



BLANKOM HDMI SDI Encoder and Decoder Instructions

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BLANKOM HDMI SDI Encoder and Decoder



Product Information

HDMI/SDI Encoder -> HDD-275 Decoder

The HDMI/SDI Encoder -> HDD-275 Decoder is a system that allows for the conversion and transmission of video and audio signals. The system includes an Encoder Input SDE-265, which supports Unicast HTTP streams, and a HDD-275 Decoder, which adapts to new settings and has pre-configured Multicast as UDP and SRT Unicast (Pull mode from Decoder /IP-Receivers).

The system can be configured with different settings for video and audio, and it is recommended to refer to the Encoder Manual from our Web for additional configuration options.

The system can be used to stream video and audio signals to a TV output or VLC on a laptop. It is recommended to use a layer 3 switch with IGMP enabled for optimal performance.

Product Usage Instructions

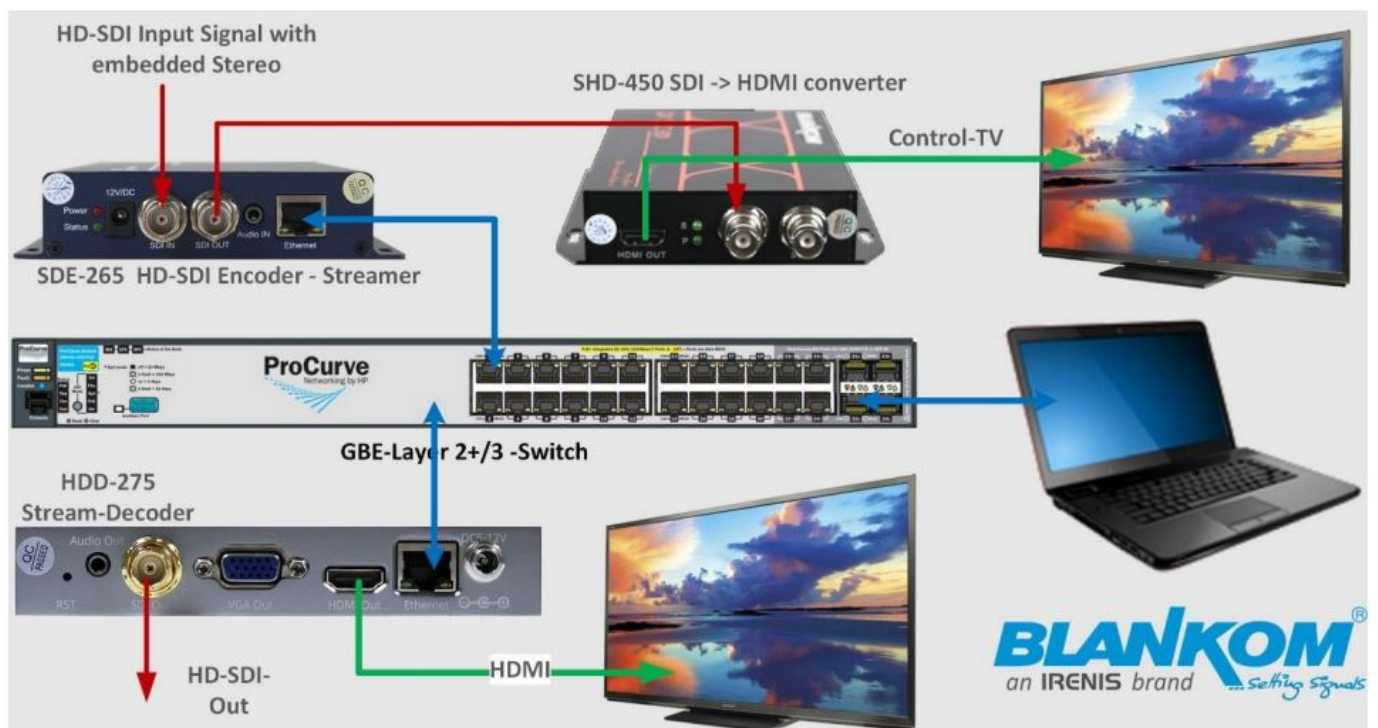
1. Connect the HDMI/SDI Encoder to the HDD-275 Decoder.
2. Configure the Encoder settings for video, referring to the Encoder Manual from our Web for additional configuration options.
3. Configure the Encoder settings for audio.
4. Configure the Decoder settings, allowing time for the system to adapt to new settings. If necessary, reboot the unit.
5. Use the pre-configured Multicast as UDP and SRT Unicast (Pull mode from Decoder /IP-Receivers) for audio streaming.
6. To stream video and audio signals to a TV output or VLC on a laptop, check the SRT streaming as Unicast and copy and paste the Encoder code.
7. Check the TV output or VLC on a laptop for any differences.
8. If necessary, install FFmpeg binaries (Linux— `sudo apt install ffmpeg`).
9. Add a `.` before the `ffplay` executable and enter into the folder.
10. Use the player with admin access and a layer 3 switch with IGMP enabled.
11. Check the system for optimal performance.
12. For RTMP-mode, enable the RTMP mode in the Encoder menu and add the Decoder IP address. If necessary, add `admin:admin` for user/password.

Instruction

How to configure the Couple: HDMI/SDI Encoder -> HDD-275 Decoder

We like to give you a short quick-start setup to configure and setup your Encoder – Streamer with its Decoder stream receiver.

If you do not configure anything except the encoding and output resolutions and use the default settings you will have a system like:



Simple as it is, the SDI-ENCODER SDE-265 default IP-Address is static: 192.168.1.168

while the DECODER HDD-275 has 192.168.1.169.

The Laptop for configuration and wired Ethernet should have an address in the same subnet. WIFI should be OFF because of Metric settings are almost set to automatic in Windows.

After switching on with default settings in both devices you have a plug and play: The Video Signal will automatically appear on the HDD-275 output interfaces.

We are using h.264 encoding with AAC Audio.

So a preview in the SDE-Web-interface is almost easier:



How-to-configure-the-Encoder-Decoder-Couple.docx

Encoder Input SDE-265 (older model but still OK):

Status Display

Input status

Running Time:0000-00-00 21:20:48
Device Time:2023-05-24 10:07:43(Sync Time To Device)
CPU Usage:13%
Memory Usage:18.9M/248.3M
Input Size:1920x1080i@50
Collected Video Frames:1921359
Lost Video Frames:2
Audio Samplerate:48000

Stream in Unicast HTTP is pre-configured in both:

Main stream

Encode Type:H.264
Encode Size:1920x1080@25
Bitrate(kbit):6000
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:udp://@238.0.0.10:12340
SRT URL:srt://192.168.1.168:9000
SRT PUSH URL:Disable
[Preview\(HTML5\)](#)

Encoder settings: Video:

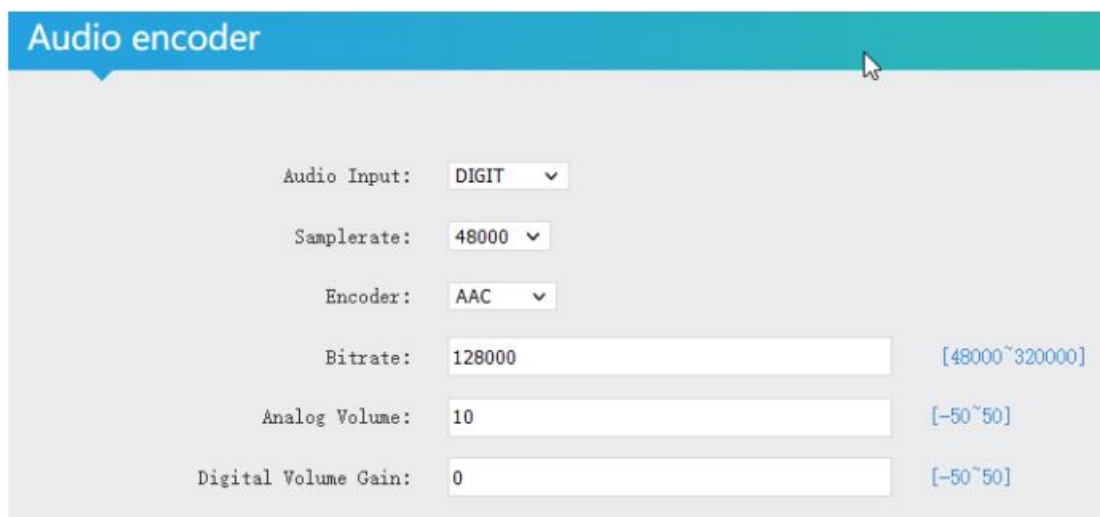
Main stream

Encoding type:	H.264	
FPS:	25	[6-60]
GOP:	5	[5-300]
Bitrate(kbit):	6000	[32-32000]
Encoded size:	same as the input	
H.264 Level:	main 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	Enable
RTMP/RTSP PUSH URL:	rtmp://192.168.1.169/live/0	Disable
Multicast IP:	238.0.0.10	Enable
Multicast port:	12340	[1-65535]
SRT URL Port:	9000	Disable [1-65535]
SRT PUSH URL:	srt://192.168.1.169:9000	Enable
SRT Encryption Password:	0123456789	Disable

In System you have got some more to configure (refer to the Encoder Manual from our Web):

SMPTE_425M:	Disable	
SRT Latency(ms):	150	[1-10000]
TS muxer:	Compatible with FFmpeg	
Deinterlaced:	Bottom Only	
Net Drop Threshold:	5000	[50-50000]
TS once pack:	7	[3-128]
ts_transport_stream_id:	101	[1-65535]
ts_pmt_start_pid:	480	[16-7936]
ts_start_pid:	481	[32-3840]
ts_tables_version:	6	[0-31]
ts_service_name:	Live	
ts_service_provider:	Encoder	
TS Empty Packet:	No Insert	
TS password enable:	Disable	
Vnix Compatible:	Disable	
TS OVER RTSP:	TS	
Multicast type:	UDP	
UDP TTL:	64	[1-254]
UDP SOCKET_BUF_SIZE:	20971520	[0-20971520]

Audio:

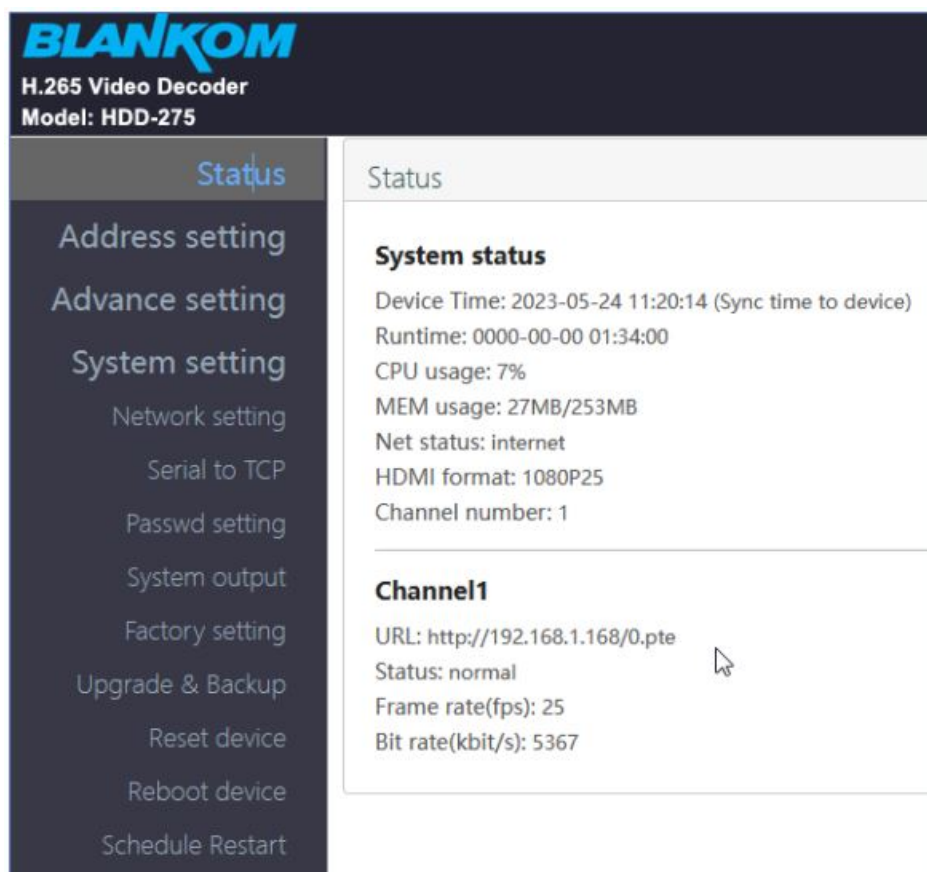


The image shows the 'Audio encoder' configuration page. It has a teal header with the title 'Audio encoder'. Below the header, there are several configuration fields:

- Audio Input: DIGIT (dropdown menu)
- Samplerate: 48000 (dropdown menu)
- Encoder: AAC (dropdown menu)
- Bitrate: 128000 (text input field) with a range indicator [48000~320000]
- Analog Volume: 10 (text input field) with a range indicator [-50~50]
- Digital Volume Gain: 0 (text input field) with a range indicator [-50~50]

We have also configured Multicast as UDP and SRT Unicast (Pull mode from Decoder /IP-Receiver).

Decoder



The image shows the 'BLANKOM H.265 Video Decoder' configuration interface. The model is 'HDD-275'. The interface is divided into a left sidebar with navigation options and a main content area.

Navigation Sidebar:

- Status (highlighted)
- Address setting
- Advance setting
- System setting
 - Network setting
 - Serial to TCP
 - Passwd setting
 - System output
 - Factory setting
- Upgrade & Backup
 - Reset device
 - Reboot device
 - Schedule Restart

Main Content Area:

Status

System status

Device Time: 2023-05-24 11:20:14 (Sync time to device)
Runtime: 0000-00-00 01:34:00
CPU usage: 7%
MEM usage: 27MB/253MB
Net status: internet
HDMI format: 1080P25
Channel number: 1

Channel1

URL: http://192.168.1.168/0.pte
Status: normal
Frame rate(fps): 25
Bit rate(kbit/s): 5367

The DECODER needs time to adapt its system to new settings, so please be patient. Sometimes you need to reboot the unit i.e. when you change the IP addresses (same for the encoder as well) or change essential decoding configurations... Trial and Error ... if it stuck, maybe a reboot might be necessary.

We already configured the Output to match the input stream values:

Status

Address setting

Advance setting

System setting

Network setting

Serial to TCP

Passwd setting

System output

Factory setting

Upgrade & Backup

Reset device

System output

Play mode: Real time

HD output: 1080P25

the same as input source

HDMI color: RGB444

CVBS output: PAL

CVBS show X: 40 [0,720]

CVBS show Y: 20 [0,576]

CVBS show W: 660 [0,720]

CVBS show H: 540 [0,576]

Rotate: 0 degree

Scaling: Disable

If the TV-Output will be disturbed somehow stucking /running ... please just increase the Cache setting in the DECODER:

Address setting

Channel number: 1

Channel1 URL: http://192.168.1.168/0.pte

Audio: ☒

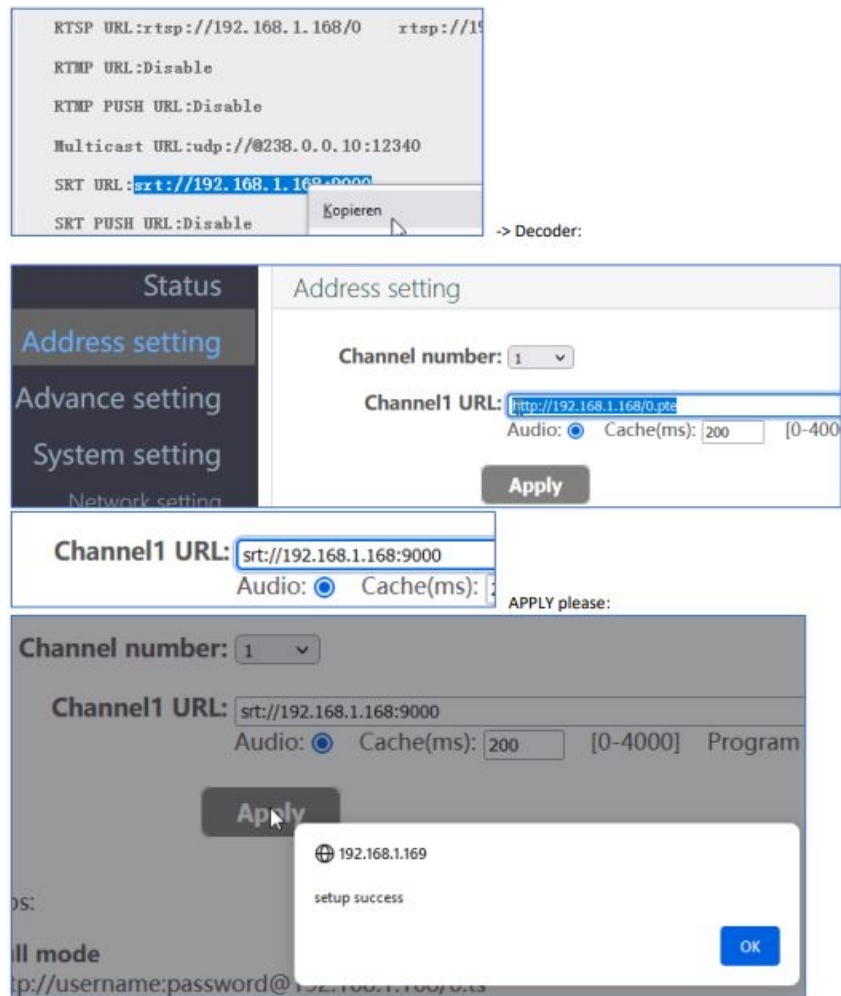
Cache(ms): 200 [0-4000]

Program ID:

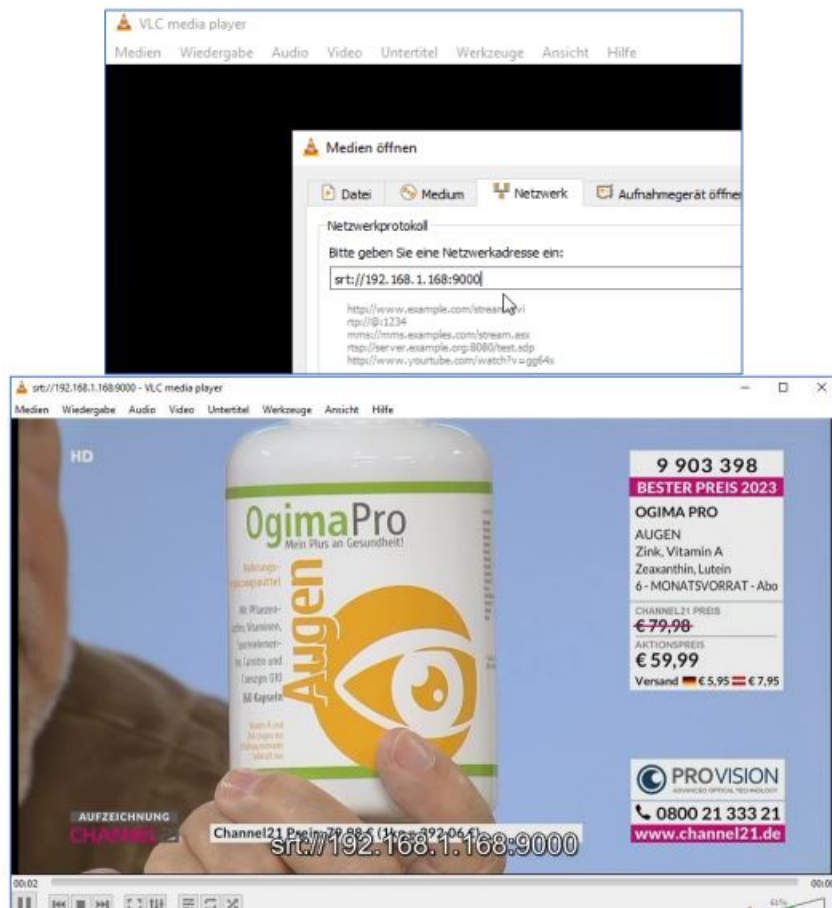
Apply

The 0.pte is an internal setting between our encoders and decoders and might be not function with other stream sources.

Let's check the SRT streaming as Unicast:
Encoder copy and paste:



Check your TV output ... it should be their w/o any differences (no Reboot necessary). We can cross-check with VLC in the Laptop:



Or -if you do not have VLC, you can install the FFMPEG binaries (Linux— `sudo apt install ffmpeg`):

The image shows the FFmpeg website's download page. It lists various download options for different operating systems. The 'Windows EXE Files' section is highlighted, showing a table of download links for different builds. The 'ffmpeg-2023-05-22-git-877ccaf776-full_build.7z' file is selected. A note indicates that a 7zip freeware packer is needed to extract the file. The extracted folder is renamed to 'ffmpeg'. A screenshot of a Windows file explorer shows the 'Programme' folder, and a dialog box indicates that administrative permissions are required to move the folder.

latest git master branch build version: 2023-05-22-git-877ccaf776

File Name	Version	SHA256
ffmpeg-git-essentials.7z	.ver	.sha256
ffmpeg-git-full.7z	.ver	.sha256

ffmpeg-2023-05-22-git-877ccaf776-full_build.7z

Datei öffnen

extract to a folder like ffmpeg but you need the 7zip freeware packer:

ffmpeg-2023-05-22-git-877ccaf776-full_build.7z

ffmpeg

renamed the folder to simple ffmpeg...

You can enter into this folder and / or swap it to:

träger (C:)

Name	Änderungsdatum	Typ	Größe
\$WinREAgent	10.05.2023 10:04	Dateiordner	
Benutzer	06.11.2021 08:45	Dateiordner	
Intel	10.05.2023 12:43	Dateiordner	
MSI	05.11.2021 19:17	Dateiordner	
OneDriveTemp	06.11.2021 09:50	Dateiordner	
PerfLogs	07.12.2019 10:14	Dateiordner	
ProgramData	07.05.2023 06:56	Dateiordner	
Programme	16.05.2023 10:14	Dateiordner	
Programme (x86)	12.05.2023 13:31	Dateiordner	
totalcmd	06.11.2021 00:03	Dateiordner	
Windows	19.05.2023 14:27	Dateiordner	

Zugriff auf den Zielordner wurde verweigert

Sie müssen Administratorberechtigungen angeben, um in diesen Ordner zu verschieben.

Programme
Erstelldatum: 07.12.2019 10:14

Setzen Überspringen Abbrechen

Weniger Details

We want to use the player with this:

The image shows a Windows file explorer window displaying the contents of the 'Programme > ffmpeg > bin' folder. The files listed are 'ffmpeg.exe', 'ffplay.exe', and 'ffprobe.exe'. A note indicates that administrative permissions are needed to start the application. Below the file explorer, a screenshot of the Windows PowerShell (Administrator) window shows the command prompt. The user navigates to the 'C:\programme\ffmpeg\bin' directory using the 'cd' command.

träger (C:) > Programme > ffmpeg > bin

Name

- ffmpeg.exe
- ffplay.exe
- ffprobe.exe

but you need to be admin to start it so we open:

Windows PowerShell (Administrator)

Task-Manager

change to the -programme-ffmpeg-bin folder

```
PS C:\WINDOWS\system32> cd /programme/ffmpeg/bin
PS C:\programme\ffmpeg\bin>
```

You need to add a .\ before the ffplay executable because the powershell demands it from you (security issue):

RTMP URL:Disable

RTMP PUSH URL:Disable

Multicast URL:udp://@238.0.0.10:12340

SRT URL:srt://192.168.1.168:9000

You should use a layer 3 switch with IGMP enabled.

Address setting

Channel number: 1

Channel1 URL: udp://@238.0.0.10:12340

Audio: ☒ Cache(ms): 200

Apply

Channel1 URL: udp://@238.0.0.10:12340

Audio: ☒ Cache(ms): 200 [0-4000] Program ID:

Apply

mode

//username:password@192.168.1.1

//username:password@192.168.1.1

//username:password@192.168.1.1

192.168.1.169

setup success

OK

Status

Address setting

Advance setting

System setting

Network setting

Serial to TCP

Passwd setting

System output

Factory setting

Upgrade & Backup

Reset device

Status

System status

Device Time: 2023-05-24 12:11:46 (Sync time to device)

Runtime: 0000-00-00 00:01:27

CPU usage: 12%

MEM usage: 50MB/253MB

Net status: internet

HDMI format: 1080P25

Channel number: 1

Channel1

URL: udp://@238.0.0.10:12340

Status: normal

Frame rate(fps): 25

Bit rate(kbit/s): 3842

We use VLC for that...Enter the udp address in VLC with the @ :

Medien öffnen

Datei Medium Netzwerk Aufnahmegerät öffnen

Netzwerkprotokoll

Bitte geben Sie eine Netzwerkadresse ein:

udp://@238.0.0.10:12340

http://www.example.com/stream.avi

rtsp://@:1234

mms://mms.example.com/stream.asx

rtsp://server.example.org:8080/test.sdp

http://www.youtube.com/watch?v=g64x

☐ Mehr Optionen anzeigen

Wiedergabe Abbrechen



Now we try RTMP-mode:

Encoder first: In main Encoder menu enable the RTMP mode:

RTMP URL: Enable ▾

Check in the encoder status window:

RTMP URL: **rtmp://192.168.1.168/live/0**
RTMP PUSH URL: Disable

The encoder need to know the Decoder IP address for that !!!
If you operate with user/password you need to add admin:admin ...:

Address setting

Channel number: ▾

Channel1 URL:

Audio: ☒ Cache(ms): [0-4000]

Apply

Check decoder status:

Net status: internet
HDMI format: 1080P25
Channel number: 1

Channel1
URL: rtmp://admin:admin@192.168.1.168/live/0
Status: normal
Frame rate(fps): 25
Bit rate(kbit/s): 4696

That works!!!

The decoder gives some hints how to use the different protocols:

Pull mode
http://username:password@192.168.1.168/0.ts
http://username:password@192.168.1.168/0.flv
http://username:password@192.168.1.168/0.m3u8
rtsp://username:password@192.168.1.168/0 (rtsp over tcp)
rtsp://username:password@192.168.1.168/0?udp (rtsp over udp)
rtsp://username:password@192.168.1.168/0?rtsp_transport_multicast (rtsp over Multicast)
rtmp://username:password@192.168.1.168/live/0
rtmps://username:password@192.168.1.168/live/0
udp://username:password@238.0.0.1:1234

SRT listener mode
srt://9000?mode=listener&smoother=live&pbkeylen=16&passphrase=password




SRT caller mode
srt://192.168.1.168:9000?smoother=live&pbkeylen=16&passphrase=password

"username" is authentication username, "password" is authentication password. Do not fill in "username:password@" or "&pbkeylen=16&passphrase=password" if application don't need authentication.

username:password is only necessary if you already configured that in the encoder as well.

Channel1
URL: rtmp://@192.168.1.168/live/0
Status: normal
Frame rate(fps): 25
Bit rate(kbit/s): 2051

SRT-Listener mode in encoder:

SRT URL Port: 9000 Disable 
SRT PUSH URL: srt://192.168.1.169:9000 Enable 
SRT Encryption Password: 0123456789 Disable 
Set up

Decoder:

Just add into the address field:

srt://9000

How-to-configure-the-Encoder-Decoder-Couple.docx and here we go:

Address setting

Channel number: 1

Channel1 URL: srt://9000

Audio: ☒ Cache(ms): 200 [0-4000]

Apply

check status

and TV set:

Status

Address setting

Advance setting

System setting

Status

System status

Device Time: 2023-05-24 12:35:06 (Sync time to device)

Runtime: 0000-00-00 00:24:24

CPU usage: 5%

MEM usage: 32MB/253MB

Net status: internet

HDMI format: 1080P25

Channel number: 1

Channel1

URL: srt://9000

Status: normal

Frame rate(fps): 25

Bit rate(kbit/s): 2359

And here we are.... All is OK.

Some tips:

If you face heavy traffic on the network and the video is sticking a little: Increase decoder cache:

Status

Address setting

Advance setting

System setting

Channel1 URL: srt://192.168.1.168:9000

Audio: ☒ Cache(ms): 500 [0-4000]

Apply

Tips:

And maybe the **Encoders Net drop threshold** in the SYSTEM settings needs to be increased:

SRT Latency(ms): 150 [1-10000]

TS muxer: Compatible with FFmpeg


Deinterlaced: Bottom Only

Net Drop Threshold: 5000 [50-50000]

The SRT Latency is also a Network issue which you can change up to your sufficient results. We cannot give values here because these highly depends on your network, switches, routers and also if you transport the stream over Internet or CDN: Every time these values are different from case to case.

How-to-configure-the-Encoder-Decoder-Couple.docx

Documents / Resources

	BLANKOM HDMI SDI Encoder and Decoder [pdf] Instructions SDE-265, HDD-275, HDMI SDI Encoder and Decoder, SDI Encoder and Decoder, Encoder and Decoder
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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