

HD-ENC-H264 Video Encoder API User Guide

1. Get current encoder device status, such as

http://xxx.xxx.xxx.xxx/get_status

xxx.xxx.xxx.xxx means the device IP address,

When open above link by browser, it will return the standard XML, and the device status will be list as below,

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<status>
<version>3.06</version>
<runtime>0000-00-00 00:18:38</runtime>
<system>2018-03-22 22:41:00</system>
<buildtime>Nov 8 2021 18:05:49</buildtime>
<cpuinfo>Hi3520DV200 HDMIx1</cpuinfo>
<cpuusage>14</cpuusage>
<memoryfree>74724</memoryfree>
<memorytotal>91252</memorytotal>
<net_status>-1</net_status>
<net_packet_sent>6</net_packet_sent>
<net_packet_dropped>0</net_packet_dropped>
<lan_dhcp>
<enable>0</enable>
</lan_dhcp>
<aisamplerate>48000</aisamplerate>
<aitick>0</aitick>
<g4>
<dev_exist>0</dev_exist>
</g4>
<wifi>
<dev_exist>0</dev_exist>
</wifi>
<vi id="0">
<framerate>0</framerate>
<int_cnt>0</int_cnt>
<lost_int>2</lost_int>
<width>1920</width>
<height>1080</height>
<interlaced>0</interlaced>
<venc id="0">
<left_pics>0</left_pics>
<left_stream_bytes>0</left_stream_bytes>
<left_stream_frames>0</left_stream_frames>
<packs>0</packs>
<enable>1</enable>
<codec>96</codec>
<width>1920</width>
<height>1080</height>
<framerate>30</framerate>
```

```
<bitrate>1800</bitrate>
<ts_url0>http://192.168.1.168/0.ts</ts_url0>
<flv_url0>http://192.168.1.168/0.flv</flv_url0>
<rtsp_url0>rtsp://192.168.1.168/0</rtsp_url0>
</venc>
<venc id="1">
<left_pics>0</left_pics>
<left_stream_bytes>0</left_stream_bytes>
<left_stream_frames>0</left_stream_frames>
<packs>0</packs>
<enable>1</enable>
<codec>96</codec>
<width>1280</width>
<height>720</height>
<framerate>30</framerate>
<bitrate>1800</bitrate>
</venc>
<venc id="2">
<left_pics>0</left_pics>
<left_stream_bytes>0</left_stream_bytes>
<left_stream_frames>0</left_stream_frames>
<packs>0</packs>
<enable>1</enable>
<codec>96</codec>
<width>640</width>
<height>360</height>
<framerate>30</framerate>
<bitrate>1800</bitrate>
</venc>
<venc id="3">
<left_pics>0</left_pics>
<left_stream_bytes>0</left_stream_bytes>
<left_stream_frames>0</left_stream_frames>
<packs>0</packs>
<enable>1</enable>
<codec>96</codec>
<width>640</width>
<height>360</height>
<framerate>30</framerate>
<bitrate>1800</bitrate>
</venc>
</vi>
<user>
<ts0>0</ts0>
<flv0>0</flv0>
<pri0>0</pri0>
<web>2</web>
<rtsp>0</rtsp>
</user>
</status>
```

2. Get the encoding status

`http://192.168.1.168/get_output?input={0}&output={0}`

`input_id` the device input ID, the 1st channels is 0, and 2nd is 1, etc.

`output_id` the output stream ID, the main stream is 0, and Substream is 1, etc.

```
<output>
<input>0</input>
<output>0</output>
<aenc_codec>0</aenc_codec>
<aenc_bitrate>128000</aenc_bitrate>
<venc_enable>1</venc_enable>
<venc_codec>96</venc_codec>
<venc_codec_supported>H.264,MJPEG</venc_codec_supported>
<venc_gop>30</venc_gop>
<vi_cap_width>1920</vi_cap_width>
<vi_cap_height>1080</vi_cap_height>
<venc_width_height_same_as_input>1</venc_width_height_same_as_input>
<venc_width>1920</venc_width>
<venc_height>1080</venc_height>
<venc_framerate>30</venc_framerate>
<venc_profile>1</venc_profile>
<venc_rc_mode>1</venc_rc_mode>
<venc_bitrate>1800</venc_bitrate>
<ts_muxrate>0</ts_muxrate>
<http_private_enable>1</http_private_enable>
<http_private_uri>/0.pte</http_private_uri>
<http_ts_enable>1</http_ts_enable>
<http_ts_uri>/0.ts</http_ts_uri>
<http_jpg_enable>0</http_jpg_enable>
<http_jpg_uri>/0.jpg</http_jpg_uri>
<http_mjpg_enable>0</http_mjpg_enable>
<http_mjpg_uri>/0.mjpg</http_mjpg_uri>
<http_hls_enable>0</http_hls_enable>
<http_hls_uri>/0.m3u8</http_hls_uri>
<http_flv_enable>1</http_flv_enable>
<http_flv_uri>/0.flv</http_flv_uri>
<rtsp_enable>1</rtsp_enable>
<rtsp_uri>/0</rtsp_uri>
<rtmp_enable>0</rtmp_enable>
<rtmp_uri>/0</rtmp_uri>
<rtmp_publish_enable>0</rtmp_publish_enable>
<rtmp_publish_uri>rtmp://192.168.1.50/live/0</rtmp_publish_uri>
<multicast_enable>0</multicast_enable>
<multicast_ip>238.0.0.1</multicast_ip>
<multicast_port>1234</multicast_port>
<unicast_enable>0</unicast_enable>
<unicast_ip/>
<unicast_port>1000</unicast_port>
<srt_enable>0</srt_enable>
<srt_port>9000</srt_port>
```

```

<srt_publish_enable>0</srt_publish_enable>
<srt_publish_uri>srt://192.168.1.169:9000</srt_publish_uri>
<srt_key_enable>0</srt_key_enable>
<srt_key>0123456789</srt_key>
<sap_enable>0</sap_enable>
<sap_stream_uri>GROUP0_STREAM0</sap_stream_uri>
</output>

```

3. Set the encoder encoding settings

http://xxx.xxx.xxx.xxx/set_output?input={input_id}&output={output_id}&key=val

Key & Val:

Key	Val (value type)	Desc.
input	int	Default value 0: a certain channel input
output	int	[0-3]: 0-Main Stream, 1 Substream 1 etc,.
aenc_codec	int	0 AAC 1 AAC+ 2 AAC++ 4 MP3 6 MP2 7 AC3
aenc_bitrate	int	Audio bitrate - bps AAC [48000-320000] AAC+ [24000-48000] AAC++ [12000-32000] MP3 [64000-320000] MP2 [64000-320000] AC3 [40000-640000]
venc_enable	int	[0-1]: Encoding, 1-enable, 0-disable Read only.
venc_codec	int	Encoding type: 96 H264 265 H265(only H265 Encoder supports)
venc_gop	int	[5-300] Keyframe interval
vi_cap_width	int	Get the input video width, Read only.
vi_cap_height	int	Get the input video height, Read only.
venc_width_height_same_sa_input	int	[0-1]: 1- encoding resolution same as input hdmi. 0-encoding resolution as settings
venc_width	int	Video Encoding width
venc_height	int	Video Encoding height
venc_framerate	int	[5-60] fps
venc_profile	int	Only works with H264 Encoding 0 base profile 1 main profile 2 high profile
venc_rc_mode	int	Bitrate control: 0 cbr 1 vbr
venc_bitrate	int	[32-32000] Bitrate (kbps)
http_private_enable	int	[0-1] HTTP private protocol , 1 – enable, Read only.
http_private_uri	String	Beginning with '/', i.e. '/0.pte'

http_ts_enable	int	[0-1] http TS stream 1-enable, 0-disable.
http_ts_uri	String	Beginning with '/', i.e. '/0.ts'
http_hls_enable	int	[0-1] http hls stream 1-enable, 0-disable.
http_hls_uri	String	Beginning with '/', i.e. '/0.m3u8'
http_flv_enable	int	[0-1] http flv stream 1-enable, 0-disable.
http_flv_uri	String	Beginning with '/', i.e. '/0.flv'
rtsp_enable	int	[0-1] http rtsp stream 1-enable, 0-disable.
rtsp_uri	String	Beginning with '/', i.e. '/0'
rtmp_enable	int	[0-1] rtmp stream 1-enable, 0-disable.
rtmp_publish_uri	String	Rtmp://server-ip:port/app/streamname
multicast_enable	int	[0-1] udp 1-enable, 0-disable.
multicast_ip	String	IP such as 224.0.0.1
multicast	int	Port such as 1234

IE. To setup the 1st hdmi input- Main stream resolution at 1920*1080@25fps, GOP 30, the url will be
http://xxx.xxx.xxx.xxx/set_output?input=0&output=0&venc_width=1920&venc_height=1080&venc_framerate=25&venc_gop=30

4. To get the device information

http://xxx.xxx.xxx.xxx/get_sys

```
<sys>
<ip>192.168.1.168</ip>
<netmask>255.255.255.0</netmask>
<gateway>192.168.1.1</gateway>
<mac>00:13:14:03:EA:DF</mac>
<dhcp_enable>0</dhcp_enable>
<g4_dev_exist>0</g4_dev_exist>
<wifi_dev_exist>0</wifi_dev_exist>
<dns0>192.168.1.1</dns0>
<dns1>8.8.8.8</dns1>
<http_port>8080</http_port>
<rtsp_port>8554</rtsp_port>
<rtsp_g711>0</rtsp_g711>
<rtsp_g711_8k>1</rtsp_g711_8k>
<rtsp_g711_mu>0</rtsp_g711_mu>
<audio_left_right>0</audio_left_right>
<pte_g711>1</pte_g711>
<ts_over_rtsp>0</ts_over_rtsp>
<rtp_multicast>0</rtp_multicast>
<udp_ttl>64</udp_ttl>
<udp_sock_buf_size>20971520</udp_sock_buf_size>
<html_password>admin</html_password>
<hostname>encoder</hostname>
<language>chinese</language>
</sys>
```

5. To set up the device

http://xxx.xxx.xxx.xxx/set_sys?key=val

Key & Val:

Key	Val (value type)	Desc.
ip	String	Wired Network IP
netmask	String	Wired Network subnet mask
gateway	String	Wired Network Gateway
mac	String	Wired Network MAC
dhcp_enable	int	[0-1] Wired Network DHCP. 1-enable, 0-disable.
g4_dev_exist	int	[0-1] 4G network 0-N/A 1-have Read only
g4_enable	int	[0-1] 1-enable, 0-disable 4G
g4_apn	String	APN set up
wifi_dev_exist	int	[0-1] For WiFi Module 0-Not 1-Have, Read only
wifi_enable	int	[0-1] 1-enable, 0-disable WiFi
wifi_ap_mode	int	0 WiFi works as STA 1 WiFi works as AP
wifi_hostap_essid	String	WIFI AP Name
wifi_hostap_psk	String	WIFI AP password
wifi_hostap_channel	int	WIFI AP Signal channel
wifi_essid	String	WIFI for connection name
wifi_psk	String	WIFI password
wifi_ip	String	WIFI network IP
wifi_netmask	String	WIFI-subnet mask
wifi_gateway	String	WIFI-Gateway
wifi_dhcp_enable	int	WIFI- DHCP
dns0	String	DNS0
dns1	String	DNS1
http_port	int	HTTP port
rtsp_port	int	RTSP backup port
rtsp_g711	int	[0-1] 1-enable, 0-disable RTSP enable G711
rtsp_g711_8k	int	[0-1] 1-enable, 0-disable 8K-G711
rtsp_g711_mu	int	0 G711U 1 G711A
audio_left_right	int	0 Stereo 1 Left 2 Right
ts_over_rtsp	int	0 RTSP- ES 1 RTSP-TS
rtp_multicast	int	0 Multicast - UDP 1 Multicast - RTP
udp_ttl	int	[1-254] UDP-TTL
udp_sock_buf_size	int	udp socket buffering size
html_password	String	Web password
hostname	String	Device hostname

6. Reboot Device

<http://xxx.xxx.xxx.xxx/reboot>

succeed / failed

7. Reset

`http://xxx.xxx.xxx.xxx/reset`

Succeed

Failed

8. With username and password

`http://username:password@xxx.xxx.xxx.xxx/`

I.E. `http://admin:admin@192.168.1.168/reboot`

9. Get Device Version

`http://xxx.xxx.xxx.xxx/get_version`

`<version> 3.06</version>`

10. Get advanced settings

`http://xxx.xxx.xxx.xxx/get_adv`

`<adv>`

`<interlaced_only_bottom>1</interlaced_only_bottom>`

`<field_to_frame>0</field_to_frame>`

`<ts_muxer>1</ts_muxer>`

`<ts_once>7</ts_once>`

`<https_password_enable>0</https_password_enable>`

`<onvif_password_enable>0</onvif_password_enable>`

`<g4_gw_as_dns>1</g4_gw_as_dns>`

`<ntp_server>time.windows.com</ntp_server>`

`<ntp_enable>0</ntp_enable>`

`<time_zone>8</time_zone>`

`<hls_buffer_number>5</hls_buffer_number>`

`<hls_splitter_time>10</hls_splitter_time>`

`<ts_transport_stream_id>101</ts_transport_stream_id>`

`<ts_pmt_start_pid>480</ts_pmt_start_pid>`

`<ts_start_pid>481</ts_start_pid>`

`<ts_tables_version>6</ts_tables_version>`

`<ts_rc_mode>0</ts_rc_mode>`

`<ts_service_name>Live</ts_service_name>`

`<ts_service_provider>Encoder</ts_service_provider>`

`<vmix_compatible>0</vmix_compatible>`

`<audio_only>0</audio_only>`

`<video_only>0</video_only>`

`<auto_super_frame_reencode>1</auto_super_frame_reencode>`

`<slice_split_enable>0</slice_split_enable>`

`<slice_split_size>1024</slice_split_size>`

`<min_qp>5</min_qp>`

`<max_qp>42</max_qp>`

```

<i_qp>5</i_qp>
<p_qp>42</p_qp>
<schedule_restart_enable>0</schedule_restart_enable>
<schedule_restart_time>180</schedule_restart_time>
<net_packet_drop_threshold>5000</net_packet_drop_threshold>
<remserial_baudrate>9600</remserial_baudrate>
<remserial_tcp_port>5150</remserial_tcp_port>
<udp_private_package_size>1400</udp_private_package_size>
<csc_enable>0</csc_enable>
<csc_contrast>64</csc_contrast>
</adv>

```

11. Set up advanced settings

http://xxx.xxx.xxx.xxx/set_adv?key=val

Key & val:

Key	Val (value type)	Desc.
interlaced_only_bottom	int	0 Deinterlaced – both (Weaving) 1 Bottom Only
field_to_frame	int	[0-1] Field To Frame (Line doubling) 1-enable, 0-disable
ts_muxer	int	0 TS – VLC 1 TS-FFMPEG
ts_once	int	[3-128] TS once pack
https_password_enable	int	[0-1] HTTP TS enable password 1-enable, 0-disable
ntp_server	String	NTP Server
ntp_enable	int	[0-1] NTP Sync 1-enable, 0-disable
time_zone	int	[-12-12] time zone UTC-12 - UTC+12
ts_transport_stream_id	int	----
ts_pmt_start_pid	int	---
ts_start_pid	int	---
ts_tables_version	int	---
ts_rc_mode	int	Null packets insert to TS 0 No 12 insert (1.2x) 13 insert (1.3x) 15 insert (1.5x) 20 insert (2x) 25 insert (2.5x) 30 insert (3x) 35 insert (3.5x)
ts_service_name	String	TS Service Name
ts_service_provider	String	TS Publisher
vmix_compatible	int	[0-1] compatible with VMIX 1-enable, 0-disable
audio_only	int	[0-1] 1-enable, 0-disable
video_only	int	[0-1] 1-enable, 0-disable
auto_super_frame_reencode	int	[0-1] 1-enable, 0-disable
slice_spilt_enable	int	[0-1] 1-enable, 0-disable

slice_split_size	int	[128-65535] Slice size
min_qp	int	[1-35]
max_qp	int	[min_qp - 50]
schedule_restart_enable	int	[0-1] restart encoder 1-enable, 0-disable
schedule_restart_time	int	
net_packet_drop_threshold	int	[50-50000]
remserial_baudrate	int	
remserial_tcp_port	int	[1-65535] TCP Port
csc_enable	int	[0-1] CSC 1-enable, 0-disable
csc_contrast	int	[0-255] set contrast for stream

12. Get input video signals

http://xxx.xxx.xxx.xxx/get_input

```

<input>
<input>0</input>
<ai_samplerate>48000</ai_samplerate>
<aenc_samplerate>48000</aenc_samplerate>
<aenc_samplerate_same_as_input>1</aenc_samplerate_same_as_input>
<aenc_bitrate>128000</aenc_bitrate>
<aenc_codec>0</aenc_codec>
<aenc_input>0</aenc_input>
<analog_vol>10</analog_vol>
<digital_vol>0</digital_vol>
<vi_cap_x>0</vi_cap_x>
<vi_cap_y>0</vi_cap_y>
<vi_cap_width>1920</vi_cap_width>
<vi_cap_height>1080</vi_cap_height>
<vi_cap_framerate>60</vi_cap_framerate>
<vi_cap_interlaced>0</vi_cap_interlaced>
</input>

```

13. To get OSD info

http://xxx.xxx.xxx.xxx/get_osd?enc_chn={output_id}&osd_chn={osd_id}

```

<osd>
<enable>0</enable>
<type>0</type>
<x>10</x>
<y>10</y>
<alpha>100</alpha>
<font_size>36</font_size>
<color>0</color>
<bcolor>16777215</bcolor>
<txt/>
<bmp/>
</osd>

```

14. To set OSD

http://xxx.xxx.xxx.xxx/set_osd?enc_chn={output_id}&osd_chn={osd_id}&key_val

key & Val:

Key	Val (value type)	Desc.
output_id	int	[0-3]
osd_id	int	[0-3]
enable	int	[0-1]
type	int	0 TXT 1 BMP 10 scroll txt 11 NTP time
x	int	Position - coordinate
y	int	Same as X
alpha	int	[0-128] OSD transparency
font_size	int	[8-72]
color	int	Text color
bcolor	int	Background color
txt	String	TXT OSD - contents
bmp	String	BMP file name