

Encoder & IPTV Streamer with HDMI Input



Available in Desktop-Version
and wall-mounting design as

h.265 and h.264 compatible 4K UHD encoder & IP streamer combined with RECORDING function

- ✓ HDMI compatible input for encoding and recording to SD Card
- ✓ Stereo Audio embedded or external Input (3.5mm stereo)
- ✓ HD Resolution 2160p30, 1080p, 1080i, 720p. ...
- ✓ GbE IP output: RTSP, RTMP, UDP/RTP, HTTP, HLS, FLV, **SRT**
- ✓ Distribution of Video Camera U(HD) and other sources content over LAN, WAN or internet.
- ✓ 4 simultaneously and independent Live stream broadcast encoder engines to multiple destinations
- ✓ Video-over IP applications, Digital Signage
- ✓ IPTV/OTT applications
- ✓ Video conferencing, Camera streaming
- ✓ IPTV on LAN applications, Corporate IPTV for Broadcastings
- ✓ UHD,HD and SD video encoding (incl. 1080p) downscaling
- ✓ Corresponding product: BLANKOM IPTV-STB 6800+ (UHD)

*BLANKOM HDE-275 encoder serves the
distribution of SD/HD and UHD 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,
on PC's and tablets with VLC Player.*

BLANKOM HDE-275

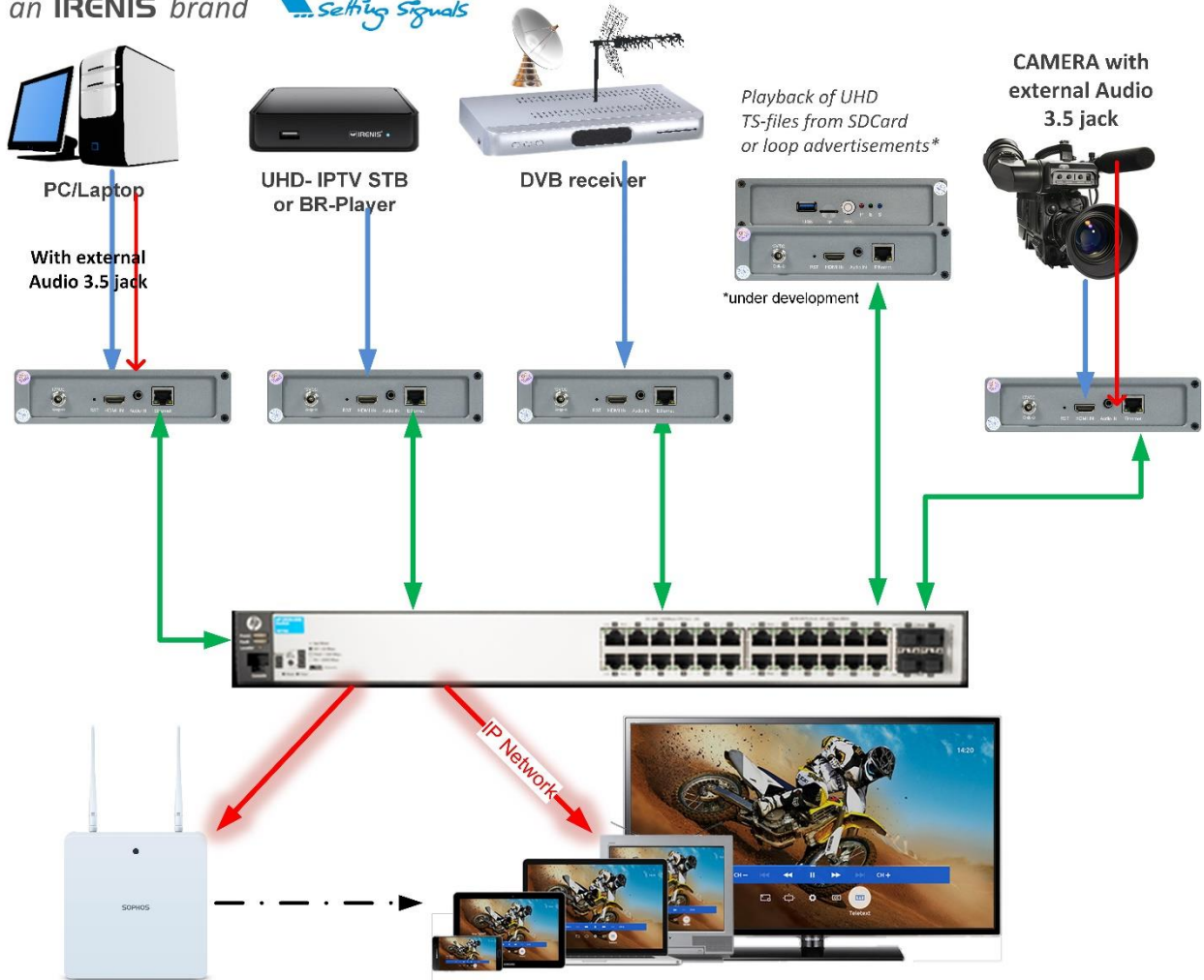
IPTV encoder is designed for TV signal distribution in excellent quality over LAN and INTERNET.

The h.264 and h.265 (HEVC) compatible compression technology features low-latency and low bit rates for IPTV/OTT systems. The high-efficient encoding chips saves bandwidth cost through all its resolution range.

Distribution of SD up to UHD 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.



Function	h.265 (HEVC) and h.264 compatible Encoder and IP Streamer
INPUT	HDMI compatible input
Resolution	2160p30, 1080p, 1080i, 720p and below
Audio	Embedded from HDMI signal or optional Stereo Input by 3.5mm jack
Video encoder	h.265 (HEVC) or h.264 (AVC) compatible, MJPEG support
Audio encoder	AAC (normal, +, ++), MP3, MP1L2, AC3 stereo compatible
Audio Bit-rate:	Bit-rate: 32k/48k/96k/128k/160k/192k, Data-rate: 64 kbps-384 kbps
SYSTEM	4 independent output streams (Main and 3 Secondary)
Data interface	RJ45, 1000Mb/s Ethernet interface, management by web browser, NTP support
Protocol	HTTP, RTSP, RTMPs, UDP/RTP, FLV, HLS, SRT ; unicast/multicast -> REC enables SAMBA
Data Rate	32 kbps – 32 Mbps (dep. on sampling rate chosen)
Encoding bitrate process	CBR/VBR
GOP Modes	NormalIP, DualIP, SmartP, BIPREDP
ONVIF 2.x	Supported by RTSP: G711A
Picture adjust	De-interlacing, Noise reduction, Sharpening, Filter& Aspect Ratio setting
OSD	4 Logo and Text Insertion as transparent overlays
Recording to USB/SDcard	TS-files to Micro-SD-Card or USB penkey (<i>high speed versions recommended</i>) Supported Filesystems: FAT32 (FAT (16/32) are limited – check filesize limits)
Power supply	External 100...240VAC to 12V DC, 1-2A, Euro-plug to 5.1 DC Jack
Dimensions	160 x 115 x 40mm
Weight	0.4 kg
Consumption	5W

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 product 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 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.



Quick-Start-Manual



Rearpanel: 12V DC Jack (+ = middle), RST=Reset hole, HDMI-Input connector, External Audio-Stereo IN by 3.5mm Jack (not included with the device), Gigabit Ethernet



Front-Panel: USB connector for Recording, TF-Card (μ -SDCard), REC-Button, Status LEDs: Power, Ethernet, System ready

Bottom-Sticker shows initial factory default settings:



Left pictures:
HDE-275 Desktop Version
Right Pictures:
HDE-275 Black Box Wall Mount Version

MAC address can be changed in the Web-IF if needed.

Notes and Hints:

The Gigabit-Ethernet-port does not support PoE so please take care of not accidentally using a PoE switch- you can damage the port and the unit will be not accessible anymore.

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.

Please assure that your HDMI –Output you like to encode is set to max. UHD with 2160p30 or lower. Higher than p30 FPS will not work. If connecting a HDMI-Out-Player, they often need to manually set to 2160p25 or 30...otherwise, its evtl. 50 or 60 (like Laptops often use).

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 addon need to be installed for the browser.

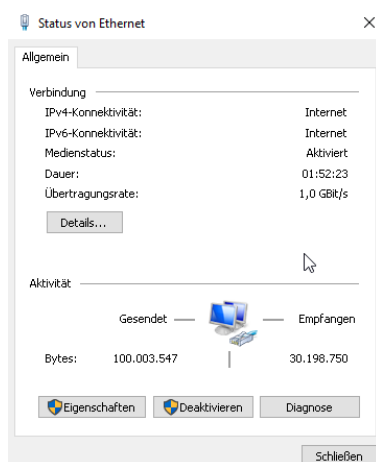
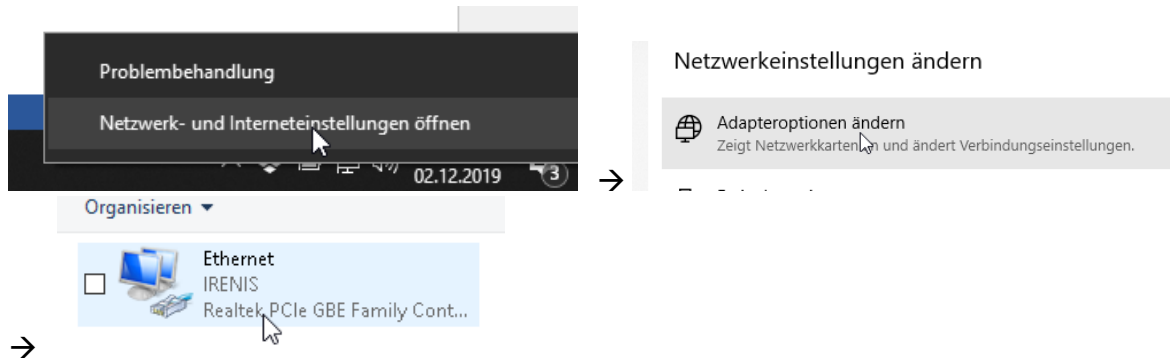
Sometimes it is helpful to reload the browser – page to get the changed settings and values because of different browser behaviours...

The RESET button 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.

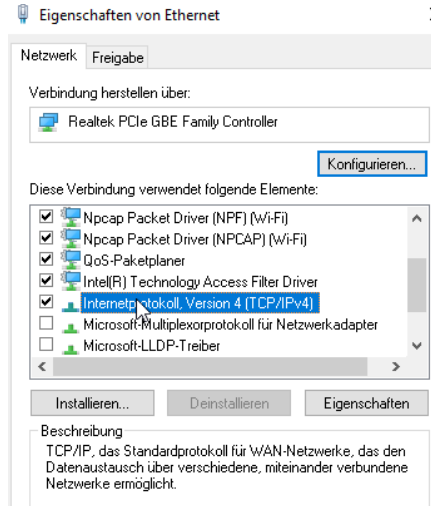
The Web-Interface lookalike may vary between different Versions but basically its selfexplaining.

Setting up your PC/Laptop before connecting:

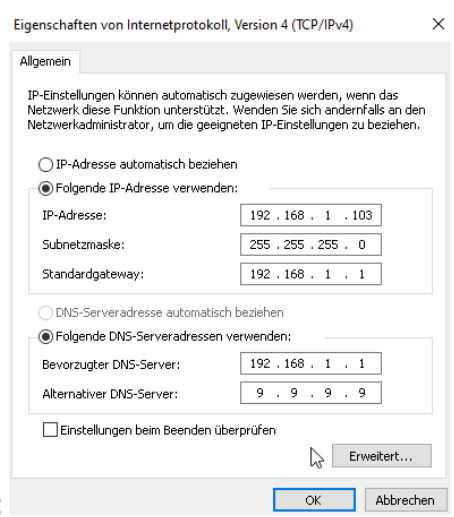
If you use a Windows based PC, you should assign its ethernet adapter into the same range like the encoder: Use a static IP like follows: 1st: Open your network settings in System Menu:



-> Maybe confirm Administrator access->

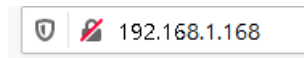


Change IPv4 settings:



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

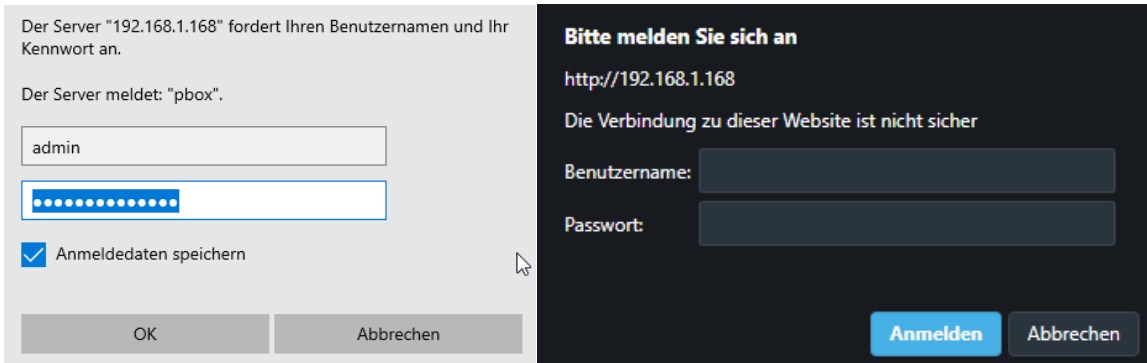
Then open your browser and enter the http- Address of the box 192.168.1.168 (w/o https):



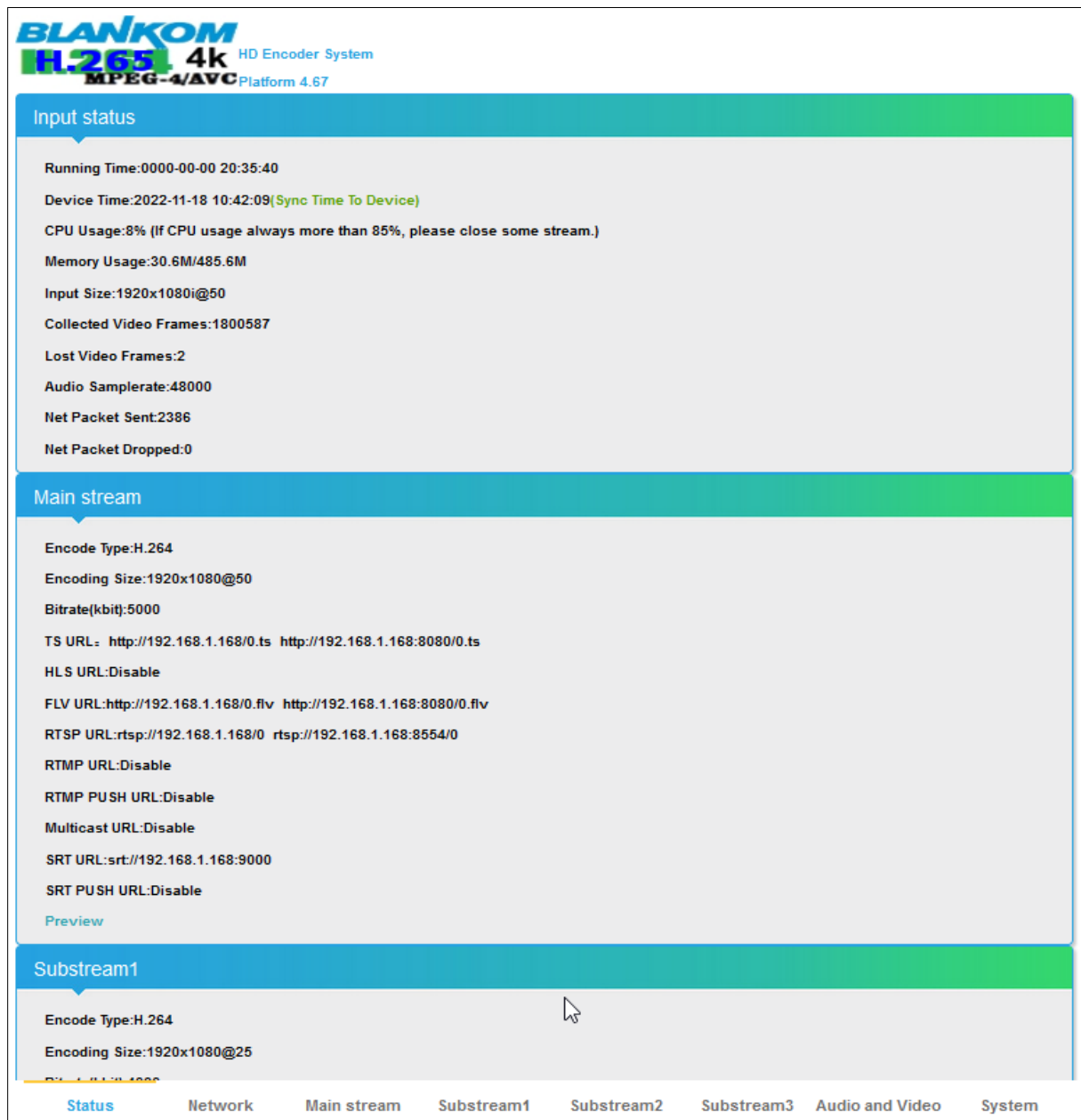
Depending on browser you'll get a log-in-screen window:

(We recommend to use the latest Mozilla browser and not the EDGE)

Quick-Start-Manual



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



Like the hint above, sometimes its helpful to reload the page:



to gather the actual values like Input HDMI values:

Input status

Running Time:0000-00-00 20:35:40

Device Time:2022-11-18 10:42:09(Sync Time To Device)

CPU Usage:8% (If CPU usage always more than 85%, please close some stream.)

Memory Usage:30.6M/485.6M

Input Size:1920x1080i@50

Collected Video Frames:1800587

Lost Video Frames:2

Audio Samplerate:48000

Net Packet Sent:2386

Net Packet Dropped:0

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...

If you press (Sync Time To Device) it will be updated. NTP-Setup in SYSTEM-menu:

Schedule restart

Restart enable:

Restart time:

NTP

NTP Enable:

NTP Server:

Time Zone:

Upload firmware and configuration

Select File: Keine Datei ausgewählt.

(File name has to be 'up.rar' or 'box.ini'. Please don't upload by different people at the same time and don't power off during upload.)

Backup firmware and configuration

System settings

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 to the encoder given IP Address by your router in it's own menu or use an IP-Scanner-tool.



Internet access

DHCP:

IP:

Netmask:

Gateway:

MAC:

DNS

DNS1:

DNS2:

PORT

HTTP Port: [1-65500]

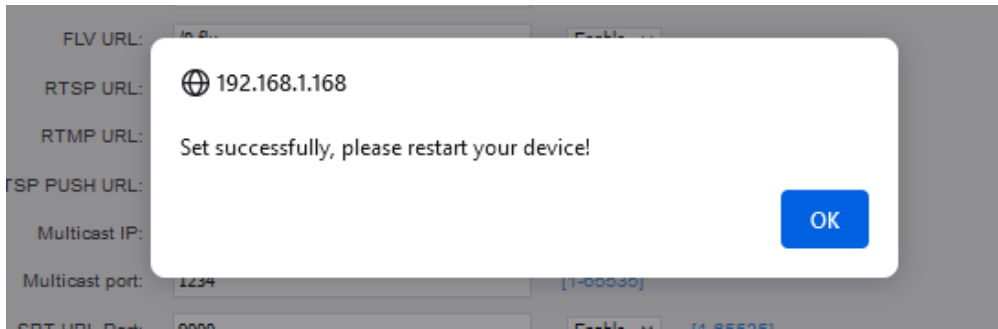
RTSP Port: [1-65500]

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

PORT:

These are the basic 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. The bottom of the every of the menu-pages contain the 'Set up' buttons to take and enable your changes.

BTW: If you get a popup:



That means after changing encoding parameters, your **RECEIVING streaming-device** like a PC with VLC or a SetTopBox or a TV set needs to be re-tuned to adjust itself to the new stream content like codec changed or size or datarate or bandwidth...

The bottom Web-frame contains the changing – Menue buttons/fields:

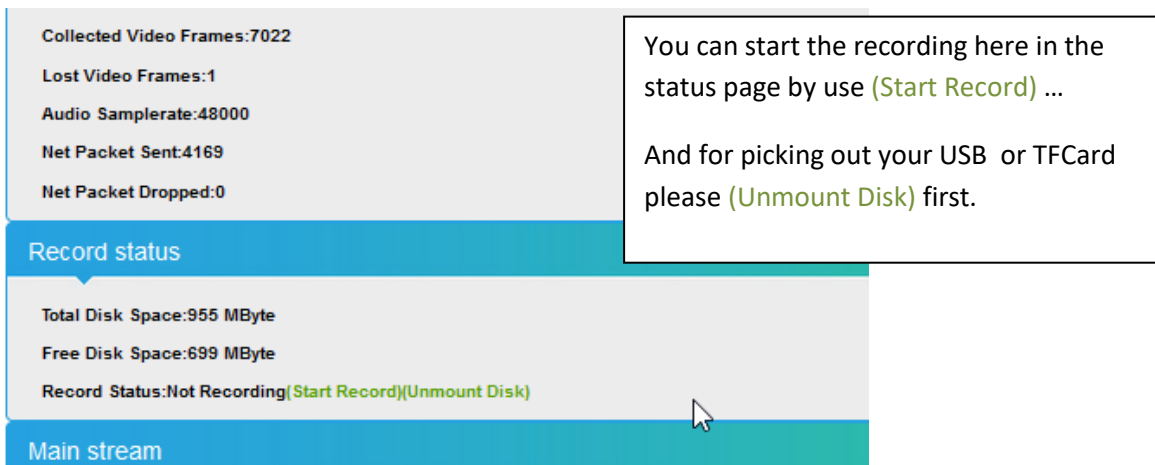
Status Network **Main stream** Substream1 Substream2 Substream3 Audio and Video System

Back to the STATUS PAGE:

You'll get information about the Input and Time/Date as well as CPU load and Memory usage:



The Record field will **only appear** if an external USB-PEN or TFCard is inserted in the slot:



Please use only one at the same time: **Either USB or μSD-Card.**

Quick-Start-Manual

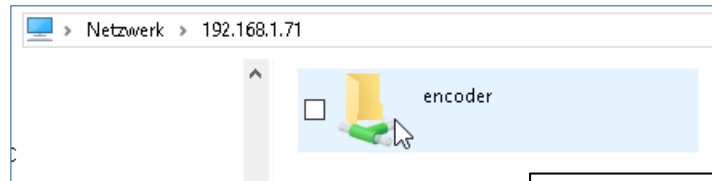
BLANKOM®

It can be formatted by your PC as FAT32 filesystem usage. EXT2/3/4 are Linux based and are only accessible by Linux PC's or you'll need an extra Tool for MS-Windows based.

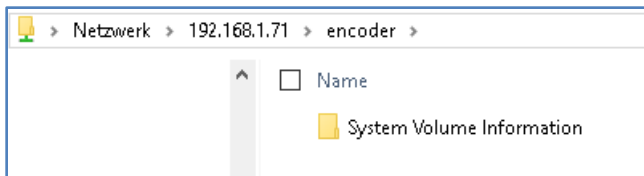
FAT, exFAT and FAT32 have limitations regarding the recording file sizes.

Before unplug the TFCard or USB Stick please press 'Unmount Disk' to safely close any files on it avoiding a file system corruption.

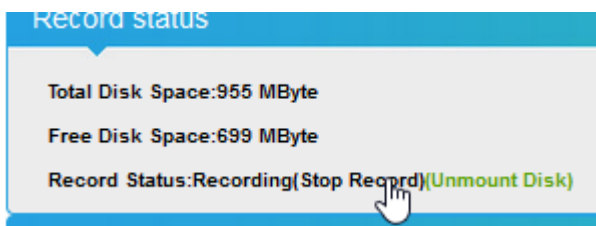
The recorded TS-files can be played in your computer i.e. by VLC. And if in the network they can be accessed by SAMBA: Simply enter the IP address of the encoder in your Windows Explorer window:



W/o any recorded TS it is empty:



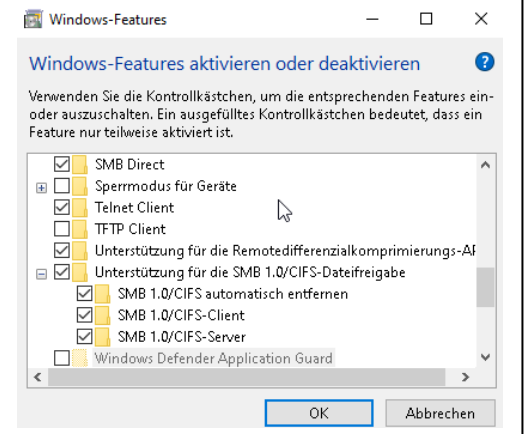
now we record:



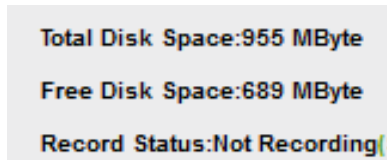
Please note: If you use Windows 10, your Settings should enable the SAMBA support in Windows:

System-Settings-> \Programs\Programme und Features...

Go to Windows features:



You can see the file size increasing ... Stop it after a while...

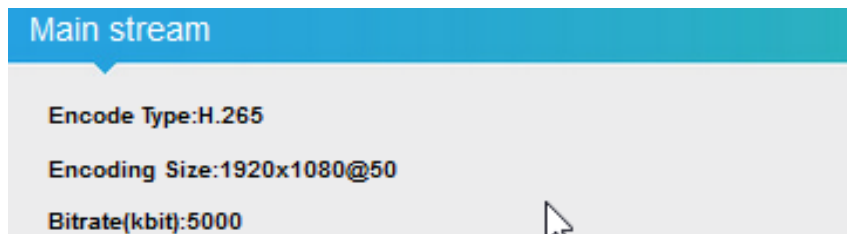


The remaining space will be refreshed...

Double-click on the SAMBA –network file *****.ts opens VLC if it has been assigned to play TS files:



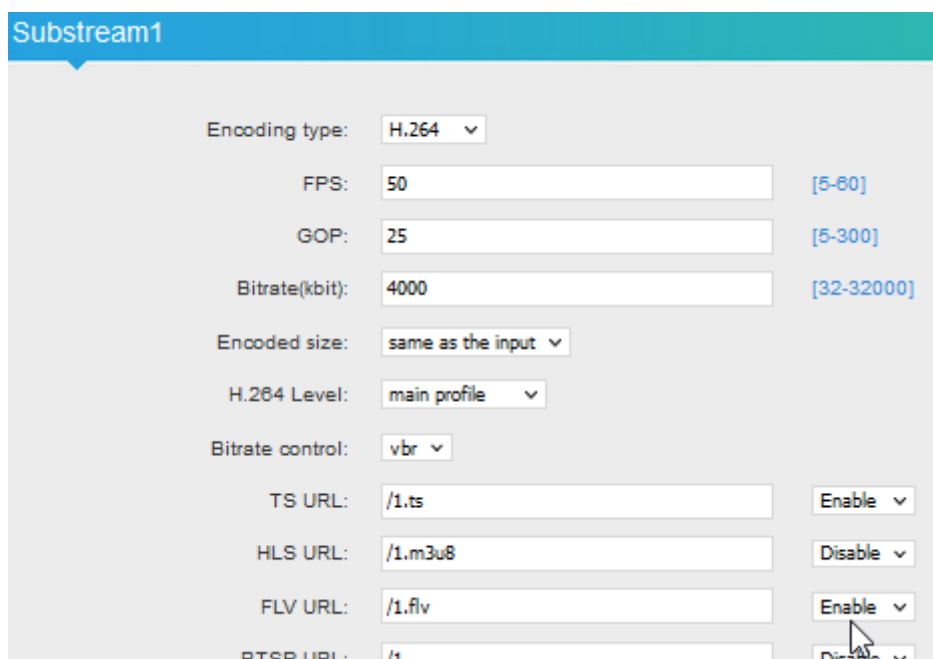
The size of the files depending on your chosen encoding settings by the Codec and the bitrate of the MAIN-Stream encoder part.



The STATUS page shows your Setup encodings for the MAIN and the 3 Substreams.

Parallel and different streamings can be used for all 4 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 substreams would be disabled...

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



In STATUS page you can check the Picture/Sound directly in the browser by the Preview button (appears only for h.264 in some models) :

Substream1

Encode Type:H.264

Encoding Size:1920x1080@25

Bitrate(kbit):4000

TS URL: http://192.168.1.168/1.ts http://192.168.1.168:8080/1.ts

HLS URL:Disable

FLV URL:http://192.168.1.168/1.flv http://192.168.1.168:8080/1.flv

RTSP URL:Disable

RTMP URL:Disable

RTMP PUSH URL:Disable

Multicast URL:Disable

SRT URL:srt://192.168.1.168:9001

SRT PUSH URL:Disable

Preview

HLS URL:Disable

FLV URL:http://192.168.1.168/1.flv

RTSP URL:rtsp://192.168.1.168:8080/1.ts

RTMP URL:Disable

RTMP PUSH URL:Disable

Multicast URL:Disable

SRT URL:srt://192.168.1.168:9001

SRT PUSH URL:Disable

Substream1

Encode Type:H.264

Encoding Size:1920x1080@25

Bitrate(kbit):4000

TS URL: http://192.168.1.168/1.ts

HLS URL:Disable

FLV URL:http://192.168.1.168/1.flv

RTSP URL:Disable

RTMP URL:Disable

RTMP PUSH URL:Disable


Multicast URL:Disable

SRT URL:srt://192.168.1.168:9001

SRT PUSH URL:Disable

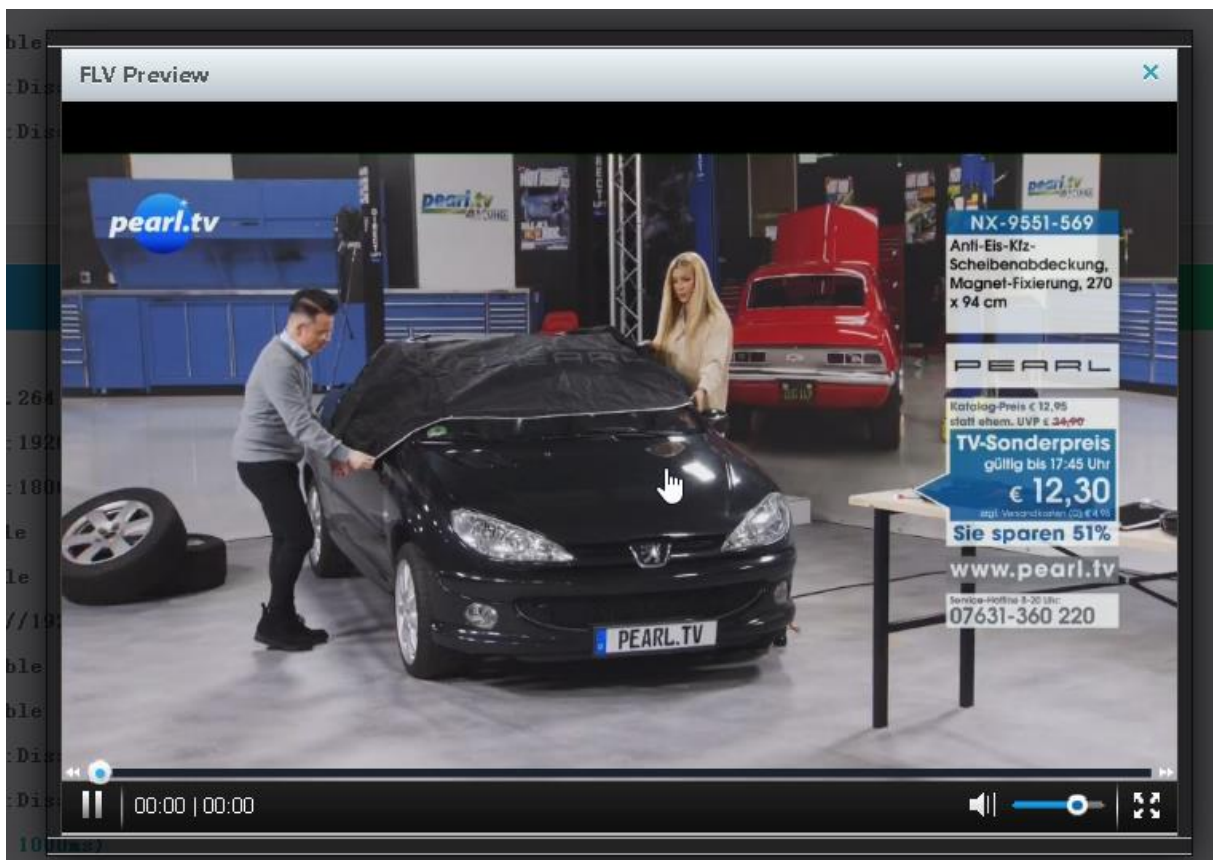
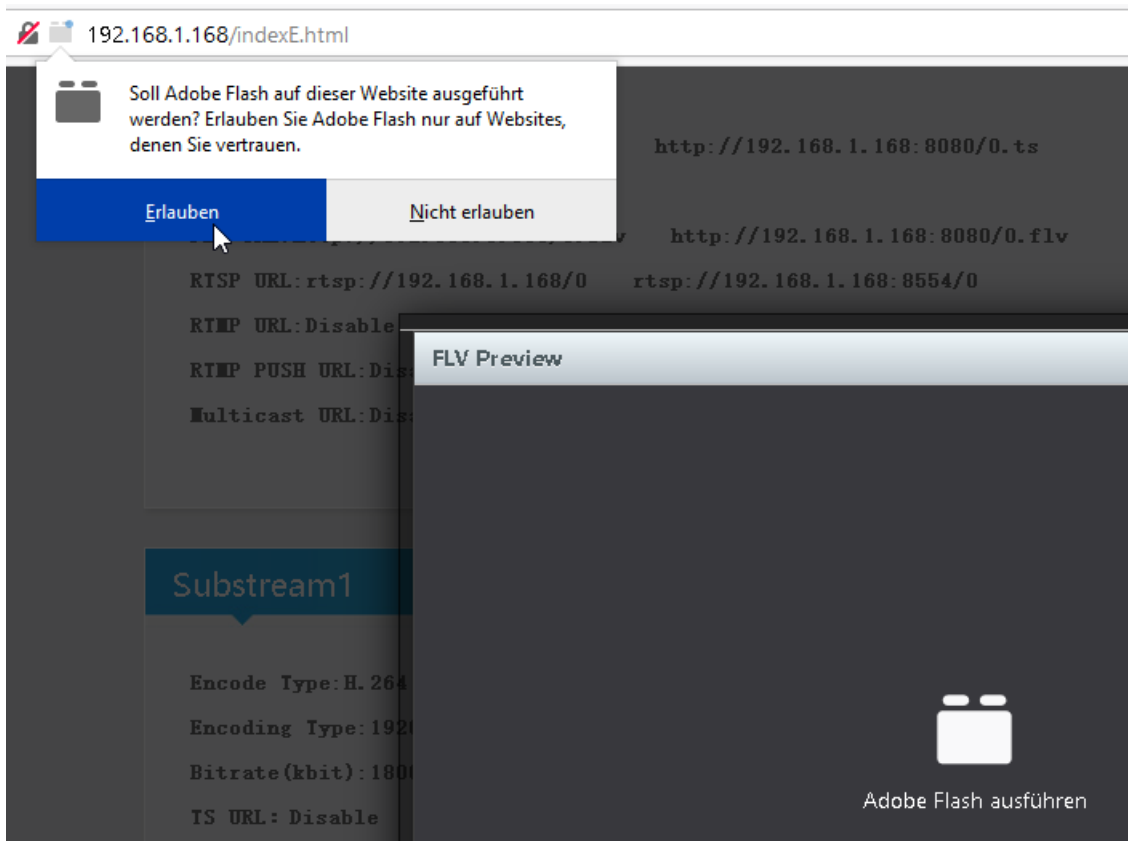
Preview

FLV Preview



NOTE: The inbuilt (FLASH)-Player usually do not decode HEVC/h.265 codecs... so do not wonder if the PREVIEW – link will disappear – it is simply non supported by FLASH/Adobe and Apple (HLS) – And because ADOBE has canceled FLASH at all since Jan. 2021, only HTML5-Preview is possible:

But with h.264: Allow your browser to do that (here Mozilla) with ~~flash-addon~~ installed:



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

Unicasts: The receiver must be in the same Subnet to get them or a route must be installed in your Network.

Main stream

Encode Type:H.265

Encoding Size:1920x1080@50

Bitrate(kbit):5000

TS URL: <http://192.168.1.168/0.ts> <http://192.168.1.168:8080/0.ts>

HLS URL:Disable

FLV URL:<http://192.168.1.168/0.flv> <http://192.168.1.168:8080/0.flv>

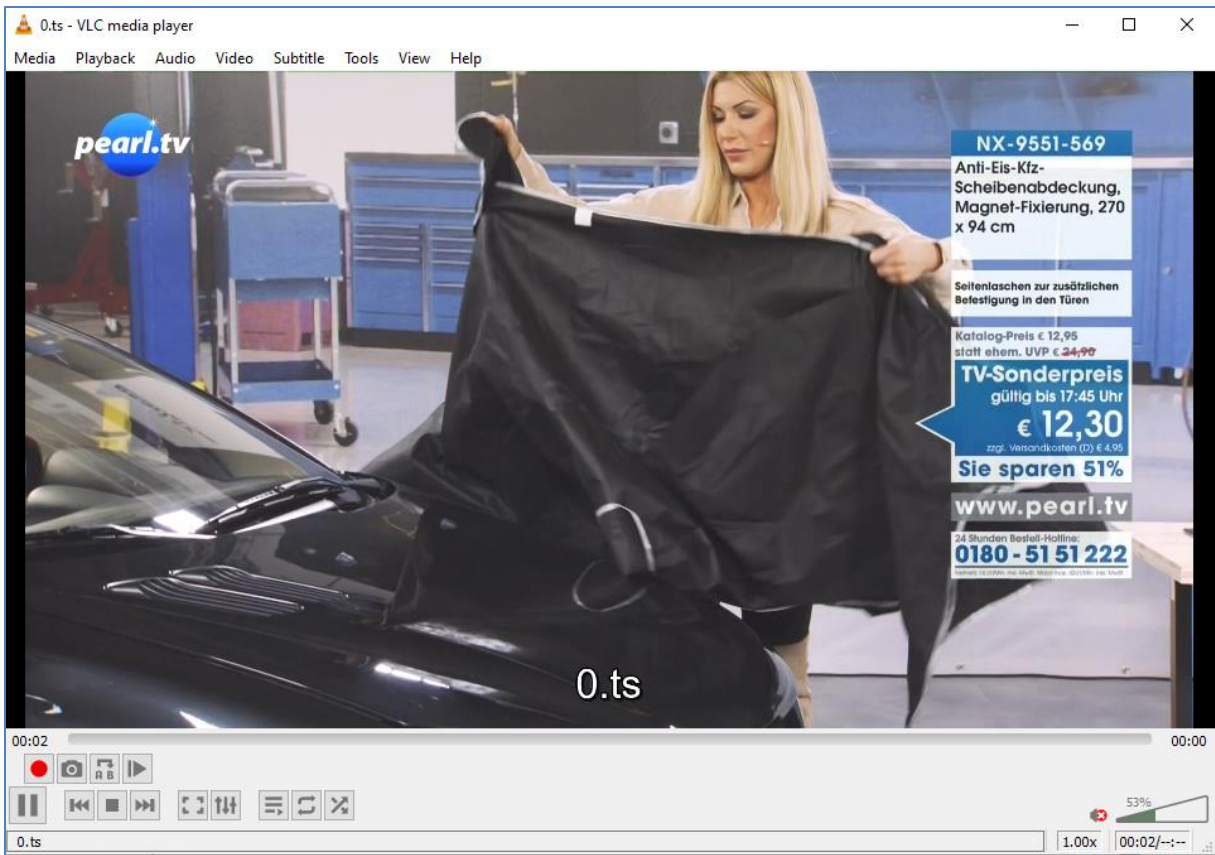
RTSP URL:<rtsp://192.168.1.168/0> <rtsp://192.168.1.168:8554/0>

Then insert into VLC:

The image shows three stages of the VLC media player interface:

- Top Left:** The VLC media player menu bar is visible. The 'Media' menu is open, and 'Open Network Stream...' is highlighted. Other options include 'Open File...', 'Open Multiple Files...', 'Open Folder...', 'Open Disc...', 'Open Capture Device...', 'Open Location from clipboard', 'Open Recent Media', 'Save Playlist to File...', 'Convert / Save...', 'Stream...', 'Quit at the end of playlist', and 'Quit'.
- Top Right:** The 'Open Media' dialog box is shown. The 'Network' tab is selected. A context menu is open over the 'Please enter a network URL:' input field, with 'Paste' highlighted. The context menu includes options: Undo (Ctrl+Z), Redo (Ctrl+Y), Cut (Ctrl+X), Copy (Ctrl+C), Paste (Ctrl+V), Delete, and Select All (Ctrl+A).
- Bottom:** The 'Open Media' dialog box is shown with the URL 'http://192.168.1.168/0.ts' entered in the input field. Below the input field, a list of example URLs is visible: <http://www.example.com/stream.avi>, <rtsp://@:1234>, <mms://mms.examples.com/stream.asx>, <rtsp://server.example.org:8080/test.sdp>, and <http://www.youtube.com/watch?v=gg64x>. At the bottom, there is a 'Show more options' checkbox, a 'Play' button, and a 'Cancel' button.

Quick-Start-Manual



Note: UDP-Adresse will be taken by VLC with an @ and we have made it easy for you:

Multicast IP:	<input type="text" value="238.0.0.1"/>	<input type="button" value="Disable"/>
Multicast port:	<input type="text" value="12340"/>	<input type="button" value="Enable"/>
<input type="button" value="Set up"/>		

Bitrate control:	<input type="text" value="cbr"/>	
TS URL:	<input type="text" value="/0.ts"/>	
HLS URL:	<input type="text" value="/0.m3u8"/>	
FLV URL:	<input type="text" value="/0.flv"/>	
RTSP URL:	<input type="text" value="/0"/>	<input type="button" value="Enable"/>
RTMP URL:	<input type="text" value="/0"/>	<input type="button" value="Disable"/>
RTMP/RTSP PUSH URL:	<input type="text" value="rtmp://192.168.1.50/live/0"/>	<input type="button" value="Disable"/>
Multicast IP:	<input type="text" value="238.0.0.1"/>	<input type="button" value="Enable"/>
Multicast port:	<input type="text" value="12340"/>	<input type="button" value="[1-65535]"/>
<input type="button" value="Set up"/>		

Set successfully, please restart your device!

AGAIN: You do not need to **restart** the encoder only the receivers you have in your network need to re-sync to the changed values!!!:

Quick-Start-Manual

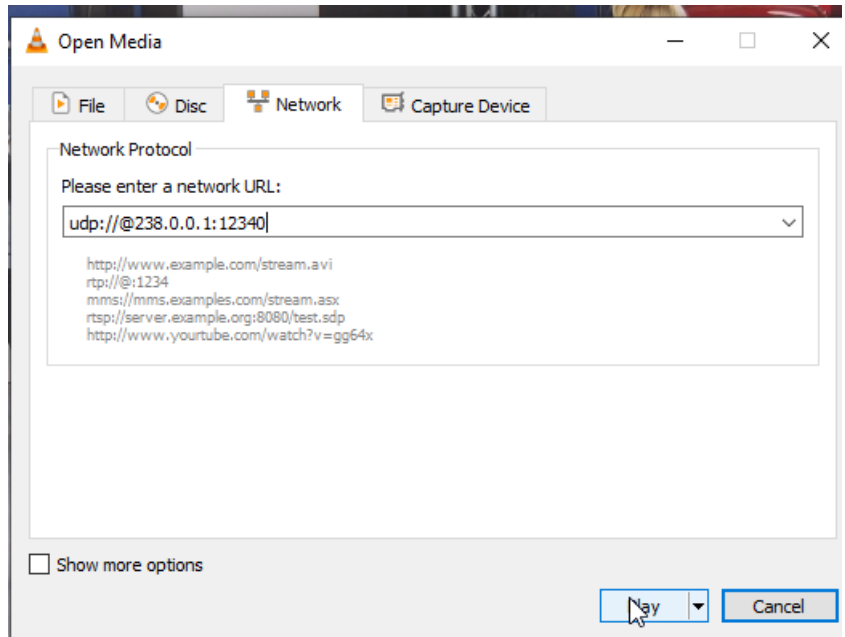


Multicast IP: Enable ▾
Multicast port: 85535]

-> STATUS page:

RTMP PUSH URL:Disable
Multicast URL:udp://@238.0.0.1:1234
SRT URL:srt://192.168.1.168: Kopieren
SRT PUSH URL:Disable Alles auswählen

copy and paste to VLC:



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

Main stream

Encoding type:	<input type="text" value="H.265"/>	
FPS:	<input type="text" value="50"/>	[5-60]
GOP:	<input type="text" value="25"/>	[5-300]
Bitrate(kbit):	<input type="text" value="5000"/>	[32-32000]
Encoded size:	<input type="text" value="same as the input"/>	
Bitrate control:	<input type="text" value="vbr"/>	
TS URL:	<input type="text" value="/0.ts"/>	Enable ▾
HLS URL:	<input type="text" value="/0.m3u8"/>	Disable ▾
FLV URL:	<input type="text" value="/0.flv"/>	Enable ▾
RTSP URL:	<input type="text" value="/0"/>	Enable ▾
RTMP URL:	<input type="text" value="/0"/>	Disable ▾
RTMP/RTSP PUSH URL:	<input type="text" value="rtmp://192.168.1.50/live/0"/>	Disable ▾
Multicast IP:	<input type="text" value="238.0.0.1"/>	Enable ▾
Multicast port:	<input type="text" value="1234"/>	[1-65535]
SRT URL Port:	<input type="text" value="9000"/>	Enable ▾ [1-65535]
SRT PUSH URL:	<input type="text" value="srt://192.168.1.169:9000"/>	Disable ▾
SRT Encryption Password:	<input type="text" value="0123456789"/>	Disable ▾

RTMP comes now with RTMPs support since Youtube is demanding it.

The independent LOGO/Text Overlay inserting Settings can be done for every encoder part of them:

OSD

Alpha:	<input type="text" value="100"/>	
<hr/>		
Zone 1		
Zone:	<input type="text" value="Disable"/>	

For deeper detailed explanations about the OSD feature refer to the full – Manual please.

ONVIF settings with RTSP can be enabled if you use a Camera based NVRecorder system.

Therefore we are adjusting the AUDIO encoding for all encoder parts now (the Audio encoding cannot be separated for every single MAIN and SUB's and is common for all:

The screenshot displays the configuration interface for audio and video settings. The top section, titled 'Audio encoder', includes a dropdown for 'Audio Input' set to 'HDMI', a 'Samplerate' dropdown set to '44100', an 'Encoder' dropdown currently showing 'AAC' with a mouse cursor hovering over it, and a 'Bitrate' input field with a range of '[48000~256000]'. Below this is the 'ONVIF audio' section with a 'G711A Over RTSP' dropdown and an 'Apply' button. The bottom section, titled 'Video', features a 'Video Rotate' dropdown set to '0°', a 'Video Clipping' dropdown set to 'Disable', and four input fields for 'Video Clipping' (Left, Top, Width, Height), all set to '0' with their respective ranges: [0,1920], [0,1080], [0,1920], and [0,1080]. An 'Apply' button is located at the bottom of the video section.

Higher bitrate settings for the audio result in higher sound quality. Every codecs have different ranges !!!

For using the digital Signage 90° angle TVs you can let the picture rotate – see above VIDEO section.

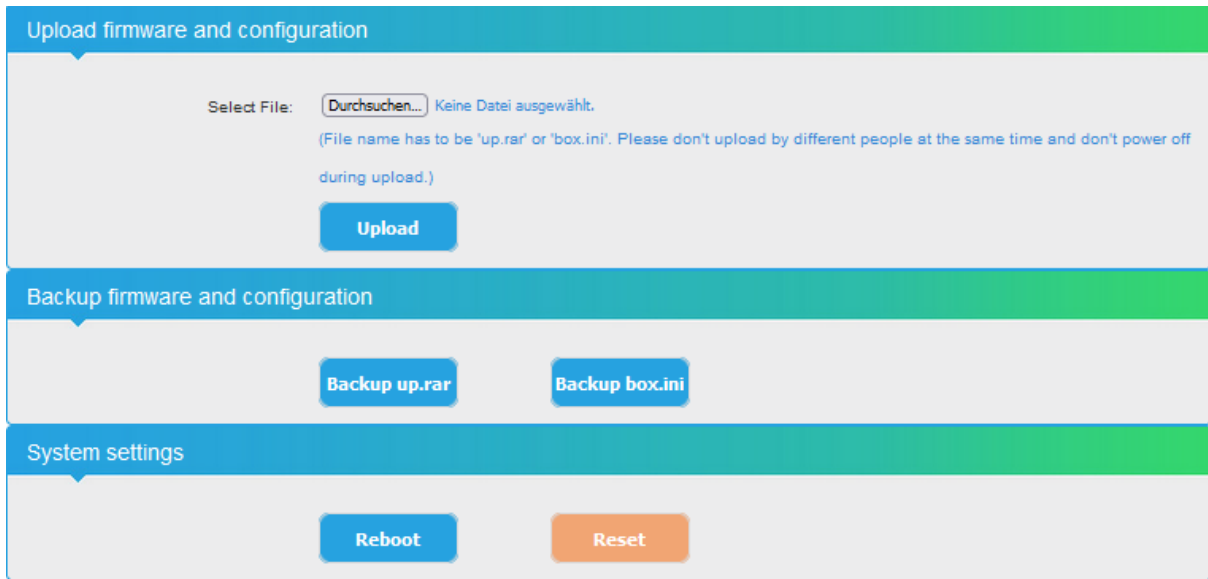
So we come to the common SYSTEM settings:



The screenshot shows the 'Change password' form. It has a teal header with the text 'Change password'. Below the header are three input fields: 'Old password:' with a masked password of seven dots, 'New password:', and 'Confirm password:'. An 'Apply' button is positioned at the bottom right of the form.

This chapter is selfexplaining – isn't it?

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

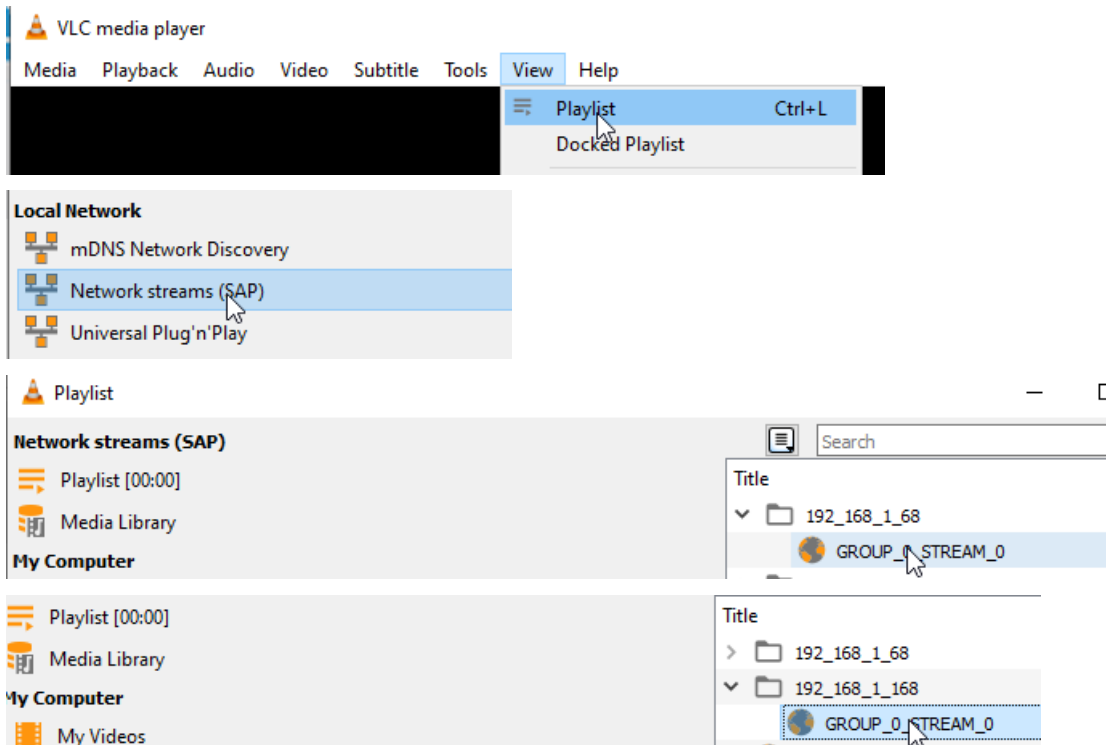


The settings as well as the Firmware can be back-upped and re-uploaded:

Finally i.e. after firmware update has been uploaded, the unit can be remotely **reset** to factory defaults or **rebooted**. A factory default reset can be also don by the hidden button hole on the front panel.

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

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



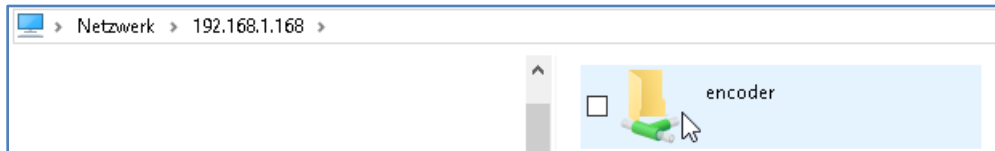
-> Will receive the stream. This works only with Multicast UDP / RTP !.

Accessing the RECORDED TS-Files directly by WINDOWS-PC:

First you have to enable the WINDOWS –Feature Support of SAMBA and CIFS:

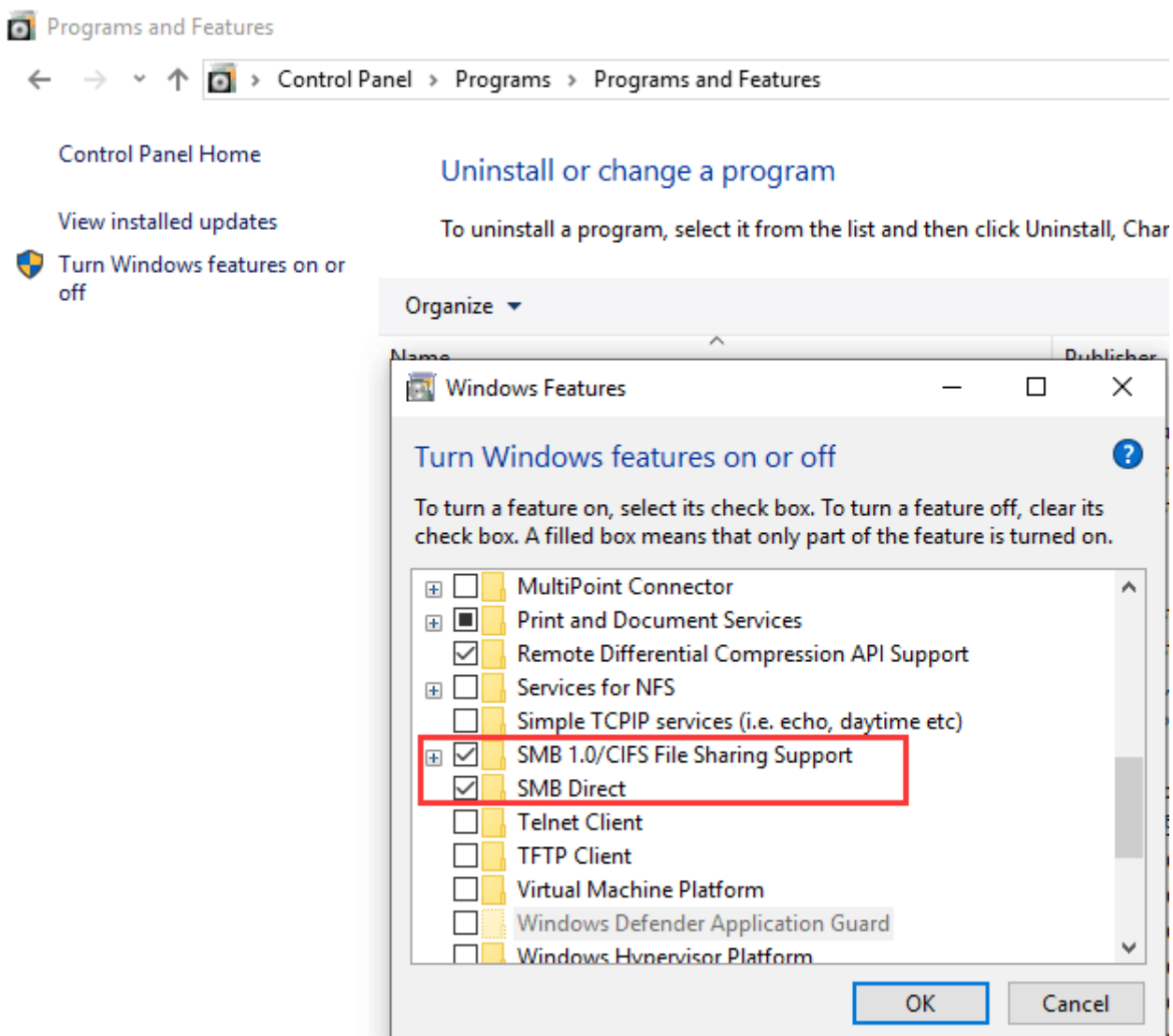
For the old WINDOWS 7 users, this is established by default

Simply enter \\IP-Address-of-the-encoder in the Windows-Explorer

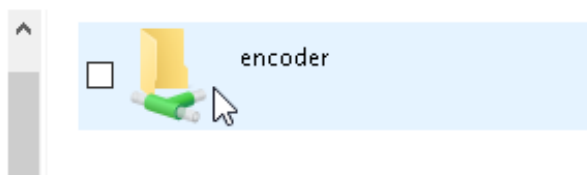


But in WINDOWS 10 (PRO) the support need to be enabled manually:

you need to turn on the SMB1.0 and SMB Direct:



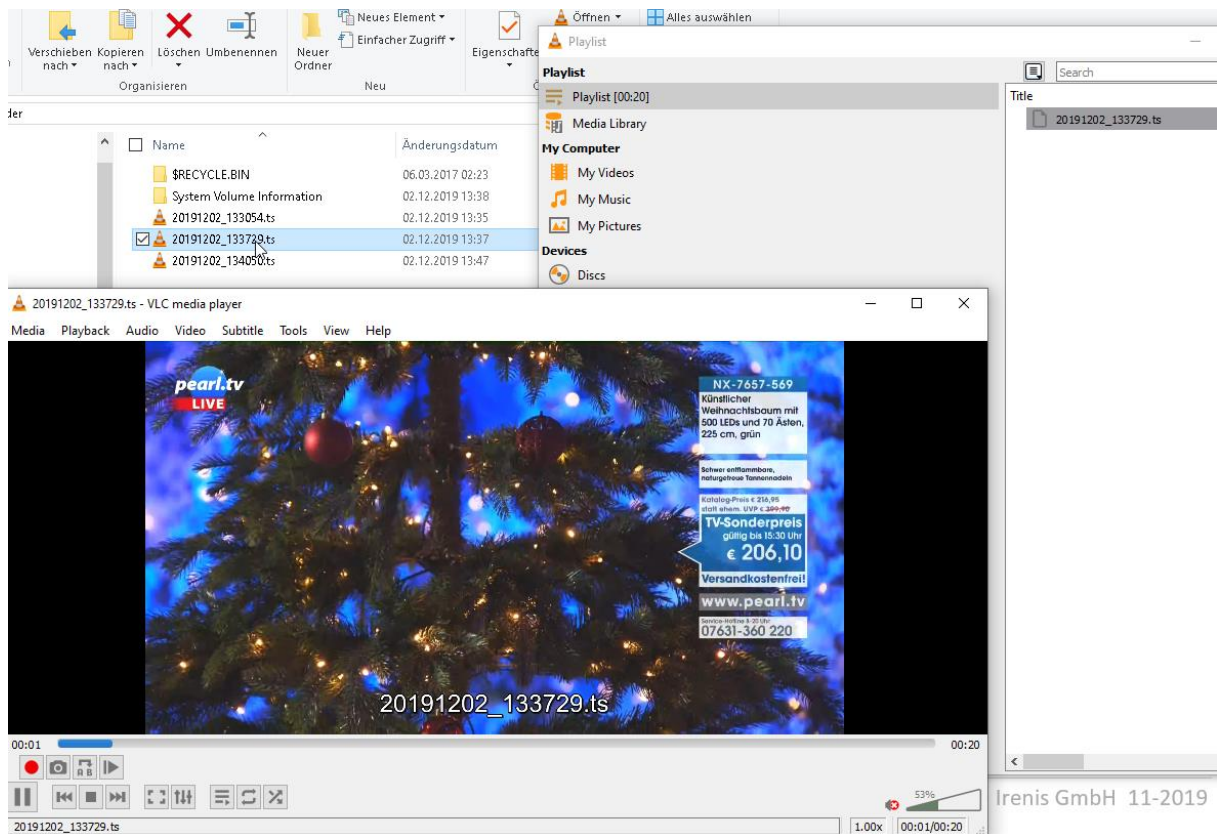
Than enter \\192.168.1.168 in the Explorer – Address-Field and you are directed to:



-> Here as example with a USB-PEN NTFS-formatted and some records done

\$RECYCLE.BIN	06.03.2017 02:23	Dateiordner	
System Volume Information	02.12.2019 13:38	Dateiordner	
20191202_133054.ts	02.12.2019 13:35	TS Video File (VLC)	62.998 KB
20191202_133729.ts	02.12.2019 13:37	TS Video File (VLC)	4.487 KB
20191202_134050.ts	02.12.2019 13:47	TS Video File (VLC)	464.884 KB

Simply double-click on one of them and here VLC has been assigned as the default Media-Player:



You can download or delete files remotely... isn't that nice?

Finally: To get more information about the deeper details of the encoder settings and configuration issues, please download the combined PDF – Manual from our website www.blankom.de.

Addon:

This unit is available as model HDE-4K5C (275 Black box) and can be wall mounted:



ADDON: SRT Support and MJPG

Main stream

Encoding type:	<input type="text" value="H.265"/>	
FPS:	<input type="text" value="50"/>	[5-60]
GOP:	<input type="text" value="25"/>	[5-300]
Bitrate(kbit):	<input type="text" value="5000"/>	[32-32000]
Encoded size:	<input type="text" value="same as the input"/>	
Bitrate control:	<input type="text" value="vbr"/>	
TS URL:	<input type="text" value="/0.ts"/>	Disable ▾
HLS URL:	<input type="text" value="/0.m3u8"/>	Disable ▾
FLV URL:	<input type="text" value="/0.flv"/>	Enable ▾
RTSP URL:	<input type="text" value="/0"/>	Enable ▾
RTMP URL:	<input type="text" value="/0"/>	Disable ▾
RTMP/RTSP PUSH URL:	<input type="text" value="rtmp://192.168.1.50/live/0"/>	Disable ▾
Multicast IP:	<input type="text" value="238.0.0.1"/>	Disable ▾
Multicast port:	<input type="text" value="1234"/>	[1-65535]
SRT URL Port:	<input type="text" value="9000"/>	Enable ▾ [1-65535]
SRT PUSH URL:	<input type="text" value="srt://192.168.1.169:9000"/>	Disable ▾
SRT Encryption Password:	<input type="text" value="0123456789"/>	Disable ▾

Corresponding with the STATUS Page:

Main stream

Encode Type:H.264
Encoding Size:1920x1080@50
Bitrate(kbit):5000
TS URL: <http://192.168.1.168/0.ts> <http://192.168.1.168:8080/0.ts>
HLS URL:Disable
FLV URL:<http://192.168.1.168/0.flv> <http://192.168.1.168:8080/0.flv>
RTSP URL:<rtsp://192.168.1.168/0> <rtsp://192.168.1.168:8554/0>
RTMP URL:Disable
RTMP PUSH URL:Disable
Multicast URL:Disable
SRT URL:<srt://192.168.1.168:9000>
SRT PUSH URL:Disable

[Preview](#)

See also:

<https://www.srtalliance.org>

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

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

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

SRT Latency can be adjusted in **SYSTEM Firmware Version** depending :

Advanced

Video Only:	<input type="text" value="Disable"/>	
Audio Only:	<input type="text" value="Disable"/>	
Record File Splitter Time(min):	<input type="text" value="30"/>	[5-300]
Hls Splitter Time(s):	<input type="text" value="10"/>	[3-20]
Hls Number:	<input type="text" value="5"/>	[3-20]
SRT Latency(ms):	<input type="text" value="150"/>	[1-10000]
Deinterlaced:	<input type="text" value="Bottom Only"/>	
Net Drop Threshold:	<input type="text" value="5000"/>	[50-50000]
TS muxer:	<input type="text" value="Compatible with FFmpeg"/>	
TS once pack:	<input type="text" value="7"/>	[3-128]
ts_transport_stream_id:	<input type="text" value="101"/>	[1-65535]
ts_pmt_start_pid:	<input type="text" value="480"/>	[16-7936]
ts_start_pid:	<input type="text" value="481"/>	[32-3840]
ts_tables_version:	<input type="text" value="6"/>	[0-31]
ts_service_name:	<input type="text" value="Live"/>	
ts_service_provider:	<input type="text" value="Encoder"/>	

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

For P2P, select SRT PUSH and enter the destination IP Address and Port.

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:>

Streaming With SRT Protocol

This feature requires OBS Studio 25.0 or newer.

Table of Contents:

- General Overview
- Can SRT be used with Twitch or my favorite service?
 - Services
 - Encoders
 - Servers
 - Players
- How to set up OBS Studio
 - Option 1: Stream SRT using the Streaming output
 - Option 2: Stream SRT using the Custom FFmpeg Record output
- Examples of setups
 - Relay server to Twitch

<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:

Main stream

Encoding type: H.265
 FPS: 25 [5-60]
 GOP: 30 [5-300]
 Bitrate (kbit): 2500 [32-32000]
 Encoded size: 1280x720
 Bitrate control: vbr
 TS URL: /0.ts Enable
 HLS URL: /0.m3u8 Enable
 FLV URL: /0.flv Enable
 RTSP URL: /0 Disable
 RTMP URL: /0 Disable
 RTMP(S)/RTSP PUSH URL: rtmp://28515w1109.qicp.vip:51992/live/10 Disable
 Multicast IP: 238.0.0.1 Disable
 Multicast port: 1234 [1-65535]
 SRT URL Port: 9000 Enable [1-65535]
 SRT PUSH URL: srt://192.168.1.169-9000 Enable
 SRT Encryption Password: 0123456789 Disable

4K Decoder H.265/H.264

Status
 Address setting
 Advance setting
 System setting

Status

System status
 runtime: 0000-00-00 00:15:06
 cpu usage: 7%
 mem usage: 52MB/263MB
 output format: 1080P50
 decode wndnum: 4

Channel1
 addr: srt://192.168.1.170-9000
 status: normal
 frame rate(fps): 25
 code rate(kbit/s): 2287

Channel2
 addr: srt://@9000
 status: normal
 frame rate(fps): 25
 code rate(kbit/s): 437

Channel3
 addr: srt://0123456789@192.168.1.170-9001
 status: normal
 frame rate(fps): 30
 code rate(kbit/s): 524

TS URL: /1.ts Enable
 HLS URL: /1.m3u8 Disable
 FLV URL: /1.flv Disable
 RTSP URL: /1 Disable
 RTMP URL: /1 Disable
 RTMP(S)/RTSP PUSH URL: rtmp://192.168.1.50/live/1 Disable
 Multicast IP: 238.0.0.1 Disable
 Multicast port: 1235 [1-65535]
 SRT URL Port: 9001 Enable [1-65535]
 SRT PUSH URL: srt://192.168.1.169-9001 Enable
 SRT Encryption Password: 0123456789 Enable

Advance setting
 System setting

output format: 1080P50
 decode wndnum: 4

Channel1
 addr: srt://192.168.1.170-9000
 status: normal
 frame rate(fps): 25
 code rate(kbit/s): 2031

Channel2
 addr: srt://@9000
 status: normal
 frame rate(fps): 25
 code rate(kbit/s): 813

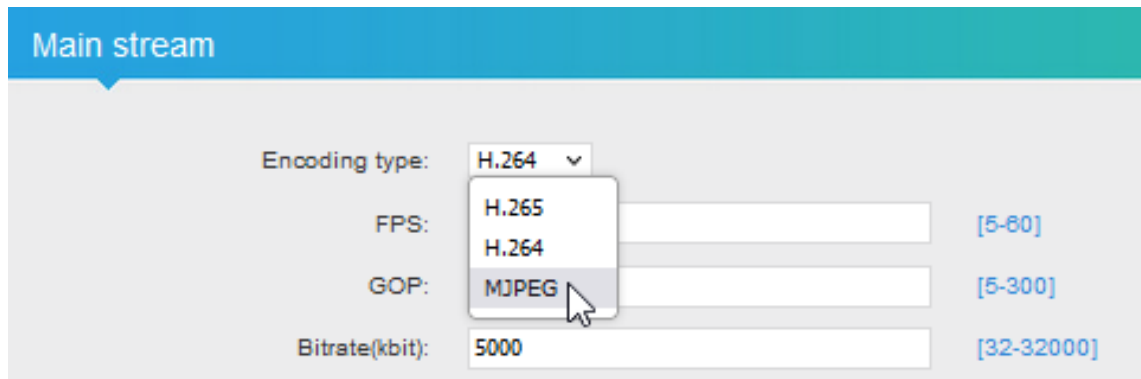
Channel3
 addr: srt://0123456789@192.168.1.170-9000
 status: normal
 frame rate(fps): 30
 code rate(kbit/s): 527

Channel4
 addr: srt://0123456789@9001
 status: normal
 frame rate(fps): 30
 code rate(kbit/s): 497

OSD

Status Network Main stream Substream Audio System

MJPEG-Support:



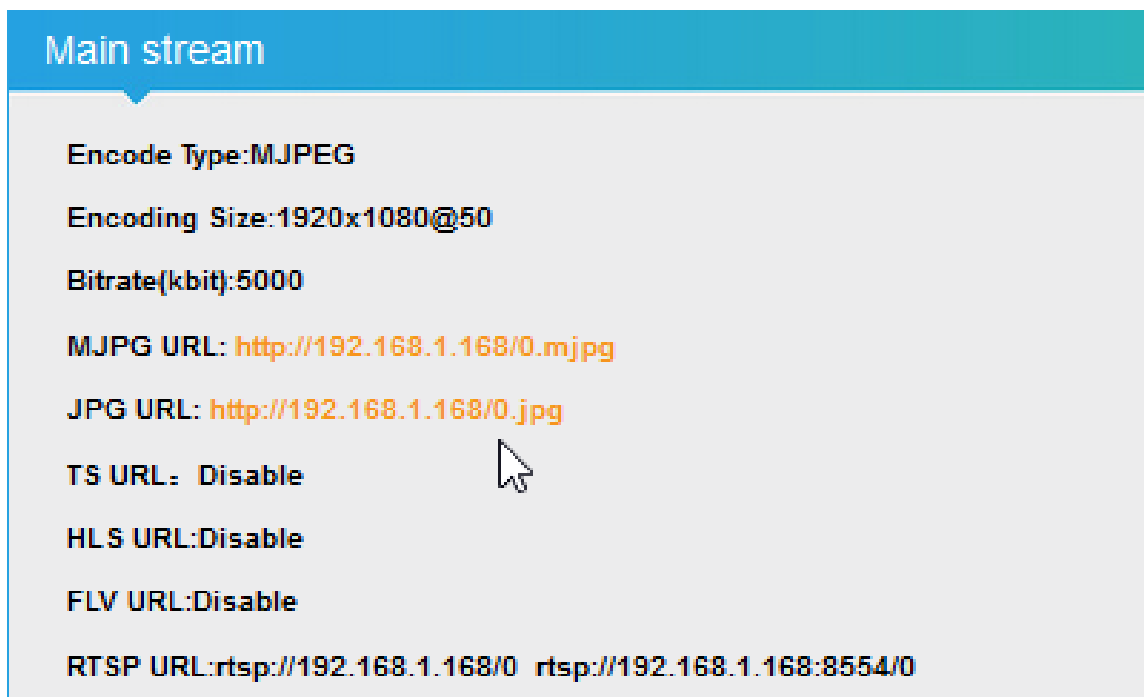
The screenshot shows the 'Main stream' configuration page. It features a teal header with the text 'Main stream'. Below the header, there are four rows of configuration options, each with a label, a value field, and a range in brackets:

Encoding type:	H.264		
FPS:			[5-80]
GOP:			[5-300]
Bitrate(kbit):	5000		[32-32000]

A dropdown menu is open for the 'Encoding type' field, showing three options: 'H.265', 'H.264', and 'MJPEG'. A mouse cursor is pointing at the 'MJPEG' option.

Status-page:

If you use MJPEG instead of h265 or h264 2 links appearing in the status-page:



The screenshot shows the 'Main stream' status page. It features a teal header with the text 'Main stream'. Below the header, the status information is displayed in a list format:

- Encode Type: MJPEG
- Encoding Size: 1920x1080@50
- Bitrate(kbit): 5000
- MJPG 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>

A mouse cursor is pointing at the 'TS URL: Disable' line.

Attention:

The decoded Input frames display might vary from time to time and sometimes the web needs a reload with the browser to update the Input data like from STATUS Window: 1920x1080i50 -> p25...

Just click-> Browser opens it:

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Usually w/o any Sound ;-)) because MJPG is motion JPG's picture transmission with out any Audio encoding for the browser.

Picture size/format correction when downscaling i.e. to SD format with old PAL settings 720x576:

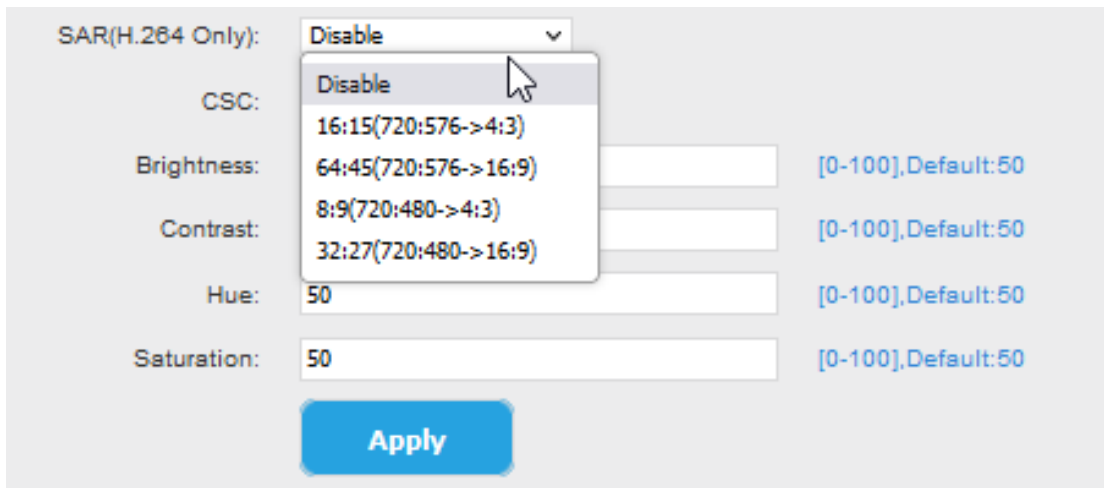
If you set the encoder process to:

Main stream

Encoding type:	H.264	
FPS:	50	[5-60]
GOP:	25	[5-300]
Bitrate(kbit):	5000	[32-32000]
Encoded size:	same as the input	
H.264 Level:	same as the input	
Bitrate control:	2560x1600	
TS URL:	1920x1080	Enable
HLS URL:	1920x1080	Disable
FLV URL:	1680x1056	Enable
RTSP URL:	1280x768	Enable
RTMP URL:	1280x720	Disable
RTMP/RTSP PUSH URL:	1024x768	Disable
Multicast IP:	850x480	Disable
Multicast port:	800x600	Disable
SRT URL Port:	720x576	[1-85535]
SRT PUSH URL:	720x540	Enable
SRT Encryption Password:	720x480	[1-85535]
	720x404	Disable
	704x576	Disable
	0123456789	Disable

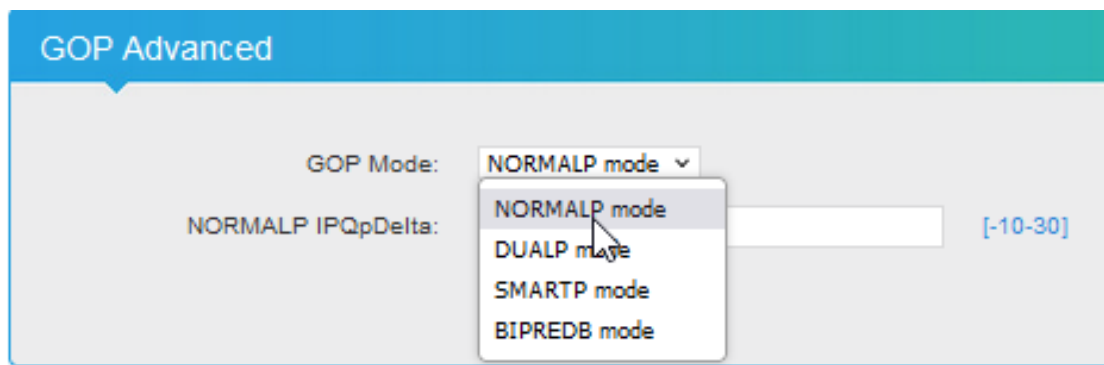
Apply

You might need to avoid the Egg-Head shrinking picture from the HD 16:9 into squeezed 4:3:



You need to reboot the machine after this to force the encoding process to do the 16:9 scaling with black bars adding into the 4:3 picture to keep the stretching picture right.

You can set the Encoding GOP modes in the advanced section:

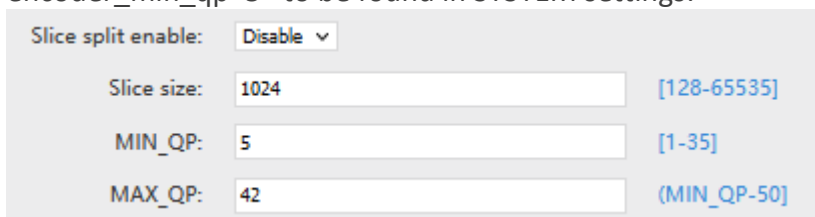


Note: Not all settings are common for both h.264 and h265 codecs...

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.

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.

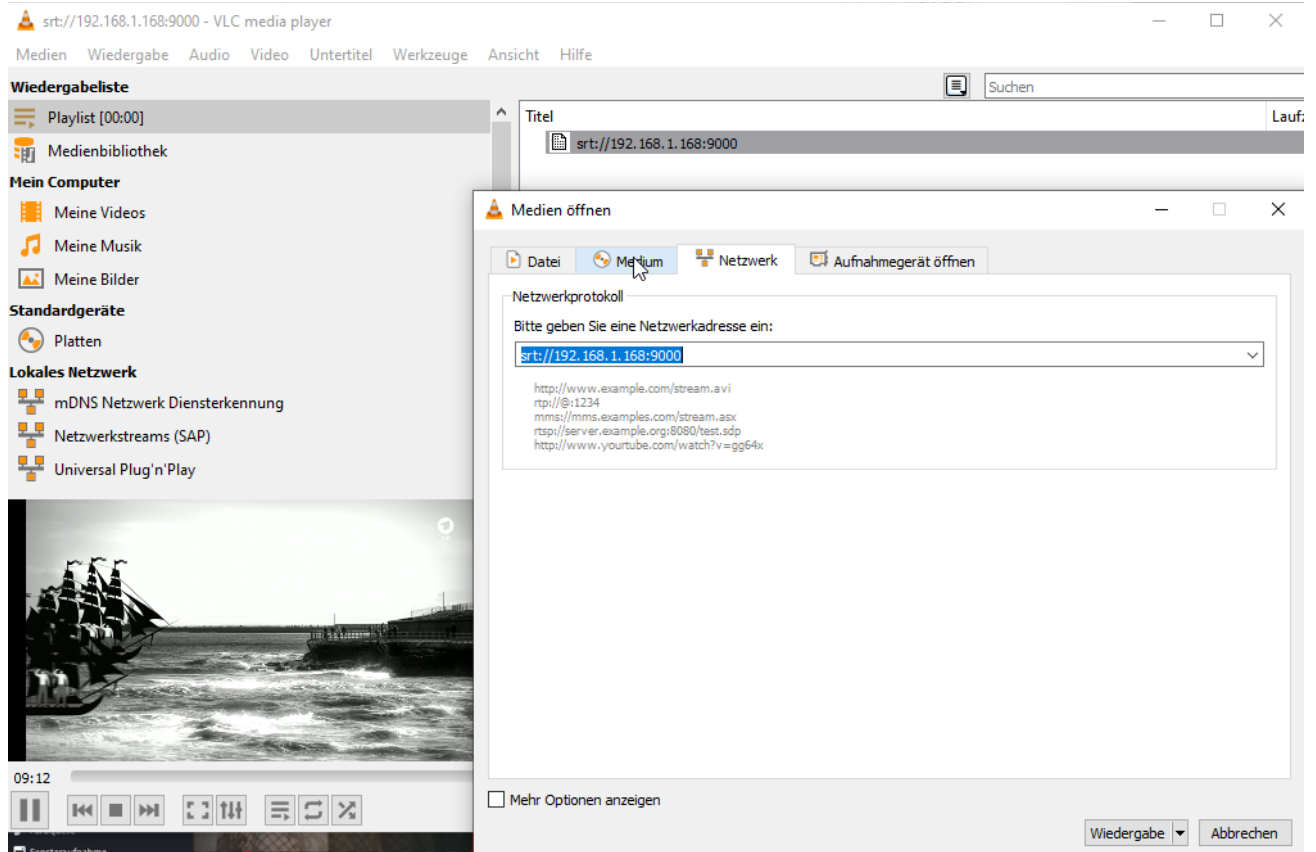
If the item “NDI source” is not displayed, the obs-ndi plug-in needs to be installed, you can download and install it from <https://github.com/Palakis/obs-ndi/releases/tag/4.6.2> or higher version:

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

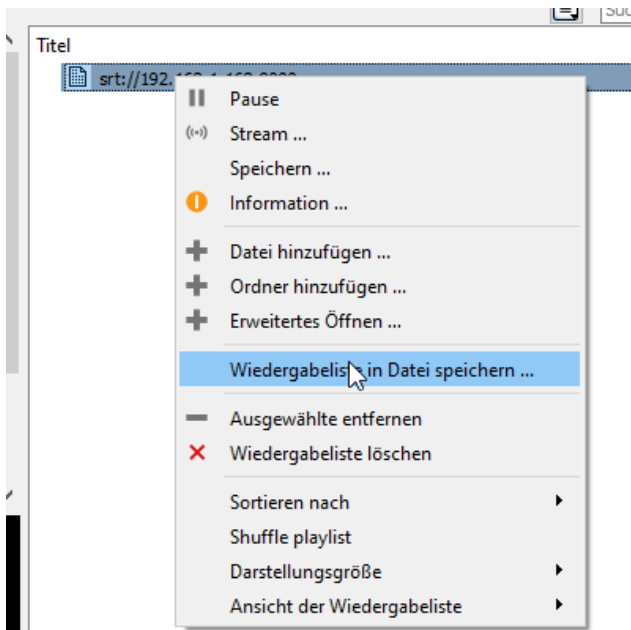
<https://github.com/Palakis/obs-ndi/releases/tag/dummy-tag-4.10.0>

Installation the VLC Source as Playlist:

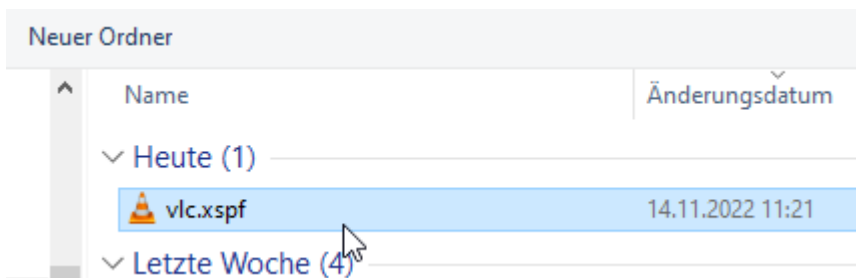
Open VLC, get your Playlist open and insert a network-stream input like UDP or here SRT:



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

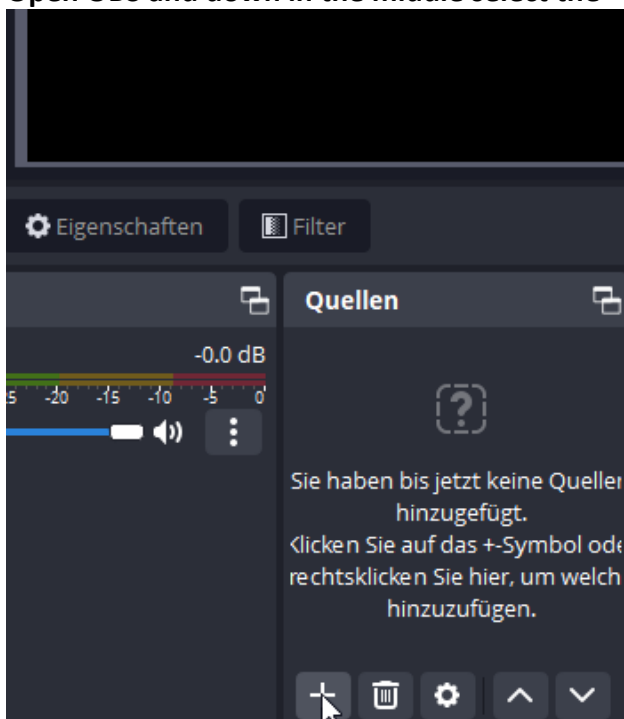


Save it on your PC:



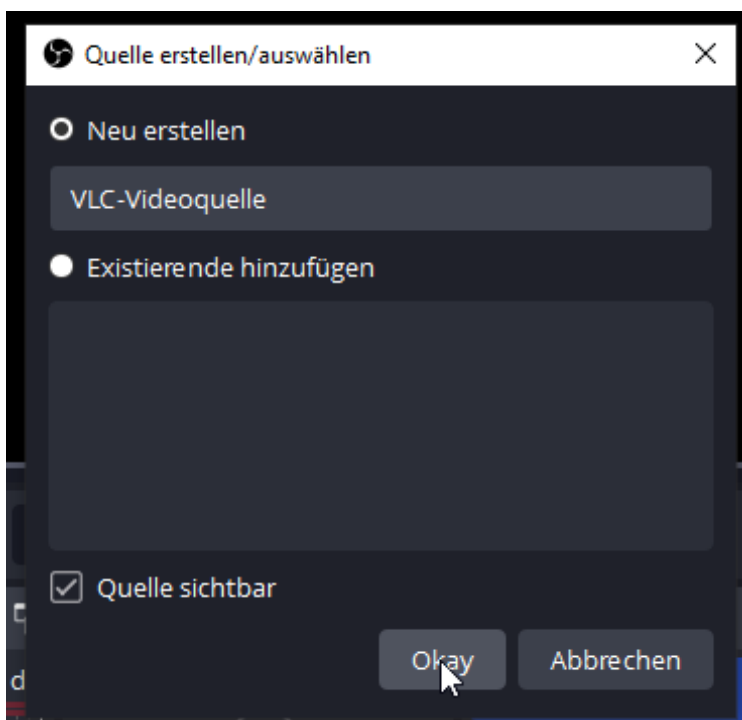
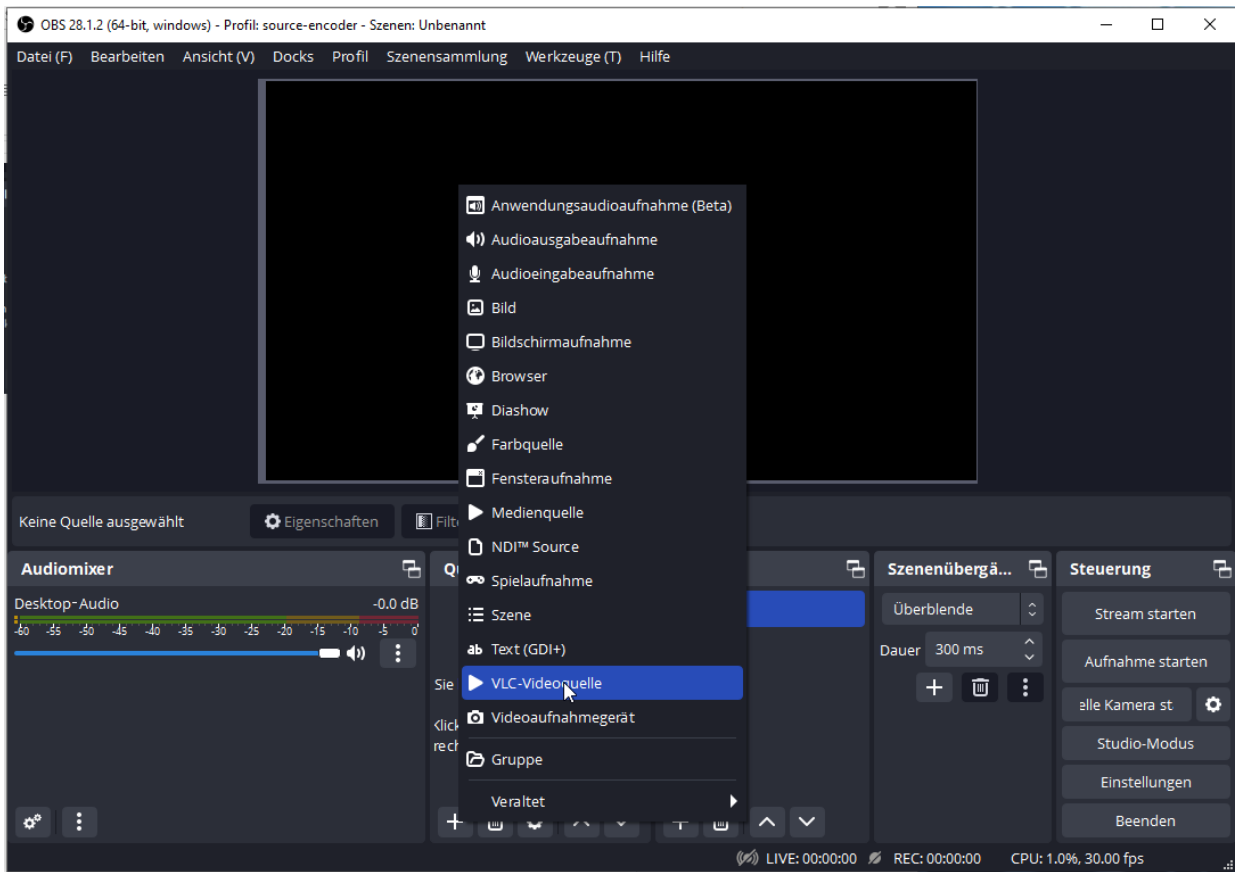
Ready.

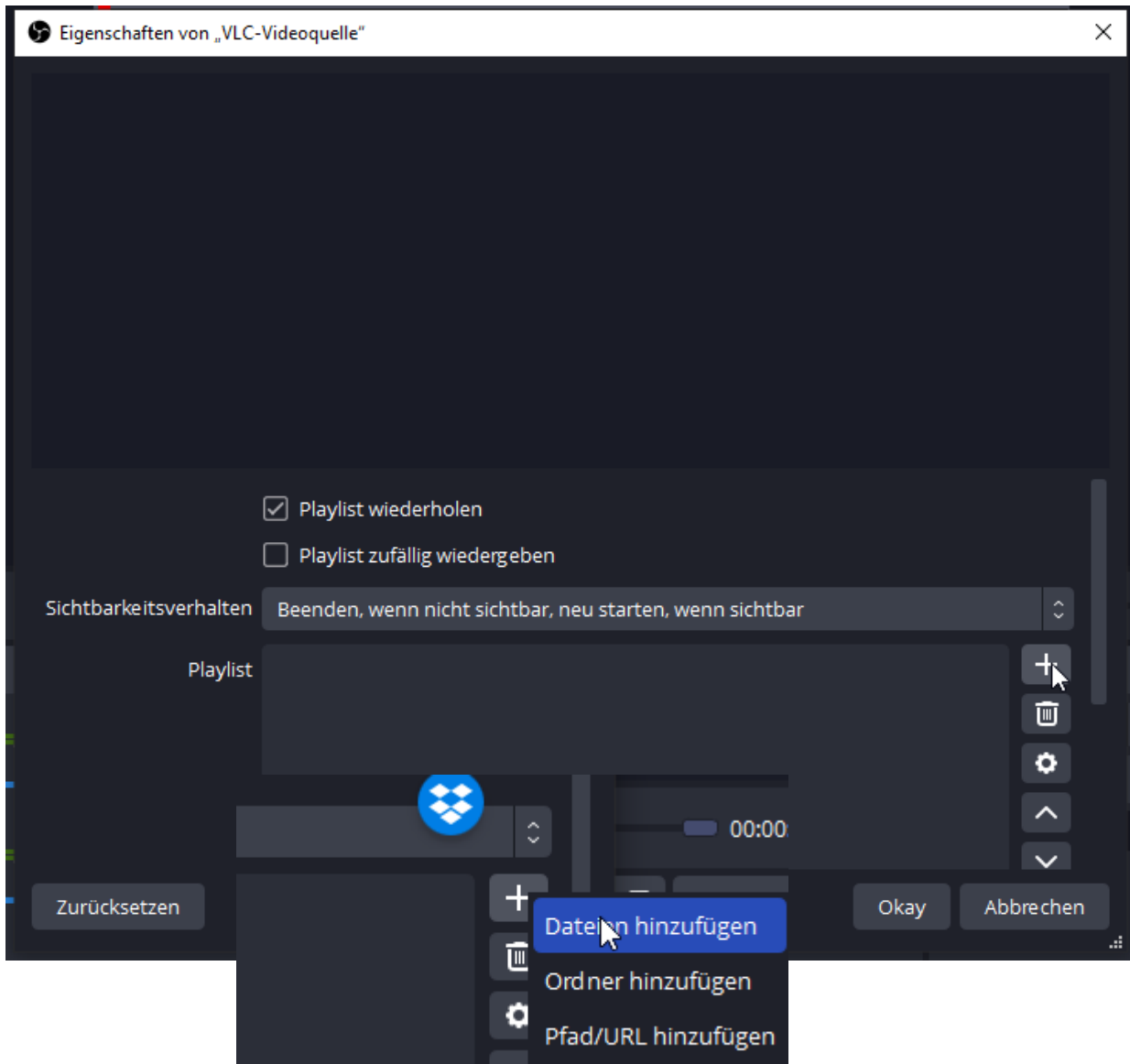
Open OBS and down in the middle select the '+' in the source field:




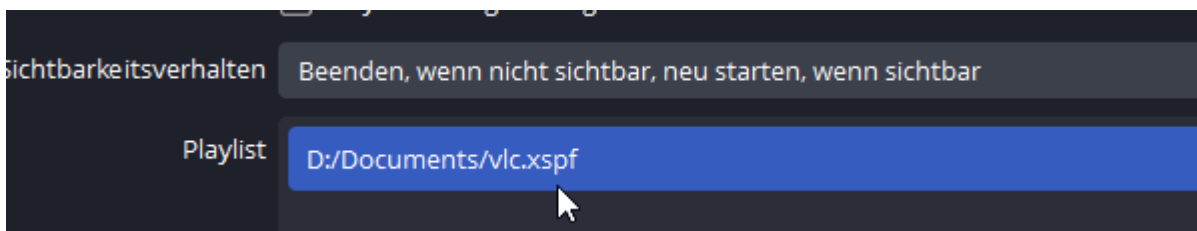
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Name	Änderungsdatum
Heute (1)	
 vlc.xspf	14.11.2022 11:21
Letzte Woche (4)	

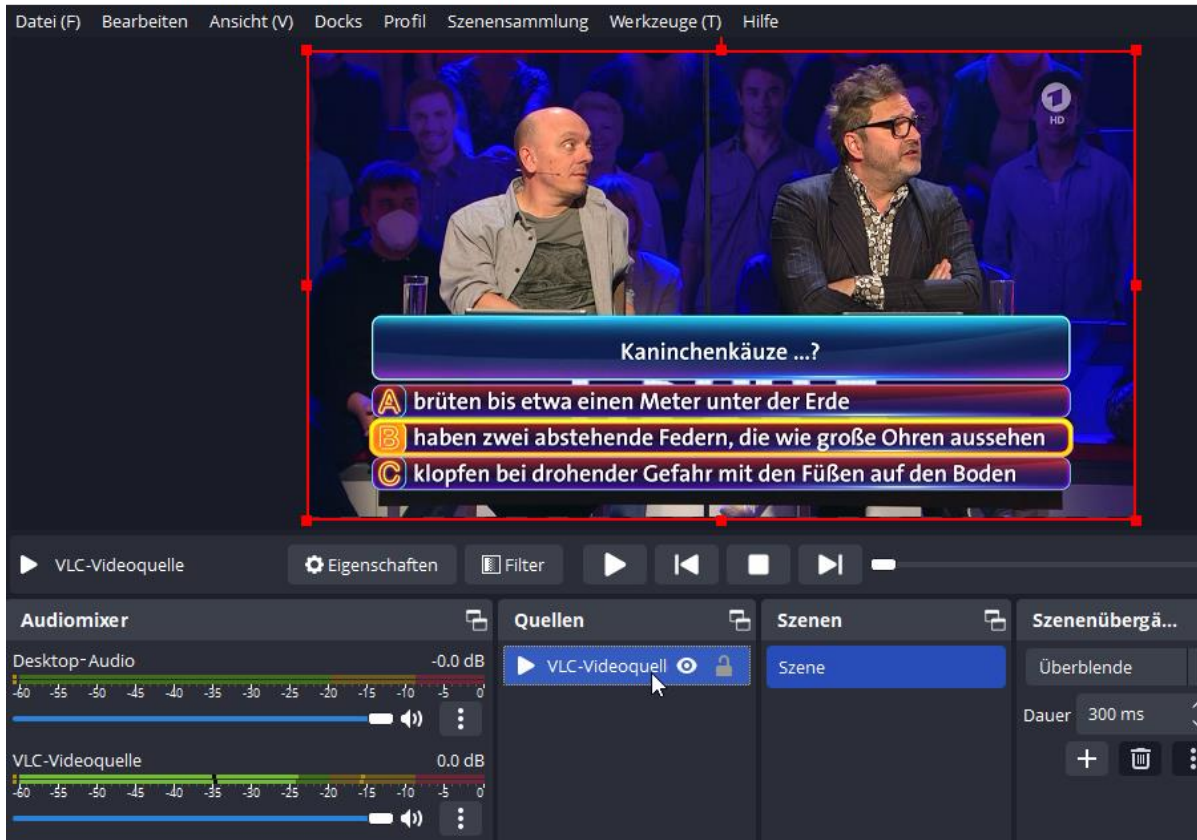


And Go:

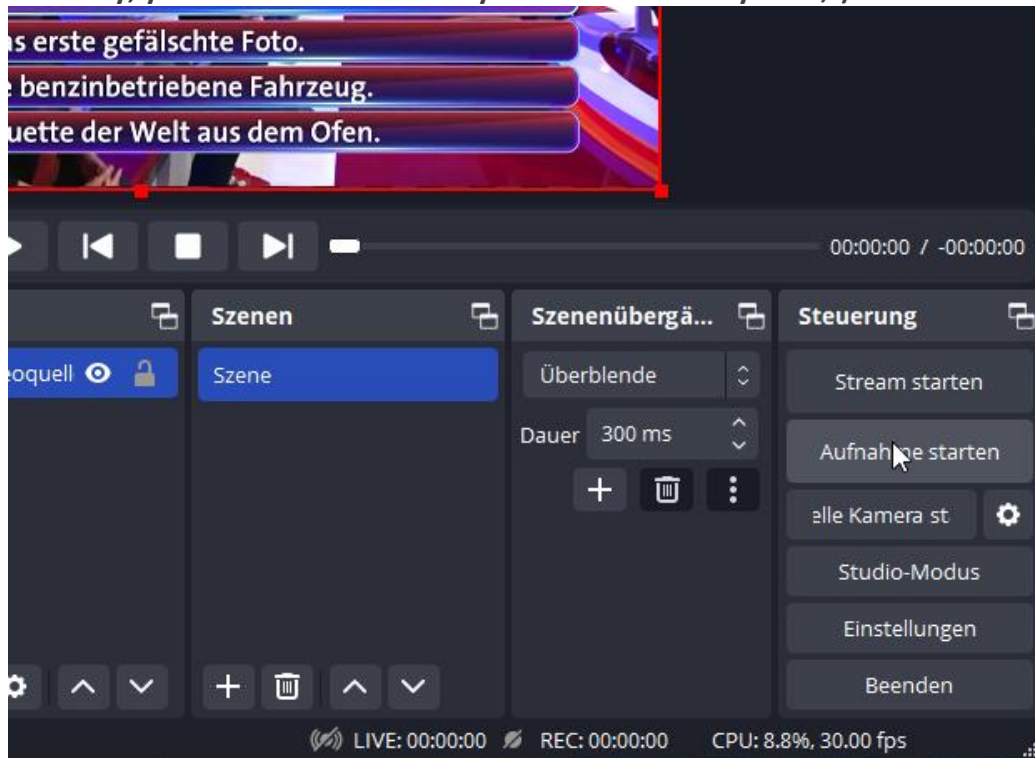
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OBS 28.1.2 (64-bit, windows) - Profil: source-encoder - Szenen: Unbenannt



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



UDP-Multicasts are supported as well: here with

Main stream

Encode Type: H.265

Encoding Type: 1920x1080@25

Bitrate(kbit): 5000

TS URL: http://192.168.1.168/0.ts http://192.168.1.168:8086/0.ts

HLS URL: Disable

FLV URL: http://192.168.1.168/0.flv http://192.168.1.168:8086/0.flv

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

RTMP URL: Disable

RTMP(S) PUSH URL: Disable

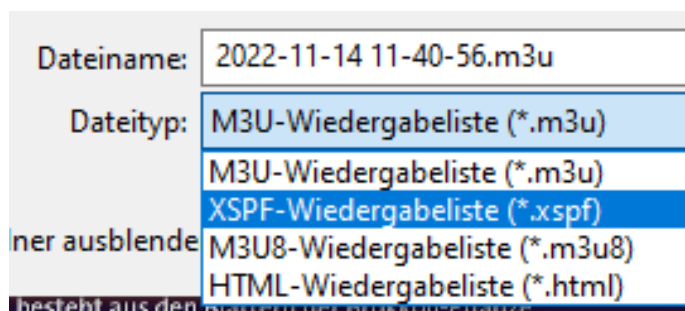
Multicast URL: udp://@238.0.0.1:1234

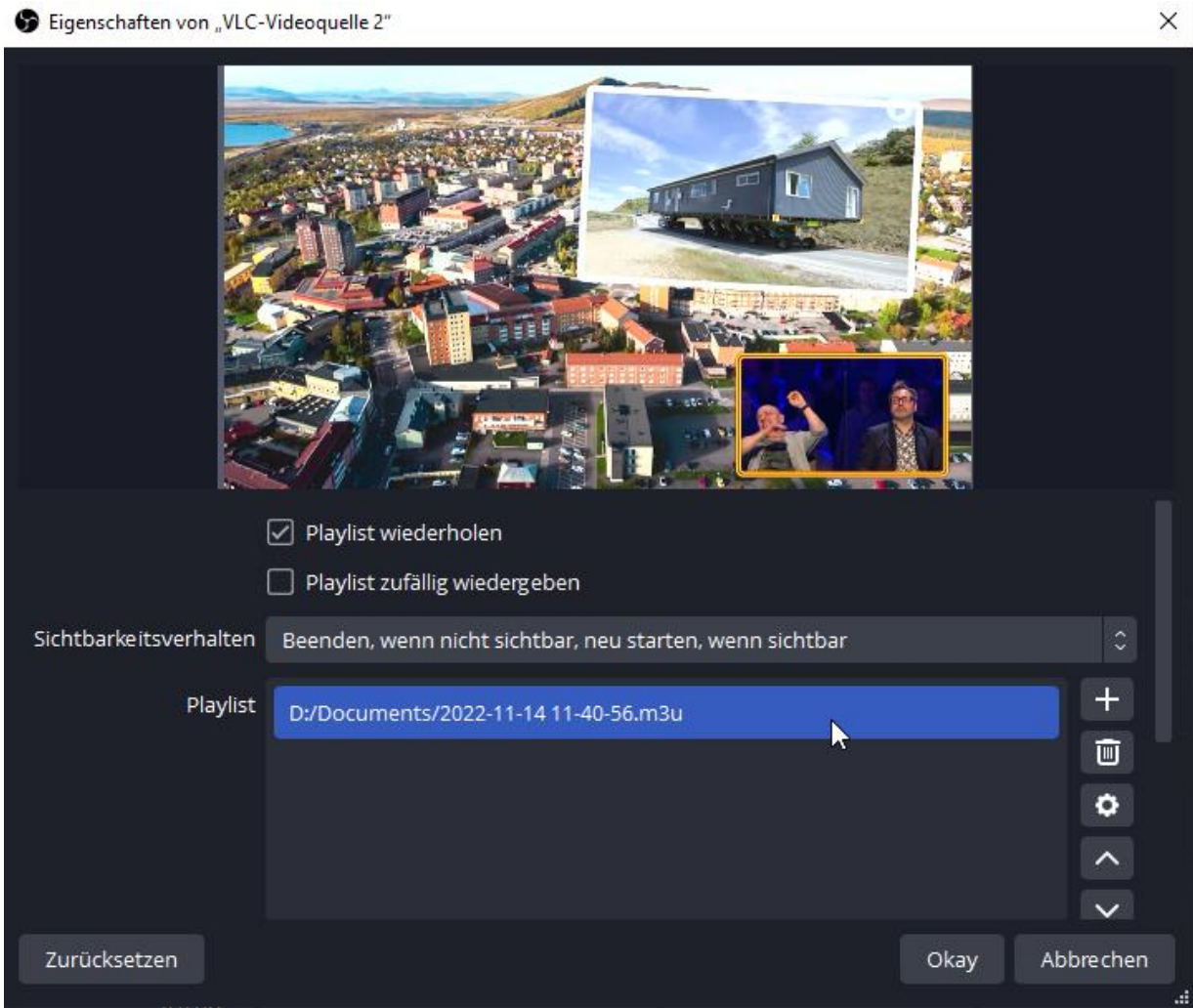
SRT URL: srt://192.168.1.168:9000

SRT PUSH URL: Disable

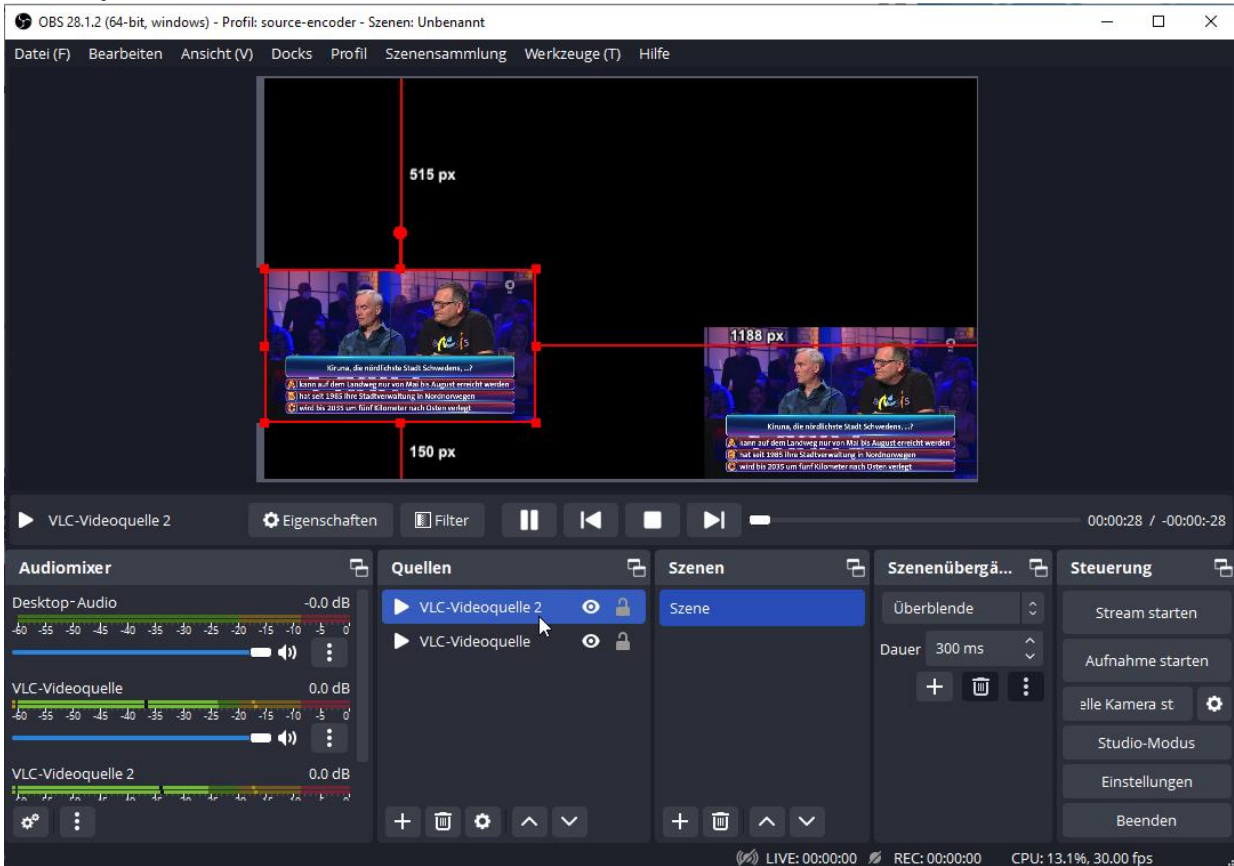
Preview(HTML5)

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





To sample some streams and create a mosaic:



Quick-Start-Manual

