HDE-(1/4)265(L) / - 264

Encoder & IPTV Streamer with HDMI Input

h.265 & h.264 compatible encoder & IP streamer combined – Optional: HDE-265L with 'Loop-HDMI' output

- ✓ HDMI-compatible input for encoding
- ✓ Stereo Audio embedded or external Input (3.5mm stereo*)
- ✓ HD Resolution 1080p, 1080i, 720p
- ✓ IP output: RTSP, RTMPs, UDP/RTP, HTTP, HLS, FLV, MJPG
- ✓ NEW: **SRT**-Support: *Only 265-Versions!*
- ✓ Distribution of Video Camera HD-SDI and other sources content over LAN, WAN or internet
- ✓ 2 simultaneously and independent Live stream broadcast encoder engines to multiple destinations
- ✓ Video-over IP applications
- ✓ IPTV/OTT applications
- ✓ Video conferencing, Camera streaming
- ✓ IPTV on LAN applications, Corporate IPTV for Broadcasters
- ✓ HD and SD video encoding (incl. 1080p)
- ✓ Corresponding product: HSD-340 HDMI to SDI converter, HDE-1264/1265 in 1RU 19'' , HDE-4264/4265, ADE-4264/4265 HDE-275Q = 2x 4Kp30 2x Full-HD to IP

BLANKOM HDE-265/264 compatible encoders serving the distribution of SD and HD TV/video content through IP networks in digital quality. The live video can be received by Internet media server by TV sets, with IPTV Set-Top Boxes, with PC's and Tablets/Smartphones using i.e. VLC Player

BLANKOM HDE-265 /HDE-264

IPTV encoder designed for TV signal distribution in excellent quality over LAN and INTERNET.

The H.265 (HEVC) compatible compression technology features low bit rates for IPTV/OTT systems. The high-efficient encoding chips saves bandwidth cost through all its resolution range.

Distribution of SD and HD TV channels through the IPTV/OTT network using state-of-art IP technology from almost any kind of video input.

Excellent Video and Audio quality. High reliability. No regular service and maintenance need during operation. Available as HDE-264 with only h.264 compatible codec support.

**) depending on model*

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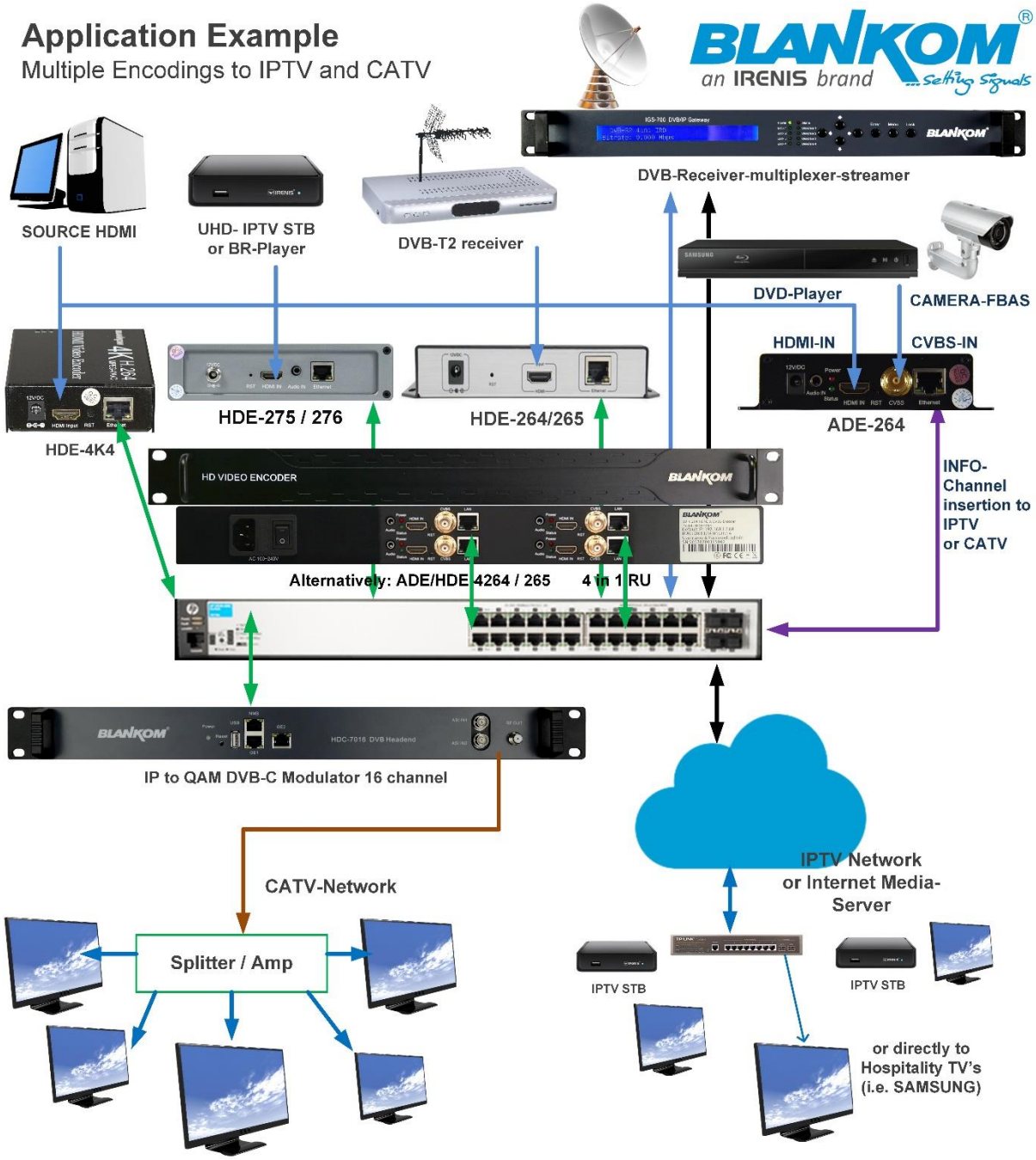
www.blankom.de

Application Example

Multiple Encodings to IPTV and CATV



Function	**H.264 compatible Encoder and IP Streamer (both and HEVC comp. only HDE-265)**
INPUT	**HDMI-Cable compatible (1.4)**
Resolution	**1080p, 1080i, 720p and below. Output only progressive (p) –** *say goodbye to the analogue times*
Video encoder	**H.265 (HEVC) or H.264 (AVC) (or both = HDE-265 only), MJPG support**
Audio encoder	**AAC +/++, MP3, MPEG1Layer2, AC-3stereo** ***(External analogue stereo Input depending on Model)***
Audio Bit-rate:	**Bit-rate: 32k/48k/96k/128k/160k/192k, Data-rate: 64 kbps-384 kbps**
Data interface	**RJ45, 1000Mb/s Ethernet interface, management by web browser** ***(HDE-264=100BaseT only)***
Protocol	**HTTP, RTSP, RTMPs, UDP/RTP, FLV, HLS ; Unicast/Multicast, MJPG, SRT (h.265 units only)**
Data Rate	**32 kbps – 32 Mbps**
Encoding bitrate	**CBR/VBR**
GOP Structure	**IBBP**
ONVIF	**Supported by RTSP: G711A/U**
Picture adjust	**De-interlacing, Noise reduction, Sharpening**
OSD	**4x Logo and Text Insertions as transparent overlay**
Upgrade	**Firmware- and Configuration-File for Backup UP- and Download by Web-IF** ***(since V6.42... Nov. 2019)***
Power supply	**12V DC, 1A**
Dimensions / Weight	**165x85x24mm / 0.5 kg**
Consumption	**5W**

 All technical data are subject to change w/o further notice... © Irenis GmbH 05-2024.....

Available in different styles of these SoC-Linux encoder streamer:

Apart from the boxed versions we offer them with integrated PSU's in 19 Inch Rackmount types

Examples with HDMI- Inputs:

HDE-1265

HDE-4265

HDE-08265

HDE-16265

Please always check our website https://www.blankom.de/downloads.html for actual Quickstart -Manuals.

Actual versions June - 24

HDE-264: **Version is 6.61 Hisilicon**

HDE/SDE-265 = 2.36A *Ambarella, 5.32 HiSilicon chips*

ADE-264: 4.90 Hisilicon

Anmerkung:

Alle von uns veröffentlichten Betriebsanleitungen richten sich an den Antennen- und IT-Fachmann, der über grundlegende Kenntnisse der Empfangs-, Netzwerk- und Anlagentechnik verfügt. Die Einhaltung aller relevanten Vorschriften und Richtlinien für den Aufbau und Betrieb von solchen Anlagen obliegt dem Installateur und/oder dem Betreiber. Insbesondere sind die in den jeweiligen Ländern geltenden Vorschriften und Richtlinien für die Inbetriebnahme speziell für den Stromanschluß und alle mit den Produkten in Zusammenhang stehenden und geltenden Normen und Gesetze einzuhalten.

Remark:

All operating instructions published by us are intended for the antenna and IT specialist who has basic knowledge of reception, network and system technology. Compliance with all relevant regulations and guidelines for the installation and operation of such systems is the responsibility of the installer and/or the operator. In particular, the regulations and guidelines applicable in the respective countries for commissioning, especially for the power connection, and all standards and laws related to the products must be complied with.

Annotation:

Tous les modes d'emploi que nous publions sont destinés aux professionnels de l'antenne et de l'informatique qui ont des connaissances de base en matière de réception, de mise en réseau et de technologie des équipements. Le respect de toutes les réglementations et directives pertinentes pour l'installation et l'exploitation de ces systèmes relève de la responsabilité de l'installateur et/ou de l'exploitant. En particulier, il convient de respecter les réglementations et directives applicables dans les pays respectifs pour la mise en service, notamment pour le raccordement électrique, ainsi que toutes les normes et lois relatives aux produits.

Annotazione:

Tutte le istruzioni per l'uso da noi pubblicate sono destinate al professionista dell'antenna e dell'informatica che ha una conoscenza di base della tecnologia di ricezione, di rete e delle apparecchiature. Il rispetto di tutti i regolamenti e le linee guida pertinenti per l'installazione e il funzionamento di tali sistemi è responsabilità dell'installatore e/o dell'operatore. In particolare, devono essere rispettati i regolamenti e le linee guida applicabili nei rispettivi paesi per la messa in funzione, soprattutto per il collegamento alla rete elettrica e tutte le norme e le leggi relative ai prodotti.

Anotación:

Todas las instrucciones de uso publicadas por nosotros se dirigen al profesional de la antena y de la informática que tiene conocimientos básicos de recepción, de redes y de tecnología de equipos. El cumplimiento de todos los reglamentos y directrices pertinentes para la instalación y el funcionamiento de dichos sistemas es responsabilidad del instalador y/o del operador. En particular, deben cumplirse los reglamentos y directrices aplicables en los respectivos países para la puesta en marcha, especialmente para la conexión de la energía y todas las normas y leyes relacionadas con los productos.

Anotação:

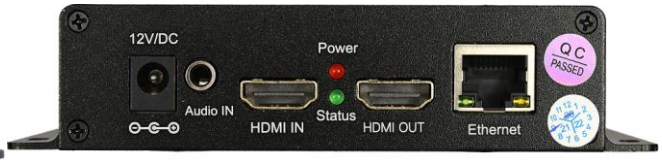
Todas as instruções de operação publicadas por nós são destinadas ao profissional de antena e TI que possui conhecimentos básicos de recepção, rede e tecnologia de equipamentos. O cumprimento de todos os regulamentos e diretrizes relevantes para a instalação e operação de tais sistemas é de responsabilidade do instalador e/ou do operador. Em particular, os regulamentos e diretrizes aplicáveis nos respectivos países para comissionamento, especialmente para a conexão de energia e todas as normas e leis relacionadas aos produtos devem ser obedecidas.

Hint: HDMI-Cable are usually limited to 10m length.

Please have also a look into the Quickstart-Manual of the SDE-265, which is also available from our web (www.blankom.de)

Appearance:

DC-Jack 12V, 100BaseT Ethernet (264 versions only) or GbE (265 versions), Status LEDs, HDMI IN, RESET Button-hole, HDE-265(L) (L=Loop out) have an additional 3.5mm Stereo Jack Audio-Input:



Variant with SDI Inputs: SDE-265 (no 264 available any more)

Attention: Please always **use the delivered external Power Supply Unit with 12V DC** and 1…3A (dep. on model). Higher Voltage will destroy the device.

SDI-Versions have a loop through to cascade the Input to other SDI-devices...

Available 1RU Versions: 1264 / 1265 and 4264 (ADE and HDE-Versions as well as SDE) Example:

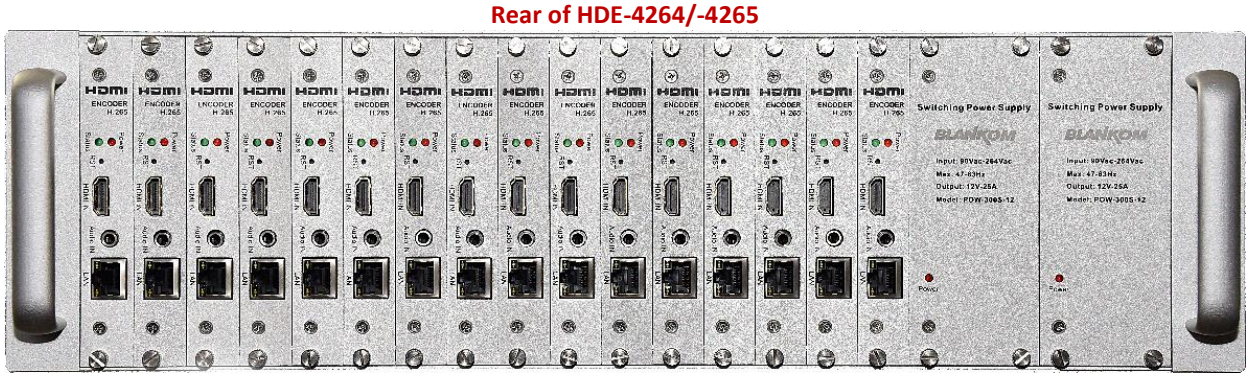
Front

REAR example ADE-4264 = CVBS + HDMI support (ADE-264 has a separate Flyer and quick start)

12xy means 1 encoder, 42xy means 4 Encoders (xy can be (2)64 or (2)65 = MPEG4 or HEVC compatible)

A = Analog (CVBS + HDMI support), S=SDI, H= only HDMI – Versions

Rear of HDE-4264/-4265



HDE-16265 front

Example Sticker with default settings (MAC may be different)

Note: HDE-4264B has been redesigned with 4x GbE outputs now to be independent per encoding process-Streaming and might use different networks to stream to.

Attention: **Because of a cut in the hardware for the HDE-265: From November 2020 production on, the chipset has been changed. So if ordering the HDE-1265 in 1RU later on, it is based on the new one. Therefore the firmware is different too and to be considered when updating. The normal HDE-265 boxed version last firmware was: 6.53E while the HDE-265(L) and new produced HDE-1265 and 16265 was an intermediate 5.32 chip/firmware version. The actual 2023/24 FW is 2.33A while the A stands for the better Ambarella Chip. The difference can be detected in the web-IF in the top frame or because the new one supports 1x Main encoder and 3x secondary encoder streamer parts.**

Notes Remarks and Hints:

The Fast- or Gigabit-Ethernet-port **does not support PoE.** Normal PoE switches usually are OK because the DC voltage will be ignored.

We recommend to use an IGMP-V2/3 protocol capable GBE- Switch to avoid flooding your network with unmanaged multicast streams. Also some consumer Internet routers do not like Multicasts (UDP/RTP) and might reboot periodically.

An Internet-connection is not necessary as long as you need to use NTP and does not have an own NTP server in your network. DNS settings and internet connection by a router needed for that.

Please assure that your HDMI –Output you like to encode is set to max. HD with 1080p60 or lower. Higher values will not work. 1080i50 will be shown as 1920x1080@25 in the Input status window

The embedded Linux system takes some seconds to fully boot. After the System-LED is on, you can connect your browser to it. We recommend Chrome, Opera, and Mozilla. For a preview Popup in the browser, a flash-player add-on is obsolete and do not need to be installed for the browser.

Sometimes it is helpful to reload the browser – page to get the changed settings and values because of different browser behaviours...

The RESET button (hole at the front) will erase all your settings and the unit will be forced to start with factory defaults. Use a thin wire to pass the small hole and press the inside button by it for at least 5-10 seconds until the System LED will go off. The encoder would perform a restart than after releasing the button.

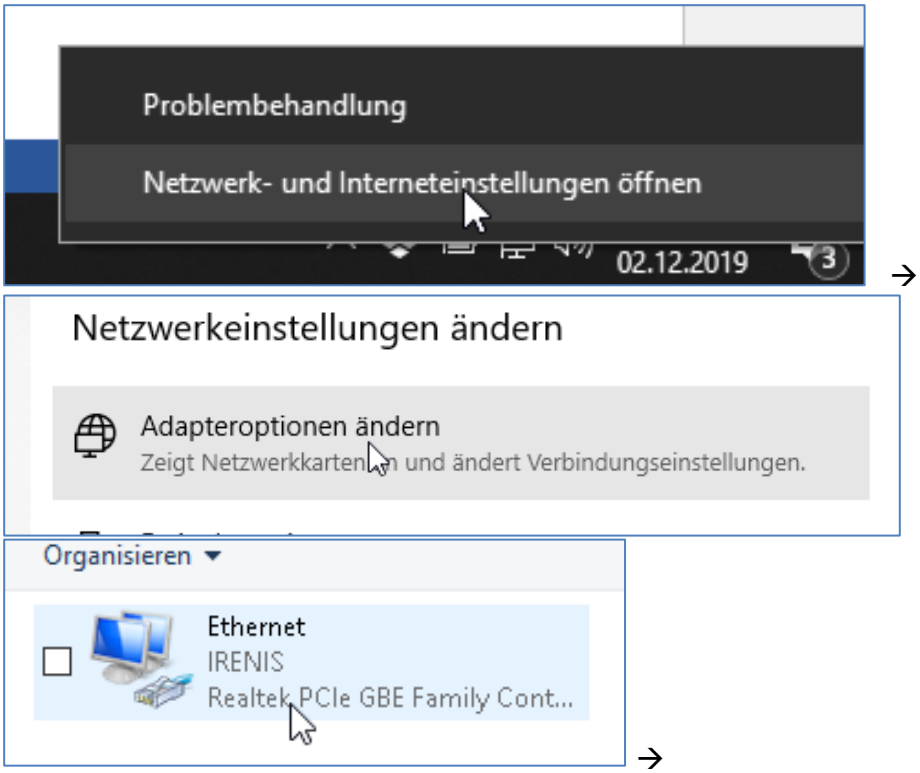
The Web-Interface lookalike may vary between different Versions but basically its self-explaining.

- The SDI versions supporting the first embedded Stereo-Audio-Pair to be encoded.

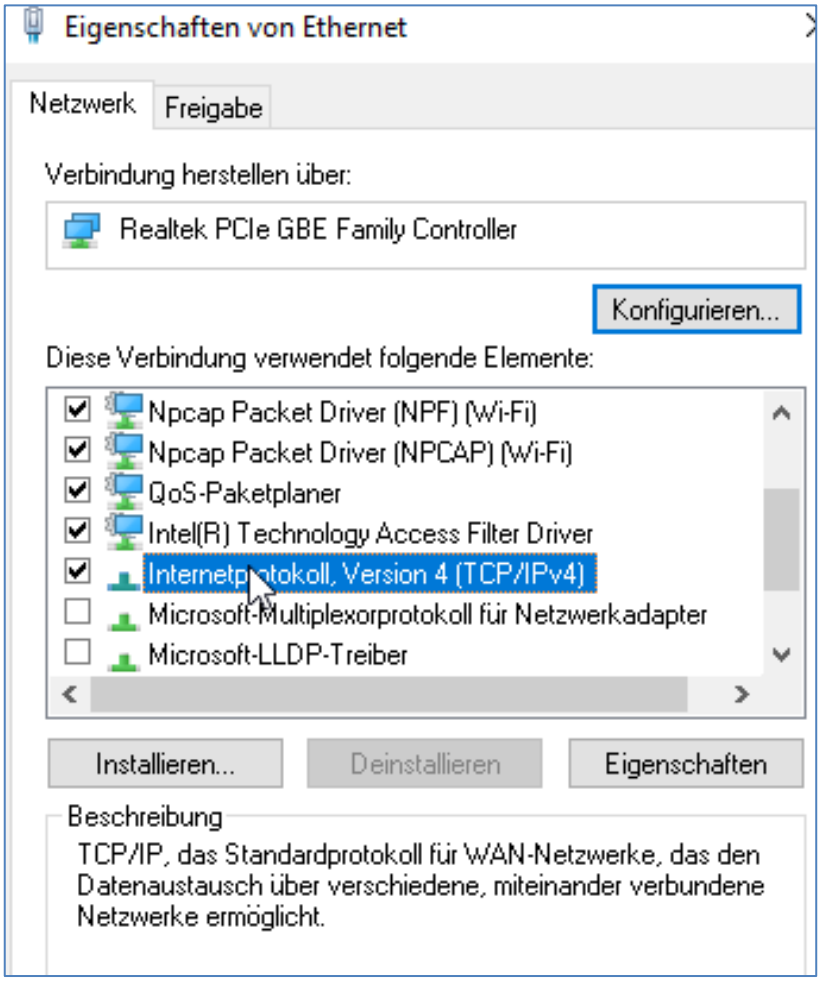
Setting up your PC/Laptop before connecting:

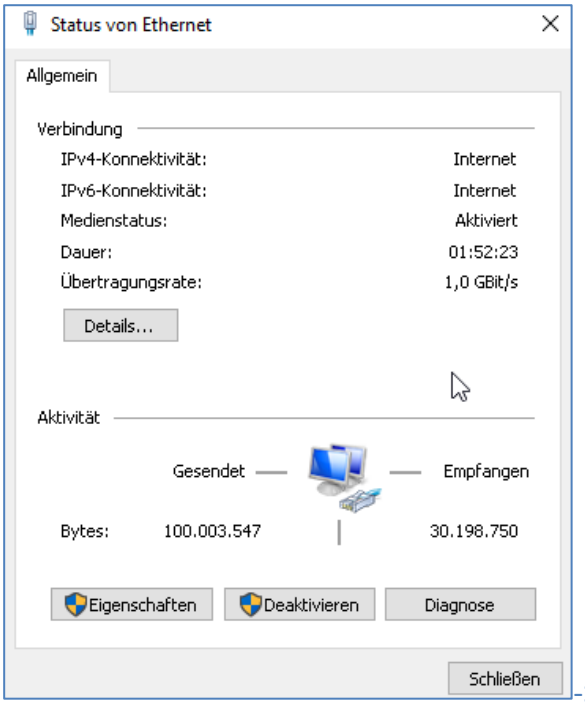
If you use a Windows based PC, you should assign its Ethernet adapter into the same range like the encoder: Use a static IP like follows:

1st: Open your network settings in System Menu:

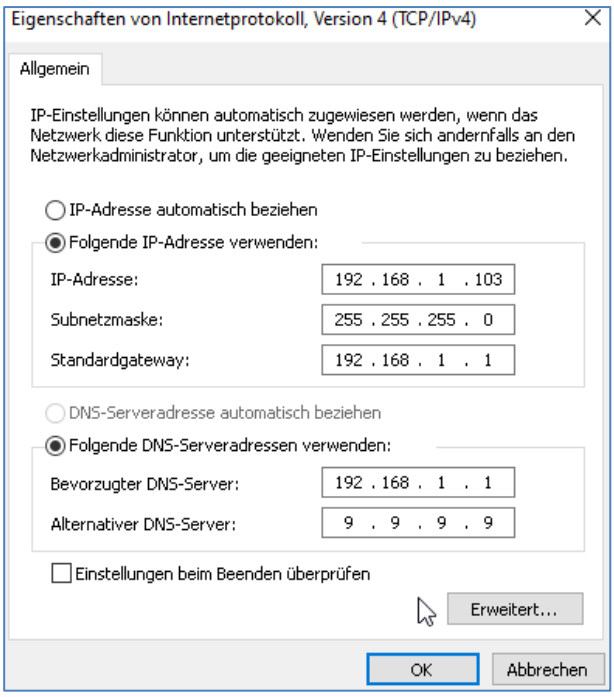


Maybe confirm Administrator access->



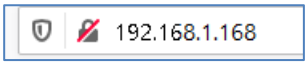


-> Change IPv4 settings:



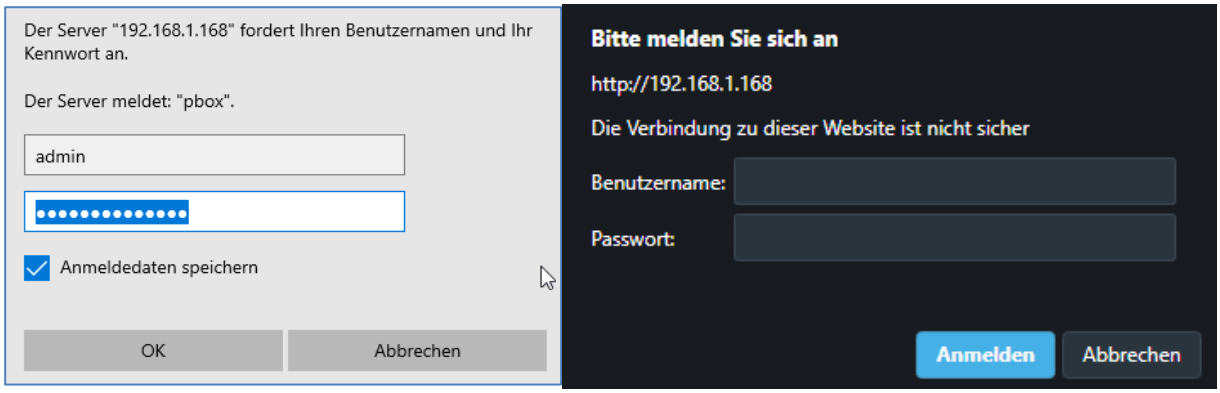
And confirm please. Linux users should know how to change the ethernet or WIFI settings.

Than open your browser and enter the http- Address of the box 192.168.1.168 (w/o https):

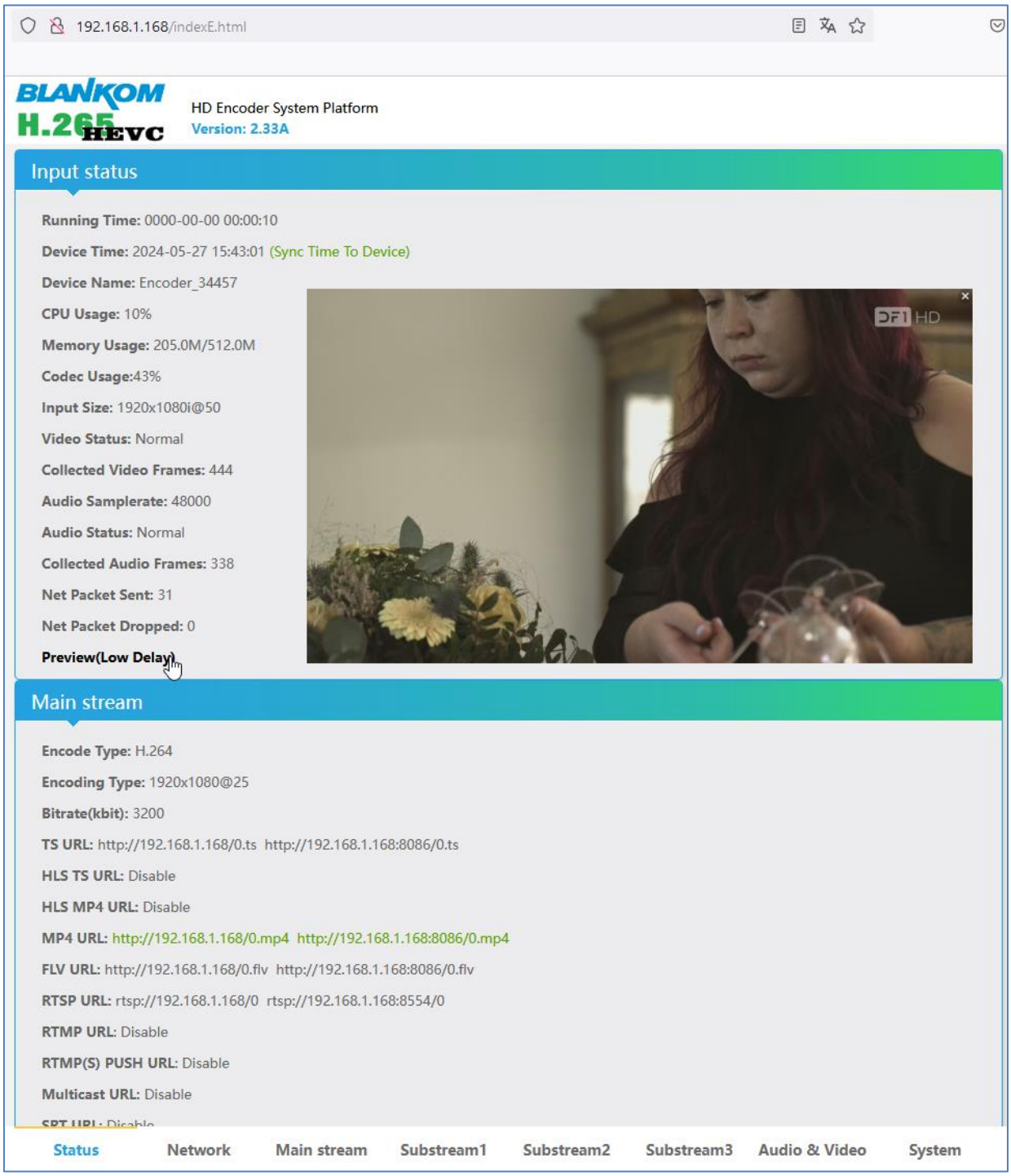


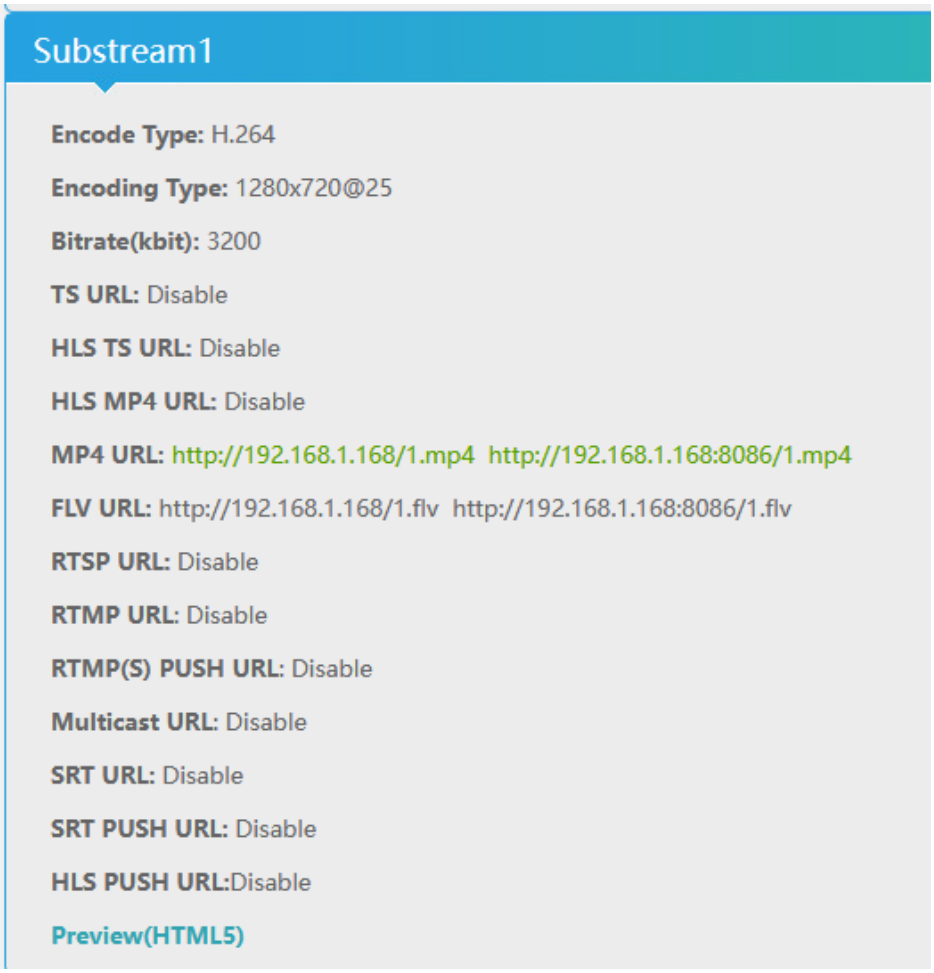
Please note: Every MODUL will have the same factory settings. So if you connect a HDE-4265 or HDE-16265 please first start with 1 module only and change the IP address to your local needs. They must be different to avoid conflicts. Sometimes your browser is caching the website, so reloading a few times should give you the real device interface – or empty the browser cache manually before connecting the next module.

Depending on browser you'll get a log-in-screen window:



Enter the default username = admin, default password = admin .... and here we go:



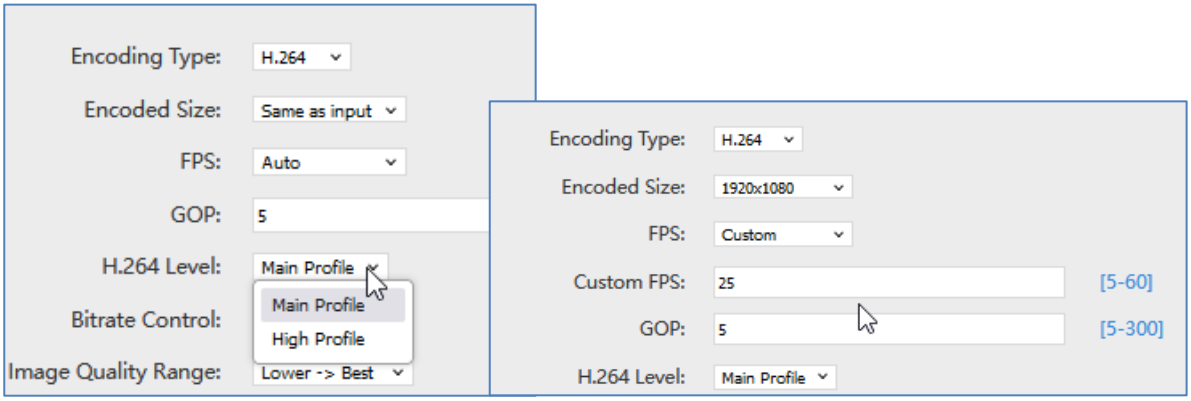


The STATUS page shows your Setup encodings for the MAIN and the Substream(s).

Parallel and different streaming's can be used for all encoder parts as long as the capacity of the system is not claiming it: You will get a message if the encoding capacity will be reached and one or more sub-streams would be disabled...

Remark: *The older B-Models support only one streaming Method enabled in Main and sec. Stream (= max. 2 outputs).*

Note: *The Ambarella Chip does not support h.264 encoding with baseline profile, only main and high level:*



The GOP setting should be set as an integer divisor or multiple of the FPS/Hz of the incoming encoding setup. See also our tipps and tricks page:

https://www.blankom.de/tipps-tricks-encoder.html

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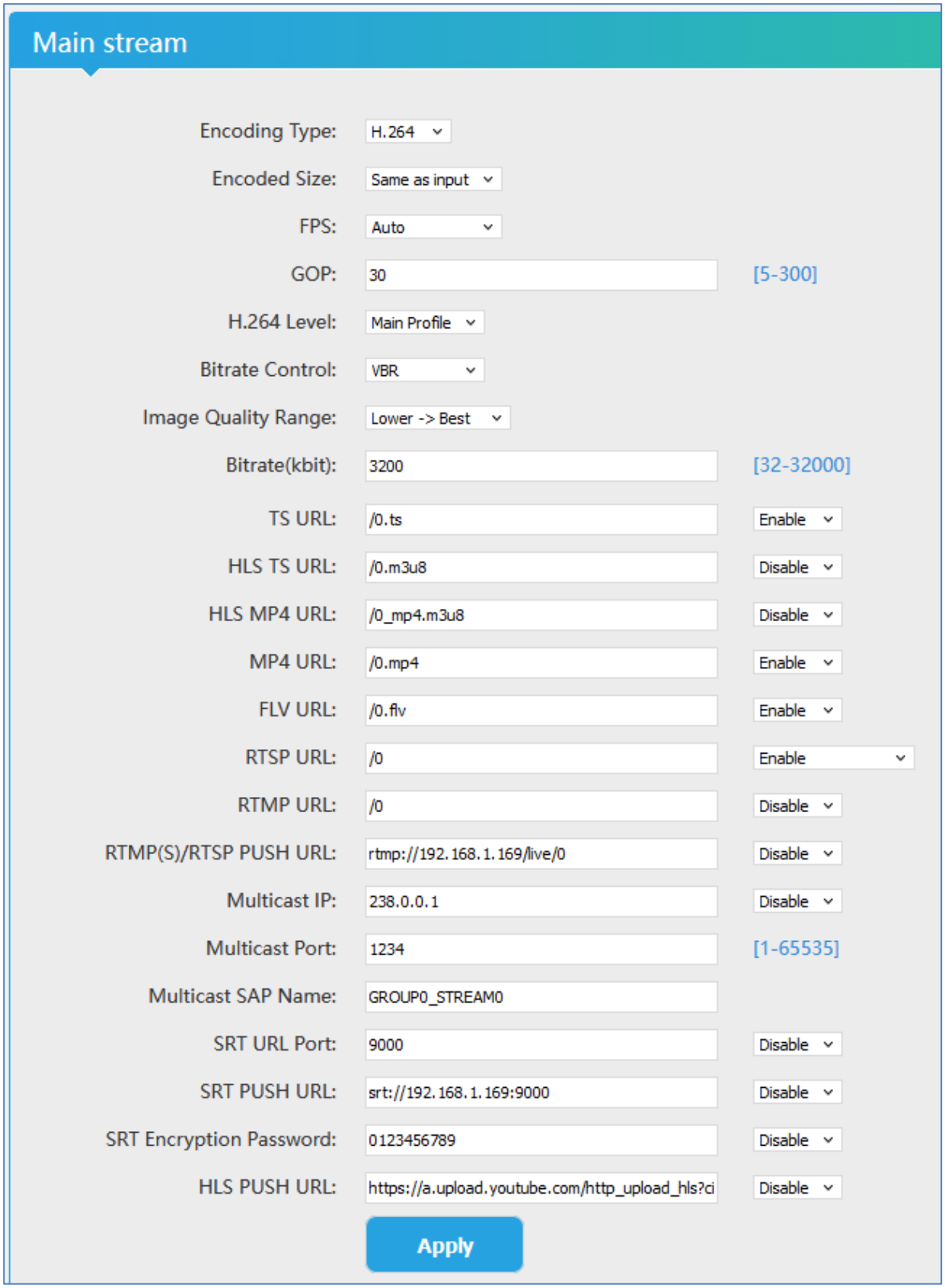
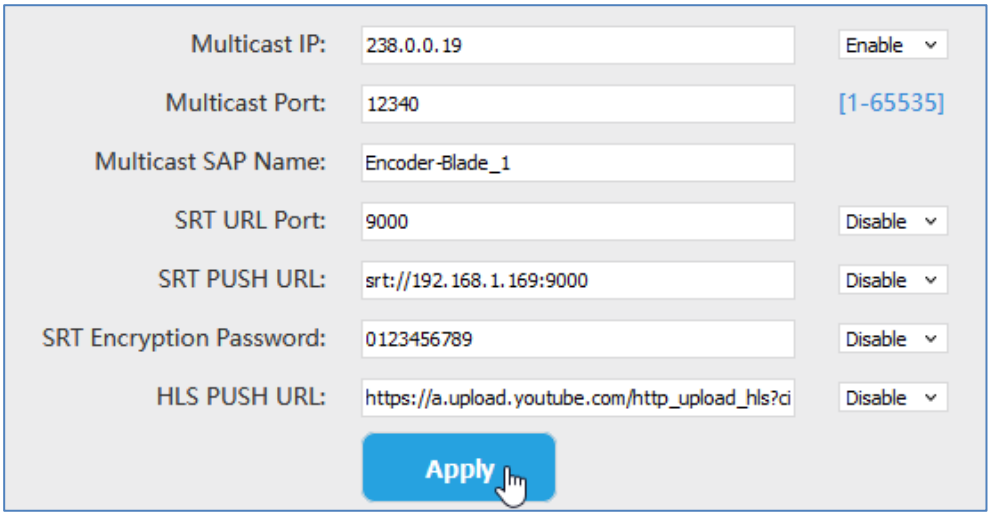


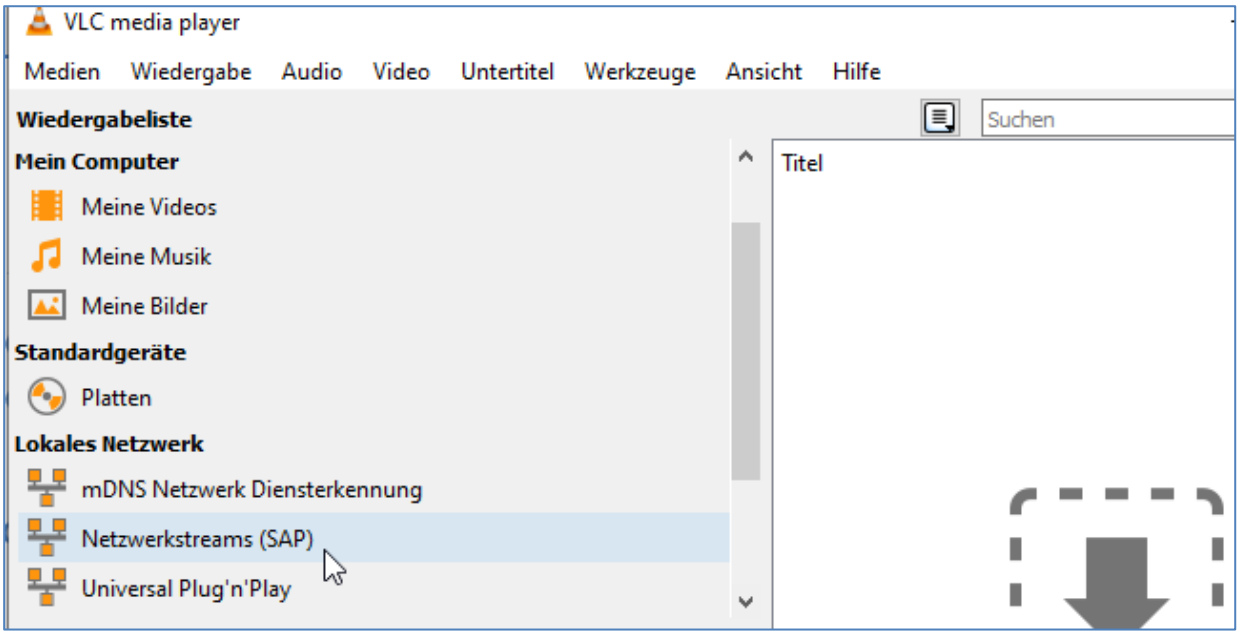
Older Versions may have less configure items as well as the h.264 only encoder HDE-264 has.

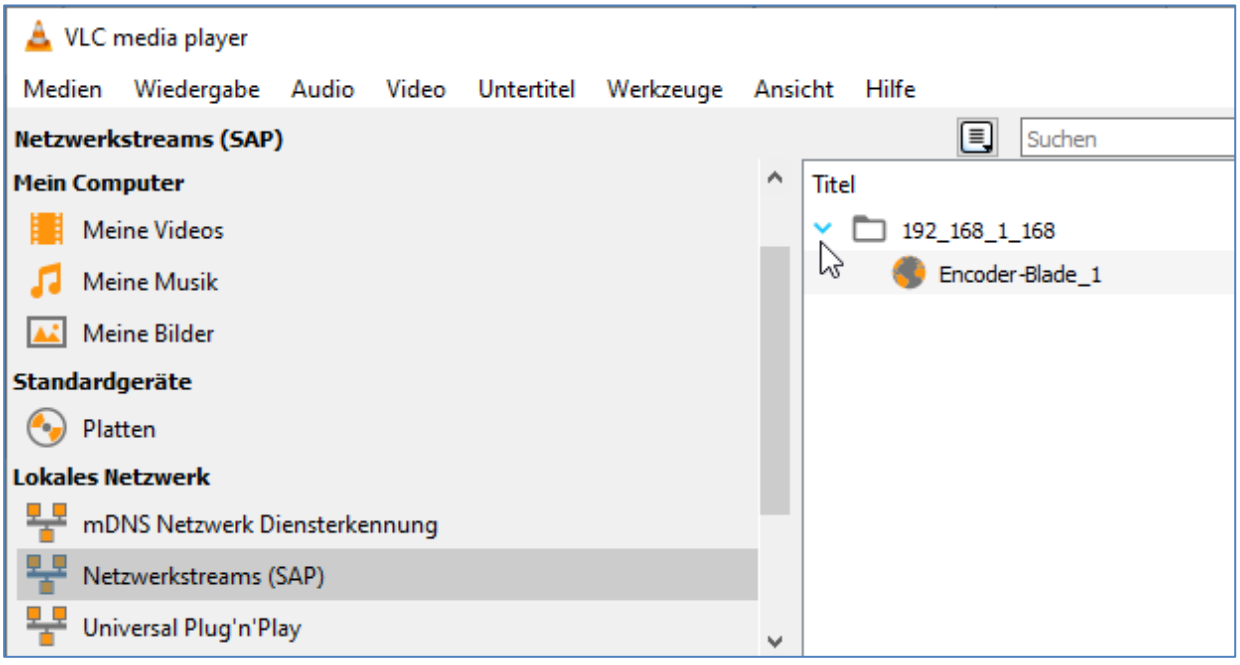
NEW: SAP multicast group announcement name can be changed to show the different encoders as names in … VLC.

Example:



See VLC grabbing the SAP-announcements:



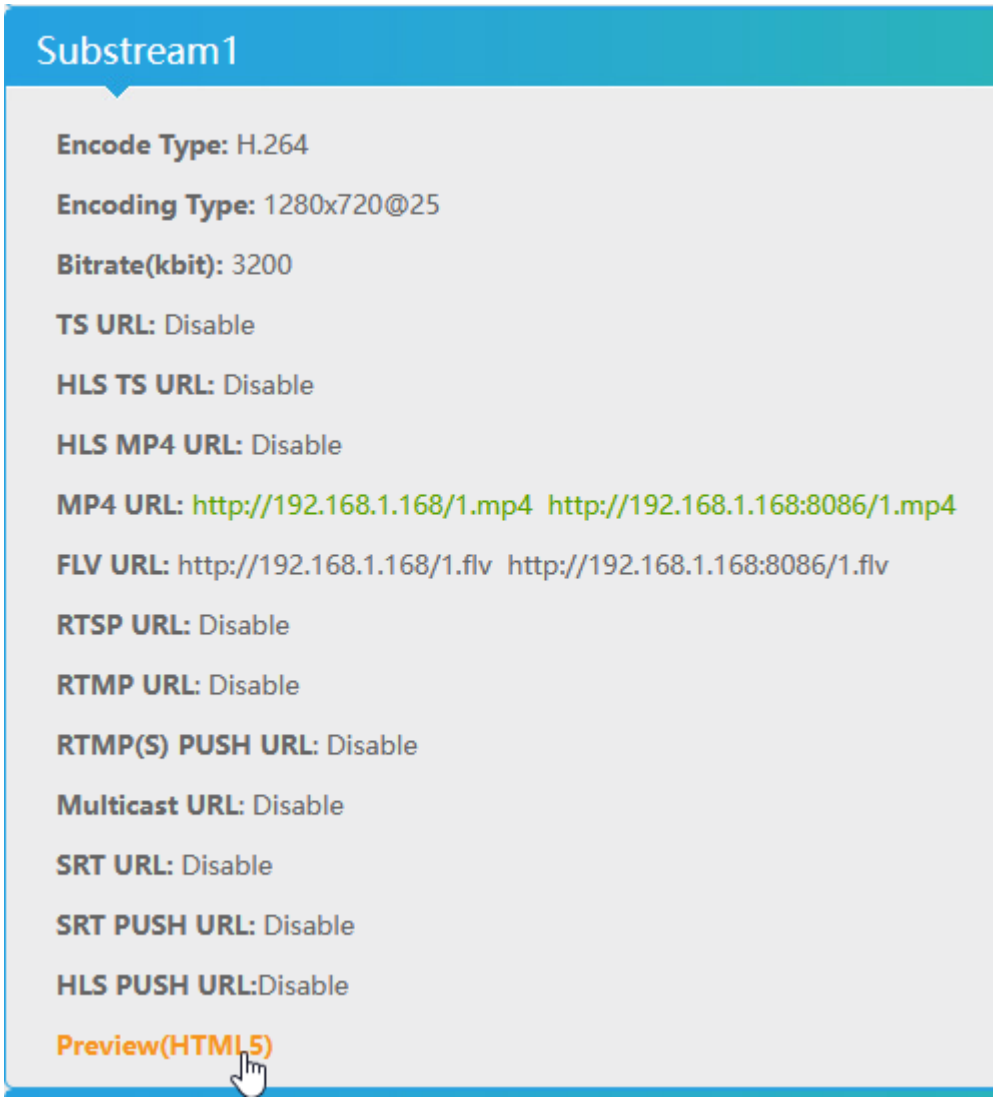


Double click opens the video stream as udp://@238.0.0.19:12340

The **STATUS page** shows your Setup encodings for the MAIN and the Sub-stream(s).

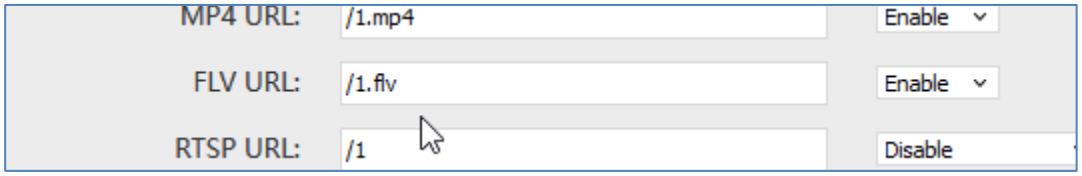
Parallel and different streaming's can be used for all encoder parts as long as the capacity of the system is not claiming it: You will get a message if the encoding capacity will be reached and a sub-stream should be disabled...

In some Sub-Streams and model depending you can check the Picture/Sound directly in the browser by this button:



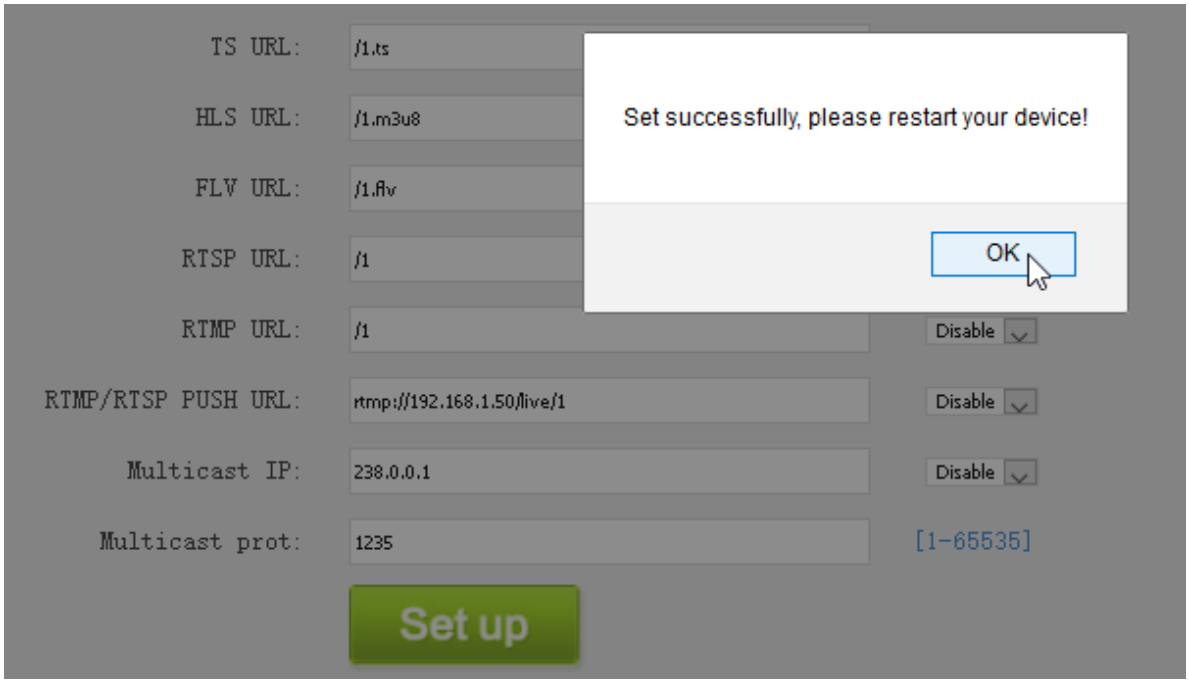
but you need to enable the FLV or HLS stream before using that – and Flash-Player support is needed by your browser:

Enabling it in the related Sub-Stream settings



-> Applying it by APPLY button and confirm the message:

In older FW versions this might be popup:

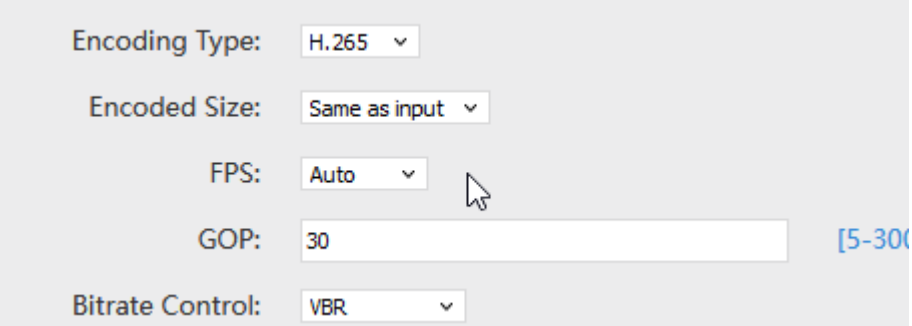


This doesn't mean to restart the encoder but to restart your Stream-receiver-Decoder like VLC or IPTV SetTopBox to re-sync it to the new codec values. This message will pop up every time you change the encoder parameters. Receivers are stupid and might not react to the changed values by themselves.

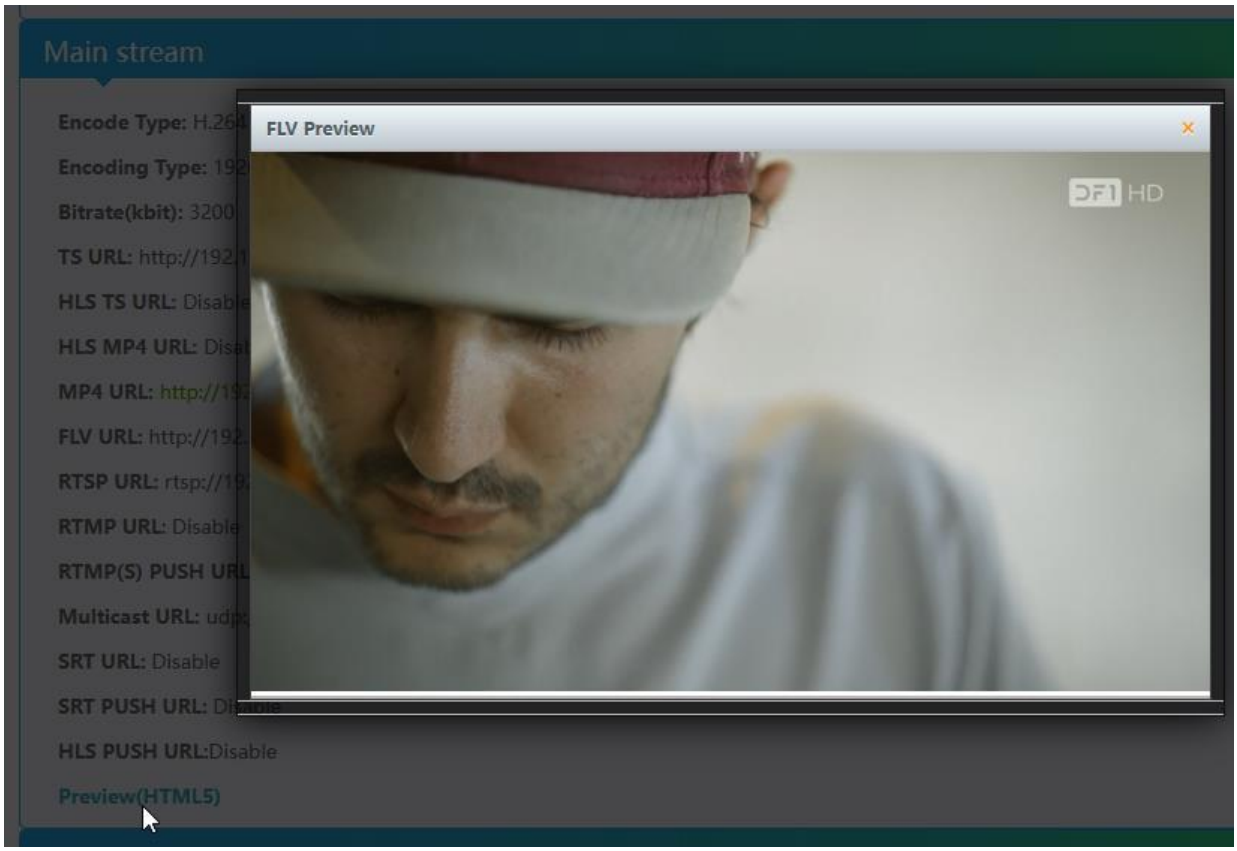
Depending on Model: Preview in Browser is possible from within the status page as a link:

HINT: Adobe Flash which anyway has been kicked from the Internet by W3C and was an animation tool from the early years (made by Adobe – which skipped it totally also from browsers).

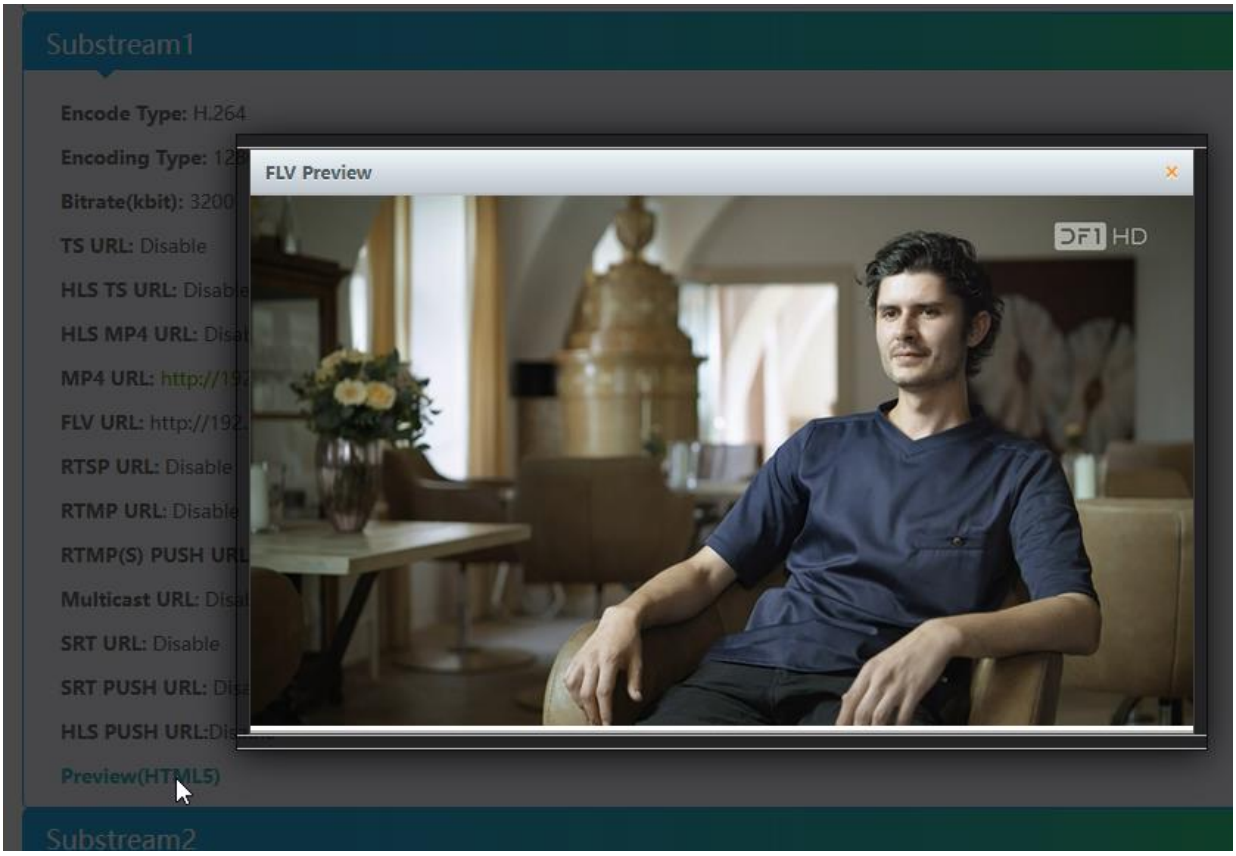
Anyway, it does not work with HEVC h.265 codec!!!! You need to have h.264 encoding to be set in the main or sub-stream menu:



But we now have installed a preview player which does support that codec but no fast forward and the other controls:



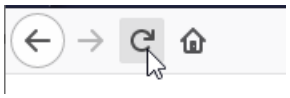
Preview h.264 in Main



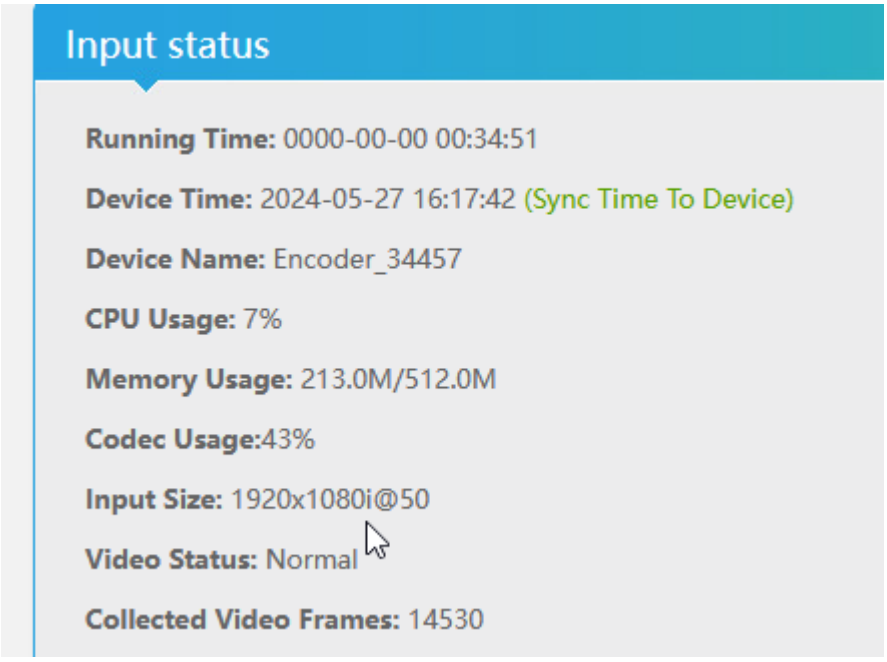
Preview h.265 in Substream

Back to STATUS page:

Like the hint above, sometimes it's helpful to reload the Status page i.e. if you see @0:



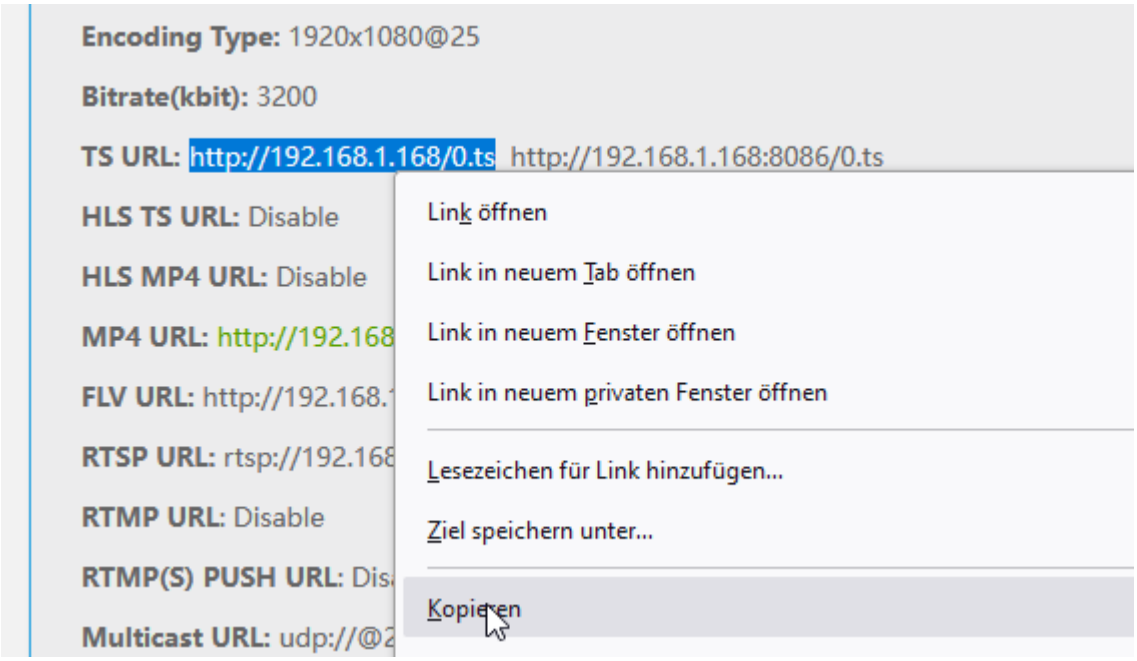
to gather the actual values like Input HDMI values:



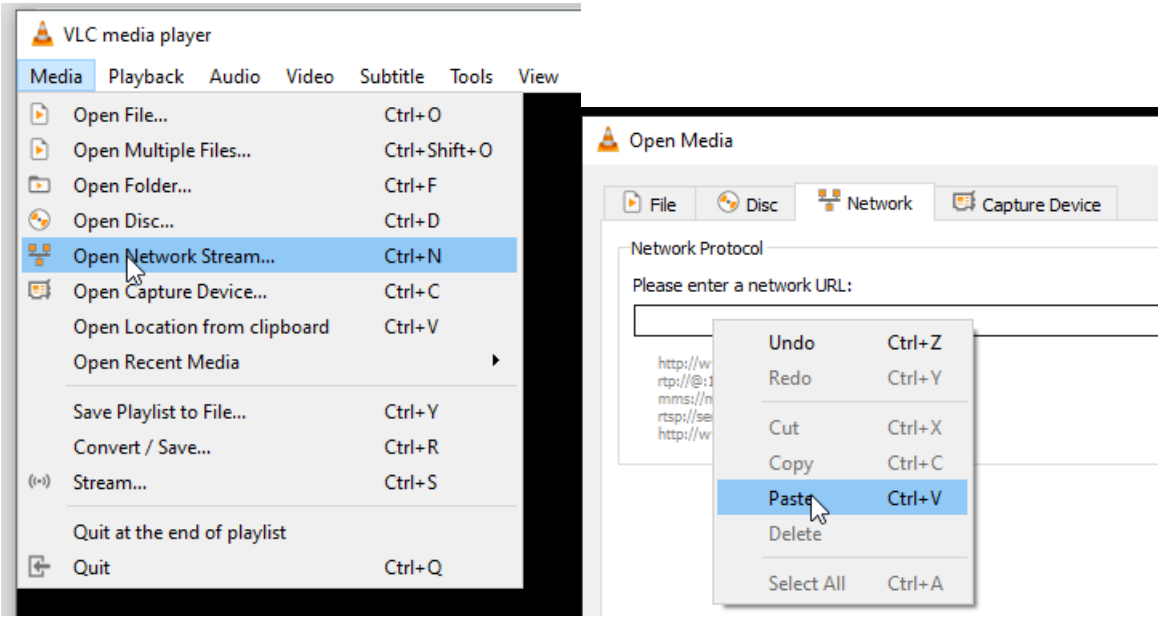
The device time can be adjusted by the Network-setup-part NTP-Server which you need to tell the NTP server URI and UTC-time difference. UK = '0', Germany normal is UTC+1... summer-time = +2.

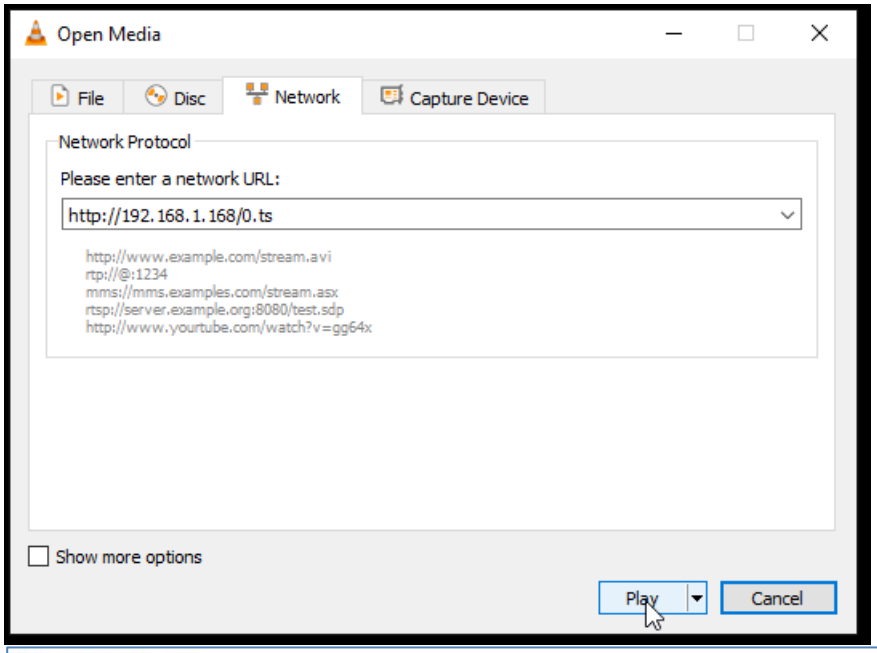
If you press (Sync Time to Device) it will be updated.

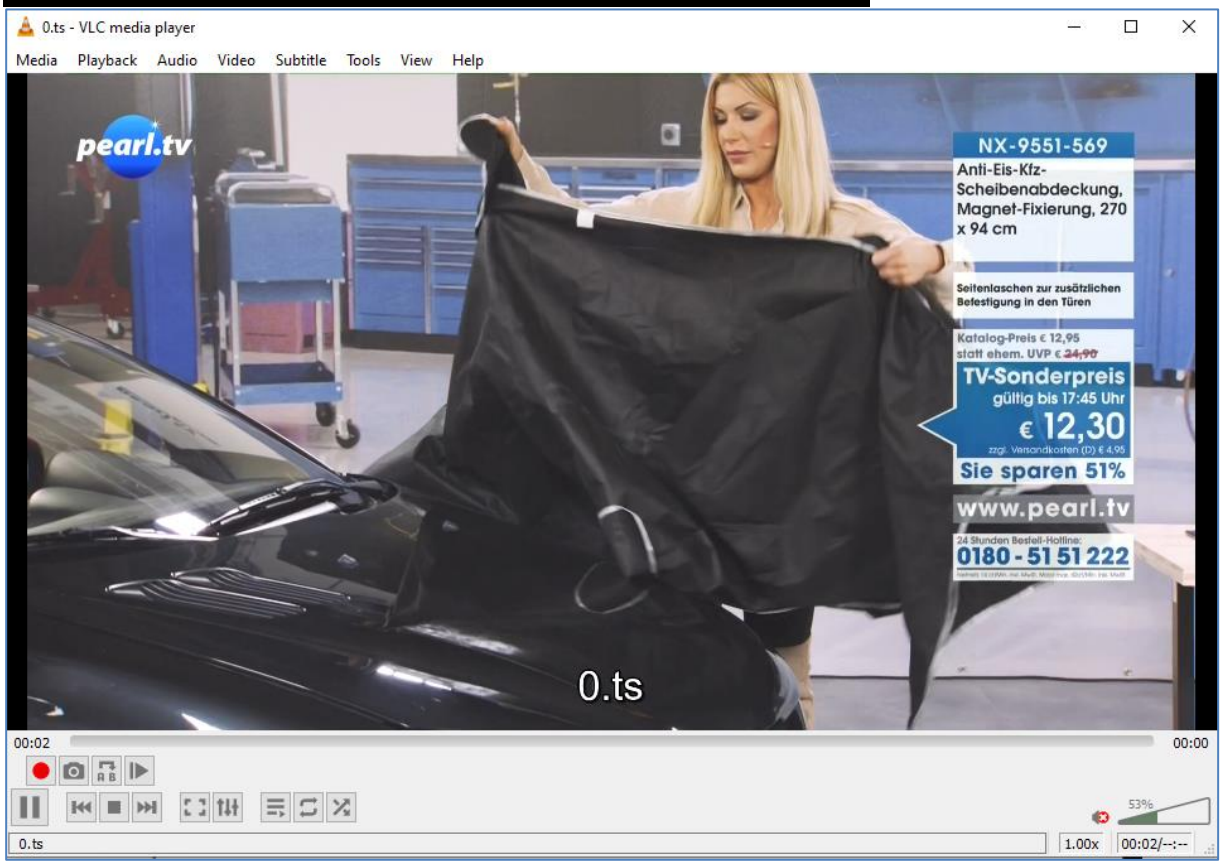
To also check your encoding streams you can copy the URI from the STATUS page:



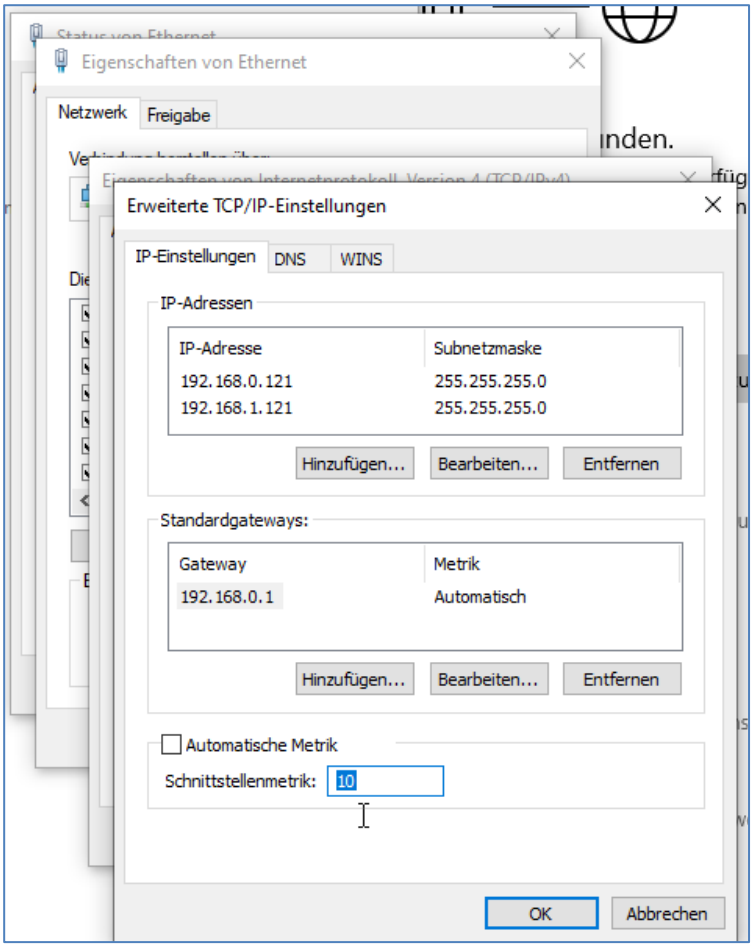
Mark it by the mouse and COPY it - Than insert into VLC:







Note: If you use more than one Network-Card in operation (like WIFI and GbE) in your receiving machine active in parallel, VLC often doesn't recognize where to catch it from. Manually settings of METRIC Values for both can solve this issue: Set WIFI to a higher value then the Ethernet card will give the Ethernet higher priority and streaming reception will work with VLC:



Linux users need to adjust that in a different way as well as MACccies.

Note: UDP/RTP-Address will be taken by VLC with an “””@””” and we have made it easy for you:

We recommend to use port addresses as EVEN numbers (because if you want to use RTP on top of UDP = no changes necessary) and non-standardised or reserved numbers above 5000 – better 10000. For every multicast you are streaming also use a different IP address because of the Ethernet-switches with IGMP – filtering those streams out from the network except a client is sending an IGMP-Query to the switch… that’s a different story…. Please make yourself familiar with IGMP.

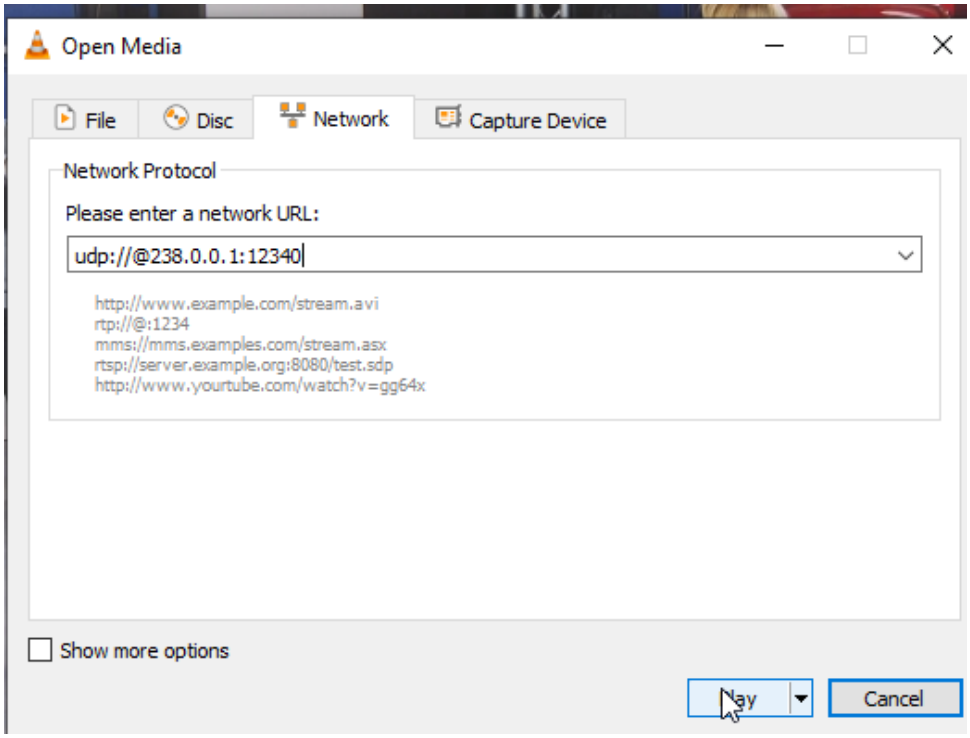
So we are now in the chapter

Multicasts:

These are of advantage against Unicast protocols because the stream is transparent in the whole network and subnetworks connected with routes or VLANs devided… regardless of the end-point IP address (V4, IGMP in V6 is different in its name and slightly in its function). The traffic is managed by the ethernet switch (IGMP). This type of streaming cannot cross the Internet as it is (except in a VPN).

But its very useful in IPTV closed environment networks so the Streamer needs only to send it once.

So Multicast reception is as UDP or UDP/RTP (EVEN port-No. – remember?)



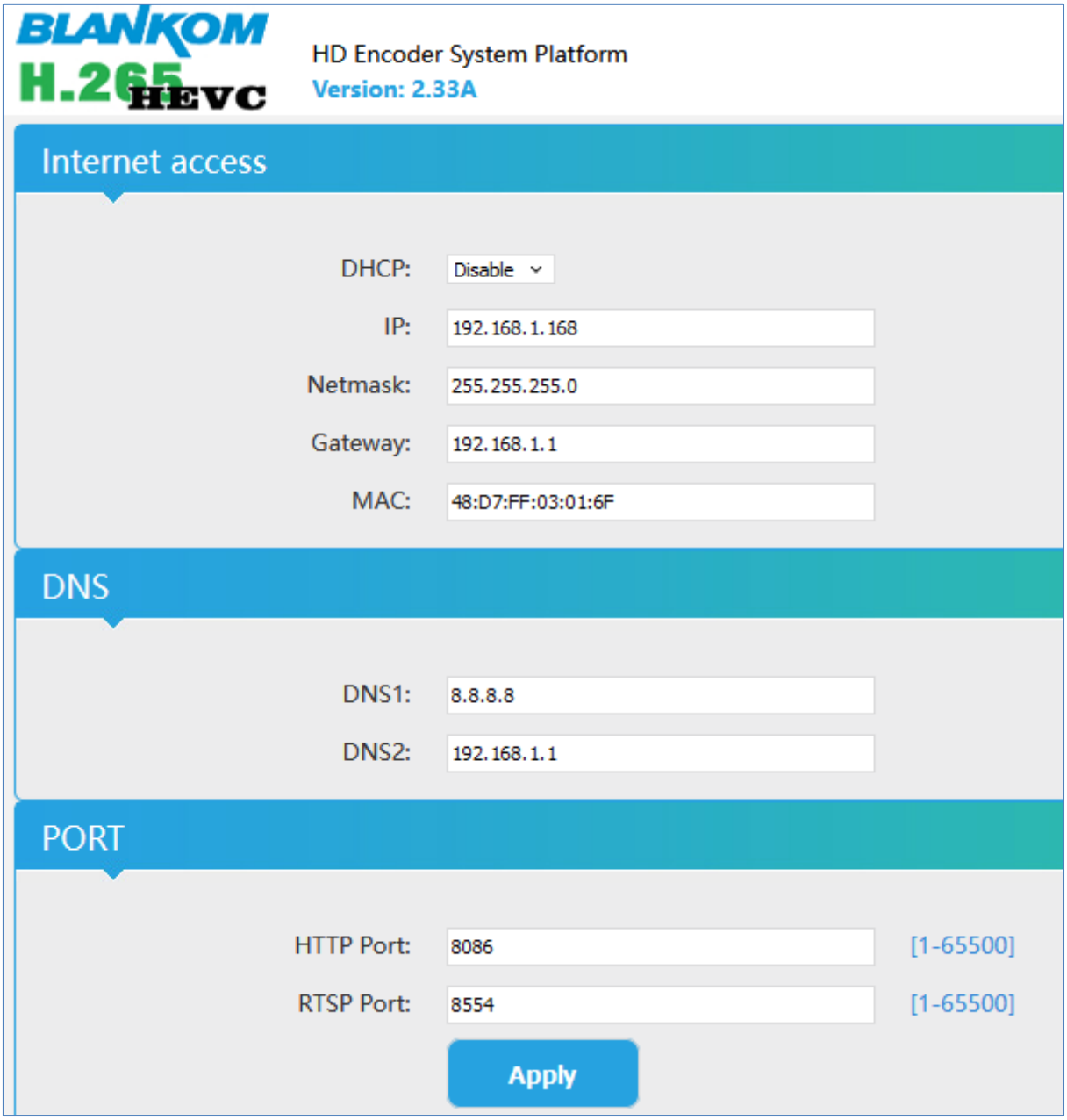
Unicasts are the other streaming protocols like http, RTMP, HLS, FLV, RTSP and of course the stunning SRT. These are Point to Point (P2P) streams, so the source send to the destination either by Call or Listening mode…. Disadvantage against multicast UDP: those need to really 'see each other'. So normally both needs to be in the same network segment and pinging each other should work. So Encoder is 192.168.1.168 and the VLC receiver (or STB or Decoder box) must be in the same network seeing each other:

```
ping 192.168.1.168
```

```
Ping wird ausgeführt für 192.168.1.168 mit 32 Bytes Daten:
Antwort von 192.168.1.168: Bytes=32 Zeit=10ms TTL=64
Antwort von 192.168.1.168: Bytes=32 Zeit=93ms TTL=64
...
```

Network: Here you can change the encoders IP-address and mode:

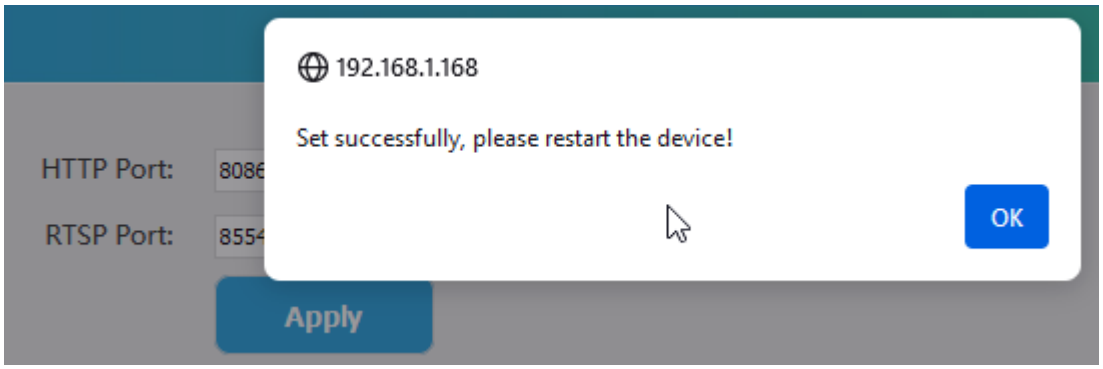
If you change it to DHCP – after a reboot it will catch it from your router. Disadvantage: You need to check the encoder given IP Address by your router in its own menu or use an IP-Scanner-tool.



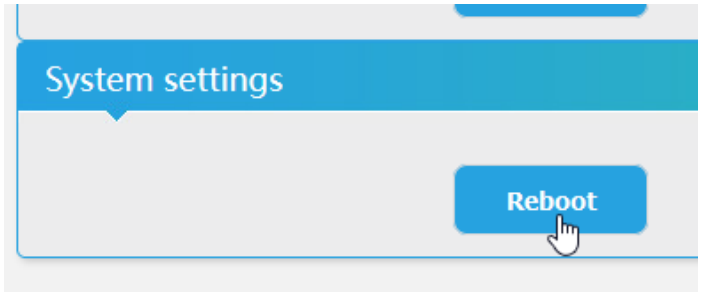
We assume, that you are familiar with the basic settings of a network.

These are the basic and default ports for HTTP and RTSP-Streaming use. You can modify that but we recommend to keep them as they are, because RTSP – receivers might are fixed to that port while HTTP isn't. Apply enables the changes. If you change the IP address you might re-tune your browser – don't forget that:

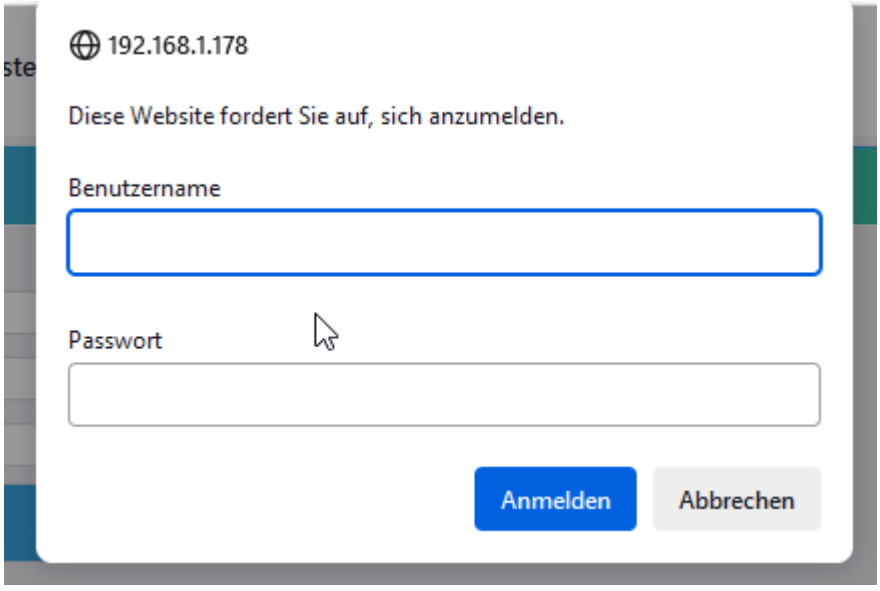
->



You need to reboot the unit to take effect of the IP address change:

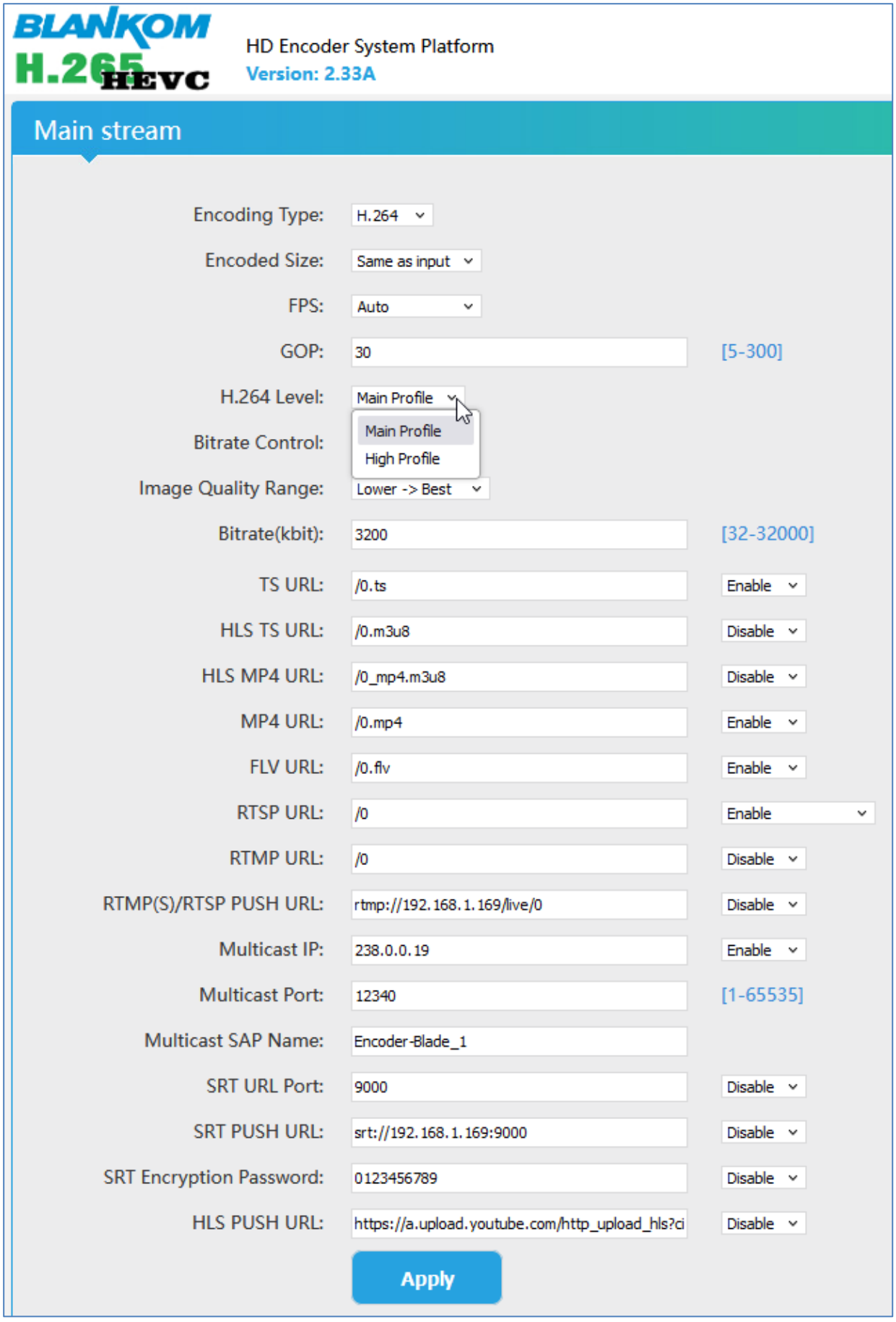


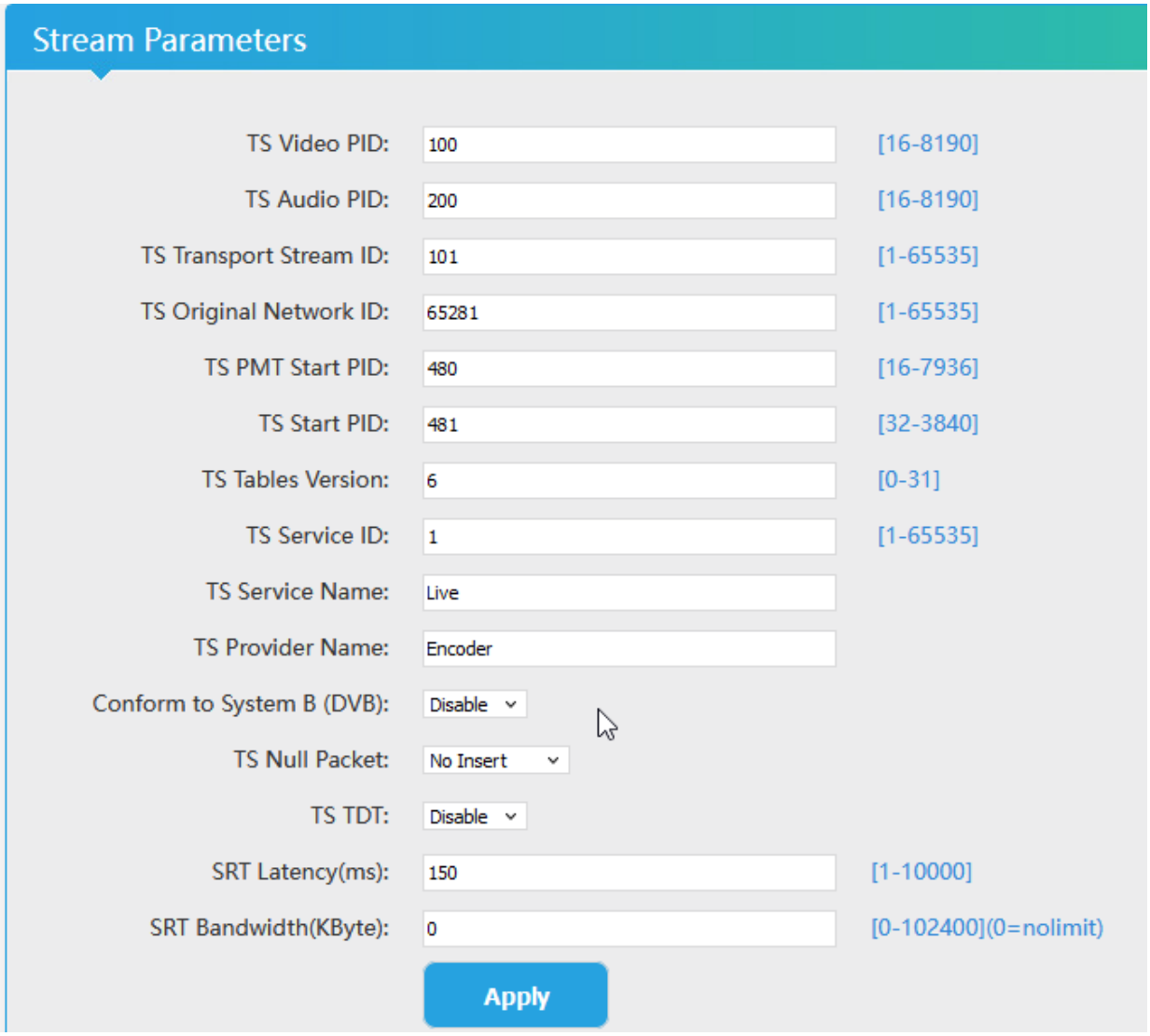
wait 30 seconds until the green LED is coming back:



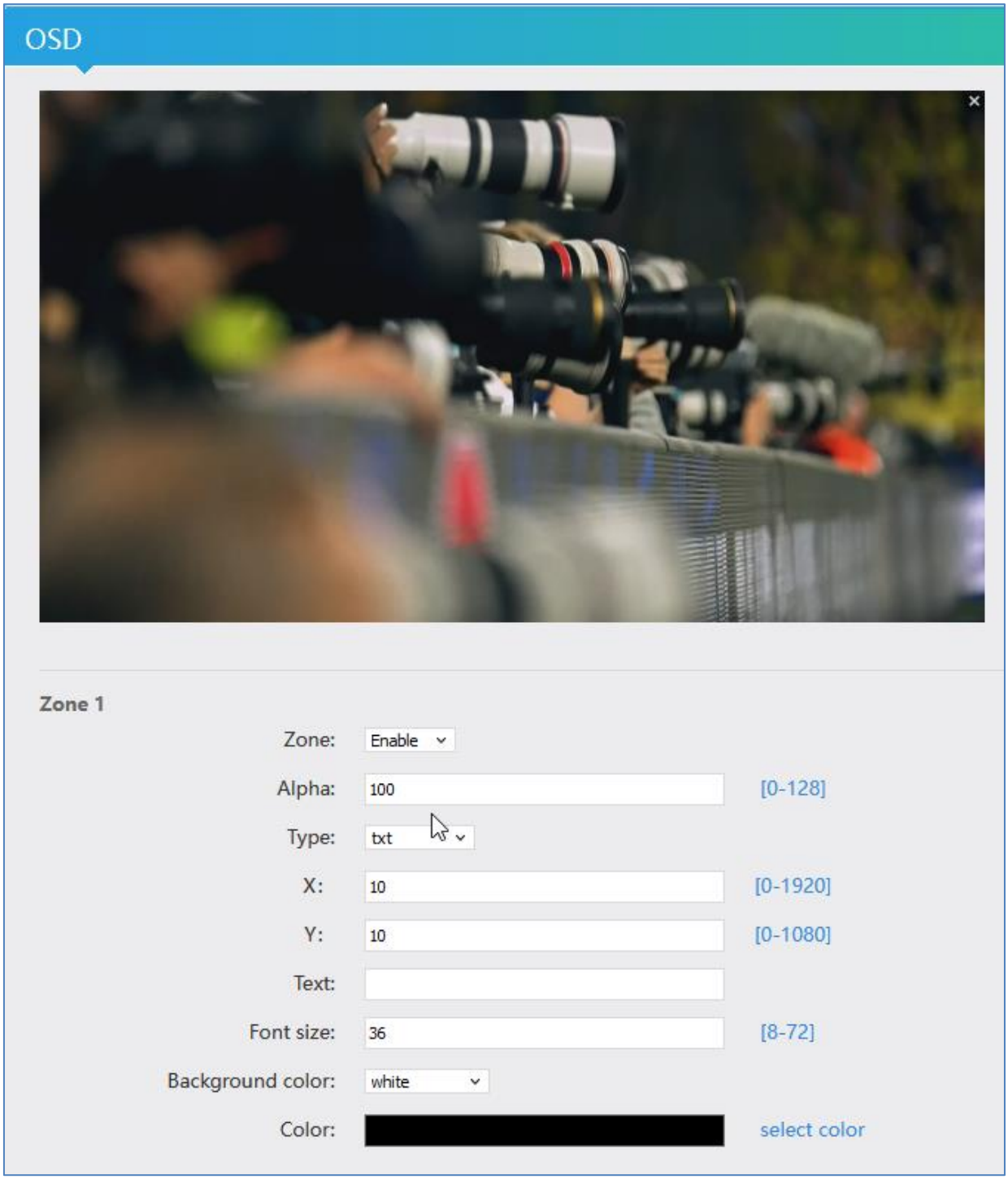
admin/admin

The **MAIN and SUB-Stream adjustments** are nearly all similar:

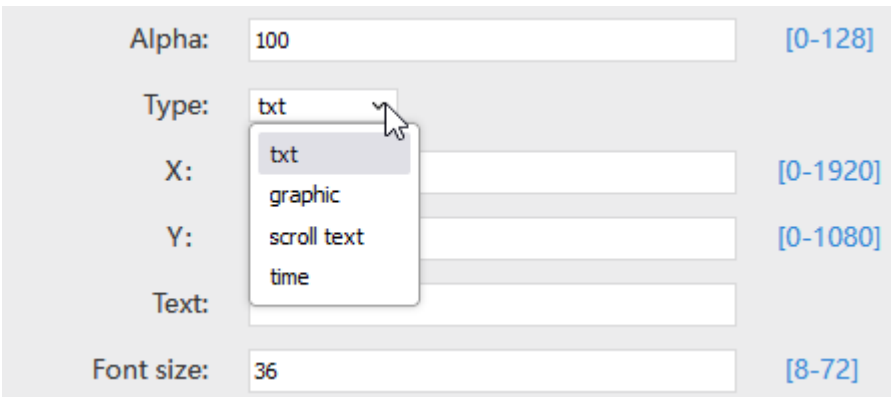

BLANKOM
H.265 HEVC
HD Encoder System Platform
Version: 2.33A
Main stream
Encoding Type: H.264
Encoded Size: Same as input
FPS: Auto
GOP: 30 [5-300]
H.264 Level: Main Profile
Main Profile
High Profile
Bitrate Control:
Image Quality Range: Lower -> Best
Bitrate(kbit): 3200 [32-32000]
TS URL: /0.ts Enable
HLS TS URL: /0.m3u8 Disable
HLS MP4 URL: /0_mp4.m3u8 Disable
MP4 URL: /0.mp4 Enable
FLV URL: /0.flv Enable
RTSP URL: /0 Enable
RTMP URL: /0 Disable
RTMP(S)/RTSP PUSH URL: rtmp://192.168.1.169/live/0 Disable
Multicast IP: 238.0.0.19 Enable
Multicast Port: 12340 [1-65535]
Multicast SAP Name: Encoder-Blade_1
SRT URL Port: 9000 Disable
SRT PUSH URL: srt://192.168.1.169:9000 Disable
SRT Encryption Password: 0123456789 Disable
HLS PUSH URL: https://a.upload.youtube.com/http_upload_hls?ci Disable
Apply

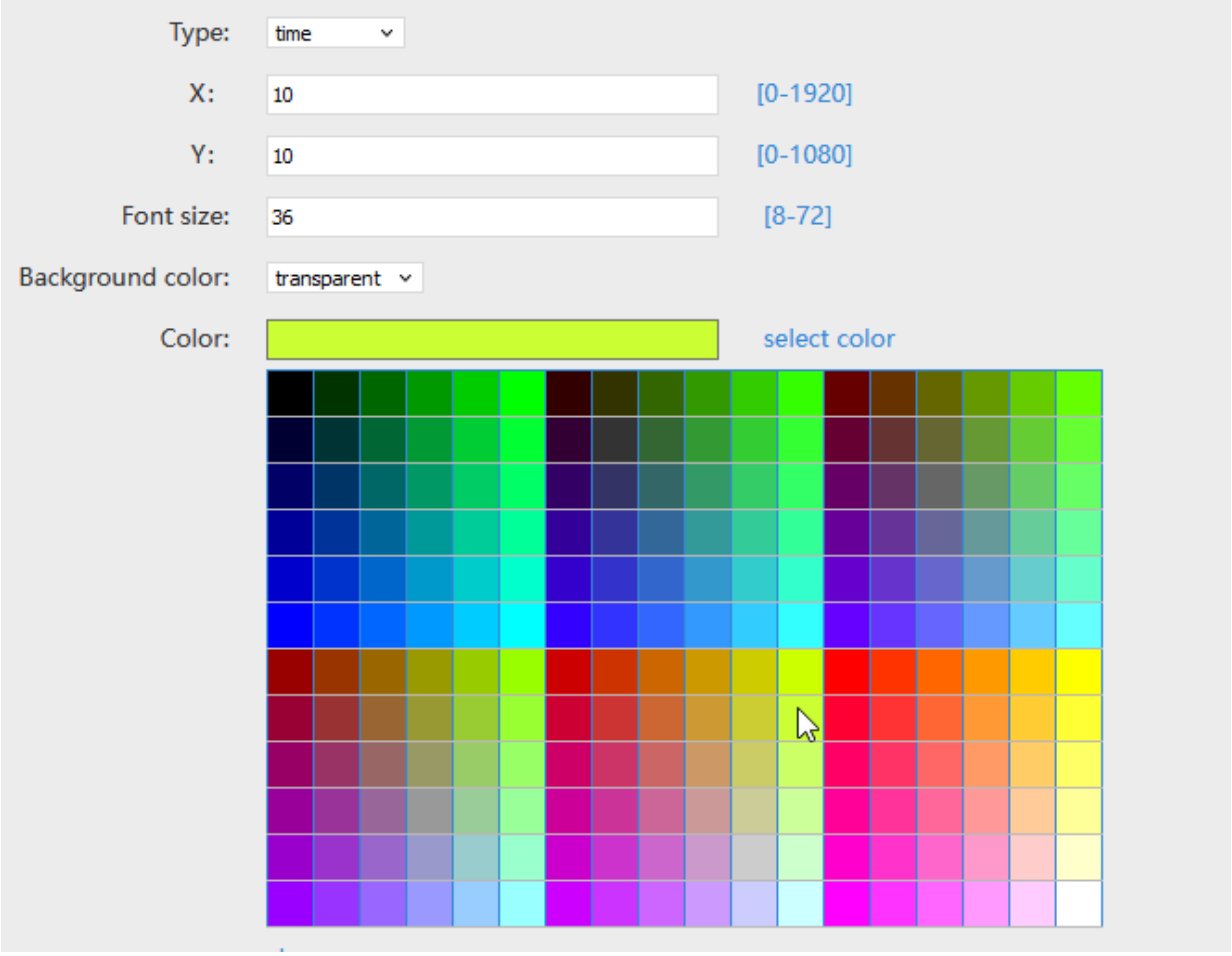

Stream Parameters
TS Video PID: 100 [16-8190]
TS Audio PID: 200 [16-8190]
TS Transport Stream ID: 101 [1-65535]
TS Original Network ID: 65281 [1-65535]
TS PMT Start PID: 480 [16-7936]
TS Start PID: 481 [32-3840]
TS Tables Version: 6 [0-31]
TS Service ID: 1 [1-65535]
TS Service Name: Live
TS Provider Name: Encoder
Conform to System B (DVB): Disable
TS Null Packet: No Insert
TS TDT: Disable
SRT Latency(ms): 150 [1-10000]
SRT Bandwidth(KByte): 0 [0-102400](0=nolimit)
Apply

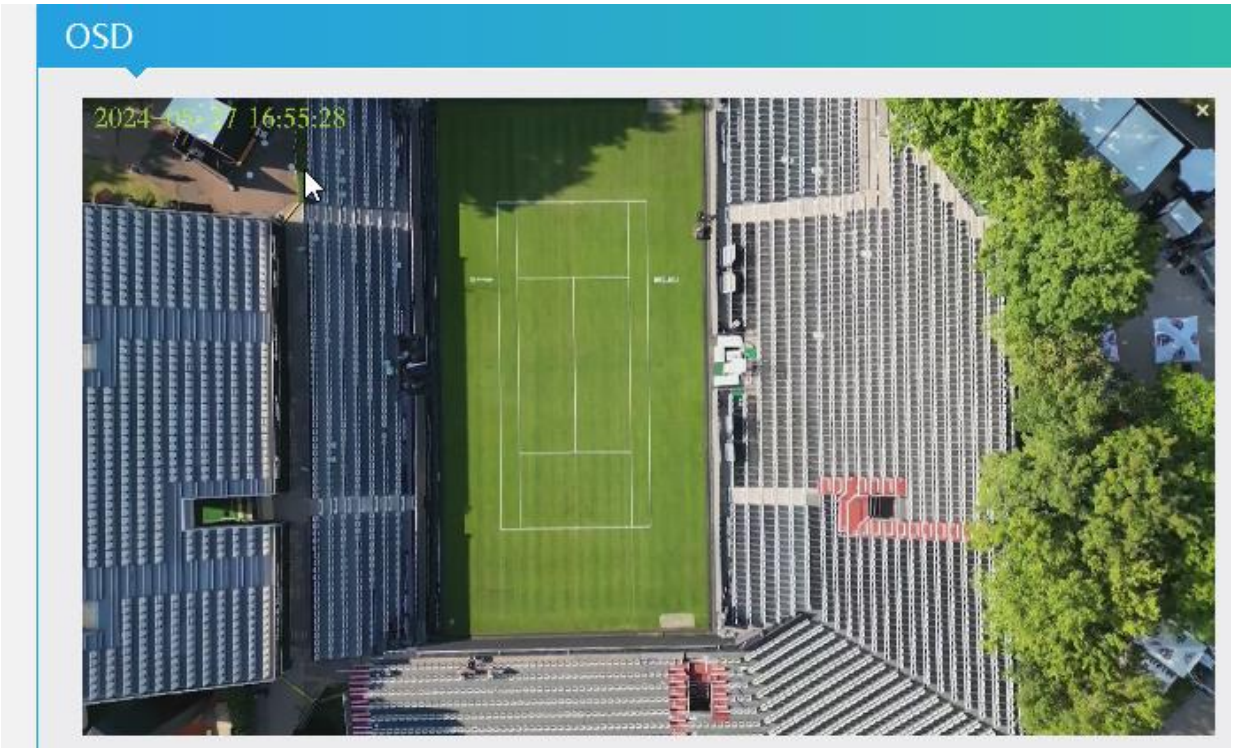
And



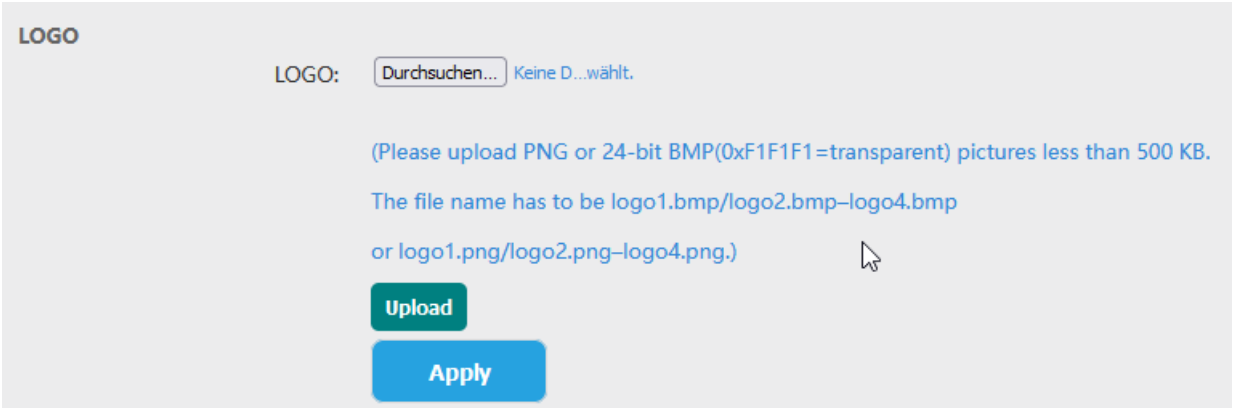
On Screen Display Menu: You can 'Overlay' a Text or Logo over the encoded Picture in 4 independent Zones for adding Text, …:



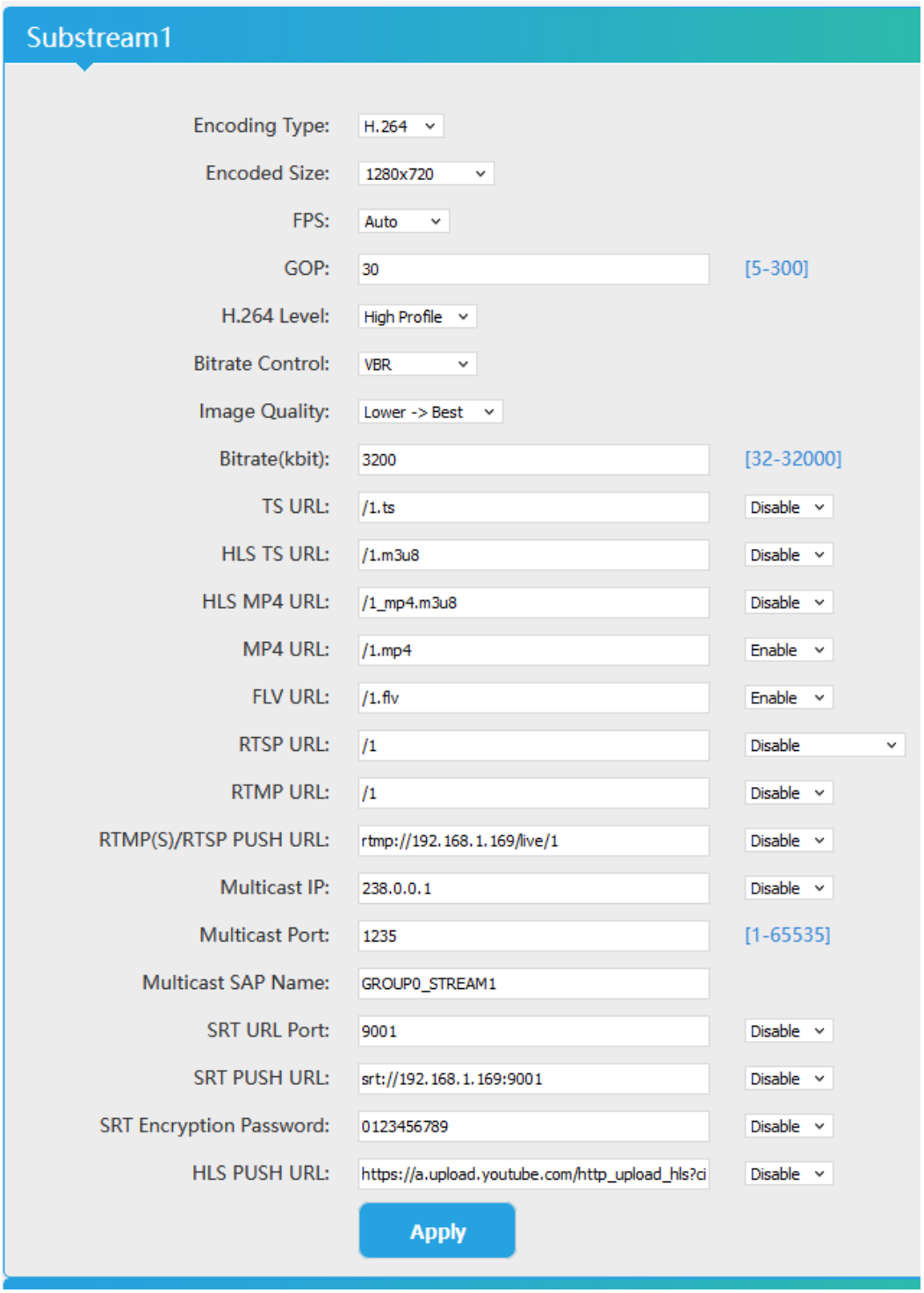




It supports BMP with a special background colour if you like to be that transparent – or simply use already transparent PNG files. Names and limitations of size are shown in the web.


LOGO
LOGO:
Durchsuchen...
Keine D...wählt.
(Please upload PNG or 24-bit BMP(0xF1F1F1=transparent) pictures less than 500 KB.
The file name has to be logo1.bmp/logo2.bmp–logo4.bmp
or logo1.png/logo2.png–logo4.png.)
Upload
Apply

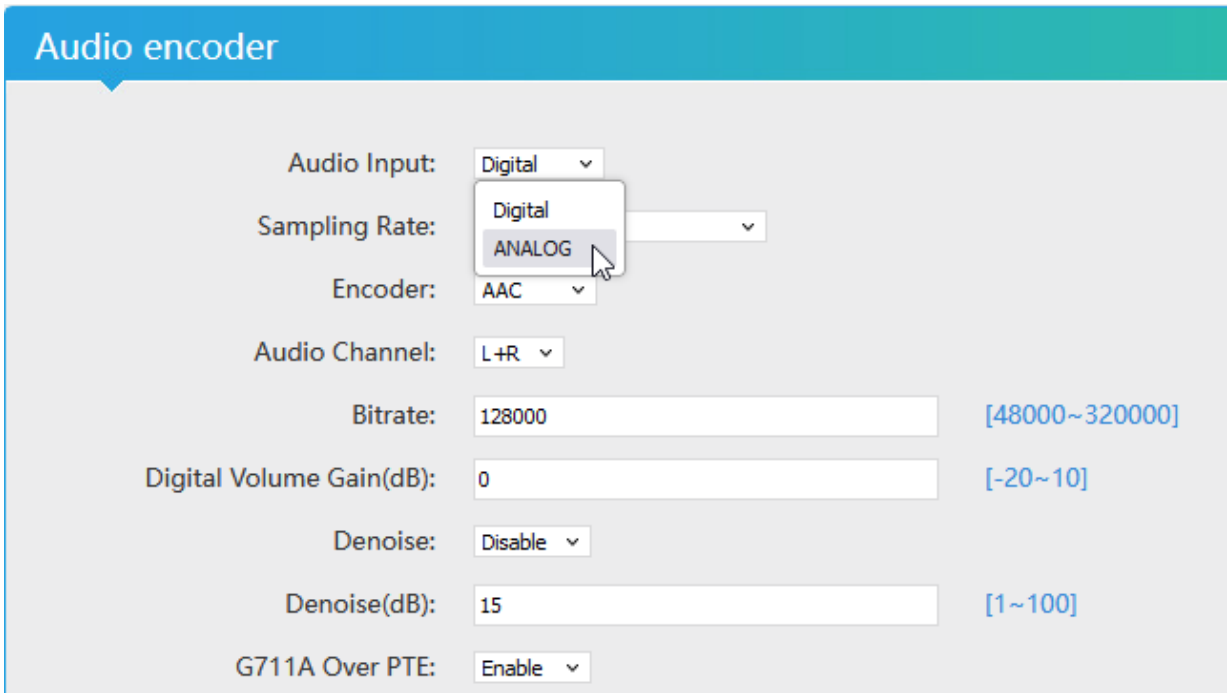
Subs 1-3:


Substream1
Encoding Type: H.264
Encoded Size: 1280x720
FPS: Auto
GOP: 30 [5-300]
H.264 Level: High Profile
Bitrate Control: VBR
Image Quality: Lower -> Best
Bitrate(kbit): 3200 [32-32000]
TS URL: /1.ts Disable
HLS TS URL: /1.m3u8 Disable
HLS MP4 URL: /1_mp4.m3u8 Disable
MP4 URL: /1.mp4 Enable
FLV URL: /1.flv Enable
RTSP URL: /1 Disable
RTMP URL: /1 Disable
RTMP(S)/RTSP PUSH URL: rtmp://192.168.1.169/live/1 Disable
Multicast IP: 238.0.0.1 Disable
Multicast Port: 1235 [1-65535]
Multicast SAP Name: GROUP0_STREAM1
SRT URL Port: 9001 Disable
SRT PUSH URL: srt://192.168.1.169:9001 Disable
SRT Encryption Password: 0123456789 Disable
HLS PUSH URL: https://a.upload.youtube.com/http_upload_hls?ci Disable
Apply

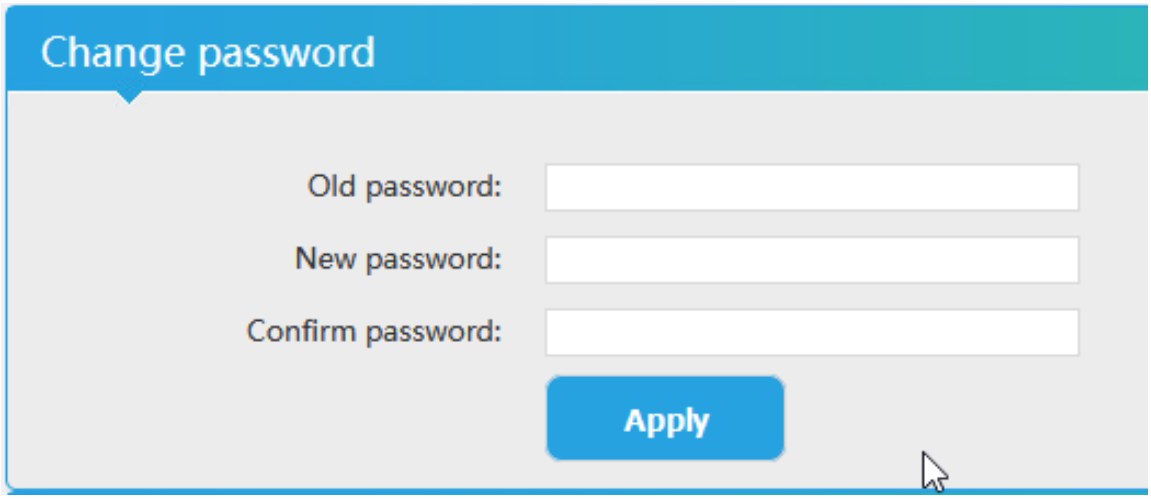
Audio settings are common for both stream encoder parts:

But Note: The HDE-264 as our most cost-effective Encoder-Streamer does not have an external Audio analogue Input like the 265 versions.

Audio Input = HDMI is default, otherwise use

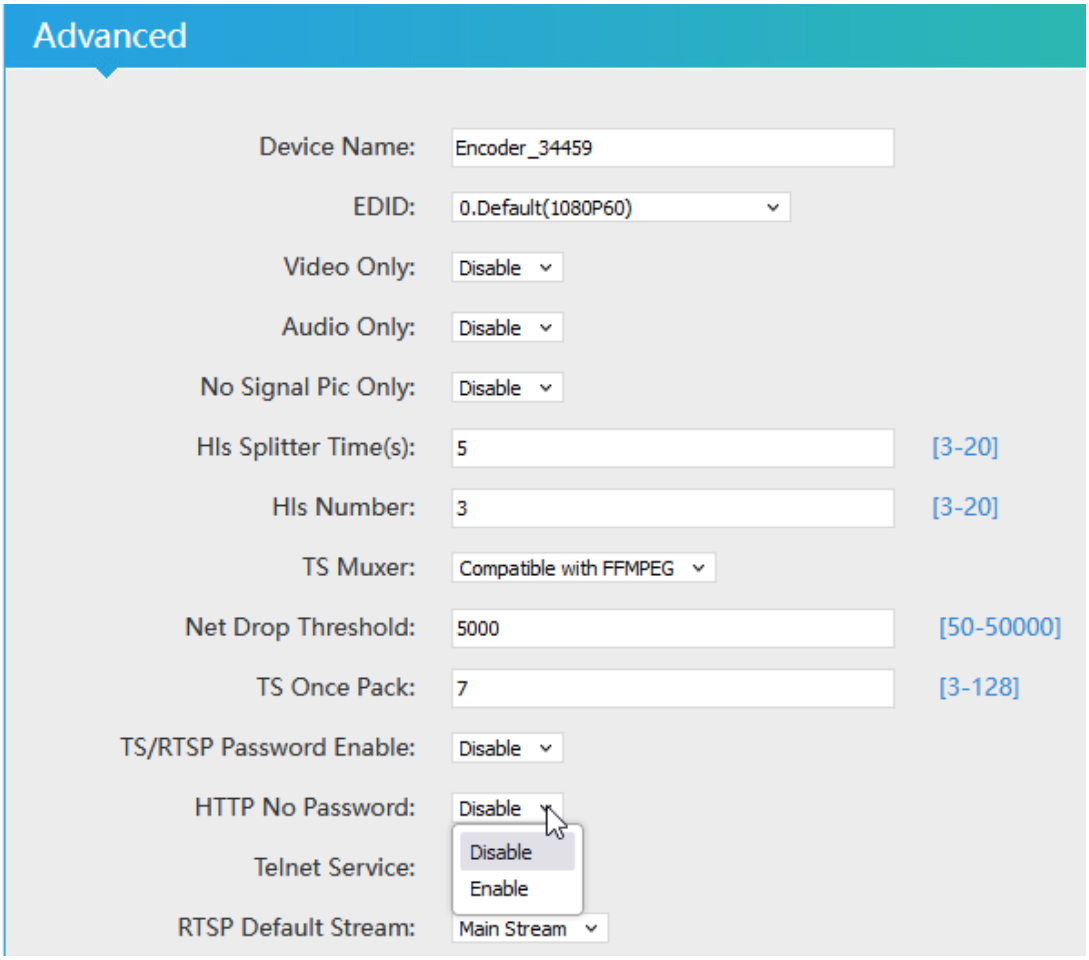


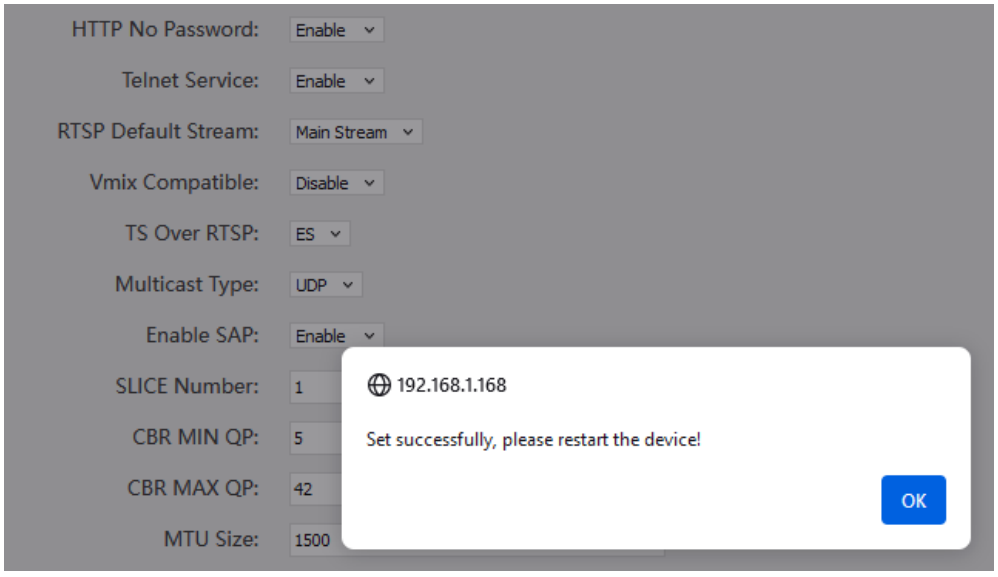
Self-explaining:



The user stays admin while each encoder's password can be changed

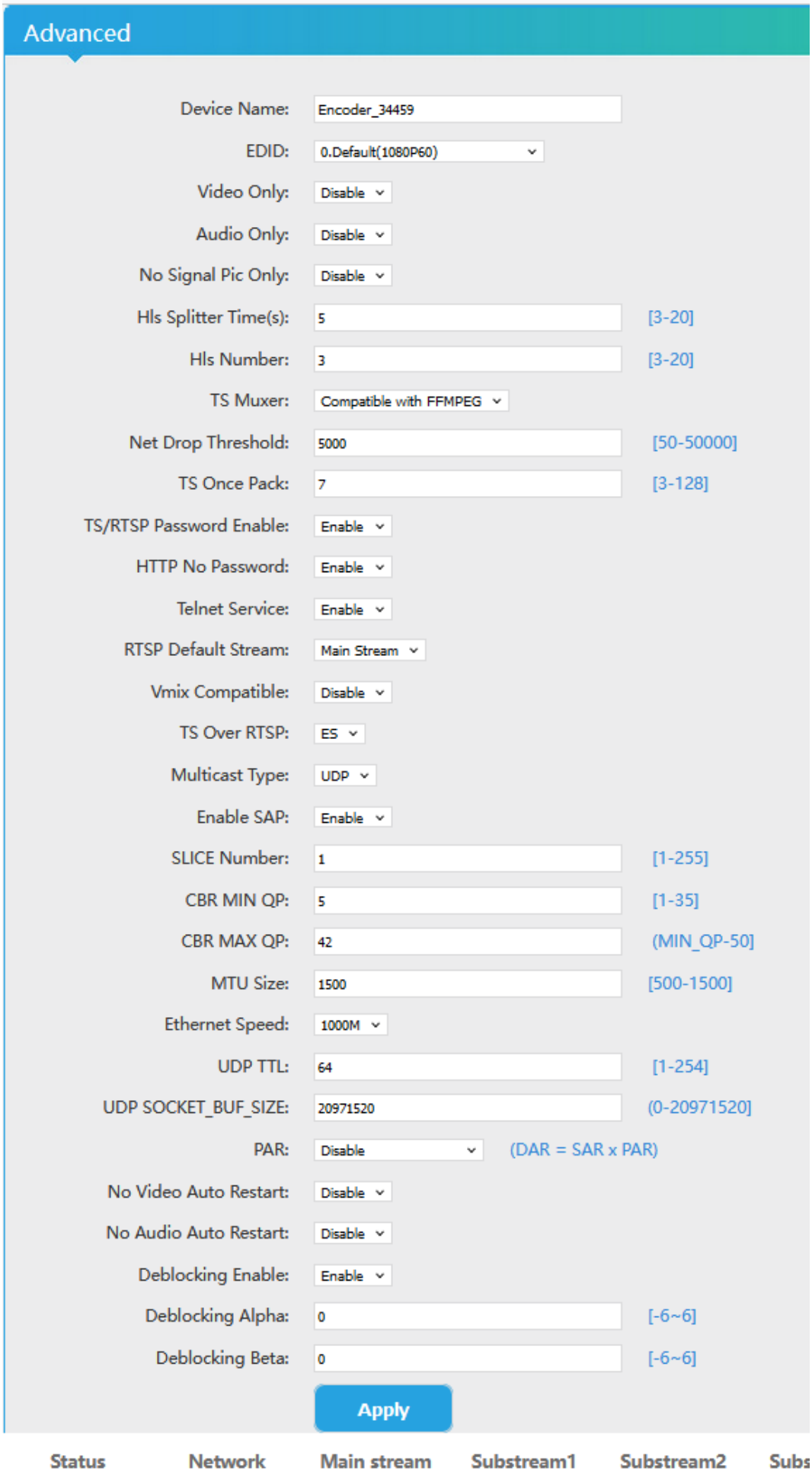
This password is the same when streaming a secure RTSP and set it in System menu.
Login w/o password is possible after setting it and reboot:





So complete encoder must be rebooted to take effect of the no password web-gui. Then login w/o PW is possible.

The default settings are usually Ok for most use-cases:

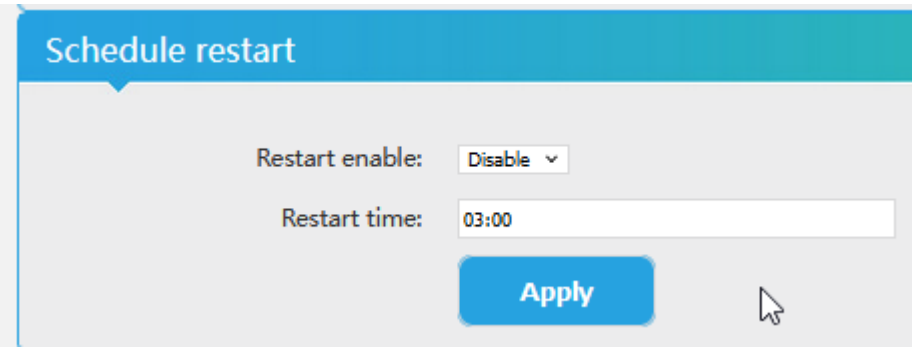


 All technical data are subject to change w/o further notice... © Irenis GmbH 05-2024.....

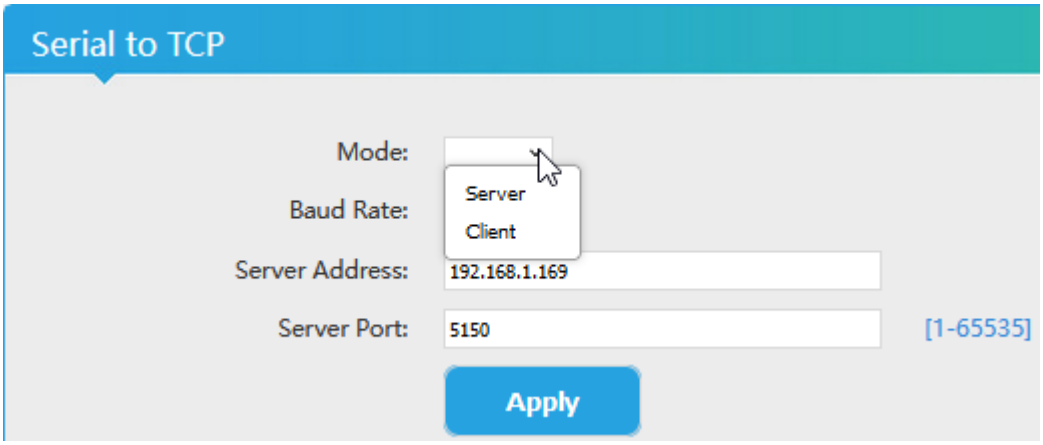
Old firmware Tip: Playing with 'De-interlaced settings' helps sometimes fixing moving picture artefacts. "BOTTOM only" setting can solve right-left-camera sticking problems.

TIP2: If you have a lot of traffic in your network and your streams are added to it and get problems like pixellations: Increase the Net Drop Threshold value significantly … maybe from default 5000 to 20000.

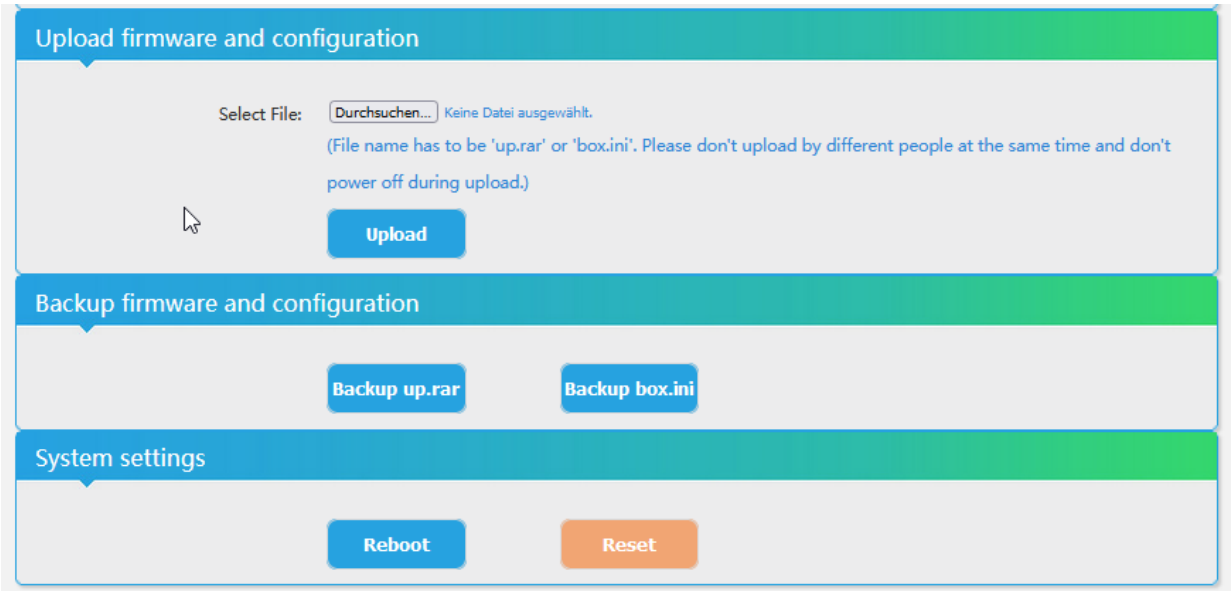
A schedules 'restart' can be programmed (NTP-Time = ON recommended):



Supporting Rserial function if needed (Linux like)… please check the internet about this



The settings as well as the Firmware can be back-upped and re-uploaded.



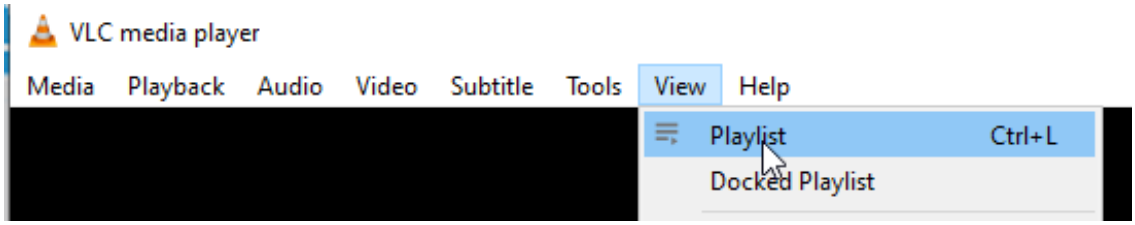
The config-settings file is a Linux based text file named box.ini. Do not modify store upload that by a windows editor except you will use notepad++ (freeware – please google...)

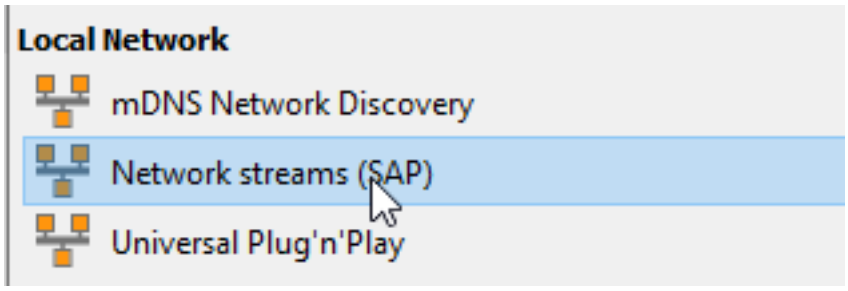
After a firmware update has been uploaded, the unit can be remotely reset to factory defaults or rebooted. There is the possibility of scripting the GUI for remote handling w/o web-IF. Check our websides… /tutorials…

We recommend to make yourself familiar with ‘What is Multicast and Unicast’ and the corresponding IP-Ranges.

Note:

Using VLC SAP-Gathering will show a simple click’n start entry:

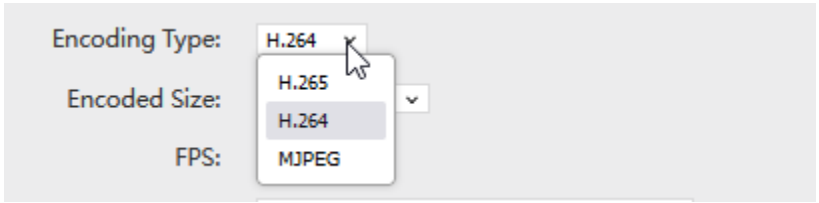




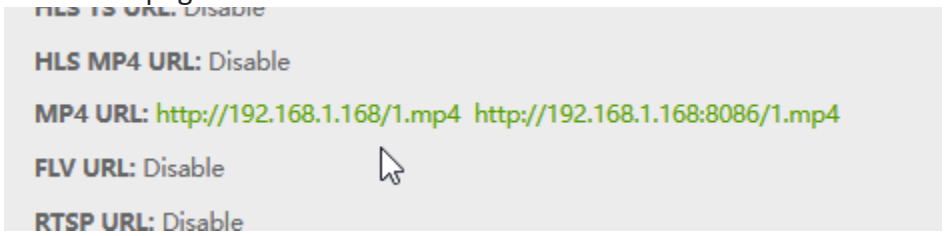
-> Will receive the stream. This works only with Multicast UDP / RTP!

A seldom case but: **MJPG support:**

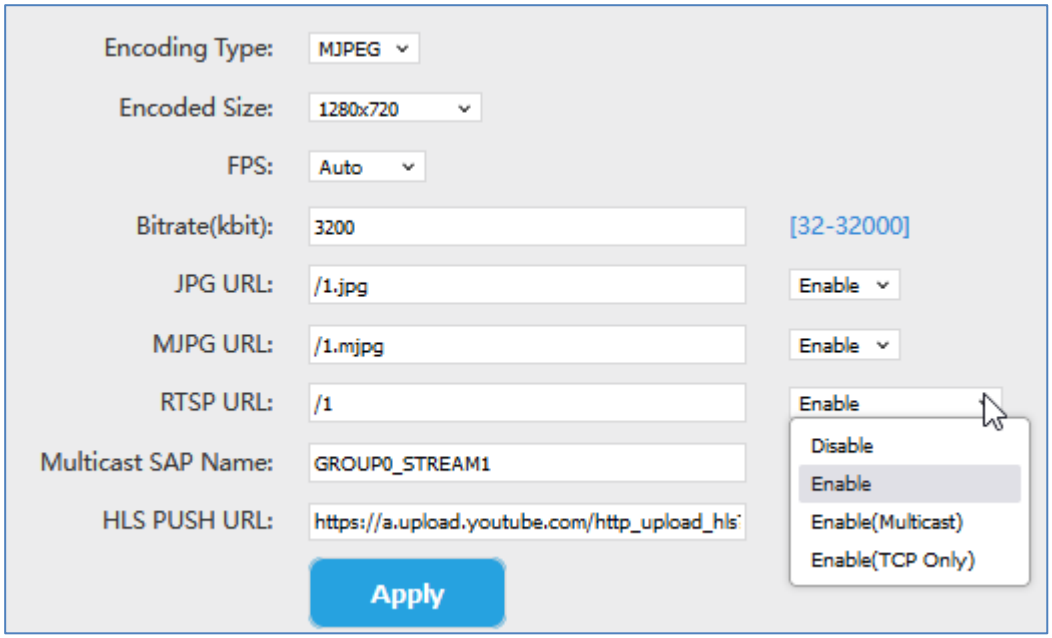
If you directly want to send the ‘pictures’ only as motion JPG format to a browser, you can set this to be enabled:



The status page will show:

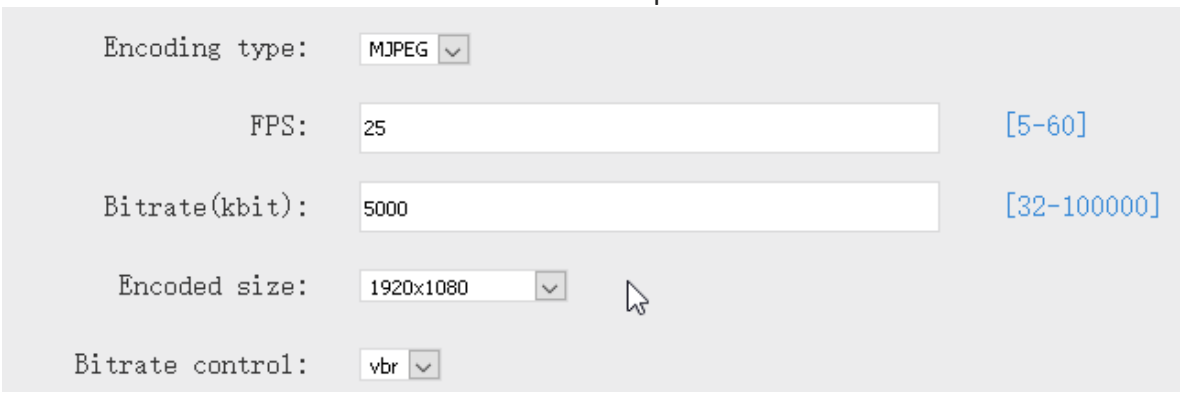


These are the browser streams… but only h.264 is working!



Here on a different device with Substream Number 1 -> Therefor it is named to /1.mjpg
Please enable at least one RTSP output before changing to MJPEG – otherwise no streaming will happen.

We recommend better to choose the **Main-encoder** part for this so:



-> Status page... **PLEASE Note: RTSP has to be enabled for MJPG-stream output:**

Main stream

Encode Type:▮JPEG

Encoding Type:1920x1080@25

Bitrate(kbit):5000

▮JPG URL: http://192.168.1.168/0.mjpg

JPG URL: http://192.168.1.168/0.jpg

TS URL: Disable

HLS URL:Disable

FLV URL:Disable

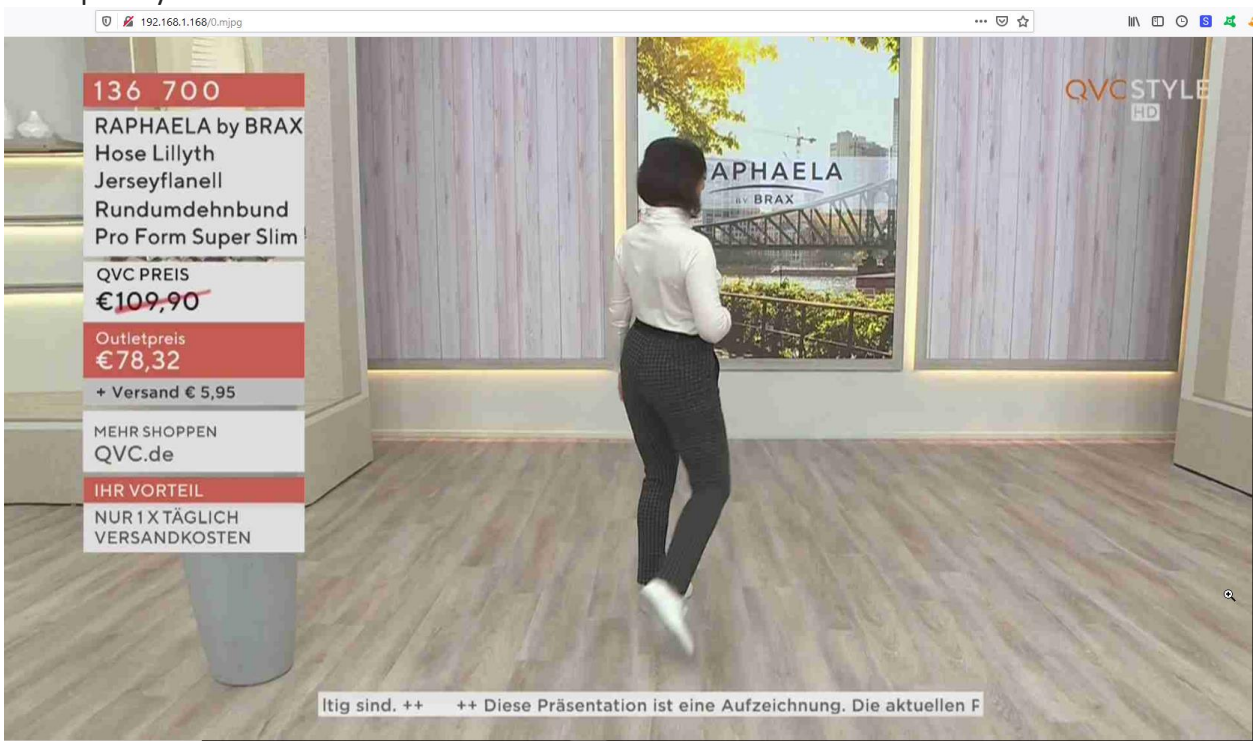
RTSP URL:rtsp://192.168.1.168/0 rtsp://192.168.1.168:8554/0

RT▮P URL:Disable

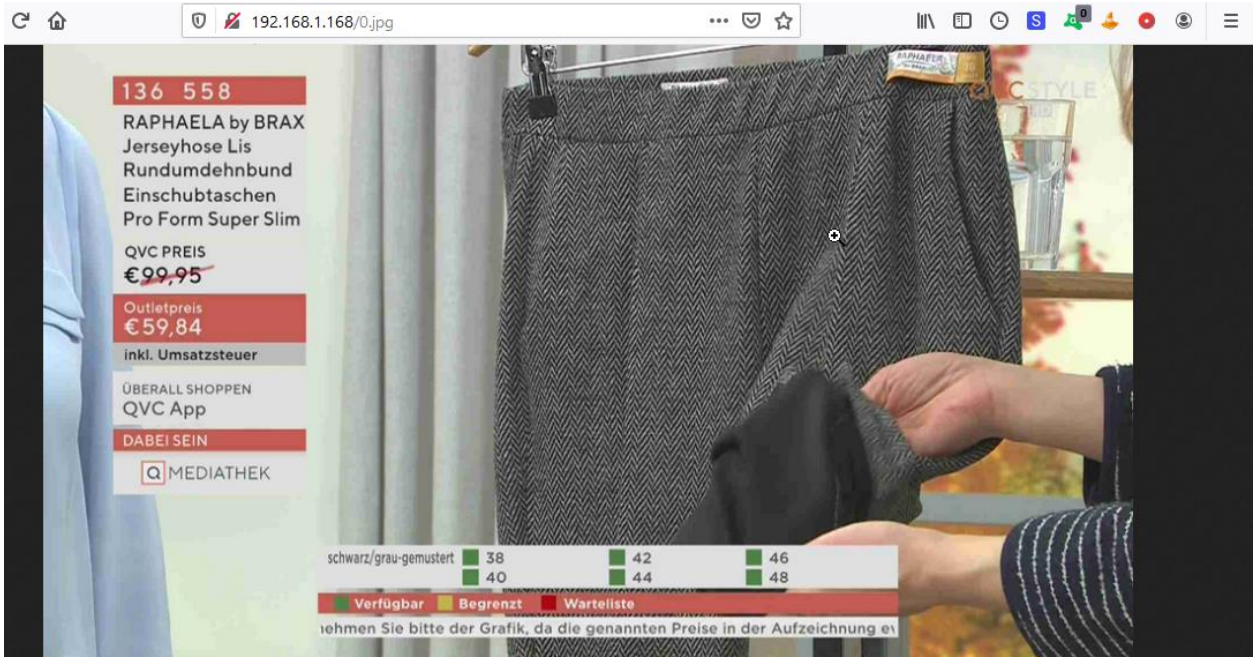
RT▮P PUSH URL:Disable

▮ulticast URL:Disable

Link open by Mozilla:



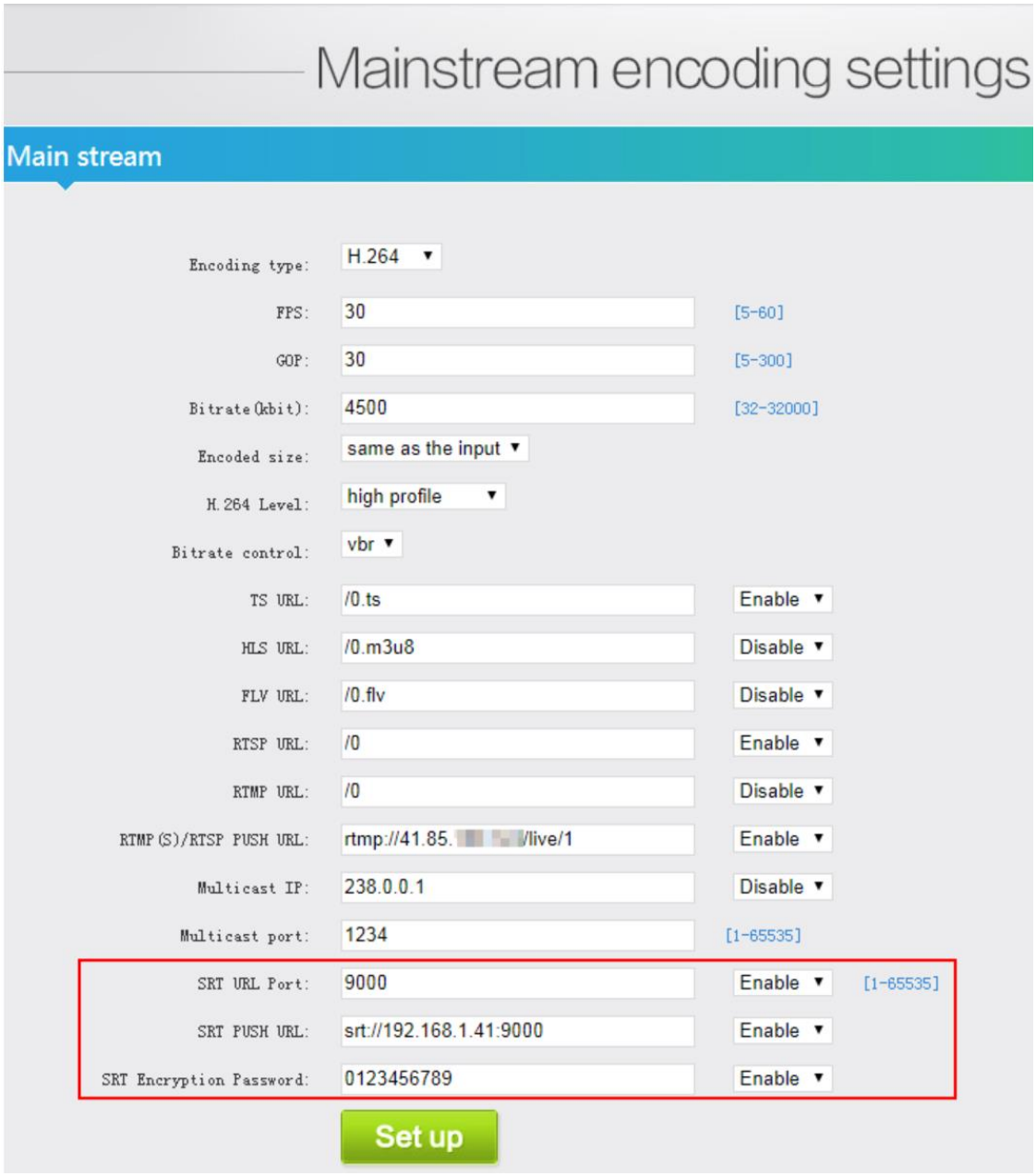
Or only the still picture shows the moment of the screen when click on /0.jpg:



SRT-support: *(Only supported by our encoders with h.265 compatibility because of processing power)*

What is SRT? Please check also https://www.srtalliance.org

Encoder settings:



What is an SRT?

Secure Reliable Transport (SRT) is an Open-source software protocol and technology stack designed for live video streaming over the public internet.

SRT provides connection and control, reliable transmission similar to TCP, however, it does so at the application layer, using UDP protocol as an underlying transport layer. It supports packet recovery while maintaining low latency (default: 120 ms). SRT also supports encryption using AES.

Source: https://en.wikipedia.org/wiki/Secure_Reliable_Transport

Note: SRT works only in pairs: The stream receiver must support SRT reception.

Video Encoders are widely used in video transmission field, and SRT supported by our video encoder & decoder. Our Encoder & Decoder work perfectly for Haivision Play, Larix Broadcaster, etc.

More details: https://www.srtalliance.org

SRT-live-server (SLS)-for our Video Encoder

Our Video Encoders support SLS for SRT.

Introduction

srt-live-server(SLS) is an open source live streaming server for low latency based on Secure Reliable Tranport(SRT). Normally, the latency of transport by SLS is less than 1 second via the internet.

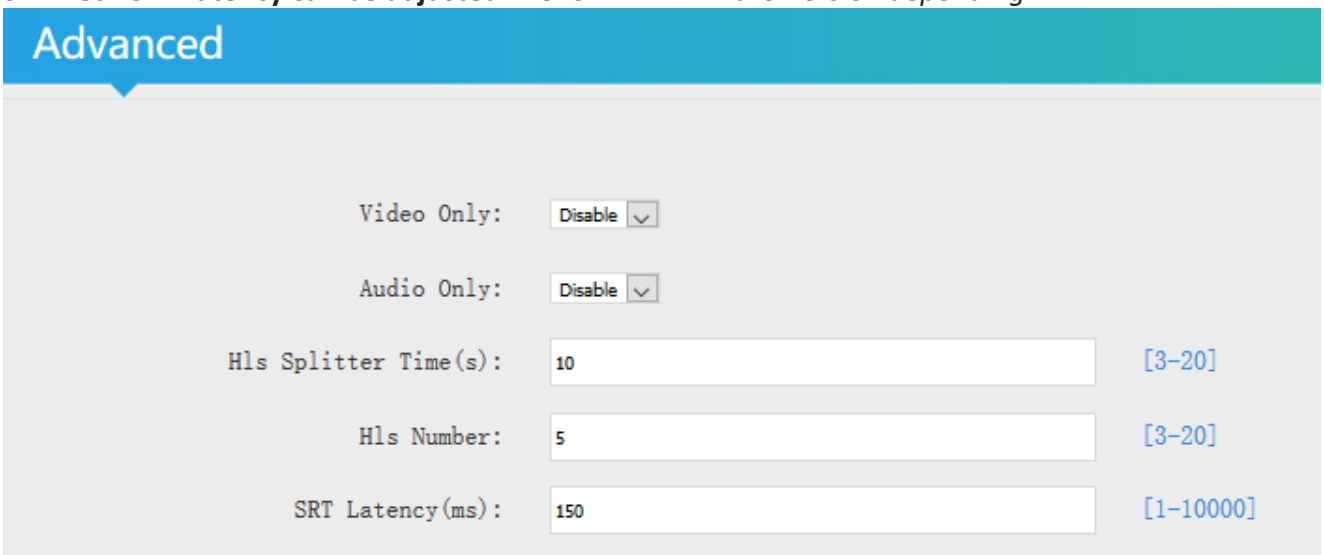
Requirements

Please install the SRT first, refer to SRT(https://github.com/Haivision/srt) for system environment basics. SLS can only run on OS based on linux, such as mac, centos or ubuntu etc.

Source: https://github.com/Edward-Wu/srt-live-server

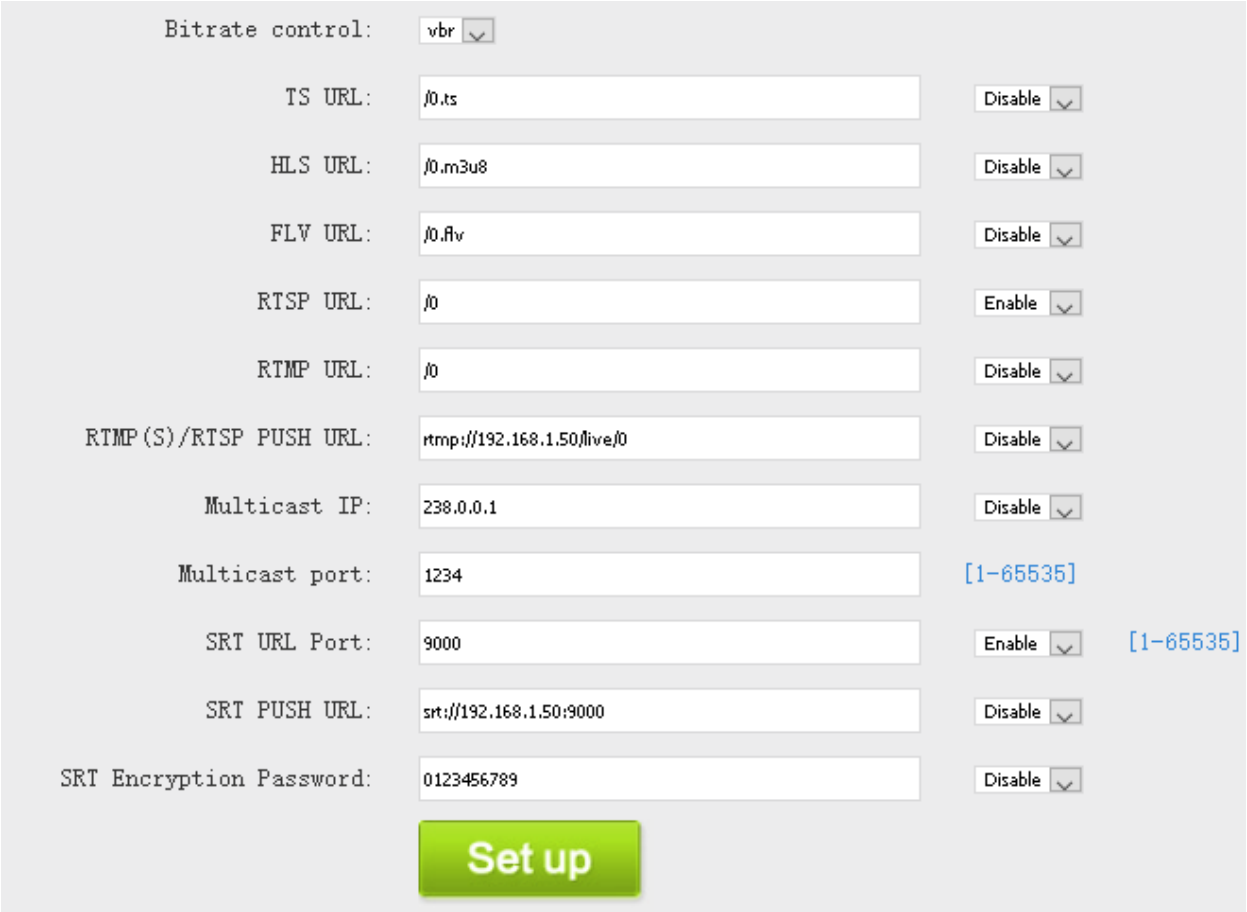
Put the following url to send to your docker container:
srt://your.server.ip:1935?streamid=input/live/yourstreamname

For P2P, select SRT PUSH and enter the destination IP Address and Port.
SRT network-Latency can be adjusted in SYSTEM *Firmware Version depending…* **:**

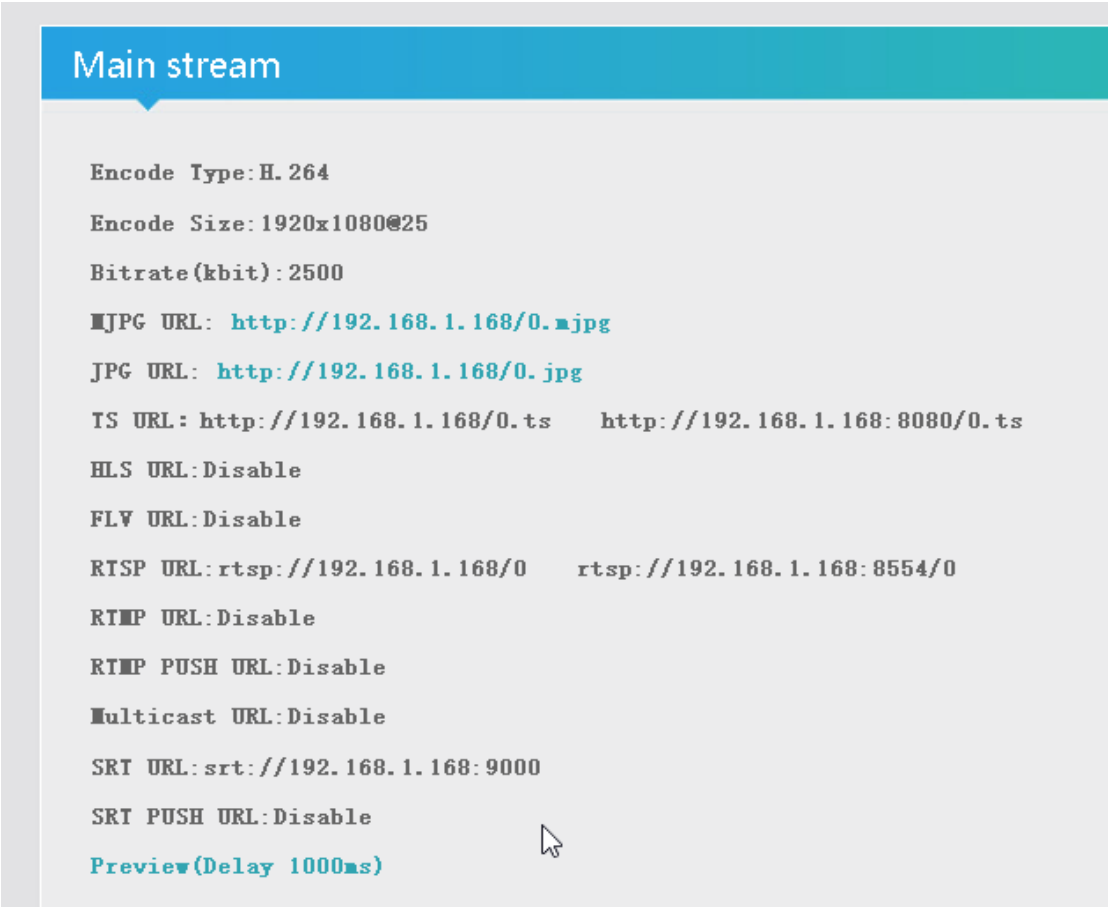


SRT is a faster transport protocol for lower latency over public networks…

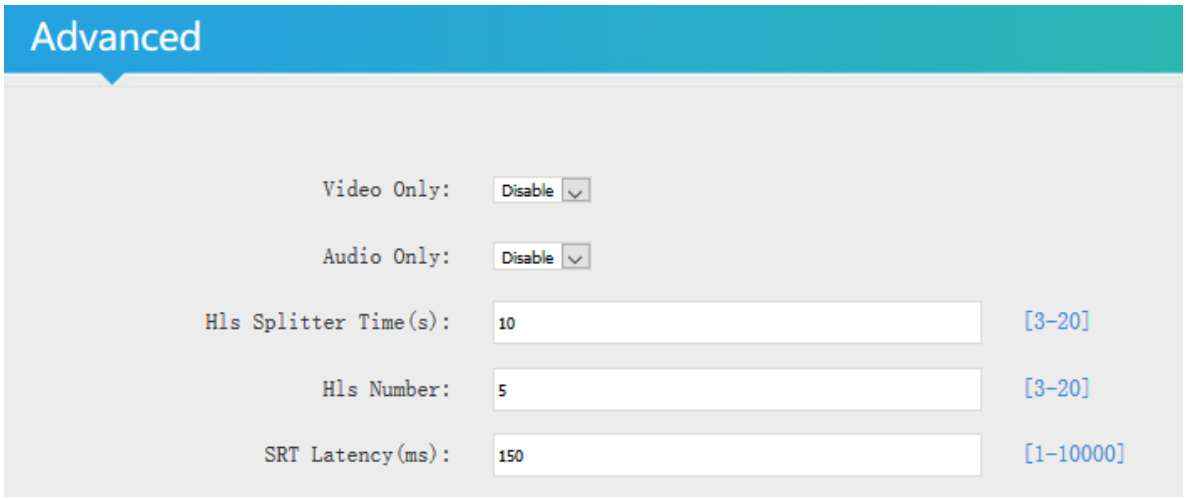
Encoder-parts settings enabling SRT-Protocol:



Check the Status page for what is enabled…:



Additionally: SRT Latency can be adjusted in SYSTEM *Firmware onwards and encoder type dependent…*:



It's a faster transport protocol for lower latency over public networks…

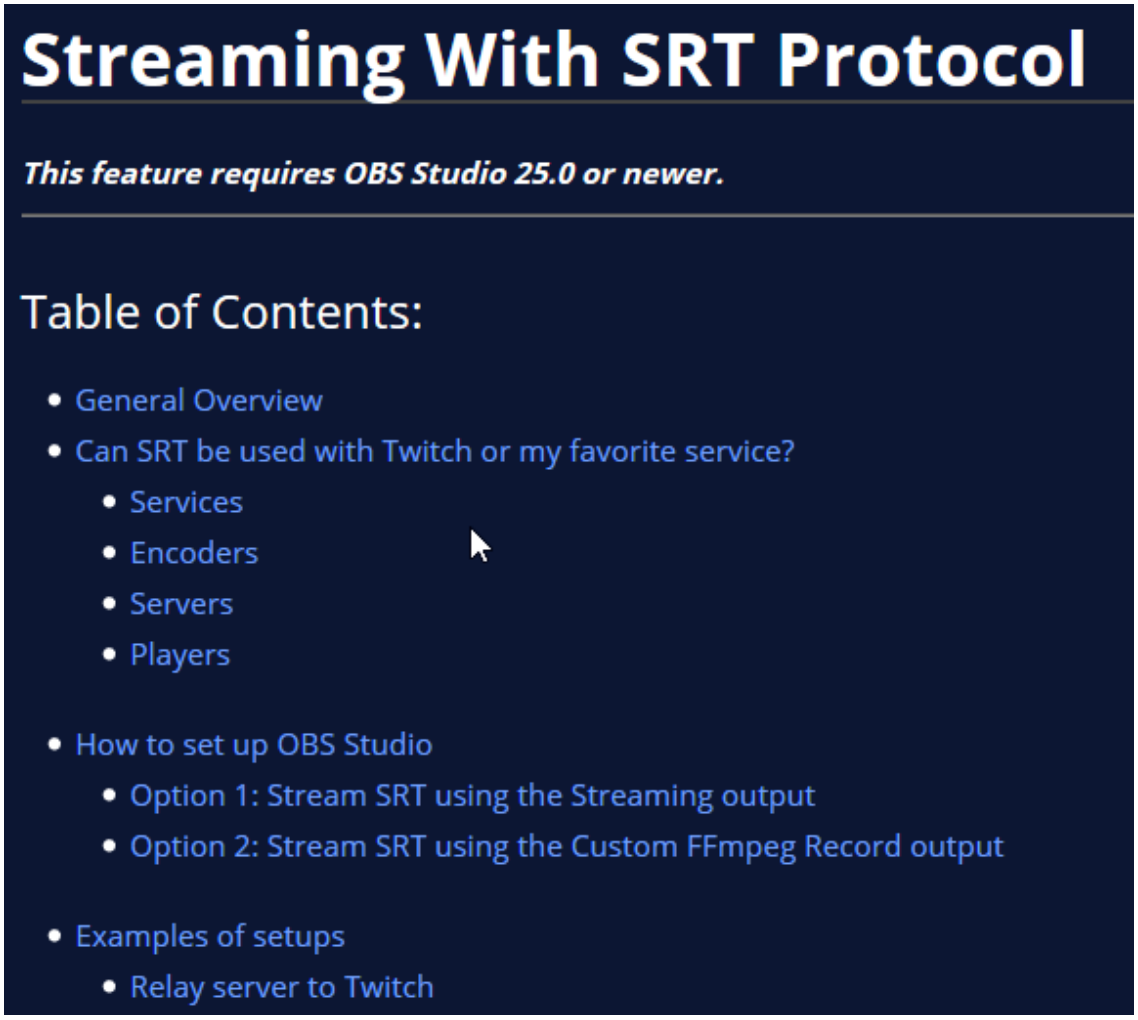
Usually SRT URL is OK for simple streaming from Encoder to the Client (media player, VLC, STB – but need to have SRT support in the client software).
For P2P direct streaming, select SRT PUSH and enter the destination IP Address and Port. Both source and destination (STB or VLC-PC or Decoder) have to be in the same subnet. Example: Over VPN, both devices need to 'see' each other (i.e. use PING).
You can check it by VLC: *(please note, the @ in the URI is not necessary like in udp/rtp)*

Some more useful links regarding SRT:

A Media server to handle SRT and more: The Open Broadcaster Software

https://obsproject.com/

https://obsproject.com/wiki/Streaming-With-SRT-Protocol:



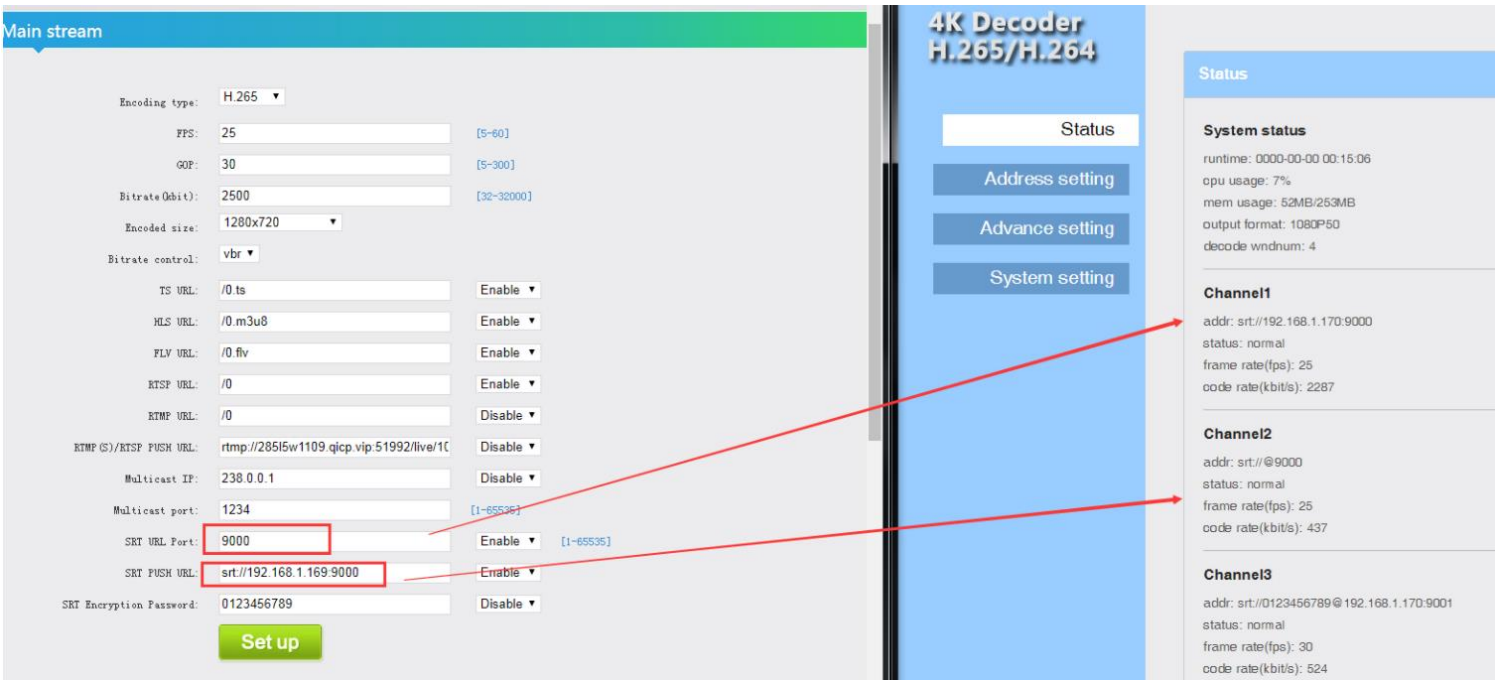
https://github.com/obsproject/obs-studio
https://github.com/haivision/srt

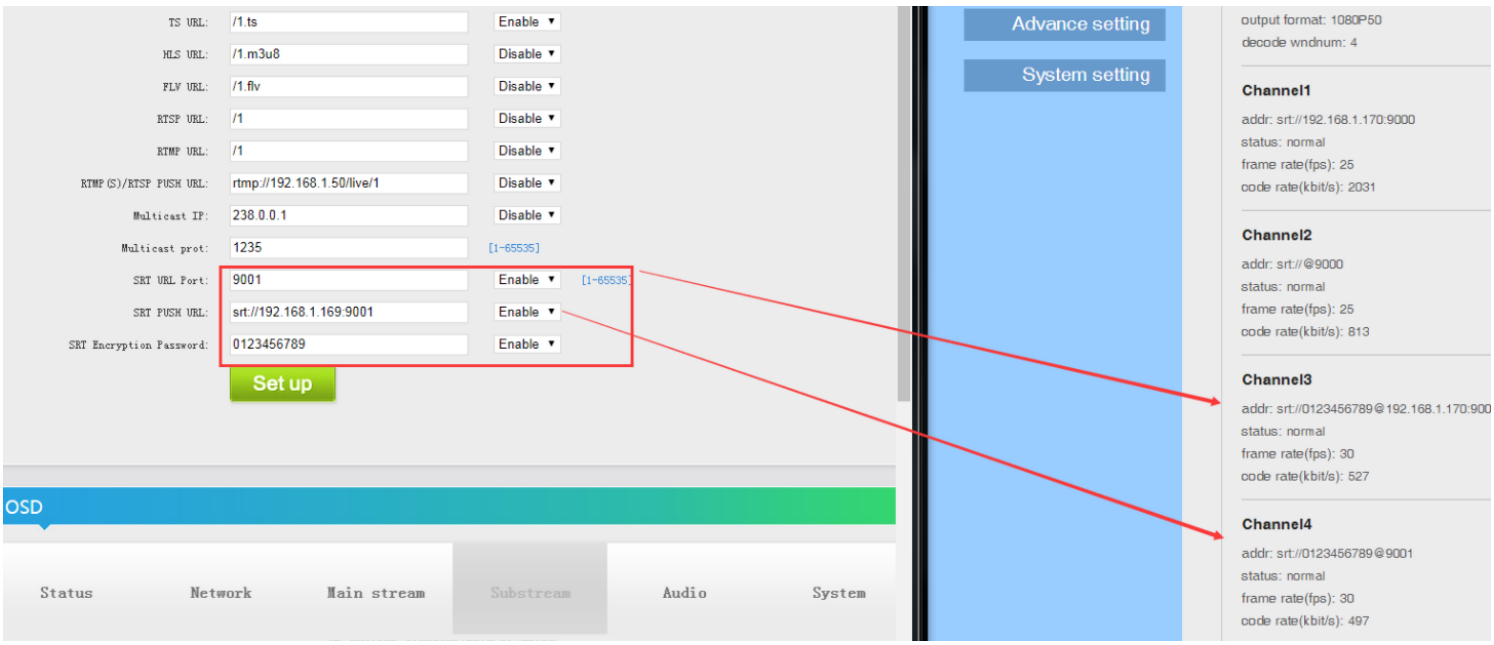
Video Encoder & Decoder SRT settings as couple:

For HDMI/VGA&CVBS/SDI Decoder-Support h264 & h265, decoder SRT playing the URI as, here the encoder works as caller (SRT push URI) and listener (SRT URI port):

srt://ip:port **# *encoder as Listener, decoder get srt from encoder, here 'ip' is the Encoder IP.***
srt://port or srt://@port **# *encoder mode as caller, push SRT to the decoder, (encoder SRT push URI as srt://decoder ip:port)***

With passphrase/Encryption, decoder SRT play URI:
srt://passpharese@ip:port **# *encoder as Listener, decoder get SRT stream from encoder, here 'IP' is the Encoder IP.***
srt://passphrase@port **# *encoder mode as caller, push srt to the decoder.***
See below screenshot for settings:





 All technical data are subject to change w/o further notice... © Irenis GmbH 05-2024.....

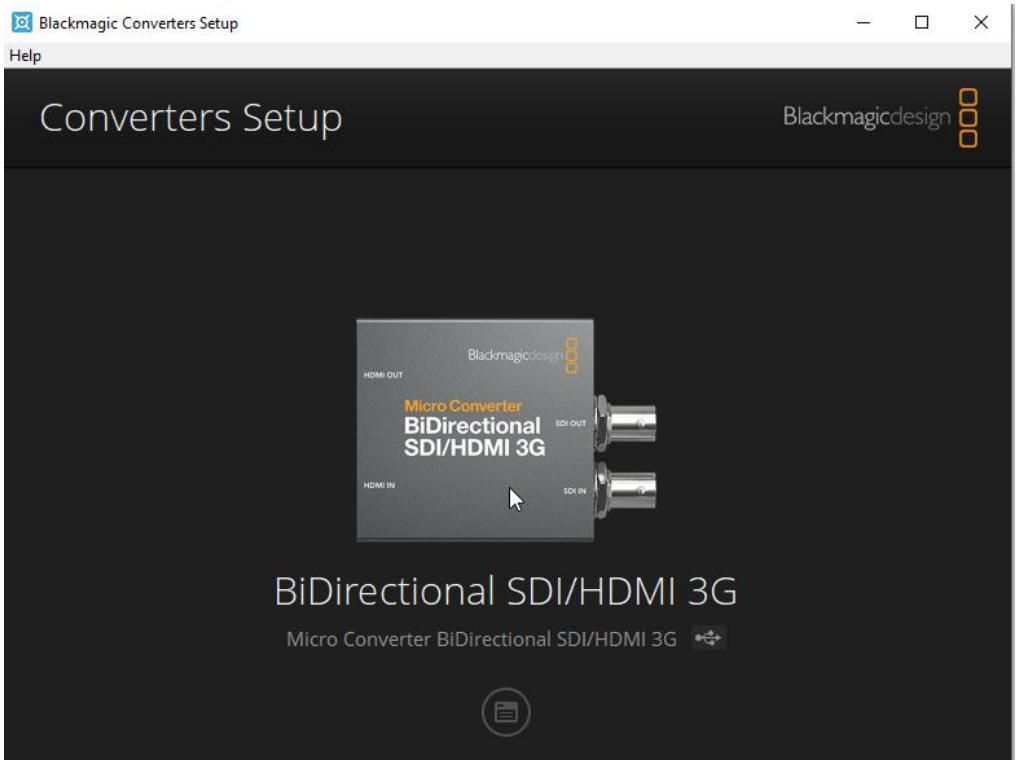
BECAUSE ADOBE HAS STOPPED FLASH player and the web browser developers are disabling flash systematically, we have arranged to get the preview by HTML5: NOTE: The PREVIEW only works with CODEC h.264 – Not with h.265! v.6.51 or 6.53E (Old Hardware model, New Hardware Firmware starts with 5.0x or 2.xyA/W while A= Ambarella Chipset). Actual HDE-264 Version is 6.61 (June-24)

Full screen:

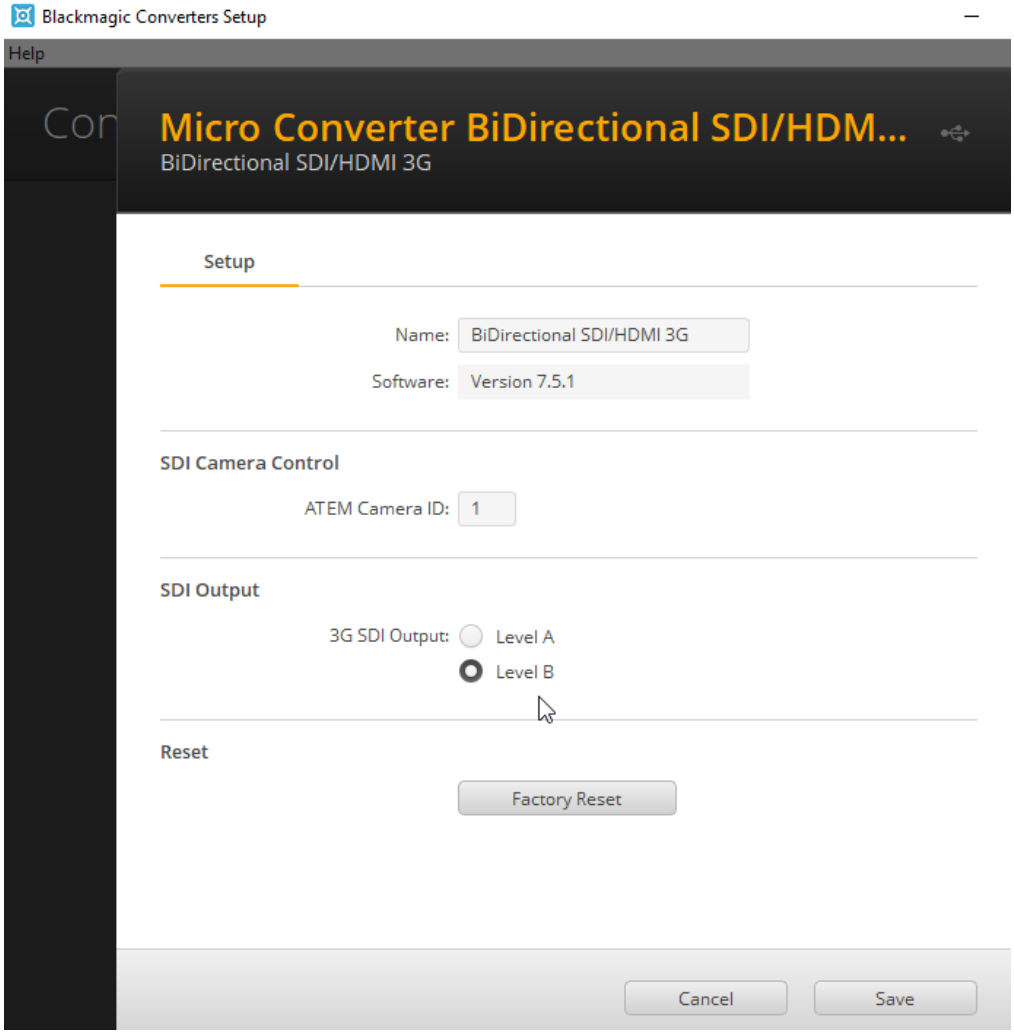
Go back with ESC Button

Attention if you are using BLACKMagic converter HDMI/SDI:

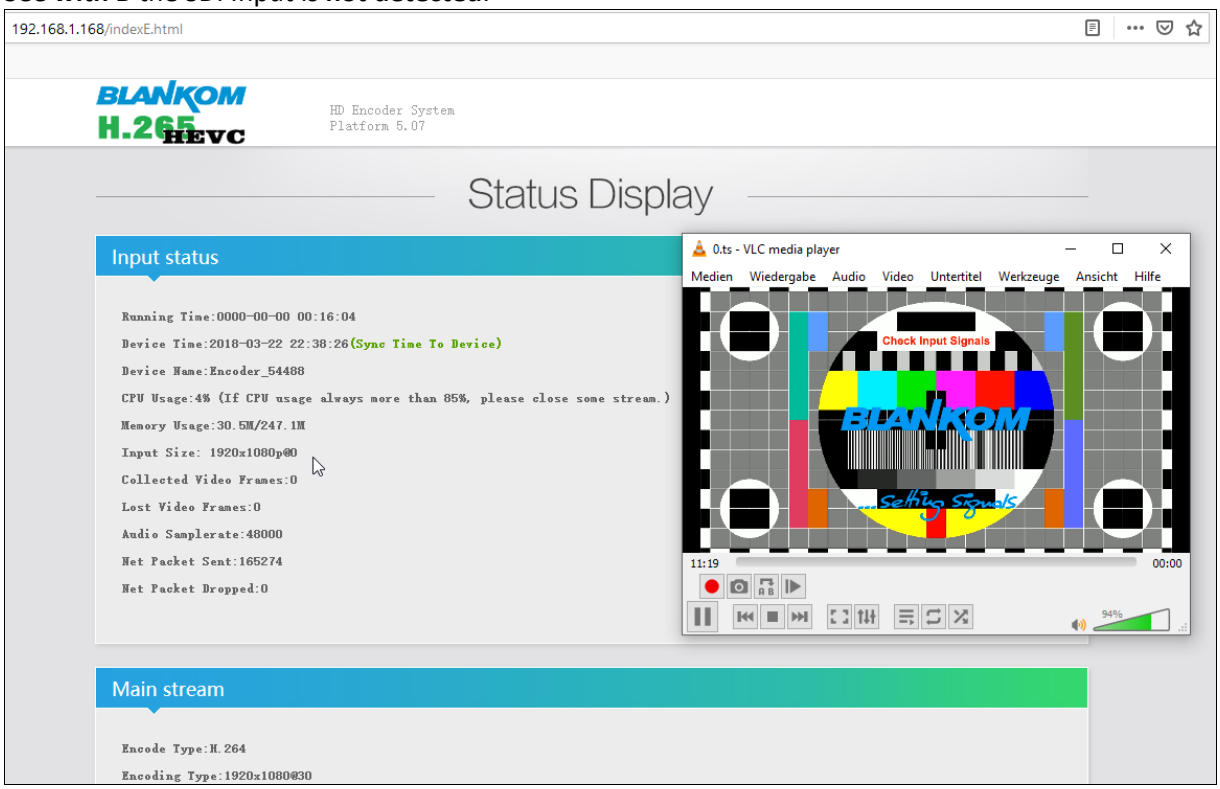
Here Version 7.5.1, Build 107bfb5d



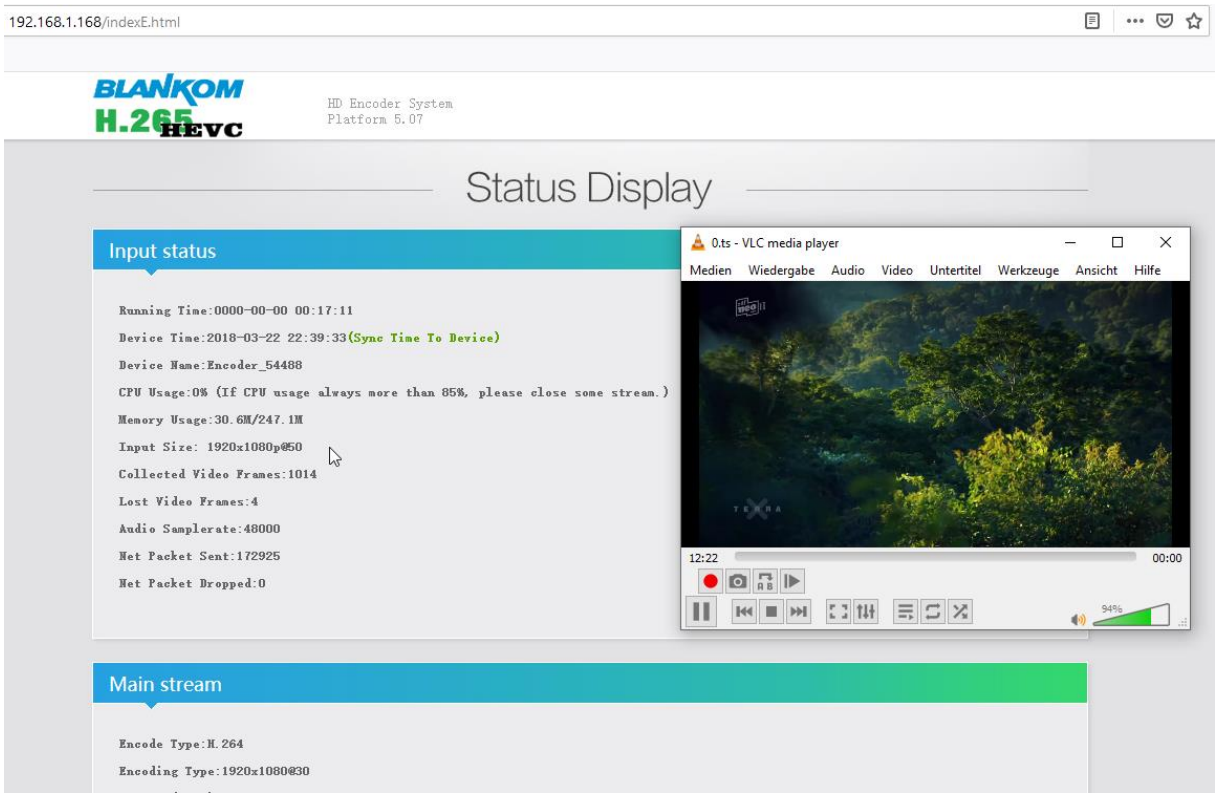
It has 2 Modes to operate as SDI output: Level A and B:
Default setting is B and this will not work with our SDI encoders:



So you need to **change it to A:**
See **with B** the SDI Input is **not detected**:

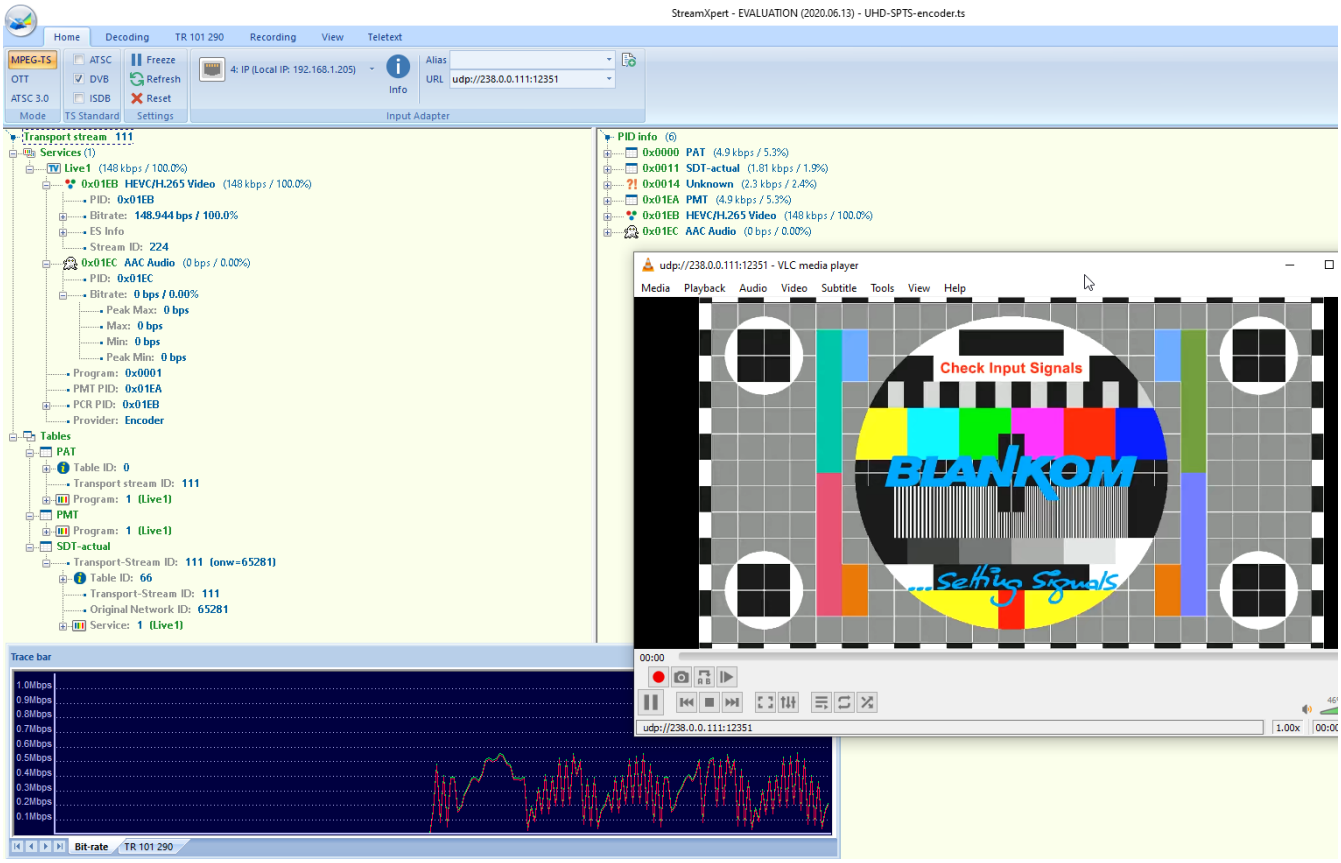


Set to Level A:



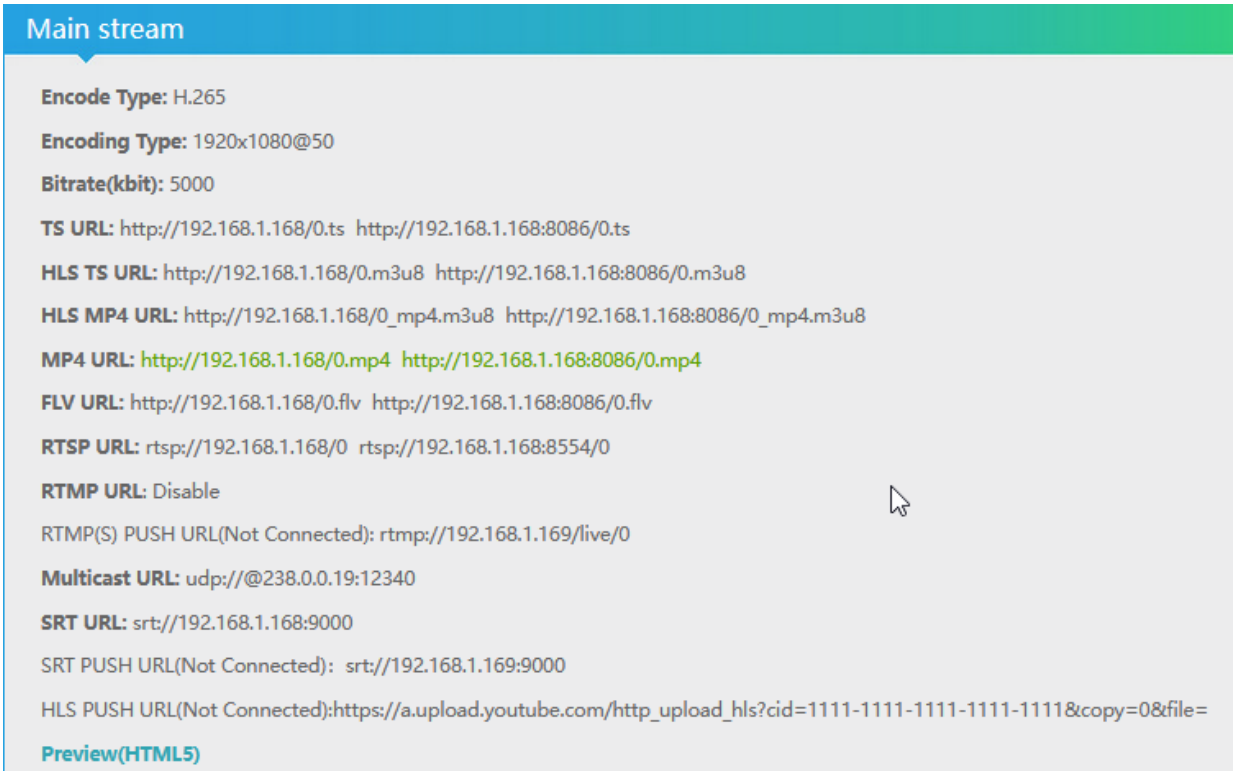
You need to refresh the web page several times after the encoder is showing the correct Input values 1920x1080p50 here.

BTW: If no signal has been detected at the Input connector, the Test-picture will appear and the Stream output may 'pump' because the encoder check the input signal periodically – and in this periods', the output stream might fluctuate like:



New feature added in Version 5.11 (h.265 versions):

- **HEVC h.265 Preview with inbuilt player (w/o pause/stop rew/fwd):**

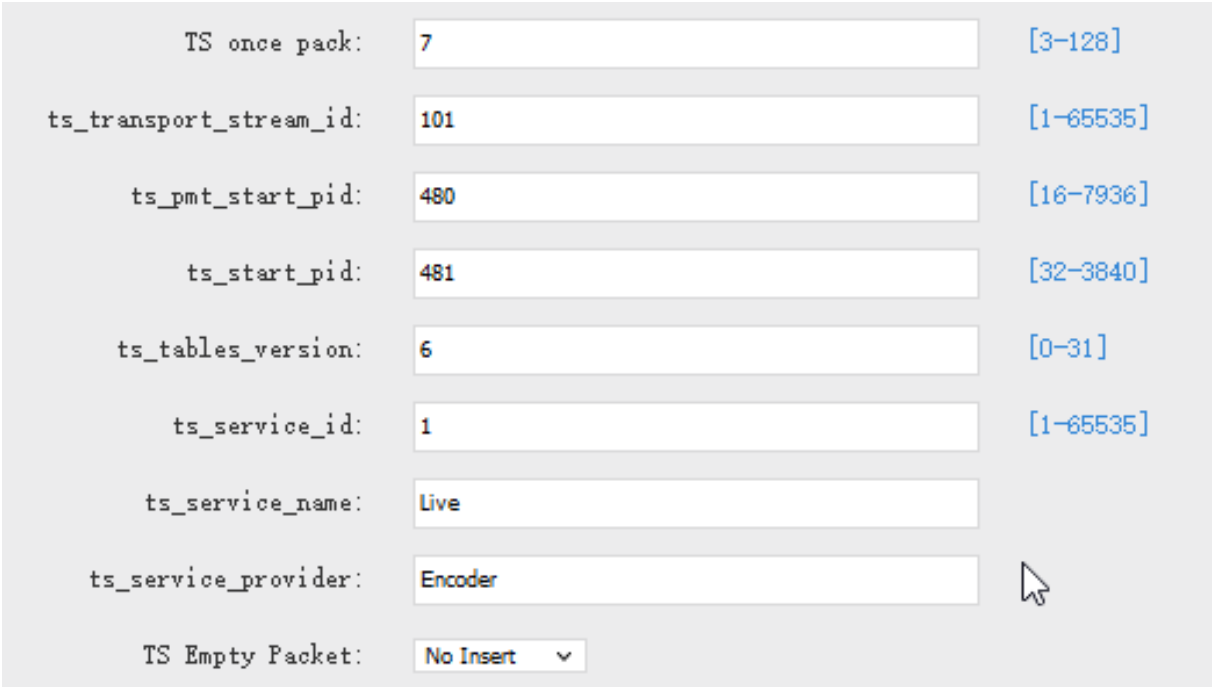


Press Preview:

It can take several seconds until the preview starts but it highly depends on the receiving web-browser-PC hardware capabilities to decode that HEVC-PiP. SO be a little patient. H.264 is a much better JS-Player:

Changing possibility of the Transportstream-PID-ID-values to distinguish several encoders in a common network to finally use a multiplexer w/o PID-Remapping:

This is located in the Main/Substream or System-settings (old versions):



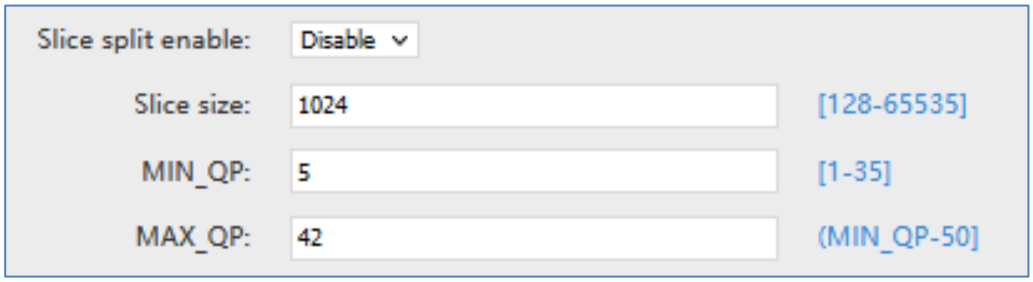
In combination with:

Please do not use PID's (here in Decimal instead of HEXadecimal in use) which are reserved in DVB, 0-18 are for special tables like PID 18dec (12hex)= EIT, PID 8191 (hex 1FFF) is for Zero-fillings to a CBR TS. Please check DVB-Norms if you are unsure.

Picture Quality: We recommend to let the default settings as they are:
Advanced Configuration Encoder Video Quality Settings

The quality of video can be set with encoder_min_qp. The higher this value is, the more 'blurred' the image will become. A value below 5 probably is not especially noticeable to the human eye and can increase latency significantly. The default value for this is 5. If you're still seeing blurry video, try increasing your max bandwidth in the settings tab of the encoder main/Sec..

encoder_min_qp=5 to be found in SYSTEM settings:



MAX_QP can be 50 – Min_QP

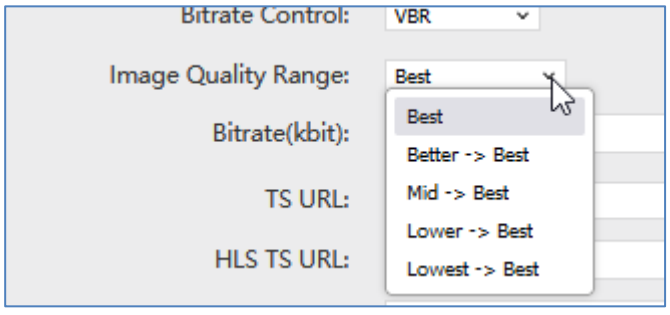
Example: A part from the **FFMPEG-advisory:**
'max_qp'

Set the max qp for rate control from 1 to 63 (default 55).
'min_qp'

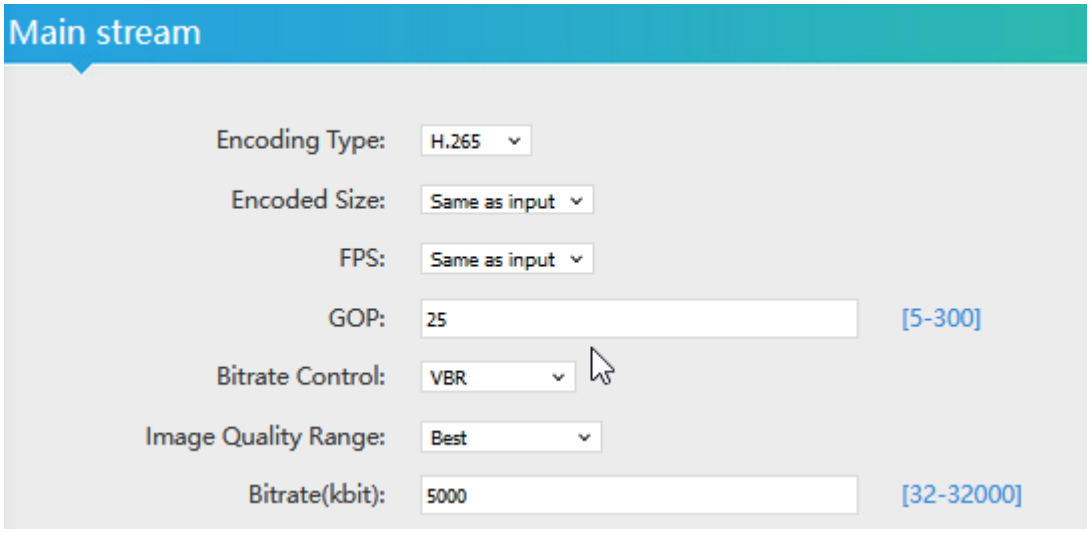
Set the min qp for rate control from 1 to 63 (default 20).

Sets the Number of slices to operate on at once within a core.
Slices are a fundamental part of the stream format. You can operate on slices in parallel to increase speed at which a stream is processed. However, operating on multiple “slices” of video at once will have a negative impact on video quality. This option must be used when encoding 4k streams to H.264 in order to sustain real-time performance. The maximum practical value for this option is 4 since there are 4 encoder cores in a device.

The 2.xyA encoder can make use of setting different picture qualities:



Setting



(We have 1920x1080i50 input = 1080p25 out)

Increases the stream output to best performance:

How to connect our Video Encoder to OBS? Open Broadcaster Software

https://obsproject.com/download

Our HDE- or SDE Video Encoder Hardware can send/connect video to OBS by NDI or VLC Video Source,
1. Open the OBS software, click in the free area of 'Source' on the right, or click “+” in the lower left corner to added, here you can add.

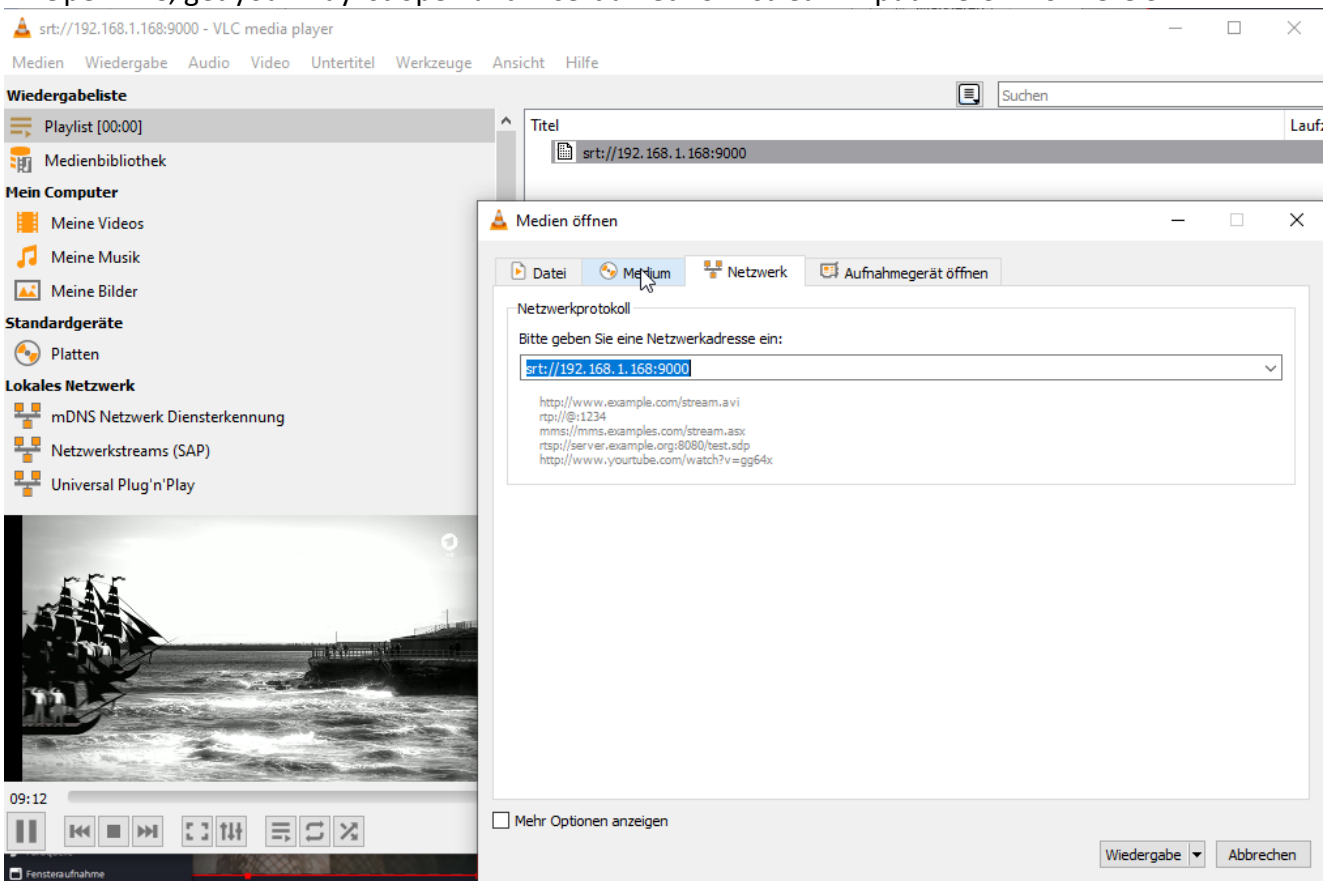
If the item “NDI source” is not displayed, the obs-ndi plug-in needs to be installed, you can download and install it from https://github.com/Palakis/obs-ndi/releases/tag/4.6.2 or higher version:

https://github.com/Palakis/obs-ndi/releases:

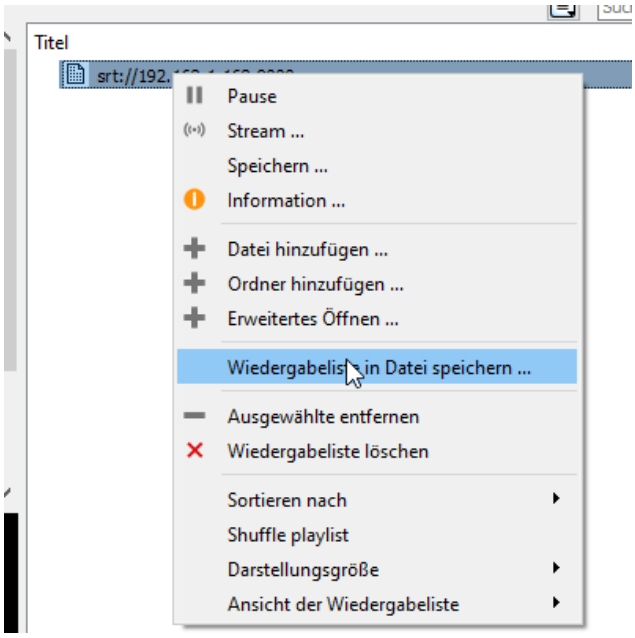
https://github.com/Palakis/obs-ndi/releases/tag/dummy-tag-4.10.0

Installation the VLC Source as Playlist:

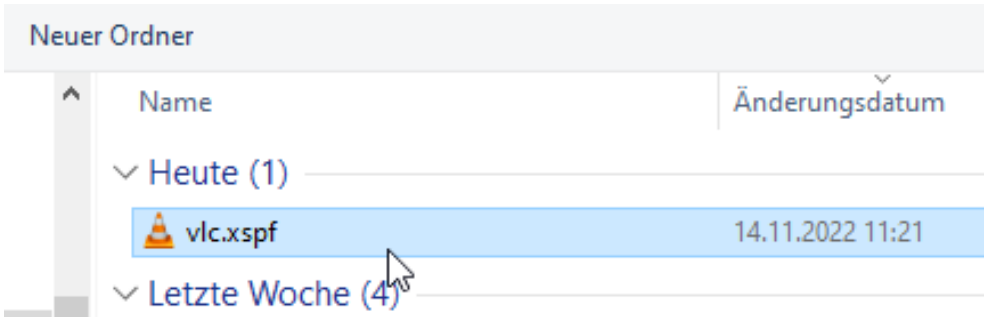
Open VLC, get your Playlist open and insert a network-stream input like UDP or here SRT:



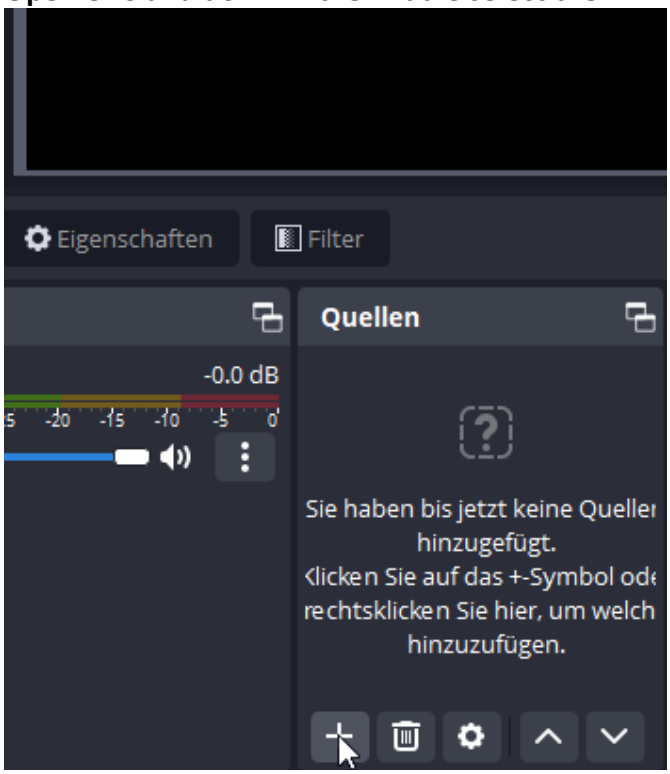
After the stream plays, use the right mouse button over:

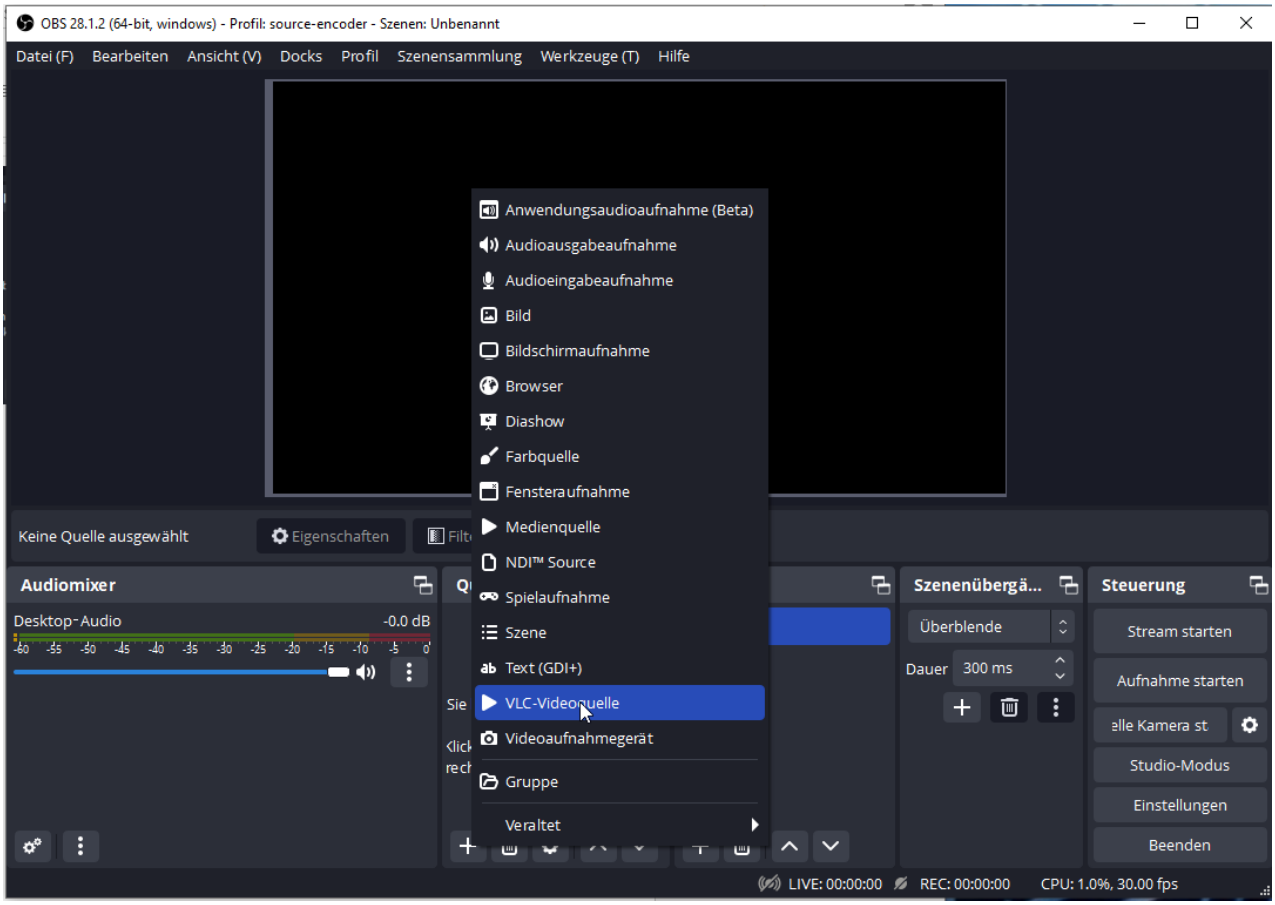


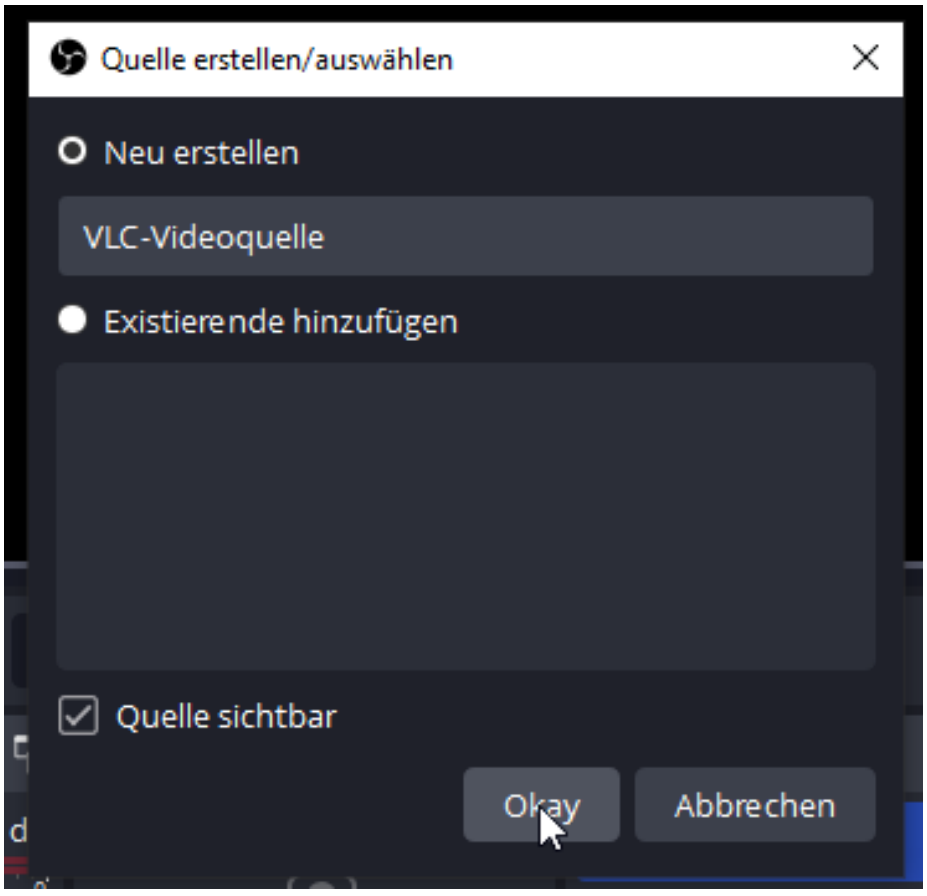
Safe it on your PC:

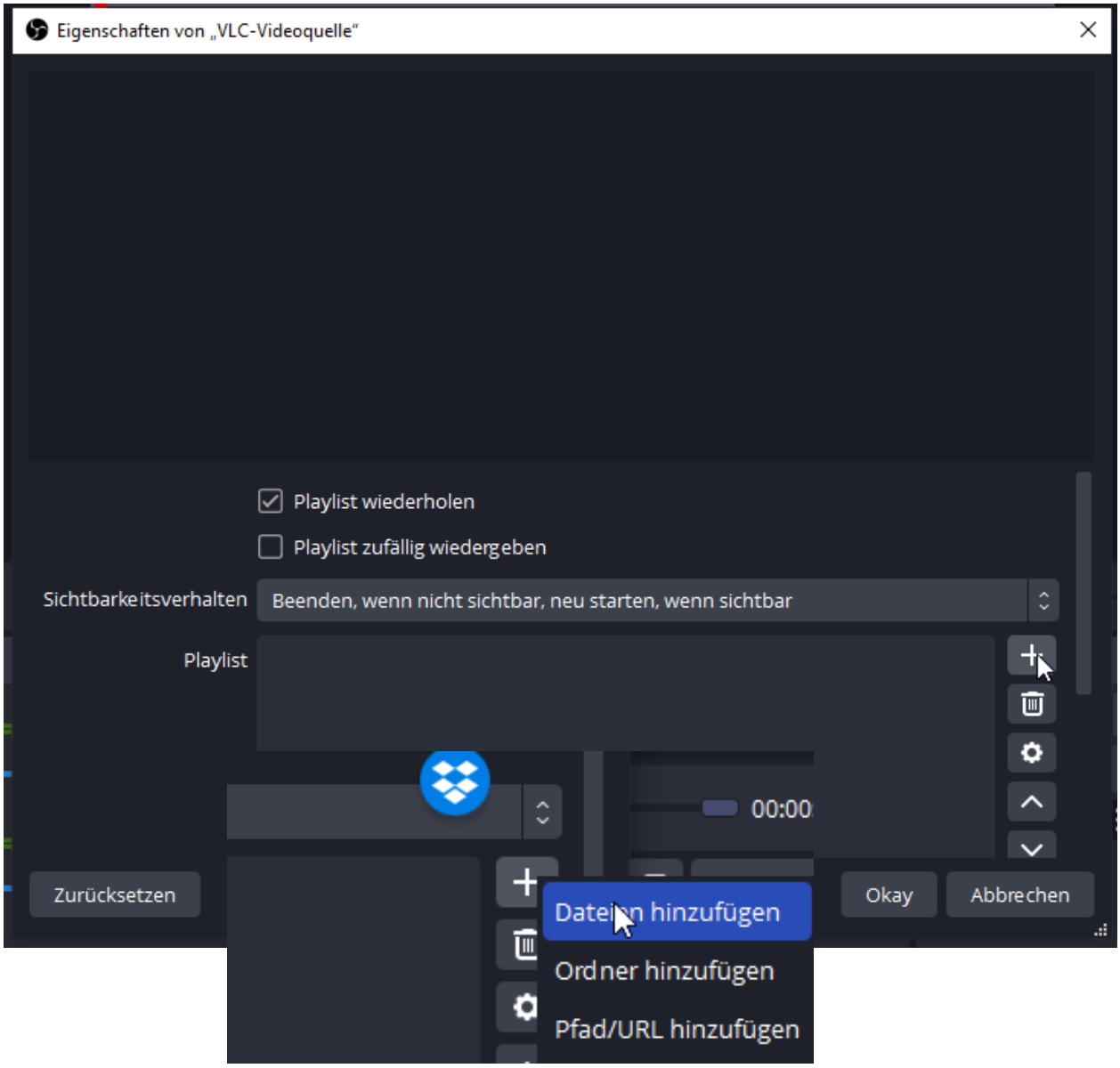


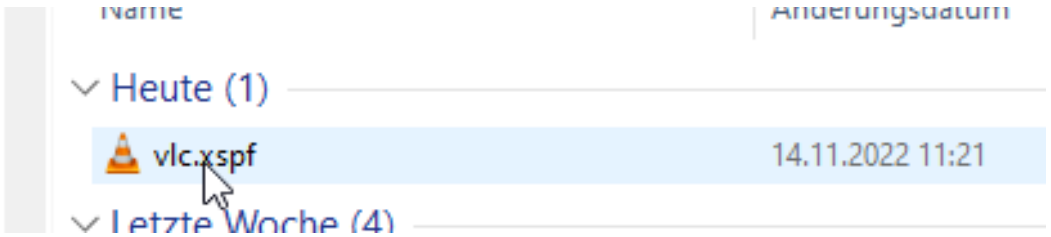
Ready.
Open OBS and down in the middle select the '+' in the source field:

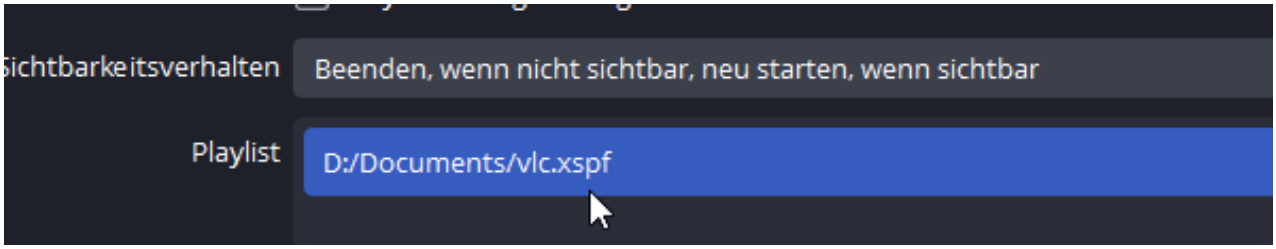



OBS 28.1.2 (64-bit, windows) - Profil: source-encoder - Szenen: Unbenannt
Datei (F) Bearbeiten Ansicht (V) Docks Profil Szenensammlung Werkzeuge (T) Hilfe
Anwendungsaudioaufnahme (Beta)
Audioausgabeaufnahme
Audioeingabeaufnahme
Bild
Bildschirmaufnahme
Browser
Diashow
Farbquelle
Fensteraufnahme
Medienquelle
NDI™ Source
Spielaufnahme
Szene
Text (GDI+)
VLC-Videoquelle
Videoaufnahmegerät
Gruppe
Veraltet
Keine Quelle ausgewählt
Eigenschaften
Audiomixer
Desktop-Audio
-0.0 dB
Szenenübergä...
Überblende
Dauer
300 ms
Steuerung
Stream starten
Aufnahme starten
Studio-Modus
Einstellungen
Beenden
LIVE: 00:00:00
REC: 00:00:00
CPU: 1.0%, 30.00 fps

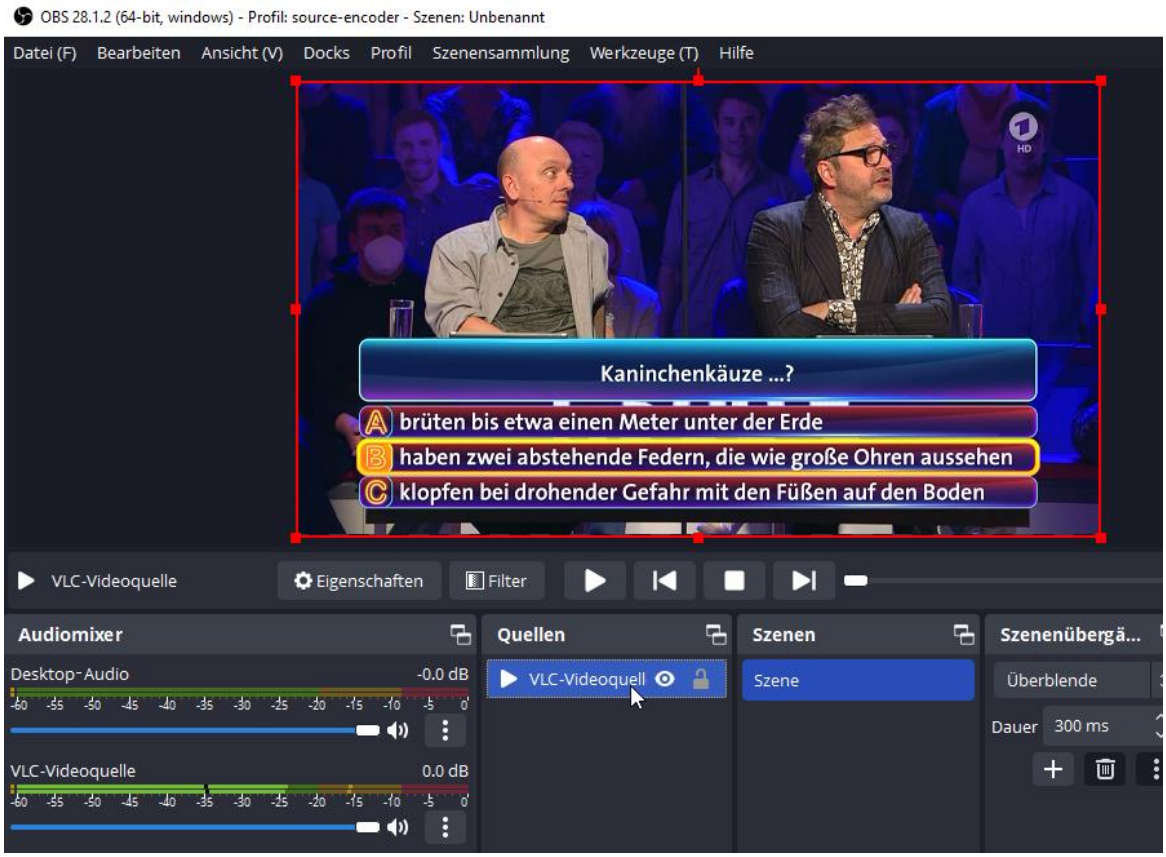

Quelle erstellen/auswählen
Neu erstellen
VLC-Videoquelle
Existierende hinzufügen
Quelle sichtbar
Okay
Abbrechen


Eigenschaften von „VLC-Videoquelle“
Playlist wiederholen
Playlist zufällig wiedergeben
Sichtbarkeitsverhalten
Beenden, wenn nicht sichtbar, neu starten, wenn sichtbar
Playlist
00:00
Zurücksetzen
Okay
Abbrechen
Dateien hinzufügen
Ordner hinzufügen
Pfad/URL hinzufügen

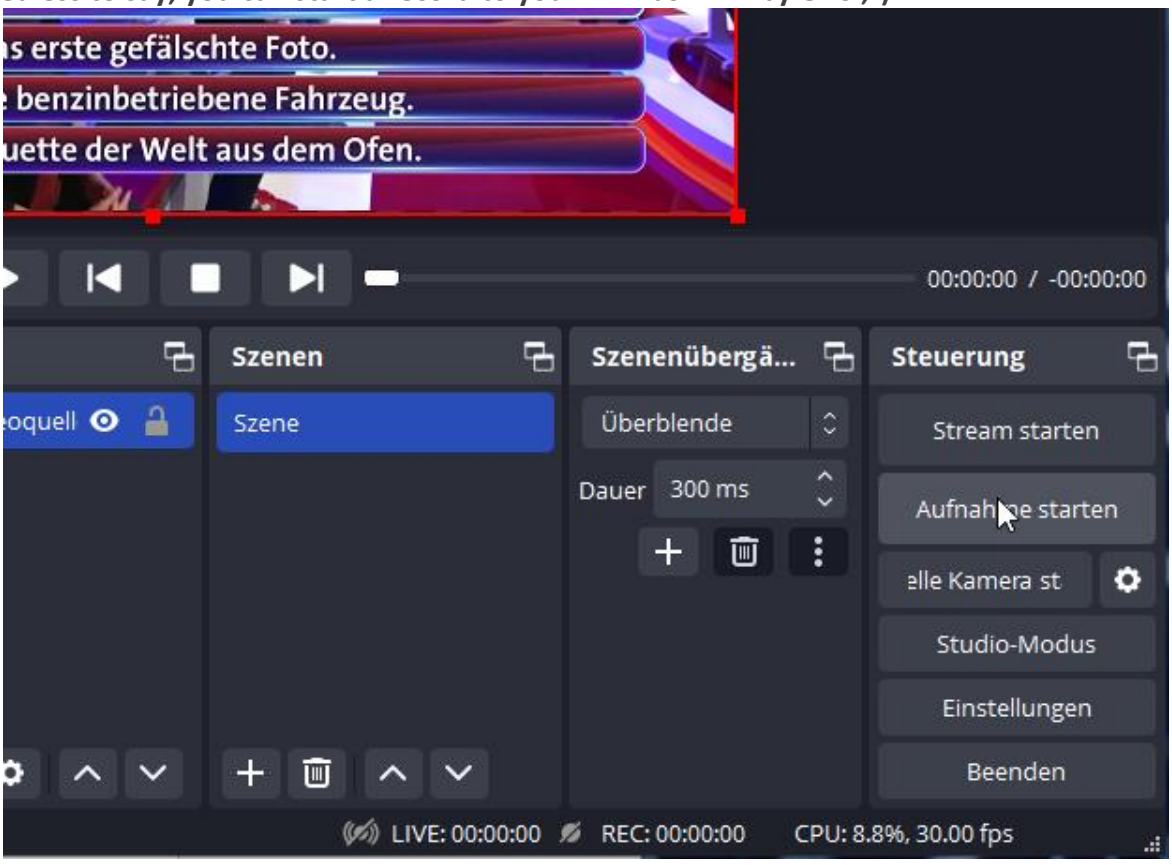

Heute (1)
vlc.xspf
14.11.2022 11:21


Sichtbarkeitsverhalten
Beenden, wenn nicht sichtbar, neu starten, wenn sichtbar
Playlist
D:/Documents/vlc.xspf

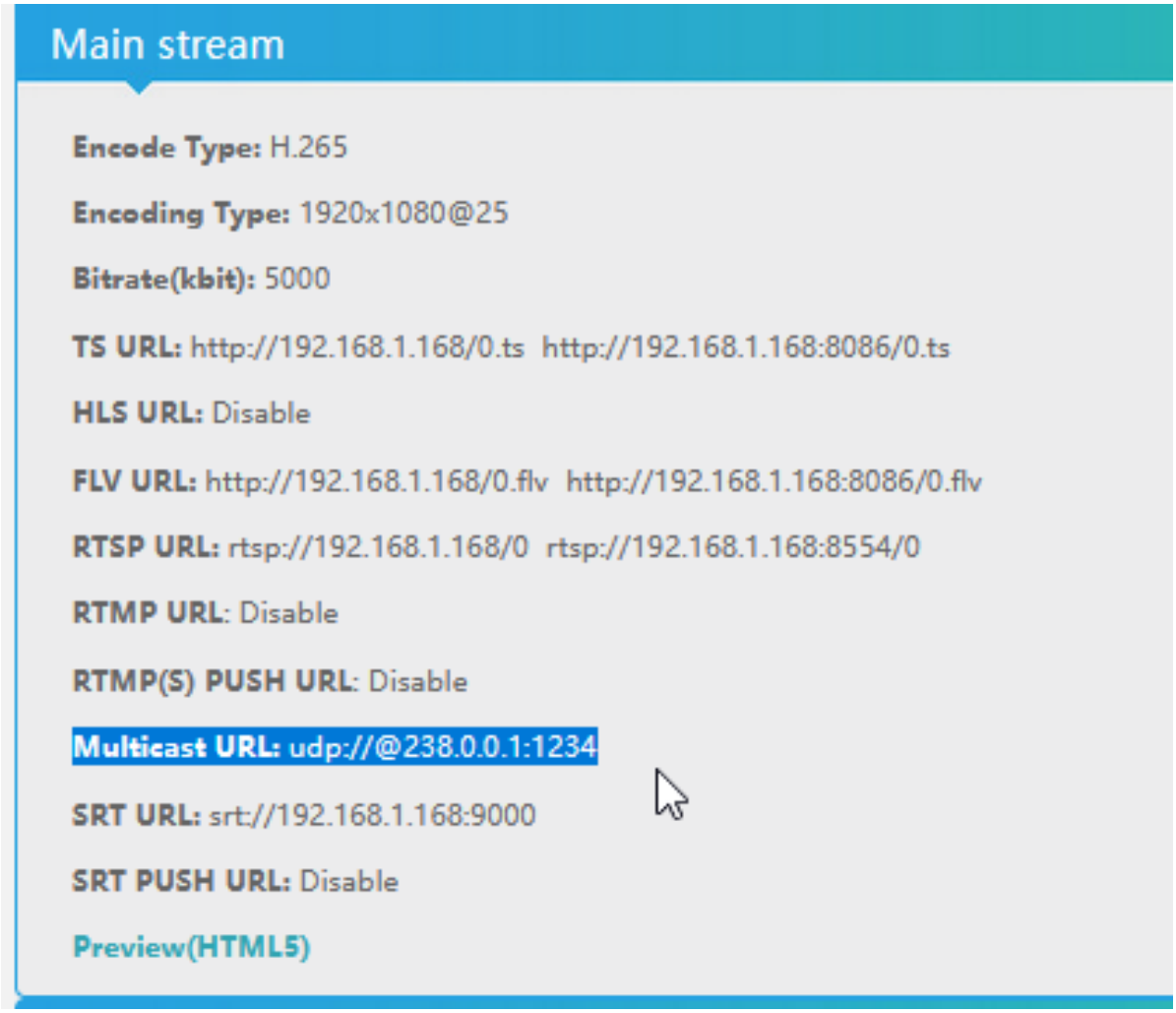
And Go:



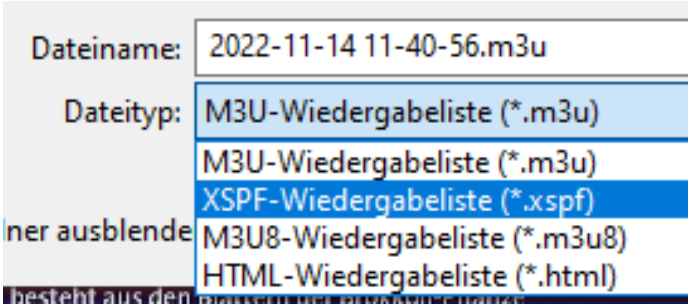
Needless to say, you can start a record to your HDD as MKV by OBS ;-)

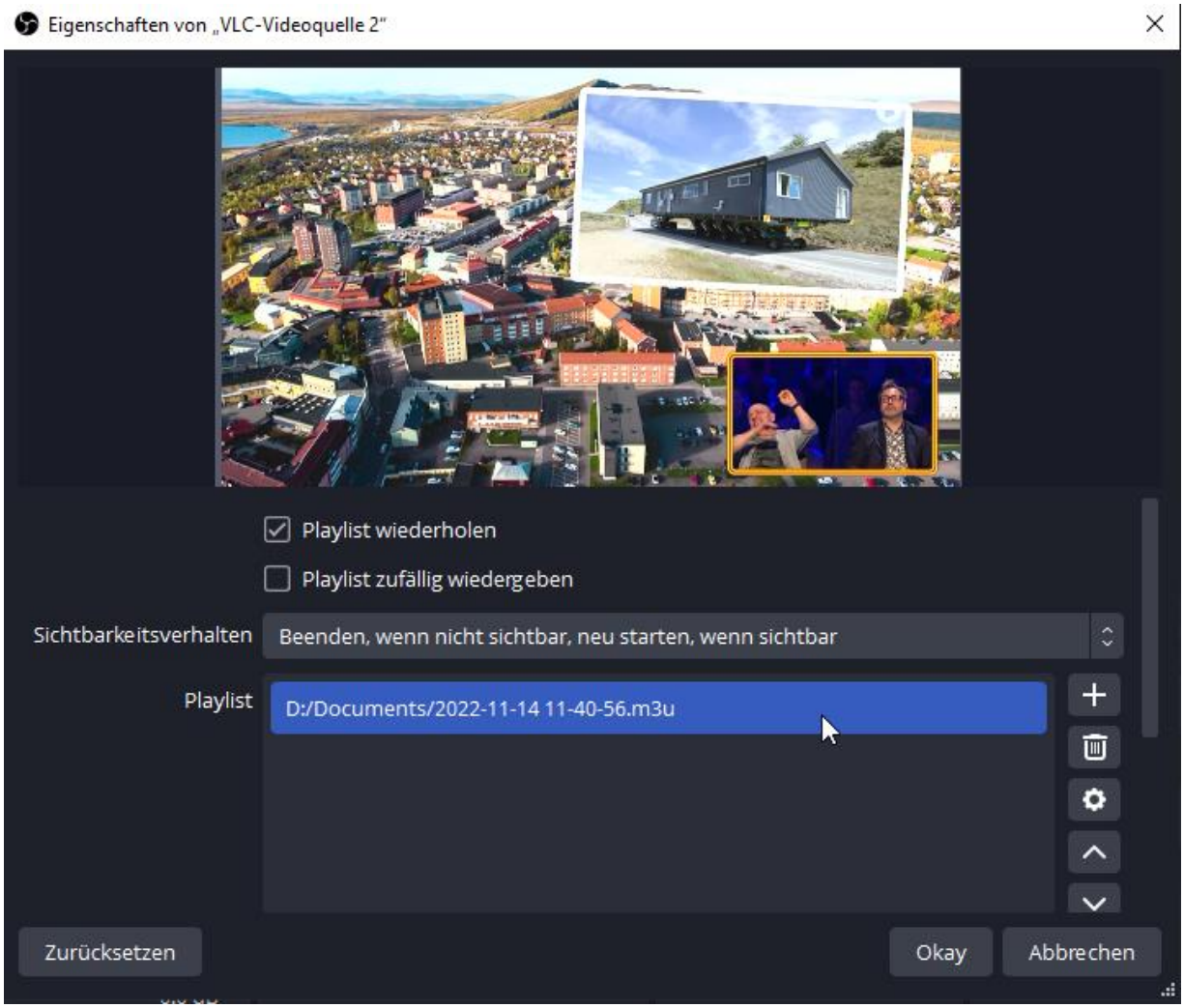


UDP-Multicasts are supported as well: here with

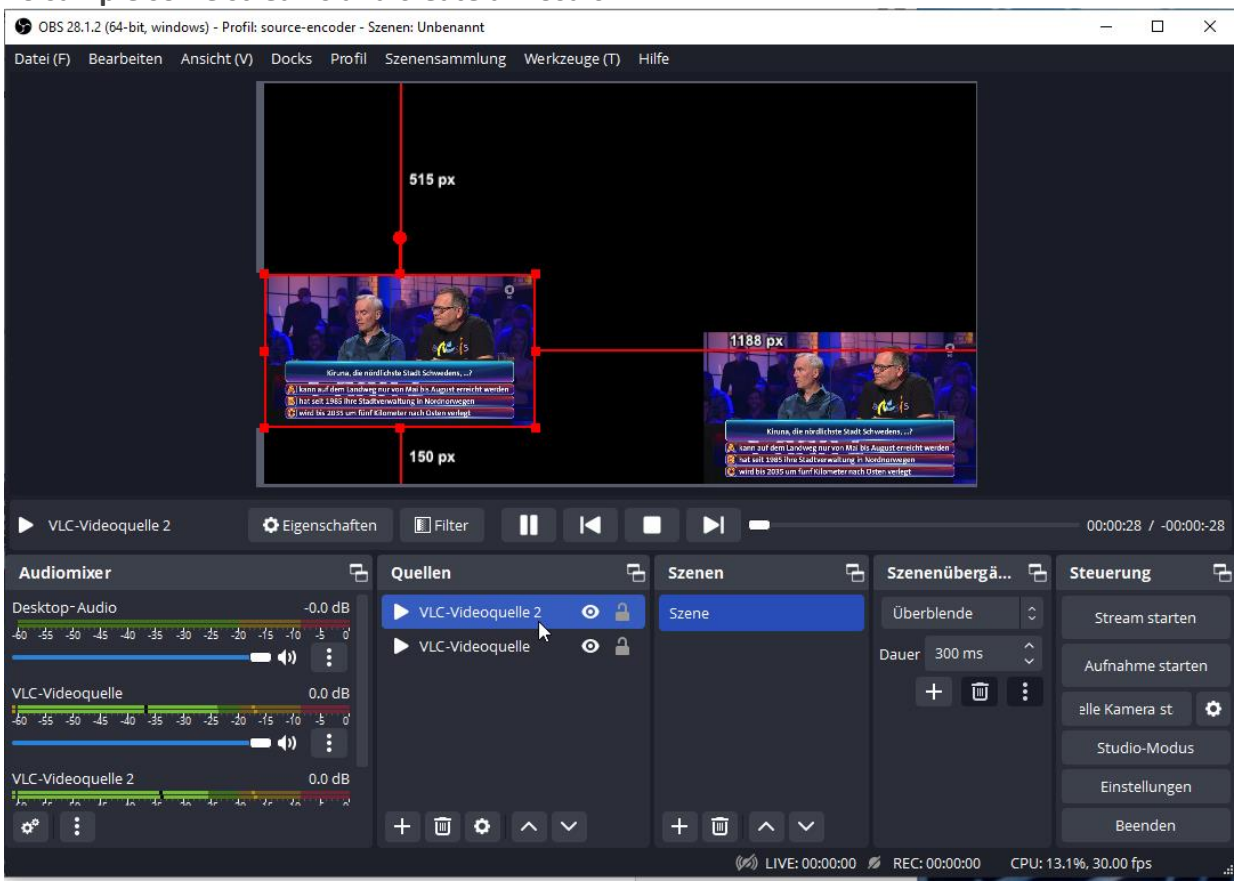


Open VLC- **playlist and save - as before - and you can also chose a different format:**





To sample some streams and create a mosaic:



Addons December 2021 FW version 5.15:

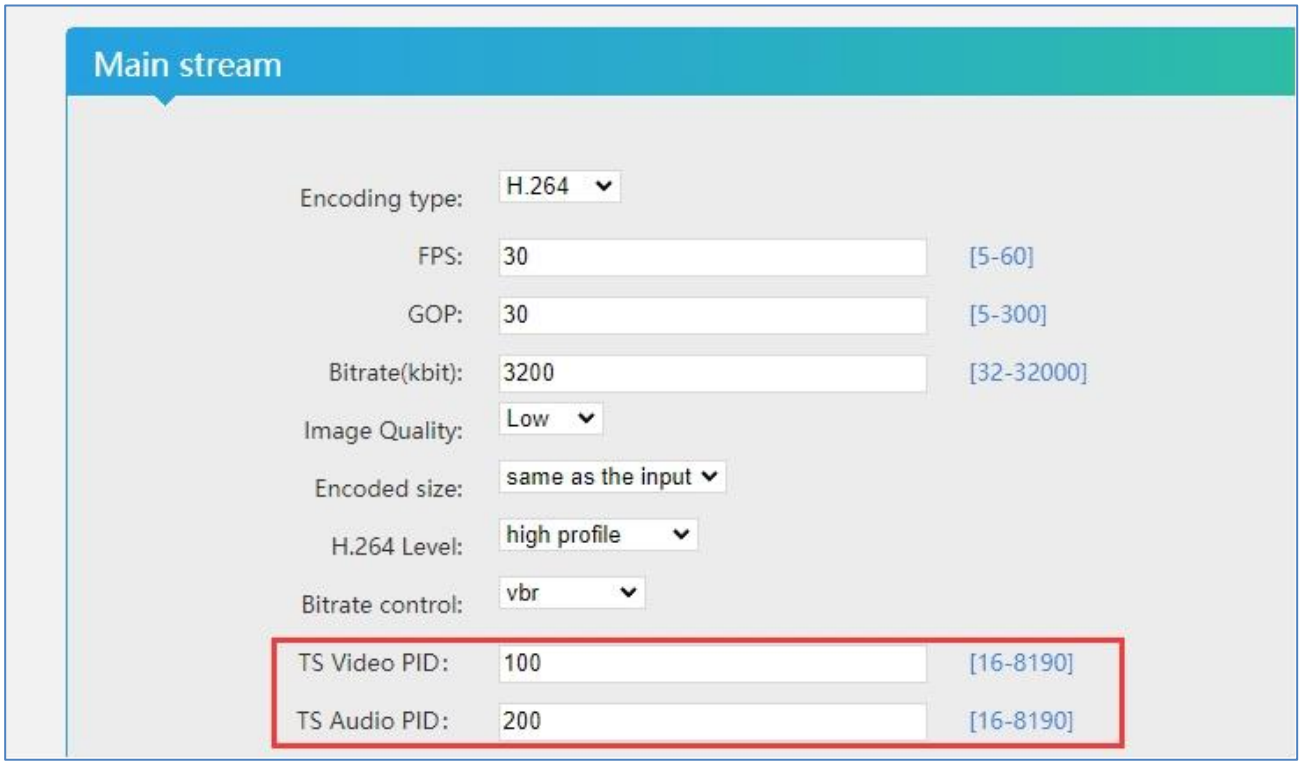
Cosmetic improvements,

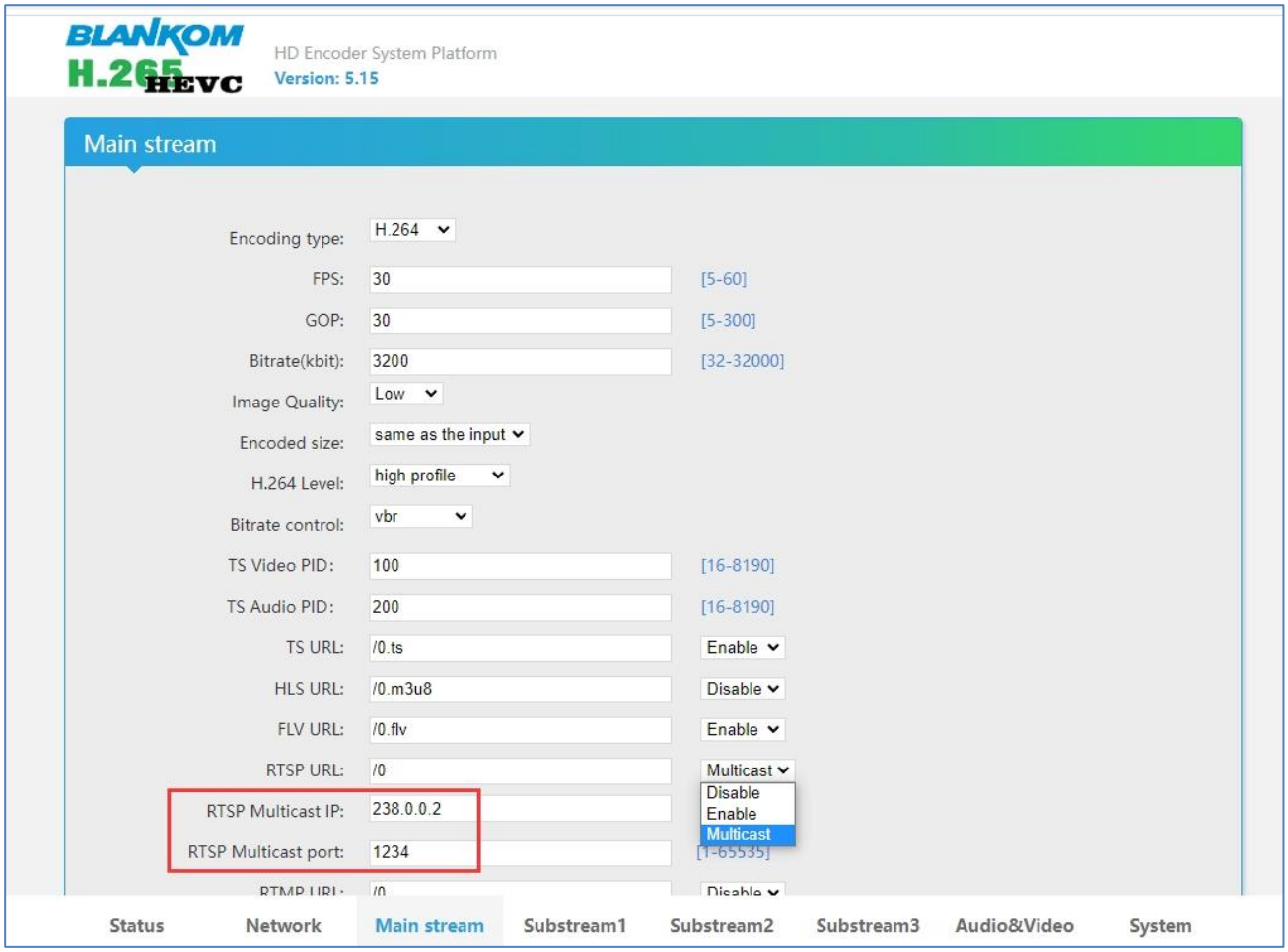
1. added TS video & audio pid, ts_service_id can be adjusted

2. added RTSP multicast

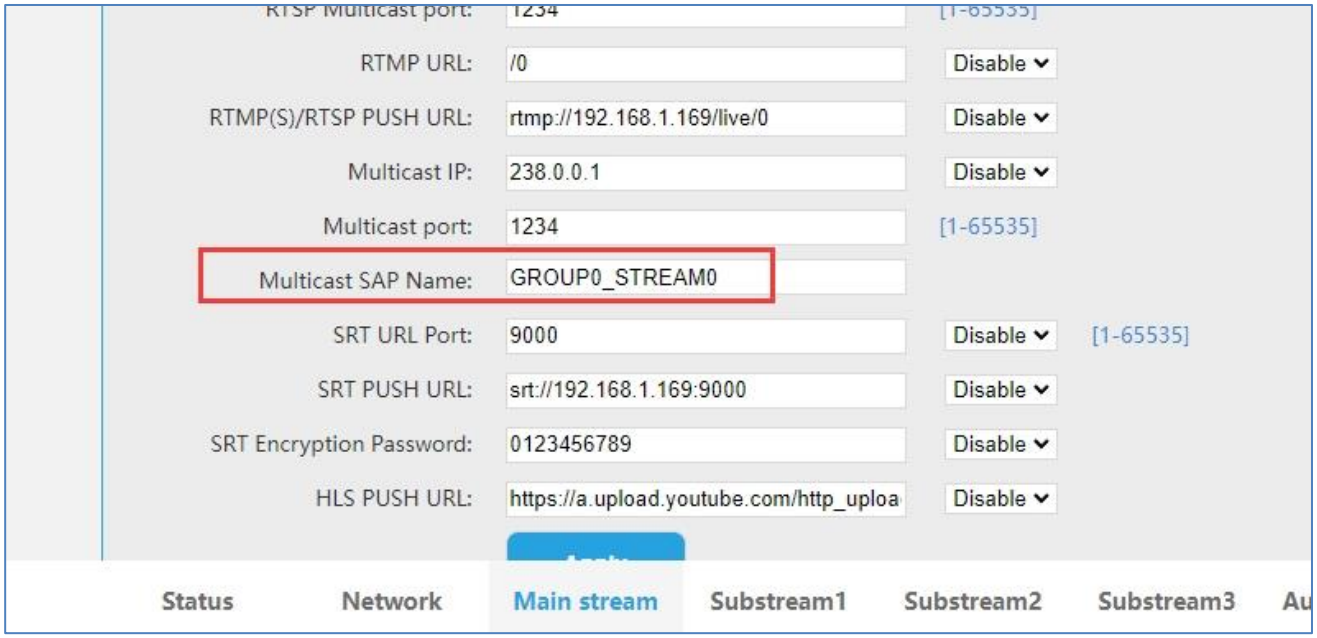
3. added multicast SAP name option

4. added switch for TS TDT - System - Advanced settings (default is disabled)



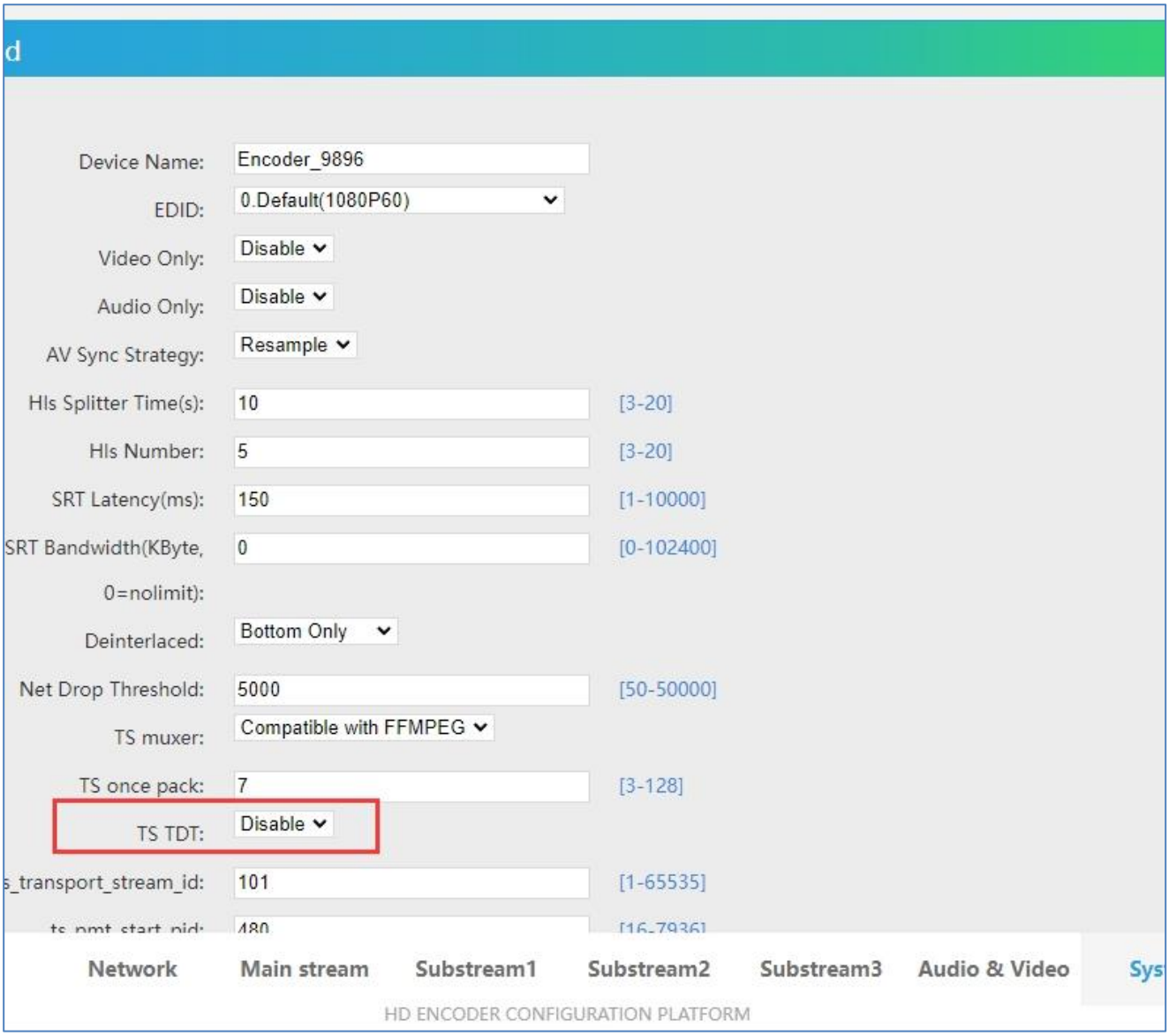


Explained above already: SAP/SDP name settings:



Please make yourself familiar what SAP is for.

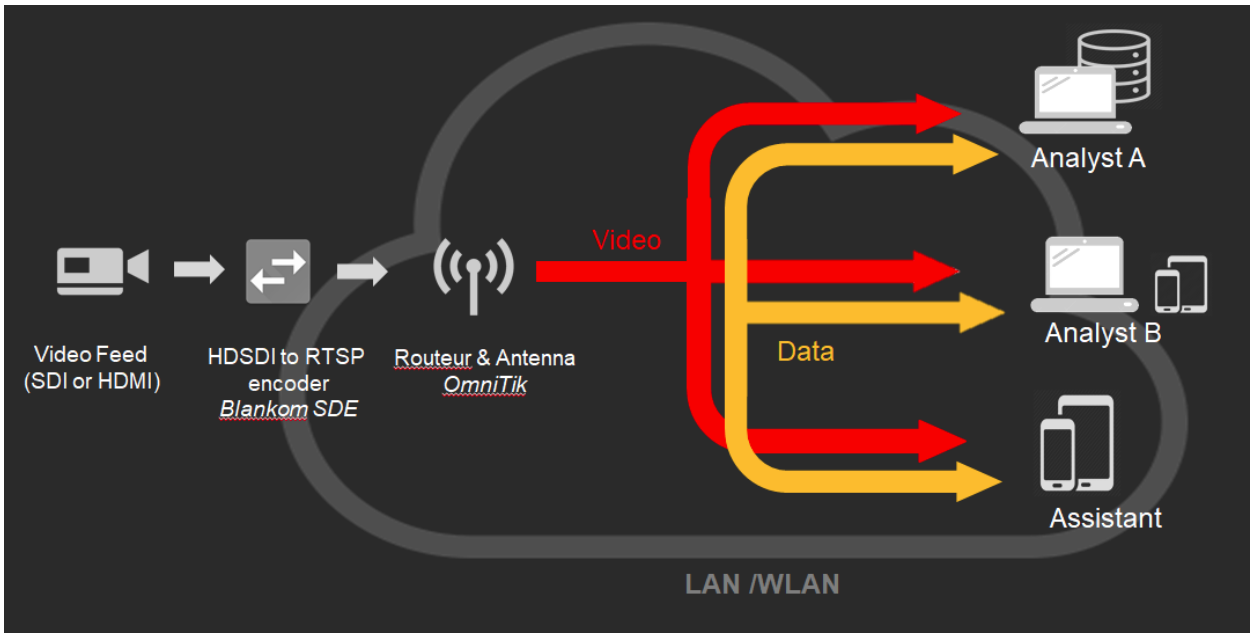
You can Add PID 20 to the Stream –tables which is usually the DVB Time and date information. This is only necessary if needed by an IP to QAM multiplexer for a CATV network- We recommend to let it switched OFF.

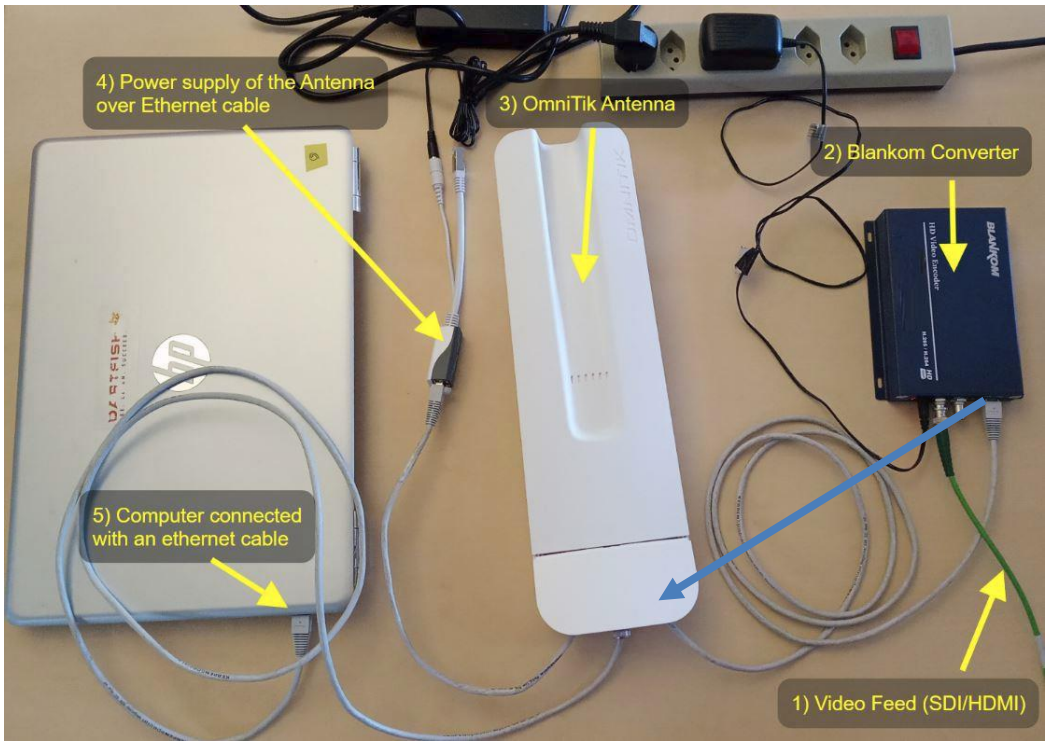


Deinterlaced settings are in 6.xy and 5.xy only.

Example Dartfish Setup:

Attention:
Do not connect the encoder before you have disabled PoE at the connection Ethernet-RJ45 of the Antenna:

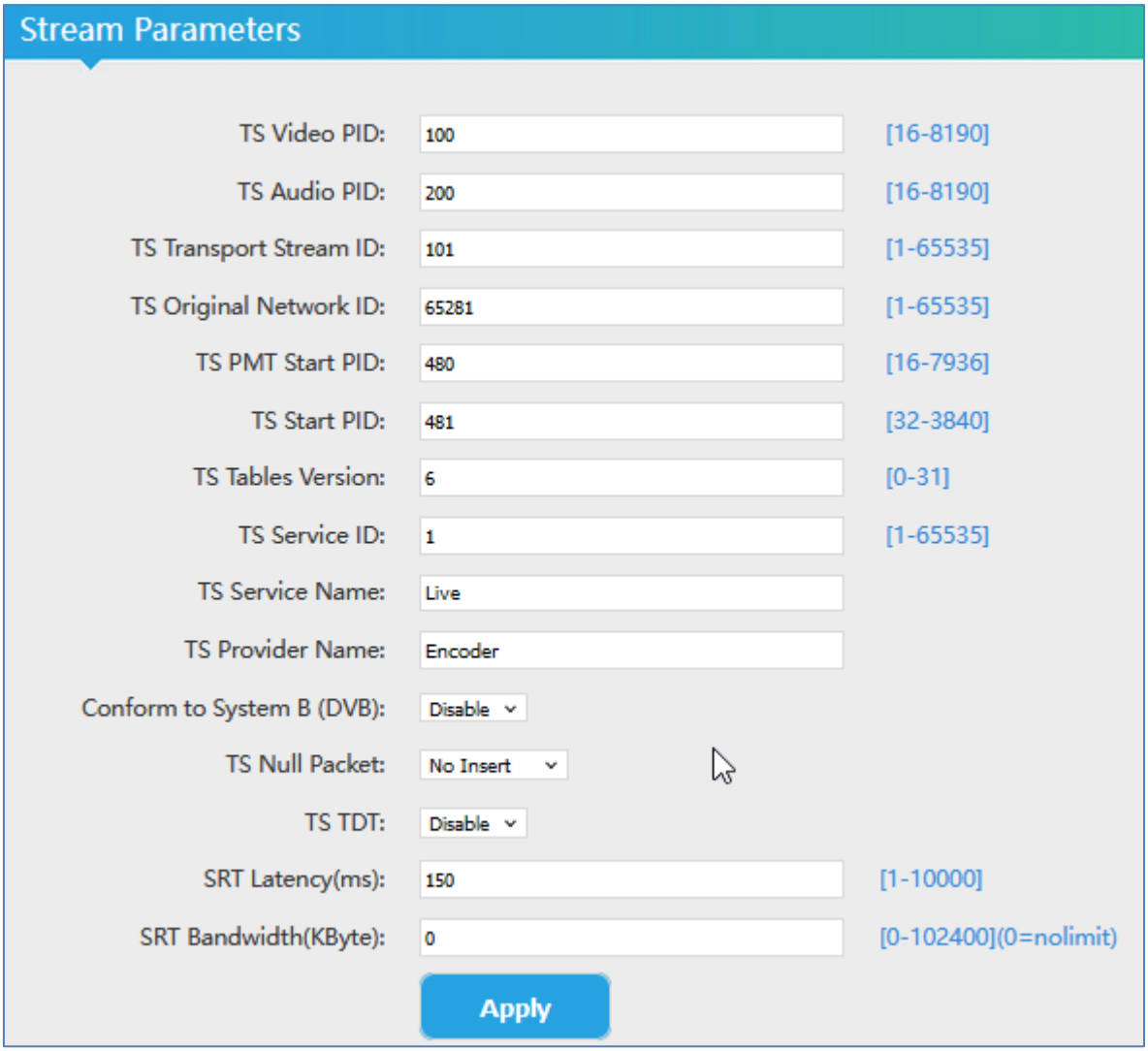




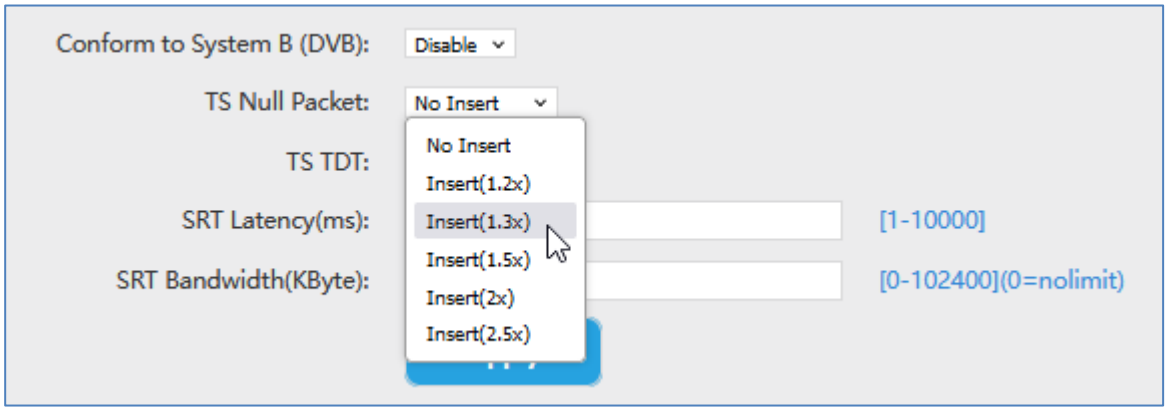
Please assure that the Ethernet port of the HDE-/SDE265 Encoder (Converter) does not get the Power over Ethernet (PoE) from the OmniTik Antenna. We recommend to first configuring the Antenna ports and avoid PoE forwarding on all other ports. Then connect the BLANKOM Converter with all connectors before powering on the whole system.

Changing possibility of the Transport Stream-PID-ID-values to distinguish several encoders in a common network to finally use a DVB multiplexer w/o PID-Remapping:

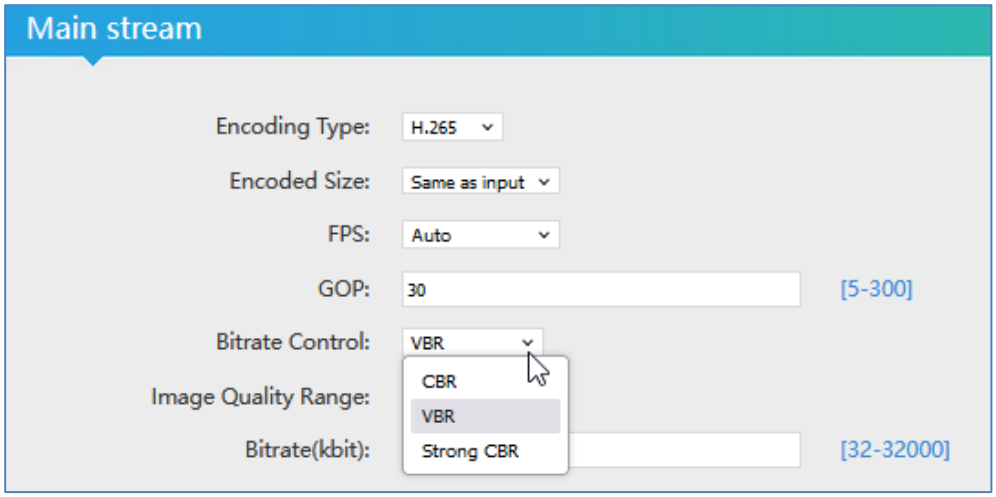
Points to this in Encoder Stream Parameter or System-settings:



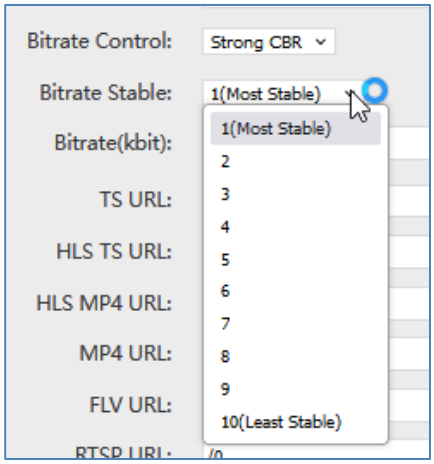
Note: If you need to add PID8191hex Null-packets for a following IP to QAM DVB-C Modulator in a CATV network to get a so called Constant bitrate stream (CBR – not to mess up with CBR encoding procedure) you should enable this and chose factor 1.3:



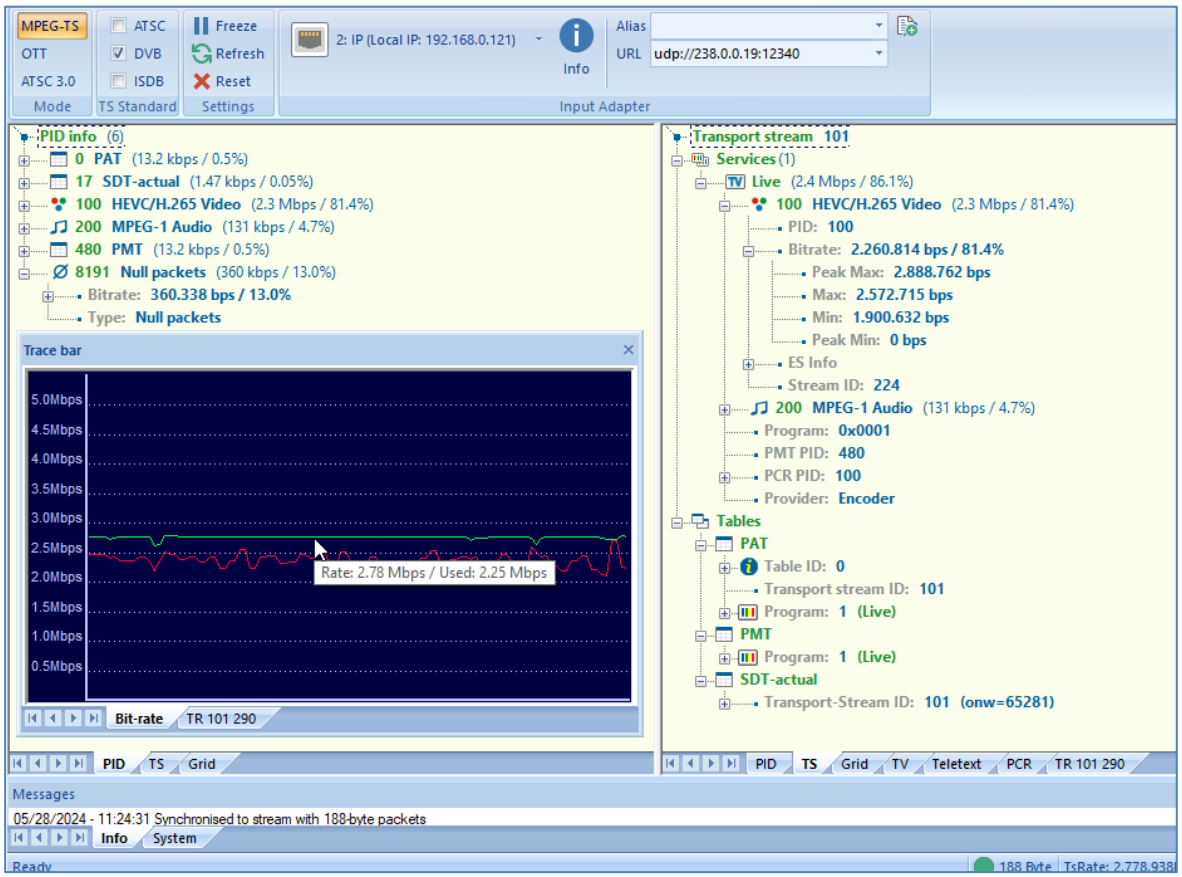
And chose STRONG CBR encoding:



Then chose:



It adds the zero-packets but does not fully stream in a 100% CBR stream:



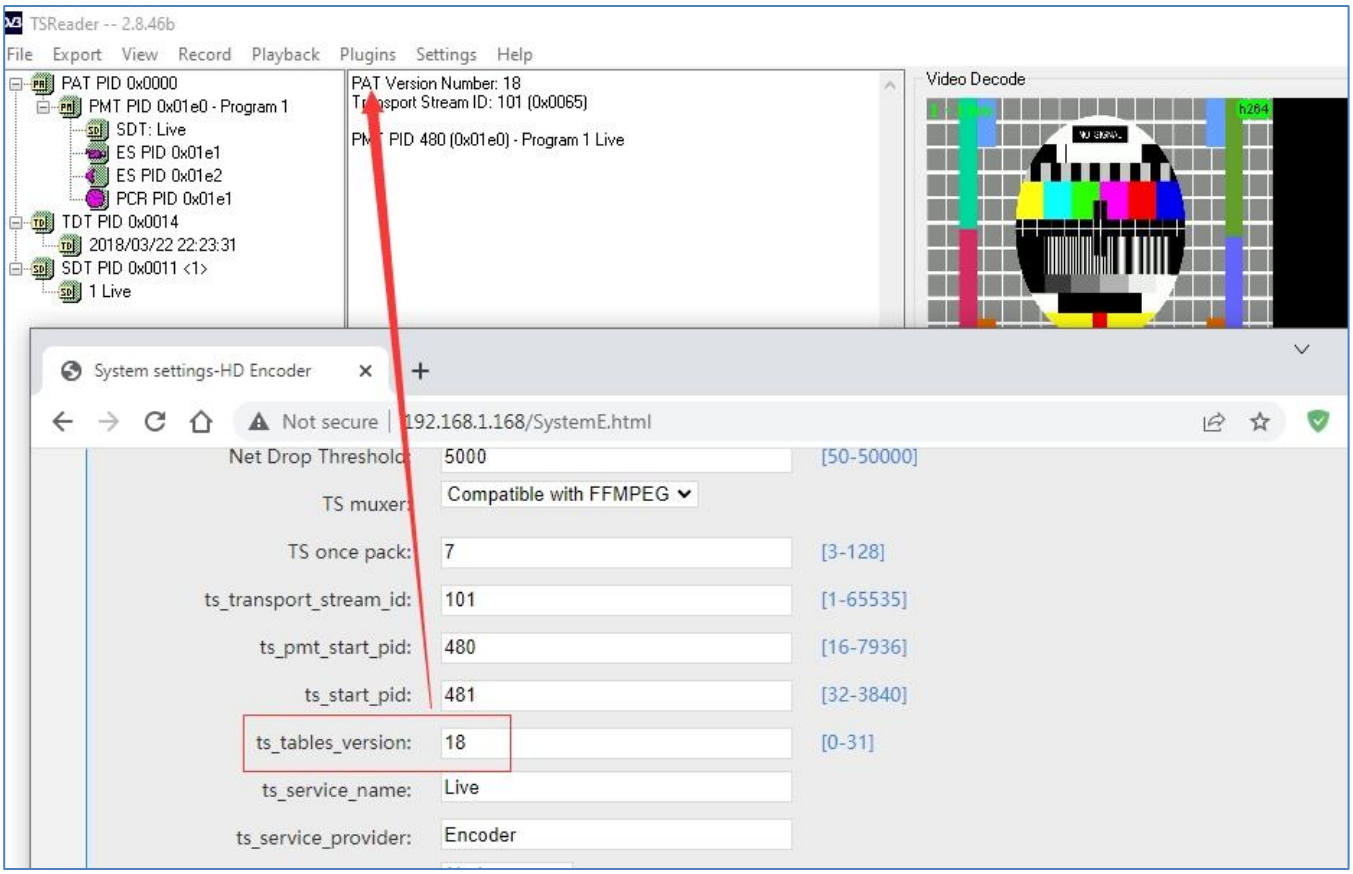
The green line is the final CBR stream output diagram with zero packets added to an almost stable value. The red line shows the A/V and data fluctuations = VBR stream.

If you switch back to VBR streaming, we recommend to wait -Monitor the stream and – to be safe: perform a reboot if it takes too long. But with 2.36A here it switches smoothly:

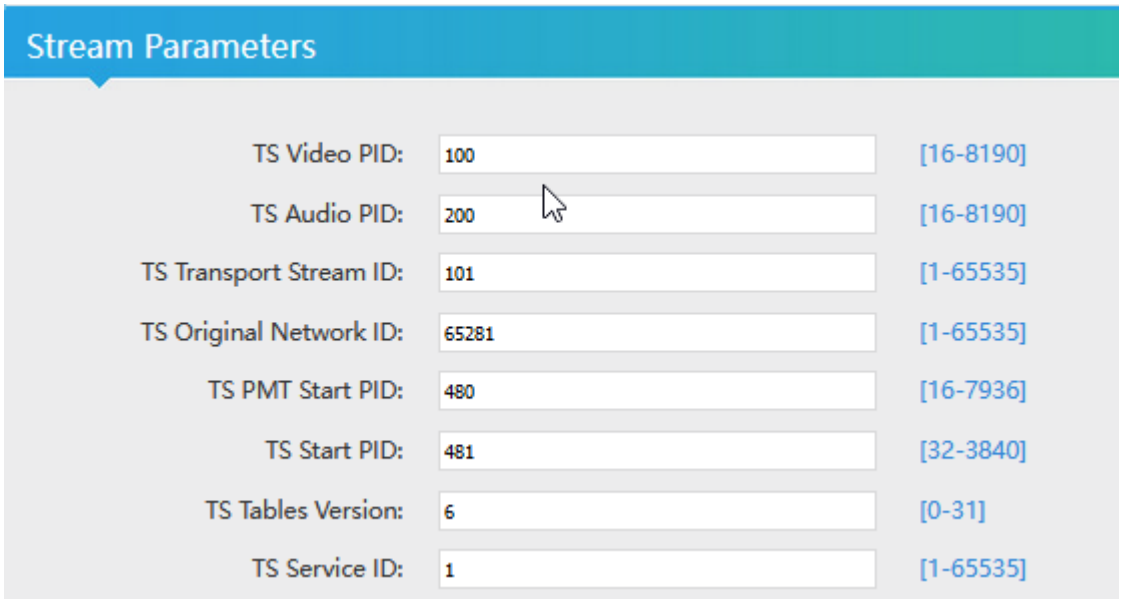
Switched off all CBR related settings and increased video-encoding to "Best" and bitrate to 5000:

Zero-packets are gone.

TS Tables Version is related to the PAT (See MPEG-DVB):



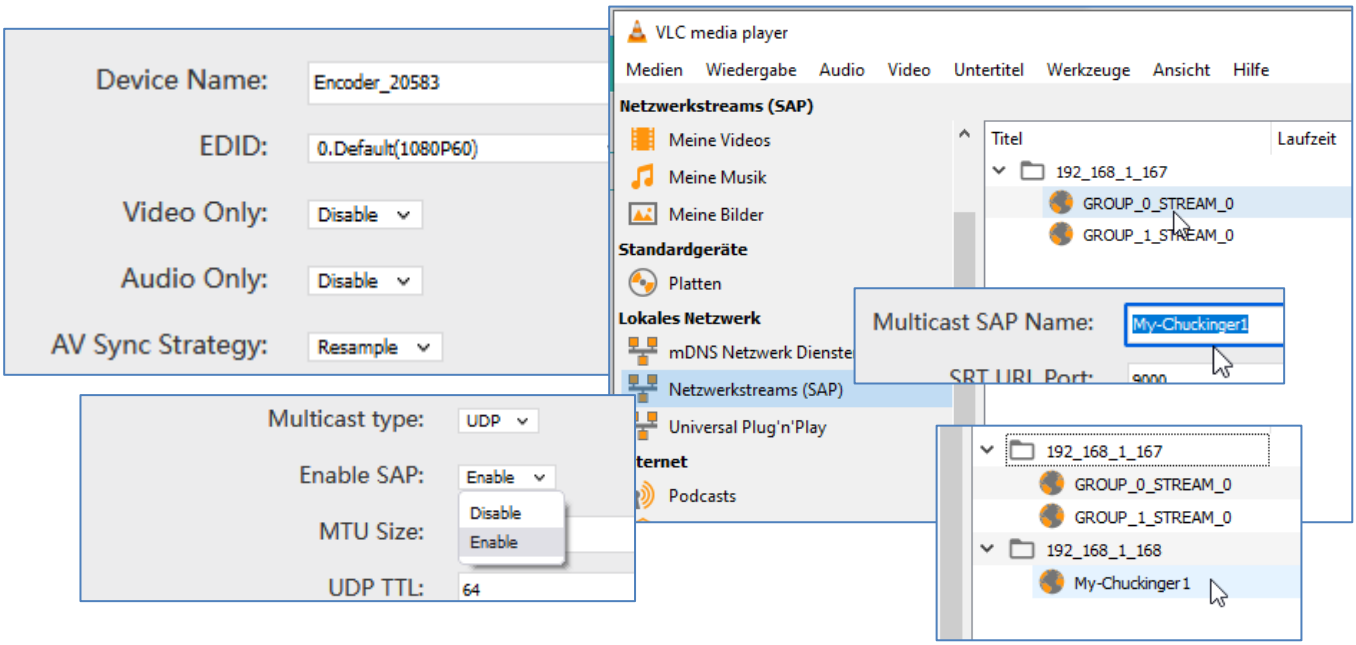
In combination with:



Please do not use PID's (here in Decimal instead of HEXadecimal in use) which are reserved in DVB, 0-18 are for special tables like PID 18= EIT. 8191dec is for Zero-fillings to a CBR TS.
Please check DVB-Norms if you are unsure.

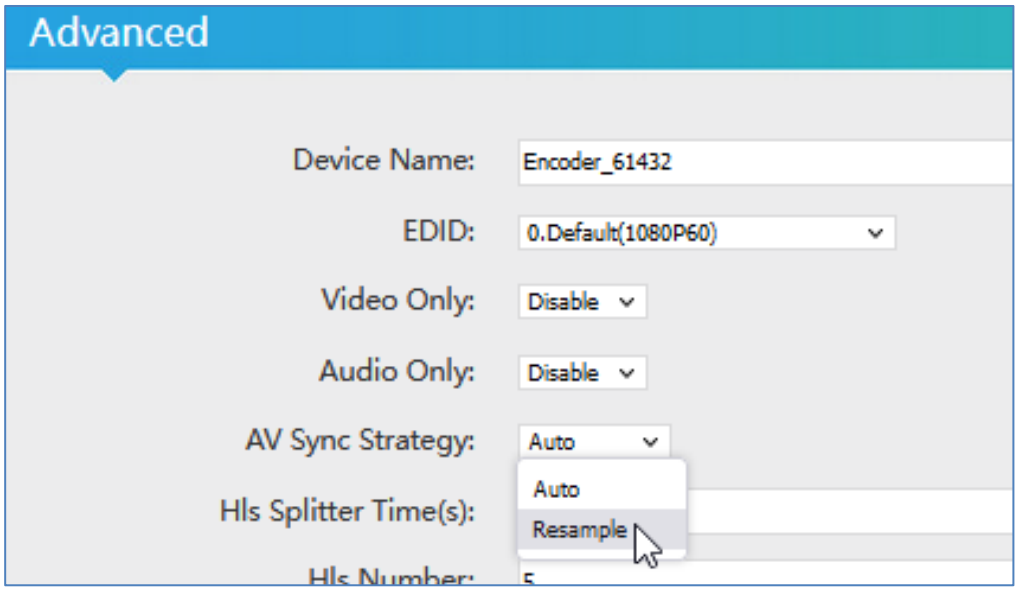
SDE-265 and HDE-265L New Version 5.15…20 ADD-ONs:

- New User Interface lookalike
- Inventing a Windows tool to search for your en- decoder if you lost IP Address: Find Your Encoder_Decoder.exe -> If you need that- ask us at info@blankom.de
- Changing possibility of TS Video & Audio PID and TS_service_id
- added RTSP- multicast support
- Changing of multicast stream SAP name option -> See below
- Added a checkbox/switch for TS TDT - System -> Advanced settings



Version 5.17 (April 2022, June 2022)

Step1: fixing Preview Window when HDMI contained no Audio signal
Step2: adds the SDI-Input detection of Level A and B automatically.
Because of some SDI-devices are using Level A and the SDE-265 needed Level B. Example:
Version 5.17 lip sync option added:



Version 5.20 is actual (Okt. 2022).

Version 5.23 is actual now- December-2022:
GOP M-N improvements, added MP4 stream Playback in browser

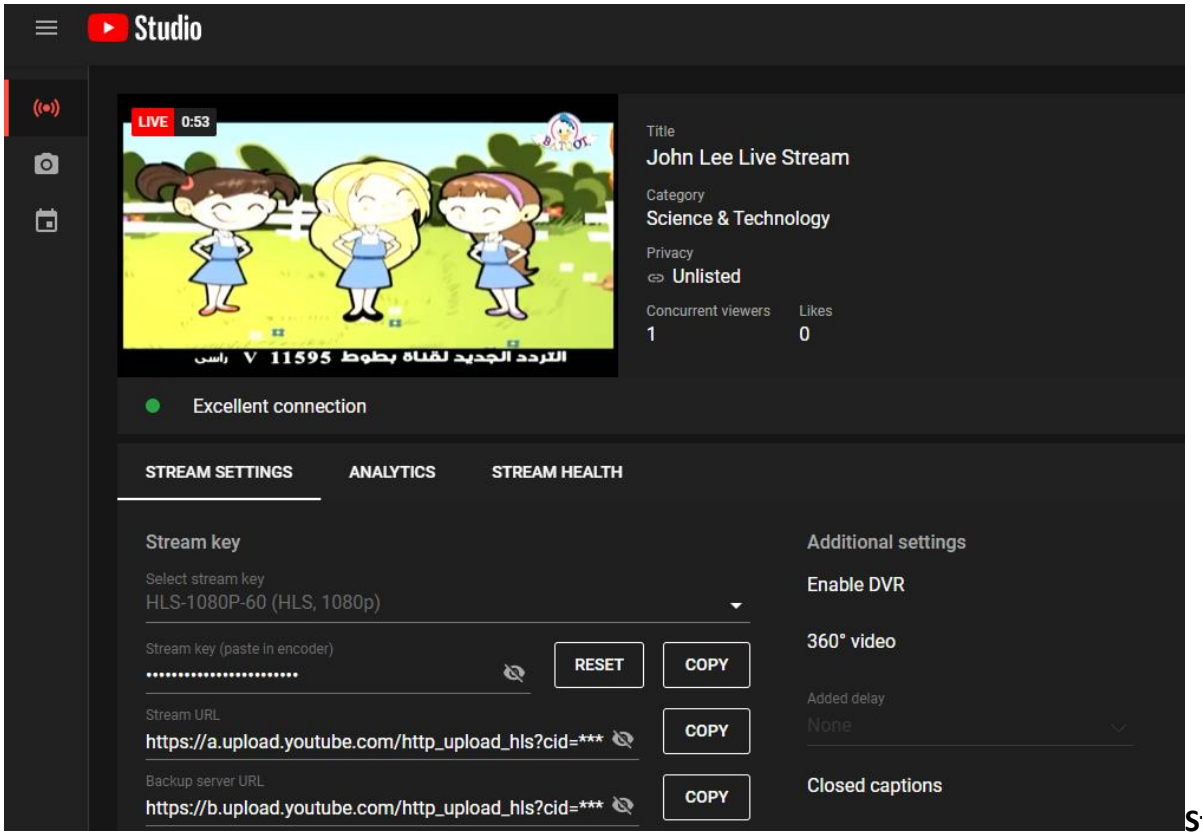
Attention:
There is an intermediate version available (almost only used in SDI Version SDE-265):
We have changed the chipset and also the firmware must be adapted …
Currently the Ambarella version is intermediate 2.xA in HDMI and SDI Encoders

How to stream h265 encoded video to YouTube using HLS?

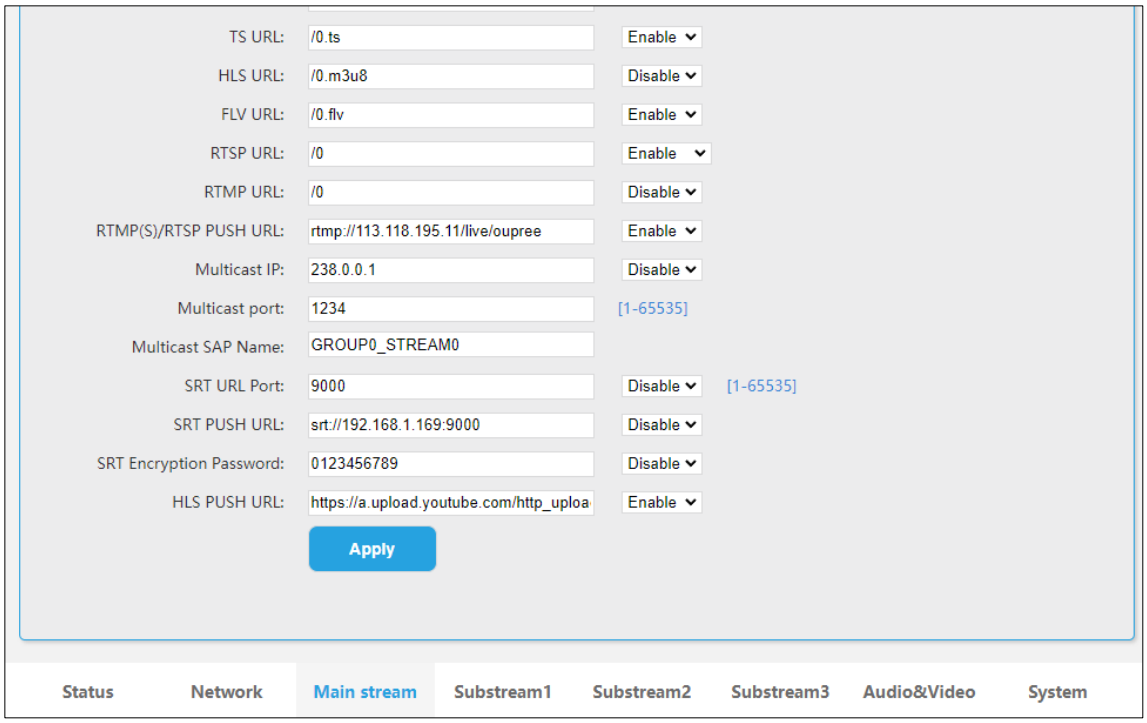
Do you want to **stream H.265 to YouTube**? Yes, **our** H265 Video Encoder supports HLS push to YouTube since the year 2021.

How to setup?

Step 1, get the **hls** stream **URL** from YouTube, if you can't find the HLS stream settings, maybe you need read here: https://support.google.com/youtube/answer/10349430,



Step 2, copy the YouTube https-HLS stream-URL and paste it to our [H265 Video Encoder,](#)



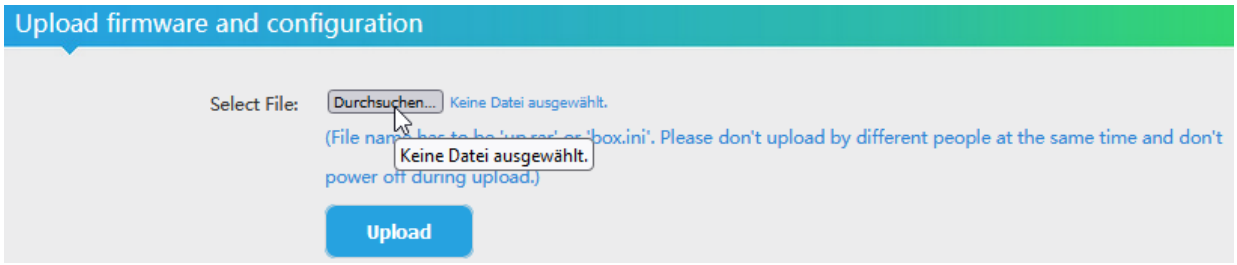
Upgrading firmware:

From time to time bug fixings, improvements and HW changes are happening so we will release new versions for : 6.xy (old HW), 5.xy (intermediate HW) and 2.xyA/W actual HW. We do not publish them in the web because you should contact us before to be sure not to flash the wrong FW to wrong HW.

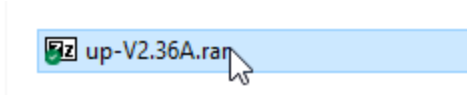
Updating Process:

System –Menu:

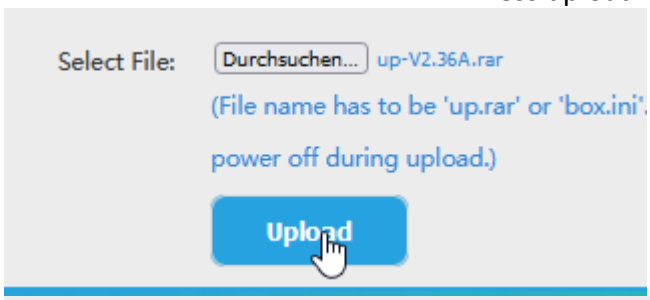
Remark: some HW/FW versions do demand the file name ***up.rar*** as the update file for uploading, newer once do not check the name but should be ***up-(vers.No.).rar.***

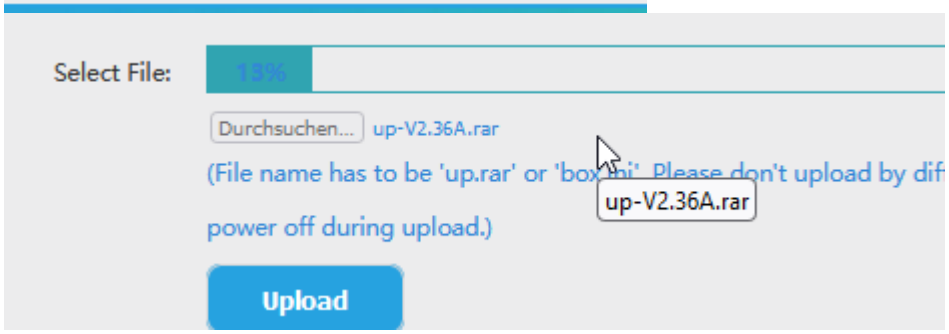


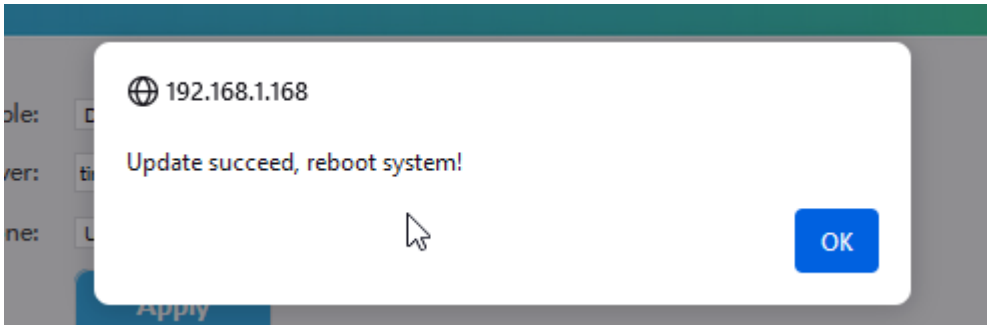
Select the proper file:

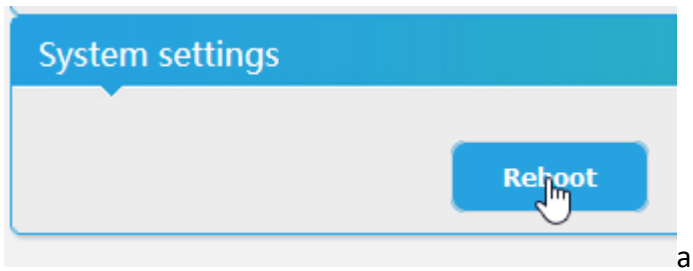


Press upload:





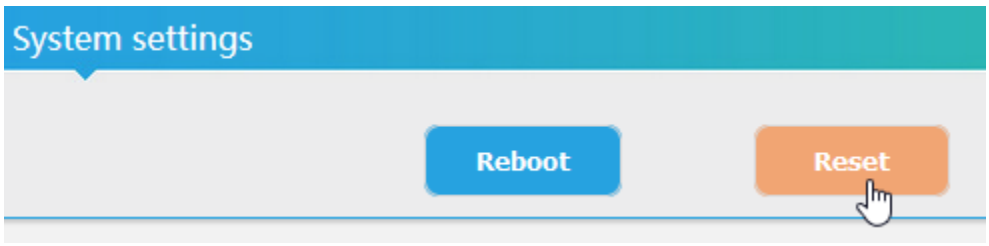




and confirm message:

RESET:

Back to factory defaults is by front panel RST-hole – you need a kind of needle and press until green LED will be off – than release the needle switch. By Web-IF:



Finally: To get more information about the deeper details of the encoder settings and configuration issues, please contact us. www.blankom.de