

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

Encoder & IPTV Streamer with HDMI Input



HD VIDEO ENCODER

BLANKOM

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

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

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

BLANKOM HDE-265 /HDE-264

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

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

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

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

*) depending on model

info@blankom.de



www.blankom.de





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

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

Examples with HDMI- Inputs:

HDE-1265



HDE-4265

- 6		
	HD VIDEO ENCODER	BLANKOM

HDE-08265



HDE-16265

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ENCOC	ER ENCODER US H.265	ENCODER H.265	ENCODER H.265	ENCODER H. 265	ENCODER H.265	ENCODER H.265	ENCODER H.265	ENCODER H.265	ENCODER H.265	ENCODER H.265	ENCODER H 265	ENCODER H.265	ENCODER H.265	ENCODER H.265	ENCODER H.265	Switching Power Supply	Switching Power Supply	
State 🔵 🔵		Salu	Power	Pow Statu	Silfa 💿 🖲	Siate O Siate	State O	fool	Sul O O	Si o o P		State	Si o o 3	Sun 💿 😐 Pom	Power	BLANKOW	BLANKOM	
RSI •	g.	Rg					8. •		• ISE	- 2.	2.	2.0	2.	B •		Input 90Vac-264Vac	Input: 90Vac-264Vac	
HDMIN	HDMIN	HDMI N	HDMIN	HDMIN	HDMIN	HDHEIN	HDMIN	N MOH	N INCH	HDMI N	N INCH	HONE N	N INGR	HDMIN	HDWIN	Output: 12V-25A Model: POW-3603-12	Oktpur: 12V-25A Model: POW-3005-12	
Audo p	Auto 10			Audio B				Auto 20		Audo IN								
5																		
×																Power	Power	
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8	0	0	6	•	0	0	0	0	63	6	0	0	0	A	0	8 C		

Please before connecting all GBEthernet to a Network-Switch change their IP addresses accordingly one after the next please.

Bevor Sie alle GBit Ethernet Ports an einen (gemeinsamen) Netzwerk-Switch anschließen, ändern Sie bitte deren IP-Adressen entsprechend nacheinander.

Default IP: 192.168.1.168, admin/admin



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:

Downloads ->

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

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

Please have also a look into the Quickstart-Manual of the SDE-265, which is almost identical and might be enhanced. (www.blankom.de)

Download Encoder-Streamer-SDE-265

Descriptions of new features with new FW releases can be find at the end of this document

HDE-264/265 QUICKSTART企

VDE-265 QUICKSTART-ADDON

SDE-265 QUICKSTART企











Appearance:



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



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



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

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

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



Attention: Because of a cut in the hardware for the HDE-265:

From November 2020 production on, the chipset has been changed to the HDE-265L. So if ordering the HDE-1265 in 1RU later on, it is based on the new one. Therefore the firmware is different too and to be considered when updating. The normal HDE-265 boxed version latest firmware was: 6.53E while the HDE-265L and new produced HDE-1265 is actually 5.x or 2.3xA. The difference can be detected in the web-IF in the top frame or because the new one supports 1x Main encoder and 3x secondary encoder streamer parts HDE-264 latest release is Nov.2023: 6.6.1.



Notes Remarks and Hints:

The Fast- or Gigabit-Ethernet-port **does not support PoE** so please take care of not accidently 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. HD with 1080p60 or lower. Higher values will not work. 1080i50 will be shown as 1920x1080@25 in the Input status window

The embedded Linux system takes some seconds to fully boot. After the System-LED is on, you can connect your browser to it. We recommend Chrome, Opera, and Mozilla. For a preview Popup in the browser, a flash-player add-on 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 self-explaining.

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

Setting up your PC/Laptop before connecting:

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

1st: Open your network settings in System Menu:



Zeigt Netzwerkkarten n und ändert Verbindungseinstellungen.



		Status von Ethernet	×	
		Allgemein		
		Verbindung		
		IPv4-Konnektivität:	Internet	
		IPv6-Konnektivität:	Internet	
		Dauer:	01:52:23	
		Übertragungsrate:	1,0 GBit/s	
		Details		
			₽ ₽	
		Aktivität		
Organisieren 🔻		Gesendet —	Empfangen	
Ethernet		Bytes: 100.003.547	30.198.750	
		Eigenschaften	eren Diagnose	
Realtek PCle	GBE Family Cont			
- 0	→ Eigenschaften von Ethernet		Schließen	-> Maybe confirm
		•	·	
	Netzwerk Freigabe			
	Verbindung herstellen über:			
	🚽 Realtek PCIe GBE Family C	Controller		
		Konfigurieren		
	Diese Verbindung verwendet folge	ende Elemente:		
	M W W Npcap Packet Driver (NF W W Npcap Packet Driver (NF	PF) (Wi-Fi)		
	QoS-Paketplaner	r CAF J (WHI)		
	🗹 🖳 Intel(R) Technology Acco	ess Filter Driver		
	Internetp stokoll, Version	4 (TCP/IPv4)		
	Microsoft-Multiplexorproto Microsoft-LLDP-Treiber	okoll fur Netzwerkadapter		
	<	>		
	Installieren Deinst	allieren Eigenschaften		
	Beschreibung			
	TCP/IP, das Standardprotokoll	für WAN-Netzwerke, das den		
	Datenaustausch uber verschier Netzwerke ermöglicht.	dene, miteinander verbundene		
Administrator access->	(,	Change IPv4 s	settings:
Eigenschaften von internetprotokoll, V	rersion 4 (TCP/IPV4)			
Allgemein				
IP-Einstellungen können automatisch zu Netzwerk diese Funktion unterstützt. V Netzwerkadministrator, um die geeigne	ugewiesen werden, wenn das venden Sie sich andernfalls an den ten IP-Einstellungen zu beziehen.			
O IP-Adresse automatisch beziehen				
Folgende IP-Adresse verwenden:				
IP-Adresse:	192.168.1.103			
Subnetzmaske:	255 . 255 . 255 . 0			
Standardgateway:	192.168.1.1			
DNS-Serveradresse automatisch b	peziehen			
Folgende DNS-Serveradressen ve	rwenden:			
Bevorzugter DNS-Server:	192.168.1.1			
Alternativer DNS-Server:	9.9.9.9			
Einstellungen beim Beenden über	prüfen			
	OK Abbrechen			

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



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

🛈 🔏 192.168.1.168

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

Der Server "192.168.1.168" forder Kennwort an.	t Ihren Benutzernamen und Ihr	Bitte melden Sie sich an
Der Server meldet: "pbox". admin		http://192.168.1.168 Die Verbindung zu dieser Website ist nicht sicher Benutzername:
✓ Anmeldedaten speichern	5	Passwort:
ОК	Abbrechen	Anmelden Abbrechen

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

Input status								
Running Time:0000	-00-00 00:00:15							
Device Time:2018-03-22 16:22:37(Sync Time To Device)								
CPU Usage:57% (If CPU usage always more than 85%, please close some stream.)								
Input Size:1920x1080i@50								
Collected Video Fran	mes:372							
Lost Video Frames:2	2							
Audio Samplerate:4	8000							
Main stream								
Encoding Type:H264	4							
Encoding Size:1920x1080@25								
Encoding Size:1920>	x1080@25							
Encoding Size:1920) Bitrate(kbit):1800	x1080@25							
Encoding Size:1920 Bitrate(kbit):1800 TS URL: http://192.	x1080@25 .168.1.168/0.ts http://1	192.168.1.168:8080/0.ts						
Encoding Size:1920: Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable	x1080@25 .168.1.168/0.ts http://1	192.168.1.168:8080/0.ts						
Encoding Size:1920; Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192.	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http://	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv						
Encoding Size:1920: Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 92.168.1.168:8554/0						
Encoding Size:1920; Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192 RTMP URL:Disable	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 92.168.1.168:8554/0						
Encoding Size:1920: Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192 RTMP URL:Disable RTMP PUSH URL:Dis	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19 sable	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 92.168.1.168:8554/0						
Encoding Size:1920; Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192 RTMP URL:Disable RTMP PUSH URL:Disable Multicast URL:Disable	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19 sable	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 92.168.1.168:8554/0						
Encoding Size:1920; Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192 RTMP URL:Disable RTMP PUSH URL:Disable Preview(HTML5)	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19 sable sable	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 92.168.1.168:8554/0						
Encoding Size:1920: Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192 RTMP URL:Disable RTMP PUSH URL:Disable Multicast URL:Disable Preview(HTML5)	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19 sable sle	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 02.168.1.168:8554/0						
Encoding Size:1920; Bitrate(kbit):1800 TS URL: http://192. HLS URL:Disable FLV URL:http://192. RTSP URL:rtsp://192 RTMP URL:Disable RTMP PUSH URL:Disable Preview(HTML5) Substream	x1080@25 .168.1.168/0.ts http://1 168.1.168/0.flv http:// 2.168.1.168/0 rtsp://19 sable ole	192.168.1.168:8080/0.ts 192.168.1.168:8080/0.flv 92.168.1.168:8554/0						



ubstream	
Encoding Type:H264	
Encoding Size:1280x720@25	
Bitrate(kbit):1800	
IS URL: Disable	
HLS URL:Disable	
FLV URL:Disable	
RTSP URL:Disable	
RTMP URL:Disable	
RTMP PUSH URL:Disable	
Multicast URL:Disable	
Preview(HTML5)	

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

Parallel and different streaming's can be used for all encoder parts as long as the capacity of the system is not claiming it: You will get a message if the encoding capacity will be reached and one or more substreams would be disabled... The B-Models support only one streaming Method enabled in Main and sec. Stream (= max. 2 outputs) as well as the HDE-264 supporting only 2 encoder engines.

Encoding type:	H.264 ¥		
FPS:	25	[5-60]	
GOP:	50	[5-300]	
Bitrate(kbit):	4000	[32-32000]	
Encoded size:	same as the input \vee		
H.264 Level:	main profile 🗸 🗸		
Bitrate control:	vbr v		
TS URL:	/0.ts	Enable 🗸	
HLS URL:	/0.m3u8	Disable \vee	
FLV URL:	/0.flv	Enable Y	
RTSP URL:	/0	Enable v	
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:	1234	[1-65535]	
SAP Name:	GROUP0_STREAM0	Enable 🗸	



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

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

Main stream				
Encoding Type:H264				
Encoding Size:1920x10)80@25			
Bitrate(kbit):4000				
TS URL: http://192.16	8.1.168/0.ts http	p://192.168.1.168:8080/	0.ts	
HLS URL:Disable				
FLV URL:http://192.16	0.flv			
RTSP URL:rtsp://192.1				
RTMP URL:Disable				
RTMP PUSH URL:Disal	ble			
Multicast URL:Disable				
Preview(HTML5)				
Centur	Network	Main stream	but v	au nood t
1 168/indexE html efore using that —it i	s needed by	vour browser html5	but ye	ju need i
nabling it in the rela	ted Main or S	ub-Stream settings		
HLS URL:	/0.m3u8		Dis	able 🗸
FLV URL:	/0.fl∨		En	able 🗸
	/0		En	able
NIAF UNI.				11 ///
H.264 Level:	main profile	~		
Bitrate control:	vbr	192.168.1.168		
TS URL:	/0.ts Set	successfully!		
HLS URL:	/0.m3u	5		
FLV URL:	/0.flv			
	/0			Enable

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

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



HINT: Former Flash-plugin **does not** work with HEVC h.265 codec!!!! You need to have h.264 encoding to be set in the main or sub-stream menu: (will be implemented in the future releases)

Substream		
Encoding type: FPS: GOP:	H.264 H.264 MJPEG 25	[5-60] [5-300]
Bitrate(kbit):	5000	[32-32000]
Encoded size:	same as the input $\ \ \backsim$	
H.264 Level:	baseline profile 🗸	

Allow your browser to do that if it asks (here Mozilla):



Note: For FLV or HLS in the preview, your browser (Mozilla preferred) can display html5 video.

Back to STATUS page:

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



To gather the actual values like Input HDMI values:



Running Time:0000-00-00 00:18:14						
Device Time:2018-03-22 22:40:36(Sync Time To Device)						
CPU Usage:58% (If CPU usage always more than 85%, please close some stream.)						
Input Size:1920x1080i@50						
Collected Video Frames:27352						
Lost Video Frames:1						
Audio Samplerate:48000						

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:

Main stream								
Encoding Type:H264								
Encoding Size:1920x1080@25								
Bitrate(kbit):4000								
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 Alles auswählen								
Multicast URL:Disable Auswahl drucken								
Preview(HTML5) Bildschirmfoto <u>a</u> ufnehmen								

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

📥 VLC media player									
Me	dia Playback Audio Video	Subtitle Tools	View						
Þ	Open File	Ctrl+O		🛓 Open Media					
Þ	Open Multiple Files	Ctrl+Shift+O					-		
Þ	Open Folder	Ctrl+F		🕑 File 🛛 😒 I	Disc 👕 Ne	etwork 🤅	Capture Device		
0	Open Disc	Ctrl+D		Network Protoc	ol				
÷	Open Network Stream	Ctrl+N		Please enter a	network URL:				
5	Open Capture Device	Ctrl+C							
	Open Location from clipboard	Ctrl+V		https://ww	Undo	Ctrl+Z			
	Open Recent Media	•		rtp://@:1	Redo	Ctrl+Y			
	Save Playlist to File	Ctrl+Y		rtsp://se http://w	Cut	Ctrl+X			
	Convert / Save	Ctrl+R			Сору	Ctrl+C			
((-))	Stream	Ctrl+S			Paste	Ctrl+V			
	Quit at the end of playlist				Delete				
E	Quit	Ctrl+Q			Select All	Ctrl+A			
							1		



📥 Open Media		_		Х
🕑 File 🛛 🚱 Disc 📲 Network 🖽 Capture Device				
Network Protocol				
Please enter a network URL:				
http://192.168.1.168/0.ts			```	
http://www.example.com/stream.avi rtp://@1234 mms://mms.examples.com/stream.asx rtsp://server.example.org:8080/test.sdp http://www.yourtube.com/watch?v=gg64x				
Show more options				
	Play	-	Cano	el

Note: If you more than one Network-Card in operation (like WIFI and GbE) in your receiving machine, VLC often doesn't recognize where to catch it from. Manually settings of METRIC Values for both can solve this issue: Lower Metric assigns higher Priority to the network interface e.g.: Set WIFI to 100 and Ethernet to 10:

And M.C. will rup:	Automatische Metrik	
And VEC WIITUIT.	Schnittstellenmetrik: 10	
🝐 0.ts - VLC media player	~	– 🗆 X
Media Playback Audio Video Subtitle Tools View Help		
pearlitv	0.ts	<section-header><text><text><text><text><text><text><text></text></text></text></text></text></text></text></section-header>
00:02		00:00
		60 53%
0.ts		1.00x 00:02/:

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



	Multicast Multicast po SAP Nan	IP: 238.0.0.1 prt: 1234 GROUP0_STREAMO Apply	Enable v [1-65535] Enable v
	GOP:	50	[5-300]
	Bitrate(kbit):	4000	[32-32000]
	Encoded size:	same as the input \vee	
	H.264 Level:	main profile 🗸	
	Bitrate control:	vbr () 192,168,1,168	
	TS URL:	/0.ts	
	HLS URL:	/0.m3L	
	FLV URL:	/0.fiv	ОК
	RTSP URL:	/0	Enable v
	RTMP URL:	/0	Disable 🗸
R	TMP/RTSP PUSH URL:	rtmp://192.168.1.50/live/0	Disable 🗸
	Multicast IP:	238.0.0.1	Enable V

AGAIN: If you change settings: You do not need to restart the encoder only the receivers you have in your network need to re-sync to the new changed Video/Encoding values!!!



Multicasts:	Mu	lticasts:
-------------	----	-----------

RTMP/RTSP PUSH URL:	rtmp://192.168.1.50/live/0	Disable 🗸	
Multicast IP:	238.0.0.1	Enable 🗸	
Multicast port:	12340	[1-65535]	copy and paste in VI C
🛓 Open M	edia	_	×
Network Please e	Protocol		
udp://d http:// mms: rtsp:// http://	238.0.0.1:12340 /www.example.com/stream.avi 2:1234 //mms.examples.com/stream.asx /server.example.org:8080/test.sdp /www.yourtube.com/watch?v=gg64x		
Show mo	ire options	Nav ▼	Cancel

Hint: If using RTP: The port numbers should be >5000 and an ODD value like 5004, 10002, ...





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

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

BLANKOM H.264 MPEG-4/AVC	HD Encoder Sy /ersion: 6.61	stem Platform			
Internet access					
	DHCP: IP: Netmask: Gateway: MAC:	Disable × 192.168.1.168 255.255.255.0 192.168.1.1 48:D7:FF:04:8C:44	•		
DNS	DNS1: DNS2:	 192.16 Set succes 192. 8.8.4 	8.1.168 sfully, please restart your de	vice!	<u>CK</u>
PORT					
	HTTP Port: RTSP Port:	8080 8554 Apply		[1-65500] [1-65500]	
Status	Netw	ork	Main stream	Substream	Audio

If you change values here the encoder-unit almost need a reboot to change the network values and to take effect.

DNS			
	DNG		
	DNS1:	192.168.1.1	
	DNS2:	8.8.8.8	

- 16 - All technical data are subject to change w/o further notice... $\$ IRENIS GmbH 04-2024.....



We assume, that you ar	e familiar with the	e basic settings of a	network.
------------------------	---------------------	-----------------------	----------

PORT		
•		
HTTP Port:	8080	[1-65500]
RTSP Port:	8554	[1-65500]
	Apply	

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 strict. The bottom of the every of the menu-pages contain the 'APPLY' buttons to take and enable your changes.

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

Main stream		
Encoding type:	H.264 ¥	
FPS:	25	[5-60]
GOP:	50	[5-300]
Bitrate(kbit):	4000	[32-32000]
Encoded size:	same as the input \vee	
H.264 Level:	main profile 🗸 🗸	
Bitrate control:	vbr v	
TS URL:	/0.ts	Enable 🗸
HLS URL:	/0.m3u8	Disable 🗸
FLV URL:	/0.fl∨	Enable 🗸
RTSP URL:	/0	Enable v
RTMP URL:	/0	Disable 🗸
RTMP/RTSP PUSH URL:	rtmp://192.168.1.50/live/0	Disable 🗸
Multicast IP:	238.0.0.1	Enable 🗸
Multicast port:	12340	[1-65535]
SAP Name:	GROUP0_STREAM0	Enable 🗸
	Apply	

All technical data are subject to change w/o further notice... © IRENIS GmbH 2025.....



On Screen Display Menu: You can 'Overlay' a Text or Logo over the encoded Video Picture in 4 Zones: For deeper detailed explanations about the OSD feature refer to the full – Manual please. Also for the ONVIF settings with RTSP. Please check our web: www.blankom.de -> Tutorials

OSD					
		Alpha:	100		[0-128]
Zon	e 1				
		Zone:	Enable 🗸		
		Туре:	Text		
		X:	Text		[0-1920]
		Y:	Scroll Text		[0-1080]
		Text:	Time		
		Font size:	36		[8-72]
	1	Background color:	white ~		
		Color:			select color
Zon	e 2				
		Zone:	Disable 🗸		
ļ	Zone	Disable v			
	Zone.	DISCOL			
	LOGO:	Durchsuchen Keine D	wählt.		
		(Please upload PNG o	r 24-bit BMP(0xF1F1F1=trans	parent) pictures less	than 500 KB. The file name
		logo1.png / logo2.pn	g – logo4.png or logo1.bmp /	logo2.bmp – logo4.	bmp.)
		Upload			
		Apply	2		

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 UI - see above.

Please check our web: <u>www.blankom.de</u> -> Tutorials, there are some useful hints – also how to use FFMPEG or how to do an http-scripting to manage the encoder-streamers w/o web-interface... Also the ONVIF Windows software can be downloaded in: <u>www.blankom.de</u> -> Downloads





Substream

Encoding type:	H.264 ¥	
FPS:	25	[5-60]
GOP:	25	[5-300]
Bitrate(kbit):	5000	[32-32000]
Encoded size:	same as the input $\ \!$	
H.264 Level:	baseline profile 💙	
Bitrate control:	vbr 🗸	
TS URL:	/1.ts	Disable 🗸
HLS URL:	/1.m3u8	Disable 🗸
FLV URL:	/1.flv	Enable 🗸
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 prot:	1235	[1-65535]
SAP Name:	GROUP0_STREAM1	Enable ~
	Apply	

Also here, OSD can be injected...

Audio settings are common for both stream encoder parts:





Audio encoder

Bitrate: 1280	v	[40000~640000]
Digital Volume: 0	000	[-50~50]
ONVIF audio G711A Over RTSP: Enab G711: G71	ole v 1A v Apply	

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

In HDE-265 /SDE-265 you can chose...So you should use the HDMI embedded Audio:

External Audio Input = HDMI if the encoder version is equipped with also external 3.5mm Stereo Jacks for analogue input,.

Self-explaining:

Change password		
Old password:		
New password:		
Confirm password:		
	Apply	\Im

The Username will stay admin per default.



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

-		
Advanced		
Video Only	: Disable v	
Audio Only	: Disable v	
HIs Splitter Time(s	: 10	[3-20]
HIs Numbe	: 5	[3-20]
TS muxe	Compatible with FFMPEG v	
Deinterlaced	: Bottom Only v	
Net Drop Threshold	: 5000	[50-50000]
TS once pack	: 7	[3-128]
ts_transport_stream_id	: 101	[1-65535]
ts_pmt_start_pic	: 480	[16-7936]
ts_start_pic	: 481	[32-3840]
ts_tables_versior	: 6	[0-31]
ts_service_name	: Live	
ts_service_provide	: Encoder	
TS Empty Packe	: No Insert v	
TS password enable	: Disable v	
ONVIF password enable	: Disable v	R
Vmix Compatible	: Disable v	
TS OVER RTSP	: ES ¥	
Multicast type	: UDP v	
UDP TTL:	64	[1-254]
UDP SOCKET_BUF_SIZE:	20971520	(0-20971520]
Slice split enable	: Disable v	
Slice size	: 1024	[128-65535]
MIN_Q	: 5	[1-35]
MAX_QF	: 42	(MIN_QP-50]
Status N	etwork Main stream	Substream

Playing with 'De-interlaced settings' helps sometimes fixing moving picture artefacts. BOTTOM only can solve right-left-camera sticking problems I fast moving Sport events. If many network traffic is on the connected Switch (HDE-264 has 100 Mb/S Interface only)

Please increase the **Net Drop Threshold** value significantly.

DVB-compatibility is shown: Set RTSP TS to ES or TS stream, you can arrange to insert Zero-packets to be compatible with some old IP top DVB Modulators – which might need that. Best setting: Change it to 1.3 factor and use strong CBR as encoding method:



ts_service_provider:	Encoder		
		H.264 Level:	main profile 🗸
TS Empty Packet:	No Insert 🗸 🗸		
TS password enable	No Insert	Bitrate control:	vbr
15 password enable.	Insert(1.2x)	TS LIRI ·	cbr
ONVIF password enable:	Insert(1.3x)	10 0112	vbr
	Insert(1.5x)	HLS URL:	strong cbr
Vmix Compatible:	Insert(2x)	FLV/ LIRI ·	/0. Av

That would insert PID-8191decimal Zero packets to the output stream – mostly common with UDP or RTP multicasts enabled. If you change back to real VBR output streams, it will take some time and we recommend to reboot the unit after changed settings back to normal.

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

NTP	
NTP enable:	Disable 🗸
Ntp Server:	time.windows.com
Time Zone:	UTC+2 v
	Apply

Supporting Rserial function if needed (Linux like for enhanced skilled profs)

Serial to TCP		
Baud Rate: TCP Port:	9600 v 5150 Apply	[1-65535]
Schedule restart		
Restart enable: Restart time:	Disable v 03:00 Apply	

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



Upload firmware and con	figuration
Select File:	Durchsuchen) 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
Backup firmware and con	figuration
	Backup up.rar Backup box.ini
System settings	
	Reboot

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.

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

Note:

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

🔺 VLC	media play	er							
Media	Playback	Audio	Video	Subtitle	Tools	View	Help		
						≡;	Playlist	Ctrl+L	
							Docked Play	/list	
Local N	letwork								
- -	mDNS Ne	etwork	Discov	ery					
*	Network	stream	s (SAP)						
	Universal	Plug'n	'Play						
🛓 Playlist	t								- C
Network st	treams (SAP)							Search	
F Playlis	st [00:00]						Title		
🋐 Media	a Library						× □] 192_168_1_68	
My Compu	ter						-	GROUP_ICSTREAM	_0



Flaylist [00:00]	Title
🋐 Media Library	> 🛅 192_168_1_68
Yy Computer	✓ □ 192_168_1_168
My Videos	GROUP_0_STREAM_0

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

A seldom case but: MJPG support:

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

	HD Encoder S MPEG-4/AVC	ystem Platform	
	Main stream		
	Encoding type: FPS: GOP: Bitrate(kbit):	H.264 × H.264 MJPEG 50 4000	[5-60] [5-300] [32-32000]
Ар	ply it and The status page will show: Main stream		
	Encoding Type:MJPEG Encoding Size:1920x1080@ Bitrate(kbit):4000	25	
	MJPG URL: http://192.168.1	l.168/0.mjpg	
	JPG URL: http://192.168.1.1	68/0.jpg	
	TS URL: Disable	\square	
	HLS URL:Disable		
	FLV URL:Disable		
	RTSP URL:rtsp://192.168.1.	168/0 rtsp://192.168.1.168:8554/0	

Please enable at least one RTSP output before changing to MJPEG – otherwise no streaming will happen. We recommend better to choose the **Main-encoder** part for this.

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



Link open by Mozilla:



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



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

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

Encoder settings:



Mainstream encoding settings

Encoding type:	H.264 V	
FPS:	30	[5-60]
GOP :	30	[5-300]
Bitrate(kbit):	4500	[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	Disable 🔻
RTSP URL:	/0	Enable 🔻
RTMP URL:	/0	Disable 🔻
RTMP(S)/RTSP PUSH URL:	rtmp://41.85.	Enable 🔻
Multicast IP:	238.0.0.1	Disable 🔻
Multicast port:	1234	[1-65535]
SRT URL Port:	9000	Enable • [1-65535]
SRT PUSH URL:	srt://192.168.1.41:9000	Enable 🔻
SRT Encryption Password:	0123456789	Enable 🔻

What is an SRT?

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

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

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

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

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

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



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

Our Video Encoders support SLS for SRT.

Introduction

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

Requirements

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

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

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

RTMP(S)/RTSP PUSH URL:	rtmp://192.168.1.169/live/0	Disable 🗸	
Multicast IP:	238.0.0.1	Enable 🗸	
Multicast port:	2222	[1-65535]	
SRT URL Port:	9000	Disable 🗸	[1-65535]
SRT PUSH URL:	srt://your.server.ip:1935?streamid=input/	Enable 🗸	
RT Encryption Password:	0123456789	Disable 🗸	
	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:	Disable 🗸	
Audio Only:	Disable 🗸	
Hls Splitter Time(s):	10	[3-20]
Hls Number:	5	[3-20]
SRT Latency(ms):	150	[1-10000]

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



Encoder-parts settings enabling SRT-Protocol:

Bitrate control:	vbr 🗸		
TS URL:	/0.ts	Disable 🧹	
HLS URL:	/0.m3u8	Disable 🧹	
FLV URL:	/0.flv	Disable 🧹	
RTSP URL:	/0	Enable 🧹	
RTMP URL:	/0	Disable 🧹	
RTMP(S)/RTSP PUSH URL:	rtmp://192.168.1.50/live/0	Disable 🧹	
Multicast IP:	238.0.0.1	Disable 🧹	
Multicast port:	1234	[1-65535]	
SRT URL Port:	9000	Enable 🧹	[1-65535]
SRT PUSH URL:	srt://192.168.1.50:9000	Disable 🧹	
SRT Encryption Password:	0123456789	Disable 🧹	
	Set up		

Check the Status page for what is enabled...:

Main stream
Encode Type: H. 264
Encode Size:1920x1080@25
Bitrate(kbit): 2500
MJPG 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
RIMP URL:Disable
RTMP PUSH URL:Disable
Multicast URL:Disable
SRT URL: srt: //192.168.1.168:9000
SRT PUSH URL:Disable
Preview(Delay 1000ms)



Additionally: SRT Latency can be adjusted in SYSTEM Firmware Version 6.53 (265 encoders) onwards and encoder type dependent...:

Advanced		
•		
Video Only:	Disable 🗸	
Audio Only:	Disable 🗸	
Hls Splitter Time(s):	10	[3-20]
Hls Number:	5	[3-20]
SRT Latency(ms):	150	[1-10000]

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

Usually SRT URL is OK for simple streaming from Encoder to the Client (media player, VLC, STB – but need to have SRT support in the client software).

For P2P direct streaming, select SRT PUSH and enter the destination IP Address and Port. Both source and destination (STB or VLC-PC or Decoder) have to be in the same subnet. Example: Over VPN, both devices need to 'see' each other (i.e. use PING).

You can check it by VLC: (please note, the @ in the URI is not necessary like in udp/rtp)





Some more useful links regarding SRT: A Media server to handle SRT and more: The Open Broadcaster Software <u>https://obsproject.com/</u> 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

k

- 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 <u>encoder works as caller</u> (SRT push URI) and listener (SRT URI port):

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

With passphrase/Encryption, decoder SRT play URI:



srt://passpharese@ip:port **'IP' is the Encoder IP.** srt://passphrase@port # encoder as Listener, decoder get SRT stream from encoder, here

srt://passphrase@port #encoder mode as caller, push srt to the decoder. See below screenshot for settings:





BECAUSE ADOBE HAS STOPPED FLASH player and the web browser developers are disabling flash systematically, we have arranged to get the preview by HTML5: **NOTE: The PREVIEW only works with CODEC h.264 – Not with h.265! v.6.51 or 6.53E or** higher (Old Hardware model, <u>New Hardware Firmware starts with 5.0x and 2.xyA = Ambarella chips</u>)



Full screen is possible in Preview. Go back with ESC Button



ntion if you are using	g BLACKMagic converter HDMI/SDI:
ersion 7.5.1, Build 107bfb5d	
igic Converters Setup	X
nverters Setup	Blackmagicdesign
номі рот	Blackmagic desem
Micro BiDin SDI/	Converter rectional and hereit
HCMN IN	
BiDirection	nal SDI/HDMI 3G
Micro Converter B	iDirectional SDI/HDMI 3G 🔸
Andes to operate as SDI outp	put: Level A and B:
setting is B and this will not w	ork with our SDI encoders:
agic Converters Setup	-
Micro Converter	r BiDirectional SDI/HDM 👒
BiDirectional SDI/HDMI 3G	
Setup	
Name:	BiDirectional SDI/HDMI 3G
Software:	Version 7.5.1
SDI Camera Control	
ATEM Camera ID:	. 1
SDI Output	
3G SDI Output:	Level A
	O Level B
	<u></u>
Reset	
	Factory Reset
	Cancel Save



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



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

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





New feature added in Version 5.11 (265 Versions – not possible with 264-Units):



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

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



Changing possibility of the Transportstream-PID-ID-values to distinguish several encoders in a common network to finally use a multiplexer w/o PID-Remapping. Service name and provider names can be changed to your needs...

This is located in the System-settings:

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 🗸	2
TS password enable:	Disable 🗸	3

In combination with TS-PIDs only in HEVC H.265 Versions) encoder chips:

Main stream		
•		
Encoding type:	H.265 🗸	
FPS:	50	[5-60]
GOP :	25	[5-300]
Bitrate(kbit):	3200	[32-32000]
Image Quality:	Low 🗸	
Encoded size:	same as the input	
Bitrate control:	vbr v	
TS Video PID:	100	[16-8190]
TS Audio PID:	200	[16-8190]
		v0

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. 8191 is for Zero-fillings to a CBR TS. Please check DVB-Norms if you are unsure.

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

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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 <u>and can</u> <u>increase latency</u> 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:

Slice split enable:	Disable 🗸	
Slice size:	1024	[128-65535]
MIN_QP:	5	[1-35]
MAX_QP:	42	(MIN_QP-50]

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 <u>on at once</u> 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:





Safe it on your PC:

Neue	r Ordner	
^	Name	Änderungsdatum
	V Heute (1)	
	🛓 vlc.xspf	14.11.2022 11:21
- 14	✓ Letzte Woche (4)	

Ready.

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





🕞 OBS 28.1.2 (64-bit, windows) - Profi	l: source-encoder - Szer	nen: Unbenannt						- 0	×
Datei (F) Bearbeiten Ansicht (V)) Docks Profil S	zenensammlu	ing Werkzeuge (T) H	Hilfe					
			Anwendungsaudioaufr	hahme (Beta)					
		∢))	Audioausgabeaufnahn	ne					
		<u>•</u>	Audioeingabeaufnahm	e					
			Bild						
		Ū	Bildschirmaufnahme						
		<u>e</u>	Browser						
		ų - 1	Diasnow						
			Fensteraufnahme						
	•		Medienquelle						
Keine Quelle ausgewahlt	C Eigenschaften		NDI™ Source						
Audiomixer		۹ ¢	Spielaufnahme		6	Szenenübergä	. 🗗	Steuerung	4
Desktop-Audio	-0.1		Szene			Überblende		Stream starte	n
-80 -55 -50 -45 -40 -35 -30 -2		: ab	Text (GDI+)			Dauer 300 ms		Aufnahme star	ten
		Sie 🕨	VLC-Videoquelle			+ 🔟	:	alla Kamora et	L A
		<lick td="" 🖸<=""><td>Videoaufnahmegerät</td><td></td><td></td><td></td><td></td><td></td><td>•</td></lick>	Videoaufnahmegerät						•
		rect 🕒	Gruppe					Studio-Modu	IS
			Veraltet	•				Einstellungei	
•* :		+						Beenden	
				(4)	LIVE: 00:00:00 🥖	REC: 00:00:00	CPU: 1.	0%, 30.00 fps	.:





SEigenschaften von "VLC-	Videoquelle"			×
	 Playlist wiederholen Playlist zufällig wiederg 	;eben		
Sichtbarkeitsverhalten	Beenden, wenn nicht sich	ntbar, neu starten, wenn sichtbar		0
Playlist Zurücksetzen		© 00:00	Okay	Abbrechen
		Ord ner hinzufügen Ord Ner hinzufügen Pfad/URL hinzufügen		
~ +	Heute (1)		Anderun	gsuatum
	vic.xspf etzte Woche (4))	14.11.202	2 11:21
ichtbarkeitsverhalten	Beenden, wenn nicl	ht sichtbar, neu starten, wen	n sichtbar	
Playlist	D:/Documents/vlc.	xspf		

And Go:



Datei (F)	Bearbeiten	Ansicht (V)	Docks	Profil	Szener	isammlung	Werkzeuge (r) Hi	ilfe					
				A bri B hal C klo	iten b ben zv	is etwa ei vei abstel pei droher	Kaninche nen Meter n nende Feder nder Gefahr	enkät unter rn, di r mit	uze? r der Erde e wie grof den Füßer	Se Ohren n auf den	ausseh Boden	O HO		
								-			10.00			
VLC-V	/ideoquelle		🗘 Eigen	schaften		Filter								
Audiomi	xer				ц,	Quellen		đ	Szenen		ŋ	Szeneni	ibergä	
Desktop-A	udio			-(0.0 dB	VLC-Vi	ideoquell 🗿	1	Szene			Überble	nde	
-60 -55 -5	o -45 -40	-35 -30 -25	-20 -1	5 -10 - 	5 0		~					Dauer 30	00 ms	
VLC-Video	quelle			C	0.0 dB							+	Ē	:
-60 -55 -5	o -45 -40	-35 -30 -25	-20 -1	5 -10 -	5 0									

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

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

Dateiname:	2022-11-14 11-40-56.m3u
Dateityp:	M3U-Wiedergabeliste (*.m3u)
	M3U-Wiedergabeliste (*.m3u)
	XSPF-Wiedergabeliste (*.xspf)
ner ausblende	M3U8-Wiedergabeliste (*.m3u8)
besteht aus den	HTML-Wiedergabeliste (*.html)



×

S Eigenschaften von "VLC-Videoquelle 2"



To sample some streams and create a mosaic:



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Addons December 2021 FW version 5.15:

Cosmetic improvements,

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

- 2. added RTSP multicast
- 3. added multicast SAP name option
- 4. added switch for TS TDT System Advanced settings (default is disabled)

Encoding type:	H.264 🗸	
FPS:	30	[5-60]
GOP:	30	[5-300]
Bitrate(kbit):	3200	[32-32000]
Image Quality:	Low 🗸	
Encoded size:	same as the input \checkmark	
H.264 Level:	high profile 🗸 🗸	
Bitrate control:	vbr 🗸	
TS Video PID:	100	[16-8190]
TS Audio PID:	200	[16-8190]

	ts_tables_version:	6		[0-31]				
	ts_service_id:	1		[1-65535]				
	ts_service_name:	Live						
1	ts_service_provider:	Encoder						
	TS Empty Packet	No Insert 🗸						
Status	Network	Main stream	Substream1	Substream2	Substream3	Audio & Video	System	
					4			



BLAN	ЮМ						
H.26	HD Encode Version: 5.	er System Platform 15					
Main str	eam						
	Encoding type:	H.264 ¥					
	FPS:	30		[5-60]			
	GOP:	30		[5-300]			
	Bitrate(kbit):	3200		[32-32000]			
	Image Quality:	Low 🗸					
	Encoded size:	same as the inpu	t 🕶				
	H.264 Level:	high profile 🗸	•				
	Bitrate control:	vbr 🗸					
	TS Video PID:	100		[16-8190]			
	TS Audio PID:	200		[16-8190]			
	TS URL:	/0.ts		Enable 🗸			
	HLS URL:	/0.m3u8		Disable 🗸			
	FLV URL:	/0.flv		Enable 🗸			
	RTSP URL:	/0		Multicast 🗸			
	RTSP Multicast IP:	238.0.0.2		Disable Enable			
	RTSP Multicast port:	1234		Multicast [1-65535]			
	RTMP I IRI ·	/n		Dicabla 🗸			
Status	Network	Main stream	Substream1	Substream2	Substream3	Audio&Video	System

KISP Multicast port:	1234	[1-65535]		
RTMP URL:	/0	Disable 🗸		
RTMP(S)/RTSP PUSH URL:	rtmp://192.168.1.169/live/0	Disable 🗸		
Multicast IP:	238.0.0.1	Disable 🗸		
Multicast port:	1234	[1-65535]		
Multicast SAP Name:	GROUP0_STREAM0			
SRT URL Port:	9000	Disable 🗸	[1-65535]	
SRT PUSH URL:	srt://192.168.1.169:9000	Disable 🗸		
SRT Encryption Password:	0123456789	Disable 🗸		
HLS PUSH URL:	https://a.upload.youtube.com/http_uploa	Disable 🗸		
Status Network	Main stream Substream1	Substream2	Substream3	Au



Device Name:	Encoder_9896					
EDID:	0.Default(1080P6	0) 🗸				
Video Only:	Disable 🗸					
Audio Only:	Disable 🗸					
AV Sync Strategy:	Resample 🗸					
Hls Splitter Time(s):	10		[3-20]			
His Number:	5		[3-20]			
SRT Latency(ms):	150		[1-10000]			
SRT Bandwidth(KByte,	0		[0-102400]			
0=nolimit):						
Deinterlaced:	Bottom Only 🗸					
Net Drop Threshold:	5000		[50-50000]			
TS muxer:	Compatible with F	FMPEG 🗸				
TS once pack:	7		[3-128]			
TS TDT:	Disable 🗸					
_transport_stream_id:	101		[1-65535]			
te nmt start nid:	480		[16-7936]			
Network	Main stream	Substream1	Substream2	Substream3	Audio & Video	Sy



Example Dartfish Setup:

Attention:

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





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



Changing possibility of the Transport Stream-PID-ID-values to distinguish several encoders in a common network to finally use a DVB multiplexer w/o PID-Remapping: TS TDT and Table version is not available in all models)

Points to this in System-settings

TS TDT: ts_transport_stream_id:	Disable Disable Enable	[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):

File Export View Record Playback Plugins See Image: PAT PID 0x0000 Image: PAT PID 0x0100 - Program 1 PAT Version This sport S Image: PMT PID 0x01e0 - Program 1 Image: PMT PID 0x01e1 PMT PID 0x01e1 PMT PID 0x01e1 Image: PCR PID 0x01e1 Image: PCR PID 0x01e1 PMT PID 0x0014 PMT PID 0x0014 Image: PDI 0x0011 <1> Image: PID 0x0011 <1> Image: PID 0x0011 <1> PMT PID 0x0011 <1>	ettings Help n Number: 18 tream ID: 101 (0x0065) 80 (0x01e0) - Program 1 Live	Video	Decode
$\leftarrow \rightarrow C \land A$ Not secure 192	2 168 1 168/SystemE html		ið 🕁 🦁
Net Drop Threshold	5000	[50-50000]	
TS muxer:	Compatible with FFMPEG \checkmark		
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:	18	[0-31]	
ts_service_name:	Live		
ts_service_provider:	Encoder		

In combination with:



Main stream		
Encoding type:	H.265 ¥	
FFS:	50	[5-60]
GOP :	25	[5-300]
Bitrate(kbit):	3200	[32-32000]
Image Quality:	Low V	
Encoded size:	same as the input	
Bitrate control:	vbr 🗸	
TS Video PID:	100	[16-8190]
TS Audio PID:	200	[16-8190]

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

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

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





Version 5.17 (April 2022, June 2022)

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

Advanced	
Device Name:	Encoder_61432
EDID:	0.Default(1080P60) ~
Video Only:	Disable 🗸
Audio Only:	Disable 🗸
AV Sync Strategy:	Auto 🗸
Hls Splitter Time(s):	Auto Resample
Hls Number	5

Version 5.20 is actual (Okt. 2022).

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

Actual Version for HDE-264 is 6.61 improved User interface and fixed some issues like Audio encodings...

Attention:

There is an intermediate version available (almost only used in SDI Version SDE-265): We have changed the chipset and also the firmware must be adapted ... Currently the Ambarella version is applied as 2.xx**A**... in SDI Encoders and HDE-265L

We have intermediately changed the chipset and also the firmware must be adapted ... Currently the Ambarella Chip-version has 2.xx... in h.265 HDMI-Loop and SDI Encoders: 20230721-V2.28A: New added and fixed video encoding: Video Resolution and rotation perfections Because of customer demands.

Do not mess up with the different HW/SW combinations. If you ask us, always give us the Version or the screenshot of the current installed one.



How to stream h265 encoded video to YouTube using HLS?

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

How to setup?

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



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



Changelog:

Firmware HDE-264 update available to 6.61, Nov. 2023 (send us an email if needed)

- Improved User Interface, Audio selection disabled (No external Stereo Input)
 - Cosmetic bug still might be seen: SAP enabled but does not shown in the status menu

Before:

Now:



Please be confused:

The h.264 only encoders (only HDMI versions available) starts with a 6 in the firmware version. The h.265 (and h.264) starts with a 5 (standard chip)

or with a 2 (Ambarella chip).

This is importand to know for our service if you are asking for an actual Firmware. Easiest method: Log into the encoder-web interface. And you'll get the status page:



New Features in HDE-265L Ambarella chip: Version starting with 2.xy:

TS Provider Name:	Encoder	
Conform to System B (DVB):	Disable 🗸	
TS Null Packet:	No Insert	TS tables also for american ITU – B norm.
HTTP No Password: Disable	×	
Telnet Service: Enable	v	
RTSP Default Stream: Main St	ream 🗸	
Vmix Compatible: Disable	×	
TS Over RTSP: ES ♥		
Multicast Type: UDP 🗸	5	
Enable SAP: Enable	×	Telnet off switching, SAP ON/OFF

Please check also the SDE-265 manual and tipps and tricks as PDF's from our webside (Download section).



New Releases in 2024/2025 are:

- Changed the HW using a new SoC Chipset from Ambarella.
- These Versions start with 2 and end with an A (for Ambarella) the old FW 5.xy and 6.xy do not work with the new HW.
- Actual FW June 2025: V2.42A added WebRTC support

New features will be described step by step later on but here are the most interesting parts:

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



GOP settings:

Video changing selections:

GOP:	30			[5-300]
Bitrate Control:	VBR	~	3	
Bitrate Stable:	1(Most S	table) v		
Video Input				
Vide	eo Rotate:	0° ~		
Flip Ar	nd Mirror:	Disable 🗸		
Input Video	Clipping:	Disable 🗸		
Video Clipp	ping(Left):	0		[0~1920]
Video Clipp	ping(Top):	0		[0~1080]
Video Clippin	g(Width):	0		[0~1920]
Video Clipping	g(Height):	0		[0~1080]
Mon	ochrome:	Disable 🗸		
		Apply		6



PAR:	Disable M	(DAR = SAR x PAR)		
Deblocking Enable:	Disable			
beblocking chable.	3:4(16:9->4:3)			
Deblocking Alpha:	4:3(4:3->16:9)	[-6~6]	1	
Doblocking Bots:	16:15(720:576->4:3)	[66]	TS/RTSP Password Enable:	Disable 🗸
Deblocking beta.	64:45(720:576->16:9)	[-0~0]	HTTO N. Deserved	Disable of
	8:9(720:480->4:3)		HITP No Password:	Disable Y
	32:27(720:480->16:9)		Telnet Service:	Enable 🗸
	9:16(16:9->1:1)			
СР	3:4(4:3->1:1)		RTSP Default Stream:	Main Stream V

Actual Ambarella Chipset Firmware is 2.38A / 2.42A (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.265evc	HD Encoder System Platform Version: 2.36A		
Input status	⊳		
Running Time: 0000	-00-00 00:06:48		
Device Time: 1970-0	1-01 03:09:07 (Sync Time To Device)		
Device Name: Encod	ler30071		
CPU Usage: 5%			
Memory Usage: 212	Memory Usage: 212.1M/512.0M		
Codec Usage:43%			
Input Size: 1920x1080i@50			
Video Status: Norma	Video Status: Normal		
Collected Video Fran	mes: 20854		
Audio Samplerate: 4	18000		
Audio Status: Norma	al		
Collected Audio Fra	mes: 18904		
Net Packet Sent: 14			
Net Packet Dropped	I: 0		
Preview(Low Delay)			

New features in 2.36A:

HTTPS, mDNS and Hostname settings:



HTTPS		
HTTPS: HTTPS Port: HTTPS Private Pass:	Disable V 8443 [1-65500] (If the private key does	not have a password, it is empty)
Select File:	Durchsuchen) Keine Datei ausgewählt. (File name is 'private.ke	y' or 'public.crt'.Please don't upload by
	different people at the same time,don't power off during upload.) Upload Delete Certs Apply	
HOSTNAME		
HOSTNAME: mDNS: mDNS URL:	Encoder30071 Enable v Encoder30071.local	
Image Quality Range: Better Bitrate(kbit): Bet TS URL: Mic HLS TS URL: Lor	er -> Best st ter -> Best d -> Best wer -> Best west -> Best	
HLS MP4 URL: /0_m	p4.m3u8 Quality changing	
TS Service N	lame: Live	
TS Provider N	lame: Encoder	
Conform to System B (TS Null P	DVB): Disable Disable Enable	
TS	Disable Y	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:





Statu	s Netw	ork Main	stream Su	ıbstream1 S	ubstream
HLS PUS	SH URL:Disable				
SRT PUS	H URL:Disable				
SRT URL	:Disable				
Multicas	st URL: ptl://@238	.0.0.1:1234			
RTMP(S)) PUSH URL: Disab	le			

The PTL mode works only between our devices: Encoder (Boxed) and Decoder units (HDD...)

HTTP No Password:	Disable Y	
Telnet Service:	Enable 🗸	
RTSP Default Stream:	Main Stream	
Vmix Compatible	Disable ¹	
vinix companyie.	Main Stream	
TS Over RTSP:	Substream1	
	Substream2	
Multicast Type:	Substream3	
5 11 AAD		An RTSP default unicast stream setting.

A Restart by Video or Audio loss:

No Video Auto Restart:	Disable Y
No Audio Auto Restart:	Disable
Deblocking Enable:	Enable 🗸

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

Substream1
Encode Type: H.264
Encoding Type: 1280x720@25
Bitrate(kbit): 3200
TS URL: Disable
HLS TS URL: Disable
HLS MP4 URL: Disable
MP4 URL: http://192.168.1.168/1.mp4 http://192.168.1.168:8086/1.mp4
FLV URL: http://192.168.1.168





The Ambarella-chip Preview is working w/o FLV set to ON:



Multicasts:

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



Multicast IP:	238.0.0.1	Enable 🗸
Multicast Port:	1234	[1-65535]
Multicast SAP Name:		
	Status-Window:	
RTMP URL: Disab	le	
RTMP(S) PUSH U	IRL: Disable	
Multicast URL: u	dp://@238.0.0.1:1234	
SRT URL: Disable	4	
		copy and paste to VLC

RTP can be chosen in the system settings once for all Multicasts from Main and substreams.

Tipp: You probably know that Multicasts are flooding your network except you are using a Layer3 Switch with IGMP-filtering support – See also: https://www.blankom.de/assets/downloads/TCP-IP-Unicast-IGMP-Dialog_und_snooping.pdf

📥 Open Media			_	
🖻 File 🛛 🕙 Disc	🚏 Network	🛒 Capture Device		
Network Protocol				
Please enter a network	URL:			
udp://@238.0.0.1:123	340			~
http://www.example.co rtp://@:1234 mms://mms.examples.c rtsp://server.example.or http://www.yourtube.co	om/stream.avi om/stream.asx g:8080/test.sdp om/watch?v=gg64	4x		
Show more options				
			Nay 🔻	Cancel

Tipp: VLC wants the @ in the URL also with RTP.



HTTPS and mDNS invented / improved:

HTTPS		
HTTPS:	Disable 🗸	
HTTPS Port:	8443	[1-65500]
HTTPS Private Pass:		(If the private key does not have a password, it is empty)
Select File:	Durchsuchen 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.)
	Upload Delete Certs	
	Apply	
HOSTNAME		
HOSTNAME:	Encoder9439	
mDNS:	Enable v	
mDNS URL:	Encoder9439.local	
	apply	

Some Encoding Hints:

FullHD encoding Bitrates best performance is at around 5000-6000 Kb/s:

BLANKOM H.265C HD Encode Version: 2.	r System Platform <mark>42A</mark>	
Main stream		
Encoding Type:	H.264 ~	
Encoded Size:	Same as input \vee	
FPS:	Auto ~	
GOP:	50	[5-300] Group of Pictures, keyframe interval = GOP / FPS
H.264 Level:	Main Profile 🗸	
Bitrate Control:	CBR v	
Bitrate Stable:	1(Most Stable) v	
Bitrate(Kbit):	6000	[32-32000]
TS URL:	/0.ts	Enable v

If you want to stream a 'still-Picture' like a Digital Signage Presentation which only shows non-moving pictures, we recommend to chose the Encoding mode to **CBR and chose a proper Bitrate stability value** – see picture above.



Some addons implemented in Encoder FW 2.42A:

Advanced	
Device Name:	
EDID:	0.Default(1080P60)
Video Only:	Disable ➤ Encode the video only.
Audio Only:	Disable ➤ Encode the audio only.
No Signal Pic Only:	Disable ➤ Only show the preset no signal picture even with video input.
No Signal:	End Stream

Added some explanations in the Web-IF:

No Signal PIC only: Shows the Testpicture animated (3 pics in a loop) and streams (here with CBR and 6Mb/s):



Re-setting it back:

No Signal Pic Only: No Signal:	Disable Only show the pr Display Picture Display Picture	eset no signal picture even with video input. ure - show the preset no signal picture.
HLS Segment Duration(s):	5	GROUP0_STREAM0 - VLC media player
HLS Segment Quantity:	3	Medien Wiedergabe Audio Video Untertitel Werkz
TS Muxer:	Compatible with FFMPEG v	
Net Drop Threshold:	5000	
TS Once Pack:	7	11:46
TS/RTSP Password Enable:	Disable 🗸	
HTTP No Password:	Disable v	
Telnet Service:	Enable 🗸	
RTSP Default Stream:	Main Stream 👻	ALAN

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Streams again.

The Stream will be switched off if no SDI/HDMI Input (otherwise testpicture = NoSignal- animation):



Stream-Switchoff if no Input: VLC shows the last picture, but the complete streaming IP is OFF now:



VLC restart: Nothing



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Switch ON: Testpicture w/o Input:

No Signal Pic Only:	Disable V Only show the preset no signal picture even with video input	how the preset no signal picture even with video input.
No Signal:	Display Picture - show the preset no signal picture.	Display Picture - show the preset no signal picture.

Input Returns, stream also:



If you have the need to customize the NoSignal Pictures (3x BMP/PNG) please send an email and we do that for you. But after updating, it will be again the standard version...

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

Hls Number:	3	[3-20]	
TS Muxer:	Compatible with FFMPEG 🗸		
Net Drop Threshold:	5000	[50-50000]	
TS Once Pack:	7	[3-128]	

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

Some picture enhancements can be adjusted by Deblocking ... :



MTU Size:	1500			[500-1500]
Ethernet Speed:	1000M ~			
UDP TTL:	64			[1-254]
UDP SOCKET_BUF_SIZE:	20971520			(0-20971520]
PAR:	Disable	~	(DAR = SAR x	PAR)
No Video Auto Restart:	Disable \vee			
No Audio Auto Restart:	Disable 🕑			
Deblocking Enable:	Enable 🗸			
Deblocking Alpha:	0			[-6~6]
Deblocking Beta:	0			[-6~6]
	Apply			

SRT description improved, HLS Push enabled:

SRT (Listener) Port:	9000	Enable	~
SRT (Caller) URL:	srt://192.168.1.169:9000	Disable	~
SRT Passphrase:	0123456789	Disable	×
	https://a.upload.voutube.com/http.upload.bls?cid-	Disable	~
THEST OSTITIONE.	https://arapioad/outabe/com/http_upioau_ns:cuu	Disable	

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

- 64 - All technical data are subject to change w/o further notice... © IRENIS GmbH 04-2024.....



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)/RT	ISP PUSH URL:	rtmp://192.168.1.169/live/0	Disable 🗸	
٨	Multicast IP:	238.0.0.1	Enable 🗸	
Mul	lticast port:	2222	[1-65535]	
5	SRT URL Port:	9000	Disable 🗸	[1-65535]
5	SRT PUSH URL:	srt://your.server.ip:1935?streamid=input/	Enable 🗸	
SRT Encrypti	ion Password:	0123456789	Disable 🗸	
		Set up		

For P2P, select SRT PUSH (Caller) and enter the destination IP Address and Port. E.g. the IP:port of the Decoder units (DS-case) HDD-275 or other or VLC... Potplayer....



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

Advanced		
Video Only:	Disable 🗸	
Audio Only:	Disable 🗸	
Hls Splitter Time(s):	10	[3-20]
Hls Number:	5	[3-20]
SRT Latency(ms):	150	[1-10000]

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

Check the Status page:

Main Stream		
Video Coder: H 264		
Video Resolution: 1920x1080@25		
Bitrate(Kbit): 6000		
TS URL: http://192.168.1.168/0.ts http://192.168.1.168:8086/0.ts		
HLS TS URL: Disable		
HLS MP4 URL: Disable		
MP4 URL: http://192.168.1.168/0.mp4 http://192.168.1.168:8086/0.mp4		
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://@238.0.0.10:12340		
SRT Listener Mode: srt://192.168.1.168:9000		
SRT Caller Mode: Disable		
HLS PUSH URL:Disable		
TRTC Room: Disable		
Preview(HTML5)		

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 Remark: There are WHIP plugins for OBS available (v3.x and above) so the OBS can process WebRTC streams.

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

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BTW: If no signal has been detected at the Input connector, the Test-picture (3bmp animated) 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:



For a more stable stream with a test-Picture or also still-pictures see above: Use the CBR encoding method and around 6Mb/s bitrate with most stable picture settings:

HD Encode H.265	r System Platform 42A	
Main stream		
Encoding Type:	H.264 ×	
Encoded Size:	Same as input v	
FPS:	Auto 🗸	
GOP:	50	[5-300] Group of Pictures, keyframe interval = GOP / FPS
H.264 Level:	Main Profile 🗸	
Bitrate Control:	CBR ¥	
Bitrate Stable:	1(Most Stable) v	
Bitrate(Kbit):	6000	[32-32000]
TS URL:	/0.ts	Enable Y

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 is from System-settings



TS TDT:	Disable	
ts_transport_stream_id:	Enable	[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):

☑ TSReader 2.8.46b File Export View Record Playback Plugins S	ettings Help		
Image: PAT PID 0x0000 PAT Versic Image: PMT PID 0x01e0 - Program 1 PAT Versic Image: SDT: Live PMT PID 0x01e1 Image: SDT: Dive PMT PID 0x01e1 Image: SDT Dive PMT PID 0x01e1 Image: PCR PID 0x01e1 PCR PID 0x01e1 Image: DCR PID 0x01e1 PCR PID 0x01e1 Image: DCR PID 0x01e1 PCR PID 0x01e1 Image: DCR PID 0x0014 PCR PID 0x0014 Image: DCR PID 0x0011 <1> PCR PID 0x0011 <1> Image: DI Live PCR PID 0x0011 <1>	n Number: 18 Stream ID: 101 (0x0065) 180 (0x01e0) - Program 1 Live	Video Decode	
System settings-HD Encoder × +	÷		~
← → C 🏠 🔺 Not secure 19	2.168.1.168/SystemE.html		🖻 🕁 🦁
Net Drop Threshold	5000	[50-50000]	
TS muxer:	Compatible with FFMPEG V		
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:	18	[0-31]	
ts_service_name:	Live		
ts_service_provider:	Encoder		



In combination with:

Main stream		
Encoding type:	H.265 ¥	
FPS:	50	[5-60]
GOP :	25	[5-300]
Bitrate(kbit):	3200	[32-32000]
Image Quality:	Low Y	
Encoded size:	same as the input 🗸	
Bitrate control:	vbr 🗸	
TS Video PID:	100	[16-8190]
TS Audio PID:	200	[16-8190]

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.

New Features added in Ambarella Chipset Version (the 'A' is important) 2.42A:

Advanced		
Device Name:	Encoder5641	
EDID:	0.Default(1080P60) ~	
Video Only:	Disable V Encode the video only.	
Audio Only:	Disable < Encode the audio only.	
No Signal Pic Only:	Disable V Only show the preset no s	ignal picture even with video input.
No Signal:	Display Picture - sho	w the preset no signal picture.
HLS Segment Duration(s):	5	[3-20] ¹
HLS Segment Quantity:	3	[3-20]

Test-Picture inbuilt (pre-set) can be shown permanently regardless of the input signal. If **No Signal** *at the input* : Stop streaming or show the Display Picture (No-Signal Test-pic).



Kick All When Input Changed:	Enable 🗸	Disconnect all players when audio/video input changes.	
No Video Auto Restart:	Enable 🗸	No video detected, automatic restart after 3 minutes.	
No Audio Auto Restart:	Disable 🗸	No audio detected, automatic restart after 3 minutes.	
Deblocking Enable:	Disable 🗸	2	
Deblocking Alpha:	0	[-6~6]	
Deblocking Beta:	0	[-6~6]	
	Apply	y and the second se	

Kicks All (?) if input changes... and Auto-resyncing to the input can be checked periodically : 3 Minutes ...

Ethernet can be configured:

Ethernet Speed: UDP TTL: UDP SOCKET BUE SIZE: V2 424: WobPTC support	1000M ~ 100M 1000M	[1-254]
HLS PUSH URL:	https://a.upload.youtube.com/http_upload_hls?cid=	Disable 🕑
WHIP (WebRTC) Bearer Token:	webrtc://domain/AppName/StreamName?txSecret=;	Enable 🗸
WHIP (WebRTC) Server:	https://webrtcpush.tlivewebrtcpush.com/webrtc/v2/	
TRTC Room:	8088	Enable 🗸
TRTC User:	guest	
TRTC UserSig:	emcvzHfjfEIe	
TRTC SDKAppID:	188166	
	Apply	

Short Explanation's reg. WEBRTC:

WebRTC Encoder - Relationship Between WebRTC and WHIP

WebRTC Overview



WebRTC (Web Real-Time Communication) is a technology that enables real-time voice calls, video chat, and peer-to-peer file sharing in web browsers without requiring plugins. The WebRTC encoder handles efficient media compression, making it ideal for real-time applications.

WHIP Protocol with WebRTC Encoder

WHIP (WebRTC-HTTP Ingestion Protocol) works seamlessly with WebRTC encoders to securely send realtime media streams from sources to servers. This combination simplifies the publishing process for WebRTC encoder outputs.

Key Advantages for WebRTC Encoder Systems

Optimized Encoder Signalling:

WHIP provides standardized signalling for WebRTC encoders, improving connection reliability.

Efficient Encoder Output Transport:

The protocol handles WebRTC encoder streams via HTTP POST, supporting various media containers.

Low-Latency Encoder Distribution:

WHIP maintains the low-latency benefits of WebRTC encoder outputs while enabling wider distribution.

WebRTC Encoder Applications

Browser-Based Encoding:

Modern WebRTC encoders in browsers can now stream directly via WHIP to media servers.

Cloud Encoding Workflows:

WHIP enables WebRTC encoders to feed cloud transcoding pipelines with minimal latency.

Conclusion

The WHIP protocol significantly enhances WebRTC encoder capabilities by providing standardized HTTP ingestion. This combination delivers the low-latency benefits of WebRTC encoding with the scalability of HTTP-based distribution.

So for the implementation of an own WebRTC service, there are free / open source tools available – Google is your friend. Or use the OBS with Whip...

Questions: Please contact us: info@blankom.de