# TBS6281se User Guide

Dear Customers,

  Thank you so much for choosing TBS products .TBS6281SE Quad TV Tuner PCI-e Card supports DVB-T2/T/C,MCNS digital TV standards and enables you to watch TV channel from one transponder/satellite while recording another channel from other transponder/ satellite via PCI Express at the same time.

  In order to use this item correctly, please read this user manual carefully at the beginning.

1. Hardware Installation

1.1 Install TBS TV Tuner 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.
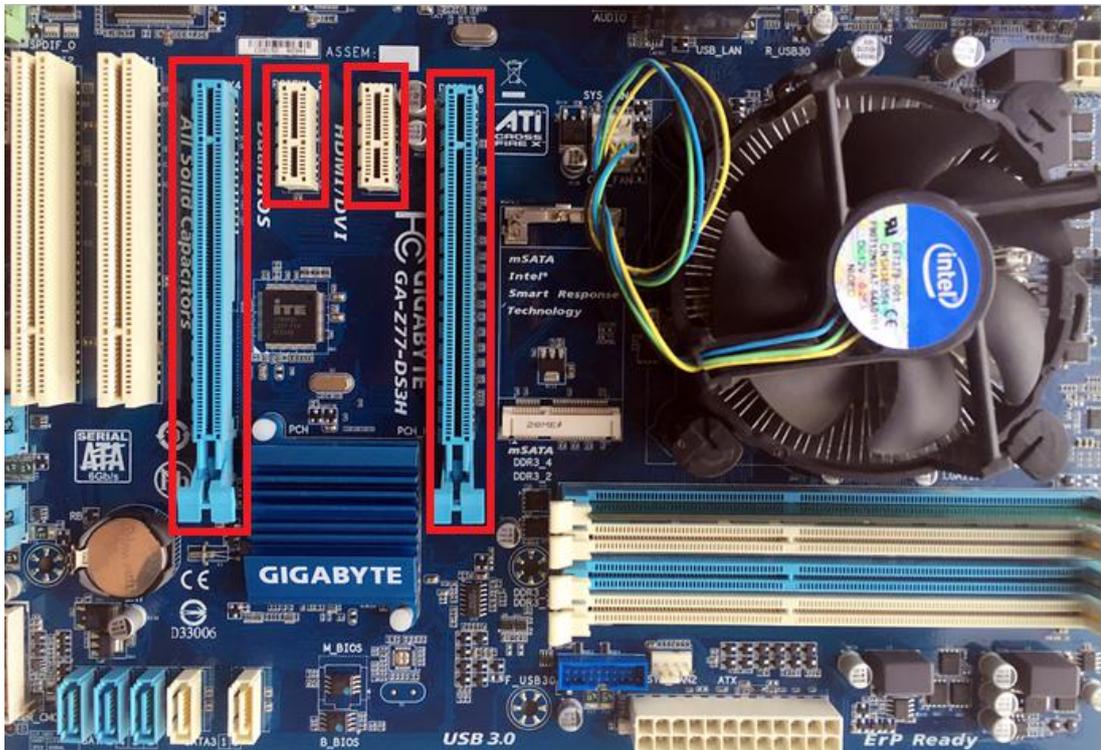

Attention：

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.

1.2   Connect TV Signal Cable to the PCI-e Card on Your PC

Please make sure you properly connect the TV signal to the TV tuner on computer in case of the damage to antenna device. The following TBS6281se TV Signal Table is for your reference.
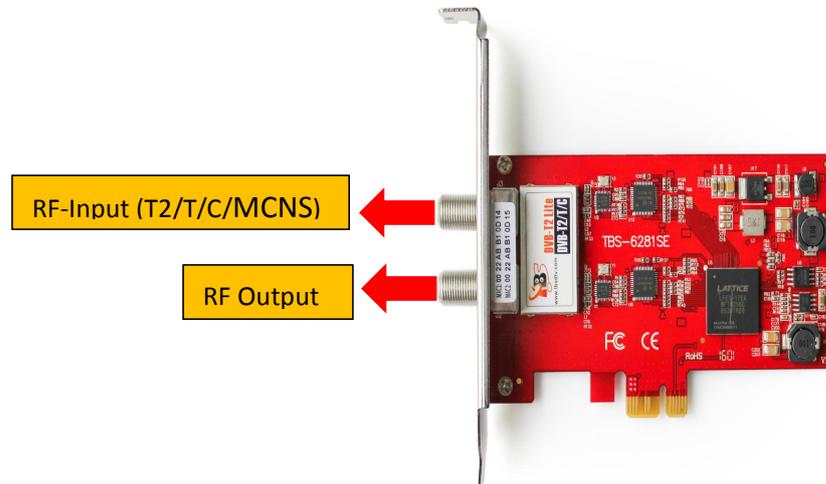

2. windows driver installation

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.
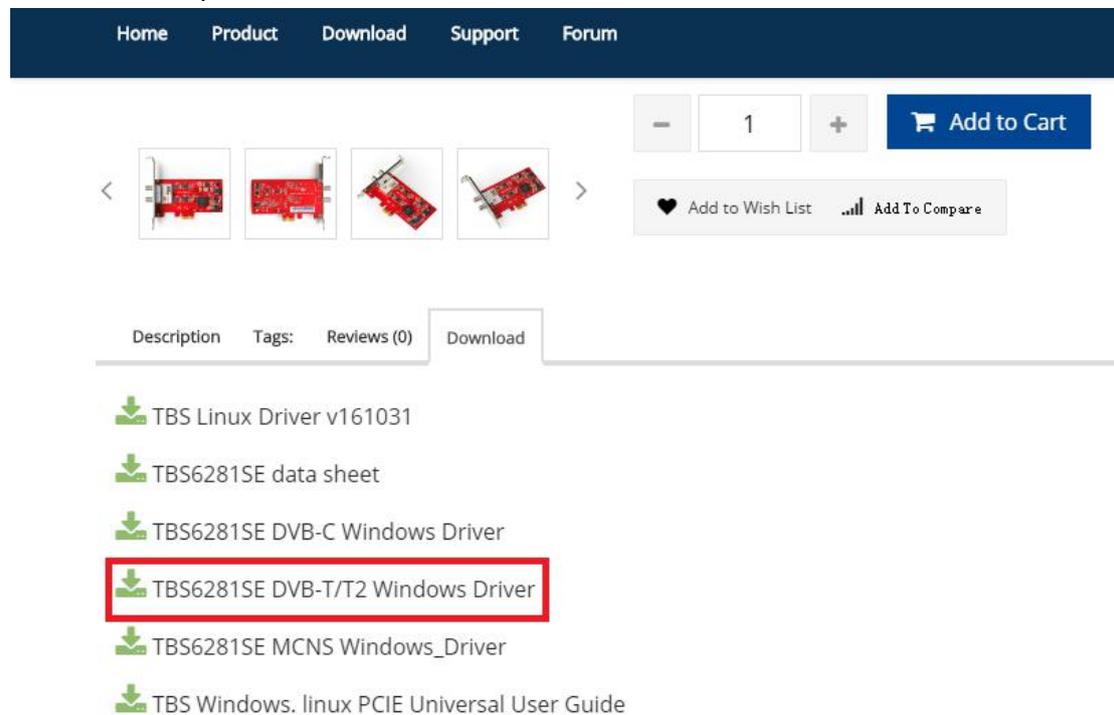
Please kindly see the following screenshot for your reference.
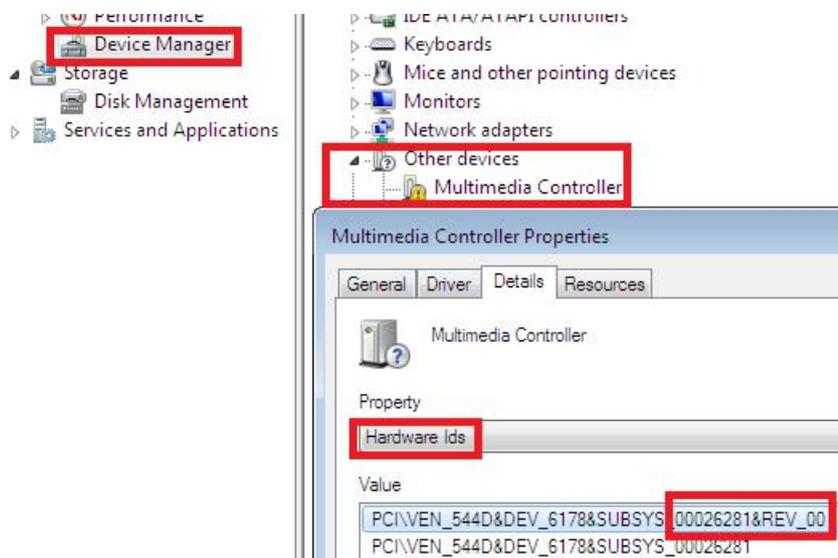
2.2 Download TBS6281se Windows Driver from Our Website (See screenshot below)
http://www.tbsiptv.com/tbs6281se-dvb-t2-t-c-tv-tuner-pcie-card?search=6281
  Choose the right driver you want to use DVB-T or DVB-C or MCNS,let us take DVB-T
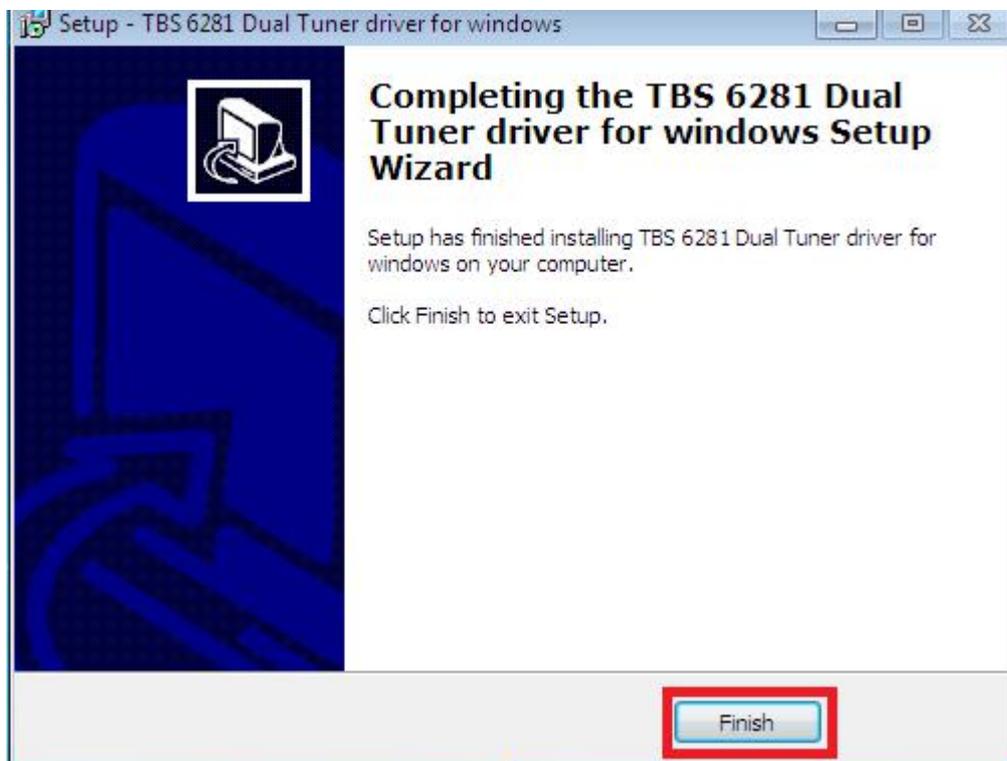driver as example


2）download and then unzip TBS 6281se Windows driver

3）Click "TBS_6281_driver_setup", and then a new window will pop

4）Click "Next"→ "Install"→ "Finish" to complete installation

5）To verify if driver was correctly installed: Choose "My Computer", right click and choose "System Properties" to pop up "System Properties" windows, click "Hardware" → "Device Manager". Then click "+"in front of "Sound, video and game controllers". If you can see "TBS6281se Dual BDA Tuners" that means you do have installed driver correctly.   Just display as below:
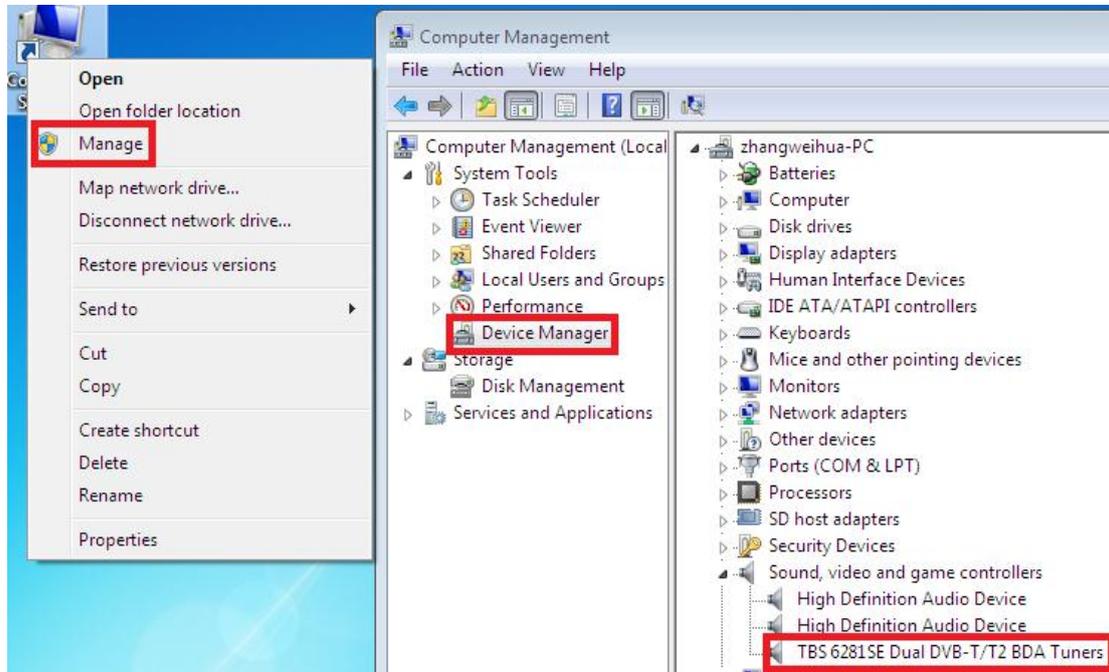
3.Play Software Installation

To enjoy satellite TV on PC or record video, you still need to install player software and right set the search parameters.The above series of TBS TV tuner Card is compatible with a lot of software like TBSViewer, DVBDream, ProgDVB etc.

Here is a link is for downloading Player software. Fordetailed installation instructions, see its Software Installation Instructions.
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/buydvb/videos

ATTENTION:
①In some case, the card can not be detected by your PC, you can't see the device in Device manager, please try to change a PCIe slot and try again; or the golden finger is oxidized in the air, clear it by an eraser and try.
②Don't insert or pull the card out directly when your computer is working, otherwise it will damage your tuner card.

4. Linux open source drive installation

4.1   Reboot your computer and then enter the operating system webui, right click to open "Terminal", input the command "sudo-s" and Ubuntu default password; finally you will get access to the operating system.
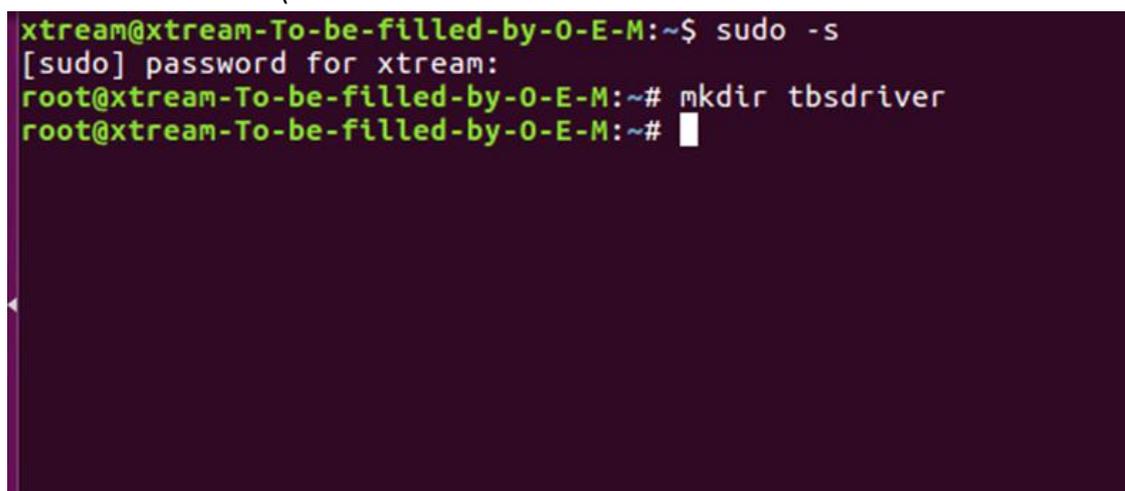
4.2   # lspci -vvv | grep 6281se (This command detects whether there is "Device 6281se", displaying as the following webui.)
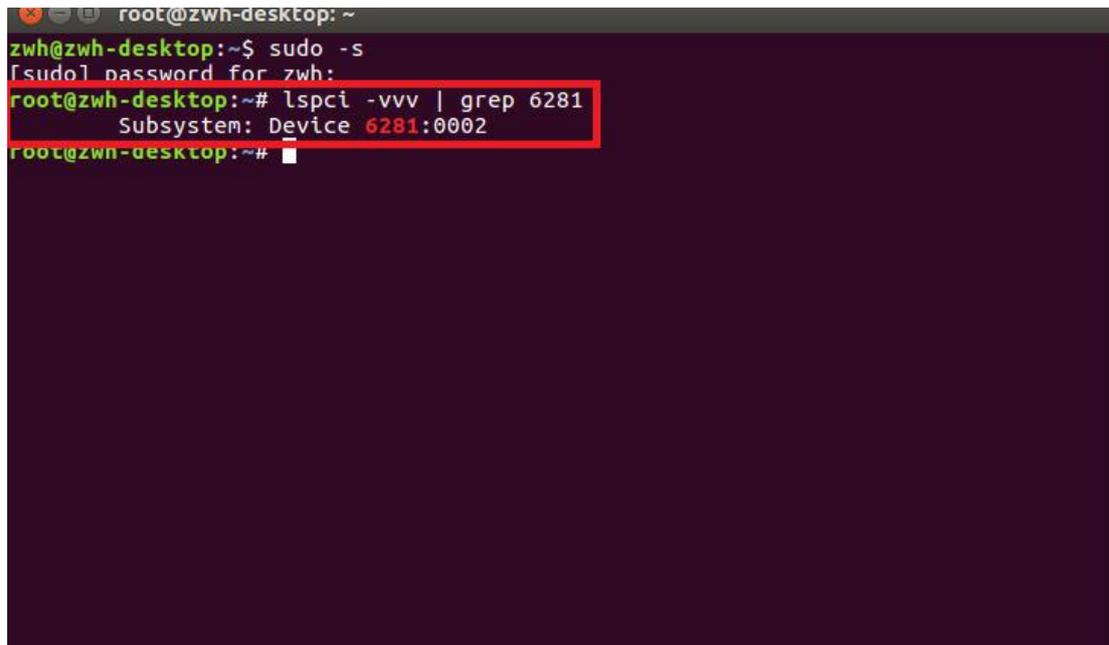
4.3   Set up a directory named "tbsdriver". Here takes saving the directory on the desktop as an example.

 # mkdir tbsdriver   (See screenshot below.）

4.4 Execute the command and install "git" package. (See screenshot below.)

apt-get install git

4.5 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

4.6   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-O-E-M:~/Desktop/tbsdriver# ls
media  media_build
root@xtream-To-be-filled-by-O-E-M:~/Desktop/tbsdriver# cd media_build/
root@xtream-To-be-filled-by-O-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
```

4.7   # make distclean（See screenshot below.）

```
root@xtream-To-be-filled-by-O-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/firmwa
re'
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
```

4.8 # make -j4

```
root@xtream-To-be-filled-by-O-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
```

4.9 # make install   (See screenshot below.）

```
root@xtream-To-be-filled-by-O-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:
```

4.10   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 the below screenshot.

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

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

4.11 Execute 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

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

6. Use dvblast under Linux Operational Environment

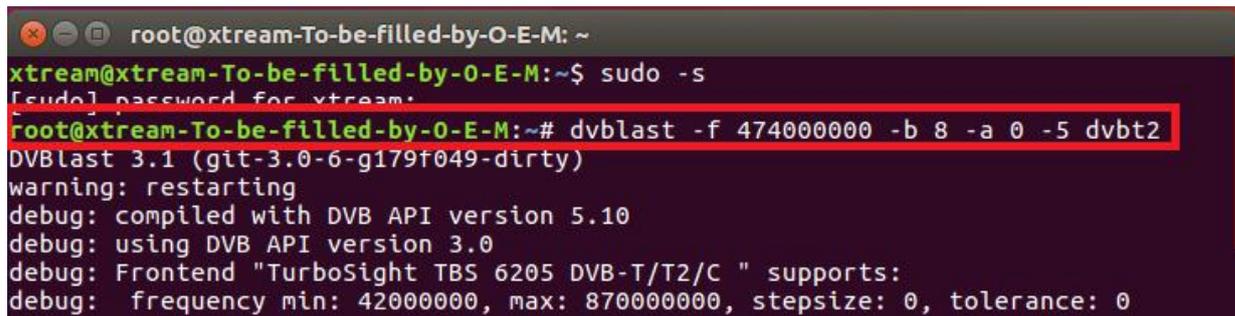Please connect the required TV signal cable to RF-Input with the purpose of locking TV channels.

6.1 Lock TV Channels from DVB-T Signal (See screenshot below.)
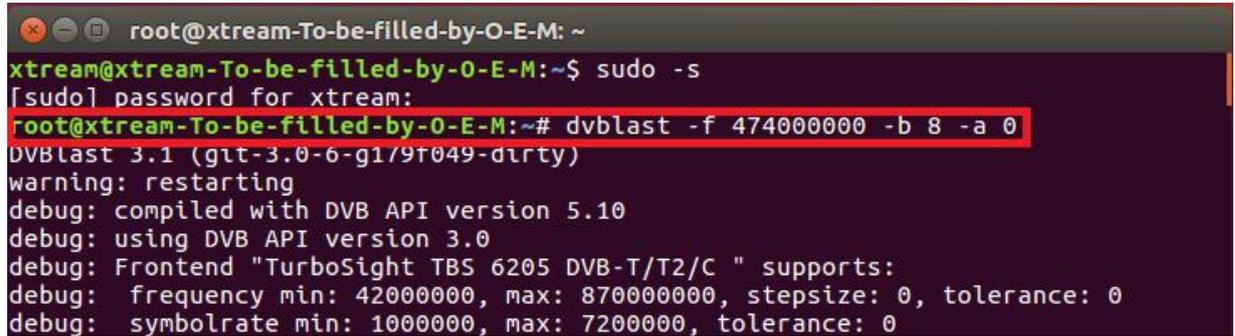
dvblast -f 474000000 -b 8 -a 0
dvblast -f 474000000 -b 8 -a 1

6.2 Lock TV Channels from DVB-T2 Signal (See screenshot below.)

dvblast -f 474000000 -b 8 -a 0 -5 dvbt2
dvblast -f 474000000 -b 8 -a 1 -5 dvbt2

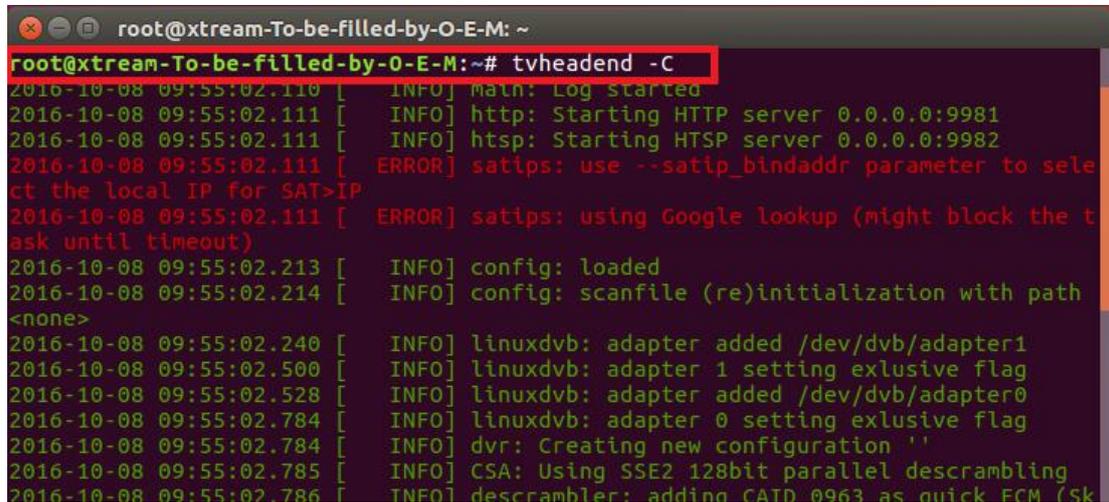### 6.3 Lock TV Channels from DVB-C Signal (See screenshot below.)
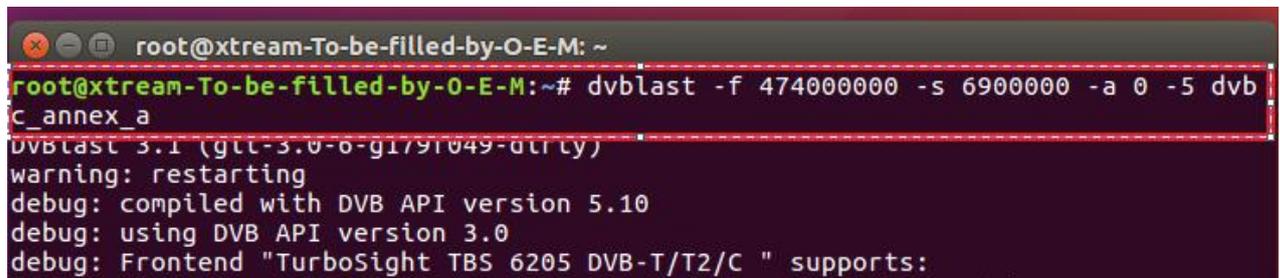
dvblast -f 474000000 -s 6900000 -a 0 -5 dvbc_annex_a
dvblast -f 474000000 -s 6900000 -a 1 -5 dvbc_annex_a

7. Tvheadend User Guide

7.1   Connect the required TV signal cable to RF-Input, then install tvheadend software driver and run tvheadend-C. (See screenshot below.)

7.2   Launch Firefox browser, input the IP address of your PC and port number 9981 as below, then you can log in tvheadend configuration webui. (See the following screenshot.）
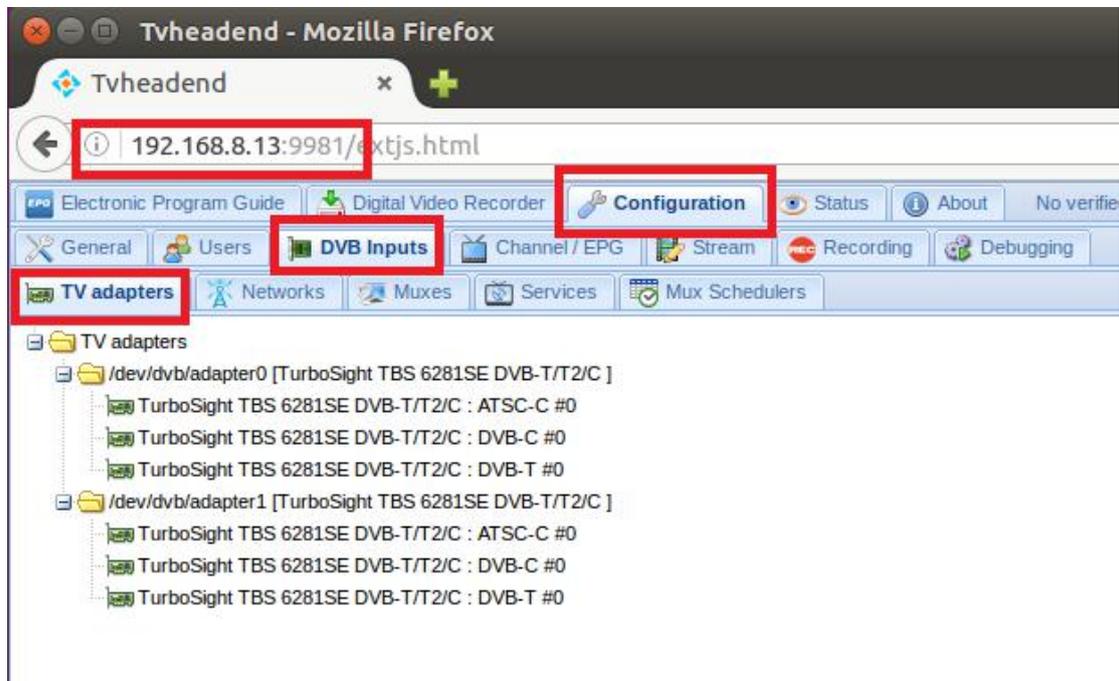
7.3   Log in "Networks", set the right "Network Name" with product model number and required TV signal via LNB, and then save it.（See screenshot below.）
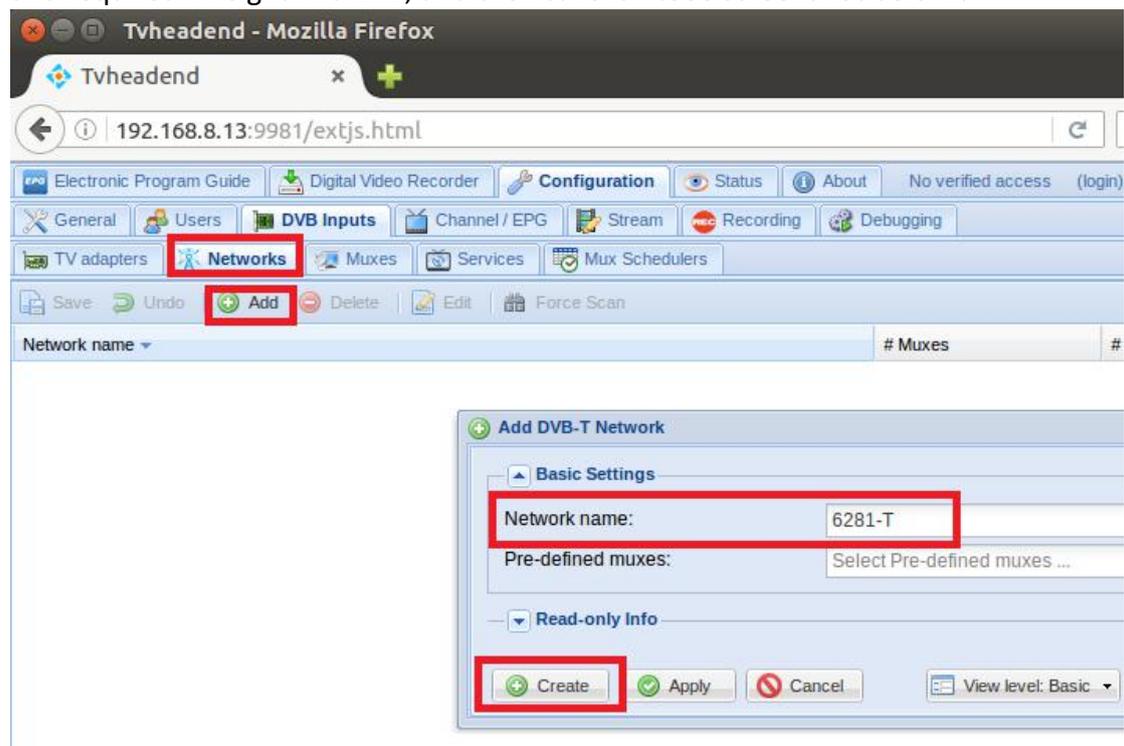
7.4   Log in "Muxes", setup freq. parameters and save it.（See screenshot below.）
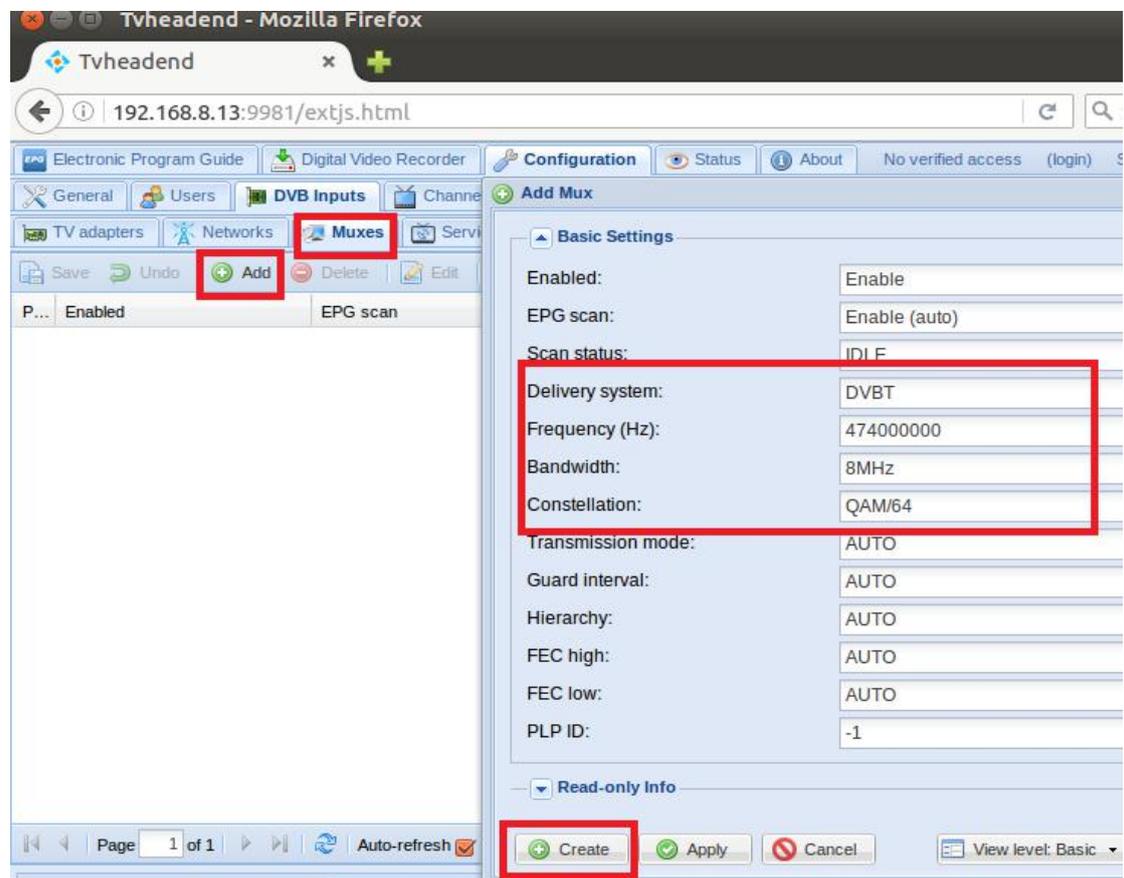
7.5 Double click "TurboSight TBS 6281SE DVB-T，tick "Enabled" and "Save" as below. (The the following screenshot is for your reference.)
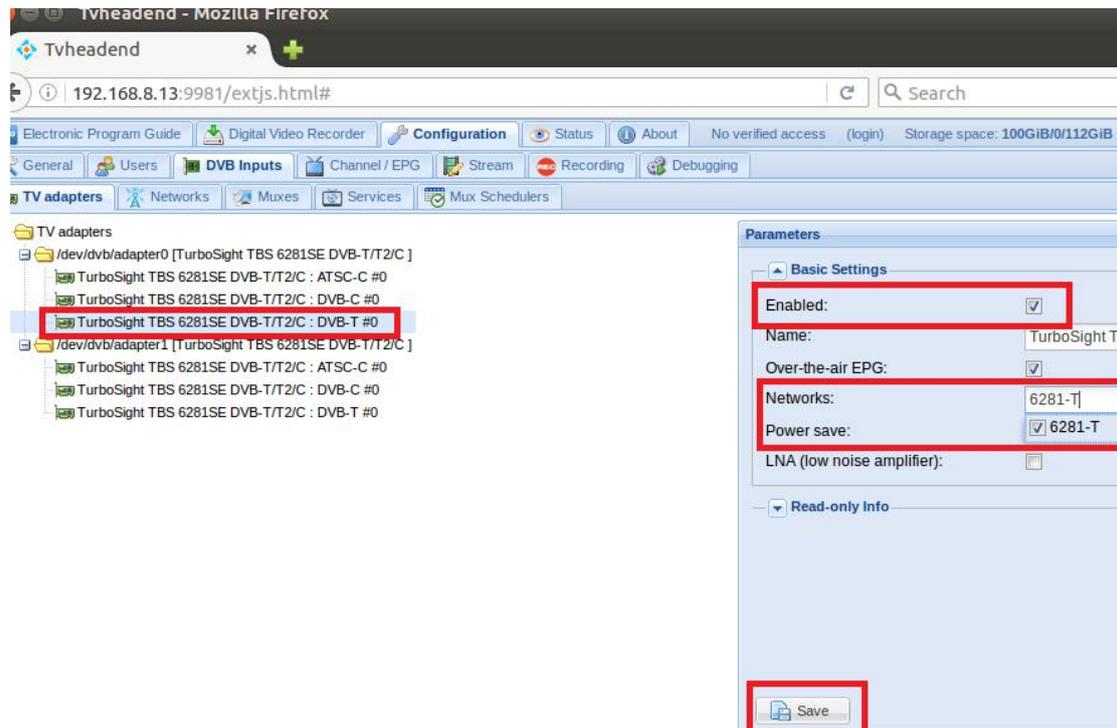
7.6 If you want to play the DVB-C signal, please perform the 7.3~7.4 step first, set up the C signal and the frequency point you need, and close the 7.5 step DVB-T signal channel. Application DVB- C signal channel, and save (as shown in Figure)
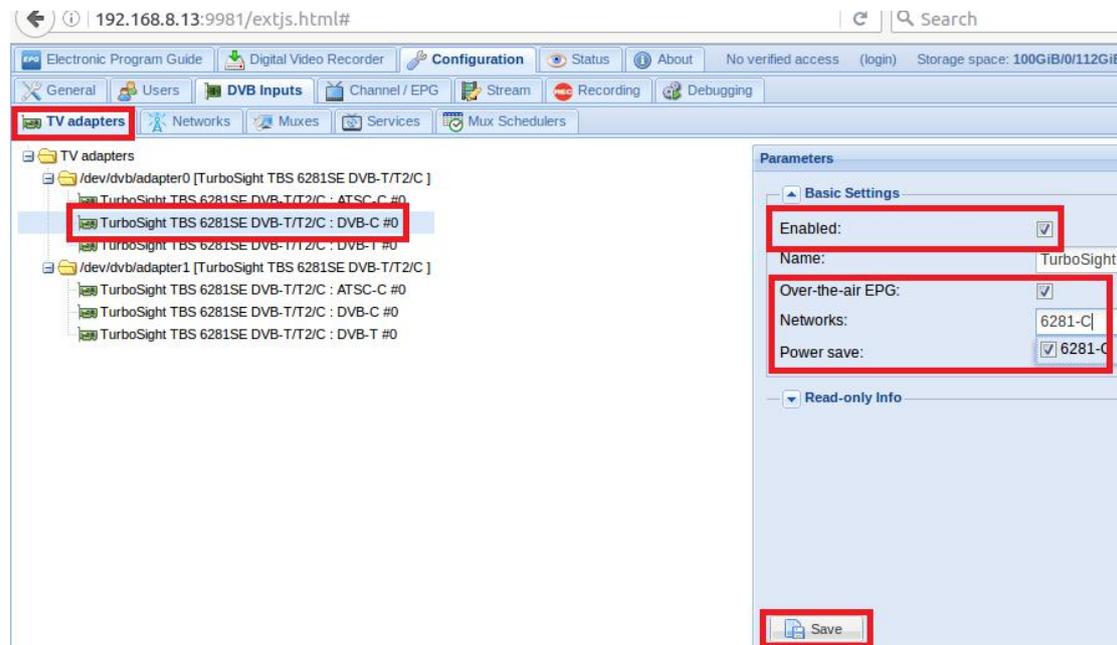
7.7 Log in "Networks" and then click "Force Scan" to lock TV channels. （See screenshot below.）

7.8 Log in "Services", you can live streaming all the TV programs that you would like to watch in "Map services". (See screenshot below.)
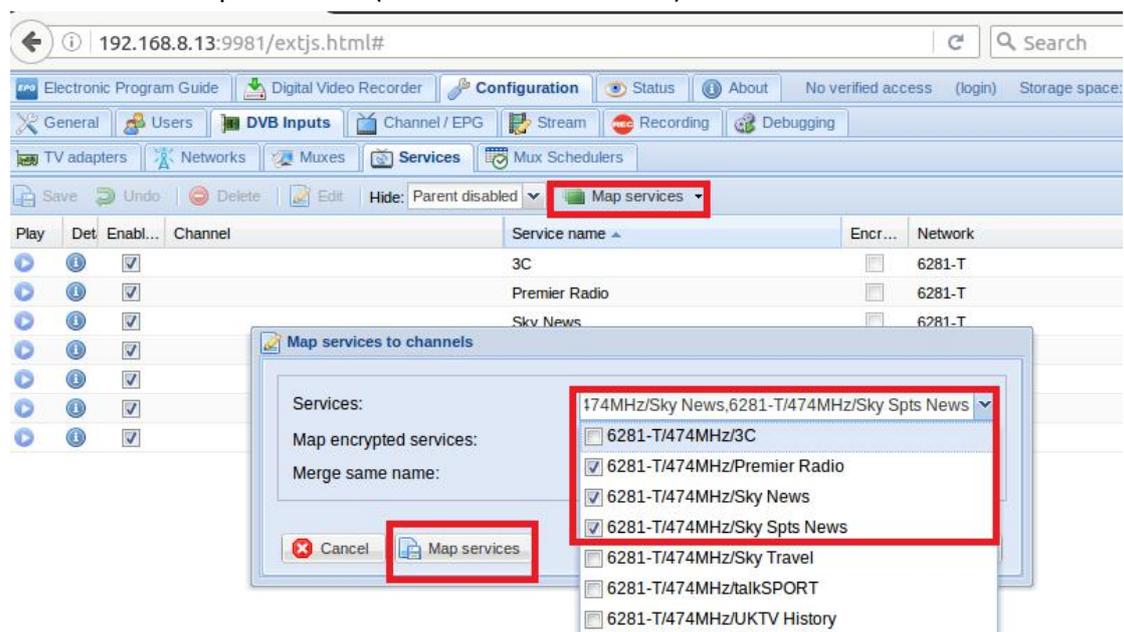
7.9 If you would like to broadcast other satellite programs, please set up the right configuration parameters according to "tvheadend 7.3-7.8" steps.

8. Astra User Guide

8.1　Open Firefox browser, input the IP address of your PC and port number 8010 as below, then you can log in astra configuration webui. (See the following screenshot.）


8.2　Create a new "Adapters" and then set the right satellite TV signal and frequency parameters via LNB, finally click "Apply". (See screenshot below.)
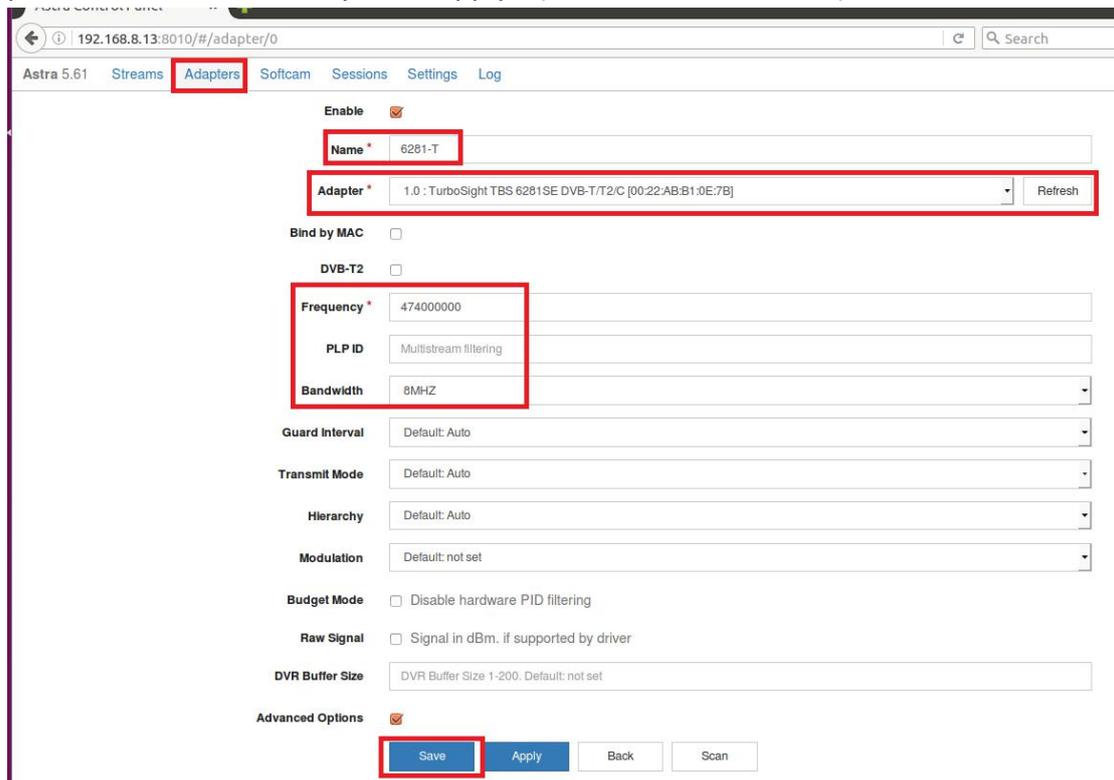
8.3   Log in "Adapters" again. If the LNB signal indication pops up in the window, you have successfully completed the configuration. Click it and enter into the operation interface. (See screenshot below.)

8.4   Log in "Adapters" to scan TV channels, and then select the programs that you would like to watch. Finally click "Save" as below.
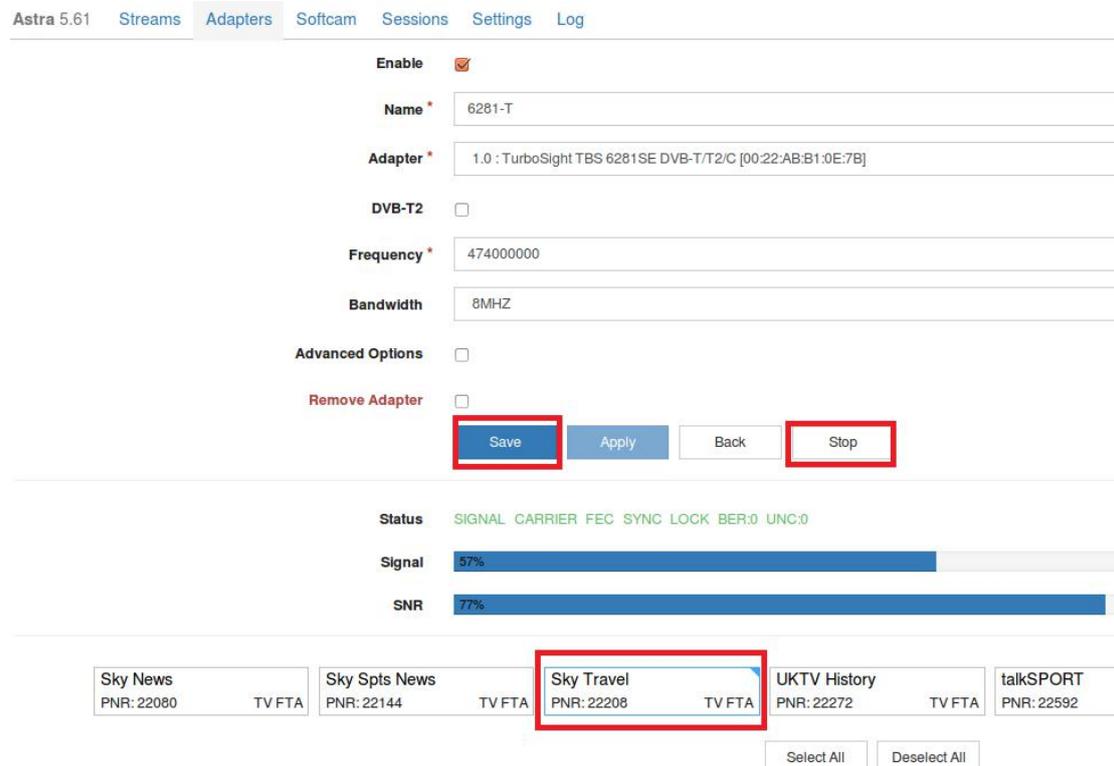
8.5   Save all the selected TV programs, you will find them in "Streams". Then please set the output protocol according to your needs. Finally click "Apply" as below.
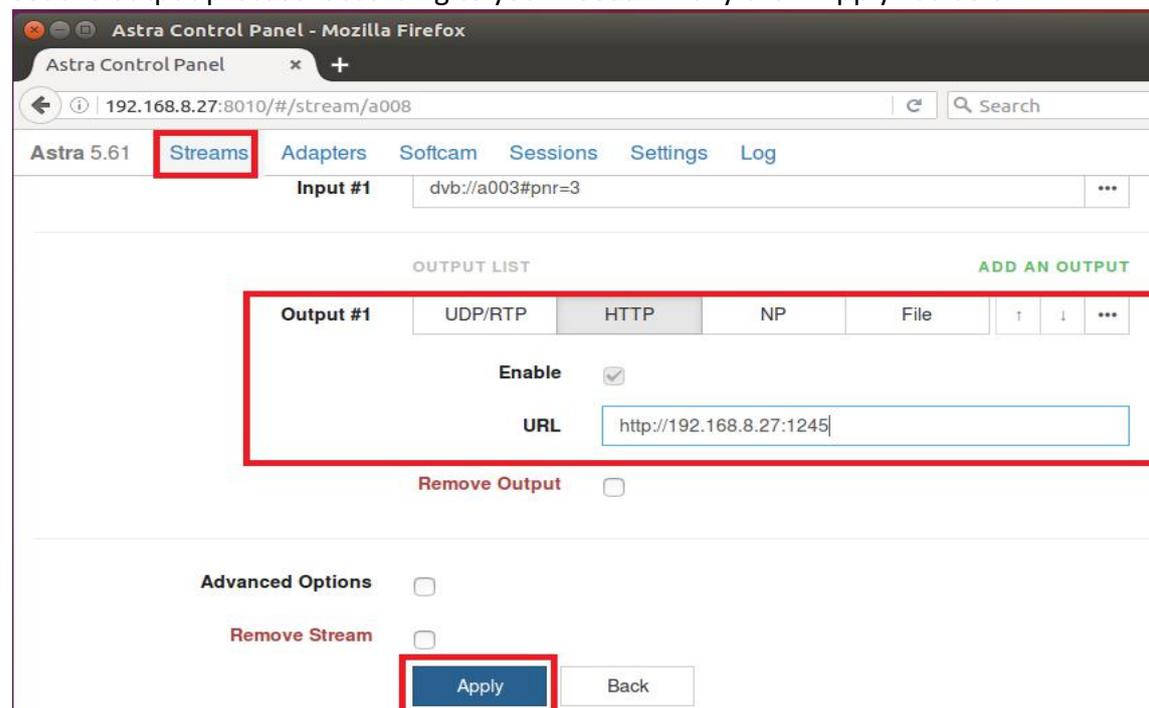
8.6 note: Astra software only supports the default signal for tuning cards. If you tune the card to support multiple signals, you need to tvheadend or dvblast and other software, the first scan you need to signal, and then back to Astra to set up your new signal

9.   Open Source install tips

/bin/sh: 1: lsdiff: not found
   #sudo apt-get install patchutils

2.you may need to install the Proc::ProcessTable module
#sudo apt-get install libproc-processtable-perl

3.fatal error: drx39xyj/drx39xxj.h: No such file or directory
#mkdir -p v4l/drx39xyj
#cp v4l/drx39xxj.h v4l/drx39xyj/

4.Can not find the 6909 firmware
#Do not forget the firmware install steps

5.If you find module load errors like "module has wrong symbol version" means that there still are old modules from your previous media tree installation (usually duplicated modules in two different places).
#sudo rm -rf lib/modules/uname -r/kernel/drivers/media/*

6.Cannot use CONFIG_CC_STACKPROTECTOR_STRONG: -fstack-protector-strong not supported by compiler
#sudo add-apt-repository ppa:ubuntu-toolchain-r/test
#sudo apt-get update
#sudo apt-get install gcc-4.9 g++-4.9
#sudo rm /usr/bin/gcc sudo ln -s /usr/bin/gcc-4.9 /usr/bin/gcc`

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 feel free using 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.zi
p
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 refer to attached pics to change some pcie setting on BIOS and update the
BIOS to the latest version. make sure set the PCI-E link speed to Gen1 like this ,as
most users after set the BIOS it can detect our card 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+.