network, it may take a moment for MxEasy to create the camera list and retrieve the camera information. However, you can select a particular camera entry before the entire list has been populated. The information and the preview image for this camera will be found and displayed first.
- The first time you launch MxEasy or the first time you use MxEasy to access MOBOTIX cameras, the Microsoft Windows firewall may display a warning dialog. Allow access for MxEasy.

3.1.3 Adding Remote Cameras Using DynDNS

MxEasy cannot find cameras that are outside of the local network. These cameras need to be added manually to the camera list. The simplest case is a camera that can be reached using a fixed IP address. To do so, select **Camera > Add Cameras** from the menu and add the fixed IP address of the camera in the **Camera Selection** dialog of the MxEasy Wizard.

In the majority of cases, however, the cameras are connected to the Internet using a broadband connection with dynamic IP addresses that change every day. This kind of Internet connection requires using ***DynDNS*** (*dynamic domain name resolution*). The dynamic DNS process allows using a given name registered with a free DynDNS service provider (e.g. `www.dyndns.org`) instead of a fixed IP address (e.g. `213.117.53.215`). The integrated DynDNS client of your broadband router automatically updates the IP address of the DynDNS service if the IP address changes. This service thus allows adding the camera using its DynDNS name (e.g. `mycamera.dyndns.org:19801`) in the **Camera Selection** dialog of the MxEasy Wizard.

Note

The IP addresses of cameras, routers, the ports and the DynDNS name **mycamera.dyndns.org** are only examples. Make sure that you are not using the same names and ports, but rather assign your own names and ports for accessing your cameras via DynDNS.

Caution

- It is highly recommended to **only use flat rate tariffs for the Internet connection of the cameras or the router**. Using a different tariff may produce costs that are too high.
- **Make sure that the factory access data of the cameras (user name "admin" and password "meinsm") have been changed!** If you would like to set a user name and password later on, please see *Section 5.3, "Setting Up A Global User For All MOBOTIX Cameras"*.

Scenario: Internet Connection Of The Cameras Using A Broadband Router

In this scenario, all cameras are connected to the Internet via a broadband router with a flat rate tariff. Note that you only need a DynDNS name for the router itself. This name and the corresponding access data are then entered in the router's DynDNS client. The router uses ***port forwarding*** to provide access to the individual cameras, e.g. **mycamera.dyndns.org:19801** for the first camera, **mycamera.dyndns.org:19802** for the second, etc. (the numbers following the colon ":" are examples for the individual ***ports***).

A ***port*** allows offering different services on one computer using the same IP address. This way, one computer can be used as web server (port **80**) and as e-mail server (port **25** for sending, port **110** for receiving e-mails) at the same time.

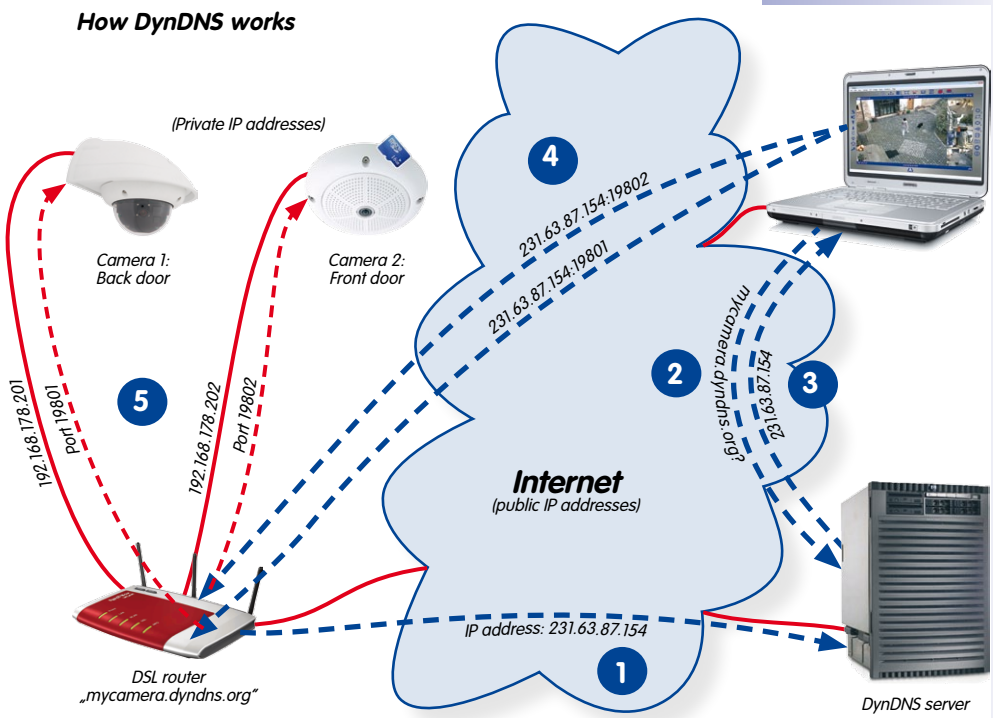
The router can assign certain ports of its external interface to specific internal addresses (this is called ***port forwarding***). For more information on ports, please see the information on **en.wikipedia.org** using **"TCP port numbers"** as search term.

The port forwarding itself is also configured on the router. Ports of the router's external IP address (**19801** and **19802** in the example) are assigned to local (internal) IP addresses of the cameras (**192.168.178.201** and **192.168.178.202**). In our example, the two ports are assigned to the following cameras (or more precisely - their IP addresses):

- **19801** → **192.168.178.201**
- **19802** → **192.168.178.202**

Once this has been configured, the router will forward a query from the Internet to port **19801** of its external IP address **213.63.87.154** to the local IP address **192.168.178.201**

and thus to ***camera 1***. In the same manner, the router will be forwarding queries on the external port `19802` to the local IP address `192.168.178.202`, i.e. to ***camera 2***.



- **1:** The router updates its IP address at the DynDNS server.
- **2:** The computer asks for the IP address of `mycamera.dyndns.org`.
- **3:** The DNS service sends the IP address `213.63.87.154` back to the computer.
- **4:** The computer uses different ports (`19801` und `19802`) when accessing the router's external IP address `213.63.87.154`.
- **5:** The router forwards queries on the ports `19801` and `19802` of its external IP address `213.63.87.154` to the internal IP addresses (`192.168.178.201` and `192.168.178.202`, respectively).

Registering A DynDNS Name

In this first step, you need to create an account at a suitable DynDNS service, if you have not already done so (e.g. `www.dyndns.org`). Make sure that you keep the access data (user name and password) stored in a safe place. You will need this information later on, when configuring the DynDNS client of the camera or the router.

In this step, you should also register the DynDNS name for the router that you would like to use for accessing the remote cameras. The name in our example would be "**mycamera**". The DynDNS service providers usually offer a selection of domains to add after the DynDNS name (separated by a dot). For this example, we selected "**dyndns.org**". The name for accessing the cameras thus always starts with "**mycamera.dyndns.org**".

Configuring The Router

- **Setting up the DynDNS client on the router:** Open the user interface of the router in your web browser by entering its IP address or its mDNS name (e.g. "**http://192.168.178.1**" or "**http://fritz.box**", respectively). If this does not work, please read the documentation of your router to find the correct IP address for accessing the router.

  Open the broadband router's configuration page of the DynDNS client in the web browser. Read the documentation of the router or search the router's online help to find more information on the "DynDNS" topic.

  Enter the DynDNS name and the access data you have registered with your DynDNS provider as described in the documentation. Furthermore, you should active the remote configuration of your router (at least temporarily).

- **Setting up port forwarding:** Open the broadband router's configuration page for port forwarding in the web browser. Read the documentation of the router or search the router's online help to find more information on the "port forwarding" topic.

  Assign one port to every local IP address (**192.168.178.201**, **192.168.178.202**) you would like to access from outside of the local network (e.g. **19801** → **192.168.178.201**, **19802** → **192.168.178.202**, etc).

Testing the DynDNS Configuration

Once you have completed the previous steps, you should run the following tests:

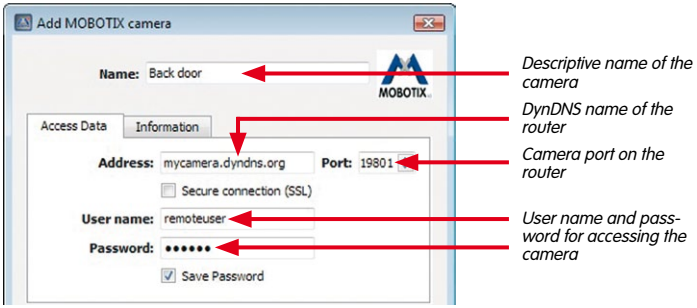
- **Test DynDNS:** Open your web browser and enter the DynDNS name you registered (example: **http://mycamera.dyndns.org**). If everything has been configured properly and the remote configuration has been activated (see *Section "Configuring The Router"*), you should see the user interface of the router.
- **Test the cameras:** Open your web browser and enter the DynDNS name and the port of the first camera (example: **http://mycamera.dyndns.org:19801**). You should now see the user interface of the camera and the browser should prompt you for access data (user name and password). Test all other cameras that are to accessed remotely using the appropriate ports (see above).

Caution

Deactivate the remote configuration of your browser if you had activated it in the *Section "Configuring The Router"*.

Adding A Remote Camera In MxEasy

To add a remote camera using DynDNS, proceed as described in *Section "Adding MOBOTIX Cameras Manually"*. Instead of an IP address, enter the DynDNS name of the router and the corresponding port of the camera:



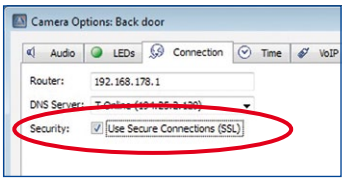
- **Name:** Descriptive name for easy identification of the camera ("`Back door`" in this example)
- **Address:** `mycamera.dyndns.org`
- **Port:** `19801`
- **User name:** User name for accessing the camera ("`remoteuser`" in this example)
- **Password:** Password for the user name

If everything has been configured properly, the status will change to green and MxEasy shows a preview image for this camera.

Activating SSL Encryption

Once this has been activated, all communication to and from the camera is encrypted using SSL. Using this encryption method makes "eavesdropping" on the data and access information (virtually) impossible. Proceed as outlined below to activate SSL encryption on the camera.

- Click on the **Next Camera** button until you see the first remote camera in the MxEasy main window (this would be the "`Back door` camera in our example).
- Click on the **Camera Options** button and select the **Connection** tab in the dialog.
- Activate the **Use Secure Connections (SSL)** checkbox.
- Click on **Apply** or on **OK** to apply the changes to the camera.
- Reboot the camera if prompted you to do so.



All communication to and from the camera is now using an SSL-encrypted connection. Note that you can also use the encrypted connection in a web browser by entering the camera's address as in the example below:

```
https://mycamera.dyndns.org:19801
```

3.2 Elements In The Program Window And Program View Modes

After the Wizard is finished and all preparations have been completed, MxEasy displays the live images. Up to four integrated cameras are displayed simultaneously. The images are displayed in the **Standard** or **Panorama** view modes of the MxEasy program window, which is divided into the areas shown below.

Standard View Mode Of The MxEasy Program Window

Note

Once the Wizard has finished, MxEasy will start in Panorama view mode, if at least half of the cameras are Hemispheric models and these cameras are running in **Panorama** mode. For further information on the Panorama view mode, please see *Section 3.2.2, "Program View Modes"*.

3.2.1 Areas Of The MxEasy Program Window

Main Window

Depending on the view you have selected, this area of the program window displays the live image of a camera, the recorded images of a camera, the camera overview or a calendar for alarm planning. When MxEasy is launched for the first time, the program window appears in Standard mode and displays the live image of the first camera. There are two information bars located above and below the main window. In the Standard and Player views, these bars display specific information on the camera currently displayed in the main window. For more information, see *Section 3.2.1, "Areas Of The MxEasy Program Window"*.

Image Bar

Depending on the current view, the image bar contains the live images or recorded event images of up to three cameras. Live images are displayed with a camera symbol and event images are displayed with a cassette symbol in the upper right-hand corner of the image. For more information on the image bar, see *Section 3.2.2, "Program View Modes"*.

Note

When MxEasy is launched for the first time, there are usually no event images. This is always the case if the integrated cameras are new and have not recorded any event images yet. MxEasy then displays a placeholder image in the bottom right-hand corner of the event image area. Because the image bar is filled dynamically according to the number of integrated cameras, MxEasy may display this image multiple times.

Toolbars

Using the buttons located around the main window, you can quickly and easily perform the most important functions for setting up and operating your MOBOTIX video surveillance system. These include functions for live surveillance, controlling the cameras, playing back recorded video and audio data and configuring integrated cameras.

The following buttons are among the software's special features and are used to activate the different ***function areas of MxEasy***. These buttons can be used to adjust the settings in many different function areas of the program. Clicking these buttons causes a number of different buttons to appear at the bottom of the program window in the dynamic toolbar. You can use these buttons to make detailed settings:

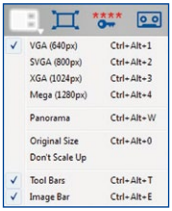
- **Player mode:** MxEasy switches to Pleaser mode and displays the events of the camera in the main window. The other cameras (if available) are displayed in the image bar. Empty areas in the image bar are filled with the camera's latest event images.

- **Alarm Planner:** Displays the alarm settings for the current camera in the calendar view. You can use this view to set the times and sensors. The cameras then use these settings to trigger alarms, actions and messages.
- **Image Settings:** Here, you can adjust the saturation, image brightness, contrast and sharpness of the camera images to suit your needs. Using the **Exposure Window** feature, the camera can adapt the exposure to the contents of specific image areas.
- **Image and Recording Formats:** Here, you can set the image format for live images and recording and adjust the image quality and the frame rate. You can also determine whether the camera's audio channel is to be recorded and whether the displayed image or the full image (or sometimes a section thereof) is to be recorded.
- **PTZ Views:** These buttons allow for simple setting (and subsequently selecting) predefined image areas that have been created using the camera's digital zoom features.

Clicking **Player Mode** or **Alarm Planner** changes the content of the main window (see *Section 3.2.2, "Program View Modes"*).

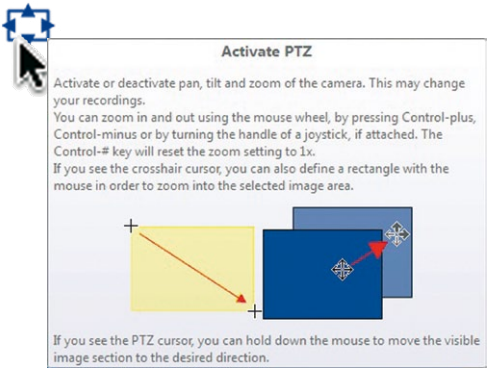
Buttons With Selection Menus

Many buttons are not only used to activate or deactivate a particular feature. These buttons also allow you to set certain values by selecting them from a menu. Selection menus are displayed by right-clicking the button or clicking the small triangle at the bottom right-hand corner of the button.



Tool Tips For Buttons And Other Elements Of The User Interface

Hover the mouse pointer over a button or element to display the corresponding ***Tool Tip***. Tool Tips are available for all buttons and other elements on the user interface. If you do not wish to display the Tool Tips, you can choose to display the headers only (**Tools > Detailed Tool Tips** menu command).



Menu Bar

Using the menu bar, you can access most of the features and settings that can be activated using the buttons in the toolbars. There are certain features that can only be activated using the menu bar, for example switching the current environment.

Status Bar

MxEasy displays certain information about the runtime at the bottom of the application. When the mouse is moved over camera windows or buttons, for example, the status bar displays the name of the camera or a short description of the element.

Information Bars

MxEasy shows the relevant information for the current view mode in the two blue bars above and below the main window.

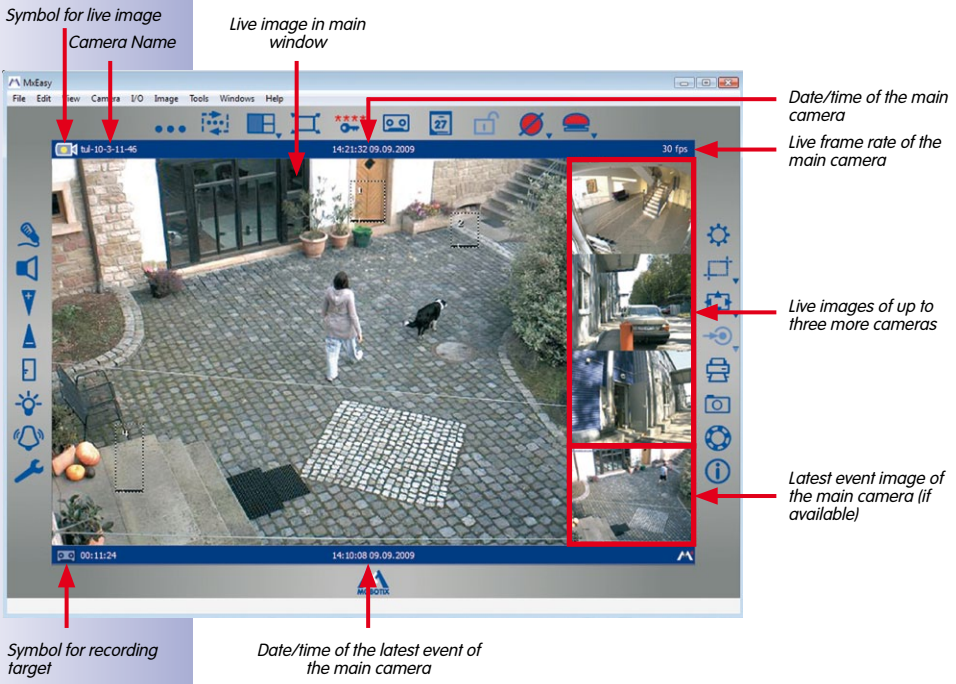
3.2.2 Program View Modes

Standard

This view of the main window is filled with the live image of the first camera that has been integrated into the system. The image for the latest event of this camera is displayed in the image bar at the bottom. The three other windows in the image bar are filled with live images from other cameras.

If there are fewer than four cameras in the system or fewer than four cameras have been activated for Standard mode (see the *Camera Overview* section), the empty windows in the image bar are filled with additional event images from the main camera.

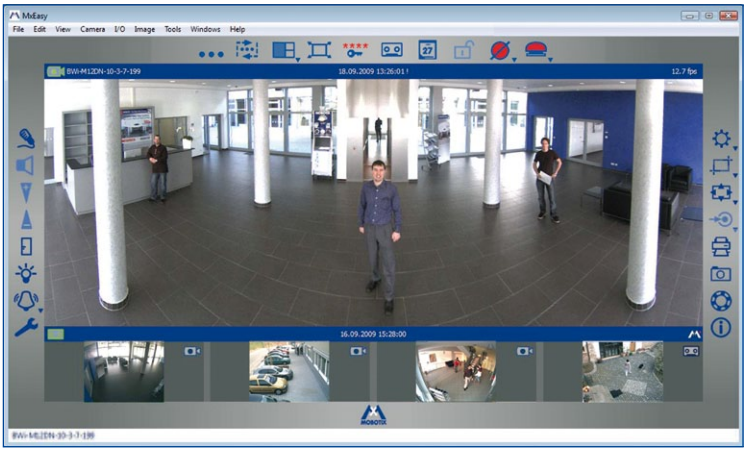
Elements of the Standard mode:



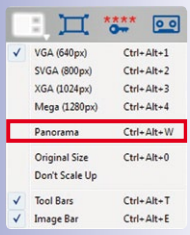
Normal Mode Vs. Panorama View

When displaying images from wall-mounted MOBOTIX Hemispheric cameras (e.g. Q24M), MxEasy can be switched to the "Panorama" view, which displays the images with an aspect ration of 8:3 (instead of the standard 4:3). In this mode, the image bar is located ***below*** the window of the main camera. The images of the image bar are ordered from

left to right instead of top to bottom. The window at the bottom right-hand side is used to display the latest event image.



To activate the Panorama view mode, open the context menu using the **Camera Overview and Layouts** button or the **View > Layout** menu.



Notes

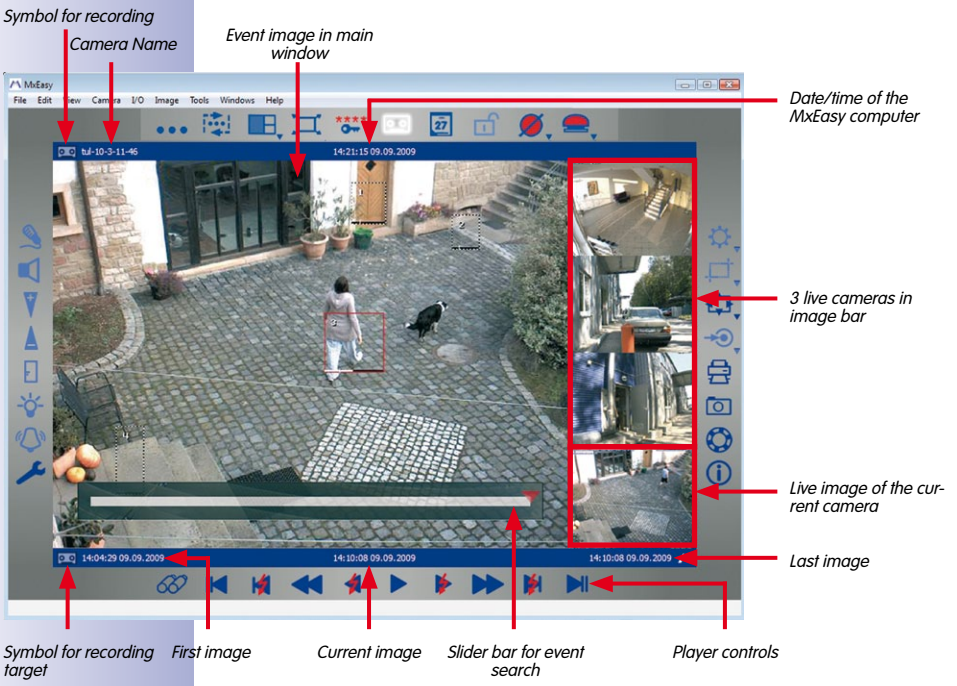
- This view is particularly suited for the Hemispheric cameras (e.g. Q24M), which records images in Panorama mode with an aspect ratio of 8:3.
- This aspect ratio of the main window is retained, even when a camera image with an aspect ratio of 4:3 (e.g. VGA) is displayed in the main window.

Player View

This mode is used to search for and play back recorded data. It is activated by clicking the **Player Mode** button from Standard or Panorama view mode The main window now displays the image for the latest event recorded by the main camera. The image bar displays the live images of the first four integrated cameras.

Additional buttons are displayed below the main window. These buttons can be used to play back and navigate through recorded video and audio data.

Elements of the Player mode:



Click the **Player Mode** button again to return to Standard mode. When you restart MxEasy, the program automatically activates the mode that had been activated before the program was closed (Standard mode or Player mode).

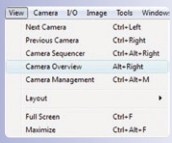
MxEasy displays an icon for the current **Recording Target** in the lower information bar of the main window. Hold the mouse pointer over the icon in the information bar to see this tool tip.

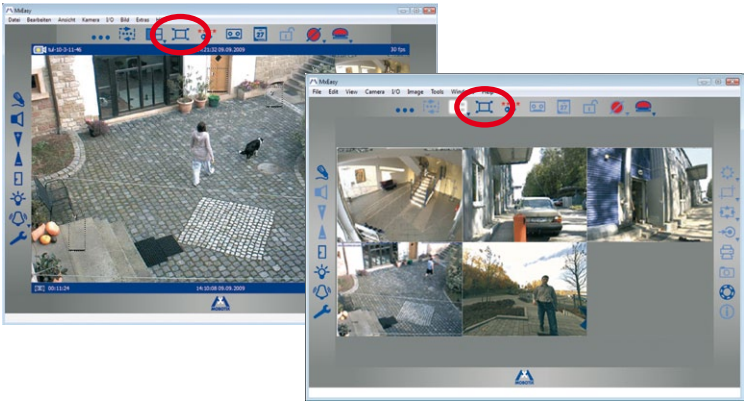
Note

Double-clicking the event image in the image bar also switches from Standard to Player mode. Another double-click into the live image of the image bar switches back again to Standard mode.

Camera Overview

To use this view, click on the **Camera Overview and Layouts** button or on the **View > Camera Overview** menu command. This view shows the live images of all cameras that have been integrated into the system in a grid with camera windows of the same size. MxEasy uses the space of the program window that is usually occupied by the main window, the image bar and the information bars.



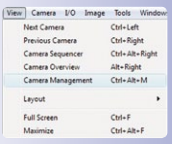


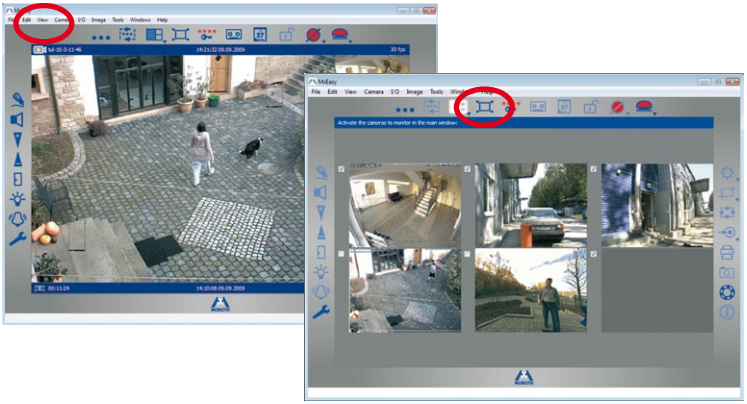
Click the **Camera Overview and Layouts** button again to return to Standard mode.

Camera Management

To use this view, click on the **View > Camera Management** menu command. Note that this also activates the **Camera Overview and Layouts** button. If you would like to leave this view again, it is sufficient to deactivate the button or the **View > Camera Management** menu command.

This view displays all of the integrated cameras (i.e. up to 16 cameras). Standard mode and Player mode display ***up to four of all cameras, which have been activated*** in Camera Management. This way, it is possible to "lock" the live images and image playback for individual cameras in certain applications scenarios without having to remove these cameras from the system.

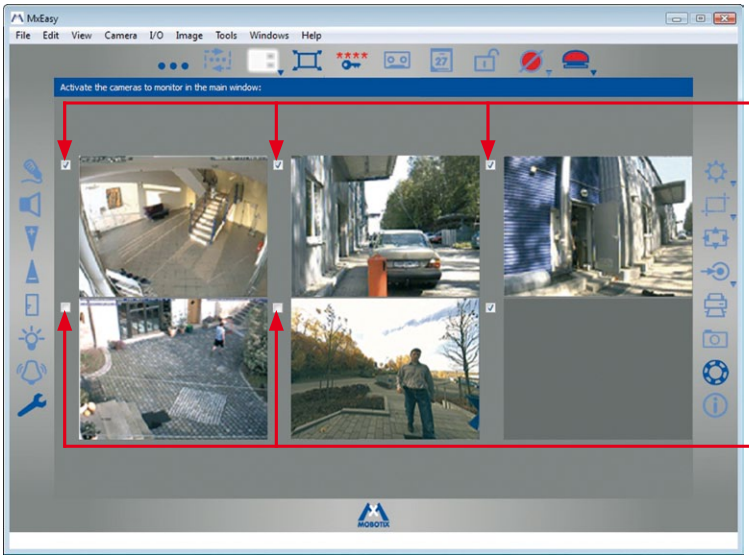




The **Next Camera** and **Camera Sequencer** buttons also use the list of all cameras activated in the Camera Management. The sequence of the cameras in this list corresponds to the display sequence in the Camera Management and proceeds from top to bottom and left to right. You can change this sequence using drag and drop: If you move a camera image using the mouse and allow it to fall onto another position, these two cameras switch positions in the Camera Management and also in the Camera Overview.

For more details on working with the **Next Camera** and **Camera Sequencer** features, see *Section 3.3, "Displaying Live Images And Monitoring Alarms"*.

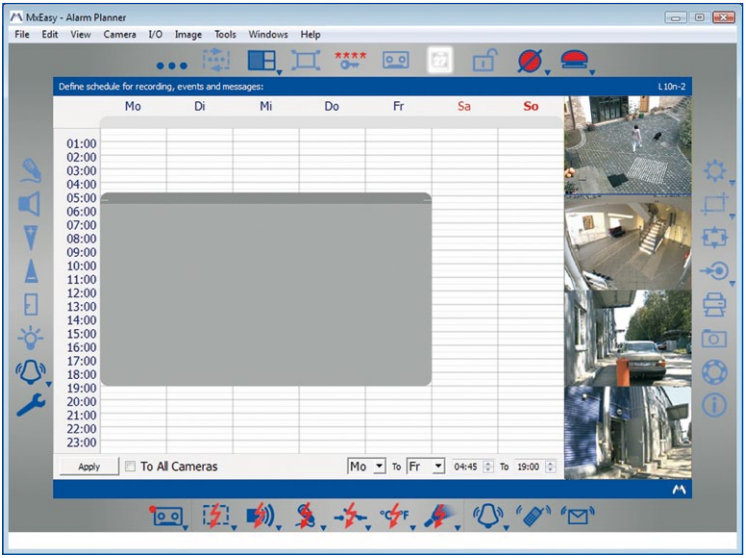
Elements of the Camera Management:



Click the **Camera Overview and Layouts** button again to return to Standard mode.

Alarm Planner Mode (Calendar)

In this mode, you can define time periods for recording events for the current live camera in the main window. Activate this mode by clicking the **Alarm Planner** button. The live images of the current camera and up to three additional cameras are displayed in the image bar. Using the calendar displayed, you can define time periods, the events that trigger an alarm, the actions taken during recording and the type of recording to be used in case of an alarm. Here, you can also define time periods for continuous recording that is independent of events. For more details, see *Section 3.6, "Setting Up Alarms And Recordings"*.



Click the **Alarm Planner** button again to return to Standard mode.

Note

Double-click the live image in the top right-hand corner of the image bar to switch the positions of the live image and the calendar. The calendar is now displayed at the top of the image bar and the live image is displayed in the main window. Double-click the calendar again to return it to the main window. This feature can be helpful for defining video motion windows (see *Section 3.6.5, "Selecting The Alarm Sensors"*).

3.2.3 Size Of The Program Window

The **Standard**, **Panorama**, **Overview** and **Player** view modes described in *Section 3.2.2, "Program View Modes"*, are mainly controlling the layout and the format of the MxEasy display elements (main window, image bar). Besides the view modes, MxEasy features additional possibilities to control the size of the program window and its display windows.

These possibilities allows using the resolution of the monitor as efficiently as possible, for example. On the other hand, this means that the images may need to be scaled, resulting in reduced image quality as compared to the original image size or if the scaling factor is using "favorable" multiples.

For this reason, MxEasy offers an additional option to adjust the size of the program window in such a manner that the camera images are displayed in optimum quality. The following paragraphs will present the individual settings.

Program Window Modes

For all modes described above (except Alarm Planner), MxEasy can be switched to two special modes that optimize the available monitor space when displaying the camera in the main window or the Camera Overview. The **View** menu contains the **Full Image** and **Maximize** commands.

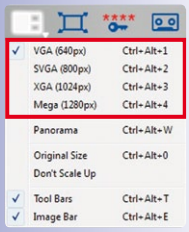
Full Image

These settings can also be activated or deactivated using the **Full Image** button. This command resizes the main window or the camera overview as well as the surrounding symbol bars to cover the entire screen; the image bar is not displayed in this mode. The frame of the program window and the Windows task bar are no longer visible. You can deactivate this mode by clicking the **Full Image** button again, by selecting the **View > Full Image** menu command, or by pressing the ESC KEY.

Maximize

The entire program window is expanded to fit the screen so that the main window or the Camera Overview are displayed with the toolbars. The frame of the program window with the title bar, the menu bar and the status bar and the Windows task bar remain visible. This mode can be deactivated by pressing the ESC KEY or the **Minimize** button in the Windows title bar.

Size Settings

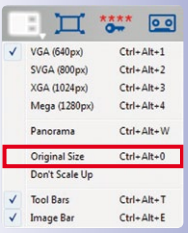


Clicking on the **Camera Overview and Layouts** button or the menu command **View > Layout** opens an additional selection menu, which allows controlling the size of the display elements.

The adjustable sizes, **VGA (640 px)** to **MEGA (1280 px)**, refer to the size of the main window. The size of the image bar is automatically adjusted to the new size of the main window.

Note

Using a size setting that is identical to the size of the camera image will result in optimum image quality.



'Original Size' Setting

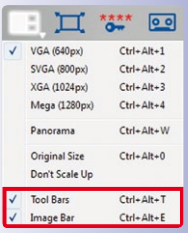
This option displays the unscaled live image of the current camera in the main window with the original image resolution from the camera. The main window sets the size of the image (**VGA**, **SVGA**, **XGA** or **MEGA**) so that it is either exactly the same size as the camera image or slightly smaller. If the camera image is too large because, for example, the camera displays a QXGA image of 2,048 x 1,536 px or records at a resolution that does not correspond to the four available resolution settings, the main window will display a centered section of the image instead of the entire camera image. You can use the digital PTZ commands to view the edges of the image that are not visible in the main window. For more details, see *Section 3.8, "Playing Back And Evaluating The Recordings"*.

Caution

- When you select **Original Size**, MxEasy automatically starts its automatic size adjustment feature. Afterwards, this option is no longer displayed in the selection menu as the manual PTZ commands can also lead to the same state and can also chage this state afterwards.
- If the camera in the main window records images in Panorama mode (aspect ratio 8:3), MxEasy automatically activates the Panorama view (if you acknowledged the user prompt).

'Don't Scale Up' Setting

This option ensures that camera images that are smaller than the main window are not enlarged (scaled up). These images are displayed in their original size, centered in the main window. This option allows preventing images from being scaled up, which can result in reduced image quality.

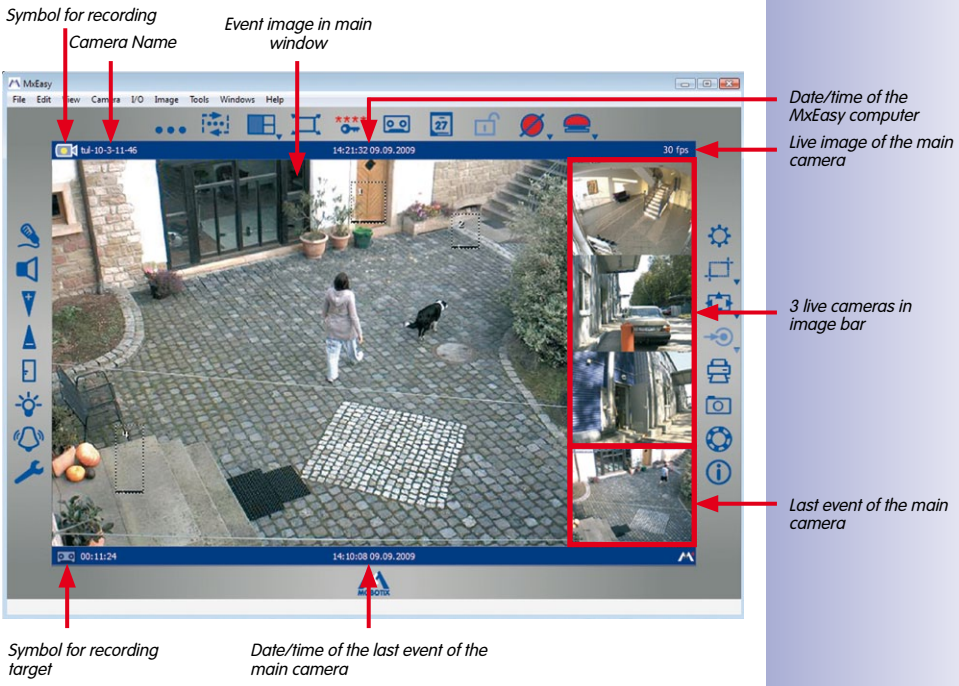


'Toolbar' And 'Image Bar' Options

You can use the selection menu to hide and/or display the toolbars and the image bar.

3.3 Displaying Live Images And Monitoring Alarms

In order to display and monitor the live images of the cameras, MxEasy mainly uses the Standard and Panorama view modes. This section describes the settings that are available when using these view modes.



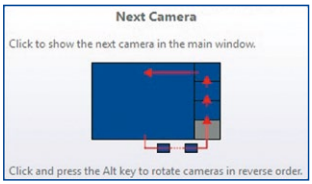
Activate the **Speaker** button to hear the audio channel of the live camera shown in the main window. Note that this is only possible if the camera microphone has been activated (see *Section 5.2.2, "Audio Settings"*). If the camera microphone has not been activated, MxEasy disables this button.

MxEasy displays an icon for the current **Recording Target** in the lower information bar of the main window. Hold the mouse pointer over the icon in the information bar to see the tool tip.

3.3.1 Switching The Displayed Cameras

Use the mouse to drag the desired camera from the image bar into the main window (or double-click the desired camera) to display a different camera in the main window. The cameras then switch places.

Manually Cycling Through Cameras



In Standard mode, up to four live images can be displayed. In the Camera Overview, however, you can activate up to 16 cameras for live display. Using the **Next Camera** button, you can switch to the next camera in the list of activated cameras. MxEasy then removes the current camera from the main window and replaces it with the top camera in the image bar. The other two cameras in the image bar move upwards and a new camera from the list of activated cameras is added in the bottom position in the image bar.

Automatically Cycling Through Cameras

Click the **Sequencer** button to automate the process of switching to the next camera. This mode sets MxEasy to automatically switch to the next camera activated in the Camera Overview every five seconds. You can change this time interval under **Tools > Preferences** on the **Behavior** tab.

You can switch to the previous camera or the next camera before the set time interval has elapsed using the arrow keys on your keyboard (CTRL+→ or CTRL+←). You can stop or restart the automatic cycle through the images by pressing CTRL+SPACEBAR. This gives you more time to review a suspicious situation, for example.

Note

Camera Sequence

The activated cameras will normally be displayed in the same sequence as they appear in the Camera Overview. If a camera in the main window is replaced by a camera in the image bar as described above, this will change the sequence accordingly. Each change in the Camera Overview (activation or deactivation of cameras, switching the sequence of the cameras) changes the display sequence to match the current sequence in the Camera Overview.

3.3.2 Alarm Display

If an alarm is detected, a flashing red lightning symbol is displayed in the image of the camera that triggered the alarm. This symbol is displayed until you acknowledge the alarm by clicking the image. This applies to both the main window and the image bar.

You can define the precise reactions of the software in the case of an alarm under **Tools > Preferences** on the **Behavior** tab (see *Section 4.8.2, "'Connections' Tab"*).

For more information on alarms and alarm notifications, see *Section 3.6, "Setting Up Alarms And Recordings"*.

When you display an event by double-clicking or dragging the event from the image bar into the main window, MxEasy automatically switches to **Player** mode and displays the desired event in the main window. For more information on Player mode, see *Section 3.8, "Playing Back And Evaluating The Recordings"*.

Note

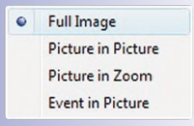
If the time displayed in the title bar of the main window is flashing, it means that the system time of the camera in the main window differs by more than 15 seconds from the system time of the computer. Make sure to synchronize the computer and the connected cameras using a time server. For additional information on this topic, see *Section 5.2.5, "Time Settings"*.

3.4 The Most Important Camera Views And Image Settings

3.4.1 Camera Views

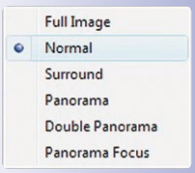
You can select one of the views available for the selected MOBOTIX camera using the pop-up menu of the **Image and Recording Formats** button.

Camera Views (All Cameras except Hemispheric Models)



- **Full Image:** MxEasy displays the entire live camera image (without inset image).
- **Lens distortion correction:** MxEasy displays a portion of the live camera image with lens correction. This option is available when the camera configuration is adjusted accordingly.
- **Picture in Picture:** This option displays a small image from one camera sensor inset in the large image of the other. This setting is available on MOBOTIX Dual models only.
- **Picture in Zoom:** MxEasy displays a small version of the entire live camera image in the bottom right-hand corner of the large live camera image. This way, the entire image is visible even when the live image is zoomed.
- **Event in Picture:** MxEasy displays a small version of the latest event image in the bottom right-hand corner of the large live camera image.

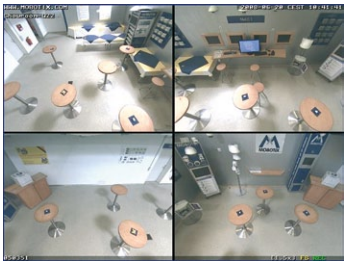
For more information on the different views available for MOBOTIX cameras, see the *General Image Settings* section in the *Software Manual*.



Camera Views (Hemispheric Models)

- **Full Image:** The entire (distorted) full image of the image sensor is displayed.
- **Normal:** A corrected image is displayed. This image can be panned and tilted. This is the factory default image setting for the Q camera models.
- **Surround:** MxEasy shows four image sections pointing to each of the four cardinal directions in the same view. You first need to specify which direction is North. All four views can be changed independently of each other using PTZ commands.
- **Panorama:** This displays the corrected image of an entire room (corrected 180° panorama) from the left to the right wall. This view is available for the wall-mounted MOBOTIX Q model only. The aspect ratio of this view is 8:3 (width to height).
- **Double Panorama:** A panorama view of the Northern half of the image is shown together with a panorama view of the Southern half of the image with an aspect ratio of 4:3 (width to height). This view is available for the ceiling-mounted MOBOTIX Q model only. Both partial views (North and South) can be changed independently of each other using PTZ commands.
- **Panorama/Focus:** This view is a combination of the Panorama view (8:3) and two smaller individual views (each 4:3) in a single image. This view is available for the ***wall-mounted*** MOBOTIX Hemispheric cameras.

Q24 view "Normal"



Q24 view "Surround"

Zoomed image section

Q24 view "Full Image"

For more information on the views available for MOBOTIX Hemispheric cameras, see the section *First Images And The Most Important Settings In The Browser* in the *Camera*

Manual. In addition, refer to the information in the section *Setting Image And Recording Formats* (the *Recorded Image* option) in the *Camera Manual*.

3.4.2 Image Settings – Formats, Quality, Frame Rate, Hemispheric Settings, Recording

By clicking **Image and Recording Formats**, additional buttons for adjusting important properties appear along the bottom edge of the program window:

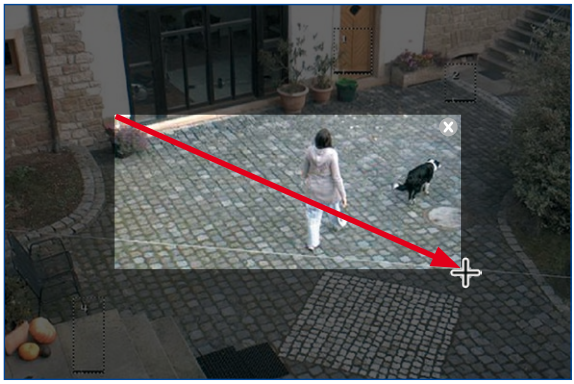
- **Resolution:** You can set the resolution of the camera image with this option. The resolution you set may be different from the resolution displayed in the main window of MxEasy. Regardless of the current resolution of the camera, the camera image in the main window of MxEasy is always displayed with the image size set here (VGA, SVGA, XGA or MEGA).

  When you click this button, a magnifying glass appears in the camera image. Click the plus or minus (+/-) button of the magnifying glass to change the image resolution of the camera (the new image resolution will soon appear in the camera image). You can now move the magnifying glass to a new image area.

  The section in the magnifying glass area always shows the original resolution of the camera (one pixel of the camera image will appear as one pixel on your monitor). This means that if the image resolution of the camera is set to a value higher than the resolution of the main window, the magnifying glass area will show an enlarged image (for example, 2 times or 4 times the size). This function allows you to accurately judge the image detail provided by the camera and used for the recording. You can optionally select the desired resolution in the context menu of the **Resolution** button.

- **Custom Size:** You can create a camera image with a custom resolution and size with this option. To do so, use your mouse to draw a box directly in the camera image. Windows set up in this manner will be automatically saved and activated once you deactivate this button.

By clicking the **Custom Size** button again, you can readjust or delete the area that you have defined in the camera image. This area is also displayed at the correct position in the full camera image, which has been darkened. You can move this area with the mouse, change its size or delete it.



This function is useful if only certain areas of the camera image are allowed to be monitored, for example.

When monitoring pumps at a gas station, for example, it may be useful to resize the image to display only the horizontal strip in the middle that is of possible interest. This way, the recorded images require less storage space. Compared to a full image, the resized image requires less bandwidth for live display and less storage space for recorded data.

- **Image Quality:** The three values that can be set using this button (*Fast*, *Normal*, *High*) influence the image quality in which the image sensor is to be read. Increasing the image quality improves the camera image but also decreases the maximum available frame rate - for VGA resolution (640 x 480 px) and higher. The *Normal* option offers a good compromise between the High and Fast options. For more information, see the sections *General Image Settings* and *Image Programs* in the *Software Manual*.
- **Obscure Area:** If certain areas in the image are meant to remain unrecognizable, you can use this button to obscure these areas with the camera (for example, workstations, public areas, etc.). To do so, use your mouse to draw one or more boxes directly in the camera image. Windows set up in this manner will be automatically saved and activated once you deactivate this button.
- **Camera Frame Rate:** From the pop-up menu of this button (right-click), you can set the frame rate provided by a camera (options: *No Limitation*, *25 fps*, *16 fps*, *12 fps*, *8 fps*, *4 fps*). This function can be used as a way to manage bandwidth. The lower the frame rate, the less bandwidth is required to transfer the video data. Note, however, that you should primarily use the functions outlined in *Section 4.5, "Bandwidth Management"*.

- **Mounting Position:** You can set the mounting position of a MOBOTIX Q model (*Ceiling* or *Wall*) from the pop-up menu of this button (right-click). If ceiling mounting is enabled, you can also specify the North direction of the camera. Activate the button and turn the image to the right or left using the symbols that appear. The North direction set in this manner will be saved automatically once you deactivate this button.

  The defined North direction influences the **Surround** and **Double Panorama** camera views. In the Surround view, the image is composed of four partial images - consisting of views to the North, East, South and West. The Double Panorama displays two 180° panorama views arranged vertically. One image is a view to the - North, the other is a view to the South. For additional information, see the section *First Images And The Most Important Settings* in the *Q24M Camera Manual*.

- **Recorded Image:** This option is important for all cameras for which a zoomed section of the live image (PTZ) is shown instead of the full camera image. This applies to all cameras that are digitally zoomed so that individual areas of the image can be monitored more closely, particularly hemispheric camera models (Q24M/Q24M). If a live image is recorded in this manner (option: **Record Shown Image**), the areas that are not visible in the zoomed image will also be missing from the recording. You can prevent this by selecting the **Record Full Image** option, which guarantees that a full camera image is always recorded - regardless of the live image that is visible or its settings.

  Note

  When playing back video data, MxEasy can automatically correct the recorded (distorted) full images of Hemispheric cameras in the same views (Surround, Panorama, etc.) as are available for live images. In this case, the PTZ commands can be carried out after the image is recorded so that the user can inspect any areas of the image more closely during playback.

  Note that any subsequent search of the full camera image (PTZ functions) is only possible with the **Record Full Image** option.

Q24M: Shown Image

Q24M: Full Image

- **Record Audio:** If this button is activated, the audio from the camera microphone will be included in the recording. If the button is deactivated, the video sequences will be recorded without sound.

Note

These settings apply for all recordings. You cannot make separate settings for each recording time period.

3.5 Image Sections And Digital Zoom Functions (PTZ)

With MxEasy, you can use digital zoom to scale the displayed image up or down and pan the modified image area from side to side or tilt it up and down. These functions are called ***PTZ functions*** (Pan/Tilt/Zoom).

3.5.1 Zooming The Image Section

You can use the following options to operate the zoom functions:

- Roll the mouse wheel forward in order to zoom in on the image. Roll the mouse wheel backward in order to zoom out from the image.
- Press and hold the ALT key (Windows) and use the mouse to draw a rectangle in the live image. MxEasy displays the selected image section in the main window.

Note

This zoom function is ***not*** available for the live image display of MOBOTIX Hemispheric cameras.

- Press and hold the COMMAND KEY. Press the buttons + or − in order to scale the visible image section up or down. CTRL+# shows the full image again.
- Rotate the control stick of the joystick to zoom in on or zoom out from the image.

Note

If you are using a joystick, make sure that you have properly configured it ***before*** you start MxEasy.

3.5.2 Panning And Tilting The Image Section

You can use the following features once you have defined an image section:

- Use the mouse to drag the zoomed image area in the desired direction.
- Press the arrow keys on the keyboard to drag the image section as desired.
- Move the joystick left, right, up or down to pan and tilt the image section as desired.

After you have defined the image section, you can save this view to be used later.

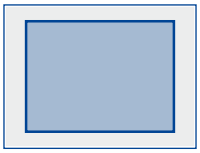
3.5.3 Digital Zoom In MxEasy And In The Camera

A digital zoom of an image is carried out in two steps:

1. Application zoom:

Often, the camera records images with a higher resolution (e.g. MEGA 1280 x 960 px) than that of display in the MxEasy main window (e.g. VGA 640 x 480). In the display, multiple pixels are combined, ***reducing the size of the pixels***. Note that the digital application zoom is active now.

The software displays an ***arrow cursor*** over the live image. When you move the mouse or the joystick, the highlighted black arrows of the cursor indicate the direction in which the image is being moved.



In this case, a digital zoom causes the main window to display an image section instead of the entire camera image. This first step - the "application zoom" - is visualized by a small rectangle in the upper right-hand corner of the image. This visualization shows the displayed image within the entire camera image.

If you perform any panning or tilting commands while the image is zoomed, these motions will only affect the area inside the entire camera image. These motions also are visualized by the small rectangle.

As you continue to zoom, the application zoom is used until the selected section of the camera image is as large as possible in the main window (until the pixels are no longer reduced). The pixels will not be enlarged if you continue to zoom. Instead, the zoom function is taken over ***by the camera***.

2. Camera zoom:

When zoom and PTZ commands are carried out inside the camera, the camera reads and displays a smaller section of the image sensor. This way, more pixels are available for displaying a smaller image section and more details are visible. The transition from application zoom to camera zoom and PTZ commands carried out by the camera is visualized in the upper right-hand corner of the image, this time by a camera symbol instead of a rectangle.

Caution

The camera zoom is only available after it has been allowed by pressing the **Toggle PTZ** button. Otherwise, the application zoom is the only PTZ command that is carried out.

Notes

Digital application zoom and live stream:

Carrying out PTZ commands within the application zoom has no effect on the generated camera image and therefore no effect on the recording.

Camera zoom and live stream:

PTZ commands carried out within the camera change the live image of the camera also affect the recording if the camera does not record the full image. In order to select an image section within a zoomed image, press and hold the ALT KEY and use the mouse to draw a box within the live image. MxEasy displays the selected image section in the main window.

PTZ Views (Positions)

In addition to interactive PTZ controls using the mouse, keyboard or joystick, you can select areas of possible interest in the camera image along with the desired zoom, pan and tilt settings and save these settings as **PTZ preset views**. You can then activate these views at a later time with a click of the mouse.

Proceed as follows to save current image sections or PTZ preset views:

- Click the **PTZ Views** button to activate the preset view buttons in the dynamic toolbar:

- To save a view, click one of the numbered view buttons (for example, **View 2**) and hold down the mouse button (for about 3 seconds) until **View 2 stored!** appears in the main window. MxEasy now places a marker beneath the button to indicate that the view has been assigned.

  The number keys on your computer can also be used to save preset views: When you press and ***hold down*** a number key (for example, 2), this view is saved (View 10 is saved by pressing 0).

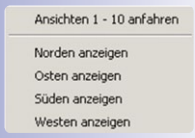
- If you would like to return to a saved view, ***briefly*** click the corresponding button or ***briefly*** press the corresponding key (for example, 2 for View 2). MxEasy displays the corresponding view. (View 10 can be activated by pressing 0.)

- If you have a joystick with save buttons installed on your computer, you can also use these buttons to save frequently-used views.

You can use this feature to save ***up to ten preset views for each camera*** in your MOBOTIX system and activate them as needed.

Note

For MOBOTIX Hemispheric cameras with an L11 lens (360° allround view), you can select additional options in the pop-up menu of the **Toggle PTZ** button. These additional options are only available for hemispheric cameras. For more information, see the *Configuring The MOBOTIX Q24M* section in the *Q24M Camera Manual*.



3.6 Setting Up Alarms And Recordings

You can centrally set up and manage recordings, alarms and notifications for one or more MOBOTIX cameras to be triggered for specified times and days of the week using MxEasy.

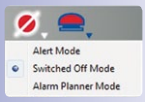
Note

All MOBOTIX cameras controlled by MxEasy can use different ***recording targets***. Depending on the model and type of camera used, they can store the audio/video data on internal storage media (SD cards) or on file servers.

Newer cameras (Q22M, Q24M, D24M, M24M, all except ***Basic*** and ***Web*** models) and ***R models*** have factory-installed SD cards and are preconfigured for recording "out-of-the-box". At present, MxEasy cannot change the recording target of the cameras. To change this basic configuration setting, you need to change the configuration on the camera itself (see *Section 4.7, "Recording Targets - SD Cards And File Servers"*). This section also contains more information on the different recording targets.

3.6.1 Operation Modes Of MxEasy

You can switch recordings/alarms on and off and activate the **Alarm Planner** as needed using **Operation Mode**. You can adjust these settings by clicking the **Operation Mode** button or by using the button's pop-up menu:

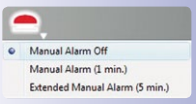


- **Switched Off Mode:** Recordings, alarms and notifications are not activated. The time periods set up in the Alarm Planner (see below) are not taken into account.
- **Alarm Planner:** Recordings, alarms and notifications take place according to the weekly times and dates that have been set in the Alarm Planner (see below).
- **Alert Mode:** As in **Alarm Planner** mode, but recording takes place continuously with the maximum frame rate (continuous recording). This overrides the type of recording and recording times set up in the Alarm Planner.

This setting remains active until it is manually changed.

Triggering Manual Alarms

When you click on the **Manual Alarm** button, MxEasy immediately activates continuous recording on all attached cameras for a limited amount of time. After this time has elapsed, MxEasy automatically switches back to the operation mode (see above) that had been active before. Note that this button also triggers all alarm notifications of the camera in the main window!

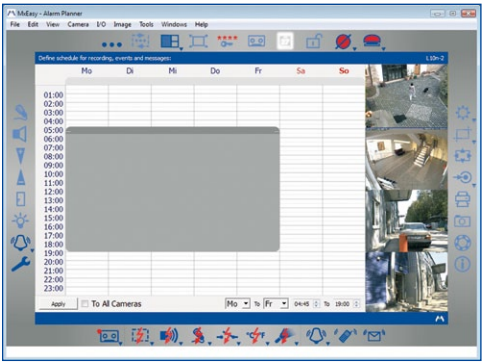


This feature is ideal for creating suspicion recordings, for example: As soon as security staff observes a suspicious situation, they can activate the manual alarm and continue to monitor the scene. If the suspicion is substantiated, security staff can extend the recording by five minutes by clicking on the button again. Once these additional five minutes have passed, recording stops automatically (unless it is extended again by pressing on the button once more).

Complete System Shutoff – Privacy Mode

Use the **Privacy Mode**, if you would like to deactivate the whole system, i.e. recording and any kind of camera access is rendered impossible until you deactivate this mode. While this lock can be deactivated directly from the current computer, you will need the user name and password set in this dialog to deactivate the lock from a different computer (see *Section 3.7, "System Shutoff - Privacy Mode"*).

3.6.2 Alarm Planner



The Alarm Planner can only be activated in Standard mode - using the **Alarm Planner** button or the **Camera > Alarm Planner** menu command. The live image of the camera from the main window is displayed as a small image in the top right-hand corner in the image bar and the other camera images move down in the image bar. All settings made

in the Alarm Planner apply to the camera that was previously in the main window. To change this, you may select the **To All Cameras** option.

The **Alarm Planner** allows you to set up recording modes, alarms and notifications for one or more cameras according to time and date settings in just a few steps.

Step 1:

- Set time period

Step 2 – for every time period:

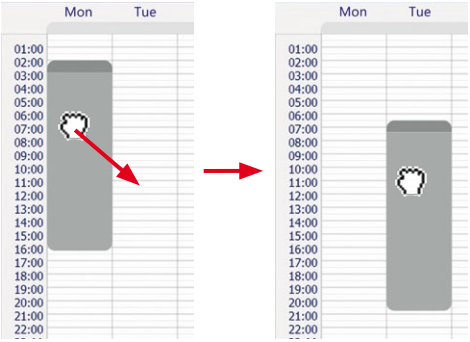
- Select a recording mode
- Select alarm sensors to trigger alarms in the defined time periods
- Set alarm notifications

The following sections describe the individual setting options in more detail.

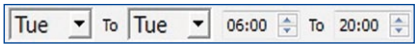
3.6.3 Setting Time Periods

Use the mouse to draw a window in the **calendar field** to set a time period in the Alarm Planner. You can continue to adjust all settings of the time window after it has been created.

- **Creating time periods:** Use your mouse to draw a box inside the calendar window (see figure above) to create a new time period.
- **Moving time periods:** Use the mouse to drag the window to the desired time and day of the week to move a time period. A **hand cursor** appears automatically when the mouse pointer hovers over a time window.



- **Changing time periods:** If you want to shrink or enlarge a time period, drag the edge of the time window accordingly using the mouse. A **resize cursor** appears automatically when the mouse pointer hovers over the edge of the window. You can also use the weekday and time fields (in the lower section of the time planner) to adjust the active time period down to the minute.



- **Deleting time periods:** Select the window with the mouse and press the DELETE key on the keyboard (or right-click the time period and choose **Remove** in the pop-up menu) to delete a time period.
- **"Background" time period:** The areas that are not assigned to specific time periods (times and days) fall into a collective time period. This period can also be assigned a particular recording mode, alarm sensors and alarm notifications. Right-click outside a defined time period in the calendar field and make the desired settings using the pop-up menu (see following sections).

Hint

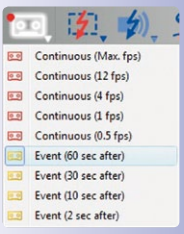
Make the settings for the "background" time period first. Then configure the individual time periods.

Important

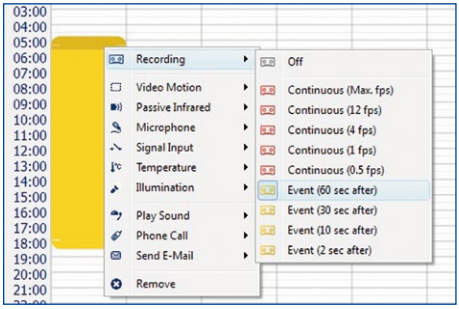
Selecting Time Periods

The settings for recording mode, alarm sensors and alarm notification described in the following sections always apply to the time periods that are currently selected. At least one time period is selected at all times: one or more explicitly defined time periods or the background time period. You can select multiple time periods by clicking these areas while pressing down the COMMAND KEY. You can determine whether or not areas are selected by noting their color: selected time periods are darker.

3.6.4 Setting The Recording Mode



You can set up a ***continuous or event recording using the*** pop-up menu of the time period (right-click the time period). If you have activated a time window in the Alarm Planner, you can also set up the recording mode for this window using the pop-up menu of the button (right-click the button).



The camera continuously records data for ***continuous recording*** and for ***event recording***, the camera begins recording when an alarm sensor is triggered (see *Section 3.6.5,*

"Selecting The Alarm Sensors"). The time period will be colored either ***red*** (continuous recording) or ***yellow*** (event recording) depending on the recording mode you have selected.

If ***event recording*** is selected, you need to also select at least one alarm sensor for the corresponding time period. Event recording is activated when the alarm sensor is triggered (see *Section 3.6.5, "Selecting The Alarm Sensors"*).

The recording status is indicated by the colored camera symbol in MxEasy (on the left in the blue camera information bar above the main window).

- Recording off
- Deactivated by camera time table
- Waiting for events
- Recording on

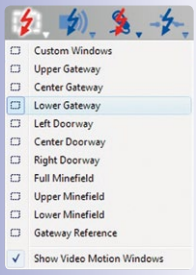
For more information on the recording features of the MOBOTIX camera, see Chapter 8, *Recording*, in the *Software Manual*.

Note

A period of two seconds before the beginning of the event is saved automatically along with the event for event recording.

3.6.5 Selecting The Alarm Sensors

When the ***Alarm Sensor*** of the MOBOTIX camera (or the active connected CamIO or ExtIO) is triggered, event recording and/or alarm notification are activated (see *Section 3.6.4, "Setting The Recording Mode"* and *Section 3.6.6, "Setting Up Alarm Notifications"*).



You can set up alarm sensors using the pop-up menu of the time period (right-click the time period). You can also set the alarm sensors using the pop-up menu of the corresponding button (right-click the button).

- **Video Motion Detection**: The alarm is triggered when a MOBOTIX camera detects a VM event. The MOBOTIX camera uses video motion windows to detect changes in the live camera image. You can select a predefined set of video motion windows from the pop-up menu of this button. You can specify whether or not the window will be visible in the camera image with the *Show Video Motion Windows* option. This option can be used to check the windows and create user-defined windows (see below).

  For more information, see *Defining Video Motion Windows* later on in this section.

- **Passive Infrared Detection:** The alarm is triggered when a PI event is triggered in a MOBOTIX camera. MOBOTIX cameras of the model series **M12** and **D12** are equipped with a PIR sensor (Passive Infrared Sensor) as standard. **M24M** and **D24M** models

can use the PIR of a connected **MOBOTIX ExtIO**. The PIR sensor enables motion detection even in the dark.

You can set different values for the triggering threshold using the selection menu of this button. Selecting a lower threshold value results in a higher sensitivity for triggering the PI event.

- **Microphone (for Noise Detection):** The alarm is triggered when a MI event is triggered in a MOBOTIX camera. This event can be triggered either by the built-in camera microphone or the microphone of an active connected CamIO or ExtIO.

  You can set different values for the triggering threshold using the selection menu of this button. Selecting a lower threshold value results in a higher sensitivity for triggering the MI event.

- **Signal Input Detection:** The alarm is triggered when a SI event is triggered in a MOBOTIX camera. This event can be triggered either by the signal input of the MOBOTIX camera or by an active connected CamIO or ExtIO.

  Using the selection menu of the signal input button, you can select a status or a status transition to trigger an SI event.

- **Temperature Detection:** The alarm is triggered when a TP event is triggered by the internal temperature sensors of a MOBOTIX camera.

  Using the selection menu of the button, you can choose between different conditions, i.e. temperature ranges, that trigger an event.

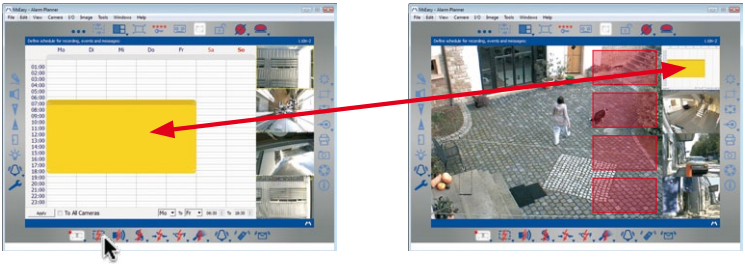
- **Illumination Detection:** The alarm is triggered when an IL event is triggered in a MOBOTIX camera.

  Using the selection menu of this button, you can choose between two different ranges that trigger an event.

For additional information, see the section *Events* in the *Software Manual*.

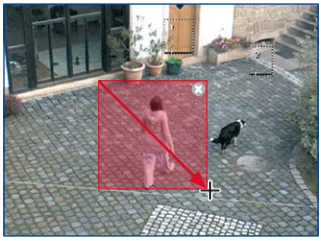
Defining Video Motion Windows

If you click the **Video Motion Detection** button while a time period is activated in the calendar view, MxEasy automatically displays the live image of the camera. The calendar is displayed in the top right-hand corner in the image bar.



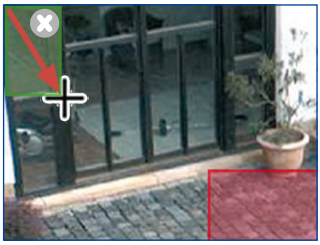
In this view, MxEasy displays predefined standard video motion windows (red areas such as in the image to the right). You can select additional video motion windows using the selection menu of the **Video Motion Detection** button.

The **Custom Windows** option in the selection menu allows you to create and edit custom video motion windows using the mouse:



- **Creating video motion windows:** Use your mouse to draw a box inside the camera image in the main window (see figure) to create a new window.
- **Moving video motion windows:** To move a window, drag and drop it to the location you want with your mouse. A **hand cursor** appears automatically when the mouse pointer hovers over a window.
- **Resizing video motion windows:** Drag the edge of the window using your mouse to increase or decrease the size of a window. A **resize cursor** appears automatically when the mouse pointer hovers over the edge of the window.
- **Deleting video motion windows:** To delete a window, click the X button in the upper right-hand corner of the window or press the DELETE key on your keyboard.

Defining Reference Windows



Reference windows help avoid false alarms resulting from unwanted changes in the image. The bright light from a flash during a thunderstorm, for example, instantly changes all image pixels. Such a change would normally trigger the defined video motion windows and, subsequently, the alarm.

Reference windows can help avoid most of these false alarms as the camera will not throw an alarm if both the video motion windows and the reference windows trigger simultaneously.

Hints For Defining Reference Windows

- Keep the ALT key pressed and draw a box with the mouse to define a reference window.
- One reference window per camera is usually sufficient.
- Always define reference windows in image areas that usually do not change, i.e. next to windows or in areas that are higher up and not reachable.
- Make sure that reference windows do not overlap video motion windows.

Once you have defined the reference windows, you can use the same functions for changing these windows as for video motion windows (moving, resizing, deleting).

Again Displaying The Calendar In The Main Window

Double-click the camera image at the top of the image bar to display the calendar in the main window.

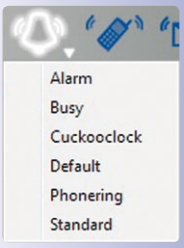
If at any time you wish to edit or resize the active video motion windows, you can switch the positions of the calendar and the live image so that the live image is displayed in the main window. To do this, double-click the **Video Motion Detection** button or double-click the live image in the top right-hand corner in the image bar.

Notes

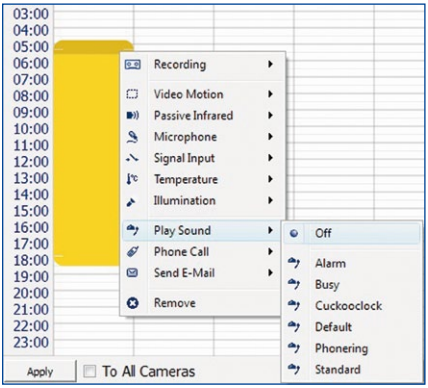
- ***Custom video motion windows*** and ***reference windows*** are used for all time ranges, for which they have been activated. In contrast, you can set the ***predefined*** windows for each time range ***individually***.
- ***Video motion and reference windows of Hemispheric cameras and cameras with activated distortion correction*** are shown as polygons if the visible image has been panned, tilted or the image has been switched from **Normal** to **Full Image**, for example.

3.6.6 Setting Up Alarm Notifications

Alarm Notifications can be sent when the alarm sensor of the MOBOTIX camera (or the active connected CamIO or ExtIO) is triggered (see *Section 3.6.5, "Selecting The Alarm Sensors"*).



You can set up and activate alarm notifications using the pop-up menu of the time period (right-click the time period). If you have activated a time window in the Alarm Planner, you can also set up alarm notifications for this window using the pop-up menu of the button (right-click the button).



You must select at least one alarm sensor for the corresponding time period (see *Section 3.6.5, "Selecting The Alarm Sensors"*). The selected alarm notifications are sent when the alarm sensor is triggered.

- **Sound Notification (audio playback):** Click this button to activate playback of an audio file on the speaker of the MOBOTIX camera (or an active connected CamIO or ExtIO). Click the button a second time to deactivate the feature.

  This function can, for example, play a pre-recorded audio file over the camera loudspeaker to inform a suspicious person that he or she is being observed and recorded ("You are unauthorized to enter this area! You are under video surveillance. Please leave the premises immediately!")

- **VoIP Phone Notification:** Click this button to activate VoIP phone notification from the MOBOTIX camera. Click the button a second time to deactivate the feature. This function can be used to alert the security guard that there is an alarm situation (for example, motion is detected in an office building at night). A message can be transmitted via telephone ("Message from surveillance camera 15, office 32, 4th floor: Motion has been detected in this room.")

- **E-Mail Notification:** Click this button to activate e-mail notification from the MOBOTIX camera. Click the button a second time to deactivate the feature.

  This function can be used to document incoming vehicles in a corporate parking lot for later evaluation. E-mails are better for messages that do not require immediate action. This function makes it possible to send images via e-mail even if no recording medium is available (for example, an external data server).

Specific settings are necessary for each notification mode, for example, the name of the audio file, a phone number, an e-mail address and/or additional basic settings of the MOBOTIX camera. MxEasy detects whether valid settings have been made and if necessary, it prompts you to make the necessary settings. For more information on **camera settings**, see *Section 5.2.2, "Audio Settings"* and *Section 5.2.7, "E-Mail Settings"*.

You can reselect an audio file, a telephone number or an e-mail address that was set previously using the pop-up menu of one of the time periods or the corresponding button (right-click the time period and select **Edit** or click the button on the lower edge of the MxEasy program window).

For additional information, see the *section Actions And Messages* in the *Software Manual*.

3.6.7 Assigning Settings To One Or More Cameras

1. Activate the camera that is to be assigned a particular task. The active camera is always the camera displaying the live image in the small camera window in the upper right-hand corner of the Alarm Planner.

2. Click the **Next Camera** button until the desired camera is located in the upper right-hand camera window.

3. Assign the camera to the desired time periods with the corresponding notification characteristics.

4. Activate the settings for the camera by clicking **Apply**. Activate the **To All Cameras** checkbox and then click **Apply** to simultaneously assign all cameras to the same time period.

Hint

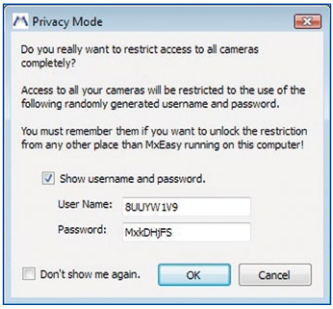
First carry out the settings that apply to all cameras (the **To All Cameras** checkbox, for example, activation and recording) and then carry out the settings for the individual cameras.

3.7 System Shutoff - Privacy Mode

In contrast to the other operation modes of MxEasy (see *Section 3.6.1, "Operation Modes Of MxEasy"*, the **Privacy Mode** deactivates the whole system, i.e. recording and any kind of camera access is rendered impossible until you deactivate this mode. While this lock can be deactivated directly from this computer, you will need the user name and password set in this dialog to deactivate the lock from a different computer. Note that the cameras are also signaling this operating mode by a specific LED blinking pattern.

Activating The Privacy Mode

To activate this mode of MxEasy, simply click on the **Privacy Mode** button. MxEasy now shows a dialog with the automatically generated access data. You can either use this access data or set a user name and password of your own.



Activate the **Don't ask me again** checkbox if you would like to activate this mode immediately when clicking on the **Privacy Mode** button (i.e. the message box will not appear any more). MxEasy then creates new access data and activates the Privacy Mode without asking back.

Caution

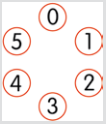
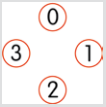
- Every time you are activating the **Privacy Mode**, MxEasy will generate new access data. Writing down these access data only makes sense if you would like to deactivate this mode from a different computer. In this case, you should **never activate** the **Don't ask me again** checkbox!
- If you choose not to see the generated access data, you can only deactivate the Privacy Mode from the same computer. In case of a serious malfunction (or total failure) of this computer, you can activate the system again as described in *Section 5.7, "Resetting The Cameras From The Privacy Mode"*.

Effects Of The Privacy Mode

- MxEasy generates random access data (user name and password), sends them to the attached cameras and deactivates all other users. If you do not posses the access data, you can only deactivate this mode from the same computer that had been used to activate the Privacy Mode.
- Image generation is deactivated completely -all display windows show the red lock icon. The **Privacy Mode** button itself is now white and the lock is closed.
- Recording is completely deactivated.
- The camera's audio channel is switched off completely.
- All attached cameras show a distinctive blinking pattern so you can see that the cameras are in this mode (see below).

Signaling By The Camera LEDs

The different MOBOTIX cameras are displaying the following blinking patterns once they have been switched to **Privacy Mode**.

Camera	LEDs	Blinking Pattern
M12		LED 0 flashes every 3 sec. red LED 3 flashes every 3 sec. red, in sync with LED 0
D12		LED 0 flashes every 3 sec. red LED 3 flashes every 3 sec. red, in sync with LED 0
Q22M, D22M, M22M		LED 0 flashes every 3 sec. green LED 1 flashes every 3 sec. red, in sync with LED 0
Q24M, D24M, M24M		LED 0 flashes every 3 sec. green LED 1 flashes every 3 sec. green, in sync with LED 0

Deactivating The Privacy Mode

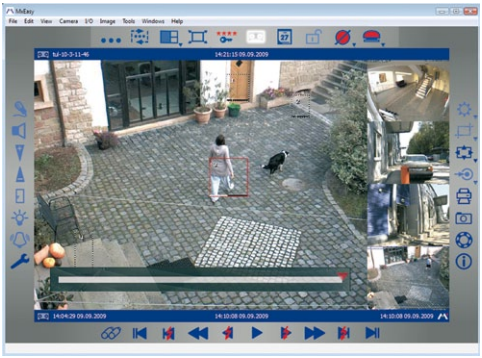
Simply click on the **Privacy Mode** button if you are using the same computer and you would like to deactivate this mode and switch on the system again.

If you are running MxEasy from a different computer, enter the access data that you have written down or defined yourself upon activating the mode.

3.8 Playing Back And Evaluating The Recordings

You can play back and evaluate the recorded event sequences (video and audio) of the MOBOTIX cameras using the MxEasy ***Player***. Once you have activated Player mode by pressing **Player Mode**, a recorded image takes the place of the live image in the main window. The live image of the camera is then displayed at the bottom right-hand corner in the image bar.

When you launch the Player for the first time, the most recent event image of the camera is displayed automatically. When the Player is launched again, it automatically displays the image from the point in time at which it was last deactivated. If the Player was last launched for a different camera and the current camera does not have a recording that corresponds to the correct time, the Player displays the next available image in the recording.



The Player buttons are used to ***play back*** the recorded event sequences. The ***Video Search*** button provides you with the search tools you need to quickly find the events you are looking for.

When you click any of the buttons marked with a red lightning, the software plays back the event images only. Buttons without a red lightning play back all recorded video and audio data. This includes the images that were recorded prior to and after the event.

Playing Video Sequences

- **Play:** Click this button to play back all recorded video and audio data.
- **Fast Forward / Fast Backward:** These buttons play back the recorded video and audio data quickly (in fast motion).
- **Play Events / Play Events Backward:** These buttons play back the recorded event images (without the time periods recorded prior to or after the events).

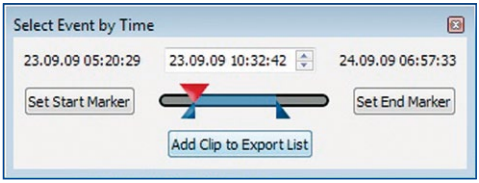
Positioning Within The Recordings

- **First Event / Last Event:** These buttons jump to the first or last image of the recording respectively.
- **Previous Event / Next Event:** These buttons jump to the next or previous event image respectively.

If the recording contains audio data, you can press the **Speaker** button to play back the audio data. The recorded audio data from the camera can be played only with normal playback (**Play** button). Audio data cannot be played with other types of playback (**Fast Forward**, etc.)

Procedure For Evaluating And Exporting Recordings

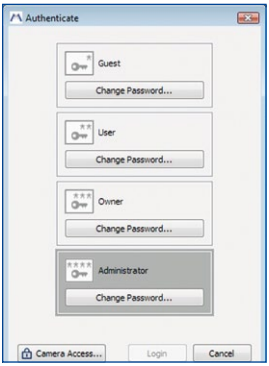
We recommend the following procedure for evaluating recordings, viewing event sequences and preparing recordings for export (the **Search Event** button):



1. Enter the earliest time for which you would like to begin the evaluation.
2. Watch the events image for image for a quick overview of the recordings.
3. If you would like to have a closer look at a particular event, play back the recorded video sequence in real-time with audio.
4. Move the red triangle to take a look at the video at various spots within the recorded event sequences. The date and time of the current event are displayed in the upper section of the dialog.
5. Set the start and end positions of the time period to be exported using the blue triangles.
6. Press **Add Clip to Export List** to add the clip marked by the triangles to the MxEasy export list. From here, this clip can by saved to a computer or an external storage device.

For more information on the export functions of MxEasy, see *Section 4.1.3, "Exporting Video And Audio Data"*.

3.9 Creating Users And Passwords



You will have access to all functions and authorizations (automatic administrator mode) the first time you launch MxEasy. If you would like to set up the software to limit user access to certain functions, we recommend using the predefined MxEasy access levels (**Administrator**, **Owner**, **User**, **Guest**). Specific functions are automatically preassigned to each access level.

Once you have set up a password for a particular access level, it is activated automatically (the access level **Guest** can be accessed without entering a password). Please note that passwords can only be set up in the **Administrator** access level.

You can log on to the access level using the login dialog (the **Authenticate** button or the menu command **File > Authenticate**). As long as the **Administrator** access level is activated, this dialog also displays the buttons for setting up and changing an existing password (**Change Password**).

The active access level is indicated by the red stars on the button:

- **Administrator:** You have access to all functions and settings of MxEasy with the **Administrator** access level. In particular, this allows you to add new cameras to MxEasy and remove existing cameras from the software. This access level is the only one that allows you to set up and change passwords.

- **Owner:** You have access to all functions available for the **User** access level and to the majority of the remaining MxEasy functions in this access level.

- **User:** You have access to the recorded event sequences in addition to the functions available for the **Guest** access level.

- **Guest:** You can access live views of all cameras and save snapshots with this access level.

Notes

For an overview of the functions in the individual access levels, see *Appendix B, "Access Rights For User Access Levels"*.

Automatic Authentication On Launch

If you have set up passwords for the access levels, each time you launch MxEasy you need to select the access level and enter the correct password. If you would like to be logged on automatically, you can activate this option and select the relevant access level under

Tools > Preferences > General. MxEasy then automatically logs on to this access level without prompting you to enter a password (see *Section 4.8, "Adjusting The Default Program Settings"*).

You can change the access level by clicking **Authenticate** while the software is running. To do so, select the access level in the menu and confirm your selection by entering the correct password. If needed, the administrator can activate additional functions by selecting a different access level. After the settings have been made, you can return to the **Guest** access level using the same dialog.

Notes:

4 ADVANCED OPERATION

In *Chapter 3, "Getting Started"*, you learned about the basic features of MxEasy. Note, however, that MxEasy allows you to do much more than simply play back video sequences. In this chapter, we will familiarize you with the advanced features of this software.

4.1 Saving, Printing And Exporting

4.1.1 Saving Snapshots

The easiest way to take snapshots is to click the **Snapshot** button. When you click this button, the image from the camera displayed in the main window will be saved immediately as a `*.jpg` file. This works for both live images and event images. The file name of a file saved as `*.jpg` contains the name of the camera followed by the date and time of the recording (for example, `mxcam 2008-11-24 15-05-13` for a file saved on November 24, 2008 at 3:05 PM and 13 seconds). The file names allow you to sort the files more easily.

Note

You can specify a target folder for the saved images under **Tools > Preferences** on the **General** tab (**Snapshots > Folder**).

4.1.2 Printing Snapshots

You can print a camera image in MxEasy using the **Print** button. This feature is only activated in Normal mode and Player mode. In Normal mode, the live images of the current camera are printed – in Player mode, the latest event image of the camera in the main window is printed together with the live images of the other cameras. A print preview is always displayed before the image is printed. Here, you can set the format, zoom factor and number of images per page.

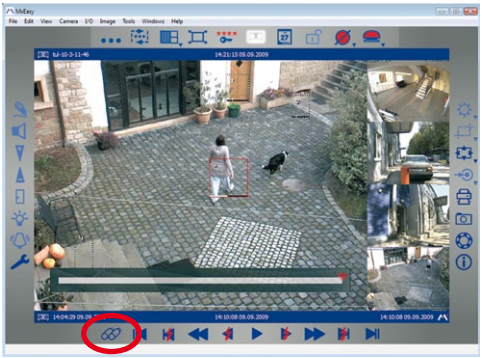
4.1.3 Exporting Video And Audio Data

In order to export recorded audio/video data, you need a MOBOTIX camera with at least one recording. If the **Player** button is active (i.e. not grayed out), you can click on this button (it turns white) to see the last event image.

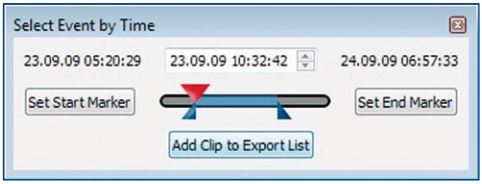
Before you start exporting recorded audio/video data, you should briefly consider how these data will be used later on. Generally speaking, you can create the following formats when exporting:

- **File server structure:** JPEG images for playback using MxEasy or MxControlCenter.
- **MxPEG Clip:** MOBOTIX format for playback in MxEasy, MxControlCenter and in Windows Media Player (after installing the MxPEG DirectShow codec).
- **AVI file:** When using this format, you should use a suitable codec depending on the target operating system. In order to find the suitable export format, you should read *Section 4.1.5, "Playing Back Exported Audio/Video Data"*.

Select the **Video Search** button in Player mode to export recorded video sequences from MxEasy:



When this button is activated, the **Select Event by Time** dialog appears:

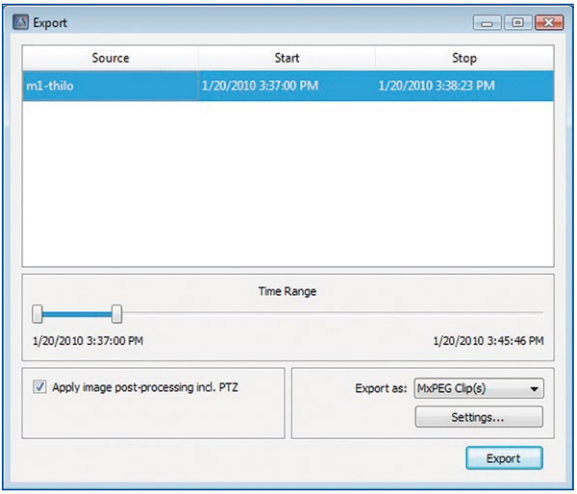


You have the following options for selecting the correct position in the recording:

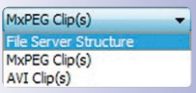
- Move the red triangle on the slider bar in the main window.
- Move the red triangle on the slider bar in the **Select Event by Time** dialog.
- Enter and confirm (using the ENTER KEY) the desired time in the **Select Event by Time** dialog.

To export recorded video and audio data:

1. Select the start time of the sequence you want to export. You can do so by moving the blue triangle on the left or entering a time in the Date/Time field (for example, using the arrow keys) and then clicking the **Set Start Marker** button.
2. Select the end time of the sequence you want to export. You can do so by moving the blue triangle on the right or entering a time in the Date/Time field (for example, using the arrow keys) and then clicking the **Set End Marker** button.
3. Click the **Add Clip to Export List** button. The **Export** dialog will now open with the time range you selected. Previously selected time ranges may appear and can, if necessary, be removed manually (DEL key). If you have closed the list by accident, you can open it again by selecting **File > Export Recordings** from the menu.



4. Select the desired export format:



   – **File Server Structure:** This option allows you to export the recorded data of the selected time range in the same format in which it is saved in the file system. Unlike other options, this option does not convert the format and hence requires the least amount of time to export. We recommend using this option when you need to keep the files in their original format (for example, to preserve evidence for law enforcement purposes).

   – **MxPEG Clip(s):** With this option, the recorded data of the selected time period is exported as MxPEG clip files. Files in MxPEG format also include the audio data recorded by the camera.

     The max. file size for exporting can be set using the **Settings** button.

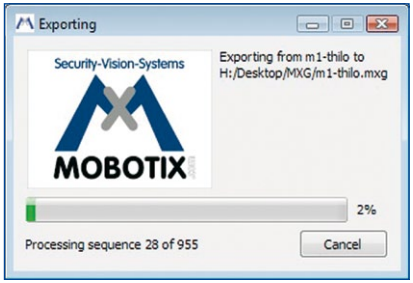
   – **AVI clips:** Use this option to export (recode) the event sequences of the selected time range as AVI file. The audio track can be included, if this is desired. Depending on the video codec used, you can play back the AVI file on different operating

systems using different applications (see *Section 4.1.5, "Playing Back Exported Audio/Video Data"*.

Note

MxEasy can play back data server structures and MxPEG clips. You can do this in the dialog located under **File > Open Clip** (see *Section 3.8, "Playing Back And Evaluating The Recordings"*).

5. Select the export settings (using the **Settings** button). You can now specify different options for the export, including a **file size limit** as well as **audio** and **video encoding options** with which you can define parameters such as the resolution or video codec.
6. To start the export, click **Export**.



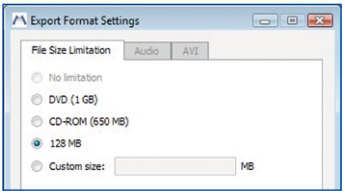
The time required for the export to finish depends on a number of factors, including the processing speed of your computer, length of the selected time range, number and size of individual files and type of recording (event or continuous recording). In particular, converting to an `*.avi` file can take a long time.

4.1.4 Export Options

When exporting the audio/video data, you can choose between different options depending on the export format selected in the **Export** dialog (**MxPEG clips**/**AVI clips**). Note that **File server structure** does not allow selecting any options. The preselected options provide for maximum compatibility of the exported data on the different operating systems (Windows, Mac OS X, Linux).

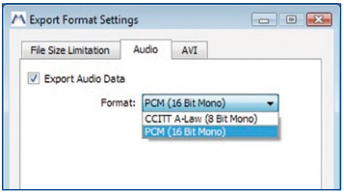
File Size

This tab allows setting the maximum size of the individual files. If the data are larger than specified here, MxEasy automatically creates additional files with the same name and a running number.



You can set most of these options for **MxPEG clips** and **AVI clips**.

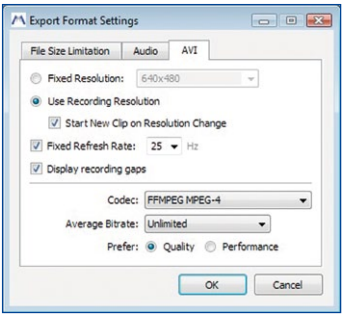
Audio



You should only change this setting if there is a good reason to use a different codec than the default **PCM** codec.

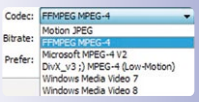
This tab is only available for **AVI clips**.

AVI



You should only change these settings if you have special requirements (e.g. if you need to set a specific resolution or frame rate).

Selecting the codec has a significant impact on the operating system on which you can play back the exported data:



- **Motion JPEG:** This codec stores full JPEG images and is suitable for most common operating systems. The exported data have the highest quality, since they consist of the original camera images stored as full JPEG images, but this codec requires the highest storage capacity (4 to 6 times as compared to the FFMPEG MPEG-4 codec).
- **FFMPEG MPEG-4 (default):** The preselected codec is supported by VLC and can also be played back on Windows, Mac OS X and Linux operating systems, if you need to support other players than VLC. This codec represents the ideal combination of quality and minimum storage space.
- **Microsoft MPEG-4 V2:** General-purpose codec for Windows systems.
- **DivX V3 MPEG-4 (Low Motion):** This codec is available for all operating systems free-of-charge (`www.divx.com`).
- **Windows Media Video 7:** Version 7 of the standard codec for Windows systems, which can be played back using Windows Media Player.
- **Windows Media Video 8:** Version 8 of the standard codec for Windows systems, which can be played back using Windows Media Player.

If the **Display recording gaps** checkbox has been activated, the end timestamp of the last clip and the start timestamp of the next clip will be shown for ten seconds, provided that the gap is ten seconds or longer.

This tab is only available for **AVI clips**.

4.1.5 Playing Back Exported Audio/Video Data

You can play back exported ***MxPEG clips*** and ***file server structures*** directly in ***MxEasy*** (**File > Open Clip > ...**). Note that you can also use ***MxControlCenter*** to play back these export formats. After installing the ***MxPEG DirectShow codec***, you can also play back ***MxPEG clips*** in ***Windows Media Player*** and other DirectShow-enabled applications (you can download the codec free-of-charge from **www.mobotix.com** in the **Support > Software Downloads** section).

In general, the exported ***AVI files*** can only be played back on the standard players that come with the operating systems. If you would like to use a universal player that can play back all of these formats on all operating systems, you should install the VideoLAN player (VLC, **www.videolan.org**). It can play back AVI files exported with the preselected options and also with all other codecs. Note that the files are automatically added to the playlist of VLC and the other players in order to play them back automatically one by one.

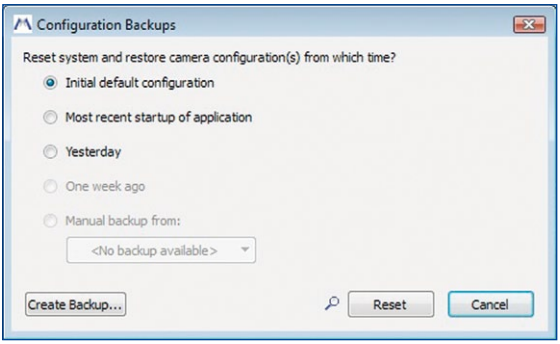
The following table shows which preinstalled or installable video players can be used on which operating system in order to get the best quality when playing back the audio/video data:

Codec	Windows		Mac OS X		Linux	
	VLC	Windows Media Player	VLC	QuickTime	VLC	MPlayer, Xine, ...
Motion JPEG	+++†	+++†	+++†	+++†	+++†	+++†
MxPEG DirectShow	—	+++**	—	—	—	—
FFMPEG MPEG-4	++	++*	++	++*	++	++*
Microsoft MPEG-4 V2	+	+	+	—	+	+*
DivX V3 MPEG-4	+	+*	+	+*	+	+*
Windows Media Video 7	+	+	+	—	+	+*
Windows Media Video 8	+	+	+	—	+	+*

Quality/compatibility: +++ excellent, ++ very good, + good, o satisfactory, — not possible;
Remarks: * codec to be installed separately, ** MxPEG DirectShow codec to be installed separately, † high storage capacity required

4.2 Saving And Restoring Settings

The backup feature (the **Backup Configuration** button), allows you to save and restore all MxEasy settings and the complete configuration of each connected camera with a simple click of the mouse.



Caution

After you have finished setting up the system, after changing the configuration and especially ***after adding cameras***, it is ***highly recommended to store the contents of the backup folder*** (see *Section 4.2.2, "Storing The Backup Folder"*).

4.2.1 Creating And Loading Backups

MxEasy automatically creates a backup when you start the program. You can also click the **Create Backup** button if you need to create one manually.

Loading A Backup

You can specify the time when a backup will be loaded using the following functions:

- **Initial default configuration:** This backup allows restoring all cameras and MxEasy itself to the default settings that were set when the program was first launched and the cameras were integrated into the system by MxEasy Wizard.
- **Most recent startup of application:** This backup contains the configuration data of MxEasy from the last time it was launched.
- **Yesterday:** This backup contains the configuration data of MxEasy when it was first launched on the previous day.
- **One week ago:** With this option you can load the configuration data of a backup from the previous week or earlier.

- **Manual backup from:** You can select a manual backup from the list provided. If you have already created manual backup, you can delete the most recent backup or all ***manual*** backups.

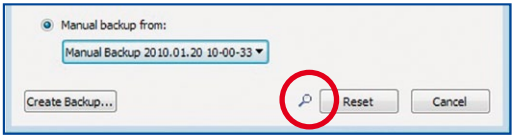
Once you have selected a backup, MxEasy uploads the backup to the attached cameras when you click on the **Reset** button and restarts the cameras.

Caution

The configuration backup only covers the cameras currently attached to MxEasy. If you have changed the configuration or added new cameras, it is strongly recommended to create a manual backup (see *Section 4.2.2, "Storing The Backup Folder"*).

4.2.2 Storing The Backup Folder

After you have set up the system or changed the configuration, you should create a manual backup. In addition, you should copy the entire backup folder to a separate storage device. This will allow you to easily restore the configuration in case you should have problems with this computer.



- Click on the **Configuration Backups** button.
- Create a manual backup by clicking on **Create Backup** (you should add the text "`Manual`" at the beginning of the backup name so you can identify the manual backups easier later on).
- Click on the magnifying glass icon to open the backup folder.
- Copy the entire contents of the folder to a suitable external storage device (possibly as a `ZIP` archive of the folder).

4.2.3 Replacing The Backup Folder

- Click on the magnifying glass icon to open the backup folder.
- Make a backup copy of the entire contents of the folder (possibly as a `ZIP` archive of the folder).
- Delete the entire contents of the backup folder.
- Copy the entire contents of the stored folder into the backup folder.
- Close MxEasy and restart the application.
- Click on the **Configuration Backups** button.
- Activate the **Manual backup from** option and select the backup you created manually.

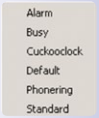
- Click on **Reset** and then on OK in the confirmation dialog.

MxEasy uploads the configuration to the currently attached cameras and restarts them.

4.3 Using The Door Intercom

The IT and Secure models of the ***M12*** and ***D12*** MOBOTIX cameras and the ***ExtIO*** and ***CamIO*** expansion models that are compatible with all MOBOTIX IT and Secure models are equipped with signal inputs and outputs. The signal inputs are capable of receiving a doorbell signal, for example, and the signal outputs can transmit the command to open a door (or a gate) to a locking system (door opener).

This means that MxEasy, when used in conjunction with MOBOTIX cameras, can serve as a fully equipped and flexible door intercom system with video and audio transmission. Press the **Microphone** or **Loudspeaker** button to use the intercom (audio transmission). To open a door or turn on the light, press the **Door** or **Light** button. You can also play back a voice message that has been saved in a MOBOTIX camera (the **Sound** button).



- **Microphone:** The audio from the computer microphone will be transmitted to the camera loudspeaker for as long as you press and hold this button. This works the same way as if you were to make an announcement in a soccer stadium or on a train platform or to use a handheld transceiver or a door intercom.
- **Speaker:** Activate this button to hear the audio from the camera microphone over the computer loudspeakers. This feature allows you to use MxEasy as a door intercom, for example.
- **Door:** You can activate a door opener connected to a MOBOTIX camera (or a connected ExtIO or CamIO) with this button via signal output 1. The signal output/door opener will deactivate automatically after five seconds.
- **Light:** This button allows you to enable and disable a device (for example, the light for the door intercom) connected to a MOBOTIX camera (or a connected ExtIO or CamIO) via signal output 2.
- **Sound:** Click this button to play back an audio file that has been saved in a MOBOTIX camera on the loudspeaker of that camera. You can select one of the audio files that is available on the camera displayed in the main window from the pop-up menu of the button (right-click). These are all system audio files that are recorded on the camera by the user or sound files that have been loaded in the camera. MxEasy uses the sound specified for the particular camera.
- **Volume Up:** Click this button to increase the speaker volume on the computer running MxEasy.
- **Volume Down:** Click this button to decrease the speaker volume on the computer running MxEasy.

For additional information on the audio functions of the MOBOTIX camera, see the sections *Microphone and Speaker* and *Sound on Event* in the *Software Manual*, the *ExtIO* and *CamIO User Manuals* and the manuals of the individual MOBOTIX camera models.

For more information on the signal inputs and outputs of MOBOTIX cameras, see the section *Signal Output*, in the *Software Manual*, the *ExtIO* and *CamIO User Manuals* and the manuals of the individual MOBOTIX camera models.

4.4 Adjusting Additional Image and Exposure Settings

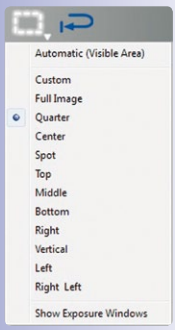
This button gives you access to functions that allow you to set individual image settings such as **Saturation**, **Brightness**, **Backlight** or **Sharpness**. You can also control the ***exposure*** of the images using this button:

- **Saturation:** This function increases or decreases the saturation of an image. When you increase this value, the image becomes more colorful.
- **Brightness:** This setting allows you to adjust the image brightness. Make sure that the exposure windows are being used effectively before you make any adjustments.
- **Backlight:** This setting improves the display of a camera image that contain over-exposed or underexposed areas. A typical example of this is a room that is illuminated only by daylight from the windows. Objects located around the edges are displayed too dark and with too little contrast. Increasing the value will increase overall illumination to properly display the dark areas in the image. This setting is particularly useful for high-contrast (color) night images.
- **Sharpness:** This setting allows you to display sharper camera images. Make sure not to set the sharpness too high since doing so may result in poor image quality (for example, for high-contrast and finely detailed images).

- **Default Settings:** Click this button to restore the default values for all settings (with the exception of exposure windows).

- **Exposure Window:** The MOBOTIX camera sets the exposure window to ensure the proper exposure/brightness for the live camera image. You can select a predefined set of exposure windows from the pop-up menu of this button. The corresponding window will then be displayed in the camera's image and you can check the modified exposure control directly in the live image. You can specify whether or not the exposure window will be visible in the camera image (green box) using the *Show Exposure Windows* option.

Notes On Predefined Exposure Windows



The content of the predefined exposure windows affects the exposure of the camera. It affects the exposure time, among other factors, and determines the overall quality of the image.

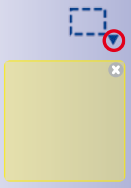
The predefined and custom exposure windows are defined as "global" for the ***full image*** displayed by the image sensor. This means that the PTZ commands do not affect the content of the exposure windows and therefore have no effect on the exposure. If an image contains dark areas and overexposed areas, performing PTZ commands does not change the appearance of these areas. For example, if you zoom into an overexposed area, it remains over exposed. The PTZ commands do not modify any part of the image.

The predefined and custom exposure windows are particularly suited for use with **full image recording** because the recorded full image of MOBOTIX cameras is not affected by PTZ commands.

If the camera is used primarily as a live camera, meaning that it must display high quality images even when PTZ commands are used, we recommend using the **Automatic Exposure (PTZ)** setting. With this setting, the current visible image section is used as the exposure window. As long as no digital zoom is performed in the camera, this area is identical to the full image displayed by the image sensor. When you perform a digital zoom, the visible area becomes smaller than the full image. This setting optimizes the exposure of the live image, even when you are performing PTZ commands.

Caution

With the **Automatic Exposure (PTZ)** setting, images recorded using **full image recording** are affected by the PTZ commands – whenever the PTZ commands affect the exposure of the image.

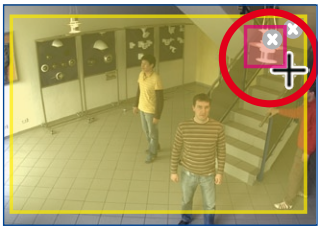


Defining Custom Exposure Windows

The **Custom** option (from the pop-up menu of the button) allows you to create and edit individual exposure windows using your mouse.

- **Creating exposure windows:** To create a new exposure window, use your mouse to draw a box inside the camera image in the main window (see figure).
- **Moving Exposure Windows:** To move a window, drag and drop it to the location you want with your mouse. A **hand cursor** appears automatically when the mouse pointer hovers over a window.
- **Modifying exposure windows:** Drag the edge of the window using your mouse to increase or decrease the size of a window. A **resize cursor** appears automatically when the mouse pointer hovers over the edge of the window.
- **Deleting exposure windows:** To delete a window, click the X button in the upper right-hand corner of the window or press the DELETE key on your keyboard.

Defining Exclusion Windows



Exclusion windows are used to remove sources of light ***within exposure windows*** from exposure control. In the example to the right, the exclusion window excludes the lamp in the upper right corner from exposure control.

Hints For Defining Exclusion Windows

- Keep the ALT key pressed and draw a box with the mouse to define an exclusion window.
- Always define exclusion windows ***within exposure windows*** (exclusion windows outside of exposure windows do not have any effect).

Once you have defined the exclusion windows, you can use the same functions for changing these windows as for exposure windows (moving, resizing, deleting).

Note

- Just like the predefined exposure windows, the custom exposure windows are defined globally on the full sensor image. That is why these windows do not trigger any image adjustment when using vPTZ actions.
- ***Exposure and exclusion windows of Hemispheric cameras and cameras with activated distortion correction*** are shown as polygons if the visible image has been panned or tilted or the image has been switched from **Normal** to **Full Image**, for example.

4.5 Bandwidth Management

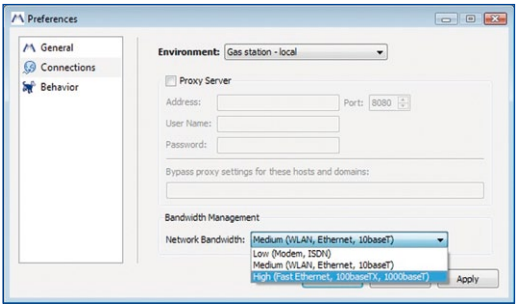
MxEasy's Bandwidth Management feature offers you an effective tool for optimizing the retrieval and display of live images from cameras in MxEasy.

Ideally, an Ethernet network will always have enough network bandwidth to transfer all data at "full network bandwidth" so that the live images of all cameras connected to MxEasy can be shown in all display windows at full resolution and full frame rate. And this is also the case for a wired Ethernet network. If the cameras (or the computer running MxEasy) are connected to the network via a wi-fi or ISDN connection or a modem, there will generally not be enough bandwidth.

With MxEasy's Bandwidth Management, you can now set up the cameras to retrieve only the live images you need at the resolution and frame rate that MxEasy requires to properly display them at any given time. This means you can have the live image from the camera in the main window displayed at full resolution and full frame rate while the live images in the smaller camera windows are shown at a lower resolution and reduced frame rate. This is possible given that MOBOTIX cameras display both high-resolution video sequences and lower resolution images ("preview" images) at the same time. MxEasy is then able to

retrieve those preview images (for more information, see the section *Accessing The Live Image And The Event Images* in the *Software Manual*).

If one of the cameras from a small camera window is displayed in the main window (for example, due to an alarm or if it has been manually set by the user), MxEasy will show the available preview images immediately and in real-time in the main window and then start to retrieve the images from the respective camera at full resolution from that point on. The live image in the main window will therefore appear for only brief moment at a lower resolution until the newly requested high-resolution image becomes available.



You can apply one of the following strategies for bandwidth management in MxEasy depending on how much network bandwidth is available (or on the network connection type for the MOBOTIX cameras) (under **Preferences > Connections > Bandwidth Management**; see also *Section 4.8.2, "'Connections' Tab"*):

- **High (Fast Ethernet, 100baseT, 1000baseT, WLAN 802.11 g+n):**

  This setting is recommended for Ethernet networks with unlimited bandwidth (for example, 100baseT/100 Mbps, 1000baseT/1 Gbps, fast 802.11g/n compliant WLAN with good signal strength).

  – **Main window, camera windows:** Both the live images from the active camera in the main window and the images from the cameras shown in the small camera windows are displayed at full quality (full resolution and full frame rate).

- **Medium (Ethernet, 10BaseT, WLAN 802.11 g+n):**

  This default setting is generally recommended for wi-fi connections (802.11a/b) or Ethernet networks with reduced bandwidth (for example, 10baseT, Powerline adapter, two-wire media converter, etc.)

  – **Main window:** The live images from the camera in the main window are displayed at full quality (full resolution and full frame rate).

  – **Camera windows:** The images from the cameras in the small camera windows are displayed at a lower resolution and lower frame rate (four frames per second) using the Preview feature.

- **Low (modem, ISDN):**

  This setting is recommended for modem or ISDN connections.

- **Main window:** With the Preview feature, the camera images in this window may be displayed with lower resolution (VGA 640 x 480 px) and at a lower frame rate (up to four frames per second).
- **Camera windows:** The images from the cameras in the small camera windows are displayed at a lower resolution and lower frame rate (four frames per second) using the Preview feature.

The ***recording of video sequences*** always occurs at the resolution and frame rate set for the individual camera irrespective of the display quality of the live camera images.

If the MxEasy program window is minimized in the task bar or dock, all live images will automatically be retrieved at a low frame rate (four frames per second). This is the reason why the live images briefly appear at a lower resolution when you restore the program window.

4.6 Network Environments: Camera Access From Different Locations

4.6.1 Overview

MxEasy supports access to cameras in different locations – with different network settings. This way, for example, the cameras in a gas station can be monitored by a laptop located on site in the local area network (LAN) and later, they can be monitored remotely over the Internet using a preset DynDNS service. Each scenario requires different network connection data for the same cameras and it would be time-consuming to have to adjust the connection data each time you connect with the cameras. MxEasy supports the concept of a network "environment".

The environment is a network area in which the access data is set for all cameras. Switching to a different environment automatically switches the network address data, i.e. the IP address, DNS name, port, SSL and proxy for all integrated cameras. Because the bandwidth is normally different for each network and access type, the bandwidth setting described in the last section is also coupled with the settings for the individual network environment.

Follow these steps to recreate the example described above:

1. Integrate the cameras and set up camera access to the local area network:
   - Launch MxEasy (the **Standard** environment is activated).
   - Search for the cameras and integrate them into MxEasy (using IP addresses).
   - Change the name of environment to `Gas station - local` (under **File > Environment > Edit Environments** and double-click the name of the environment: *Standard*).
   - Set the bandwidth to *High* under **Tools > Preferences > Connections** for a fast LAN connection.
2. Set up external camera access over the internet:
   - Set up DynDNS on the DSL router and define ports for the individual cameras.

– Create a new environment: `Gas station - remote access` (under **File > Environment > Edit Environment**, click the "+" button).
– Select **Camera > Show Cameras** and in the **Cameras** dialog, select the `Gas Station - remote access` option.
– Set the correct DynDNS address in the connection data of the relevant cameras (for each camera: right-click and select **Information**, then enter the DynDNS name).
– Set the bandwidth for access to *Low* under **Tools > Preferences > Connections** if your DSL connection is 1,000 kbps or slower.

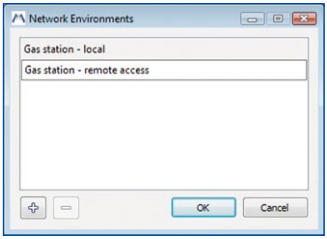
Result

- To monitor the cameras on site at the gas station, you can access the cameras via the fast LAN by selecting the **Gas station - local** environment (under **File > Environments**).
- To monitor the cameras remotely, you can access the cameras via the slower DSL connection with DynDNS by selecting the **Gas station - remote access** environment. No additional settings are required.

The following section will describe the process of defining and editing the environments in more detail.

4.6.2 Defining And Editing Environments

To define or edit environments, select **File > Environment > Edit Environments**:



In the **Network Environments** dialog, you can use the "+" and "-" buttons to define new environments and delete existing environments respectively. To rename an environment, select the environment in the list box: Double-click the entry or press F2 to rename the environment.

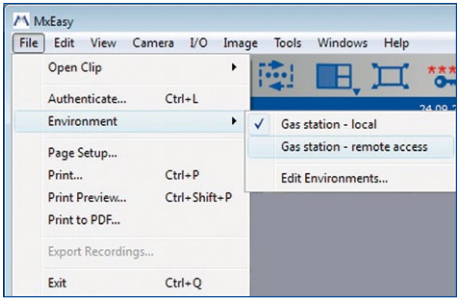
Note

When you create a new environment, MxEasy adopts all camera network data and bandwidth settings from the current environment.

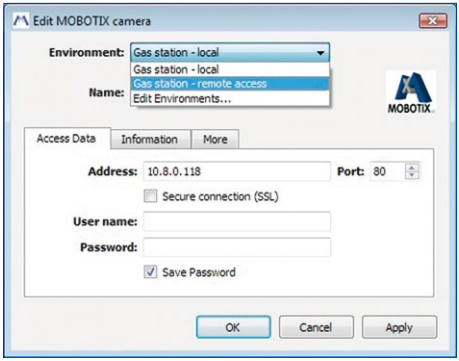
4.6.3 Selecting An Environment And Changing The Network Data

You can select a predefined environment using the following commands:

- **File > Environment** (direct selection of environment)

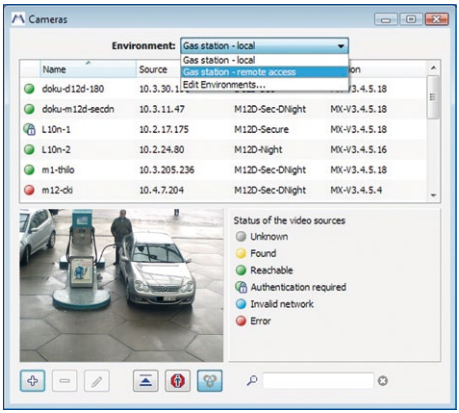


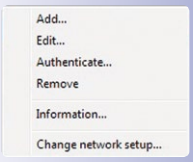
- **Camera > Camera Access** (**Edit MOBOTIX Camera** dialog)



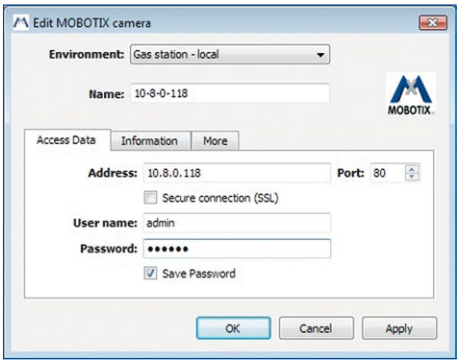
Adjust the network access information on the **Access Data** tab to the remote access data of the camera in the main window.

- **Camera > Show Cameras (Cameras dialog)**

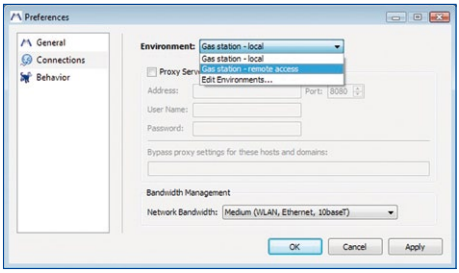




In order to edit the camera access data, you can right-click the camera and select **Edit** from the context menu. Next, enter the access data in the **Edit MOBOTIX camera** dialog:



- **Tools > Preferences > Connections**



When you select an environment, MxEasy activates the network connection data and bandwidth settings associated with this environment for all cameras. All changes you make to the camera addresses and the bandwidth settings after this point will be saved for the active environment.

4.7 Recording Targets - SD Cards And File Servers

All MOBOTIX cameras controlled by MxEasy can use different ***recording targets***. Depending on the model and type of camera used, they can store the audio/video data on the (volatile) internal memory, on internal storage media (SD cards) or on file servers.

Newer cameras (Q22M, Q24M, D24M, M24M, all except ***Basic*** and ***Web*** models) and ***R models*** have factory-installed SD cards and are preconfigured for recording "out-of-the-box".

At present, MxEasy cannot change the recording target on the attached cameras. To do so, you need to open the web interface of the corresponding camera in a web browser or use MxControlCenter.

Caution

This will not be an issue when using MxEasy to configure a MOBOTIX system with new cameras. If you are using MxEasy to add cameras with active connections to file servers, however, these connections will be closed when resetting the cameras to the MxEasy defaults.

In this case, file server storage needs to be re-established on these cameras ***using the appropriate access data***. For additional information on this topic, see the *Recording on External File Servers* section in the *Software Manual*.

Storage Requirements And Life Expectancy Of MicroSD Cards

The life expectancy of a MicroSD card increases proportionally to the storage capacity, since the camera software will execute fewer write/delete cycles on each storage cell. The first delete operation will start once the card has been filled to capacity (first full cycle). The theoretical life expectancy of a MicroSD card with 16 GB reaches between 10 and 35 years – depending on how it is being used.

Notes

- Please note that the values contained in the following tables are average values that may vary depending on how the camera is actually used.
- For more information on SD card recording, please see the *Camera Manual* of your MOBOTIX camera.

32 GB MicroSD Card: Storage Requirements And Life Expectancy					
	6 fps CIF	6 fps VGA		1 fps MEGA	1 fps QXGA
	M-JPEG	M-JPEG	MxPEG	M-JPEG	M-JPEG
File size single image	15 kB	45 kB	-	120 kB	240 kB
Storage req. per second	90 kB	270 kB	75 kB	120 kB	240 kB
Storage req. per 24 hrs	7.8 GB	23.5 GB	6.5 GB	10.4 GB	20.8 GB
Time for one full cycle	4 days	1.3 days	4.8 days	3 days	1.5 days
Est. theor. life expectancy	60 years	20 years	73 years	46 years	23 years

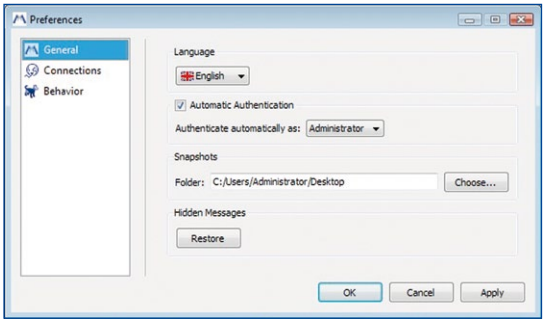
4 GB MicroSD Card: Storage Requirements And Life Expectancy					
	6 fps CIF	6 fps VGA		1 fps MEGA	1 fps QXGA
	M-JPEG	M-JPEG	MxPEG	M-JPEG	M-JPEG
File size single image	15 kB	45 kB	-	120 kB	240 kB
Storage req. per second	90 kB	270 kB	75 kB	120 kB	240 kB
Storage req. per 24 hrs	7.8 GB	23.5 GB	6.5 GB	10.4 GB	20.8 GB
Time for one full cycle	12 hours	4 hours	14.4 hours	9.2 hours	4.4 hours
Est. theor. life expectancy	7.6 years	2.5 years	8.8 years	5.6 years	2.8 years

4.8 Adjusting The Default Program Settings

Use the following menu commands to view the default program settings of MxEasy. Select the commands that apply to your operating system:

- **Windows: Tools > Preferences** menu command
- **Mac OS X: MxEasy > Settings** menu command
- **Linux: Edit > Settings** menu command

4.8.1 'General' Tab

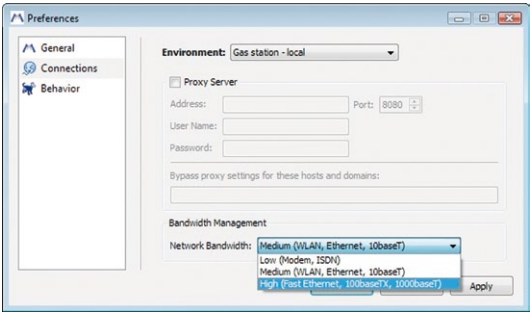


- **Language:** You can select the language of the MxEasy user interface with this option. Currently, the languages **English** and **German** are available. Additional languages are in preparation.
- **Automatic Authentication:** Determines whether or not users are automatically authenticated when MxEasy is launched. MxEasy logs on to this access level automatically, without requiring the user to enter a password. For more information, see *Section 3.9, "Creating Users And Passwords"*).
- **Folder for snapshots:** Use this option to specify a directory or folder for saving images recorded with the **Snapshot** button. For more information, see *Section 4.1, "Saving, Printing And Exporting"*.
- **Restore hidden messages:** Click the **Restore** button to show any message and warning windows that have been specifically deactivated by the user by checking **Don't ask me again**.

Note

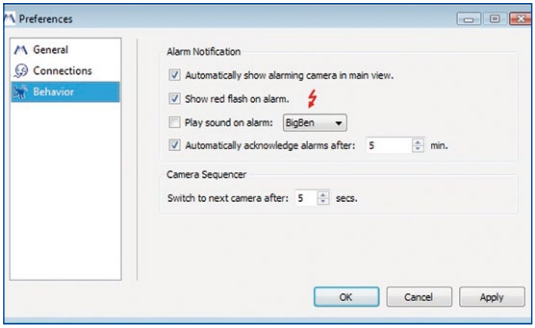
MxEasy will warn you if an error occurs when recording data to a storage medium such as an SD card. This error message can be hidden by selecting **Don't ask me again**.

4.8.2 'Connections' Tab



- **Proxy Server:** If you connect to the Internet in your local network via a proxy server, then the proxy settings need to be entered in the MxEasy program settings. This is necessary if MxEasy needs to access the Internet for purposes such as downloading software updates (see *Section 5.6, "Software Update"*).
- **Bypass proxy settings:** If a proxy server has been entered, access to all network devices will occur over this server even if the device is a remote camera or a local network camera. This may result in slower access to the local camera or even prevent access entirely. You should therefore enter the IP addresses (or symbolic names) of all local network devices in the **Bypass proxy settings** field. Here, you can enter an address range (e.g. `192.168.*`) or multiple addresses separated by semicolons (`192.168.1.23;192.168.1.24`).
- **Network Bandwidth:** This setting allows you to optimize the retrieval and display of the live images from the camera in MxEasy. Depending on the setting you select, the camera images will always be retrieved and displayed in MxEasy either at full resolution and full frame rate or at reduced resolution and reduced frame rate (Preview feature) (for more information, see *Section 4.5, "Bandwidth Management"*).

4.8.3 'Behavior' Tab



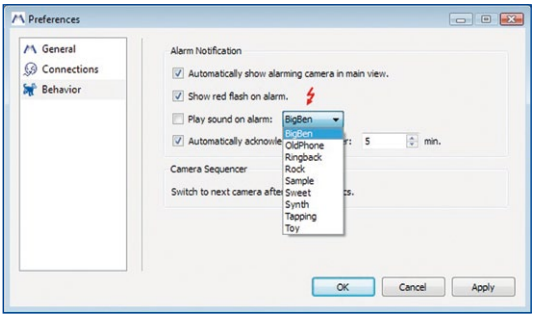
- **Automatically show alarming camera in main view:** If this option is enabled, the live image of a camera connected to MxEasy, but not visible in the main window or

the camera windows will automatically be shown in the main window of MxEasy in the event that the camera triggers an alarm. You will then be able to view the associated event sequence immediately (the **View Events** button). For more information, see *Section 3.6.5, "Selecting The Alarm Sensors"*.

Notes

If MxEasy is minimized and one of the cameras reports an alarm, the program window will be restored automatically and appear in front of all other applications.

- **Show red flash on alarm:** When this option is activated and an alarm is triggered, MxEasy displays a flashing red lightning bolt in the middle of the live camera images. This image disappears once you have acknowledged the alarm by clicking the image.
- **Play sound on alarm:** When you enable this option, MxEasy will automatically play back the selected alarm sound as soon as a camera triggers an alarm. The alarm sound will end when it is acknowledged automatically or manually by a user (by clicking the camera window). See *Section 3.6, "Setting Up Alarms And Recordings"* and *Section 5.6, "Software Update"*.



- **Automatically acknowledge alarms after:** This setting allows you to specify the time after which MxEasy will automatically acknowledge alarm messages from connected cameras. Automatic acknowledgement may also end a still active alarm sound. For more information, see *Section 3.6.5, "Selecting The Alarm Sensors"*.
- **Camera Sequencer:** You can define how long the display will last before switching to the image of the next camera with the sequencer interval. For more information, see *Section 3.3.1, "Switching The Displayed Cameras"*.

5 ADVANCED FEATURES

5.1 Camera Management

This section will show you how to add new cameras in MxEasy, how to edit, rename and remove cameras that are already attached to MxEasy.

5.1.1 Adding Cameras

In order to add new MOBOTIX cameras to the MxEasy system, execute the **Cameras > Add Cameras** menu command. MxEasy now automatically finds new cameras and lists all cameras not yet attached in the **MxEasy Wizard**. To continue, please proceed as described in *Section 3.1.1, "Searching MOBOTIX Cameras"* and *Section 3.1.2, "Selecting And Adding New Cameras"*.

5.1.2 Working With The Current Camera - Renaming, Editing And Removing

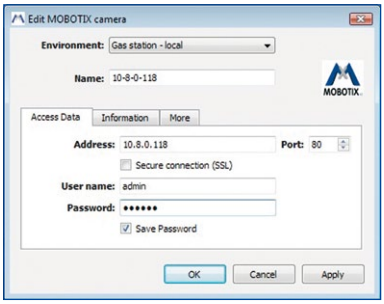
The functions presented in this section always apply to the camera currently displayed in the MxEasy main window.

Renaming The Current Camera

Double-click on the camera name shown at the left of the upper information bar in the MxEasy main window or select **Camera Rename Camera** from the menu, then enter a new name and store it.

Editing The Current Camera

Select **Cameras > Edit Camera** from the menu. Open this dialog to change the camera name and to enter changed **access data** (IP address, secure connection, user name and password). All other tabs in this dialog are for your information only.



This is also where you can modify the network parameters of a different **environment** of the displayed camera (see *Section 4.6, "Network Environments: Camera Access From Different Locations"*).

Removing The Current Camera

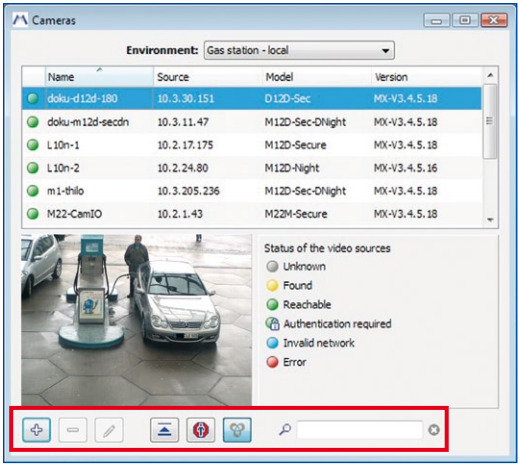
Caution

When removing cameras from the system, MxEasy will offer to reset the cameras to the state they had before they were added to MxEasy. Please note that this may also affect the passwords assigned in MxEasy. They will be reset and the old passwords will be valid again.

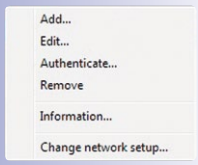
Select **Cameras > Remove Camera** from the menu. Click on **Reset** to reset the cameras to the state they had before they were added to MxEasy. When you click on **OK**, MxEasy will remove the cameras.

5.1.3 Working With The Camera List

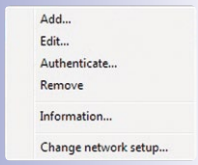
Select **Cameras > Show Cameras** from the menu to open the **Camera List**. This list contains all cameras that are reachable over the network. ***Cameras that are already controlled by MxEasy are highlighted in bold print.***



In order to edit the selected cameras, you can use the following functions (executed either by the context menu shown here or by clicking on the corresponding button):



- **Add:** Manually adds a MOBOTIX camera, if it cannot be found since it is not on the local network, but can only be accessed via the Internet.
- **Edit:** Works in a similar manner as editing a camera (see the *Editing The Current Camera* section). Note that you can only use this command if you have highlighted one camera.
  - **Authenticate:** Use this command to change the access data used by MxEasy for accessing one or more cameras. Note that this command does not modify



the access data on the cameras (see the *Changing The Access Data For All Attached Cameras* section below).

Remove: This button removes the highlighted cameras from the list and from MxEasy (only those that had been attached before). Click on **Reset** to reset the cameras to the state they had before they were added to MxEasy. When you click on **OK**, MxEasy will remove the cameras.

- **Information:** Shows an information dialog for the highlighted camera similar to the **Edit** button described above.
- **Change Network Configuration:** This dialog allows changing the network configuration of all highlighted cameras in one step (see *Section 3.1.2, "Selecting And Adding New Cameras"*).
- **Hide Preview Image and Legend:** Hides the preview image and the legend or shows it again.

Display Still Image: Deactivates the live stream of the corresponding camera and shows a still image in order to reduce the bandwidth.

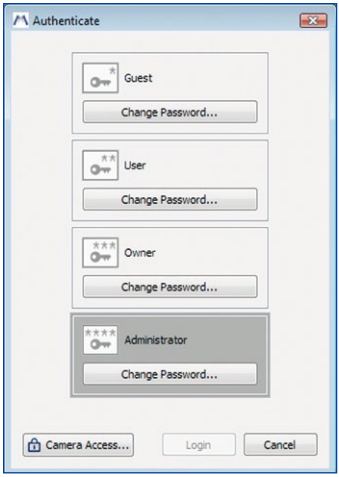
Activate Camera Search: This button is usually activated to show that MxEasy automatically searches for new cameras in the background.

Renaming The Highlighted Camera

Double-click on a camera name or press F2 to change it. Press the RETURN key to store the new name. The new camera names will be applied to the corresponding cameras if you close the **Camera List**.

Changing The Access Data For All Attached Cameras

If you would like to change the access data of all cameras, click on the **Authenticate** button to open the dialog by the same name. Next, click on **Camera Access** and proceed as described in *Section 5.3, "Setting Up A Global User For All MOBOTIX Cameras"*.

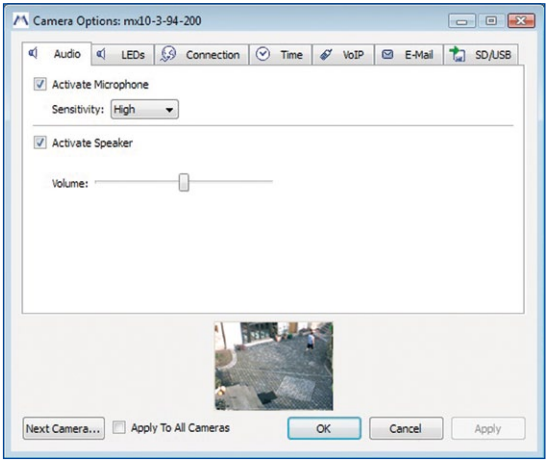


5.2 Camera Settings

5.2.1 Overview

Many of the settings for the connected MOBOTIX cameras can be centrally managed using MxEasy (the **Camera Options** button).

Select the camera whose settings you would like to change (the **Next Camera** button). The live image from the camera you selected will be displayed as a preview image to help you identify the specific camera you want.



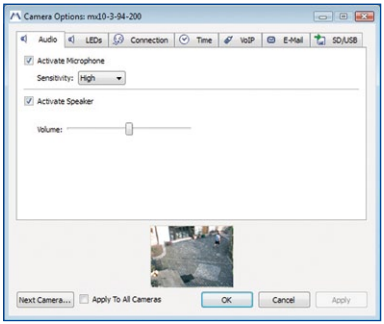
Click **Apply** or **OK** and your settings will be sent to the selected camera or, if the **To All Cameras** checkbox is checked, to all the cameras connected to MxEasy.

Notes

No preview image will be shown if the **To All Cameras** option is enabled.

You may need to reboot the camera for some of the changes described here to take effect. If it is necessary, MxEasy will prompt you before rebooting the camera automatically.

5.2.2 Audio Settings

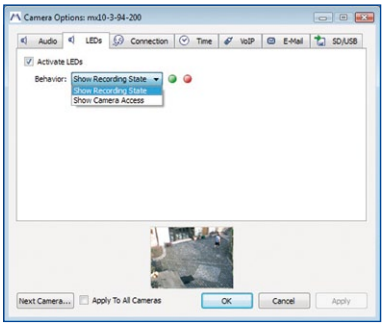


You can make the most important audio settings for the camera in this dialog.

- **Activate microphone and sensitivity:** The camera microphone can be activated or deactivated and the microphone sensitivity can be adjusted as required using the options here.
- **Activate speaker and volume:** The camera speaker can be activated or deactivated and the volume can be adjusted as required using this option.

For additional information, see the sections *Microphone and Speaker* and *Sound on Event* in the *Software Manual*.

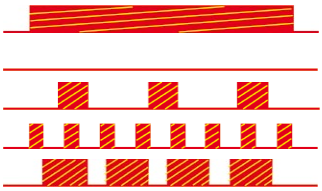
5.2.3 LED Settings



The LEDs of the MOBOTIX cameras can be used to signal certain functions and statuses. You can assign selected flashing patterns to particular camera actions and functions in this dialog.

- **Show Recording State:** You can set the LEDs of the MOBOTIX camera to blink when an event occurs and a recording is made with this option.
- **Show Camera Access:** The LEDs of the MOBOTIX camera blink whenever the camera is accessed, i.e., if the live image from the camera is displayed in MxEasy or a configuration has been changed using the **Camera Options** button, for example.

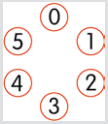
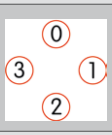
LED Blinking Patterns



- **On:** LED is permanently on
- **Off:** LED is permanently off
- **Blinking:** LED is off, blinking on slowly
- **Flashing:** LED off, flashing on fast
- **Negative flashing:** LED is on, flashing off

Blinking Patterns According To Settings

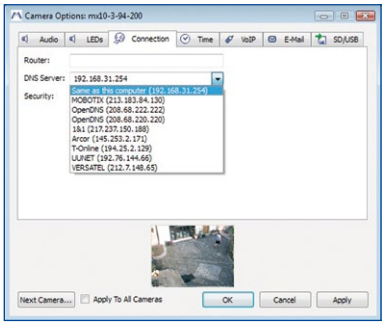
Setting	LEDs	Color	Blinking Pattern
Show Recording State	Alarm: 1, 5		• **Continuous recording:** On • **Event recording:** Neg. flashing every 3 sec. • **Unarmed, off:** Off • **Armed, waiting:** Flashing every 3 sec. • **Critical error:** Blinking in sync. with Power LED
	Power: 0		• **OK:** On permanently • **Non-critical error:** Neg. flashing every 3 sec. • **Critical error:** Blinking
Show Camera Access	Alarm: 1, 5		• **Continuous recording:** On • **Event recording:** Neg. flashing every 3 sec. • **Unarmed, off:** Off • **Armed, waiting:** Flashing every 3 sec. • **Critical error:** Blinking in sync. with Power LED
	Power: 0		• **Always:** Double flashing every 3 sec.

Camera	LEDs
M12	
D12	
Q22M, D22M, M22M, Q24M, D24M, M24M	

For more information on the LED blinking patterns of MOBOTIX cameras, see the section *LED Signals and LED Configuration* in the *Software Manual* and in the *Camera Manual* of the respective camera model.

5.2.4 Connection Settings

You can also set the parameters for communications with external servers in this dialog, for example, if you need to send e-mails.



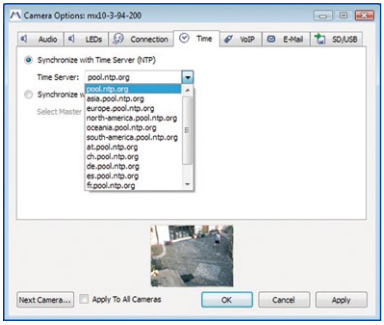
- **DNS Server:** If you have MOBOTIX cameras connected to the network via a manual IP address, you can enter the IP address of the DNS server used by your network here. MxEasy will automatically suggest the DNS server that your computer is currently using (the *Same as this computer* option). A DNS server must be entered in a MOBOTIX camera in order for the **Time Server**, **VoIP** and **E-Mail** functions to work, if the respective IP addresses are ***not*** known.

- **Use Secure Connections (HTTPS/SSL):** If necessary, you can activate encryption for all data transferred via HTTPS between MxEasy and the MOBOTIX cameras. We strongly recommend using this option for security-related applications. Note that SSL encryption will place a higher load on the network bandwidth.

For additional information, see the section *SSL Encryption and Certificates* in the *Software Manual*.

5.2.5 Time Settings

Each MOBOTIX camera has a battery-buffered real-time clock that always keeps the time correct, even in the event of a power failure. However you need to make sure that all cameras connected to MxEasy are synchronized for playback and event tracking. You can do this using a time server that synchronizes all cameras to the exact same time. Use this dialog to enter or select a time server. Note that you can also specify a MOBOTIX camera as a time server.



- **Synchronize with Time Server (NTP):** Select a time server from the list or enter the name of your preferred NTP time server. If the MOBOTIX cameras are set to automatically obtain their network data via DHCP, make sure that a valid DNS server is also entered in the MOBOTIX cameras (the **Connection** tab).
- **Synchronize with Master Camera:** Alternatively, you can select one of the cameras connected to MxEasy as a time server.

For additional information, see the section *Date and Time/Time Zones and Time Servers* in the *Software Manual*.

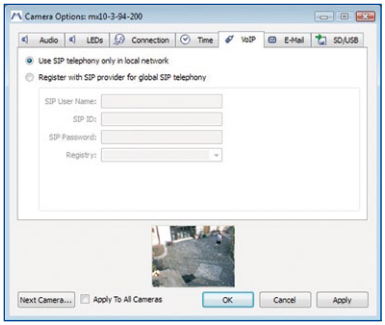
Hint

If the cameras are connected to the Internet, you can select a time server from the drop-down menu. You can also enter a time server in the local network if one is available. If neither a time server on the Internet nor a local time server is available, you should specify one of the cameras connected to MxEasy as the master camera for the purpose of time synchronization. Doing so will at least ensure that all cameras remain synchronized with each other and hence allow saved video sequences to be played back in a synchronized manner.

Note

The time display in the title bar of the main window will blink if the system time of an active camera (Live view) in the main window deviates from the system time of the computer by more than 15 seconds. In this case, check the computer to see if it is also synchronized with a time server. Try to set up the same time server for both the computer and the MOBOTIX cameras.

5.2.6 VoIP Settings For Phone Calls

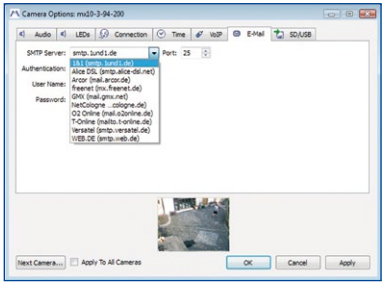


Using Internet telephony, you can make phone calls with MOBOTIX cameras. In order to use this feature, you need to register with a VoIP provider for Internet telephony (for example, sipgate.de). You can enter the access data for the registered VoIP account in this dialog.

- **Use SIP telephony in only local network:** No SIP user data is required if phone calls are to be made within the local network only (for example, to softphones installed on computers).
- **Register with SIP provider for global SIP telephony:** Enter the user data that you received from your SIP provider upon registration into the appropriate fields (**SIP User Name**, **SIP ID**, **SIP Password** and **Registry**). If the MOBOTIX cameras are set to automatically obtain their IP addresses via DHCP, make sure that a valid DNS server is also entered in the MOBOTIX cameras (the **Connection** tab).

For additional information, see the sections *Phone Call* and *Phone Profiles* in the *Software Manual*. For detailed information on all telephony features of the MOBOTIX cameras, see Chapter 9 of the *Software Manual*.

5.2.7 E-Mail Settings



MOBOTIX cameras can send e-mails (for alarm notification, for example). In order to use this feature, you need to provide a valid e-mail address. You can enter the access data for the account in this dialog.

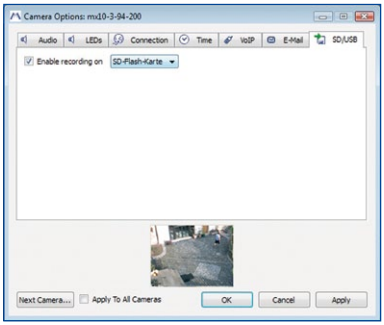
- **E-Mail data:** Enter the user data of an e-mail account in the fields provided in the dialog: **SMTP Server**, **Port** (normally Port 25), **Authentication** (normally **SMTP Login**) and **User Name** and

Password. If the MOBOTIX cameras are set to automatically obtain their network data via DHCP, make sure that a valid DNS server is also entered in the MOBOTIX cameras (the **Connection** tab).

For additional information, see the sections *E-Mail* and *E-Mail Profiles* in the *Software Manual*.

5.2.8 SD/USB Settings

MOBOTIX cameras can save their recorded audio and video data either to the internal camera memory or an external storage medium. Using an external storage medium can substantially increase your storage capacity. For the storage medium, you can choose the integrated SD card of the camera or an external USB medium (USB stick, USB hard drive, etc.), for example. The basic settings and basic functions of this feature are found in this dialog.



- **External USB hard drive:** Select this option if you want the MOBOTIX camera to record data to a connected external USB hard drive directly.
- **SD Flash Card:** This option sets the MOBOTIX camera to record data to an inserted SD flash card.
- **USB Stick/Flash SSD:** Select this option if you want the MOBOTIX camera to record data to a connected USB stick or an external flash SSD directly.
- **Others:** This option is automatically activated if the MOBOTIX camera is configured to use a recording mode that does not support USB, SD or Flash SSD storage devices. MxEasy is currently unable to set up such a recording mode directly.

A yellow recording icon will appear in MxEasy in the lower information bar of the main window if one of the *External USB Hard Drive, SD Flash Card* and *USB Stick/Flash SSD* options is set as the recording target. Hold the mouse pointer over the icon in the information bar to see this tool tip.

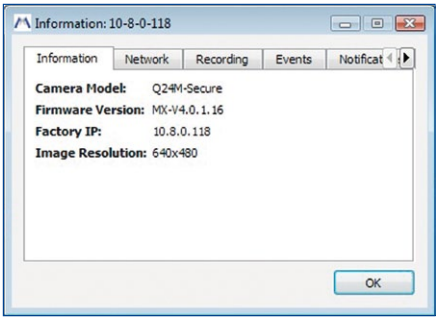
Caution

The **Enable recording on** drop-down menu shows different options depending on the camera model you are using. Make sure that the appropriate recording device is connected to the MOBOTIX camera. MxEasy will display an error message if the recording device is improperly connected or not connected at all.

Before the recording device can be used in MxEasy, it needs to be selected and formatted for the MxFFS file system using the camera software (see the section *Recording on Flash, USB and SD Storage Devices* in the *Software Manual*). In future versions, MxEasy will be able to automatically select and format the recording device.

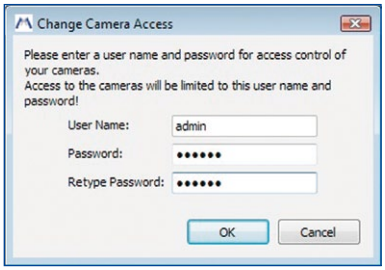
5.2.9 Camera Information

Information on the selected camera settings of the currently active camera in the main window can be accessed using the **Information** button.



5.3 Setting Up A Global User For All MOBOTIX Cameras

If necessary, you can set up one administrator to be used for all MOBOTIX cameras connected using MxEasy (the **File > Authenticate** menu command, **Camera Access** button). This will replace the default administrator (user name: **admin**, password: **meinsm**). MxEasy then accesses all connected cameras using the new user name and the new password.



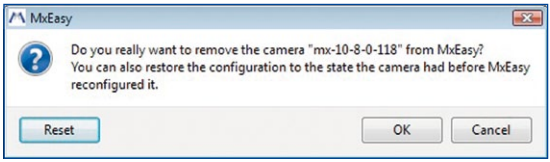
Setting up a new administrator not only provides quick and reliable protection against unauthorized access, it also blocks browser access to the Guest screen (**Public Access**; for more information, see the section *Users, User Groups, Passwords, Supervisor Mode* in the *Software Manual*.

Caution

A password set up in MxEasy for the global access level will never be shown for security reasons. Make sure that you store this password in a secure place.

If no user name and password have been entered, MxEasy uses the factory defaults (user `admin`, password `meinsm`). This automatically enables public access to the Guest screen via a browser window.

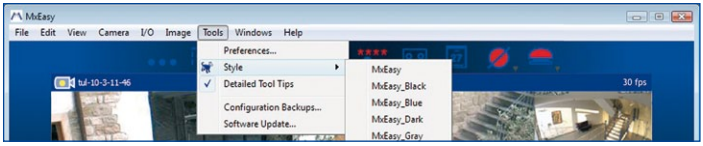
If you do not want to use a camera with MxEasy and want to use it elsewhere, you should first remove the camera from MxEasy (the **Camera > Remove Camera** menu command) and then reset it to the status it had before it was connected to MxEasy (the **Reset** button). If you do so, any modified user names and passwords for the administrator will be reset.



5.4 Customizing The User Interface

Thanks to the software architecture of MxEasy, it is possible to change various elements of the user interface (for example, buttons and backgrounds).

5.4.1 MxEasy Skins



You can change the appearance of MxEasy using the **Tools > Style** menu command. The user interface can be customized to your needs by changing the *.css file and the graphics files.

Editing Skins

A MxEasy skin consists of one or more `*.css` files and a number of graphics files.

- **Windows:** The files for the various skins can be found in the **StyleSheets** subdirectory of the MxEasy program directory.
- **Mac OS:** The *.css files are located in the application file in **MxEasy.app > Contents > StyleSheets**, while the graphics files are located in **MxEasy.app > Contents > StyleSheets > Images**.

Right-click **MxEasy.app** in the Finder and select **Show Package Contents** from the pop-up menu to open the directory structure.

For example, create a copy of the file `MxEasy.css` and change the path for the graphics files. To do so, use a text or CSS editor and save all `*.css` files without formatting ("Plain Text" or "Text Only").

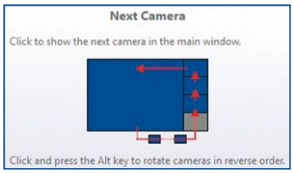
Caution

Make sure you create backup copies before you start editing the files and use these files in place of the original MxEasy files. Knowledge of `*.html` and `*.css` files is necessary if you would like to create or modify skins.

When editing graphics files, make sure that you do not change the pixel size (width and height). All graphics files should be saved as a `*.png` file, especially if they contain transparent areas.

5.4.2 Displaying Tool Tips

If the mouse pointer hovers over a button, a detailed description of the respective button will shortly appear in MxEasy. You can switch between the detailed Tool Tips and the brief descriptions using the **Tools > Detailed Tool Tips** menu command.



5.5 Custom Alarm Sounds

Adding Alarm Sounds

Any *.wav audio file can be used as an MxEasy alarm sound.

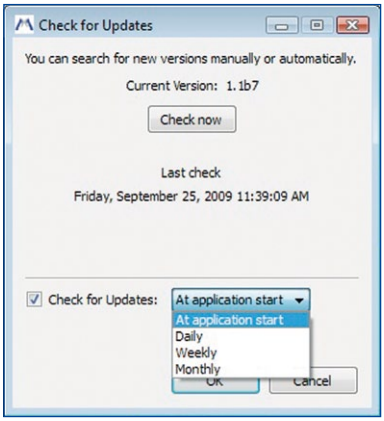
- **Windows:** The audio files for the various alarm sounds can be found in the **Sounds** subdirectory of the MxEasy program directory.
- **Mac OS:** Right-click `MxEasy.app` in the Finder and select **Show Package Contents** from the pop-up menu to open the directory structure. The audio files for alarm sounds are located within the application file (`MxEasy.app > Contents > Sounds`).

Copy the new audio files to the corresponding directory. The new alarm sounds will be available in MxEasy immediately.

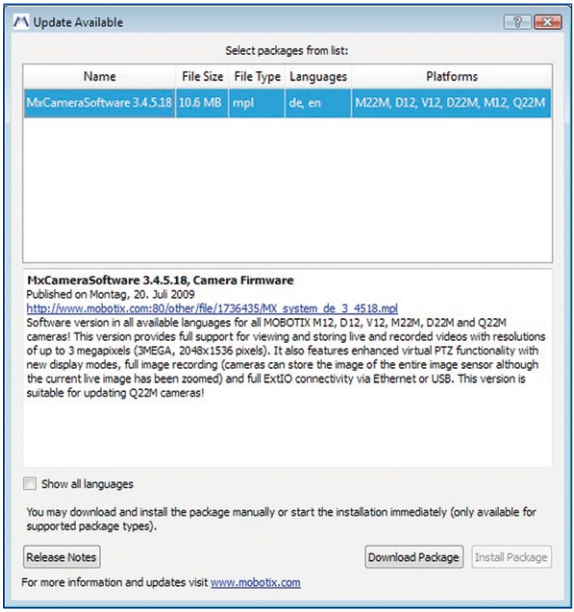
5.6 Software Update

MxEasy Software

MxEasy can search for a new program version automatically using the update function. An Internet connection is required to check for updates. You can adjust how often the program checks for updates (the **MxEasy > Tools > Software Update** menu command). You can also check for updates manually (**Check now**). If a new program version is available, it will be displayed together with the release notes. The update can now be downloaded onto your computer (**Download Package**) or installed immediately (**Install Package**). MxEasy must be restarted after an update has been installed.



Camera Software



The software versions of all connected cameras can also be updated. Available updates will be listed there. You can select your preferred language version as either an `*.mpl` or `*.zip` file (**Download Package**) and then install it (**Install Package**). The updated camera will be restarted after installation. The following languages are available for the ***M12/M22/D12/D22/Q22 camera models*** (English is included in every language package):

- **en, cn:** English/Chinese
- **en, de:** English/German
- **en, es:** English/Spanish
- **en, fr:** English/French
- **en, it:** English/Italian
- **en, jp:** English/Japanese
- **en, ru:** English/Russian

For the ***Q24, D24 and M24 camera models*** (and higher), all available languages are installed. You can easily install the latest version of the software for your camera.

Caution

If you connect to the Internet in your local network via a proxy server, then the proxy settings need to be entered correctly in the MxEasy program settings. For more information, see *Section 4.8.1, "'General' Tab"*.

5.7 Resetting The Cameras From The Privacy Mode

If you choose not to see the generated access data when activating the Privacy Mode (see *Section 3.7, "System Shutoff - Privacy Mode"*), you can only deactivate this mode from the same computer that had been used to activate the Privacy Mode. In case of a serious malfunction (or total failure) of this computer, you can only activate the system by resetting all attached cameras to the factory default settings.

Note

You should always try to retrieve the MxEasy Backup folder from the malfunctioning computer and to copy this folder to the new computer.

Resetting The Cameras To Factory Settings

- Disconnect the power supply for every camera that is attached to MxEasy.
- Restore the power supply and press the ***camera button for resetting to factory defaults***, until you hear the appropriate signal (see *Section "Resetting the Camera to Factory Defaults"*, in the corresponding *Camera Manual*).

Once you have reset all cameras, restart MxEasy. Follow these steps to proceed:

- Add all cameras to the system, which had been attached MxEasy before (see *Section 3.1.1, "Searching MOBOTIX Cameras"*).
- Load the automatic backup in MxEasy, if this is available (see *Section 4.2, "Saving And Restoring Settings"*). If the backup of the last system start is not available any more, you will have to set up the cameras manually.

Notes:

A FURTHER INFORMATION

A.1 Components Of A MOBOTIX System

We will introduce the individual components of your MOBOTIX system in this section. You will also find hints about additional information about products found on the MOBOTIX website.

A.1.1 Power Supply

The Ethernet cable supplies the MOBOTIX cameras with power. You can use either MOBOTIX PoE products or switches with PoE power supply in accordance with **IEEE 802.3af**.

MOBOTIX NPA-PoE-Set (MX-NPA-PoE-SET)

This set powers the MOBOTIX cameras or other PoE devices via the network cable. The integrated cross-over feature of the adapter allows connecting the camera directly to a computer without using a switch. The integrated LED signals the proper functioning of the power supply as well as the power supply's PoE class currently available.

For more information on MOBOTIX PoE products, see `www.mobotix.com` under **Products > Accessories > Power Supply**.

Switches With PoE Power Supply

When purchasing switches with PoE power supply in accordance with **IEEE 802.3af**, make sure that the required number of ports is supported (in certain units, only some of the ports are equipped with PoE power supply).

Uninterruptible Power Supply (UPS)

An *uninterruptible power supply* (*UPS*) consists of a rechargeable battery and electronic components. These components ensure that the battery is correctly charged and prevent the connected units from being damaged as a result of voltage peaks and lows. If an electrical surge occurs, the voltage peaks are filtered out and in the event of low voltage, the UPS takes over the power supply of the connected units for as long as the power stored in the battery lasts.

We recommend safeguarding the network components of your MOBOTIX system (camera power supply, switches, routers and even file servers) using UPS units as they can ensure that your system will continue to operate properly, even in the case of a complete power failure.

A.1.2 Switch

A switch connects individual network-ready units to one another and delivers data from the sending units to the receiving units. In larger networks, one or more switches form the *backbone* of the system over which the data is transferred to the individual computers and/or network devices. In a smaller network, this function is normally performed by a *router* with multiple network ports (for example, in a home network).

A.1.3 Router

A router is normally used to establish a connection to the Internet. Technically speaking, a router transfers requests to external IP addresses of computers that are located outside of the local network. If a router has a sufficient number of network ports, it can also function as a switch.

A router performs these functions, among others, for the units joined in the network:

- **DHCP:** Using this function, individual network devices in the local network (cameras and computers) are automatically assigned unique IP addresses to enable communication between these units.
- **Internet Connection:** The router establishes a connection to an Internet service provider (ISP) and receives a unique public IP address (an address that is recognized and available online). Requests sent to an external IP address (e.g. a website) are sent to this public address via the router and the results are sent back to the requesting computer. Normally, a permanent connection to the provider is established.
- **DynDNS:** Each time the Internet connection is reestablished, the ISP automatically assigns the router a different public IP address (for example, if the provider interrupts the connection overnight). In order to assign a unique, static name to these constantly changing IP addresses, register with a free DynDNS provider (for example,**`www.dyndns.org`**) and create a name for your router and Internet connection (for example, **`myhomenetwork.dyndns.org`**).

  This unique name (for example, **`myhomenetwork.dyndns.org`**) is entered into the router along with the registration information of the DynDNS provider (user name and password). Each time the router's public IP address is reset by the provider, the router registers this IP address with the DynDNS provider where the address is then linked to your unique name.
- **Port Forwarding:** It is possible to access individual network devices (for example, cameras) from outside the network using this router feature. A camera is assigned to a port in the router. This port sends information to the internal network address of the camera. In conjunction with DynDNS, you can access your first camera using **`mycamera.dyndns.org:19801`** as address. MxEasy configures the connected cameras automatically so that each camera can be used from outside the network as a proxy camera.

For more information on these services, see the section *Directly Accessing MOBOTIX Cameras via the Web* in the *Software Manual. Section 3.1.3, "Adding Remote Cameras Using DynDNS"*, contains more information on the ***DynDNS*** and ***port forwarding*** topics.

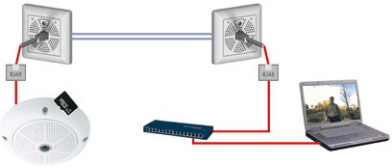
A.2 How Can I Expand My MOBOTIX System?

You can expand your MOBOTIX system with the following components to adjust the system to suit your needs:

- **MOBOTIX ExtIO**: This expansion module, which is compatible with all MOBOTIX IT and Secure models, can be used to set up a separate door intercom via a USB or Ethernet cable in addition to the camera (USB: max. 5 m/16 ft, Ethernet: max. 100 m/110 yd, Mx2wire: max. 500 m/550 yd). The integrated buttons act as a call button and a light switch, and speech is transmitted over the microphone and speakers of the ExtIO. A key switch can be integrated into one of the two signal inputs, for example. Using the key switch, the system can be manually activated and deactivated. The other input is used to transfer the signals of an additional sensor (for example, a second motion detector). The two external consumers (for example, door opener and light) are controlled using relays.

  Further information on the MOBOTIX ExtIO is available at **www.mobotix.com** under **Products > ExtIO**.

- **MOBOTIX Mx2wire**: This expansion module allows using two-wire cabling to establish ***network connections with PoE power supply for MOBOTIX cameras and other network devices for distances of up to 500 m/550 yd*** (two modules required). Mx2wire modules can thus be used to convert existing two-wire cables (bell wires, coax cables, power lines, etc.) to multimedia network connections.



  Further information on the MOBOTIX Mx2wire is available at **www.mobotix.com** under **Products > Mx2wire**.

- **Joystick:** A joystick with three axes (two axes via the control stick and one axis via the rotating grip) and memory buttons for frequently used camera positions simplify the handling of the MOBOTIX system if users need to make frequent use of zoom functions to access saved camera positions.
- **Key Switch:** A key switch can be connected to one of the signal inputs of the MOBOTIX camera or ExtIO to allow for quick activation and deactivation of your MOBOTIX system.

Notes:

B ACCESS RIGHTS FOR USER ACCESS LEVELS

B.1 Button Functions

Button	Button	Admin	Owner	User	Guest
Top Toolbar					
Next Camera		X	X	X	X
Camera Sequencer		X	X	X	X
Camera Overview and Layouts		X	X	X	X
Full Screen		X	X	X	X
Authenticate		X	X	X	X
Player Mode		X	X	X	
Alarm Planner		X			
Privacy Mode		X	X		
Operation Mode		X	X		
Manual Alarm		X	X	X	
Left Toolbar					
Microphone		X	X	X	
Speaker		X	X	X	
Volume Up		X	X	X	
Volume Down		X	X	X	
Door		X	X		
Light		X	X		
Sound		X	X		

Button	Button	Admin	Owner	User	Guest
Camera Options		x			
Right Toolbar					
Image Settings		x	x		
Image Formats and Views		x			
Activate PTZ		x	x		
PTZ Views		x	x	x	
Print		x	x	x	
Snapshot		x	x	x	
Backup Configuration		x			
Information		x	x	x	

B.2 Menu Command Functions

"MxEasy" Menu (Mac OS X only)	Admin	Owner	User	Guest
About MxEasy	x	x	x	x
About Qt	x	x	x	x
Preferences	x	x		

"File" Menu	Admin	Owner	User	Guest
Close (Mac OS X only)	x	x	x	x
Authenticate	x	x	x	x
Page Setup	x	x	x	
Print	x	x	x	
Print Preview	x	x	x	

"File" Menu	Admin	Owner	User	Guest
Print to PDF	X	X	X	
Export Recordings	X	X	X	
Exit (Windows)	X	X	X	X

"View" Menu	Admin	Owner	User	Guest
Next Camera	X	X	X	X
Previous Camera	X	X	X	X
Camera Sequencer	X	X	X	X
Camera Overview	X	X	X	X
Camera Management	X	X	X	X
Full Screen	X	X	X	X
Maximize	X	X	X	X

"Camera" Menu	Admin	Owner	User	Guest
Show Cameras	X			
Edit Camera	X			
Camera Options	X			
Information	X	X	X	
Add Cameras	X			
Remove Camera	X			
Rename Camera	X			
Reload	X	X	X	X
Reboot	X			
Player Mode	X	X	X	
Operation Mode	X	X		
Alarm Planner	X			
Manual Alarm	X	X	X	

"I/O" Menu	Admin	Owner	User	Guest
Speaker	X	X	X	
Volume Up	X	X	X	
Volume Down	X	X	X	
Door	X	X		
Light	X	X		
Sound	X	X		

"Image" Menu	Admin	Owner	User	Guest
Image Settings	X	X		
Image Formats and Views	X			
Activate PTZ	X	X		
PTZ Views	X	X	X	
Snapshot	X	X	X	

"Tools" Menu	Admin	Owner	User	Guest
Preferences (Windows only)	X	X		
Style	X	X	X	X
Detailed Tool Tips	X	X	X	X
Configuration Backups	X			
Software Update	X			

"Help" Menu (Windows only)	Admin	Owner	User	Guest
About	X	X	X	X
About Qt	X	X	X	X

C MOBOTIX GLOSSARY

ActiveX

Control element on Windows computers which may also be used in other programs (including Windows Internet Explorer) to run special tasks. The ***MxPEG ActiveX*** control element allows video and audio data from MOBOTIX cameras to be displayed in other applications (including Internet Explorer).

Arming

This refers to the process of activating an alarm system so that events trigger the appropriate alarms. Traditional alarm systems can be armed using a key switch or by entering a code on a keyboard. MOBOTIX cameras can be armed using a "software switch."

Auto Grid

Automatically generated grid used for displaying the live images from all cameras.

Bonjour

(French for *"hello"*) is a technology developed by Apple based on the ***Zeroconf*** protocol, which is a method to automatically recognize network services on IP networks. For example, you can find a printer or a network camera on the local network without knowing the exact IP address of the device you are looking for.

CamIO

MOBOTIX signal module that the camera uses to directly operate lamps, sirens and access controls, as well as external audio components (speakers and microphones).

CCTV

Abbreviation for *Closed-Circuit Television*. A television system in which the analog video signal is transmitted to monitor within one particular environment only (for example, a building). The term CCTV is often used for video surveillance systems.

CF Card

Abbreviation for *Compact Flash Card*. An ultra-compact, digital (random-access) memory medium based on flash memory modules and well-known as an image storage medium for digital cameras.

CIF, 2CIF, 4CIF (in accordance with PAL TV standard)

Common Intermediate Format. Corresponds to 1/4 TV image with 288 rows and 352 pixels (0.1 megapixel). 2CIF (1/2 TV image) has the same small number of rows (288), but 704 pixels (0.2 megapixel). 4CIF corresponds to the image quality of a traditional TV image with 576 rows and 704 pixels (0.4 megapixel).

CMOS Sensor

Abbreviation for *Complementary Metal-Oxide Semiconductor Sensor*. Sensor for energy-efficient digitalization of image information. CMOS sensors are used as image sensors in digital cameras.

Codec

Blend of the words *coder/decoder*, which denotes a process for encoding and decoding data. When applied to audio/video data, two codecs are required, an audio codec and a

video codec. Commonly used codecs are mainly concerned with compressing the data to save transmission bandwidth and storage capacity.

DevKit

Camera installation kit with independent image sensors based on MOBOTIX M12 or M22 cameras, intended for concealed installation in other devices.

DHCP

Abbreviation for *Dynamic Host Configuration Protocol*. Allows a server to automatically assign devices in the network with the appropriate configuration (including the IP address, DNS server and gateway), as opposed to fixed IP addresses on the individual network devices.

DNS

Abbreviation for *Domain Name Service*. Allows the domain names of servers on the Internet (e.g. **`www.mobotix.com`**) to be linked ("resolved") to their corresponding IP addresses (e.g. **`212.89.150.84`**).

Dome Camera

Most often refers to cameras with a round and compact design. The lens can be freely positioned and is protected by a transparent dome-shaped plastic housing.

DSL

Abbreviation for *Digital Subscriber Line*. Denotes a fast Internet connection capable of providing bandwidth of up to 16 Mbps for a typical household.

DualDome

Dome camera with two lenses and image sensors such as the MOBOTIX D12D. These lenses can deliver wide-angle and telephoto images independently of one another.

DVR

Abbreviation for *Digital Video Recorder*.

DynDNS

Abbreviation for *Dynamic DNS* (or *DDNS*, Dynamic Domain Name Service). Similar to ***DNS***, this links domain names (e.g. **`mydomain.com`**) with IP addresses, whereby the IP addresses may change at any time. This service provides a convenient method to access your MOBOTIX cameras from home or work if the camera internet connection is not through a ***router*** which assigns a fixed IP address, but instead over a ***DSL*** connection with a dynamically assigned IP address from the provider. A well-known provider of this (free) service is **`www.dyndns.org`**.

Ethernet

The most common technology for communication within a wired network. It facilitates data exchange between all devices (computers, printers, IP cameras, etc.) connected to a local area network (LAN).

Events

An event refers to a situation when something happens or changes. In terms of video surveillance, this means a change in the status of an area that is being monitored. This can be movement of a person, a change in brightness, a drop in ambient temperature, the detection of a noise via a microphone, an electrical signal at a signal input, the manual operation of a button, etc.

ExtIO
MOBOTIX signal module that the camera uses to directly operate lamps, sirens and door openers as well as external audio components (speakers and microphones).

FixDome
Camera without moving parts in a dome-shaped housing.

Flash Memory
See ***CF Card***.

fps
Abbreviation for *frames per second*. See ***Frame Rate***.

Frame Rate
The frame rate specifies how many frames per second (***fps***) are generated and sent by the camera. The human eye perceives movement as a smooth video sequence when more than 14 images per second are produced.

HDTV
Abbreviation for *High Definition TV*.

HiRes
Abbreviation for *High Resolution*. Refers to high-resolution images (above 1 megapixel).

Image Compression
Image compression reduces the file size of an image. This is particularly important when transferring and saving files.

Image Processing
Digital image processing. The goal is to correct errors made during image generation (caused by overexposure, underexposure, blurring, weak contrast, image noise, etc.) in order to create a "better" image.

IP Network
Data network based on the *Internet protocol* (TCP/IP).

IP Telephone
See ***VoIP***.

JPEG
Abbreviation for *Joint Photographic Experts Group*, responsible for the development of the JPEG standard method for image compression. JPEG is the most common lossy image format for photos on the Internet. Loss in image quality is barely noticeable at compression rates between 99% and 60%.

Latency
Time interval elapsed between when an image is captured by a camera and when that same image is displayed on the monitor.

Layout
Describes the layout of video sources on a screen site of the MxControlCenter. When display-

ing the images from network cameras, the layout determines the positions and resolutions of the images displayed on the monitor. In addition to the actual video images, you can also incorporate graphic elements such as the location of the cameras, etc.

LED

Abbreviation for *Light Emitting Diode*. An electronic semiconductor component, built in to MOBOTIX cameras and add-on modules, which emits light when current flows through the component in the correct direction.

Linux

Free and open source operating system; serves as the operating system for all MOBOTIX cameras.

Megapixel

Images that are 1 million pixels. Larger formats of images can be displayed as a multiple of this, for example, 3 Megapixel is equal to 3 million pixels.

MonoDome

Dome camera with one lens.

Motion Detection

Action of sensing a movement within a particular area. MOBOTIX cameras use algorithmic methods to detect changes from image to image in predefined areas, while taking into account preset conditions. If a camera detects a movement, it signals an event and triggers an alarm.

Motion JPEG, or M-JPEG,

is a video compression method where each individual image is compressed separately as a JPEG image. Unlike MPEG, the quality of M-JPEG recordings is not dependent on movement within the image.

MPEG

Motion Pictures Expert Group. Standard for compressing and saving image and video data, resulting in quality loss. Originally created for playing entertainment content on PCs, MPEG concentrates on displaying still image material and compromises the quality of moving image material in order to increase the transmission speed.

MxControlCenter

MOBOTIX video management software for professional control of mid-sized and large camera networks.

MxEasy

MOBOTIX video management software for small and compact camera networks of up to 16 cameras.

MxPEG

MOBOTIX-developed protocol for compression and storage of image and video data with minimal network load and high image quality. The MxPEG ***ActiveX*** control component allows video and audio data from MOBOTIX cameras to be displayed in other applications (including Internet Explorer). To date, MxPEG remains the ONLY protocol specifically designed for security applications

NAS

Abbreviation for *Network Attached Storage*. A storage system connected via an Ethernet cable. All network devices (cameras) have access to this storage system.

Network

Group of computers that are connected via various cables and share access to data and devices such as printers and network cameras.

PIR

Passive Infrared Sensor for motion detection.

PoE

Power over Ethernet. A technology for supplying network-ready devices (such as network cameras) with power via the Ethernet data cable.

PTZ

Abbreviation for *Pan/Tilt/Zoom*. Refers to the movement of a video camera to the left and right, up and down, and to the camera's ability to enlarge an image.

Quad Display

Layout in which the images from four cameras are displayed in one window.

Resolution

Indicates the number of pixels used to produce an image. The more pixels an image has, the greater the detail when the image is enlarged. The resolution is expressed as either the number of pixel columns times pixel rows, or as a total number of pixels. A VGA image has 640 columns and 480 rows (640 x 480 pixels), which equals 307,200 pixels, or approximately 0.3 megapixel.

RoHS

This abbreviation stands for the *Restriction of Hazardous Substances Directive* and refers to EC Directive 2002/95/EC, which prohibits the use of certain hazardous substances when manufacturing products and components. The goal of this directive is to prevent these substances from harming the environment when the products are disposed of later.

Router

Network device that connects multiple networks with one another. The router creates the physical connection between the devices in different networks (like a hub), analyzes the relevant data packets and forwards ("routes") these packets to the correct target network.

SD Card / MicroSD card

SD Memory Card (*Secure Digital Memory Card*). A digital storage medium based on flash storage modules such as USB sticks.

Sequencer

Feature that automatically switches the camera displayed in the main window after a specific time delay.

SIP

Session Initiation Protocol. Network protocol for setting up, controlling and terminating a

communication connection via a computer network. SIP is frequently used in conjunction with IP telephony.

Signal Input/Signal Output

Coupling an alarm triggering device (for example a fire alarm system or a network camera) to a control center or another type of transmitter (for example, a telephone or IP network). A typical signal input/output scenario in video surveillance progresses as follows: an event triggers an alarm that then displays, for example the video image from the network camera that triggered the alarm on the monitor at a control center.

Snapshot

Photograph of a situation created spontaneously and directly with a mouse click or other such event directed by the user.

Switch

Hardware used to connect multiple network devices (computers, cameras, printers, etc.) within a network. A *PoE switch* can also supply the cameras with power over an Ethernet cable.

UPS

Uninterruptible Power Supply. Refers to devices that continue to supply power in the event of a sudden power failure. These devices usually operate using a battery. UPS is installed on the power lines of devices and systems in order to protect them in the event of a power failure.

Video Search

Monitoring of recordings, searching for a particular event.

VoIP

Voice over Internet Protocol. Telephony using computer networks.

Wizard

Refers to a software component that helps the user install or set up a particular program and that guides the user through the configuration process by means of simple questions.

WLAN

Wireless Local Area Network. Used to provide Internet connections without the need for cables.

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Notes:

MOBOTIX – The HiRes Video Company

Security-Vision-Systems

MOBOTIX.com

To demonstrate our confidence in the quality of our products, MOBOTIX cameras were used to capture all the images that appear in this manual.

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You can find the latest version of this document at `www.mobotix.com` under **Support**.

CE

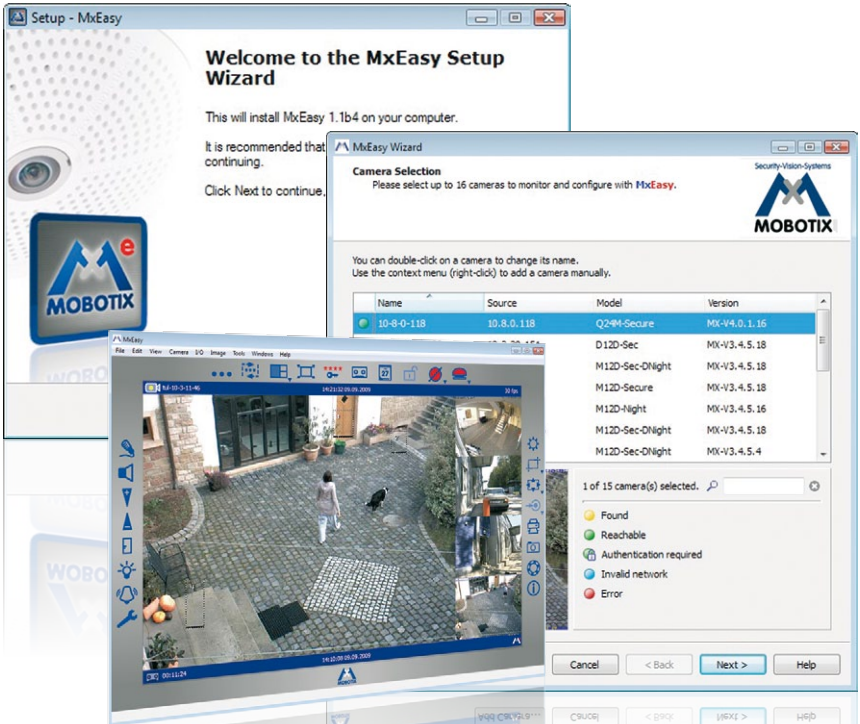
Technical specifications subject to change without notice!

EN

MxEasy User Manual

The HiRes Video Company

MxEasy: Point & Shoot



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HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost efficient.

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HiRes
3 Megapixel
2048 x 1536
Software zoom

Skyline
Format free
Each image format freely definable

30 Frames/s
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30 F/s Mega

Virtual PTZ
Digital pan, tilt, zoom

Backlight
Safe using CMOS without mechanical iris

Internal DVR
Internal via Flash, external via Network

Win/Lin/Mac
Recording
via Network on PC up to 1 Terabyte

Microphone & speaker
Audio
bi-directional via IP, variable framerates

SIP-Client with video
IP Telephony
Alarm notify, cam remote control

VideoMotion
Multiple windows precision pixel-based

-22 to +140 °F
Weatherproof
-30 to +60 °C, IP65, no heating necessary

IEEE 802.3af
PoE
Network power even in winter

Robust
No moving parts fiber glass housing

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