



DATV-NotSoEasy

DATV-Software for TX and RX
(Windows/Linux) by Michael,
DL5OCD

What is DATV-NotSoEasy?

This software is a frontend for:

- Encoding (FFMPEG, included)
- Decoding (FFPLAY or MPV, included)

It is:

- IP based
- Platform independent
- Open Source
- Based on scripts, not compiled (yet)
- Still under development (Beta)



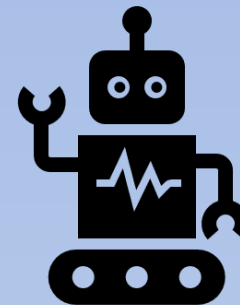
Features

DATV-NotSoEasy accepts input via:

- DSHOW (Virtual Cam)
- UDP-Stream
- File
- VAC and other audio devices

Output:

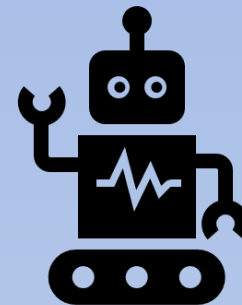
- UDP-Stream
- RTMP-Stream
- Support for codec H.264/H.265/H.266
- Codec AV1 is prepared, coming soon



Features

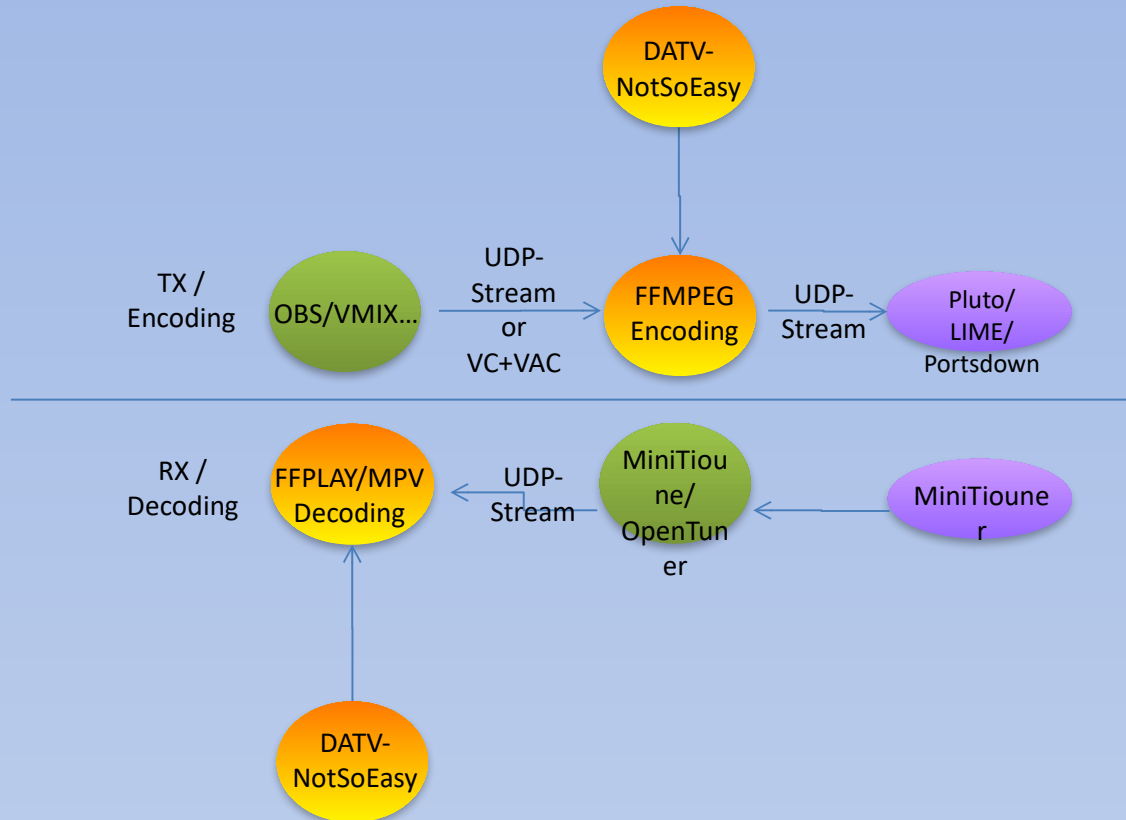
Platform independent, support for

- Adalm Pluto (TX)
- Lime-SDR (TX)
- Portsworld4 (TX)
- MiniTioune (RX)
- Open Tuner (RX)
-

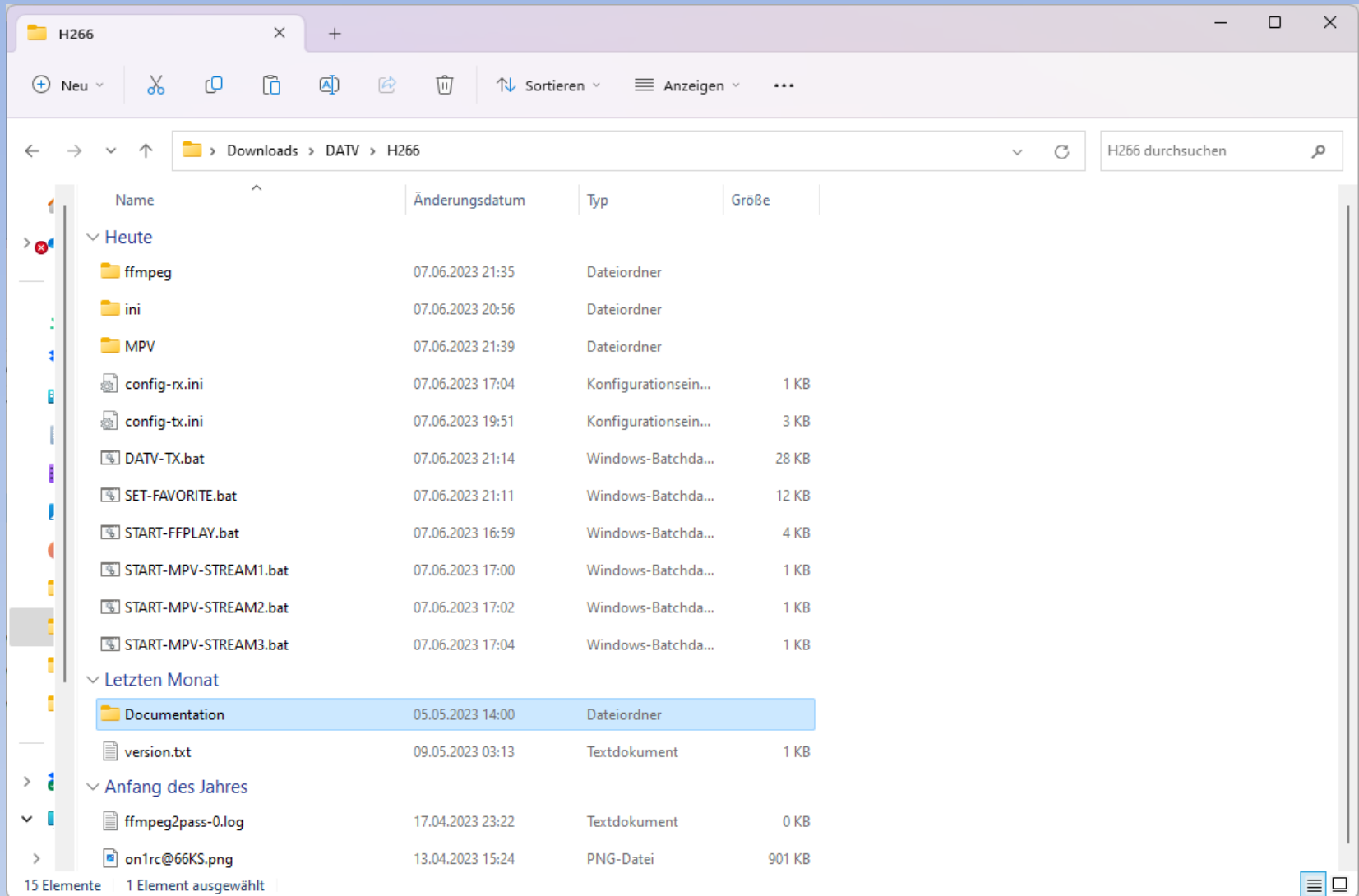


- Network based (remote operation...)
- Flexible and scalable
- Three predefined profiles for fast start (can be changed)
- Fast start with the previous used parameters
- Free defined Sample Rates possible (25-3000KS)
- Support for HW and SW encoding (HW Nvidia, H.266 only SW atm)

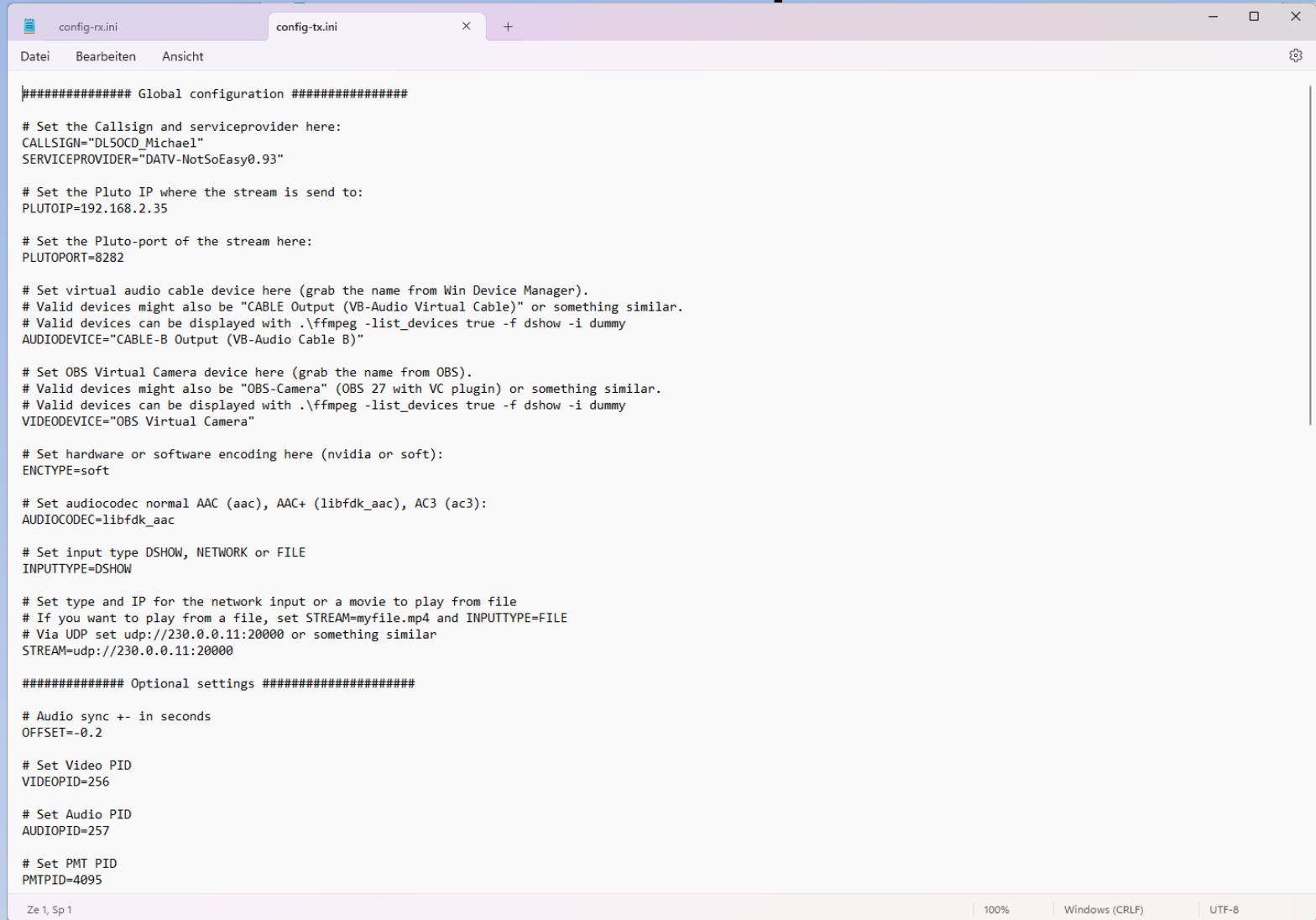
Concept / Schematic



Content



TX-Setup



```
##### Global configuration #####

# Set the Callsign and serviceprovider here:
CALLSIGN="DL5OCD_Michael"
SERVICEPROVIDER="DATV-NotSoEasy0.93"

# Set the Pluto IP where the stream is send to:
PLUTOIP=192.168.2.35

# Set the Pluto-port of the stream here:
PLUTOPORT=8282

# Set virtual audio cable device here (grab the name from Win Device Manager).
# Valid devices might also be "CABLE Output (VB-Audio Virtual Cable)" or something similar.
# Valid devices can be displayed with .\ffmpeg -list_devices true -f dshow -i dummy
AUDIODEVICE="CABLE-B Output (VB-Audio Cable B)"

# Set OBS Virtual Camera device here (grab the name from OBS).
# Valid devices might also be "OBS-Camera" (OBS 27 with VC plugin) or something similar.
# Valid devices can be displayed with .\ffmpeg -list_devices true -f dshow -i dummy
VIDEODEVICE="OBS Virtual Camera"

# Set hardware or software encoding here (nvidia or soft):
ENCTYPE=soft

# Set audiocodec normal AAC (aac), AAC+ (libfdk_aac), AC3 (ac3):
AUDIOCODEC=libfdk_aac

# Set input type DSHOW, NETWORK or FILE
INPUTTYPE=DSHOW

# Set type and IP for the network input or a movie to play from file
# If you want to play from a file, set STREAM=myfile.mp4 and INPUTTYPE=FILE
# Via UDP set udp://230.0.0.11:20000 or something similar
STREAM=udp://230.0.0.11:20000

##### Optional settings #####

# Audio sync +- in seconds
OFFSET=-0.2

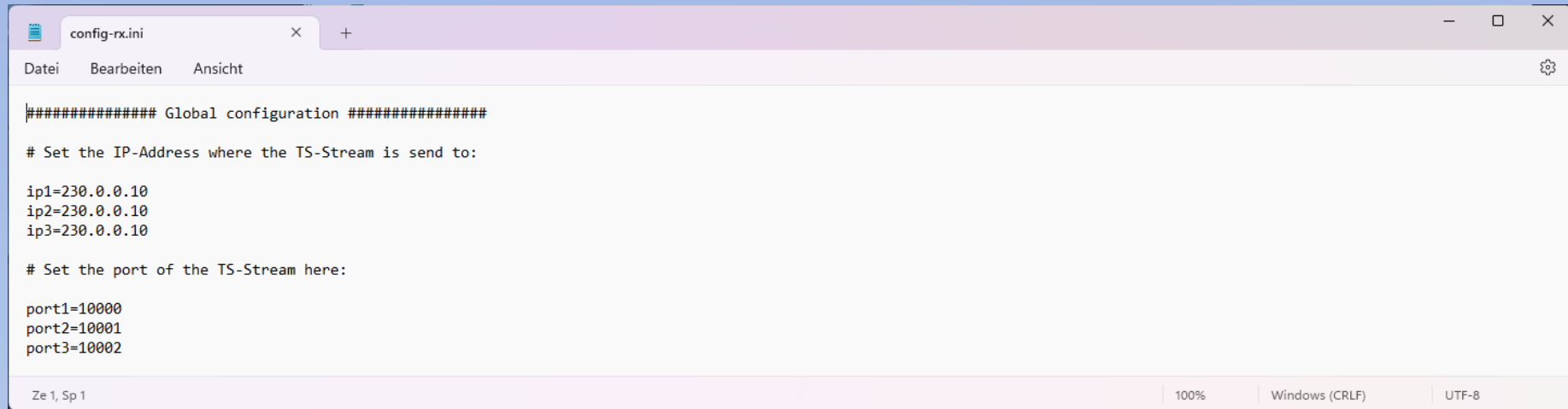
# Set Video PID
VIDEOPID=256

# Set Audio PID
AUDIOPID=257

# Set PMT PID
PMTPID=4095
```

Ze 1, Sp 1 | 100% | Windows (CRLF) | UTF-8

RX-Setup

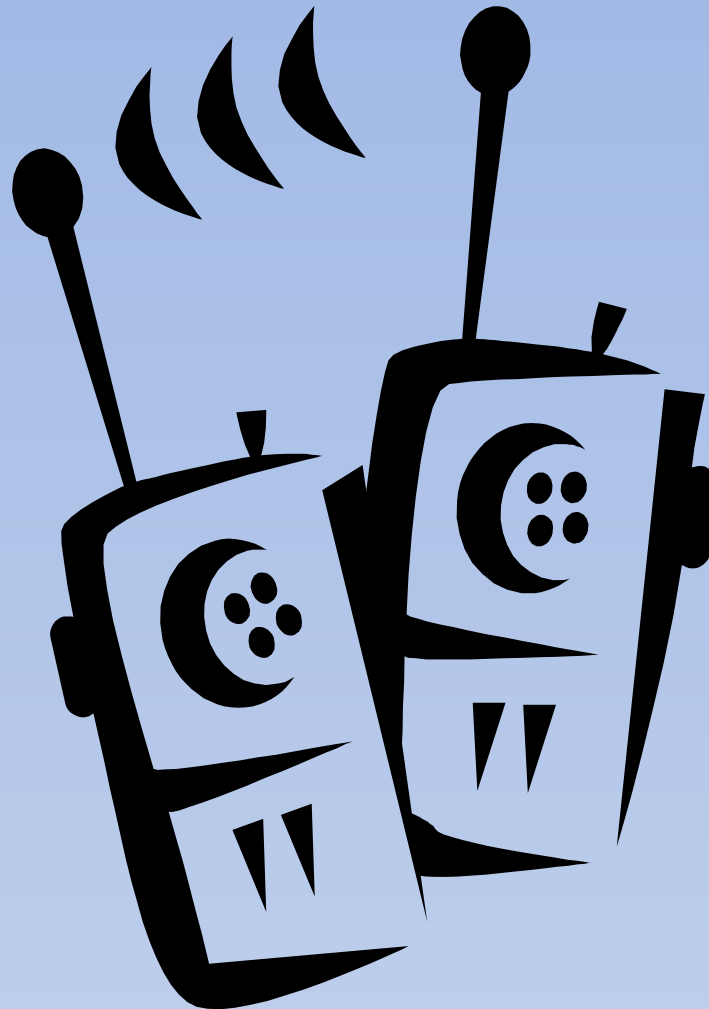


The screenshot shows a text editor window titled 'config-rx.ini'. The window has a menu bar with 'Datei', 'Bearbeiten', and 'Ansicht'. The main text area contains the following configuration:

```
##### Global configuration #####  
  
# Set the IP-Address where the TS-Stream is send to:  
  
ip1=230.0.0.10  
ip2=230.0.0.10  
ip3=230.0.0.10  
  
# Set the port of the TS-Stream here:  
  
port1=10000  
port2=10001  
port3=10002
```

The status bar at the bottom shows 'Ze 1, Sp 1', '100%', 'Windows (CRLF)', and 'UTF-8'.

TX



TX Interface



```
DATV-TX.bat - Verknüpfung
-----
DATV-NotSoEasy Version 0.93 Beta by DL5OCD
-----
Last run:
SR=66
MODE=QPSK
FEC=9/10
IMAGE SIZE=640x360
FPS=20
AUDIO=1
CODEC=libx265
TS BITRATE=116
VB BITRATE=63
AB BITRATE=8
-----
Profile 1 setup:
SR=125
MODE=QPSK
FEC=9/10
IMAGE SIZE=960x540
FPS=15
AUDIO=2
CODEC=libvenc
TS BITRATE=223
VB BITRATE=148
AB BITRATE=8
-----
Profile 2 setup:
SR=250
MODE=QPSK
FEC=4/5
IMAGE SIZE=1280x720
FPS=25
AUDIO=2
CODEC=libvenc
TS BITRATE=396
VB BITRATE=270
AB BITRATE=32
-----
Profile 3 setup:
SR=500
MODE=QPSK
FEC=4/5
IMAGE SIZE=1280x720
FPS=30
AUDIO=2
CODEC=libx265
TS BITRATE=793
VB BITRATE=624
AB BITRATE=32
-----
Use profile 1 (1), profile 2 (2), profile 3 (3), use previous parameters (4), or start with new parameters (5) :
```

TX Interface

```
Windows PowerShell
-----
Use profile 1 (1), profile 2 (2), profile 3 (3), use previous parameters (4), or start with new parameters (5) :5
Please, choose your Codec (SW-ENC): H264 (1), H265 (2), VVC (H266) (3) :2
Please, choose your FPS: 10 (1), 20 (2), 25 (3), 30 (4), 48 (5), 50 (6), 60 (7) :4
Please, choose Mono (1), or Stereo (2) :2
Please, choose your Mode : QPSK (1), 8PSK (2), 16APSK (3) :1
Please, choose your Image size : 640x360 (1), 960x540 (2), 1280x720 (3), 1920x1080 (4), 2560x1440 (5) :3
Please, choose your Audiobitrate 4k (1), 8k (2), 16k (3), 32k (4), 64 (5), 96k (6) :4
-----
| - DVBS2 QPSK |
|-----|
| 0 : Define |
| 1 : SR35 |
| 2 : SR66 |
| 3 : SR125 |
| 4 : SR250 |
| 5 : SR333 |
| 6 : SR500 |
| 7 : SR1000 |
| 8 : SR1500 |
| 9 : SR2000 |
|-----|
Please, choose your SR 0-9 :0
Please, choose your SR (35-3000) :800
-----
| - DVBS2 FEC |
|-----|
| 1 : 1/4 |
| 2 : 1/3 |
| 3 : 2/5 |
| 4 : 1/2 |
| 5 : 3/5 |
| 6 : 2/3 |
| 7 : 3/4 |
| 8 : 4/5 |
| 9 : 5/6 |
| 10 : 8/9 |
| 11 : 9/10 |
|-----|
Please, choose your FEC 1-11 :6
-----
```

TX Interface

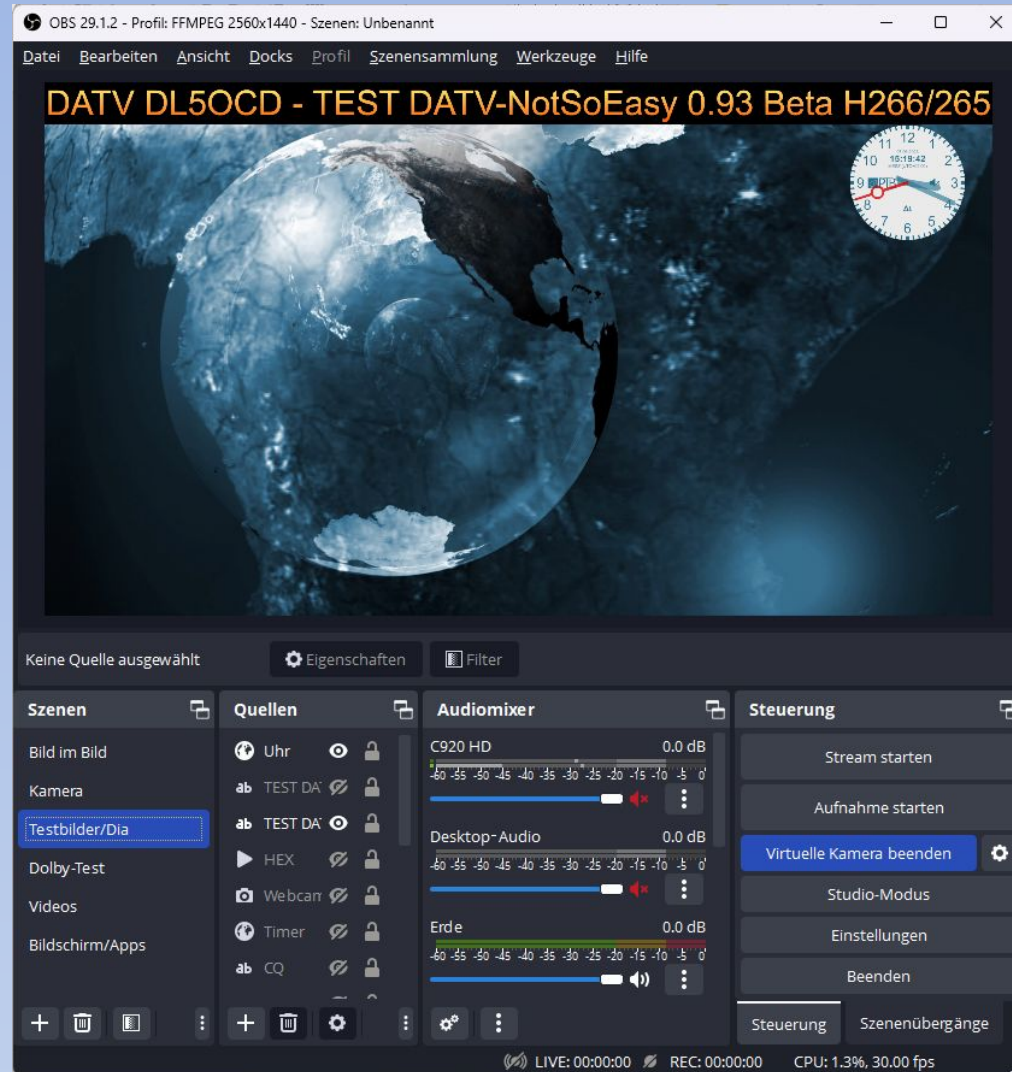
```
DATV-TX.bat - Verknüpfung
-----
software FFMPEG Encoder H.264/H.265
SR: 500
Mode: QPSM
FEC: 4/5
Codec: libx265
Resolution: 1280x720
FPS: 30
TS-Bitrate: 793K
Videobitrate: 624K
Audiobitrate: 32K
Buffersize: 2496K
Maxdelay: 2000ms
Maxinterleave: 4s
-----
ffmpeg version n6.0-11-gc55dd7bc4d-gb5af451901+36 Copyright (c) 2000-2023 the FFmpeg developers
  built with gcc 13.1.0 (Rev4, Built by MSYS2 project)
  configuration: --pkg-config=pkgconf --cc='ccache gcc' --cxx='ccache g++' --ld='ccache g++' --extra-cxxflags=-fpermiss
ive --extra-cflags=-Wno-int-conversion --disable-autodetect --enable-amf --enable-bzlib --enable-cuda --enable-cuvid --e
nable-d3d11va --enable-dxva2 --enable-iconv --enable-lzma --enable-nvenc --enable-openssl --enable-zlib --enable-zstd --e
nable-vaapi --enable-vdpau --enable-vulkan --enable-x11 --enable-xlib --enable-xv --enable-xvcp --enable-yasm --enable-
enable-nvdec --enable-cuda-llvm --enable-libm3lame --enable-libopus --enable-libvorbis --enable-libvpx --enable-libx2
64 --enable-libx265 --enable-libdav1d --enable-libaom --disable-debug --enable-libfdk-aac --enable-libv4l2 --enable-lib
venc --enable-openssl --extra-libs=-liconv --enable-gpl --enable-nonfree
  libavutil      58. 2.100 / 58.  2.100
  libavcodec     60. 3.100 / 60.  3.100
  libavformat    60. 3.100 / 60.  3.100
  libavdevice    60. 1.100 / 60.  1.100
  libavfilter    9. 3.100 /  9.  3.100
  libswscale     7.  1.100 /  7.  1.100
  libswresample  4. 10.100 /  4. 10.100
  libpostproc   57.  1.100 / 57.  1.100
Input #0, dshow, from 'video=QBS Virtual Camera':
  Duration: N/A, start: 27001.956000, bitrate: N/A
  Stream #0:0: Video: rawvideo (NV12 / 0x3231564E), nv12, 1280x720, 30 fps, 30 tbr, 10000k tbn
Guessed Channel Layout for Input Stream #1:0 : stereo
Input #1, dshow, from 'audio=CABLE-B Output (VB-Audio Cable B)':
  Duration: N/A, start: 13501.137000, bitrate: 1411 kb/s
  Stream #1:0: Audio: pcm_s16le, 44100 Hz, 2 channels, s16, 1411 kb/s
Stream mapping:
  Stream #0:0 -> #0:0 (rawvideo (native) -> hevc (libx265))
  Stream #1:0 -> #0:1 (pcm_s16le (native) -> aac (libfdk_aac))
Press [q] to stop, [?] for help
x265 [info]: HEVC encoder version 3.5+103-b016fca5a
x265 [info]: build info [Windows][GCC 13.1.0][64 bit] Bbit+10bit+12bit
x265 [info]: using cpu capabilities: MMX2 SSE2Fast LZCNT SSSE3 SSE4.2 AVX FMA3 BMI2 AVX2
x265 [info]: Main profile, Level-3.1 (Main tier)
x265 [info]: Thread pool created using 20 threads
x265 [info]: Slices          : 1
x265 [info]: frame threads / pool features      : 4 / wpp(12 rows)
x265 [info]: Coding QT: max CU size, min CU size : 64 / 8
x265 [info]: Residual QT: max TU size, max depth : 32 / 1 inter / 1 intra
x265 [info]: ME / range / subpel / merge        : hex / 57 / 2 / 3
x265 [info]: Keyframe min / max / scenecut / bias : 15 / 150 / 40 / 5.00
x265 [info]: Lookahead / bframes / badapt       : 20 / 4 / 2
x265 [info]: b-pyramid / weightp / weightb      : 1 / 1 / 0
x265 [info]: References / ref-limit cu / depth  : 3 / off / on
x265 [info]: AQ: mode / str / qg-size / cu-tree  : 2 / 1.0 / 32 / 1
x265 [info]: Rate control / qcompres            : ABR-624 kbps / 0.60
x265 [info]: VBV/HRD buffer / max-rate / init    : 2496 / 624 / 0.750
x265 [info]: tools: rd=3 psy-rd=2.00 early-skip rskip mode=1 signhide twp
x265 [info]: tools: b-intra strong-intra-smoothing lslices=4 deblock sao
Output #0, mpegts, to 'udp://192.168.2.35:8282?pkt_size=1316&overrun_nonfatal=1&fifo_size=50M':
  Metadata:
    service_provider: DATV-NotSoEasy0.93
    service_name    : DL5OCD_Michael
    encoder         : Lavf60.3.100
  Stream #0:0: Video: hevc, yuv420p(tv, progressive), 1280x720, q=2-31, 624 kb/s, 30 fps, 90k tbn
  Metadata:
    encoder         : Lavc60.3.100 libx265
  Side data:
```

Profile Editor



```
C:\WINDOWS\system32\cmd. X + v
Script for setting favorite parameters by DL50CD
-----
Profile 1 parameters:
SR=125
MODE=QPSK
FEC=9/10
IMAGESIZE=960x540
FPS=15
AUDIO=2
CODEC=libvenc
TSBITRATE=223
VBITRATE=148
ABITRATE=8
-----
Profile 2 parameters:
SR=250
MODE=QPSK
FEC=4/5
IMAGESIZE=1280x720
FPS=25
AUDIO=2
CODEC=libvenc
TSBITRATE=396
VBITRATE=270
ABITRATE=32
-----
Profile 3 parameters:
SR=500
MODE=QPSK
FEC=4/5
IMAGESIZE=1280x720
FPS=30
AUDIO=2
CODEC=libx265
TSBITRATE=793
VBITRATE=624
ABITRATE=32
-----
Do you want to change your profile settings? YES (1), NO (2) :|
```

Example: Input from OBS via VC



Example: Adalm Pluto

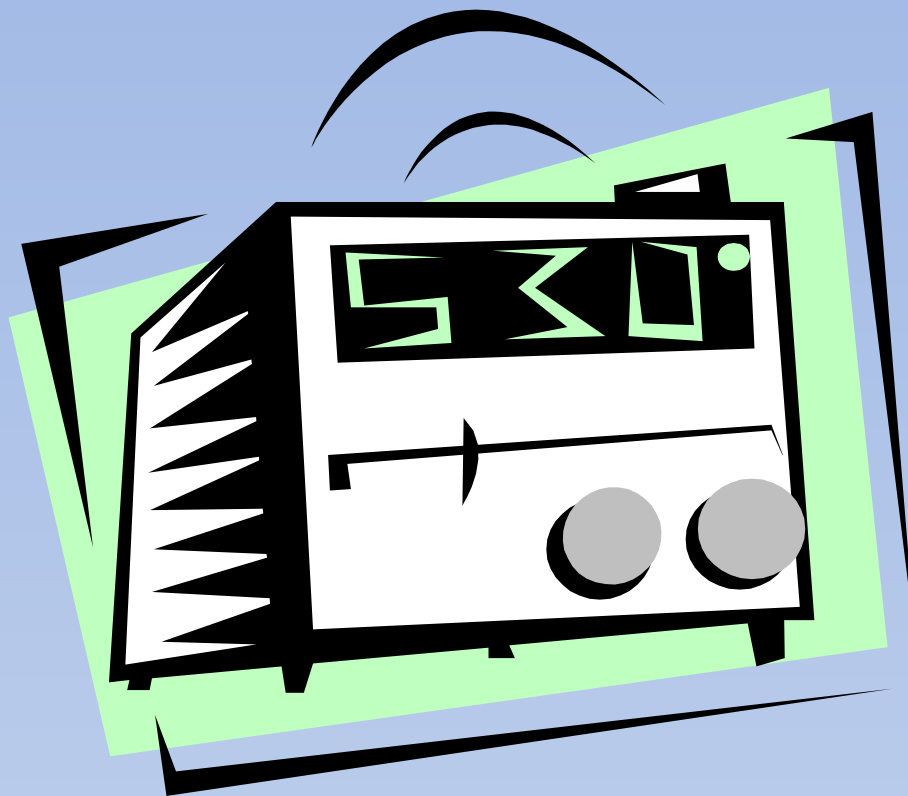
PTT	Switch OFF		ON AIR
Power (0.1 dB steps)	-23.6dB		

Modulator

Callsign (DVB Program Name)	DL5OCD	DVB Provider Name (output: FwVer_ProvName)	Michael (max 15 chrs)
PCR/PTS	1507ms	PAT period	1000ms
Freq-Manual (70 MHz - 6 GHz)	2409.73	Freq-Channel (SR channel Uplink / Downlink)	250KS14 (2409.75 / 10499.25) ▾
Mode	DVBS2 ▾	Mod	QPSK ▾
SR (KSymbols)	250 ▾ Custom ▾	FEC	9/10 ▾
Pilots	Off ▾	Frame	LongFrame ▾
Rolloff	0.20 ▾	Transverter LO (MHz)	0.02 ▾ Custom ▾
TS Rate Available (Kb/s)	447.769		
Firmware version	2908		

Apply Settings

RX



RX FFPLAY Interface

```
C:\WINDOWS\system32\cmd.  X  +  v

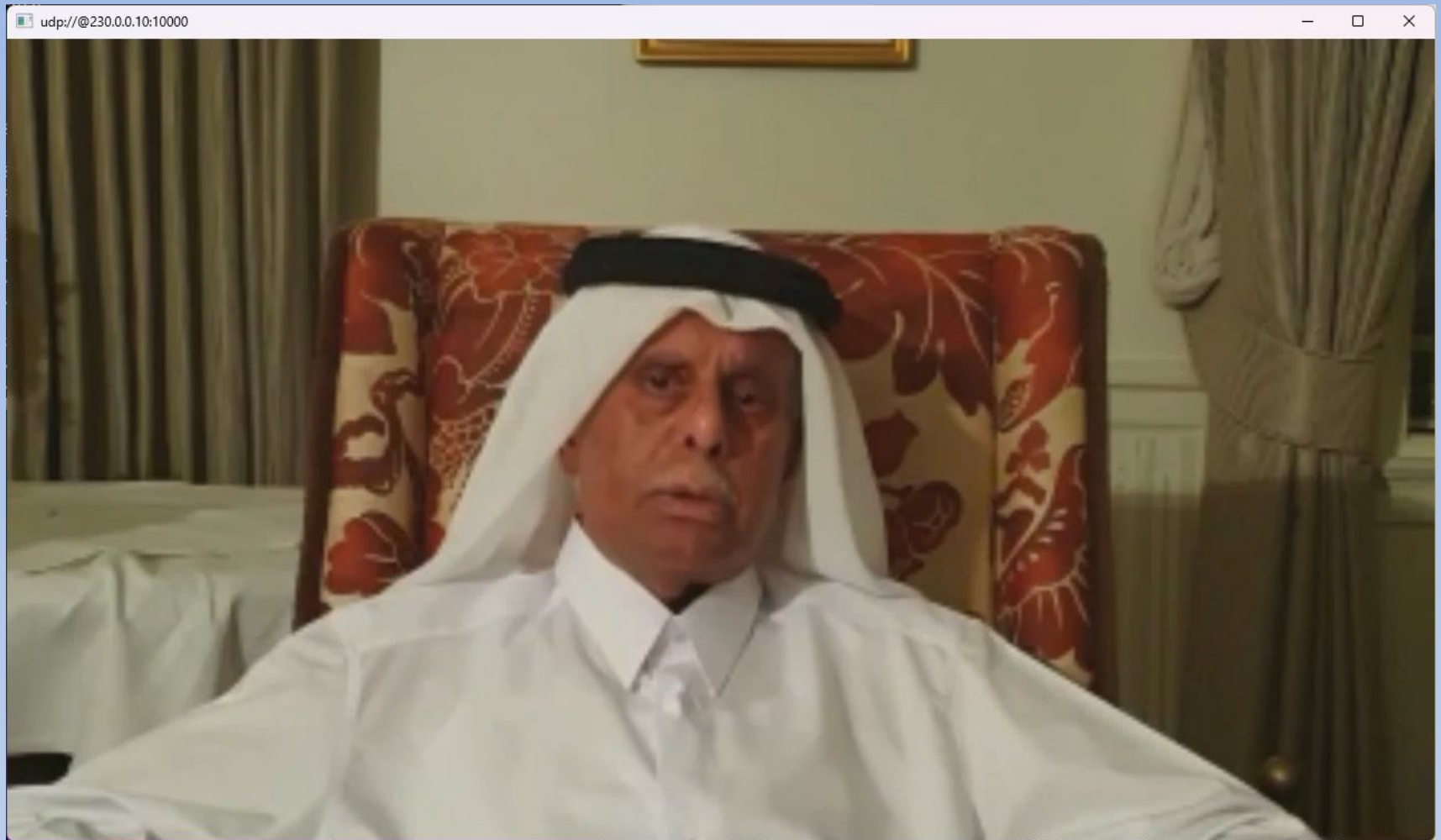
DATV-NotSoEasy Version 0.93 Beta by DL50CD
-----

Do you want to decode 1, 2 or 3 streams (press 1, 2 or 3):1
-----

|----- Scaling -----|
|-----|
| 0 : Original          |
| 1 : 930x522           |
| 2 : 1280x720          |
| 3 : 1980x1080         |
| 4 : 2560x1440         |
| 9 : Show photo        |
|-----|

Please, choose your scaling for the video (0,1,2,3,4,9) :0
```

RX FFPLAY Interface



RX MPV Interface



RX with Open Tuner

The screenshot displays a live broadcast setup using OBS Studio and OpenTuner Pro 2. The main window shows a video feed of a test signal titled "DATV DL5OCD - TEST DATV-NotSoEasy 0.93 Beta H266/265". The video feed is framed by a red border, indicating it is the active source. The OBS interface includes a browser window showing the test signal, an audio mixer, and a scene list. The OpenTuner Pro 2 window shows the connection status as "Connected" and displays various tuning parameters for the test signal, including frequency, symbol rate, and video/audio codecs. The video feed is also shown in a smaller window at the bottom right of the OBS interface.

OpenTuner Pro 2 - 2023/05/08 - MiniTuner Pro 2

Connection Status: **Connected**
LDPC Fehlerrate: 409

Tuner 1 - FFmpeg

Demod Status: Lock DVB-S2
Mer: 7.9 dB
RF Input Level: -52 dB
Gewünschte Freq: 10.496.249 (746.249)
LNA Gain: 0
Symbol Rate: 498
Modcod: QPSK 4/5
Ber: 1236
Freq Carrier Offset (Hz): 8634
Frequenz: Transport
Service Name: DL5OCD
Service Name Provider: 2908Michael
Null Packets: 9%

Video Codec: hevc
Video Auflösung: 1280 x 720
Audio Codec: aac
Audio Rate: 32000 Hz, 2 channels

Lautstärke: 0%

Tuner 2 - FFmpeg

D3.2
[Signal Report](#)
[Adjust](#)

Dn: 10494.75 SR: 1000
Up: 2405.25

10491.53
1500Ks
DL5OCD
10496.24
500Ks
10498.26
335Ks

```
x265 [info]: Main profile, Level-3.1 (Main tier)
x265 [info]: Thread pool created using 20 threads
x265 [info]: Slices : 1
x265 [info]: Frame threads / pool features : 4 / wpp(12 rows)
x265 [info]: Coding QT: max CU size, min cu size : 64 / 8
x265 [info]: Residual QT: max TU size, max depth : 32 / 1 inter / 1 intra
x265 [info]: ME / range / subpel / merge : hex / 57 / 2 / 3
x265 [info]: Keyframe min / max / scenecut / bias : 15 / 150 / 40 / 5.00
x265 [info]: Lookahead / bframes / badapt : 20 / 4 / 2
x265 [info]: b-pyramid / weightp / weightb : 1 / 1 / 0
x265 [info]: References / ref-limit cu / depth : 3 / off / on
x265 [info]: AQ: mode / str / qg-size / cu-tree : 2 / 1.0 / 32 / 1
x265 [info]: Rate Control / qcompress : ABR-624 kbps / 0.60
x265 [info]: VBV/HRD buffer / max-rate / init : 2496 / 624 / 0.750
x265 [info]: tools: rd=3 psy-rd=2.00 early-skip rskip mode=1 signhide tmvp
x265 [info]: tools: b-intra strong-intra-smoothing lslices=4 deblock sao
Output #0, mpegts, to 'udp://192.168.2.35:8282?pkt_size=1316&overrun_nonfatal=1&fifo_size=5000':
Metadata:
  service_provider: DATV-NotSoEasy0.93
  service_name: DL5OCD_Michael
  encoder: Lavf60.3.100
Stream #0:0 Video: hevc, yuv420p(tv, progressive), 1280x720, q=2-31, 624 kb/s, 30 fps, 90k tbn
Metadata:
  encoder: Lavc68.3.100 libx265
Side data:
  cpb: bitrate max/min/avg: 624000/8/624000 buffer size: 2496000 vbv_delay: N/A
Stream #0:1 Audio: aac, 32000 Hz, stereo, s16, 32 kb/s
Metadata:
  encoder: Lavc68.3.100 libfdk_aac
Frames: 3929 fps= 30 q=39.9 size= 12688K time=00:02:11.87 bitrate= 788.2Kbits/s dup=0 drop=4 speed= 1x
```


RX with MiniTione

The screenshot displays a desktop environment with several applications running. The primary application is MiniTione v1.0.1.0, which is a Receiver/Analyser for DVB-S/S2 144 MHz to 2450 MHz. It shows a large video window displaying a satellite image of Earth, with the title "DATV DL5OCD - TEST DATV-NotSoEasy 0.93 Beta H266/265". The interface includes various controls for frequency, power, and signal quality. A sidebar on the left shows a list of frequencies and a table of signal parameters. The bottom of the MiniTione window displays a log of system information and a status bar with various indicators.

Other applications visible include OBS Studio, which is also displaying the same satellite image, and a spectrum analyzer window showing a frequency spectrum with peaks at 10491.52, 10496.24, and 10498.26 MHz. The desktop background is a dark blue gradient with various icons and a taskbar at the bottom.

MiniTione v1.0.1.0 - Receiver/Analyser DVB-S/S2 144 MHz to 2450 MHz - SRmini=25 Ks/s - for MiniTione/MiniTione-Pro

OSCAR-100 x

SR (Ks) Freq (MHz)

SR (Ks)	Freq (MHz)
1500	1000
1000	125
500	250
333	375
250	500
125	625
66	750
35	875
25	1000

Low SR Wide scan

DVB mode: DVB-S, DVB-S2, Auto, Manual

Fek: A, Vol, A, 23KHz, OFF, ON, TS

Store info Memory

LNA gain 13.0dB

Carrier Lock, SR Lock, Full, RF Pw -53dBm, C/N MER 7.7dB, Constellations

TS stat

Null Packets: 9.7%, Video: 669kb/s 84.3%, Audio: 34kb/s 4.3%, data rcvd: 787.8kb/s, TS bitrate: 793.95kb/s

Log:

```
x265 [info]: build info [windows][GCC 13.1.0][64 bit] 8bit+10bit+12bit
x265 [info]: using cpu capabilities: MMX2 SSE2Fast LZCNT SSE3 SSE4.2 AVX FMA3 BMI2 AVX2
x265 [info]: Main profile, Level-3.1 (Main tier)
x265 [info]: Thread pool created using 28 threads
x265 [info]: Slices: 1
x265 [info]: frame threads / pool features: 4 / wpp(12 rows)
x265 [info]: Coding QT: max CU size, min CU size: 64 / 8
x265 [info]: Residual QT: max TU size, max depth: 32 / 1 inter / 1 intra
x265 [info]: ME / range / subpel / merge: hex / 57 / 2 / 3
x265 [info]: Keyframe min / max / scenecut / bias: 15 / 150 / 40 / 5.00
x265 [info]: Lookahead / bframes / badapt: 20 / 4 / 2
x265 [info]: b-pyramid / weights / weightb: 1 / 1 / 8
x265 [info]: References / ref-list / cu / depth: 3 / off / on
x265 [info]: AQ: mode / str / qg-size / cu-tree: 2 / 1.0 / 32 / 1
x265 [info]: Rate Control / qCompress: ABR-624 kbps / 0.60
x265 [info]: VBV/HRD buffer / max-rate / init: 2496 / 624 / 0.750
x265 [info]: tools: rd=3 psy-rd=2.00 early-skip rskip mode=1 sighide tmp
x265 [info]: tools: b-intra strong-intra-smoothing llices=4 deblock sao
Output #0, mpegts, to 'udp://192.168.2.35:8282?pkt_size=1316&overrun_nonfatal=1&fifo_size=500':
Metadata:
  service_provider: DATV-NotSoEasy0.93
  service_name: DL5OCD_Michael
  encoder: Lavf60.3.100
Stream #0:0 Video: hevc, yuv420p(tv, progressive), 1280x720, q=2-31, 624 kb/s, 30 fps, 90k tbn
Metadata:
  encoder: Lavc60.3.100 libx265
  Side data:
    cpb: bitrate max/min/avg: 624000/0/624000 buffer size: 2496000 vbv_delay: N/A
Stream #0:1 Audio: aac, 32000 Hz, stereo, s16, 32 kb/s
Metadata:
  encoder: Lavc60.3.100 libfdk_aac
frame= 9977 fps= 30 q=33.9 size= 32188KB time=00:05:33.37 bitrate= 791.0kb/s dup=8 drop=4 speed= 1x
```

Obs 29.1.2 - Profile: FFmpeg 2560x1440 - Szenen: Unbenannt

Browser

Szenen

Quellen

Audiomixer

Steuerung

Stream starten

Aufnahme starten

Virtuelle Kamera beenden

Studio-Modus

Einstellungen

Beenden

Steuerung

Szenenübergänge

Display Settings Info

Manual Tune

Chat

10491.52 1500Ks

10496.24 500Ks

10498.26 333Ks

16:30 08.06.2023

RX - external decoder H.266 @ 25KS

The screenshot displays a Windows desktop environment with several open applications. The primary application is a software interface for receiving and decoding H.266 video, titled "DATV DL5OCD - TEST DATV-NotSoEasy 0.93 Beta H266/265". This interface features a video player showing a green iguana, a control panel with various settings, and a status window displaying reception statistics.

The control panel includes sections for "SR (KS) Freq (kHz)", "Frequency", "Symbolrate", "Derotator", and "Payload Diagram A71A". The status window shows "Null Packets: 6.8%", "Video: 88.06kb/s", "Audio: 0.00kb/s", and "data rcvd: 88.06kb/s".

The desktop also shows other applications like "MiniToune v1.0.1.0", "MiniTounePro V2", "TS stat", and "DATV-NotSoEasy by DL5OCD". The taskbar at the bottom indicates the date and time as 26.06.2023, 01:50.

RX - external decoder H.266 @ 25KS

The screenshot displays a Windows desktop environment with several open applications. The primary application is a video receiver/decoder interface, likely MiniTunerPro V2, which is configured for receiving H.266 video at 25KS. The interface includes a main video window showing a pink flower, a sidebar with scene and source lists, an audio mixer, and a top-right section with MiniTunerPro V2 settings and a payload diagram. The bottom status bar shows system information like temperature and date.

MiniTunerPro V2 Settings:

- SR (KS): 25000
- Freq (kHz): 10499251
- Symbolrate: 25000
- Deviation: 3S
- Carrier Width: 31 KHz
- TV mode: DVB-S2

Payload Diagram:

- Null Packet: 6.8%
- Video: 9.1%
- Audio: 0.0%
- data rcvd: 87.1kb/s_v
- TS bitrate: 88.080kb/s

System Information:

- OS: Windows 10
- Processor: Intel Core i7-10700K
- Memory: 32 GB
- Storage: 1 TB
- Temperature: 17°C
- Date: 26.06.2023

Roadmap

Under development:

- Optimization of parameters
- Implementation of PWR-Control
- Implementation of Rolloff
- Implementation of Frequency Control



Download

The newest version can be found here:

<https://drive.google.com/file/d/1PEajRkWum6wgNEIOGZZ5-NZwfBLFtWfJ/view?usp=sharing>

Thanks for your attention!

Q`n A

