eyevis
PERFECT VISUAL SOLUTIONS

eS100

eStreamer eS100 – User Manual

V1.2

Table of Contents

1. Overview

The eStreamer eS100 (eyecon Capture streamer) transmits DVI-signals over an existing IP network. The eS100 can be connected to the DVI output of a workstation PC. There is no need to install any software, agent or service on the PC. A monitor can be connected to the DVI output of the eS100 to display the signal of the DVI input (loop through).

The eStreamer eS100 supports different modes to transfer the video over the network.

The Status LED on the front panel indicates the operating mode:

Magenta = KVM Server mode

Yellow = KVM Client mode

Green = Video Decoder mode

Blue = Video Encoder mode

2. Advantages

If there is no access to the workstation PC for installing the eyecon capture software, the eS100 offers the possibility for hardware capture. Also for security reasons different network structures can be used: the eS100 provides its own network interface that can be configured to another subnet. Furthermore mouse and keyboard signals can be forwarded to the PC using an USB connection.

3. Contents of delivered System

The System will be delivered with the complete Hardware needed to start directly into the Setup.

It Contains:

- eStreamer eS100
- DVI Cable
- USB Cable
- External Power Supply

4. Safety Information

Review all safety information before attempting to service the eS100.

4.1Warnings and Precautions

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damages, you should do a damage-claim with the carrier who delivered your system.

4.2Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the eS100 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cord must include a grounding plug and must be plugged into grounded electrical outlets.

4.3 Disposal and Recycling

This unit consists mostly of environmentally friendly material. Computers and related electronic equipment contain substances such as metals, glass, plastics and certain chemical compounds that are highly recoverable, recyclable and reusable. By recycling your old equipment in a responsible manner, you can keep electronic products out of our landfills and help maximize the use of our natural resources.

The crossed-out refuse bin indicates that the products must be properly recycled or disposed of appropriately in accordance with national legislation in the respective EU countries.

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.

4.4 General Safety Precautions

- Keep the area around the chassis clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewellery or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

4.5 System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- Use a grounded wrist strap designed to prevent static discharge.

- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing any board from its antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the server board and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the server board.

4.6 INSTALLATION GUIDELINES

4.6.1 ELEVATED AMBIENT TEMPERATURE

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature of 35°C.

4.6.2 CIRCUIT OVERLOADING

Ensure the equipment is properly connected to the supply circuit and follow equipment ratings to avoid overloading the circuits.

4.6.3 RELIABLE GROUNDING

Reliable grounding of rack-mounted equipment should be maintained. Particular attention should be given to supply connections rather than direct connections to the branch circuit (e.g., use of power strips).

5. Supported Modes

5.1 RFB

The RFB Mode gives the Advantage to connect a PC via loop trough function to the eS100.

The eS100 will give you full RFB access which can be password protected. After setting up the network you can access and control this System using the eyecon software.

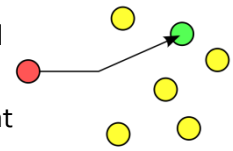
5.2 Video Mode

The Video Mode offers its user a complete eyecon free use. The low latency bus allows you to almost stream any content.

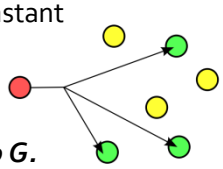
5.2.1Video Encoder & Decoder Unicast/Multicast Modification

The eS100 could be setup as Encoder and Decoder for Video Mode. The Network Modes Unicast and Multicast are possible.

In a normal network structure (switch based network) we recommend the use of unicast. It's a point-to-point connection between Client and Server. The level of bandwidth depends from the number of clients that use the stream.



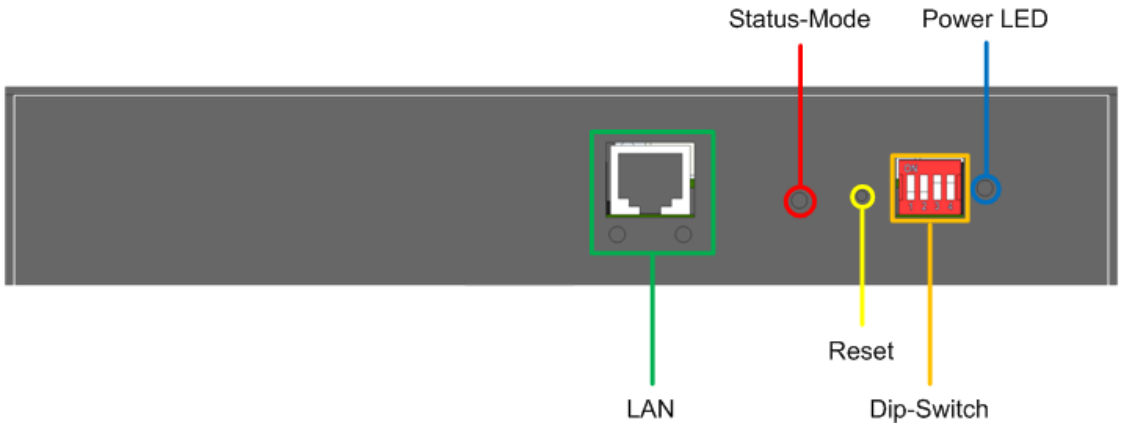
On the other hand multicast is a true broadcast connection. All streaming packets will be delivered to all the clients inside the subnet. That means you'll have a constant bandwidth no matter if 1 or 100 clients using the stream. This could over float your local network structure.



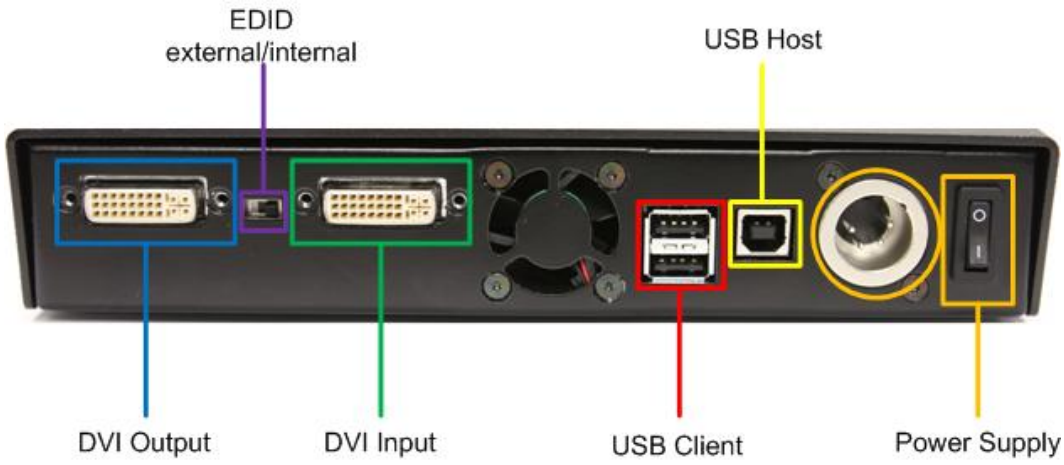
For multicast use we strongly recommend the use of ***CISCO catalyst 2960 G.***

6. Connecting the eS100

At the front panel you'll find a 'LAN' connector for connecting the eS100 to a standard Ethernet network. Connect the eS100 with a RJ45 cable to a network switch.



At the back panel there are the connectors for video signals, USB and power supply:



Connect the workstation PC (source) to the 'DVI in' connector. The Signal is loop trough to the second DVI connector which is marked with 'DVI Out'. With the switch between the connectors the EDID information that is been transmitted to the attached source can be selected: Either the internal EDID, stored on the eS100 or the EDID information of the attached Monitor on the 'DVI Out' connector.

The "DVI Out" connection is optional and is not needed to transfer an image.

To control the workstation PC through the eS100 a USB cable-connection is needed: Connect the PC with the provided USB cable to the 'USB Host' connector. The USB connection is optional it isn't needed to transfer an image. To control mouse & keyboard use the 'USB Client' connector.

Last step is to plug in the power supply which is delivered with the eStreamer box.

7. Setup eS100

To set up the eS100 parameters use the 'eStreaming Network Configuration' tool provided with a CD. To install this software you'll need a windows PC. Copy the folder 'configuration' to a folder on your hard disk. The tool will create a log file in the programs folder that includes all messages. It is not possible to write in a CDs folder!

If an error message appears at program start, try to install the 'Microsoft Visual C++ 2008 Redistributable Package (x86)' located in the driver folder. The Package is also available at the Microsoft download center.

7.1 First Configuration

With the factory settings the eS100 has the following IP-address:

- **192.168.5.8/24**

To configure each device connect the eS100 with your network.

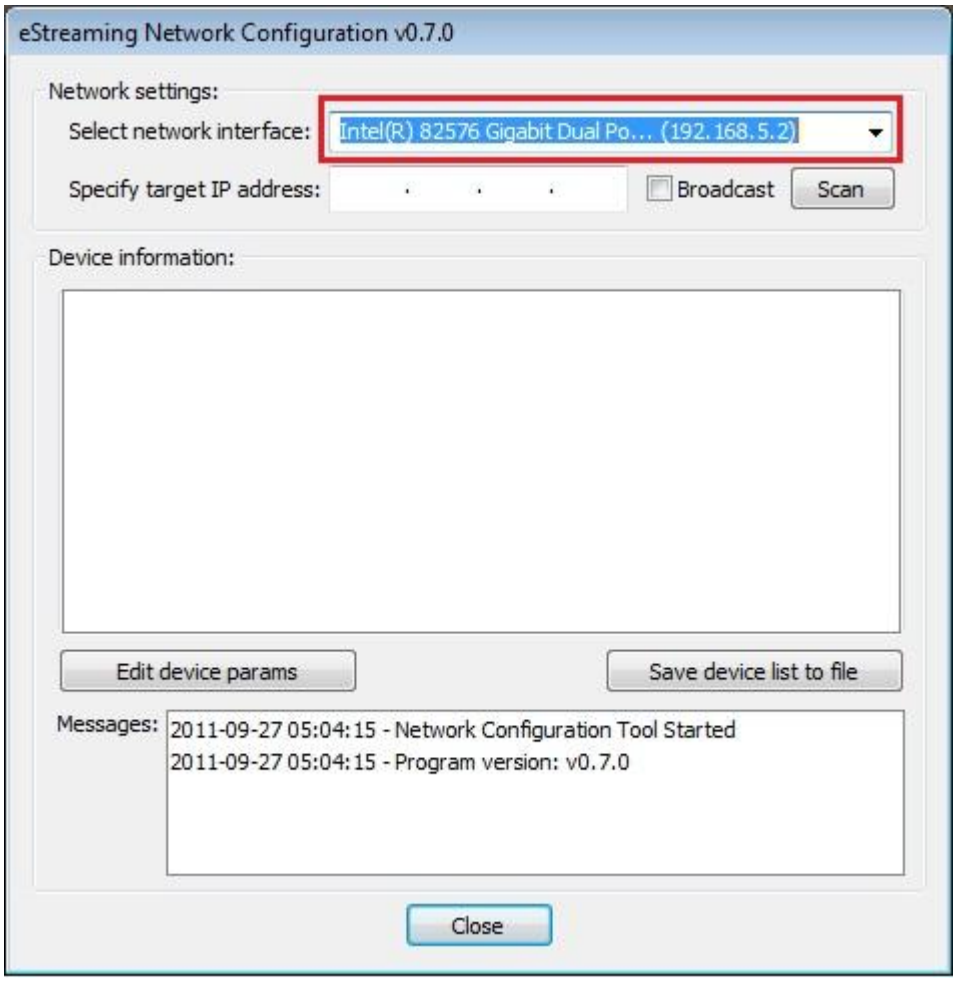
<BILD Verbindung Laptop PC eS100>

First step is to set up the network adapter of your client PC. Your client PC has to be in the same IP range as the eStreamer.

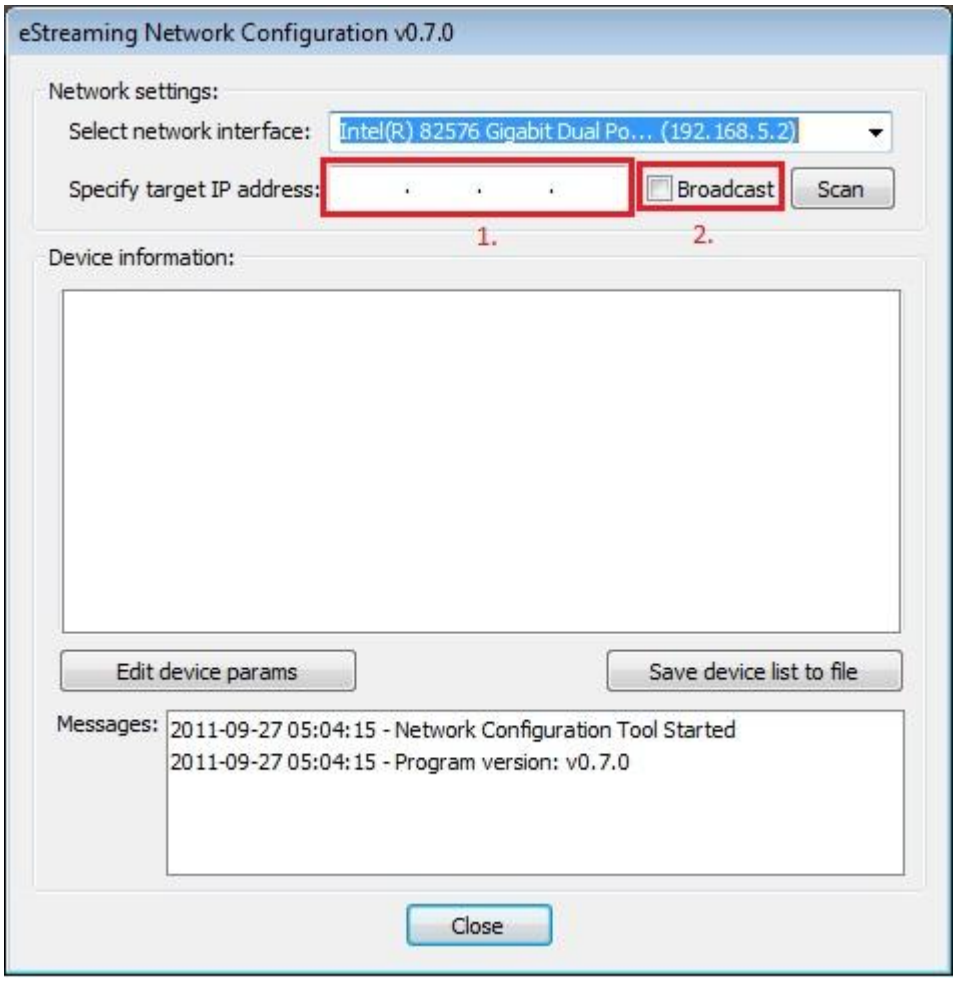
7.2 Setup IP Address

Launch the 'eStreaming Network Configuration' tool on your configuration PC.

It's recommended to setup each device individually in a small network to prevent misunderstanding.



In the beginning you'll have to select the configured network interface of your client PC.

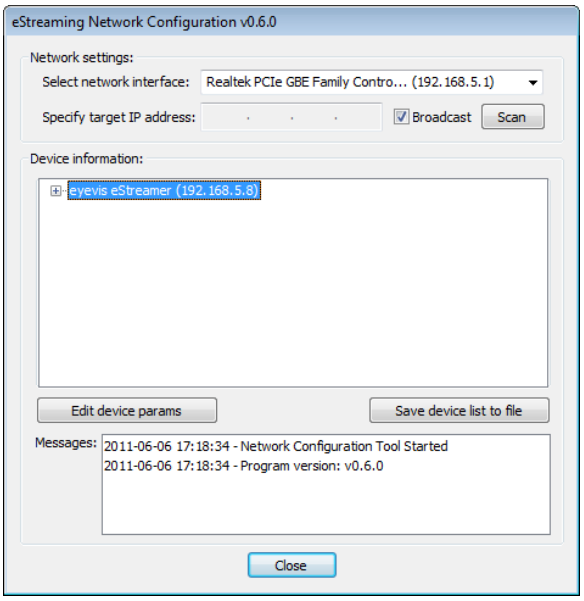


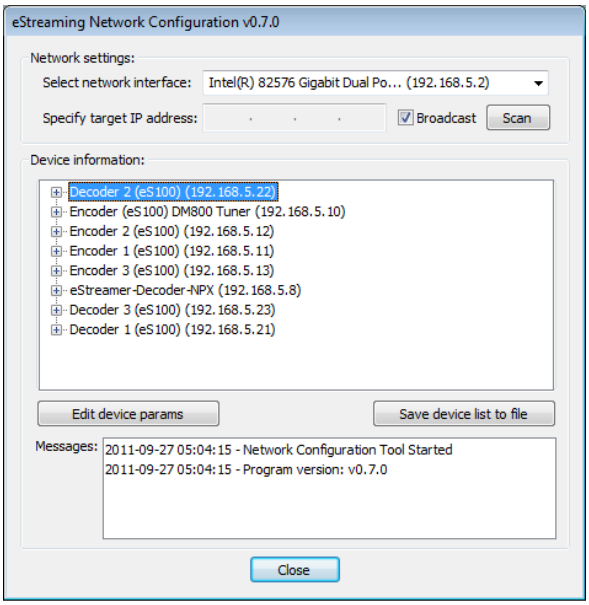
In order to find the right eStreamer there are two ways to select the device you want to configure.

1. Type in the device IP address manualy. The initial IP address of the device is 191.168.5.8

2. To get an overview of all the eStreamer, or in case you don't remember the correct IP address you can check the 'Broadcast' field.

Press the 'Scan' button to execute the search procedure.

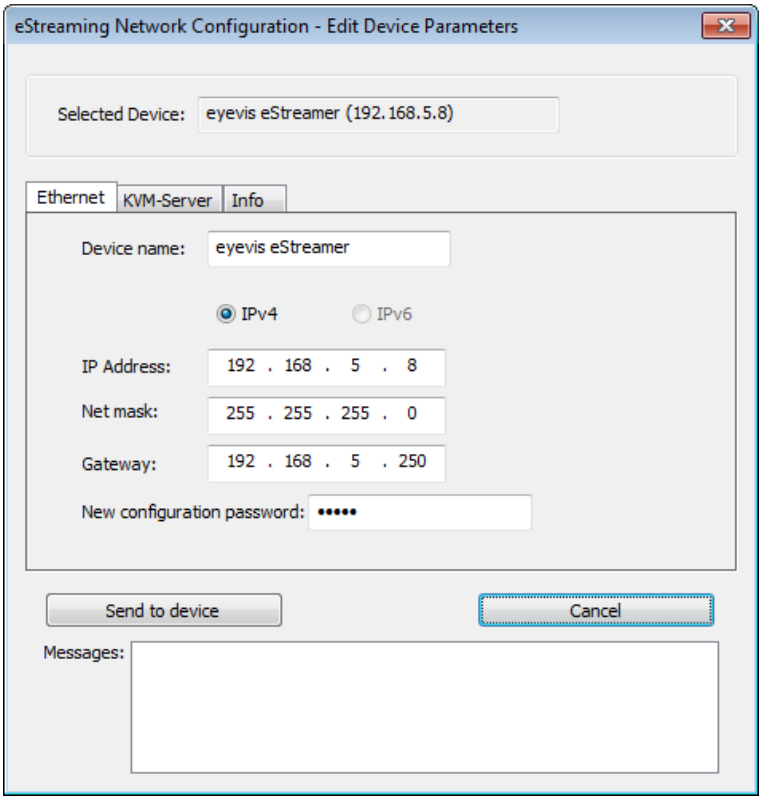




Select the device you want to configure and press the 'Edit device params' button.

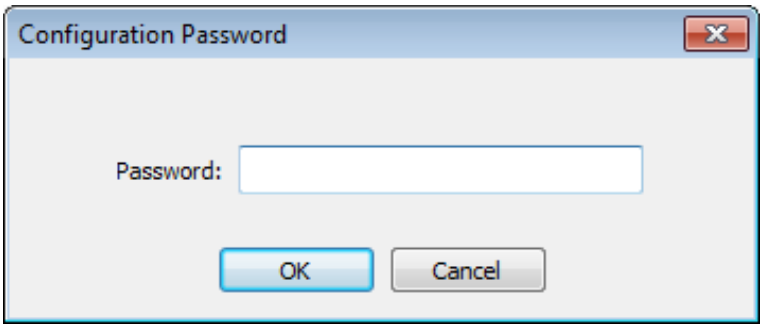
Using the broadcast function will list all discovered devices in the field 'device information'. This list can be exported to a XML file including all device parameters by pressing the 'Save device list to file' button.

7.2.1 eStreamer Ethernet settings

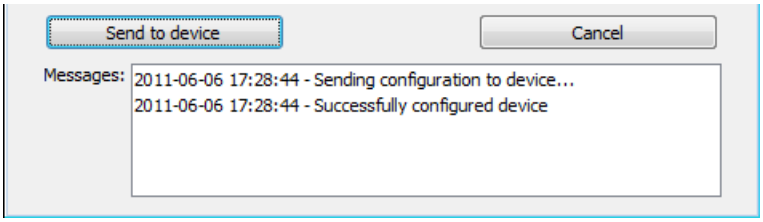


- **Device name:** Name of the device that will be shown in a connection window.
- **IPv4/IPv6** IPv6 will be available in future.
- **IP Address:** Enter an IP address for the device.
- **Net mask:** Enter the Subnet mask.
- **Gateway:** Enter a Gateway address.
- **Password:** You can enter a new configuration password (default is '**eyevis**').

Press the 'Send to device' button to safe your configuration settings. A pop-up window for password confirmation will appear.



If you enter the correct "Configuration password" the following message will be displayed:



Otherwise an error will be displayed in the message window. Make sure that the DIP switch number 4 is turned off (up position). After changing the devices IP address the unit will automatically reboot. Having the DIP switch 4 turned on will reset the IP settings and the configuration password!

default password: eyevis

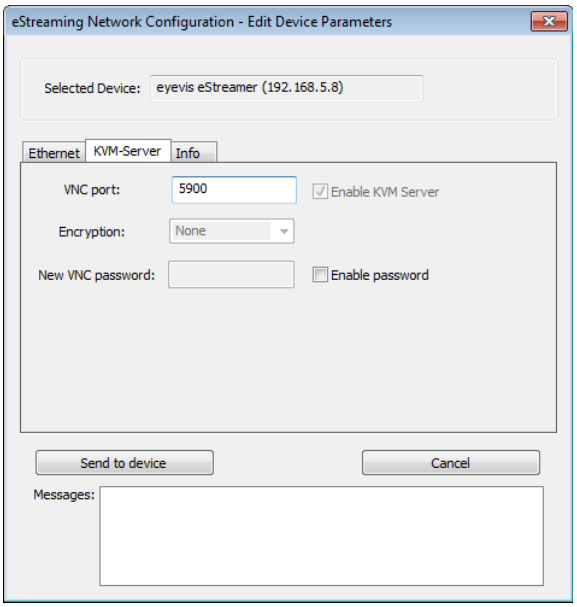
7.2.2 Status Modes

The eS100 can be used in two different modes.

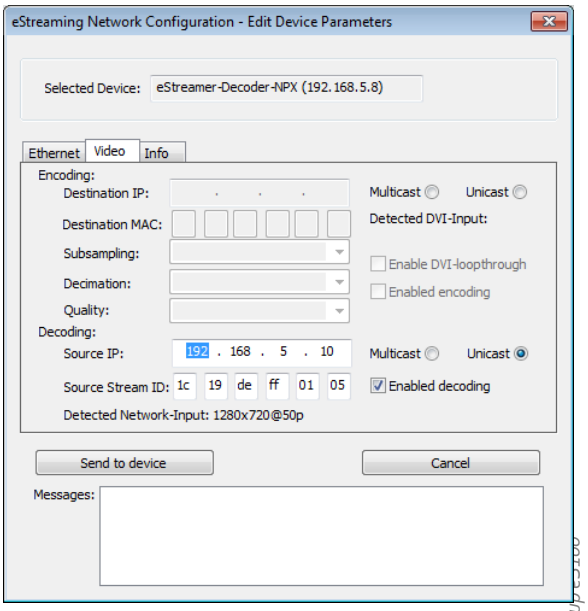
- KVM Server / RFB Mode
- Video Mode

To decide in which mode the eS100 should operate you can change the dip-switch settings. (see chapter 8. Dip-Switch-Mode)

According to the settings selected the tab inside the 'eStreaming Network Configuration – Edit Device Parameters' will change.



KVM-Mode

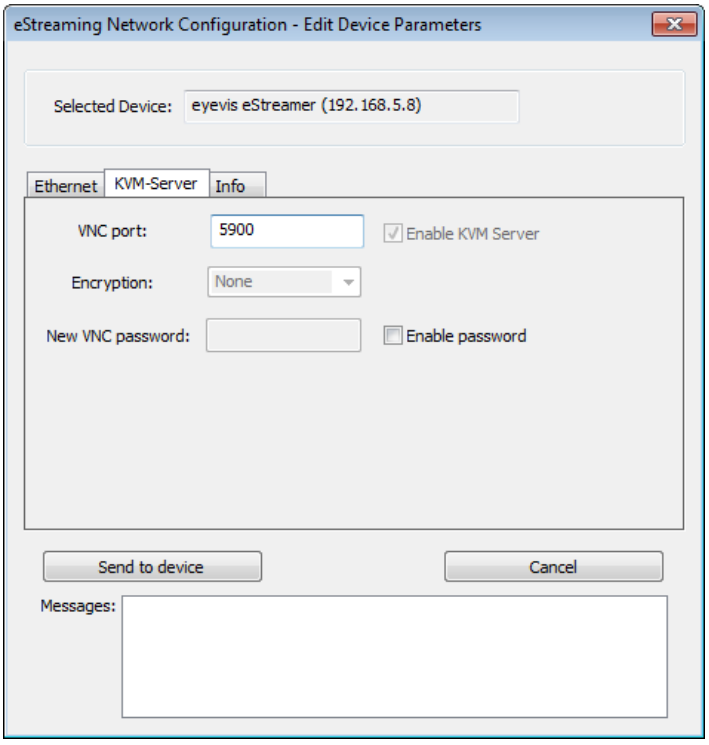


Video-Mode

7.3 KVM Server / RFB Mode

This mode works only together with the eyecon software. Detailed information about eyecon integration will follow in future. The 'KVM Server' tab has the following settings:

- **VNC port:** Enter a VNC port (default: 5900)
- **Encryption:** will be available in future
- **Password:** Enter password for VNC connection



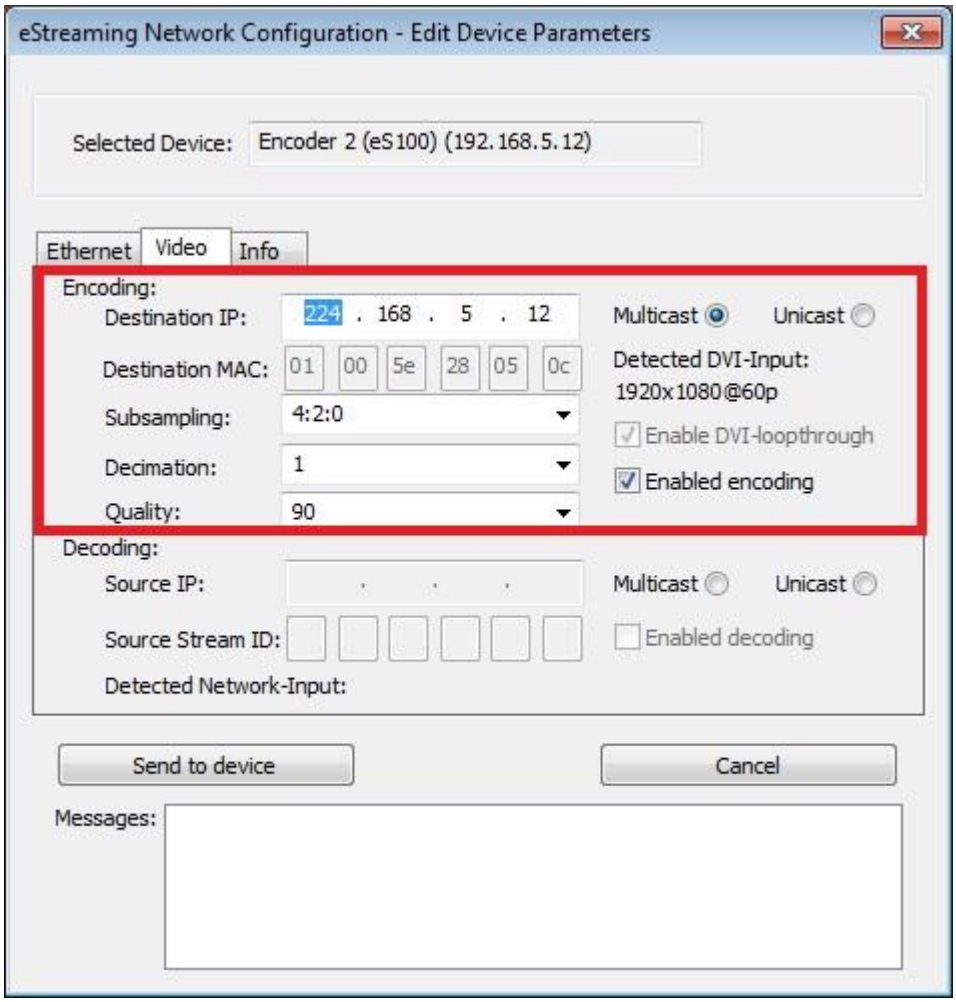
Press the 'Send to device' button to safe your configuration settings.

7.4 Video-Mode

The Video-Mode is subdivided into Encoder / Decoder. Both sub-modes will work without any use of eyecon software.

7.4.1 Video Mode Encoder

The configuration of the detailed encoding settings is done by the use of the 'Video'-Tab.

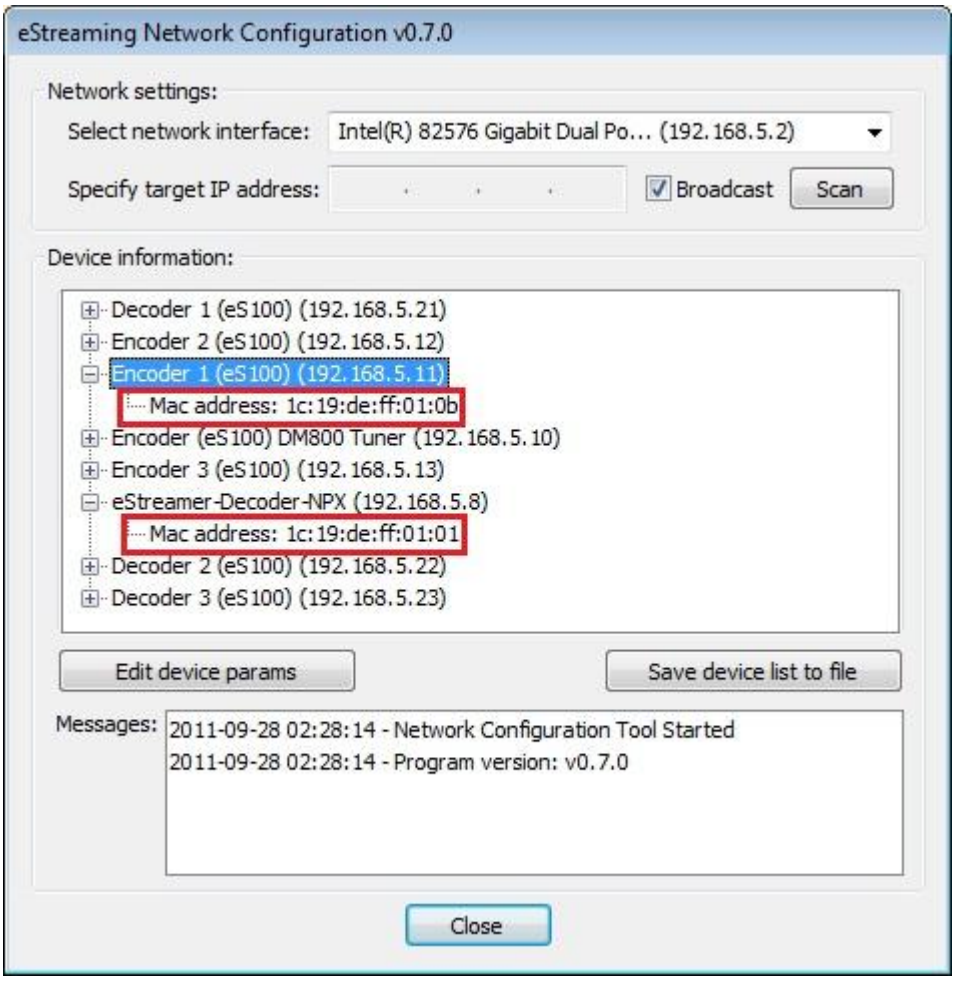


- **Destinastion IP:** differs between 'Multicast' & 'Unicast' setting.

  Multicast: requires the use of a valid multicast address.

  Unicast: requires the use of the convenient device IP address.

- **Destination MAC:** if unicast is selected you'll have to enter the destination MAC address of your destination device.

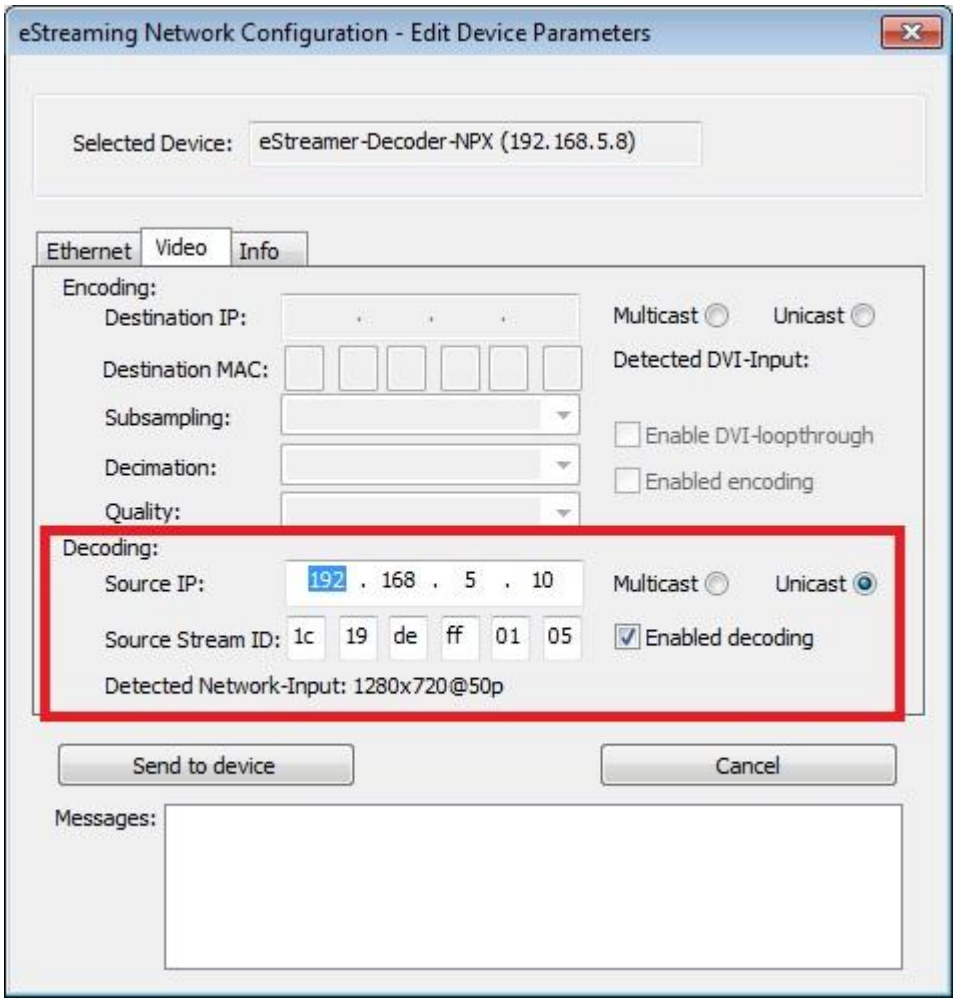


The MAC address of each device is listed on the first window of 'eStreaming Network Configuration' under 'Device Information'.

- **Subsampling:** Define the 'chroma subsampling' modes
  - **4:4:4**
  - **4:2:2**
  - **4:2:0**
- **Decimation:** Defines the frame decimation. 1 stands for no frame loss, 2 stands for half of the frames, 3 for 1/3 of the frames etc.
- **Quality:** Defines the Bandwith/Image quality. It's rated from 90 to 1.
  - 90 stands for best quality
  - 1 stands for worst quality
- **Enable DVI-loopthrough:** The device will perform a direct loopthrough from DVI-input to DVI output
- **Enabled encoding:** Allows you to manually dis-/enable the encoding.

7.4.2 Video Mode Decoder

The configuration of the detailed decoding settings is done by the use of the 'Video'-Tab.



- **Source IP:** differs between 'Multicast' & 'Unicast' setting.

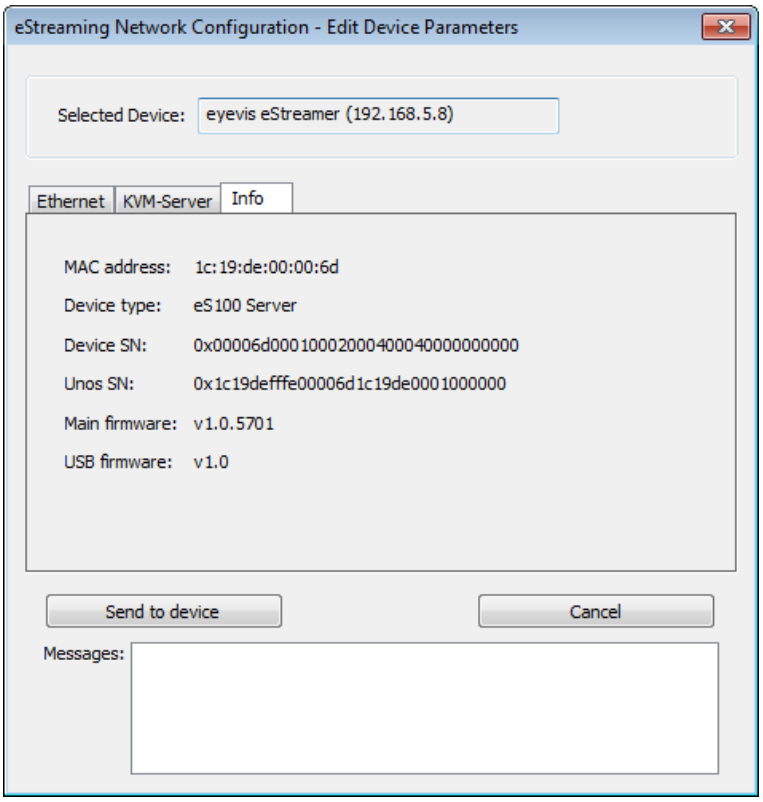
  Multicast: requires the use of a valid multicast address.

  Unicast: requires the use of the convenient device/stream IP address.

- **Source Stream ID:** if unicast is selected you'll have to enter the host MAC address of your streaming device.
- **Enable decoding:** Allows you to manually dis-/enable the decoding.

7.5. Device information

The 'Info' tab shows information about the eS100 device:



This information will be exported while pressing the 'Save device list to file' button. See Chapter 10. Export eS100 settings

8. Dip-Switch-Mode

DIP '001X' -> Video Encoder (blue)

DIP '010X' -> Video Decoder (green)

DIP '101X' -> RFB Server (magenta)

DIP '110X' -> RFB Client (yellow)

DIP '000X' -> Service Mode (white)

*Attation DIP-Switch 4 is only for RESET-porpose.

9. Reset IP address & configuration password

1. To reset the IP address turn off the device and change the dip switch '4' to lower position (ON).

2. Power ON the device and wait until the status LED is lit.

3. Move the dip-switch '4' back to the upper position (OFF).

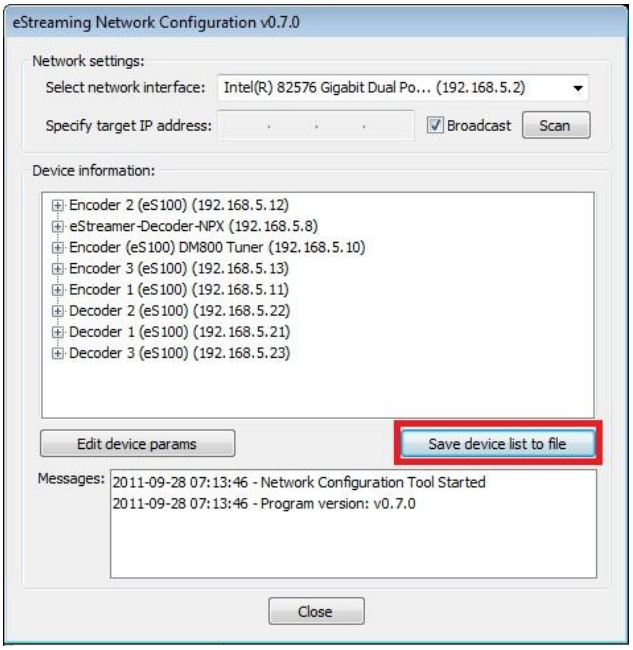
Now the network configuration is reset to:

IP = 192.168.5.8 Subnet mask = 255.255.255.0

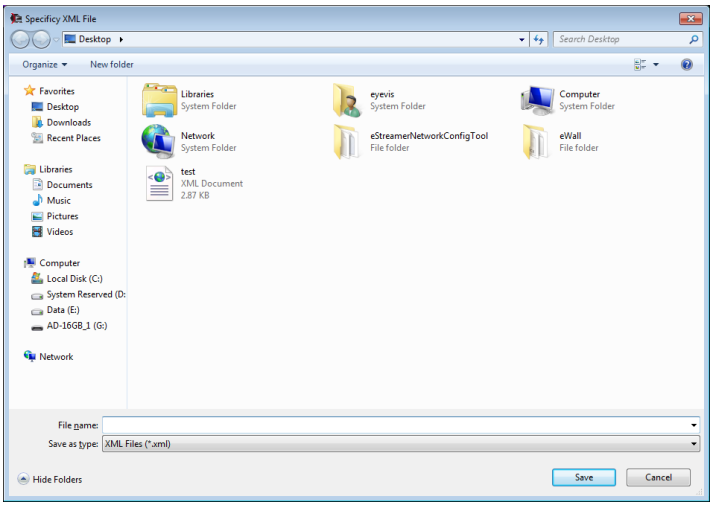
The configuration password is also reset to: **eyevis**

10. Export eS100 settings

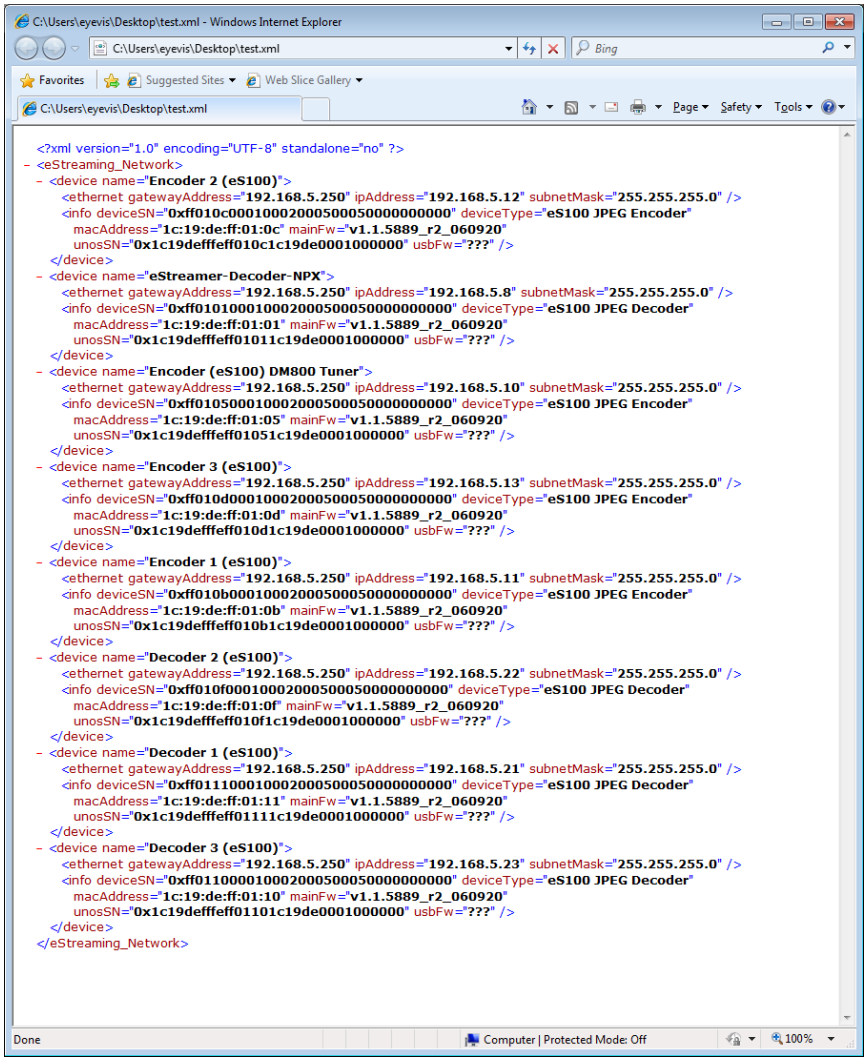
To gain a better overview of the entire configuration there is the possibility to export the complete device settings into a XML file. Open the 'eStreaming Network Configuration' application. In order to export the setting press the 'Save device list to file' button.



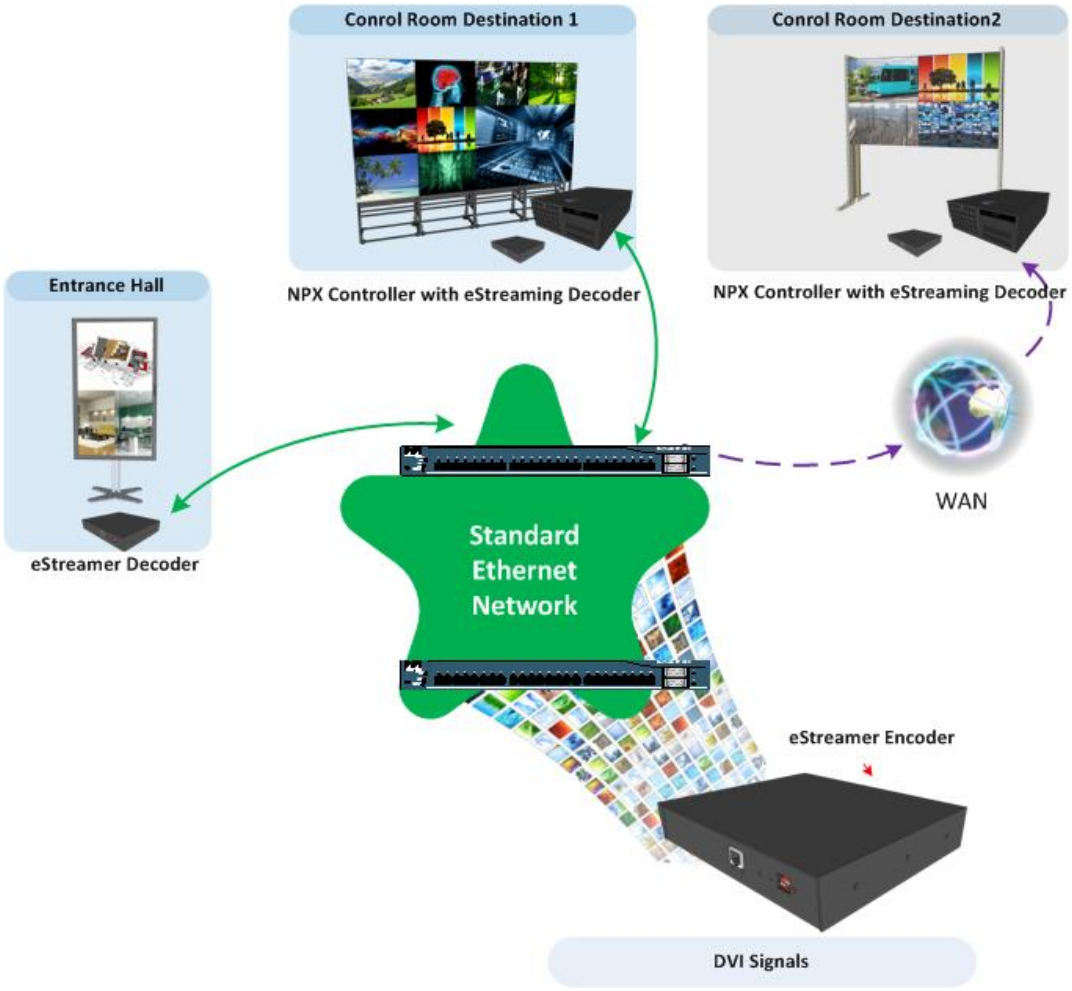
You can place the XML file wherever you wish.



After you've successfully saved the XML file you can use any explorer to open this file.



11. Example Configuration



Notes

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As at: September 2011

eyevis eStreamer® eS100 Manual