# **User Guide-TBS2603**

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## 1. Overview

TBS2603 H.265/H.264 HD HDMI encoder is a professional high-definition video coding box, which equipped with 1 HDMI channel input and dual stream RJ45 output. TBS2603 supports MPEG-4 AVC/H.264/H.265 High Profile code format input and dual stream H.264/H.265 format, audio AAC format output.

## 1.1 Applications

- ---- IPTV;
- ---- Digital Signage;
- ---- Video Conference;
- ---- Replace HD Video Capture Card;
- ---- Hotel TV system;
- ---- Live Broadcast;
- ----Teaching/Campus Broadcast;
- ---- Recording System;
- ---- NVR (Net Video Recorder);

## **1.2 Technical Specifications**

## Video

Input	1x HDMI (1.3a)
HDMI Resolution	1920×1080_60i/60P, 1920×1080_50i, 1280×720_60p,
	1280×720_50p and below
Encoding	H.264/AVC Main Profile/High Profile ; H.265/HEVC Baseline
	Profile; Audio AAC
Data Rate	0.8Mbps~12Mbps
Rate Control	CBR/VBR
GOP Structure	IBBP
Advanced	De-interlacing, Noise Reduction, Sharpening
Pretreatment	

### Audio

Encoding	AAC, MP3
Sampling Rate	Auto
Bit-rate	48K/64K/96K/128K/160K/192K/256k
Sampling Precision	16bit
Data Rate	64Kb/s ~ 384Kb/s

#### System

System Support	WINDOWS XP/VISTA/SERVER2003/SERVER2008/WIN7 32 and WIN7 64; LINUX
Ethernet/RJ45	1000 Base-T Ethernet interface
Protocol	HTTP, UDP, RTP, RTSP, RTMP, ONVIF(not yet)
Control Interface	WEB

#### **General Spec**

Dimensions	115mm*75*25mm
Weight	170g(NW), 560g(GW)
Working	0~45℃
Temperature	

## 2. Settings

On **WEB** setting page, modifying IP address of the computer is needed. Default IP address of the HDMI HD encoder is 192.168.1.168.

Reset & Initialization: When the HDMI HD encoder is powered on, you can reset and initialize it by pressing & holding the RST button for 10 seconds, and then it will restart automatically. And IP address will be initialized to 192.168.1.168

## 2.1 IP setting

Computer IP address: 192.168.1.\* (Note: "\*" is any number ranging from 0 to 254 except 168) Open IE, input "192.168.1.168" to go to WEB operate interface

#### Name: root

Password: root

Authentication	Required	×
http://192.168.1.2	requires a username and password.	
Your connection to	o this site is not private.	
User Name:	root	
Password:	****	
	Log In Cancel	

## 2.2 Network Setting

Default IP address is 192.168.1.168. If you forget the IP address after changing it, please press the RST button for 10 seconds to restart it ,when the machine is powered up, then it will restore factory defaults.

TBS Protentional II.265 IID IIDAII Gaeoder					
C Status	Network				
Wetwork					
Network	DHCP:	Disable 💌			
HDMI main	IP:	192.168.1.168			
HDMI 2nd	Netmask:	255.255.255.0			
O CVBS main	Gateway:	192.168.1.1			
CV/BS 2nd	DNS:	8.8.8.8			
	MAC:	86:63:98:71:36:d9			
O: Audio Expand		Apply			
Ø System					

Notes: After network setting is done, you need to reboot the device to make it work. **2.3 HDMI Main Stream Setting** 

You can enable HTTP, RTSP, unicast IP, Multicast IP, RTP or RTMP server IP by your preference, and after all the data are filled in, please remember to click on button "Apply".

#### **TBS Technologies International Ltd.**

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XX/XX/XX/	F 1	001	nt	17	00	m
** ** **.	ιı	UN 1	JU	· ¥•	υu	111

HDMI main C Status Wetwork channel name: xxx HDMI main H.264/5: H265 • HDMI main H.264 Level: baseline pro 💌 HDMI 2nd Encoding frame rate: 30 [5-30] O CVBS main vbr -Bitrate control: O: CVBS 2nd Key interval: 30 [5-200] O: Audio Expand -Encoded size: auto System MinQp: 4 [1-51] 45 [MinQp-51] MaxQp: MaxBitrate: (K): 1024 [16-12000] Package: A 💌





## 2.4 HDMI Second Stream Setting

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HDMI second stream setting is similar to HDMI main stream setting.

Ţ	Status	HDMI 2nd		
۲	Network			
0	HDMI main	H.264/5:	H265 💌	
0	HDMI 2nd	H.264 Level: :	baseline pro 💌	
	HDMI 2nd	Encoding frame rate:	11	[5-30]
0	CVBS main	Bitrate control:	cbr 💌	
6	CV/PS 2nd	Encoded size:	720×540 💌	
ت	Audio Expand	Bitrate: (K):	100	[16-12000]

Notes: Above data can be adjusted based on your practical application.

: Audio Expand	UTTD.	(heleni out	
💿 System	HIIP:	/ndmi_ext	
	HTTP Port:	80	[1-65535]
	RTSP:	/hdmi_ext	Disable 💽 Format /hdmi (begin with "/")
	RTSP Port:	554	[1-65535]
	unicast IP:	192.168.1.18	Disable 💌 Format: /hdmi (begin with */*)
	unicast port:	1234	[1-65535]
	Multicast IP:	239.0.0.2	Disable 💌
	Multicast port:	1234	[1-65535]
	RTP:	192.168.1.18	Disable 💌
	RTP port:	1234	[1-65535]
	RTMP server IP:	192.168.1.18	Disable 💌
	RTMP server port:	1935	[1-65535]
	RTMP user name:		]
	RTMP password:		)
	RTMP app name:	live	
	RTMP stream name:	stream	]
		Apply	

Notes: Above configuration parameter is the same to main stream

2.5 CVBS main (Note:TBS2603 not use the function)

## 2.6 CVBS 2nd (Note:TBS2603 not use the function)

### 2.7 Audio Expand

You can modify "Audio Setting", "HDMI OSD Setting", "CVBS OSD Setting", "HDMI color", "CVBS color" and "Image Setting" under this section (this HDMI Encoder does not have CVBS interface, so CVBS color setting is not needed)

Or you can just keep the original data without making any changes.

# 2.7.1 Audio Setting

TBS Proferrioaal II.265 IID IIDIII Gaeoder					
🖵 Status	Audiio Encoder				
Network					
HDMI main	Audio input. HDMI aud				
B HDMI 2nd	Audio bitrate: 96000				
O CVBS main	Audio channel: left 💌				
CVBS 2nd	Audio Codec: AAC 💌				
:;; Audio Expand	Resample: Disable				
Audio Setting	RTSP audio encode: AAC 💽				
HDMI OSD Setting					
CVBS OSD Setting					
HDMI color					
CVBS color					
image Setting					
System					

2.7.2 HDMI OSD Setting

1900-001 III 1902-101 III 1900 III 1900 III 1900 III					
Q	Status	HDMI OSD			
۲	Network	X:	12	[0-1920]	
0	HDMI main	Υ:	134	[0-1080]	
O	HDMI 2nd	Font size:	12	[8-72]	
٢	CVBS main	alpha:	11	[0-128]	
0.	CVBS 2nd	text	mm		
(Ö)	Audio Expand		Apply		
	Audio Setting				
	HDMI OSD Setting				
	CVBS OSD Setting				
	HDMI color				
	CVBS color				
	image Setting				
٢	System				

2.7.3 HDMI color Setting

TBI Proferina II.265 IID IIDIII Gaeoder					
Q	Status	HDMI color Setting			
۲	Network	Brightness:	12	[0-100] Default value: 50	
0	HDMI main	Contrast	11	(0-100) Default value: 50	
	HDMI 2nd	Hue:	13	[0-100] Default value: 50	
٥	CVBS main	Saturation:	12	[0-100] Default value: 50	
0.	CVBS 2nd		Apply		
0	Audio Expand				
	Audio Setting				
	HDMI OSD Setting				
	CVBS OSD Setting				
	HDMI color				
	CVBS color				
	image Setting				
٢	System				

- 2.7.4 CVBS OSD Setting (Note:TBS2603 not use the function)
- 2.7.5 CVBS color Setting (Note:TBS2603 not use the function)
- 2.7.6 Image Setting

TBS Proterrional II.265 IID IIDAII Gaeoder					
🖵 Status	quality Setting				
Network	Noise:	open 💌			
HDMI main	Sharpening:	open 💌			
HDMI 2nd	Sharpening strength:	1	[-4-5]		
O CVBS main	Filtering:	close 💌	-		
() CVBS 2nd	Filtering A:	1	[0-3]		
: 🔅 Audio Expand	Filtering B:	1	[0-255]		
Audio Setting	Filtering C:	0	[0-4]		
HDMI OSD Setting		Apply			
CVBS OSD Setting					
HDMI color					
CVBS color					
image Setting					
System					

# 2.8 System

You can configure "System settings", "Change Password", "Upgrade settings" and check "Version" information under this section.

## 2.8.1 System settings

## 2.8.2 Change Password

TES Proferional II.265 IID IIDIII Gaeoder				
🖵 Status	System settings Change Password Upgrade settings Version			
<ul> <li>HDMI main</li> </ul>	New password:			
HDMI 2nd	Confirm new password:			
(O) CVBS 2nd				
: Audio Expand				
System				

## 2.8.3 Upgrade settings

This setting includes two steps-"upload" and "upgrade". You should upload the updating file first, and then proceed with the next step- upgrading.

Step 1: Click button "Choose File" to select the updating file in your

computer.

TBI Proterrional II.265 IID IIDIII Gaeoder				
🖵 Status	System settings Change Password Upgrade settings Version			
Wetwork				
P HDMI main	Upgrade System: Choose File No file chosen upload			
B HDMI 2nd	upgrade			
O CVBS main	progress(%) :			
O. CVBS 2nd				
🔅 Audio Expand				
System				
System				

After the file is selected successfully, you will see the file name shown in front of button "upload", then please click "upload" to continue.

1900an III. 205 IID IIDIII Gaeoder				
🖵 Status	System settings Change Password	Upgrade settings Version		
Wetwork				
HDMI main	Upgrade System: Choose File Op	date.tar.bz2 upload		
HDMI 2nd	upgrade			
O CVBS main	progress(%) :			
. CVBS 2nd				
(O) Audio Expand				
③ System				
System				

If the file is uploaded successfully, you will find a prompt pop up as below, then please click "OK" to continue.

192.168.1.2 says:	×
successfully uploaded!	ОК

**Step 2:** After the file is uploaded, please click button "upgrade". You can check the update status during the whole process.

TIF Protentional II.265 IID IIDIII Gaeoder				
🖵 Status	System settings Change Password Upgrade settings Version			
Network				
HDMI main	Upgrade System: Choose File No file chosen Upload			
B HDMI 2nd	upgrade			
O CVBS main	progress(%):			
CVBS 2nd				
: Audio Expand				
Ø System				
System				

If upgrade is successful, you will see a window pop up "The system successfully updated", and then please click "OK".

TES PE	10kevrtoaal [].265 []D	192.168.1.2 says: The system successfully updated ! Prevent this page from creating additional dialogs.	×
□       Status         ⊕       Network         ⊡       HDMI main         ⊡       HDMI 2nd         ⊙       CVBS main         ⊙       CVBS 2nd	System settings Change Passw Upgrade System: Choose File upgrade progress(%) : 100%	No file chosen upload	ОК
:Ö: Audio Expand Ö System System			

# 2.8.4 Version

You can check version information under this section.

reboead III. 2020 III The III Warden was a second with the second s					
🖵 Status	System settings	Change Password	Upgrade settings	Version	
Wetwork					
P HDMI main	Versi	on: 1.0.1.			
B HDMI 2nd					
O CVBS main					
CVBS 2nd					
🔅 Audio Expand					
Ø System					
System					

## 2.9 RTMP protocol setting

RTMP server ip	192.168.1.18	Enable
RTMP server port:	1935	[1-65535]
RTMP user name:		
RTMP password:		
RTMP app name:	live	
RTMP stream name:	newstream	
ONVIF:	Disable ▼	
(	Apply	

## 2.9.1 H.264/H.265 level

Baseline main / high / profile: If you want support RTMP, you should choose: baseline profile (H.265 only supports baseline profile).

## 2.9.2 RTMP server IP

Input your corresponding serve IP

## 2.9.3 RTMP App Name

User-defined

## 2.9.4 RTMP stream name

User-defined

## 2.9.5 Sever Testing

**2.9.5.1** Install the software: Flash Media Server 3.5. There is no need to input series number; both user name and password are 1

2.9.5.2 Start the background software



2.9.5.3 Go to folder "FlashPlayer", find "VideoPlayer.html" and open it

**2.9.5.4** Input: rtmp://ip address/rtmp/hdmi, then choose "live" to see the images, or input rtmp://192.168.1.100:1935/live/hdmi to choose "LIVE", then click "Play stream"

ADOBE FLASH' MEDIA SERVER SAMPLE VIDEO PLAYER	Adobe
SONY	SELECT A VIDEO FROM THE LIST BELOW SOURCE: /applications/vod/media surrate: /Silkips.ik/ server: /Silkips.ik/
	dma sample 1 (manifest / kin sampled, titldings: Nr (mb) progetaemt sampled, totklarge (kr (mp) SOURCE: /applications/live > Internation
STDEAM HDV: thm://102168.1.100-1035/bin/bdmi	
URL syntax: [crotocol] //servername//application//codectD.j[streamname]; extension] input: rtmp://192.168.1.100:1935/live/hdmi ch	ck it here play

# 3. Status

After HDMI main stream setting and HDMI second stream setting are done, you will be able to see their access address, and you can directly copy it to the VLC player software for decoding.

Ş	TBI Proferitional II.265 IID IIDIII Gaeoder				
Q	Status	Access address	Video parameters	Audio parameters	Hardware status
	HDMI status HDMI 2nd	Access address	http://192.168.1.168.8080/hr	dmi	
	CVBS status CVBS 2nd				
•	Network HDMI main				
8	HDMI 2nd				
© ©	CVBS main CVBS 2nd				
©	Audio Expand				

--Access Address: it can be directly copied to the VLC player software for decoding.

TIF Protentional II.265 IID IIDIII Gaeoder					
Q	Status	Access address	Video parameters	Audio parameters	Hardware status
	HDMI status				
	HDMI 2nd	Video	) size: auto ut fps: 60		
	CVBS status	Encod	e fps: 30		
	CVBS 2nd				
۲	Network				
0	HDMI main				
0	HDMI 2nd				
0	CVBS main				
0:	CVBS 2nd				
(Ö)	🔅 Audio Expand				
٢	System				

--Video parameters: Display video signal parameters that inputting in

S	TBS Protentional II.265 IID IIDIII Gaeoder			
Q	Status	Access address Video parameters Audio parameters	Hardware status	
	HDMI status			
	HDMI 2nd	Input sample: 44100		
	CVBS status	Encoded size: 0		
	CVBS 2nd			
۲	Network			
0	HDMI main			
O	HDMI 2nd			
٥	CVBS main			
0:	CVBS 2nd			
	Audio Expand			
٢	System			

--Audio parameters: Display audio signal parameters that inputting in

TEI Protentional II.265 IID IIDIII Gaeoder						
ţ	💭 Status	Access address	Video parameters	Audio parameters	Hardware status	
	HDMI status HDMI 2nd CVBS status	Interrupt nun Missing interrupt nur	nber: 0 nber: 0			
	CVBS 2nd					
•	Network					
5	DMI main					
5	HDMI 2nd					
0	CVBS main					
(	(). CVBS 2nd					
	🔅 Audio Expand					
	System					

--Hardware status: Increasing intervals indicates it has video input. If it displays as 0, it means there is no video input, then you need to check the input signal.

If you found "Access address: disabled" as the below picture, you have to reset HDMI main stream or HDMI second stream by following the user guides about "2.3 HDMI Main Stream Setting" and "2.4 HDMI Second Stream Setting".

TBS Protentional II.265 IID IIDIII Gaooder			
🖵 Status	Access address Video parameters		
HDMI status	Access address: disabled		
HDMI 2nd			
CVBS 2nd			
Wetwork			
P HDMI main			
HDMI 2nd			
O CVBS main			
CVBS 2nd			
() Audio Expand			
Ø System			