FAQ

Note

1. With Digital TV, a single physical channel may have different contents inside it. The specs call each one as a *service*. This is what a TV user would call "channel". So, in order to avoid confusion, we're calling *transponders* as the physical channel on this FAQ, and *services* for the logical channel.
2. The LinuxTV community maintains some Wiki pages with contain a lot of information related to the media subsystem. If you don't find an answer for your needs here, it is likely that you'll be able to get something useful there. It is hosted at:

   https://www.linuxtv.org/wiki/

Some very frequently asked questions about Linux Digital TV support

1. The signal seems to die a few seconds after tuning.

   It's not a bug, it's a feature. Because the frontends have significant power requirements (and hence get very hot), they are powered down if they are unused (i.e. if the frontend device is closed). The `dvb-core` module parameter `dvb_shutdown_timeout` allow you to change the timeout (default 5 seconds). Setting the timeout to 0 disables the timeout feature.

2. How can I watch TV?

   Together with the Linux Kernel, the Digital TV developers support some simple utilities which are mainly intended for testing and to demonstrate how the DVB API works. This is called DVB v5 tools and are grouped together with the `v4l-utils` git repository:

   https://git.linuxtv.org/v4l-utils.git/

   You can find more information at the LinuxTV wiki:

   https://www.linuxtv.org/wiki/index.php/DVBv5_Tools

   The first step is to get a list of services that are transmitted.

   This is done by using several existing tools. You can use for example the `dvbv5-scan` tool. You can find more information about it at:

   https://www.linuxtv.org/wiki/index.php/Dvbv5-scan

   There are some other applications like `w_scan` [1] that do a blind scan, trying hard to find all possible channels, but those consumes a large amount of time to run.

   [1] https://www.linuxtv.org/wiki/index.php/W_scan

   Also, some applications like `kaffeine` have their own code to scan for services. So, you don't need to use an external application to obtain such list.

   Most of such tools need a file containing a list of channel transponders available on your area. So, LinuxTV developers maintain tables of Digital TV channel transponders, receiving patches from the community to keep them updated.

   This list is hosted at:

   https://git.linuxtv.org/dtv-scan-tables.git

   And packaged on several distributions.

   Kaffeine has some blind scan support for some terrestrial standards. It also relies on DTV scan tables, although it contains a copy of it internally (and, if requested by the user, it will download newer versions of it).

   If you are lucky you can just use one of the supplied channel transponders. If not, you may need to seek for such info at the Internet and create a new file. There are several sites with contains physical channel lists. For cable and satellite, usually knowing how to tune into a single channel is enough for the scanning tool to identify the other channels. On some places, this could also work for terrestrial transmissions.

   Once you have a transponders list, you need to generate a services list with a tool like `dvbv5-scan`.

   Almost all modern Digital TV cards don't have built-in hardware MPEG-decoders. So, it is up to the application to get a MPEG-TS stream provided by the board, split it into audio, video and other data and decode.

3. Which Digital TV applications exist?

   Several media player applications are capable of tuning into digital TV channels, including Kaffeine, Vlc, mplayer and MythTV.

   Kaffeine aims to be very user-friendly, and it is maintained by one of the Kernel driver developers.

   A comprehensive list of those and other apps can be found at:

   https://www.linuxtv.org/wiki/index.php/TV_Related_Software

   Some of the most popular ones are linked below:

   https://kde.org/applications/multimedia/org.kde.kaffeine
   : KDE media player, focused on Digital TV support

   https://www.linuxtv.org/vdrwiki/index.php/Main_Page
   : Klaus Schmidinger's Video Disk Recorder

   https://linuxtv.org/downloads and https://git.linuxtv.org/
   : Digital TV and other media-related applications and Kernel drivers. The `v4l-utils` package there contains several swiss knife tools for using with Digital TV.

   http://sourceforge.net/projects/dvbtools/
   : Dave Chapman's dvbtools package, including dvbstream and dvbtune

   http://www.dbox2.info/
   : LinuxDVB on the dBox2

   http://www.tuxbox.org/
   : the TuxBox CVS many interesting DVB applications and the dBox2 DVB source

   http://www.nenie.org/misc/mpsys/
   : MPSYS: a MPEG2 system library and tools

   https://www.videolan.org/vlc/index.pt.html
   : Vlc

   http://mplayerhq.hu/
   : MPlayer

   http://xine.sourceforge.net/ and http://xinehq.de/
   : Xine

   http://www.mythtv.org/
   : MythTV - analog TV and digital TV PVR

   http://dvbsnoop.sourceforge.net/
   : DVB sniffer program to monitor, analyze, debug, dump or view dvb/mpeg/dsm-cc/mhp stream information (TS, PES, SECTION)

4. Can't get a signal tuned correctly

   That could be due to a lot of problems. On my personal experience, usually TV cards need stronger signals than TV sets, and are more sensitive to noise. So, perhaps you just need a better antenna or cabling. Yet, it could also be some hardware or driver issue.

   For example, if you are using a Technotrend/Hauppauge DVB-C card *without* analog module, you might have to use module parameter adac=-1 (dvb-ttpci.o).

   Please see the FAQ page at linuxtv.org, as it could contain some valuable information:

   https://www.linuxtv.org/wiki/index.php/FAQ_%26_Troubleshooting

   If that doesn't work, check at the linux-media ML archives, to see if someone else had a similar problem with your hardware and/or digital TV service provider:

   https://lore.kernel.org/linux-media/

   If none of this works, you can try sending an e-mail to the linux-media ML and see if someone else could shed some light. The e-mail is linux-media AT vger.kernel.org.

5. The dvb_net device doesn't give me any packets at all

   Run `tcpdump` on the `dvb0_0` interface. This sets the interface into promiscuous mode so it accepts any packets from the PID you have configured with the `dvbnet` utility. Check if there are any packets with the IP addr and MAC addr you have configured with `ifconfig` or with `ip addr`.

   If `tcpdump` doesn't give you any output, check the statistics which `ifconfig` or `netstat -ni` outputs. (Note: If the MAC address is wrong, `dvb_net` won't get any input; thus you have to run `tcpdump` before checking the statistics.) If there are no packets at all then maybe the PID is wrong. If there are error packets, then either the PID is wrong or the stream does not conform to the MPE standard (EN 301 192, http://www.etsi.org/). You can

use e.g. `dvbsnoop` for debugging.

6. The `dvb_net` device doesn't give me any multicast packets

   Check your routes if they include the multicast address range. Additionally make sure that "source validation by reversed path lookup" is disabled:

   ```
   $ "echo 0 > /proc/sys/net/ipv4/conf/dvb0/rp_filter"
   ```

7. What are all those modules that need to be loaded?

   In order to make it more flexible and support different hardware combinations, the media subsystem is written on a modular way.

   So, besides the Digital TV hardware module for the main chipset, it also needs to load a frontend driver, plus the Digital TV core. If the board also has remote controller, it will also need the remote controller core and the remote controller tables. The same happens if the board has support for analog TV: the core support for video4linux need to be loaded.

   The actual module names are Linux-kernel version specific, as, from time to time, things change, in order to make the media support more flexible.