

Baudisch.CP-CAM

User Manual

History:

Version	Date	Name	Change
1.0	12.10.2007	Bönisch / Meinert	Regenerated
2.0	04.08.2008	Beck	Software manual
2.4	10.11.2009	Siegele	Enhancement
2.5	26.07.2010	Meinert	Enhancement CP-CAM Steel
2.7	09.08.2010	Siegele	Enhancement
2.8	21.10.2010	Bönisch	Update
2.8	15.11.2010	Czeschka	English translation
2.9	19.11.2010	Czeschka	Update
2.9	25.11.2010	Meinert	Proof-reading

Approved latest version:

	Date	Name	Division	KZZ	Signature
Checked	TT.MM.JJJJ		DEV		
Checked			PF		
Checked			VT		
Checked			Kunde		
Checked			FE		
Approved			GL		

1. Table of Content

2. General Information

2.1. History of Versions

Date	Version	Description / Function Enhancement
		•
23.07.2010	2.8	• New Resource „snoms.cgi“ added (MJPG Stream instead of single image stream)
07.07.2010	2.7	• Bugfix. IP stack (MSS was sent with a value of 0) • Adaptation to less tolerant viewers: Padding space at the „Content-Length“ removed.
19.02.2010	2.6	• New driver for camera (compression problem with special diamond pattern)
10.12.2009	2.5	• Bugfix: Port for status messages was incorrectly loaded (UCHAR / UINT)
22.07.2009	2.4	• Automatic disconnection is now adjustable via parameters (system.ini)
08.07.2009	2.2 / 2.3	• Encoding of form data changed to „ISO-8859-1“ • Default value for Discovery Port changed to 4005 • Content Type for single image changed to „image/jpeg“ • Automatic disconnection of a TCP connection, after complete transmission of the single picture (Workaround for PHP HTTP requests) • Bugfix: Wrong ID tag at end of string • Bugfix: Internal (insertPostPair())
30.06.2009	2.1	• Bugfix: Object name for Java Applet corrected • Web-IF expanded language configuration • Default value for switching threshold (IR) set to 720
28.05.2009	2.0	• Bugfix: Adjustment of the IR control due to new API
02.05.2009	1.9	• Expansion of resources to „snom.cgi“ with special treatment (user level 2)
22.04.2009	1.8	• Bugfix: Restriction to Web resources (CGI interface) • Send camera name per UDP (alternative to broadcast) • New resource XML added
09.02.2009	1.7	• Web interface expanded (switching threshold for IR etc.)
26.08.2008	1.6	• Bugfix: camera ID protocol
25.08.2008	1.4 / 1.5	• Auto detection adjusted (data format of the feedback) • Camera ID added • Hardware Watchdog added (system.ini)
08.08.2008	1.3	• Bugfix: HTTP authentication

		• Automatic detection of a CAM in LAN (UDP broadcast) • Zoom and pan in Web-IF added • Output in Web-IF for (shutter, chip version, ...) • Autom. IR control
30.07.2008	1.1	• First release

2.2. Introduction

The Baudisch.CP-CAM combines video camera and web server into one compact unit.

Without further additional components, colour videos can simultaneously be accessed via a web browser from multiple PCs on the network.

Built-in IR spotlights allow operation at night - persons and objects in front of the camera are seen well even in total darkness.

Settings on the camera can easily be made via the web browser.

Due to its slim design, the CP-CAM is suitable to use in mail boxes, door bell panels or similar situations where cameras previously did not fit.

Simply the LAN cable is needed for the connection which then provides the power supply per Power-over-Ethernet (PoE / Endspan).

Alternatively to PoE operation the camera can also be supplied with 24VDC.

2.3. Designs

The Baudisch.CP-CAM is available in different housings and mounting options:

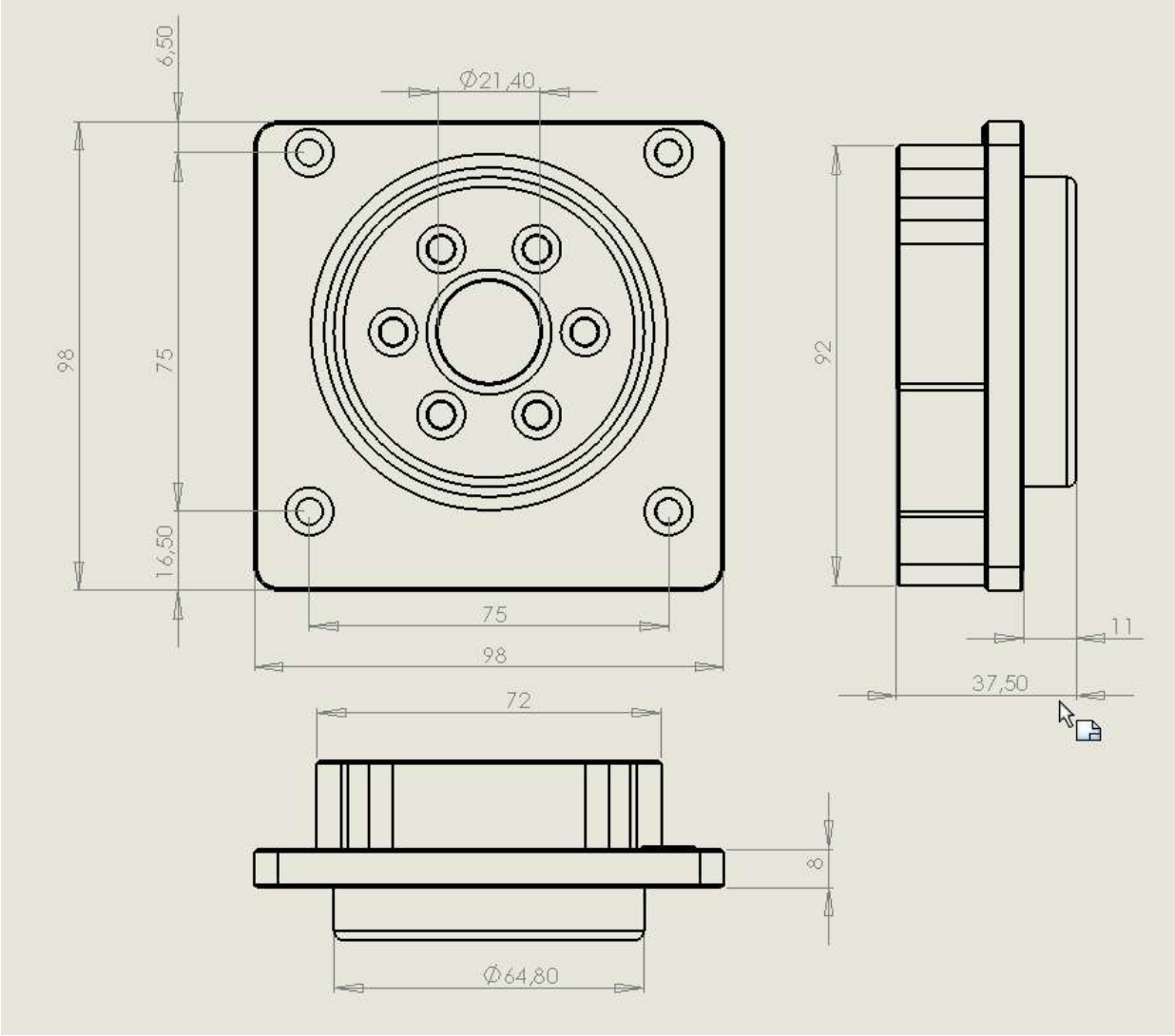
2.3.1. Baudisch.CP-CAM IP65 housing for panel mounting

Solid and robust design in aluminium outdoor housing.

The camera is simply inserted and attached from the rear side through a round opening (diameter 65 mm). A circular seal prevents water entry.

The supply line (Ethernet with PoE) is connected via a cable gland on the back.

Dimensions of the Baudisch.CP-CAM housing for panel mounting IP65



2.3.2. Baudisch.CP-CAM housing for Siedle Vario

The modules for Siedle Vario housing allow for the quick and easy use.
Simply click in – ready.*

This example shows the Baudisch.CP-CAM in Siedle Vario with silver metallic panel and Siedle door station.

The panels are available in different colours.

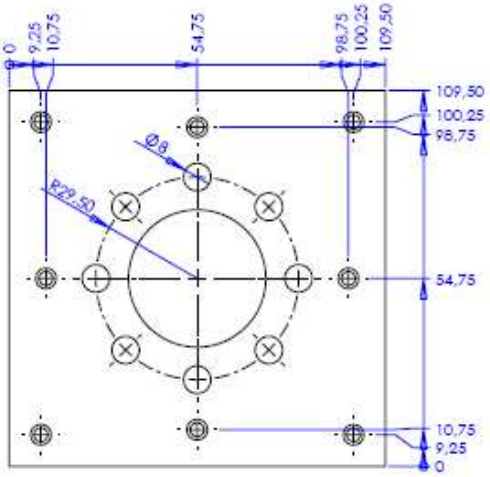
The supply line (Ethernet with PoE) is connected with a standard LAN cable on the rear side.

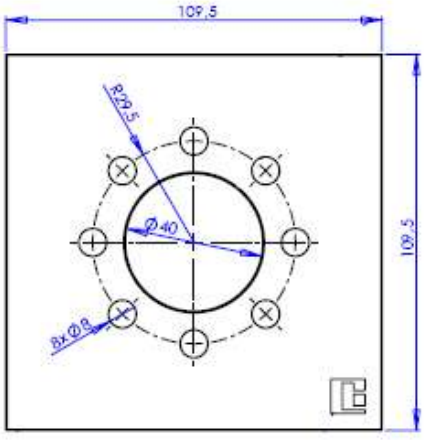
The cable can also be lead through perpendicularly towards the rear. The hole on the rear panel must therefore be broken away.

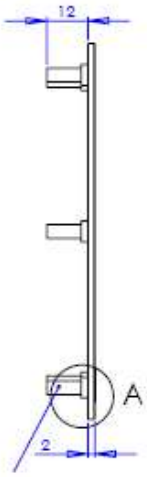
Note: For the housings for surface mounting, it may be required to first remove a mounting bolt. Please note the installation instructions.

2.3.3. Baudisch CP-CAM Steel

Design to be installed behind a separate front panel or for use in the Baudisch.SIP modular system. The V4A front panel must be ordered separately. Mounting frames are optionally available.







2.3.4. Baudisch.CP-CAM installed in Baudisch DoorStations

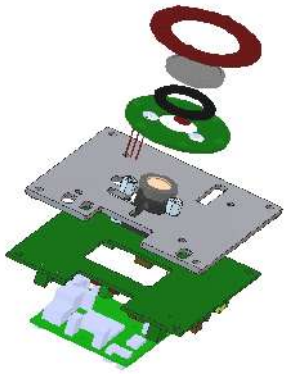
Of course, the Baudisch.CP-CAM is also used in combination with other Baudisch products.

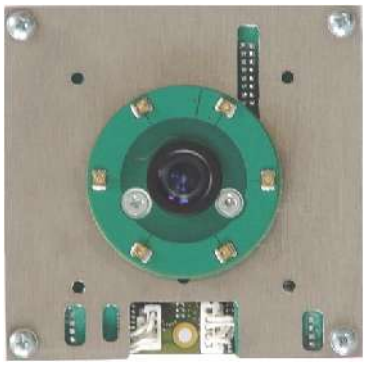
Installation of the camera in the Baudisch Voice over IP SIP DoorStation with hands-free unit and display.

Installation of the camera in ComPanel with 6.4“ screen, speakerphone unit and Baudisch transponder reader.

2.3.5. Baudisch.CP-CAM Installation Kit OEM

A parts kit is available for OEM use.



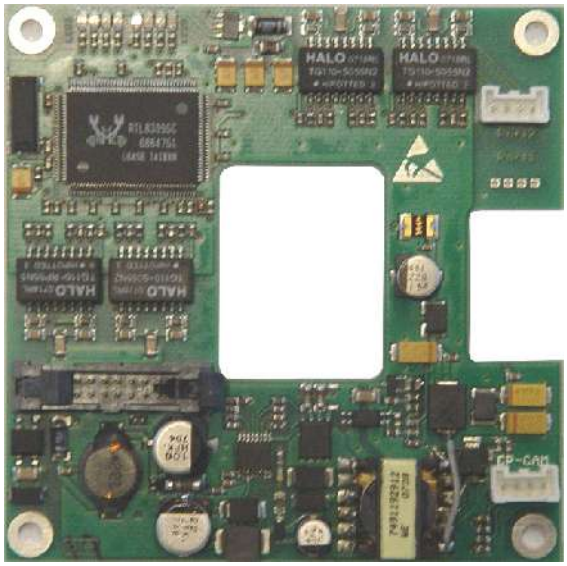


The OEM parts kit consists of camera, IR spotlights, IR filter glass and mounting bracket.

2.4. Accessories

2.4.1. CP Switch OEM for Baudisch.CP-CAM

Module for joint operation of CP-CAM and SIP-Main OEM to an Ethernet cable for PoE supply.



- Switch assembly for installation in customized housing
- Power supply via PoE (endspan) or 24VDC / max. 3 VA
- 100 Mbit UP-Link port
- 100 Mbit port for CP-CAM
- 100 Mbit port for SIP DoorStation
- 100 Mbit port for additional application
- 24 VDC output for supply of CP-CAM
- LED function displays

2.4.2. CP-CAM IO-Interface with 2 I/O Ports and 24VDC PoE Supply

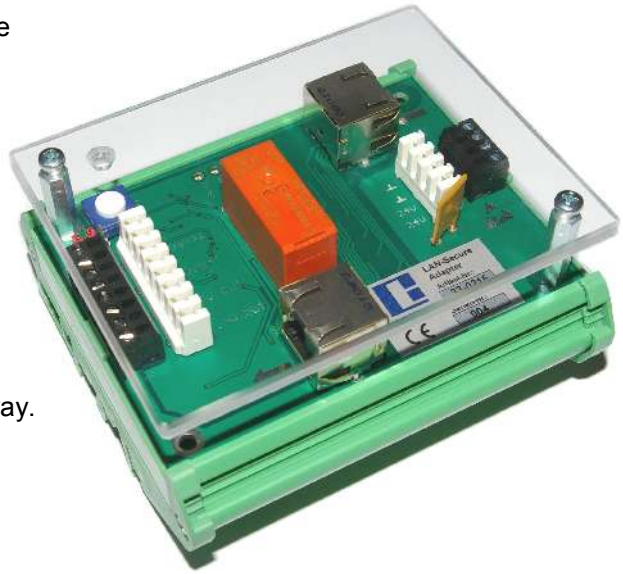
For use as an input or output module and to 24VDC PoE supply.

- Switch cabinet module with two I/O ports, each to be configured as input or output. To be used for feedback or for switching purposes.
- The function of the I/O ports are set via the web interface of the CP-CAM connected.
- Can feed the CP-CAM with 24VDC if PoE is not available. The interface module itself must be operated with 24VDC (no PoE).
- Also available without I/O ports to be used as supply interface only.

2.4.3. LAN Secure Adapter

When using a CP-CAM in the outdoor area, there is danger of sabotage and access on the Intranet.

The LAN secure adapter is looped into the network cable in the secured area and switches off the voltage and the network cable to the terminal in case of sabotage.



The module monitors for it two closed current loops (adjustable 0 ohm or e.g.10k Ohm) for sub-interruption and short-circuit and disconnects by sabotage all 8 cores of the network cable and the switched operating voltage of 24VDC.

In connection with a door station and the commonly connected door opener, an unwanted door opening can also be prevented this way.

3. Technical Manual

3.1. Technical Data of All Designs

Camera:	VGA Colour CMOS Image Sensor
Object lens:	2.5 mm f1:2.0 with fixed aperture 2.0, focussing range 20 cm to infinity, viewing angle: horizontal approx. 83°, vertical approx. 65°, diagonal approx. 111°
Resolution:	colour image adjustable up to 640 x 480 (VGA), hardware-based JPEG compression with max. 25 images per second with QVGA
Network:	100BaseTX Ethernet interface, built-in web server, multiple PCs can access simultaneously
Connection:	all versions are delivered with a plug-in patch cable 0.25 m., 2 digital inputs or outputs for switching options on free cores of the network line possible
CE mark:	EMC tested to EN55011 and EN500082-1
Temperature range:	-20°C to +55°C (-20°C after 15 minutes running time)
Protection class:	weatherproof IP54 or IP65 dependent of the housing design and installation situation
PoE supply:	class 1, endspan (voltage is fed to the 4 data cables), midspan (PoE on free cores) is not available
Operational voltage:	24 VDC direct supply (20-36 V) on 2 free data cables as an alternative to PoE
Power:	maximum 3 VA

3.2. Hardware

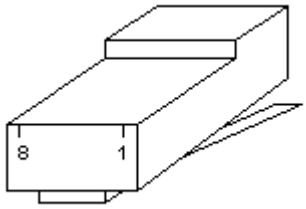
- The CP-CAM has a powerful 32 bit RISC-DSP processor with a clock frequency of 128 MHz.
- The camera is based on a CMOS image sensor that delivers the image information via DMA directly to the CPU.
- The colour image is available with 640 x 480 (VGA) or 320 x 240 (¼ VGA).
- hardware-based JPEG compression with a maximum of 25 pictures per second
- 100BaseTX Ethernet interface
- Power-over-Ethernet (PoE / endspan) Attention! No midspan
- alternative power supply with 24V DC / max. 3 watt
- IR LED lighting
- -20° C to + 40°C (-20°C after 15 minutes running time)
- EMC tested, CE mark

3.3. Software Characteristics

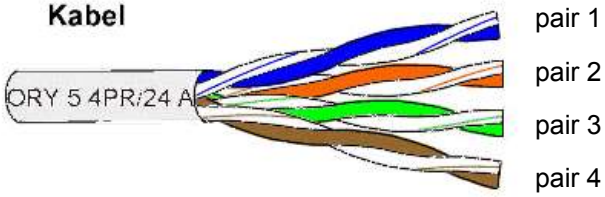
- Picture representation in the web browser in VGA (640x480), QVGA (320x240), QQVGA (160x120) or user-defined intermediate sizes with adjustment possibility of image detail.
- switching video / single image
- adjustable compression rate
- up to 4x digital zoom
- display in 90° increments rotation
- easy configurable via web browser
- automatic detection of night mode for IR lighting
- night mode to be overridden by external signals
- remote control functions
- authorization levels with password protection
- FTP access
- query of camera ID from the network
- JPG and motion JPEG interface compatible to AXIS VAPIX

3.4. Connection Diagram

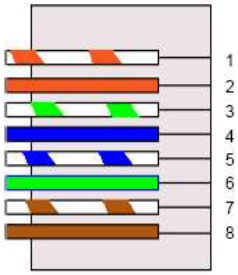
Pin numbering of connector RJ45



Colour coding of the cable according to EIA/TIA 568A

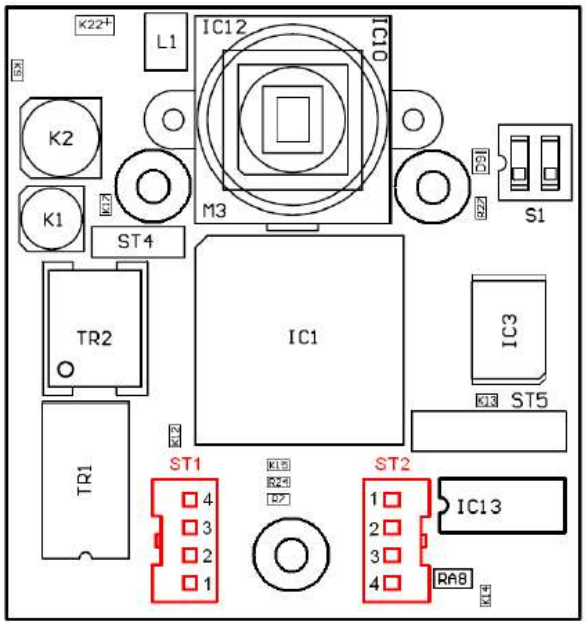


configuration



Connection to the CP-CAM

Note: In the version with the SIP DoorStation, the camera is pre-set to be connected with the internal switch. The connection and the supply occur jointly. See description of the SIP DoorStation.



Pin	Signal	Core - Colour	RJ45 connector
ST1-4	Eth RX-	green	Pin 6
ST1-3	Eth RX+	green white	Pin 3
ST1-2	Eth TX-	orange	Pin 2
ST1-1	Eth Tx+	orange white	Pin 1
ST2-1	IO1		
ST2-2	IO2		
ST2-3	GND	brown white	Pin 7
ST2-4	+24V	blue white	Pin 5

For the connection to the pin strips ST1 and ST2 are 2 pieces of socket housing 16-1721, JST PAP-04V-S and 6 crimp contacts 16-1722, JST SBHD-001T-P0,5 required. Apply with a crimping tool JST WCI610.

3.5. Declaration of Conformity

CE - Declaration of Conformity

The manufacturer **Baudisch Electronic GmbH**
Im Gewerbegebiet 7-9
D-73116 Wäschenbeuren

Hereby declares that the products of the series

Baudisch.CP-CAM

comply with the following directives:

- **2004/108/EC** **EMC-directive for electromagnetic compatibility**
- **73/23/EEC, changed to the directive 93/68/EEC** **Low Voltage Directive: Electrical equipment for use within certain voltage limit.**

For the assessment of conformity were the following standards used:

- EN 55022/4.2007 class B
- EN 61000-6-1/10.2007

CE The conformity of the product with the above standards and guidelines is confirmed by the CE mark.

Wäschenbeuren, January 2008 Peter Baudisch CEO

4. Software Description

4.1. Foundations

4.1.1. Connection over Ethernet

All CP-CAMs are delivered from the factory with a default IP address from which an initial communciation is possible:

Default IP address= **192.168.0.180**

Default sub net mask= 255.255.255.0

In case no access is possible to this address in the customer network, we recommend that a computer temporarily converts to this IP address and if necessary to connect to the CP-CAM via a small hub or a direct cable connection.

4.1.2. Change IP Address of a Windows XP Computer

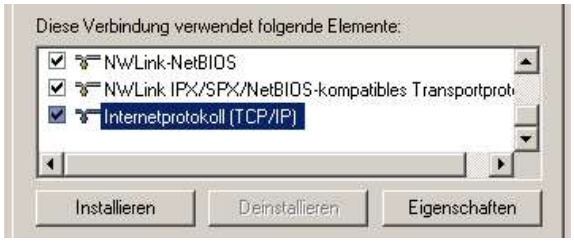
In Windows XP, the IP address of a PC can be changed in the following way:

Right click on My Network,

then on Properties.

Right click on network connection,

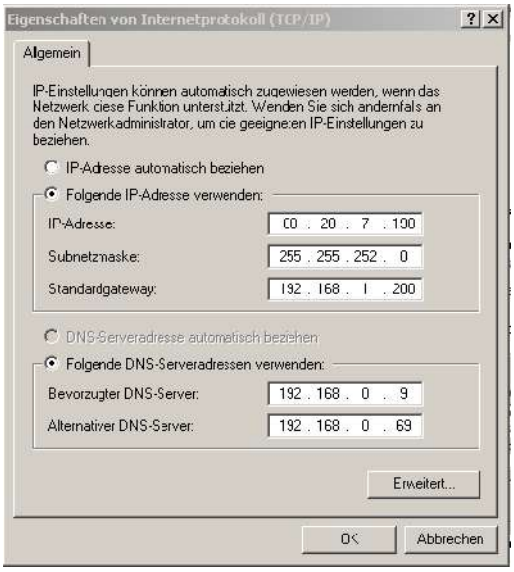
then select Properties.



Select internet protocol and go to Properties.

Set corresponding IP format

The IP address and the sub net mask are identical with the address of the CP-CAM, only the last digit of the IP address is to be set differently.



4.1.3. Installation of Java on PCs

The presentation of live pictures of the IP camera on the web browser (e.g. Internet Explorer) is implemented via a Java application.

In case only an „X“ instead of the picture appears when calling up the IP camera, you need to install Java.

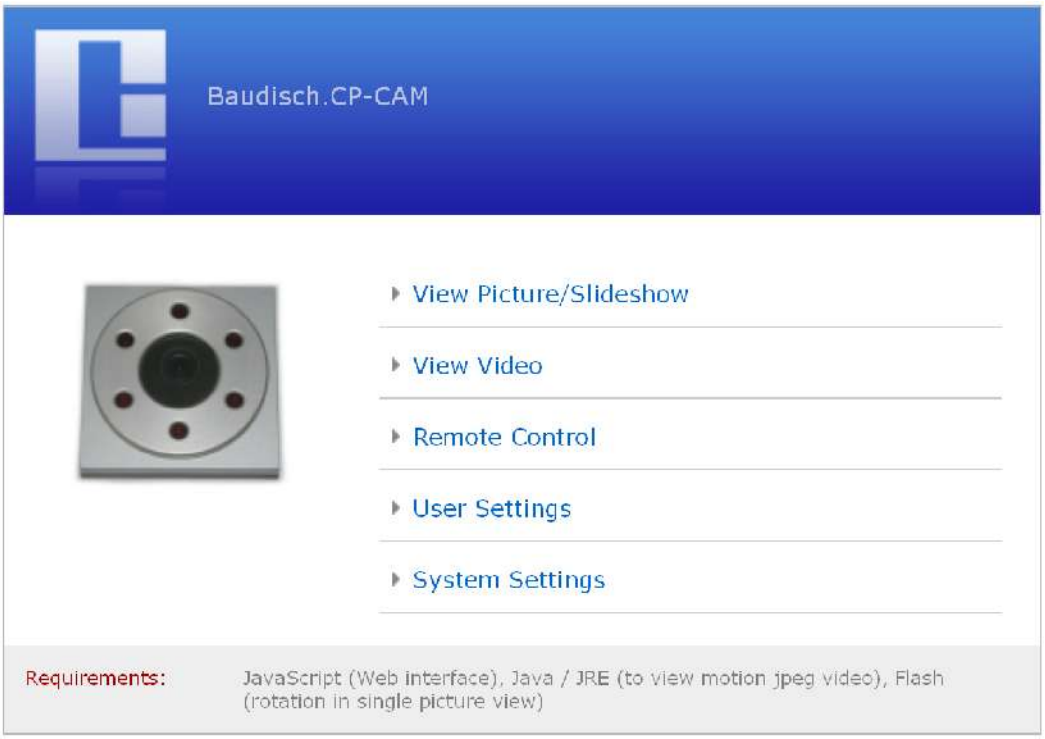
You can download the current version of Java free of charge under http://www.java.com/de/.

More detailed installation instructions are found und the Help and FAQ pages on Java.com.

4.2. Web Interface

4.2.1. Starting Page / Main Menu

The web interface of the CP-CAM can be accessed by entering the IP address 192.168.0.180 (default setting) in a web browser.



After entering the IP, the starting page with additional selections appears.

View Picture/Slideshow -- displays single pictures (jpg)

View Video -- displays video stream (MJPG)

Remote Control -- controls the settings of the switching functions

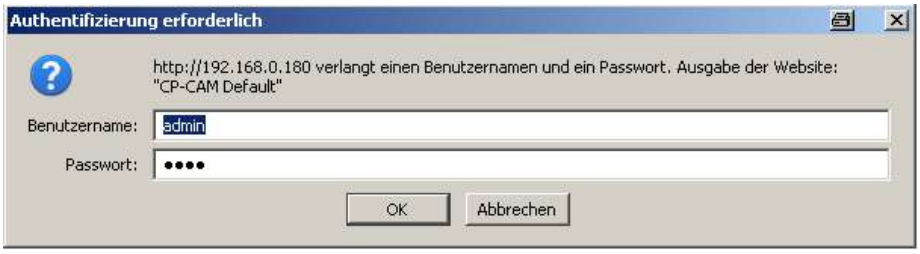
User Settings -- configures users and access authorizations

System Settings -- configures network and camera settings

4.2.2. Entering Password

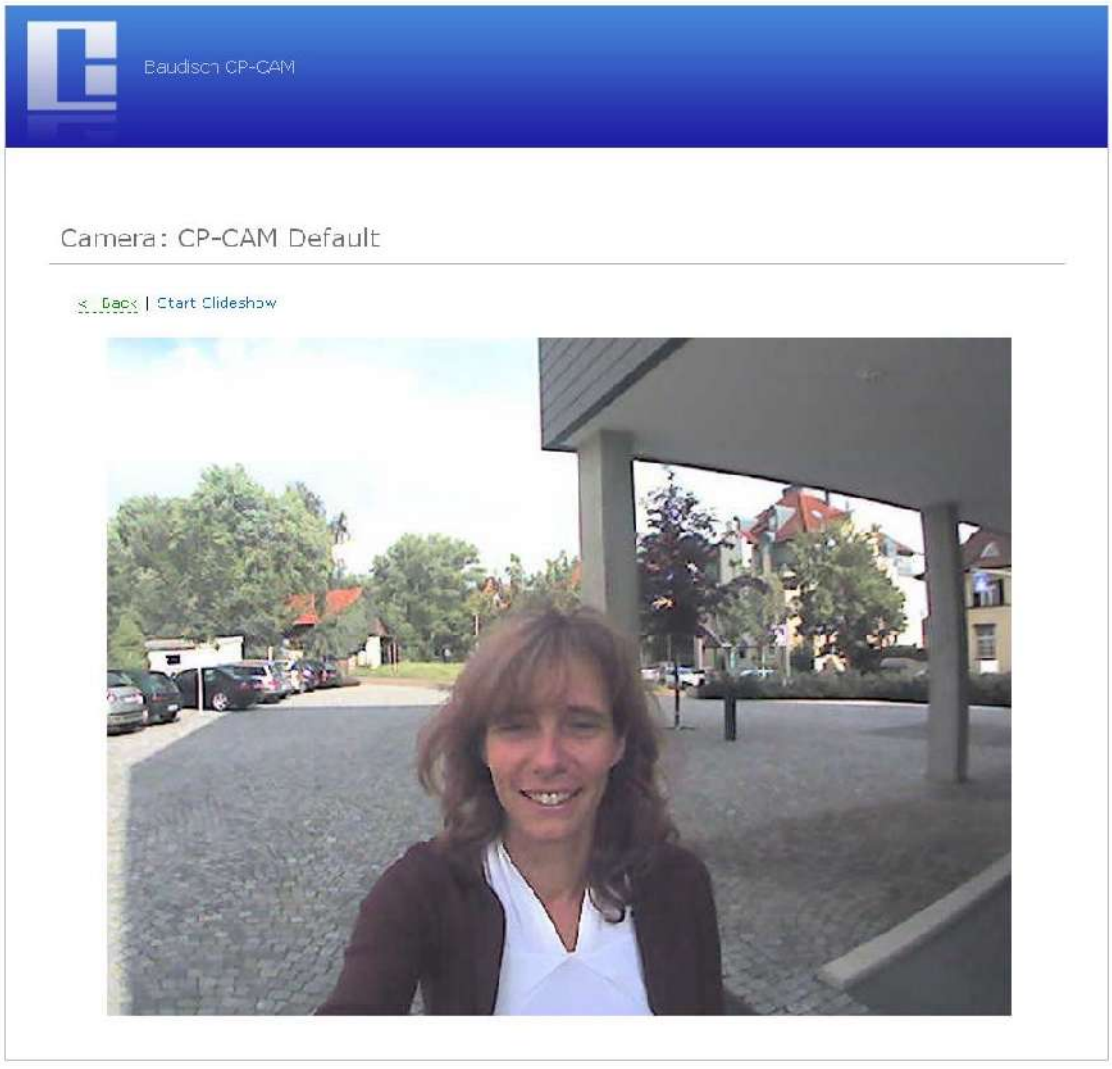
The starting page can be accessed without a password. A password is required for all other menus.

From the factory, the user name is pre-set to „**admin**“ in the basic configuration. The password is „**1234**“.



4.2.3. Display Picture

Is used to display single pictures of the camera.

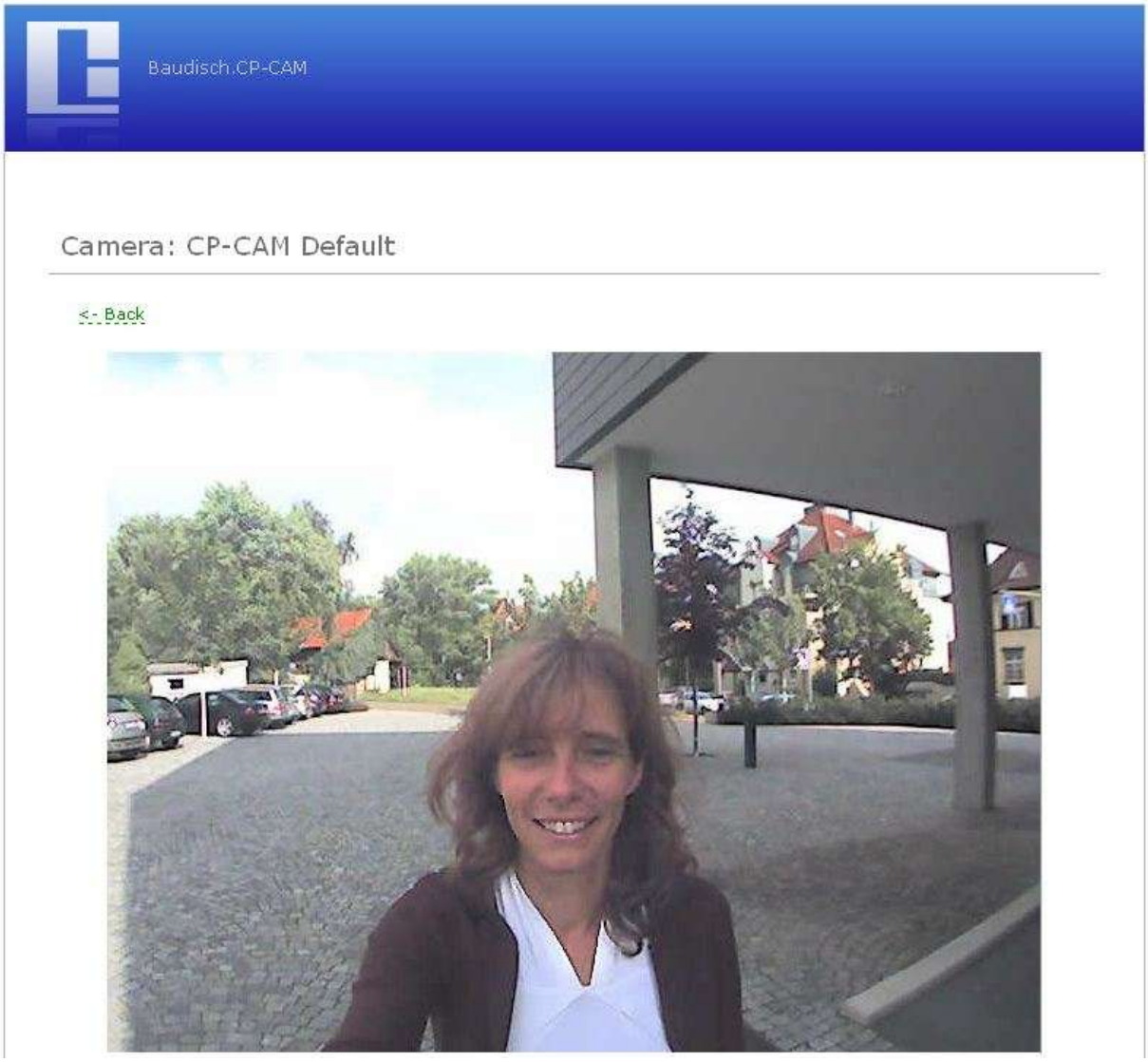


By clicking „**Start**“, the camera starts displaying a picture every second.

With „**Stop**“, the current picture is permanently displayed.

With „**Back**“, you return to the main menu.

4.2.4. Display Video

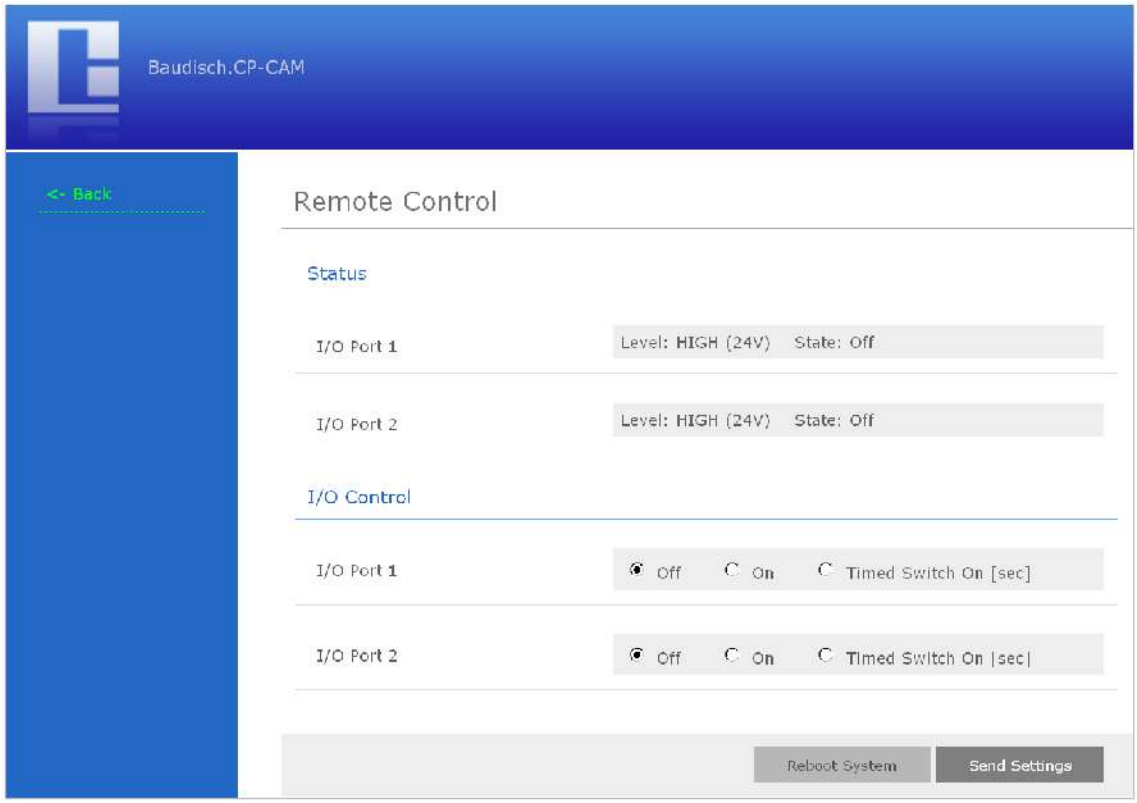


With this selection, the video images are displayed.

Settings for the displayed video can be found under „**Settings**“ -> „**Camera**“

With „**Back**“, you return to the main menu.

4.2.5. Remote Control



The CP-CAM can, in conjuction with an IO interface (33-0901), provide two opto-coupler inputs or two relay outputs.

A door opener or a light can for example be switched via the web interface using the outputs.

Status

I/O Port 1 -- Shows the status of the first I/O input

I/O Port 2 -- Shows the status of the second I/O input

I/O Control

I/O Port 1 -- The switching state of the first output can be set here.

I/O Port 2 -- The switching state of the second output can be set here.

Off -- Output always off.

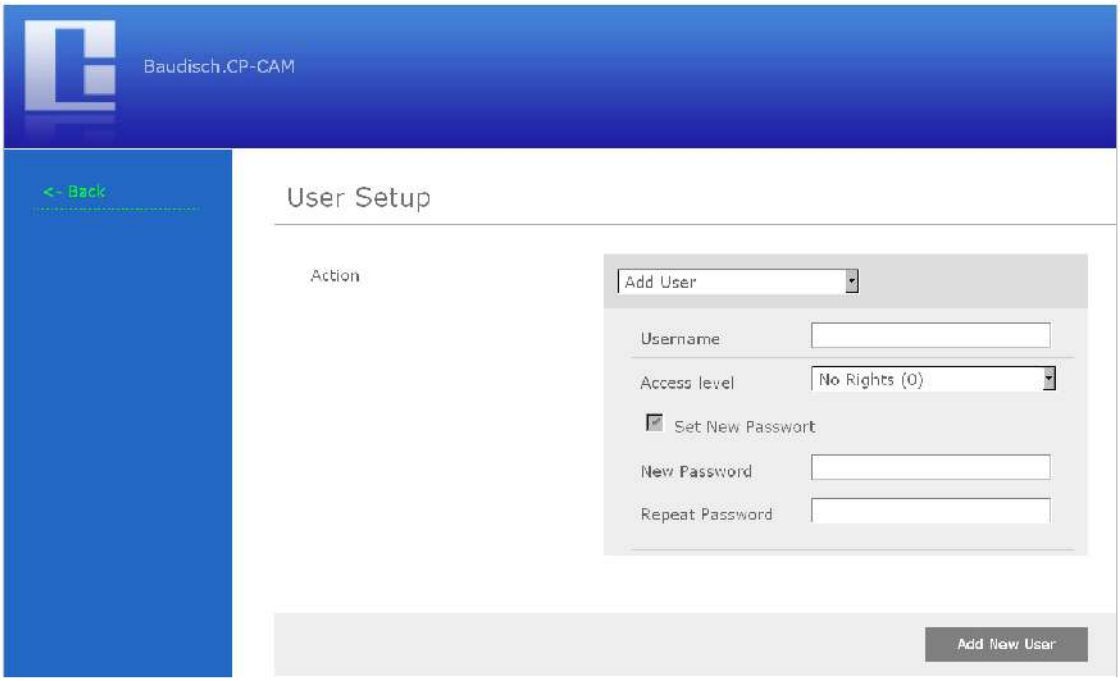
On -- Output is permanently switched on.

Timed Switch On -- Here, the output can be set for a given time period.

Reboot System — Restarts the CP-CAM

Send Settings — Sends the settings to the camera to be effective.

4.2.5.1. User administration / Access authorization



In this menu the users of the CP-CAM can be managed. A user can be assigned different permissions.

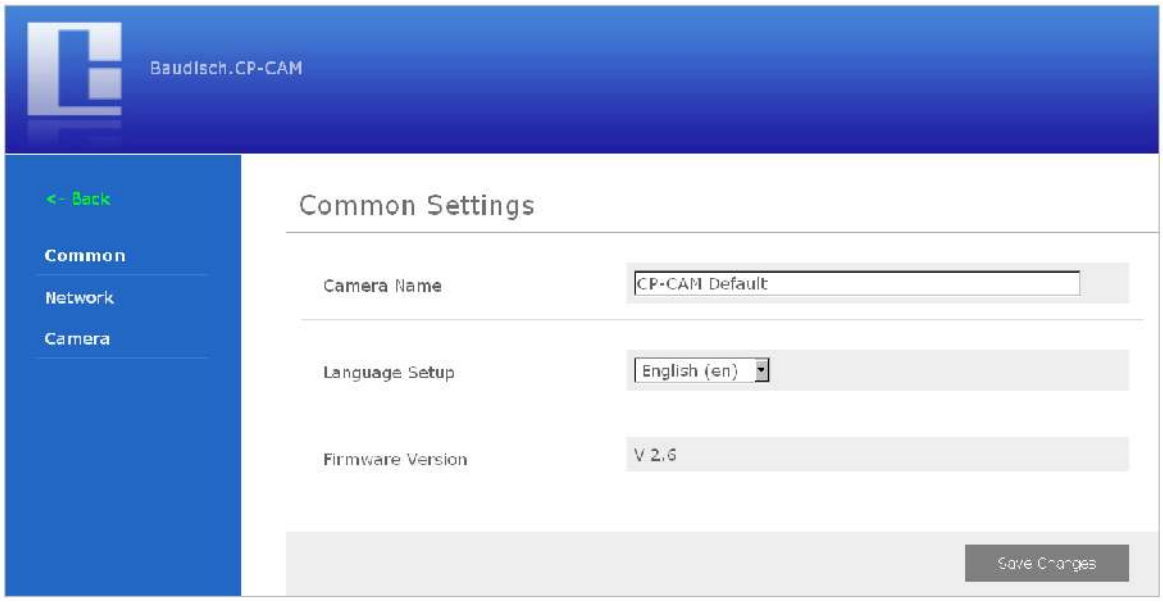
The availability of the video and picture display without password entry can be set under „**Einstellungen**“ -> „Netzwerk“.

Action	--	Ability to add, change or delete a user.
Username	--	In this field, user name is entered. (no umlauts or special characters)
Access level	--	Selection of authorization for a user.
No rights (0)	--	User is deactivated.
Viewer (2)	--	User has access to single picture and video display, as well as for the camera ID.
Remote control (4)	--	User has additionally access to remote control.
Administration (8)	--	User has unrestricted access.
Set New Password	--	Enter password.
Repeat Password	--	Confirm password.
Add New User / Change / Delete	--	By clicking on this button, the settings are applied.

With „**Back**“, you return to the main menu.

4.2.6. Settings

4.2.6.1. General



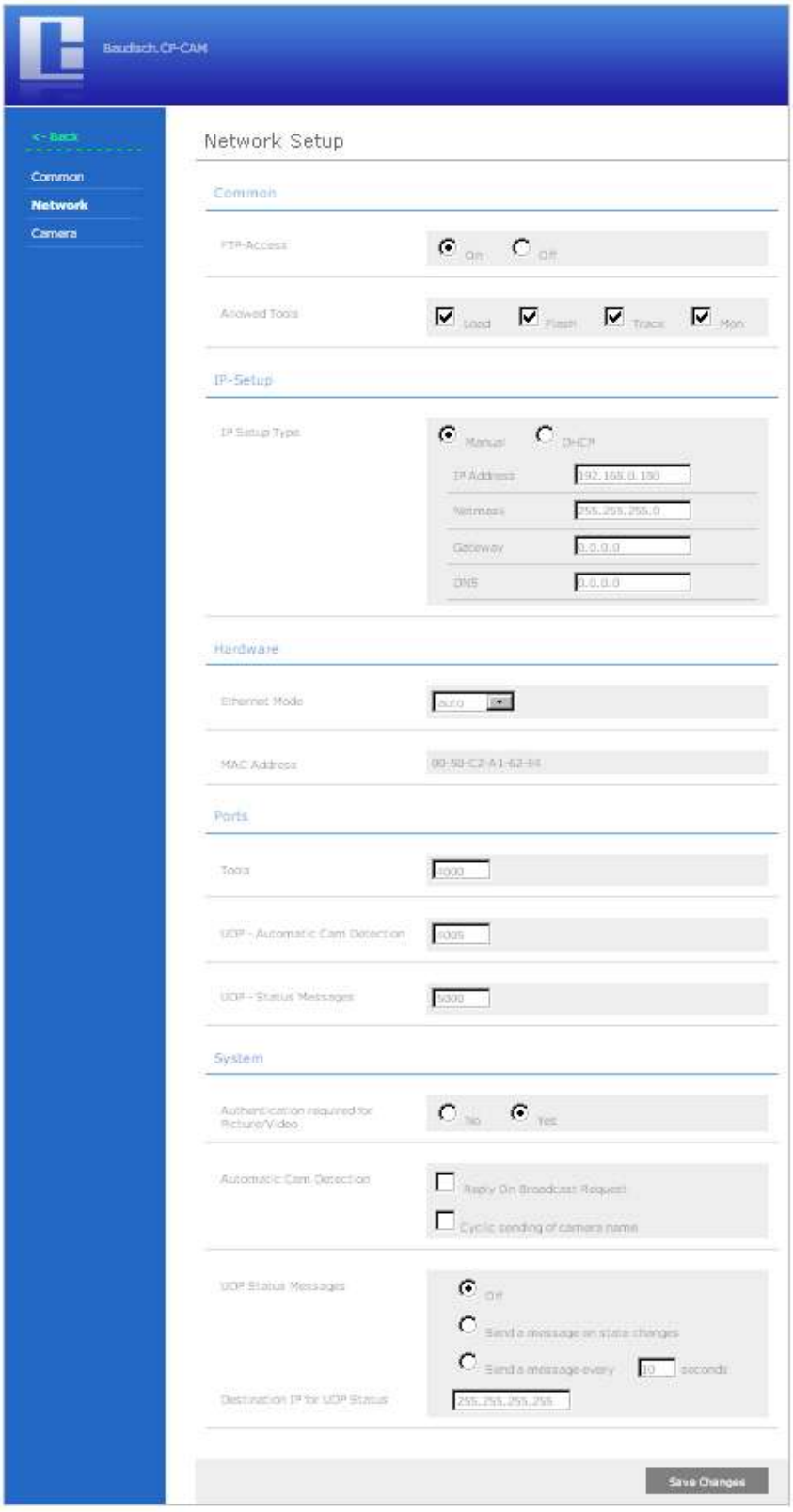
Camera Name -- The name of the camera can be set here, which is displayed as header above the video window. The name is also displayed in the password prompt window.

Firmware version -- The installed software version on the CP-CAM is shown here.

Save Changes -- Saves the settings permanently and you return to the main menu.

4.2.6.2. Network

Change network settings



Common

FTP-Access -- FTP access to the data of the CP-CAM can be turned on here.

Allowed Tools -- Specifies with support programs are allowed to access the CP-CAM.

IP-Setup

IP Setup Type

Manual / DHCP -- Specifies whether the network settings are to be manally or automatically assigned.

IP Address -- IP address at which the CP-CAM can be reached on the network

Netmask -- Net mask is entered here.

Gateway -- Gateway is entered here.

DNS -- DNS server is entered here.

Hardware

Ethernet Mode -- Standard setting should always be set to „auto“. The other settings are only for network professionals in the event of problems with the automatic.

MAC Address -- MAC address of the camera

Ports

Attention! The following port numbers must all have different values, as this can cause a malfunction!

Tools -- Port for support programs

UDP – Automatic Cam Detection -- UDP port for automatic detection of a camera in the network using special software.

UDP – Status Messages -- UDP port for status messages

System

Authentication required for picture / video -- Specifies whether the user requires a password for the video and picture display.

Automatic Cam Detection -- Must be turned on to automatically detect several camera over the network. Must be turned off after system installation, particularly in networks where many broadcasts are sent.

UDP Status Messages -- Settings for status messages.

Aus -- Camera sends no status messages.

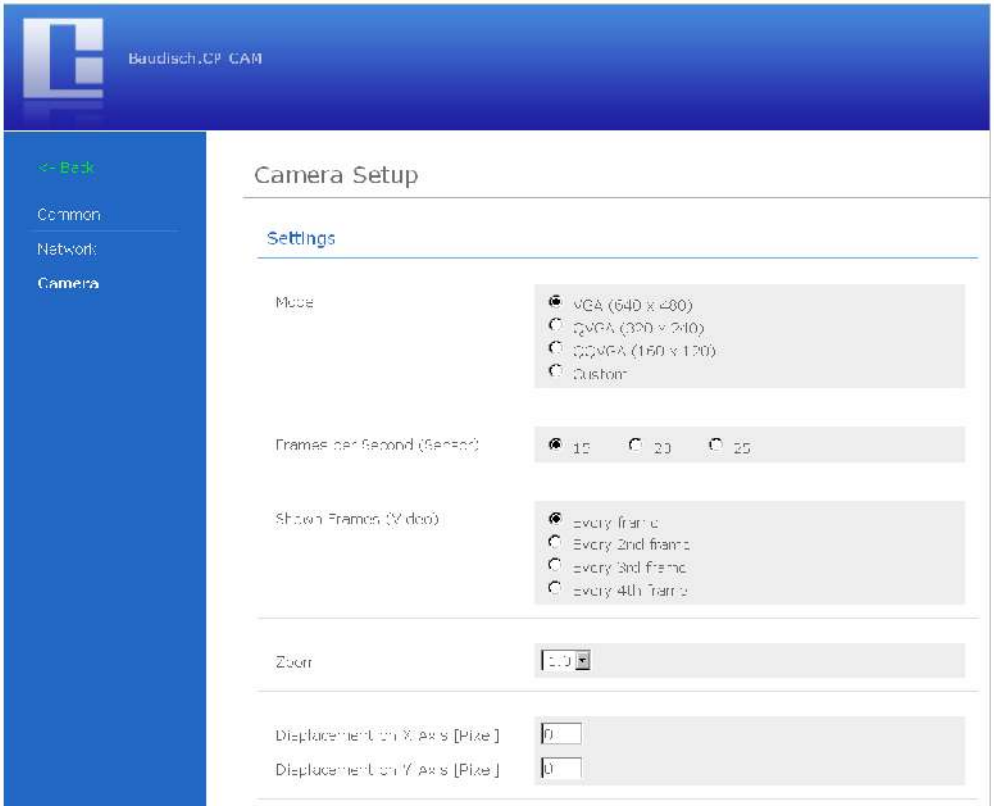
Message after mode change -- A message is sent after each mode change.
(I/O-, camera driver and LED mode)

Cyclical message -- An additional message is sent after a time interval – even if there has been no mode change.

Destination IP for UDP Status -- Destination address of status messages.

-- Saves the settings permanently and you return to the main menu.

4.2.6.3. Camera



Settings

Mode -- Setting of the camera resolution.

Number of frames per second -- Defines the number of pictures per second which the video sensor captures. With VGA max. 15 (20 at quality 40), by QVGA/QQVGA max. 25.

Shown Frames -- Specifies how many of the captured pictures are transmitted as video. Only every X-th picture is sent.

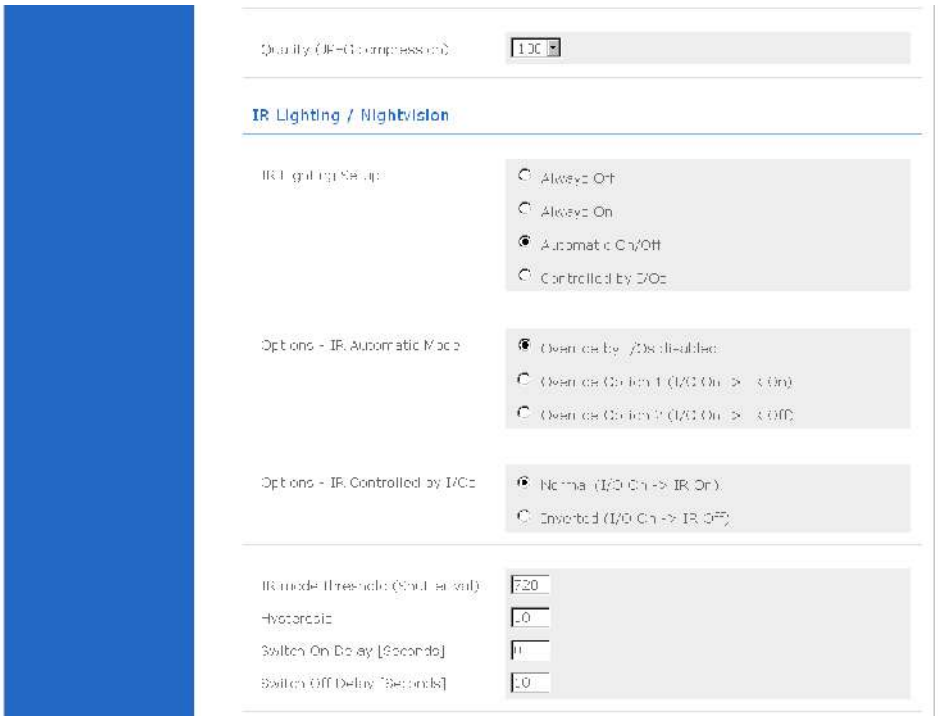
Zoom -- Setting of the picture enlargement.

Zooming is only possible with a resolution smaller than VGA (640x480). The zoom factor can only be as large as the factor which reduced the picture. So with QQVGA max. 4.0x. A value too large is automatically reset to 1.0x.
Generally:

$$(\mathrm{Re}\,solutionX * Zoom) \leq 640$$
$$(\mathrm{Re}\,solutionY * Zoom) \leq 480$$

Displacement on X-Axis / Y-Axis -- It is possible to adjust a picture (only at resolutions <VGA). To view a certain section of the picture, move the section in the X and Y direction so far until the desired picture is visible. Incorrect values are corrected automatically!
Example: At a resolution of 320x240 and 2x zoom, the center of the picture should be displayed. The picture must be adjusted 160 pixels in the X direction and 120 pixels in the Y direction!

Quality (JPEG compression) -- A lower quality should be chosen in case the network bandwidth is not sufficient (too many users).



4.2.6.4. IR Lighting / Nightvision

IR Lighting Setup -- Selection of IR lighting mode.

- Always off -- IR lighting permanently off
- Always on -- IR lighting permanently on
- Automatic -- The camera measures the brightness and, if necessary, turns on the light automatically.
- Controlled by I/Os -- IR lighting is controlled with the 2. I/O ports.

Options– IR Automatic Mode -- Specifies that the IR lighting can be overridden with the 2 I/O ports despite automatic mode.

- Override by I/Os disabled -- No response when I/O port is switched.
- Override Option 1 -- If the I/O port is ON, the IR lighting is switched on by force.
- Override Option 2 -- If the I/O port is ON, the IR lighting is switched off by force.

Options– IR Controlled by I/Os -- Determines whether the IR control via the I/O port is to be normal or inverted.

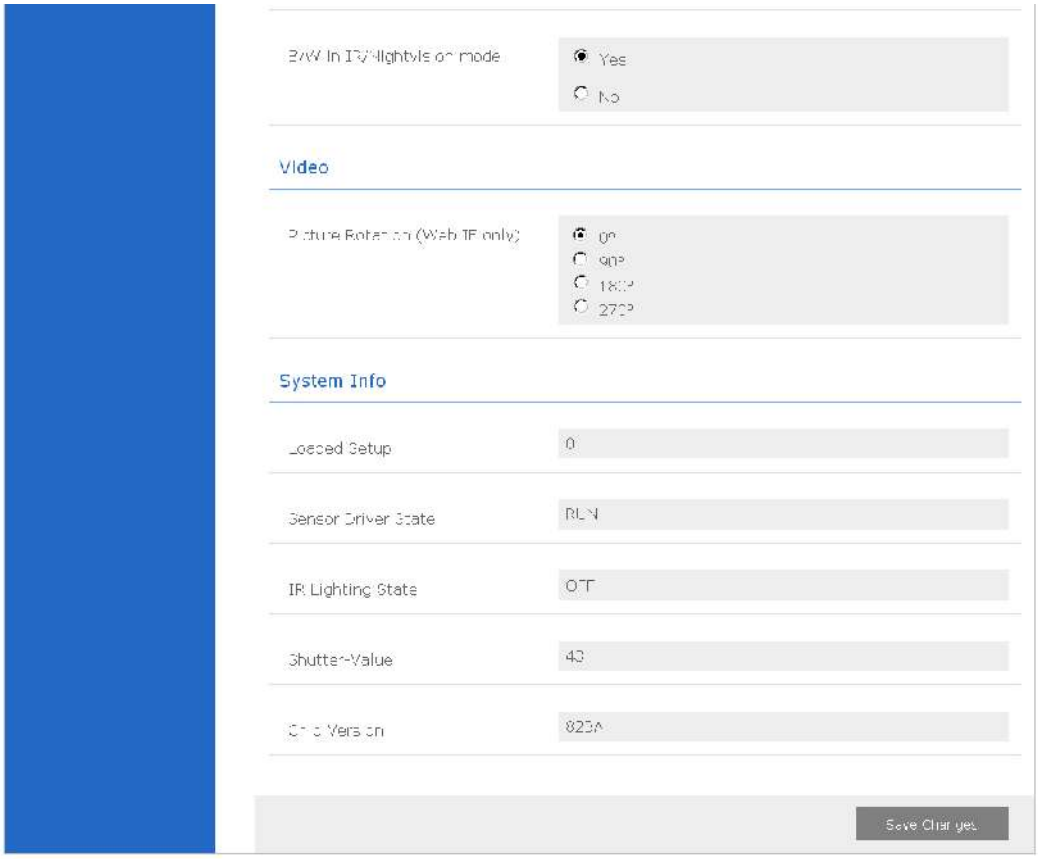
IR mode threshold (Shutter) Determination of the switching threshold (shutter – light intensity)

Hysteresis Hysteresis for switching threshold. Switching threshold on = switching threshold + hysteresis. Switching threshold off = switching threshold – hysteresis.

Switch On Delay Waiting time after exceeding the threshold on until switching occurs.

Switch Off Delay Waiting time after falling below the threshold off until switching occurs.

B/W in IR/Nightvision mode Indicates whether the night vision should be switched to black / white mode.



Video

Picture Rotation in video Applet -- The CP-CAM is capable of rotating the displayed picture in 90° increments, the installation position of the CP-CAM can therefore be selected. The rotation is only for the viewing in the web interface. The pictures and the motion JPEG stream, which can be accessed over http://<Kamera-IP>/jpg/image.jpg and http://<Kamera-IP>/mjpg/video.mjpg respectively, are always in original position. The client software resumes the picture rotation.

Note: Single pictures can only be rotated when the web browser supports Flash and has it installed.

System Info

Loaded Setup -- Shows which presettings were loaded.

Sensor Driver State -- Status mode of the camera driver.
Should always be on „RUN“, otherwise the camera must be restarted.

IR Lighting State -- Shows whether the infrared lighting is turned on or off.

Shutter-Value -- Shows the current „position“ of the integrated lens aperture of the camera. This panel provides automatic exposure compensation. This value allows conclusions to be drawn of the intensity of the current lighting. The larger the value, the less ambient light.

Chip Version -- Version of the built-in video chips

Save Changes -- Saves the settings permanently and you return to the main menu.

4.3. Expanded Configuration and Updates

4.3.1. Access via FTP

The CP-CAM has a Flash memory, on which the configuration data, background pictures for display in web browser and FTP account data are located.

To change and customize these data, a FTP client (such as Total Commander) is required.

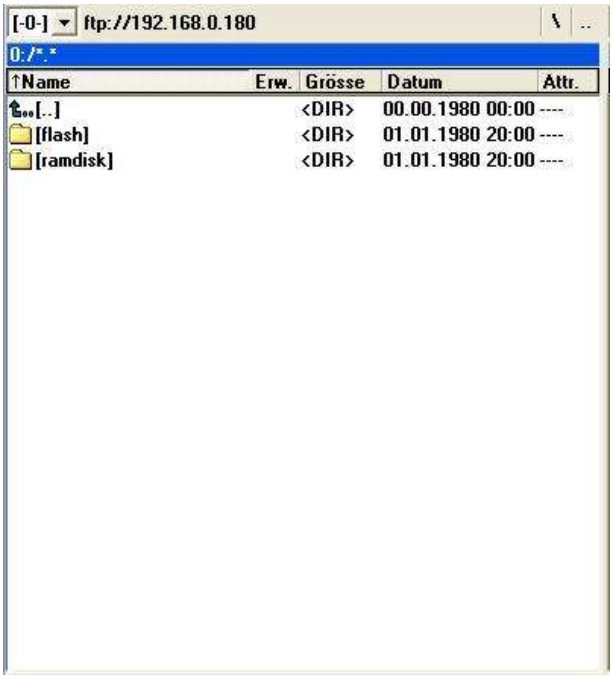
The following parameters must be entered to establish an FTP connection:

Network **IP address** (default is 192.168.0.180)

User name (default is „admin“)

Password (default is „1234“)

Note: The CP-CAM can not simply be reset by a hardware reset.
Therefore write down possibly changed access data and keep them in a safe place.



When the connection has been successfully established, the directory structure and the files of the main directory of the CP-CAM appears.

Your important files are found in the directory <flash>:

- background.jpg
- ftp-accounts.txt
- index.html

ATTENTION: For technical reasons, during and for 5 minutes after a data transfer to the CP-CAM, there should be no interruption of the power supply and the transmission connection.
If disregarded, it may lead to faulty transmission and incorrectly processed data , which may result in a dysfunctional CP-CAM.

4.4. Configuration Files

Note: These settings are only for experienced technicians, incorrect settings may cause the camera to malfunction.

In the folder „/flash/config“ (accessible via an FTP connection), the files "user.ini" and "system.ini", are located, in which the following settings are saved:

user.ini

The users, their passwords and access authorization are saved in this file.

system.ini

The system settings are saved here.

[Global]
#Name of the camera for identification [max. 18 characters!]
Name=CP-CAM default
#Preset for camera settings
Preset=0
#FTP access control - 0 = disabled / 1 = enabled
Ftp=1
#Access resources (image, video, Axis ID) 1 = restricted / 0 =open
AccessRestricted=1
#Picture rotation in web interface (Applet/Flash-Plugin) 0 / 90 / 180 / 270
JavaRotation=0
#Division factor for FPS by video stream
VideoDivFPS=1
#Hardware watchdog 0=deactivated / 1=activated
 # ATTENTION! After change from 1 -> 0 perform POR via supply interruption!!!!
Watchdog=0
#Camera ID for axis protocol [max. 64 charaters!]
AxisID=CP-CAM200801

[Lighting]
#Minimum triggering level (shutter value)
Threshold=420
#Hysteresis
Hysteresis=10
#Switching delay after exceeding of threshold [seconds] + 2-4 seconds (internal control!)
DelayTimeOn=0
DelayTimeOff=10
#black/white mode, when LEDs are lit 0=no / 1=yes
BwMode=1

[StatusMessages]
#Destination port for status messages
StatusPort=5000
#Destination IP for status messages
StatusIP=255.255.255.255
#Status messages 0=off / 1=message by change / 2=message cyclical
StatusEnabled=0
#Time interval for cyclical status [seconds]
CycleTime=10

4.4.1. Template HTML Files

4.4.1.1. General

All files with the extension „.thtml“ are templates for special website versions that contain dynamic files. Variables are found in these files, which are replaced with current values in the web server. By sending, settings or actions are changed.

4.4.1.2. To display camera picture(s) on a Snom telephone

To display a single picture stream on a SNOM 820 telephone, several settings must be made. It is possible to work with or without authorization.

The files are found under: „/flash/htdocs/language/<language version>/“. German (de), English (en), French (fr) and Italian (it) are the current language versions.

Is the authentication deactivated, no changes are to be made (see original status):

```
<?xml version="1.0" encoding="UTF-8"?>
<SnomIPPhoneImageFile>
<LocationX>00</LocationX>
<LocationY>00</LocationY>
<url>http://!SYS_IPADDRESS;/jpg/image.jpg</url>
<fetch mil="200">http://!SYS_IPADDRESS;/snom.cgi</fetch>
</SnomIPPhoneImageFile>
```

If the authentication was activated, the „snom.thtml“ file (the activated language version) must be adjusted as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<SnomIPPhoneImageFile>
<LocationX>00</LocationX>
<LocationY>00</LocationY>
<url>http://viewer:1234@!SYS_IPADDRESS;/jpg/image.jpg</url>
<fetch mil="200">http://viewer:1234@!SYS_IPADDRESS;/snom.cgi</fetch>
</SnomIPPhoneImageFile>
```

In the above example, the user „viewer“ is used with the password „1234“. The user must at least have „Viewer“ authorization (2)!

4.5. Interfaces and Protocols

4.5.1. Single JPG File

Using the URL http://<Kamera-IP>/jpg/image.jpg, a single JPG file with the current picture can be retrieved. This interface is compatible with AXIS VAPIX.

In response to the request you get:

HTTP/1.1 200 OK\r\n

Content-Type: image/jpeg\r\n

Content-Length: <image size in Bytes>\r\n

\r\n

<JPEG image data>\r\n

At least the authorization level “Viewer(2)” is required for the request, in case the access was resticted by the configuration.

Note: . This interface is only conditionally suitable for display of a „single picture stream“ because the connection takes about 2 seconds. There is a configuration parameter in the file system.ini which switches between HTTP 1.0 and HTTP1.1 behaviour. To optimize the picture presentation by HTTP1.0 clients (e.g. PHP), the parameter „SinglePictureConnectionCut“ must be set to 1. For HTTP1.1 clients, the setting must be 0!

4.5.2. Motion JPEG Stream

Using the URL http://<Kamera-IP>/mjpg/video.mjpg, a motion JPEG stream can be retrieved. This interface is almost fully compatible with AXIS VAPIX. The start-header has been slightly expanded and the definition of the boundary is not as by AXIS "- -myboundary" but only "myboundary".

Start-header:

"HTTP/1.0 200 OK\r\n"

"Connection: close\r\n"

"Server: CP-CAM\r\n"

"Cache-Control: no-store, no-cache, must-revalidate, pre-check=0, post-check=0, max-age=0\r\n"

"Pragma: no-cache\r\n"

"Expires: Mon, 3 Jan 2000 12:34:56 GMT\r\n"

"Content-Type: multipart/x-mixed-replace; boundary=myboundary\r\n"

"\r\n"

"--myboundary\r\n"

Sub-header of the stream with the picture data:

Content-Type: image/jpeg\r\n

Content-Length: <image size in Bytes>\r\n

\r\n

<JPEG image data>\r\n

"--myboundary\r\n"

At least the authorization level "Viewer(2)" is required for the request, in case the access was resticted by the configuration.

Note: The connection takes about 2 seconds. This has implications for clients which shortly interrupt the connection. This results in short interruptions in the video stream for about 2 seconds!

Camera – ID

Using the URL http://<Kamera-IP>/axis-cgi/view/param.cgi?action=list&group=Brand.ProdFullName, a camera ID string can be retrieved.

In response to the request you get:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\n

\n

Brand.ProdFullName=CP-CAM200801\n

4.5.3. Status Messages

The status messages consist of data packets which always have 32 characters (byte). The basic structure is as follows:

<Sequece number>#<Status>@<Parameter bytes><Proof total>

Fields in printf-format: <%02X>#<%02X>@<%24s><%02X>

The sequence number is increased by 1 after each sent packet. After the packet with the sequence number 255 is sent, it restarts at 0. After a POR (power on reset), the sequence number restarts at 0 as well.

The 24 byte parameter only consists of printable ASCII characters. Unused character positions contain spaces (0x20).

The proof total is made up of all characters in the packet as Addition Modulo 256 (with the exception of two for the proof total).

Note: This protocol is a preliminary implementation. There may be changes in the near future!

Status byte	**Parameter**	**Description**
0xA0	„V x.x;“	Message after system startup. Meldung nach dem Systemstart. Firmware version is displayed.
0xA1	„xxxxxx“	Status message after mode change or end of cycle time.
	„**HL**xxxx“	Firmware version (**H**igh- / **L**ow-Byte)
	„xx**x**xxx“	Mode I/O 1 ’0’ = LOW ’1’ = HIGH
	„xxx**x**xx“	Mode I/O 2 ’0’ = LOW ’1’ = HIGH
	„xxxx**xx**“	Mode IR lighting ’0’ = off ’1’ = on ’2’ = N/A (after POR)
	„xxxxx**x**“	Mode of camera driver ’0’ = POR ’1’ = RUN [...] ’5’ = DOWN

4.5.4. Automatic Detection

<In the works – current ALPHA status>

4.6. Reset IP Address

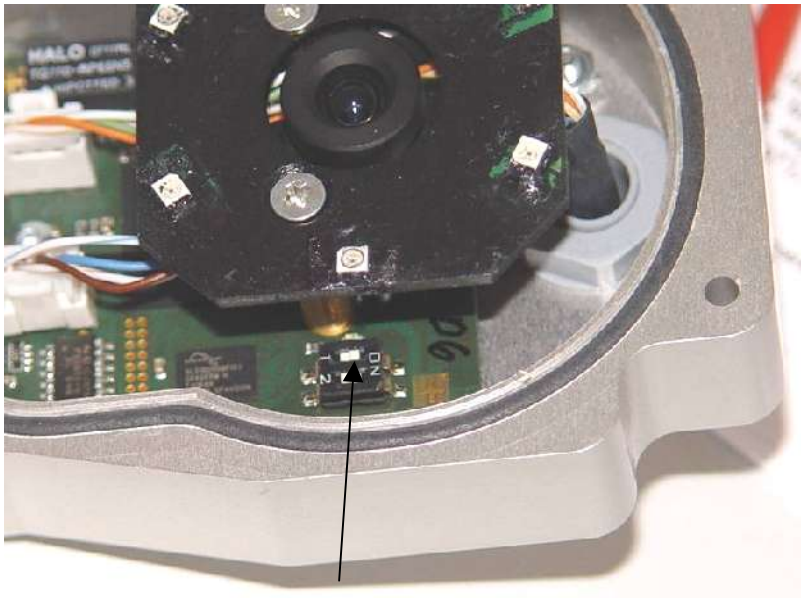
This should be carried out only by experienced technicians. The customer is liable for damages caused by improper opening of the housing.

If the entered IP address is unknown, it is possible to reset the address to 10.10.10.10 using the DIP switch. To proceed, the unit must be opened.

Note: A change of the IP address is made via the web interface of the CP-CAM.

The procedure is as follows:

1. Open the CP-CAM so the two DIP switches are accessible (see picture).
2. Note the switch position and then turn both switches to „OFF“.
3. Connect PC with the IP number range 10.10.10.xxx and set the desired IP address in the web interface.
4. Turn switch positions back to original positions.
5. Close housing properly.



DIP switch

5. System Integration

5.1. Video Display SNOM 820/821

5.2. Manual Display

A list of settings for the Snom Telefone is found under:

http://wiki.snom.com/Settings/xml_notify

The connection can be tested after inplementation of these settings.

For further adjustments, it is important to know whether or not the "authentication" for picture and video display should be activated (Network).

If the authentication is activated, the „snom.thtml“ template files must be adjusted.
(see 4.4.1.2 To display camera picture(s) on a Snom telephone)

An „Action URL“ can be set in the Snom telefone for a test.

One of the functions keys is then configured with the function „Action URL“ and added in the
http://<Kamera IP>/snom.cgi
and http://<Benutzer>:<Passwort>@<Kamera IP>/snom.cgi (by activated authentication).

By pressing the button, the camera picture should then be shown on the display.

5.2.1. Automatic Display of Door Station

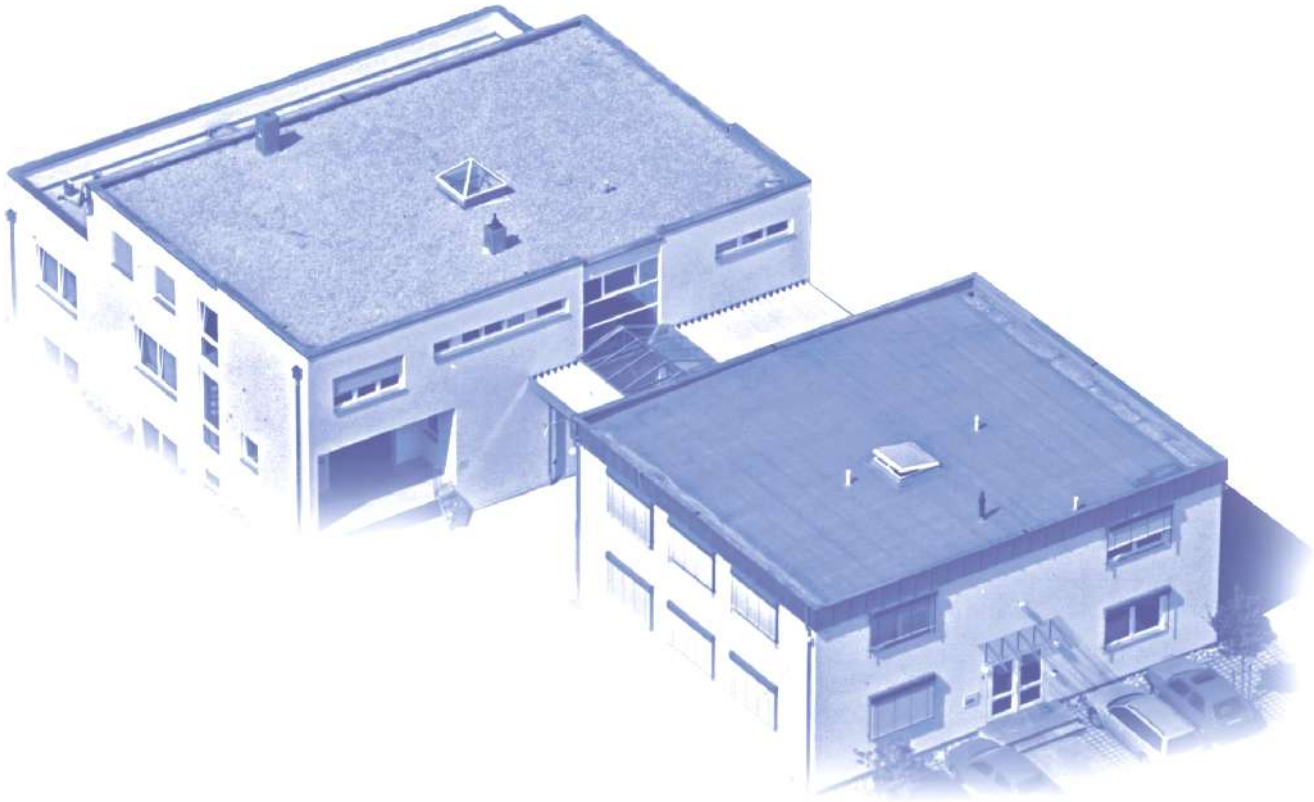
To automatically have the picture shown on the display by a call, the URL to the camera must be added in the door station under „settings hardware“ -> “status/remote control“:

The http:// in the field can also be left blank. It will then be added internally.

In this field, „<camera IP>/snom.cgi“ or „viewer:1234@<camera IP>/snom.cgi“ is then added (by activated authentication).

By a call, these are then sent to the telefone. However, this message can currently not be transfered via a common SIP server, with the exception of:

- OpenSIPS / OpenSER (Open Source SIP Project under Linux).
- IP direct connection



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