



G-Code/EEN-2010

1-Channel Analog Video Encoder

Installation

Preface

The information given in this manual was current when published. The company reserves the right to revise and improve its products. All specifications are subject to change without notice.

Notice

This manual provides the installation information for the Encoder.

To work with the Encoder, any installer or technician must have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring and low-voltage electrical hookups
- A basic knowledge of network system setting
- Have read this manual completely

Copyright

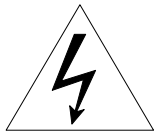
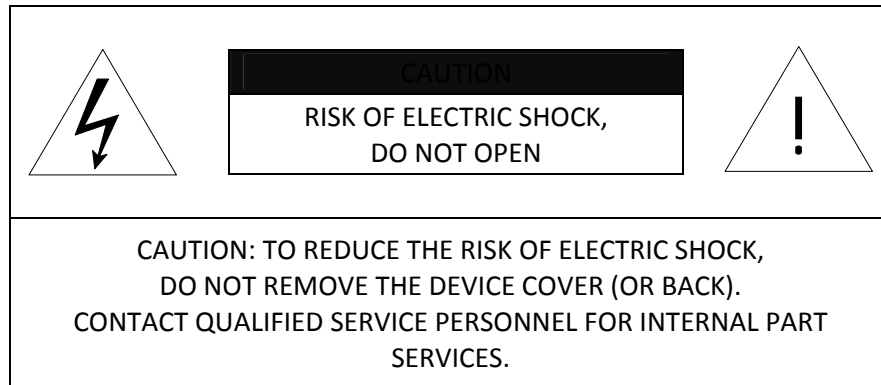
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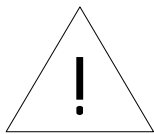
Important Information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking the unit, check for missing or damaged items. If any item is missing, or if damage is evident, DO NOT INSTALL OR OPERATE THIS PRODUCT. Contact the dealer for assistance.

Precaution



This symbol is intended to alert the user the presence of un-insulated “dangerous voltage” within the product’s enclosure, which may be sufficient magnitude to constitute an electric shock risk to persons.



This symbol is intended to alert the user the presence of important operating and maintenance (servicing) instructions within the guide manual

- Please read this manual carefully before installing the unit.
- Unauthorized disassembly may cause equipment failure or damage to the unit.
- Please do not place the unit on a place exposed to an excessive heat source.
- Do not operate the camera in environments beyond the specified temperature. Refer to “**Environment Condition**” on “**APPENDIX (A): SPECIFICATIONS**” in this manual.
- Before applying power to the camera, check the power source to ensure that it is within the specifications.
Refer to “**Electrical Characteristics**” on “**APPENDIX (A): SPECIFICATIONS**”

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1. FEATURES

Streaming

- Dual streaming mode (such as different codec/resolution/bit rate, etc.)
- De-interlacing on DSP
- Burnt-in text supported
- Unicast/Multicast supported

Video/Audio

- Video compression: H.264 / MJPEG, 25/30 fps @ D1 (PAL / NTSC)
- Audio compression: G.711 (μ Law, aLaw) / PCM
- Analog video out for external monitors
- Video Motion Detection supported
- Two-way mono audio supported (listen only is supported by GEUTEBRUECK DVRs)

Network

- RTSP / HTTP protocol supported
- 10/100 Base-T Ethernet

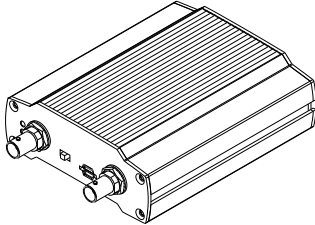
Additional Features

- RS-485 supported (e. g. to remote control analogue PTZ cameras)
- SD memory card supported
- PoE supported

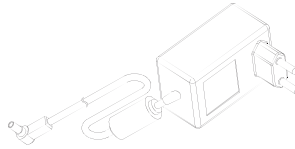
2. PACKAGE CONTENTS

Unpack carefully and handle the equipment with care. The packaging contains:

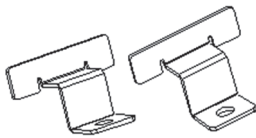
Encoder



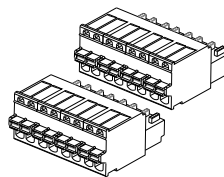
DC power adaptor



Mounting brackets



8 Pin terminal blocks



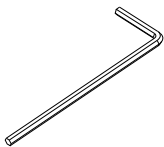
Screws and anchor blocks



Quick Installation Guide



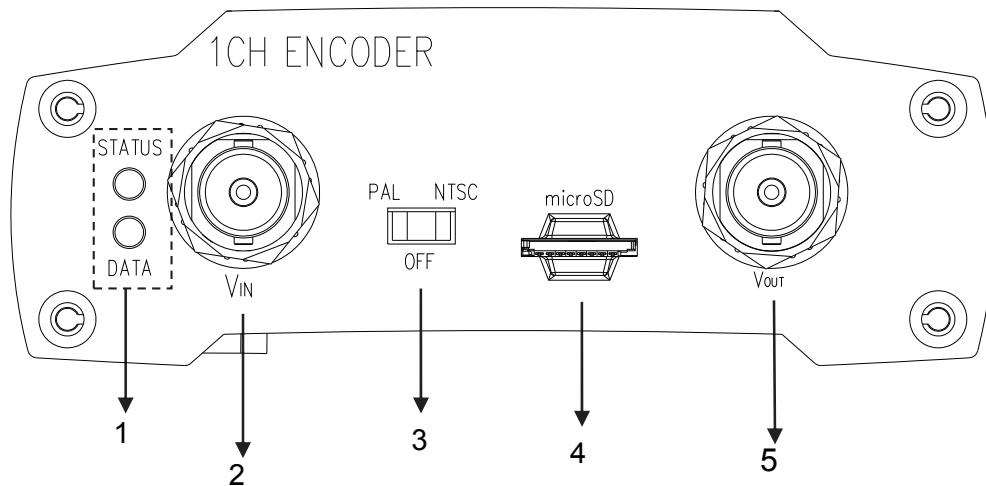
2.0 mm hex L-wrench



The above contents are subject to change without prior notice.

3. PART NAMES

3.1. Front Panel



① System Status LEDs

They indicate certain system information.

- **Status:** The LED turns on in orange when the encoder is powered on.
- **Data:** The LED turns on in green when the video signal comes in with a proper connection.

② Video Input BNC connector

As a video input connector, connect to the camera.

③ Video input/output Configuration Switch

This switch enables video input and output to be turned on or off. No video comes in or out with this switch off and only some test patterns will be displayed on the Webpage. You can change the video standard format of the device by moving the switch to NTSC side or PAL side as required. The device needs to be rebooted after moving the switch in order to apply the change.

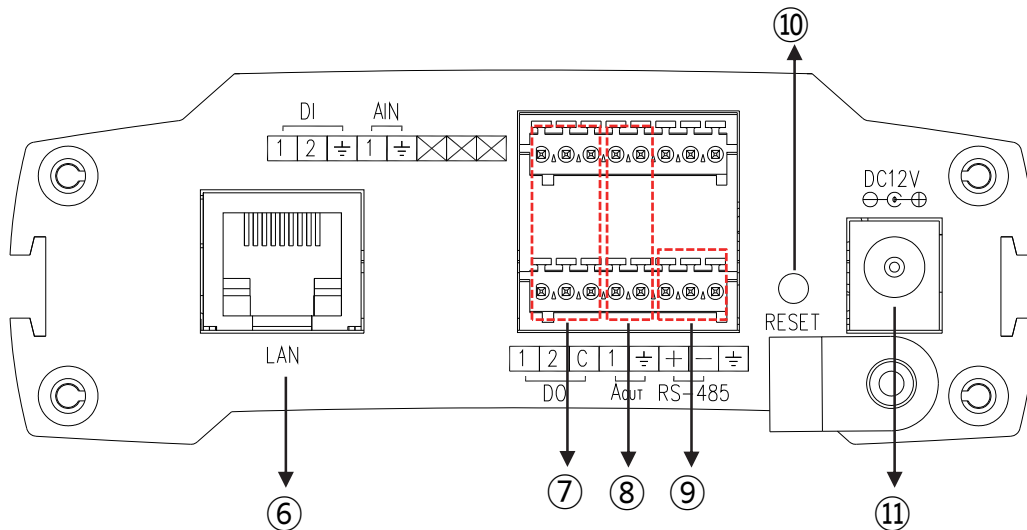
④ SD memory card slot

Insert a SD memory card for local storage.

⑤ Loop out BNC connector

As a loop out connector, connect to a device such as a DVR or monitor.

3.2. Back Panel



⑥ LAN connector

Use the RJ45 LAN connector for 10/100 Base-T Ethernet.

⑦ DI/DO

The encoder supports two channels for each of DI and DO. Refer to the section **4.1. Connectors** for more specific information.

⑧ Audio IN/OUT (listen only is supported by GEUTEBRUECK DVRs)

The encoder has one channel mono audio input/output. As the output power for the audio is low, an amplifier speaker is needed.

⑨ RS-485

RS-485 terminal block is used for PTZ controls.

⑩ Reset

Reboot the device system or reset the device to its factory default settings. Refer to the section **7. Reboot** for more specific information.

⑪ Power connector

Connect the power adaptor for power supply. DC 12V 1A adaptor is needed.

4. CONNECTIONS

4.1. Connectors

Video connection

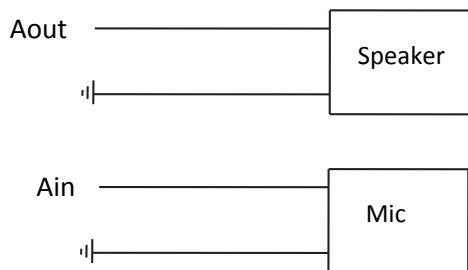
Connect the camera to the **Video input connectors** on the back panel using 75 ohm video coaxial cables with a BNC connector. Each video channel input among these connections can be looped to other equipment as monitor through **External Video output connector**.



Make sure to connect the analog video input before you turn on the encoder. Otherwise, the device must be rebooted to see the normal display if the camera is NTSC, because the encoder default setting is PAL without a video connection.

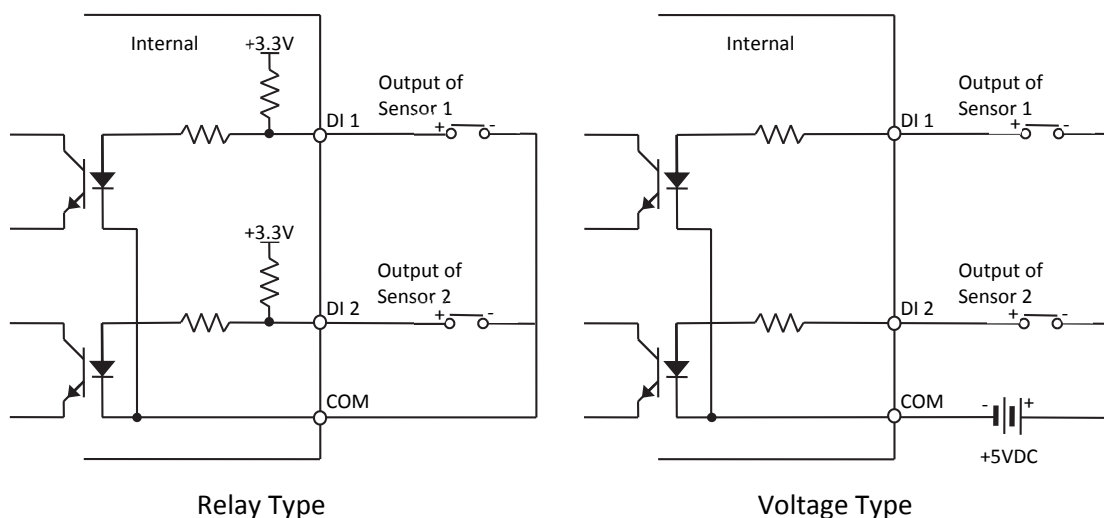
Audio connection (listen only is supported by GEUTEBRUECK DVRs)

Connect to the audio input device such as a Mic.



Sensor Input (D/I)

There are two sensor interface types – Voltage Type and Relay Type. The interface type can be controlled by the software. Before connecting sensors, check driving voltage and output signal type of the sensor. Since the connection is different according to sensor type, be careful to connect the sensor.



Input voltage range: 0 VDC minimum to 5 VDC maximum, Max 50 mA

| Signal | Description |
|--------|--|
| COM | Connect (-) cable of electronic power source for sensors to this port as shown in the circuit above. |
| D1~D2 | Connect output of sensors for each port as shown in the circuit above. |



Do not exceed the maximum input voltage or relay rate.
Do not use voltage and relay type sensor together.

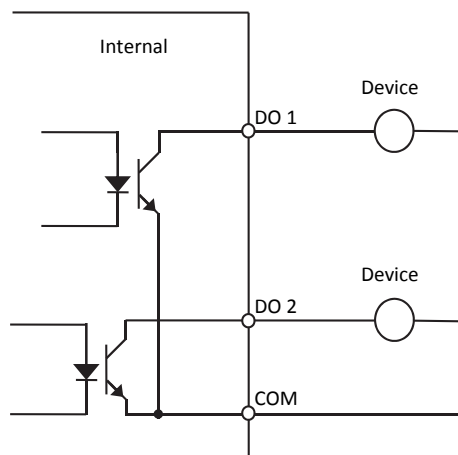
Alarm Output (D/O)

Only the relay type is supported.

Relay Rating: Max 24 VDC 50 mA



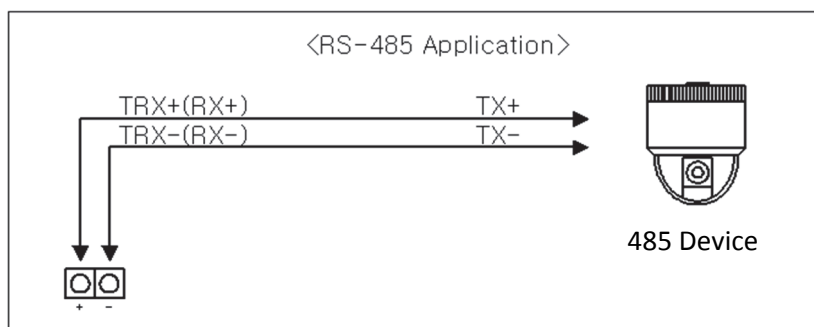
Do not exceed the maximum relay rating.



Relay Type

RS-485

The RS-485 serial port consists of **TRX+** (RX+) and **TRX-** (RX-) like in the following image.



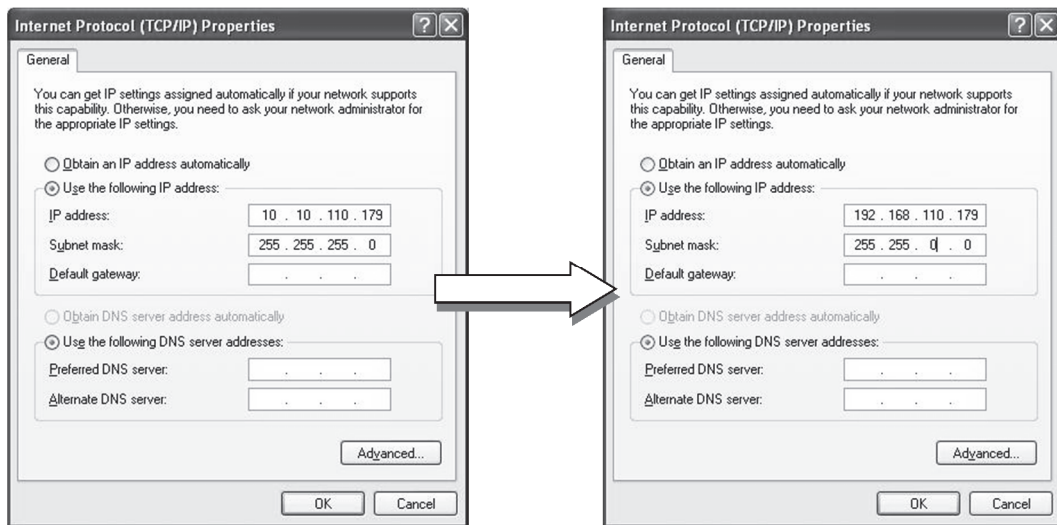
RS-485 Connection

5. CONFIGURATION

5.1. Set up network environment

The default IP address of the device is 192.168.XXX.XXX. Users can identify the IP address of the device from converting the MAC address's hexadecimal numbers, which is attached to the device. Be sure that the device and PC are on a same area network before running the installation.

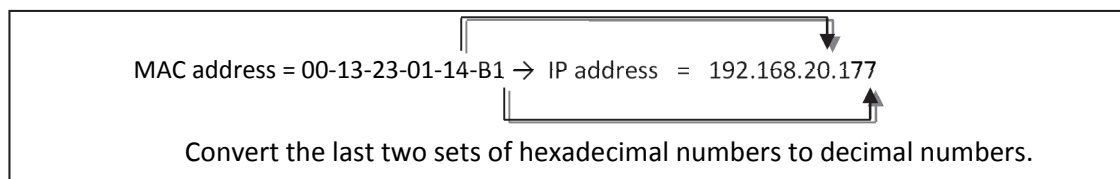
IP address : **192.168.xxx.xxx**
Subnet mask: **255.255.0.0**



5.1.1. Generic IP Environment

In case of generic private network environment where IP address 192.168.XXX.XXX are used, users may view the live streaming images on a web page using the device's default IP address:

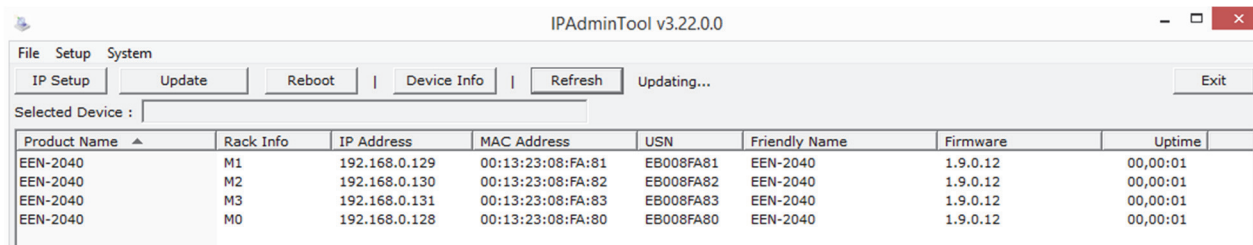
1. Convert the device's MAC address to the IP address. Refer to the Hexadecimal-Decimal Conversion Chart at the end of the manual.
(The MAC address of the device is attached on the side or bottom of the device.)



2. Start the Microsoft® Internet Explorer web browser and enter the address of the device.
3. Web streaming and device configurations are supported through ActiveX program. When the ActiveX installation window appears, authorize and install the ActiveX.

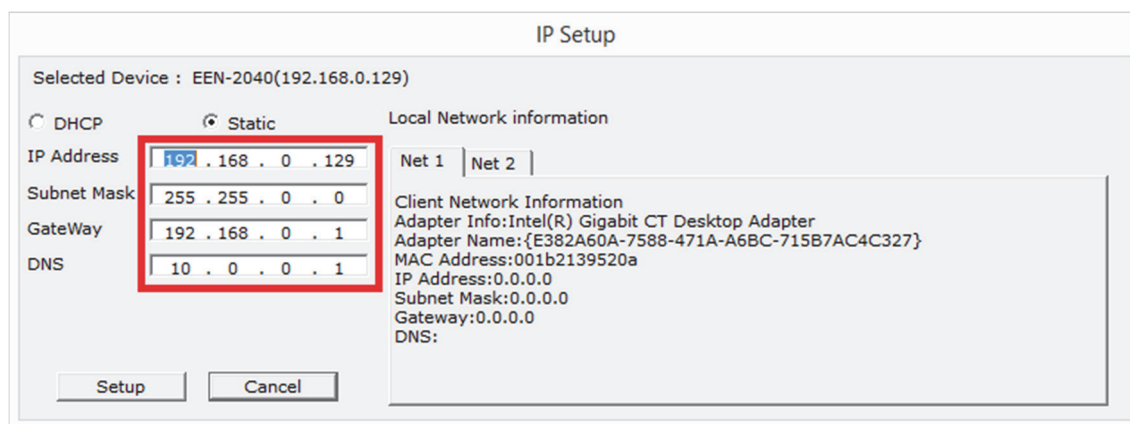
5.1.2. Custom IP Environment

IPAdminTool is a management tool, which automatically scans all of the network products for users to perform administrative tasks, which includes network configurations, firmware update, device reboot, and device organizations.



To modify the device's default IP address for customized network area;

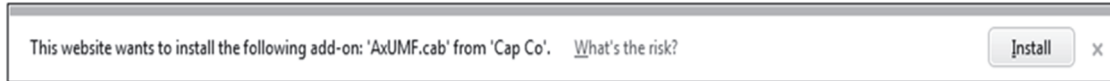
1. Find the device from the IPAdminTool's list and highlight the device's name.
2. Right-click the mouse and select **IP Address**; IP Setup window appears.



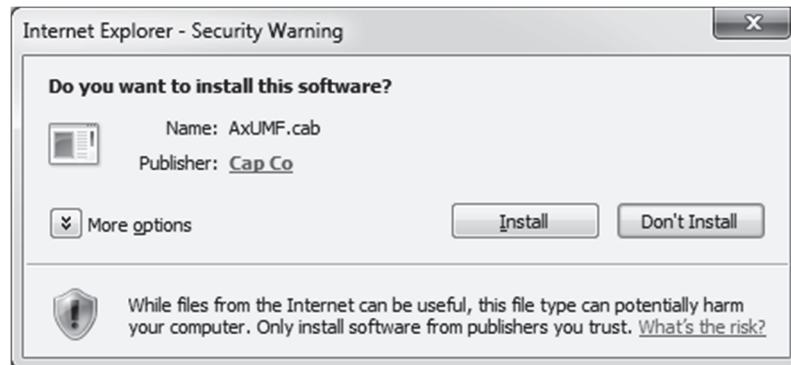
3. In the IP Setup's window, information under **Local Network information** displays the user/PC's network area information. Those information need to be incorporated to the IP Address, Subnet Mask, Gateway, and DNS boxes, except the last 2 sets of IP Address, which are to be the unique numbers for the device. Refer to the image above for the setting
4. Click **Setup** to complete the modification.

5.2. View video on web page

Once the device's proper IP address has been identified, type the URL in a web browser to access the camera. At first time access, installation window may pop up.



1. When the browser asks to install the AxUMF software, click **Install** to proceed.



2. When Setup installation pop-up window appears, click **Install** to proceed with rest of installations.

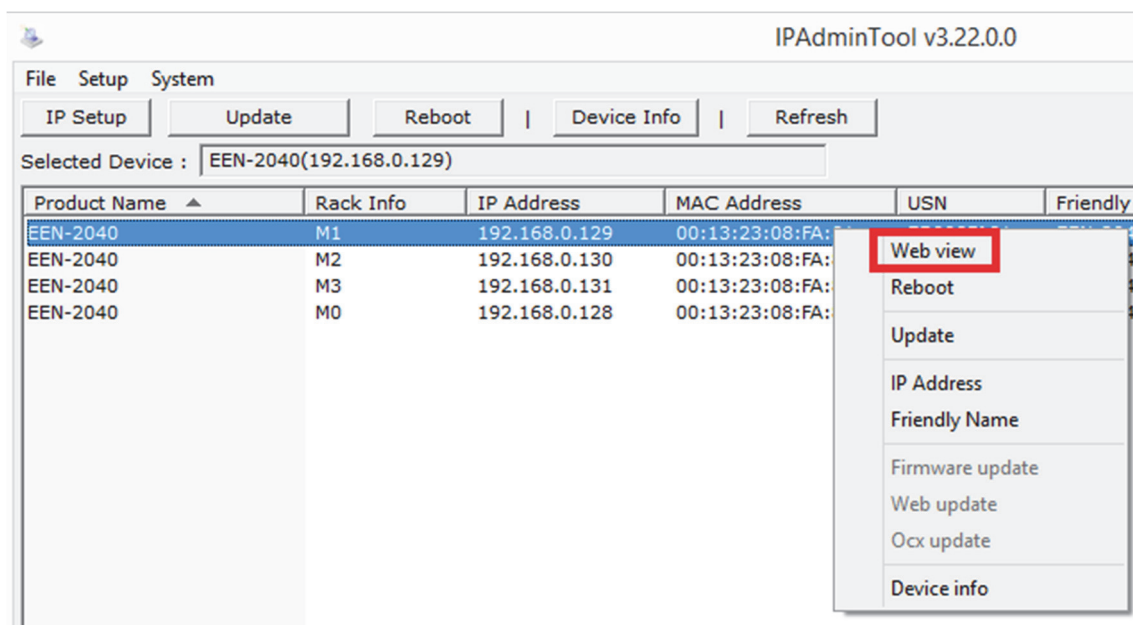


Depending on system OS and Internet Explorer version, installation experience may differ from one another. Figures described above are from Windows 7, Internet Explorer 9 environment.

5.2.1. Access through IPAdmin Tool

IPAdminTool automatically searches all activated network encoders and IP cameras and shows the product name, IP address, MAC address and etc.

1. From the IPAdminTool's product list, select the device by highlighting it.
2. Right-click the mouse and select **web-view**.



3. The system's default web browser opens the device's address.



Whether directly accessing the streaming video through typing IP address on a web page or taking steps through IPAdminTool, the ActiveX is needed to be installed for the Microsoft® Internet Explorer to have the complete configuration privileges.

6. Commissioning in GEUTEBRÜCK Software

6.1 Commissioning of IP Cameras in GSC-Setup

The following steps are required:

- The IP cameras must be assigned an IP address and a function package.
- Adding and configuring of the media channels.
- Proof of dome functions in Telecontrol.

Following this, the connected encoders (IP cameras) are available in the GeViScope / re_porter software.



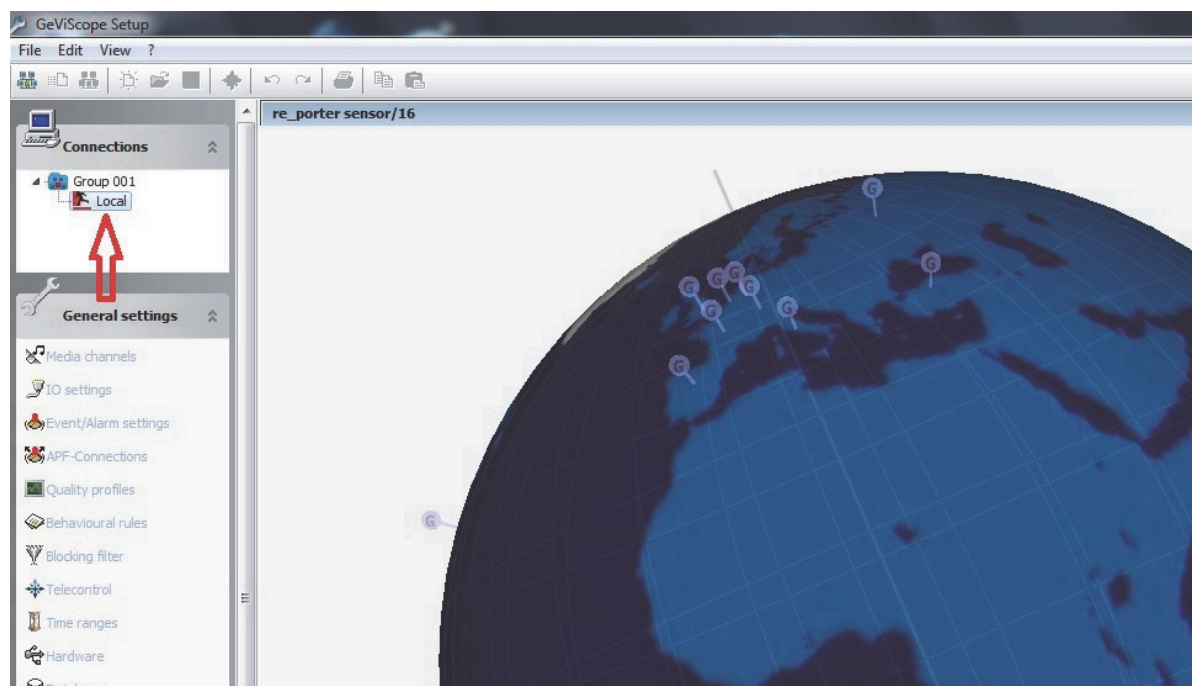
Attention: To install the encoders (IP cameras) correctly, the GeViScope/re_porter Software must be **version 7.5.960.xx** or higher. Older Software must be updated. Please download at: www.geutebrueck.com

Adding of the Encoders / IP-cameras


Open the GeViScope setup menu by double-clicking the desktop icon



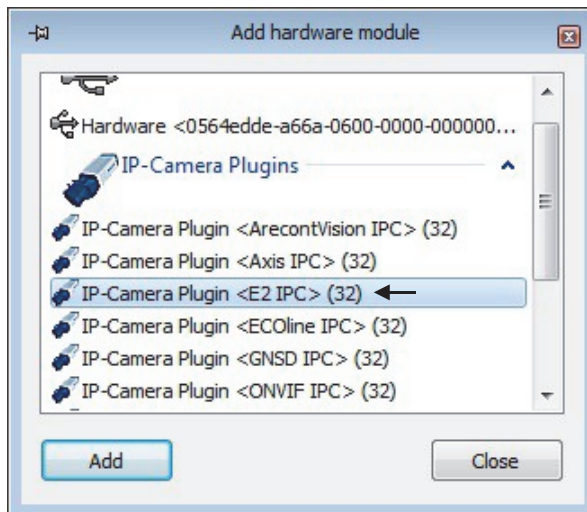
Step 1: Connect the GeViScope to a server in the Connections menu.



Step 2: Click the left mouse button to open the General Settings menu. Click the menu item for Hardware in the General Settings menu.


The context menu is opened by clicking the  [Add] button.

In the list that appears, please **select** the **Encoder (IP Camera Plugin <E2 IPC>)** that you would like to add.



Confirm the selection by clicking **Add**.

The additional IP camera now appears in the hardware module list.

Click the icon  to send the settings to the server.
 Select the IP camera that must be configured.
 Choose the IP camera settings tab and assign an available IP-address.

Installation information for IP address configuration:

IP domes use static IP addresses. Therefore, the IP address of the GeViScope must have an IP address from the same IP subnet as the IP dome device.

a) Static IP address

GeViScope is assigned a fixed static IP address with the same IP subnet as the IP dome. This is the preferred configuration for a GeViScope that uses IP dome devices.

b) 2 network cards

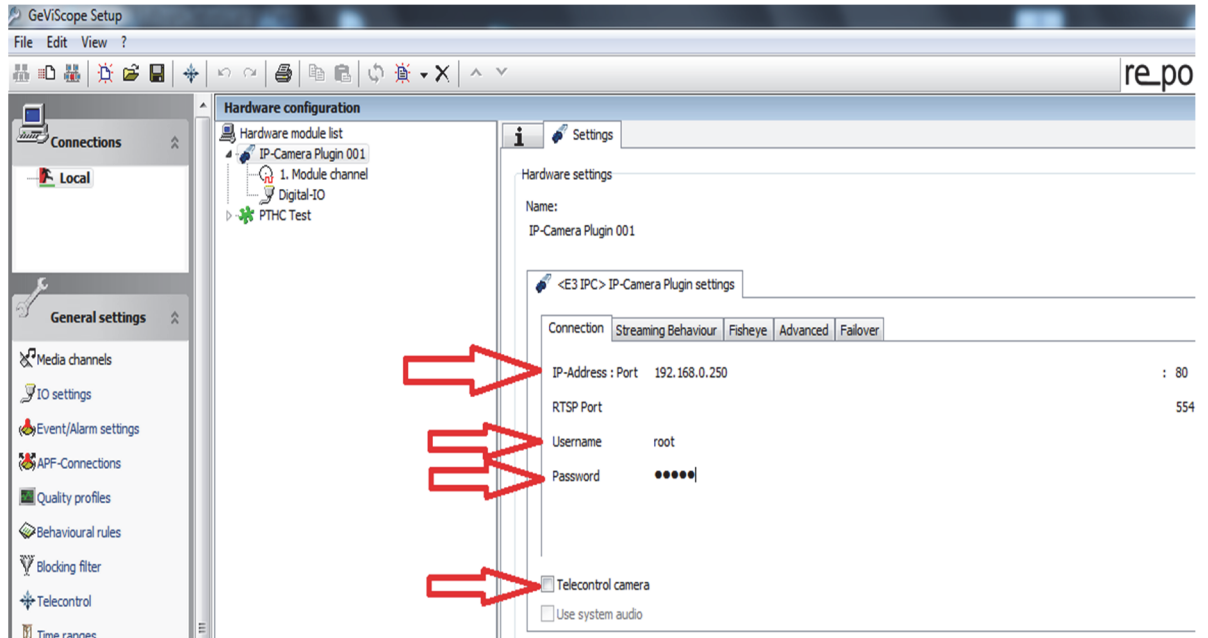
As an alternative to a) a second network card can be installed in the GeViScope. This makes a dual operation of DHCP and static IP possible. Communication with the IP dome devices is carried out over the second network card that is configured with a static IP address as in a).

c) DHCP Modus

A GeViScope that runs in DHCP mode must be assigned, by the DHCP server, either a static IP address or an IP address from the same IP subnet as the IP dome devices. To power up the Camera, please connect the Ethernet cable to the Camera's Ethernet Port and plug the other end of the cable into an IEEE 802.3at High Power over Ethernet (PoE Plus) Switch. If there is a need to operate the Heater for Outdoor Models, please plug the AC 24V cable into the Camera's Power Connector to power up the Camera instead. •




Attention: A loss of the connection to the DHCP server can cause the connection loss to the encoder / IP camera devices! This operating mode should only be used if a continuous connection to the DHCP server is ensured!



Please insert the username “**root**” and password “**admin**”.


Activate the **Telecontrol camera button**, if you want to integrate an IP camera with motorized lens (Zoom and focus remote controlled).

This activation configures automatically all needed parameters in the Telecontrol menu.

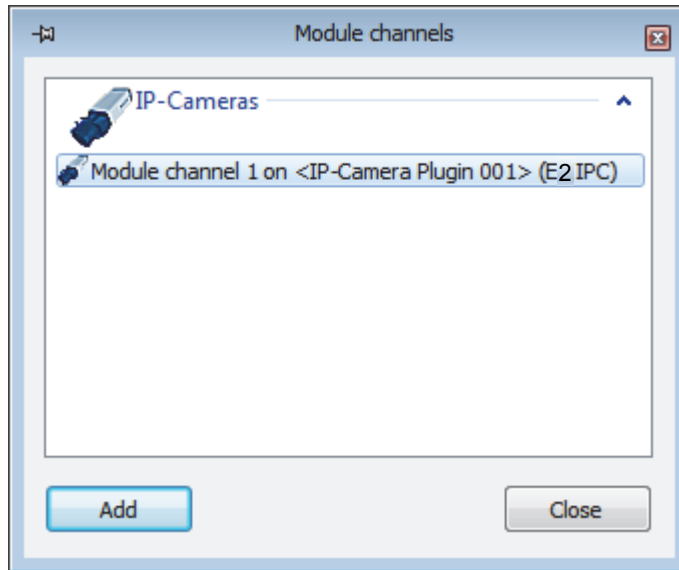
When you have checked all the settings yet again, click the  icon to send the settings to the server.

Adding and configuring media channels

On the General settings menu, click Media channels in order to initialize the media settings. The media channels of the basic unit are displayed.

The context menu is opened by clicking the  „Add“ button.

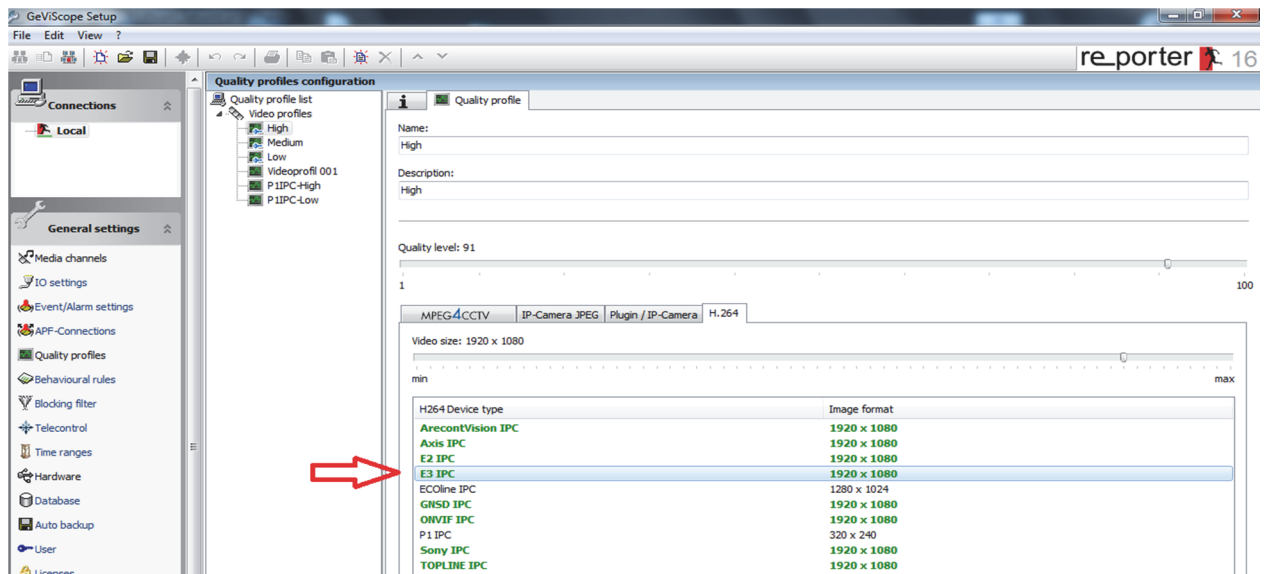
Please select the channels that you would like to add from the list that appears.




Confirm the input by clicking **Add**.

The compression format is automatically set to H.264.

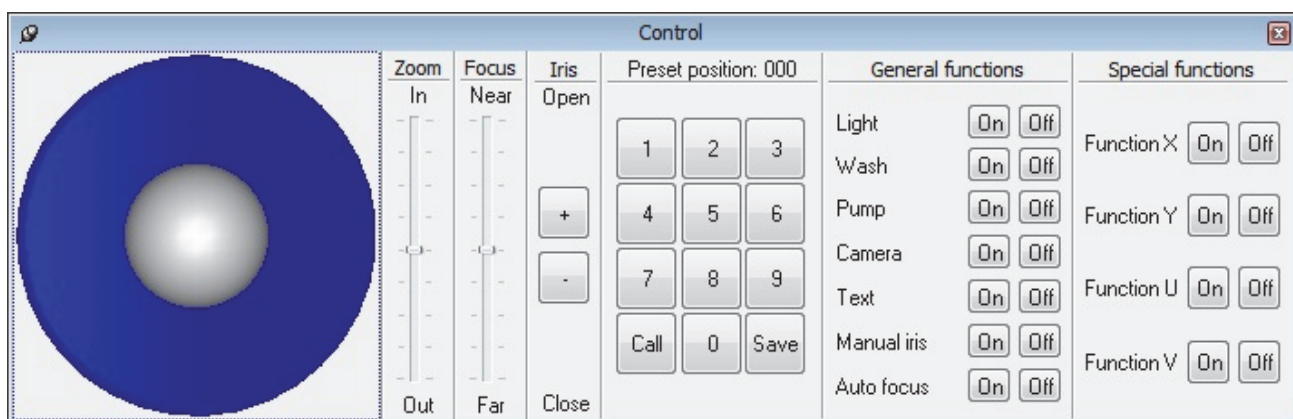
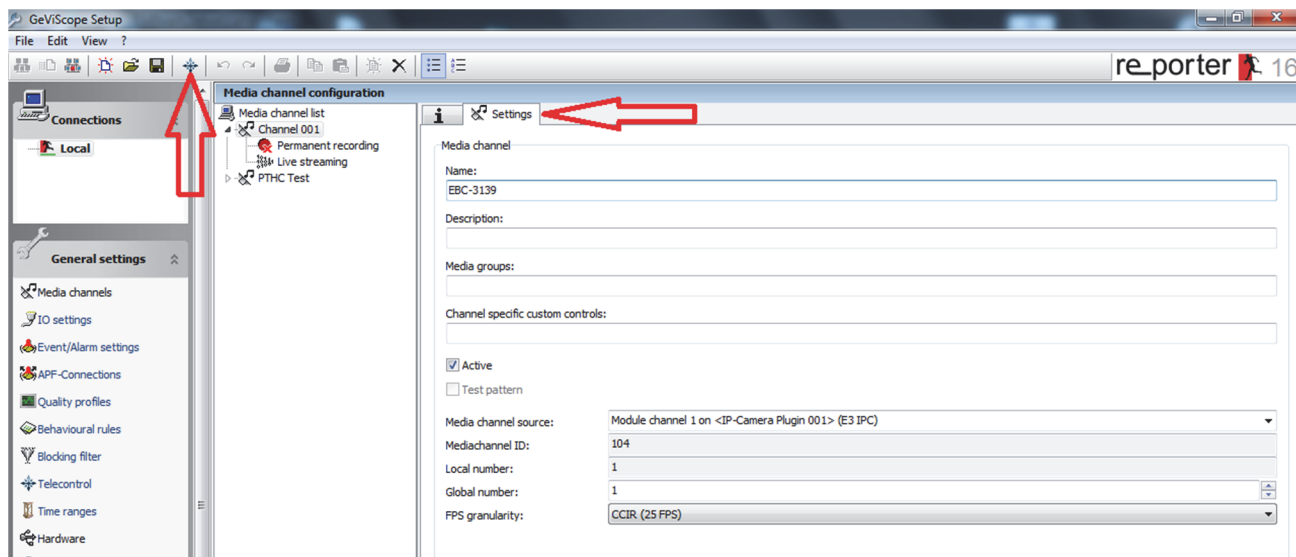
You only should control the image quality in the menu Quality profile. Move the slider till the image format of the chosen plugin type changes to green.



When you have checked all the settings yet again, click the  icon to send the settings to the server.

Please click on tab **Media channels** → folder **Settings** → **Telecontrol** button to check the correct Telecontrol functions with joystick and sliders.

This function is only available for cameras, which have a motorized lens (Zoom and focus remote controlled).



6.2 Commissioning of IP Cameras in G-Set

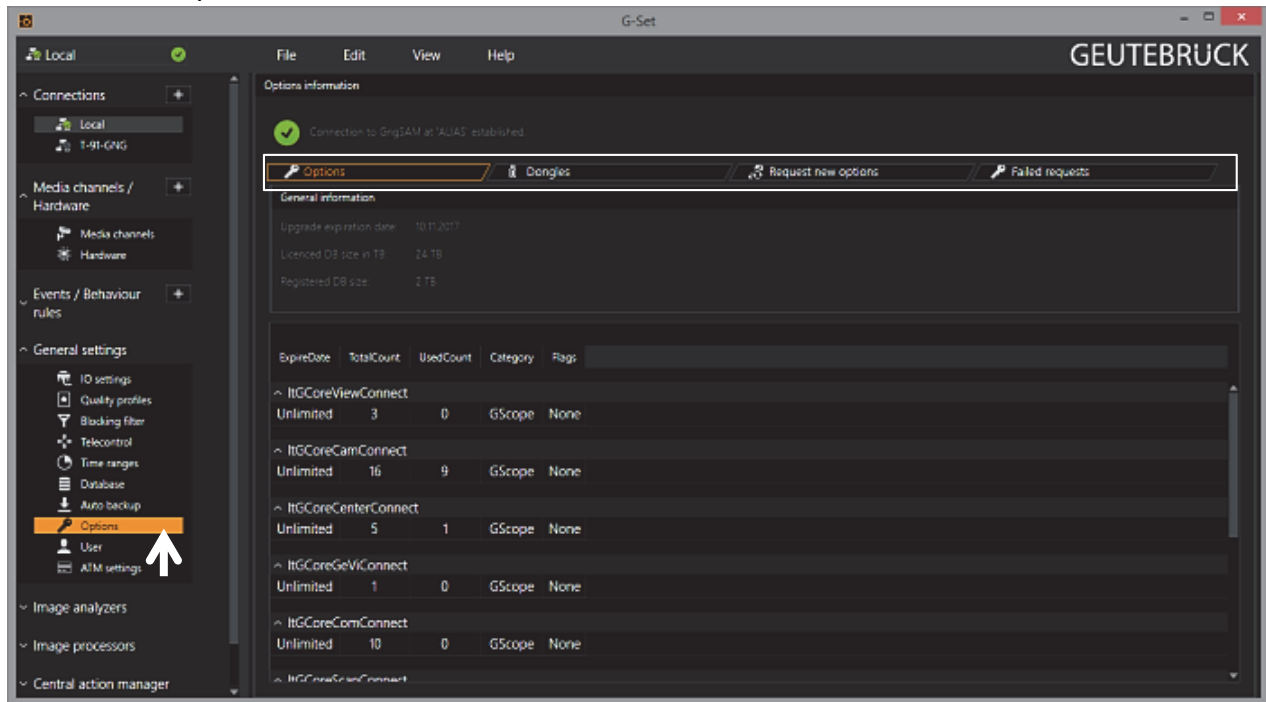


NOTE: For correct installation of IP cameras one **Option G-Core/CamConnect** must be available for each camera.

Available options are shown in G-Set at *General settings - Options*.

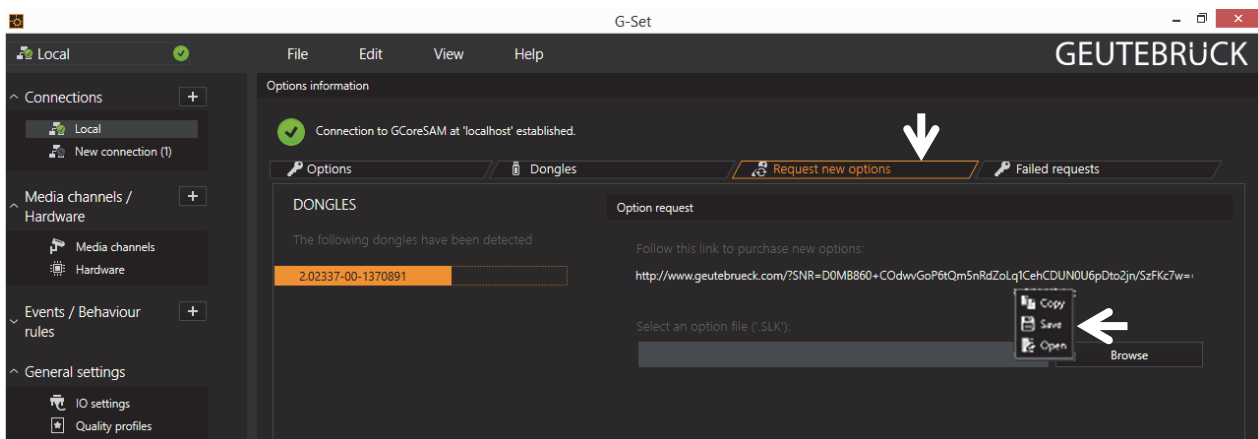
Required options can be ordered using *General settings - Options* in G-Set.

After clicking on *Options*, the options dialog opens with the first tab, which shows an overview of the available options.



The dialog shows the four tabs *Options*, *Dongles*, *Request new options* and *Failed requests*.

Request new options




New options can be requested using this dialog. When you click the dongle that will be assigned the new options, an URL appears in the field *Follow this link to purchase new options*.

Right clicking this URL opens a menu in which the URL can be copied, saved or opened in the default browser.

After passing the URL to a browser, follow the instructions on the GEUTEBRÜCK website.

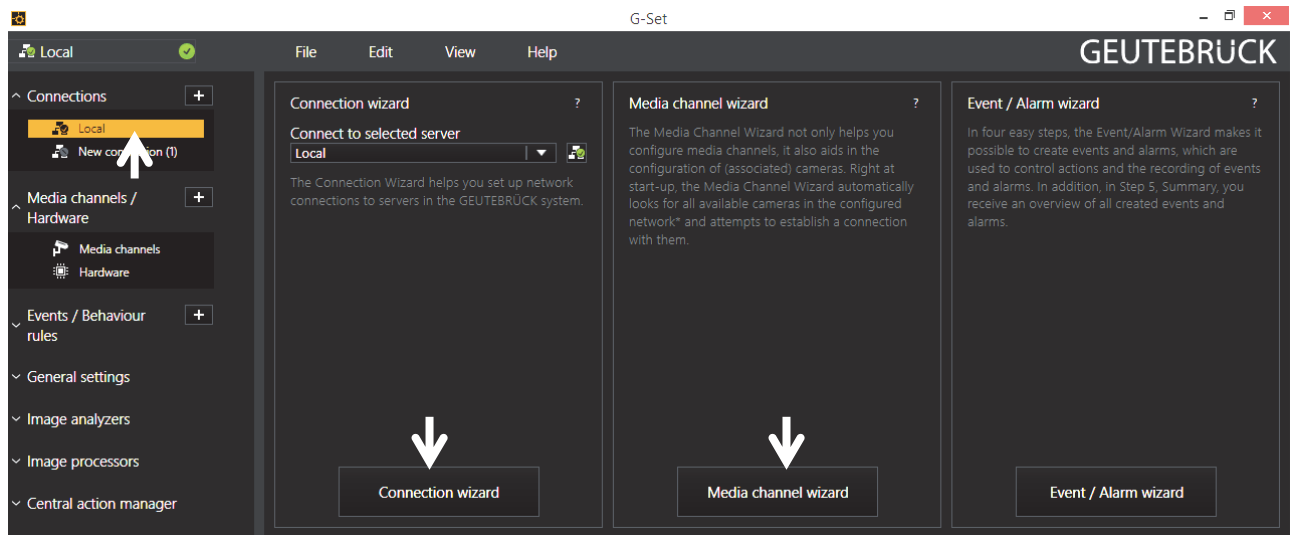
Adding Encoders / IP Cameras

Please double click at desktop on the G-Set icon  to open the G-Set configuration menu.

Step 1: Connection to a server

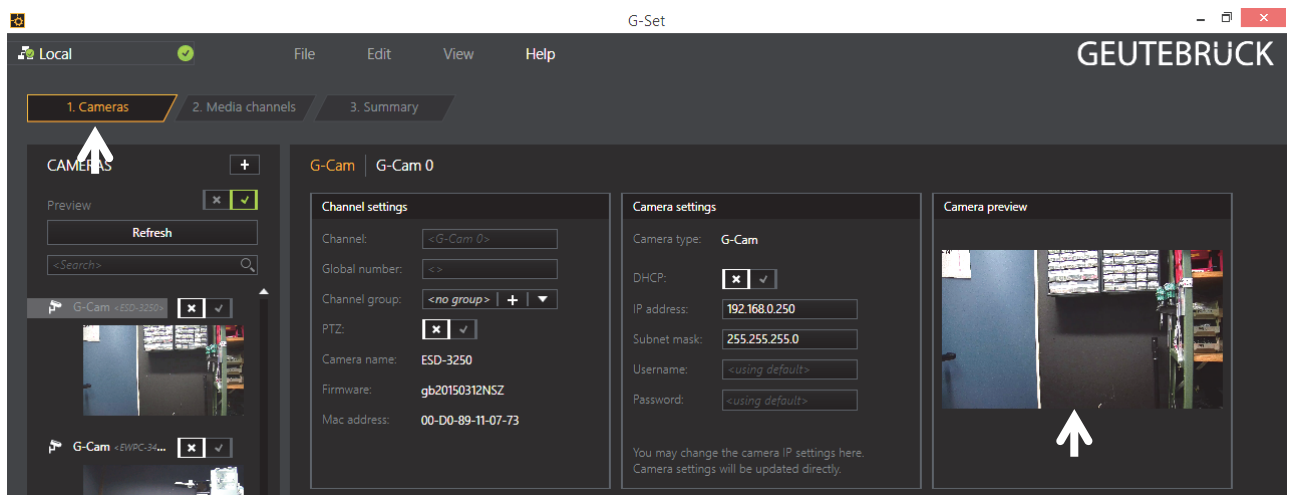
To connect G-Core with a (local or remote) server,

- Double-click on a connection available under *Connections* in the selection menu or
- In the Connection wizard dialog select a server from the list and click on the icon.
- By clicking *Connection wizard*, you can also configure new server connections.



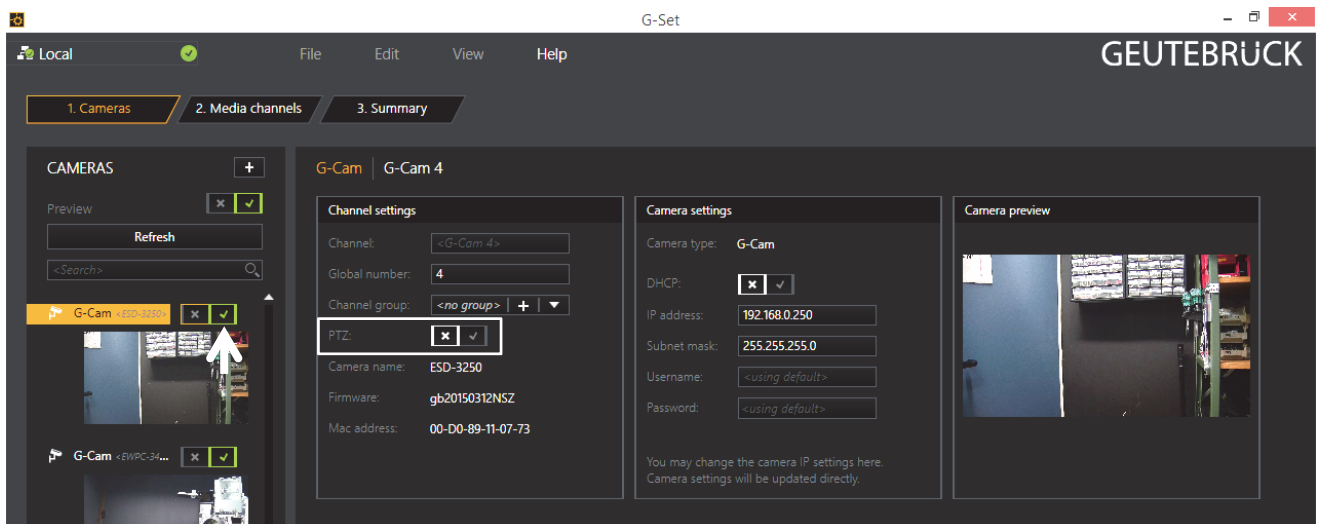
Step 2: Activation and configuration of Media channels.

Left mouse click at *Media channel wizard* and click on tab *Cameras* opens the following window:



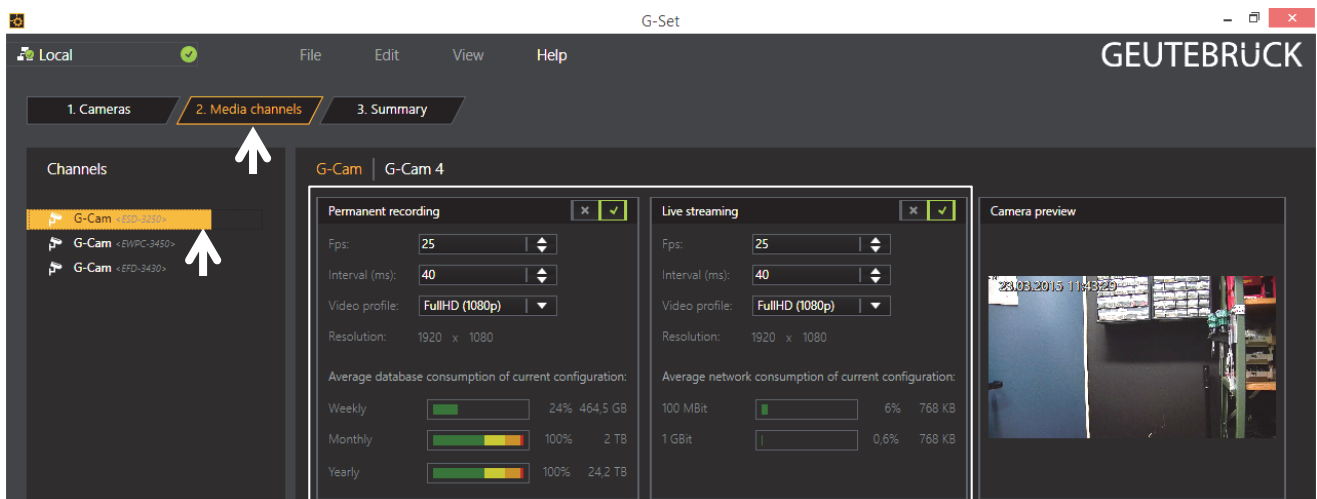
The Media Channel Wizard automatically searches for existing network cameras and displays them in the first column.

Cameras for which access rights are available are also displayed with a small camera image. Select the desired camera by clicking the tick box (changes to green) and edit the general information and the camera-specific data.



NOTE: If you want to control a PTZ camera, the **tick box PTZ** in the menu *Channel Settings* **must** be activated.

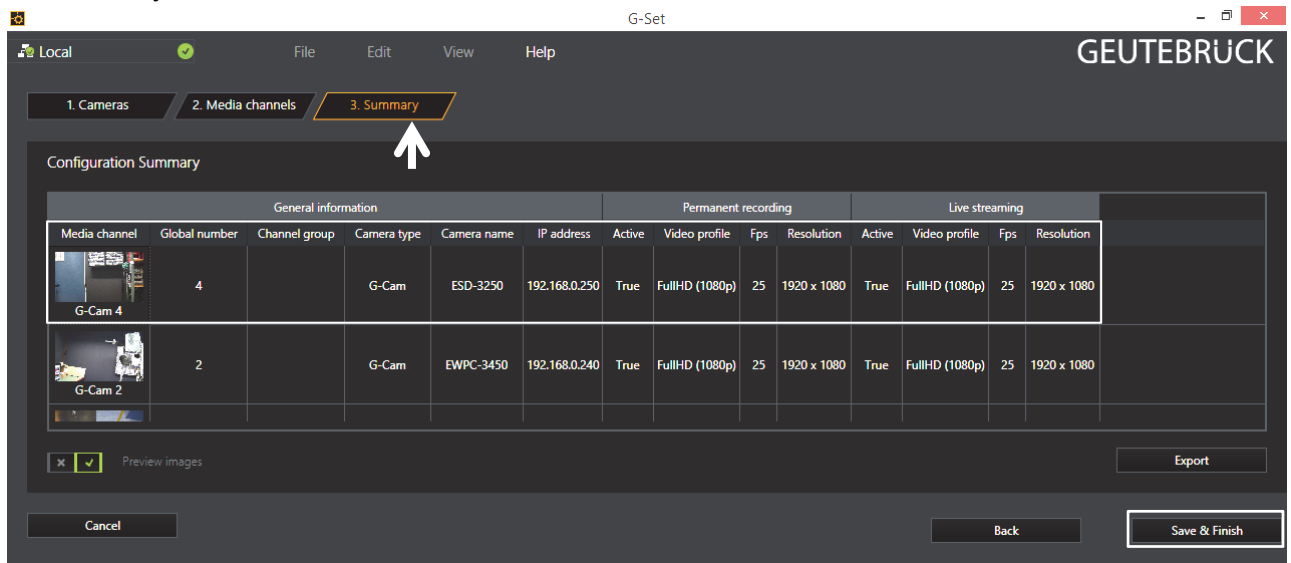
Left click on the tab *Media channels* opens the configuration window.
At left column (camera tree) please choose the desired camera.



In the camera menus you can make the desired settings for *Permanent Recording* and *Live Stream*.

Step 3: Summary (check settings, confirm and transfer settings to the server).

Mouse click on tab *Summary* provides you with an overview of all the settings that have been defined for your cameras.

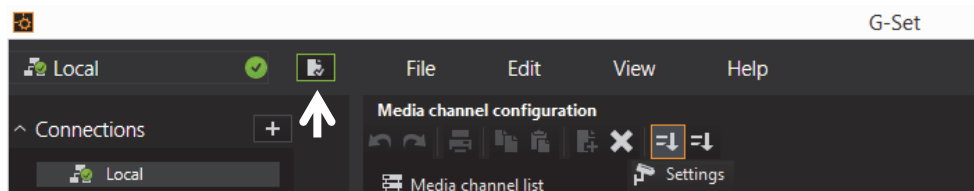


Please confirm your settings by clicking the button *Save & Finish*.

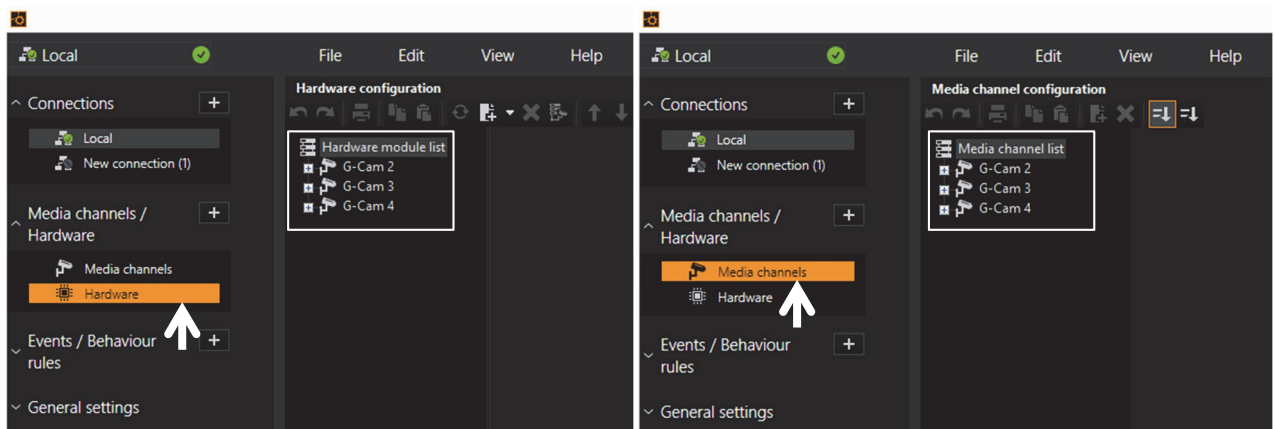


IMPORTANT: For settings to take effect, they **must** be sent to the server by clicking the icon

You can find the *transfer button* on the *command bar* of G-Set.



Finally, with click at *Hardware* and *Media Channels*, you can check whether the camera is present in the network and the media channels are configured correctly.



7. Reboot

1. While the device is in use, press the Reset button.
2. Wait for the system to reboot.



Please do **not hold the reset button for more than 2 seconds**. Otherwise, the device may be switched to its Factory Default settings.

7.1. Factory Default

Resetting the device back to the factory default will initialize all parameters including the IP address back to the factory defaults. To reset back to the factory default:

1. Press reset button and hold it while the device is in use.
2. Release the Reset button after 10 seconds until LED blinks.
3. Wait for the system to reboot.



The factory default settings can be inferred as follows:

| | |
|---------------|---------------|
| IP address: | 192.168.xx.yy |
| Network mask: | 255.255.0.0 |
| Gateway: | 192.168.0.1 |
| User ID: | root |
| Password: | admin |

7.2. Safe Mode

What is Safe Mode?

There may be certain occasions that your camera repeatedly fails to boot. Then, your camera may enter safe mode to be recovered from the occasions by providing the emergency firmware as a factory default.

What may have caused Safe Mode?

Here below are the main typical causes.

- * The power supply is continually unplugged certain times in the middle of system booting.
- * The firmware files required for system booting are damaged.
- * There are conflicts in the system settings.

How to recover your system from Safe Mode

Safe Mode

Your device has entered safe mode now. Device is usually forced to safe mode when device recognizes itself not operating normally over times.
In most cases, repeated unstable power connection during the boot is the main cause for safe mode.
If you have seen your device in safe mode for the first time, just follow the instructions below to reboot the device.

1. Click 'Start Reboot' on the current page.
2. Wait until the device completely reboots. (*It may take a few seconds to several minutes.)
3. Refresh the webpage to check if it appears normal.

If the device is not recovered after you have done the above instructions, it may indicate that settings in device may have been corrupted.
Then, try the instructions as follows to reset all settings.

1. Click 'Reset All Settings' on the current page.
2. Wait until the device resets all settings. (*It may take a few seconds to several minutes.)
3. Check if the webpage appears normal.

If the device is still in safe mode after you have done the above procedure, it may indicate that there may be a corruption on the firmware of the device.
In this case, the device cannot be booted normally.
Thus, perform the firmware update according to the instructions below.

1. Click 'Browse', and select the appropriate firmware file.
2. Click 'START' to restore the firmware to the device. (*You will see the relevant messages during the firmware update.)
3. Check if the webpage appears normal.

If you are still on this page even after the above procedure, your device may have encountered the worst situation. Certain part of the hardware on the device may have been broken. Thus, you should contact your local agency for further assistance.

Reboot

Start Reboot

Reset All Settings

Reset All Settings

Upload Firmware Image

Choose a firmware image to upload:

Browse ...

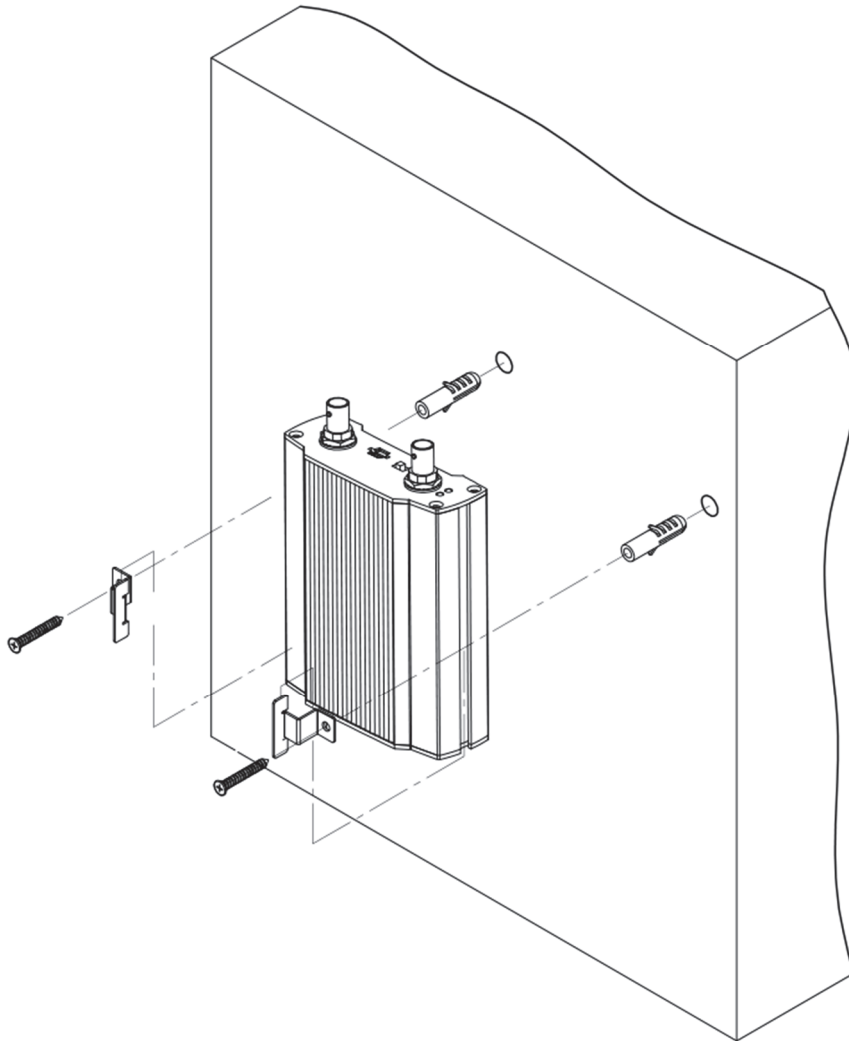
START

The messages above will appear on the webpage when your device has been rebooted in safe mode. Then, you should follow the instructions on the webpage according each step.
If the unit remains in Safe Mode, you should contact your dealer.

8. WALL-MOUNTING

To wall-mount the encoder, follow this instruction:

The encoder has one mounting hole on each side. Mount the device using the included screws and anchor blocks. Refer to the image below.



APPENDIX (A): SPECIFICATIONS

Summary

| Video | |
|--|--|
| Input | 1 channel |
| Output | 1 channel (Loop Out, BNC connector) |
| Compression Format | H.264, MJPEG Selectable per Stream |
| Number of Streams | Dual Stream, Configurable |
| Resolution | D1, 4CIF, 2CIF, VGA, CIF, QCIF, QVGA |
| Compression FPS | 25/30 fps @ D1 (PAL/NTSC) |
| Deinterlacing | Support (DSP) |
| Motion Detection | Support (DSP) |
| Burnt-in Text (Digital) | Support (DSP) |
| Audio (listen only is supported by GEUTEBRUECK DVRs) | |
| Input/output | 1 channel / 1 channel |
| Compression Format | G.711 |
| Function | |
| Digital Input/output | 2 channel / 2 channel |
| RS-485 | 1 channel |
| RS-232 | - |
| Network | 10/100 Base-T |
| Power Over Ethernet | Supported |
| Protocol | QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMPv1/v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLSv1 |
| SD/SDHC Memory slot | 1 x MicroSDHC slot (SD Card is not included) |

Electrical Characteristics

| | |
|------------------------------------|--|
| Video Input | 1 Vp-p, 75Ω |
| Video Output | 1 Vp-p, 75Ω |
| Audio Input | Mic-in, 0.178Vp-p, 10KΩ |
| Audio Output | Lineout, 2.26Vp-p, 10KΩ |
| Sensor(D/I) | Max 50 mA @ 5 VDC |
| Alarm(D/O) | Max 50 mA @ 24 VDC On-state resistance: 50 Ω (max continuous) |
| Power Source /Consumption (Approx) | DC 12V, PoE IEEE802.3af (Class 0) / 3W @ 12V |

Environment Condition

| | |
|-----------------------|--------------------------------|
| Operating Temperature | 0 °C ~ 50 °C (32 °F ~ 122 °F) |
| Operating Humidity | Up to 85% RH |

Mechanical Condition

| | |
|-----------------|-------------------------------|
| Dimension | 103 (W) x 38 (H) x 141 (D) mm |
| Weight (Approx) | 430 g |

APPENDIX (B): POWER OVER ETHERNET

The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard. IEEE 802.3af allows for two power options for Category 5 cables.

The PoE module signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15 Watt power to the port.

PoE compatibility

With non Power Sourcing Equipment (PSE)

When it is connected with non PSE, the power adaptor should be connected.

With power adaptor

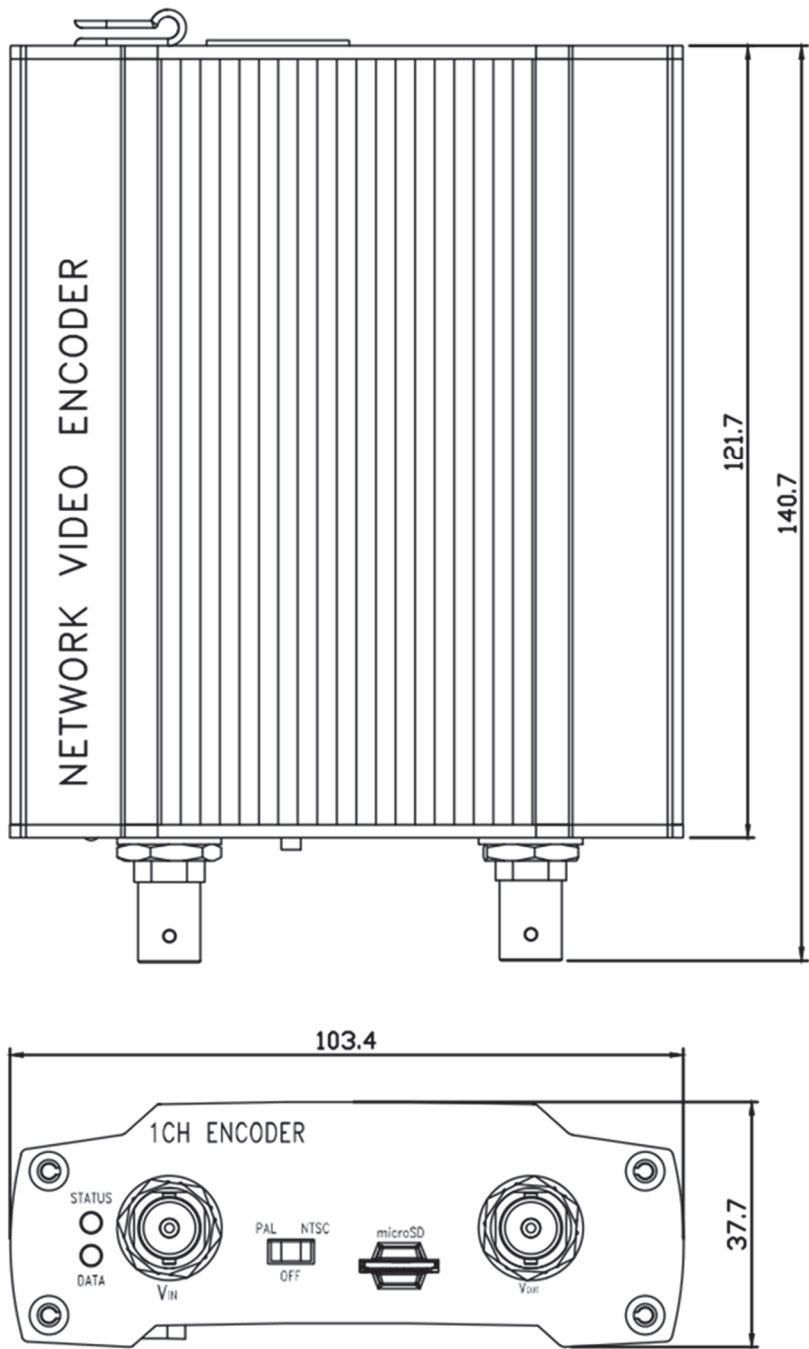
Connecting both PSE and power adaptor does not do any harm to the products. Disconnecting power adaptor while it is operating does not stop operation. The product continues to work without rebooting.

Power classification

The PoE Power Class supported by the IP device is Class 0.

| Class | Usage | Minimum Power Levels Output at the PSE | Maximum Power Levels at the Powered Device |
|-------|---------|--|--|
| 0 | Default | 15.4 W | 0.44 to 12.95 W |

APPENDIX (C): DIMENSIONS



(Unit: mm)

APPENDIX (D): HEXADECIMAL-DECIMAL CONVERSION TABLE

Refer to the following table when you convert the MAC address of your device to IP address.

| Hex | Dec | Hex | Dec | Hex | Dec | Hex | Dec | Hex | Dec | Hex | Dec | Hex | Dec |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 00 | 0 | 25 | 37 | 4A | 74 | 6F | 111 | 94 | 148 | B9 | 185 | DE | 222 |
| 01 | 1 | 26 | 38 | 4B | 75 | 70 | 112 | 95 | 149 | BA | 186 | DF | 223 |
| 02 | 2 | 27 | 39 | 4C | 76 | 71 | 113 | 96 | 150 | BB | 187 | E0 | 224 |
| 03 | 3 | 28 | 40 | 4D | 77 | 72 | 114 | 97 | 151 | BC | 188 | E1 | 225 |
| 04 | 4 | 29 | 41 | 4E | 78 | 73 | 115 | 98 | 152 | BD | 189 | E2 | 226 |
| 05 | 5 | 2A | 42 | 4F | 79 | 74 | 116 | 99 | 153 | BE | 190 | E3 | 227 |
| 06 | 6 | 2B | 43 | 50 | 80 | 75 | 117 | 9A | 154 | BF | 191 | E4 | 228 |
| 07 | 7 | 2C | 44 | 51 | 81 | 76 | 118 | 9B | 155 | C0 | 192 | E5 | 229 |
| 08 | 8 | 2D | 45 | 52 | 82 | 77 | 119 | 9C | 156 | C1 | 193 | E6 | 230 |
| 09 | 9 | 2E | 46 | 53 | 83 | 78 | 120 | 9D | 157 | C2 | 194 | E7 | 231 |
| 0A | 10 | 2F | 47 | 54 | 84 | 79 | 121 | 9E | 158 | C3 | 195 | E8 | 232 |
| 0B | 11 | 30 | 48 | 55 | 85 | 7A | 122 | 9F | 159 | C4 | 196 | E9 | 233 |
| 0C | 12 | 31 | 49 | 56 | 86 | 7B | 123 | A0 | 160 | C5 | 197 | EA | 234 |
| 0D | 13 | 32 | 50 | 57 | 87 | 7C | 124 | A1 | 161 | C6 | 198 | EB | 235 |
| 0E | 14 | 33 | 51 | 58 | 88 | 7D | 125 | A2 | 162 | C7 | 199 | EC | 236 |
| 0F | 15 | 34 | 52 | 59 | 89 | 7E | 126 | A3 | 163 | C8 | 200 | ED | 237 |
| 10 | 16 | 35 | 53 | 5A | 90 | 7F | 127 | A4 | 164 | C9 | 201 | EE | 238 |
| 11 | 17 | 36 | 54 | 5B | 91 | 80 | 128 | A5 | 165 | CA | 202 | EF | 239 |
| 12 | 18 | 37 | 55 | 5C | 92 | 81 | 129 | A6 | 166 | CB | 203 | F0 | 240 |
| 13 | 19 | 38 | 56 | 5D | 93 | 82 | 130 | A7 | 167 | CC | 204 | F1 | 241 |
| 14 | 20 | 39 | 57 | 5E | 94 | 83 | 131 | A8 | 168 | CD | 205 | F2 | 242 |
| 15 | 21 | 3A | 58 | 5F | 95 | 84 | 132 | A9 | 169 | CE | 206 | F3 | 243 |
| 16 | 22 | 3B | 59 | 60 | 96 | 85 | 133 | AA | 170 | CF | 207 | F4 | 244 |
| 17 | 23 | 3C | 60 | 61 | 97 | 86 | 134 | AB | 171 | D0 | 208 | F5 | 245 |
| 18 | 24 | 3D | 61 | 62 | 98 | 87 | 135 | AC | 172 | D1 | 209 | F6 | 246 |
| 19 | 25 | 3E | 62 | 63 | 99 | 88 | 136 | AD | 173 | D2 | 210 | F7 | 247 |
| 1A | 26 | 3F | 63 | 64 | 100 | 89 | 137 | AE | 174 | D3 | 211 | F8 | 248 |
| 1B | 27 | 40 | 64 | 65 | 101 | 8A | 138 | AF | 175 | D4 | 212 | F9 | 249 |
| 1C | 28 | 41 | 65 | 66 | 102 | 8B | 139 | B0 | 176 | D5 | 213 | FA | 250 |
| 1D | 29 | 42 | 66 | 67 | 103 | 8C | 140 | B1 | 177 | D6 | 214 | FB | 251 |
| 1E | 30 | 43 | 67 | 68 | 104 | 8D | 141 | B2 | 178 | D7 | 215 | FC | 252 |
| 1F | 31 | 44 | 68 | 69 | 105 | 8E | 142 | B3 | 179 | D8 | 216 | FD | 253 |
| 20 | 32 | 45 | 69 | 6A | 106 | 8F | 143 | B4 | 180 | D9 | 217 | FE | 254 |
| 21 | 33 | 46 | 70 | 6B | 107 | 90 | 144 | B5 | 181 | DA | 218 | FF | 255 |
| 22 | 34 | 47 | 71 | 6C | 108 | 91 | 145 | B6 | 182 | DB | 219 | | |
| 23 | 35 | 48 | 72 | 6D | 109 | 92 | 146 | B7 | 183 | DC | 220 | | |
| 24 | 36 | 49 | 73 | 6E | 110 | 93 | 147 | B8 | 184 | DD | 221 | | |

Technical alterations reserved.

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