



User Manual of TBS2660

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Dear Customers,

Thank you for choosing our products. In order to use this item correctly, please read this manual carefully at the beginning.

1. Brief Introduction

- TBS2660 is a Professional H.265 IP Video decoder with HDMI/VGA, composite, and analog audio outputs, which decodes digital video& audio streams into analog video signals, and allows analog devices such as monitors and video switches to be connected to an IP-based video system. Built-in high-performance A17 processor, TBS2660 is a codec engine with the ability to decode up to 16 channels 1080p video, compatible with multi- protocol, support RTP/RTSP/HTTP input (TS、 NON TS) H264/H265.
- TBS2660 can be paired with the TBS2603 H.265 HDMI Encoder or TBS2630 Multi-channel HD H.264/H.265 HDMI Encoder (sold separately), allowing up to full HD point-to-point video links over the Internet

2. Features

- Build-in high performance A17 Processor
- Up to 16 channels 1080P multi-protocol video codec engine
- Two 1000 Mbps Ethernet interface
- WEB interface control, FW upload by USB flash
- Support one HDMI 2.0 Ultra-HD output, up to 3840 x 2160@60fps resolution
- Support one VGA HD output, up to 2560 x 1600@60fps 2560 x 1600@60fps
- Split-screen display, up to 16 channels on a single screen
- Support PIP(Picture in Picture)

3. Appearance

3.1 Front Panel



3.2 Rear Panel



3.3 Interface

Display Interface	1 x VGA
	2 x HDMI (HDMI 1 is not available for V0.1.50)
Ethernet	2 x LAN Gbit / 1000Mbit / 100Mbit (LAN0 : 192.168.1.98 / LAN1: 192.168.8.98)
USB	2 x USB 2.0
	1 x USB 3.0

4. Access to Main Interface

4.1 Open the Web browser and input the IP address.

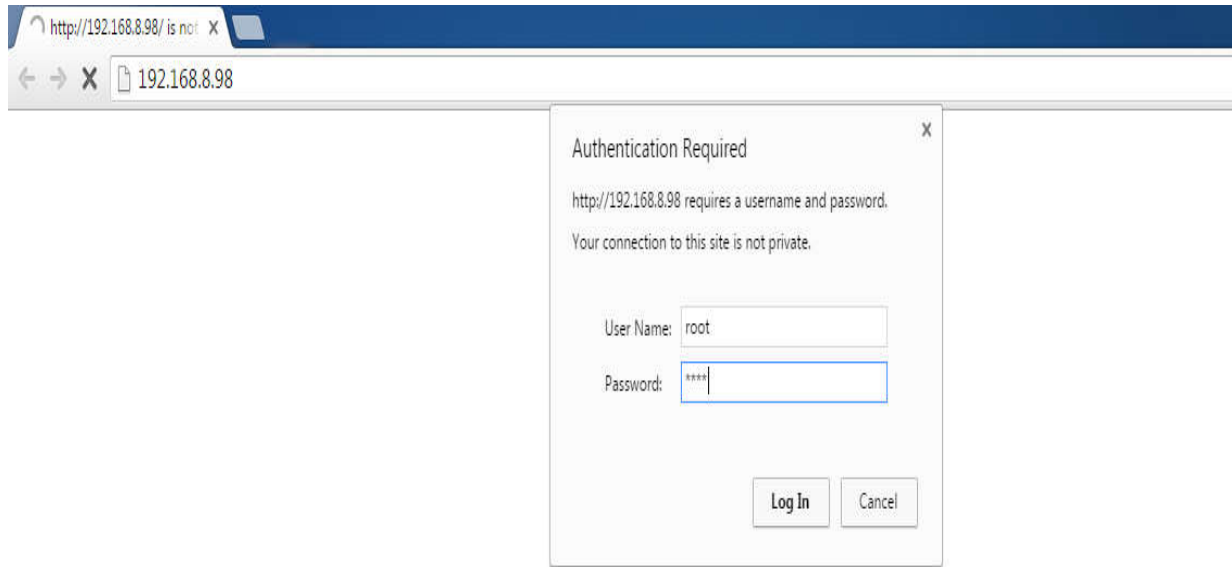
TBS2660 has two different network segments. If you connect LAN0, please input IP address 192.168.1.98 to enter the login page.

If you connect LAN1, please input IP address 198.168.8.98.



4.2 Enter the user name and password

By default, the user name and password for initial login is **root**. Then click **Log In** to continue.



5. Configuration Steps

5.1 Streams

You could enter the video streaming URLs into URLX (X represents 0~31). Then click “Update”.

[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

Adding a 4K video will cause the app to restart
Enter the URLs that will be displayed

URL 0	http://192.168.8.12/4ktv.ts
URL 1	http://192.168.8.12/4ktv.ts
URL 2	http://192.168.8.12/4ktv.ts
URL 3	http://192.168.8.12/4ktv.ts
URL 4	
URL 5	

5.2 Video Output

After you enter video streaming URLs, switch to “**Video Output**” and set output resolution (HDMI/VGA/PIP) and other decoding operation parameters. Then click “**Update**” when you complete.



[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

Screen Configuration

HDMI1	VGA	PiP
1080P 60hz ▼	1080P 60hz ▼	576P 50hz ▼
Streams Displayed	Streams Displayed	Streams Displayed
http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts	http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts	http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts
Output FPS (recommended 30):	30	

Update

Tips: You could use Ctrl on keyboard with the mouse to select multiple steams in HDMI and VGA streaming displayed.

Below displays a PIP function when we select 16 steams.



5.3 Status

After you complete Video Output setting, you could review it in **Status** interface.

If “Status” displays **“RUNNING”** while “Last Error” displays **“OK”**, it means the video can be output successful and you can enjoy it on your PC, tablet PC, Smartphone, and smart TV. Have Fun!



[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

Status	Sent Frames	Received Frames (Dec Buffer Enc)	Skipped Frames	Video Format	Transcoding	URL	Last Error
RUNNING 0*	2926	2805 (1) 2802	0 (S: 0 E: 0 ENC: 0)	H265 3840x2160 50.00 fps (50.0)	1920x1080 CBR 2000	URL 0	OK
RUNNING 1*	3007	2886 (1) 0	0 (S: 0 E: 0)	H265 3840x2160 50.00 fps (50.0)	STOPPED	URL 1	OK
RUNNING 2*	2684	2563 (1) 0	0 (S: 0 E: 0)	H265 3840x2160 50.00 fps (50.0)	STOPPED	URL 2	OK
RUNNING 3*	2606	2485 (1) 0	0 (S: 0 E: 0)	H265 3840x2160 50.00 fps (50.0)	STOPPED	URL 3	OK

* - HiSilicon Hardware VDEC channel
S - Frames that are not sent to VENC or VPSS due to FPS differences
E - Frames failed to be sent

Version 0.1.50

Note: If output multiple videos at the same time, the videos may be delayed.

5.4 Audio Output

Here you can set the parameters of Analog Audio, and then click “Update” to output the audio.

[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

Audio Configuration

HDMI1	Analog AUDIO
Streams	Streams
http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts	http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts http://192.168.8.12/4ktv.ts None

Update

Note: There is no analog audio interface on TBS rear panel. Please remove the cover to connect analog audio.

5.5 Transcoding

TBS2660 has transcoding function. You can enter the video streaming URL, set “Resolution”, “Mode”, “Rate” and click “Update” to get the Output URL.



The Best Digital TV Solution x Transcoding x +

192.168.8.98/Transcoding.html

[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

Transcoding Configuration

URL	Resolution	Mode	Rate (Kb/s) [0 - Default]*	Output URL
☒ rtp://239.255.1.11:1234	640x480	CBR	0	http://192.168.8.98:80/0 rtsp://192.168.8.98:554/0

*When Fixed QP is selected, the rate is in format , eg 2130 for MinQP 21 and MaxQP 30

**Please keep in mind the H3536 encoder capabilities:

** - 1x 4K

** - 2x 1080p

** - 4x 720p

You could use VLC or FFMEG media player to verify whether it works by entering Output URL as below.

Open Media

File Disc Network Capture Device

Network Protocol

Please enter a network URL:

http://192.168.8.98:80/0

http://www.example.com/stream.avi
rtp://@:1234
mms://mms.example.com/stream.asx
rtsp://server.example.org:8080/test.sdp
http://www.youtube.com/watch?v=g64x

☐ Show more options

Play Cancel



Or you could review it in the **Status** interface as below:

[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

Status	Sent Frames	Received Frames (Dec Buffer Enc)	Skipped Frames	Video Format	Transcoding	URL	Last Error
RUNNING 0*	2483	2362 (1) 2342	20 (S: 20 E: 0 ENC: 0)	H265 3840x2160 50.00 fps (50.0)	1920x1080 CBR 2000	URL_0	OK
RUNNING 1*	2683	2558 (5) 0	0 (S: 0 E: 0)	H265 3840x2160 50.00 fps (50.0)	STOPPED	URL_1	OK

5.6 Admin

You could reset password and IP in Admin interface.



[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Mod](#)

Old Password:

New Password:

New Password:

IP eth0:

netmask eth0:

IP eth1:

netmask eth1:

DNS:

Gateway:

Proxy host:port

Notes:

- 1) Remember to click “Change Password” after you reset new password. And the system will automatically prompt you to log in again.
- 2) Remember to click “Update” after you reset new IP. Then use the new IP to log in the WEB.

5.7 Upgrade

To upgrade the application, please upload a local update file and click “Upgrade” to complete.

[Status](#) [Video Output](#) [Audio Output](#) [Streams](#) [Transcoding](#) [Module Status](#) [Admin](#) [Upgrade](#) [Restart](#)

☒ Local Upgrade No file chosen

Current Version 0.1.50

5.8 Restart

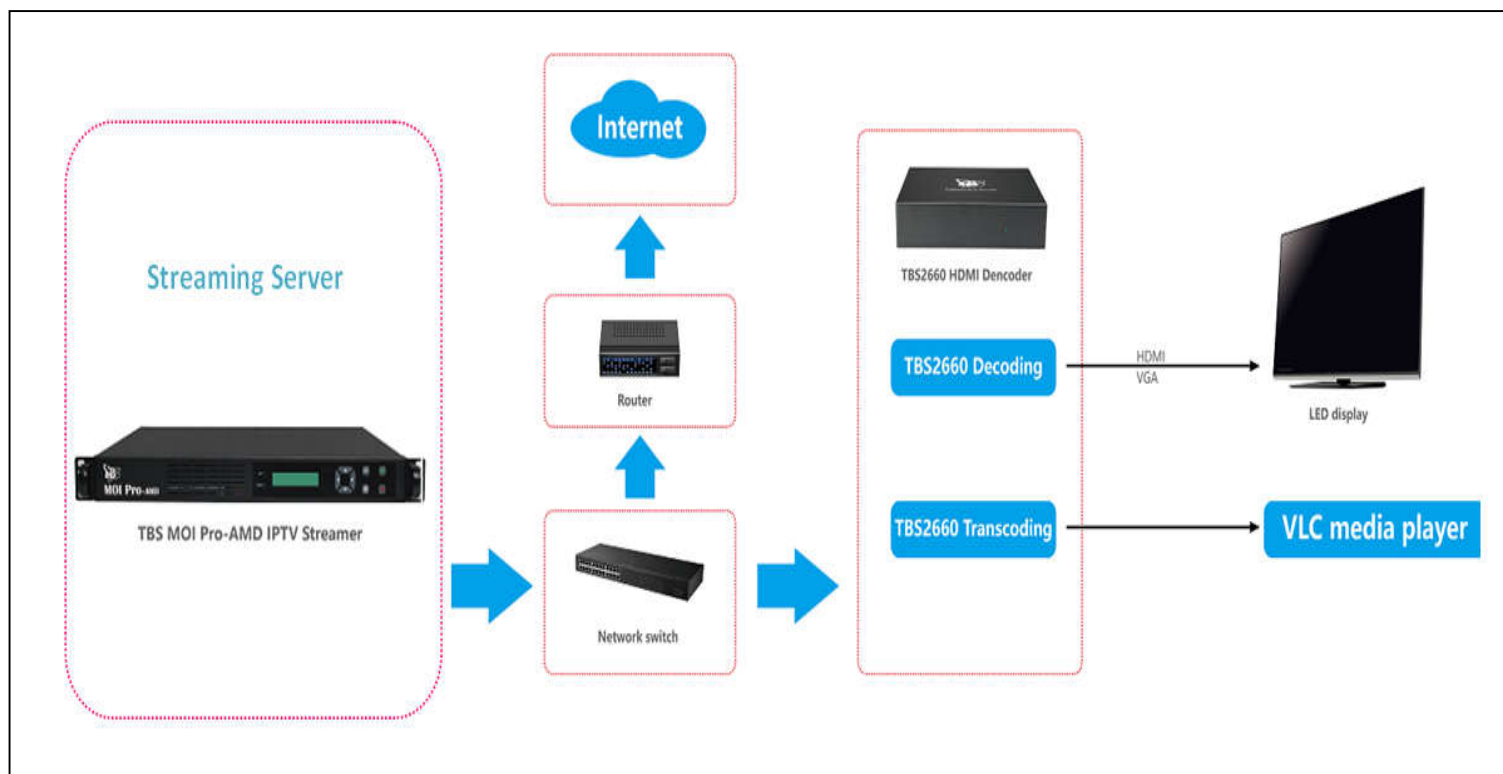
If you want to decode a 4K video, please click this icon to restart the application.



TBS2660 professional IP decoder is compatible to your IP server, Apache2 web server and other brand encoders. Besides, it would work with TBS streaming server and TBS2630 HDMI encoder. Below are some brief instructions for your reference.

6. Decoding Operation with TBS Streaming Server

6.1 System Diagram of TBS Streaming Server&TBS2660



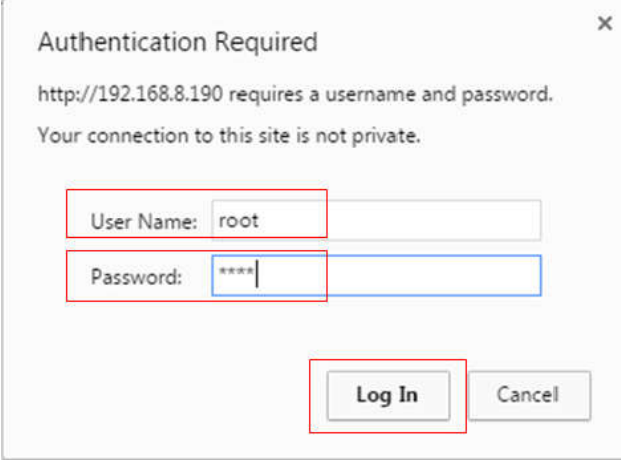
Below is in the case of MOI PRO AMD.

6.2 Get Video Streaming URL from MOI PRO AMD

6.2.1 Open the Web browser and input the IP address of MOIPRO AMD (**192.168.8.190**) to enter the login page:



6.2.2 Enter the user name and password, and then click **Login**. By default, the user name and password for initial login is **root/root**:



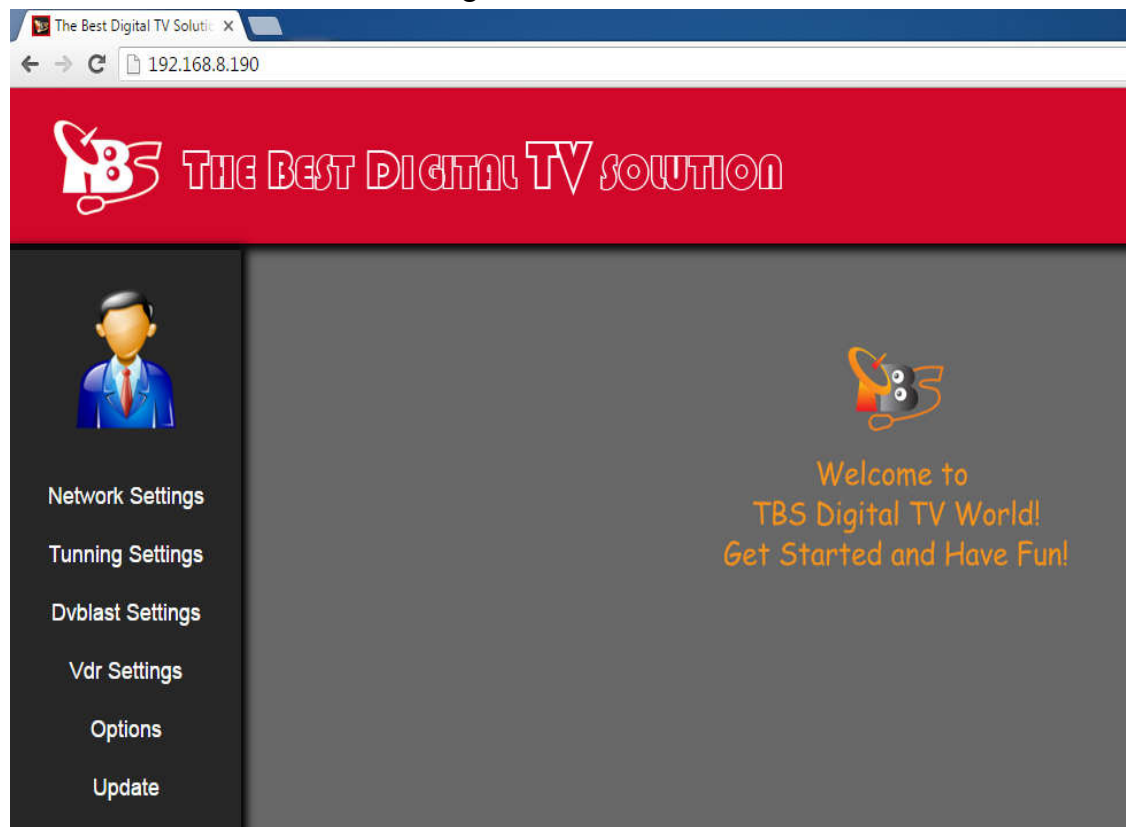
Authentication Required

http://192.168.8.190 requires a username and password.
Your connection to this site is not private.

User Name:

Password:

6.2.3 The main interface will be showed after successful login as bellows. Then click “Dvblast Setting”.



6.2.4 Configure parameters. Select an adapter, set “Frequency”, “Symbol Rate”, “Polarization”, “Delivery System”, “Constellation”, “FEC” and then click “Scan Channels”



Tuners :
TBS adapter0
TBS adapter1

Frequency(kHz): 11110000

Symbol Rate(Sym/s): 45000000

Polarisation: V

Delivery System: DVBS2

Constellation: PSK_8

FEC: 3/4

Switch Port: 1

Scan Channels

6.2.5 If your setting is correct, channels will be scanned out. Then select a channel to stream.

Program List	OutputAddress	OutputPort	UDP	Enable
P1	239.255.0.1	1234	☐	☐
P2	239.255.0.2	1234	☐	☐
P3	239.255.0.3	1234	☐	☐
P4	239.255.0.4	1234	☐	☐
P5	239.255.0.5	1234	☐	☐
P6	239.255.0.6	1234	☐	☐
P7	239.255.0.7	1234	☐	☐
P8	239.255.0.8	1234	☐	☐
P9	239.255.0.9	1234	☐	☐
P10	239.255.0.10	1234	☐	☐
P11	239.255.0.11	1234	☐	☒
P12	239.255.0.12	1234	☐	☐



Note: Please remember to tick “Streaming & Save” at the bottom.

P24	239.255.0.24	1234	☐	☐
P25	239.255.0.25	1234	☐	☐
P26	239.255.0.26	1234	☐	☐
P27	239.255.0.27	1234	☐	☐
P28	239.255.0.28	1234	☐	☐
P29	239.255.0.29	1234	☐	☐

☒ Streaming&Save

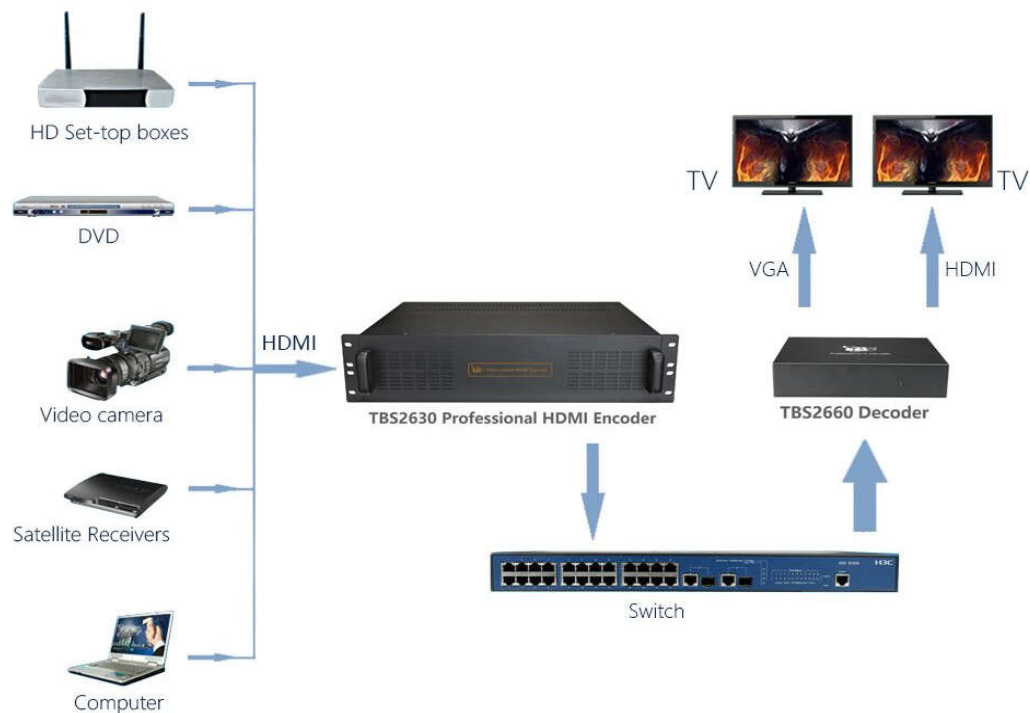
6.2.6 Now, we got a URL by dvblast from MOI PRO AMD. It's “OutputAddress” + “OutputPort”, e.g. rtp://239.255.0.11:1234

6.3 Decoding Video Stream with TBS2660

Please refer to above configuration steps 5.1, 5.2 and 5.3.

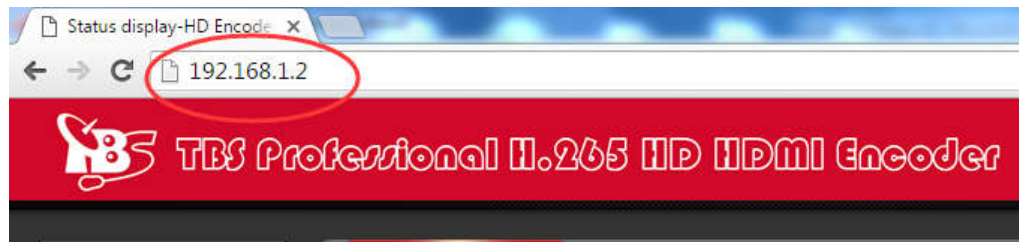
7. Decoding Operation with TBS2630 Professional HDMI Encoder

7.1 System Diagram of TBS2630&TBS2660



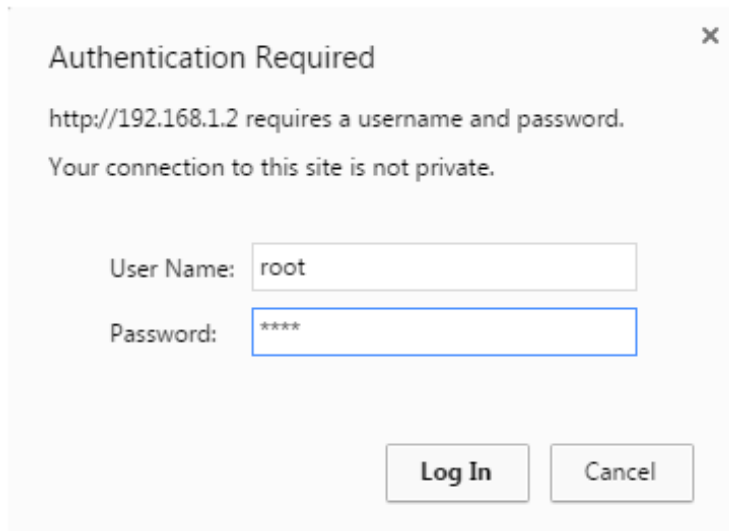
7.2 Get Video Streaming URL from TBS2630

7.2.1 Input TBS2630 IP address to enter its operation interface. (Default IP:192.168.1.* The "*" is any number ranging from 2~17)

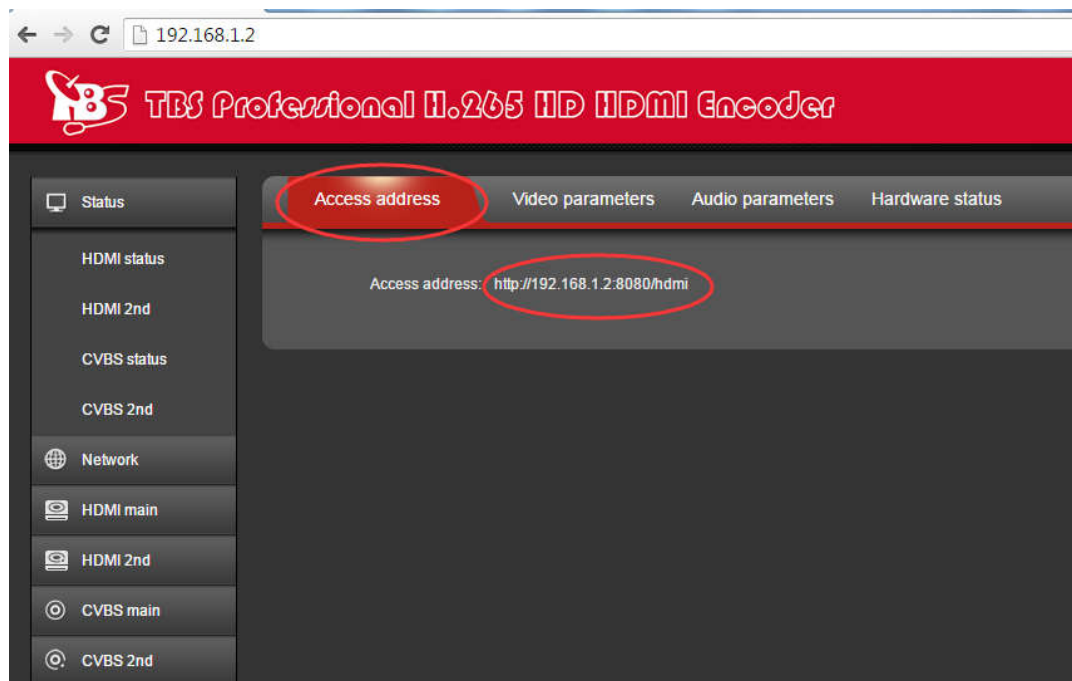


7.2.2 Enter the user name and password, and then click Login.

Note: Both the default user name and password for initial login are “root” .



7.2.3 Click “Access address” on TBS2630 operation interface and then you can get the video play stream URL



7.3 Decoding Video Stream with TBS2660

Please refer to above configuration steps 5.1, 5.2 and 5.3.



8. Product Specifications

Standard	
Video Decoding Standard	H.265 Main Profile Level5.1
	H.264 Baseline/Main/High Profile level5.0
	MPEG4 SP L0~L3/ASP L0~L5
	MJPEG/JPEG Baseline
Video Encoding Standard	H.264 Baseline/Main/High Profile Level5.1
	MJPEG/JPEG Baseline
Supported protocols	RTP/RTSP/HTTP/Sat2IP
Decode	4x4K*2K(3840*2160)@30fps/2x4Kx2K(3840*2160)@60fps H.265/H.264
	16x1080p@30fps /8x1080p@60fpsH.265/H.264
	32x720p@30fps/16x720p@60fps H.265/H.264
Hardware	
Network interface:	2x Gigabit LAN
CPU	ARM Cortex A17 (4 cores @Max. 1.4GHz)
RAM	2G
Nand flash	256M
Interface	1x HDMI 2.0 , Maximum support 3840 x2160@60fps
	1x VGA , Maximum support 2560 x1600@60fps
	3x SATA
	3x USB (1*3.0 + 2*2.0)
System	LINUX
Package contents	TBS2660
	Power Adapter