

Setup of DVB compatible Streams

This article will show how to properly setup a new DVB compatible Stream.

Setup of basic Stream Settings

At first, DVB Streams are created like any other Stream in PLAYDECK, by going into the Settings and entering the appropriate Stream Info. In this case we use a local UDP URL for Testing, a High Framerate of 60 FPS, a medium Video Bitrate of 6 MBit/s, the standardized MPEG-2 Video Codec, a High Quality Audio with AAC Codec and 96 KHz Sample Rate and 320 KBit/s Bitrate:

The screenshot shows the 'Settings' window for a stream in PLAYDECK. The left sidebar contains a menu with options: Settings, Playlist, Application, Subtitles / CC, Video, Channel, Outputs, Inputs, Director View, Streaming, Recording, Audio, Channel Audio, Input Audio, Normalization, and Network. The 'Streaming' option is selected. The main area displays the configuration for 'Stream ID: 1'. The status is 'Stream not started yet'. There are buttons for 'Start Now', 'Stop Now', and a checkbox for 'Stream is always active'. The 'Stream Source' is set to 'Channel' with a dropdown menu showing 'Channel 1', 'Input 1', and 'Director 1'. The 'Stream Protocol' is 'DVB Compatible Streaming'. The 'Stream URL' is 'udp://127.0.0.1:5001'. The 'Video Format' is 'HD1080-60p HDYC 1920x1080@60.00p 16:9'. The 'Video Codec' is 'MPEG-2 Video' with a bitrate of '6 MBit/s'. The 'Audio Format' is 'Channel: 2', 'Sample rate: 96.0 kHz', and 'Bit depth: 16-bit'. The 'Audio Codec' is 'AAC (Advanced Audio Coding)' with a bitrate of '320 KBit/s'. There are 'Options' fields and 'Show Help' links for the Stream Protocol, Stream URL, Video Codec, and Audio Codec.

There are 2 types of DVB Streaming:

- Regular DVB Streaming via UDP (udp://...)
- SRT DVB Streaming via SRT (srt://...)

This screenshot shows the 'Stream Protocol' dropdown menu. The menu is open, displaying a list of protocols. 'DVB Compatible Streaming' is highlighted in orange. Other protocols include '<Auto Detect>', 'RTMP Streaming', 'UDP Streaming', 'SRT - Secure Reliable Transport', 'RTP', 'RIST Streaming', 'RTSP Streaming (beta)', 'IIS Live Smooth Streaming', 'Apple HTTP Live Streaming', 'MPEG-DASH Streaming', 'RTMP (FMLE) Streaming - H.264', 'RTMP (FMLE) Streaming - VP6', and 'Windows Media Streaming'. The 'Stream URL' and 'Preview URL' fields are visible on the left, and the 'Video Format' and 'Video Codec' fields are visible on the right. There is an 'Options' field and a 'Show Help' link at the bottom.

Additional DVB Settings

DVB Streams rarely work out-of-the-box like other Stream Formats (e.g. RTMP), because they need specific additional Settings, which we walk-thru now. You can also use this official DVB Spec PDF as Reference.

PCR

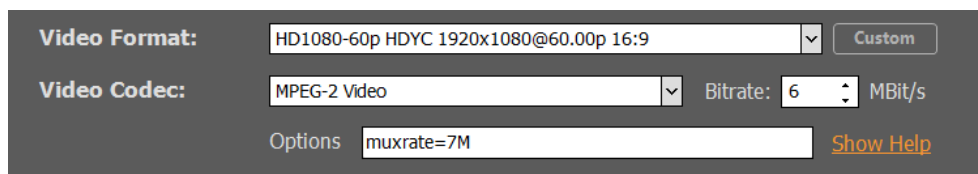
PCR stands for “Program Clock Reference”, which is sent by our DVB encoder. It’s kinda a “heartbeat” for the DVB Stream. If your network connection between PLAYDECK and DVB receiver is not reliable and stable, you will easily get PCR errors on your receiver. The PING from PLAYDECK to DVB receiver should never be higher than 20ms, even in peak times (e.g. other traffic).

MUXRATE

You should always set the Muxrate with this Formula:

$$\text{MUXRATE} = (\text{VIDEO BITRATE} + \text{AUDIO BITRATE}) * 1.25$$

So in our Sample above we have (rounded): 8 Mbit/s. We set the MUXRATE to PLAYDECK via the OPTIONS field of our Video Codec:



As a result, the resulting Bitstream will be of the MUXRATE value and non-video and non-audio parts are filled with null-packets.

CLOSED CAPTIONS + SCTE-35

Both don't need to be activated specifically, as they are automatically enabled by PLAYDECK.

INFORMATION TAGS

There are several informative fields, which are unique to DVB:

- *service_name* (any text value)
- *service_provider* (any text value)
- *service_id* (any number – default is 1)
- *service_type* (possible values: *digital_tv*, *mpeg2_digital_hdtv*, *advanced_codec_digital_sdtv*, *advanced_codec_digital_hdtv*, *hevc_digital_hdtv* – default is *digital_tv*)
- *transport_stream_id* (any number – default is 1)
- *original_network_id* (any number – default is 1)
- *pmt_start_pid* (numbers between 16 to 7936 – default is 129)
- *start_pid* (numbers between 256 to 3840 – default is 1024)
- *pes_payload_size* (any number – default is 2930 bytes)
- *mpegs_flags* (possible values: *resend_headers*, *pat_pmt_at_frames*, *latm*)

- *start_timecode* (possible values: auto, disabled, local_time OR custom text like "10:00:00:00" – default is auto)
- *tables_version* (any number – default is 0)

These values are also entered into the OPTIONS field of our Video Codec. You simply use a SPACE between options. Add as many options as you like/need:

Video Format:	<input type="text" value="HD1080-60p HDYC 1920x1080@60.00p 16:9"/>	<input type="button" value="Custom"/>
Video Codec:	<input type="text" value="MPEG-2 Video"/>	Bitrate: <input type="text" value="6"/> MBit/s
Options	<input type="text" value="muxrate=7M service_type=mpeg2_digital_hdtv service"/> Show Help	