



A DATV Receiver for everybody

Looking for a simple DATV receiver



Preface

- Why all the work?
- A simple entry into the DATV Reception technology
- Competition is complicated and expensive
- Any good solution is simple!

DATV – Receivers available



- The Ryde-RX of BATC with the Mini-Tiouner or now with the Pico-Tiouner
- The Octagon SF8008
- SDRAngel Software for LINUX, Windows, MacOS with SDR front end (SDR-Play, RTL-SDR, Pluto, or others)

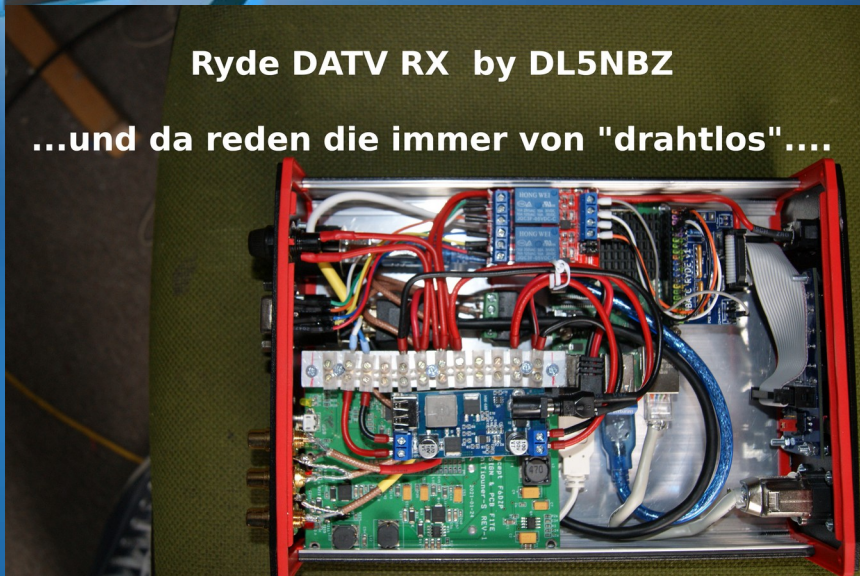
BATC

The Ryde RX

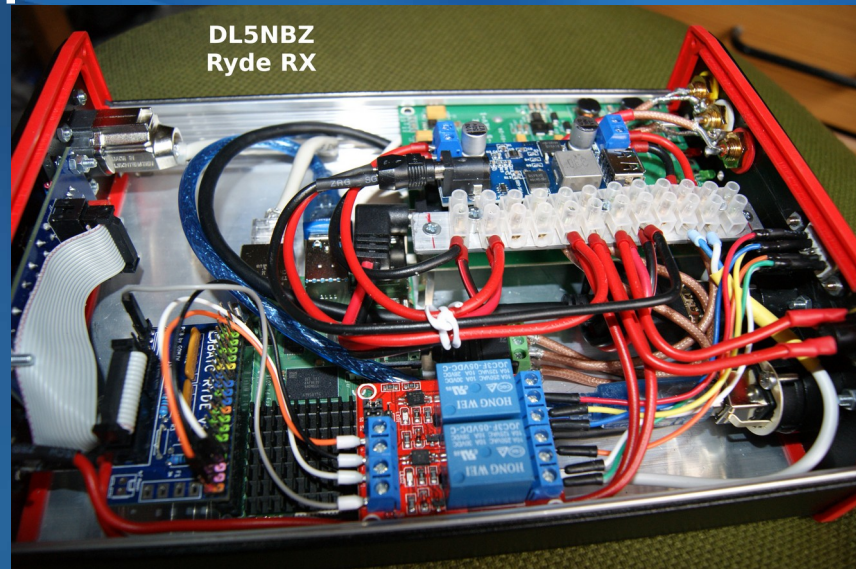
good, but complicated and expensive

Ryde DATV RX by DL5NBZ

...und da reden die immer von "drahtlos"....



DL5NBZ
Ryde RX



DVB-S/DVB-S2 from 144 MHz to 2450 MHz Symbol rates
from 66kS/s to 6000kS/s

Rainer Floesser, DL5NBZ



The Octagon SF8008

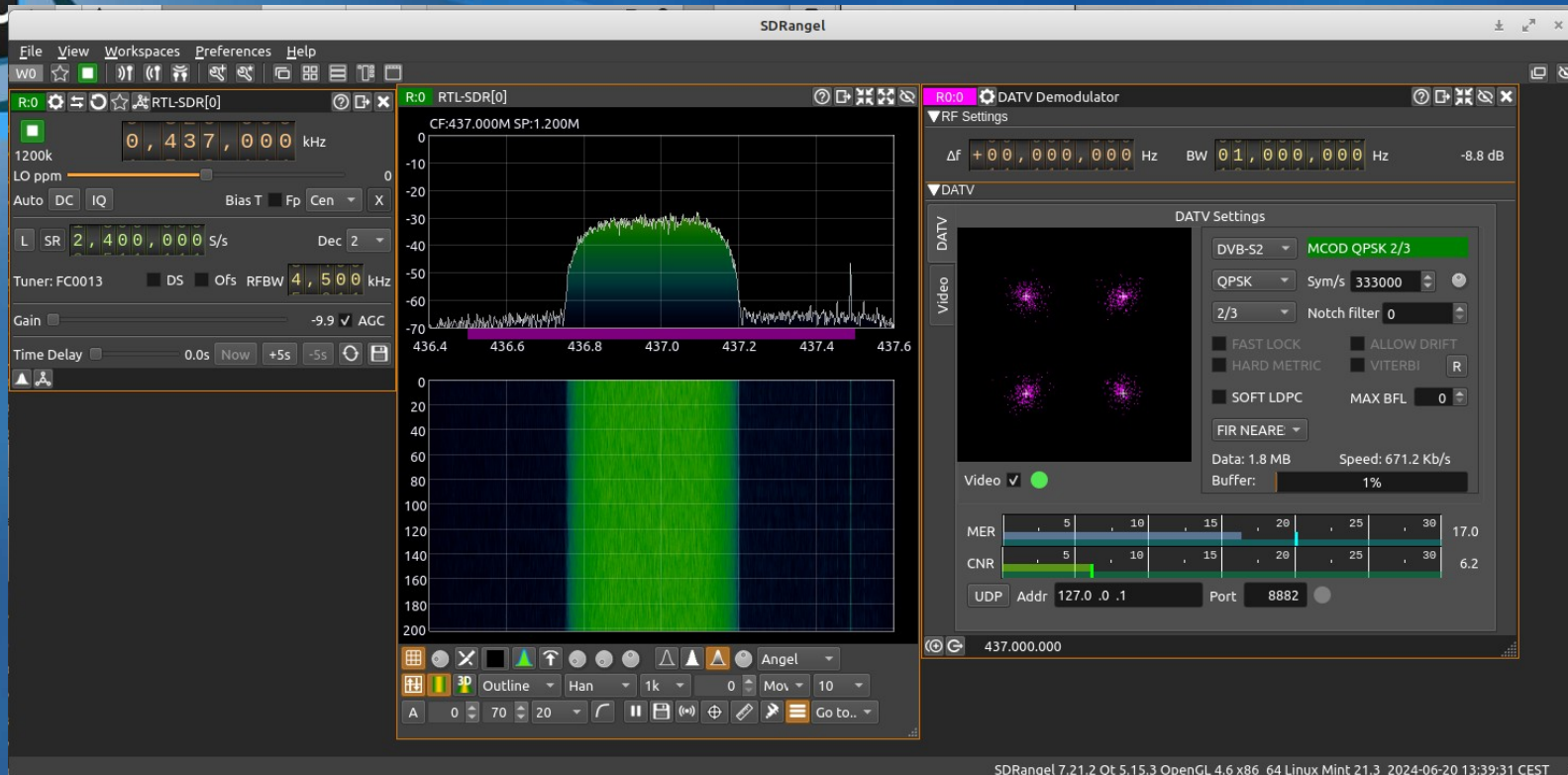


Works only on 23cm and only from with a symbol rate of at least 250kS/s in DVB-S and DVB-S2

Rainer Floesser, DL5NBZ

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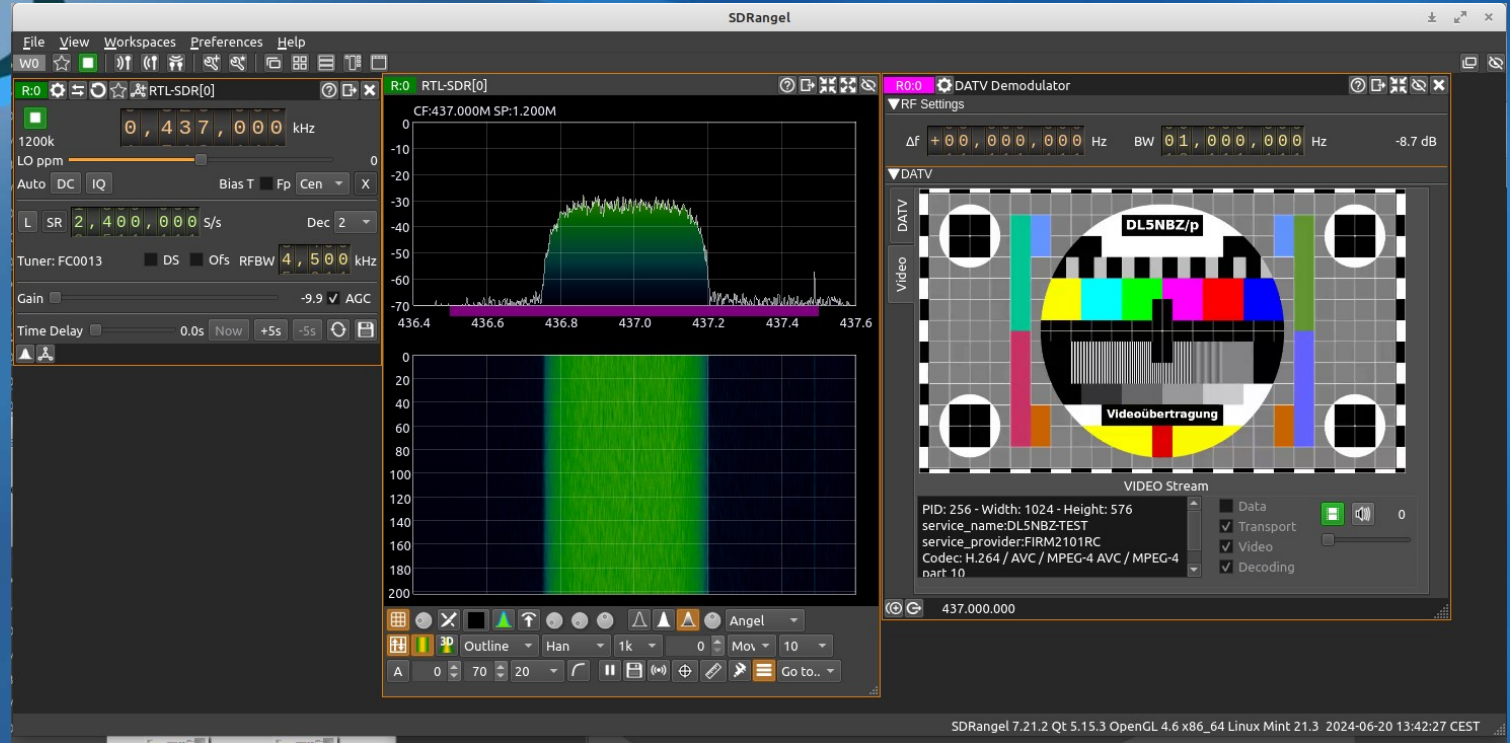
SDRAngel



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BATC

SDRAngel



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Minimum requirements for a beginners receiver

- Frequency range: min. 430-440 and 1240-1320 MHz
- Modulation: QPSK
- Standard: DVB-S RB and DVB-S2 RB
- All common symbol rates 125, 250, 333, 500, 1000, 1500 and 2000 kS/s
- Portable operation must be possible



My solution: The DATV-VE receiver

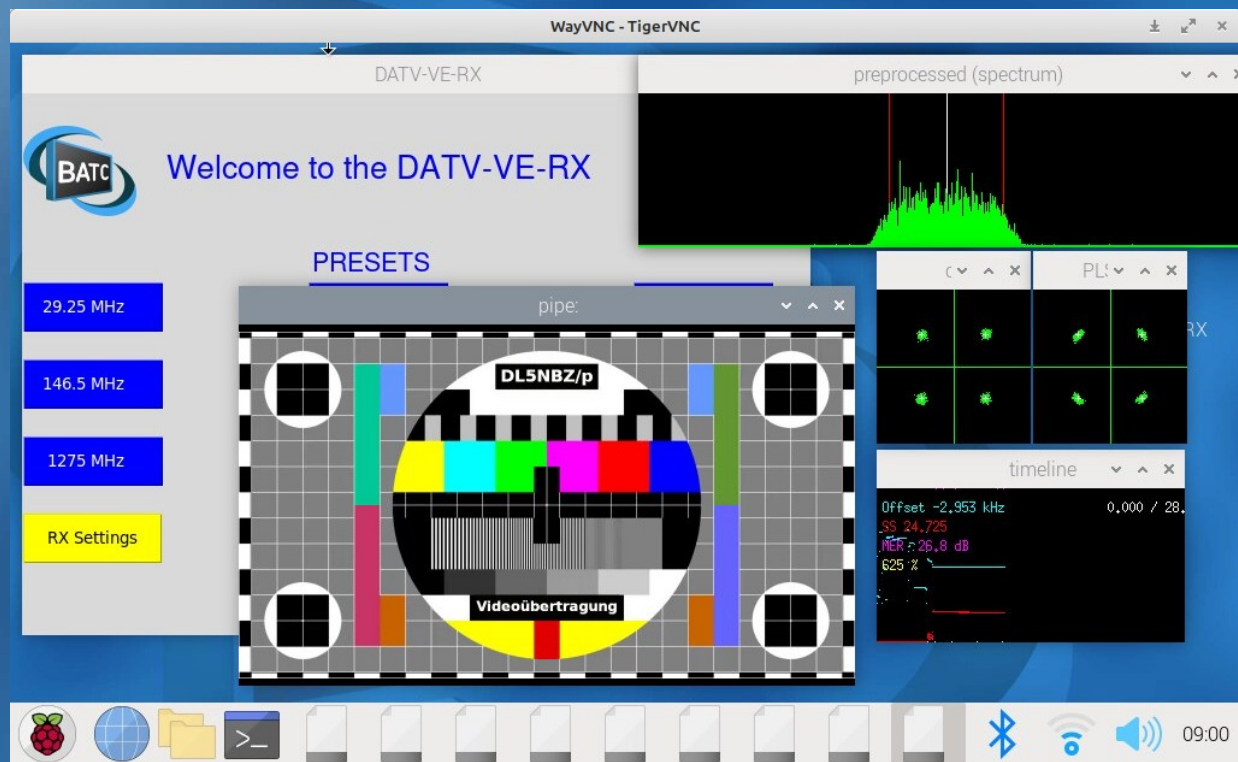


- Simple concept
- Reconstruction-proof
- Easy to assemble
- Construction without soldering
- Cost-effectiveness
- Large range of functions
- Modern technology
- Flexible

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DATV-VE-RX



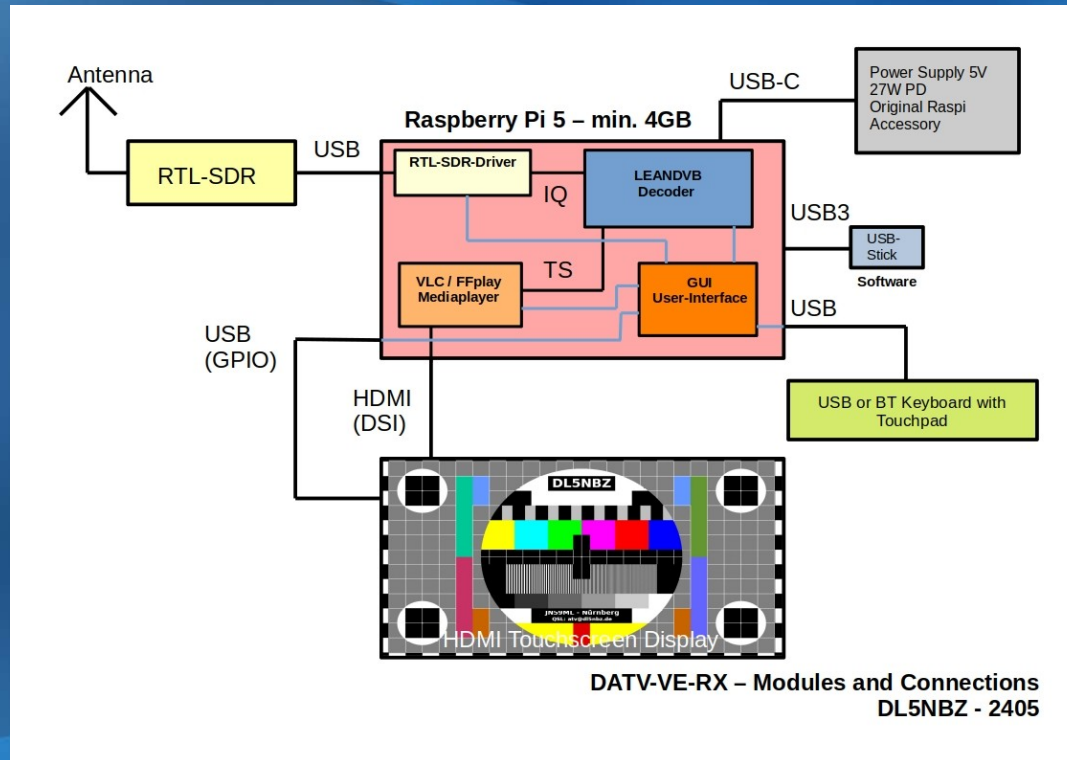
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DATV-VE-RX

The hardware concept

Components:

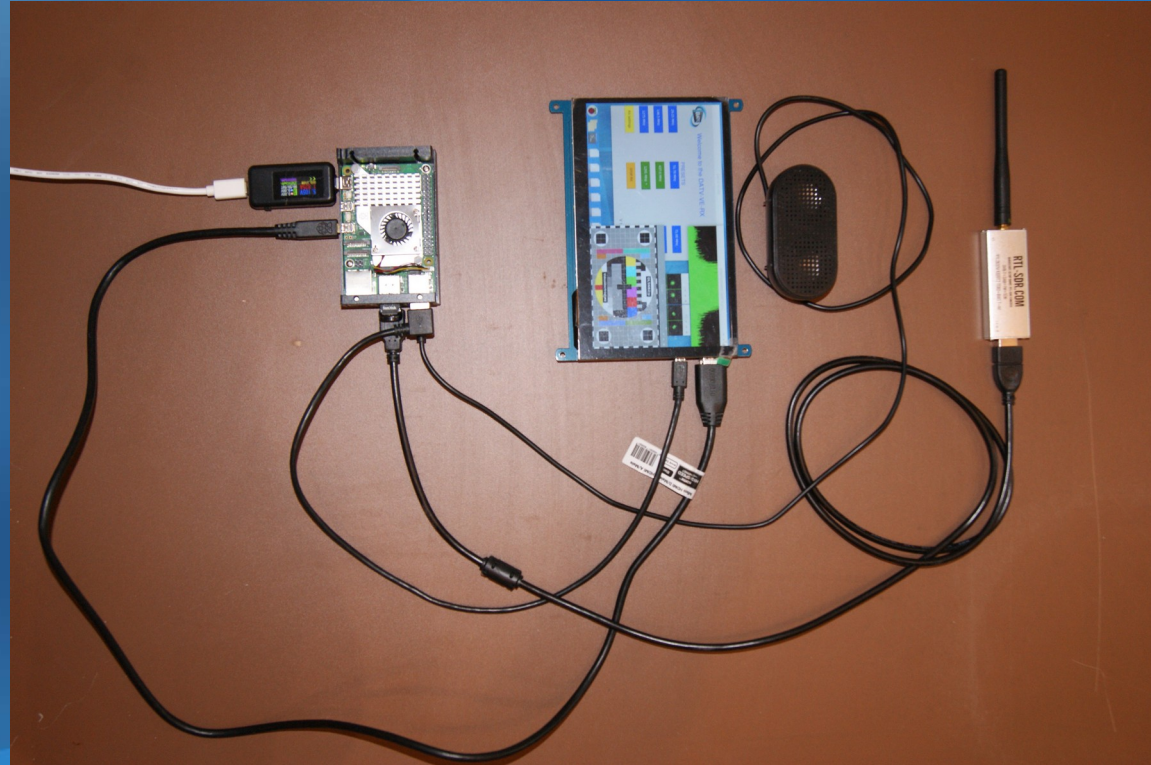
- RTL-SDR Stick
- Raspberry PI5 min 4GB
- HDMI touchscreen display
- Power supply 5V/27W Power Delivery
- USB3 stick 32GB
- Keyboard with touchpad



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DATV-VE-RX

First test



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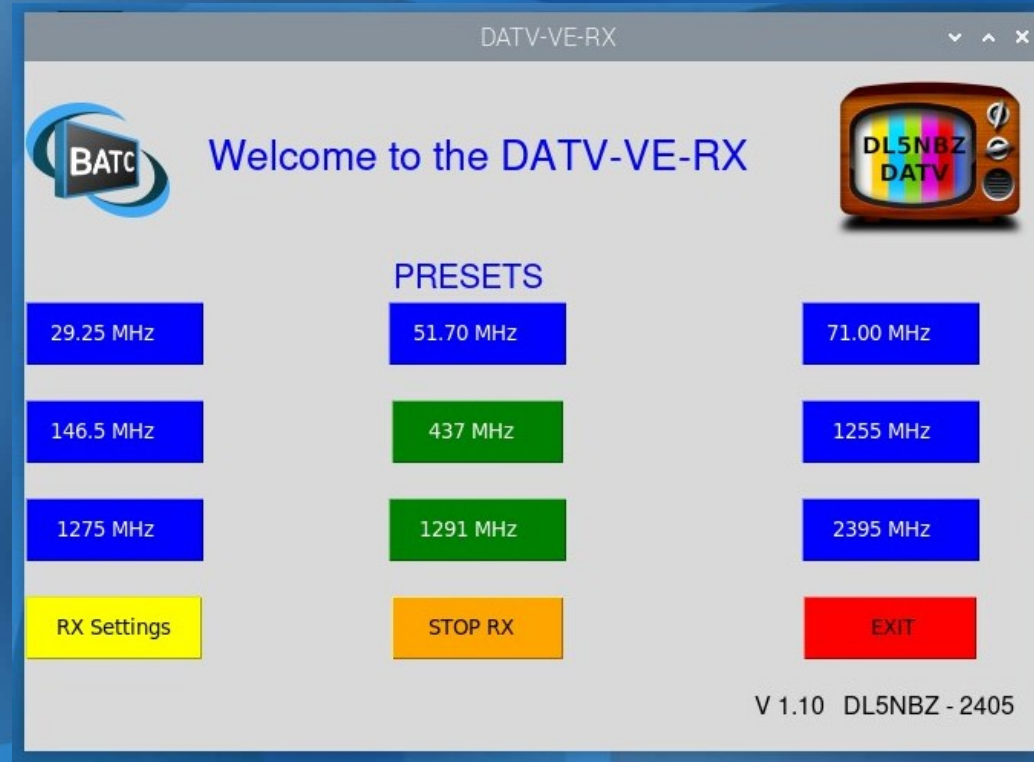
Technical Data DATV-VE-RX

- Frequency range: 24 MHz to 1766 MHz
- Modulation: QPSK, 8PSK, 16APSK, 32APSK autodetect
- Standard: DVB-S RB and DVB-S2 RB
- All common symbol rates 66, 125, 250, 333, 500, 1000, 1500 and 2000 kS/s
- Portable operation possible while using the RASPI4

The file presets.csv

No	Label	Color	OS Command
1	29.25 MHz	blue	rtl_sdr -f 29.25e6 -g 0 -s 6e4 - ./leandvb --gui -f 6e4 --sr 33e3 --cr 1/2 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
2	51.70 MHz	blue	rtl_sdr -f 51.7e6 -g 25 -s 8e5 - ./leandvb --gui -f 8e5 --sr 125e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
3	71.00 MHz	blue	rtl_sdr -f 71e6 -g 25 -s 8e5 - ./leandvb --gui -f 8e5 --sr 125e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
4	146.5 MHz	blue	rtl_sdr -f 146.5e6 -g 25 -s 1.8e6 - ./leandvb --gui -f 1.8e6 --sr 125e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
5	437.0 MHz	green	rtl_sdr -f 437e6 -g 25 -s 1.8e6 - ./leandvb --gui -f 1.8e6 --sr 333e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
6	1255 MHz	blue	rtl_sdr -f 1255e6 -g 25 -s 1.8e6 - ./leandvb --gui -f 1.8e6 --sr 333e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
7	1275 MHz	blue	rtl_sdr -f 1275e6 -g 25 -s 1.8e6 - ./leandvb --gui -f 1.8e6 --sr 333e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
8	1291 MHz *	green	rtl_sdr -f 1291e6 -g 25 -s 1.8e6 - ./leandvb --gui -f 1.8e6 --sr 333e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
9	2395 MHz	blue	rtl_sdr -f 1255e6 -g 25 -s 2.4e6 - ./leandvb --gui -f 2.4e6 --sr 333e3 --cr 2/3 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -
10	TEST CH	black	rtl_sdr -f 437e6 -g 0 -s 2.4e6 - ./leandvb --gui -f 2.4e6 --sr 333e3 --cr 8/9 --standard DVB-S2 --sampler rrc --rrc-rej 30 --fastlock --viterbi ffplay -x 512 -y 300 -

The user interface: datv-ve-rx.py



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The user interface: settings.py

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DATV-VE-RX

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RX-Settings

DL5NBZ DATV

SDR-PARAMETERS

SAMPLE-RATE (MHz): 1.0 GAIN (0-49): 41 0=AGC

RX-PARAMETERS

RX-Frequency (MHz): 437 Symbolrate(kS/s): 333 FEC : 8/9

RX-OPTIONS

☒ DVB-S2 ☒ Fastlock ☒ Viterbi ☒ Drift ☒ Sampler ☐ LDPC
☒ GUI ☐ FullScreen ☐ vlc ☐ SR-Scan ☐ Record ☐ RecordIQ

STREAMING

☐ UDP-Stream IP-PORT: 1234 IP-ADDR : 127.0.0.1

EDIT PRESET-No

READ (1-9): 10 LABEL: TEST-CH
WRITE (1-9): 10 COLOR: black

START STOP RX SAVE PRESETS

DL5NBZ-2405 V1.10

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How to get the software

Image:

<https://agaf.darc.de/archiv/technik/datv-ve-rx/datv-ve-rx-110.zip>

Additional files:

<https://www.darc.de/der-club/referate/agaf/atv-weblinks/>





Thanks for your attention!

- Any Questions?