

Professional DVBS/S2 Tuner Card User Guide

Dear Customers,

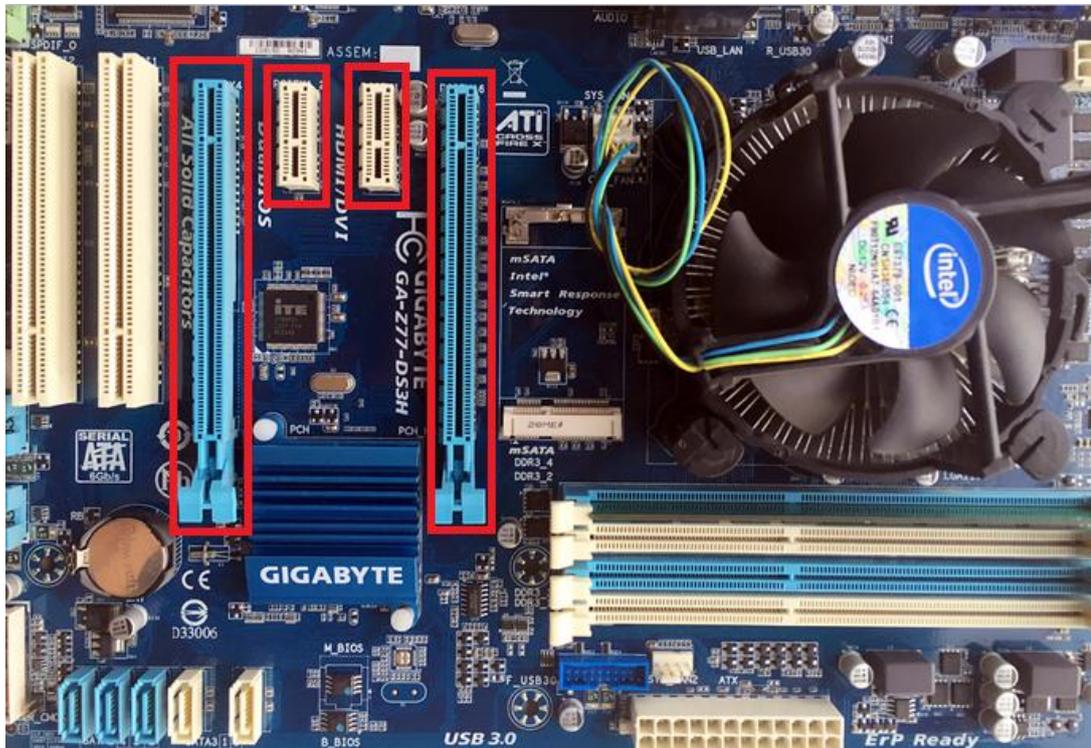
TBS6908, TBS6903, TBS5927 is a professional level digital satellite TV Tuner card with PCI Express or USB interface. It supports not only normal DVB-S/S2 QPSK, 8PSK which is supported by normal satellite receivers, but also CCM, ACM, VCM, Multi-Input Stream, 16APSK, 32APSK, Generic Stream Mode, which most satellite receiving devices can't support. With use of dedicated TBS tools, those special streams can be captured.

TBS6908 is a Quad tuner PCIe card, TBS6903 is a Dual PCIe card, and TBS5927 is an USB single tuner card. In order to use this item correctly, please read this 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, all kinds of pcie slots like PCIEX1,PCIEX4,PCIEX8 or PCIEX16 is suitable for our card. Finally, put computer cover back and turn on your computer.



1.2 Connect satellite signal Cable to the PCI-e card on your PC

Please make sure connected the correct signal to corresponding tuner input. The following is sequence of the TBS5927 tuner:

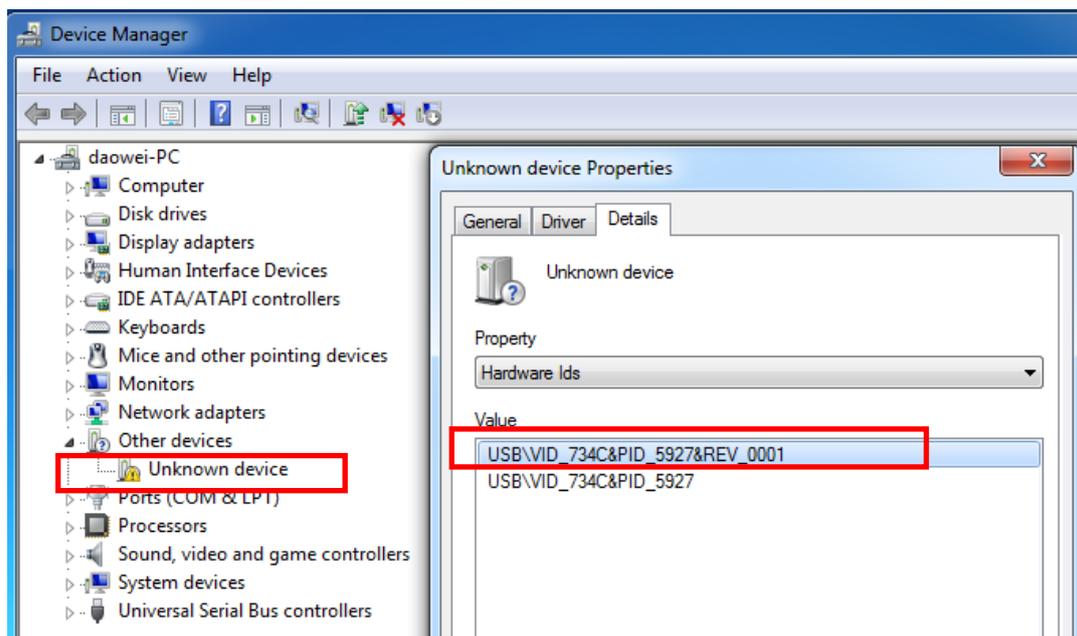


2. windows driver installation

2.1 Start your PC and jump to “Computer Management”. There will pop up an unknown device “Multimedia Controller” in “Other devices” item before the driver install.

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. Every product have its own private hardware ID.

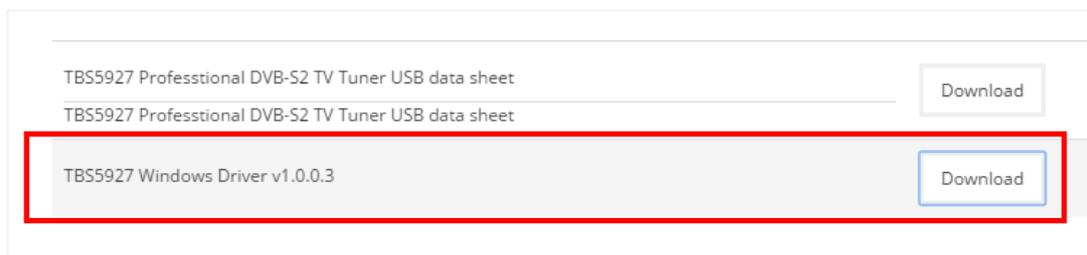
Please kindly see the following screenshot for your reference.



2. 2 Download TBS5927 Windows Driver from Our Website

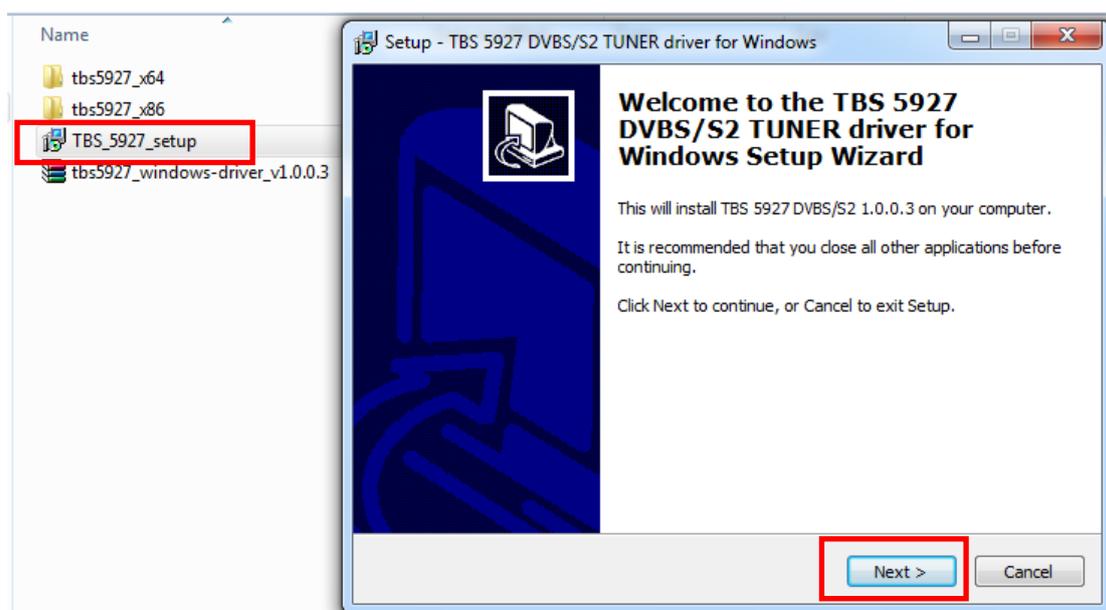
1) http://www.tbsiptv.com/download/tbs5927/tbs5927_windows-driver_v1.0.0.3.zip

TBS5927 Professional DVB-S2 TV Tuner USB

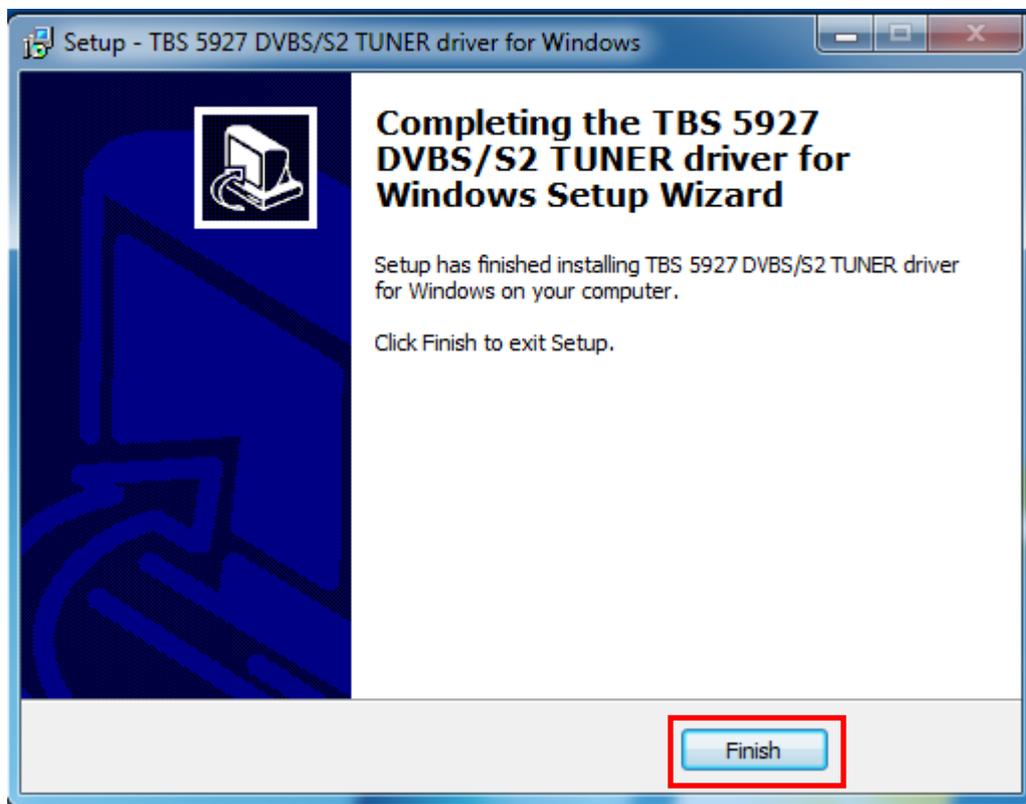
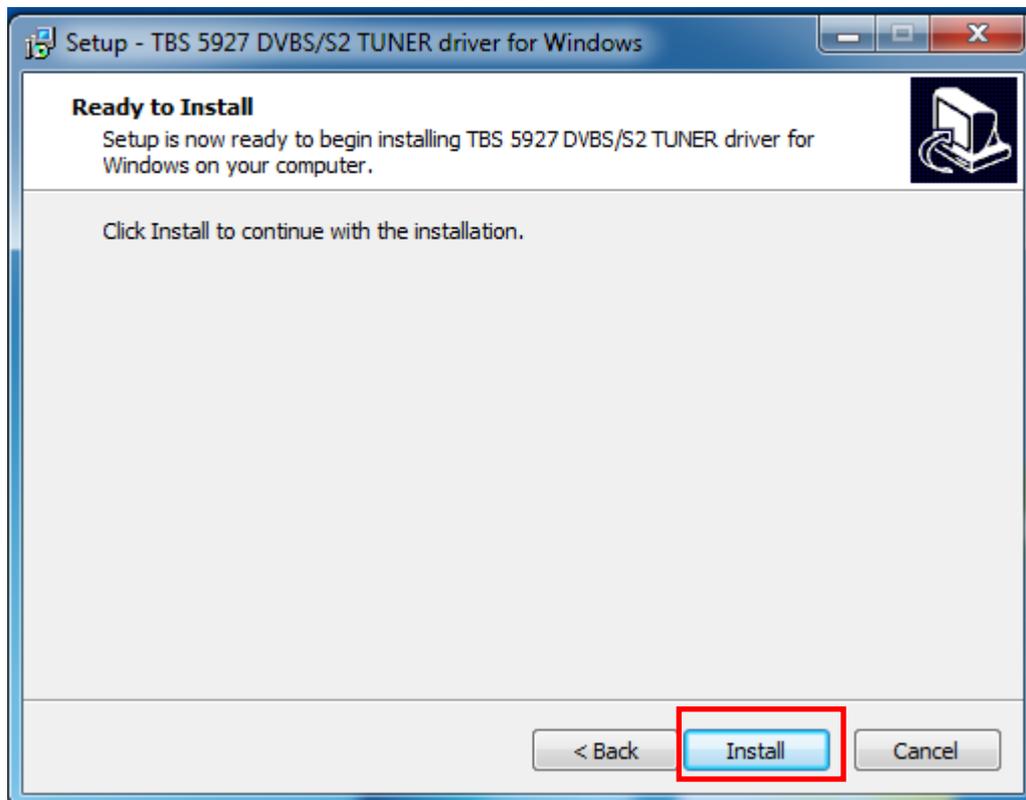


2) Download and then extract tbs5927_windows_driver_v1.0.0.3.zip

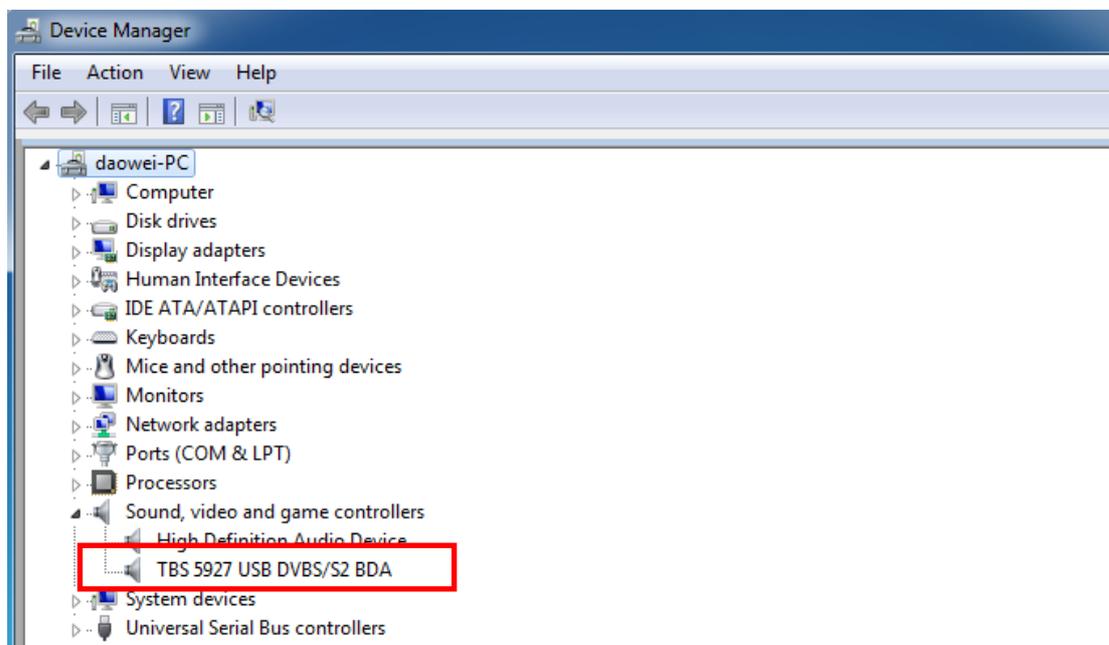
3) Click “TBS_5927_driver_setup”, and then a new window will pop up



4) Click “Next”→ “Install”→ “Finish” to complete installation



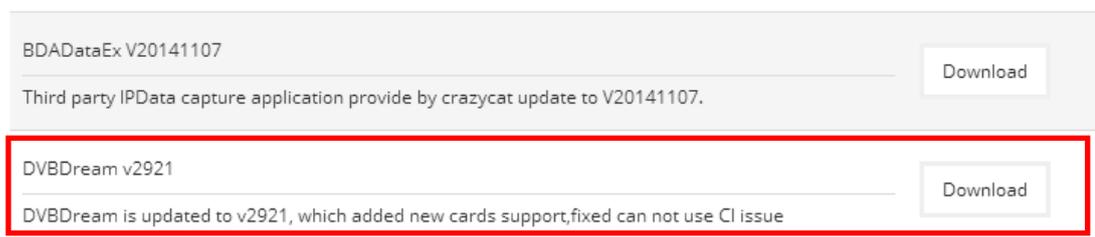
5) To verify if the driver was correctly installed: Choose “My Computer”, right click and choose “System Properties” to pop up “System Properties” windows, click “Hardware” → “Device Manager”. Then click “+” in front of “Sound, video and game controllers”. If you can see “TBS5927 USB DVBS/S2 BDA Tuners” 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.

Now, we take DVBDream as an example to show you how to scan multistream. First, install a DVBDream, you can download it from our website:



The satellite is Eutelsat 5 West A at 5.0°W, we select one of transponders 11179000, V, 30000000, 3/5, in this picture you can see more informations about it:

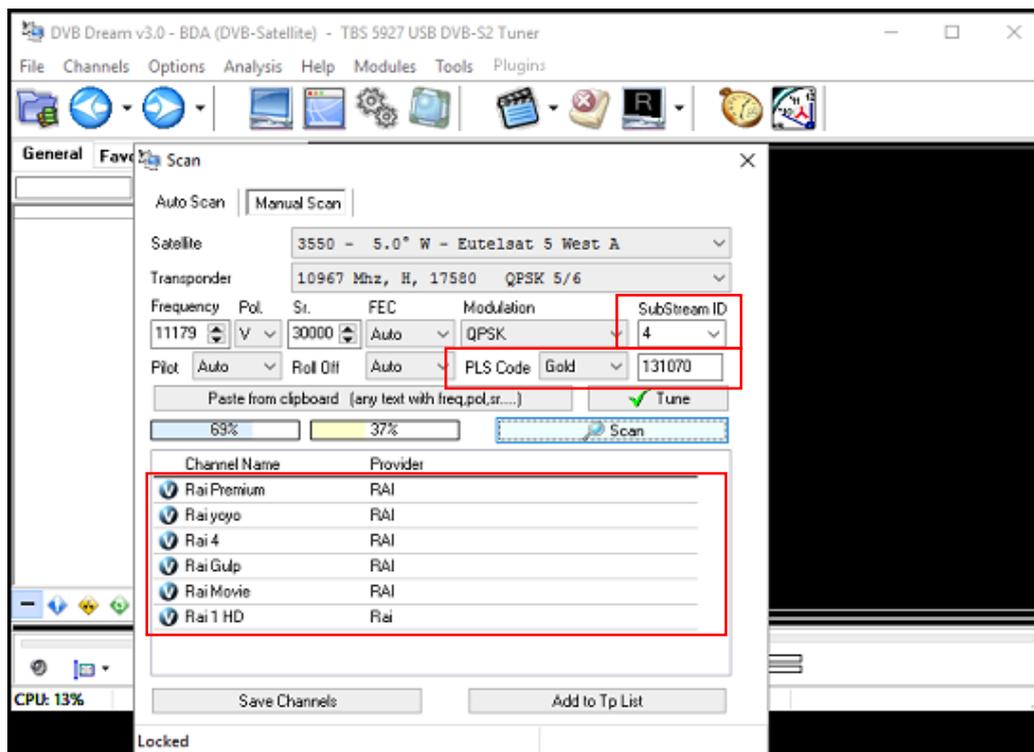
PLS gold=131070;

Stream ID=4,5,12;

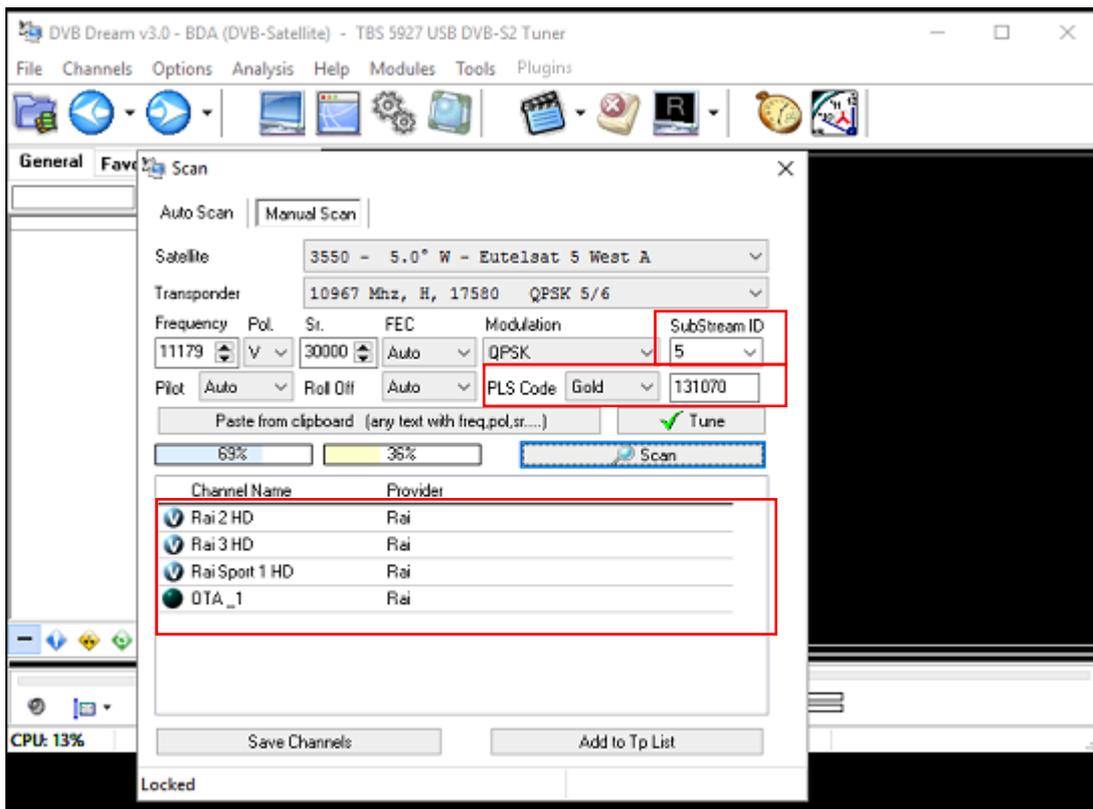
Details please check the next screen:

11179 V tp KC6 Super 0	Rai	RAI	DVB-S2 PLS gold 131070 multistream stream 4	30000-3/5 ACM			318-4	D Lita 160507
		Rai Premium	F	MPEG-2	8581	431	441 I	
		Rai Yoyo	F	MPEG-2	8582	432	442 I	
		Rai 4	F	MPEG-2	8583	433	443 I	
		Rai Gulp	F	MPEG-2	8584	434	445 I	
		Rai Movie	F	MPEG-2	8585	435	446 I	
		Rai 1	F	MPEG-4/HD	8588	438	450 orig 645 I AC3	
11179 V tp KC6 Super 0	Rai	RAI	DVB-S2 PLS gold 131070 multistream stream 5	30000-3/5 ACM			318-5	Lexzie 161023
		Rai 2	F	MPEG-4/HD	8592	532	542 I AC3	
		Rai 3	F	MPEG-4/HD	8593	533	543 I AC3	
		Rai Sport 1	F	MPEG-4/HD	8599	539	549 I 649 I AC3	
11179 V tp KC6 Super 0	Rai	RAI	DVB-S2 PLS gold 131070 multistream stream 12	30000-3/5 ACM			0-210	D Lita 160507
		Rai 3 Campania	F	MPEG-2	3303	514	652 I	

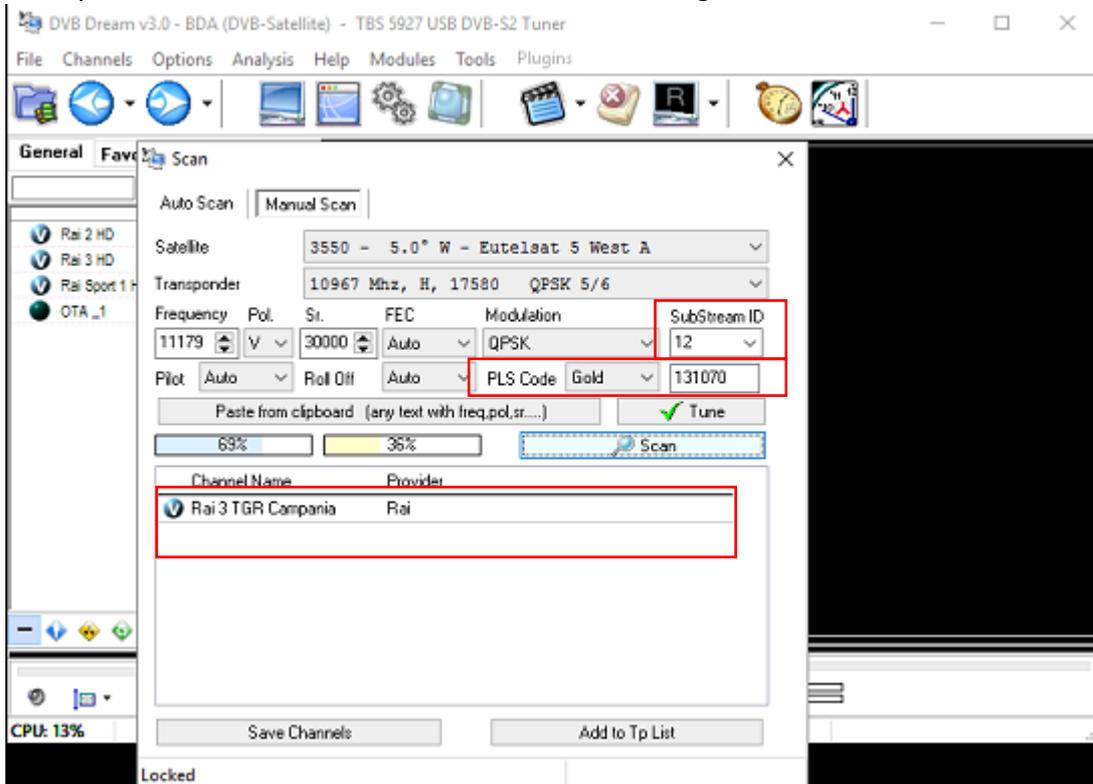
Now open your DVBDream, set your satellite in “Options”—“Diseq”, then click “Channels”—“Manual Scan”. In this dialog, you need to enter the correct transponder’s information, including Frequency, Symbol rate, Modulation, FEC, PLS Code. Then click “Tune” button first, when it’s in locked status , select a stream ID, click “Scan”, don’t forget to save your channels at last:
Transponder 1: 11179000, V, 30000000, S2, 3/5, PLS gold=131070, Stream=4;



Transponder 2: 11179000, V, 30000000, S2, 3/5, PLS gold=131070, Stream=5;



Transponder 3: 11179000, V, 30000000, S2, 3/5, PLS gold=131070, Stream=12;



Here is a link is for downloading Player software. For detailed 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:

- ① In 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, try to clean it by an eraser.
- ② Don'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 # lsusb -vvv | grep 5927 (This command detects whether there is "Device 5927", displaying as the following webui.)

```
zwh@zwh-Super-Server:~$  
zwh@zwh-Super-Server:~$ lsusb -vvv | grep 5927  
Couldn't open device, some information will be missing  
Couldn't open device, some information will be missing  
Couldn't open device, some information will be missing  
Bus 002 Device 004: ID 734c:5927 TBS Technologies China  
Couldn't open device, some information will be missing  
idProduct 0x5927  
Couldn't open device, some information will be missing  
Couldn't open device, some information will be missing  
zwh@zwh-Super-Server:~$
```

4.3 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:~#
```

4.4 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
  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:~#
```

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
```

```
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.com/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)
```

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-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
```

4.7 # 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
```

4.8 # 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
```

4.9 # 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:
```

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) #wgethttp://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
root@zhangweihua:~/Desktop/tbsdriver# tar jxvf tbs-tuner-firmwares_v1.0.tar.bz2
-C /lib/firmware/
dvb-demod-drxk-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-vsbs-1.0.8.fw
dvb-fe-drxj-mc-vsbs-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-vsbs.fw
dvb-fe-or51211.fw
```

4.11 Executed all the above commands, you should have completed driver installation. Reboot your computer and enter the following command to check if the adapters are loaded successfully.

```
# reboot
# dmesg | grep frontend
```

```
zwh@zwh-Super-Server:~$
zwh@zwh-Super-Server:~$
zwh@zwh-Super-Server:~$ dmesg | grep frontend
[ 38.403397] dvb-usb: no frontend was attached by 'TurboSight TBS 5927 DVB-S/S2'
[ 40.520581] usb 2-1.6: DVB: registering adapter 0 frontend 0 (TurboSight TBS 5927 DVB-S/S2)...
zwh@zwh-Super-Server:~$
```

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/

```

6. Open Source install tips

1./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`

7. Use dvblast under Linux Operational Environment

7.1 Dvblast to the normal stream:

Lock TV Channels from DVB-S Signal:

```
# dvblast -f 12538000 -s 41250000 -v 13 -a 0 (V signal)
```

```
daowei@daowei-All-Series:~$  
daowei@daowei-All-Series:~$  
daowei@daowei-All-Series:~$ dvblast -f 12538000 -s 41250000 -v 13 -a 0
```

```
# dvblast -f 12429000 -s 3330000 -v 18 -a 1( H signal):
```

```
daowei@daowei-All-Series:~$  
daowei@daowei-All-Series:~$ dvblast -f 12429000 -s 3330000 -v 18 -a 1
```

Lock TV Channels from DVB-S2 Signal:

```
# dvblast -f 12660000 -s 45000000 -v 13 -m psk_8 -a 3 (V signal):
```

```
daowei@daowei-All-Series:~$  
daowei@daowei-All-Series:~$ dvblast -f 12660000 -s 45000000 -m psk_8 -v 13 -a 2
```

```
# dvblast -f 12630000 -s 43200000 -v 18 -m psk_8 -a 4 (H signal):
```

```
daowei@daowei-All-Series:~$  
daowei@daowei-All-Series:~$ dvblast -f 12630000 -s 43200000 -m psk_8 -v 18 -a 3
```

7.2 DVblast to scan MIS stream:

If you want to scan MIS by DVblast need some changes, here is the detail information for DVB-S2 MIS or DVB-T2 PLP.

actually, DVblast does support MIS, but needs small patch. Here is how to fix DVblast, it needs 2 lines patched to support MIS/PLS properly. So, in source code file:

<https://github.com/gfto/dvblast/blob/master/dvb.c>

the following changes needs to be done:

```
1>
```

```
#define DTV_STREAM_ID 42
```

must be:

```
#define DTV_STREAM_ID 43
```

2>

#define MIS 9

needs to be:

#define MIS 8

7.3 After did some changes with DVblast, we can go to lock. The satellite is same one as we take an example in DVbdream, the transponder is 11179000, V, 30000000, PLS gold=131070;

Stream ID=4,5,12;

Transponder 1: 11179000, V, 30000000, Stream ID=4:

./dvblast -f 11179000 -s 30000000 -v 13 -m psk_8 -1 0x402004 -a 0

```
debug: frontend has acquired signal
debug: frontend has acquired carrier
debug: frontend has acquired stable FEC
debug: frontend has acquired sync
info: frontend has acquired lock
lock status: 1
debug: - Bit error rate: 0
debug: - Signal strength: 40016
debug: - SNR: 27224
debug: new PAT tsid=4 version=0
debug: * NIT pid=16
debug: * program number=8581 pid=421
debug: * program number=8582 pid=422
debug: * program number=8583 pid=423
debug: * program number=8584 pid=424
debug: * program number=8585 pid=425
debug: * program number=8588 pid=428
debug: end PAT
debug: new SDT actual tsid=4 version=0 onid=318
debug: * service sid=8581 running=4
debug:   - desc 48 service type=0x1 provider="RAI" service="Rai Premium"
debug: * service sid=8582 running=4
debug:   - desc 48 service type=0x1 provider="RAI" service="Rai yoyo"
debug: * service sid=8583 running=4
debug:   - desc 48 service type=0x1 provider="RAI" service="Rai 4"
debug: * service sid=8584 running=4
debug:   - desc 48 service type=0x1 provider="RAI" service="Rai Gulp"
debug: * service sid=8585 running=4
debug:   - desc 48 service type=0x1 provider="RAI" service="Rai Movie"
debug: * service sid=8588 running=4
debug:   - desc 48 service type=0x1 provider="Rai" service="Rai 1 HD"
debug: end SDT
```

Transponder 2: 11179000, V, 30000000, Stream ID=5:

```
# ./dvblast -f 11179000 -s 30000000 -v 13 -m psk_8 -1 0x402005 -a 0
```

```
info: frontend has acquired lock
lock status: 1
debug: - Bit error rate: 0
debug: - Signal strength: 40016
debug: - SNR: 26568
debug: new PAT tsid=5 version=8
debug: * NIT pid=16
debug: * program number=8592 pid=525
debug: * program number=8593 pid=553
debug: * program number=8599 pid=529
debug: * program number=8600 pid=229
debug: end PAT
debug: new SDT actual tsid=5 version=6 onid=318
debug: * service sid=8592 running=4
debug:   - desc 48 service type=0x1 provider="Rai" service="Rai 2 HD"
debug: * service sid=8593 running=4
debug:   - desc 48 service type=0x1 provider="Rai" service="Rai 3 HD"
debug: * service sid=8599 running=4
debug:   - desc 48 service type=0x1 provider="Rai" service="Rai Sport 1 HD"
debug: * service sid=8600 running=4
debug:   - desc 48 service type=0xc provider="Rai" service="OTA _1"
debug: end SDT
debug: new NIT actual networkid=12289 version=2
debug:   - desc 40 networkname="Rai"
debug: * ts tsid=5 onid=318
debug:   - desc 41 service_list sid=8599 type=0x01
debug:   - desc 41 service_list sid=8592 type=0x01
debug:   - desc 41 service_list sid=8593 type=0x01
debug:   - desc 5a dvb-t frequency=5000000000 Hz bandwidth=8 MHz priority=HP timeslicing=0 mpegfec=0
debug:   - desc 83 unknown length=12 value=2197fe2d2190fdf62191fdf7
debug: end NIT
```

Transponder 3: 11179000, V, 30000000, Stream ID=12:

```
# ./dvblast -f 11179000 -s 30000000 -v 13 -m psk_8 -1 0x40200c -a 0
```

```
debug: MULTISTREAM
debug: delivery systems:
debug: DVBS
debug: DVBS2
debug: DSS
debug: frequency 11179000 is in Ku-band (lower)
debug: configuring LNB to v=13 p=0 satnum=0 uncommitted=0
debug: tuning DVB-S frontend to f=11179000 srate=30000000 inversion=-1 fec=999 rolloff=35 modulation=psk_8 pilot=-1 mis=4202508
warning: failed opening CAM device /dev/dvb/adapter0/ca0 (No such file or directory)
debug: setting filter on PID 0
debug: setting filter on PID 16
debug: setting filter on PID 17
debug: setting filter on PID 18
debug: setting filter on PID 19
debug: setting filter on PID 20
error: no config file
debug: frontend has acquired signal
debug: frontend has acquired carrier
debug: frontend has acquired stable FEC
debug: frontend has acquired sync
info: frontend has acquired lock
lock status: 1
debug: - Bit error rate: 0
debug: - Signal strength: 40016
debug: - SNR: 26240
debug: new PAT tsid=210 version=2
debug: * program number=3303 pid=256
debug: end PAT
debug: new SDT actual tsid=210 version=0 onid=260
debug: * service sid=3303 eit_pf running=4
debug:   - desc 48 service type=0x1 provider="Rai" service="Rai 3 TGR Campania"
debug: end SDT
```

For these parameters “-1 0x402004”, “-1 0x402005”, “-1 0x40200c”, it’s MIS id. Here’s the calculation:

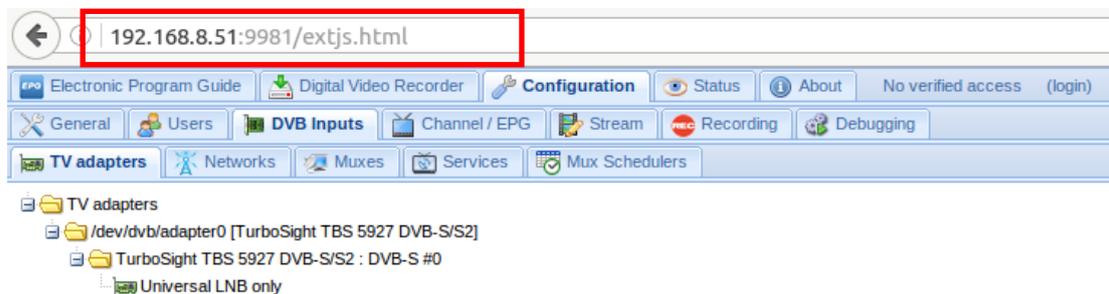
mis_id = pls_mode << 26 | pls_code << 8 | isi_id

8. Tvheadend User Guide

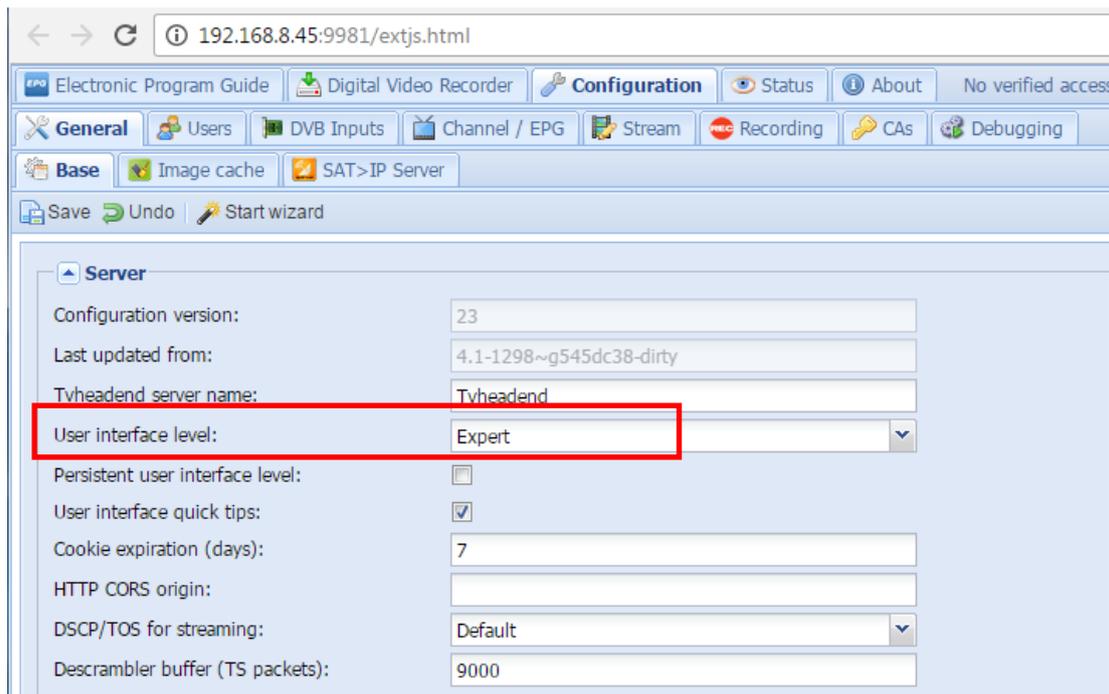
- 8.1 Connect the required TV signal cable to LNB-Input
- 8.2 Install and Run tvheadend-C software driver (See screenshot below.)

```
root@xtream-To-be-filled-by-O-E-M: ~
root@xtream-To-be-filled-by-O-E-M:~# tvheadend -C
2016-10-08 09:55:02.110 [ INFO] Main: Log started
2016-10-08 09:55:02.111 [ INFO] http: Starting HTTP server 0.0.0.0:9981
2016-10-08 09:55:02.111 [ INFO] htsp: Starting HTSP server 0.0.0.0:9982
2016-10-08 09:55:02.111 [ ERROR] satips: use --satip_bindaddr parameter to select the local IP for SAT>IP
2016-10-08 09:55:02.111 [ ERROR] satips: using Google lookup (might block the task until timeout)
2016-10-08 09:55:02.213 [ INFO] config: loaded
2016-10-08 09:55:02.214 [ INFO] config: scanfile (re)initialization with path <none>
2016-10-08 09:55:02.240 [ INFO] linuxdvtb: adapter added /dev/dvb/adapter1
2016-10-08 09:55:02.500 [ INFO] linuxdvtb: adapter 1 setting exclusive flag
2016-10-08 09:55:02.528 [ INFO] linuxdvtb: adapter added /dev/dvb/adapter0
2016-10-08 09:55:02.784 [ INFO] linuxdvtb: adapter 0 setting exclusive flag
2016-10-08 09:55:02.784 [ INFO] dvr: Creating new configuration ''
2016-10-08 09:55:02.785 [ INFO] CSA: Using SSE2 128bit parallel descrambling
2016-10-08 09:55:02.786 [ INFO] descrambler: adding CAID 0963 as quick ECM (Sk
```

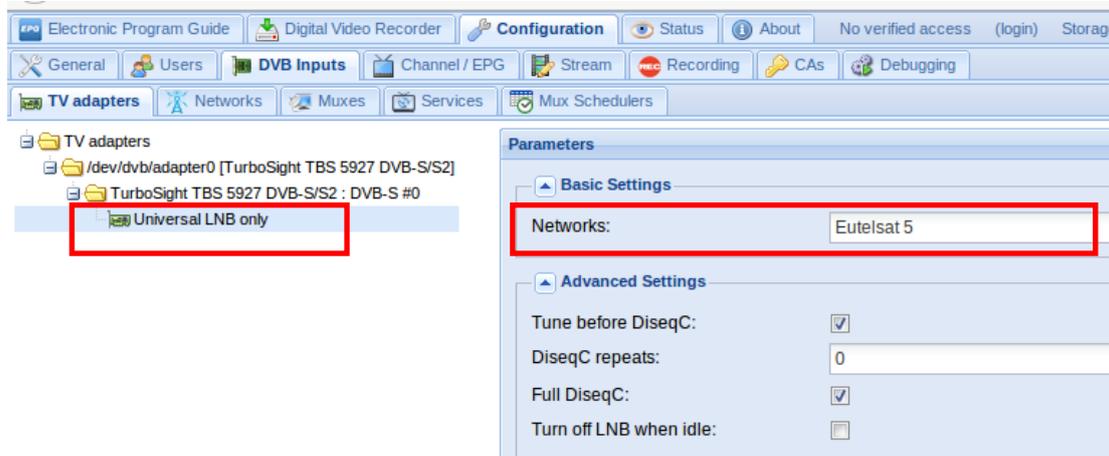
- 8.3 Open a browser like Firefox or Google Chrome, enter the IP address of your server and port number 9981 as below, then you can log in tvheadend configuration webpage. (See screenshot below.)



- 8.4 The default user mode is basic level, you can change it to expert user mode, then you can go to set some advanced settings, like this:



8.5 Click “Networks” item, select DVBS mode and add a network, enter a network name, if you don’t want to use “network discovery”, please don’t select it. After created a network, you need to add your network to the adapter. (See screenshot below.)



8.6 Click “Muxes” item add a new muxes. In this dialog box, please enter the correct transponder information including Frequency, Symbol rate, Modulation, FEC. PLS code, Stream ID, click “create” at last and wait a few seconds, the channels will be scanned out.(See the screenshot below.):

Transponder 1: 11179000, V, 30000000, 3/5, PLS code=131070, Stream ID=4;

Add Mux

Basic Settings

Enabled: Enable

EPG scan: Enable (auto)

Scan status: IDLE

Delivery system: DVB-S2

Frequency (kHz): 11179000

Symbol rate (Sym/s): 30000000

Polarization: V

Modulation: PSK/8

FEC: 3/5

Rolloff: AUTO

Pilot: AUTO

PLS mode: GOLD

Advanced Settings

Character set: Select Character set ...

Accept zero value for TSID:

ISI (Stream ID): 4

PLS code: 131070

The scan result, please check it in "Services" item:

Electronic Program Guide Digital Video Recorder Configuration Status About No verified access

General Users DVB Inputs Channel / EPG Stream Recording CAS Debugging

TV adapters Networks Muxes **Services** Mux Schedulers

Save Undo Delete Edit Hide: Parent disabl... Map services

...	Channel	Service name	Automatic chec...	Priori...	Encrypted	Type override	Network
▶	i	☑		Rai 1 HD	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	i	☑		Rai 4	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	i	☑		Rai Gulp	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	i	☑		Rai Movie	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	i	☑		Rai Premium	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	i	☑		Rai yoyo	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927

Transponder 2: 11179000, V, 30000000, 3/5, PLS code=131070, Stream ID=5;

Edit Mux

Basic Settings

Enabled: Enable

EPG scan: Enable (auto)

Delivery system: DVB-S2

Frequency (kHz): 11179000

Symbol rate (Sym/s): 30000000

Polarization: V

Modulation: PSK/8

FEC: 3/5

Advanced Settings

Scan status: IDLE

Character set: Select Character set ...

Rolloff: AUTO

Pilot: AUTO

Expert Settings

Accept zero value for TSID:

AC-3 detection: Standard

EIT - skip TSID check:

ISI (Stream ID): 5

PLS mode: GOLD

PLS code: 131070

Read-only Info

The scan result, please check it in "Services" item:

...	Channel	Service name	Automatic chec...	Priori...	Encrypted	Type override	Network
▶	ⓘ	☑		OTA_1	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai 1 HD	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai 2 HD	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai 3 HD	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai 4	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai Gulp	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai Movie	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai Premium	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai Sport 1 HD	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927
▶	ⓘ	☑		Rai yoyo	Auto check en...	0	<input type="checkbox"/>	Override disabl...	5927

Transponder 3: 11179000, V, 30000000, 3/5, PLS code=131070, Stream ID=12;

Add Mux

Enabled:

EPG scan:

Delivery system:

Frequency (kHz):

Symbol rate (Sym/s):

Polarization:

Modulation:

FEC:

Advanced Settings

Scan status:

Character set:

Rolloff:

Pilot:

Expert Settings

Accept zero value for TSID:

AC-3 detection:

EIT - skip TSID check:

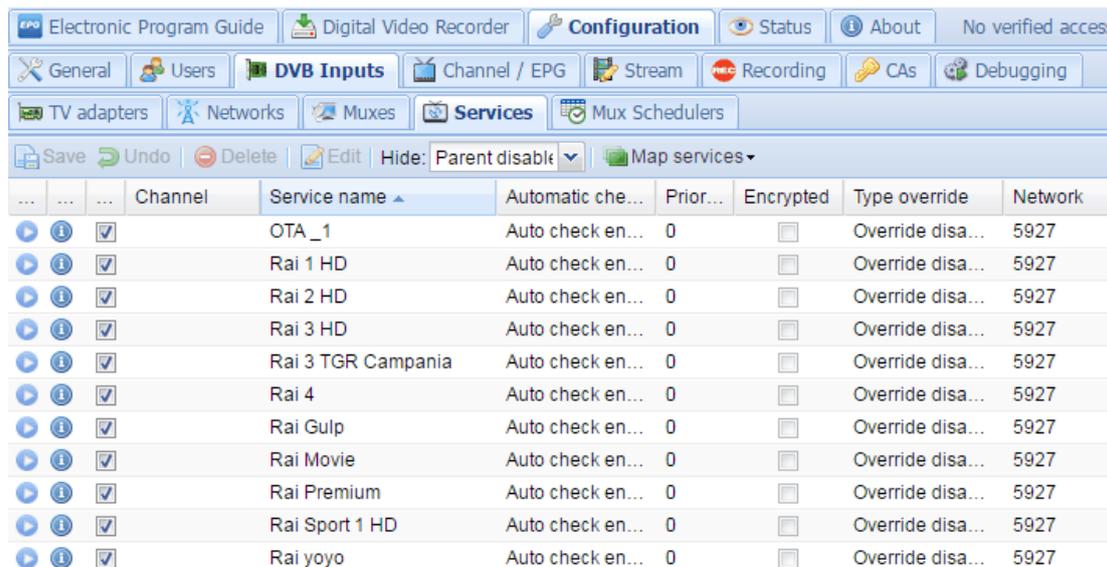
ISI (Stream ID):

PLS mode:

PLS code:

Read-only Info

Here's the scan result, please check it in "Services" item:



Channel	Service name	Automatic che...	Prior...	Encrypted	Type override	Network
...	OTA_1	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai 1 HD	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai 2 HD	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai 3 HD	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai 3 TGR Campania	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai 4	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai Gulp	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai Movie	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai Premium	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai Sport 1 HD	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927
...	Rai yoyo	Auto check en...	0	<input type="checkbox"/>	Override disa...	5927

For the normal stream, just use it as usual, you don't need to care about the PLS code and stream ID.

8.7 Click the "Services" item to check the the scan result, and pick these channels you want to map out.

8.8 Click your map out result in "Channel/EPG", now you can play your channels in media player which support network stream play like VLC. There are two ways to play your stream, the one is to play all the channels you map out, and the other is play them one by one. Like this:

URL1: <http://192.168.8.51:9981/playlist>

URL2: <http://192.168.8.51:9981/stream/channelnumber/1>

We can only get HTTP streams from tvheadend.

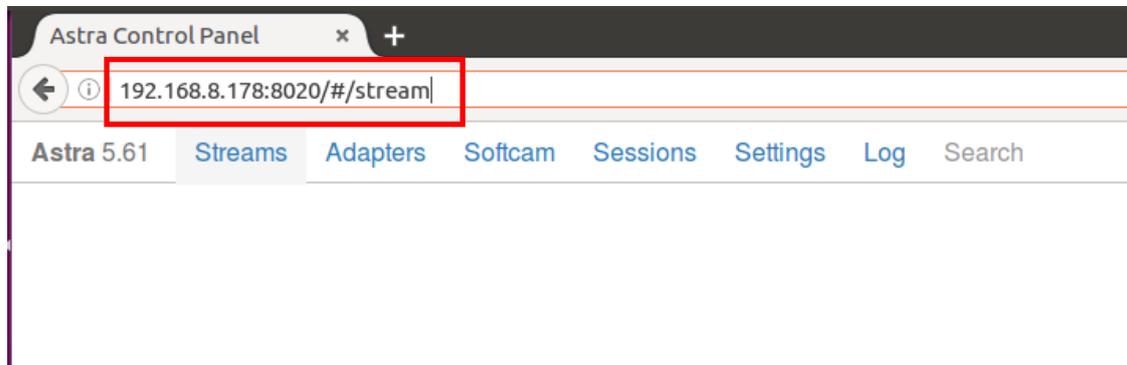
9. Astra User Guide(Trial version)

9.1 Connect the Required TV Signal Cable to LNB-Input

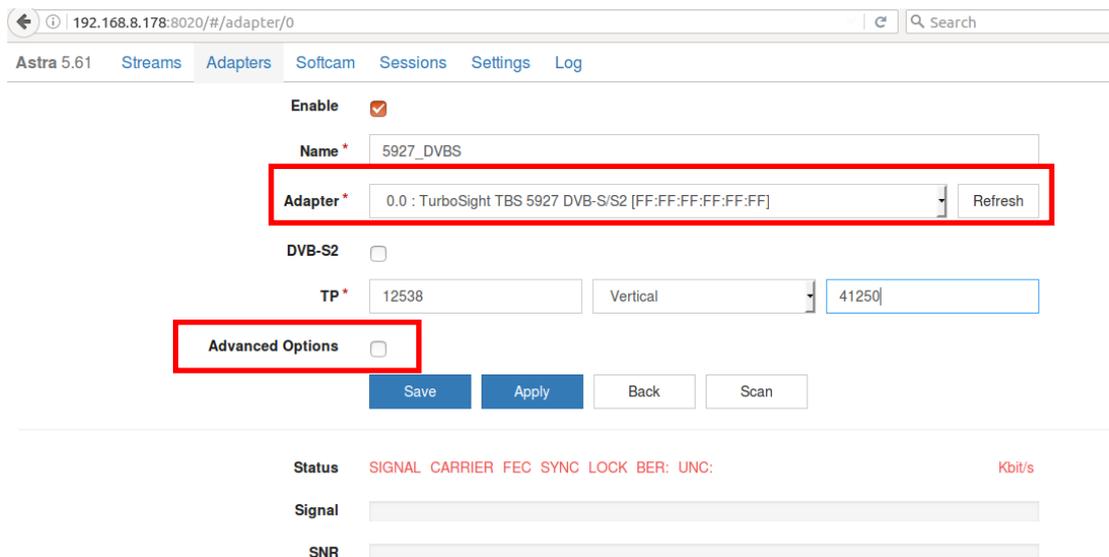
9.2 Install Astra for your system, then create an empty "test.json" file in "/etc/astra/" folder, now you can run Astra use the following command. The port is not only and stationary one, you can specify it yourself.(See screenshot below.)

```
daowei@daowei-All-Series:~$
daowei@daowei-All-Series:~$
daowei@daowei-All-Series:~$
daowei@daowei-All-Series:~$ astra -c /etc/astra/test.json -p 8020 --daemon
daowei@daowei-All-Series:~$
```

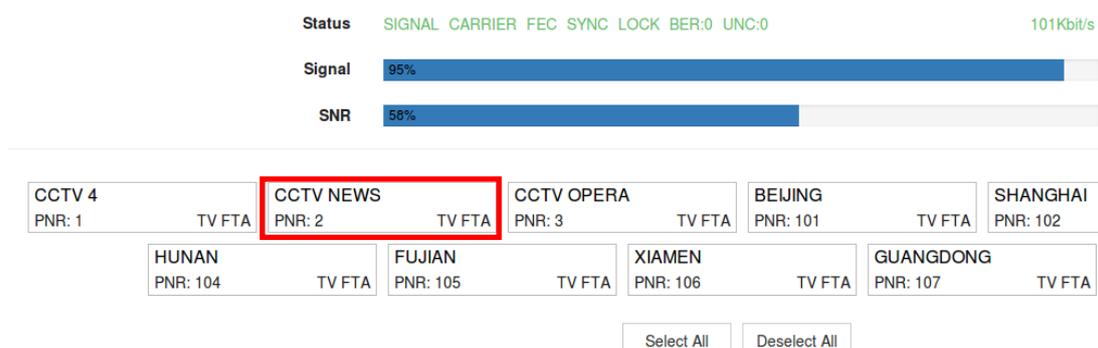
9.3 Open Firefox browser, enter the IP address of your server and port number 8020 as below, then you can log in astra configuration webpage.



9.4 Create a new “Adapters” and then select an adapter, you can set Set parameters in this page, more advanced setting please click “Advanced Options” to set, click “Apply” first.(See screenshot below.)



9.5 Then click “Scan” button to scan the channel, the sequence can not be reversed. After scanned out, select the channels you want and save, like this:

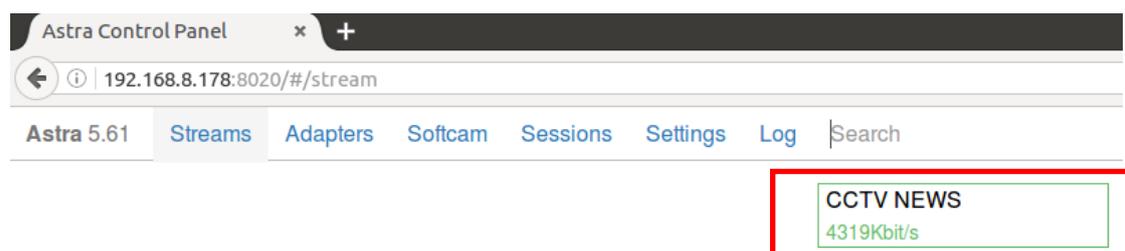


9.6 After did that you can go back to webpage, now you find them in “Stream”. Then please set the output protocol according to your needs. Finally click “Apply” as below.

ADD AN OUTPUT

Output #1	UDP/RTP	HTTP	NP	File	↑	↓	...
		<input checked="" type="checkbox"/>					
	Enable <input checked="" type="checkbox"/>						
	URL <input type="text" value="http://192.168.8.178:1235"/>						
	Remove Output <input type="checkbox"/>						
Advanced Options <input type="checkbox"/>							
Remove Stream <input type="checkbox"/>							
<input type="button" value="Apply"/> <input type="button" value="Back"/>							

In Astra, we can get the HTTP, RTP or UDP stream. When you play the stream the status should be like this:



Astra is a paid software, we can not enjoy all functions in trial version. Some advanced settings still not open for us, we can't find these interfaces in Web UI. IF you need, you have to pay for Astra.

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

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

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

4. 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

5. 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

6. 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

7. 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.

8. 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

9. 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.

10. Whether support CI+?

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