

TBS6301 User Guide

Dear Customers,

Thank you so much for using TBS products. TBS6301 HDMI Video Capture Card comes with HDMI1.4 port, completely support full HD Video and Audio capture and playback. It provides HDMI input of highest quality and meets the HDMI 1.4 standard. It satisfies the 1080P resolutions and can capture the LPCM audio signals in HDMI.

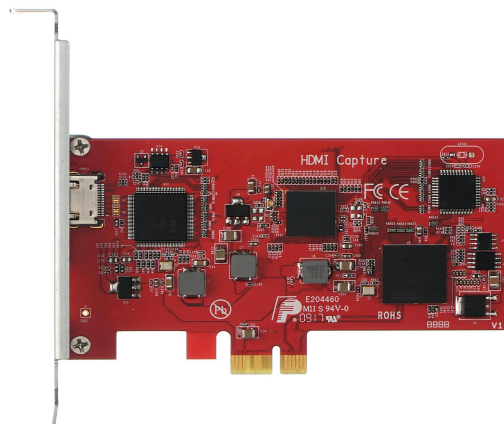
You can easily capture signals from different kinds of devices by TBS6301 HDMI Capture Card without limitation. For TBS6301 windows driver is BDA architecture compatible with DVBDream, DVBView etc. While TBS6301 Linux driver is V4l architecture compatible with dvblast, tvheadend and astra.

Main Features:

- Real HDMI Digital Interface
- Compatible with 1080i Full HD Input Signals
- Compliant with HDMI 1.3, HDMI 1.4a 3D, HDCP 1.4 specifications
- Compatible with Windows XP / Vista / Windows 7 /Windows 8 / Windows 10/Linux
- Hardware encoding
- H.264 hardware compression
- Various Output Color Spaces
- Supports 20 bits DeepColor
- Automatically Detecting Input Signal

Applications:

- IPTV Servers
- Datacasting and monitoring
- Electronic Program Guides (EPG's)
- Broadcast TV



Model	TBS6301
Interface	PCI-E x1
Recording mode	Hardware compression, real time mode
Display video format	YV12,NV12,YUY2,RGB24,RGB32
Video format	H.264
Audio Input	HDMI Embedded audio
Color Space	YUYV, UYVY, I420, RGB 24 Bits, RGB 32 Bits
Image Mirror	Horizontal; vertical
Update	Firmware could be updated
OS and Driver	Windows XP / Vista / Windows 7 /Windows 8 / Windows 10/Linux
Power	12V/6W
Temperature	0~60℃
Dimension	18.5*16.5*3.5cm
Weight	300g

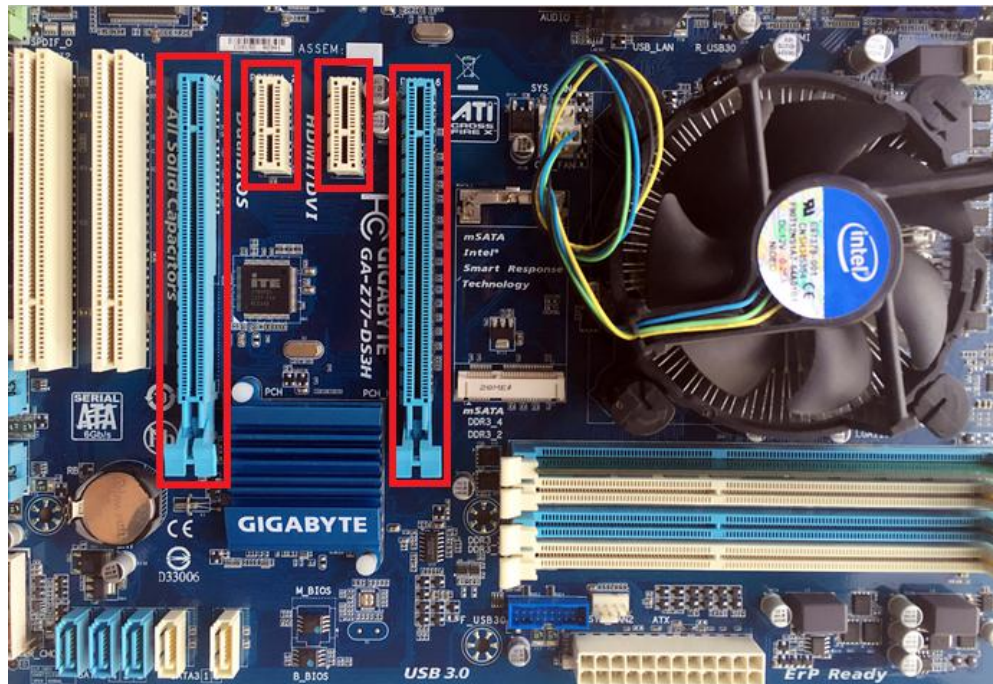
HDMI input Video format support:

Horizontal size	Vertical size	rate	I (Interleave)or P (Progressive)
1920	1080	60/59.94	I
1920	1080	50	I
1280	720	60/59.94	p
1280	720	50	p
720	483(480)	59.94	P
720	576	50	P
1920	1080	30/29.97	P
1920	1080	24/23.98	P
1280	720	30/29.97	P
1280	720	24/23.98	P

1. Hardware Installation

1.1 Install the TBS6301 HDMI HD capture card

Power off the computer, remove computer cover and take out cover panel of PCI-e slot in which you want to put the card. Insert the card in **PCI-e slot** and fix card bracket with screw. Make sure the card fit in PCI-e slot tightly. Then put back computer cover.



Attention:

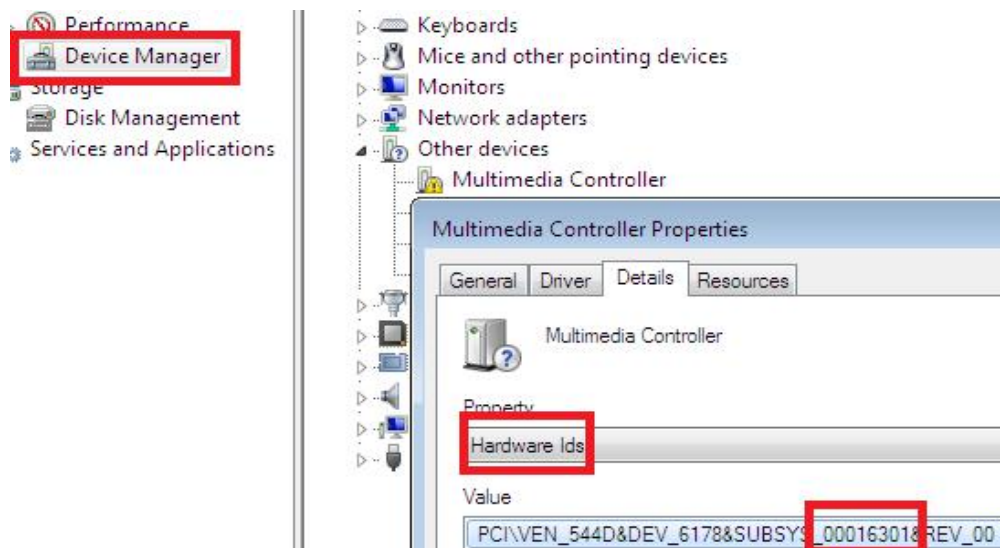
- ① When turn off the computer, please do not touch the PC internal components especially the CPU and VGA chip, which has a high temperature with a risk of burns.
- ② Please be sure to see the manual of PC and peripheral equipment.

2. Windows Driver Installation

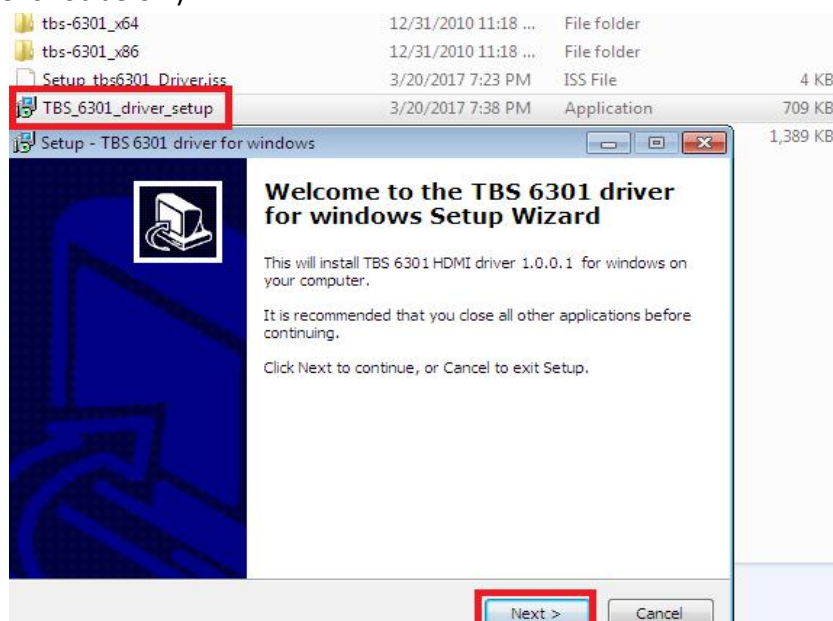
2.1 Start your PC and jump to “Computer Management”. There will pop up a notice “Failed to install the device driver” if you use Windows 7 operating system.

In order to install the driver successfully, you have to do as the prompts step by step. Then you can check the TBS TV tuner hardware device ID as follows: Open “Computer Management”, click “Other devices”, finally choose and double click the right hardware device for more details.

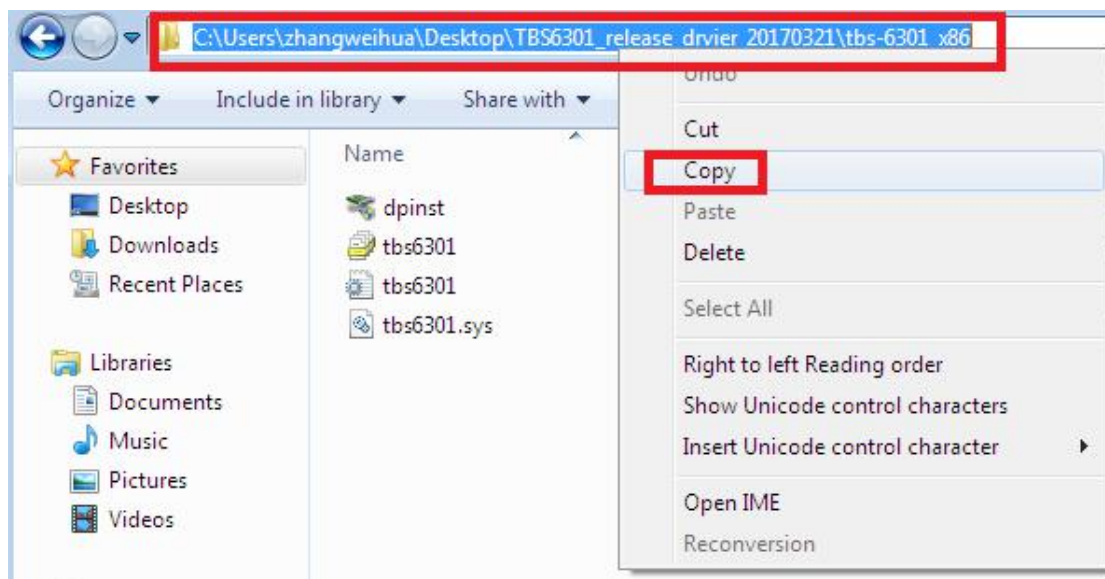
Please kindly see the following screenshot for your reference.



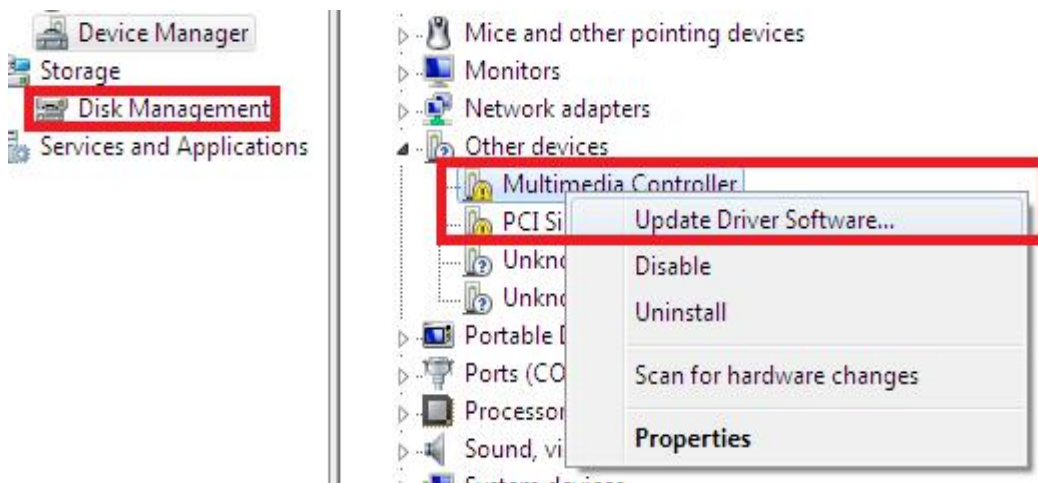
2.2 Download TBS6301 Windows Driver from our website and then unzip TBS 6301 Windows driver. Click “TBS_6301_driver_setup” , then a new window will pop up. (See screenshot below)



2.3 If the quick installation fails, please try to manually install TBS6301 software driver as follows: open the drive compression package, and then copy the drive path in your own system. (see below)



2.4 Open the device manager, and then update driver software manually. (see below)



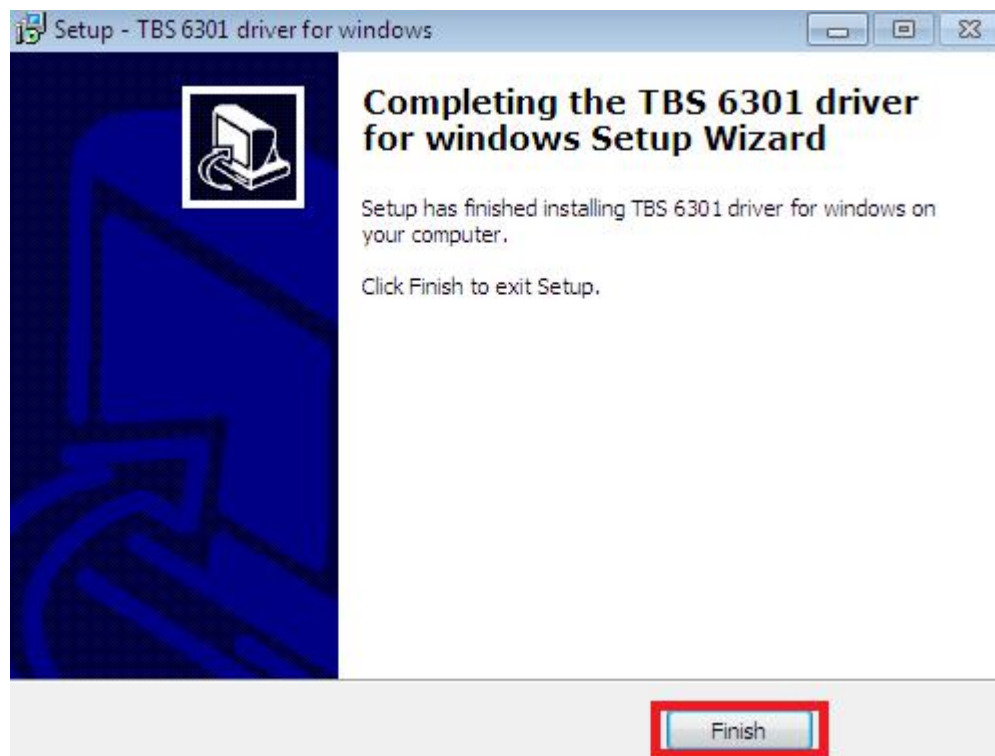
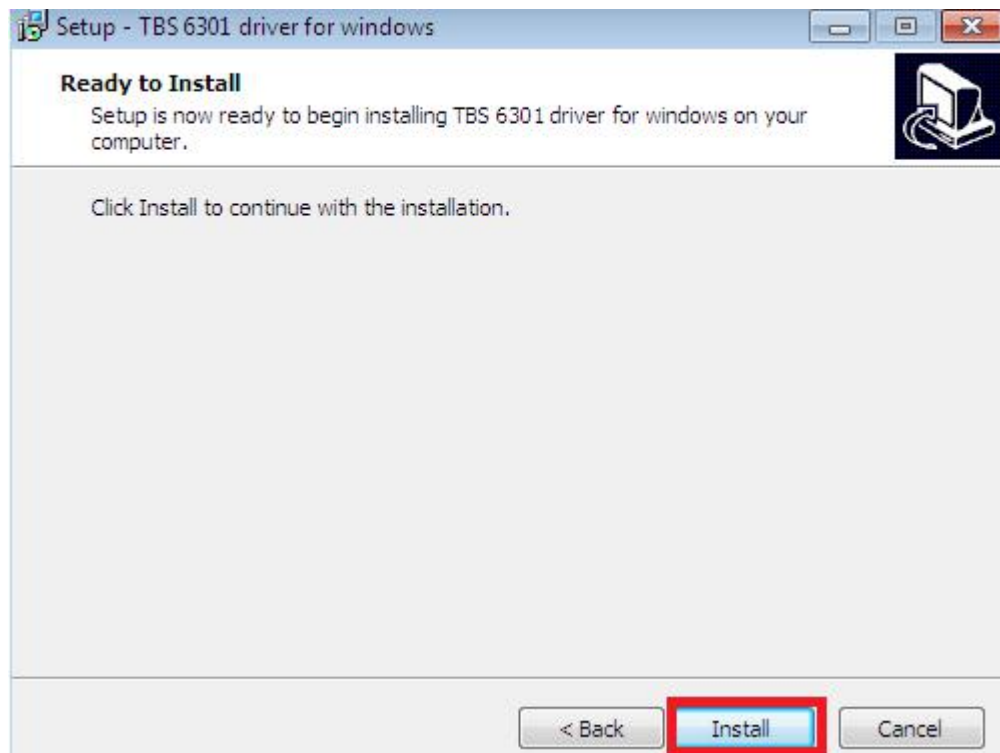
How do you want to search for driver software?

→ Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.

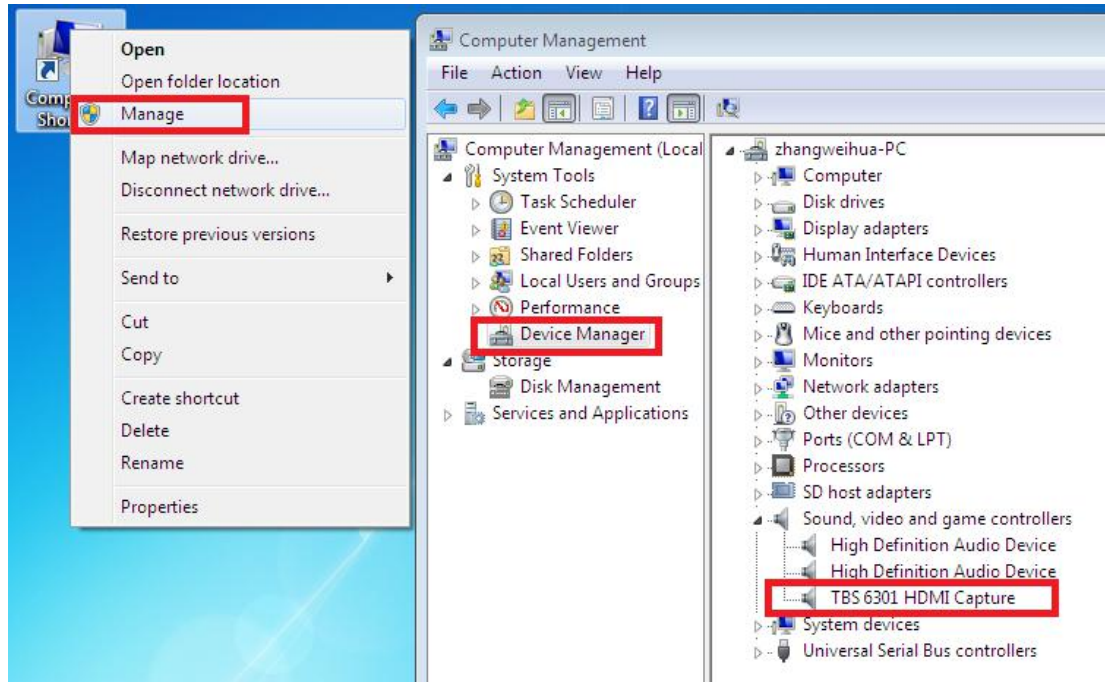
→ Browse my computer for driver software
Locate and install driver software manually.

Cancel

2.5 Click “Next”, “Install” and “Finish” to complete installation.



2.6 To verify if you successfully install the driver: Choose “My Computer”, right click and choose “System Properties”, then there will pop up “System Properties” windows. Click “Hardware” and “Device Manager”, and then click “+” in front of “Sound, video and game controllers”. If you can see “TBS6301 HDMI Capture”, that means you do have installed driver correctly. Please kindly find attached screenshot as below:



3. Play Software Installation

Here is a link for downloading Media Player software. For detailed installation instructions, please kindly find its user guide.

<http://www.tbsiptv.com/index.php?route=product/download&path=6>

Moreover, you can check some Video Guide on the following link:

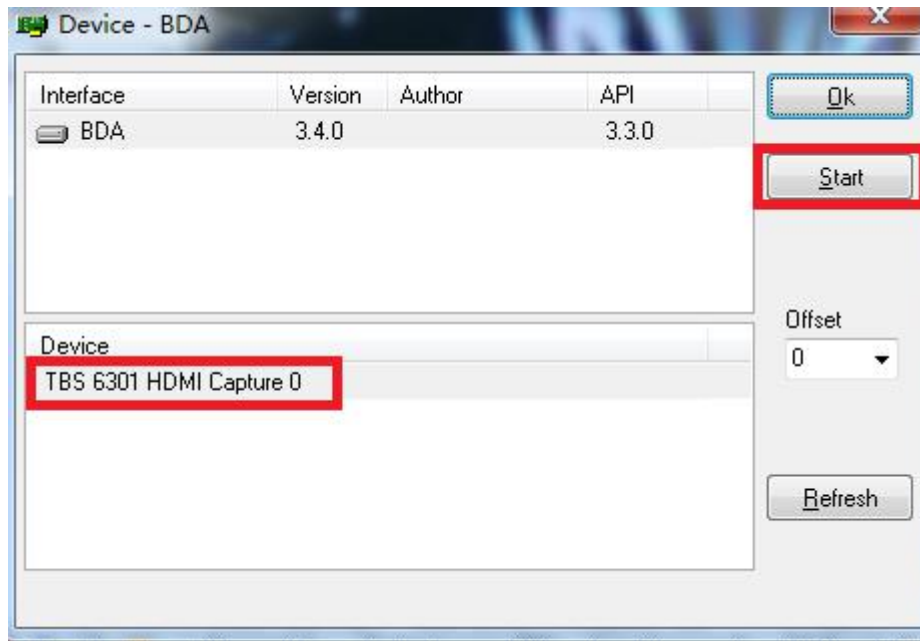
<https://www.youtube.com/user/buydvd/videos>

Now we take DVBDream as an example:

1> download the software OEM version from website:

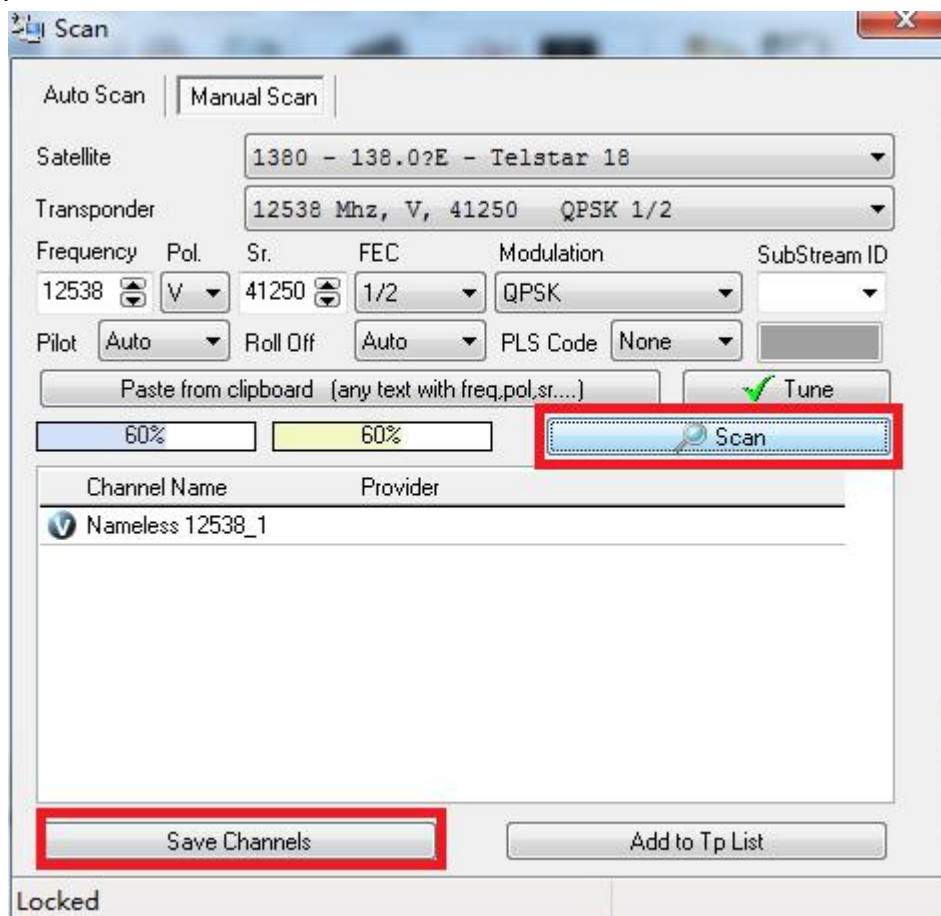
http://www.tbsiptv.com/download/common/dvbdream_oem_version_setup_v2921.Zip

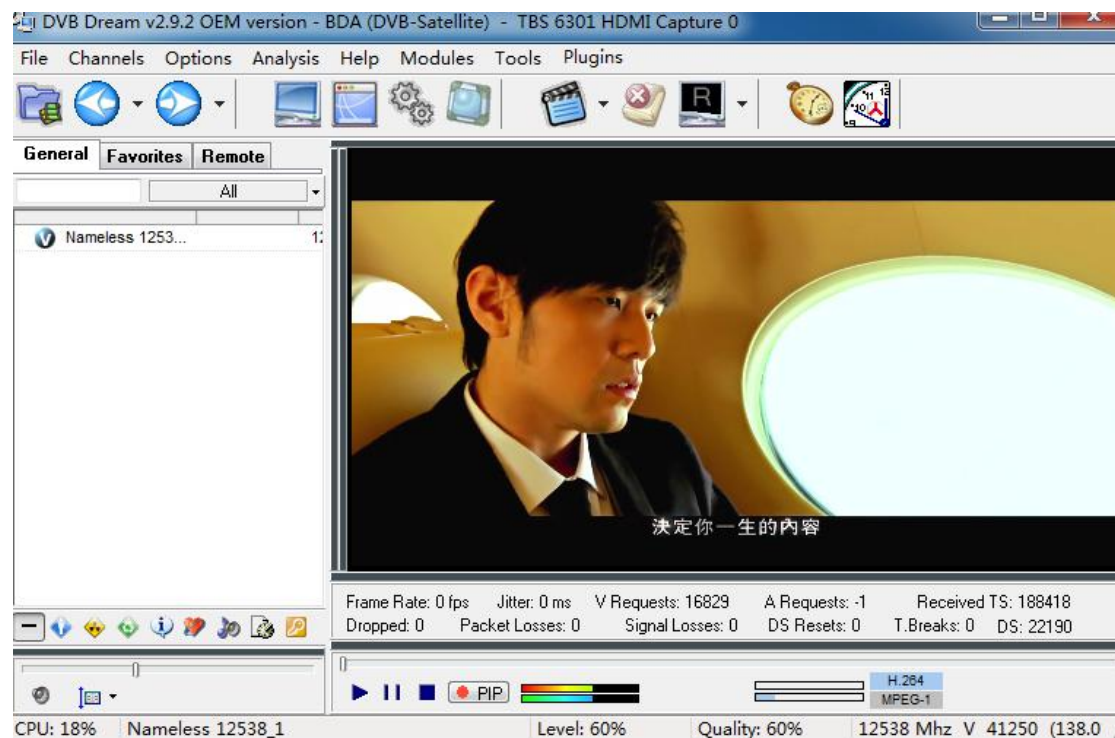
2> Install it and open it, then select a device under “Options” - “Device” item:



3> Now go to the channel. Just set it as a DVBS tuner card. Input or select a Diseqc and all the corresponding parameters, then click "scan" button and "save channels" as below.

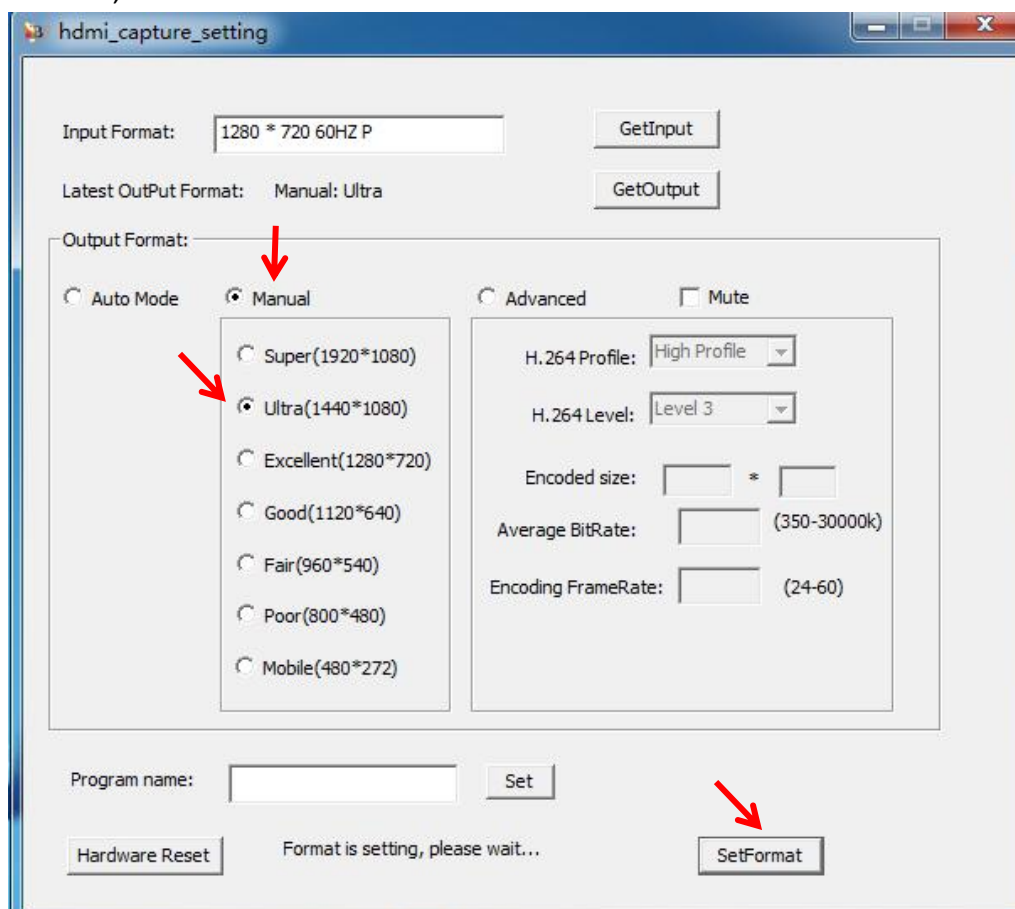
The frequency and symbol rate are just a reference values, you can input any valid one.





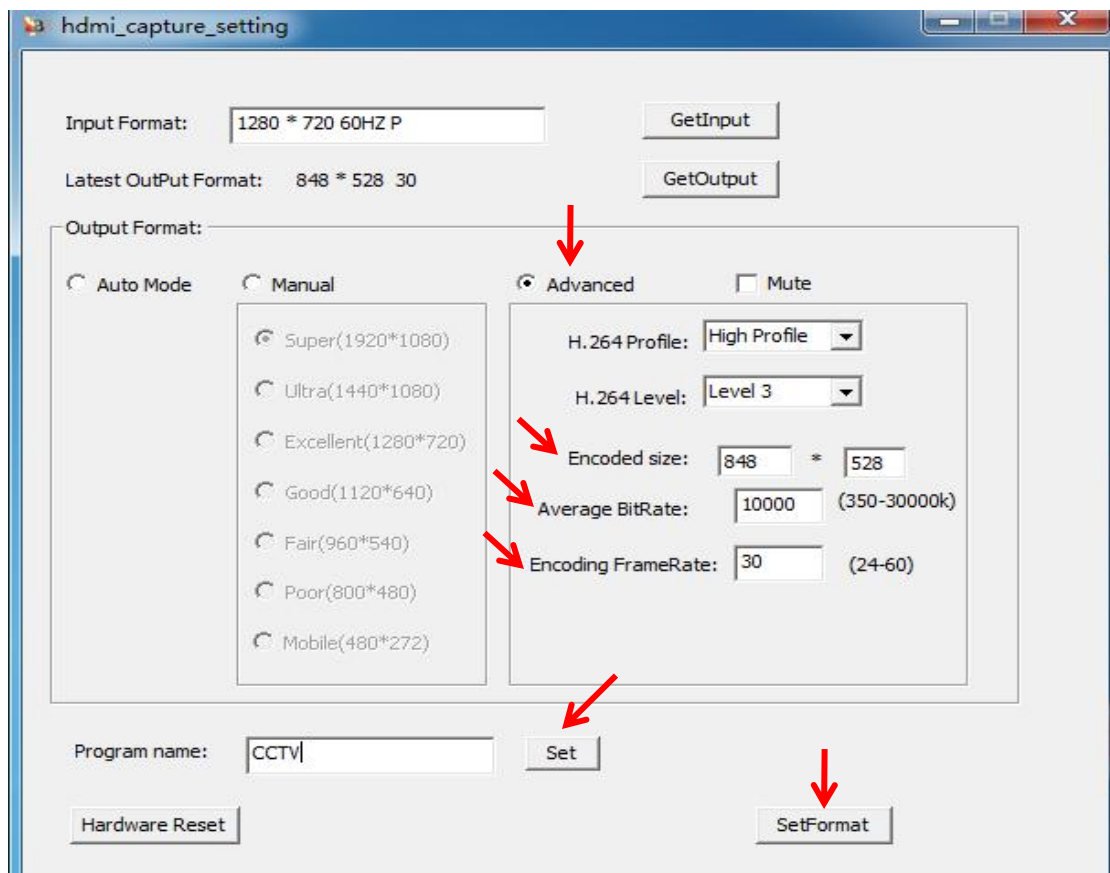
4 .Windows HDMI options

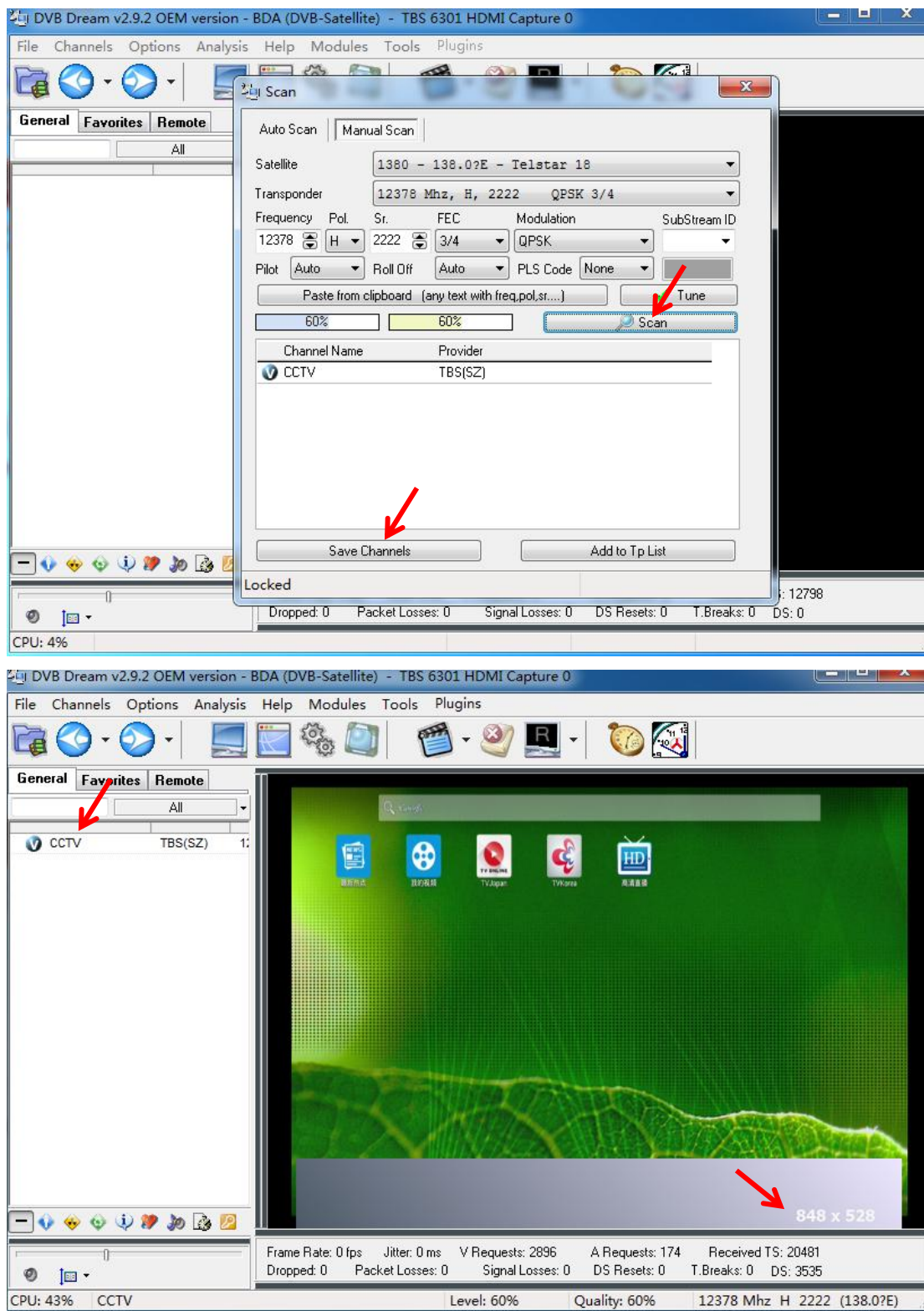
4.1 Select Output resolution: There are 3 kinds of output formats for your choice: Auto Mode, Manual Mode and Advance Mode.





4.2 Advanced Output Setting: You can set up customized resolution and program name.





4.3 If you can't receive any source, please click "Hardware Reset" button and then scan channels again. Or you can try to choose "Mute" mode, and then use VLC to record TV program for a few minutes; finally you will find if the card is ok or not.

5. How to use TBS6301 HDMI Capture card with MOIPro-AMD

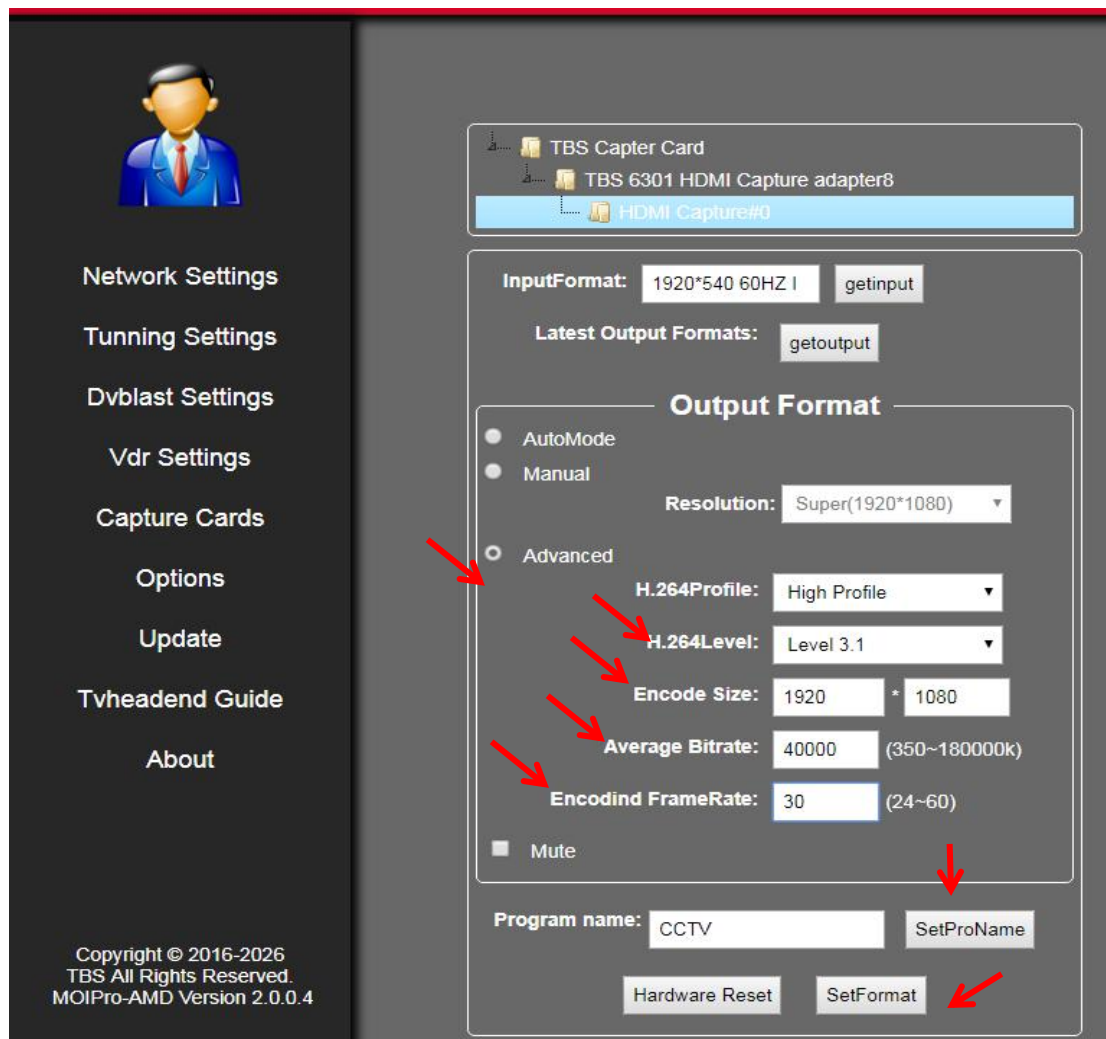
5.1 Open the browser and enter the MOIPro-AMD display IP address

Select Output resolution: There are 3 kinds of output formats for your choice: Auto Mode, Manual Mode and Advance Mode.

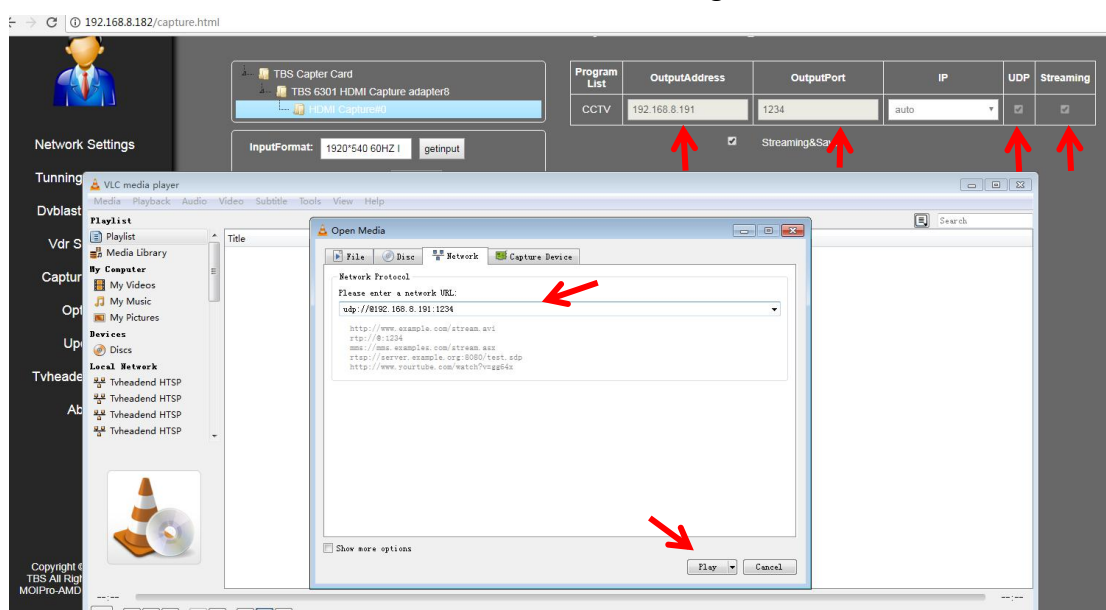
The screenshot displays the MOIPro-AMD web interface for configuring the TBS6301 HDMI Capture card. The interface is divided into a sidebar menu and a main settings area. The sidebar menu includes options like Network Settings, Tuning Settings, Dvblast Settings, Vdr Settings, Capture Cards (highlighted with a red arrow), Options, Update, Tvheadend Guide, and About. The main settings area shows the TBS Capter Card configuration, including the TBS 6301 HDMI Capture adapter8 and HDMI Capture#0. The Output Format section is expanded, showing options for AutoMode, Manual, and Advanced. The Resolution dropdown is open, showing options like Super(1920*1080), Ultra(1440*1080), Excellent(1280*720), Good(1120*720) (selected), Fair(960*540), Poor(800*480), and Mobile(480*272). Other settings include H.264Profile, H.264Level, Encode Size, Average Bitrate, and Encoding FrameRate. The Program name is set to CCTV. Red arrows point to the 'Capture Cards' menu item, the 'HDMI Capture#0' device, the 'Manual' output mode, the 'Resolution' dropdown, and the 'SetFormat' button.

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MOIPro-AMD Version 2.0.0.4

5.2 Advanced Output Setting: You can set up customized resolution and program name.



5.3 You can use unicast or multicast mode to streaming the channels



6. Linux Format Setting

6.1 Update the driver

Please kindly install or update the latest open source driver. Here comes links for your reference: https://github.com/tbsdtv/linux_media/wiki

6.2 HDMI Options Tool Usage

-a <adapter> -n <frontend number>

./hdmioptions -a 0 -n 0 means open /dev/dvb/adapter0/frontend0

-i : putout the information format of the input

-r : software reset

-R : MCU reset

-N : Mac address

-c : check the latest configuration of the output format

-x : set output mute(1:mute,0:normal) when audio and video are out of sync

-K <progName> : set program Name

We can set the output format by the one of following three ways:

(1)Auto mode: -A (the same with input format)

(2)Manual: -M (1--7,1:super 1920*1080,2:ultra 1440*1080,3:excellent 1280*720,4:good 1120*720,5:fair 960*540,6:poor 800*480,7:mobile 480*272)

(3)Advanced: -p : profile(0:high, 1:Main) -l :level (30/31/32/40/41/42) -H(size) -V(size)(1920*1080--480*272) -B : bitRate(350--18000K) -F : frameRate : (24--60)

for example:

./hdmioptions -a 0 -n 0 -i -N // check adapter0's input video format and mac address

./hdmioptions -a 0 -n 0 -c //check the latest configuration of the output format

./hdmioptions -a 0 -n 0 -R // the device of adapter0's mcu reset

./hdmioptions -a 0 -n 0 -x 1 //set output mute when audio and video are out of sync, it can be set with auto,manual and advanced mode

./hdmioptions -a 0 -n 0 -K myhdmITV // set the device of adapter0's video output program name

./hdmioptions -a 0 -n 0 -A // set the device of adapter0's video output format auto mode, it means the same to the input format

`./hdmioptions -a 0 -n 0 -M 3 // set the device of adapter0's video output format manual mode, you can set from 1 to 7 match 1920*1080 to 480*272`

`./hdmioptions -a 0 -n 0 -p 1 -l 32 -H 1920 -V 1080 -B 50000 -F 30 // set the device of adapter0's video output format Advanced mode: main profile, level is 3.2, H is 1920, V is 1080, bitrate is 5M and frameRate is 30 frames.`

2. This tool is precompiled for Ubuntu 16.04x64 operating environment. If you can't run it, you can compile by yourself according to the following steps:

(1) add these lines to this file: `/usr/include/linux/dvb/frontend.h`

`struct ecp3_info`

`__u8 reg;
 __u32 data;`

`struct mcu24cxx_info`

`__u32 bassaddr;
 __u8 reg;
 __u32 data;`

`#define FE_ECP3FW_READ _IOR('o', 90, struct ecp3_info)
#define FE_ECP3FW_WRITE _IOW('o', 91, struct ecp3_info)
#define FE_24CXX_READ _IOR('o', 92, struct mcu24cxx_info)
#define FE_24CXX_WRITE _IOW('o', 93, struct mcu24cxx_info)`

(2) `gcc hdmi_format.c tbsecp3-spi.c -o hdmioptions`

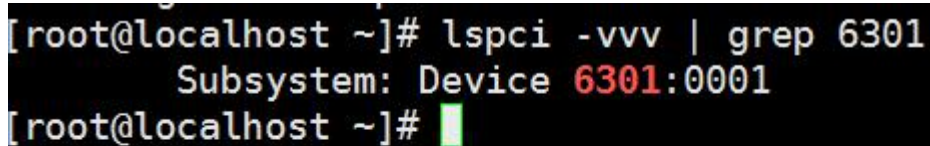
ATTENTION:

- ① In some case, the PCI-e card can't be detected by your PC. Therefore, you can't see the device in Device manager. Please use another PCI-e slot and try again; or the golden finger is oxidized in the air, you have to clear it by an eraser and try again.
- ② Don't insert or pull the card out directly when your computer is working, otherwise it will damage your tuner card.

7. Linux open source drive installation

7.1 Reboot your computer and then enter the operating system, right click to open “Terminal”, input the command “sudo-s” and Ubuntu default password; finally you will get access to the operating system.

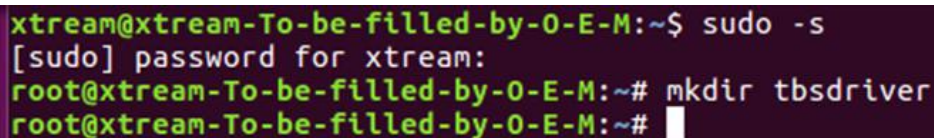
7.2 # lspci -vvv | grep 6301 (This command detects whether there is “Device 6301”, displaying as the following)



```
[root@localhost ~]# lspci -vvv | grep 6301
Subsystem: Device 6301:0001
[root@localhost ~]#
```

7.3 Set up a directory named “tbsdriver”. Here takes saving the directory on the desktop as an example.

mkdir tbsdriver (See screenshot below.)



```
xtream@xtream-To-be-filled-by-0-E-M:~$ sudo -s
[sudo] password for xtream:
root@xtream-To-be-filled-by-0-E-M:~# mkdir tbsdriver
root@xtream-To-be-filled-by-0-E-M:~#
```

7.4 Execute the command and install “git” package. (See screenshot below.)

apt-get install git

```
xtream@xtream-To-be-filled-by-0-E-M:~$ sudo -s
[sudo] password for xtream:
root@xtream-To-be-filled-by-0-E-M:~# apt-get install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk
  gitweb git-arch git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git
0 upgraded, 1 newly installed, 0 to remove and 138 not upgraded.
Need to get 0 B/3,006 kB of archives.
After this operation, 24.0 MB of additional disk space will be used.
Selecting previously unselected package git.
(Reading database ... 211973 files and directories currently installed.)
Preparing to unpack .../git_1%3a2.7.4-0ubuntu1_amd64.deb ...
Unpacking git (1:2.7.4-0ubuntu1) ...
Setting up git (1:2.7.4-0ubuntu1) ...
root@xtream-To-be-filled-by-0-E-M:~#
```

7.5 Enter the directory of “tbsdriver” and then download “media build” and “media” files. (See the following screenshot.)

git clone https://github.com/tbsdtv/media_build.git

git clone --depth=1 https://github.com/tbsdtv/linux_media.git -b latest ./media

```
root@xtream-To-be-filled-by-0-E-M:~/Desktop# cd tbsdriver/
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver# git clone https://github.co
m/tbsdtv/media_build.git
Cloning into 'media_build'...
remote: Counting objects: 3398, done.
remote: Total 3398 (delta 0), reused 0 (delta 0), pack-reused 3398
Receiving objects: 100% (3398/3398), 640.51 KiB | 3.00 KiB/s, done.
Resolving deltas: 100% (2415/2415), done.
Checking connectivity... done.
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver# git clone --depth=1 https:/
/github.com/tbsdtv/linux_media.git -b latest ./media
Cloning into './media'...
remote: Counting objects: 59051, done.
remote: Compressing objects: 61% (33904/55580)
```

7.6 Enter the directory of “media build”, execute “make dir DIR=../media” as the following screenshot.

make dir DIR=../media

```
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver# ls
media media_build
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver# cd media_build/
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver/media_build# make dir DIR=../media
make -C linux/ dir DIR="../media"
make[1]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/linux'
rm -rf drivers firmware include sound .patches_applied .linked_dir .git_log.md5 git_log
Searching in ../media/Makefile for kernel version.
./use_dir.pl ../media
sync file: firmware/av7110/Boot.S
sync file: include/uapi/linux/media-bus-format.h
sync file: include/uapi/linux/v4l2-dv-timings.h
sync file: include/linux/fence.h
sync file: include/linux/compiler-gcc.h
sync file: include/linux/dma-buf.h
sync file: sound/pci/bt87x.c
sync file: include/uapi/linux/videodev2.h
sync file: firmware/ttusb-budget/dspbootcode.bin.ihex
sync file: include/linux/cec-funcs.h
sync file: include/trace/events/vb2.h
sync file: include/sound/aci.h
sync file: include/uapi/linux/usb/video.h
sync file: firmware/cpia2/stv0672_vp4.bin.ihex
sync file: include/linux/ti_wilink_st.h
sync file: include/linux/pci_ids.h
```

7.7 # make distclean (See screenshot below.)

```
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver/media_build# make distclean
make -C /home/xtream/Desktop/tbsdriver/media_build/v4l distclean
make[1]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/v4l'
No version yet, using 4.7.0-040700rc3-generic
rm -f *~ *.o *.ko *.o.cmd *.ko.cmd *.mod.c av7110_firm.h fdump \
    config-compat.h Module.symvers Module.markers modules.order \
    *.unsigned *.ko.unsigned.cmd
make -C firmware clean
make[2]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/v4l/firmw
are'
rm -f ihex2fw
rm -f vicam/firmware.fw ttusb-budget/dspbootcode.bin cpia2/stv0672_vp4.bin av7110
/bootcode.bin
make[2]: Leaving directory '/home/xtream/Desktop/tbsdriver/media_build/v4l/firmw
are'
rm -f .version *.o.flags *.o.d *.mod.gcno Makefile.media \
    Kconfig Kconfig.kern .config .config.cmd .myconfig \
    .kconfig.dep
rm -rf .tmp_versions .tmp*.ver .tmp*.o *.gcno
rm -f scripts/lxdialog scripts/kconfig
make -C firmware distclean
make[2]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/v4l/firmw
are'
rm -f ihex2fw
rm -f vicam/firmware.fw ttusb-budget/dspbootcode.bin cpia2/stv0672_vp4.bin av7110
/bootcode.bin
```


7.8 # make -j4

```
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver/media_build# make -j4
make -C /home/xtream/Desktop/tbsdriver/media_build/v4l
make[1]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/v4l'
No version yet, using 4.7.0-040700rc3-generic
scripts/make_makefile.pl
make[2]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/linux'
Updating/Creating .config
make[2]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/linux'
Syncing with dir ../../media
Syncing with dir ../../media
Applying patches for kernel 4.7.0-040700rc3-generic
patch -s -f -N -p1 -i ../backports/api_version.patch
patch -s -f -N -p1 -i ../backports/pr_fmt.patch
make[3]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/linux'
Unapplying patches
patch -s -f -R -p1 -i ../backports/api_version.patch
make[3]: Leaving directory '/home/xtream/Desktop/tbsdriver/media_build/linux'
Applying patches for kernel 4.7.0-040700rc3-generic
patch -s -f -N -p1 -i ../backports/api_version.patch
patch -s -f -N -p1 -i ../backports/pr_fmt.patch
1 out of 1 hunk FAILED -- saving rejects to file drivers/media/platform/s3c-camif/camif-core.c.rej
1 out of 1 hunk FAILED -- saving rejects to file drivers/media/platform/s3c-camif/camif-regs.c.rej
```

7.9 # make install (See screenshot below.)

```
root@xtream-To-be-filled-by-0-E-M:~/Desktop/tbsdriver/media_build# make install
make -C /home/xtream/Desktop/tbsdriver/media_build/v4l install
make[1]: Entering directory '/home/xtream/Desktop/tbsdriver/media_build/v4l'
-e
Installing /lib/modules/4.7.0-040700rc3-generic/kernel/mm files:
frame_vector.ko

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/dvb/firewire:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/common/tuners:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/dvb/ttpci:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/dvb/bt8xx:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/video/cx18:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/video/hdpvr:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/video/saa7164:

Removing obsolete files from /lib/modules/4.7.0-040700rc3-generic/kernel/drivers/media/video/pwc:
```

7.10 Install “firmware” and execute the following command. Please save the file in your favorite directory, and then unzip the file to “lib/firmwares” directory as below.

- 1) Execute `#wget http://www.tbsdtv.com/download/document/linux/tbs-tuner-firmwares_v1.0.tar.bz2`

```
root@zhangweihua:~/Desktop/tbsdriver# wget http://www.tbsdtv.com/download/document/linux/tbs-tuner-firmwares_v1.0.tar.bz2
--2016-08-25 09:25:31-- http://www.tbsdtv.com/download/document/linux/tbs-tuner-firmwares_v1.0.tar.bz2
Resolving www.tbsdtv.com (www.tbsdtv.com)... 45.79.75.140
Connecting to www.tbsdtv.com (www.tbsdtv.com)|45.79.75.140|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1018149 (994K) [application/x-bzip2]
Saving to: 'tbs-tuner-firmwares_v1.0.tar.bz2'

tbs-tuner-firmwares 100%[=====] 994.29K  423KB/s   in 2.4s

2016-08-25 09:25:39 (423 KB/s) - 'tbs-tuner-firmwares_v1.0.tar.bz2' saved [1018149/1018149]

root@zhangweihua:~/Desktop/tbsdriver#
```

- 2) `#tar jxvf tbs-tuner-firmwares_v1.0.tar.bz2 -C /lib/firmware/` (See screenshot below.)

```
root@zhangweihua:~/Desktop/tbsdriver# tar jxvf tbs-tuner-firmwares_v1.0.tar.bz2 -C /lib/firmware/
dvb-demod-drxx-pctv.fw
dvb-demod-mn88472-02.fw
dvb-demod-mn88473-01.fw
dvb-demod-si2168-01.fw
dvb-demod-si2168-02.fw
dvb-demod-si2168-a20-01.fw
dvb-demod-si2168-a30-01.fw
dvb-demod-si2168-b40-01.fw
dvb-demod-si2183-b60-01.fw
dvb-fe-bcm3510-01.fw
dvb-fe-cx24116.fw
dvb-fe-cx24117.fw
dvb-fe-drxj-mc-1.0.8.fw
dvb-fe-drxj-mc-usb-1.0.8.fw
dvb-fe-drxj-mc-usb-qam-1.0.8.fw
dvb-fe-ds3000.fw
dvb-fe-ds300x.fw
dvb-fe-ds3103.fw
dvb-fe-mxl5xx.fw
dvb-fe-or51132-qam.fw
dvb-fe-or51132-usb.fw
dvb-fe-or51211.fw
```

7.11 After executing all the above commands, you should have successfully completed installation. Reboot your computer and input the following commands to detect if you have done it.

reboot

dmesg | grep frontend

```
root@zc-laptop:~#  
root@zc-laptop:~# dmesg | grep frontend  
[ 6.975908] begin Attaching frontend  
[ 7.002205] end Attaching frontend  
[ 7.083219] TBSECP3 driver 0000:0a:00.0: DVB: registering adapter 0 frontend 0 (TurboSight TBS 6301 HDMI Capture )...  
root@zc-laptop:~#  
root@zc-laptop:~#
```

5. If you would like to get latest source program, please enter the “tbsdriver /media” directory and execute the following commands to update the drivers. (See the commands below.)

cd media

git remote update

git pull

cd ../media_build

git remote update

git pull

make

sudo make install

reboot

```
root@zhangweihua: ~/Desktop/tbsdriver/media_build  
root@zhangweihua:~/Desktop/tbsdriver/media# git remote update  
Fetching origin  
root@zhangweihua:~/Desktop/tbsdriver/media# git pull  
Already up-to-date.  
root@zhangweihua:~/Desktop/tbsdriver/media# cd ../media_build  
root@zhangweihua:~/Desktop/tbsdriver/media_build# git remote update  
Fetching origin  
root@zhangweihua:~/Desktop/tbsdriver/media_build# git pull  
Already up-to-date.  
root@zhangweihua:~/Desktop/tbsdriver/media_build# make  
make -C /home/zhangweihua/Desktop/tbsdriver/media_build/v4l  
make[1]: Entering directory '/home/zhangweihua/Desktop/tbsdriver/media_build/v4l'  
'  
creating symbolic links...  
make -C firmware prep  
make[2]: Entering directory '/home/zhangweihua/Desktop/tbsdriver/media_build/v4l/  
/firmware'  
make[2]: Leaving directory '/home/zhangweihua/Desktop/tbsdriver/media_build/v4l/  
firmware'  
make -C firmware  
make[2]: Entering directory '/home/zhangweihua/Desktop/tbsdriver/media_build/v4l/  
/firmware'  
make[2]: Nothing to be done for 'default'.  
make[2]: Leaving directory '/home/zhangweihua/Desktop/tbsdriver/media_build/v4l/'
```

8. ECP3_update

1. Update the Driver

```
#wget
http://www.tbsdtv.com/download/document/linux/media_build-0119.tar.bz2
#tar jxvf media_build-0119.tar.bz2
#cd media_build
#./install.sh
#reboot
```

2. Update Tool Usage

```
// -a 0 -n 0 means open /dev/dvb/adapater0/frontend0
1) check version
   ./ecp3_fw_update -a 0 -n 0 -v
2) write yyy.bin file to flash.
   ./ecp3_fw_update -a 0 -n 0 -w yyy.bin
3) read from flash to stored in xxx.bin
   ./ecp3_fw_update -a 0 -n 0 -r xxx.bin
4) write yyy.bin to flash and read from flash to stored in xxx.bin
   ./ecp3_fw_update -a 0 -n 0 -w xxx.bin -r yyy.bin
```

Here we take 6903 PCI-e card as example to update the ecp3 firmware. You can use this command:

```
./ecp3_fw_update -a 0 -n 0 -w tbs6903_ver0a99.bin
```

This tool is precomile for ubuntu 16.04 x64 enviroment if you can not run it you can compile by yourself with these steps:

1)add these lines to this file: /usr/include/linux/dvb/frontend.h

```
struct ecp3_info
{
    __u8 reg;
    __u32 data;
};

#define FE_ECP3FW_READ    _IOR('o', 90, struct ecp3_info)
#define FE_ECP3FW_WRITE  _IOW('o', 91, struct ecp3_info)
```

2)gcc re_wr_file.c tbsecp3-spi.c -o ecp3_fw_update

9. MCU_update

1. Update the Driver

install or update the latest open source driver from the following link.
https://github.com/tbsdtv/linux_media/wiki

2. mcufwupdate(update mcu FW) usage

-a <adapter> -n <frontend number>

./mcufwupdate -a 0 -n 0 means open /dev/dvb/adapter0/frontend0

-r : read mcu fw

-w : write mcu fw

-R : MCU reset

(1)read from mcu to stored in current directory with oldmcuFW.bin

./mcufwupdate -a 0 -n 0 -r oldmcuFW.bin

(2)write tbs6903mcuFW.bin to mcu for update its FW.

./mcufwupdate -a 0 -n 0 -w tbs6903mcuFW.bin

(3)after you write mcu fw, you have to reset it for work

./mcufwupdate -a 0 -n 0 -R

3. This tool is precompiled for Ubuntu 16.04 x64 operating environment. If you can't run it, you can compile by yourself with the following steps:

(1)add these lines to this file: /usr/include/linux/dvb/frontend.h

struct ecp3_info

__u8 reg;

__u32 data;

struct mcu24cxx_info

__u32 bassaddr;

__u8 reg;

__u32 data;

#define FE_ECP3FW_READ _IOR('o', 90, struct ecp3_info)

#define FE_ECP3FW_WRITE _IOW('o', 91, struct ecp3_info)

#define FE_24CXX_READ _IOR('o', 92, struct mcu24cxx_info)

#define FE_24CXX_WRITE _IOW('o', 93, struct mcu24cxx_info)

(2) gcc mcu_fw_update.c tbsecp3-spi.c -o mcufwupdate

FAQ

Linux:

1. How to install the driver

Closed Driver install steps:

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=9875>

Open Source Detail steps:

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=9960>

2. Can not compile the driver in CentOS 7

check your kernel version:

`uname -a`

Link the build folder .Go to this folder such as :

`cd /lib/modules/3.10.0-327.13.1.el7.x86_64/`

`ln -sf /usr/src/kernels/3.10.0-327.10.1.el7.x86_64/ build`

Then install the driver as normal steps

3. How to use tvheadend.

Check this:

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=9949>

4. How to use astra.

Script Guide:

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=9862>

Video Guide:

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=9976>

5. How to use OSCAM with tvheadend

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=10049>

6. How to use mumudvb

<http://www.mumudvb.net/doc/mumudvb-1.7.3/QUICKSTART.html>

http://www.mumudvb.net/doc/mumudvb-1.7.3/README_CONF.html

Windows:

1. Windows 7 x64 Code 52 issue

Please check this guide:

<http://www.tbsdtv.com/forum/viewtopic.php?f=86&t=9989>

2. Does your driver support windows 10?

No problem. You can freely use Windows xp,vista/7/8/10.

1. Can't watch the HD channels, only picture or only audio.

Make sure that you have installed the right video and audio decoder.

2. Where I can get the TSReader dll support?

You can get it on our download page :

http://www.tbsdtv.com/download/document/common/tsreader-bdasource_v1.0.8.7-20150604.zip

3. Where I can get the StreamReader dll support?

You can get it on our download page :

http://www.tbsdtv.com/download/document/common/streamreader-dll_v1.0.0.3.zip

4. Why can't use it with Windows Server 2008

Please install this patch for your windows server 2008:

http://www.tbsdtv.com/download/document/common/win2008_bda.zip

5. The card don't been detected by motherboard.

Please kindly change some PCI-e setting on BIOS and update the BIOS to the latest version. Make sure to set the PCI-E link speed to Gen1 like this. Because according to most users' feedbacks, the PC can detect our card after setting the BIOS. So you can have a try.

6. How to set dvbdream support 8 diseqc?

Open "Options" item then select "Diseqc", Diseqc Switch Type "None".

After add one satellite,open "Properties", can set diseqc port by "Uncommitted" from 0 to 15

7. What kind of antenna to use(DVBT/DVBT2 Card)?

Our all dvbt/t2 card just support the parasitic antenna. If you use the active antenna, you need supply power to antenna.

8. Whether support CI+?

Our all CI card just support the CI, do no support CI+.