

# OpenWebRX(⌚)

## History, Features and Deployment

10/2023 - Stefan Dambeck DC7DS

# Agenda

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## WebSDR / OpenWebRX History

How it all began

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## OpenWebRX(+) Features

A walk through OpenWebRX(+) features and decoding capabilities

03

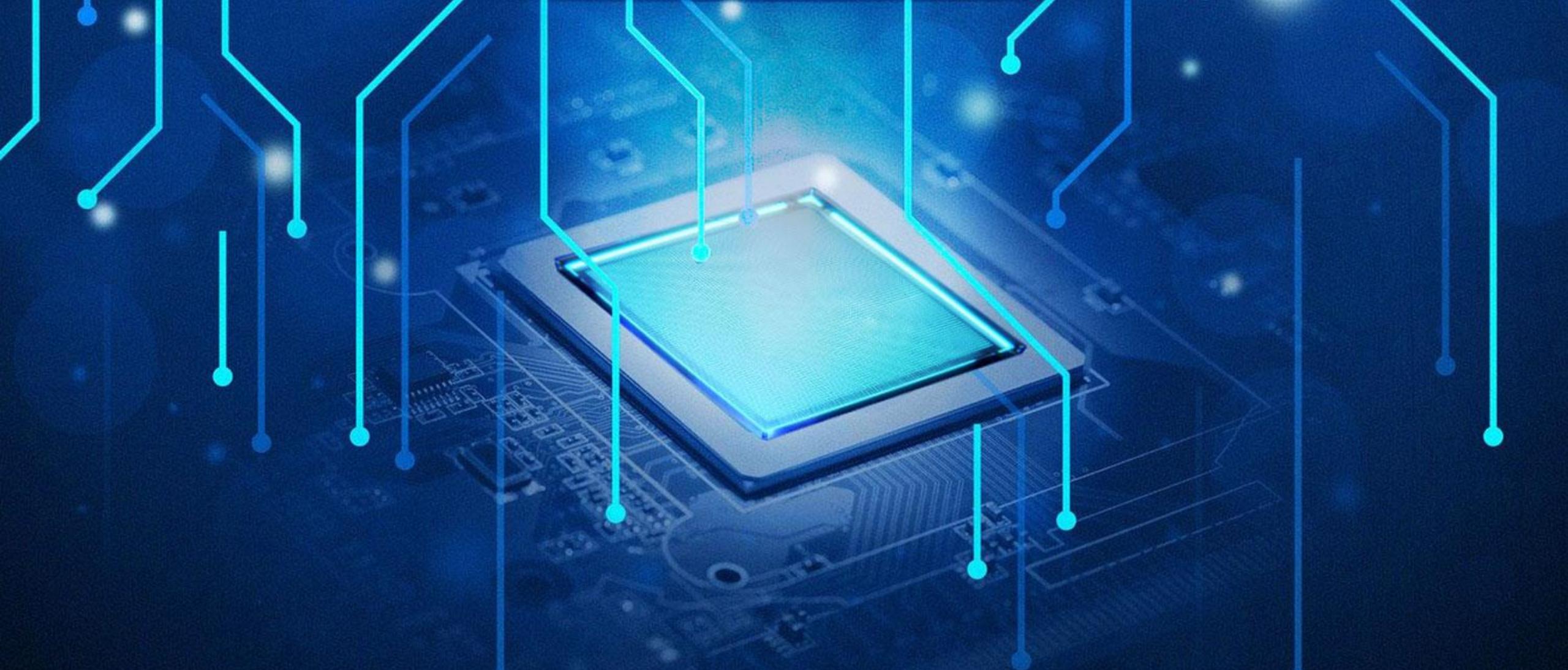
## OpenWebRX(+) Deployment

How to roll your own instance of OpenWebRX(+)

04

## OpenWebRX+ Demo

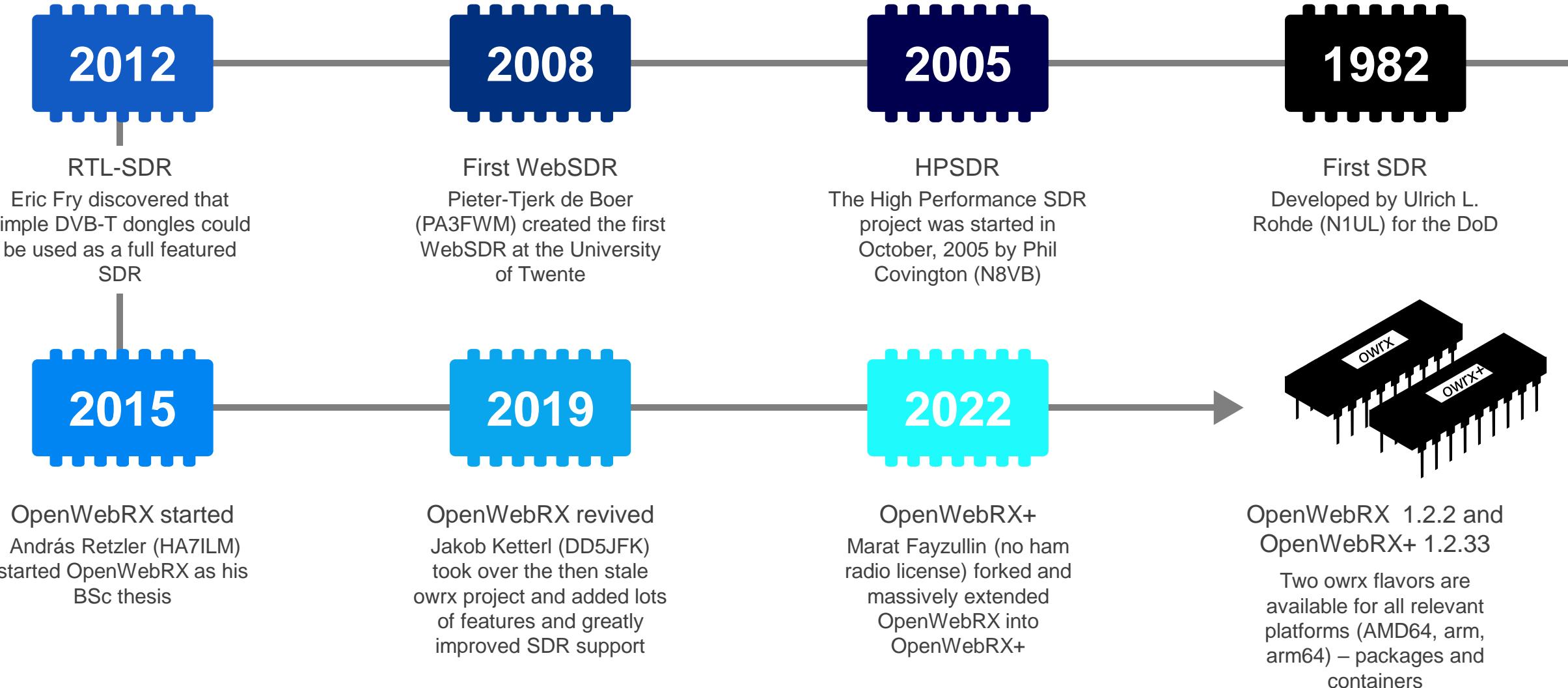
Hands-on demonstration



# WebSDR / OpenWebRX History

How it all began

# History of SDRs and WebSDR



# WebSDR by PA3FWM

KFS WebSDR #1 Not secure | websdr1.kfsdr.com:8901/?tune=7181lsb&zoom=6

View:  others slow  one band  blind Allow keyboard:

Waterfall:  Java  HTML5 Sound:  Java  HTML5 Chrome audio start Firefox/Mozilla audio start

2005 UTC 1305 Local (Your computer) Try zooming out!

Frequency: 14074.000 kHz VFO: A (B: 3710.00 kHz LSB)  
Enter frequency above, or tune by clicking/dragging/scrollwheel on the frequency scale.

Mode: **USB**  
-2.5k  -500  -50  -10  -1  =kHz  +1  +10  +50  +500  +2.5k VFO:  A/B  A=B  B=A  
Use the =kHz button to snap to the nearest kHz.

80/75M  60M  40M  30M  20M  17M  15M  10M

Memories:  
 recall  erase  store (new)  
Memories are stored as cookies on your computer, not on the server.

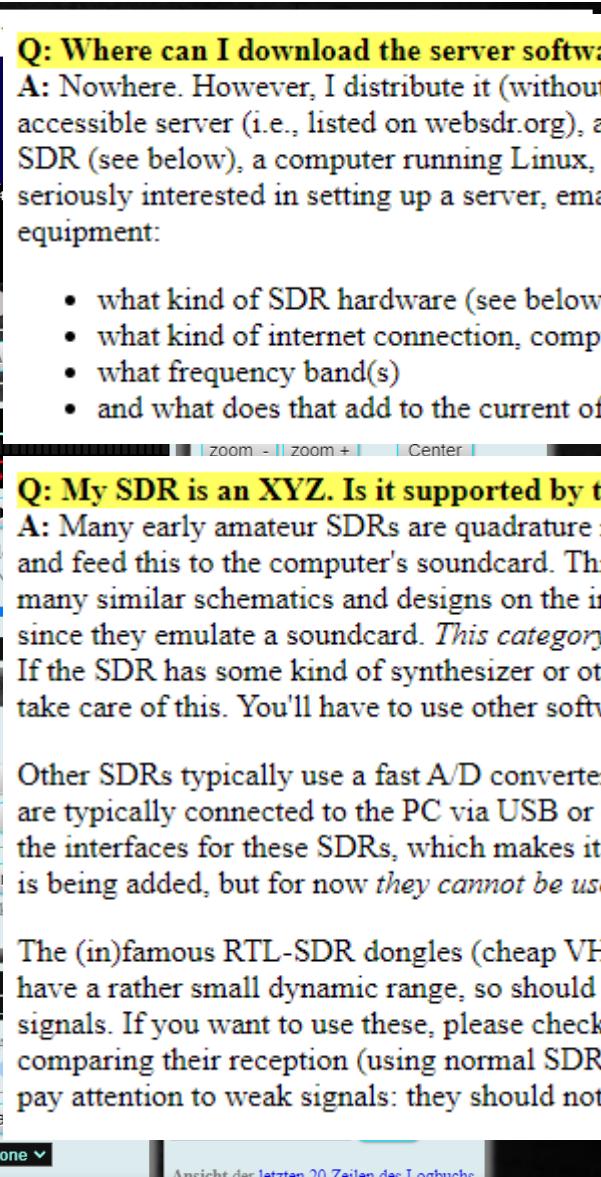
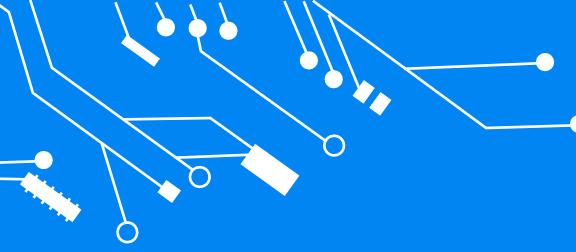
Bandwidth:  
USB: **2.80 kHz @ -6dB; 3.26 kHz @ -60dB**. Default BW in bold.  
 CW-wide  LSB-wide  USB-wide  AM-wide  FM-wide  SAM-U

Waterfall view:  
 zoom out  zoom in  
 max out  max in  
Or use scroll wheel & dragging on waterfall.  
Speed: **medium**   
Size: **medium**   
View: **waterfall**   
 Hide labels  
Toggle "Hide labels" if labels are missing.

DSP Noise Reduction: **Off**   
More info about Noise Reduction, Notch2 & High Boost [here](#)

Audio buffering: **+500ms**

# WebSDR by PA3FWM



View:  all bands  others slow  one band  blind Keyboard:

144100 144200 144300 144400 144500 144600 144700 144800 144900 145000 145100  
HAMRADIO FT8 DB0JT JN67JT APRS / Paket

Helligkeit:  Kontраст:  Signal: 101.1 dBm

Dieser WebSDR wird derzeit besucht von 10 user(s) Mobile Version Zoom A

Frequenz: 145675.00 kHz. Mode: FM  
Bitte gebe oben die Frequenz ein. A/B A=B  
Oder tune mit klicken/ziehen/Scrollrad auf der Frequenzzleiste.

TUNE: <<< << < >> >> >>>

Bänder BAND: 11m 10m 2m Freenet 70cm

Admin

Wechsel zu anderen WebSDR Servern Nürnberg DE Niedermorn CH Zug CH

Memories

Download Append Replace Delete all Show/Hide  
Save to memory

Memories werden gespeichert als Cookies auf Deinem Computer, nicht auf dem Server.

QRZ.COM Rufzeichen lookup by [qrz.com](#):  Search  
Rufzeichen lookup by [grzcq.com](#):  Search  
OTH locator by [OTH-Locator](#):  Search

## Q: Where can I download the server software?

A: Nowhere. However, I distribute it (without cost) via e-mail to people who are setting up a publicly accessible server (i.e., listed on [websdr.org](#)), and who have everything needed to set it up: a suitable SDR (see below), a computer running Linux, and a fast internet uplink. If you have all of these and are seriously interested in setting up a server, email [me](#) with the following details about your plans and equipment:

- what kind of SDR hardware (see below for what is supported)
- what kind of internet connection, computer, and Linux installation
- what frequency band(s)
- and what does that add to the current offering on [websdr.org](#) (see the next question) ?

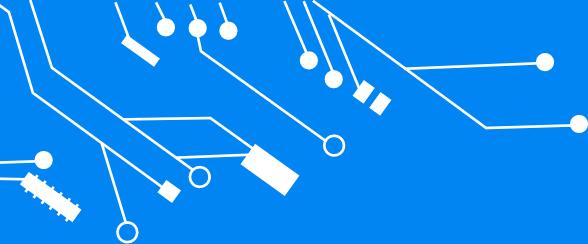
## Q: My SDR is an XYZ. Is it supported by the WebSDR server software?

A: Many early amateur SDRs are quadrature mixers which downconvert radio signals to the audio range and feed this to the computer's soundcard. This category includes the well-known Softrock kits, and very many similar schematics and designs on the internet. Also the FunCubeDongle and USB-Afedri work, since they emulate a soundcard. *This category of SDRs is supported.*

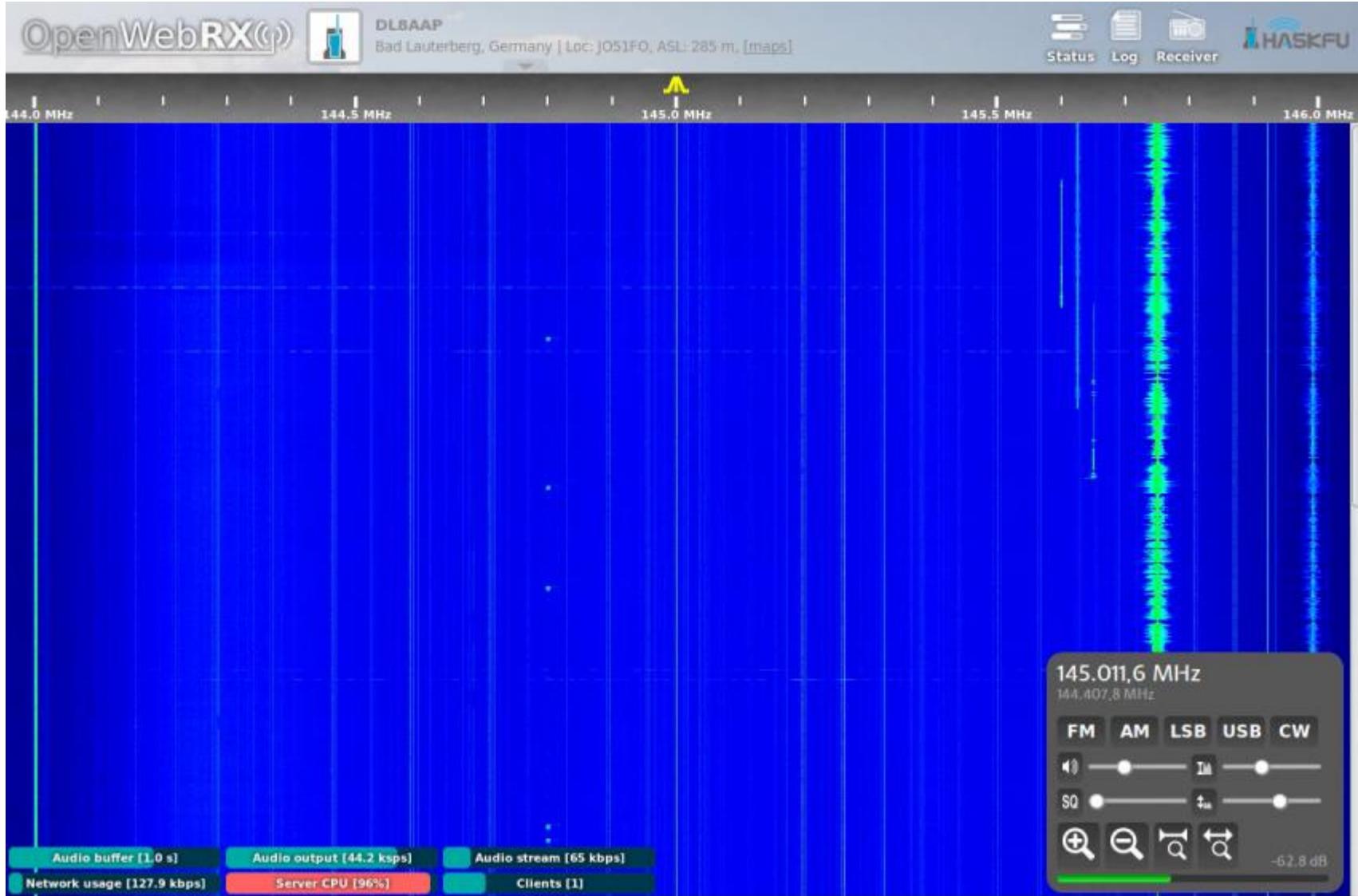
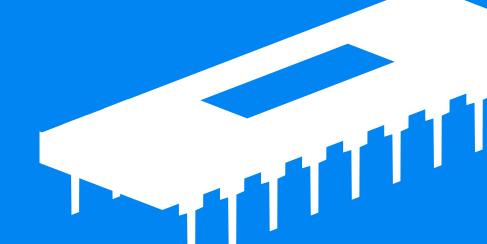
If the SDR has some kind of synthesizer or other configuration settings, the WebSDR software will not take care of this. You'll have to use other software to configure it.

Other SDRs typically use a fast A/D converter and digital hardware to filter part of the spectrum; they are typically connected to the PC via USB or ethernet. Unfortunately, there is no standardization among the interfaces for these SDRs, which makes it hard for me to support them. A generic interface for them is being added, but for now *they cannot be used*.

The (in)famous RTL-SDR dongles (cheap VHF/UHF SDRs) are now supported. Note that these SDRs have a rather small dynamic range, so should only be used in situations where there are no very strong signals. If you want to use these, please check carefully that they are not being overloaded, e.g. by comparing their reception (using normal SDR software) to e.g. a normal non-SDR receiver; in particular, pay attention to weak signals: they should not disappear into the noise.



# OpenWebRX by HA7ILM



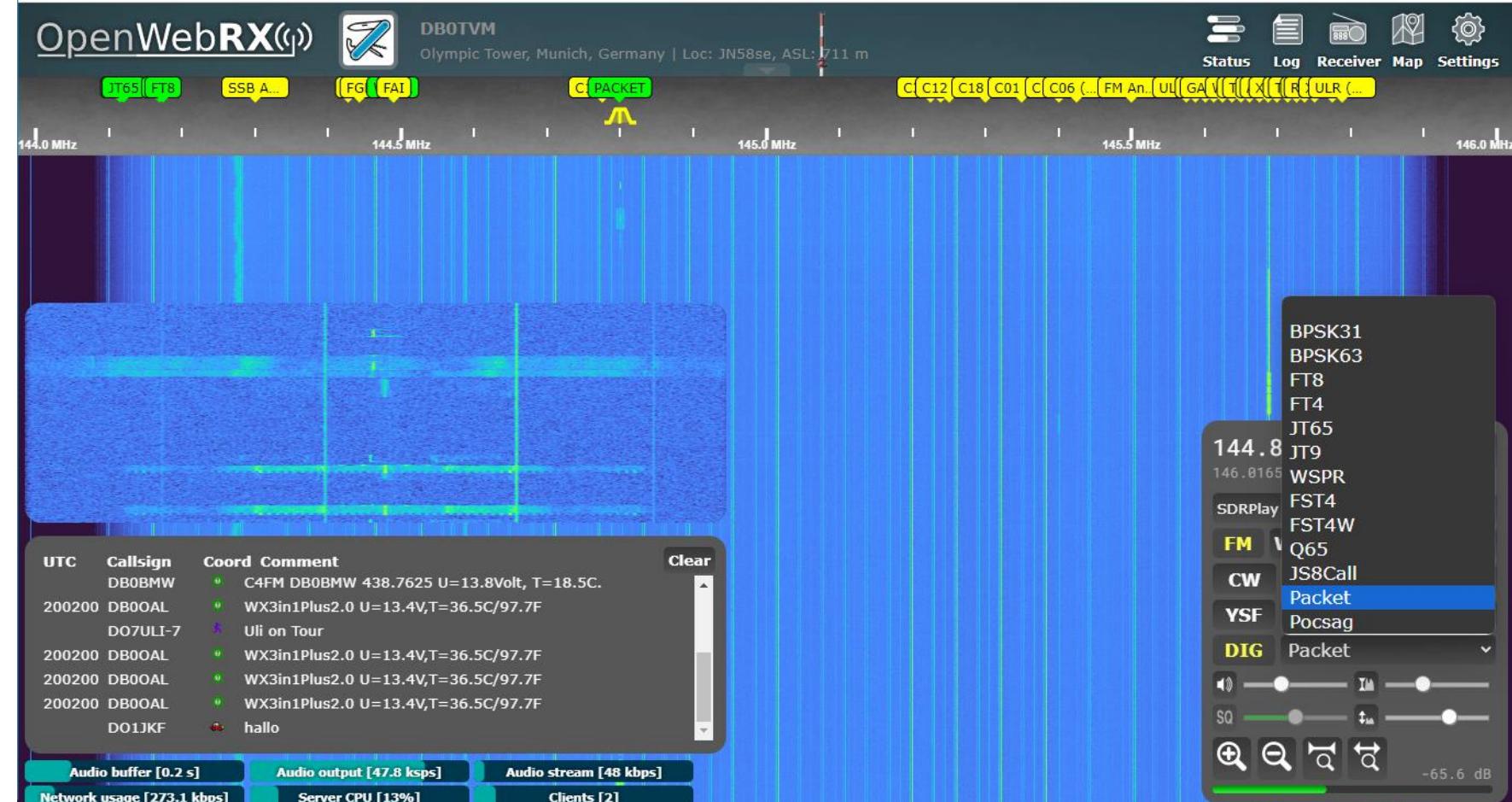
## Early OpenWebRX

As of 2016, OpenWebRX had basic features

- FM, AM, SSB, CW
- Squelch and volume controls
- Some waterfall controls
- Purely text-based config
- Broad SDR support (RTLSDR, Airspy, HPSDR, SDRplay and many more)



# OpenWebRX-Rework by DD5JFK

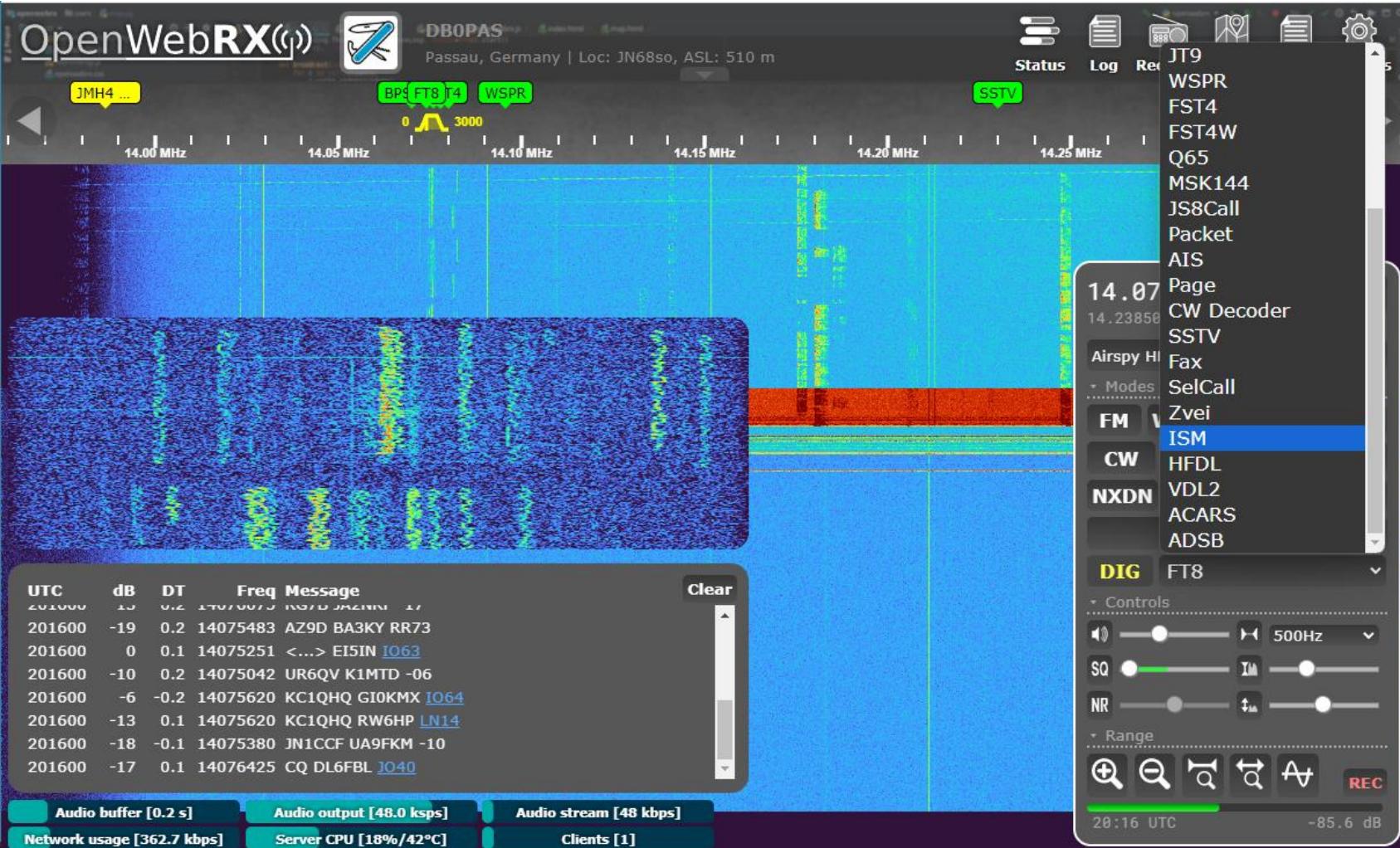


## New OpenWebRX

Jakob DD5JFK greatly enhanced the features of OpenWebRX

- Config Web-Gui
- Digital Voice (D-Star, C4FM, DMR, NXDN) and Digimode (APRS, FT8/4, WSPR, JS8) decoders integrated into web-ui
- Bookmarks and labels
- Map view showing decoded signals and their origin (FT8/4, WSPR, JS8, APRS)
- Background decoding
- Improved SDR support

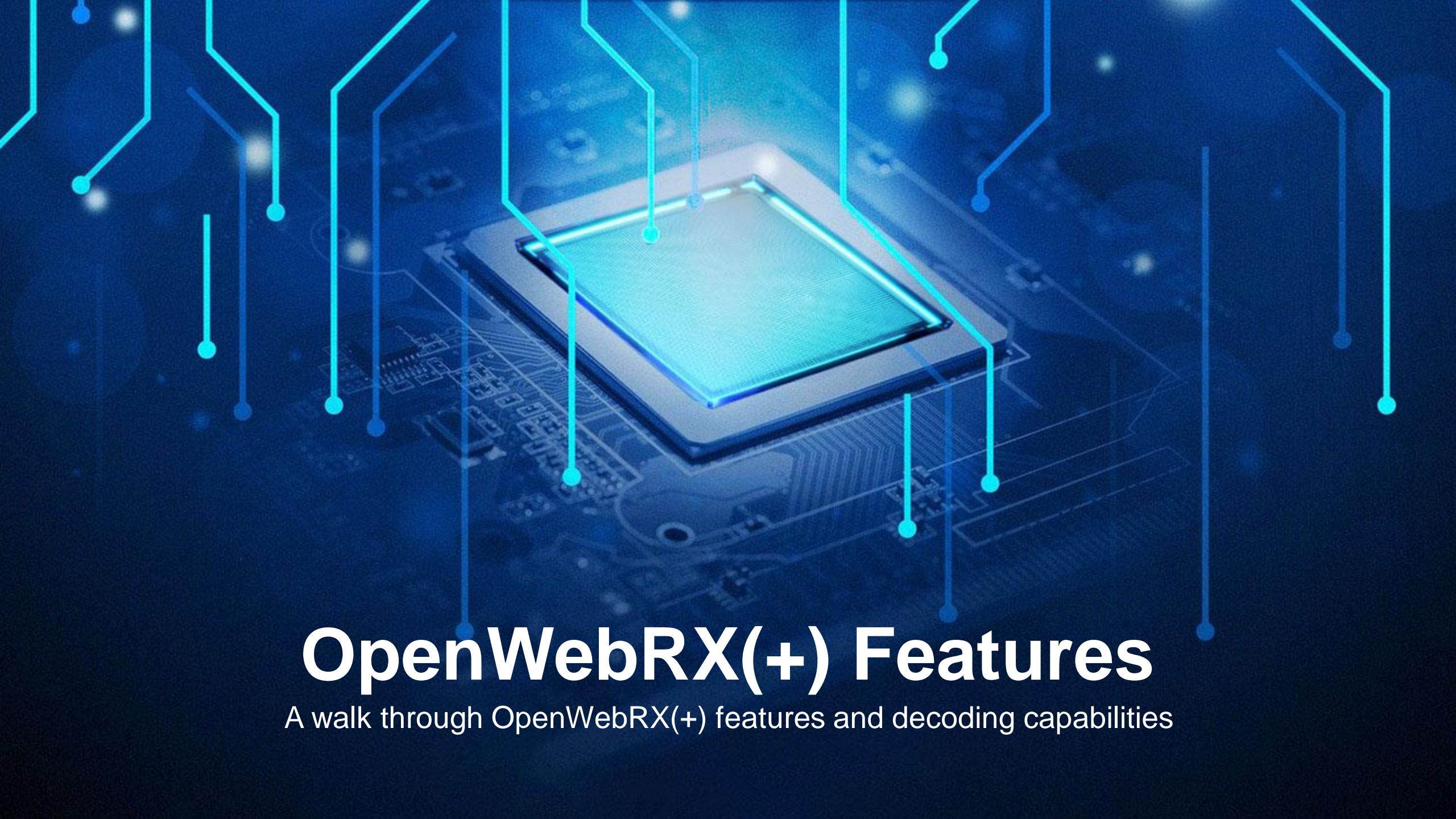
# OpenWebRX+ by Marat Fayzullin



## OpenWebRX+

Marat Fayzullin forked OpenWebRX into OpenWebRX+ and added lots of decoding capabilities

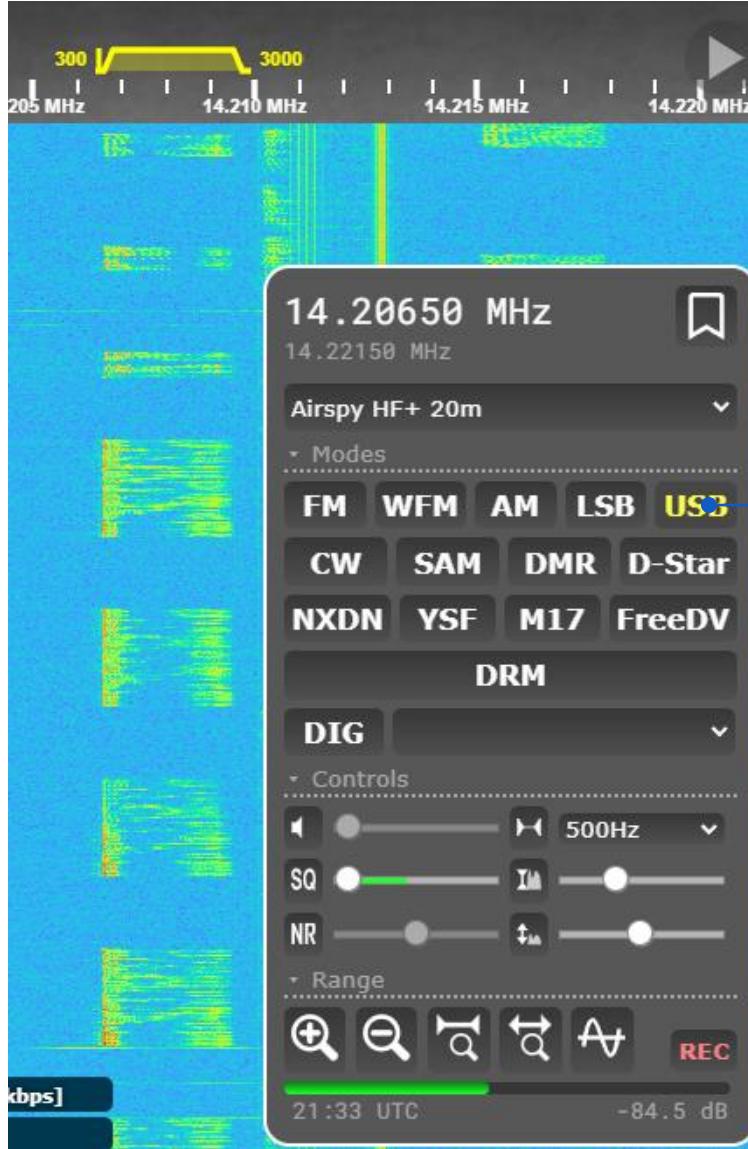
- Enhanced map (OSM) and filters
- Lots of additional decoders (SSTV, AIS, CW, Page, Fax, ISM, HFDL/ACARS/ADS-B)
- Enhanced Controls and Functions (NR, Rec, spectrum display)
- File viewer for received SSTV pics



# OpenWebRX(+) Features

A walk through OpenWebRX(+) features and decoding capabilities

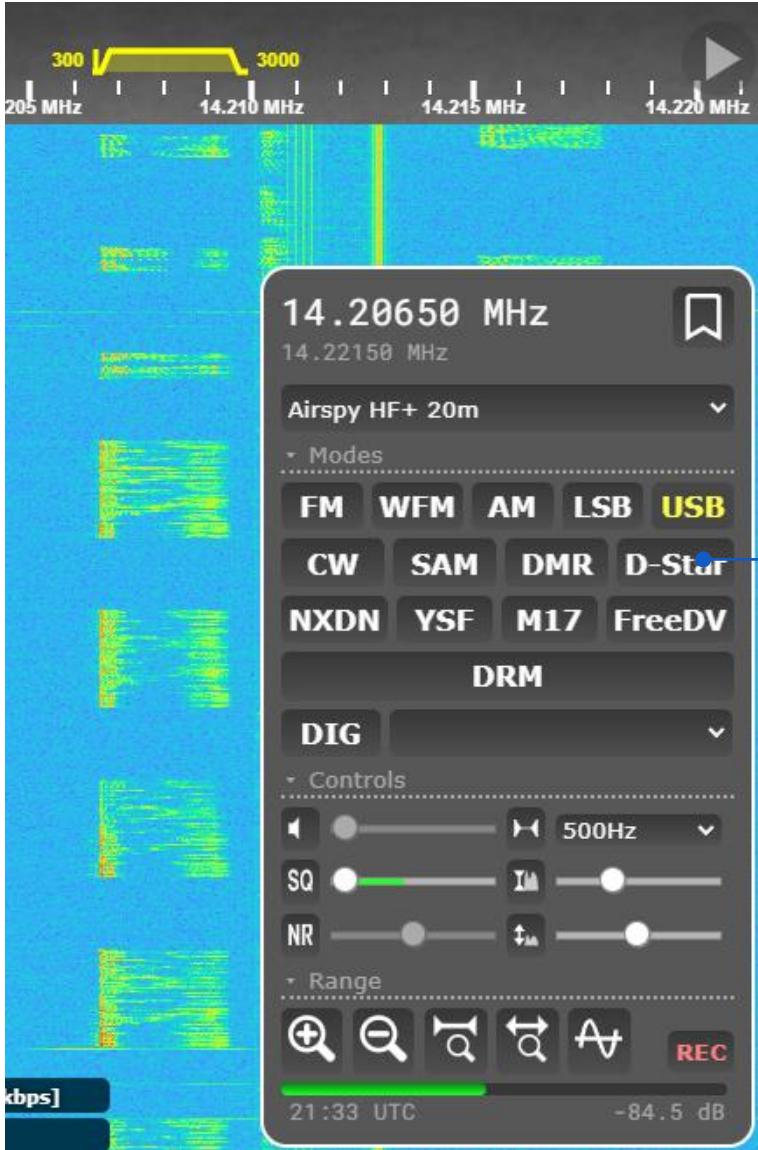
# Receive Audio



## Receive and demodulate audio

OpenWebRX(+) can receive and demodulate narrowband (FM, AM, SSB, CW) and wideband (WFM, broadcast) transmissions

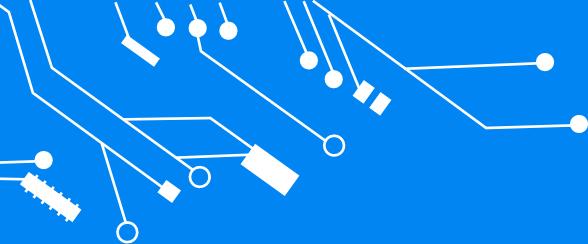
# Receive Digital Voice



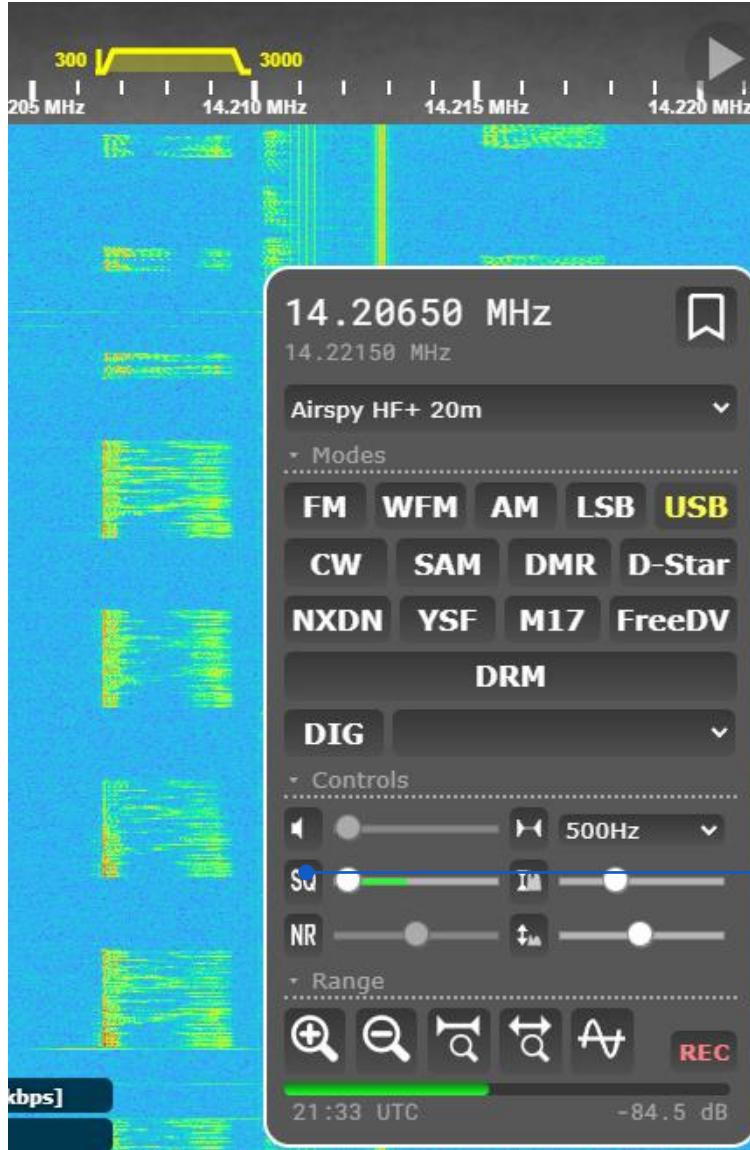
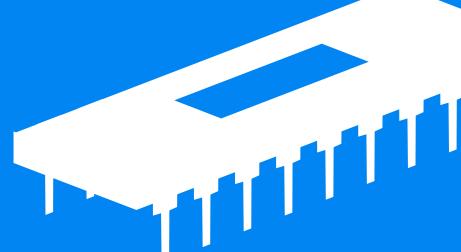
## Receive and decode digital voice

OpenWebRX(+) can receive and demodulate ham radio digital voice (DV) modes D-Star, C4FM/YSF, DMR, NXDN and M17

**Requirements:** DV modes that use the proprietary, patented AMBE codec require the use of a codec server plus a hardware AMBE decoder (such as ThumbDV)

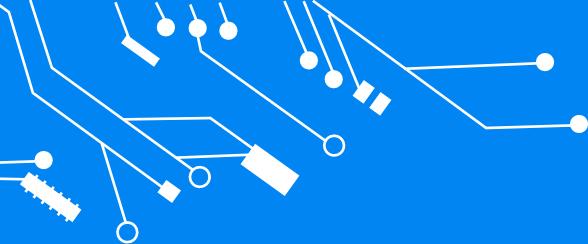


# Squelch Control

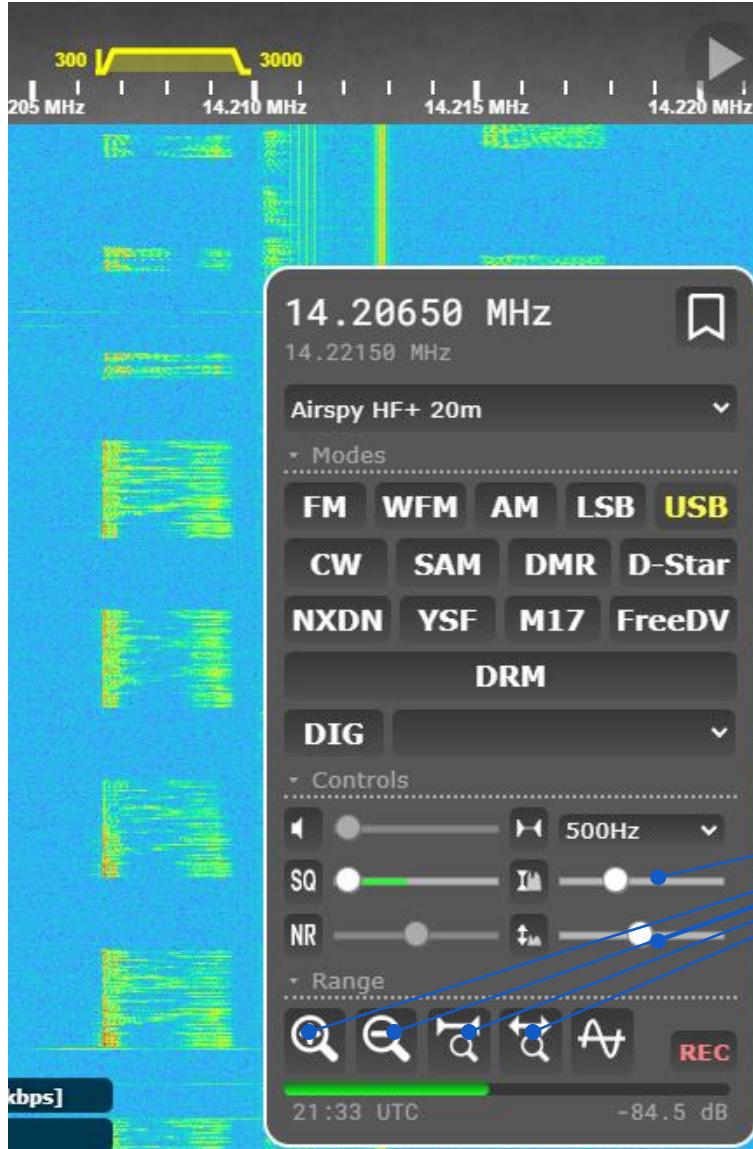
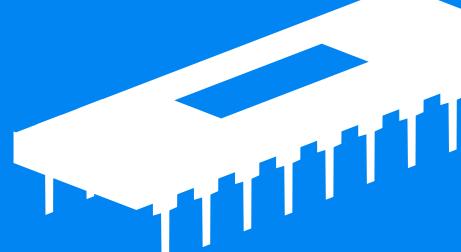


## Mute noise and static

OpenWebRX(+) has a built in squelch function to mute noise and static based on signal strength



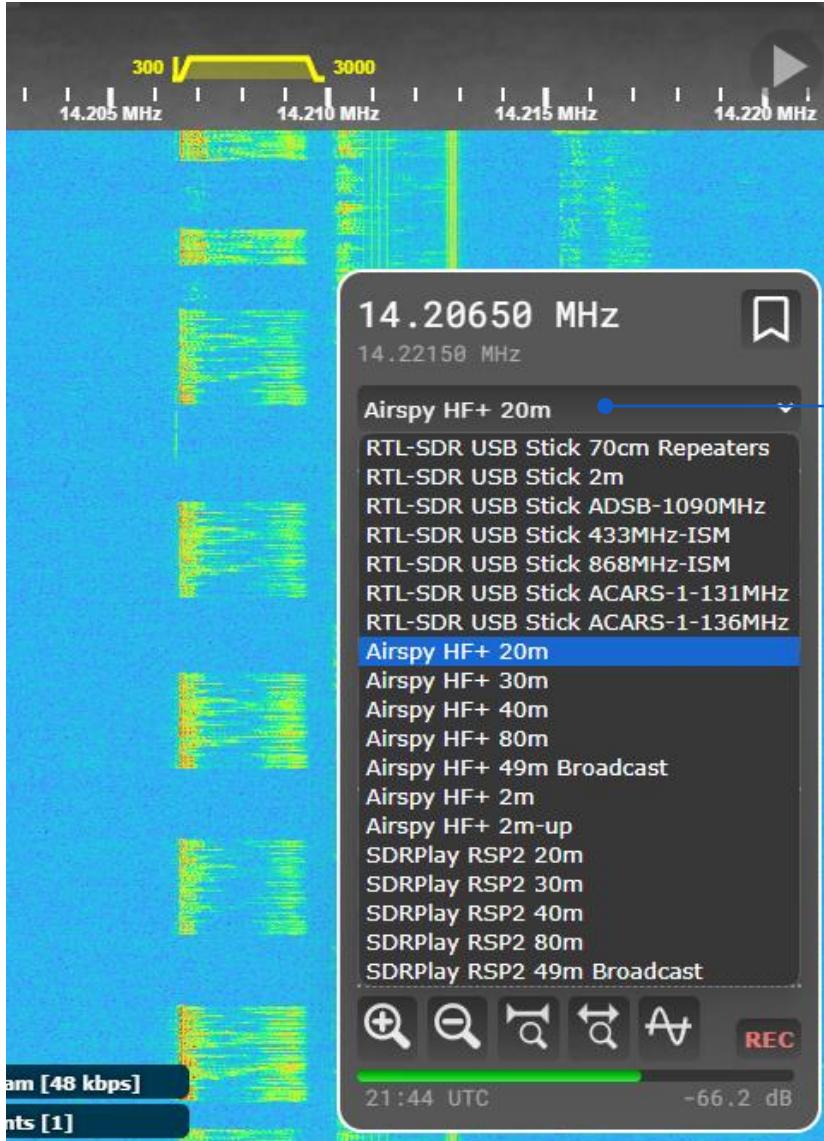
# Waterfall controls



## Setup display and bandwidth

The waterfall display in OpenWebRX(+) is controllable via multiple slider controls and buttons

# Receive Profiles



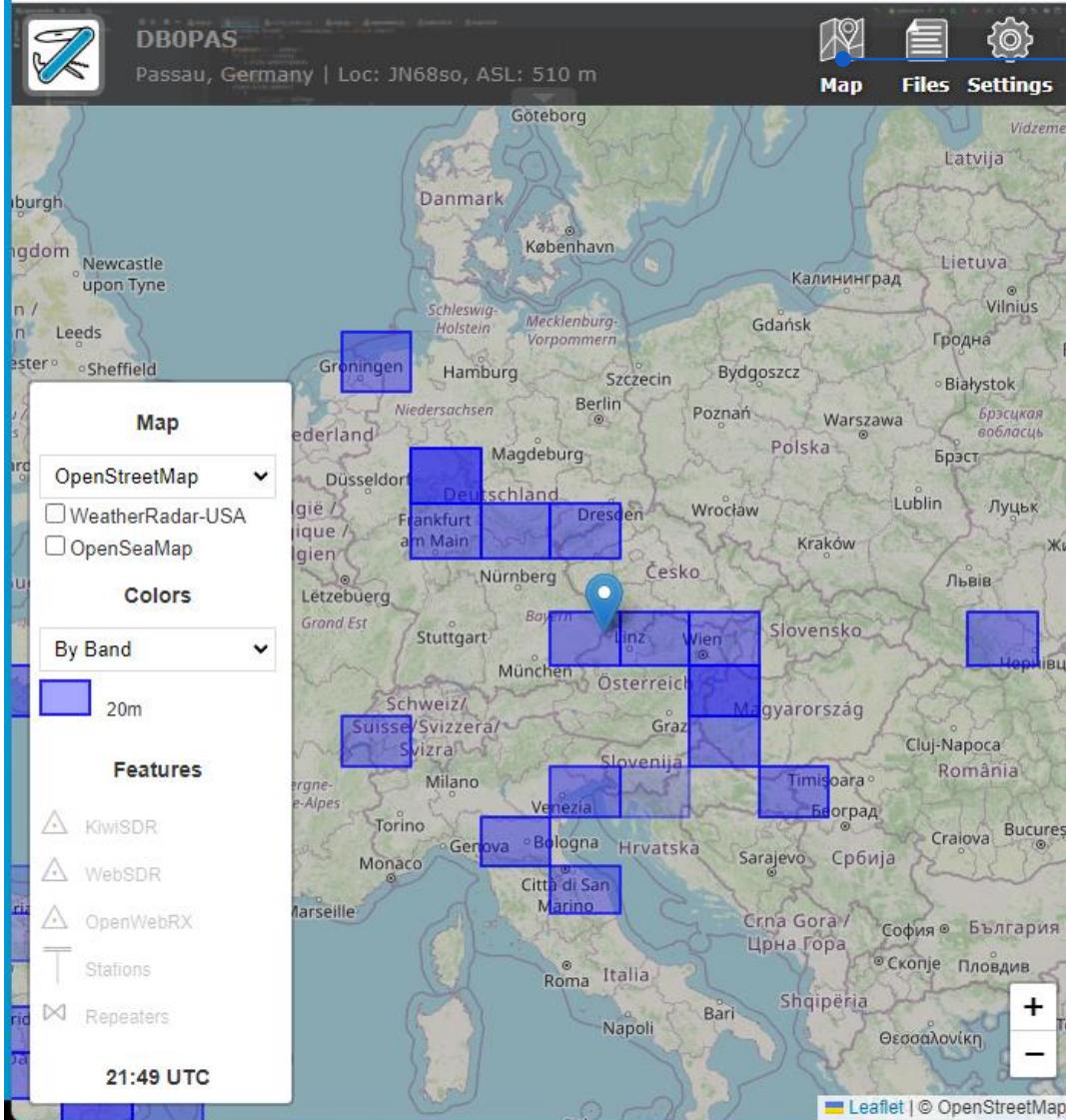
## Choose device and band

OpenWebRX(+) supports the simultaneous use of many SDRs and bands – just choose device and band via the profile dropdown box

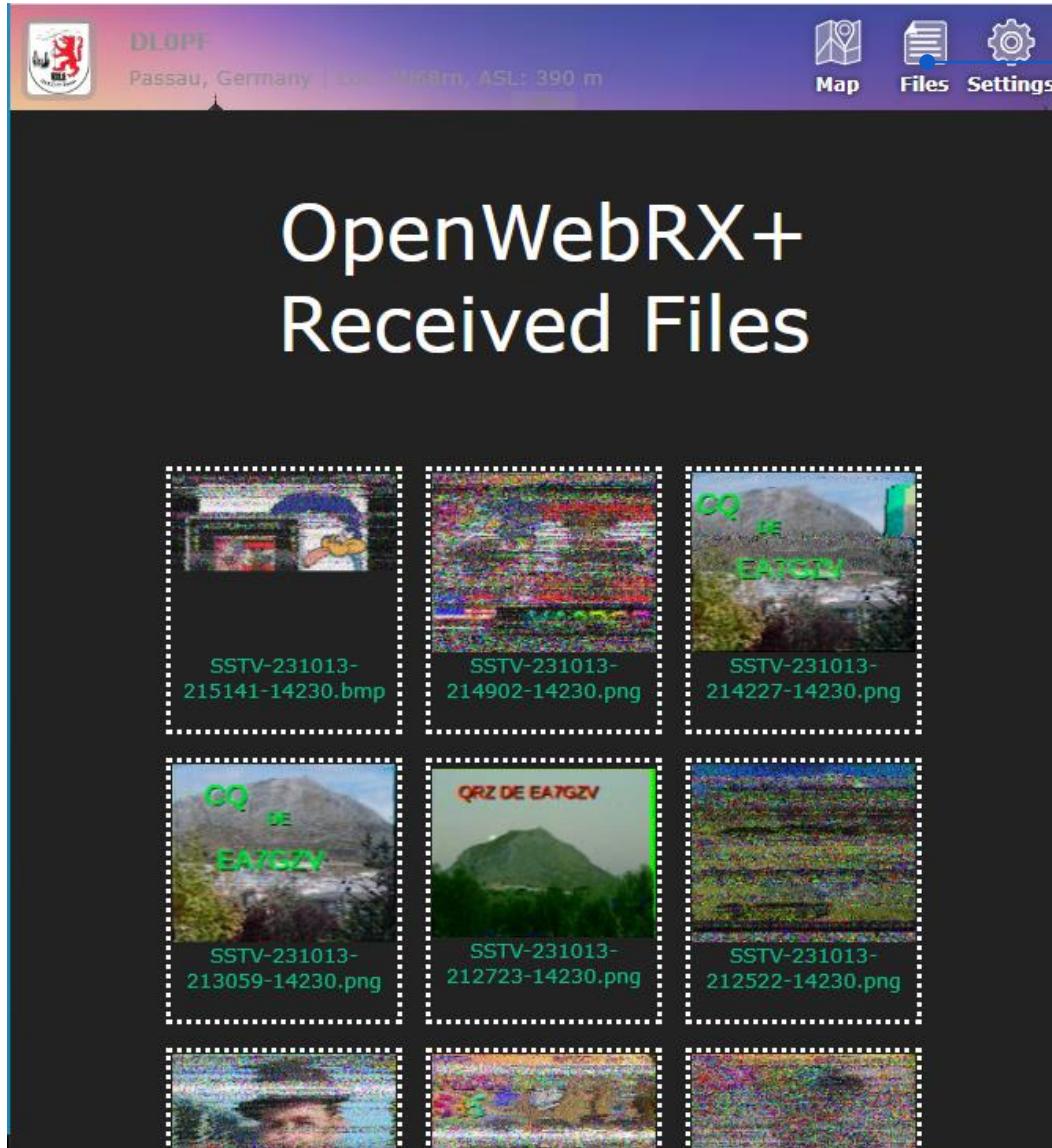
# Map view

Map

OpenWebRX(+) has an integrated map view using Google maps or OpenStreetMaps to show positions of received stations (e.g. FT8 or APRS/Packet decodes)



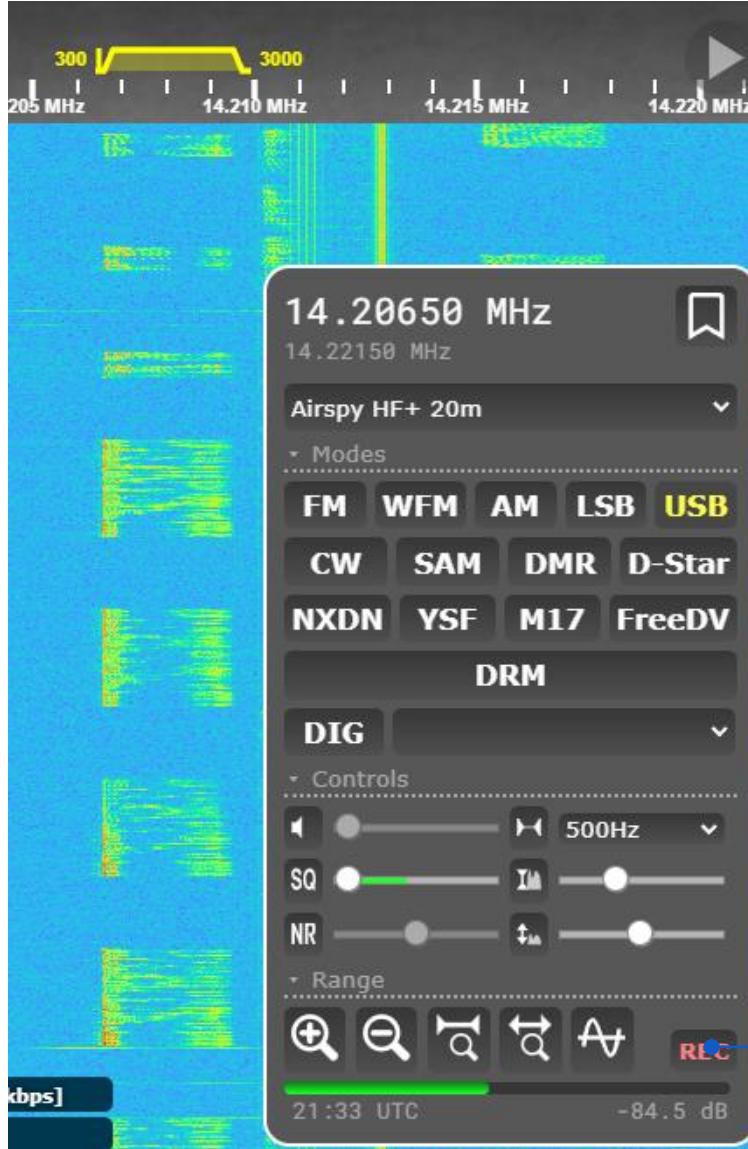
# Received Files



## Received Files

OpenWebRX+ has an integrated file viewer for received SSTV pictures

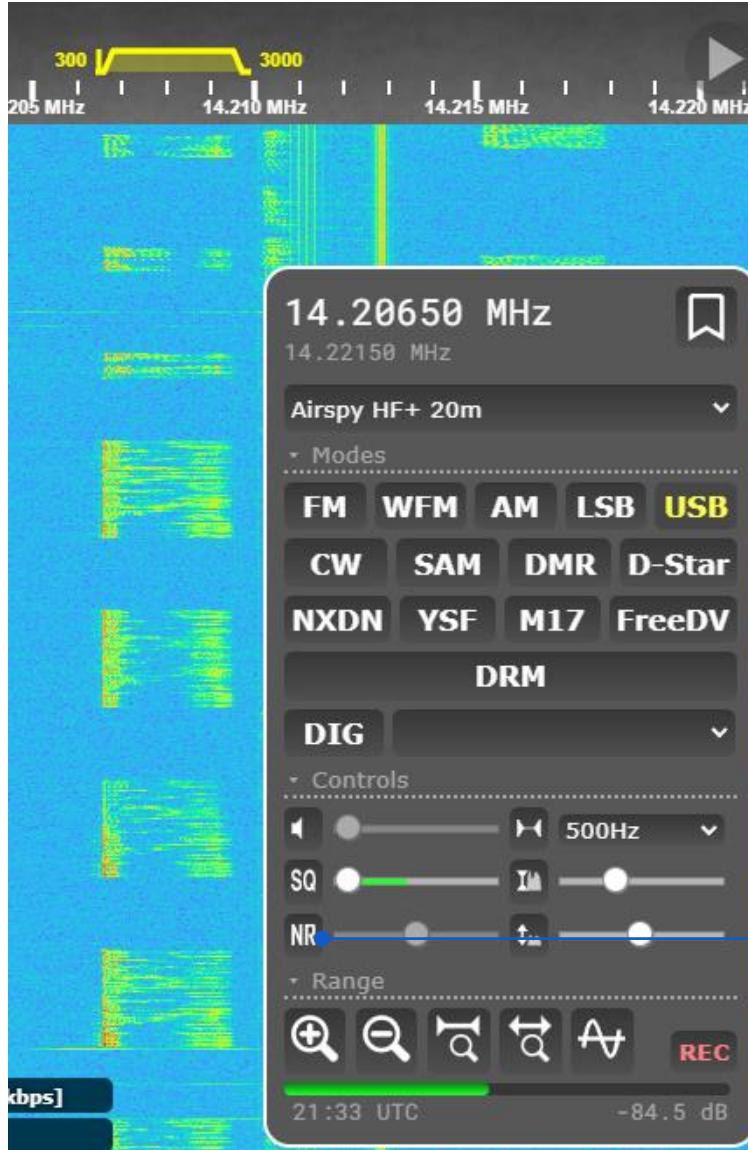
# Audio Recorder



OpenWebRX+ supports live recording of received transmissions to a local .mp3 file using browser-based functions

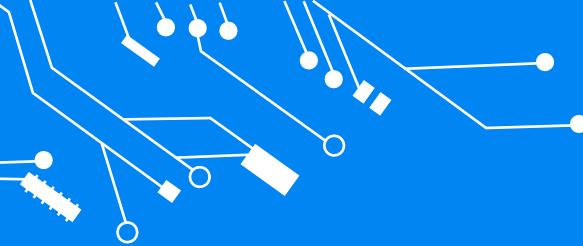
[Record Audio](#)

# Noise Reduction

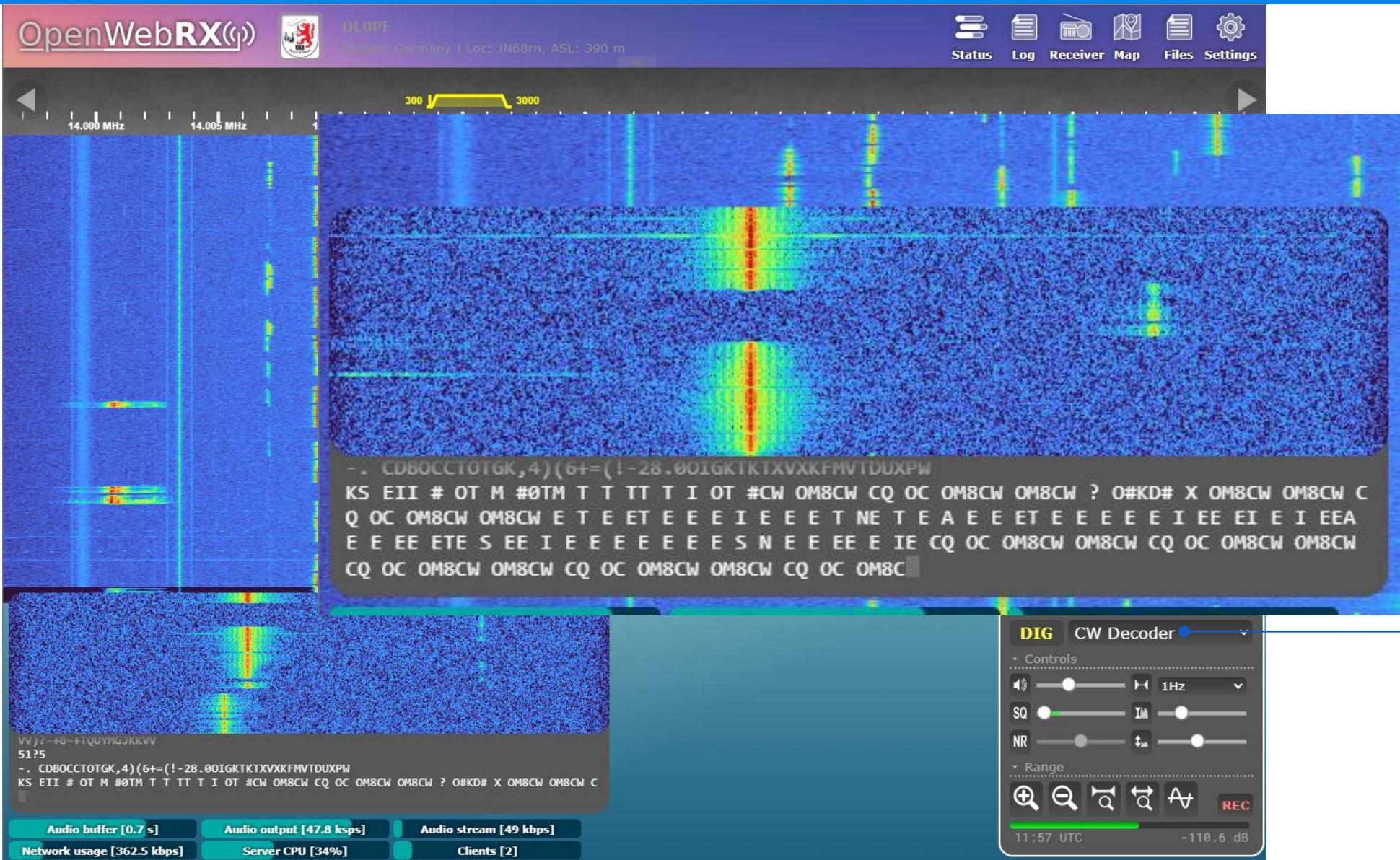
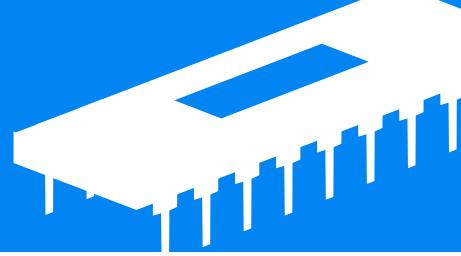


OpenWebRX+ supports configurable noise reduction on the received signals

## Noise Reduction



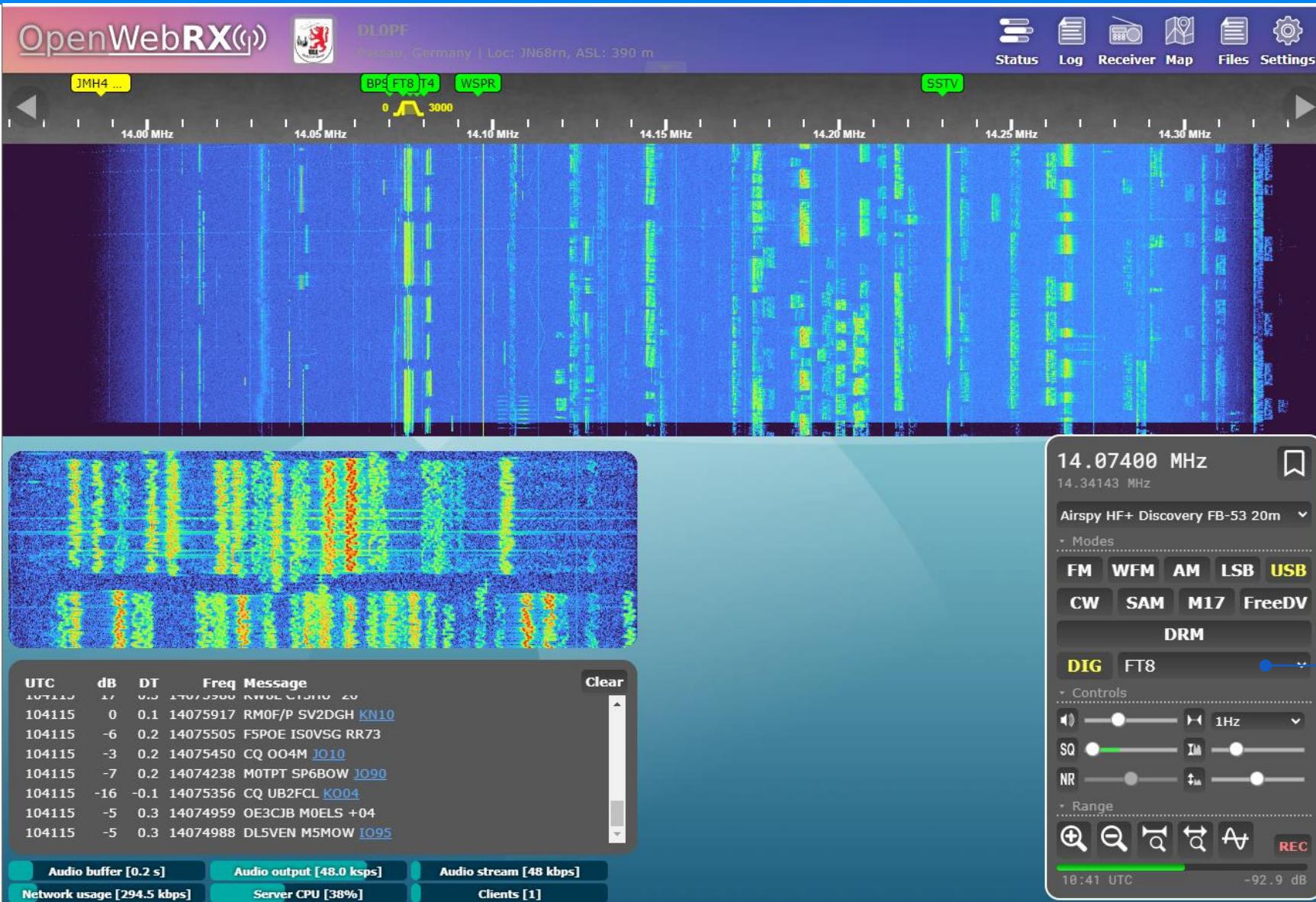
# cw decoder



OpenWebRX+ has an integrated cw decoder

CW

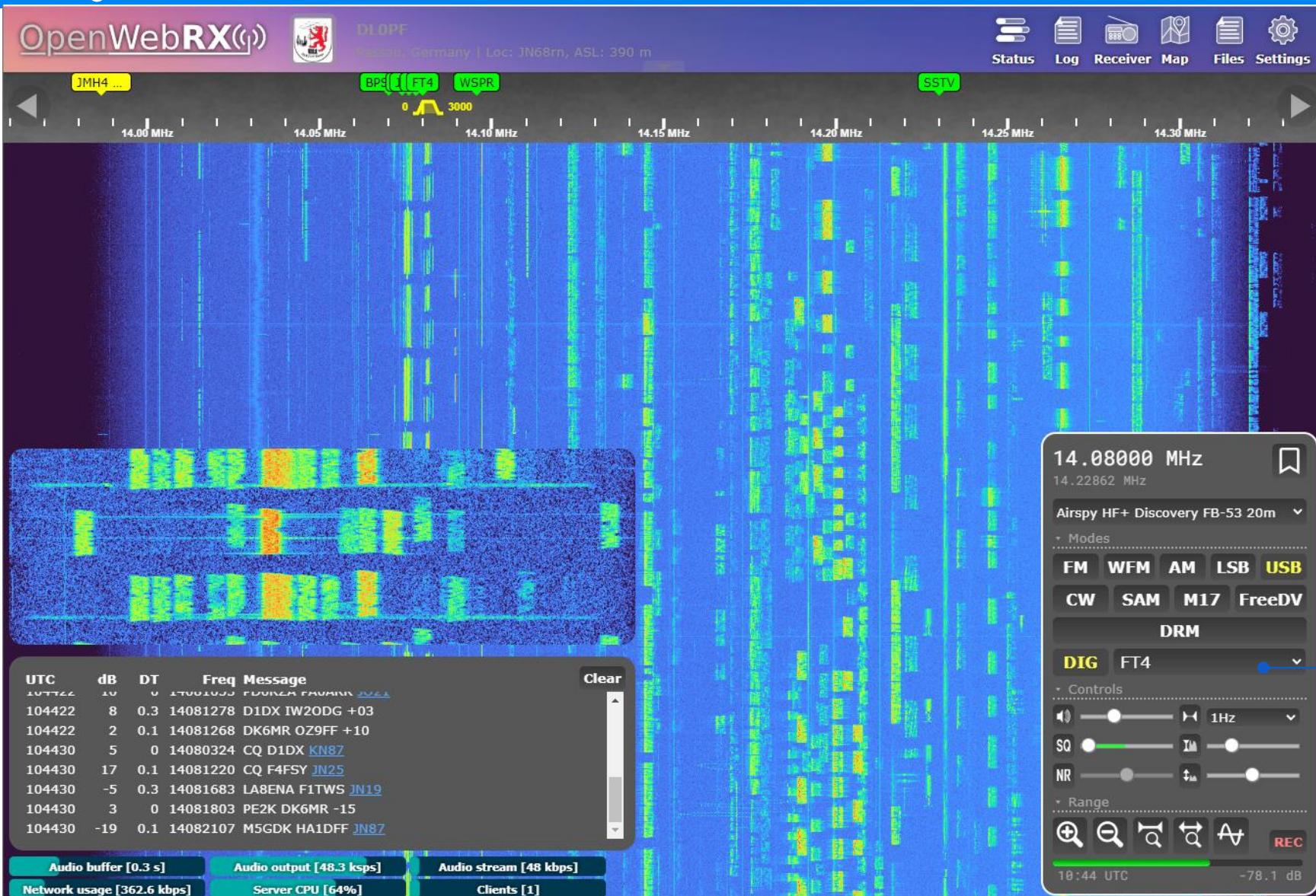
# Digimodes: FT8



OpenWebRX(+) supports realtime FT8 decoding. Spots are shown on the internal map and uploaded to pskreporter

FT8

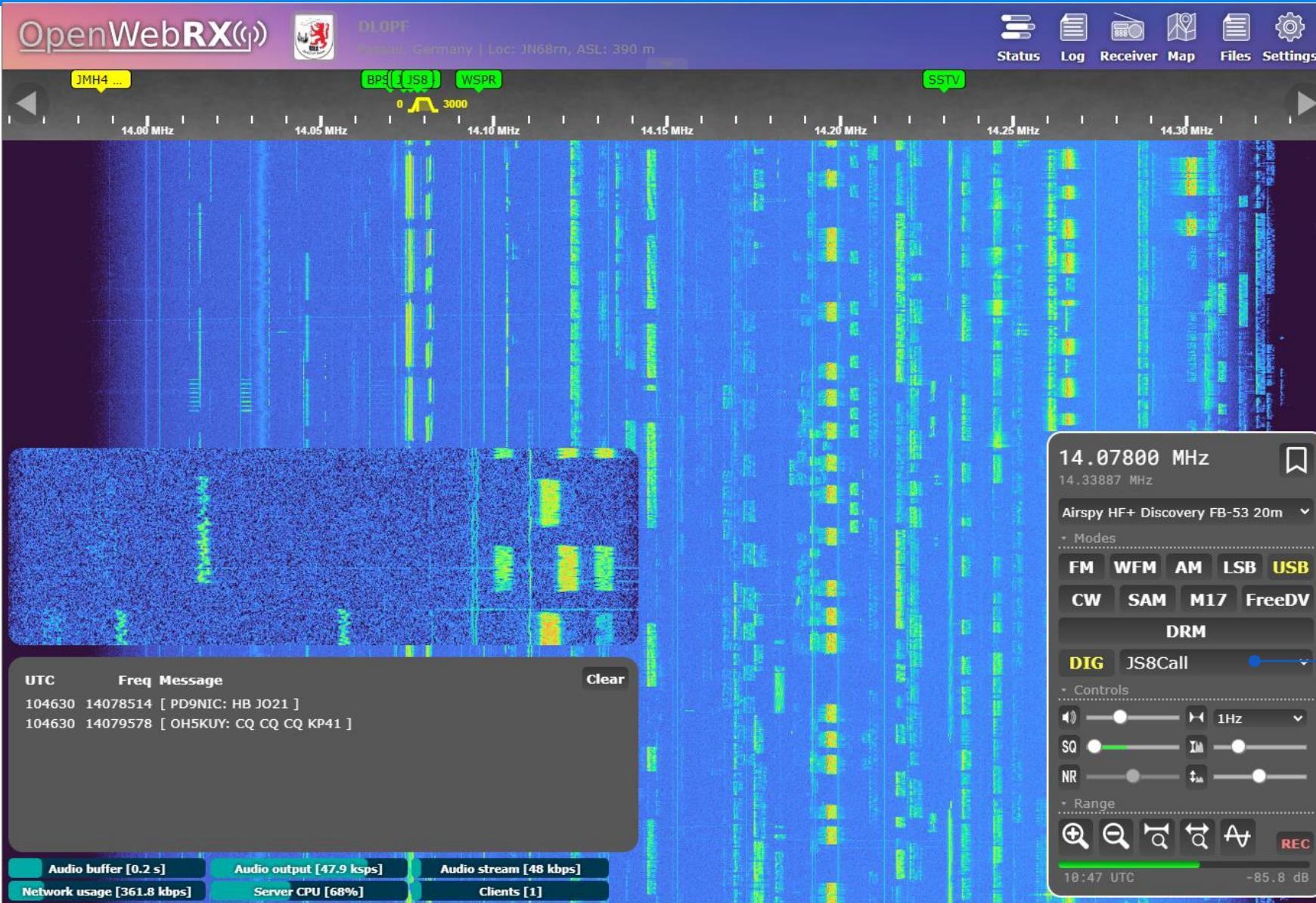
# Digimodes: FT4



OpenWebRX(+) supports realtime FT4 decoding. Spots are shown on the internal map and uploaded to pskreporter

FT4

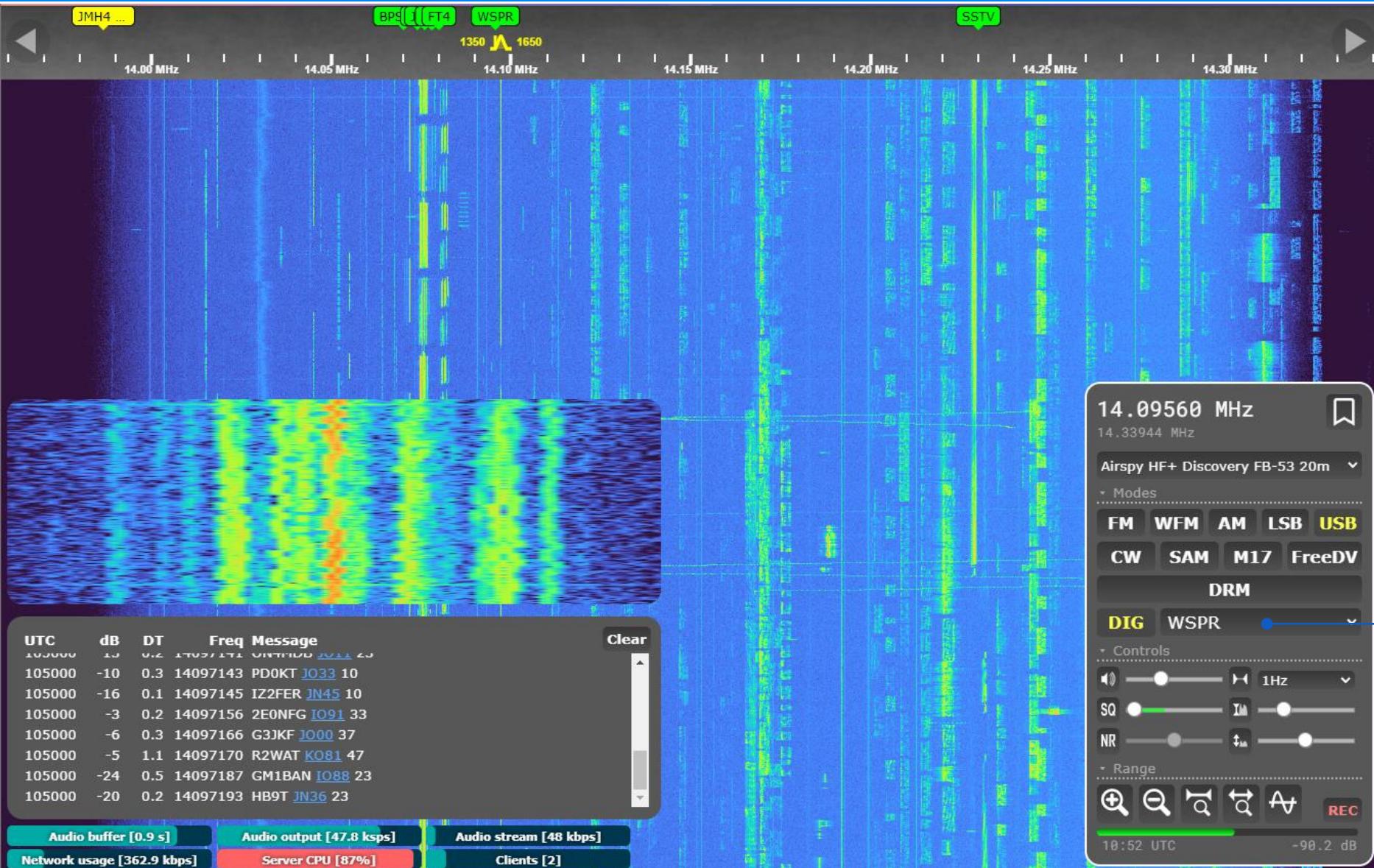
# Digimodes: JS8Call



OpenWebRX(+) supports  
realtime JS8Call decoding.  
Spots are shown on the internal  
map and uploaded to  
pskreporter

**JS8Call**

# Digimodes: WSPR

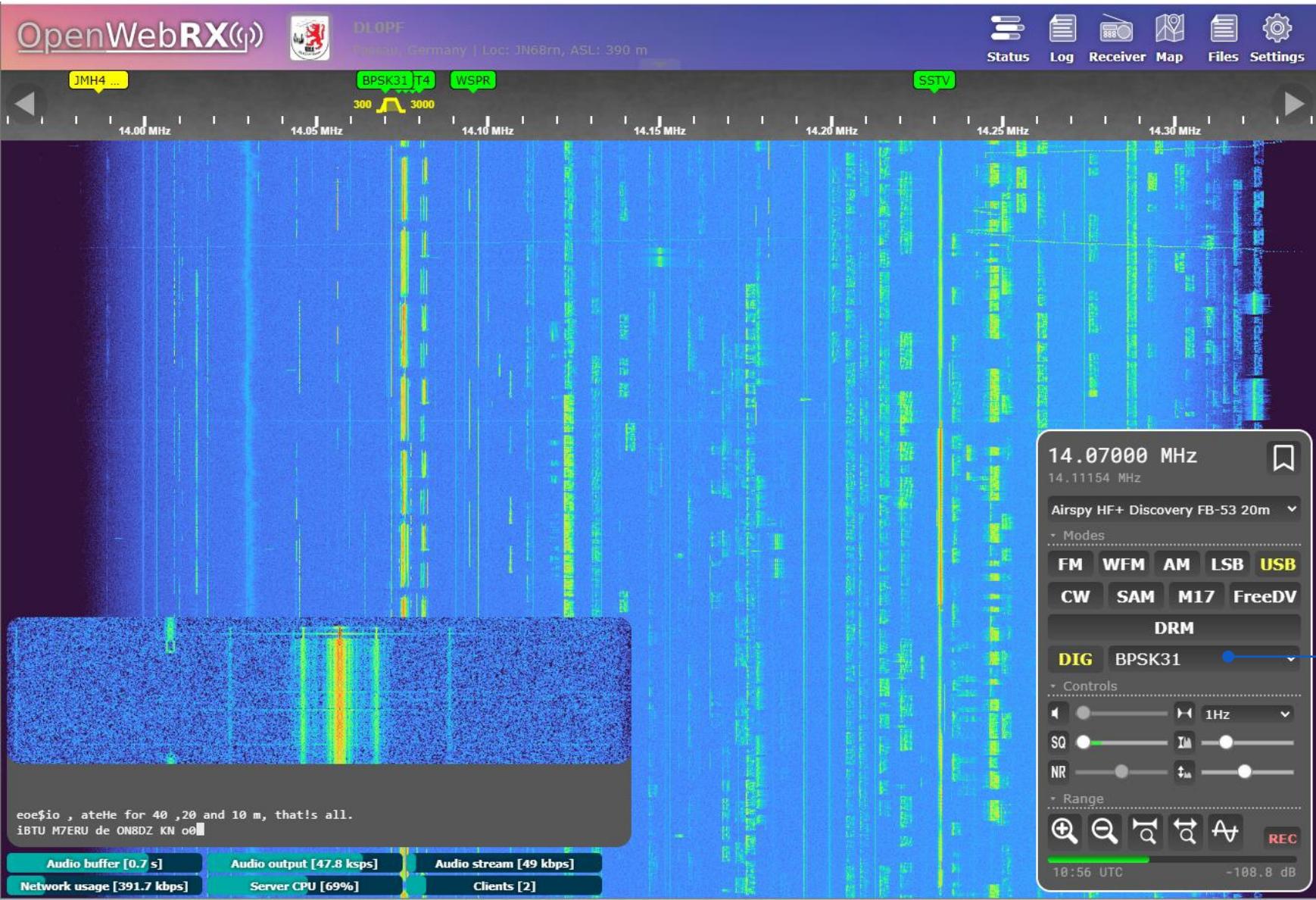


OpenWebRX(+) supports  
realtime WSPR decoding.  
Spots are shown on the  
internal map and uploaded to  
wsprnet.org

**WSPR**

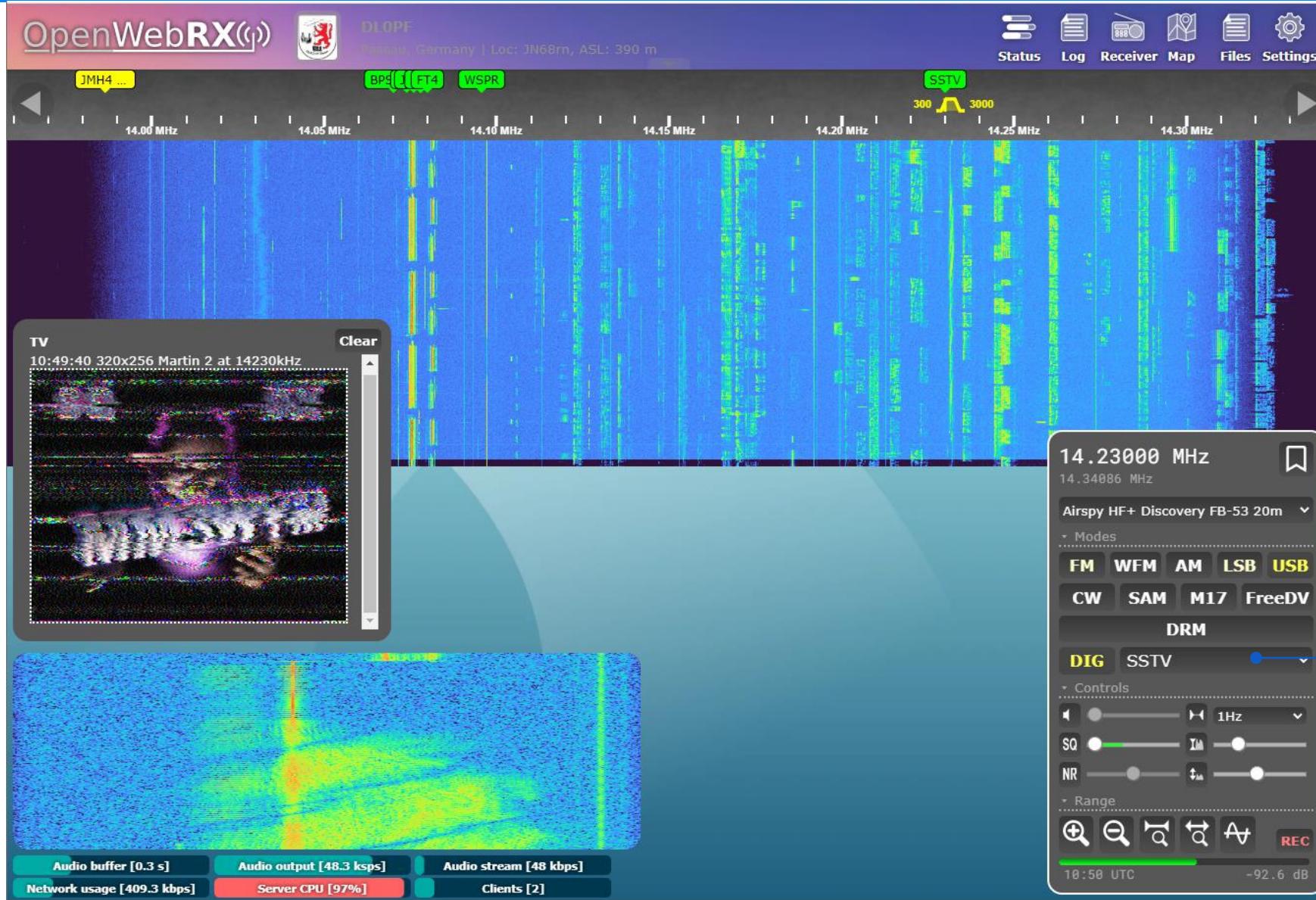


# Digimodes: BPSK31



OpenWebRX(+) supports  
realtime BPSK31 decoding.  
Decoded text is shown in the  
receiver panel  
**BPSK31**

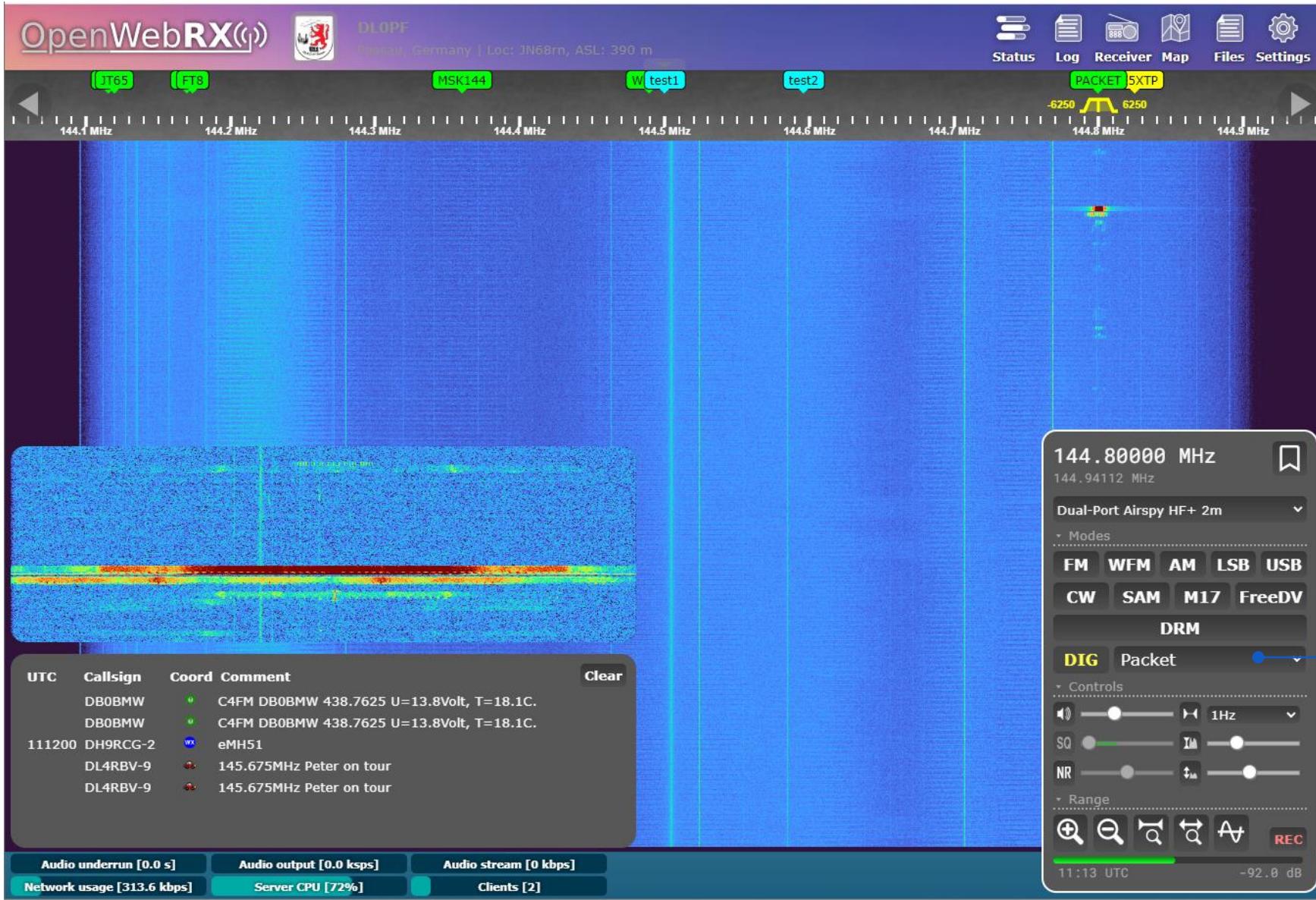
# Digimodes: SSTV



OpenWebRX+ supports  
realtime SSTV decoding.  
Received images are shown on  
the “Files” subpage



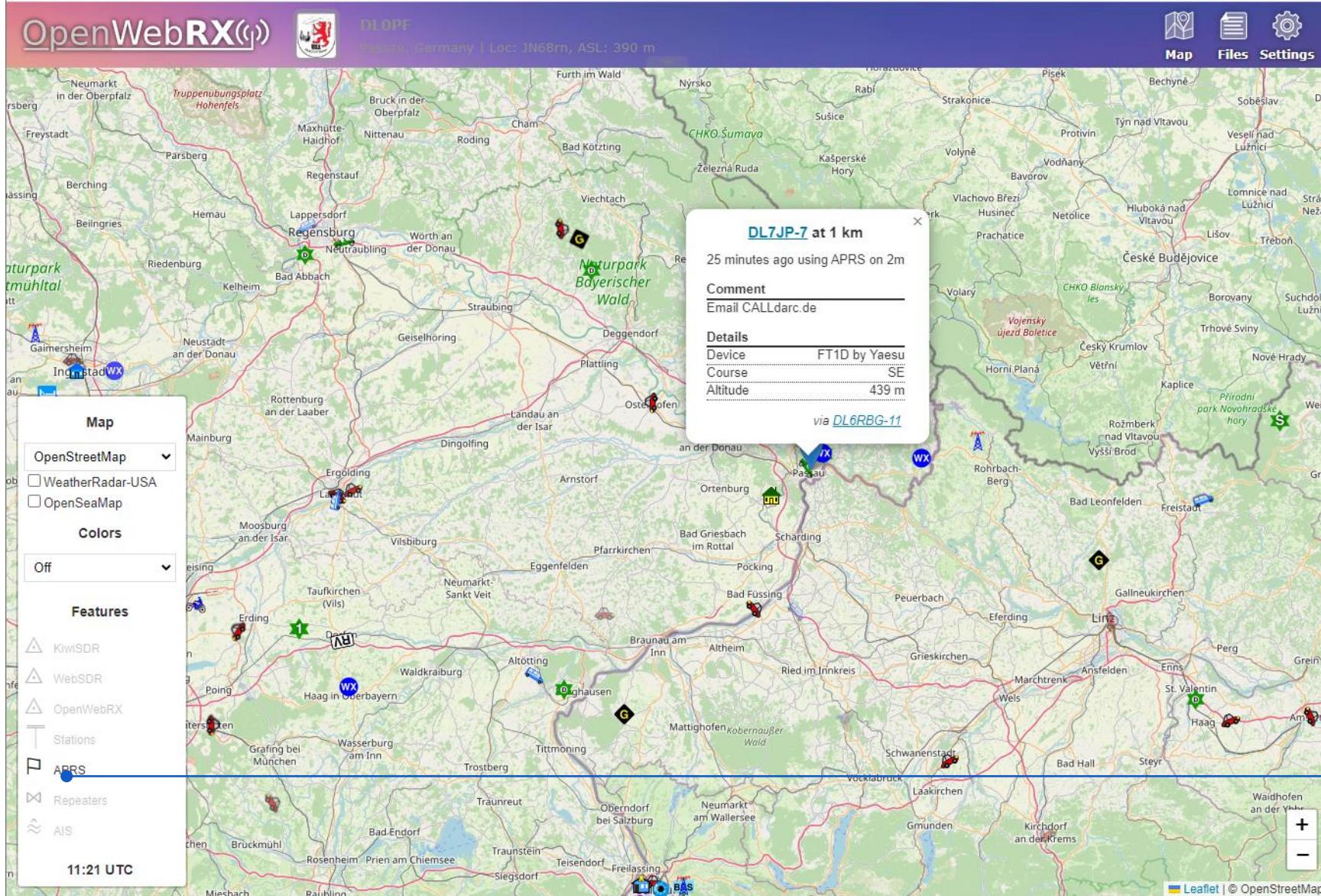
# Digimodes: Packet(I)



OpenWebRX(+) supports realtime APRS AFSK 1K2 decoding. Received stations are shown on the internal map and uploaded to aprs-is

**AFSK 1K2**

# Digimodes: Packet(II)



OpenWebRX(+) supports a map view of received APRS stations

**AFSK 1K2**

# Digimodes: AIS(I)

The screenshot displays the OpenWebRX+ software interface, which includes:

- Spectrogram:** A large blue-tinted spectrogram showing signal activity across a frequency range from 161.7 MHz to 162.3 MHz. Two green vertical bars labeled "AIS" are positioned at approximately 161.95 MHz and 162.05 MHz.
- Log Table:** A table at the bottom left shows received station information with columns for UTC, Callsign, Coord, and Comment. Entries include:

UTC	Callsign	Coord	Comment
111800	211668740		
111800	203999443		DONAU, OED3022, dest. PASSAU
111800	211558200		
111800	211659450		
111800	269057395		
111800	264162571		
111800	211777320		
- Receiver Control Panel:** A detailed panel on the right for the 161.97500 MHz and 162.02051 MHz bands. It includes sections for Modes (FM, WFM, AM, LSB, USB, CW, SAM, M17, FreedDV, DRM, DIG, AIS), Controls (volume, SQR, NR), and Range (frequency selection buttons). The status bar at the bottom shows "11:18 UTC" and "-70.0 dB".
- Header:** Includes the logo "OpenWebRX+", the location "DLOPF Passau, Germany | Loc: JN68rn, ASL: 390 m", and navigation links for Status, Log, Receiver, Map, Files, and Settings.

OpenWebRX+ supports  
realtime AIS decoding.  
Received stations are shown  
on the internal map

**AIS**

# Digimodes: AIS(II)

The screenshot shows a map of Passau, Germany, with several blue AIS station icons plotted. A callout box highlights one specific station:

**211762630 at 0 km**  
a few seconds ago using AIS on VHF Marine  
Comment: SUNLINER, DK9565, dest. PASSAU  
Details: Course E

The map includes labels for DLOPF, Halser Straße, B 12, B 85, B 388, St 2125, Ziegstadt, Heinung, Maierhof, Hacklberg, Ilzstadt, Passau, Innstadt, Linda, and various local streets and landmarks. The bottom left corner shows the OpenWebRX+ interface with a sidebar for features like KiwiSDR, WebSDR, OpenWebRX, Stations, APRS, Repeaters, and AIS, along with a timestamp of 11:24 UTC.

OpenWebRX+ supports a map view of received AIS stations

**AIS**



# Digimodes: ADSB(I)

The screenshot shows the OpenWebRX+ software interface. At the top, there's a header with "OpenWebRX+", a logo, and "DBOPAS Passau, Germany | Loc: JN68so, ASL: 510 m". Below the header is a menu bar with "Status", "Log", "Receiver", "Map", "Files", and "Settings". The main area features a spectrum analysis window with a yellow marker at 1090.0 MHz. A green bar at the bottom indicates signal strength. To the left is a table of flight information:

Flight	Aircraft	Squawk	Dist	Alt (ft)	Speed (kt)	Signal
CTN384E	501D20	3532	59 km	64↑ 37900	SSE 441	-23.1 dB
EWG3UH	3C5EE2	1000	37 km	64↓ 38925	NW 417	-22.3 dB
SAS7310	4AC9EE	5231	45 km	36950	NW 441	-22.5 dB
MSR785	01015D	1000	38 km	30875	WNW 414	-22.3 dB

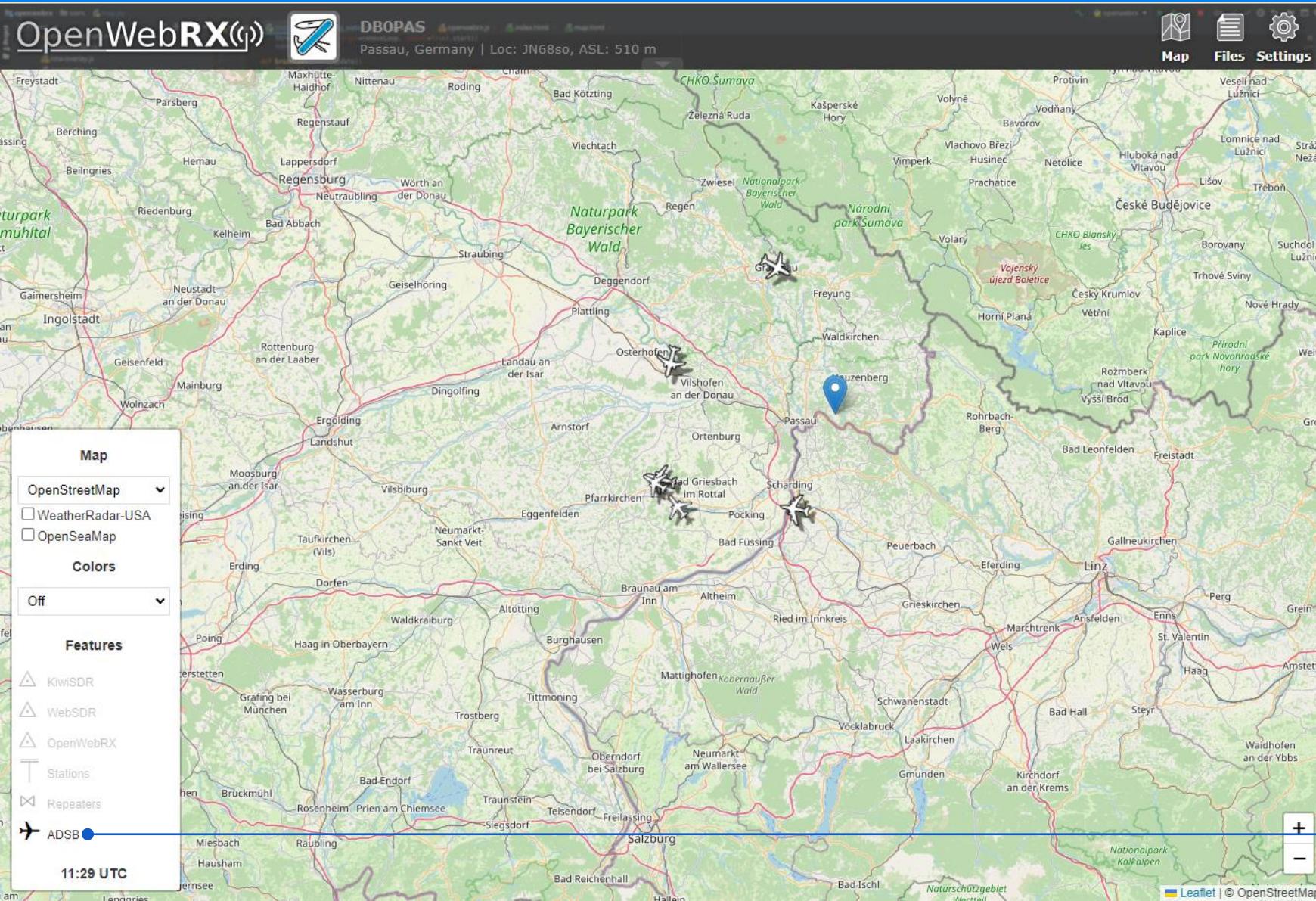
At the bottom, there are status indicators: "Audio underrun [0.0 s]", "Audio output [0.0 kbps]", "Audio stream [0 kbps]", "Network usage [303.0 kbps]", "Server CPU [83%/61°C]", and "Clients [2]". On the right side of the interface is a detailed control panel for the RTL-SDR USB Stick ADSB-1090MHz:

- Frequency: 1.09000000 GHz, 1.09067478 GHz
- Modes: FM, WFM, AM, LSB, USB, CW, SAM, DMR, D-Star, NXDN, YSF, M17, FreeDV, DRM, DIG, ADSB (DIG is selected)
- Controls: Volume (1Hz), Squelch (SQ), Noise Reduction (NR)
- Range: Range selection buttons (Q, Q, Q, Q, A, REC)
- Time: 11:28 UTC
- Signal Level: -30.8 dB

OpenWebRX+ supports  
realtime ADSB decoding.  
Received stations are shown  
on the internal map

**ADSB**

# Digimodes: ADSB(II)



OpenWebRX+ supports a map view of received ADSB stations

**ADSB**

# Digimodes: VDL2/ACARS

The screenshot displays the OpenWebRX+ software interface. At the top, a spectrogram shows several vertical signal traces on a blue grid, with frequency markers from 136.5 MHz to 137.1 MHz. Above the spectrogram, a menu bar includes "OpenWebRX(q)", "DBOPAS", "Passau, Germany | Loc: JN68so, ASL: 510 m", and "Status Log Receiver Map Files Settings". Below the menu, a legend identifies signal types: ARINC (yellow), SITA (orange), and various ARINC/SITA combinations. A zoomed-in view of the spectrogram is shown below the main window. The bottom half of the interface features a "Messages" panel with a table of decoded flight data:

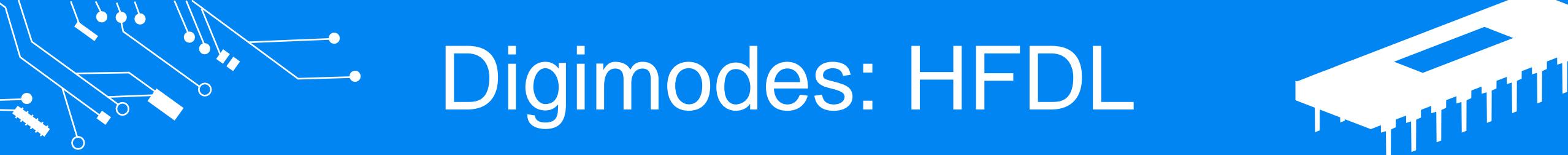
Time	Flight	Aircraft	Data
11:31:04		3C6544	Airborne
11:31:04		3C6544	Airborne
11:31:07		3C6544	Airborne
11:31:07		3C6544	Airborne
11:31:12	PC465T	TC-RBA	ACARS frame
11:31:13	PC465T	TC-RBA	Airborne
11:31:14	PC465T	TC-RBA	Airborne, Receive Ready
11:31:17	MS785	SU-GDU	ACARS frame
11:31:18	PC465T	TC-RBA	Airborne, Receive Ready
11:31:18	MS785	SU-GDU	Airborne, Receive Ready
11:31:20	LX47GP	HB-JCS	ACARS frame

Below the messages panel, a "Controls" section includes buttons for volume, squelch, and noise reduction, along with a "REC" button. At the very bottom, network and system status indicators are shown.

OpenWebRX+ supports  
realtime VDL2/ACARS and  
HFDL decoding on VHF  
airband. Decoded messages  
are shown in the receiver panel

**VDL2/ACARS**

# Digimodes: HFDL



**OpenWebRX** (DLOPE) Passau, Germany | Loc: JN68rn, ASL: 390 m

GS-17... GS-13... GS-2... GS-10... GS-15...

13.30 MHz 0 3000 13.35 MHz

Time	Flight	Aircraft	Data
11:34:42	FV6565	151E01	@180.0000,180.0000
11:35:18	SU1139	151FE9	@180.0000,180.0000
11:35:18	SU1364	15201E	@180.0000,180.0000
11:33:42	SU1310	151FF0	@180.0000,180.0000

Audio underrun [0.0 s] Audio output [0.0 kbps] Audio stream [0 kbps]  
Network usage [313.9 kbps] Server CPU [60%] Clients [2]

**PLANESPOTTERS.NET** RADAR PHOTOS DATA

151DAD

**151DAD**  
Mode S Code | ICAO 24-bit Aircraft Address

Hex	151DAD
Decimal	1383853
Octal	5216655
Binary	000101010001110110101101 Bit-reversed ⓘ 10110101101100010101000
Country	Russian Federation
Converts to Registration	RA-73133

CURRENT REG RECORDS

REG	MSN	AIRCRAFT TYPE	AIRLINE / COMPANY	DELIVERED
RA-73133	41684	Boeing 777-300ER	Aeroflot - Russian Airlines	Apr 2022

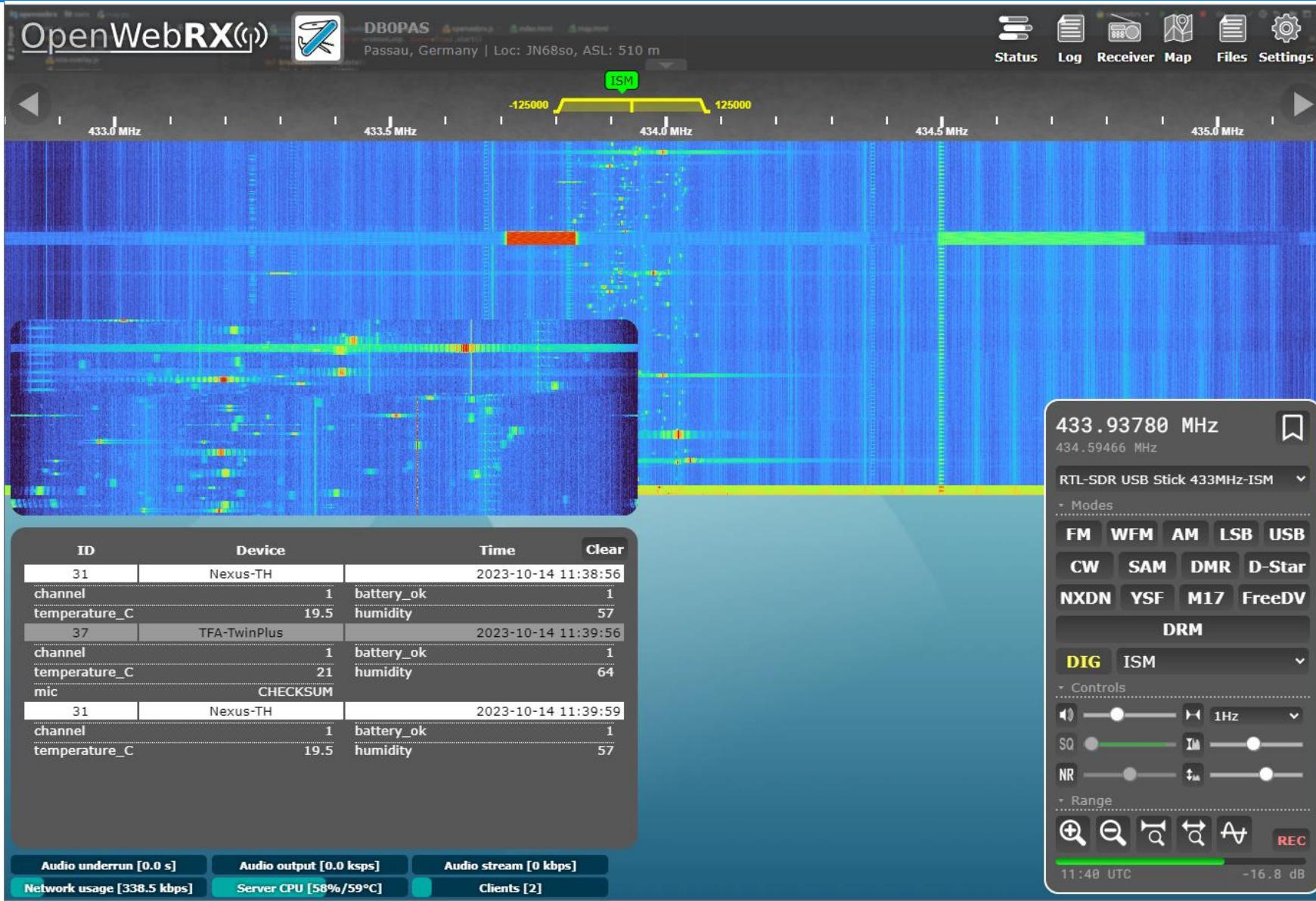
**DRM** DIG HFDL

Controls: 1Hz, SQ, NR  
Range: REC

11:36 UTC -71.8 dB

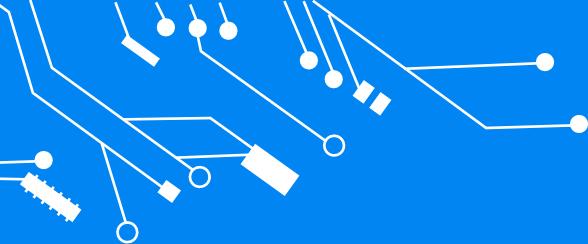
OpenWebRX+ supports realtime HFDL decoding on 13MHz airband. Decoded messages are shown in the receiver panel **HFDL**

# Digimodes: ISM

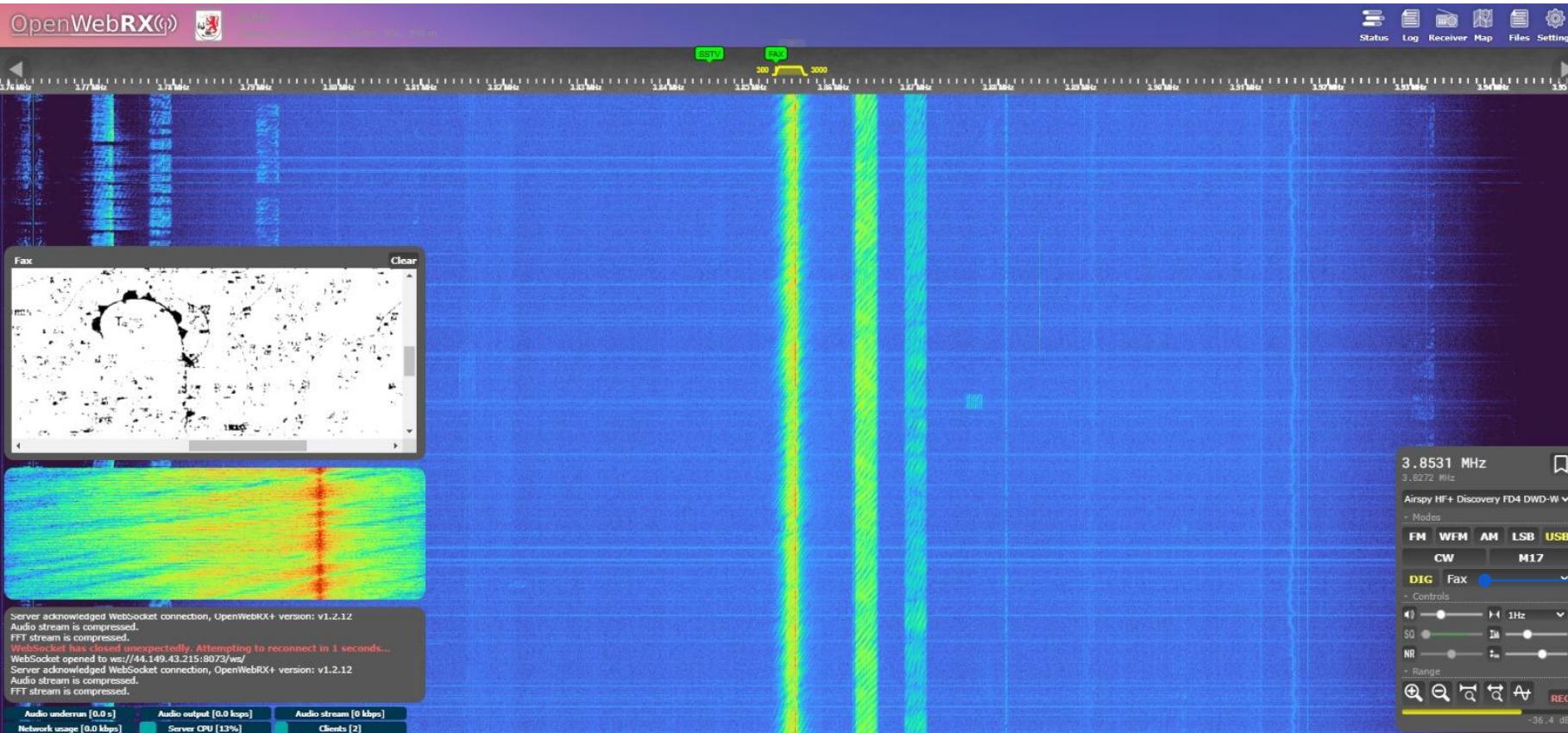
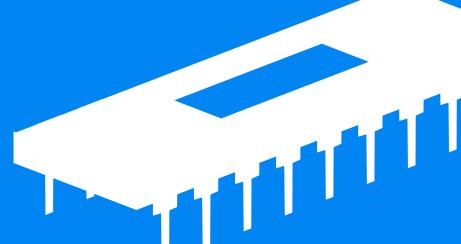


OpenWebRX+ supports realtime ISM band decoding on 433 MHz. Decoded messages are shown in the receiver panel

ISM



# Digimodes: FAX



OpenWebRX+ supports realtime FAX decoding. Decoded images are shown in the receiver panel and are accessible via “Files”

# Digimodes

**Additional Digimodes are supported**

- MSK144
- RTTY
- JT65
- JT9
- FST4 / FST4W
- Q65
- Pagers
- SelCall / ZVEI



# Map: Repeaters



**OpenWebRX**

DLOPF  
Passau, Germany | Loc: 3N68rn, ASL: 390 m

Map Files Settings

**Map**

OpenStreetMap  WeatherRadar-USA  OpenSeaMap

Colors: Off

**Features**

- KiwiSDR
- WebSDR
- OpenWebRX
- Stations
- APRS
- Repeaters**
- AIS
- HFRL

12:20 UTC

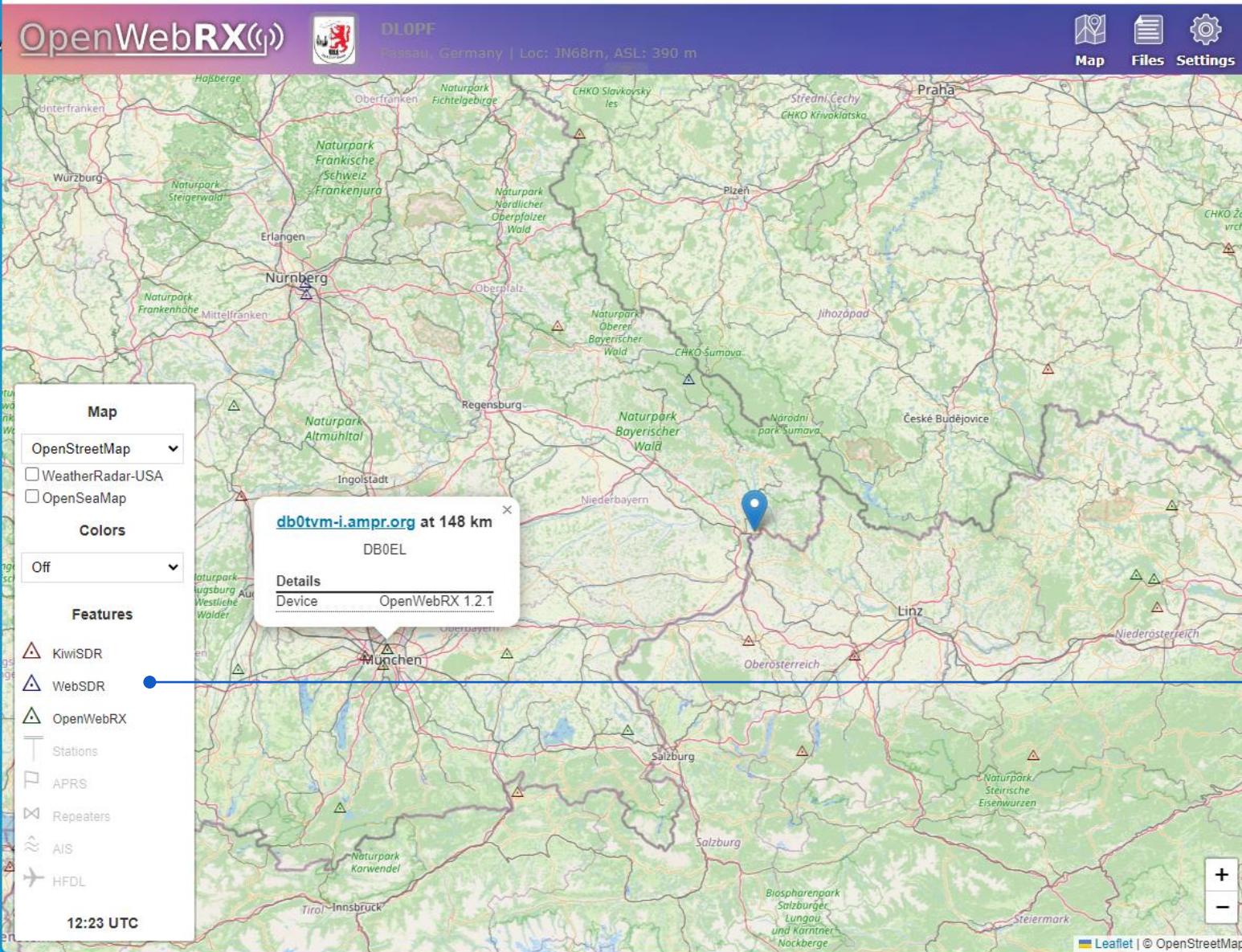
**DB0BW at 9 km**  
On-air, last updated on 2023-01-01  
**Details**  
Frequency **438.675MHz**  
Modulation NFM

Leaflet | © OpenStreetMap

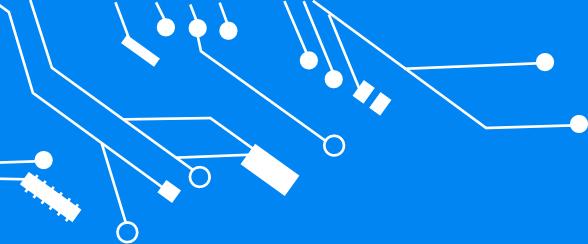
OpenWebRX+ supports a map view of nearby repeaters (via repeaterbook)

**Repeaters**

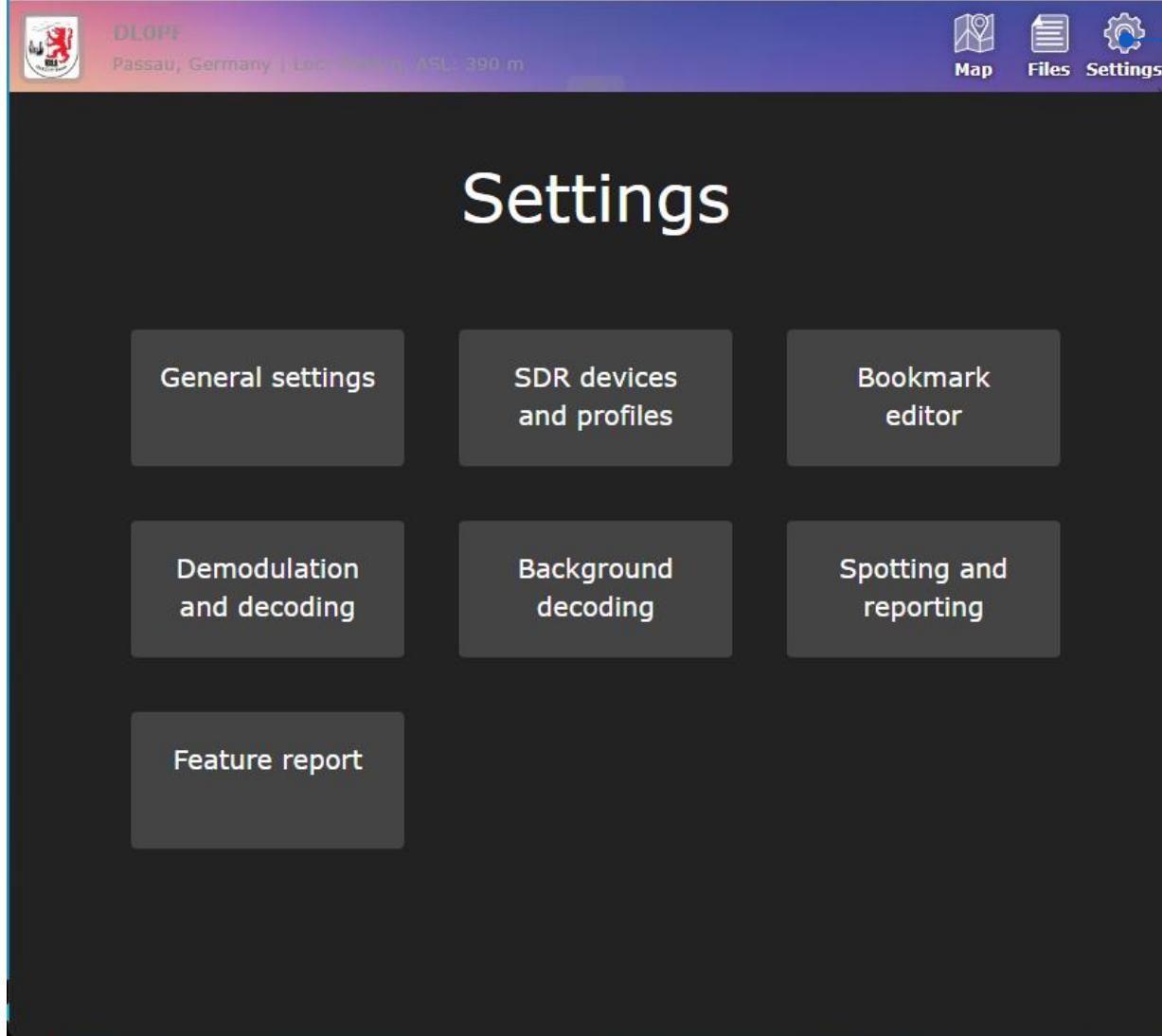
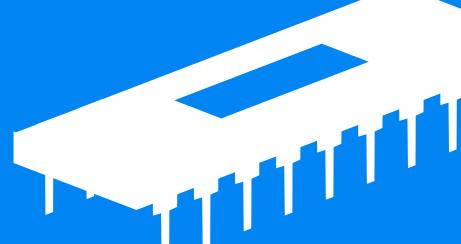
# Map: WebSDRs



OpenWebRX+ supports a map view of  
WebSDRs:  
KiwiSDR, WebSDR, OpenWebRX  
**WebSDRs**

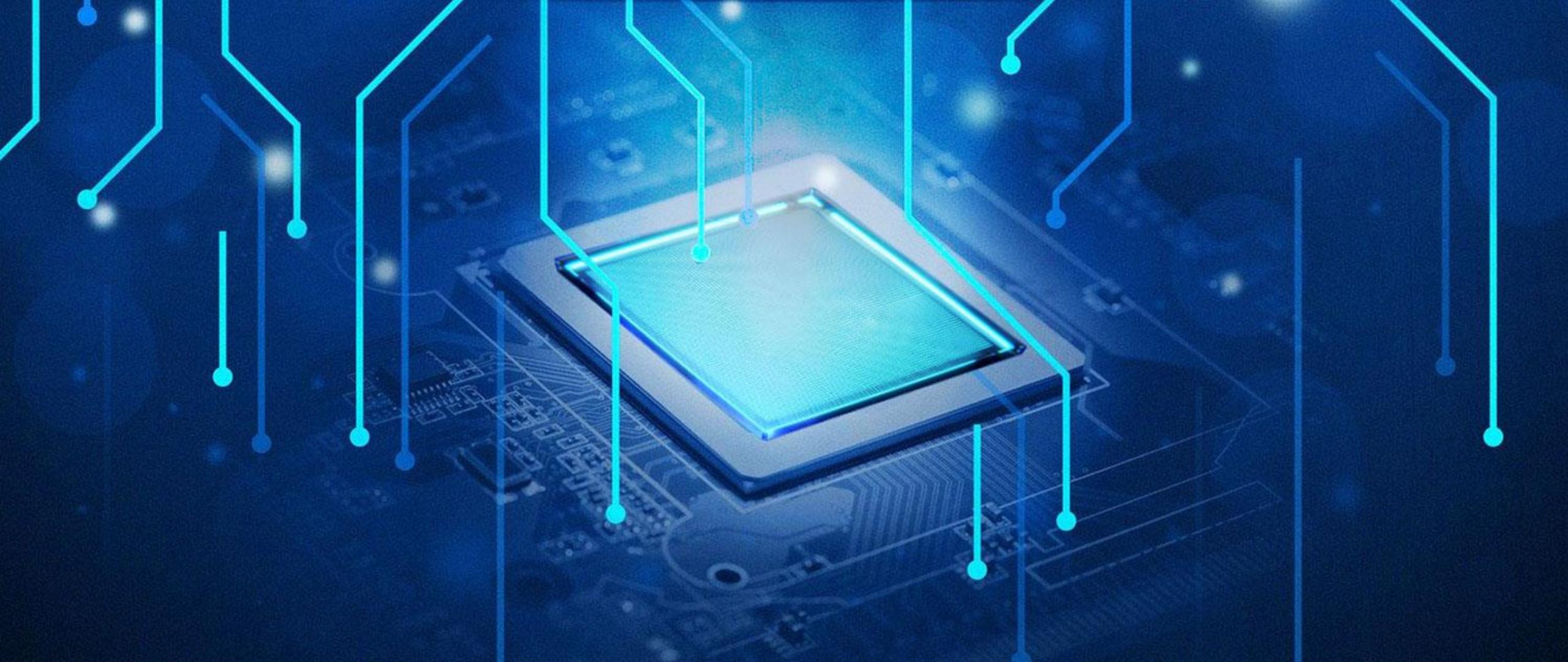


# Settings Gui



## Settings

OpenWebRX(+) has an integrated Web-based settings editor that enables easy configuration of station settings, SDR devices and profiles as well as decoding settings



# OpenWebRX(+) Deployment

How to roll your own instance of OpenWebRX(+)

# OpenWebRX(+) platform options



## Standard PC

Just use Linux (Debian, Ubuntu) and install OpenWebRX(+) packages



## Virtual Machine

Same as PC, just using a Linux virtual machine w/ SDRs by USB passthrough or network



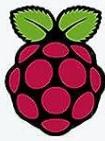
## Single Board Computer (SBC)

SBCs like RaspberryPi or OrangePi can be used. There are readily built RasPi images for OpenWebRX and OpenWebRX+ for an easy, quick start



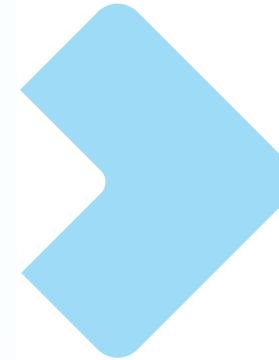
## Docker container

There are readily built Docker containers for both OpenWebRX and OpenWebRX+, usable on any kind of platform (PC, VM, SBC)



## Raspberry Pi 4B VS Raspberry Pi 3B+

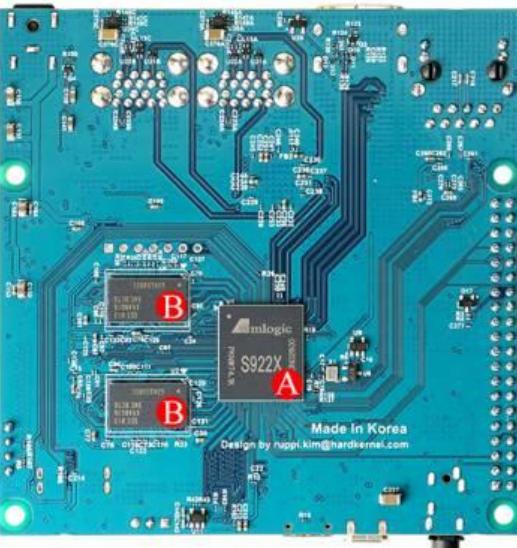
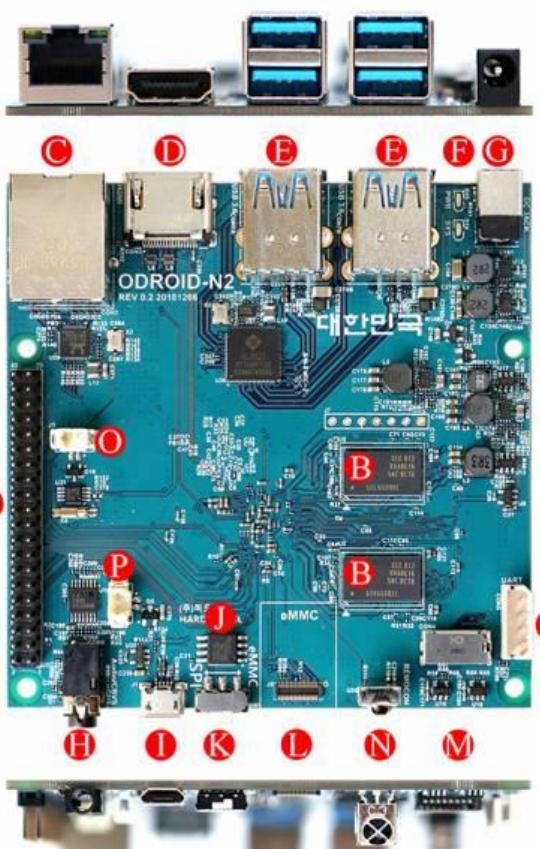
SOC	<b>Broadcom BCM2711</b>	Broadcom BCM2837B0
Bluetooth	Bluetooth 5.0	Bluetooth 4.0
CPU	<b>Quad core Cortex-A72@1.5GHz</b>	Quad core Cortex-A53@1.4GHz
GPU	<b>VideoCore IV@500Mhz</b>	VideoCore IV@250-400Mhz
RAM	<b>1 GB, 2 GB oder 4 GB LPDDR4-2400 SDRAM</b>	1GB LPDDR4-2400 SDRAM
USB	<b>2x USB 3.0, 2x USB 2.0</b>	4x USB 2.0
Displayport	<b>2x Micro HDMI</b>	Einzelnes HDMI in voller Größe
H.265	<b>Unterstützt H.265-Dekodierung (4kp60)</b>	Keine Unterstützung
Konnektivität	<b>2,4 GHz / 5 GHz 802.11ac Wi-FiGigabit-Ethernet</b>	2,4 GHz/5 GHz 802.11ac Wi-Fi300 Mbit/s Ethernet
Power sources	<b>5V/3A USB-C</b>	5V/2.5A micro USB



# Raspberry Pi 4B

As of Q4/2023, the gold-standard of single board computers

- Good starting point for OpenWebRX(+)
- Ready built images are available
- Powerful enough for 1-2 SDRs and a small amount of users
- priced at ~50,-€ incl. tax



## ODROID N2(+)

As of Q4/2023, still one of the most powerful single board computers (though it was released 2019)

- No readily built image available, but docker ARM64 build can be used
- 2 – 2.5 times the performance of Raspberry Pi 4B
- priced at ~100,-€ incl. tax

A	S922X CPU	J	1 x SPI Flash 8MiB
B	4 x DDR4 RAM	K	1 x SPI Boot Select Switch
C	1 x RJ45 Ethernet Port (10/100/1000)	L	1 x eMMC Module Socket
D	1 x HDMI 2.0	M	1 x Micro SD Slot
E	4 x USB 3.0	N	1 x IR Receiver
F	2 x System LED Indicators	O	1 x RTC Backup Battery Connector (2-pin)
G	1 x DC Power Jack	P	1 x Active Cooling Fan Connector (2-pin)
H	1 x AV Out (Stereo Audio with Composite video)	Q	40 x GPIO Pins
I	1 x Micro USB2.0 OTG	R	1 x UART for System Console

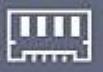


## Orange Pi 5 (8GB)

- Rockchip RK3588S 8-core 64-bit processor
- Main frequency up to 2.4GHz
- 8GB LPDDR4/4x RAM
- Support 8K video codec



8-core 64-bit  
processor



8GB LPDDR4/4x RAM



HDMI 2.1



Gigabit LAN port



USB2.0/3.0



26 Pin headers

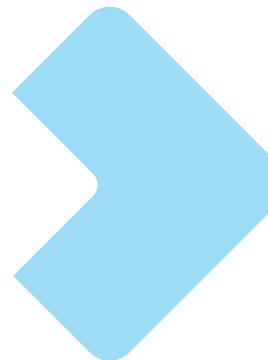


MicroSD card slot



Type-C power  
supply

## Orange Pi 5



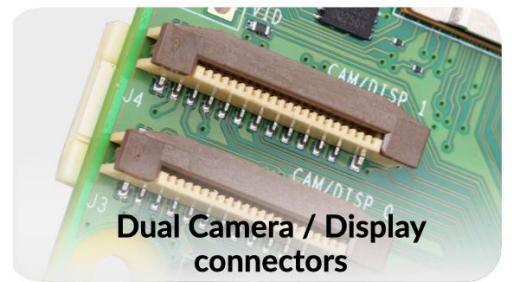
As of Q4/2023, one of the most powerful single board computers

- No readily built image available, but docker ARM64 build can be used
- 2 – 2.5 times the power of odroid N2+
- 3.5 – 4 times the performance of RasPi 4B
- Even more powerful than brand-new RasPi 5 (no details yet)
- priced at ~100,-€ + tax

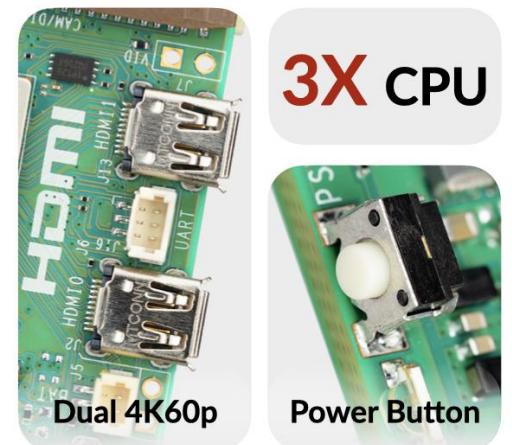
# Raspberry Pi 5

RTM Q4/2023, the gold standard in single board computers is getting a massive upgrade

- Perfect starting point for OpenWebRX(+)
- Ready built images are available
- Performance should at level of ODROID N2+
- priced at ~80,-€ incl. tax



**800** MHz VideoCore VII GPU



Raspberry Pi **Silicon**



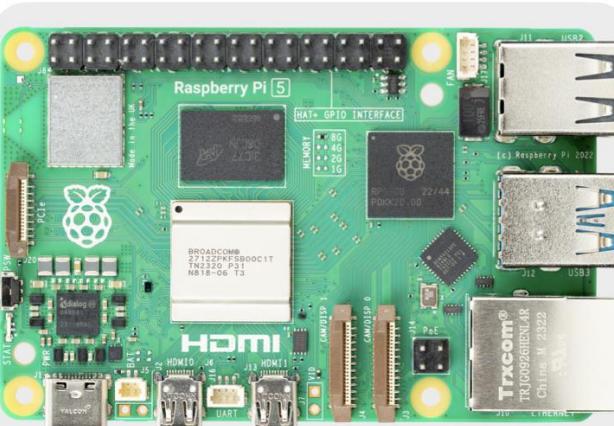
PCIe 2.0



**2.4GHz**

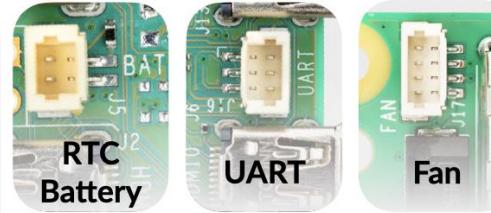


RP1-C0 22/44  
POKK20 00



Raspberry Pi 5

**Real time clock** with External Battery connector

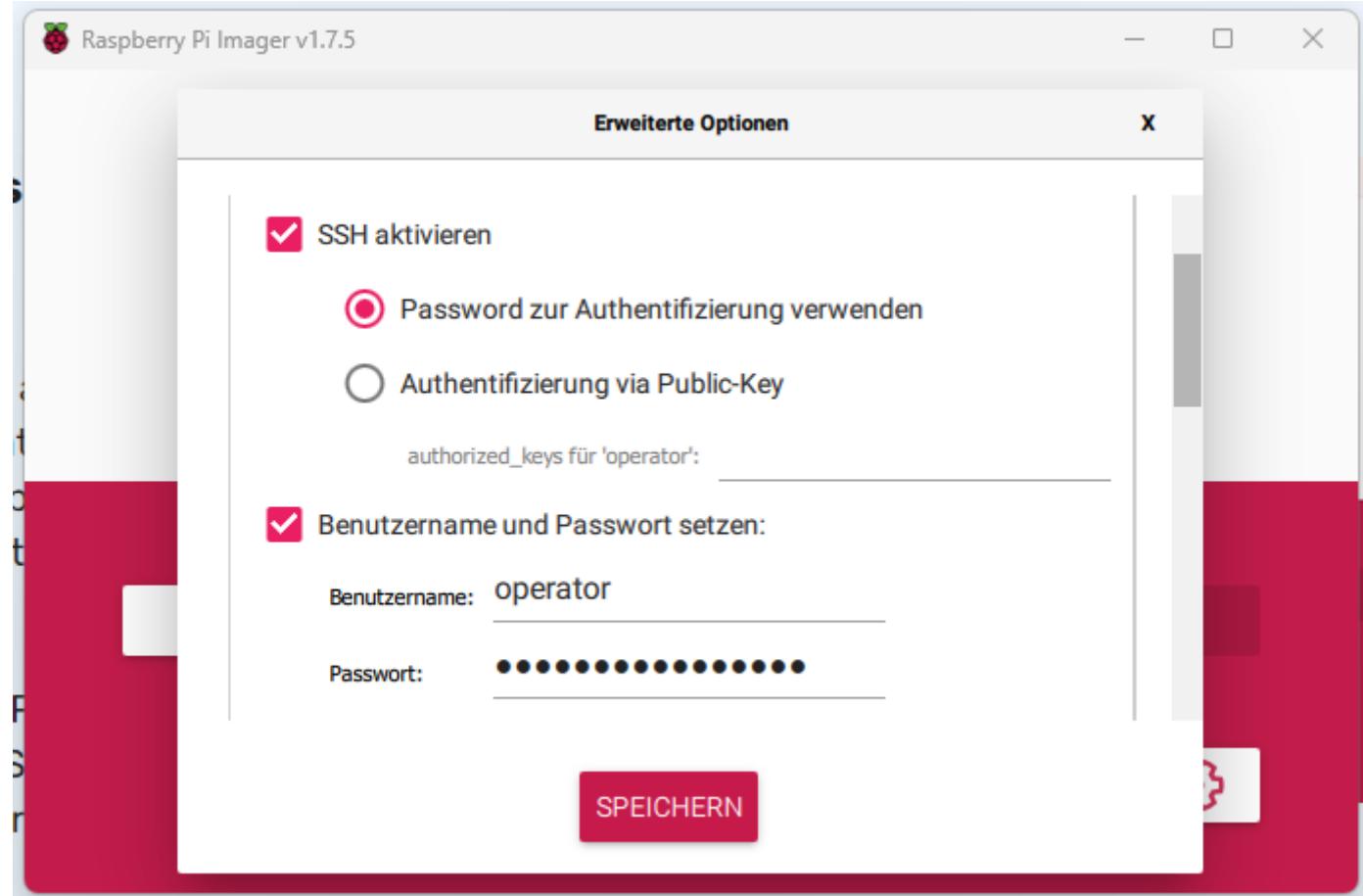


**64-bit** quad-core Arm Cortex-A76 processor



New for  
2023

# RaspberryPi install



# Package install

## Manual installation via packages (as root)

```
wget -O - https://luarvique.github.io/ppa/openwebrx-plus.gpg | gpg --dearmor -o /etc/apt/trusted.gpg.d/openwebrx-plus.gpg  
echo "deb [signed-by=/etc/apt/trusted.gpg.d/openwebrx-plus.gpg] https://luarvique.github.io/ppa/ubuntu ./" > /etc/apt/sources.list.d/openwebrx-plus.list  
apt update
```

```
wget -O - https://repo.openwebrx.de/debian/key.gpg.txt | gpg --dearmor -o /usr/share/keyrings/openwebrx.gpg  
echo "deb [signed-by=/usr/share/keyrings/openwebrx.gpg] https://repo.openwebrx.de/ubuntu/ jammy main" > /etc/apt/sources.list.d/openwebrx.list  
apt update
```

```
apt install openwebrx
```

# Docker install

## Install

```
# create volumes
docker volume create owrxp-settings
docker volume create owrxp-etc

# run container in background
docker run -d --name owrxp-nightly \
    --device /dev/bus/usb \
    -p 8073:8073 \
    -v owrxp-settings:/var/lib/openwebrx \
    -v owrxp-etc:/etc/openwebrx \
    --restart unless-stopped \
    slechev/openwebrxplus-nightly

# add admin user (on another shell)
docker exec -it owrxp-nightly python3 openwebrx.py admin adduser [username]
```

## Blacklisting device drivers on host

You should disable the kernel drivers for RTL, SDRPlay and HackRF devices on the host linux (where docker runs) before running OWRX+ and then reboot.

```
cat > /etc/modprobe.d/owrx-blacklist.conf << _EOF_
blacklist dvb_usb_rtl28xxu
blacklist sdr_msi3101
blacklist msi001
blacklist msi2500
blacklist hackrf
_EOF_
```



# OpenWebRX+ Demo

# OpenWebRX(+) Links



## Central source of information

OpenWebRX:

<https://openwebrx.de/>

<https://github.com/jketterl/openwebrx/wiki>

OpenWebRX+:

<https://github.com/luarvique/ppa>

## SDRs usable with OpenWebRX(+)

Airspy:

<https://airspy.com/>

RTLSDR:

<https://www.nooelec.com/store/sdr.html>

[https://www.rtl-sdr.com/v4/](https://www rtl-sdr com/v4/)

SDRplay:

<https://www.sdrplay.com/>

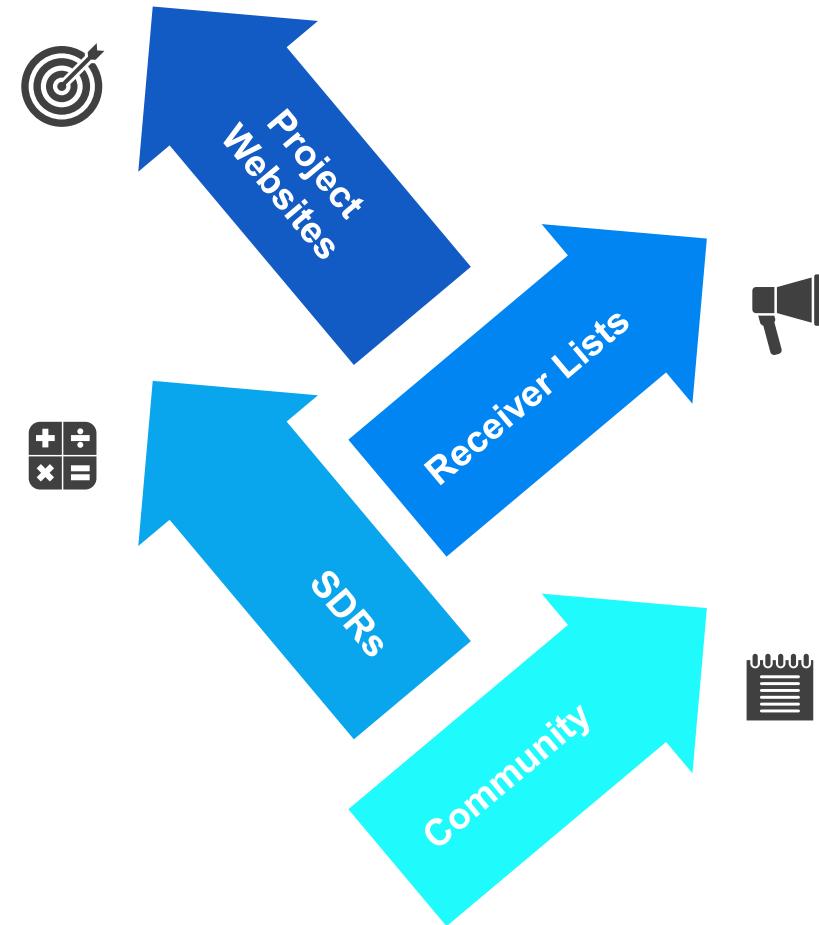
HackRF

<https://greatscottgadgets.com/hackrf/>

PlutoSDR (Analog Adalm Pluto):

[https://www.mouser.de/new/analog-](https://www.mouser.de/new/analog-devices/adi-adalm-pluto/)

[devices/adi-adalm-pluto/](#)



## How to find public WebSDRs

Receiverbook:

<https://www.receiverbook.de/>

Public KiwiSDRs:

<http://kiwisdr.com/public/>

Public WebSDRs

<http://websdr.org/>

## Contact authors and other OpenWebRX users

OpenWebRX Group:

<https://groups.io/g/openwebrx>

OpenWebRX(+) Telegram chat:

[https://t.me/openwebrx\\_chat](https://t.me/openwebrx_chat)



# Thanks for watching!

