

User Manual:Setting up DVB-S for satellite

From MythTV Official Wiki

This page is up-to-date to MythTV version 0.21

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Setting up MythTV as a satellite receiver (DVB-S)

--> *You can skip this chapter if you're not using MythTV as a satellite receiver.*

This chapter explains how to configure your DVB-S (Satellite) capture devices. Before reading this page you should read MythTV structure. First the basics are explained followed by a step-by-step example. As example we will be using a DVB-S capture card from Technotrend (the Technotrend Budget S-1500), but this guide should work for any DVB-S card supported by your operating system.

"The Technotrend Budget S-1500 is a DVB-S capturecard with the possibility of adding a optional CI module. A CI-module gives you the possibility to add a Cam module so you can view encrypted channels (pay-tv). This is optional for most DVB cards and does not change any of the following configuration steps."

What about PayTV and encrypted channels?

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If you are using your setup to watch encrypted channels (payTV) then you need to pay attention to your choice of hardware. your DVB capture device needs to support the use of a CI device. CI devices can be:

1. Integrated with your DVB device;
2. Connected directly to your capture device
3. Connected to your computer: In this case the device driver for your operating system needs to support this (e.g. a USB based CI device).

Depending on your Television provider you need a CAM module to insert into your CI. In this Cam module you insert your smartcard provided by your television supplier. In short your hardware will be connected like:

```
Smartcard --> Cam module --> CI slot --> capture device --> computer
```

From this point on you can follow this guide. Your hardware should decode your television signal automatically, transparent for MythTV.

Setting up you capture device

--> *you can skip this part if you're dvb-s device is already working properly*

In most cases your capture cards should work "out-of-the-box", adjustments are not necessary. To check if your capture device is working you see the following during boot or by using the `dmesg` command from the terminal.

```
> dmesg
```

the output should see:

```
saa7146 (0): dma buffer size 192512
DVB: registering new adapter (TT-Budget/S-1500 PCI).
adapter MAC has addr = 00:11:22:33:44:55
Input: Budget-CI dvb ir receiver saa7146 (0) as / class/input/input0
budget_ci: CI interface initialised
registering frontend 0 (ST STV0299 DVB-S) ...
```

The card is now ready for use. If your devices is not support by default then find out how to get drivers for it.

The ubuntu package named `linux-firmware-nonfree` contains drivers for some DVB-S cards, however there was an issue with some versions prior to 1.8(as shipped with lucid) See http://www.linuxtv.org/wiki/index.php/Hauppage_WinTV-HVR-4000#Mythbuntu_9.04_users

MythTV configuration

Start `mythtv-setup` as root, and select option 2. Capture cards. Choose "(New capture card). Fill the configuration as follows:

- Card Type: DVB DTV capture card (v3.x)
- DVB Card Number: 0 (if this is your first DVB card. The number corresponds with what at the end of the `dmesg` output is displayed: "registering frontend 0".)

- By filling out the card, you'll see that "Frontend ID" and "Subtype" automatically filled.
- The timeouts can remain on their default values.

Now your screen should look somewhat like the one below (this may vary depending your version and look).



DiSEqC

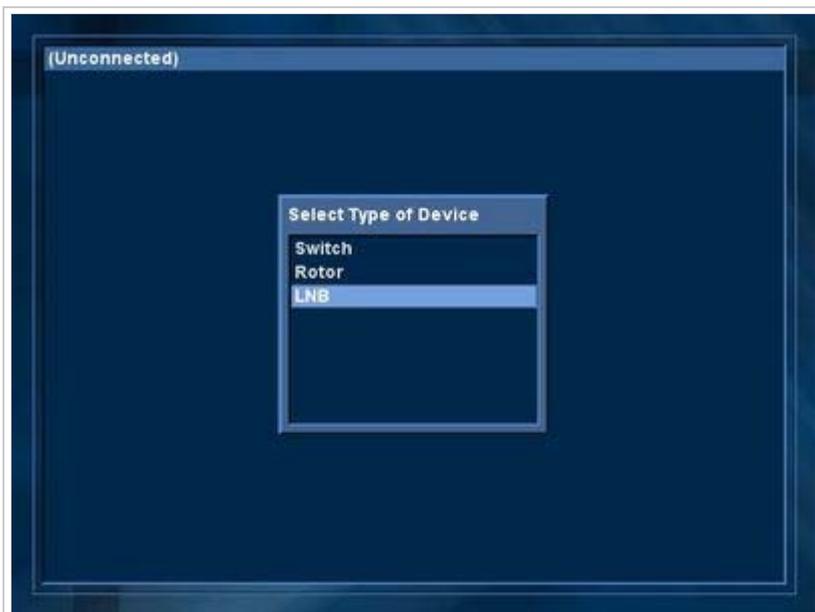
If you use a DVB-S capture device, you need to setup the right settings for DiSEqC. This is the protocol which enables your system to tell your dish to which satellite it has to look.

- Click on DiSEqC in the configuration of the capture card.
- If nothing had yet been configured, you will see "(Unconnected)" on top of the screen. Select this to make adjustments.

Note: In order to select (Unconnected) it is necessary to press an arrow key followed by enter

Note: In the current version of MythTV it's not yet possible to alter a DiSEqC connection once it is established. If you still want to do this, you must remove the capture card and add it back (in your configuration menu not your hardware stupid...).

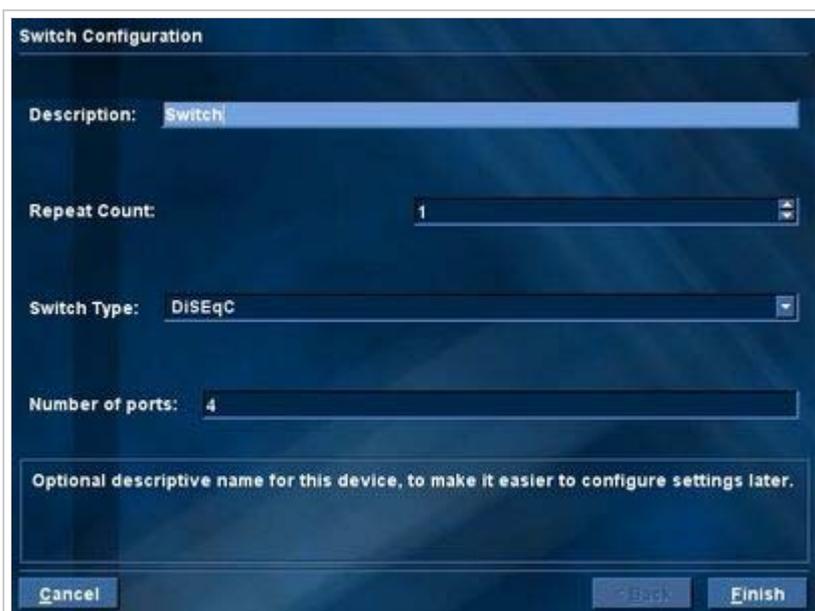
If you click "(Unconnected)", you'll get a small list of choices (see image). In this screen you choose to what device your DVB capture device is linked. If in doubt choose LNB.



Diseqc setup

DiSEqC Switch

Choose Switch, if your capturecard is connected with a DiSEqC switch so you can select multiple LNB's (see image below).

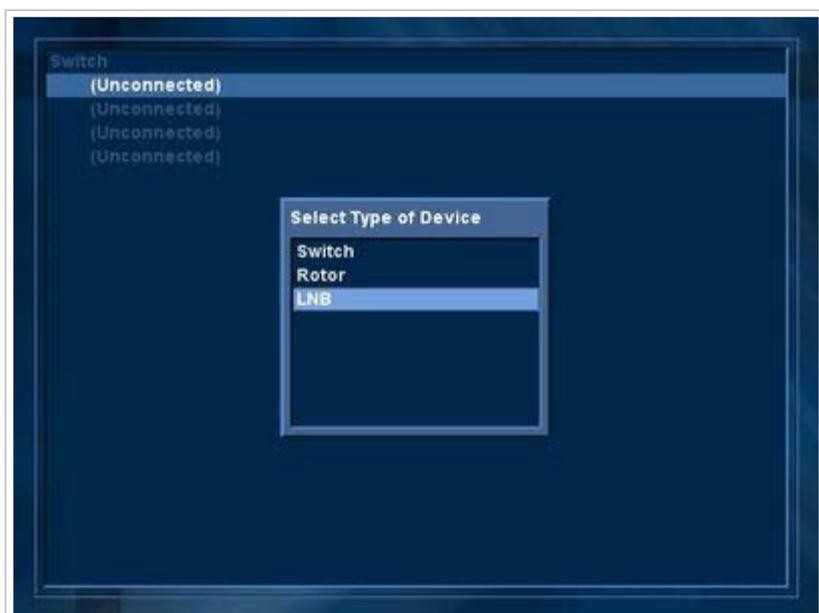


Diseqc switch setup

In this screen you'll have the following fields:

- Description: A recognizable description for this switch.
- Repeat count: The number of times a command is repeated (for unreliable switches).
- Switch Type: The type of switch, usually DiSEqC (Valid choices are: Tone, DiSEqC, Legacy SW21, SW42 Legacy and Legacy SW64).
- Number of ports: The number of ports on the switch. Depending on the switchtype it's possible you can not change this (e.g. Tone is always 2 ports).

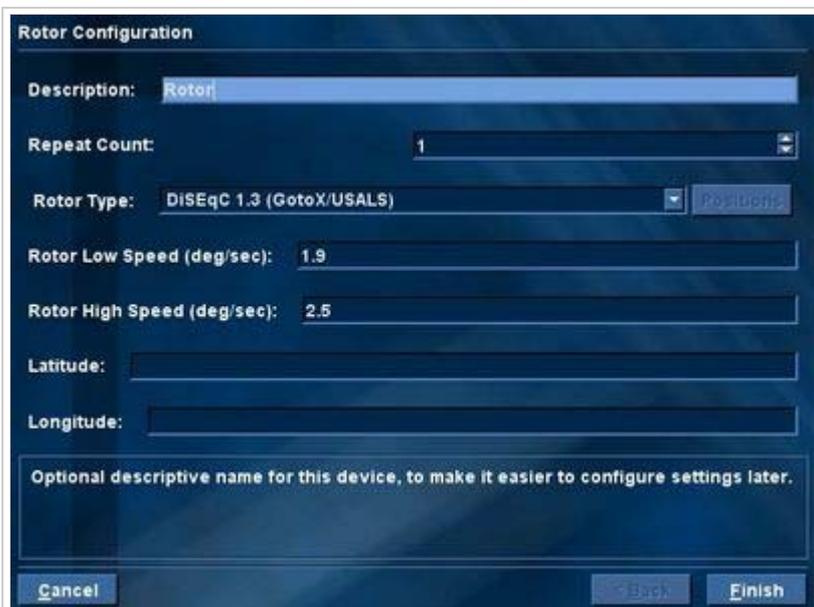
Once the institutions of the switch are known, you get the next screen. Here you can choose for each switchport what really is connected, this usually is an LNB.



Diseqc setup

DiSEqC Rotor

Choose Rotor, if your capturecard is connected to a rotating dish.



Rotor Configuration

Description:

Repeat Count:

Rotor Type: **DiSEqC 1.3 (GotoX/USALS)**

Rotor Low Speed (deg/sec):

Rotor High Speed (deg/sec):

Latitude:

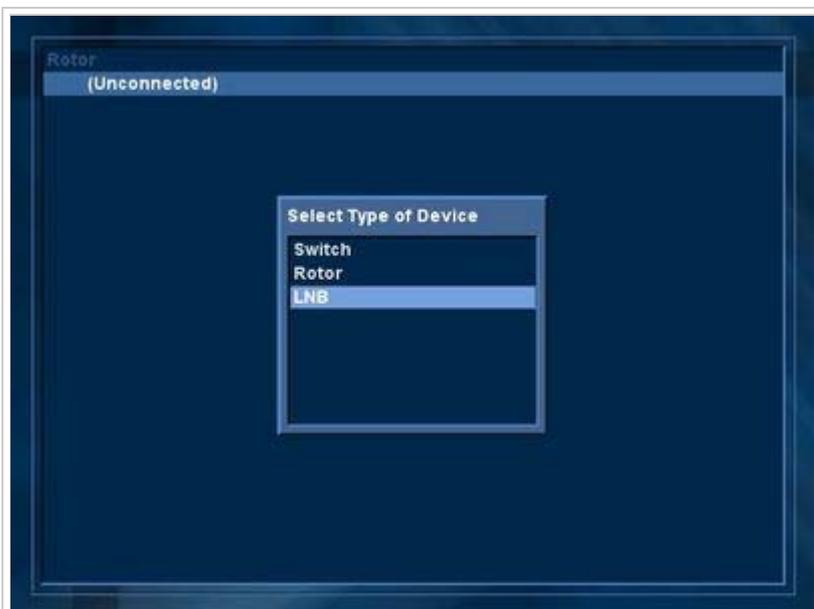
Longitude:

Optional descriptive name for this device, to make it easier to configure settings later.

Diseqc rotor setup

- Description: Add a recognizable description of the rotor here.
- Rotor type: Add what type of rotor you will use. Valid choices are: "DiSEqC 1.2" and "DiSEqC 1.3 (GotoX / USALS)". By the first you can configure the "Positions".
- Also you must enter some data specific to your rotor and location.

If you're done with the configuration of the DiSEqC rotor, then you get the next screen, where you can choose what is connected with your rotor. Again, this will usually be an LNB.



Rotor
(Unconnected)

Select Type of Device

- Switch
- Rotor
- LNB**

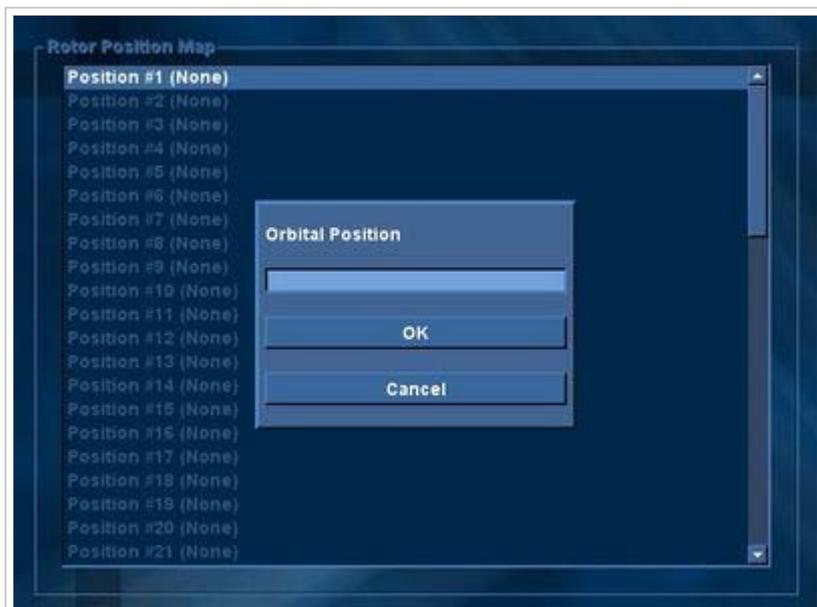
Diseqc rotor setup

DiSEqC 1.2 positions

If you choose for "Positions" with rotor type "DiSEqC 1.2", then you get the next screen where you can configure a positionnumber for each "Orbital Position".

<Todo: add more information here about the diseq protocol and use of this>

You can find more information about DiSEqC in the chapter about DVB in general.



Diseq rotor setup

DiSEqC LNB

Choose for LNB, if you capture device is directly connected with an LNB.

LNB Configuration

Description:

LNB Preset:

LNB Type:

LNB LOF Switch (MHz):

LNB LOF Low (MHz):

LNB LOF High (MHz):

Select the LNB preset from the list, or choose 'Custom' and set the advanced settings below.

Diseqc Inb setup

- Description: This should be a recognisable description for this LNB (e.g. "Astra 19.2")
- LNB preset: "Universal (Europe)" is usually the right choice if you live in Europe, but depends on the type of LNB. Consult the documentation of your LNB if Universal does not work.

Finding satellite info and channels

Create your settings for MythTV by opening the MythTV-setup.

setup your card, ensure you use card 0 (or any other adapter number you use), setup a storage directory, setup your Video Sources, setup your Input connections, Scan channels etc. For initial transponders, use one frequency that locks from the list:

1. D**hnet 119 -> <http://www.lyngsat.com/packages/dish119.html>
2. D**hnet 110 -> <http://www.lyngsat.com/packages/dish110.html>
3. B*v 91 -> <http://www.lyngsat.com/nimiq1.html>
4. B*v 82 -> <http://www.lyngsat.com/nimiq2.html>

Add 3 zeros to the end of each frequency (ie 12224 R should be 12224000, Right Circular, 20000000)

Unofficial Scripts

 **Warning:** The following is unofficial and unsupported. If you have problems scanning then report them properly so they may be fixed.

For some non-standards compliant DVB-S broadcasters, Scanning satellites in Myth can sometimes be a error prone process. If this is the case for you, then a couple of handy programs may help you:

MythTV channel scanner v0.96.29 updated 02/08/12 (<http://dvbn.happysat.org/viewtopic.php?f=17&t=52057>)

Good script that scans and imports channels into your MythTV system

myth_scanner

This program will grab all of the transponder info for the entire satellite, and populate the Myth channel & transponder database. All you need is to be tuned to any TP on that sat (using szap for example). You can find the most recent copy somewhere on www.happysat.org

modchannel.sh

This program will bulk rename/renumber/change EIT/change visible/delete channels/etc. Very handy if you have to rescan a sat often. Available at GenerationD (<http://www.generationd.com>)

References

Lyngsat.com (<http://www.lyngsat.com>)

One of the best resources to retrieve channel data.

MythPortal.be (<http://www.MythPortal.be>)

Excellent tutorials for setting up MythTV as a satellite receiver (Dutch language).

Contributors

This section is initially setup by Loki with help from MythPortal.be, an excellent resource for setting up MythTV (Dutch language).

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- This page was last modified on 14 September 2013, at 14:40.
 - This page has been accessed 23,014 times.