Security Vision Systems

M10 Reference Manual

Version 2.0 (EN)

MOBOTIX ... the new face of IP video

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1 MOBOTIX Camera Overview

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1.1 Functional Overview

This version of the camera software has the following main features:

- **Live Images** at 1280x960 resolution via network, ISDN, GSM, WLAN with up to 25 fps (at 320x240), also adjusted for **PDAs**.
- *Digital zoom* with three stages (**1x**, **2x**, **4x**) and integrated panning (from **2x**: clicking in the browser image will move the visible image section in that direction).
- **Event**–controlled **Recording** in the camera (up to 64 MB for Secure models) or on file servers up to the Terabyte range.
- **File server tests** can monitor a file server and use one or more of the defined messaging options for error notification.
- **Player** for playing back the recorded images/event stories (up to 50 pre– and post–alarm images for Secure models) of the integrated video management system.
- **Multi View** screen for displaying several cameras or events on one camera.
- **Event Notification** by e–mail, SMS (using a provider), voice notification (Audio Call–Out), **sounds and by visual means** using two separate messaging paths (**Messaging** and **Messaging 2**).
- When sending an alarm using **ISDN Audio Call–out**, the camera can call several numbers until the alarm has been acknowledged.
- **Object Tracing** for analyzing the paths of objects that are moving in the image.
- **Logo generator** for displaying logos in the camera's image with the following dialogs: **Manage Image Files**, **Image Profiles** and **Logo Profiles** for controlling logo display.
- *Logos* can have transparent areas and can be displayed partially transparent (watermark effect), banner rotation and animations are also possible.
- **Transfer profiles** for improved handling of **FTP**, **E–Mail** and **IP Notify** transfers.
- **Time Tables** with handling of custom days for holidays and vacations. The time tables are used to control the camera's *arming*, *messaging*, *logo*, *obscure image* and other features.
- **Speaker Phone** with speak, listen and intercom modes using the microphone and loudspeaker.
- **ISDN Audio Call–In** to *remotely control* the camera using a touchtone telephone (retrieve camera information, establish Internet connection, announcement of retrieved IP address, intercom feature, etc.).
- *MxPEG video compression* using **MxPEG Viewer** for Windows® which is downloadable from the camera. The **ActiveX plug–in** for Internet Explorer users brings all advantages of MxPEG (including the camera's audio stream) to the browser–based user interface.
- *Routing* allows using other connections besides the default connection. This feature provides means and ways to use different gateways and ISDN connections for different tasks.
- *DynDNS client* for accessing the camera using a symbolic name (e.g. `mymobotixcam.dyndns.org`) although the provider is assigning a new IP address every time the camera connects to the Internet..
- Inerasable *recovery operating system* that automatically jumps in when rebooting the camera after *Updating the System Software* has failed, allowing you to restart the update process.
- *Enhanced startup options* for the camera (obtain IP address via DHCP, announce IP address and other network data, reset to factory default setting) using the blue **R** and **L** keys on the camera's front.
- **Test Current Network Configuration** for testing the interfaces, all defined messaging, network and selection profiles.

1.2 Screens of the Camera

- **Guest** screen: Live images without the possibility of influencing camera features.
- **Live** screen: Live images with access to certain control features and pre–defined softbuttons.
- **PDA** screen: Live images on a screen that has been adapted for PDAs, smart phones and similar

devices.
- **Player** screen: Video management system with access to stored images and event stories recorded by this and by other cameras.
- **Multi View** screen Multiple display of live/event images from this and from other cameras with softbuttons for accessing pre–defined and custom settings.

1.3 Additional Information

- The ***Online Help*** system (also available by clicking on the button on the individual dialogs).
- **Camera Status Pages** (also available by clicking on the button of the individual pages)
- The *MOBOTIX Camera News* provide an overview of new and modified camera features.
- Online *Reference Manual* as PDF file on *www.mobotix.com*
- Online *Documentation* on *www.mobotix.com*
- *Software downloads* and *support information* on *www.mobotix.com*

2 MOBOTIX Camera News for Version M10–V2.0.3

2.1 Image Processing

2.1.1 Images With Mega Resolution:

All camera models of the M10 family (except **IT** models) now have new image sensors with max. 1280x960 pixels resolution. This resolution can be selected using the drop–down menu of the **Live** screen or in the **General Image Settings** dialog.

2.1.2 Digital Zoom With Panning:

Using the softbuttons of the **Live** screen, you can now select 1x (no zoom), 2x and 4x zoom. From zoom level 2x, clicking with the mouse near the borders of the image will move the image within the standard image in that direction (panning). This feature is also available, if a customized image size has been set that is smaller than one of the standard image sizes (160x120, 320x240, 640x480, 1280x960).

2.1.3 MxPEG:

You can view the MxPEG audio and video stream not only using **MxPEG Viewer**, but also using the MxPEG ActiveX Plug–in for Internet Explorer running under Windows (drop–down menu of the **Live** screen: *Browser > ActiveX*).

2.1.4 Automatic Switching to B/W Night Lens for M10–Day&Night:

For this model, you can select a trigger value in Lux in the **General Image Settings** dialog to let the camera automatically select the IR sensitive B/W night lens when illumination falls below the selected level. In order to prevent erratic behavior (e.g. when a car's light beam hits the camera at night) you can set a delay time.

For camera models with day and night lenses, but without automatic day/night switching, you can use *Time Tables* to switch between the day and night lenses.

2.2 Event and Action Control

2.2.1 Two Separate Messaging Paths:

The **Messaging** and **Messaging 2** dialogs allow defining two different sets of messaging paths, each of which can use all messaging profiles (*sounds*, *e–mail*, *voice messages*, *IP Notify*) that have been created on the camera.

2.2.2 Time Tables:

Time Tables allow controlling the MOBOTIX camera's *arming*, *messaging*, *logo* and *obscure image area* features by selecting the desired time table in the corresponding dialog. For special days (vacations, holidays, weekends, ...), you can define custom days that can be linked to specific time tables.

2.3 Configuring the Camera

2.3.1 Enhanced Network Tests:

Test Current Network Configuration has been expanded to include *routes* and the *IP Notify profiles*.

2.3.2 File Server Checks:

The **Camera Checks** allow monitoring the file server that the camera is using for external image storage. You can now send error messages using the camera's messaging and action profiles or directly on the camera using sounds or the camera's LEDs.

2.3.3 Routing features:

The **routing** features provide means to use different networks (e.g. Ethernet, ISDN) for different transfer and alert functions of the camera. The *routing example* describes how such a scenario might look like.

2.3.4 DynDNS Client:

Since the camera will most likely get a different IP address every time it dials up to the Internet or when using a router with a non–dedicated connection, the MOBOTIX camera cannot be addressed easily from the Internet. This is overcome using the **DynDNS client** of the camera, which allows using different dynDNS services to connect the dynamic IP to a ("symbolic") name of the camera you have selected.

2.3.5 FTP Profiles:

FTP image transfers are now managed using **FTP profiles**. The dialog allows setting global parameters at the top of the dialog (e.g. for authentication purposes at the FTP server) that can be used for the individual profiles.

2.3.6 E–Mail Profiles:

E–mail addresses are now also managed using **e–mail profiles**. This dialog also allows setting global parameters at the top of the dialog (e.g. for authentication purposes at the POP3/SMTP servers) that can be used for the individual profiles.

2.3.7 IP Notify Profiles:

IP Notify profiles allow defining several network messages and to use them in the dialogs that use messaging.

2.3.8 Time Tables With Custom Days:

The **Time Tables** allow controlling many features of the MOBOTIX camera, as the time tables defined in this dialog may be used in the corresponding dialogs. For special days (vacations, holidays, weekends, ...), you can define custom days that can be linked to specific time tables.

2.4 Improvements of the User Interface

2.4.1 The Live Screen:

2.4.1.1 New softbuttons

- The **MxPEG on** softbutton activates MxPEG video compression (fast streaming, low bandwidth requirements), **MxPEG off** switches to JPEG images (better image quality).
- The **1x Zoom**, **2x Zoom** and **4x Zoom** as well as the **Center Pan**, **Set Default View** and **Load Default View** softbuttons have been included to provide easy control of the camera's zoom features. These settings and some other options (e.g. locking image position and zoom level) can also be set in the **General Image Settings** dialog.

2.4.1.2 Changes to the drop–down menu

- The *Brightness*, *Backlight*, *Color Saturation*, *Sharpness* and *Measurement Field* values can be set individually for each lens (only dual–lens models).
- New *Zoom control* entry for executing the **1x Zoom**, **2x Zoom** and **4x Zoom** as well as the **Center Pan**, **Set Default View** and **Load Default View** commands.
- Expanded *Browser* entry to allow selecting the MxPEG ActiveX plugin. The *ActiveX* option is only available if Internet Explorer is used in conjunction with a Windows operating system.
- New entry *Manage Settings* to load the image factory defaults, restore the image settings from flash, and to store the complete configuration of the MOBOTIX camera.

2.4.2 Enhanced online help:

The ***help system*** has been further expanded to include new features and now also sports a table of contents.

The complete online help is also available as *Reference Manual* as a PDF file from *www.mobotix.com*.

2.5 Other News

2.5.1 Recovery Operating System:

If the regular operating system is damaged while **Updating the System Software**, the camera will automatically use a second, fully functionally operating system when booting the next time. All previous settings will remain intact. The camera will hence remain reachable after the next reboot although it is running on the recovery operating system.

The recovery operating system always shows the software version at the time when the camera had been delivered. The recovery system *cannot* be overwritten. This will allow you to retry updating the system software without running the risk that the camera becomes unreachable.

2.5.2 Background Image

For this version of the browser–based user interface of the MOBOTIX camera, a new background image has been created.

2.6 Archive

MOBOTIX Camera News for Version M1–V1.9.4

3 Managing Users and Passwords

The **Users and Passwords** dialog allows managing the user names and passwords for granting access to the camera.

Access rights are managed in three levels, each having individual rights.

Access Levels:

admin	Users of the **admin** *level* have unlimited access rights. For example, only users of this level can install software updates on the camera or save a changed configuration to permanent storage. The **admin** *user* (password is **meinsm**) is the factory−preset administrator of the camera. **It is strongly recommended to change the default password!** Make sure there is at least one user of the **admin** level.
user	Users of the **user** level can change image and event settings. It is not necessary to protect this access level with a password.
guest	Users of the **guest** group may only view the live image of the guest page.

Each access level automatically has all the rights of its subordinate levels. An administrator also can execute all functions of the **user** and **guest** levels. A member of the **user** group also can execute the functions of the **guest** level.

As soon as one user has been registered at the **user** or the **guest** level, respectively, access to the corresponding screens requires a user name and password.

Note: Make sure that you store your password information in a secure place. Special care should be taken to retain the password of at least one user at the **admin** level. Without the password, administrative access to the camera is not possible any more and there is no possibility to circumvent the password. It is likewise impossible to retrieve the password from a permanently saved configuration.

If the administrator password is no longer available, you will have to send the camera back to MOBOTIX for a factory reset!

3.1 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

4 Starting the Camera

Generally, the camera starts automatically as soon as it is supplied with power.

4.1 Recovery Operating System

If the regular operating system is damaged while *Updating the System Software*, the camera will automatically use a second, fully functionally operating system when booting the next time. All previous settings will remain intact. The camera will hence remain reachable after the next reboot although it is running on the recovery operating system.

The recovery operating system always shows the software version at the time when the camera had been delivered. The recovery system *cannot* be overwritten.

In the event that *Updating the System Software* has failed, you should open the **Camera Status** to check the **Software Version** of the camera. If the software version corresponds to the version at the time of the delivery, you should **restart the upload process** with the new version.

4.2 Camera Start–up

In order to manipulate the camera at start–up, use the keys on the front of the camera. You can start the camera either using the factory default settings (default IP address) or with DHCP support to obtain a dynamic IP address (provided a DHCP server is available in your network). When you use DHCP support, the IP address and other network data is announced automatically as a voice message.

Note: For Web camera models, the network settings are *not* announced since these models do not have an audio feature.

The camera keys (**R**, **L**) are labeled as seen by the camera:

R = right side of camera
(as seen by the camera)

L = left side of camera
(as seen by the camera)

4.2.1 Starting the Camera Using DHCP

Upon startup, the camera tries to obtain an address from a DHCP server on your local network.

- Connect the camera's power supply.
- Wait until all six LEDs are lighting up simultaneously for the **second time**.
- Now press and hold the **R** key.
- Only release the key when the LED in the 8 o'clock position is lighting up.

When the startup is completed, the camera automatically announces its IP address, its network mask and its MAC address (exception: **Web** models).

Note: If you would like to have a running camera repeat its network settings, simply press the **R** key once.

4.2.2 Starting the Camera Using the Factory Default Settings

You would like to start the camera using the factory default network configuration.

- Connect the camera's power supply.
- Wait until all six LEDs are lighting up simultaneously for the **second time**.
- Now press and hold the **L** key.
- Only release the key when the LED in the 4 o'clock position is lighting up.

The camera is accessible again using the factory default settings. Note that the passwords *will not* be reset when the camera is booted with the factory default settings.

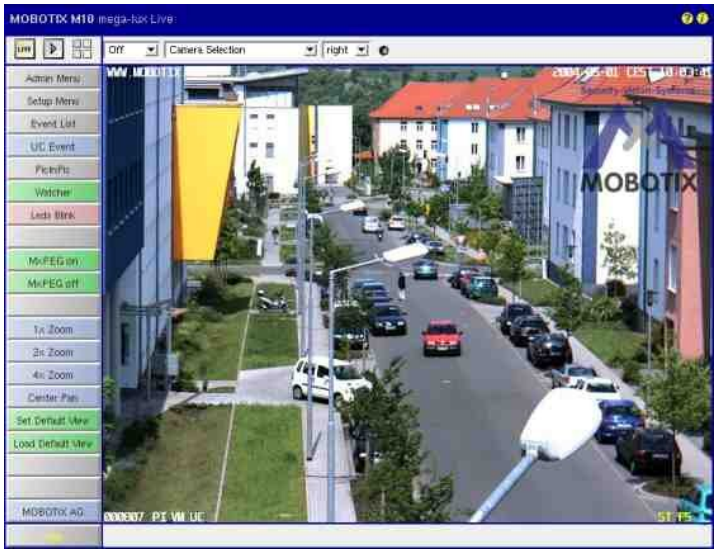
Note: When you use the camera keys to load a configuration, this configuration is **not** automatically saved. Upon restarting the camera without using the camera keys, the configuration **last saved** will be used.

5 The *Live* Screen of the MOBOTIX Camera

The camera automatically opens the **Live** screen when you access the camera for the first time. Use this screen to change image settings, to use the softbuttons, to open the **Setup Menu** or to access the password–protected **Admin Menu**.

5.1 The Elements of the *Live* Screen

Hold your mouse over the elements of the user interface to see the bubble help. Click on the element to go to the description.



5.2 Element Descriptions

5.2.1 Elements of the Title Bar

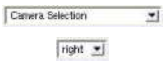
Name	Element	Description
Camera Name	mega–lux	Shows the camera name as set in the **Quick Installation** wizard or in the **Ethernet Interface** dialog in the **Camera name** field.
Open Help		Opens the online help for the current screen or dialog. If no help topic is available, the ***Help*** page will be displayed.
Camera Information		Displays information on the hardware, software and the most important settings of the camera.

5.2.2 Screens of the Camera

Name	Element	Description
Live	LIVE	The **Live** screen of the MOBOTIX camera displays the current images of the camera. Use the *dropdown menus* to access certain functions of the image controls and the camera administration or open the **Setup Menu** to see links to all image and event control dialogs. The **Admin Menu** (password–protected) contains all dialogs for configuring the camera.

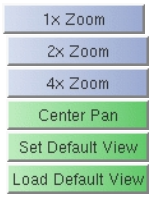
Player		Use the **Player** screen to view and download the events stored in the internal or the external image storage of the camera. **See also:** *The Player*
Multi View		Use the **Multi View** screen to combine several cameras in different patterns and to assign special functions (highlighting, focus on alarm, ...) for the individual cameras. **See also:** *The Multi View Screen*

5.2.3 Image Control Elements

Name	Element	Description
Frame rate		Select the desired frame rate for the Live screen. Please note that the image rate depends to a large degree on the bandwidth of the transmission path, the selected resolution and the video codec used (MxPEG or Motion JPEG). **See also:** *The Best Frame Rate*
Function selector		**Use the image control functions to adjust the Live screen to your preferences:** *Image Sensor* Select the right, the left or both image sensors, or a picture–in–picture (*RiL* or *LiR*) display (only available in dual–lens models). *Image Size* Select the desired image size in pixels. *JPEG Quality* Select the desired JPEG quality. *Brightness* Select the desired image brightness. *Backlight Correction* Select the desired correction level for a backlight situation in order to brighten dark image areas. *Color Saturation* Select the desired color saturation. *Sharpness* Select the desired sharpness of the images. *Measurement Field* Select one of the predefined exposure windows to adjust the exposure control. *Exposure Correction* Select the desired f/stop correction (± two f/stops). *Zoom Control* Select the desired zoom level. Selecting a zoom level of 2x or higher will allow you to save the currently displayed image section as default view or to load the saved view. *Browser* Select how the browser gets the images from the camera: **Internet Explorer: *JScript***, *Java*, *ActiveX*

		Netscape/Mozilla: *Server–Push*, *JScript* *Manage Settings* Use this function to *load the image factory defaults*, *restore the image settings* from flash, and to *store the complete configuration* (requires administrative access). **See also:** *The MxPEG ActiveX Plug–in for Internet Explorer*
Status display		**Displays the current status of the camera:** *Black:* Normal state of the camera. *Yellow blinking:* The camera switches from one state to another (e.g. from the left to the right image sensor). *Green:* A process has been completed successfully (about one second). *Red:* A process could not be completed successfully (about one second).

5.2.4 The Soft Buttons

Name	Element	Description
Softbuttons		The softbuttons at the left–hand side of the screen execute certain functions, most of which can be used by users with *User* level access. If you have administrative access to the camera, you may assign new functions to existing softbuttons by [Shift]–clicking the corresponding softbutton. **See also:** *Defining Soft Buttons* *Managing Users and Passwords*
Zoom buttons		**Use these buttons to control the digital zoom and the panning functions for moving the visible section within a zoomed image:** *1x Zoom* Switches the digital zoom off and returns to the regular camera view. This setting will deactivate the *Center Pan*. *2x Zoom* Switches the image display to 2x zoom level. This zoom level is available for all image sizes (resolutions). From this zoom level on, clicking in the image will move the visible image area within the full image. *4x Zoom* Switches the image display to 4x zoom level. This zoom level is available for all image sizes except *1280x960*. *Center Pan* Moves the visible image area to the center of the full image, if zoom level *2x* or higher has been activated. *Set Default View* Sets the current image area and the zoom level as default view. If *Measurement Fields* are used to control exposure, the field's current position will also be saved. *Load Default View* Loads the image area and the zoom level that had been saved using the *Set Default View* button.

		Note: If you would like to load the default view you just saved using **Set Default View** and any exposure windows even after the next reboot, make sure that you **store the current configuration in the flash memory**. **See also:** *General Image Settings* *The Best Frame Rate*

5.2.5 The Image Area

Name	Element	Description
Image area		The image area shows the live images of the camera as well as logos, texts and symbols of the camera. In addition, you may choose from the following options: • If the *digital zoom* has been activated (2x and higher), you may move the visible image area (panning) or set the default view. • If you are using the Internet Explorer and ActiveX is allowed on your system, using the *MxPEG Plug–in for Internet Explorer* reduces the bandwidth and offers additional functions while maintaining the browser–based user interface. • Using [Shift]–click and another click with the left mouse button, you may define windows for several features of the camera (*video motion detector*, *obscuring image areas*, ...) as described in the *Graphically Entering Image Areas* topic.
Logo	Security-Vision-Systems MOBOTIX AG	The functions for *managing image files*, *logo definitions* and *creating image profiles* will enable you to use graphic files stored on the camera or from other URLs as logos with transparent areas or as watermark in every image of the camera. Using several logos will allow you to display these logos as banners at a definable interval. If you are using *Time Tables*, you may also activate/deactivate the logos in a scheduled manner.
Text display	**WWW.MOBOTIX.COM**	Open the *Text and Display Settings* dialog to change the text that is displayed in the top left corner of the image area. Using *variables* and *placeholders for dynamic image texts*, you can display e.g. the current temperature within the camera or text received via the serial interface in every image.
Date display	**2004–05–01 CEST 10:01:22**	Open the *Text and Display Settings* dialog to change the date and time information that is displayed in the top right corner of the image area.
Event Symbols	**000807 PI VM UC**	Open the *Text and Display Settings* dialog to change the symbols that are displayed at the bottom of the image area. The *event symbols* in the lower left corner of the image area show the event number (in this case **000807**) and the symbols for the *activated sensors* at the time of the recording. In this image, **PI** (PIR sensor), **VM** (Video Motion) and **UC** (User Click) had been activated. If an event occurs, the corresponding symbol (e.g. VM) is displayed in red.

Action symbols	**ST FS**	Open the *Text and Display Settings* dialog to change the event symbols that are displayed at the bottom of the image area. The yellow symbols in the lower right corner of the image area show all actions that are active on the camera. In this case, **ST** (Storage) and **FS** (File Server storage) are active. If one of the actions is carried out, it is displayed in blue (e.g. ST); a failed action is shown in red (e.g. FS). Deactivated messages are shown in grey (e.g. EM) when setting **Messaging > Enable Message Profile** to *off* or when using *Time Tables* to deactivate the messages). If a *Time Table* profile has been selected in **General Events > Arming** to activate or deactivate the camera, `off` is appended to the displayed action symbols. **Attention:** If **General Events > Arming** has been set to *off*, event/action symbols and error messages are *not displayed* in the image. For failed actions, an error message will appear above the symbols. Open the *Text and Display Settings* dialog to deactivate the error messages in the image. **See also:** *Abbreviations Used in the MOBOTIX Camera*

5.3 The MxPEG ActiveX Plug–in for Internet Explorer

If you are using Internet Explorer (from version 5.5) on a Windows computer (from Windows 2000), you can use the **MxPEG ActiveX plug–in** for viewing the live camera images. This plug–in allows you to combine the advantages of MxPEG with the browser–based user interface:

- Lower bandwidth requirements due to MxPEG video compression
- Smooth movements in the video stream thanks to high *image rates*
- Audio channel of the camera available on the local computer (not for **Web** models)
- Additional scaling functions in the browser
- Panning (moving the visible image area within the full image) with activated digital zoom by clicking in the image.

Note: When fast movements occur in the image, you may see tiles in the image when MxPEG is activated. If you prefer better image quality, you should deactivate MxPEG as described in *High Resolution and Quality*.

See also: *The MxPEG Viewer*

5.3.1 Prerequisites for Using the MxPEG ActiveX Plug–in

Make sure that the following prerequisites are fulfilled if you intend to use the MxPEG ActiveX plug–in:

- MOBOTIX camera model IT or higher
- Windows computer from Windows 2000
- Installed Internet Explorer from Version 5.5

- Administrator or Power User access on the local computer (for installing the plug–in)
- Suitable security settings in Internet Explorer to install and to execute ActiveX plug–ins. In Internet Explorer, open **Tools > Internet Options > Security** (tab) and make sure that the following settings are active for the current security level:
  - **Execute ActiveX controls that are safe for scripting:** *Activate* or *Prompt*
  - **Execute ActiveX controls and plug–ins:** *Activate* or *Prompt*
  - **Download signed ActiveX controls:** *Activate* or *Prompt*
- Access to the camera with a *user* or *admin* login as described in *Managing Users and Passwords*.

5.3.2 Installing and Running the MxPEG ActiveX Plug–in

Proceed as follows:

1. Start Internet Explorer and enter the address of a MOBOTIX camera (from software version 2.0).
2. Open the *image controls*, select the **Browser** option and *ActiveX* as value.
3. You will be asked if you would like to accept the installation of the signed ActiveX plug–in. Click OK to install the plug–in.
4. Click on the **MxPEG on** button on the user interface or activate MxPEG in the **JPEG Settings** dialog to use the advantages of MxPEG video encoding.

Notes:

- Right–click in the *image area* to check if the ActiveX plug–in is running. You should now see the context menu explained in the *Options of the MxPEG ActiveX Plug–in* section, not the standard context menu of Internet Explorer.
- If you have completely closed Internet Explorer, you will need to restart the plug–in the next time you would like to access the camera by again selecting the **Browser** and *ActiveX* options in the *image controls*.

5.3.3 Options of the MxPEG ActiveX Plug–in

If the MxPEG ActiveX plug–in has been installed, right–clicking the image will display a context menu with the following options:

Option	Values	Description
Digital zoom	*1x / 2x / 4x* *Center* *Pan* *Set Default View* *Load Default View*	Use these options to control the digital zoom and the panning functions for moving the visible section within a zoomed image. The functions are the same as for the *zoom buttons*.
Scale image	*0.5x / 1x / 2x*	Scales the image of the ActiveX plug–in to the desired size.
Audio	–	Activate this option to listen to the audio channel of the camera. An error message will alert you if the camera's microphone is deactivated. If this is the case, open the **Loudspeaker and Microphone** dialog and activate the microphone.
	–	

Change access level		Changes the access level used by the ActiveX plug–in to access the camera. *User* access can use all functions of the ActiveX plug–in, *Guest* disables the audio functions and the zoom controls. If a password has been assigned for the *user* or the *guest* level, the plug–in will again ask for login credentials to access the camera. This authorization is required for security reasons and cannot be circumvented.
About MxPEG ActiveX	–	Displays information about the version of the MxPEG ActiveX plug–in.

5.4 The Best Frame Rate

Depending on the camera application (e.g. bandwidth of the data connection), the frame rate requirements may vary greatly.

5.4.1 Fast Images

For security applications that require fast images, you should use a Windows computer (from Windows 2000) and Internet Explorer (from version 5.5) in conjunction with the *MxPEG ActiveX plug–in* or the *MxPEG Viewer* for viewing the live camera images. Furthermore, you should provide a data link with sufficient bandwidth for the camera's images.

Set the following parameters to the values listed below:

- Use the *image controls* to set these parameters:
  - **Resolution:** *320x240*
  - **JPEG Quality:** *80%*
  - **Sharpness:** *0–2*
- Right–click in the image area (this will show the context menu described in *Options of the MxPEG ActiveX plug–in*) and select the **Scale image > 2x** option.
- Select a *Frame rate* of *25 fps*.
- Click on the **MxPEG on** button on the user interface or activate **MxPEG** in the **JPEG Settings** dialog.

5.4.2 High Resolution and Quality

If the frame rate is not the most important criterion of an application, you can set the focus on image quality:

- Use the *image controls* to set these parameters:
  - **Resolution:** *640x480* or *1280x960*
  - **JPEG Quality:** *70%*
  - **Sharpness:** *4* (default)
- Click on the **MxPEG off** button on the user interface or deactivate **MxPEG** in the **JPEG Settings** dialog.
- Adjust the frame rate to the other factors of the application (especially the available bandwidth) and to your preferences:

5.5 Storing the Configuration

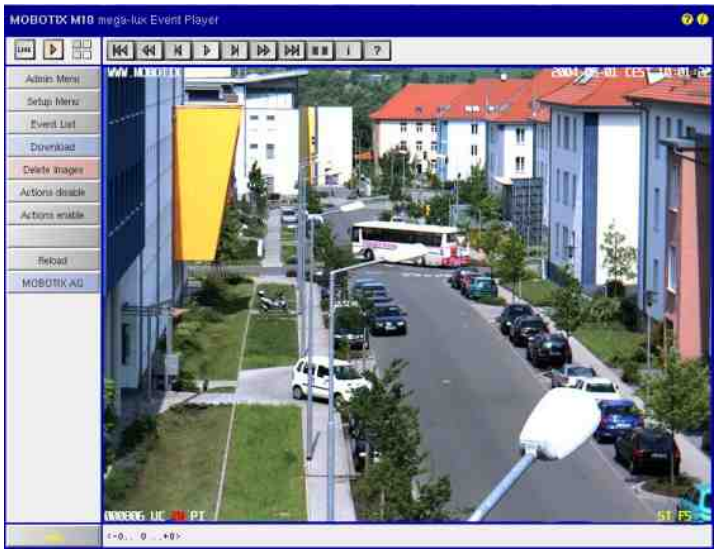
Using the controls of the *Live* screen to adjust the camera configuration will keep these changes until the next reboot of the camera, it will not automatically store them permanently. If you have administrative access to the camera, you should **store the current configuration into flash memory**.

6 The *Player* Screen of the MOBOTIX Camera

Open the **Player** to play back the recorded events and image sequences of the camera, to open the event list and to download images in a package with the offline player.

6.1 The Elements of the *Player* Screen

Hold your mouse over the elements of the user interface to see the bubble help. Click on the element to go to the description.



6.2 Element Descriptions

6.2.1 Elements of the Title Bar

Name	Element	Description
Camera Name	mega–lux	Shows the camera name as set in the **Quick Installation** wizard or in the **Ethernet Interface** dialog in the **Camera name** field.
Open Help		Opens the online help for the current screen or dialog. If no help topic is available, the ***Help*** page will be displayed.
Camera Information		Displays information on the hardware, software and the most important settings of the camera.

6.2.2 Screens of the Camera

Name	Element	Description
Live	LIVE	The **Live** screen of the MOBOTIX camera displays the current images of the camera. Use the *dropdown menus* to access certain functions of the image controls and the camera administration or open the **Setup Menu** to see links to all image and event control dialogs. The **Admin Menu** (password–protected) contains all dialogs for configuring the camera. *The Live Screen*

		See also:
Player		Use the **Player** screen to view and download the events stored in the internal or the external image storage of the camera. When you click on  again in the Player and *Event Storage on External File Server* is activated, the camera displays a list containing the current storage size of the **Internal Recorder** and of any cameras that are storing their images on the same file server into the same directory.
Multi View		Use the **Multi View** screen to combine several cameras in different patterns and to assign special functions (highlighting, focus on alarm, ...) for the individual cameras. **See also:** *The Multi View Screen*

6.2.3 Elements of the Player Controls

Name	Element	Description
First event		Displays the first event that is stored.
Fast backward		Starts fast backward from the current image in endless loop mode.
One frame backward		Shows the previous event image or the previous image of an event story, depending on the settings of the *Event Story* button. If the first image has been reached, the next click will show the last image.
Play		Starts playing back the images in endless loop mode. Shows only the event images, all events including event story or one event story only, depending on the settings of the *Event Story* button.
One frame forward		Shows the next event image or the next image of an event story, depending on the settings of the *Event Story* button. If the last image has been reached, the next click will show the first image.
Fast forward		Starts fast forward playback in endless loop mode of only the event images, all events including event story or one event story only, depending on the settings of the *Event Story* button.
Last event		Displays the last event that is stored.
Get image information		Displays the information of the current image.
Open query window		Shows the **Event List** that allows you to pull up specific events in the camera Player. Click on the **Download Images** link in this dialog to download events as described for the *Download* button.
Stop		Stops an active playback in progress, that had been started using the  , the  or the  button.

6.2.4 The *Event Story* Button

Click on this button of the Player controls to change the manner in which the Player plays back event stories (i.e. pre–alarm images, the event image itself and the post–alarm images). The *Status bar* shows, which image of an event story is currently displayed.

In order to change the settings for recording event stories, open the **General Event Settings** dialog. This

dialog will also allow you to specify if you would like to save an event story with every event or only when specific events occur.

Note: This feature is not available for **Basic** and **Web** models.

Name	Element	Description
Events only (no story)		**(Default)** Only shows the event images starting from the current image; pre– and post–alarm images are skipped.
With event story		Shows all images (pre–alarm, event and post–alarm images) of all events starting from the current image.
One event story only		Shows all images (pre–alarm, event and post–alarm images) of the current event in endless loop mode.

6.2.5 The Soft Buttons

Name	Element	Description
Softbuttons		The softbuttons at the left–hand side of the screen execute certain functions, most of which can be used by users with *User* level access. If you have administrative access to the camera, you may assign new functions to existing softbuttons by [Shift]–clicking the corresponding softbutton. **See also:** *Defining Soft Buttons* *Managing Users and Passwords*
Event List		Click on this button to display the **Event List** dialog. This dialog displays a list with the last 20 events with the corresponding navigation links. Click on one event link to show the corresponding event image in the player or select a date and time to list the events of that point in time.
Download		Click on this button in the **Download Window** dialog to download the desired events with an integrated event player. You can also set the start and end points of the events that are of interest to you. Click on **Set Event Range** to display the size of the packed archive file together with other information in the upper half of the dialog. To display the content of the downloaded `.tar` archive file, you can use e.g. WinZip, StuffIt or PowerArchiver.
Delete Images		Click on the **Delete Images** button to delete all images from the camera's *internal storage*. If *Event Storage on External File Server* has been activated, the camera will *not* delete these images. **Attention:** This will delete all images irretrievably without any further safety prompt.

6.2.6 The Image Area

Name	Element	Description
Image area		The image area shows the event images of the current camera.

		Click into the image to open the information window for the current image.
Text display	WWW.MOBOTIX.COM	Shows the text that had been defined in the *Text and Display Settings* dialog at the time of the recording.
Date display	2004–05–01 CEST 10:01:22	Displays the date and time information of the current image.
Event Symbols	000807 UC VM PI	Shows the event number (in this case **000807**) and the symbols for the *activated sensors* at the time of the recording. In this image, the **UC** (User Click), **VM** (Video Motion) and **PI** (PIR sensor) had been activated. Since a video motion window triggered the recording, the VM symbol is shown in red.
Action symbols	ST FS	This shows the symbols of the actions that had been active at the time of the recording. In this case, **ST** (Storage) and **FS** (File Server storage) had been active. If one of the actions is carried out, it is displayed in blue (e.g. ST in every last image of an event story); a failed action is shown in red (z. B. FS).
Status bar	<-1.. 0 ..+2>	The Status bar shows, whether or not an event story had been stored for the current event image. In this case, one pre–alarm image (-1) and two post–alarm images (+2) had been stored. The number in the middle (0) shows the current image's position (0 is the event image itself). **See also:** *The Event Story Button*

6.3 Storing the Configuration

If you have made adjustments to e.g. the softbuttons (using [Shift]–click) , the camera will keep these changes until the next reboot, but it will not automatically store them permanently. If you have administrative access to the camera, you should **store the current configuration into flash memory**.

7 The *Multi View* Screen of the MOBOTIX Camera

The **Multi View** screen provides a way of grouping several cameras in different patterns or shows one camera with its latest events.

7.1 The Elements of the *Multi View* Screen

Hold your mouse over the elements of the user interface to see the bubble help. Click on the element to go to the description.

7.2 Element Descriptions

7.2.1 Elements of the Title Bar

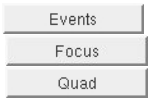
Name	Element	Description
Camera Name	mega–lux	Shows the camera name as set in the **Quick Installation** wizard or in the **Ethernet Interface** dialog in the **Camera name** field.
Multi View screen name	*Quad*	Displays the name of the current multi view as set in the **Multi View Screens** dialog.
Open Help		Opens the online help for the current screen or dialog. If no help topic is available, the ***Help*** page will be displayed.
Camera Information		Displays information on the hardware, software and the most important settings of the camera.

7.2.2 Screens of the Camera

Name	Element	Description
Live	LIVE	The **Live** screen of the MOBOTIX camera displays the current images of the camera. Use the *dropdown menus* to access certain functions of the image controls and the camera administration or open the **Setup Menu** to see links to all image and event control dialogs. The **Admin Menu** (password–protected) contains all dialogs for configuring the camera.

		See also: *The Live Screen*
Player		Use the **Player** screen to view and download the events stored in the internal or the external image storage of the camera. **See also:** *The Player*
Multi View		Use the **Multi View** screen to combine several cameras in different patterns and to assign special functions (highlighting, focus on alarm, ...) for the individual cameras.

7.2.3 The Soft Buttons

Name	Element	Description
Softbuttons		The softbuttons at the left–hand side of the screen execute certain functions, most of which can be used by users with *User* level access. If you have administrative access to the camera, you may assign new functions to existing softbuttons by [Shift]–clicking the corresponding softbutton. **See also:** *Defining Soft Buttons* *Managing Users and Passwords*
Multi View screens		Click on one of the soft buttons to select one of the predefined multi view screens. *Events* Displays the last four events (160x120) at the left side of the screen and shows the current image in the main image area. *Focus* Displays a list of up to four cameras (160x120) at the left side of the screen; the local camera is preset at the top left position. If one of the cameras detects an event, the corresponding image will be displayed in the main image area. *Quad* Displays up to four cameras with 320x240 resolution. **Note:** [Shift]–click an image area to set the options for this camera or image area as described in *Configure Multi View Screens*.

7.2.4 The Image Area

Name	Element	Description
Image area		The image area shows the images of one or more cameras, as defined in the *Configure Multi View Screens* dialog. In addition, you may choose from the following options: • [Shift]–click on one of the image areas to open the **Multi View Screens** dialog for this area. • Clicking one of the image areas will open the camera, provided that it actually is a MOBOTIX camera. **See** *Multi View Screens*

		also:

7.3 Storing the Configuration

Changes to the *Multi View* screen that you performed in the **Multi View Screens** dialog or by [Shift]–clicking one of the image areas will only be valid until the next reboot of the camera. If you have administrative access to the camera, you should **store the current configuration into flash memory**.

8 Hardware and Release Information

In the **Information About This Camera** dialog, the main features of this camera are listed in detail.

The information is displayed in the following sections:

- Product Information
- Camera Identifier
- Hardware
- File System
- Operating System
- Software Releases
- Additional Loaded Packages

When you are contacting our support team, make sure to have this information on hand.

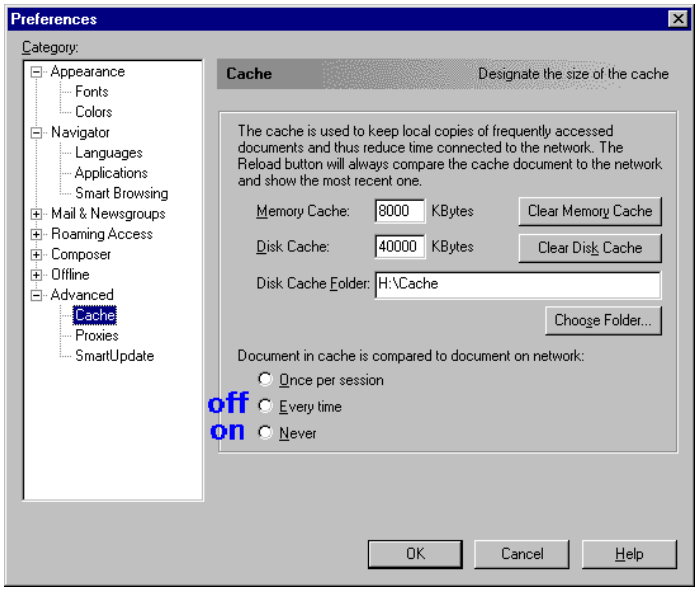
9 Browser cache

In order to minimize transfer time and bandwidth, browsers store viewed pages locally on your computer. This mechanism is referred to as *caching*. There is, however, a chance that you may see outdated information.

In order to avoid this problem, the browser needs to update the locally stored information on a regular basis. You can influence this mechanism by activating or deactivating the browser cache. For some camera processes, especially for updating the software, it is highly recommended that you deactivate the cache.

9.1 Netscape Navigator

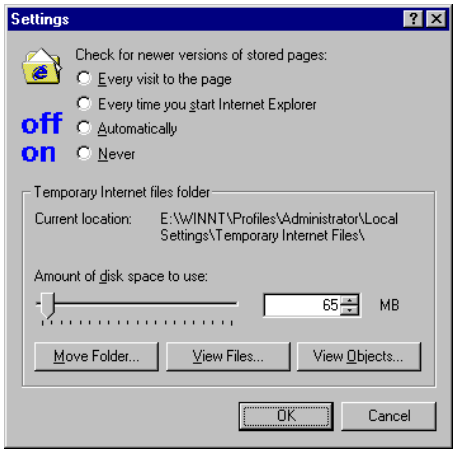
- Select **Edit > Settings** in the dialog.
- Open the **Advanced** category.
- Select the **Cache** entry.
- Select the *Every time* setting to ***deactivate*** the cache.



In order to reactivate the browser cache, select the *Never* setting.

9.2 Internet Explorer

- Select **Tools > Internet Options** in the dialog.
- In the **Internet Options** dialog, select the **General** tab and click on **Settings**.
- Check the *Every visit to the page* option to ***deactivate*** the browser cache.



In order to reactivate the browser cache, check the *Automatically* option.

10 Configuring the Camera

To configure the camera, you normally select parameters in the dialogs and enter text in the text boxes. These parameters and values are stored in the *configuration file*.

You can view (but not modify) this file using the **Show Current Configuration** dialog.

The configuration file resides in the cameras permanent storage (flash). The configuration is read once at boot time and then copied to the cameras RAM. Any changes to the configuration are done in the copy of the original and are only valid until the next system start.

Some configuration settings (ISDN, network, LAN image storage, switching the mode of the serial interface) do not become effective at runtime. In order for modifications of these settings to become active, you need to perform a **Reboot camera**. All other configuration settings can be modified at runtime and become effective immediately.

Note: **Do not try loading an old configuration file (up to software version M1–V1.9.x) into a camera that runs software version M10–V2.x. Since the configuration file format has changed, the camera will not accept an old configuration file.**

10.1 Modifying the Configuration

Using the **Quick Installation** wizard is the easiest and most secure way for initially configuring the camera.

To modify other settings, you can use the submenus of the **Setup Menu** and the **Admin Menu**.

10.2 Saving the Configuration

In the dialogs, click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialogs. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

10.3 Working with the Configuration File

In order to configure certain parameters of your MOBOTIX camera, you may need to modify settings in the configuration file. All related parameters are grouped together in configuration sections.

Show the current configuration	The current configuration file is displayed as formatted text. Alternatively, you can choose to display the configuration file as **text only** file.
Store current configuration into flash memory	Stores the current configuration in the camera's permanent storage so that the changed version is used when the system is rebooted.
Restore last configuration from the permanent storage (flash)	When you have modified the configuration temporarily and do not intend to keep the changes, you can retrieve the last configuration that has been stored permanently. **Note:** The current configuration can be replaced as a whole or in parts (see *Keep Parts of the Configuration*).

Reset configuration to factory defaults	It is possible to reset the camera's current configuration to the factory default settings. After doing so, you need to save the configuration to permanent storage and reboot the camera. Attention: This will overwrite any modifications of the network settings. Make sure that the camera can still be accessed. **Note:** The current configuration can be replaced as a whole or in parts (see *Keep Parts of the Configuration*).
Save current configuration to local computer	With this function, you can create a backup copy of the current configuration on your local computer. Note, that FTP passwords etc. are readable in the file.
Load a configuration from local computer	Using this function, you can load a locally stored backup copy of the configuration into your camera. After doing so, you need to save the configuration to permanent storage and reboot the camera. In order to be accepted, the file originally must have been created by this camera. **Note:** The current configuration can be replaced as a whole or in parts (see *Keep Parts of the Configuration*).
Edit configuration file (for experts)	It is possible to modify parameters directly in the configuration file. **It is recommended that only experts make use of this possibility.** An invalid modification of parameters may render the camera inaccessible. Save the modified configuration in the permanent storage and reboot the camera.

10.4 Keeping Parts of the Configuration

Usually, when loading a backup copy from your local computer or when resetting the configuration to the factory default settings, the entire configuration is replaced.

In order to keep parts of the configuration (e.g. user and password settings), you need to check the *everything except the parts checked below*option in the **Replace** list. Check the configuration sections that are **not** to be replaced.

Next, click on **Load** in the **Load Configuration From File** dialog, or click on **Restore** in the **Restore Configuration From Flash** dialog, to replace the complete configuration or parts of it in the *current* camera configuration.

Note: Remember, that the changes to the configuration still apply only to the current camera settings. If you reboot now, the old configuration will be used if you do not **store** the current configuration to the permanent (flash) storage of the camera.

11 Updating the Camera Software

Open the **Update System Software** dialog to select special files with a `.mpl` file extension for updating the camera software.

11.1 Loading the Update File

Warning!

- Make sure you reboot the camera before you attempt to upload new software.
- Make sure that neither the power supply nor the data connection are disrupted while the upload is in progress.
- Never close browser windows or switch to other browser windows until the results of the upload are displayed.
- If the update fails, **do not reboot the camera**, but restart the upload process.

To update the camera software do the following:

1. Download the update file from the MOBOTIX support page to your computer: *http://www.mobotix.com/mx_download/*.
2. Make sure that you save the current configuration on your computer by opening **Save current configuration to local computer** in the Admin menu.
3. Open the **Reboot the Camera** dialog, restart the camera and re–open this help page.
4. Open the **Update System Software** dialog.
5. **Read the notes in the dialog! Especially if you are using an ISDN connection for the upload, read the notes for ISDN users!**
6. Select the upload file on your computer.
7. Click on the **Start Upload** button to launch the upload process.

Note: After the software has been updated successfully and after you have rebooted the camera, message windows may alert you of configuration parameters not matching. If this happens, you should **reset the configuration to factory defaults**, either in parts or as a whole.

If you would like to keep certain settings, you should choose *Everything except the parts checked below* and then activate all options that should *not* be replaced, such as Security, Networking, Audio, ...). This applies to the **Audio** section in particular if the camera is being administered using an ISDN connection. You will not be able to reach the camera otherwise!

For additional information on this topic, see the *Configuring the Camera* help topic.

12 System Messages

Open the **System Messages** dialog to view information on the services running on the camera. For every service, up to 10 success and 10 error messages are displayed.

Notes:

- The system messages are stored in the camera's RAM. In case of a power failure or when rebooting the camera, all system messages are deleted.
- From software version V1.9.4, the *Image Transfer Results* dialog has been renamed to **System Messages**

12.1 Structure of System Messages

Column	Description
Time	The system message's date and time
Service	Displays the service that has issued the system message: **STORAGE** Image storing on a file server **ISDNOUT** ISDN Dial–out **IPMSG** Send/receive IP Notify **FTP** FTP transfers **EMAIL** E–Mail messages
ID	Internal process number of the service
Message	Extensive message text of the service

13 File Server Checks

Use the **Camera Checks** dialog to configure tests that constantly monitor the file server that the camera is using for image storage. The camera will actively monitor the file server and can report problems using different notification methods.

Before you configure the file server test, make sure that you have properly configured the **Event Storage** on an external file server.

13.1 Configuring the Tests

You can choose to run different test methods. The camera can check if the file server can be reached on the network. It can also test if all event images have been transferred properly to the file server or if events have been lost. Depending on the selected sensitivity, the tests can be executed with different strictness.

13.1.1 Description of Parameters

Parameter	Description
Check	This option **enables** or **disables** your camera's file server check.
Tests	Select the tests you would like to perform. • **Ping server** will check if the file server responds to network packets. • **Check transfer** will assert if it is possible to write data to the file server. • Checking for **Lost events** will verify that recent events have been written to the file server. If the file server test is running, a link to the log file is displayed. The log file contains messages (error and success messages) and measurement values (transfer buffer usage, numbers of last internal and transferred event). Rebooting the camera will delete the log file contents.
Sensitivity	Select the sensitivity of the tests. Selecting **high** will use stricter test criteria and will notify you early if problems occur. Selecting **low** will use less strict test settings and notification will be delayed.

13.2 Error Notification

In order to notify you of any problems that the file server may be having, you can let the camera transfer an image to an FTP server or have it send the error message using an e−mail or an IP Notify message. If the camera is connected to ISDN, it can also call you on the phone to let you know that an error condition has been detected. The camera itself can use its loudspeaker to play an audio message or it can activate its LEDs to alert you of an error condition.

Moreover, you can set an interval to repeat the error notification until the error condition has been removed.

13.2.1 Description of Parameters

Parameter	Description

FTP	Select the **FTP Profile** that should be used to transfer images in case of an error condition. **Note:** The FTP server and the external file server of the camera should not be on the same computer, if possible.
E–Mail	Select the **E–Mail Profile** that should be used for sending the error messages. **Note:** In order to obtain more information on the error condition, set up the e–mail profile to append an image or the system messages.
ISDN Audio Call	If the camera is connected to ISDN, you can select one of the profiles defined in the **ISDN Dial–Out Profiles** dialog and the camera will call you in case of an error condition. **Note:** If ISDN dial–out has been configured and the camera remote control has been activated in the ISDN dial–out profile, you can use the *remote control* features of the camera to establish a dial–out connection to the Internet. This will allow you to search for errors using the browser remote controls.
IP Notify	Select the **IP Notify Profile** that should be used to send error messages in case an error condition has been detected.
Audio Message	Select the **Audio Message** that should be played back on the camera speaker.
Camera LEDs	The camera can signal an error condition by flashing the LEDs on the camera front. Select how the LEDs should blink: **Blink one LED** or **Flash all LEDs**.

13.3 Storing the Configuration

Click on the **Set** button to save your settings until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

14 Event Filter

The **Event Filter** dialog contains all filters available for influencing the occurrence of events.

14.1 Event Counter (EC)

The event counter prevents events from being triggered immediately. It only triggers an event when a certain number of events within a defined period of time has been exceeded/reached or not reached, respectively.

Each image will increase the event counter by one, even if multiple event sensors are active at the time.

The event counter can be used, for example, for monitoring a conveyor belt in a production scenario. When fewer events occur than expected during the defined period of time, a malfunction is recognized and the camera triggers an alarm.

Also, the event counter is necessary to avoid false alarms of the video motion (VM). Due to the event counter, an event is only triggered when events occur e.g. for as long as two to five seconds. This way, you can make sure that the object is really moving.

Parameter	Description
Event Counter Enable	When the event counter is enabled, events trigger alarms. The event counter counts *all* events selected in the **Event Selection** box. **Individual Events** controls if only the event counter is allowed to trigger actions or if individual events may also trigger actions.
Events to Count	In the *Event Selection* list select the events to be counted. Hold the [Ctrl] key pressed to select more than one event.
Individual Events	Specify, whether you want the counted individual events to be saved or deleted. Saved events can continue to initiate actions or messages: • *ignore events*: Actions are only triggered by the event counter. • *use events*: Actions are triggered by the event counter *and* by individual events that have been selected in the **Event Selection** box.
Counting Period	Define the period of time in which the events are to be counted. Values: `1 .. 3600` seconds
Event Count	Enter the number of expected events. Values: `1 .. 3600`
Condition	Define the condition to trigger an event: *more/equal* An event is triggered when the expected number of events has been reached or exceeded. *less* An event is triggered when the expected number of events has not been reached.
Start Action	Define how often the event is to be triggered: *First* The event is triggered only *once*, i.e. when the condition is first detected. *Every* The event is triggered *every* time as long as the condition is true.

14.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

15 Example: Using Event Control

Very frequently, you would like only selected events to trigger an action, send a message or store an event story. Starting with software version V1.9.4 you can use *Event Selection* to control *Event Stories*, *Actions* and *Messages*.

15.1 Scenario

- You would like the camera to store a single image without pre− and post−alarm images every 30 seconds.
- Also, the camera is supposed to react to movements within the motion detection window and those registered by the PIR detector. Once the camera recognizes a movement, you would like it to store the event plus 10 pre− and 10 post−alarm images.
- Additionally, the camera is supposed to send an e−mail with an attachment that contains the event story .

15.2 Settings

- In the **E−Mail Profiles** dialog, create a profile with an e−mail address to which to send the message.
- In the **General Event Settings** dialog, enable the **Arming** option.

Note: In order to store images and to perform actions and messages, arming *has to be* enabled.

- Set the number of pre− and post−alarm images for the **Event Story**.
- In the **Event Settings** dialog, activate the **Video Motion Window (VM)**, the **Passive Infrared Detector (PI)** and the **Periodic Event (PE)** options.
- For the **Periodic Event** option, select the *Seconds* interval unit and enter *30* as value for the interval.
- In the **Messaging** dialog, define the events that should trigger a message. In the **Event Selection** section, activate the *VM − Video Motion* and *PI − PIR Detector* options.

Note: Use [Ctrl]−Click to select more than one entry.

- In the **E−Mail Action (EM)** section, select the name of the e−mail profile you created before.
- Select the *event story* entry to set the proper attachment type.

15.3 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

16 Language and Entry Page

Open the **Language and Entry Page** dialog to define the camera's behavior when a browser connects to the camera. You can modify the entry page, the camera's language, certain page options and the ports of the camera's web server.

16.1 Select Entry Page

Select the entry page that will be displayed when a browser connects to the camera.

Option	Description
Guest	The **Guest** screen displays the camera's current image. The camera configuration cannot be changed. However, the image rate can be modified temporarily.
Live	The **Live** screen displays the camera's current image. The camera displays a set of softbuttons to the left of the live image. The drop–down menus above the image allow changing certain image parameters. This page has been preset as the default entry page.
Player	On the **Player** screen, you can play back the stored events. The events will be played back automatically, regardless of the storage location (internally in the RAM or externally on a file server; see also *Image Storage*).
Multi View	The **Multi View** screen displays multiple cameras or events on one screen. Open the Multi View Screens dialog, if you would like to configure a screen.
PDA	The **PDA** screen displays the camera's current image for low–resolution devices (PDAs/MDAs and mobile phones).
PDA Event List	The **PDA Event List** displays an overview of the stored events in form of a list, also for low–resolution devices.

16.2 Page Options

Description of Parameters	
Language	Select the language for the user interface.
Image Pull–Down Menus	Display or hide the pull–down menus of the **Live** screen. These menus are used for quickly configuring frequently used parameters.
Refresh Rate for Guest Access	Set the maximum and the default refresh rate for the Guest screen. This setting does *not* affect the refresh rate of the Live screen.
Refresh Rate for User Access	Set the maximum and the default refresh rate for the User access (the **Live** screen).
Page Refresh Rate	

	Set a period of time after which the camera reloads the page completely. This can eliminate problems with certain browsers.

16.3 Web Server

Per factory default settings, browsers can reach the camera's web server using port 80 (standard port for HTTP requests).

However, if the camera needs to be accessible from the local network (Intranet) and from the Internet, two web server ports can be defined for security reasons, so that local network and Internet access can be clearly separated.

Within the local network, the camera is accessible via port 80 and can be integrated in a Multi View display, for example. Access from the Internet uses a router connection with a mapped port to the camera. As port 80 is used already on the local network, the router channels access from the Internet to a different camera port (e.g. 8080).

In this case, you would have to enter the values *80* and *8080* for the ports.

Modify these settings only if you are fully aware of the consequences. One single invalid setting may render the camera unreachable.

Note: Any modifications of this setting require you to **Reboot** the camera to become effective.

16.4 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

17 Time and Date

Open the **Time and Date** dialog to set the camera's date, time, time zone and time server settings.

The operating systems clock is synchronized with the real–time clock at boot time and every 6 hours. To avoid differences caused by minor offsets of the real–time clock, the camera can synchronize the real–time clock when booting and periodically every 6 hours using an external time server.

Note: The camera must be able to access the time server over the local network.

17.1 Description of Parameters

Parameter	Description
Date **Time**	In order to set the date manually, enter the date in the respective text boxes using the format `YYYY-MM-DD`. Enter the time in the respective text boxes according to the selected time zone using the format `HH MM SS`. Click on the corresponding **Set** button to the right of a text box to set the camera clock. **Note:** You can only use digits for entering the date and the time.
Your Computer	Click on the **Set** button to copy the date and time of your local computer to this line.
Time zone	Select the correct time zone for the camera location.
Time Server	**To synchronize the camera with a timeserver do the following:** • Enter the IP address of a time server that sends the time data according to RFC 868. • Click on the **Set** button. • In the newly displayed **Time Server** line of the **Set Clock to** section, click on the **Set** button. If an error message is displayed at the bottom of the dialog, check the IP address of the time server. Activate the **Adjust periodically** checkbox to *automatically* synchronize the time.
Hourly Sound:	Select one of the sound files that have been stored using the **Manage Voice Messages** dialog in order to play back the file at every full hour.

17.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire

configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

18 The Ethernet Interface

Your MOBOTIX camera is equipped with an integrated 10 Mbps Ethernet interface to connect the camera to local networks.

From the factory, the camera is pre−configured for a class A subnet:

IP Address: `10.x.x.x`

Network Mask: `255.0.0.0`

18.1 Quick Installation

The **Quick Installation** wizard is the easiest and most secure way for initially configuring the camera. It is performed automatically when the **Admin Menu** is opened for the first time.

Once you have selected the language, this wizard helps to configure the following basic settings:

- Factory Reset
- Network Settings (using Ethernet and ISDN call−in and dial−out)
- Camera Name
- Ethernet Interface (IP address and network mask of the camera)
- Gateway (e.g. for storing images on websites using an Ethernet connection)
- ISDN Call−Out (only if activated in **Network Settings**)
- ISDN Dial−In
- Domain Name Service (DNS)
- Image Transfer to FTP Server
- Store configuration permanently

Note: Depending on the settings you have selected, not all dialogs mentioned above will be displayed.

18.2 The *Ethernet Interface* Dialog

It is recommended that you use the **Ethernet Interface** dialog only when you feel comfortable with the terms and services involved. **Invalid entries may render your camera unreachable!**

18.2.1 General Interface Setup

Parameter	Description
Ethernet	Enable/disable the Ethernet interface. The factory default setting is *on*.
Additional IP Address	The camera can manage two different network configurations. When you configure your camera for your network, select *On* in order to store the factory default configuration as alias configuration. Thus, you can make sure that the camera remains accessible using the factory default configuration. Note: The alias configuration cannot be defined independently.
BOOTP/DHCP	Provided these services are available on your network, the camera can use them to automatically obtain its network configuration. Ask your network administrator whether these services are available. If the configuration using BOOTP/DHCP has been successful, all other settings in the menu are ignored. If the configuration using BOOTP/DHCP fails, your settings or the factory

	default settings are used.
Camera Name	You can assign a host name to the camera that should describe e.g. the camera's location in more detail. Using this name, you can select the camera e.g. when configuring a Multi View screen. Note: In order to access the camera on your local network using its host name, a DNS service needs to be available and a *DNS server* has to be specified.

18.2.2 Ethernet Parameters

Parameter	Description
IP Address	You can access the camera in the network via its IP address. Ask your network administrator which IP address is available.
Network Mask	In order for computers to be able to communicate in a network, the IP address needs to be assigned a matching network mask. Again, it is your network administrator who will tell you which network mask to use.

18.2.3 Routing

Parameter	Description
Default Route and Gateway IP Address	A gateway acts a relay between individual networks and it coordinates the data traffic between these networks. The default route sets the gateway that is to be used when no other gateway has been specified for a special *route*.

18.2.4 Domain Name Service (DNS)

Parameter	Description
DNS servers	In some dialogs (e.g. FTP Profiles), you can replace the IP address by a symbolic name (e.g. `ftp.mycompany.com`). In order for symbolic names to be transformed to IP addresses, at least one DNS server has to be registered. In the **Quick Installation** wizard, you can select a DNS server or enter a DNS server of your Internet provider. **Note:** The DNS servers entered here will *only* be used for the Ethernet interface. If an ISDN dial–out connection has been defined in the **ISDN Connections > Dial–Out Connections** dialog and this connection has been set as **Default Route**, the DNS servers assigned by the provider will be used.
Domain	When you enter the host name without the domain name, the camera will automatically add the domain name specified here.

18.3 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

19 ISDN Connections: The Dial–In Connection

On the **Dial–In Connection** tab of the **ISDN Connections** dialog, you define if and how you can dial in to the camera either via an ISDN router or via a computer with ISDN card.

To manage the ISDN connections for dialing out, click on the **Dial–Out Connections** tab; certain parameters for dialing out (Dialing Pause, Dial–Out Limits) can be configured on the **Dial–Out Parameters** tab.

19.1 General Parameters

Parameter	Description
ISDN Dial–In	Use this option to either **Enable** or **Disable** dialing in via ISDN. When you already have defined settings, these remain saved when the dial–in is disabled.
Termination Reboot	Activate this option and the camera will reboot after a connection has been terminated. It is recommended not to use this feature together with network connections via the Ethernet interface or when you expect numerous ISDN connections within a short timeframe. The factory default setting for this feature is *off*.
Camera MSN	The MSN (**M**ultiple **S**ubscriber **N**umber) is the telephone number used to call the camera. By factory default, the camera will react to every MSN of an ISDN port. **Set the MSN you would like the camera to react to:** • Leave the field empty if you would like the camera to accept *every* MSN valid for the ISDN port. • Enter the MSN of the ISDN port you would like to assign to the camera. When the camera is connected *directly* to an NT, enter the MSN *without prefix*. **Note:** The easiest way to determine the correct MSN is to call the camera and then reload the **Dial–in Connection** tab. Then, click on the button with this MSN to accept it.
Allowed Phone Numbers	The camera can be configured to only react to calls that originate from accepted telephone numbers. In order to create a list of accepted telephone numbers, enter the numbers in the text box, one per line. **Note:** The calling telephone number may be truncated or changed during the transfer! In order to easily be able to determine a call's *correct* telephone number, the *MSN of the last calling device* is displayed that has been detected at this ISDN bus. To allow a computer or router for dialing in, you need to call the camera from the respective device and then reload the **Dial–in Connection** tab. Then, click on the button with this MSN to accept it. When you leave the list empty, the camera will answer every call.

Camera IP Address	The camera uses this IP address for ISDN dial−in connections. It can vary from the IP address of the network interface. It is recommended to only change the ISDN IP address with good reason. By factory default, the ISDN IP address is identical to the IP address of the network interface.
Caller IP Address	This IP address is assigned to a computer that dials into the camera via ISDN. Normally, no entry is necessary here as the camera automatically will use the IP address of the caller incremented by two. When entering an IP address here, make sure that this address has not yet been assigned to another device within your local network. The caller IP address *has to be* different from the **Camera IP Address**.
Idle Time	In order to minimize telephone costs, the camera can terminate an ISDN connection if it does not detect data traffic within the period of time specified here.
Authentication	It is recommended to always select an authentication protocol. Most computers understand both protocols. Other than *PAP*, *CHAP* transmits encrypted user name and password information. **Note:** When you select **None**, it is possible to dial−in to the camera *without* authentication. For security reasons this is not recommended!
Camera Login	For successfully logging onto the camera, you need to enter a *user name* and *password* for authentication. **Note:** It is recommended to replace the factory defaults by specifying your own user name and password.

19.2 Routing

Parameter	Description
Default Route	When ISDN Dial−In is activated, you can set the default route for this connection (provided this has not yet been configured) in this dialog. For defining additional routes, open the **Routing** dialog. For additional information on this topic, see the *Routing* help topic.

19.3 Storing the Configuration

Click on the **Set** button to save your settings until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

20 ISDN Connections: Dial–Out Connections

On the **Dial–Out Connections** tab of the **ISDN Connections** dialog, you define the parameters which the camera uses to dial–out to the Internet or an ISDN router via ISDN (e.g. to transfer an image or send an e–mail).

To edit the ISDN connections for dialing in, click on the **Dial–In Connections** tab; certain parameters for dialing out (Dialing Pause, Dial–Out Limits) can be configured on the **Dial–Out Parameters** tab.

20.1 Configuring Dial–Out Connections

You can configure up to six different dial–out connections. *Four* of these can be active at the same time. Active connections are highlighted.

- Enter a **Name** for the connection. Only use letters, digits, dot, hyphen and underscore.
- Enter the **Phone Number** the camera will use for dialing out. Your Internet provider or the administrator of the destination will provide the correct number.
- For successfully dialing in, the camera needs to authenticate itself at the destination. Therefore, you need to enter a **User Name** and a **Password**. Your Internet provider or the administrator of the destination will provide this information.
- In order to minimize telephone costs, the camera terminates the ISDN connection if it does not detect data traffic within the period of time specified here as **Timeout**.
- At the right hand side of the dialog, you will find three option switches for every connection:

Inactive	Deactivates the connection. The settings remain stored in the configuration.
Remove	Deletes this entry from the configuration.
Set as default route	Sets the default route to this connection. For configuring additional routes, go to the **Routing** dialog. For additional information see the *Routing* help topic.

Notes:

- In order for the camera to use a certain connection, you need to either set a network route or the default route to this connection. Network routes (via the camera's Ethernet interface) can be configured only in the **Routing** dialog.
- The camera can only obtain the IP addresses of the DNS name servers automatically via the one connection that is set as default route. When an ISDN connection is used as the default route, you can access computers via connections, for which just a network route is set, only with an IP address.
  Note: When you have activated the **BOOTP/DHCP** option in the **Ethernet Interface** dialog, the **Default Route** is *always* set to the **Ethernet Interface**.

20.2 Storing the Configuration

Click on the **Set** button to save your settings until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

21 ISDN Connections: Dial–Out Parameters

Open the **Dial–Out Parameters** dialog to define additional parameters for dialing out.

To manage the ISDN connections for dialing out, click on the **Dial–Out Connections** tab; in order to edit the ISDN connections for dialing into the camera, click on the **Dial–In Connections** tab.

21.1 Dial–Out Options

Parameter	Description
Dial–Out Pause	Set the time in seconds for the camera to wait between two dial attempts.

21.2 Dial–Out Accounting

Parameter	Description
Limits	Using the dial–out limits helps you limit the costs of ISDN operation. Select the **enabled** option in order to block further dial–out attempts once the defined limits have been reached.
Configure Limits	You can configure various limits that will block dial–out once they are reached: • Time limit in minutes for day, week, month • Number of connections for day, week, month
Reset Counters	Click on the **Reset** button to reset all counters for ISDN dial–out.

21.3 Dial–Out Status

Parameter	Description
Status	This shows the current status of ISDN dial–out. In case the dial–out is blocked, you will find a description in this field.

21.4 Storing the Configuration

Click on the **Set** button to save your settings until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

22 Test Current Network Configuration

As the interface settings are sometimes rather complex, checking if a specific setting works may become a rather tedious task. In order check specific connections, the camera provides several tests in the **Test Current Network Configuration** dialog.

This dialog offers individual tests for the connections that have been configured so far. These tests comprise:

- ISDN: tries to establish a connection (Is the phone line available? Is the called device busy? Is the user and password information correct?).
- Routing: checks the network connection to the gateways (using `ping` commands).
- DNS: checks the network connection to the specified DNS servers and tries to resolve a symbolic name.
- Image transfer: lists all e–mail and FTP profiles that have been configured in order to test them one by one.
- General Test: enter a computer name or IP address to test if it can be reached (using the `ping` command).

You should run all tests one by one starting from the top and carefully analyze the test results. While the test are running, the test output is displayed in the small popup window. The test result is displayed in the dialog itself.

If a test detects an error or fails completely, a message in red will alert you. Check the corresponding settings if this happens.

Notes: Make sure that the camera has been rebooted after you have changed the configuration before running the tests.

23 Routing

Open the **Routing** dialog to define the routes to be used by the camera for connecting to different networks. Connections via the Ethernet interface can be used as well as ISDN data connections.

In general, the camera can only send network data using a connection previously configured in the **Ethernet Interface** and **ISDN Connections** (**Dial−In Connection** or **Dial−Out Connections** tabs) dialogs.

Note: Make sure that you create a route for *every* ISDN dial−out connection; otherwise the camera does not dial out.

23.1 Introduction

A *network* is defined by the *network address* and the *network mask*. For example, by factory default the camera is configured to an IP address within the network `10.0.0.0/255.0.0.0` (network address/network mask).

Networks are connected through *gateways*. This may be an ISDN router or a special computer within the network.

In order for each computer within the network to know if and how it can connect to computers in other networks, you need to configure *routes*. A route consists of the following information:

- The target network data (network address and network mask).
- The IP address of the gateway. This information is not needed for ISDN connections since here, the service provider automatically acts as gateway.
- The connection to be used.

When a network package is to be sent to a specific target IP address, the camera checks if a route exists for this address. If no specific route exists, or no routes have been defined, the so−called *Default Route* is used.

23.2 The Default Route

Select the connection to be used by default. In general, this is the connection to your Internet Service Provider or to the closest gateway.

When you select the **Ethernet Interface** connection, you need to enter the IP address of the **Gateway**. Valid gateway IP addresses need to be accessible within the camera's local network (as defined in the **Ethernet Interface** dialog).

Note: When you have activated the **BOOTP**/**DHCP** option in the **Ethernet Interface** dialog, the **Default Route** is *always* set to the **Ethernet Interface** with the **Gateway IP Address** being determined automatically.

When you select an **ISDN Dial−Out Connection**, the camera accepts the DNS server's IP address proposed by the service provider.

23.3 Network Routes

Enter the routes to other networks.

- Enter a name for the route. Only use letters, digits, dot, hyphen and underscore.
- Enter the target network information: **Destination Network** and **Network Mask**.
- Enter the IP address of the **Gateway**. This IP address must be part of the local network of the camera. For routes using ISDN connections, this field remains empty since the gateway is set automatically.
- Select a **Connection**.
  Note: When you have selected an ISDN connection, you cannot access computers within this network using the symbolic DNS name but only via their IP address.
- For each connection, you can select one of of two options:

  Inactive Deactivates this route entry.

  Remove Removes this route from the configuration.
- Click on the **Set** button to check the routes. Provided that the respective gateways are available, the configured routes are saved.

For additional information on the topic, see the *Routing – Example* help topic.

23.4 Storing the Configuration

Click on the **Set** button to save your settings until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

23.5 Example: Routing

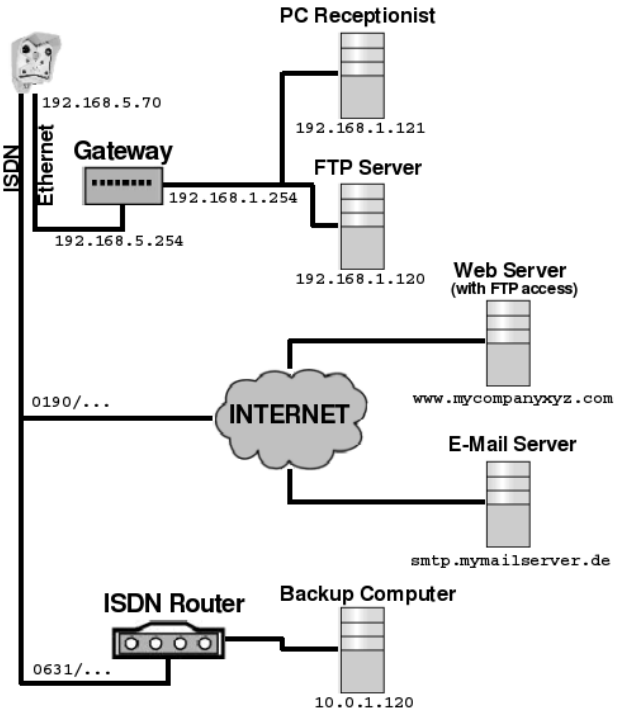
The following scenario has been designed to illustrate the configuration of network connections and their routes.

23.5.1 Scenario

A camera is mounted at a parking area and observes the main entrance of a company building. The receptionist needs to see a *Live Image* of the camera. Also, during the day, the image is supposed to be presented on the company's *web site* which is located on an external server. During the night, the grounds are monitored. In *case of an alarm*, the images are not only stored on the company's network but a re sent *redundantly* via ISDN on a separate backup computer. In case of an alarm, an *e–mail* is sent as well.

23.5.2 Design and Network Topology

The camera is integrated in the company network via Ethernet. Additionally, the camera is equipped with ISDN, so that it can connect to the Internet and dial–in to the backup computer:



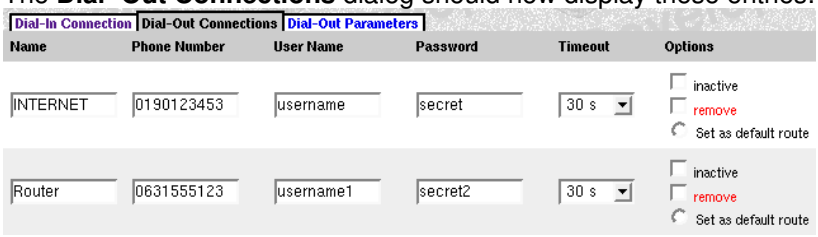
Due to security reasons, the internal company network is separated from the external network connection of the camera by a gateway. The IP addresses of the two gateway interfaces are: `192.168.5.254` (external) and `192.168.1.254` (internal). The camera is assigned the (external) IP address `192.168.5.70`. The receptionist's PC has the (internal) IP address `192.168.1.121` and in the case of an alarm, the camera is supposed to store images via FTP on the Intranet server `192.168.1.120`.

ISDN is used for dialing–out to a provider in order to obtain an Internet connection. Thus, the camera can regularly update an image on the web server `www.mycompanyxyz.com` on which the company's website is hosted. On top of this, sending e–mails using freely accessible e–mail services (e.g. via the `smtp.mymailserver.com` server) is possible. In case of an alarm, ISDN is used also for dialing in to an ISDN router for establishing the redundant connection to the backup computer `10.0.1.120`.

23.5.3 Configuration

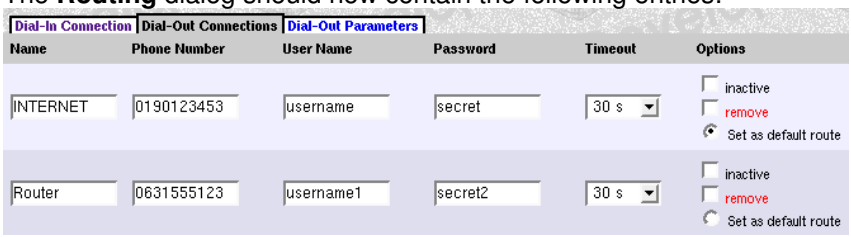
1. To begin with, configure three **FTP Profiles**:
   - Profile "`FTP_WEB`" for updating the image on the web site.
     Computer Name: `www.mycompanyxyz.com`
   - Profile "`FTP_ALARM`" for storing the alarm images on the Intranet server.
     Computer Name: `192.168.1.120`
   - Profile "`FTP_ALARM_2`" for redundantly storing the alarm images on the backup computer.
     Computer Name: `10.0.1.124`
2. Click **Set** to save the changes, then click on ↵ to return to the **Admin Menu**.
3. Then, create the e–mail profile "`ALARM`" in the **E–Mail Profiles** dialog. You can use a valid DNS name for the SMTP server, e.g. `smtp.mymailserver.com`.
4. Click **Set** to save the changes, then click on ↵ to return to the **Admin Menu**.
5. Next, you configure the **Ethernet Interface** by assigning the camera the following network data:
   - IP Address: `192.168.5.70`
   - Network Mask: `255.255.255.0`
6. Click **Set** to save the changes, then click on ↵ to return to the **Admin Menu**.
7. Then, enter the following ISDN connections in the **Dial–Out Connections** dialog:
   - one dial–out connection "`INTERNET`" to the provider,
   - one dial–out connection "`Router`" to the ISDN router that is connected to the backup computer.

The **Dial–Out Connections** dialog should now display these entries:



8. Click **Set** to save the changes, then click on ↵ to return to the **Admin Menu**.
9. Then, open the **Routing** dialog and enter the following routes:
   - Set the ISDN dial–out connection "`INTERNET`" as the **Default Route**. This is the only way that the server name `www.mycompanyxyz.com` entered in the FTP profile "`FTP_WEB`" or the SMTP server name "`smtp.mymailserver.com` used in the "`ALARM`" e–mail profile can be resolved by a DNS request. No gateway is entered as this is assigned automatically.
   - In order to connect to the internal company network via the **"`ETHERNET`" network route**, you need to enter the following:
     - ◊ Name: `ETHERNET`
     - ◊ Destination Network: `192.168.1.0`
     - ◊ Network Mask: `255.255.255.0`
     - ◊ Gateway: `192.168.5.254`
     - ◊ Connection: *Ethernet interface*
   - Create the **"`Redundant`" network route** in order to connect to the ISDN router which has a connection to the backup computer:
     - ◊ Name: `Redundant`
     - ◊ Destination Network: `10.0.0.0`
     - ◊ Network Mask: `255.0.0.0`
     - ◊ Gateway: not required.
     - ◊ Connection: Dial–Out Connection "`ROUTER`"

   The **Routing** dialog should now contain the following entries:



10. Click **Set** to save the changes, then click on **Close** to close the dialog. Save the modified configuration in the permanent storage of the camera and **reboot** the camera.

You can now check the default route in the **Test Current Network Configuration** dialog. When this test is successful, you can set up *regular image transfers*, i.e. the respective *events* and *actions*.

24 Dynamic DNS

In the **Configure Dynamic DNS** dialog, you set up the camera's *DynDNS Client* so that you can access the camera using a symbolic host name even though the camera's IP address keeps changing.

24.1 Introduction

Connections via the Internet are typically established by Internet service providers. Normally, providers assign changing IP addresses which means that the camera's IP address is a different one each time a connection to the provider is established. Once the camera is connected to the Internet, you can only access it via the Internet when you know its current IP address.

The *Domain Name Service* (DNS) is an important Internet service. Using so−called *name servers*, this service provides decentralized databases which allow for allocating symbolic host names (e.g. `www.mobotix.com`) to the respective IP addresses (e.g. `213.83.41.133`). However, the DNS service concept is based on statically assigned IP addresses. Originally, this concept was not designed to work with frequently changing IP addresses as used when dialing up to a provider.

In order to enable the DNS to also manage changing IP addresses, the *Dynamic DNS Service* (DynDNS) has been introduced. A mechanism has been added to the DNS service, which the camera can use to transmit its current IP address, so that the entry in the name server database is updated automatically.

24.2 Configuring the DynDNS Client

Prior to configuring the camera for DynDNS, you need to register a host name for your camera with a DynDNS service (e.g. `mycam.dyndns.org`). For a list of DynDNS service websites, see the **Service Type** list box.

24.2.1 Description of Parameters

Parameter	Description
Client	This option **enables** or **disables** your camera's DynDNS client.
Service Type	The DynDNS data transfer is not standardized. This has resulted in different data exchange formats for different DynDNS providers. Select the service type suitable for your DynDNS service.
Server	Enter the symbolic name (e.g. `members.dyndns.org`) or the IP address of your DynDNS provider's server. When you are not sure which server to enter, leave this field empty. In this case, the camera automatically uses the *standard server* stated between brackets in the **Service Type** field.
Host Name	Enter the host name (e.g. `members.dyndns.org`) that you have registered with a DynDNS service for your camera.
User Name	Enter the user name that you have registered or that you have been assigned during the registration process with your DynDNS service.
Password	Enter the password that is used for authentication at the DynDNS server.
Connection	This field shows which connection the DynDNS client uses and if it is working properly. This is the connection defined for the standard route. For configuring the

	standard route, open the **Routing** dialog.

24.3 Testing the Configuration

Ethernet Connection

In this case, the camera's DynDNS client transfers the IP address just once when the camera has been rebooted.

When your network uses e.g. DSL to connect to the Internet, you need to make sure that the camera is rebooted periodically *after* the respective router has been assigned a new IP address. By default, a time task, which reboots the camera once a day, has been defined in the **Time Tasks** dialog.

For status information on this feature, open the **System Messages** dialog.

ISDN Dial–Out Connection

When you choose *ISDN Dial–Out Connection* as connection type, you need to reboot the camera so you can test the connection in the **Test Network Configuration** dialog. The log window will show whether or not you have logged on to the DynDNS server successfully.

24.4 Storing the Configuration

Click on the **Set** button to save your settings until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

25 Camera Remote Control via ISDN

If your camera is connected to the public telephone network via ISDN, you can call your camera from any telephone . Using the telephone keys, you can then control your camera remotely. The telephone must support tone (**D**ial **T**one **M**ulti−**F**requency) dialing, sometimes also called *touchtone dialing*.

Note: This feature is not available for **Web** models.

25.1 Configuring ISDN Audio Call−In

In order for the camera to answer ISDN audio calls, you need to configure this access in the **ISDN Audio Call−In** dialog first.

Enter the telephone number (MSN) in this dialog to which the camera will answer. In addition, you can select a message that the camera plays when answering a call.

25.1.1 Description of Parameters

Parameter	Description
Call−In	Activate/deactivate ISDN Audio Call−In.
Camera MSN	Normally, three MSNs (**M**ultiple **S**ubscriber **N**umber) are assigned to every ISDN network termination. By its factory default settings, the camera will answer to every MSN that is called on the ISDN S0 bus. The camera software can assist you in finding and entering the MSN. Call your camera and reload this dialog or re−open it by clicking on this link: **ISDN Audio Call−In**. The last MSN called is displayed and you can copy it to the text box.
Allowed Phone Numbers	The camera can be configured to either react to all incoming calls or only to the telephone numbers entered here. In order to create a list of the accepted telephone numbers, enter the numbers in the text box, separated by spaces. The camera software can assist you in finding and entering the telephone number. Call your camera and reload this dialog or re−open it by clicking on this link: **ISDN Audio Call−In**. The last telephone number called is displayed and you can copy it to the text box. **Note:** When you leave this text box empty, the camera will answer every call. This is not recommended for security reasons.
Welcome Message	Select one of the voice messages that have been stored using the **Manage Voice Messages** dialog. The camera will play this message upon every call.
PIN Code	Enter a **P**ersonal **I**dentification **N**umber to avoid unauthorized access to your camera. When you have set a PIN, every caller needs to enter this number using the telephone keys. This will only

	work if you call from a telephone that supports tone dialing.
Audio Mode	Select the audio mode to be activated after calling the camera: **No audio** Audio mode is deactivated. **Listen only** After the voice message has been played, the connection remains active and you can listen to what is going on in the room. **Speak only** After the voice message has been played, the connection remains active and you can make an announcement using the camera speaker. **Intercom** After the voice message has been played, the connection remains active and you can communicate with a person via the camera.
Intercom Settings	The **Intercom** audio mode simulates an intercom device. To minimize distortions, the camera's microphone is deactivated while you speak. **Threshold** The threshold controls the volume at which the audio channel from the telephone is put on the camera's loudspeaker while the microphone is deactivated. **Duration** Sets the minimum duration during which the microphone is switched off.
Hangup call after	The maximum connection time before it is terminated.
E–Mail Profile	After successfully connecting to the camera, you can send the last event image via e–mail by pressing *"5"* on your telephone's keyboard. Select the e–mail profile you would like to use for sending. You can select any of the profiles created in the **E–Mail Profiles** dialog.
Dial–out Profile	Select the dial–out profile which the camera will use for dialing into the Internet when you press the "2" phone key.
Dial–out Idle Time	Select the time after which the camera will disconnect an existing ISDN Internet connection when no traffic is detected. **Note:** This setting overrides the timeout value configured in the **ISDN Connection > Dial–Out Connections** dialog.

25.1.2 Security Recommendations

When you have activated calls into the camera via telephone, anybody can call the camera. To avoid unauthorized access to the camera, it is recommended to restrict the access:

- Enter the phone numbers which are allowed to call the camera.
- Set a PIN to be entered over the telephone by any caller.

25.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

25.3 Camera Remote Control

Once you have successfully called the camera, it switches to the audio mode set in this dialog. When you have selected "Listen", for example, you can now listen to what the camera microphone is recording.

Using the keys of a telephone that supports tone dialing, you can send the commands of the main menu to the camera:

1. Select a feature by pressing any telephone key from **0** to **9**. The camera repeats the number and tells you which command you have chosen.
2. Confirm the command and execute it by pressing the **#** key.

Notes:

- Prior to pressing the **#** key, you may press additional keys in order to select other commands.
- Any command not acknowledged by the camera is not available.
- While the camera "talks", *no* keypad commands are accepted!

25.3.1 Keypad Commands of the Main Menu

Key	Function
1	Announce camera information: • Time of the last event • Status of the Internet connection
2	Connect to the Internet (provided that dialing out has been configured in the **ISDN Interface** dialog): • When the connecting has been established successfully, the camera announces its IP address. • The connection remains active for at least 10 minutes. It is recommended that you terminate the connection manually.
3	Terminate the connection between the camera and the Internet.
4	Announce the camera's date and time.
5	Send an e−mail with the latest event image as attachment. The e−mail is sent to the profile you defined for this purpose.
6	Trigger the *User Click (UC)* event.
7	Switch to Listen audio mode. You can hear what the camera microphone is recording. While doing so, the camera's loudspeaker is deactivated.
8	Switch to Speak audio mode.

	You can make an announcement using the camera's built–in loudspeaker. While doing so, the camera's microphone is deactivated.
9	Switch to Intercom audio mode. The camera simulates an intercom device. To minimize distortions, the camera's microphone is muted when you speak into the telephone.
0	Switches to the *Enhanced Signal Out Options* menu.

25.3.2 Keypad Commands of the *Enhanced Signal Out Options* Dialog

1 On	**2** 2 seconds on	**3** 60 seconds on
4 Off	**5** 2 seconds off	**6** 60 seconds off
7	**8**	**9**
*** Main Menu	**0** State of the signal output	**#** Confirm

26 The Serial Interface

Open the **Serial Interface and Modem Setup** dialog to select the interface type, its mode and to set the parameters of the serial interface.

You can use the serial interface either as signal in–/output for controlling external devices (e.g. alarm bell and light using a relay), for transferring data via a modem or mobile phone or as a web terminal for controlling/monitoring machines.

Note: This feature is not available for **Web** models.

26.1 Selecting the Operating Mode

Select how you would like to use the serial interface in the **Operating mode** drop–down box:

Serial	Description
Data	The serial interface operates as as terminal or as enhanced signal in–/output
Modem	An analog modem or GSM is used with the serial interface.
off	The serial interface is deactivated.

Notes:

- Depending on the selected operation mode, additional parameters are displayed.
- **If the serial interface has been deactivated before, it will be available only after rebooting the camera.**

26.2 The *Data* Operating Mode

In the **Data** operating mode, you can use the camera as web–based data terminal for controlling, monitoring and remotely maintaining machines or to control other devices via the enhanced signal in–/output.

Parameter	Description
Mode	**Terminal and Logger Mode** The camera can be used for monitoring and controlling production machines, heating systems and other devices equipped with a serial interface. **Note:** The integrated web terminal is only activated *after* the camera has been rebooted. **I/O Mode** The three remaining pins are available as signal in–/output. Open the **Signal State** dialog if you would like to configure this option.

	Auto−mode The camera will switch modes depending on the action it is currently executing (e.g. update buffer, set signal output, etc.).
Speed	Select the data transfer speed supported by your modem.
Bits	Number of data bits per character.
Parity	Type of check for a transferred bit sequence: **N** No checks are performed. **E** The sequence is checked for an even number of single bits. **O** The sequence is checked for an odd number of single bits.
Stop Bits	Required number of stop bits
Flow−control	**off** Flow control is deactivated. When you are not sure which type of flow control your modem supports, do not change this setting. The factory default setting is *Off*. **crtscts** Hardware flow control **Note:** Xon/Xoff are currently not supported.
Echo	Certain devices do not repeat the string that has been sent. For this reason, this string cannot be displayed in the web terminal. Set the Echo parameter to *On* in order to display the strings sent.
End of Line	The end−of−line character varies between devices. Select the correct character for the device used: **LF** Line feed **CR** Carriage return **LFCR** Line feed/carriage return **CRLF** Carriage return/line feed
Buffer Size	All incoming characters are stored in a buffer prior to being displayed in the web terminal. Set the buffer size (max. 100 kByte).
Timestamp	When you set this parameter to *On* every line is preceded by a timestamp.

26.3 The *Modem* Operating Mode

In the **Modem** operating mode, the camera can communicate with analog modems or GSM devices in order to establish data connections.

Note: As modems and GSM devices strongly vary in their use of AT commands, it is recommended that you have the manufacturer's documentation ready when setting the following parameters.

Parameter	Description
Speed	Select the data transfer speed supported by your modem.
Flow−control	**off** Flow control is deactivated. When you are not sure which type of flow control your modem supports, do not change this setting. The factory default setting is *Off*. **crtscts** Hardware flow control **Note:** Xon/Xoff are currently not supported.
Modem Type	**Analog** Analog telephone modem **GSM** GSM model (mobile phone with data transfer, e.g. Siemens MC35, Nokia 30) **Null** Null modem A null modem is a special RS232 cable that has certain pins connected in a manner that a modem connection is simulated. In this cable, certain (at least the send and receive pins) or all pins are cross−connected.
Modem Mode	**In** You can dial into the camera using the modem. **Out** The camera can dial out, e.g. for transferring images to the Internet. **In/Out** You can dial into the camera *or* the camera can dial out. **Note:** Only *one* channel is available so that dialing in and out does not work *simultaneously*.
Termination Reboot	When you set this parameter to *On*, the camera will reboot *every* time after it has dialed out. This means that the internal image storage is deleted and local network connections are interrupted. **Note:** It is recommended to use this setting only when the camera does not send images frequently.
Dial Timeout	The maximum time the camera should wait for a connection to be established.
Modem Init out	Enter the AT commands that your modem needs for initializing an outgoing call. Precede each quote character by a backslash (\").
Modem Init in	Enter the AT commands that your modem needs for initializing an incoming call. Precede each quote character by a backslash (\").
Modem disconnect	Enter the AT commands that your modem needs for terminating a call. Precede each quote character by a backslash (\").
Phone Number	Enter the telephone number that you want the modem to use for dialing out.

Dial Mode	**Tone** The selected numbers are transferred as tones. This is the factory default setting. **Pulse** The selected numbers are transferred as pulses. This is an old−fashioned method. **No** The dialing method preset by the manufacturer is used.
IP Address Camera	The IP address used by the camera. When you do not enter an IP address, the factory default IP address is used.
IP Address Peer	The IP address that is assigned to the device dialing in. When you do not enter an IP address, the factory−preset IP address (172.16.23.202) is used.
IP Address Outgoing Gateway	When having dialed out successfully, the called device transmits the IP address of the gateway. The IP address entered here must not be identical to either the camera's IP address or a local address. When you do not enter an IP address, the factory−preset IP address (172.16.23.202) is used.
Authentication	Select the authentication protocol of your choice to be used when establishing a connection. Other than PAP, CHAP encodes the user name and password prior to transfer. The factory default setting is PAP. **Note:** Both parties need to use the same protocol.
Camera Login	User name and password used to dial into the camera. Enter the password twice.
Remote Login	User name and password used by the camera for dialing out. Enter the password twice.
Idle Time	When no data traffic is recognized for the period of time set here, the camera terminates the connection.
Echo Interval	Period of time after which the camera checks whether the connection has been interrupted. Recommended value: *10* seconds.
Echo Fails	Number of retries checking for interruptions. The connection is terminated when the selected value has been reached.
PIN Code	PIN code for using the GSM card. When no PIN is necessary, leave this box empty. **Warning: Entering an invalid PIN may result in a locked GSM card!**
PIN delay	Period of time that the camera waits after the PIN has been entered. Recommended value: *15* seconds.

26.4 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

27 Multi View Screens

Open the **Multi View Screens** dialog to define the settings of the **Multi View** screen for displaying multiple cameras and events.

The dialog consists of the **Screens**, **Cameras** and **New Screen** tabs.

27.1 Screens

The **Screens** tab gives an overview of all configured Multi Views. On this tab, you can select the default view the camera should display when opening the **Multi View** screen and you can delete previously configured Multi Views.

27.1.1 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

27.2 Cameras

Before you can select a camera in a Multi View screen, the camera needs to be defined. To do so, either enter the camera manually on the **Cameras** tab or let this camera search automatically for all cameras on the *same subnet*. Click on the **Set** button to add the camera to the list.

27.2.1 Display Options

You may select one or multiple cameras and define **Display options...** for the camera(s). These options become active as soon as they have been selected.

Option	Description
Show selected camera images inline	A 160x120 image of the selected cameras is displayed on the tab.
Hide camera images	No camera images are displayed.

27.2.2 Actions

You may select one or multiple cameras and perform actions on them. Select an action from the list and click on the **OK** button.

When no cameras have been defined yet, you can choose one of the following actions:

Action	Description
Add a new camera	Enter the IP address of the camera you would like to add to the list in this text box.
Search for new cameras on the subnet	Cameras on the same subnet can be identified by means of their MAC address and are added to the list of available cameras.

When cameras are listed, the following actions are available as well:

Action	Description
Get information about the selected cameras	The software version, RAM and features of the selected cameras are retrieved and displayed.
Change the host names of the selected cameras	A text box is displayed for the selected cameras for you to enter a new camera name.
Remove selected cameras	The selected cameras are deleted from the local camera list.
Copy configuration to the selected cameras	Select this option to copy the configuration of the local camera to other cameras. Click on the **OK** button to display a new dialog. You may now select which section of the configuration you would like to copy. For authentication purposes, you can either select the *Use my current authentication tokens* option for the local camera or you may enter the remote camera's user name and password. **Note:** This feature is not available for **Web** models.

Note: The configuration of the Ethernet interface cannot be copied. In order to avoid complications, it is recommended that all cameras use the same version of the software.

27.3 New Screen

Use the **New Screen** tab to define new Multi View screens.

Select a screen layout and assign a *unique* name.

In addition, you can activate the following options:

Option	Description
Default	When opening the **Multi View** screen, the new screen is displayed.
Add softbutton	Adds a new softbutton with the name of this screen to the existing softbuttons of the **Multi View** screen.

27.4 Storing the Configuration

Click on the **Create New Screen** button to activate your settings and to save them until the camera is rebooted.

In the lower part of the dialog a confirmation is displayed. Click on the **store** link to store the entire configuration permanently.

27.5 Configuring Image Areas of a Multi View Screen

Click on the **Multi View** button to display the Multi View screen.

In order to display a camera in the image area, hold the [Shift] key down and click with the mouse in the image area of your choice.

The **Multi View Screens** dialog is displayed. It consists of the following two parts:

- **Current Configuration**: Contains the current configuration of the selected image area (camera and IP address).
- **New Configuration**: Allows you to select a different camera and to set the desired options for this image area (see below).

27.6 Configuring an Image Area

Note: When you have not defined a camera yet, open **Multi View Screens > Cameras** (tab) and add a new camera or have the camera search the local subnet for additional MOBOTIX cameras.

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Camera</td><td>Select a camera from the list.</td></tr>
<tr><td>On Alarm</td><td>Select an action to be triggered upon an alarm:
<table>
<tr><td>off</td><td>The camera does not perform any action.</td></tr>
<tr><td>Highlight</td><td>When an alarm occurs, the image area is highlighted using a color.</td></tr>
<tr><td>Message</td><td>When an alarm occurs, you are informed in a new window which camera has triggered the alarm.</td></tr>
<tr><td>Highlight & message</td><td>Combines the Highlight and Message actions.</td></tr>
<tr><td>Focus</td><td>Select this setting to display a camera that normally is displayed in a small image area in the main image area when an alarm occurs. Make sure that Focus has been selected for the main image area.</td></tr>
<tr><td>Highlight & focus</td><td>Combines the Highlight and Focus actions.</td></tr>
</table></td></tr>
</table>

	Message & focus — Combines the *Message* and *Focus* actions. **Highl. & msg. & focus** — Combines the *Highlight*, *Message* and *Focus* actions. No matter which action(s) you have selected, you can always activate the **Auto zoom** setting. When you move the mouse over the image area, the image is enlarged.
On Click	**Select an action to be triggered when clicking on the camera image:** **Goto Live Image** — Displays the **Live** screen. **Goto Player** — Displays the **Player** screen. **Remote softbutton** — When you have selected the *Show all softbuttons* option from the second list, the **Remote softbutton** dialog is opened when you click on the image. In this dialog, you may also select a single function to be performed when clicking on the image. To close the list, click on the image again.

27.6.1 Selecting the Display Mode

Option	Description
Live Image (fast)	The camera image is displayed that you have set as default image. To set the refresh rate of your choice, modify the **Refresh** parameter accordingly.
Special Format (slow)	Select this option in order to display a different image than the one displayed on the Live screen. This display mode is slower than the **Live Image (fast)** mode. Set the **Refresh** parameter and select the camera lens to be displayed by means of the **Sensor** parameter. **Note:** This option is not available for **Web** models.
Event	Select this option to display the latest event images in the image area. Number *0* is the latest event image.
Focus	A **Focus** image area allows displaying all screens configured for the same image area in a rotating manner. The **Focus** image area should have 640x480 pixels while the camera images are displayed in the smaller image areas. Set the desired display duration by selecting a value for the **Focus Period** parameter.

Image URL	Use this option to display any image that can be called using a valid URL. This is a very good method to show images from any network camera that is accessible via a URL. You can set the **Refresh** and the **URL** options for this parameter.

27.7 Storing the Configuration

Click on the **OK** button to activate your settings and to save them until the camera is rebooted.

To store the configuration permanently, go to the **Admin Menu** and select the ***Store*** *current configuration into flash memory*option in the **Configuration** section.

28 Defining Soft Buttons

On the left side of the user level screens (**Live**, **Player** and **Multi View**) you can find several softbuttons, some of which have been pre−defined in the factory.

You can customize these buttons in order to facilitate certain work processes or to simplify the access to certain actions or dialogs. For example, you can define a softbutton for calling the URL of an external alarm plan in an emergency or for sending IP Notify messages to other computers or cameras. Also, you can use these buttons to control the features of the pan/tilt head via the serial interface.

28.1 Defining Soft Buttons

In order to edit a softbutton, you have the following possibilities:

- You can *configure a softbutton* in the screen of your choice by holding [Shift] down and clicking on a button.
- In order to *edit softbutton features*, go to the **Configure softbuttons** dialog and edit, add or delete features in the list.

28.2 Configuring a Soft Button

Hold [Shift] down and click on one of the softbuttons on the **Live**, **Player** or **Multi View** screens.

Set the function for the softbutton:

List Box	Description
Replace button with	Specify the action to be performed. **Replace button with** Replaces the current softbutton feature by the one selected in the right list. **Insert button above:** Inserts a new softbutton with the function defined in the right list above the selected button. **Insert button below:** Inserts a new softbutton with the function defined in the right list underneath the selected button. **Delete this button** Deletes the selected softbutton from the softbutton menu.
No function	Select a function for the selected softbutton.

Execute a command:

Command	Description
Set	Click on this button to temporarily store the configuration of this softbutton.

	Note: Always remember to permanently store any modifications of the configuration in the **Store current configuration into flash memory** dialog so that the buttons will remain available even after rebooting the camera.
Default Menu	Click on this button to reset the menu of this page to its factory default settings.
Copy Menu	Click on this button to copy the menu of this page to the other side of the camera.
Define Function	Displays the **Configure Soft Buttons** dialog so that you can edit the features in the list as described under *Editing Soft Button Features*.

28.3 Editing Soft Button Features

Use the **Configure softbuttons** dialog to manage the softbutton features.

Column	Description
Name	Enter a short unique name that can be selected later on in the feature list of the **Configure Soft Buttons** dialog.
Color	Set the color of the softbutton.
Function	Select the desired function.
Parameter	Some features require parameters. Once you have selected a feature, the related parameters are displayed here. Use spaces to separate multiple parameters and enter the parameter values with preceding "=" characters.
Options	To delete a softbutton, click on the **Delete** option and confirm your selection by clicking on the **Set** button.

Notes:

- In order to enter a new function, fill in the fields of the last row and click on the **Set** button for temporarily storing the definition and creating a new row.
- Click on either the **Function** or **Name** link to sort the table accordingly.
- Once you have added a new function, you can select it for a softbutton as described under *Configure softbuttons* by holding [Shift} down and clicking with the mouse.

28.4 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

29 Image Storage on the LAN

Open the **Event Storage** dialog to set the camera options for storing images.

The camera can store images either internally in its RAM or on an external file server.

Note: Cameras of the **Web** series *cannot* store files on external file servers.

The size of the internal storage capacity varies between camera models. For information on your camera's internal storage capacity, refer to the **Internal Event Image Storage** section.

Note: Click on the **More** button to display all options of the dialog.

29.1 Internal Image Storage

- Click on the *Download* button to download all images in the internal storage as a .tar file.
  Note: Depending on the camera model, this file can be up to 36 MB in size.
- Click on the *Delete All* button to delete all images from the internal storage.

Note: Rebooting the camera (as per default *time task* every morning at 3:36 am) will also delete all images from internal storage.

29.2 External Image Storage

Without installing additional software, the camera can store images externally on a file server. You can choose from two file server variants:

- NFS (**N**etwork **F**ile **S**ystem) storage on a Linux or UNIX computer.
- Or storing in a shared volume of a Windows NT, Windows 2000 or Windows XP computer.
  Note: Domain or Active Directory logins are *not* supported.

Note: This feature is not available for **Web** models.

29.3 Storing Images on a Linux Server

29.3.1 Server Configuration

1. Log onto the system as **root** user.
2. Create a new directory (example: `data`):
   `mkdir /data`
3. Change the owner and the user group for this directory:
   `chown -R 65534:0 /data`
4. Assign the required access rights for the directory:
   `chmod 755 /data`
5. Use the `ps aux | grep nfs` command to check if the NFS server is already running. If not, use the `/etc/init.d/nfsserver start` command to start it.
6. Use the `rpcinfo -p` command to check if the *nfs*, *mountd* and *portmapper* services are executed. Normally, *nfs* and *mountd* are started by the NFS server while *portmapper* is executed as a separate service. If *portmapper* is not executed, you can start it using the `/etc/init.d/portmapper start` command.

7. Open the */etc/exports* file in a text editor and enter the following line:
   `/data <camera ip>(rw,no_root_squash)`
8. To re–initialize the list of entries in */etc/exports*, execute the `exportfs -a` command.
9. Next, restart the NFS server. Execute the `/etc/init.d/nfsserver restart` command.

The server configuration may vary for different distributions. Note that MOBOTIX cannot provide support for configuring the Linux/Unix server.

29.3.2 Camera Configuration

Parameter	Description
Remote file system	Select the **NFS** option.
File Server	Enter the IP address or the name of the file server. The file server must be accessible for the camera in the local network.
Directory	Enter the absolute path for the directory which the camera should use for storing images. Make sure that this directory exists and that access rights are assigned accordingly.
Storage size	You can limit the storage capacity to be used by the camera. Enter the maximum storage capacity for the camera in the text field. **Note: Once the reserved storage space is occupied, the oldest images will be overwritten automatically.** If you do not want to limit the storage capacity, check the **unlimited** checkbox. In this case, an error will occur once the storage capacity has been reached. **Note:** Click on the **Calculate** link to determine the storage capacity requirement for your application in the **Calculate Storage Size** dialog.
Time to keep	You can limit the time to keep the stored images. Enter the maximum value in the text field. If you do not want to limit the time to keep the images, check the **unlimited** checkbox.
Number of Events	You can limit the maximum number of events to be stored. Enter the maximum number in the text field. If you do not want to limit the number of events, check the **unlimited** checkbox.

29.4 Storing Images on a Windows Server

29.4.1 Server Configuration

Note: Note, that the camera can only use *local* accounts on a Windows computer. Domain or Active Directory accounts are not supported.

1. Log onto the system as **administrator** user.

2. Make sure that simple sharing is *not* used:
    - Open **Start > Control Panel > Folder options > View** (tab).
    - Deactivate the **Use simple file sharing [recommended]** option.
    - Click on the **OK** button to close the dialog.
3. Create a new *local* user and set a password. The camera will use this user ID later−on to log onto the server.
4. Create a new directory with a name of your choice.
5. Right−click the directory and select the **Sharing and Security** option in the context menu.
6. Activate the **Share this folder** option and assign a name for the share.
7. Click on **Access Rights** and add the account name you just created.
8. Change the access rights for this user by activating the **Full Access** option in the **Allow** column.
9. Close all open dialogs by clicking on **OK**.

Note that MOBOTIX cannot provide support for configuring the Windows server.

29.4.2 Camera Configuration

Parameter	Description
Remote file system	Select the **WIN** option.
File Server	Enter the IP address or the name of the file server. The file server must be accessible for the camera in the local network.
Directory	Enter the **Share Name** that you have assigned during server configuration, not the directory or the absolute path.
NetBios name	Computers in Microsoft networks are assigned so−called NetBios names. Enter the NetBios name of the file server. The NetBios name can be found on the **Start > Settings > Control Panel > System > Computer Name** tab of the server.
User Name	Enter the user name the camera should use to log onto the server.
Password	Enter the password you have assigned to the user name.
Storage size	You can limit the storage capacity to be used by the camera. Enter the maximum storage capacity for the camera in the text field. **Note: Once the reserved storage space is occupied, the oldest images will be overwritten automatically.** If you do not want to limit the storage capacity, check the **unlimited** checkbox. In this case, an error will occur once the storage capacity has been reached. **Note:** Click on the **Calculate** link to determine the storage capacity requirement for your application in the **Calculate Storage Size** dialog.
Time to keep	You can limit the time to keep the stored images. Enter the maximum value in the text field. If you do not want to limit the time to keep the images, check the **unlimited** checkbox.
Number of Events	You can limit the maximum number of events to be stored. Enter the maximum number in the text field.

	If you do not want to limit the number of events, check the **unlimited** checkbox.

29.5 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

In order to enable these settings, you need to reboot the camera!

30 FTP Profiles

Using the **FTP Profiles** dialog, you can create and manage profiles for automatically uploading images to FTP servers.

You need to create at least one profile that you can select in the **Time Tasks** or **Actions** dialogs for transferring images via FTP.

30.1 What is FTP?

FTP (**F**ile **T**ransfer **P**rotocol) is an Internet protocol used for exchanging files between computers. This protocol is used frequently for uploading modified HTML pages or images to the server of an Internet provider.

30.1.1 Using the MOBOTIX Camera for FTP Transfer

The MOBOTIX camera can transfer images via FTP to a server, so that your homepage always shows an up–to–date image, for example. In this setting, the camera functions as sender (FTP client) while the remote computer acts as the receiver (FTP server).

You may define one or multiple FTP profiles. Every FTP profile contains the entire set of FTP transfer information. The transfer can be triggered either by a task defined in the **Time Tasks** dialog or by an event defined in the **Actions** dialog.

30.2 Global Options and Profile Options

This dialog contains *global options* that can be used in all profiles and *profile options* only valid for the respective profile.

It is recommended to use the global options for entering frequently used parameters (e.g. **FTP Server**, **User Name**, **Password** and **Connection**). In the profiles using the global FTP server, you can leave the respective fields empty.

30.3 Profiles & Options

Notes:

- Click on the **More** button to display all options for all profiles.
- The first line below the profile name shows the **Current Destination** file. Once you have made the desired changes, click on the **Set** button in the lower part of the dialog to update the profile entry.

For each profile, set the following parameters in the FTP Profiles dialog:

Parameter	Description
FTP Profile *n*	Enter a unique profile name. You can select stored profiles in the **Time Tasks** and **Actions** dialogs, in order to perform time or event–controlled file transfers.
Current Destination	Here, the camera displays the destination file that is created using the current values in the fields **Directory Name**, **File**

<table>
<tr><td></td><td>Name and Event Directory.

Note: When you have modified any of these fields, you need to click on the Set button at the bottom of the dialog to update the current destination file.</td></tr>
<tr><td>Directory Name</td><td>Enter the FTP server directory name where you want the images to be stored.

You may use any name that is valid for your FTP server and that is accessible for you. If the specified directory does not yet exist, it will be created during the FTP transfer. If you are using Variables (as is the case in the factory default setting), the directories are created using the corresponding names.

If you leave this field empty, the images are stored directly at the root level ("/") of the FTP server. Make sure that the user you entered has the necessary access rights for storing files and for creating directories.

Note: Do not enter a slash ("/") before the directory name!</td></tr>
<tr><td>File Name</td><td>Enter the file name (e.g. <code>my_image.jpg</code>) for the stored image.

You may use any name that is valid for your FTP server. If you are using Variables (as is the case in the factory default setting), the files are created using the corresponding names.</td></tr>
<tr><td>Image Profile</td><td>For every FTP profile, you can use a specific image format that is independent of the image format currently displayed by the camera. These formats are saved in the camera as image profiles.

Select one of the image profiles defined in the Image Profiles dialog.

Caution! If the MxPEG mode of the camera has been activated, accessing the images using image profiles will only work properly if the camera has been set to live images with 1280x960 (Mega) or 640x480 (VGA) resolution with zoom set to 1x:

<table>
<tr><th>Selected Image Format</th><th>1x Zoom</th><th>2x or 4x Zoom</th></tr>
<tr><td>1280x960, 640x480</td><td>OK</td><td>Not possible</td></tr>
<tr><td>320x240, 160x120 or customized format, if not 1280x960 or</td><td>Not possible</td><td>Not possible</td></tr>
</table>
</td></tr>
</table>

	640x480
Temporary Name	When this option is active, the image is stored in a temporary file during FTP transfer. Once it has been transferred completely, the image will be renamed. Activate this option to prevent visitors from seeing incomplete images, empty frames or error messages if the image transfer has not been completed.
Event Directory	Activate this option if you would like to create an individual subdirectory for every event and its pre– and post–alarm images.
FTP Server	Enter the IP address or the name of the FTP server (recipient). Examples: **IP Address:** `123.123.123.123` **Computer Name:** `ftp.myftpserver.com` If you would like to use a symbolic name, make sure that at least one DNS server has been specified in the **Ethernet Interface** dialog so that the camera can obtain an IP address for this server.
User Name	Enter the user name for logging on to the FTP server. You will be assigned a user name either by your Internet provider or by your system administrator.
Password	Enter the password for logging on to the FTP server. You will be assigned a password either by your Internet provider or by your system administrator.
Connection	Should you not want to use the global default settings in a profile, you can select *Active FTP* (when a firewall or a router is located between the camera and the FTP server) or *Passive FTP* here. When you are not sure which setting is supported by your FTP server, do not change this setting.

30.3.1 Deleting Profiles

In order to delete a profile, check the **delete** option in the top right corner of the profile. The profile will be deleted as soon as you click on the **Set** button in the lower part of the dialog.

30.3.2 Saving Created Profiles

Click on the **Set** button to check the created profiles. If a profile is faulty or entries are missing, you will be prompted to correct or complete your entries for this profile. When no errors have been detected, the profile is stored *temporarily*.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire

configuration permanently.

Notes:

- Any newly created or modified profile is saved *permanently* only when the entire camera configuration is stored.
- In order to activate the newly created or modified FTP profiles, you do *not* have to reboot the camera.

30.4 Variables and Placeholders for Directory and File Names

In order to create unique directory or file names, you can use *variables* or the placeholders listed below. Using variables and placeholders is helpful for creating e.g. a daily history.

In this example, the date and time placeholders are replaced by the current date and time of the event.

<table>
<tr><th>Variable/Placeholder</th><th>Description</th></tr>
<tr><td>$(TEXT.FTPDIR)</td><td>MOBOTIX pre-defined directory

The placeholder is replaced by a unique directory structure following the pattern below:

<code>cameraname/YYYY/MM/DD/hh/</code>

<table>
<tr><td>Camera Name</td><td>The Camera Name that you have defined in the Ethernet Interface dialog or that has been assigned via DHCP.</td></tr>
<tr><td>YYYY</td><td>Year, four digits</td></tr>
<tr><td>MM</td><td>Month, two digits with leading zero</td></tr>
<tr><td>DD</td><td>Day, two digits with leading zero</td></tr>
<tr><td>hh</td><td>Hour, two digits with leading zero</td></tr>
</table>
</td></tr>
<tr><td>$(TEXT.FTPFILE)</td><td>MOBOTIX pre-defined file name

The placeholder is replaced by a unique file name following the pattern below:

<code>mYYMMDDhhmmssmmm</code>

<table>
<tr><td>m</td><td>The letter "m"</td></tr>
<tr><td>YY</td><td>Year, two digits with leading zero</td></tr>
<tr><td>MM</td><td>Month, two digits with leading zero</td></tr>
<tr><td>DD</td><td>Day, two digits with leading zero</td></tr>
<tr><td>hh</td><td>Hour, two digits with leading zero</td></tr>
<tr><td>mm</td><td>Minute, two digits with leading zero</td></tr>
<tr><td>ss</td><td>Second, two digits with leading zero</td></tr>
<tr><td>mmm</td><td>Milliseconds, three digits with leading zeros</td></tr>
</table>
</td></tr>
</table>

	Remember to add the `.jpg` file name extension so that the camera generates a valid file name. **`$(TEXT.FTPFILE).jpg`**.
`~H`	The **Camera Name** that you have defined in the **Ethernet Interface** dialog or that has been assigned via DHCP.
`~E`	The current IP address of the camera's Ethernet interface
`~N`	The camera's factory default IP address
`~S`	Serial number of the camera
`~c`	Image number, *six digits* with leading zeros
`~C`	Image number, *ten digits* with leading zeros
`%H`	Hours *(00 to 23)*
`%I`	Hours *(00 to 12)*
`%p`	*AM* or *PM*
`%M`	Minutes *(00 to 59)*
`%S`	Seconds *(00 to 59)*
`~M`	Milliseconds, three digits with leading zeros
`%Z`	Time zone
`%a`	Day of the week *(Mon .. Fri)*
`%A`	Day of the week *(Monday .. Friday)*
`%b` or `%h`	Month *(Jan .. Dec)*
`%B`	Month *(January .. December)*
`%d`	Day of the month *(00 ... 31)*
`%j`	Day of the year *(001 ... 366)*
`%m`	Month *(00 .. 12)*
`%U`	Week of the year *(01 .. 53)*, Sunday is the first day of the week
`%w`	Day of the week *(0 .. 6)*, *0* = Sunday
`%W`	Week of the year *(01 .. 53)*, Monday is the first day of the week
`%y`	Year, two digits
`%Y`	Year, four digits

Notes:

- Make sure placeholders and variables are typed correctly.
- Note, that placeholders are case–sensitive, but *Variables* are *not*.
- Click on the **Set** button and compare the results after **Current Destination** of the FTP profile with the version you envisioned.

30.4.1 Additional Possibilities for Creating Dynamic Directory and File Names

Apart from the placeholders listed above, you can also use *Variables*.

31 E–Mail Profiles

Open the **E–Mail Profiles** dialog to create and manage profiles for automatically sending images in e–mails.

You need to create at least one profile that you can select in the **Time Tasks** or **Messaging** dialogs for sending images via e–mail.

31.1 Using the MOBOTIX Camera for Sending E–Mails

The MOBOTIX camera can send images via e–mail to recipients to report e.g. unauthorized access to a specific area.

You may define one or multiple e–mail profiles. Every e–mail profile contains all the information required to send e–mails to one address. The transfer can be triggered either by a task defined in the **Time Tasks** dialog or by an event defined in the **Messaging** dialog

You can enter any text and use predefined *variables*, as described in *Examples for Dynamic Text in Subject Lines*.

31.2 Global Options and Profile Options

This dialog contains *global options* that can be used in all profiles and *profile options* only valid for the respective profile.

It is recommended to use the global options for entering frequently used parameters (e.g. **SMTP Server**, **Authentication Method**, **User Name** and **Password**). Leave the corresponding fields empty in the profiles in which you would like to use the global values.

31.3 Profiles & Options

Note: Click on the **More** button to display all options for all profiles.

Set the following parameters for each profile in the **E–Mail Profiles** dialog:

Option	Parameter
Mail Profile *n*	Enter a unique profile name. You can select the profiles defined in this dialog in the **Time Tasks** and **Messaging** dialogs in order to send e–mails time– or event–controlled, respectively.
Receiver Address	Enter the recipient's address to which the e–mail will be sent. Example: `myname@myaddress.com`
From Address	Enter the sender's (valid!) address. Otherwise, the e–mail cannot be sent. Example: `myname@mycompany.com`
Reply Address	When an error occurs, the e–mail will be sent to this address. Normally, you

<table>
<tr><td></td><td>would enter the address of either your administrator or a camera user.</td></tr>
<tr><td>Subject Text</td><td>This text will be displayed in the subject line of the e−mail. For some examples of how this option can be used, see the Examples for Dynamic Text in Subject Lines help topic.</td></tr>
<tr><td>Body Text</td><td>This text will be displayed in the text area for the e−mail. You can also use dynamic text containing Variables and Placeholders.</td></tr>
<tr><td>Attachment</td><td>Select the type of e−mail attachments.</td></tr>
<tr><td>Image Profile</td><td>Set if you would like to send the current Live or Alarm Image or if you would like the camera to create an image file according to an image profile which is then attached to the e−mail.

This setting is relevant only when you have set the Attachment parameter to Image from image profile.

Caution! If the MxPEG mode of the camera has been activated, accessing the images using image profiles will only work properly if the camera has been set to live images with 1280x960 (Mega) or 640x480 (VGA) resolution with zoom set to 1x:

<table>
<tr><th>Selected Image Format</th><th>1x Zoom</th><th>2x or 4x Zoom</th></tr>
<tr><td>1280x960, 640x480</td><td>OK</td><td>Not possible</td></tr>
<tr><td>320x240, 160x120 or customized format, if not 1280x960 or 640x480</td><td>Not possible</td><td>Not possible</td></tr>
</table>
</td></tr>
<tr><td>Authentication Method</td><td>The following possibilities for authentication are supported:

• No authentication
• SMTP login with user and password at the SMTP server
• Authentication with POP3 server before sending</td></tr>
<tr><td>SMTP Server</td><td>IP address or name of the e−mail server. Your Internet provider or administrator will provide this information.

Make sure that the following prerequisites are fulfilled:

• The Ethernet Interface and the Gateway in particular need to be configured correctly.
• When using a symbolic name (e.g. <code>smtp.mycompany.com</code>), you have to specify a DNS server in the Ethernet Interface dialog.
• Your LAN's firewall has to be configured in a way that the camera is allowed to send e−mails.</td></tr>
<tr><td>POP3 Server</td><td>When you have set the Authentication Method parameter to POP before SMTP, you need to enter the respective POP3 server here.</td></tr>
<tr><td>User Name</td><td>Enter the user name for logging on to the SMTP server.</td></tr>
</table>

	You will be assigned a user name either by your Internet provider or by your system administrator.
Password	Enter the password for logging on to the SMTP server. You will be assigned a password either by your Internet provider or by your system administrator.

31.3.1 Deleting Profiles

In order to delete a profile, check the **delete** option in the top right corner of the profile. The profile will be deleted as soon as you click on the **Set** button in the lower part of the dialog.

31.3.2 Saving Created Profiles

Click on the **Set** button to check the created profiles. If a profile is faulty or entries are missing, you will be prompted to correct or complete your entries for this profile. When no errors have been detected, the profile is stored *temporarily*.

Notes:

- Any newly created or modified profile is saved *permanently* only when the entire camera configuration is stored.
- In order to activate the newly created or modified E–Mail profiles, you do *not* have to reboot the camera.

31.4 Examples for Dynamic Text in Subject Lines

Using *variables* and *placeholders*, the camera can dynamically integrate information into the e–mails it is sending out.

Scenario 1	**The camera's dynamic IP address assigned by either the provider or by a DHCP server is supposed to be transferred in the subject line.**
Definition of subject line	`$(id.nam): Event=$(fpr.eno) IP=$(ID.ET0)`
Explanation	`$(id.nam)` Name of the camera `$(fpr.eno)` Event number `$(ID.ET0)` IP address that the camera obtained from a DHCP server

Scenario 2	**In an outdoor setting, the state of the signal input (external sensor) should be visible in the e–mail subject line.**
Definition of subject line	`$(id.nam): Internal PIR=$(SEN.PIR)% Signal Input=$(SEN.SIN)`

Explanation		
	`$(id.nam)`	Name of the camera
	`$(SEN.PIR)`	Internal PIR level in percent
	`$(SEN.SIN)`	State of the signal input

31.5 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

32 Camera Messages

The **Messaging** and **Messaging 2** dialogs allow defining two different sets of messaging paths to be used when different alarms occur.

In this dialog, you set up the camera to only send an e−mail when the video motion sensor detects a movement, but not when the PIR sensor reports an event, for example. See also: *Example for Using Event Control*.

Note: Click on the **More** button to display all options of the dialog.

32.1 General Settings

32.1.1 Enable Message Profile

Using this option, you can (temporarily) deactivate the entire message profile. When a message profile is deactivated, your modifications remain saved.

32.1.2 Messaging dead time

The messaging dead time defines a period of time (0 – 3600 sec) after an alarm message during which no further alarm messages are triggered.

32.1.3 Time Table Profile

Select a time table profile to activate/deactivate messages in a scheduled manner.

32.1.4 Event Selection

Highlight the events that are supposed to trigger a message. The factory setting **All** triggers the messages defined below for all events.

Note: This selection does not affect image storage in the camera's internal storage or on a file server.

32.2 Message Description

Sound on Event (SD)/(SD2)	In case of an alarm, the camera can play an audio file. Set the parameters for **Play List** and **order** in which the files are played. **Note:** This feature is not available for **Web** models. Open the **Manage Voice Messages** dialog in order to create or delete your own voice messages or to select one of the pre−recorded audio files. For additional information on this option, see the *Manage Voice Messages* help topic.

E−mail Action (EM)/(EM2)	In case of an alarm, the camera can send notifications via e−mail. Create at least one profile in the **E−Mail Profiles** dialog so you can select it here. Select *event image* to attach the event image to the e−mail. Selecting *profile* (you only will be able to do so when you have clicked on **More** before) will use the settings defined in the e−mail profile. For additional information on this option, see the *E−Mail Profiles* help topic.
ISDN Audio Call−Out (CL)/(CL2)	In case of an alarm, the camera can send voice messages via telephone. You can select any profile as a destination that you have defined in the **ISDN Dial−Out Profiles** dialog. **Note:** This feature is not available for **Web** models. **To create a profile for the ISDN voice notification, proceed as follows:** • In the **Manage Voice Messages** dialog, record a voice message. • Create a profile in the **ISDN Dial−Out Profiles** dialog and select a voice message for this profile. A list with all available profiles is displayed. For additional information on this option, see the *Manage Voice Messages* and *Profiles for ISDN Call−Out* help topics.
IP Notify (IP)/(IP2)	In case of an alarm, the camera can send a network message to another computer's TCP port. Select one of the profiles that you have created in the **IP Notify Profiles** dialog. **Note:** This feature is not available for **Web** models. For additional information on this option, see the *IP Notify Profiles* help topic.

See also: *Example for Using Event Control*

32.3 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

33 IP Notify Profiles

In the **IP Notify Profiles** dialog, you can configure the network messages that the camera uses in case of an alarm to send text messages to the TCP port of a computer or camera and, thus, trigger e.g. other events (observation chain).

Open the **Messaging** dialog to link the profiles created here with the respective events.

33.1 Profiles & Options

Note: Click on the **More** button to display all options for all profiles.

For each profile, set the following parameters in the IP Notify Profiles dialog:

Option	Parameter
IP Notify Profile *n*	Enter a unique profile name. Valid characters for profile names are letters, digits, hyphen, dot and underscore.
Address	Enter the IP address and the port (separated by a colon) to which the camera is supposed to send the network message. (Example: `192.155.13.22:8000`) **Remarks:** • Use *commas* to separate multiple addresses to which you would like to send the message. • It is also possible to use symbolic names. In order to do so, you need to enter a DNS server in the **Ethernet Interface** dialog.
Message	Enter the message text. You can enter any text and use predefined *variables*. For a complete list of variables, see the *Variables* help topic.
Send Port	When using a firewall, you can define a different send port for your camera. In order to do this, click on the **More** button and enter the port of your choice in the **Send Port** field. The factory default setting for the send port is *0* (automatic). **Note:** This feature is not available for **Web** models.

33.1.1 Deleting Profiles

In order to delete a profile, check the **delete** option in the top right corner of the profile. The profile will be deleted as soon as you click on the **Set** button in the lower part of the dialog.

33.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

34 Time Control

Open the **Time Tasks** dialog to define tasks that the camera performs at specific points in time (most often recurring periodically).

Example:
Update an image on a website every 10 minutes between 7 am and 9 pm every day.

34.1 Configuring Time Tasks

34.1.1 Actions and messages that can be executed as time tasks

Action/Message	Description
Restore last configuration	The last permanently stored configuration is retrieved. Temporary setting are lost. Use this action to reset all cameras periodically which can be accessed by several persons at user level (e.g. for testing purposes).
Reboot camera	In order to ensure that the camera functions operate as desired, it is recommended to reboot the camera periodically. By its factory default settings, the camera will reboot every morning at 3:36 am.
Time Task event	Triggers an event following a certain time scheme. **Note:** In case this action is not be displayed, activate the **Time Tasks (TT)** option in the **Event Settings** dialog and reload this dialog.
FTP "<profile name>": Current image FTP "<profile name>": Event Archive	Select one of the FTP profiles that you have created in the **FTP Profiles** dialog and set the action of your choice: • **Current Image**: Stores the current image on the FTP server. Use this action to store periodic images on a website, for example. • **Event Archive**: Downloads all events as compressed archive file on the FTP server. **Note:** • After the images have been transferred, they are deleted in the RAM. • The compressed archive file can be several MB in size. • When these actions are not displayed, create a profile in the **FTP Profiles** dialog and reload this dialog.

E–Mail "<profile name>"	Select one of the e–mail profiles that you have created in the **E–Mail Profiles** dialog in order to send e–mails periodically. **Note:** When this action is not displayed, create a new profile in the **E–Mail Profiles** dialog and reload this dialog.
ISDN message call "profile name"	Select one of the call profiles that you have created in the **ISDN Dial–Out Profiles** dialog and the camera will call periodically. **Note:** When this action is not displayed, create a new profile in the **ISDN Dial–Out Profiles** dialog and reload this dialog.
IP Notify "profile name"	Select one of the IP Notify profiles that you have created in the **IP Notify Profiles** dialog to send the IP message periodically. **Note:** When the desired IP message is not displayed, create a new profile in the **IP Notify Profiles** dialog and reload this dialog.
Play voice message "file name"	Select one of the audio files that you have created in the **Manage Voice Messages** dialog in order to play back the audio file over the camera's loudspeaker periodically. **Note:** When this action is not displayed, record a new audio file in the **Manage Voice Messages** dialog and reload this dialog.

34.1.2 Numeric Values of the Time Fields

Time Field	Possible Values
Minutes	Minutes from *0 .. 59*
Hours	Hours from *0 .. 23* **Attention:** This field is evaluated without considering the minutes. This may lead to the camera transferring images from 7 am until 7:59 pm when you have entered `7-19` in this and "*" in the **Minutes** field. See also: *Examples*
Days	Days of the month from *1 .. 31*
Months	Months from *1 .. 12*
Week Days	Days of the week *0 .. 7*, with *0* = Sunday, *1* = Monday, ... *6* = Saturday, *7* = Sunday

Note: When filling in the time fields, you can only use numbers.

34.1.3 Combined Time Field Entries

You can enter a *numeric value* for a point in time, an asterisk "*", a list, a range or an interval:

Character	Function	Description
	Numeric Value	A numeric value means *at this point in time*: `12` in the **Minutes** time field means *at the 12th minute*.
*	**Every**	The asterisk "*" means *every*: "*" in the **Hours** time field means *at every hour*.
,	**List**	You can combine several numeric values to form a list: `3,6,8` in the **Days** time field means *on the 3rd, 6th and 8th of every month*.
–	**Range**	You can enter a range in time field. `7-9` in the **Months** time field means *from the 7th month (July) to the 9th month (September)*. Note that the smaller numeric value *always* comes first. Thus, entering `22-5` in the Hours field returns an error. In this case, you need to enter two ranges (`22-23,0-5`), or you could define two tasks.
/	**Interval *(from – to)***	You can shorten a list by entering an interval: `7-18/2` in the **Hours** time field means *from 7 am to 6 pm, every second hour*. The entry corresponds to the following list: `7,9,11,13,15,17`.
*/	**Interval *(every × ...)***	You may also combine an interval with an asterisk (*****): `*/10` in the **Minutes** field means *every 10 minutes, starting with minute* `00`. **Note:** Values that are larger than 1/2 of the maximum value (e.g. >`30` for minutes) only make sense for certain exceptions, as the task will be executed once at minute `00` and then again after the interval. **Example:** Entering `*/50` will execute the task once at minute `00`, then again at minute `50`.

Note: Enter at least one number in one of the time fields. A task is rejected when you have entered asterisks in every time field.

34.1.4 Examples

Minutes	Hours	Days	Months	Days of the week	Explanation
`*/10`	`7-21`	*	*	*	The task is executed every 10 minutes between 7 am and 9:50 pm every day. If you would like to store images from 7 am to 9 pm sharp, create two time tasks (see next example).
`*/10` 0	`7-20` 21	* *	* *	* *	If you would like the task to be performed on the hour for the last time, you need to define a second task with this exact hour and the value `0` for minutes. These two tasks now work as follows:

					• The first task is executed every 10 minutes between 7 am and **8**:50 pm every day. • The second task is performed just once every day, at 9:00 pm.
*/10	7-15	*	6-9	2,4	The task is executed every 10 minutes between 7 am and 3:50 pm on Tuesdays and Thursdays from June to September.
*/15	8-16	*	*	1-5	The task is executed every 15 minutes between 8 am and 4:45 pm from Monday to Friday.

34.1.5 Options

At the right border of the dialog, two option switches per defined task are displayed:

Inactive	The task is deactivated although the definition remains in the configuration.
Delete	The task is deactivated and will be deleted from the configuration.

Note: The **Remove** option is only available for stored tasks.

34.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

35 General Event Settings

Open the **General Event Settings** dialog to perform all event control settings such as camera activity, dead times, delays and storage settings.

Note: Click on the **More** button to display all options of the dialog.

35.1 Description of Parameters

Option	Parameter
Arming	When you deactivate arming permanently or temporarily, events will continue to be recognized (and highlighted in the image symbols) but they will not be processed any further. Consequently, the images are not stored, the event counter is not incremented and neither actions nor messages are performed. **enable** The camera is armed permanently. **off** The camera is not armed: No image storage, actions or messages. **SI closed (low)** The camera is armed only when the signal input is closed (e.g. by a key switch). **SI open (high)** The camera is armed only when the signal output is open.
Operation	Select the logical operation for the **Time Table** profile.
Time Table Profile	In order to arm the camera in a time–controlled manner, you need to select a *Time Table Profile*. You need to *enable* arming. The **Time Table Profile** can also be combined with arming via signal–input.
Stop Actions (SP):	You can set up the camera to stop all actions if a certain event occurs. Once this happens, no more images are stored and neither actions nor messages are performed. Use this option if you would like freeze the stored images or image sequences and to prevent them from being overwritten. • Set **Activate Stop Actions** to *on*. • Select the event in **Condition to Stop** upon which you would like to stop all actions. **Note:** This event must have been activated in the **Event Settings** dialog. • Set the delay between the occurrence of the event and stopping all actions in **Time Before Stop**. • By clicking on the **Restart Actions** softbutton, you can restart the actions again. (For additional information on softbuttons, see the *Defining softbuttons* help topic.)
Event Dead Time	The event dead time defines a period of time (0 .. 3600 s) after an event during which no new events are recognized. By defining an event dead time you can avoid, for example, that a complex action (person walks through the active image area) triggers *multiple* events. **Note:** During an event dead time no images are stored, the event counter is not incremented and neither actions nor messages are performed.
Action	Action delay defines a period of time (0 .. 3600 s) between the occurrence of an

<table>
<tr><td>Delay</td><td>event and an action (image storage, action, message).

For example, you want to monitor a door. In order for the person to be visible when the door is completely open, you can set a short delay.

Note: During action delay, no images are stored and neither actions nor messages are performed.</td></tr>
<tr><td>Ring Buffer</td><td>The camera is equipped with an internal image storage the size of which varies between camera models. For information on the exact size of your camera's internal image storage, refer to the Event Storage dialog.

When the ring buffer is activated, the camera overwrites the oldest stored image once the storage capacity of the internal storage has been reached.

Note: When you store images on a file server, the internal image storage is used as a buffer and, thus, is activated automatically.</td></tr>
<tr><td>Event Story</td><td>The factory default setting of the camera is to save event stories which can consist of a maximum number (depending on the camera model) of pre– and post–alarm images for every event:

<table>
<tr><th>Model</th><th>Images Before Event</th><th>Images After Event</th></tr>
<tr><td>Web</td><td>3</td><td>3</td></tr>
<tr><td>IT</td><td>10</td><td>10</td></tr>
<tr><td>Secure</td><td>50</td><td>50</td></tr>
</table>

However, you may not want to store an event story for every type of event. In this case, select only those events from the Event Selection list that are supposed to trigger an event story. An event story is now saved only when one of the selected events occurs.

In order to cover a longer period of time (up to 10 minutes) with the event story, you need to define a Time interval between the individual images that is long enough.

Notes:

The event image of a detected event is always stored.

Because of the storage space required by the pre– and post–alarm images (e.g. resolution set to 1280x960), the number of images set here may not be reached. If this happens, take one or more measures described in the following:

• Reduce the JPEG Quality in the JPEG Settings dialog.
• Reduce the Resolution in the General Image Settings dialog in order to reduce the amount of data that is stored for the pre–alarm images.
• Increase the Event Dead Time when too many alarm follow in a short period of time, since a new alarm will overwrite the pre–alarm images of the previous alarm.
• Reduce the number of pre– and post–alarm images and increase the value for the Image Interval (e.g. <code>1000</code> to set one second).</td></tr>
</table>

35.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

36 Event Settings

The **Event Settings** dialog contains all events that can trigger a camera action. Except for the event counter, you can combine the event sensors freely.

Note: Click on the **More** button to display all options of the dialog.

36.1 Event Sensor Description

Event sensor	Description
Passive Infrared Detector (PI)	The passive infrared detector registers warm moving objects within the sensor area. The sensor reaches about 10 meters (34 ft.) and has a field of view of ± 15°. Use the trigger level to define when an event is triggered. Activate the level meter in the **Text and Display Settings** dialog and select *PIR Detector* as source. The level meter helps you find the best possible trigger level for your application.
Video Motion Window (VM)	The video motion sensor reacts to movements in certain image areas, called "video motion windows". You can define one or more independent video motion windows for each image sensor (camera lens). A video motion window defined for the left image sensor will still be active, even if you only see the image from the right lens of the camera. This means that events detected by the (invisible) image sensor are recognized as well. **Note:** When you have activated the **Night Camera Level** option, only the motion windows of the currently active image sensor are evaluated. Every line in the definition box (e.g. `0,270,190,100,100,2`) represents one window. The image coordinates' origin is the lower left corner of the image. **Hint:** If you would like to define a new or additional window, open the **Event Settings** dialog and follow the instructions in the *Graphically Entering Image Areas* help topic. **Format of one line:** `Image sensor, pos. x, pos. y, width, height, sensitivity, area[, max. area]` **36.1.0.1 Parameters of one configuration line:** **Image Sensor** — *0* = right camera lens; *1* = left camera lens

Pos. x	Number of pixels from the left edge of the image to the left edge of the window
Pos. y	Number of pixels from the lower edge of the image to the lower edge of the window
Width	Width of the window
Height	Height of the window
Sensitivity	Values: *0–99%* The smaller the value, the higher the sensitivity of the video motion sensor.
Area	Values: *0–99%* The smaller the value, the smaller the area that needs to change. The percentage of the window area that needs to change in order to trigger an event.
Max. area	Values: *0–99%* The maximum percentage of the window area that *is allowed* to change in order to trigger an event. This is an optional parameter.

Using reference windows to avoid false alarms

Reference windows are used to avoid false alarms for events that are triggered by motion windows, e.g. due to rapidly changing light conditions.

Define an *additional* motion window in a portion of the image where no movements are expected. Then, add an exclamation mark (`!`) *before* the window definition.

Example: `!0,912,750,364,188,20,25`

Using the event counter to avoid false alarms

Use the *event counter* to create an event only if a certain number of events occurs within the specified time frame.

Using comments to deactivate window definitions

In order to temporarily deactivate window definitions, place hash sign (`#`) in front of the definition. This window definition will still be saved, but will not be used as a video motion window.

Microphone (MI)

The camera's integrated microphone reacts to noises in the camera's perimeter.

When the trigger level is exceeded, an event is triggered if the noise lasts longer than the minimum period of time

	defined. Activate the level meter in the **Text and Display Settings** dialog and select *Microphone* as source. The level meter helps you find the best possible trigger level for your application. **Note:** This feature is not available for **Web** models.
Signal Input (SI)	The camera's signal input can trigger an event. For example, you can connect the door bell with the signal input so that an event is triggered when the bell is rung. **Options:** *off* The event is deactivated. *closed (low)* An event occurs, when the switch is closed. *open (high)* An event occurs, when the switch is opened. **Note:** This feature is not available for **Web** models.
Periodic Event (PE)	The periodic event is a simple variant of a time–controlled event. Use this event if you would like to create events in intervals < 1 minute. • Select an interval unit. • Set the duration of the interval. • The second interval is relevant only when you have activated the *Stop Actions (SP)* option. Once the stop condition has occurred, images will still be stored while the delay is active.
Time Task (TT)	Time tasks are controlled by tasks that you can create and manage in the **Time Tasks** dialog. Activate this option in order to execute time tasks.
User Click (UC)	This will allow triggering events manually by clicking on the **UC Event** softbutton. Activate this option if the camera should react to these events.
Buttons (BT)	Press one or both of the keys on the camera's front labeled **R** and **L** to trigger events manually. Define which camera key or which key combination will trigger an event.
IR Remote Control (IR)	The camera can trigger an event when it recognizes any signal from an IR remote control. Activate this option to trigger an event for *any code* received.

<table>
<tr><td></td><td>Note: This feature is not available for Web models.</td></tr>
<tr><td>IP Receive (RC)</td><td>The camera can trigger an event when it receives an IP notification via TCP/IP:

• Set the port at which you expect the notification.
• Select the type of check:
String Compare The event is triggered when the received text is identical to the text entered here.
Regular Expression The event is triggered when the received text matches the regular expression entered here.
• Enter the text or the regular expression.

Note: This feature is not available for Web models.</td></tr>
<tr><td>COM In (CI)</td><td>The camera can trigger an event when it receives a message via the serial interface (RS232).

• Select the type of check:
String Compare The event is triggered when the received text is identical to the text entered here.
Regular Expression The event is triggered when the received text matches the regular expression entered here.
• Enter the text or the regular expression.

Note: When you perform a binary comparison, you need to enter special characters as hex notations according to the ASCII code.

Example:

<table><tr><th>Character</th><th>Hexadecimal notation</th></tr><tr><td>?</td><td>%3F</td></tr><tr><td>=</td><td>%3D</td></tr></table>
Note: This feature is not available for Web models.</td></tr>
<tr><td>Temperature (TP)</td><td>The integrated temperature sensor can trigger an event when the actual temperature is higher or lower than the value entered here:

• Specify whether the event is to be triggered when the the actual value is higher or lower than the entered value.
• Enter the temperature that is to trigger the event.</td></tr>
</table>

	• Select the unit. • Define how often the event is to be triggered: *First* The event is triggered only *once*, i.e. when the condition is first detected. *Every* The event is triggered *every* time as long as the condition is true. **Note:** This feature is not available for **Web** models.
Illumination (IL)	The image sensors can trigger an event when the illumination is higher or lower than the value entered here: • Select the image sensor to be used for this event (only available on dual lens models). • Specify whether the event is to be triggered when the the actual value is higher or lower than the entered value. • Enter the illumination value that is to trigger the event. • Define how often the event is to be triggered: *First* The event is triggered only *once*, i.e. when the condition is first detected. *Every* The event is triggered *every* time as long as the condition is true. **Note:** This feature is not available for **Web** models.
Random Event (RD)	The camera can trigger an event at a random point in time. Enter the number of random events per hour. This value represents the *average* number of events to be triggered per hour for a longer period. **Note:** This feature is not available for **Web** models.

36.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

37 Event Selection

The event selection mechanism of MOBOTIX cameras constitutes an event filter that quite efficiently allows you to restrict actions and messages or event stories including pre– and post–alarm images *to selected events only*.

Note: The factory default setting for all filters is *All*, meaning that the respective functions (event stories, actions and messages) are performed for all events.

- **Event Story (Pre and Post–alarm Images)**
  Open the **General Event Settings** dialog to select certain events in the **Event Story** section. An event story (the images before and after the event) is saved only when one of the selected events occurs.

  Note: The event image of a detected event is *always* stored.
- **Messaging and Messaging 2**
  Use the **Messaging** and **Messaging 2** dialogs to select certain events in the **Event Selection** section. When one of the selected events occurs, the camera sends a message.
- **Actions**
  Open the **Actions** dialog to select certain events in the **Event Selection** section. When one of the selected events occurs, the camera performs an action.

38 The Action Controls

The **Actions** dialog governs how the camera will react to certain events.

In the **Signal Out Action** dialog, you can also configure user–defined events.

In addition, you can define special *Messages* in the **Messaging** and **Messaging 2** dialogs. You may select different events in each dialog to send different messages for these events.

38.1 Event Selection

When you first install your camera, it recognizes all events since the factory default setting *all* has been set.

You can restrict the number of events upon which the camera should react by highlighting only the desired events in the list. If this is the case, the actions described hereafter are performed for the highlighted events only.

Note: This selection does *not* affect the storing of images in the camera's internal image storage or on a file server.

38.2 Actions

Signal Out Action (SO)	Closes the signal output (pin 1–5) for the defined period of time. In order to exactly define the signal output status, set this option to *Off* and enter the desired settings in the **Signal Out Action** dialog (not available for **Web** cameras). Note: Before you can activate **Signal Out Action**, make sure that **Event** is selected in the **Signal Output** drop–down selector of the **LED Setup** dialog (factory default setting). If desired, you can define special messaging actions in the **Messaging** dialog.
File Transfer Action (FT)	Transfers an image to an FTP server. Select one of the profiles that you have created in the **FTP Profiles** dialog.
Second File Transfer (FT2)	Enables you to use a second FTP file transfer to a different (or the same) server.
Visual Alarm (VA)	When an event occurs, the live image can be enhanced by a visual effect. You can define the *Effect*, *Color* and *Duration* of this visual effect. As an additional measure, you may activate **Alarm Acknowledge** to confirm events manually and to remove the visual alarm. **Note:** This feature is not available for **Web** models.

38.3 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire

configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

39 Time Tables

Use the **Time Tables** dialog to define schedules for switching certain camera functions on or off:

1. *Arming* of *Actions* and *Messages*
2. Scheduled display of *Logos*

The **Custom Days** section at the beginning of this dialog allows defining exceptions to the time tables defined further below.

39.1 Custom Days

Create custom days lists for holidays or vacations that disrupt the regular weekly schedule.

Custom Days List	Description
Name	Enter a unique name for this custom days list. Valid characters are letters, digits, dot, comma and underscore.
Custom Days List	Enter all days that disrupt the regular weekly schedule in this list. Empty lines or lines beginning with a `#` character will be regarded as comment lines and are thus ignored. The input format follows ISO 8601. Create a new line for every new day you would like to add. The following entries are recognized: • `YYYY-MM-DD` for single days. • `YYYY-MM-DD..YYYY-MM-DD` for a range of days.

Note: Click on the **Set** button to add the new custom days list to the selection boxes of the individual lines of a time table. The custom days lists are listed at the end of the list boxes and are marked by pointed brackets.

Example: `<NewYearHoliday>`

39.2 Time Tables

You may define multiple profiles, each storing one time table. Always enter a unique name for a time table. Valid characters are letters, digits, dot, comma and underscore.

Click on **Add new time table** to add a new time table with *one* example time period (one line) to the bottom of the list.

The individual *time periods* within a time table are setting the times in which certain camera functions are switched on or off. In a store, for example, two time tables with several time periods each may be used to arm the camera depending on the opening and closing times (cf. predefined time tables `Opening_Times` and `Closing_Times`).

Depending on the camera model, the number of time periods within a time table is limited:

- **Web**: one time period
- **IT**: six time periods
- **Secure**: twelve time periods

39.2.1 The Columns of a Time Table

Column(s)	Contents	Description
1		The alarm symbol and the blue background color of a line indicate, that this time period is currently active.
2	**Switching**	Sets the switching behavior of this time period. The first time period of a time table also defines the times excluded from the start and end times as having the opposite switching behavior as in the current time period. When no time period has been entered, the profile is regarded as being *activated*. • *on*: switches the camera function within the start and end times to On. • *off*: switches the camera function within the start and end times to Off.
3	**Time Tables and Custom Days Lists**	Select the days for which this time period is supposed to be used. Using customized combinations of weekdays is only possible by editing the configuration file manually. If custom days lists have been defined, they are listed at the end of the list boxes and are marked by pointed brackets. **Example**: `<NewYearHoliday>`
4 + 5	**Start time**	The start time for this time period in hour and minute. The start time always has to be before the end time. If this is not the case, the end time will be set to `23:59` automatically.
6 + 7	**End time**	The end time for this time period in hour and minute. This time period will be active until the minute set for end time has expired. The end time always has to be after the end time. If this is not the case, the end time will be set to `23:59` automatically.
8	**Actions**	• **Remove**: removes the selected time period from the time table. • **Add**: adds a new time period at the end of the time table.

39.2.2 Deleting Profiles

In order to delete a profile, check the **delete** option below the profile. The profile will be deleted as soon as you click on the **Set** button in the lower part of the dialog.

39.3 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

40 General Image Settings

Open the **General Image Settings** dialog to define the basic settings for image control in the camera.

Notes:

- Some of these settings can be changed using the pull−down menus above the image on the **Live** screen.
- Click on the **Factory** button to reset all parameters to the factory default settings.
- Click on the **Restore** button to restore the last stored configuration.
- Click on the **More** button to display all options of the dialog.

40.1 Description of Parameters

Camera Selection	Select the lens that you want see on the Live and Guest screens or set the picture−in−picture mode to combine the images of both lenses (only for dual−lens cameras). **right** Right lens (factory default setting, usually the wide−angle lens) **left** Left lens (usually the tele lens) **both** Combines the images of both lenses and displays them side−by−side (left: left lens, right: right lens, as seen by the camera). **This option is not available on Day&Night models as these models automatically switch between the daylight and night image sensors depending on illumination.** **RiL** Displays a small image (160x120 mm) from the right lens in the bottom right corner of the image from the left lens. This requires a resolution of 640x480. **(Only Day&Night Models, see above.)** **LiR** Displays a small image (160x120 mm) from the left lens in the bottom right corner of the image from the right lens. This requires a resolution of 640x480. **(Only Day&Night Models, see above.)** **auto** Automatically selects the color sensor for daylight and the b/w sensor for night recording (only for Day&Night cameras).
Camera Night Switch (DY/NI) (only Day&Night Models)	**Day&Night** camera models automatically switch between day and night lenses when the illumination falls below or exceeds the level set here. The higher the illumination value, the earlier the camera switches to the night lens. **Notes:** • This parameter is available only for Day&Night models. • Set the night switch delay to the desired value. This delay prevents switching to the other lens when illumination increases or decreases for a short period of time (e.g. a car with headlights passing by at night).

	To determine the best possible value for defining the night camera level, proceed as follows: • In the **Text & Display Settings** dialog, click on the **More** button to display all options of the dialog. • In the same dialog, set the **Text Display** parameter to *On*. • In the **Comment** text box, enter the `^IR` placeholder. The camera now displays the current illumination rate in Lux on the live image. (See also *Placeholders for Dynamic Image Text*.) • Set the **Level Meter** parameter to *Bar*, and select *Illumination* as source for the level meter. The camera now displays the current exposure rate as a red bar on the live image. The value for switching to the night lens is displayed as white vertical line.
Camera Time Switch (all other models with dual lenses)	Switches to the other lens according to a **Time Table**, if the **Camera Selection** option has been set to *auto*.
Image Size	Select the display size of the image. Dual images (right and left image sensor) automatically require twice the width. When selecting *Custom Size*, the camera will use the image size specified in the **Custom Size** field (see below).
Custom Size	Enter the size of the customized image in pixels that is displayed if **Resolution** has been set to *Custom Size*. The image will be cut from the next larger standard image format (160x120, 320x240, 640x480, 1280x960). If the image size defined here is smaller than the corresponding standard image format, clicking with the mouse near the borders of the image will move the image within the standard image in that direction (panning). Example: An image with `300x200` pixels resolution is cut from the standard 320x240 image , an image with `1000x500` pixels resolution is cut from the standard 1280x960 image. **Note:** The values entered here are rounded *internally* to the next lower multiple of 16, but are not changed in this text box.
Digital Zoom	Usually, the camera's digital zoom is controlled using the softbuttons (**1x Zoom**, **2x Zoom**, **4x Zoom**) or the *Zoom control* drop–down menu of the image settings on the **Live** screen. The settings of this option will influence how the camera zoom operates. **You can set the following options:** • **Zoom Lock**: *unlock zoom* (default) activates the softbuttons and the drop–down menu *Zoom control* of the image settings on the **Live** screen, *lock zoom* locks the zoom at the current zoom setting. • **Pan Lock** *unlock pan* (default) activates panning in the live image (clicking in the borders of the image moves the displayed section of the image in the desired direction), *lock pan* locks the center of the image to the position defined in **Image position** below. • **Pan Position** The image center sets a fixed image position for the zoom when panning has been locked. `0,0` *(x,y)* is the center of the image. Negative values move the line of vision to the left or down,

	positive values move it right or up, respectively. Valid values: `-1000 to +1000`.
Frames per second	Number of images per second that are recorded by the camera. When long exposure times are necessary to comply with poor lighting conditions, the frame rate decreases.
Mirroring	Using this parameter, you can mirror the image (but not the displayed text) vertically, horizontally and along both axes simultaneously.
Rotation	Using this parameter, you can turn the image (but not the displayed text) by 180°. It is recommended you use this feature *only* for indoor applications only as the camera warranty would be void otherwise. **Attention:** • **When mounting the camera upside–down in outdoor scenarios, the camera is not IP65–certified any more.** • **When mounting the camera upside–down in outdoor scenarios (even though the camera is protected from rain), humidity from natural condensation cannot exit the camera properly. This will inevitably cause water to collect in the camera, leading to irreparable damages! Mounting a camera upside–down in outdoor environments will automatically void your warranty!**
Sharpness	In order to improve image quality, you can adjust the sharpness control value. A lower value results in a smoother (less crisp) image. The factory default setting is *4*. If the value is too high, image this may result in image disturbances.
Dark Noise Suppress	Growing darkness results in image quality getting poorer. This effect is called image (or dark) noise. The **Dark Noise Suppress** parameter minimizes this effect.
Obscure Image Enable	In some applications, certain image parts need to be obscured. **Note:** • This parameter is available only for Secure models.
Obscure Image Time Table	Select a **Time Table** profile to activate/deactivate the obscured image areas in a scheduled manner.
Obscure image areas	Defines the image areas that are to be obscured; every line in the definition box (e.g. `0,270,190,100,100,2`) represents one window. The image coordinates' origin is the lower left corner of the image. **Hint:** For defining a new or additional window, follow the instructions in the *Graphically Entering Image Areas* help topic. **Format of one line:** `Image sensor, pos. x,pos. y, width, height, type` **Parameters of one configuration line:** **Image Sensor** — *0* = right *1* = left

Pos. x	Number of pixels from the left edge of the image to the left edge of the window
Pos. y	Number of pixels from the lower edge of the image to the lower edge of the window
Width	Width of the window
Height	Height of the window
Type	*0* = filled rectangle *1* = crossed−out frame *2* = mosaic (default)

40.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

41 JPEG Settings

Open the **JPEG Settings** dialog to activate MxPEG, define the JPEG quality and set other options for the camera's JPEG images.

Note:

- Some of these settings can be changed using the pull–down menus above the image on the **Live** screen.
- Click on the **More** button to display all options of the dialog.

41.1 Description of Parameters

Parameter	Description
MxPEG	When you enable **MxPEG**, the camera creates a stream using MOBOTIX' own video compression scheme. MxPEG allows for large–format live videos at extremely low network load (1% at 100 Mbps). For viewing and storing the stream, you need *MxPEG Viewer* for Windows. You can download the application directly from this camera. Find the latest version of *MxPEG Viewer* on the MOBOTIX homepage. **See also:** *The MxPEG Viewer* *The MxPEG ActiveX Plug–in for Internet Explorer*
JPEG Quality	Select the image quality of the JPEG image. Values: *10 .. 90 %* The factory default setting is *70%*.
JPEG User Comment	Enter your own text which is stored as comment in the header of every JPEG file. **Notes:** • The comment will not be visible in the image itself. For entering visible text, open the **Text and Display Settings** dialog. • The comment is limited to 64 characters.
Comment Text Rows	Text messages received by the serial interface can be integrated in the header of a JPEG image. You can reserve up to 16 characters for the comment.

41.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

42 Exposure Settings

Open the **Exposure Settings** dialog to adjust the exposure settings of the camera and to optimize it for the current lighting condition.

The MOBOTIX camera is equipped with several automatic features so that the best possible images can be created under all weather and lighting conditions. Normally, only extreme conditions call for manual modifications of the exposure settings.

When modifying settings manually, you should always start with the factory default settings.

Notes:

- Some of these settings can be changed using the pull−down menus above the image on the **Live** screen.
- Click on the **More** button to display all options of the dialog.

42.1 Description of Parameters

Automatic Contrast	It is recommended that this setting always has the value *Auto* in order to create high−contrast images under all lighting conditions.
Brightness	Changing the **Brightness** parameter will adjust the *entire* image area. **Notes:** • Configure the *Exposure Fields* first (see below). This is usually sufficient to achieve good image exposure. • If setting the exposure fields does not produce satisfying images, you may want to use the **Brightness** parameter for fine tuning. • Selecting high values for this parameter that are too high may lead to overexposure of bright image areas.
Backlight	This parameter also is used for adjusting the brightness of an image. However, it only affects the *darker portions* of an image. **Notes:** • Configure the *Exposure Fields* first (see below). This is usually sufficient to achieve good image exposure. • If setting the exposure fields does not produce satisfying images, you may want to use the **Backlight Correction** parameter for fine tuning.
F−Number	Select a an F−stop number in order to correct the exposure of the camera.

<table>
<tr><td>Exposure Field</td><td>Exposure fields are defines image areas that are used for exposure and color adjustments. To facilitate exposure field positioning, you can select from a number of pre–defined exposure fields.

Notes:

• When your camera is a dual lens model, you can define different exposure fields for each lens.
• You may also use the exposure fields to perform the automatic White Balance adjustment.

Pre–defined Exposure Fields:

<table>
<tr><td>All</td><td>Uses the complete image area for exposure control.</td></tr>
<tr><td>Quarter</td><td>An exposure field at the image center that covers a quarter of the viewable image area.</td></tr>
<tr><td>Center</td><td>An exposure field at the image center with a size of 220x160 pixels.</td></tr>
<tr><td>Spot</td><td>An exposure field at the image center with a size of 90x65 pixels.</td></tr>
<tr><td>Top</td><td>An exposure field at the top of the image with a size of 570x234 pixels.</td></tr>
<tr><td>Middle</td><td>An exposure field at the image center with a size of 570x234 pixels.</td></tr>
<tr><td>Bottom</td><td>An exposure field at the bottom of the image with a size of 570x234 pixels.</td></tr>
<tr><td>right</td><td>An exposure field at the right side of the image with a size of 210x410 pixels.</td></tr>
<tr><td>Vertical</td><td>An exposure field at the image center with a size of 210x410 pixels.</td></tr>
<tr><td>left</td><td>An exposure field at the left side of the image with a size of 210x410 pixels.</td></tr>
<tr><td>Right & Left</td><td>Two exposure fields at the left and right sides of the image with a size of 155x410 pixels each.</td></tr>
<tr><td>Extra</td><td>Select this value if you would like to define customized exposure fields in the configuration file.</td></tr>
</table>
</td></tr>
<tr><td>Exposure Weighting</td><td>Using this parameter, you can define how much the exposure fields are to be considered for exposure control ––relative to the remainder of the image.
Values: Total .. 0% .. 100%

The factory default setting is 100% which means that only the exposure fields are used for exposure control.</td></tr>
<tr><td>White Balance Weighting</td><td>Using this parameter, you can define how much the exposure fields are to be considered for white balancing––relative to the</td></tr>
</table>

	remainder of the image. Values: *Total .. 0% .. 100%* The factory default setting is *Total* which means that the entire image is used for white balance.
Average Brightness	Using this parameter, you can influence the average brightness within the exposure fields. Note, that too high a value may affect the exposure time. The factory default setting is *40%*.
Show Field	*on*: Shows exposure field(s) as green box(es). The other options (*Histo Raw Inside*, *Histo Raw Outside*, ...) show additional histograms with parameters of specific image processing features.
Max. Exposure Time	Set the maximum exposure time in seconds.
Min. Exposure Time	Set the minimum exposure time in seconds.
Exposure Correction	Use this parameter to increase/decrease the exposure time by up to two steps.
Frequency of Power Supply	This parameter sets the camera to the power supply frequency of the respective country to prevent interference. The factory default setting for Europe is *50 Hz*. For Canada, the U.S.A. and Japan, set the power supply frequency to *60 Hz*.

Note: In the lower part of the dialog, the current exposure settings of the image sensors are displayed.

42.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

43 Color Settings

Open the **Color Settings** dialog to adjust the color settings of the image sensors in order to optimize the camera for the lighting that is available.

Note:

- Some of these settings can be changed using the pull–down menus above the image on the **Live** screen.
- Click on the **More** button to display all options of the dialog.

43.1 Description of Parameters

Color Profile	Under certain light conditions, the display of white may vary. White balance is used to correct this kind of color variation. **Select one of the following profiles for white balance:** **auto** The factory default setting *Auto* should produce the best results with most applications. **Neontube** When the *Auto* setting does not deliver satisfactory results where fluorescent lamps are used, try using the *Neontube* profile for white balance. **Cloudy** When the *Auto* setting does not deliver satisfactory results in settings with a very cloudy sky, try using the *Cloudy* profile for white balance. **Sunny** When the *Auto* setting does not deliver satisfactory results at times of glaring sunlight, try using the *Sunny* profile for white balance.
Color Saturation	Color saturation controls the color intensity. The higher the saturation, the more intense are the colors. Values: *–10 .. 0 .. 10* The recommended factory default setting is *5*. The value *–10* causes an image to be displayed as a grey–scale image.
Blue balance	Controls the blue channel of the image.
Red Balance	Controls the red channel of the image.

The current color settings of the image sensors are displayed in the lower part of the dialog.

43.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

44 Text & Display Settings

Open the **Text & Display Settings** dialog to define different types of information that are to be displayed in the image, such as comments, date and time, error messages, symbols, highlighting and level meters.

The displays can be used for information or advertising purposes. They may be used for configuring the camera, help find errors or inform you about recognized events and actions performed by the camera.

Note: Click on the **More** button to display all options of the dialog.

44.1 Description of Parameters

Parameter	Description
Text Display	Activates or deactivates all image information displays. The *Date and Time* option displays the standard time format you selected at the upper right edge of the image.
Text Background Color	Select the desired color of the text background.
Text Background Opacity	Select the desired opacity of the text background color.
Error Messages	Activates or deactivates the display of error messages at the bottom edge of the image. **Note:** Make sure that the **Text Display** parameter is activated.
Date and Time	Select the standard time format to be displayed in the image.
Comment	Enter your comment to be displayed at the upper left edge of the image. In order to display dynamically created camera information, you can use a number of special characters. These characters are listed and described in the topics *Placeholders for Dynamic Image Text* and *Variables*. In order to format the text display in different colors, the following color codes are available: ^#00 ^#01 ^#02 ^#03 ^#04 ^#05 ^#06 ^#07 ^#08 ^#09 **Example:** **^#0A**WWW.**^#09**MOBOTIX.**^#0C**COM results in this colored text display: WWW.MOBOTIX.COM

	
Show Event/Action Symbols	Events, actions or errors are represented by symbols. When you have activated a large number of event sensors and actions, select *Symbols II* to get a symbol display consisting of two lines at the bottom of the image. **Event Symbols:** **Symbol** / **Meaning** **PI** / Passive Infrared Sensor **MI** / Microphone **VM** / Video Motion Windows **SI** / Signal Input **PE** / Periodic Event **TT** / Time Task event **IR** / IR Remote Control **UC** / User Click **RC** / IP Receive **IL** / Illumination **TP** / Temperature **RD** / Random event **CI** / Receive text via the serial interface **EC** / Event Counter **Action Symbols:** **Symbol** / **Meaning** **SO** / Signal Output **FT** / FTP Transfer **EM** / E–Mail Action **ST** / LAN Image Storage **IP** / IP Notify **CL** / Phone Call **SD** / Speaker **FS** / Storing Images on File Server

VA	Visual Alarm
TR	Image Transfer via TCP/IP
SB	Soft Button
SP	Stop Actions
CT	Text Message via the Serial Interface

Color−coding of Action Symbols:

Color	Meaning
Yellow	normal
Grey	inactive
aqua	is executed
red	Error

Other Symbols:

Symbol	Meaning
IS	ISDN
OA	Obscure image areas
NI	Night lens active
DY	Day lens active
OT	Object tracing active

Level Meter	Displays a level meter in the image as bar or diagram. You can choose from different data sources for the level meter. Among other things, the level meter can be used for determining the best trigger level for the microphone, the passive infrared sensor or other definable event or image parameters.
Level Meter Data	Select the source for the data you would like to display in the level meter.
Enable Object Tracing	Moving objects are highlighted within the entire image area. The moving object is traced graphically. This feature can help, for example, to uncover escape routes or the like.
Tracing Camera	Select the image sensor you would like to use for object tracing.

44.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire

configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

45 Managing Image Files

Open the **Manage Image Files** dialog to define the image files for displaying logos in the camera. You can upload image files to the camera and store them in its permanent storage. Alternatively, the camera can automatically download an image file from a website (using the *URL* address).

The camera can display the following image file formats:

- *Portable Network Graphics*, (file extension `.png`)
- *Windows bitmaps* (file extension `.bmp`)

Note: When you plan to display portions of the graphic transparently, it is recommended to use an indexed bitmap file with 256 colors or a PNG graphic with alpha channel and transparency.

Once you have loaded the desired image files in your camera or made available via URL, these images can be displayed as logo or watermark in the camera image. Open the **Logo Profiles** dialog.

45.1 Upload Image File

- Select a logo file for uploading to the camera.

  .png The *Portable Network Graphics* format has been designed for use in the World Wide Web. It combines the advantages of GIF (compression without losses) and JPEG (high color depth). On top of this, it uses a patent–free and license–free compression algorithm.
  PNG images can contain a transparent color as paletted image, when they are stored as greyscale or RGB images, they can contain an alpha channel, which defines for each pixel how much image background is visible.

  .bmp The *Bitmap* format is the standard format for graphic files under Microsoft Windows and is used for storing bitmap graphics without any loss. This format has a very simple structure, but it requires a lot of storage capacity.

  The bitmap format is restricted in that it does not contain any information regarding transparency. Should you still want to save an image with transparent areas as bitmap, this image needs to be available as *indexed 256 color bitmap*. Then, you can select a color in this dialog that you want to be displayed transparently.
- In case of **Existing Image Files**, select whether you would like to keep or overwrite existing files. If you select *Keep*, a new file will be created by adding a number to the file name.
- Click on **Browse** to select the file you would like to upload to your computer. To start the transfer, click on **Upload**.

Tips:

- The **Manage Image Files** dialog displays the size and the remaining space for all user graphics in the **Stored User Images** section. Upon delivery, every camera has 243 kB free space for user images. A camera that is to be loaded into the camera cannot be larger than 243 kB. If user graphics have been saved, the free space is reduced accordingly and is displayed in the **Free** field and in the explanatory text for **Image File**.
- In order to create an indexed bitmap graphic with *transparent areas* it may help to fill the transparent images areas with a color that is *not* used in the rest of the image.

- For a *free−of−charge tool for creating and editing graphic files* in the formats mentioned above under Windows, Unix, Linux and MacOS X environments, go to www.gimp.org. Apart from several conversion possibilities, Gimp also allows you to find the index for the color that you want to display transparently.
- To display the *content of a* `.tar` *file*, you can use e.g. WinZip, StuffIt or PowerArchiver.

45.2 View System Images

The camera software already contains some image files. In order to view these system images, select a name. Click on **Display** to display the image in a separate preview window.

45.3 Stored User Images

This list contains the image files you have stored in the camera's permanent storage.

- Click on a graphic file name to display this image in a separate preview window.
- Click on **Delete** to delete this image file from the list of user images.

45.3.1 Displayed Information

The name, size and format for every image file are displayed in this list.

PNG images with alpha channel are marked in the **Transparency** by an *alpha* entry, for 256 color bitmaps, an additional selection field is displayed where you can set the color you would like to display transparently.

To configure transparency for bitmap images:

- Select the index of the color you would like to set to transparent.
- Click on the **Set** button.

The last line of this section displays information on the amount of storage space that the image files are using. Also, the remaining storage capacity for user data is displayed.

45.4 Download Image Files

Note: This section is available only if you already have stored at least one image file in the camera's permanent storage.

You can store one or several image files as an archive file (`.tar`) on your local computer. In order to select several files, keep the *Ctrl* key pressed and select the desired files with your mouse.

You can either keep such an archive for backup purposes or upload it to other cameras.

45.5 Images Loaded From URL

The camera can be configured to download images from a website (*URL*) once after it has been rebooted or in predefined intervals. These files are saved in temporary storage and will thus only be available until the camera is rebooted.

- Enter a name for the image. Only use letters, digits, dot, hyphen and underscore.
- Enter the image's **URL**, e.g. `http://www.mycompany.com/logo-small.png`

  Note: The camera needs to be installed and configured in a way that the URL can be accessed either via an **Ethernet** or an **ISDN Dial−Out** connection.

- Under **Reload page**, select either *Off* in order to load the files only once after the camera has been rebooted, or define the duration after which you want the image to be reloaded.
- If access to the URL is protected by a **user name** and **password**, you need to enter these data in the respective fields.
- For each image loaded from an URL, the following options are available:

  Inactive Deactivates loading of the image. The settings remain stored in the configuration.

  Delete Deletes this entry from the configuration.
- Click on the **Set** button to start loading the first image file and to create another line.

After you have clicked on the **Set** button, the camera tries to load the configured images. You can display the current status of each image that has not been set to **Inactive** by clicking on  . For this purpose, the transfer log file is displayed in a separate window. When successful, a link is displayed in the status window, which you can use to open a preview window with the image as is stored on the camera.

45.6 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

46 Logo Profiles

The **Logo Profile** dialog is used to extend the image files that have been uploaded in the *Manage Image Files* dialog to a *logo profile* with the corresponding display options.

A logo profile is the combination of an image file and its positioning information in the camera image.

46.1 Logo Display

Select the desired option to either *activate* or *deactivate* the logo display in the camera image.

46.2 Profiles & Options

Note: Click on the **More** button to display all options for all profiles.

Set the following parameters in the Image Profiles dialog for each profile:

Parameter	Description
Logo *n*	Enter a unique logo name. The camera will use this name for error messages. Valid characters are letters, digits, dot, comma and underscore.
Enable Logo	Using this switch, you can temporarily hide individual logos. Hidden logos remain stored and can be shown again later on.
Time Table Profile	To show a logo time–controlled, you can select a *Time Table*.
Live Image Logo	Using this option, you define whether or not the logo is displayed in the live image.
Image Link Logo	Specify, whether or not the logo may be used for *custom image formats*. When you choose the setting *force*, the logo is displayed in every image and cannot be removed.
Image Sizes	Highlight the allowed camera resolutions that may use this logo. The logo is only displayed in the image when it has been approved for this resolution. **Note:** When you do not highlight any option, the logo is used with *every* resolution.
Logo Opacity	Use this option to define how visible the logo is displayed within the camera image. Specifying the opacity value lower than 100% results in the actual camera image to shine through. If you would like to obtain a watermark effect, try setting the opacity to 20 to 30%.
Image List	The image list contains all available *Image Files*. You may use one or multiple image files for a logo. When selecting several image files, they are displayed one at a time (rotated) at short intervals.
Rotation Interval	Specify the interval for displaying the image files from the image list one at a time.

<table>
<tr><td>Positioning Mode</td><td>The logo image files can be positioned in the camera image in two different ways. For each possibility, the alignment and offset information is interpreted differently.
Relative: The logo is positioned in the camera image relative to its alignment, the image size is not relevant.
Frame: The logo is drawn as frame around the entire camera image as described under Creating Frames later in this topic.
<table>
<tr><th></th><th>Positioning: Relative</th><th>Positioning: Frames</th></tr>
<tr><td>X/Y Alignment</td><td>The logo is aligned relative to the camera image.</td><td>Ignored</td></tr>
<tr><td>X/Y Offset</td><td>Border offset from the aligned image border in dots.</td><td>Size of the corner portions of the frame in dots. For additional information on this topic, see the Creating Frames help topic.</td></tr>
</table></td></tr>
</table>

46.2.1 Deleting Profiles

In order to delete a profile, check the **delete** option in the top right corner of the profile. The profile will be deleted as soon as you click on the **Set** button in the lower part of the dialog.

46.3 Creating Frames

Using an image file, you can draw a frame in the camera image. Make sure Positioning is set to *Frame*.

- The image files should be square as they will be divided into 9 frame pieces: 4 corner pieces, 4 edge pieces and one unused center piece.
- The corner pieces should be identical in size. The size is set by the *X/Y Offset* menu parameters.
- The edge pieces are repeated until the entire image width and height is filled:

Corner Upper/left	Edge piece top	Corner Upper/right
Edge piece left	*Unused.*	Edge piece right
Corner Bottom/left	Edge bottom	Corner Bottom/right

Hint: It is recommended to create an image file with dimensions that can easily be divided by three, e.g. 90 x 90 pixels.

46.3.1 Frame File – Example

The sample file shown fulfills all prerequisites to be used as a frame:

- Format: PNG
- Size: 90 x 90 pixels
- Shape: Square

To configure this image files as frame:

- Download this file to your computer (right–click on the file and then click on **Save Image as...**).
- Open the **Manage Image Files** dialog and transfer this file to your camera.
- In this dialog, click on the **Set** button.
- Open the **Logo Profiles** dialog and click on the **Add new logo definition** button at the end of this dialog.
- In the new profile, set the **Display Logo** parameter to *show*.
- In the **Image List** field, select the *example_frame* entry.
- Set the **Positioning** parameter to *Frame*.
- Enter a value of 35 for both the **X Offset** and the **Y Offset** parameters.
- Click on the **Set** button and check how the frame is displayed in the camera's **Live Image**.

Adapt the frame's **Opacity** as desired.

46.4 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

47 Image Profiles

Open the **Image Profiles** dialog to create profiles that define customized image formats. These image profiles can be used in the *FTP Profiles* and the *E–Mail Profiles* for transferring images different from the current live image settings.

47.1 Global Options

Set the global options that control how camera images can be requested using the HTTP API:

Parameter	Description
CGI Access	Disabling this parameter will prevent access to the customized image format using the HTTP API as described in *CGI Parameters of image.jpg*.
Custom Formats	If this parameter is enabled, customized image formats can be requested using the HTTP API, if it is disabled, only the image profiles defined in this dialog can be used.
Default Parameter	These parameters will be used as default values when initializing.

47.2 Profiles & Options

Note: Click on the **More** button to display all options for all profiles.

For each profile, set the following parameters in the Image Profiles dialog:

Parameter	Description
Image Profile *n*	Enter a unique image profile name. This name will be displayed in the **FTP Profiles** and **E–Mail Profiles** dialogs in the **Image Profile** field. Valid characters are letters, digits, dot, comma and underscore.
Camera Selection	Select the image sensor you would like to use. Set the image sensor to *Right*, *Left*, *Both*, *LiR/RiL* and *Live Image*. *Live Image* always uses the current live image, as it is displayed on the Live screen of the camera. This option is not available on Day&Night models as these models automatically switch between the daylight and night image sensors depending on illumination.
Image Size	This parameter sets the image size in pixels.
JPEG Quality	Select the desired image quality. The higher the image quality, the larger the transferred image file will be. The recommended setting is *70%*.
Mirroring	Specify whether the image will be mirrored in horizontal, vertical or in both directions.
Rotation	Select the rotation of the image. Currently, only 180 degrees are supported.
Sharpness	Set the sharpness to your desired setting.
Text Display	Set the display of text in the image to *Off*, *On* or *Date & time*. Set the parameters for **Text background color** and **Opacity of background**

	color to the desired values.
Text Background Color	Sets the text background color.
Text Background Opacity	Sets the opacity of the text background color.
Date and Time	Sets the desired time format.
Comment	Any text you would to show in the image can also contain *placeholders* and *variables*.
Logo Profile	Select one or more *logos* to display in every transferred image from this list box. Note, that some of these logos may be deactivated or not available for the selected resolution of this custom format. Logos that are forced for this resolution in the **Logo Profiles** dialog cannot be disabled here. They will *always* be displayed in the image.

47.3 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

48 Placeholders for Dynamic Image Texts

The **Text & Display Settings** dialog allows using placeholders in the **Comment** textbox to dynamically display certain camera information in the image.

48.1 Description of Placeholders

Placeholders	Description	Note
`~H`	The **Camera Name** that you have defined in the **Ethernet Interface** dialog or that has been assigned via DHCP.	
`~E`	The current IP address of the camera's Ethernet interface	
`~N`	The camera's factory default IP address	
`~S`	Serial number of the camera	
`~fv`	The version of the file system	
`~fp`	Service Update	
`~ft`	Release date	
`^F#`	Image number (*#* = number of digits to display: *1 .. 9*)	every image
`^Er`	Exposure time for the right lens in seconds	every image
`^El`	Exposure time for the left lens in seconds	every image
`^ER`	Exposure time for the right lens in milliseconds	every image
`^EL`	Exposure time for the left lens in milliseconds	every image
`^Ir`	Illumination value (*–20 .. 100 dB*) of right lens at F–stop 2.0	every image
`^Il`	Illumination value (*–20 .. 100 dB*) of left lens at F–stop 2.0	every image
`^Ib`	Average illumination value (*–20 .. 100 dB*) of both lenses at F–stop 2.0	every image
`^IR`	Illumination value (*0 .. 100000 lux*) of right lens at F–stop 2.0	every image
`^IL`	Illumination value (*0 .. 100000 lux*) of left lens at F–stop 2.0	every image
`^IB`	Average illumination value (*0 .. 100000 lux*) of both lenses at F–stop 2.0	every image
`^J#`	JPEG image size in KB (*#* = number of digits to display: *1 .. 9* of the *previous* image **Note:** This placeholder will only display values if the **Images Before Event** option in the **Setup Menu > General Event Settings** dialog has been set to *1* or higher.	every image
`^j#`	JPEG image size in bytes (*#* = number of digits to display: *1 .. 9* of the *previous* image **Note:** This placeholder will only display values if the **Images Before Event** option in the **Setup Menu > General Event Settings** dialog has been set to *1* or higher.	every image
`^hj`	Image rate in frames per second	every image
`^hq`	JPEG quality *(1..100)*	every image

^Lt	Time of last event	(hh:mm:ss)
^Ld	Date and time of last event	(YYYY−MM−DD hh:mm:ss)
^Ls	Time since last event in seconds	(+s)
^Lr	Time since last event in hours, minutes, seconds	(+hh:mm:ss)
^Ti	Internal temperature in °C (degrees Celsius)	every twelfth image
^Tn	Internal temperature in °F (degrees Fahrenheit)	every twelfth image
^s#	Use this placeholder to display data of the serial interface in the image. The text color is *black*, the background color is *white*. The *#* character represents the number of lines that are to be displayed. Replace the *#* character by a value in hexadecimal notation. Values: *0 .. 9 A B C D E F* **Examples:** **^s3** Displays three lines in the image using black text color and white background. **^sF** Displays sixteen lines in the image using black text color and white background.	
^S#	Use this placeholder to also display data of the serial interface in the image. In this case, the text color is *white* while the background color is *standard*. The *#* character represents the number of lines that are to be displayed. Replace the *#* character by a value in hexadecimal notation. Values: *0 .. 9 A B C D E F* **Examples:** **^S3** Displays three lines in the image using white text color and standard background. **^SF** Displays sixteen lines in the image using white text color and standard background.	
~~	The tilde (~) character	
^^	The caret (^) character	
^CC	The copyright character ©	
^CE	The Euro character €	
^CR	The registered trademark character ®	

Notes:

- Make sure placeholders and variables are typed correctly.
- Note, that placeholders are case–sensitive, but *Variables* are *not*.

48.1.1 Additional Possibilities for Creating Dynamic Image Text

Apart from the placeholders listed above, you can also use *Variables*.

48.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

49 Graphically Entering Image Areas

The **Video Motion Window (VM)** (not for **Web** models) and **Obscure Image Area (OA)** (Secure models only) options use windows within the image sensors that you can define and modify in the **Event Settings** and **General Event Settings** dialogs.

To facilitate entering the coordinates for the window definition, you can use your mouse to define the window size and location directly in the camera's **Live image**.

Note: You *cannot* define image areas graphically when a dual image is displayed.

49.1 Defining New Windows

1. Open the camera's **Live image**.
2. When your camera is a dual lens model, select one lens.
3. Hold the *[Shift]* key down and left−click with your mouse on a corner of the image area.
   This spot is highlighted in yellow.
4. Release the *[Shift]* key and click on the opposite corner of the image area.
   The highlighted image area is now displayed as a yellow frame in the live image.
5. Enter the window coordinates:
   - For the **Video Motion Window (VM)** option by clicking on the **Add Rectangle** button in the **Event Settings** dialog.
   - For the **Obscure Image Area (OA)** option by clicking on the **Add Rectangle** button in the **General Event Settings** dialog.
6. You can select additional image areas and add them to the window definitions list by clicking on the **Add Rectangle** button.
7. To add the window definitions to the configuration, click on the **Set** button in the lower part of the dialog. The yellow frame disappears and the windows are displayed instead:
   - **Video Motion Window (VM)**: dotted line rectangle with image modification bar and trigger level displayed at the bottom edge of the image.
   - **Obscure Image Area (OA)**: roughly tiled image area that prevents recognition.

Notes:

- A window area can be entered graphically as often as you desire.
- When you do not click on the **Add Rectangle** button of the **Event Settings** or the **General Event Settings** dialog, the yellow frame or spot disappears from the live image after 60 seconds.
- When images are stored event−controlled or with a time task while the yellow frame or the highlighting is displayed, they will stored as well.

See also: *The Live Screen of the MOBOTIX Camera*

49.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

50 Microphone and Loudspeaker

The **Loudspeaker and Microphone** dialog contains the basic microphone and loudspeaker settings.

Notes:

- Click on the **More** button to display all options of the dialog.
- This feature is not available for **Web** models.

50.1 Microphone

- Activate the microphone.
- Select one of the following options:
  - *Low sensitivity*: setting for short distances
  - *High sensitivity*: Setting for longer distances. When you select this setting, background noise may occur.
- Click on the **Test** button to check your setting. In order to perform this check, the loudspeaker must be activated.

50.2 Speaker

- Activate the loudspeaker.
- Activate or deactivate the speaker and set the amplification.
  Value range: *–30 .. 0 .. 30*
- In order to check your settings, select one of the audio files and click on the **Test** button.

50.3 Deactivating the Microphone

Deactivating a camera's microphone may become necessary in order to protect the privacy or for other reasons. You can now permanently and **irreversibly** deactivate the microphone in the **Loudspeaker and Microphone** dialog.

1. Click on the **More** button.
2. Click on the **disable** link that appears in the first paragraph of the explanation.
3. Follow the instructions in the **Permanently Disable the Camera Microphone** section.

Attention: **This deactivation is permanent and removes *all* functions that involve the microphone and cannot be reversed even by MOBOTIX engineers.**

50.4 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

51 ISDN Camera Phone

Using the **ISDN Camera Telephone** dialog, you can enter a phone number for the camera to call. Afterwards, you can listen what the camera microphone is recording, make an announcement over the camera's built–in loudspeaker, or use the camera as an intercom system.

Note:

- If you *only see one or no buttons*, activate the **Microphone** and **Loudspeaker** options in the **Loudspeaker and Microphone** dialog. You will then have access to all functions.
- This feature is not available for **Web** models.

To use the camera telephone do the following:

- Enter the phone number you would like the camera to call.
- Select a function:
    - ♦ Click on the **Listen** button to hear what the camera microphone is recording.
    - ♦ Click on the **Speak** button to make an announcement using the camera's loudspeaker.
    - ♦ Click on the **Intercom** button to use the camera as an intercom system.

The camera now calls the telephone number you have entered and switches to the selected mode.

Notes:

- While you are connected to the camera, the browser window remains empty.
- Make sure that the speaker level setting in the **Loudspeaker and Microphone** dialog does not exceed a value of *3*.

52 Manage Voice Messages

Use the **Manage Voice Messages** dialog to edit the camera's voice messages.

The camera can record, play and manage voice messages. To record voice messages, you can either use your telephone or the camera's microphone.

Notes:

- In order to record a voice message using the camera's internal microphone, you must have activated the microphone in the **Loudspeaker and Microphone** dialog. The factory default setting for the microphone is *deactivated*.
- This feature is not available for **Web** models.

Alternatively, you can transfer one or more messages recorded by another camera as an audio file via your computer to this camera.

52.1 Record Voice Message

1. Using the Telephone

- Enter the telephone number that you want the camera to call.
- Select the maximum message duration in seconds.
  Value range: 2 .. 20 sec.
- Click on the **Call & Record** button.

The camera calls the telephone number you entered so that you can record the voice message.

2. Using the Internal Microphone

- Select the maximum message duration in seconds.
  Value range: 2 .. 20 sec.
- Click on the **Record** button.

Once the recording is finished, additional options are displayed:

- Testing the voice message:
  - Click on the **Play** button in order to play back the voice message using the camera's loudspeaker. For doing so, the loudspeaker needs to be activated in the **Loudspeaker and Microphone** dialog.
  - When you click on the **Call & Play** button, the camera calls the number and plays back the voice message over the telephone.
- Once you are satisfied with the voice message, enter a name and save the recording by clicking on the **Store** button.
- If you do not want to store the voice message, click on the **Cancel** button.

52.2 Stored Voice Messages

Note: This section is available only if you already have created and stored at least one voice message.

The name and size of the individual voice messages are displayed in the list. You can execute these actions on each voice message:

Play The voice message is played back using the camera's loudspeaker.

Call & Play The camera calls the telephone number entered in **Phone Number to Call** and plays back the voice message.

Delete Removes the corresponding voice message.

The last line of this section displays information on the amount of storage space that the voice messages are using.

52.3 Download Voice Messages

Note: This section is available only if you already have created and stored at least one voice message.

You can download one or several voice messages to archive them on your local computer. In order to select several files, keep the *Ctrl* key pressed and select the desired files with your mouse.

You can either keep such an archive for backup purposes or upload it to other cameras.

52.4 Upload Voice Messages

- First, select the format of the file you would like to upload:

.tar A compressed audio archive that can contain several packed *.al* files and that has been generated by a camera. Use this format for exchanging voice messages between cameras.

.wav Use this format if you have recorded an audio file on a Windows computer by means of the Audio Recorder. When saving the file, make sure to set **Format** to *CCITT A−Law* and **Attribute** to *8,000 kHz; 8 Bit; Mono*.

.al A−Law encoding is frequently used for digitally transferring analog signals. This encoding system needs very few digitizing levels for improving the quality of voice transfer.
The camera expects a file with the following features: 8 kHz sampling rate, mono, 8 bit.

- Click on the **Browse** button to select the file on your computer. To start the transfer, click on the **Upload** button.

Note: Linux systems, for example, feature the *sox* program for creating A−Law−compatible voice messages (having the file name extension .al).

53 ISDN Audio Call–Out Profiles

Using the **ISDN Dial–Out Profiles** dialog, you can create and manage call profiles featuring different phone numbers.

The profiles thus created are used in the **Messaging** dialog to send notifications via **ISDN Call Action (CL)**.

Note: This feature is not available for **Web** models.

53.1 Description of Parameters

Test Profiles	Select a previously created profile in order to check your entries.
Profile name	Enter a unique profile name.
Remove	To delete a stored profile, click on **Remove** and confirm your selection by clicking on the **Set** button.
Phone Number	Enter the phone number for the camera to call. You can enter multiple phone numbers. The camera then calls the numbers one by one until one of them accepts the call.
Dial Retries	Defines the maximum number of dial retries. Value range: 1 .. 10.
Dial Timeout	Defines the dial timeout between two retries while dialing in seconds.
Message name	Select one of the voice messages recorded in the **Manage Voice Messages** dialog.
Confirm call with PIN code	Set a PIN to be entered in order to acknowledge this audio call.. If no PIN is entered (e.g. a voice mailbox answers), the camera will call the next phone number on the list.
After the message has been sent	**Hangup** After the voice message has been played back, the connection is terminated. **Listen only** After the voice message has been played, the connection remains active and you can listen to what goes on in the room. **Speak only** After the voice message has been played, the connection remains active and you can make an announcement. **Intercom** After the voice message has been played, the connection remains active and you can start a conversation.
Camera Remote Control	Activate this option if the camera is supposed to react to *touch tone phone commands*.
Hangup after	Set the maximum connection time for a voice message. Value range: 1 .. 10 minutes

53.2 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

54 The HTTP API

The HTTP API (**A**pplication **P**rogramming **I**nterface) is a software interface to the camera and allows to conveniently integrate the camera into a centralized management system. The interface consists of two CGI scripts that can be called with parameters and values using HTTP commands. By means of these scripts, you can modify the settings of the **Setup** submenus and execute certain camera functions.

Modifying the Settings of the *Setup Menu*

Using the HTTP command `http://<camera ip>/control/control`, you can modify the settings of the **Setup menu**.

Executing Camera Functions

Using the HTTP command `http://<camera ip>/control/rcontrol`, you can execute certain camera functions.

Important: Certain functions for *Saving and Restoring* the configuration can only be performed by a user of the *admin* access level. In this case, you need another HTTP command for calling the *rcontrol* script, namely:
`http://<camera ip>/admin/rcontrol`

54.1 Command Conventions

54.1.1 Command With one Instruction

If you would like to use the `list` instruction with the `control` command, you need to separate the instruction from the command using a **?**:

```
http://<camera ip>/control/control?list
```

54.1.2 Command With one Instruction and a Parameter/Value Pair

In order to execute an instruction with a parameter, the instruction needs to be separated from the parameter by an ampersand **&**. The parameter value is separated by a = sign.

```
http://<camera ip>/control/control?list&section=action
```

54.1.3 Command With one Instruction and Several Parameter/Value Pairs

If you would like to use multiple parameters, separate them using an ampersand **&**:

```
http://<camera ip>/control/rcontrol?action=ledson&time=5
```

54.1.4 Several Values for one Parameter

For some parameters you need to enter two values in order to address both lenses. These parameters are shown as having *two* default values (e.g. `0 0`). In the http command, you will need to separate these values using a **+** sign :

```
http://<camera ip>/control/control?set&section=general&sharpen=0+0
```

54.1.5 Newline characters in commands

If you would to use one or more newline characters in a command (e.g. to set several video motion window definitions), you need to replace the newline characters using the CGI replacement string `%0A`.

```
http://<camera ip>/control/control?set&section=general&
  coverimage_area=0,540,380,200,200,2%0A1,320,100,100,150,2
```

54.1.6 Special Characters in Commands

In order to display the CGI formatting strings themselves (newline, blank, umlauts, ...), enter the *URL–encoded* characters. To do this, enter a `%` sign followed by the hex value of the character you would like to display. The following table contains a list of the most common characters:

Character	URL–Encoding	Character	URL–Encoding	Character	URL–Encoding
(Newline)	%0A	**(Blank)**	%20 or +	**%**	%25
&	%26	**+**	%2B	**=**	%3D
?	%3F	**©**	%A9	**®**	%AE
ß	%DF	**ä**	%e4	**Ä**	%c4
ö	%F6	**Ö**	%D6	**ü**	%FC
Ü	%DC	**Ç**	%c7	**à**	%e0
á	%e1	**â**	%E2	**æ**	%E6
ç	%E7	**è**	%E8	**é**	%E9
ê	%EA	**ë**	%EB	**î**	%ee
ï	%EF	**ô**	%F4	**ù**	%F9
ú	%FA	**ù**	%FB	**û**	%fc

54.1.7 Table of Color Values

You may specify color values for certain parameters. These values correspond to the hex values of the red, green and blue (RGB) values of a specific color. Two characters each represent on color, `00` represents the lowest value (*no color*), `FF` represents the highest value (*full color*). As the colors are mixed additively, `0x000000` will be black and `0XFFFFFF` will be white.

Example:

`0x`**`FF`**`0000` Red
`0x00`**`FF`**`00` Green
`0x0000`**`FF`** Blau

Color name	Hexadecimal notation	Color	Color name	Hexadecimal notation	Color
Black	0x000000		Maroon	0x800000	
Dark green	0x008000		Olive	0x808000	
Marine	0x000080		Purple	0x800080	
Teal	0x008080		Dark gray	0x808080	
Light gray	0xC0C0C0		Red	0xFF0000	
Green	0x00FF00		Yellow	0xFFFF00	
Blau	0x0000FF		Magenta	0xFF00FF	
Cyan	0x00FFFF		White	0xFFFFFF	

54.2 The *control* Command

First of all, you need to tell the camera which instructions are to be performed.

54.2.1 Instructions for the *control* Command

Instruction	Description
set	Write access to the image settings. Use this instruction to modify the image settings. `http://<camera ip>/control/control?`**`set`**
read	Read access to the image settings. Use this instruction to query information about the image settings. `http://<camera ip>/control/control?`**`read`**
list	The *list* instruction returns a list of the configuration file sections that can be modified. To retrieve the parameters of one particular section, add *section=<sectionname>* at the end of the call. **Example:** `http://<camera ip>/control/control?`**`list`**`&section=`*`action`* lists all options of the *action* section. This command allows reading the current values and it provides a method for obtaining the options and the texts of the user interface by other applications.
factory	The *factory* instruction allows you to reset the parameters of a section to the factory default settings. This call requires the section name *section=<sectionname>* as additional parameter. `http://<camera ip>/control/control?`**`factory`**`&section=<sectionname>`
restore	The *restore* instruction allows you to reset the parameters of a section to the values stored in the flash memory. This call requires the section name *section=<sectionname>* as additional parameter. `http://<camera ip>/control/control?`**`restore`**`&section=<sectionname>`

54.2.2 List of Available Sections

The sections shown in the following tables correspond to all dialogs that you can control remotely using the `control` command. Click on one of the following links to go to the corresponding section.

The *signalout* section
The *mxpegparam* section
The *quickcontrol* section
The *itwm* section

54.2.3 Parameters for the *imagecontrol* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionimagecontrol`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Camera Selection			
camera	*Camera Selection*	right, left, auto	auto
Camera Night Switch (DY/NI)			
nightswitch	*Night Camera Level*	3, 6, 10, 185, 32, 56, 100, 170, 320, 560, 1000, 1800, 3200	100
nightswitchdelay	*Night Switch Delay*	0, 1, 2, 3, 4, 5, 7, 10, 15, 20, 25, 30	5
Image Size			
size	*Image Size*	160x120, 320x240, 640x480, 1280x960, customize	640x480
customsize	*Custom Size*	(String constant)	800x400
Digital Zoom			
zoomlock	*Zoom Lock*	disable, enable	disable
panlock	*Pan Lock*	disable, enable	disable
panpos	*Pan Position*	(String constant)	0,0
Frames per Second			
framerate100	*Frame Rate*	0, 3300, 2500, 2000, 1600, 1400, 1200, 1000, 800, 600, 400, 300, 200, 100, 50, 25, 10	2500
Mirror & Rotate Image			
mirror	*Mirroring*	no, vertical, horizontal, both	no no
rotate	*Rotation*	0, 180	0 0
Sharpness			
sharpen	*Sharpness*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
Noise Suppress			
darknoisesuppress	*Noise Suppress*	off, low, medium, high	low low
Automatic Contrast			
automatic	*Automatic*	off, auto	auto auto

	Contrast		
Brightness			
brightness	*Brightness*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Backlight Correction			
backlight	*Backlight*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
Color Profile			
colorprofile	*Color Profile*	auto, Neontube, Cloudy, Sunny, Outdoor	auto
Color Saturation			
color	*Color Saturation*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Blue Balance			
blue	*Blue Balance*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Red Balance			
red	*Red Balance*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
MxPEG			
motionjpeg	*MxPEG*	disable, enable	enable
mxpeg_cyclic	*Cyclic Image Refresh*	0 .. 100	8
mxpeg_delta	*Delta of Change*	0 .. 100	0
mxpeg_minchange	*Minimum MCU Change*	0 .. 100	10
mxpeg_sw2full	*Switch to Full Image*	0 .. 100	60
JPEG Quality			
quality	*JPEG Quality*	10, 20, 30, 40, 50, 60, 70, 80, 90	70
JPEG User Comment			
jpegcommentuser	*JPEG User Comment*	(String constant)	
JPEG Comment Text (CT)			
jpegcomment_ctx	*Comment Text Rows*	0 .. 16	1
Comment Text Length			
jpegcomment_ctlen	*Comment Text Length*	64 .. 2048	256
Text Display			
textdisplay	*Text Display*	disable, enable, datetime	enable
textbgcolor	*Background Color*	0x000000, 0x800000, 0x008000, 0x808000, 0x000080, 0x800080, 0x008080, 0x808080,	0x000000

		0xC0C0C0, 0xFF0000, 0x00FF00, 0xFFFF00, 0x0000FF, 0xFF00FF, 0x00FFFF, 0xFFFFFF	
textbgopacity	*Background Opacity*	0, 25, 50, 75, 100	0
Display Error Messages			
errortext	*Error Messages*	0, 1	1
Date and Time			
date	*Date and Time*	0, 1, 2, 3, 4, 5, 6	1
Comment			
print	*Comment*	(Multiline string constant)	^j6
Obscure Image Area (OA)			
coverimage	*Obscure Image Enable*	enable, disable	disable
coverimage_timetable	*Obscure Image Time Table*	(No value), Weekdays_Mo–Fr, Weekend_Sa–So, Opening_Times, Closing_Times, MyCustomTimes	
coverimage_area	*Obscure Image Area*	(Multiline string constant)	0,540,380,200,200,2

54.2.4 Parameters for the *eventcontrol* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectioneventcontrol`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Passive Infrared Detector (PI)			
pircheck	*PIR Enable*	1, 0	0
pir	*PIR Level*	0 .. 100	50
Video Motion Window (VM)			
motioncheck	*Video Motion Enable*	1, 0	1
motion	*Video Motion Definitions*	(Multiline string constant)	0,540,380,200,200,20,25
motionwintype	*Video Motion Style*	off, on, highlight, passiv, area	highlight
motionnightoff	*Video Motion Night Mode*	0, 3, 6, 10, 18, 32, 56	0 0
Microphone (MI)			
miccheck		1, 0	0

	Microphone Enable		
mic	*Microphone Level*	0 .. 100	50
micwidth	*Microphone Signal Width*	50, 100, 150, 200, 250, 300, 400, 500, 750, 1000, 2000	50
Signal Input (SI)			
inputswitch	*Signal Input*	off, close, open	off
Signal CTS (SC)			
inputcts	*Signal CTS*	off, close, open	off
Signal DSR (SR)			
inputdsr	*Signal DSR*	off, close, open	off
Signal RxD (SX)			
inputrxd	*Signal RxD*	off, close, open	off
Periodic Event (PE)			
timercheck	*Periodic Event Enable*	1, 0	0
timerunit	*Periodic Time Unit*	sec, ms, Hz	sec
timer	*Periodic Time Interval*	0 .. 86400	60
Time Task (TT)			
timetaskcheck	*Time Task*	1, 0	1
User Click (UC)			
userclick	*User Click*	1, 0	1
Buttons (BT)			
buttoncheck	*Buttons Enable*	1, 0	0
button	*Button Combination*	right, left, rightORleft, rightANDleft	right
IR Remote Control (IR)			
ircheck	*Remote Control Enable*	1, 0	0
ircode	*Remote Control Code*	0	0
IP Receive (RC)			
ipreceivecheck	*IP Receive Enable*	1, 0	0
ipreceiveport	*IP Receive Port*	1 .. 65536	8000
ipreceivematch	*IP Receive Compare*	strcmp, regex	strcmp
ipreceivemessage	*IP Receive Message*	(String constant)	

COM In (CI)			
comincheck	*COM In Enable*	1, 0	0
cominmatch	*COM In Compare*	strcmp, regex, binary	strcmp
cominmessage	*COM In Message*	(String constant)	
Temperature (TP)			
tempcheck	*Temperature Enable*	1, 0	0
tempsource	*Temperature Sensor*	intern	intern
tempcompare	*Temperature Compare*	higher, lower	higher
templevel	*Temperature Level*	(String constant)	50.0
tempunit	*Temperature Unit*	Celcius, Fahrenheit	Celcius
tempaction	*Temperature Action*	first, every	first
Illumination (IL)			
illucheck	*Illumination Enable*	1, 0	0
illusource	*Illumination Source*	right, left, both	right
illucompare	*Illumination Compare*	higher, lower	higher
illulux	*Illumination Level*	(String constant)	100.0
illuaction	*Illumination Action*	first, every	first
Random Event (RD)			
randomcheck	*Random Event Enable*	1, 0	0
randomrange	*Events per Hour*	(String constant)	1.000
Event Counter (EC)			
eventcounter_status	*Event Counter Enable*	enable, disable	disable
eventcounter_mask	*Events to Count*	(String constant)	*
eventcounter_filter	*Individual Events*	yes, no	yes
eventcounter_time	*Counting Period*	1 .. 3600	10

eventcounter_event	*Event Count*	1 .. 3600	5
eventcounter_condition	*Condition*	more, less	more
eventcounter_action	*Start Action*	first, every	every
Sound on Event (SD)			
playsound	*Sound Enable*	enable, disable	disable
playsound_list	*Play List*	Alarm, Cuckooclock, Default, Standard	
playsound_sequence	*Playback Sequence*	randomize, ascending, descending	randomize
playsound_alertmask	*Event Selection*	(String constant)	*
Sound on Event (SD2)			
playsound2	*Sound Enable*	enable, disable	disable
playsound2_list	*Play List*	Alarm, Cuckooclock, Default, Standard	
playsound2_sequence	*Playback Sequence*	randomize, ascending, descending	randomize
playsound2_alertmask	*Event Selection*	(String constant)	*
Signal Out Action (SO)			
outputaction	*Signal Out Action*	0, 1, 2, 5, 10, 30, 60, 300	0
outputaction_alertmask	*Event Selection*	(String constant)	*
ISDN Audio Call−Out (CL)			
callaction	*Audio Call−Out Profile*	off, Zeitansage	off
callaction_alertmask	*Event Selection*	(String constant)	*
Second ISDN Call−Out (CL2)			
callaction2	*Audio Call−Out Profile*	off, Zeitansage	off
callaction2_alertmask	*Event Selection*	(String constant)	*
E−mail Action (EM)			
emailaction	*E−Mail Profile*	off, AlarmMail, NotifyMail	off
emailaction_alertmask	*Event Selection*	(String constant)	*
Second E−mail (EM2)			
emailaction2	*E−Mail Profile*	off, AlarmMail, NotifyMail	off
emailaction2_alertmask	*Event Selection*	(String constant)	*
File Transfer Action (FT)			
ftpaction	*FTP Profile*	off, FTP−Webcam, FTP−Archiving, FTP−Day−Periode	off
ftpaction_alertmask	*Event Selection*	(String constant)	*
Second File Transfer (FT2)			
ftpaction2	*FTP Profile*		off

		off, FTP−Webcam, FTP−Archiving, FTP−Day−Periode	
ftpaction2_alertmask	*Event Selection*	(String constant)	*
IP Notify (IP)			
ipnotifyaction	*IP Notify Profile*	off, SimpleNotify, MultipleNotify, TrickyHttpRequest	off
ipnotify_alertmask	*Event Selection*	(String constant)	*
Second IP Notify (IP2)			
ipnotifyaction2	*IP Notify Profile*	off, SimpleNotify, MultipleNotify, TrickyHttpRequest	off
ipnotify2_alertmask	*Event Selection*	(String constant)	*
IP File Transfer (TR)			
ipfilecheck	*Activate IP File Transfer*	1, 0	0
ipfile_alertmask	*Event Selection*	(String constant)	*
ipfileport	*Send Port*	0 .. 65535	0
ipfileprotocol	*Simulated Protocol*	raw, http	raw
ipfileaddress	*Destination Address*	(String constant)	10.0.62.15:8000
ipfilename	*Transferred File*	current.jpg, lastevent.jpg, eventstory.jpg	current.jpg
Right Soft Button (SBr)			
softbutton1	*Activate Soft Button*	1, 0	1
softbuttonname1	*Soft Button Name*	(String constant)	Speak IP
Left Soft Button (SBl)			
softbutton2	*Activate Soft Button*	1, 0	0
softbuttonname2	*Soft Button Name*	(String constant)	Actions disable
Visual Alarm (VA)			
visualalarm	*Activate Visual Alarm*	enable, disable	disable
visualalarm_alertmask	*Event Selection*	(String constant)	*
visualalarm_format	*Visual Effect*	bar1, bar2, box1, box2, sign1, sign2	box1
visualalarm_color	*Effect Color*	0x000000, 0x800000, 0x008000, 0x808000, 0x000080, 0x800080, 0x008080, 0x808080, 0xC0C0C0, 0xFF0000, 0x00FF00, 0xFFFF00, 0x0000FF, 0xFF00FF, 0x00FFFF, 0xFFFFFF	0xFF0000
visualalarm_erase		0, 1, 5, 10, 30	10

	Display Duration		
visualalarm_acknowledge	*Alarm Acknowledge*	enable, disable	enable
Arming			
edactiv	*Arming*	enable, disable, close, open	enable
edacttimetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
Stop Actions (SP)			
freezeactiv	*Activate Stop Actions*	off, on	off
freezecondition	*Condition to Stop*	PI, VM, MI, SI, BT, IR, PE, TT, UC, RC, RD, EC	UC
freezedelay	*Time Before Stop*	0 .. 86400	15
Action Delay			
actiondelay	*Action Delay*	0 .. 3600	0
Event Dead Time			
eventdelay	*Event Dead Time*	0 .. 3600	5
Action Profile			
action_alertmask	*Event Selection*	(String constant)	*
Message Profile			
messaging_activ	*Enable Message Profile*	enable, disable	enable
messaging_timetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
notifydelay	*Messaging Dead Time*	0 .. 3600	60
notify_alertmask	*Event Selection*	(String constant)	*
Message Profile			
messaging2_activ	*Enable Message Profile*	enable, disable	enable
messaging2_timetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
messaging2_delay	*Messaging Dead Time*	0 .. 3600	60
messaging2_alertmask	*Event Selection*	(String constant)	*
Ring Buffer			

ringbuffer	*Ring Buffer*	1, 0	1
Event Story			
histcount	*Images Before Event*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50	1
futcount	*Images After Event*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50	2
storyinterval	*Image Interval*	0 .. 600000	500
story_alertmask	*Event Selection*	(String constant)	*
Display Options			
imageinfo	*Show Event/Action Symbols*	0, 1, 2	1
chartdrawmode	*Level Meter*	off, bar, scrollchart	off
chartdatasource	*Level Meter Data*	PI, MI, IL, SI, EC, TP	PI
Object Tracing (OT)			
objecttracing	*Enable Object Tracing*	disable, enable	disable
objectcamera	*Tracing Camera*	right, left	right

54.2.5 Parameters for the *exposurecontrol* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionexposurecontrol`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Lens F–Number			
ca_lens_fnumber	*F–Number*	0.8, 1.0, 1.4, 2.0, 2.4, 2.8, 3.5, 4.0	2.0 2.0
Exposure Field			
ca_exp_window_type	*Measurement Field*	all, quarter, center, spot, top, middle, bottom, right, vertical, left, right_left, extra	middle all
ca_exp_window_weight	*Exposure Weighting*	–1, 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100 100
ca_wbal_window_weight	*White Balance Weighting*	–1, 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	–1 –1
ca_avg_intensity	*Average Brightness*	100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800	400 400
ca_exp_window_draw	*Show Field*	off, on, histogram_inside, histogram_outside, out_histogram_inside, out_histogram_outside, jpeg_histogram	on on
Exposure Time			

ca_exp_max	*Max. Exposure Time*	160, 320, 640, 1280, 2560, 4960, 10080, 20000, 40000, 80000, 160000, 320000, 640000, 1280000	160000 160000
ca_exp_min	*Min. Exposure Time*	160, 320, 640, 1280, 2560, 4960, 10080, 20000, 40000, 80000, 160000, 320000, 640000, 1280000	160 160
ca_exp_corr	*Exposure Correction*	–2, –1, 0, 1, 2	0 0
Frequency of Power Supply			
ca_linefreq	*Line Frequency*	50, 60	50

54.2.6 Parameters for the *general* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectiongeneral`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Camera Selection			
camera	*Camera Selection*	right, left, auto	auto
Camera Night Switch (DY/NI)			
nightswitch	*Night Camera Level*	3, 6, 10, 185, 32, 56, 100, 170, 320, 560, 1000, 1800, 3200	100
nightswitchdelay	*Night Switch Delay*	0, 1, 2, 3, 4, 5, 7, 10, 15, 20, 25, 30	5
Image Size			
size	*Image Size*	160x120, 320x240, 640x480, 1280x960, customize	640x480
customsize	*Custom Size*	(String constant)	800x400
Digital Zoom			
zoomlock	*Zoom Lock*	disable, enable	disable
panlock	*Pan Lock*	disable, enable	disable
panpos	*Pan Position*	(String constant)	0,0
Frames per Second			
framerate100	*Frame Rate*	0, 3300, 2500, 2000, 1600, 1400, 1200, 1000, 800, 600, 400, 300, 200, 100, 50, 25, 10	2500
Mirror & Rotate Image			
mirror	*Mirroring*	no, vertical, horizontal, both	no no
rotate	*Rotation*	0, 180	0 0
Sharpness			

sharpen	*Sharpness*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
Noise Suppress			
darknoisesuppress	*Noise Suppress*	off, low, medium, high	low low
Obscure Image Area (OA)			
coverimage	*Obscure Image Enable*	enable, disable	disable
coverimage_timetable	*Obscure Image Time Table*	(No value), Weekdays_Mo–Fr, Weekend_Sa–So, Opening_Times, Closing_Times, MyCustomTimes	
coverimage_area	*Obscure Image Area*	(Multiline string constant)	0,540,380,200,200,2

54.2.7 Parameters for the *exposure* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionexposure`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Automatic Contrast			
automatic	*Automatic Contrast*	off, auto	auto auto
Brightness			
brightness	*Brightness*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Backlight Correction			
backlight	*Backlight*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
Lens F–Number			
ca_lens_fnumber	*F–Number*	0.8, 1.0, 1.4, 2.0, 2.4, 2.8, 3.5, 4.0	2.0 2.0
Exposure Field			
ca_exp_window_type	*Measurement Field*	all, quarter, center, spot, top, middle, bottom, right, vertical, left, right_left, extra	middle all
ca_exp_window_weight	*Exposure Weighting*	–1, 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	100 100
ca_wbal_window_weight	*White Balance Weighting*	–1, 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100	–1 –1
ca_avg_intensity	*Average Brightness*	100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800	400 400
ca_exp_window_draw	*Show Field*	off, on, histogram_inside, histogram_outside, out_histogram_inside, out_histogram_outside, jpeg_histogram	on on
Exposure Time			

ca_exp_max	*Max. Exposure Time*	160, 320, 640, 1280, 2560, 4960, 10080, 20000, 40000, 80000, 160000, 320000, 640000, 1280000	160000 160000
ca_exp_min	*Min. Exposure Time*	160, 320, 640, 1280, 2560, 4960, 10080, 20000, 40000, 80000, 160000, 320000, 640000, 1280000	160 160
ca_exp_corr	*Exposure Correction*	–2, –1, 0, 1, 2	0 0
Frequency of Power Supply			
ca_linefreq	*Line Frequency*	50, 60	50

54.2.8 Parameters for the *color* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectioncolor`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Color Profile			
colorprofile	*Color Profile*	auto, Neontube, Cloudy, Sunny, Outdoor	auto
Color Saturation			
color	*Color Saturation*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Blue Balance			
blue	*Blue Balance*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Red Balance			
red	*Red Balance*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0

54.2.9 Parameters for the *jpeg* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionjpeg`

Parameter	Name in Dialog	Possible Values	Default Value(s)
MxPEG			
motionjpeg	*MxPEG*	disable, enable	enable
JPEG Quality			
quality	*JPEG Quality*	10, 20, 30, 40, 50, 60, 70, 80, 90	70
JPEG User Comment			

jpegcommentuser	*JPEG User Comment*	(String constant)	
JPEG Comment Text (CT)			
jpegcomment_ctx	*Comment Text Rows*	0 .. 16	1

54.2.10 Parameters for the *text* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectiontext`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Text Display			
textdisplay	*Text Display*	disable, enable, datetime	enable
textbgcolor	*Background Color*	0x000000, 0x800000, 0x008000, 0x808000, 0x000080, 0x800080, 0x008080, 0x808080, 0xC0C0C0, 0xFF0000, 0x00FF00, 0xFFFF00, 0x0000FF, 0xFF00FF, 0x00FFFF, 0xFFFFFF	0x000000
textbgopacity	*Background Opacity*	0, 25, 50, 75, 100	0
Display Error Messages			
errortext	*Error Messages*	0, 1	1
Date and Time			
date	*Date and Time*	0, 1, 2, 3, 4, 5, 6	1
Comment			
print	*Comment*	(Multiline string constant)	^j6
Display Options			
imageinfo	*Show Event/Action Symbols*	0, 1, 2	1
chartdrawmode	*Level Meter*	off, bar, scrollchart	off
chartdatasource	*Level Meter Data*	PI, MI, IL, SI, EC, TP	PI
Object Tracing (OT)			
objecttracing	*Enable Object Tracing*	disable, enable	disable
objectcamera	*Tracing Camera*	right, left	right

54.2.11 Parameters for the *event* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionevent`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Passive Infrared Detector (PI)			
pircheck	*PIR Enable*	1, 0	0
pir	*PIR Level*	0 .. 100	50
Video Motion Window (VM)			
motioncheck	*Video Motion Enable*	1, 0	1
motion	*Video Motion Definitions*	(Multiline string constant)	0,540,380,200,200,20,25
motionwintype	*Video Motion Style*	off, on, highlight, passiv, area	highlight
motionnightoff	*Video Motion Night Mode*	0, 3, 6, 10, 18, 32, 56	0 0
Microphone (MI)			
miccheck	*Microphone Enable*	1, 0	0
mic	*Microphone Level*	0 .. 100	50
micwidth	*Microphone Signal Width*	50, 100, 150, 200, 250, 300, 400, 500, 750, 1000, 2000	50
Signal Input (SI)			
inputswitch	*Signal Input*	off, close, open	off
Signal CTS (SC)			
inputcts	*Signal CTS*	off, close, open	off
Signal DSR (SR)			
inputdsr	*Signal DSR*	off, close, open	off
Signal RxD (SX)			
inputrxd	*Signal RxD*	off, close, open	off
Periodic Event (PE)			
timercheck	*Periodic Event Enable*	1, 0	0
timerunit	*Periodic Time Unit*	sec, ms, Hz	sec
timer	*Periodic Time Interval*	0 .. 86400	60
Time Task (TT)			
timetaskcheck	*Time Task*	1, 0	1
User Click (UC)			
userclick	*User Click*	1, 0	1
Buttons (BT)			
buttoncheck	*Buttons Enable*	1, 0	0

button	*Button Combination*	right, left, rightORleft, rightANDleft	right
IR Remote Control (IR)			
ircheck	*Remote Control Enable*	1, 0	0
ircode	*Remote Control Code*	0	0
IP Receive (RC)			
ipreceivecheck	*IP Receive Enable*	1, 0	0
ipreceiveport	*IP Receive Port*	1 .. 65536	8000
ipreceivematch	*IP Receive Compare*	strcmp, regex	strcmp
ipreceivemessage	*IP Receive Message*	(String constant)	
COM In (CI)			
comincheck	*COM In Enable*	1, 0	0
cominmatch	*COM In Compare*	strcmp, regex, binary	strcmp
cominmessage	*COM In Message*	(String constant)	
Temperature (TP)			
tempcheck	*Temperature Enable*	1, 0	0
tempsource	*Temperature Sensor*	intern	intern
tempcompare	*Temperature Compare*	higher, lower	higher
templevel	*Temperature Level*	(String constant)	50.0
tempunit	*Temperature Unit*	Celcius, Fahrenheit	Celcius
tempaction	*Temperature Action*	first, every	first
Illumination (IL)			
illucheck	*Illumination Enable*	1, 0	0
illusource	*Illumination Source*	right, left, both	right
illucompare	*Illumination Compare*	higher, lower	higher
illulux	*Illumination Level*	(String constant)	100.0
illuaction	*Illumination*	first, every	first

	Action		
Random Event (RD)			
randomcheck	*Random Event Enable*	1, 0	0
randomrange	*Events per Hour*	(String constant)	1.000
Event Counter (EC)			
eventcounter_status	*Event Counter Enable*	enable, disable	disable
eventcounter_mask	*Events to Count*	(String constant)	*
eventcounter_filter	*Individual Events*	yes, no	yes
eventcounter_time	*Counting Period*	1 .. 3600	10
eventcounter_event	*Event Count*	1 .. 3600	5
eventcounter_condition	*Condition*	more, less	more
eventcounter_action	*Start Action*	first, every	every
Sound on Event (SD)			
playsound	*Sound Enable*	enable, disable	disable
playsound_list	*Play List*	Alarm, Cuckooclock, Default, Standard	
playsound_sequence	*Playback Sequence*	randomize, ascending, descending	randomize
playsound_alertmask	*Event Selection*	(String constant)	*
Sound on Event (SD2)			
playsound2	*Sound Enable*	enable, disable	disable
playsound2_list	*Play List*	Alarm, Cuckooclock, Default, Standard	
playsound2_sequence	*Playback Sequence*	randomize, ascending, descending	randomize
playsound2_alertmask	*Event Selection*	(String constant)	*
Signal Out Action (SO)			
outputaction	*Signal Out Action*	0, 1, 2, 5, 10, 30, 60, 300	0
outputaction_alertmask	*Event Selection*	(String constant)	*
ISDN Audio Call−Out (CL)			
callaction	*Audio Call−Out Profile*	off, Zeitansage	off
callaction_alertmask	*Event Selection*	(String constant)	*
Second ISDN Call−Out (CL2)			
callaction2	*Audio Call−Out Profile*	off, Zeitansage	off

callaction2_alertmask	*Event Selection*	(String constant)	*
E−mail Action (EM)			
emailaction	*E−Mail Profile*	off, AlarmMail, NotifyMail	off
emailaction_alertmask	*Event Selection*	(String constant)	*
Second E−mail (EM2)			
emailaction2	*E−Mail Profile*	off, AlarmMail, NotifyMail	off
emailaction2_alertmask	*Event Selection*	(String constant)	*
File Transfer Action (FT)			
ftpaction	*FTP Profile*	off, FTP−Webcam, FTP−Archiving, FTP−Day−Periode	off
ftpaction_alertmask	*Event Selection*	(String constant)	*
Second File Transfer (FT2)			
ftpaction2	*FTP Profile*	off, FTP−Webcam, FTP−Archiving, FTP−Day−Periode	off
ftpaction2_alertmask	*Event Selection*	(String constant)	*
IP Notify (IP)			
ipnotifyaction	*IP Notify Profile*	off, SimpleNotify, MultipleNotify, TrickyHttpRequest	off
ipnotify_alertmask	*Event Selection*	(String constant)	*
Second IP Notify (IP2)			
ipnotifyaction2	*IP Notify Profile*	off, SimpleNotify, MultipleNotify, TrickyHttpRequest	off
ipnotify2_alertmask	*Event Selection*	(String constant)	*
IP File Transfer (TR)			
ipfilecheck	*Activate IP File Transfer*	1, 0	0
ipfile_alertmask	*Event Selection*	(String constant)	*
ipfileport	*Send Port*	0 .. 65535	0
ipfileprotocol	*Simulated Protocol*	raw, http	raw
ipfileaddress	*Destination Address*	(String constant)	10.0.62.15:8000
ipfilename	*Transferred File*	current.jpg, lastevent.jpg, eventstory.jpg	current.jpg
Right Soft Button (SBr)			
softbutton1	*Activate Soft Button*	1, 0	1
softbuttonname1	*Soft Button Name*	(String constant)	Speak IP
Left Soft Button (SBl)			
softbutton2	*Activate Soft Button*	1, 0	0

softbuttonname2	*Soft Button Name*	(String constant)	Actions disable
Visual Alarm (VA)			
visualalarm	*Activate Visual Alarm*	enable, disable	disable
visualalarm_alertmask	*Event Selection*	(String constant)	*
visualalarm_format	*Visual Effect*	bar1, bar2, box1, box2, sign1, sign2	box1
visualalarm_color	*Effect Color*	0x000000, 0x800000, 0x008000, 0x808000, 0x000080, 0x800080, 0x008080, 0x808080, 0xC0C0C0, 0xFF0000, 0x00FF00, 0xFFFF00, 0x0000FF, 0xFF00FF, 0x00FFFF, 0xFFFFFF	0xFF0000
visualalarm_erase	*Display Duration*	0, 1, 5, 10, 30	10
visualalarm_acknowledge	*Alarm Acknowledge*	enable, disable	enable
Arming			
edactiv	*Arming*	enable, disable, close, open	enable
edacttimetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
Stop Actions (SP)			
freezeactiv	*Activate Stop Actions*	off, on	off
freezecondition	*Condition to Stop*	PI, VM, MI, SI, BT, IR, PE, TT, UC, RC, RD, EC	UC
freezedelay	*Time Before Stop*	0 .. 86400	15
Action Delay			
actiondelay	*Action Delay*	0 .. 3600	0
Event Dead Time			
eventdelay	*Event Dead Time*	0 .. 3600	5
Action Profile			
action_alertmask	*Event Selection*	(String constant)	*
Message Profile			
messaging_activ	*Enable Message Profile*	enable, disable	enable
messaging_timetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
notifydelay	*Messaging Dead Time*	0 .. 3600	60

notify_alertmask	*Event Selection*	(String constant)	*
Message Profile			
messaging2_activ	*Enable Message Profile*	enable, disable	enable
messaging2_timetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
messaging2_delay	*Messaging Dead Time*	0 .. 3600	60
messaging2_alertmask	*Event Selection*	(String constant)	*
Ring Buffer			
ringbuffer	*Ring Buffer*	1, 0	1
Event Story			
histcount	*Images Before Event*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50	1
futcount	*Images After Event*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50	2
storyinterval	*Image Interval*	0 .. 600000	500
story_alertmask	*Event Selection*	(String constant)	*
Display Options			
imageinfo	*Show Event/Action Symbols*	0, 1, 2	1
chartdrawmode	*Level Meter*	off, bar, scrollchart	off
chartdatasource	*Level Meter Data*	PI, MI, IL, SI, EC, TP	PI
Object Tracing (OT)			
objecttracing	*Enable Object Tracing*	disable, enable	disable
objectcamera	*Tracing Camera*	right, left	right

54.2.12 Parameters for the *eventfilter* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectioneventfilter`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Event Counter (EC)			
eventcounter_status	*Event Counter Enable*	enable, disable	disable
eventcounter_mask	*Events to Count*	(String constant)	*

eventcounter_filter	*Individual Events*	yes, no	yes
eventcounter_time	*Counting Period*	1 .. 3600	10
eventcounter_event	*Event Count*	1 .. 3600	5
eventcounter_condition	*Condition*	more, less	more
eventcounter_action	*Start Action*	first, every	every

54.2.13 Parameters for the *settings* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionsettings`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Arming			
edactiv	*Arming*	enable, disable, close, open	enable
edacttimetable	*Time Table Profile*	(No value), Weekdays_Mo–Fr, Weekend_Sa–So, Opening_Times, Closing_Times, MyCustomTimes	
Stop Actions (SP)			
freezeactiv	*Activate Stop Actions*	off, on	off
freezecondition	*Condition to Stop*	PI, VM, MI, SI, BT, IR, PE, TT, UC, RC, RD, EC	UC
freezedelay	*Time Before Stop*	0 .. 86400	15
Event Dead Time			
eventdelay	*Event Dead Time*	0 .. 3600	5
Action Delay			
actiondelay	*Action Delay*	0 .. 3600	0
Ring Buffer			
ringbuffer	*Ring Buffer*	1, 0	1
Event Story			
histcount	*Images Before Event*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50	1
futcount	*Images After Event*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50	2
storyinterval	*Image Interval*	0 .. 600000	500
story_alertmask	*Event Selection*	(String constant)	*

54.2.14 Parameters for the *action* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionaction`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Action Profile			
action_alertmask	*Event Selection*	(String constant)	*
Signal Out Action (SO)			
outputaction	*Signal Out Action*	0, 1, 2, 5, 10, 30, 60, 300	0
File Transfer Action (FT)			
ftpaction	*FTP Profile*	off, FTP−Webcam, FTP−Archiving, FTP−Day−Periode	off
Second File Transfer (FT2)			
ftpaction2	*FTP Profile*	off, FTP−Webcam, FTP−Archiving, FTP−Day−Periode	off
Visual Alarm (VA)			
visualalarm	*Activate Visual Alarm*	enable, disable	disable
visualalarm_format	*Visual Effect*	bar1, bar2, box1, box2, sign1, sign2	box1
visualalarm_color	*Effect Color*	0x000000, 0x800000, 0x008000, 0x808000, 0x000080, 0x800080, 0x008080, 0x808080, 0xC0C0C0, 0xFF0000, 0x00FF00, 0xFFFF00, 0x0000FF, 0xFF00FF, 0x00FFFF, 0xFFFFFF	0xFF0000
visualalarm_erase	*Display Duration*	0, 1, 5, 10, 30	10
visualalarm_acknowledge	*Alarm Acknowledge*	enable, disable	enable

54.2.15 Parameters for the *message* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionmessage`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Message Profile			
messaging_activ	*Enable Message Profile*	enable, disable	enable
messaging_timetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	

notifydelay	*Messaging Dead Time*	0 .. 3600	60
notify_alertmask	*Event Selection*	(String constant)	*
Sound on Event (SD)			
playsound	*Sound Enable*	enable, disable	disable
playsound_list	*Play List*	Alarm, Cuckooclock, Default, Standard	
playsound_sequence	*Playback Sequence*	randomize, ascending, descending	randomize
E−mail Action (EM)			
emailaction	*E−Mail Profile*	off, AlarmMail, NotifyMail	off
ISDN Audio Call−Out (CL)			
callaction	*Audio Call−Out Profile*	off, Zeitansage	off
IP Notify (IP)			
ipnotifyaction	*IP Notify Profile*	off, SimpleNotify, MultipleNotify, TrickyHttpRequest	off

54.2.16 Parameters for the *message2* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionmessage2`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Message Profile			
messaging2_activ	*Enable Message Profile*	enable, disable	enable
messaging2_timetable	*Time Table Profile*	(No value), Weekdays_Mo−Fr, Weekend_Sa−So, Opening_Times, Closing_Times, MyCustomTimes	
messaging2_delay	*Messaging Dead Time*	0 .. 3600	60
messaging2_alertmask	*Event Selection*	(String constant)	*
Sound on Event (SD2)			
playsound2	*Sound Enable*	enable, disable	disable
playsound2_list	*Play List*	Alarm, Cuckooclock, Default, Standard	
playsound2_sequence	*Playback Sequence*	randomize, ascending, descending	randomize
Second E−mail (EM2)			
emailaction2	*E−Mail Profile*	off, AlarmMail, NotifyMail	off
Second ISDN Call−Out (CL2)			
callaction2	*Audio Call−Out*	off, Zeitansage	off

	Profile		
Second IP Notify (IP2)			
ipnotifyaction2	*IP Notify Profile*	off, SimpleNotify, MultipleNotify, TrickyHttpRequest	off

54.2.17 Parameters for the *signalout* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionsignalout`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Signal Out Arming			
so_activ	*Activate Enhanced Signal Out*	enable, disable	disable
so_acttimetable	*Time Table Profile*	(No value), Weekdays_Mo–Fr, Weekend_Sa–So, Opening_Times, Closing_Times, MyCustomTimes	
Signal Out Switch Time			
so_time	*Switch Time*	0 .. 86400	60
Signal Out Dead time			
so_deadtime	*Dead Time*	0 .. 3600	10
Display Options			
so_imageinfo	*Show Event Symbols*	1, 0	0
Illumination			
so_illicheck	*Illumination Filter*	off, greater, lower	off
so_illilux	*Level*	(String constant)	100.0
Passive Infrared Detector (PI)			
so_pircheck	*PIR Enable*	1, 0	0
so_pir	*PIR Level*	0 .. 100	50
Video Motion Window (VM)			
so_motioncheck	*Video Motion Enable*	1, 0	0
Microphone (MI)			
so_miccheck	*Microphone Enable*	1, 0	0
Signal Input (SI)			
so_inputswitch	*Signal Input*	off, close, open	off
Periodic Event (PE)			
so_timercheck	*Periodic Event Enable*	1, 0	0
so_timer	*Periodic Time*	0 .. 86400	60

	Interval		
Time Task (TT)			
so_timetaskclick	*Time Task*	1, 0	0
User Click (UC)			
so_userclick	*User Click*	1, 0	0
Buttons (BT)			
so_buttoncheck	*Buttons Enable*	1, 0	0
so_button	*Button Combination*	right, left, rightORleft, rightANDleft	right
IR Remote Control (IR)			
so_ircheck	*Remote Control Enable*	1, 0	0
IP Receive (RC)			
so_ipreceivecheck	*IP Receive Enable*	1, 0	0
COM In (CI)			
so_comincheck	*COM In Enable*	1, 0	0
Temperature (TP)			
so_tempcheck	*Temperature Enable*	1, 0	0
Random Event (RD)			
so_randomcheck	*Random Event Enable*	1, 0	0
so_randomrange	*Events per Hour*	(String constant)	1.000

54.2.18 Parameters for the *mxpegparam* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionmxpegparam`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Camera Selection			
camera	*Camera Selection*	right, left, auto	auto
Image Size			
size	*Image Size*	160x120, 320x240, 640x480, 1280x960, customize	640x480
Frames per Second			
framerate100	*Frame Rate*	0, 3300, 2500, 2000, 1600, 1400, 1200, 1000, 800, 600, 400, 300, 200, 100, 50, 25, 10	2500
Brightness			
brightness	*Brightness*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0

Sharpness			
sharpen	*Sharpness*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
JPEG Quality			
quality	*JPEG Quality*	10, 20, 30, 40, 50, 60, 70, 80, 90	70
MxPEG			
motionjpeg	*MxPEG*	disable, enable	enable
mxpeg_cyclic	*Cyclic Image Refresh*	0 .. 100	8
mxpeg_delta	*Delta of Change*	0 .. 100	0
mxpeg_minchange	*Minimum MCU Change*	0 .. 100	10
mxpeg_sw2full	*Switch to Full Image*	0 .. 100	60
Exposure Field			
ca_exp_window_type	*Measurement Field*	all, quarter, center, spot, top, middle, bottom, right, vertical, left, right_left, extra	middle all
ca_exp_window_draw	*Show Field*	off, on, histogram_inside, histogram_outside, out_histogram_inside, out_histogram_outside, jpeg_histogram	on on

54.2.19 Parameters for the *quickcontrol* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionquickcontrol`

Parameter	Name in Dialog	Possible Values	Default Value(s)
Camera Selection			
camera	*Camera Selection*	right, left, auto	auto
Image Size			
size	*Image Size*	160x120, 320x240, 640x480, 1280x960, customize	640x480
Brightness			
brightness	*Brightness*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Backlight Correction			
backlight	*Backlight*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
Color Saturation			
color	*Color Saturation*	–10, –9, –8, –7, –6, –5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	0 0
Sharpness			

sharpen	*Sharpness*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	4 4
JPEG Quality			
quality	*JPEG Quality*	10, 20, 30, 40, 50, 60, 70, 80, 90	70
Exposure Field			
ca_exp_window_type	*Measurement Field*	all, quarter, center, spot, top, middle, bottom, right, vertical, left, right_left, extra	middle all
ca_exp_window_draw	*Show Field*	off, on, histogram_inside, histogram_outside, out_histogram_inside, out_histogram_outside, jpeg_histogram	on on

54.2.20 Parameters for the *itwm* Section

Enter the following command to see all parameters for this section:
`http://<camera ip>/control/control?listsectionitwm`

Parameter	Name in Dialog	Possible Values	Default Value(s)
IP File Transfer (TR)			
ipfilecheck	*Activate IP File Transfer*	1, 0	0
ipfileport	*Send Port*	0 .. 65535	0
ipfileprotocol	*Simulated Protocol*	raw, http	raw
ipfileaddress	*Destination Address*	(String constant)	10.0.62.15:8000
ipfilename	*Transferred File*	current.jpg, lastevent.jpg, eventstory.jpg	current.jpg

54.3 The *rcontrol* Command

The first value expected by the script is always the name of the action that is to be performed. Depending on the action, you may have to provide additional parameters. For the additional parameters mandatory and optional parameters are used.

Note: In order to see all options for the *rcontrol* command, enter the `list` instruction in your browser's address bar:
`http://<camera ip>/control/rcontrol?list`.

54.3.1 Parameters of *rcontrol*

Action	Description	Mandatory parameter	Optional parameter
sigouthigh	The signal output is closed. The optional *time* parameter reopens the signal output after the defined period of time has passed.	none	*time* Period of time in seconds

sigoutlow	The signal output is opened. The optional *time* parameter closes the signal output again after the defined period of time has passed.	none	*time* Period of time in seconds
sound	Plays the *boing* audio file. Using the optional parameter *soundfile*, you can specify an audio file. You can either use one of the audio files provided in the software or any audio file that you have recorded in the **Manage Voice Messages** dialog.	none	*soundfile* Name of the audio file
ledson	Switches all LEDs on. The optional *time* parameter resets the LEDs to the factory default settings after the specified period of time has passed.	none	*time* Period of time in seconds
ledsoff	Switches all LEDs off. The optional *time* parameter resets the LEDs to the factory default settings after the specified period of time has passed.	none	*time* Period of time in seconds
ledsdefault	Resets all LEDs to the factory defaults. The optional *time* parameter resets the LEDs to the previous settings after the specified period of time has passed.	none	time
ledsstring	You can explicitly change the state of every single LED. You only need the *leds* parameter. This parameter expects a string consisting of six characters, with each character defining the state of one LED. The characters are allocated clockwise with the first character allocated to the LED at 12 o'clock. Example: `http://<camera ip>/control/rcontrol?action=ledsstring&leds=01BD11`	**leds** 0= LED off 1= LED on B= LED blinking D= Default state of the LEDs	*time* Period of time in seconds
irledson	Switches all infrared LEDs on. The optional *time* parameter switches all LEDs off again after the specified period of time has passed.	none	*time* Period of time in seconds
irledsoff	Switches all infrared LEDs off.	none	none
irledsstring	You can explicitly change the state of the infrared LEDs for each side. You only need the *leds* parameter. This parameter expects a string consisting of two characters, with each character defining the state of one infrared LED bar. The first character of the string controls the state of the right LED bar, the second character controls the state of the left LED bar.	**leds** 0= LED off 1= LED on	*time* Period of time in seconds

	Example:
	`http://<camera ip>/`
	`control/rcontrol?`
	`action=ledsstring`
	`&leds=01`		

defreeze	Unlocks the camera after a Stop Action (SP) event has occurred and resumes image recording.	none	none
putrs232	Send text via the serial interface When you do not set the *rs232outtext* parameter, all that is transferred are the words "hello world".	none	*rs232outtext* string
getrs232	Read text from the serial interface. When you do not use any other parameters, only the last 2048 bytes are read from the buffer.	none	*nrofbytes* 0 .. 102400 bytes *rs232delafterread* Delete buffer after reading
getrs232hex	Similar to the getrs232 function, the only difference being that the characters are returned in hex code.	none	same as **getrs232**
userclick	Performs the *User Click* function.	none	none
pancenter	Sets the position of the zoomed image section to the center of the visible image.	none	none
gettemp	Returns the internal temperature of the camera. *Note:* This command is not available for **Web** cameras.	none	none
rs232sigin	Returns the state of pin 9 of the serial interface	none	none
setrs232sig	Sets the pins of the serial interface. Make sure that the serial interface has been configured correctly in the **Serial Interface and Modem Setup** dialog.	**24V** 0, 1 **RTS** 0, 1 **TXD** 0, 1 **DTR** 0, 1	none
ftplastevent	Transfers the last stored alarm image via FTP. Expects the name of an FTP profile as additional information. The profile must have been defined in the **FTP Profiles** dialog.	*profile* Profile name	none
ftpcurrent	Transfers the current image via FTP. Expects the name of an FTP profile as additional information. The profile must have	*profile* Profile name	none

	been defined in the **FTP Profiles** dialog.		
emaillastevent	Transfers the last stored alarm image via e−mail. Expects the name of an e−mail profile as additional information. The profile must have been defined in the **E−Mail Profiles** dialog.	*profile* Profile name	none
emailcurrent	Transfers the current image via e−mail. Expects the name of an e−mail profile as additional information. The profile must have been defined in the **E−Mail Profiles** dialog.	*profile* Profile name	none
notifylastevent	Sends a network message with the status of the latest event image.	*profile* Profile name	none
notifycurrent	Sends a network message with the status of the current image.	*profile* Profile name	none
sendmessage	Sends an IP notification to the defined address *Note:* This command is not available for **Web** cameras.	**message** String **addr** ip−address:port	none
actionactivityon	Activates all actions	none	none
actionactivityoff	Deactivates all actions	none	none
actionactivitytime	Activates all actions for the period of time defined in the **General Event Settings** dialog.	none	none
eventack	Acknowledges an alarm.	none	none
isdnphone	Triggers a camera voice message via telephone. Expects the name of profile defined in the **ISDN Dial−Out Profiles** dialog as additional information.	*profile* Profile name	none
speakip	Plays back the current IP address via the loudspeaker. **Note:** This command is not available for **Web** cameras.	none	none

54.4 Saving and Restoring the Configuration

Functions for saving and restoring the configuration can only be performed by a user of the *admin* access level.

Example: `http://<camera ip>/admin/rcontrol?action=storeconfig`

Note: These commands are not available for **Web** cameras.

54.4.1 Functions for Users of the *admin* level

Function	Description	Mandatory parameter	Optional parameter
storeconfig	Stores the current configuration in the camera's permanent storage.	none	none
restoreconfig	Restores the last saved configuration from the camera's permanent storage.	none	none
resetconfig	Reads the camera's factory default settings.	none	none
reboot	Reboots the camera.	none	none

55 CGI Parameters of the MOBOTIX Camera

To retrieve images of the camera directly from the integrated web server, you can use one of the following HTTP commands:

- **http://<camera ip>/record/current.jpg**

  Retrieves a camera image according to the current image settings. You cannot specify any additional parameters.
- **http://<camera ip>/cgi-bin/image.jpg**

  Retrieves a camera image using additional image parameters. For example, the following command will display an image from the right camera lens, size 320x240 mm with an image quality of 60%:

  http://<camera ip>/cgi-bin/image.jpg?**camera=right&size=320x240&quality=60**

  The saved configuration is *not* changed.

  Appending **?help** to the end of the command will display the corresponding help page:
  http://<camera ip>/cgi-bin/image.jpg**?help**
- **http://<camera ip>/cgi-bin/faststream.jpg**

  Retrieves the live stream from the camera using additional image parameters. For example, the following command will show the live stream as MxPEG from the camera in a generated HTML page:

  http://<camera ip>/cgi-bin/faststream.jpg?**stream=MxPEG&html**

  Appending **?help** to the end of the command will display the corresponding help page:
  http://<camera ip>/cgi-bin/faststream.jpg**?help**

Note: This feature is not available for **Web** models.

Caution! If the **MxPEG mode of the camera has been activated**, accessing the images using the CGI commands described here will only work properly if the camera has been set to live images with 1280x960 (Mega) or 640x480 (VGA) resolution with zoom set to 1x:

Selected Image Format	1x Zoom	2x or 4x Zoom
1280x960, 640x480	OK	**Not** possible
320x240, 160x120 or customized format, if not 1280x960 or 640x480	**Not** possible	**Not** possible

55.1 Parameters for *image.jpg*

Parameter=Default	Values	Explanation
help		**Help** This overview.
current		**Current Live Image** Output image from /record/current.jpg All other parameters are ignored.
config		**Current Configuration**

		Output image with parameters from current configuration file Other parameters will overwrite them.
fip=10.0.0.0	*Escaped string*	**Factory IP** Will only deliver an image if the camera has this factory IP address.
error=picture	picture empty content	**Error Handling** *picture*: returns the "No frame available!" image *empty*: returns nothing *content*: returns only the content type
imgprof=	*Escaped string*	**Image Profile** Load parameters from this image profile. At first, the current configuration is read and will be overritten by image profile settings.
Image Parameter		
camera=live	right left both pip RiL LiR live	**Camera Selection** Camera lens used for JPEG conversion. **Note:** A day/night camera always using current live camera.
size=640x480	1280x960 640x480 320x240 160x120 custom	**Image Size** Resolution of converted JPEG.
customsize=800x400	*Escaped string*	
automatic=auto	off auto day night inactiv autoonly	**Automatic Image Improvement** Set the image improvement mode: *off/inactive:* contrast will not be improved *auto/day/autoonly:* normal auto contrast *night:* auto contrast with more clipping
brightness=0	–10..10	**Brightness**
backlight=4	–10..10	**Backlight Correction** Increases brightness of darker points in the image.
color=5	–10..10	**Color Saturation** –10 will output BWimage.
blue=0	–20..20	**Color Balance for Blue** Adjust blue balance.
red=0	–20..20	**Color Balance for Red** Adjust red balance.
sharpen=4	–2..20	**Sharpen** Negative values wil blur the image.
quality=80	1..100	**JPEG Quality**
textdisplay=enable		

	disable enable datetime	**Text Display** Enable or disable text display: *datetime* displays date &time only.
textbgopacity=0	0..100	**Text Background Opacity** Opacity of the background color in percent.
textbgcolor=0x000000	*Escaped string*	**Text Background Color** Enter hex color: 0xRRGGBB Default black=0x000000
date=0	0..7	**Insert Date &Time** *0* = off *1* = Date, time zone, time *2* = Time *3* = Time, milliseconds *4* = Date *5* = Long date *6* = Date, time &milliseconds *7* = Time zone
print=	*Escaped string*	**Customized Message** The message text follow CGI syntax rules: '%0A' for return, '+' for space and so on.
mirror=no	no vertical horizontal both	**Mirror**
rotate=0	0..360	**Rotate** Currently only 0° and 180° available.
darknoisesuppress=medium	off medium high	**Noise Suppress** Specify the noise suppress mode.
showlogo=	MXLOGO−320 MXLOGO−640 MXLOGO−1280	**Image Link Logo** Logo profile for image. Repeat parameter to display more logos at once.

55.2 Parameters for *faststream.jpg*

Parameter=Default	Values	Explanation
help		**Help** This overview.
stream=full	full	**Stream Type** Image data in stream: *full*: full JPEG images *MxPEG*: MOBOTIX optimized JPEG
jpheaderupdate=0	0..1000	**Frames between tables refreshs** Table refresh count. 0: off, 1: every frame, 2: every second frame, ...
jpheaderrefresh=0	0..60	**Seconds between table refreshs** Table refresh time. 0: off, 1: every second, 2: every second second, ...

fps=	*Escaped string*	**Frames per Second** Frame rate of streamed images: e.g. '*3.0*' streaming with 3 frames per second
framestep=1	1..1000	**Frame Step** Stepping interval for stream. Set to 1 for maximum rate.
framecount=0	0..	**Frame Counter** Amount of images delivered before stream stops (0=infinite).
fip=10.0.0.0	*Escaped string*	**Factory IP** Will only deliver an image if the camera has this factory IP address.
error=picture	picture empty content	**Error Handling** *picture*: returns the "No frame available!" image *empty*: returns nothing *content*: returns only the content type
html		**HTML Page With Stream** Output HTML page including stream.

Except for the *help* and *current* parameters, you can combine any number of parameters in any order.

56 LED and Signal Output Setup

The camera uses the six LEDs on its front to inform you about different actions/states of the system. Open the **LED Setup** dialog to modify LED behavior or to deactivate them entirely.

The camera keys on the camera's front (**R**, **L**) are labeled as as seen by the camera, the LEDs are identified by looking at the camera itself (12 to 10 o'clock positions):

Right side of camera
(as seen by the camera)

Left side of camera
(as seen by the camera)

56.1 LED Settings

Parameter	Description
LED Main Switch	The main switch activates or deactivates all LEDs of the camera. **Note:** When deactivated, the LEDs blink only when the camera is starting. Beyond that, the LEDs will **not signal anything**.
Set all LEDs	You can assign the same function to all LEDs: **Differently** Select this option to assign different functions to the the LEDs. **Factory Default** Resets all LEDs to the factory defaults. All other options correspond to the functions that you can select for the individual LEDs. For more detailed information, see the *LED Signals* help topic. **Note:** The selected settings may be overruled temporarily by certain applications, e.g. while installing a software update.

56.2 LED Signals

You can assign a different signaling function to every LED:

Signal	Meaning
off	The LED's signal feature is deactivated during regular operation. **Note:** This setting will be ignored during camera startup.
On	The LED is on without interruption.
Blink	The LED blinks slowly.
Flicker	The LED blinks rapidly.

Event	The LED indicates *every* triggered event.
PIR	The LED indicates when an event has been triggered by the passive infrared detector.
Left button	The LED goes on when you press the **L** key on the camera's front.
Right button	The LED goes on when you press the **R** key on the camera's front.
Signal input	The LED goes on when the signal input is active.
Signal output:	The LED goes on when the signal output is active.
Microphone	The LED indicates when an event has been triggered by the microphone.
IR remote control	The LED indicates when an infrared signal by a remote control has been received.

56.3 Other Settings

PIR Threshold	Define the trigger level for the *passive infrared detector*. **Note:** Activate the level meter in the **Text and Display Settings** dialog and select *PIR Detector* as source. The level meter helps you find the best possible trigger level for your application.
Signal Output	**On** The contact between pin 1 of the RS−232 connector and ground (pin 5) is closed. **off** The signal output is open. **Event** The signal output will be switched as soon as an event occurs.

56.4 Storing the Configuration

Click on the **Set** button to activate your settings and to save them until the camera is rebooted.

Click on the **Close** button to close the dialog. While closing the dialog, the system checks the entire configuration for changes. If changes are detected, you will be asked if you would like to store the entire configuration permanently.

57 Using Variables

Variables can be used in various dialogs and are replaced at runtime by the actual values:

- File or directory name in the **FTP Profiles** dialog.
- Subject or body text in the **E–Mail Profiles** dialog
- Network messages in the **Messaging** dialog
- Comments in the **Text &Display Settings** dialog

57.1 Variable Description

Variable	Description	Note
LEV: Last Event		
$(LEV.DATE)	Date and time of the last event	YYYY–MM–DD hh:mm:ss
$(LEV.TIME)	Time of the last event	hh:mm:ss
EVT: Event		
$(EVT.AST)	Displays all active actions.	See also: *Abbreviations Used in the MOBOTIX Camera*
$(EVT.EST.SELECTED)	Displays all active events.	See also: *Abbreviations Used in the MOBOTIX Camera*
$(EVT.EST.ACTIVATED)	Displays the event that has triggered an alarm.	See also: *Abbreviations Used in the MOBOTIX Camera*
$(EVT.VATIMESTAMP)	Time of the last alarm acknowledgement.	YYYY–MM–DD hh:mm:ss.msec
FPR: Fingerprint Information		
$(FPR.FRM)	Unique image number of every digitized image since the camera has been rebooted.	
$(FPR.ENO)	Event Number	
$(FPR.TIMESTAMP)	Date and Time	YYYY–MM–DD hh:mm:ss.msec
TEXT: Text Variables		
$(TEXT.FTPDIR)	Default path for FTP image storage	<hostname>/YYYY/MM/DD/hh/
$(TEXT.FTPFILE)	Default filename for FTP image storage (without file name extension)	mYYMMDDhhmmssmsc
$(TEXT.EVENTFILE)	File name (without file name extension) that contains a timestamp and where event images are identified by a *E+* suffix.	fYYMMDDhhssmsc[_Eeeeeee]
TMS: Timestamp Information		
$(TMS)	Timestamp &milliseconds	YYYY–MM–DD hh:mm:ss.msec
$(TMS.DATE)	Date according to ISO 8601	YYYY–MM–DD
$(TMS.TIME)	24h date &milliseconds	hh:mm:ss.msec

$(TMS.TIMET)	Number of seconds since 1970−01−01 00:00:00 UTC &milliseconds	Seconds.msec
$(TMS.YEAR)	Year, four digits	YYYY
$(TMS.SYEAR)	Year, two digits	YY
$(TMS.MON)	Month from 01 to 12	MM
$(TMS.DAY)	Day from 01 to 31	TT
$(TMS.YDAY)	Day of the year (001 ... 366)	DDD
$(TMS.WEEK)	Number of the week according to *ISO 8601:1988* from 01 to 53. The first week has at least four days in the current year. The week starts on Monday.	WW
$(TMS.WDAY)	Day of the week from 1 to 7. 1=Monday, 2=Tuesday, ...	W
$(TMS.HOUR)	Two−digit number of the current hour (24h representation) from 00 to 23	hh
$(TMS.HOUR12)	Two−digit number of the current hour (12h representation) from 00 to 12	hh
$(TMS.AMPM)	AM and PM abbreviations 12 o'clock noon is 'PM' and 12 o'clock midnight is 'AM'	`AM` or `PM`
$(TMS.MIN)	Two−digit minutes	mm
$(TMS.SEC)	Two−digit seconds	ss
$(TMS.MSEC)	Three−digit milliseconds	msec
$(TMS.ZONE)	Abbreviation of the current time zone	ZZZ
$(TMS.RFC822)	Date and time as deviation from GMT (UTC) according to RFC822	Day, DD MMM YYYY hh:mm:ss +zzzz
ID: Identification Information		
$(ID.MAC)	MAC address of the network interface	00:03:C5:xx:yy:zz, where *00:03:C5*: MOBOTIX identifier, *xx:yy:zz*: factory IP address in hexadecimal notation
$(ID.FIP)	Factory default IP address of the camera	10.x.x.x
$(ID.NAM)	Host name of the camera	<hostname>
$(ID.ET0)	Current IP address of the camera	E.g. 192.168.77.9
$(ID.SWV)	Software version of the camera	E.g. M10−V2.0.3.9
$(ID.UPT)	Operating time of the camera since the last reboot in seconds	Seconds
SEN: Sensor Information		
$(SEN.SIN)	Status of the signal input	0, 1
$(SEN.BTR)	State of the right camera key	0, 1
$(SEN.BTL)	State of the left camera key	0, 1
$(SEN.PIR)	PIR level in percent	0..100
$(SEN.MIC)	Microphone level in percent	0..100

	This value will only be displayed if the **Microphone** event or the level meter has been activated.	
$(SEN.ILR)	Illumination level of the right lens, where 0: dark, 1000: direct sun at the equator at noon	0..1000
$(SEN.ILL)	Illumination level of the left lens, where 0: dark, 1000: direct sun at the equator at noon	0..1000
$(SEN.VIM)	Number of the triggered motion window	(Comma−separated list with window numbers)
$(SEN.TIN.CELSIUS)	Internal camera temperature in degrees Celsius	°C
$(SEN.TIN.FAHRENHEIT)	Internal camera temperature in degrees Fahrenheit	°F

Notes:

- Note, that variables are *not* case−sensitive.
- Make sure to spell the variables correctly.

57.1.1 Additional Possibilities for Creating Dynamic Text

Apart from the variables listed above, you can also use *Placeholders for Dynamic Image Text*.

58 Abbreviations Used in the MOBOTIX Camera

The shortcuts (also called 'image symbols') listed in the table below are displayed at the bottom of the camera images. They inform you about camera events, actions and messages.

These shortcuts are visible in the **Live** images, the stored images and the event stories. For example, using the shortcuts displayed in the **Player** images you can identify the lens that has triggered the storage of an image or event story.

58.1 Event Symbols

Event symbols are displayed in the lower left corner of the image.

BL	The "L" key on the camera's front has been pressed.
BR	The "R" key on the camera's front has been pressed.
BT	A key on the camera's front has been pressed.
CI	RS232 message received via the serial interface.
EC	Event Counter
IL	Illumination
IR	Signal by an IR remote control
MI	Microphone
PE	Periodic Event
PI	Passive Infrared Detector
RC	IP Receive
RD	Random event
SB	Soft Button
SI	Signal Input
TP	Temperature
TT	Time Task event
UC	User Click
VA	Visual Alarm
VM	Video Motion window

58.2 Message and Action Symbols

These symbols are displayed in the lower right corner of the image.

CL	ISDN Call Action
CO	Send a message via the RS−232 interface
CT	Receive a JPEG comment via the RS−232 interface
EM	E−Mail Action

FS	Storing images on a File Server
FT	Perform File Transfer action
IP	IP Notify
SD	Sound on event is active
SO	Switching Signal Output is active
SP	Stop action has been triggered – the camera has stopped recording
ST	The camera is storing images in its internal storage
VA	Visual Alarm is active

58.3 Error Symbols

These symbols are displayed together with an error message above the event symbols only if an error has occurred.

DY	Error on active daylight lens
IS	ISDN transfer error
LG	Logo processing error
NI	Error on active night lens
OA	Error obscuring image areas
SB	Error triggering a camera key function

See also: *Open Help* in the **Text & Display Settings** dialog.

59 Regular Expressions

This page should only give you a short introduction into the concept of regular expressions and is far from complete. For more information on the subject, reading *Regular Expressions* by Jeffrey E.F. Friedl, O'REILLY, is highly recommended.

Regular expressions are search patterns which you can use to test strings. For example, you can use a regular expression to test the message text of an IP message or data sent via the serial interface. A regular expression consists of one or several characters you are searching for and of special characters that are performing certain functions.

Example: A machine sends data via the serial interface such as this sample:

```
[...]
2003-09-22 12:24:50 PM robots ready
2003-09-22 12:24:51 robots starting process
2003-09-22 12:25:25 robots finished in 34sec
2003-09-22 12:25:30 robots ready
2003-09-22 12:25:31 PM robots starting process
2003-09-22 12:25:33 error: no material found
2003-09-22 12:25:33 robots stop on error
```

The regular expression **`stop.*error`** will trigger an event if the machine returns an error as in the last line of the example.

59.1 Special Characters

When you want to search for a character from the left column of the table below or for the backslash "\" or minus "–" characters, precede them with a backslash "`\`" (this is also called *masking*).

Character	Function
^	The **^** character marks the start of a string. The expression `^Test` is only true for strings that start with *Test*.
$	The *$* character marks the end of a string. The expression `Test$` only is true for strings that end with *Test*.
.	The *full stop* character is a placeholder for *one* character. The `ab.d` expression is true for *abcd* or *abad*, but not for *abccd*. When searching for the **.** character itself, you need to mask it by preceding it with a backslash "\". In this case, the expression `ab\.d` is only true for *ab.d*.
*****	The *asterisk* character is a repeat operator meaning that the preceding character may either occur never or an unlimited number of times. The expression `ab*c` is true for *abc*, *abbbbbc*, but also for *ac*.
+	The *plus* character is a similar repeat operator meaning that the preceding character may either occur once or an unlimited number of times. The expression `ab+c` is true for *abc*, *abbbbbc*, but not for *ac*.
?	The *question mark* character means that the preceding character may occur once or never. The expression `ab?c` is true for *abc* and *ac*, but not for *abbc*.
[ ]	Expressions surrounded by *[square brackets]* represent a character class.

	A character class can be defined either as a list or as a range. The expression `[abc]` represents a list of characters, while the expression `[a-m]` represents a range. For example, `[0-9]` is true for all numbers, while `[a-z]` is true for all lower–case letters. It is possible to use several ranges within one character class, such as `[0-9a-zA-Z]`, or you can mix lists and ranges as in `[afm0-6]`. A character class can also be negated by using a preceding caret "^" character. The expression `[^ab]` is true for all characters that are neither *a* nor *b*.

60 The MxPEG Viewer

When you set the **MxPEG** parameter in the **JPEG Settings** dialog to *enable*, the camera creates a combined audio/video stream using MOBOTIX video encoding. MxPEG allows for large−format live video and audio streaming (audio only if supported by the camera model) at extremely low network load (1% at 100 Mbps).

For viewing and storing the stream, you need **MxPEG Viewer** for Windows. You can download the application directly from this camera. For using MxPEG with the browser−based user interface, refer to *The MxPEG ActiveX Plug−in for Internet Explorer*.

MxPEG Viewer also provides voice transport in both directions via network connections (*Voice over IP* or *VoIP*), provided that adequate bandwidth is available.

Find the latest version of **MxPEG Viewer** or the *MxPEG ActiveX Plug−in for Internet Explorer* on the MOBOTIX homepage.

Notes: When fast movements occur in the image, you may see tiles in the image when MxPEG is activated. If you prefer better image quality, you should deactivate MxPEG as described in *The Live Screen* under *High Resolution and Quality*.

This help page describes the basic features of **MxPEG Viewer**. For more detailed information, read the **MxPEG Viewer Help**, that is available for downloading on the MOBOTIX website.

For further information on the **MxPEG ActiveX Plug−in** for Internet Explorer, see *The Live Screen*.

60.1 Defining and Displaying Cameras

Enter one or several IP addresses or symbolic names of cameras in one line of the text box. Separate the individual IP addresses using commas.

Click on the **Start** button to display the camera images.

Notes:

- The last five lines are stored in the list.
- If necessary, you can also enter a port with the IP address. Use a colon to separate the port. Example: `192.188.155.44:3131`

60.2 Selecting Cameras

In order to modify a camera or to control a rotor head, select the desired camera.

When you click on the camera image, the image will get a yellow frame.

60.3 Setting Image Parameters

You can modify the following parameters for the selected camera:

View	Selects the image sensor
Quality	Controls the image quality
Brightness	Controls the image brightness
Exp−Field	Selects the exposure window
Framerate	Selects the frame rate
Sharpness	Controls the image sharpness
Size	Selects the image size

60.4 Status Information

The following information is displayed for the selected camera:

MxF/s	Display image rate while displaying the MxPEG video stream
F/s	Display image rate while displaying individual images
kbps	Used bandwidth

60.5 General Controls

The player's controls have been designed to match those of the camera player when accessed using a browser.

Option	Description
all	Selects all cameras displayed in order to switch all cameras to *Live* mode at once, for example.
Live	Switches one or more cameras to *Live* mode.
	Switches one or more cameras to *Event Recorder* mode which displays all events stored by the selected camera(s).
	Switches one or more cameras to *Local Recorder* mode which displays all events stored in the local computer's RAM.
i	Displays the camera information in the browser.
?	Displays the **Image Search** dialog. **Note:** This feature has not yet been implemented.
	Switches the camera to *Listen* audio mode.
+ **−**	Sets the speaker loudness of the selected camera(s). **Note:** This feature has not yet been implemented.

	Switches the camera to *Speak* audio mode.
	The signal output of the selected camera is closed (*high*).
	The signal output of the selected camera is open (*low*).
	The *Door Opener* function closes the signal output for two seconds (*high*).
IE	Opens the standard browser.
	Stores the content of the *Local Recorder* from the RAM in a file.
	Loads the content of a file into the *Local Recorder*.

60.6 Options

Click on the **Options** button to modify the *global* **MxPEG Viewer** options and the *local* options of the individual cameras.

The first tab of the **Options** dialog of **MxPEG Viewer** is the **Global** tab. **MxPEG Viewer** will display a tab with the name and IP address of each camera in the viewer, allowing you to make individual adjustments.

60.6.1 Global Options

The global options affect all cameras, provided that no special settings have been defined for individual cameras (e.g. authentication, Multi View, etc.).

Option	Description
Camera default user name	Enter the user name that is used for all cameras for authentication purposes.
Camera default password	Enter the password that is used for all cameras for authentication purposes.
Port for remote control	**MxPEG Viewer** can be controlled either from a remote computer or by a camera sending network (IP) messages. Enter the port for **MxPEG Viewer** to listen for IP messages. See also *Remote–Controlling **MxPEG Viewer***.
Log File	Select if and where you would like to store the log file.
Mouse–Over	Select the action that will be performed when you hold the mouse over an image. **off** Mouse–over is deactivated. **on** Mouse–over is active. **by Multi View** Copies the camera's Multi View configuration.
Copy definitions	**Multi View** Copies the selected camera's Multi View screen. **Softbuttons** Copies the list of softbuttons from the selected camera's Multi View screen.

60.6.2 Local Options

The local options only affect the camera named in the tab so you can enter settings specific to this camera.

Option	Description
HTTP port	HTTP port of the camera's web server Default setting: *80*
Pan/tilt head	You can use the camera with a pan/tilt head. The pan/tilt head is controlled by **MxPEG Viewer**. Select one of the supported models from the list.
Local Recorder size	Configure the amount of RAM to be reserved for the *Local Recorder*.
Username	User name sent to the camera for authentication purposes. Only required when the camera's *user* or *guest* access levels are password–protected.
Password	Password sent to the camera for authentication purposes. Only required when the camera's *user* or *guest* access levels are password–protected.
Save password	Stores the authentication data you have entered for the next start of the viewer.
Display strategy	**minimum delay** Images are displayed with minimum delay. **smooth display** Images are displayed smoothly.

Note: When the camera's *user* or *guest* access levels are password–protected and you enter the user name and password for the *guest* level in the local options, you will not be able to modify any *image parameters*. The *guest* access level is not authorized to do so.

60.7 Remote–Controlling MxPEG Viewer

You can control some of **MxPEG Viewer's** parameters from another camera or computer using HTTP commands. See the list below for a complete description of these parameters.

Syntax:

```
http://<ip-address-computer>[:<portnumber>]/ip=<camera-ip>&quality=40&size=320x240&camera=left
```

60.7.1 Description of Parameters

Parameter	Description
ip	Defines the IP address of the camera(s) displayed in the Viewer. Separate multiple IP addresses using commas. When a camera sends an IP message to **MxPEG Viewer**, it can transfer its own IP address as a value: In this case, use the following syntax for the **ip** parameter: `GET ip=ownip`
quality	Image quality in %
size	Selects the image size Values: *160x120, 320x240, 640x480*

camera	Selects the image sensor Values: *left, right, both, RiL, LiR*
port	The port number to which **MxPEG Viewer** listens.

60.7.2 Value Description

Value	Description
<ip–address–computer>	Enter the IP address of the computer on which **MxPEG Viewer** is installed.
<portnumber>	Enter the port number to which **MxPEG Viewer** listens, provided that standard port *80* is not used. If this is the case, you do not need to enter a port number.
<camera–ip>	Enter the IP address of the camera you would like to display.

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Manufacturer

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