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How to set the optimal Keyframe frequency / I-Frame Interval (s) for YouTube & Facebook Live by our IP Video Encoder?

BLANKOM Video Encoder Settings for I-Frame-keyframe-Interval (s) for YouTube or Facebook Live

What's a Keyframe?

The keyframe (I-frame) is the **full** frame of the image in a video.

Subsequent frames, the delta frames, only contain the information that has been changed from picture to picture. Keyframes will appear multiple times within a coded stream, depending on how it was created or how it's being streamed.

How to set Keyframe frequency/I-Frame(keyframe) Interval (S) for YouTube & Facebook Live by <u>the</u> <u>BLANKOM IP Video Encoder?</u>

Facebook:

An I-frame (keyframe) must be sent at least every 2 seconds within the Video-stream.

YouTube:

Keyframe frequency: Recommended 2 seconds. Should not exceed 4 seconds

Keyframe frequency / I-Frame(keyframe) Interval (S) = GOP/FPS. The below stream I-Frame Interval (S) is 2s, resulting from GOP/FPS=50/25:





HD Encoder System Platform 5.12

Main stream		
Encoding type:	H.265 ¥	
FPS:	25	[5-60]
GOP:	50	[5-300]
Bitrate(kbit):	8000	[32-32000]
Encoded size:	1920x1080 ¥	

BLANKOM ONVIF Video Encoders is working together with Milestone VMS Software

How to Integrate Non-IP Video Sources into Milestone VMS Software with <u>BLANKOM SDI, HDMI and VGA</u> or <u>CVBS Analog encoders</u>?

If you are using <u>Milestone VMS Software</u> to manage your video surveillance system, you may encounter some situations where you need to integrate non-IP video sources into your network. For example, you may want to monitor a PC screen that a security guard is watching or a non-network enabled camera that is already installed.

In these cases, you may think that you have to re-wire and retrofit your existing equipment, which can be costly and time-consuming. However, there is a simpler and easier solution: Using BLANKOM Encoders.

BLANKOM Encoders are devices that can convert any SDI, HDMI, VGA, or CVBS analog video signal into an IP stream that can be integrated into Milestone VMS Software via a network. This way, you can view and record your non-IP video sources on your VMS software without changing your hardware.

BLANKOM Encoders support various video formats and resolutions, including 4K HDR, and can encode in H.264 or H.265 for optimal bandwidth and storage efficiency. They also support ONVIF protocol, which means they are compatible with most IP cameras and NVRs on the market.

BLANKOM Encoders are easy to install and configure, and they come with a web-based interface that allows you to adjust the settings and preview the video output. You can also use BLANKOM's free tool to search and manage multiple encoders on your network.



With BLANKOM Encoders, you can expand your video surveillance system with non-IP video sources without compromising the quality and performance of your network. You can also enjoy the flexibility and convenience of accessing your video feeds from anywhere on your network.

If you want to learn more about BLANKOM Encoders and how they work with Milestone VMS Software, you can contact us for more information.



Decoder as Transcoder: HDD-276 4Kp60:

How to convert an IPC (Camera) RTSP to a RTMP Stream?

With the rapid development of the security monitoring industry, more and more surveillance cameras are widely used, but mostly of the IP cameras are support RTSP ONVIF protocols, it's not easy to view the video over internet or from other location.

By the BLANKOM <u>HDD-276 4K 60FPS HDMI CVBS</u> <u>Decoder & Transcoder</u>, you can decode the IP camera RTSP stream (also, supports SRT / HTTP(S) / HLS / FLV / RTMP(S) / UDP/RTP (Unicast/Multicast), ONVIF stream), and output HDMI, CVBS and L/R stereo audio, at the same time, our HDD-276 can do a restreaming, converting the IPC –RTSP stream to RTMP and push this to a 3rd party live stream platform or a media streaming server.

With the **BLANKOM HDD-276 Decoder & Transcoder**, you don't need to do any changes for the original surveillance camera, the HDD-276 converts the RTSP video stream from the surveillance camera into an RTMP live stream.



Steps:

1. Copy the RTSP URL from the IP camera

2. Login the WEB control panel of HDD-276, click the 'Input Stream Address ', and paste the RTSP URL to it:

11.	
4K HDR IP Decoder / Transcoder	
	input stream address
Status	Channel1
Input stream address	address: rtsp://admin:123456@192.168.1.103:554/h264/ch1/main/av_:
input ou oan addrood	
Transcoding setting	audio: Enable V cache(ms): 1000 [0-4000]
System setting	Program ID: Program 1 🗸
	Apply

3. Chose the 'Transcoding setting' menu and configure the RTMP URL of the platform we want to push to, then enable (APPLY) it:



4K			
IP Decoder / Transcoder	Transcoding setting		
Status		[1.005]	
Input stream address	Encoding Type: FPS:	25] [5-60]
Transcoding setting	GOP:	25] [5-300]
System setting	Bitrate(kbit):	3200] [32-100000]
	Encoded Size:	1920x1080 ♥	
	TS URL:	/0.ts	Enable 🗸
	HLS URL:	/0.m3u8	Enable V
	FLV URL:	/0.flv	Disable 🗸
	RTSP URL:	/0	Enable 🗸
	RTMP(S)/RTSP PUSH URL:	rtmp://192.168.1.169/live/0	Enable 🗸
	Multicast IP:	238.0.0.1	Enable 🗸
	Multicast Port:	1234	[1-65535]
	SRT URL Port:	9000	Enable 🗸
	SRT PUSH URL:	srt://192.168.1.169:9000	Enable 🗸
	SRT pwd:	0123456789	Enable 🗸
		Apply	

4. Set the **BLANKOM HDD-276 Decoder & Transcoder** Decoder output resolution for HDMI & CVBS:

4K HDR			
P Decoder / Transcoder	System output		
Status		108	0P60 🗸
nput stream address	Low delay output: Disable V HD output: 1080P60	480 576 720 720	260 250 250 260
Transcoding setting	CVBS output: PAL 🗸	108 108 108	JP25 JP30 0150
System setting	Brightness:	50 108 108 108)P50 0160 0P60
Network setting	Contrast:	50 192 256	0x1200P60 0x1440P60
Passwd setting	Saturation:	384 384 50 384	Jx2160P25 Jx2160P30 Jx2160P50
System output 4	Apply	384 409	Jx2160P60 6x2160P25 6x2160P30
Reset device		409 409	5x2160P50 5x2160P50 5x2160P60
Reboot device			



WUXGA 1920x1200@60fps and UXGA 1600x1200@60fps Input

with our HDMI Video Encoder:

BLANKOM Video Encoders support as input also the special PC-formats:

WUXGA 1920x1200@60fps and UXGA 1600x1200@60fps but you need a special firmware from us. You can <u>click here</u> to contact us if needed.

Example: WUXGA 1920x1200@60fps input to BLANKOM H265 HDMI Video Encoder can be caused sometimes used by MS-Windows PC's:

Color Color	🛓 Current Media Information		>
light light			
Off Off	General Metadata Codec Statistics		
light light settings	Information about what your media or stream is made of. Muxer, Audio and Video Codecs, Subtitles are shown.		
	✓ Stream 0		^
	Original ID: 100		
Windows HD Color	Codec: H264 - MPEG-4 AVC (part 10) (h264)		
	Type: Video		
	Video resolution: 1920x1200		
et a brighter and more vibrant picture for videos, gam	e Buffer dimensions: 1920x1200		
upport HDR.	Frame rate: 60		
/indows HD Color settings	Decoded format:		
	Orientation: lop left		
	Color transfer function ITL P PT 700		
- I - II - A	Color space: ITU-R BT 709 Range		
cale and layout	Chroma location: Left		
	 Stream 1 		
hange the size of text, apps, and other items	Original ID: 200		
	Codec: ADTS		
100% (Recommended) V	Type: Audio		
	Channels: Stereo		
dvanced scaling settings	Sample rate: 48000 Hz		¥
Display resolution	Location: http://192.168.1.150/0.ts		
1920 × 1200 (Recommended) V		<u>C</u> lose	2
Display orientation	265		

Input status

Running Time: 0000-00-00 00:01:31
Device Time: 2018-03-22 22:23:53 (Sync Time To Device)
Device Name: Encoder_9896
CPU Usage: 5% (If CPU usage always more than 85%, please close some stream.
Memory Usage: 29.2M/247.1M
Input Size: 1920x1200p@60
Collected Video Frames: 5408
Lost Video Frames: 3
Audio Samplerate: 48000
Net Packet Sent: 454
Not Packet Dranned: 0



UXGA 1600x1200@60fps input & output for H265 Video Encoder:



Input status

Running Time: 0000-00-00 00:05:25

Device Time: 2018-03-22 22:27:47 (Sync Time To Device)

Device Name: Encoder_9896

CPU Usage: 9% (If CPU usage always more than 85%, please close some stream.)

Memory Usage: 29.8M/247.1M

Input Size: 1600x1200p@60

Collected Video Frames: 19429

Lost Video Frames: 2

Audio Samplerate: 0

Net Packet Sent: 61858

Net Packet Dropped: 0

Special HTTP- commands to disable and enable the stream outputs

for the MAIN-Encoder Menu: like RTMP/RTSP...... Example: IP address of the SoC encoder device is 192.168.1.150 then

http://192.168.1.150/set_output?&rtmp_enable=0&rtmp_publish_enable=0&http_ts_enable=0&http_flv_enable =0&rtsp_enable=0&http_hls_enable=0&multicast_enable=0&srt_enable=0&srt_publish_enable=0&srt_key_ena ble=0&hls_publish_enable=0&http_hls_fmp4_enable=0&http_fmp4_enable=0 enable 0=means disable enable 1=means enable

or parts of it like: <u>http://192.168.1.150/set_output&multicast_enable=0</u> would disable the udp (or rtp) stream output. <u>http://192.168.1.150/set_output&multicast_enable=1</u> would re-enable it as a remote command to the encoder's web server.

Attention: The target Webserver in the encoder needs the login data "user:password" - to let you in: So http://admin:admin@IP-Address/... as prefix needed.



e	Main stream settings-HD Encode 🗙	+			_					~	-	٥	×
<i>\</i>	→ C ☆ ▲ Not secure	192.168.1.150/OutputP1MainE.html							Ê	☆ ♥	*		:
	Encoding type:	H.264 V			IR IR Inter	□ Elements Ca ⊘ ▼ ♀ □ P	onsole Sources Network reserve log Disable cache Invert Hide data URLs	Performance Memory Application Nothrottling ▼ ि ⊥ ± All Fetch/XHR JS CSS Img Media Fo	Security Light	thouse >> Manifest (■ 1 Other	* :	×
	Custom EPS:	25	[5-60]			10 ms 20 m	Blocked Requests D 3rd-party n 30 ms 40 ms	equests 50 ms 60 ms 70 m	s 80 ms	90 ms	10	.0 ms	110
	GOP:	30	[5-300]										
	Bitrate(kbit):	5000	[32-32000]		Name		× Headers Payload	Preview Response Initiator Timing					
	Encoded size:	1920x1080 ¥			🗆 set	_output?input=0&outp	V General						-
	H.264 Level: Bitrate control:	high profile v strong cbr v					Request URL:	http://192.168.1.150/set_output?input=0 th=1920&venc_height=1080&http_ts_uri able=0&rtmp_uri=/0&rtmp_publish_uri=	&output=0&venc_fran =%2F0.ts&http_flv_uri rtmp%3A%2F%2F192	merate=2580 i=%2F0.flv8cr 2.168.1.169%2	/enc_gop= /tsp_uri=% 2Flive%2F0	=30&venc =2F0&rtm J&rtmp_p	_wid p_en ublis
	TS URL:	/0.ts	Enable 🗸					h_enable=0&http_ts_enable=1&http_flv_ =%2F0.m3u8&http_bls_enable=0&venc	enable=1&rtsp_enable width beight same as	e=1&venc_p	rofile=28th	http_hls_u	ni 18
	HLS TS URL:	/0.m3u8	Disable 🗸					multicast_port=1234&multicast_enable=	0&venc_codec=96&sr	rt_enable=08	<pre>ksrt_port=!</pre>	:9000&(srt	pu
	HLS MP4 URL:	/0_mp4.m3u8	Disable 🗸					blish_enable=0&srt_publish_uri=srt%3A _key_enable=0&max_qp=38&hls_publish	2F%2F192.168.1.169% _enable=08/hls_public	/63A9000&sr sh_uri=https ^r	¿_key=012 %3A%2F%	.34567898 2Fa.uploz	ksrt id.yo
	MP4 URL:	/0.mp4	Enable 🗸					1utube.com%2Fhttp_upload_hls%3Fcid%	3D1111-1111-1111-11	111-1111%2	3copy%3D	0%26file	%3D
	FLV URL:	/0.flv	Enable 🗸					_fmp4_enable=0&http_hls_fmp4_uri=%2	F0_mp4.m3u8&http_fr	mp4_enable=	=1&http_fr	imp4_uri=	%2F
	RTSP URL:	/0	Enable 🗸				Request Methods	0.mp4&ts_muxrate=5000&_=169217792	3689				
	RTMP URL:	/0	Disable 🗸				Status Code:	● 200 OK					- 8
	RTMP(S)/RTSP PUSH URL:	rtmp://192.168.1.169/live/0	Disable 🗸				Remote Address: Referrer Policy:	192.168.1.150:80 strict-origin-when-cross-origin					
	Multicast IP:	238.0.0.1	Disable 🗸				Response Headers	Raw					
	Multicast port:	1234	[1-65535]				Accept-Ranges:	bytes					
	Multicast SAP Name:	GROUP0_STREAM0					Access-Control-Allow-Origin	r: • 7					
	SRT URL Port:	9000	Disable	[1-65535]			Content-Type:	text/html					
	SRT PUSH LIRI	srt://192.168.1.169:9000	Disable ¥				▼ Request Headers	Raw					
	SPT Encryption Password:	0123/56789	Disable ¥				Accept:	text/plain, */*					
		https://a.upload.vo1utubo.com/http.umo	Dicable M		1 req	Conrole What's New	ed Accept-Encoding:	gzip, denate					*
	TIES FOST ONE.	maps//a.upload.yo futube.com/map_gpto	Disable +		High	lights from the Chrome	116 update						_
	OSD	Apply			Im Fin	proved debuggi d and fix issues with	ng of missing styleshee missing stylesheets with ease	ts a		\mathfrak{I})		
	Status Network	Main stream Substream1 S	ubstream2	Substream3 Audio&Video System	Lin	ear timing supp	ort in the Easing Editor			/ ►	ne	ew	

To maintain the other encoding parts like Secondary 1,2 and 3 (if the encoder supports multiple secondary streams) is:

http://192.168.1.150/set_output?output=1&rtmp_enable=1&rtmp_publish_enable=0&http_ts_enable=0&http_f lv_enable=0&rtsp_enable=0&http_hls_enable=0&multicast_enable=0&srt_enable=0&srt_publish_enable=0&srt_ key_enable=0&hts_publish_enable=0&http_hls_fmp4_enable=0&http_fmp4_enable=0

output=1 value 0...3, 0=mainstream; 1...3=substream 1~3

To **kill all stream outputs** in once when the input signal is lost (avoiding the default NO-Signal-Picture to be send in the enabled streams):

this <u>http://ip/set_sys?kick_all=1</u> (such as <u>http://192.168.1.170/set_sys?kick_all=1</u>), which mean it will disconnect all clients when removed the HDMI or SDI Input (or signal Input was switched off).

Also, <u>http://ip/set_sys?kick_all=0</u> means this disables the above function and goes back to normal default = Transmitting a Test-Picture instead of the Video – Stream.

These above commands are working in the Windows-CMD-(DOS) environment:

C:\>curl "http://admin:admin@192.168.0.168/set_output?output=0&multicast_enable=0" succeed

To simply use it in <u>Windows 10</u> with the Powershell (PS) – because CURL is not working here as in the CMD, you can install following tool:

https://www.coretechnologies.com/products/http-ping/http-ping.exe

copy it to the C:\Windows\system32 folder as administrator so it will be accessible from any windows location or folder = its in the Path.

Then open the PS: enter:

Special addons for our SoC Encoder/Decoder



PS C:\> http-ping http://admin:admin@192.168.0.168/set output?output=0"&"multicast enable=1

Or disable a stream-output:

http-ping http://admin:admin@192.168.0.168/set output?output=0"&"multicast enable=0

BUT: you need to put the **&** in brackets: "**&**" to pass this as part of the command because otherwise it assumes the **&** is part of the command syntax.

results in:

http://www.CoreTechnologies.com/
