

SoC Encoder & IPTV Streamer with HD-SDI Input



h.265 and h.264 compatible encoder & IP streamer as boxed or 19" 1RU

- HD-SDI or SD-SDI input for encoding
- Stereo Audio embedded or external Input (3.5mm stereo)
- HD Resolution input 1080p, 1080i, 720p, out: progressive (p)
- IP output: RTSP, RTMPs, UDP/RTP, HTTP, HLS, FLV, SRT, MJPG
- Distribution of Video Camera HD-SDI and other sources content over LAN, WAN or internet.
- 2 or max. 4 simultaneous and independent Live stream broadcast encoder engines to multiple destinations
- Video-over IP applications (Studio signal distribution)
- IPTV/OTT applications
- Video conferencing, Camera streaming
- IPTV on LAN applications, Corporate IPTV for Broadcasters
- HD and SD video encoding (incl. 1080p)

Complementary products:

- HSD-340 HDMI to SDI converter
- HDD-275 Decoder IP to 4K/HDMI/HD-SDI/VGA/CVBS outputs
- IPTV Set Top Box 6800+
- HDC-5004: IP UDP/RTP to 4 muxed adj. RF DVB-C Modulator
- HDC-5016: 512 IP to 16 DVB-C channels

BLANKOM SDE-(1)265 encoder serves 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, on PC has and tablets with VLC Player.

BLANKOM SDE-265 & SDE-1265

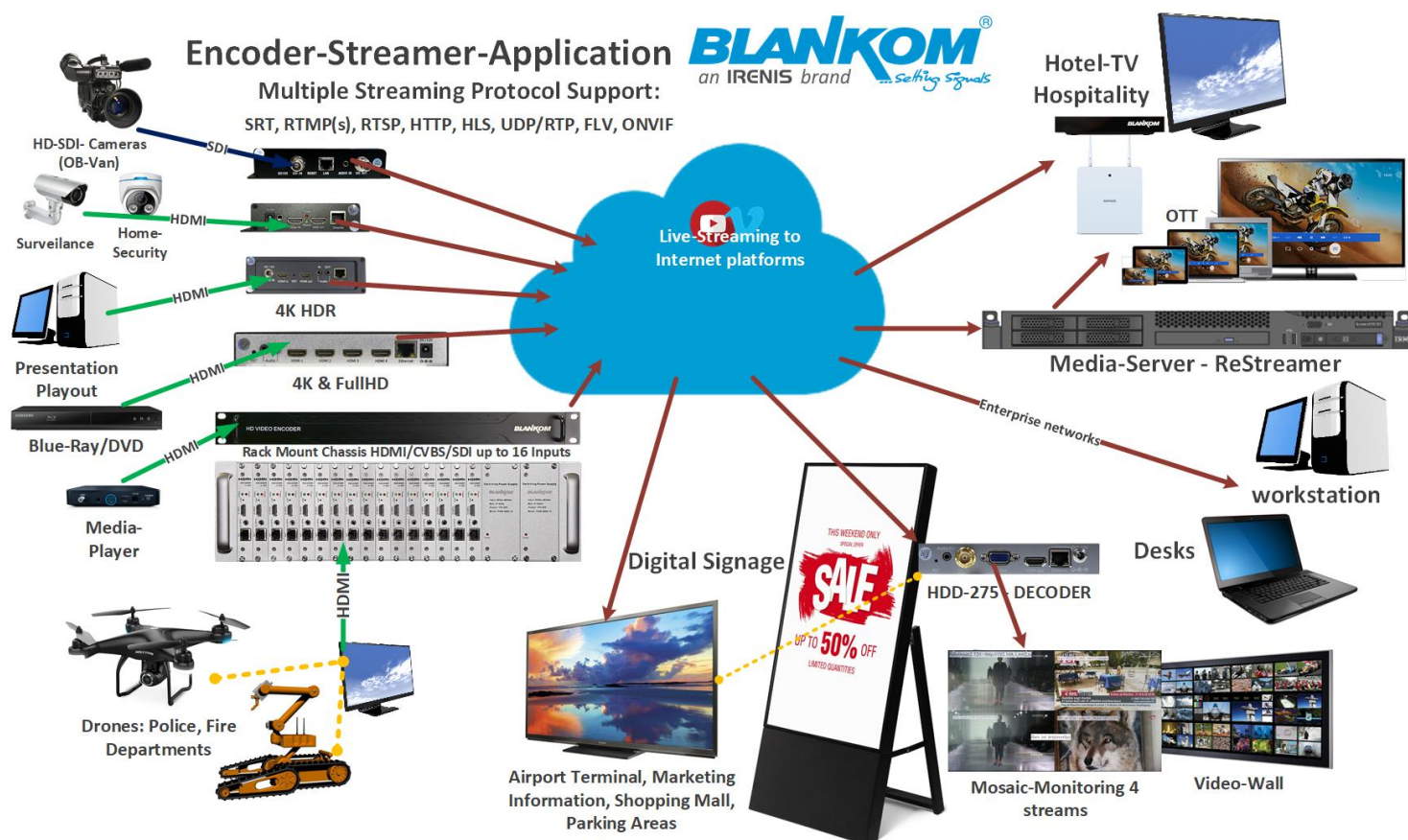
IPTV encoder is designed for TV signal distribution in excellent quality over LAN and INTERNET.

The 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 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.

Remark: SDE-264 is not available any more



Function	h.265 (HEVC compatible) and h.264 (MPEG4 compatible) Encoder and IP Streamer
INPUT	3G HD-SDI/SD-SDI (BNC type) input and loop through output, SDI level A+B autodetect*
Resolution	1080p, 1080i, 720p and below
Video encoder	h.265 (HEVC) or h.264 (AVC) or MJPEG compatible
Audio encoder	AAC, AAC++, MP3, MPEG1Layer2, AC-3 stereo compatible
Audio Bit-rate:	Bit-rate: 32k/48k/96k/128k/160k/192k, Data-rate: 64 kbps-384 kbps
Data interface GbE	RJ45, 1000BaseT Ethernet interface, management by web browser
Protocol	HTTP, RTSP, RTMPs, UDP/RTP, FLV, HLS ; unicast/multicast, SRT P2P
Streaming	DVB-conform IP streams w/ Tables and selectable adding Zero-PID function
Data Rate	32 kbps – 32 Mbps
Encoding bitrate process	CBR or VBR (CBR setting enables zero-packet insertion for the TS)
SMPTE 425	Support Level A & B
GOP Structure	IBBP
ONVIF 2.x	Supported by RTSP: G711A
Picture adjust	De-interlacing, Noise reduction, Sharpening
OSD	4 Logo and Text Insertion as transparent overlays possible
Power supply	12V DC, 1A
Dimensions	165x85x24mm
Weight	0.5 kg
Consumption	5...10W

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.

View the new add-ons and features: They are written as add-on pages to the last manual-page (just before the addendums)

***) example: SDI-Auto-detection of Level -A or -B implemented since Firmware Version 5.17**

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

Hardware and Software versions from the past and until now:

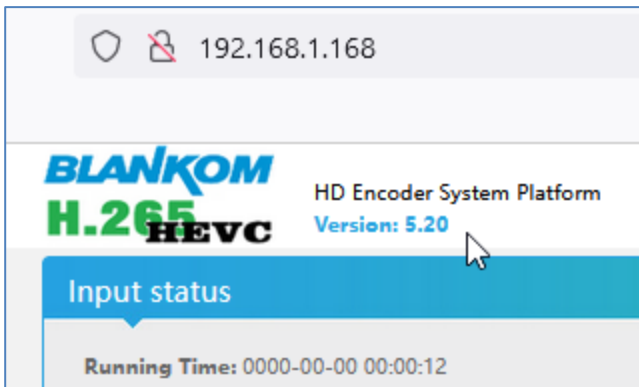
The old and new (temporary) design varies a little:



Produced until November 2020:

The Firmware Version ends with 6.51E (HDMI) and 6.51S (SDI Input). We were forced to redesign the hardware SoC's because of not available chipsets (Worldwide Chip-situation). We were forced to source from 2 different PCB and housing suppliers because of being able to serve our customers in time avoiding delivery times of 3 month and more...

The next Version in **Black** housing -but same lookalike- got Firmware versions with 5.xx and ended with 5.20 for HDE-265L and SDE-265 as a common firmware in both models: Can be detected on Status-page when entering



which also is the same Version in this temporary

hardware design:



Temporary just until August 2022, FW 5.20

The new Firmware Versions HDMI=SDI has started with 2.** and begun from 2.13A; where 'A' indicates the new modern chipset from Ambarella (SDI HDMI VGA - same firmware) which is available in 2 different housings.

Actual
Design



Obvious: The 3 dimensions of the variants are all different...

The new Chipset has some advantages and improvements like a direct preview Window as WebRTC:

192.168.1.168 🔊 ⭐

BLANKOM
H.265
HEVC

HD Encoder System Platform
 Version: 2.15A

Input status

Running Time: 0000-00-00 00:00:22
 Device Time: 2022-09-15 11:38:52 (Sync Time To Device)
 Device Name: Encoder_17566
 CPU Usage: 2%
 Memory Usage: 170.3M/600.0M
 Codec Usage:43%
 Input Size: 1920x1080i@50
 Video Status: Normal
 Collected Video Frames: 918
 Audio Samplerate: 48000
 Audio Status: Normal
 Collected Audio Frames: 823
 Net Packet Sent: 14
 Net Packet Dropped: 0
Preview(Low Delay)

GOP settings:

GOP: [5-300]

Bitrate Control:

Bitrate Stable:

Video changing selections:

Video Input

Video Rotate:

Flip And Mirror:

Input Video Clipping:

Video Clipping(Left): [0~1920]

Video Clipping(Top): [0~1080]

Video Clipping(Width): [0~1920]

Video Clipping(Height): [0~1080]

Monochrome:

PAR: **Disable** (DAR = SAR x PAR)

Deblocking Enable: **Disable**

Deblocking Alpha: **4:3(4:3->16:9)** [-6~6]

Deblocking Beta: **16:15(720:576->4:3)** [-6~6]

CP

TS/RTSP Password Enable: **Disable**

HTTP No Password: **Disable**

Telnet Service: **Enable**

RTSP Default Stream: **Main Stream**

All SDI-Versions have a loop through to cascade the Input to other SDI-devices... do not mess up with them...

ATTENTION:

Please do not feed the SDI BNC Input with remote powering like some Cameras doing with 12V DC. This will destroy the SDI Input circuit. In addition, before connecting the 12V DC Power source, connect the Ethernet and SDI-BNC cables first. A hot plug of SDI BNC is not recommended because of non-grounded DC potential differences (over a long coax cable) might destroy the input circuit.



Sticker with default settings (MAC may be different)

Notes and Hints:

The Gigabit-Ethernet-port does not support PoE.

We recommend using an IGMP-V2/3 protocol, capable GBE- Switch to avoid flooding your network with unmanaged multicast streams. In addition, 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. HD with 1080p60 or lower. Higher values will not work.

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 need to been 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...

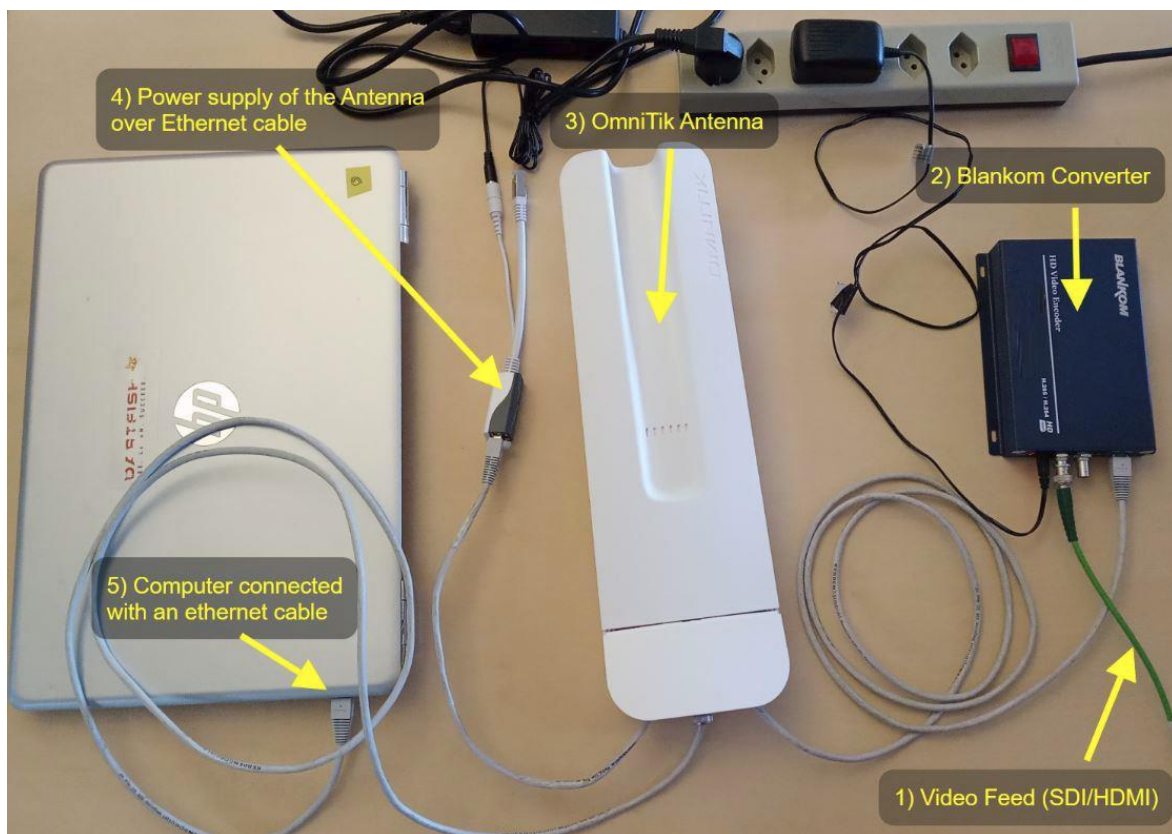
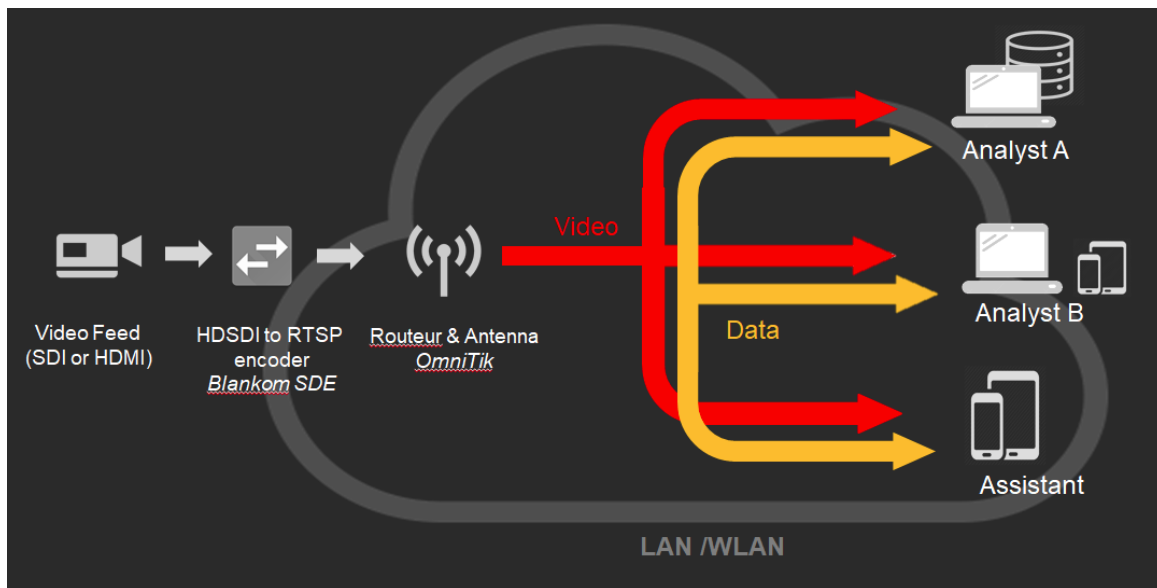
The RESET button will erase all your settings and the unit will be forced to start with factory defaults. Use a thin wire to pass the small hole and press the inside button by it for at least 5-10 seconds until the System LED will go off. The encoder would perform a restart than after releasing the button.

The Web-Interface lookalike may vary between different Versions but it is self-explaining.

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

PLEASE check grounding voltage potential differences between the grounding of SDI-Coax, Network Cable and Power-Supply-Ground at the metal chassis. If necessary, you should ground all.

Example with the Dartfish –Setup:



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. Than connect the BLANKOM SDI-Streamer - Converter with all connectors before powering on the whole system. Do not mess-up with the power supplies: The Antenna uses 28Volt DC which would kill the SDI-Encoder by too high Voltage.

As mentioned above, we have done 2 **Hardware improvements** of the SDI-Encoder-Version so it comes with a new Firmware as well. (Same for HDE-265, the new is named HDE-265L).

Differences:

- Old Hardware & firmware ends with **V6.56S** produced until February/April 2021
- Version 5.xx Hardware with 4 encoder sub-parts looks slightly different:

- Now more encoding parts 1x Main and 3x Secondary are active – but depend from each
- Next Firmware starts at V.5.xy or actually is:

5.20:

- From Version 5.11, the web-player preview can be chosen also for h.265 encodings:

Main stream

Encode Type: H.264

Encoding Type: 1920x1080@30

Bitrate(kbit): 3200

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: Disable

SRT URL: Disable

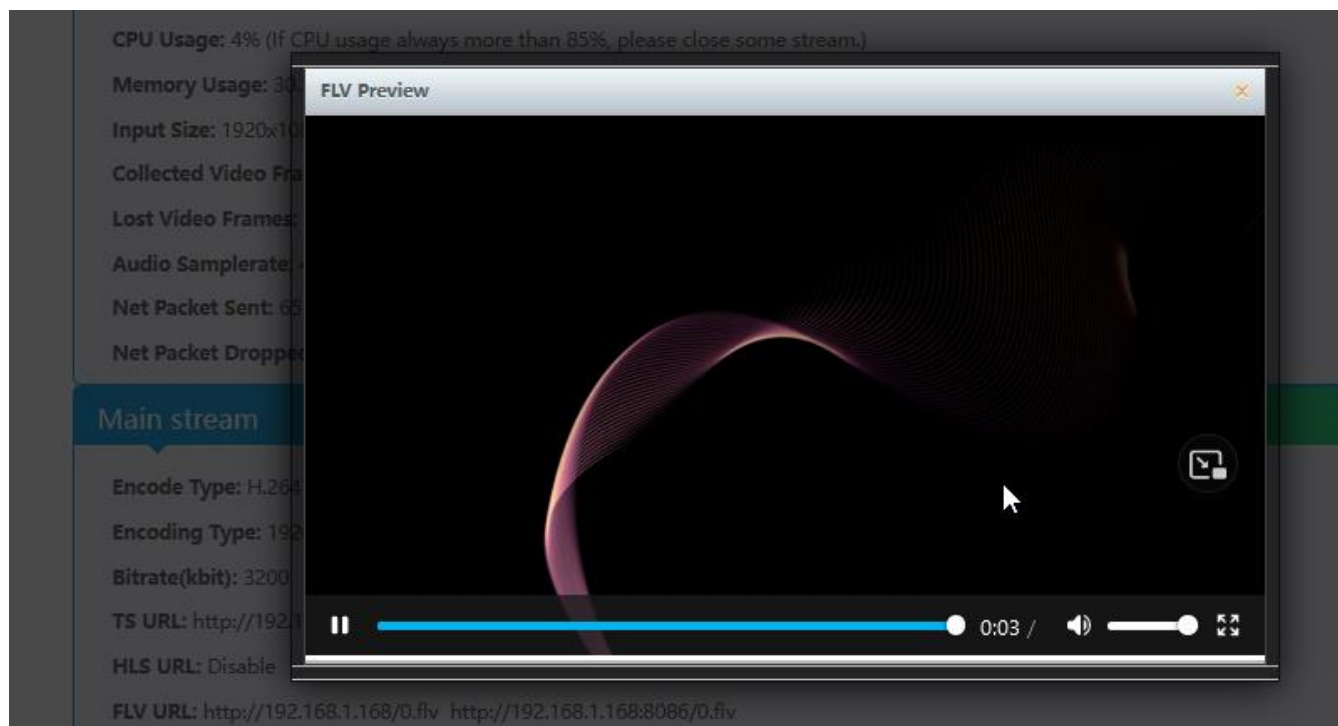
SRT PUSH URL: Disable

Preview(HTML5)

FONTs

Improved for
better lookalike
and visibility
avoiding serifs

even with HEVC/h.265



But no Play/stop/ffwd/rwd available Like in h.264 encoding mode:



- **A hint:** Sometimes it helps to reboot the unit in the SYSTEM Menu when you have changed essential streaming values like UDP -> RTP... But usually, no need

Actual Ambarella Chipset Firmware is 2.36A (A= Ambarella) and should not uploaded to a Version like shown in the STATUS window top with either a6 or a 5 in front or to a version with a 'W' at the end.

BLANKOM H.265 HEVC HD Encoder System Platform
Version: 2.36A

Input status

- Running Time: 0000-00-00 00:06:48
- Device Time: 1970-01-01 03:09:07 (Sync Time To Device)
- Device Name: Encoder30071
- CPU Usage: 5%
- Memory Usage: 212.1M/512.0M
- Codec Usage: 43%
- Input Size: 1920x1080i@50
- Video Status: Normal
- Collected Video Frames: 20854
- Audio Samplerate: 48000
- Audio Status: Normal
- Collected Audio Frames: 18904
- Net Packet Sent: 14
- Net Packet Dropped: 0
- [Preview\(Low Delay\)](#)

New features in 2.36A:
HTTPS, mDNS and Hostname settings:

HTTPS

HTTPS:

HTTPS Port: [1-65500]

HTTPS Private Pass: (If the private key does not have a password, it is empty)

Select File: Keine Datei ausgewählt. (File name is 'private.key' or 'public.crt'. Please don't upload by different people at the same time, don't power off during upload.)

HOSTNAME

HOSTNAME:

mDNS:

mDNS URL:

Image Quality Range: Better -> Best
 Bitrate(kbit):
 TS URL:
 HLS TS URL:
 HLS MP4 URL: /0_mp4.m3u8

Quality changing

TS Service Name: Live
 TS Provider Name: Encoder
 Conform to System B (DVB): Disable
 TS Null Packet: Disable
 TS TDT: Disable

Table system can be set to DVB-C Annex B compatibility -> USA / Korea cableTV norms = not for EU and the rest of the world if you use an IP to QAM Modulator behind the IP encoder streamer.

Private Multicast modus (proprietary) – to reduce latency in multicasts:

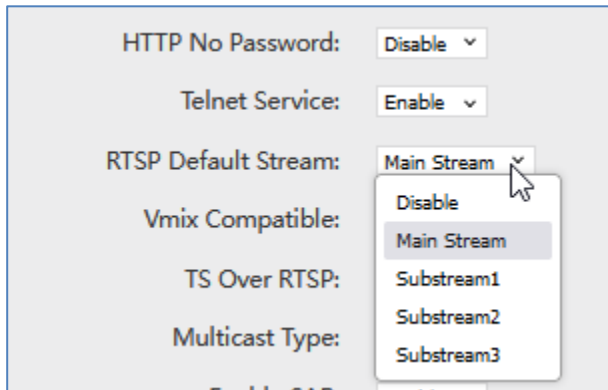
Advanced settings / System Menu:

vmix Compatible:
 TS Over RTSP: ES
 Multicast Type: PTL
 Enable SAP: PTL
 SLICE Number: 1

Address to enter is then:

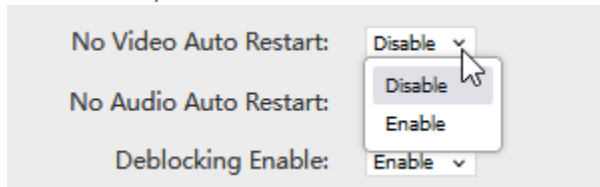
RTMP(S) PUSH URL: Disable
 Multicast URL: ptl://@238.0.0.1:1234
 SRT URL:Disable
 SRT PUSH URL:Disable
 HLS PUSH URL:Disable

Status	Network	Main stream	Substream1	Substream
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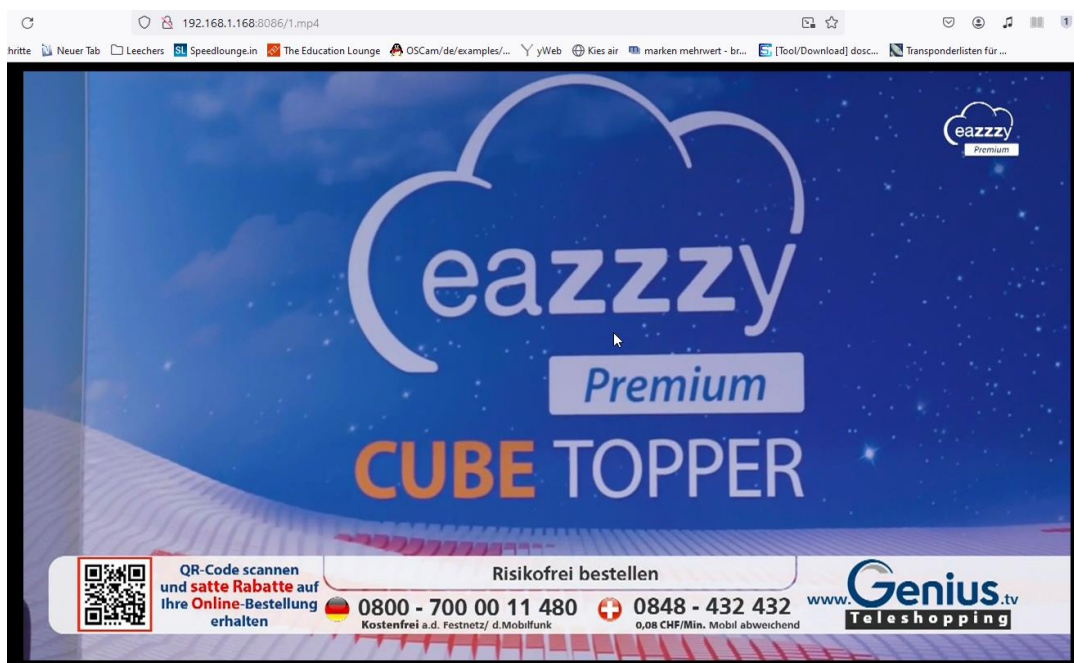


An RTSP default unicast stream setting.

A Restart by Video or Audio loss:



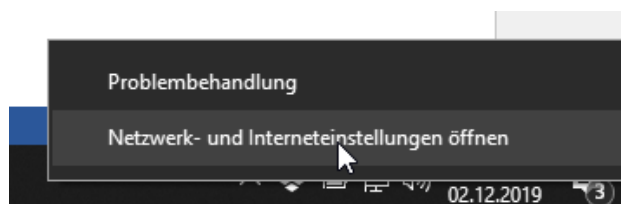
Direct Browser Video address (only h.264 encodings):



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:

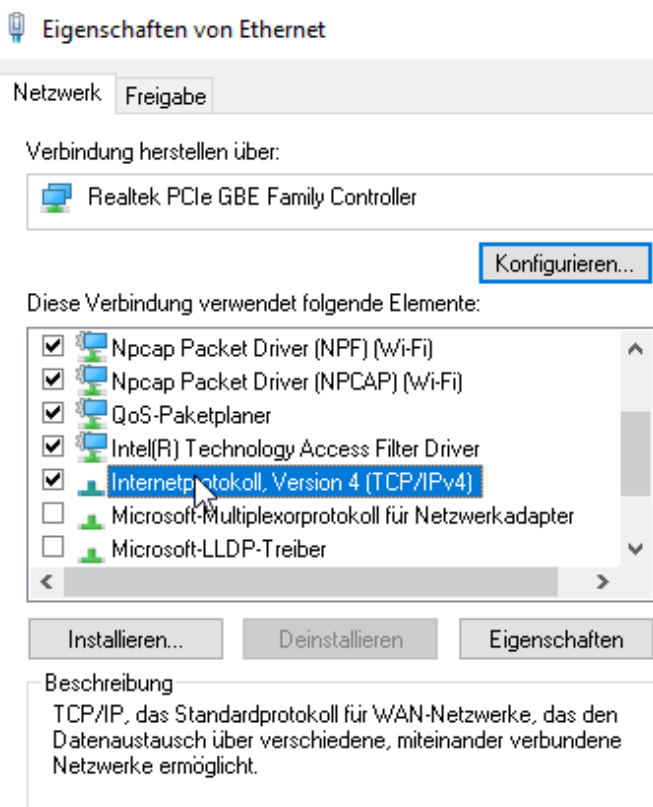


→ -> Maybe confirm Administrator access-> Change IPv4 settings:



Netzwerkeinstellungen ändern

Adaptoptionen ändern
Zeigt Netzwerkarten und ändert Verbindungseinstellungen.



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 will get a log-in-screen window:



Der Server "192.168.1.168" fordert Ihren Benutzernamen und Ihr Kennwort an.

Der Server meldet: "pbox".

admin

.....

☒ Anmeldedaten speichern

OK Abbrechen

Bitte melden Sie sich an

http://192.168.1.168

Die Verbindung zu dieser Website ist nicht sicher

Benutzername:

Passwort:

Anmelden Abbrechen

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

Input status

Running Time: 0000-00-00 00:11:51
Device Time: 2018-03-22 22:34:13 (Sync Time To Device)
Device Name: Encoder_20583
CPU Usage: 10% (If CPU usage always more than 85%, please close some stream.)
Memory Usage: 29.2M/247.1M
Input Size: 1920x1080p@0
Collected Video Frames: 184
Lost Video Frames: 3
Audio Samplerate: 48000
Net Packet Sent: 49
Net Packet Dropped: 0

Main stream

Encode Type: H.264
Encoding Type: 1920x1080@50
Bitrate(kbit): 3200
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: Disable
SRT URL: Disable

Status

Network

Main stream

Substream1

Substream2

Substream3

Audio & Video

System

HD ENCODER CONFIGURATION PLATFORM

If you loose the IP address of this unit you can reset it to default by pressing the **RESET button** with a kind of needle through the hole in the housing for several seconds until the LED(s) at the network port and or the other status leds will turn partly to off. See explanation above.

Main stream

Encode Type: H.264

Encoding Type: 1920x1080@30

Bitrate(kbit): 3200

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: Disable

SRT URL: Disable

SRT PUSH URL: Disable

[Preview\(HTML5\)](#)

Substream1

Encode Type: H.264

Encoding Type: 1280x720@30

Bitrate(kbit): 3200

TS URL: Disable

HLS URL: Disable

FLV URL: http://192.168.1.168/1.flv http://192.168.1.168:8086/1.flv

RTSP URL: Disable

RTMP URL: Disable

RTMP(S) PUSH URL: Disable

Multicast URL: Disable

SRT URL: Disable

SRT PUSH URL: Disable

[Preview\(HTML5\)](#)

The Delay depends on codecs/resolutions in use

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

Parallel and different streaming 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 Substream would be disabled... The B-Models support only one streaming Method enabled in Main and sec. Stream (= max. 2 outputs)

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



However, you need to enable the FLV or HLS stream before using that – and your browser needs **Flash-Player support**:

Enabling it in the related Sub-Stream settings

MP4 URL:	/0.mp4	Enable
FLV URL:	/0.flv	Enable
RTSP URL:	/0	Disable

-> Applying it by Set Up!

TS URL:	/1.ts	
HLS URL:	/1.m3u8	
FLV URL:	/1.flv	
RTSP URL:	/1	
RTMP URL:	/1	Disable <input type="checkbox"/>
RTMP/RTSP PUSH URL:	rtmp://192.168.1.50/live/1	Disable <input type="checkbox"/>
Multicast IP:	238.0.0.1	Disable <input type="checkbox"/>
Multicast port:	1235	[1-65535]

Set up

Set successfully, please restart your device!

OK

This does not mean to restart the encoder but to **restart your Stream-receiver-Decoder** like VLC or IPTV Decoder / 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. A reboot is only needed after changing IP settings of the system.

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

-> **SDI or HDMI Input stream- Preview:** The Ambarella-chip Preview is working w/o FLV set to ON:

BLANKOM
H.265 HEVC

HD Encoder System Platform
Version: 2.36A

Input status

Running Time: 0000-00-00 00:41:04

Device Time: 1970-01-01 03:43:23 (Sync Time To Device)

Device Name: Encoder30071

CPU Usage: 6%

Memory Usage: 213.3M/512.0M

Codec Usage: 43%

Input Size: 1920x1080i@50

Video Status: Normal

Collected Video Frames: 9104

Audio Samplerate: 48000

Audio Status: Normal

Collected Audio Frames: 8189

Net Packet Sent: 27416

Net Packet Dropped: 1058

Preview(Low Delay)



Main stream

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 values:

Input status

Running Time: 0000-00-00 00:00:02

Device Time: 2024-06-10 11:04:36 (Sync Time To Device)

Device Name: Encoder30071

CPU Usage: 10%

Memory Usage: 215.4M/512.0M

Codec Usage: 43%

Input Size: 1920x1080i@50

Video Status: Normal

Collected Video Frames: 46

Audio Samplerate: 48000

Audio Status: Normal

Collected Audio Frames: 22

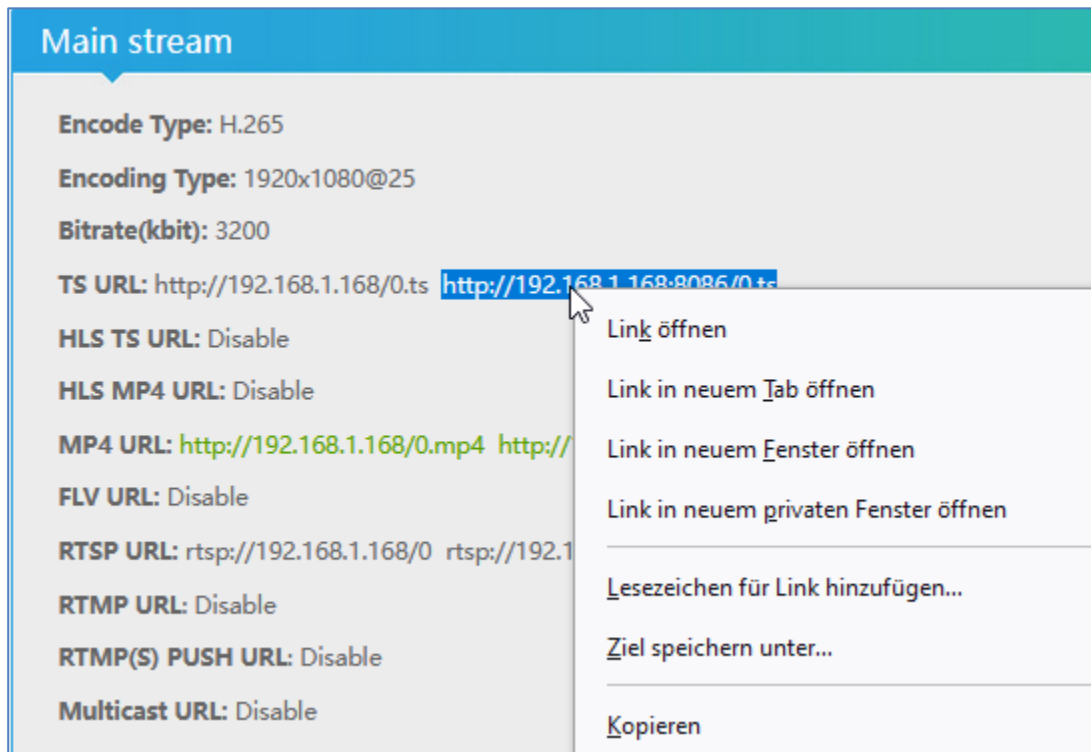
Net Packet Sent: 30433

Net Packet Dropped: 1079

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...

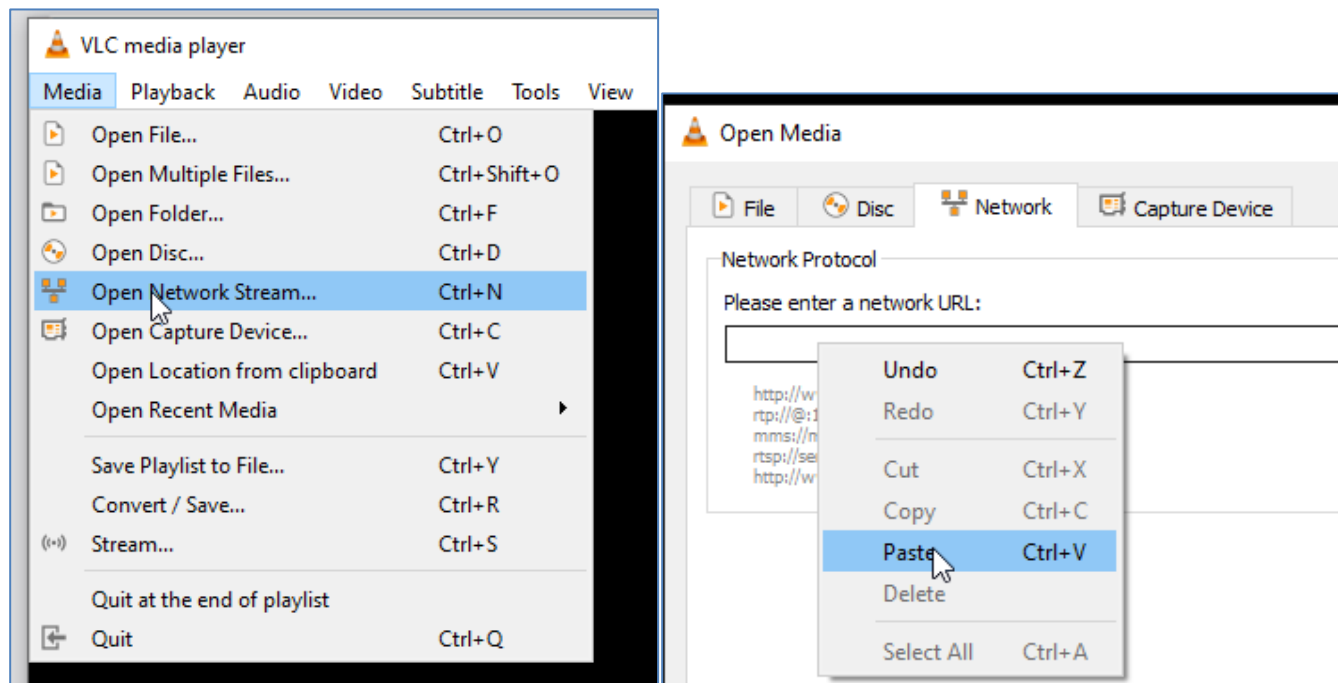
If you press (Sync Time to Device) it will be updated.

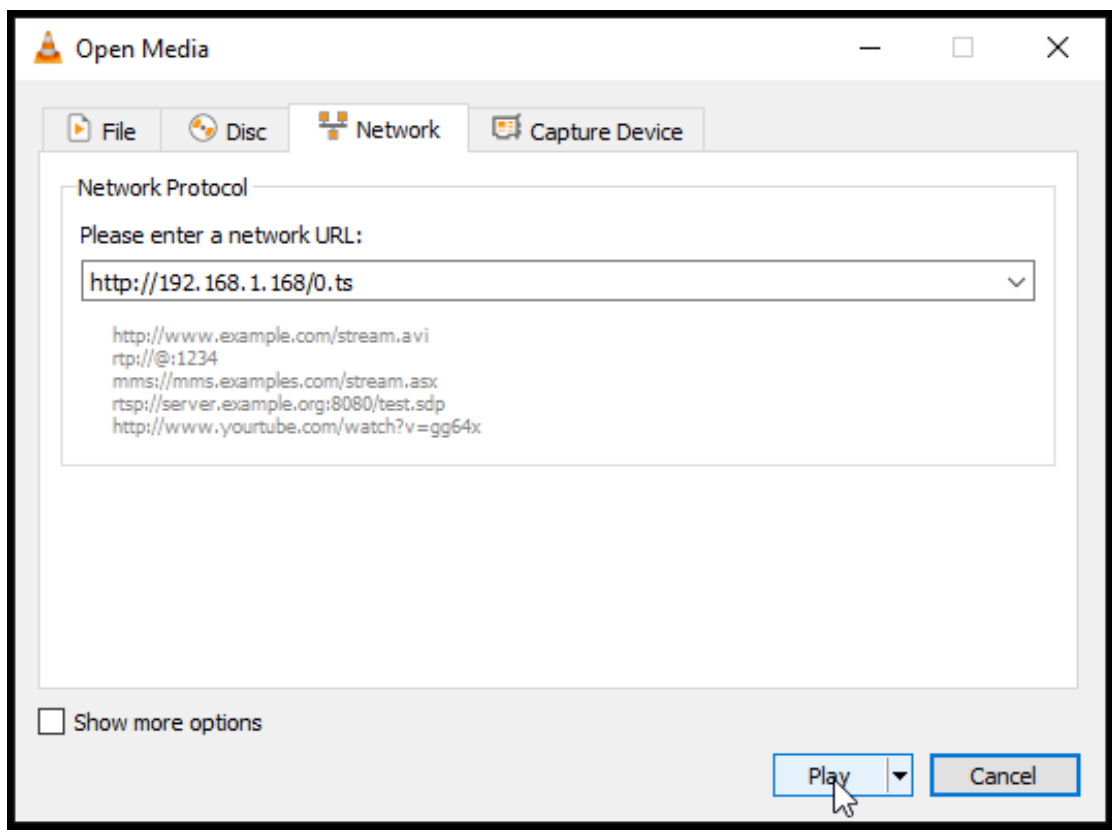
To also check your encoding streams, you can copy the URI from the STATUS page:



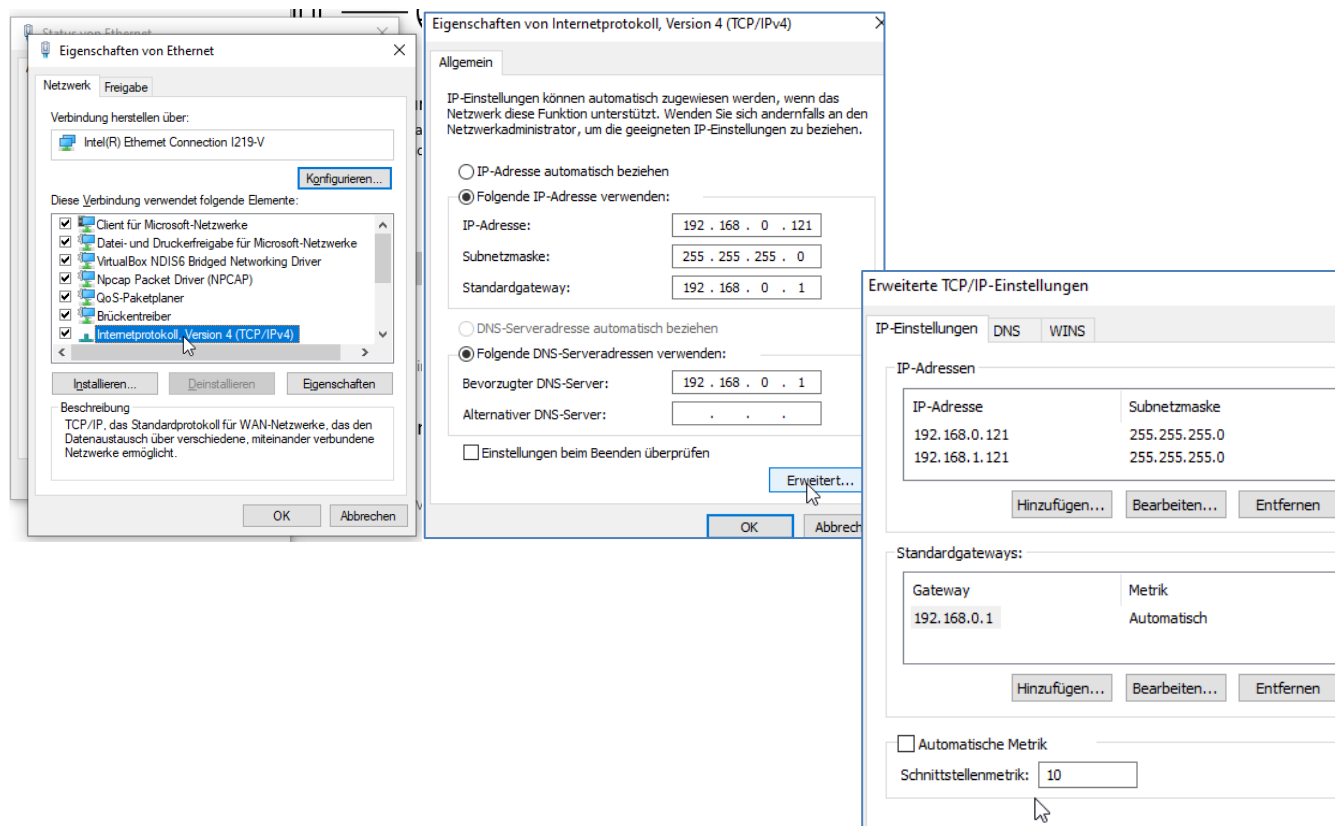
Copy and paste in VLC:

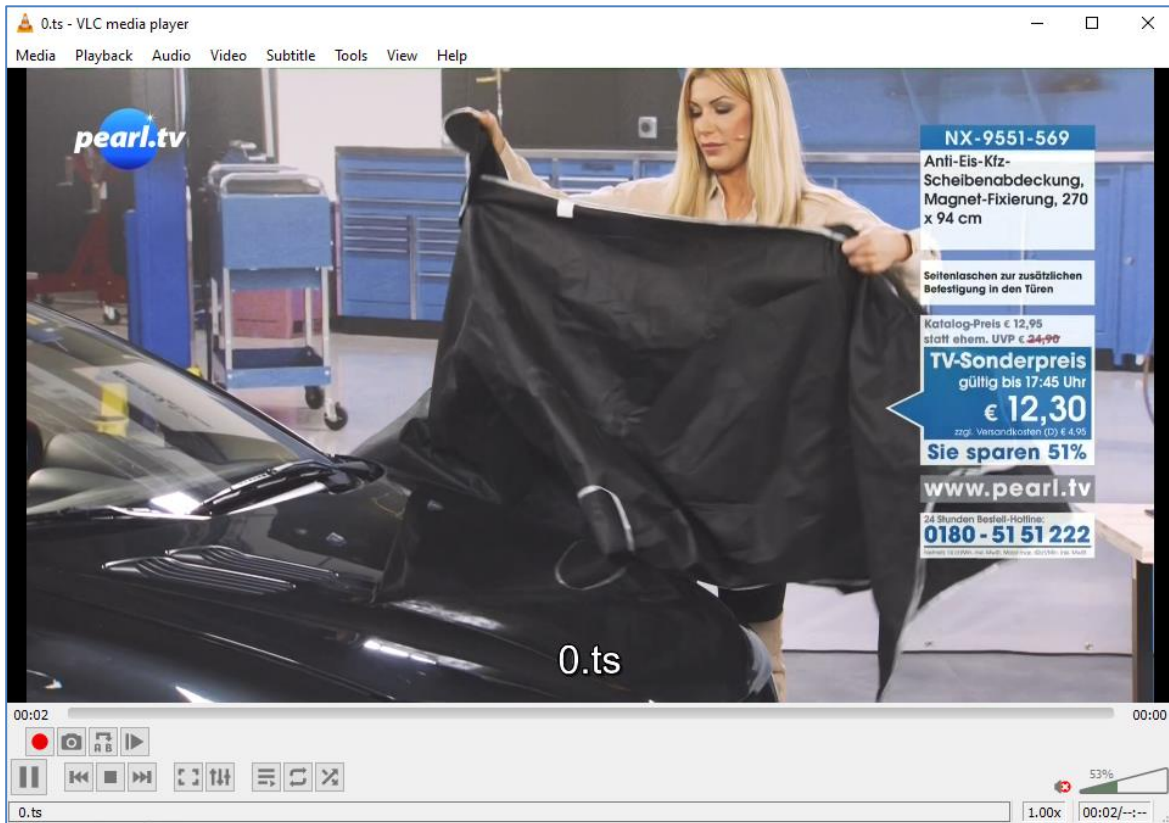
Mark it by the mouse and COPY it - Than insert into VLC:





Note: If you more than one Network-Card in operation (like WIFI and GbE) in your receiving machine, VLC often does not recognize where to catch it from. Manually settings of METRIC Values for both can solve this issue:





Multicasts:

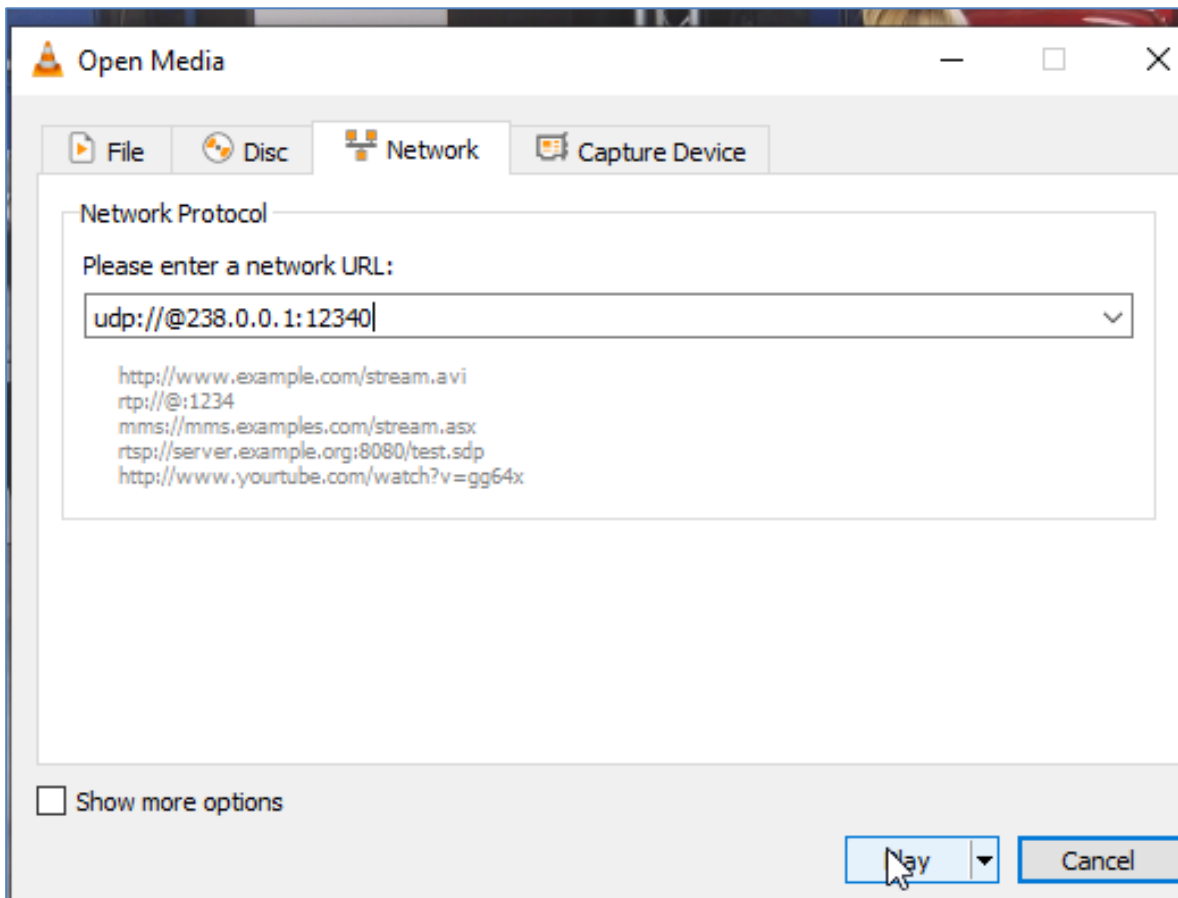
Note: UDP/RTP-Address will be taken by VLC with an @ and we have made it easy for you:

Multicast IP:	<input type="text" value="238.0.0.1"/>	Enable ▾
Multicast Port:	<input type="text" value="1234"/>	[1-65535]
Multicast SAP Name:	<input type="text" value="GROUP0_STREAM0"/>	

Status-Window:

RTMP URL:	Disable
RTMP(S) PUSH URL:	Disable
Multicast URL:	udp://@238.0.0.1:1234
SRT URL:	Disable

copy and paste to VLC



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 the encoder given IP Address by your router in its own menu or use an IP-Scanner-tool.

The screenshot shows the 'Network Settings' page. At the top, there's a header 'Network Settings'. Below it is a blue tab labeled 'Internet access'. The main area contains several input fields: 'DHCP:' with a dropdown menu set to 'Disable', 'IP:' with the value '192.168.1.168', 'Netmask:' with '255.255.255.0', 'Gateway:' with '192.168.1.1', and 'MAC:' with '48:D7:FF:01:82:39'.

The screenshot shows the 'DNS' settings page. It has a blue header 'DNS'. Below it are two input fields: 'DNS1:' with the value '192.168.1.1' and 'DNS2:' with the value '9.9.9.9'.

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

The screenshot shows the 'PORT' settings page. It has a blue header 'PORT'. Below it are two input fields: 'HTTP Port:' with the value '8080' and 'RTSP Port:' with the value '8554'. To the right of each field is a range indicator '[1-65500]'. At the bottom center is a green button labeled 'Set up'.

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 is not. The bottom of the every of the menu-pages contain the 'Set up' buttons to take and enable your changes.

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

Mainstream encoding settings

Main stream

Encoding type:	H.264	
FPS:	50	[5-60]
GOP:	30	[5-300]
Bitrate(kbit):	1800	[32-32000]
Encoded size:	same as the input	
H.264 Level:	high profile	
Bitrate control:	vbr	
TS URL:	/0.ts	Enable
HLS URL:	/0.m3u8	Disable

FLV URL:	/0.flv	Enable
RTSP URL:	/0	Enable
RTMP URL:	/0	Disable
RTMP/RTSP PUSH URL:	rtmp://192.168.1.50/live/0	Disable
Multicast IP:	238.0.0.1	Disable
Multicast port:	12340	[1-65535]

Set up

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

OSD


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

Also, for the ONVIF settings with RTSP.

Alpha: [0-128]

Zone 1

Zone:

Type: 

X: [0-1920]

Y: [0-1080]

Text:

Font size: [8-72]

Background color:

Color: [select color](#)

Zone 2

Zone:

Zone 3

Zone:

Zone 4

Zone:

LOGO

LOGO: [Keine Dat...gewählt.](#)

Please upload PNG or 24-bit BMP (0xF1F1F1=transparent) pictures less than 500 kByte.

The file name has to be logo1.bmp\logo2.bmp\logo3.bmp\logo4.bmp, or logo1.png\logo2.png\logo3.png\logo4.png.

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.

Substream

Encoding type:	H.264	▼	
FPS:	30		[5-60]
GOP:	30		[5-300]
Bitrate(kbit):	1800		[32-32000]
Encoded size:	1280x720	▼	
H.264 Level:	high profile	▼	
Bitrate control:	cbr	▼	
TS URL:	/1.ts	Disable	▼
HLS URL:	/1.m3u8	Disable	▼
FLV URL:	/1.flv	Disable	▼
RTSP URL:	/1	Disable	▼
RTMP URL:	/1	Disable	▼
RTMP/RTSP PUSH URL:	rtmp://192.168.1.50/live/1	Disable	▼
Multicast IP:	238.0.0.1	Disable	▼
Multicast port:	1235		[1-65535]

Set up

Audio settings are common for both stream encoder parts:

Add-on: Some models have OPUS support....

BLANKOM
H.265 HEVC HD Encoder System Platform
Version: 2.36A

Audio encoder

Audio Input: Digital ▾

Sampling Rate: 48000 ▾

Encoder: AAC ▾
AAC
AAC+
AAC++
MP3
MP2
AC3
Opus

Audio Channel: [48000~320000]

Bitrate: [48000~320000]

Digital Volume Gain(dB): [-20~10]

Denoise: AC3

Denoise(dB): 15 [1~100]

G711A Over PTE: Disable ▾

Self-explaining:

BLANKOM
H.265 HEVC HD Encoder System Platform
Version: 2.36A

Change password

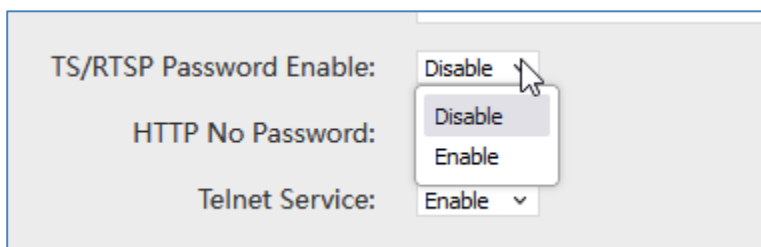
Old password: [input field]

New password: [input field]

Confirm password: [input field]

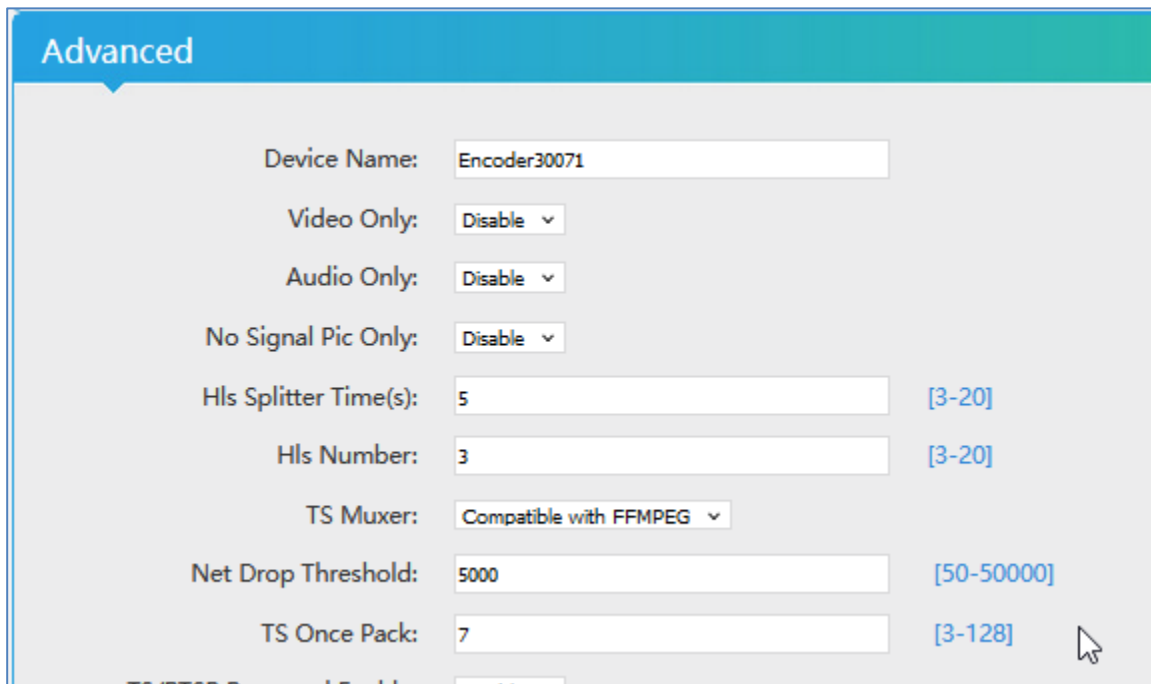
Apply

But USER admin will stay – also for the password protected streams if selected:



TS/RTSP Password Enable:	Disable
HTTP No Password:	Disable
Telnet Service:	Enable

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



Advanced	
Device Name:	Encoder30071
Video Only:	Disable
Audio Only:	Disable
No Signal Pic Only:	Disable
Hls Splitter Time(s):	5 [3-20]
Hls Number:	3 [3-20]
TS Muxer:	Compatible with FFMPEG
Net Drop Threshold:	5000 [50-50000]
TS Once Pack:	7 [3-128]

Increase Net drop threshold value, if you have a lot of traffic at the Ethernet... to secure streamings when facing pixilation's in the stream-receiver / decoder.

You can change the size/form factor:

SLICE Number:	<input type="text" value="1"/>	[1-255]
CBR MIN QP:	<input type="text" value="5"/>	[1-35]
CBR MAX QP:	<input type="text" value="42"/>	(MIN_QP-50)
MTU Size:	<input type="text" value="1500"/>	[500-1500]
Ethernet Speed:	<input type="text" value="1000M"/>	
UDP TTL:	<input type="text" value="64"/>	[1-254]
UDP SOCKET_BUF_SIZE:	<input type="text" value="20971520"/>	(0-20971520)
PAR:	<input type="text" value="Disable"/>	(DAR = SAR x PAR)
No Video Auto Restart:	<input type="text" value="Disable"/>	
No Audio Auto Restart:	<input type="text" value="Disable"/>	
Deblocking Enable:	<input type="text" value="Disable"/>	
Deblocking Alpha:	<input type="text" value="8:9(720:480->4:3)"/>	[-6~6]
Deblocking Beta:	<input type="text" value="9:16(16:9->1:1)"/>	[-6~6]

Playing with 'DE-interlaced settings' (only older Firmware versions) helps sometimes fixing moving picture artefacts. **BOTTOM only** can solve right-left-camera moving sticking problems (Old Versions).

MTU Size:	<input type="text" value="1500"/>	[500-1500]
Ethernet Speed:	<input type="text" value="1000M"/>	
UDP TTL:	<input type="text" value="64"/>	[1-254]
UDP SOCKET_BUF_SIZE:	<input type="text" value="20971520"/>	(0-20971520)
PAR:	<input type="text" value="Disable"/>	(DAR = SAR x PAR)
No Video Auto Restart:	<input type="text" value="Disable"/>	
No Audio Auto Restart:	<input type="text" value="Disable"/>	
Deblocking Enable:	<input type="text" value="Enable"/>	
Deblocking Alpha:	<input type="text" value="0"/>	[-6~6]
Deblocking Beta:	<input type="text" value="0"/>	[-6~6]

Ethernet settings should be considered by the professional networkers if needed...

Some picture enhancements can be adjusted by Deblocking ...

For more info... contact us... www.blankom.de

A schedule 'restart' can be programmed (NTP-Time = ON recommended) and supporting **Rserial** function if needed (Linux like – check Internet about that)

Serial to TCP

Mode:

Baud Rate:

Server Address:

Server Port: [1-65535]

Apply

Schedule restart

Restart enable:

Restart time:

Apply

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

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.)

Upload

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...)

Finally, i.e. after firmware update has been uploaded, the unit can be remotely reset to factory defaults or rebooted:

Backup firmware and configuration

Backup up.rar **Backup box.ini**

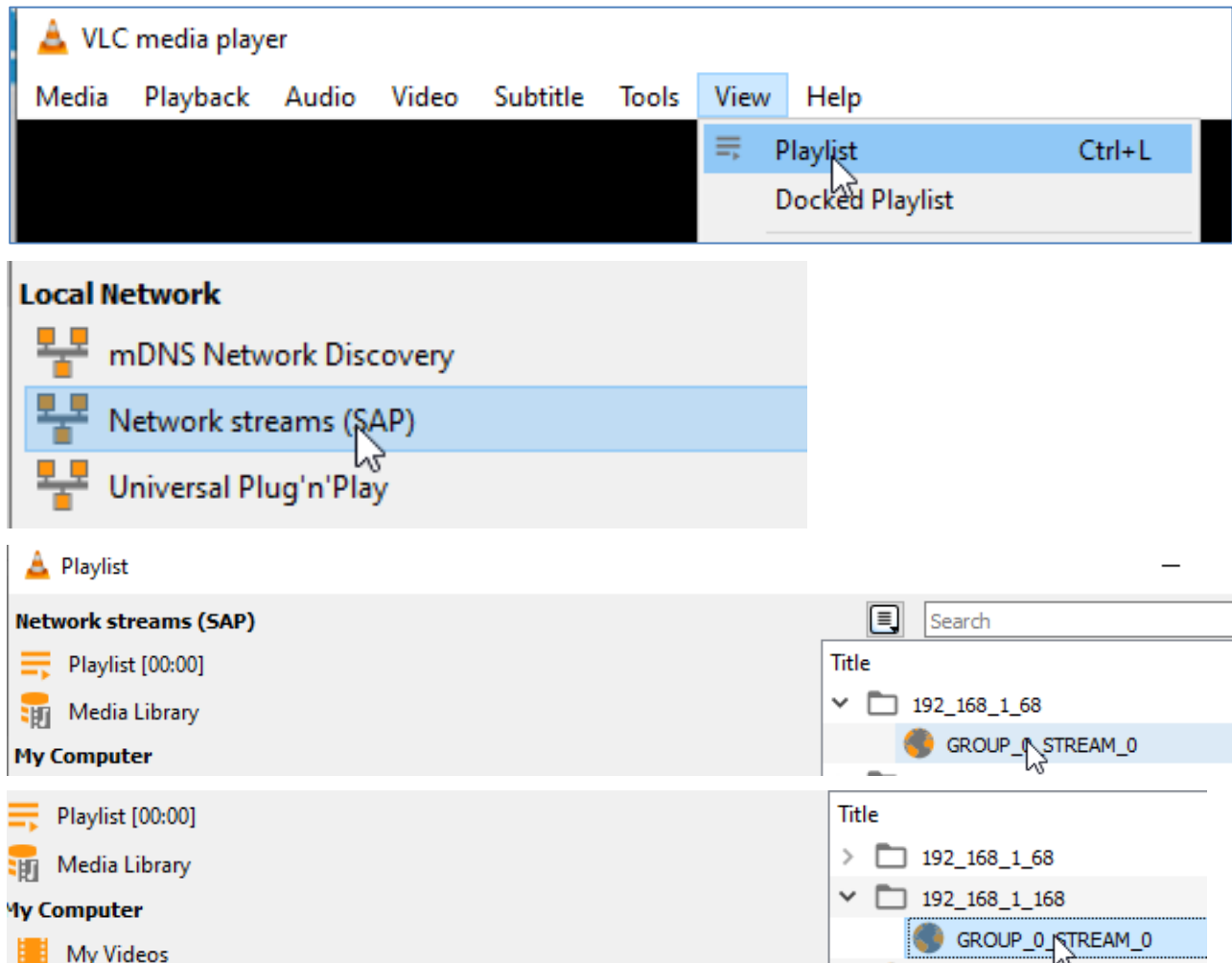
System settings

Reboot **Reset**

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

A last hint:

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



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

Addon from FW 6.39 (03-2020-old hardware model) on:

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

Mainstream encoding settings

Main stream

Encoding type:	<input type="text" value="H.264"/>	
FPS:	<input type="text" value="30"/>	[5-60]
GOP:	<input type="text" value="30"/>	[5-300]
Bitrate (kbit):	<input type="text" value="4500"/>	[32-32000]
Encoded size:	<input type="text" value="same as the input"/>	
H.264 Level:	<input type="text" value="high profile"/>	
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"/>	Disable ▾
RTSP URL:	<input type="text" value="/0"/>	Enable ▾
RTMP URL:	<input type="text" value="/0"/>	Disable ▾
RTMP (S)/RTSP PUSH URL:	<input type="text" value="rtmp://41.85.1.1/live/1"/>	Enable ▾
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://192.168.1.41:9000"/>	Enable ▾
SRT Encryption Password:	<input type="text" value="0123456789"/>	Enable ▾

More details:

<https://www.srtalliance.org>

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.

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

Our Video Encoder supports SLS for SRT.

Introduction

srt-live-server (SLS) is an open source live streaming server for low latency based on Secure Reliable Transport (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

RTMP (S)/RTSP PUSH URL:	<input type="text" value="rtmp://192.168.1.169/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="2222"/>	[1-65535]
SRT URL Port:	<input type="text" value="9000"/>	<input type="button" value="Disable"/> ▾ [1-65535]
SRT PUSH URL:	<input type="text" value="srt://your.server.ip:1935?streamid=input/"/>	<input type="button" value="Enable"/> ▾
SRT Encryption Password:	<input type="text" value="0123456789"/>	<input type="button" value="Disable"/> ▾
<input type="button" value="Set up"/>		

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

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

Advanced

Video Only:	<input type="button" value="Disable"/> ▾	
Audio Only:	<input type="button" value="Disable"/> ▾	
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]

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

Check the Status page:

Main stream

Encode Type: H.264

Encode Size: 1920x1080@25

Bitrate(kbit): 2500

MJPEG URL: <http://192.168.1.168/0.mjpg>

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

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

HLS URL: Disable

FLV URL: Disable

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(Delay 1000ms)

You can check the receiving it by a PC and 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:

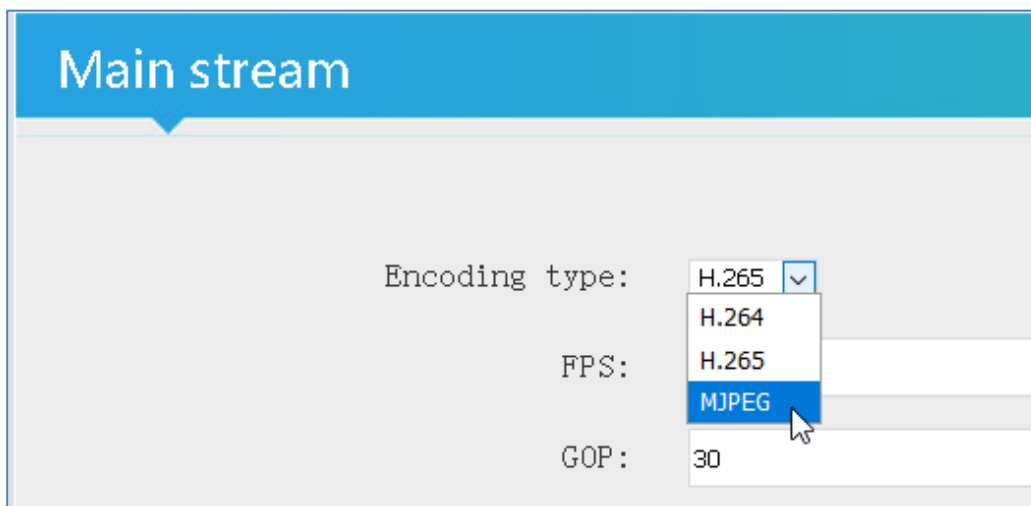
- General Overview
- Can SRT be used with Twitch or my favorite service?
 - Services
 - Encoders
 - Servers
 - Players
- How to set up OBS Studio
 - Option 1: Stream SRT using the Streaming output
 - Option 2: Stream SRT using the Custom FFmpeg Record output
- Examples of setups
 - Relay server to Twitch

<https://github.com/obsproject/obs-studio>

<https://github.com/haivision/srt>

MJPEG Support:

Setting the encoder main or secondary processor to



Enables at the Status-Page the direct Links for Motion JPEG transmission direct into your browser (if that supports it):

Main stream

Encode Type:H. 265

Encode Size:1920x1080@30

Bitrate(kbit):1500

MJPEG 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

RTMP URL:Disable

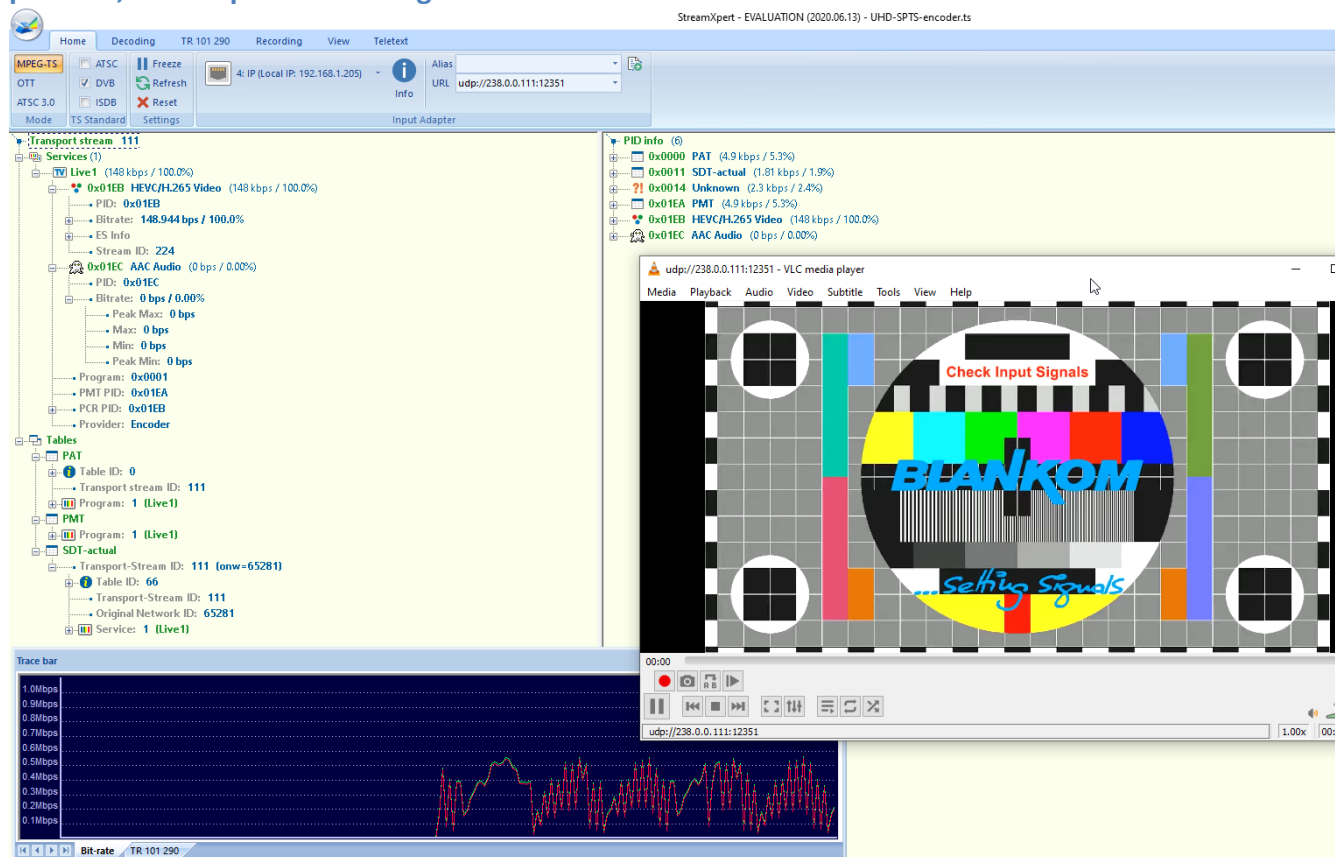
Just click: (here w/o input signal, so you get our test-picture ;-):



The /0.jpg (or in secondary stream the /1.jpg

Will do a screen-snapshot to your browser – so no motion – just like a screenshot.

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:

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

Main stream

Encoding type:

H.265

FPS:

50

[5-60]

GOP:

25

[5-300]

Bitrate(kbit):

3200

[32-32000]

Main stream

Encode Type:H.265

Encoding Type:1920x1080@50

Bitrate(kbit):3200

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:Disable

SRT URL:Disable

SRT PUSH URL:Disable

Preview(HTML5)



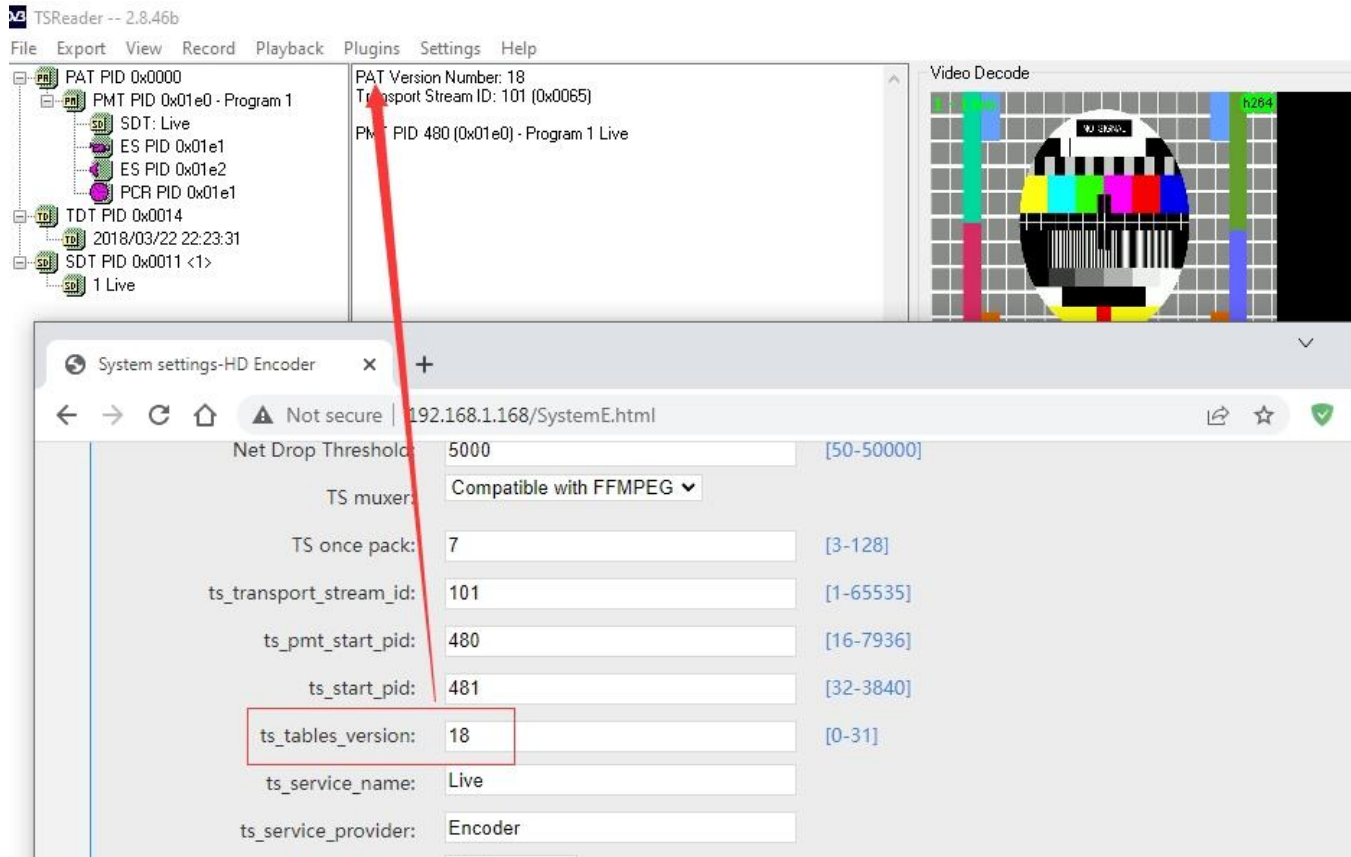
It can take several seconds until the preview starts but it highly depends on the receiving web-browser-PC hardware capabilities to decode that HEVC-PIP. So please be patient and wait a little...

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

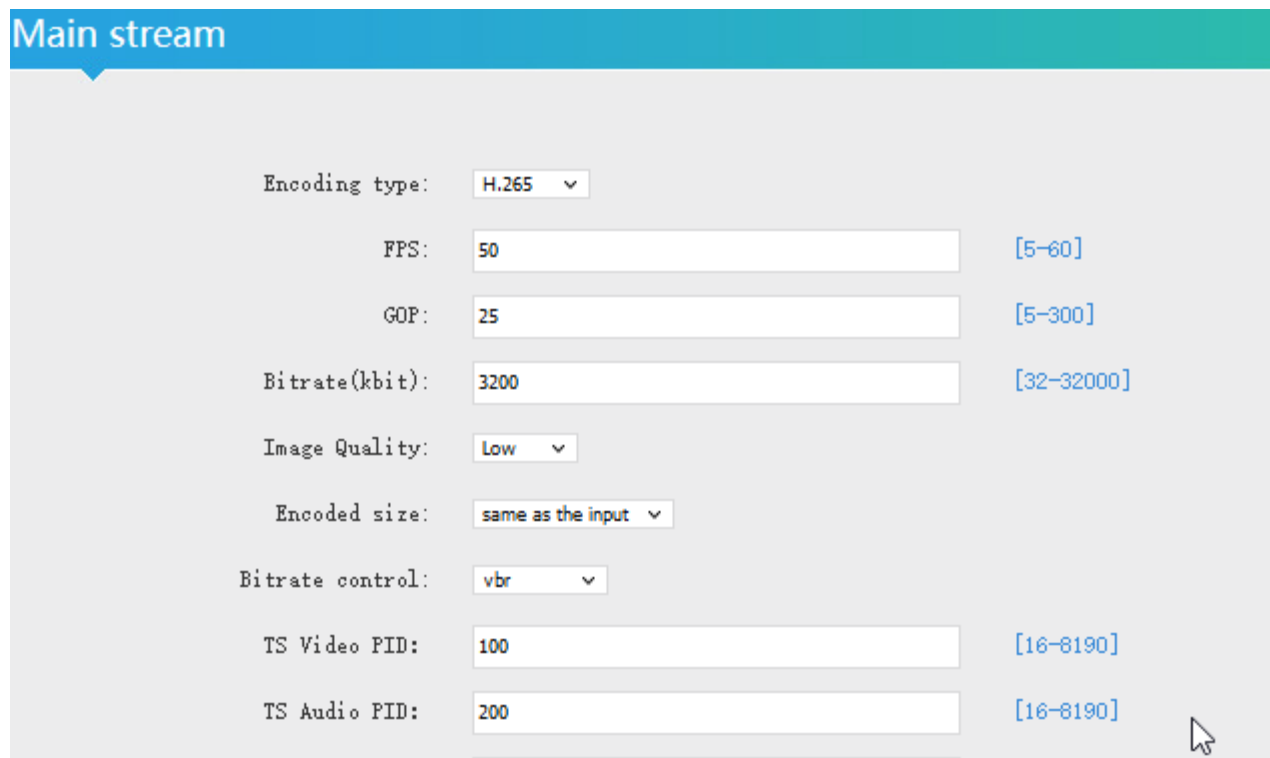
This in System-settings

TS TDT:	<div>Disable</div> <div>Disable</div> <div>Enable</div>		
ts_transport_stream_id:			[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_service_provider:	Encoder		
TS Empty Packet:	No Insert		
TS password enable:	Disable		

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



In combination with:



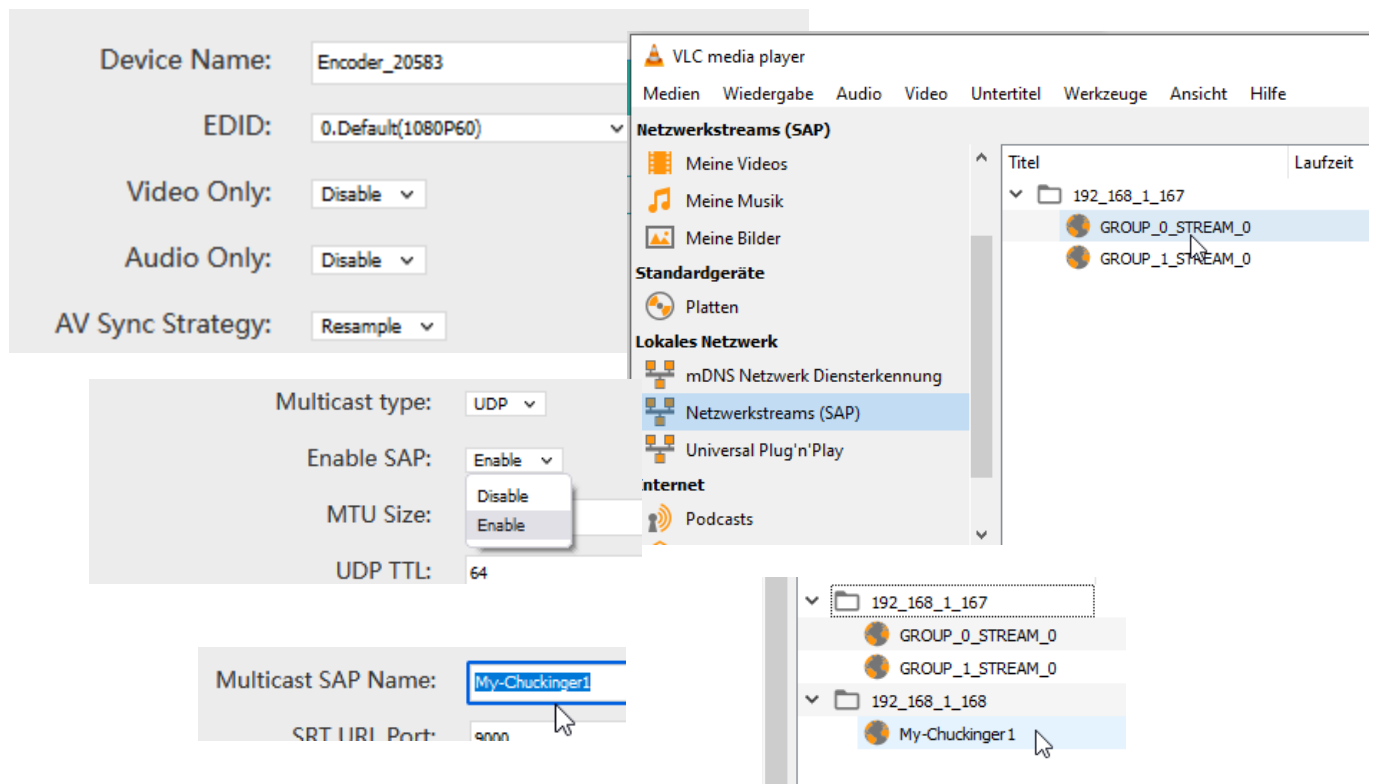
Please do not use PID's (here in Decimal instead of HEXadecimal in use) which are reserved in DVB, 0-18 are for special tables like PID 18= EIT. 8191dec is for Zero-fillings to a CBR TS.

Please check DVB-Norms if you are unsure.

Some more changelogs:

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



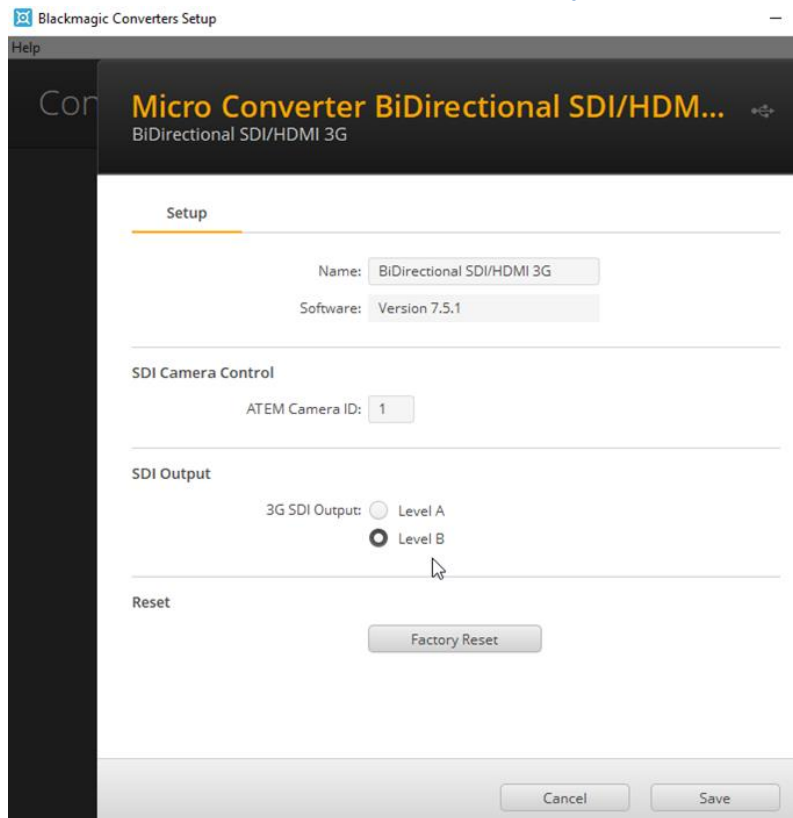
Version 5.17 (April 2022, June 2022)

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:

We added the automatic Level detection A and B for the SDI-Input.
(Not available in the old Hardware with firmware versions 6.xx)



Version 5.20: lip sync option added:

Advanced

Device Name: Encoder_61432

EDID: 0.Default(1080P60) ▼

Video Only: Disable ▼

Audio Only: Disable ▼

AV Sync Strategy: Auto ▼

Hls Splitter Time(s):

Hls Number: 5

AV Sync Strategy dropdown menu:

- Auto
- Resample

Intermediate hardware Model with very fast Chipset (not available in 19" Versions):



You can detect the Web-IF Firmware in the STATUS Page. This Hardware shows a Firmware Version with 2.xy and an 'A' which reflects to the Chipset.

Some addons/changes in this Version: System settings:

TS/RTSP Password Enable: Disable ▼

HTTP No Password: Disable ▼

Telnet Service: Enable ▼

RTSP Default Stream: Main Stream ▼

Vmix Compatible: Disable ▼

TS Over RTSP: ES ▼

Multicast Type: UDP ▼

Enable SAP: Enable ▼

- TS and RTSP streams can be used with the user/password option (same as web-IF-login)
- The web-login user/pw can be disabled
- Telnet access can be switched ON or OFF
- RTSP selection as a default stream from which encoder part
- SAP enable/disable

Version 5.23 has some improvements in GOP encoding processes.

Technical Specification SDE-16265:



Function	h.265 (HEVC compatible) and h.264 (MPEG4 compatible) Encoder and IP Streamer
INPUT	HD-SDI / SD-SDI (BNC type) input and loop through output, Level detection = Auto V.5.17 on
Resolution	1080p, 1080i, 720p and below
Video encoder	h.265 (HEVC) or h.264 (AVC) or MJPEG
Audio encoder	AAC, AAC++, MP3, MPEG1Layer2, AC-3 stereo compatible
Audio Bit-rate:	Bit-rate: 32k/48k/96k/128k/160k/192k, Data-rate: 64 kbps-384 kbps
SYSTEM	
Data interface	RJ45, 1000BaseT Ethernet interface, management by web browser
Protocol	HTTP, RTSP, RTMPs, UDP/RTP, FLV, HLS ; unicast/multicast, SRT P2P
Data Rate	32 kbps – 32 Mbps
Encoding bitrate process	CBR or VBR
SMPTE 425	Support Level A & B
GOP Structure	IBBP
ONVIF 2.x	Supported by RTSP: G711A
Picture adjust	De-interlacing, Noise reduction, Sharpening
OSD	4 Logo and Text Insertion as transparent overlays possible
Power supply	2x redundant internal switching PSU's 110...240VAC 47-64Hz to 12V DC
Dimensions	19" 3RU: 483 (L) x 300 (W) x133 (H) mm
Weight	6,5 kg
Consumption	90W

Finally: To get more information about the deeper details of the encoder settings and configuration issues, please check some of the combined PDF – Manuals from our website or write us.

Contact: info@blankom.de

Please note: There are several tips and tricks available on our web sites as well as Video technology tutorials:

<https://www.blankom.de/tutorials.html>

<https://www.blankom.de/assets/downloads/Whitepaper-streaming-protocols.pdf>

https://www.blankom.de/assets/downloads/TCP-IP-Unicast-IGMP-Dialog_und_snooping.pdf