FMNetWeb

Installation and user manual

Version 2.0.0

Frank, DF6AX
Lamspringe
Website: https://df6ax.de
Project download: https://df6ax.de/fmnetweb/

Copyright (C) 2026 Frank, DF6AX (https://df6ax.de)
Licence: GNU General Public License version 2 or later (GPL-2.0-or-later). This manual and the software may be freely copied and distributed.

Contents

1. What is FMNetWeb? 3
2. Requirements 3
3. Raspberry Pi OS in brief 4
4. Installation 4
5. First start 4
6. Settings 5
7. Operation 8
8. Troubleshooting 17
9. Updates and uninstalling 18
10. Licence and author 19

Note: The interface is available in English and German; it follows the browser language and can be switched with the flags. Only the installer prompts are still in German.

Version 2.0.0 · Frank, DF6AX · Lamspringe
Website: https://df6ax.de · Project download: https://df6ax.de/fmnetweb/install.sh
Copyright (C) 2026 Frank, DF6AX (https://df6ax.de) · Licence: GPL-2.0-or-later

1. What is FMNetWeb?

FMNetWeb is a small service for the Raspberry Pi (or a Linux PC) that is logged into the FM-Funknetz via the original SvxLink. Using a web interface in your browser, you can then listen on your phone or PC, choose the talkgroup (TG) and transmit yourself. No app and no hotspot are needed: the microphone and speaker of your device are used directly in the browser.

The web interface runs on your own network (Wi-Fi/LAN).

How FMNetWeb works: The connection to the FM-Funknetz is maintained by an unmodified SvxLink (version 24.02). FMNetWeb starts it itself and provides the user interface. On the network your station therefore appears honestly as “SvxLink”; FMNetWeb only adds itself as the front end in the node information. It transmits only while you hold TRANSMIT (no VOX). “Active now”, “Last heard” and the eye come from the official MQTT broker of the FM-Funknetz.

2. Requirements

- Raspberry Pi 3, 4 or 5, or a Linux PC with Debian or Ubuntu (with internet access and systemd). About 2 GB should be free on the SD card (SvxLink is built during installation).
- Access to the FM-Funknetz: you get the reflector password (AUTH_KEY) by opening a ticket at ticket.fm-funknetz.de.
- Your own callsign with a suffix, for example DL1ABC-App. This callsign must not be used at the same time by a hotspot or another device, otherwise the login is rejected.
- **Enter the callsign exactly as it is registered with the FM-Funknetz – including the suffix and upper/lower case (e.g. DF6AX-iOS is not the same as DF6AX-IOS).**
- A phone, tablet or PC with an up-to-date browser (Chrome, Edge, Firefox, Safari) on the same network.

3. Raspberry Pi OS in brief

1. Download and start the Raspberry Pi Imager from the manufacturer.
2. Choose "Raspberry Pi OS Lite (64-bit)" as the operating system and the SD card as storage.
3. In the settings (gear icon), set the hostname, user and password, your Wi-Fi and "Enable SSH".
4. Write the SD card, insert it into the Pi and start it. After about two minutes, log in via SSH, for example `ssh pi@raspberrypi.local`.

4. Installation

Run two commands on the Pi (via SSH):

```
wget https://df6ax.de/fmnetweb/install.sh
sudo bash install.sh
```

The installer only asks two things (the prompts are in German):

- "Rufzeichen mit Zusatz, genau wie beim FM-Funknetz registriert – Groß-/Kleinschreibung beachten (z. B. DL1ABC-App):" (your callsign with suffix, exactly as registered with the FM-Funknetz – mind upper/lower case)
- "Reflektor-Passwort (Auth-Key) für das FM-Funknetz:" (the reflector password for the FM-Funknetz; your input stays invisible)

Enter the callsign exactly as it is registered with the FM-Funknetz – including the suffix and upper/lower case (e.g. DF6AX-iOS is not the same as DF6AX-IOS).

The installer then installs all required packages, builds SvxLink 24.02 from the original source (github.com/sm0svx/svxlink), sets up the service and starts it. SvxLink is built because the Raspberry Pi OS repositories only contain an old version without talkgroups. The first installation therefore takes about 20 to 40 minutes on a Raspberry Pi; the build log is in `/var/log/fmnetweb-svxlink-build.log`. At the end it shows the address at which you open the interface. No web password is requested: the interface opens without a login. Without a web password, anyone on your home network who can open the page can transmit under your callsign and change the settings. If other people also use your network (e.g. a guest Wi-Fi that is not separated), set a password in the settings.

5. First start

Open the address given by the installer, for example `https://raspberrypi.local` or `https://192.168.1.50`. If the service is not running on the standard port 443, the port is included (for example `https://raspberrypi.local:8443`).

The connection is encrypted, but the Pi has issued the certificate itself. This is necessary because browsers only allow the microphone on encrypted pages. You will therefore see a certificate warning the first time.

Chrome, Edge, Firefox, Android: confirm the warning ("Advanced" and then "Proceed to ..." or "Accept the risk and continue"). You only need to do this once.

iPhone and iPad: the certificate has to be downloaded as a profile, installed and trusted.

1. In Safari, open the address the installer shows at the end (`http://<IP-of-the-Pi>:80/ca.mobileconfig`; if port 80 is in use, a different port is shown) and choose "Allow".
2. Settings, General, VPN & Device Management: select the downloaded profile and install it.
3. Settings, General, About, Certificate Trust Settings: enable the FMNetWeb certificate.
4. Open the https address of the Pi in Safari.

Audio in the browser: audio starts when the page loads or at the first touch or key press. Until then, the header shows [Lautsprecher-Symbol]. Tip for Chrome and Edge: in the site settings for the address, set "Sound" to "Allow" and audio starts immediately.

After setting up: open the settings (gear icon at the top) and check your callsign and password. “Test connection” shows whether the login works.

6. Settings

You reach the settings via the gear icon in the header. “Save” applies them. If the reflector, callsign, monitor TGs or station details change, FMNetWeb briefly restarts SvxLink (about one second without connection).

Reflector

- Server 1, Server 2 and port: addresses of the reflectors. If server 1 fails, server 2 is used. Normally there is no need to change anything.
- Callsign (incl. suffix): your callsign with suffix, for example DL1ABC-App. **Enter the callsign exactly as it is registered with the FM-Funknetz – including the suffix and upper/lower case (e.g. DF6AX-iOS is not the same as DF6AX-IOS).**
- Reflector password (AUTH_KEY): the password from the ticket.

Talkgroups

- Default TG: the TG selected after start-up (default 262).
- Monitor TGs: TGs you also listen to (default 262). At most 28: the FM-Funknetz allows 30 monitor TGs per station, and FMNetWeb uses two of them for the SSTV TGs 26599 and 265990.

- Favourite TGs (stepping): the TGs that the ◀ TG and TG ▶ buttons step through (default 262 and 20).
- Buddies (callsigns): stations you want to be notified about, separated by commas. If a buddy is talking on another TG, a notice with a link to switch appears above “Last heard”. A callsign without suffix (DL1ABC) applies to all stations with that callsign, i.e. also DL1ABC-APP or DL1ABC-L.

Operation

- Scan hold time (s): how long the scan stays on a TG with activity.
- Max. transmit time (s): after this, a transmission is ended automatically.
- Receive buffer (ms): larger = more stable audio, but more delay.

Station (shown on the dashboard)

- Latitude and Longitude: your position in decimal degrees.
- Locator: calculated automatically from the coordinates.
- Use this device’s position: enters the position of your phone or PC (the browser asks for permission).
- Location, Sysop, Website: free entries that appear in the dashboard of the network.

APRS

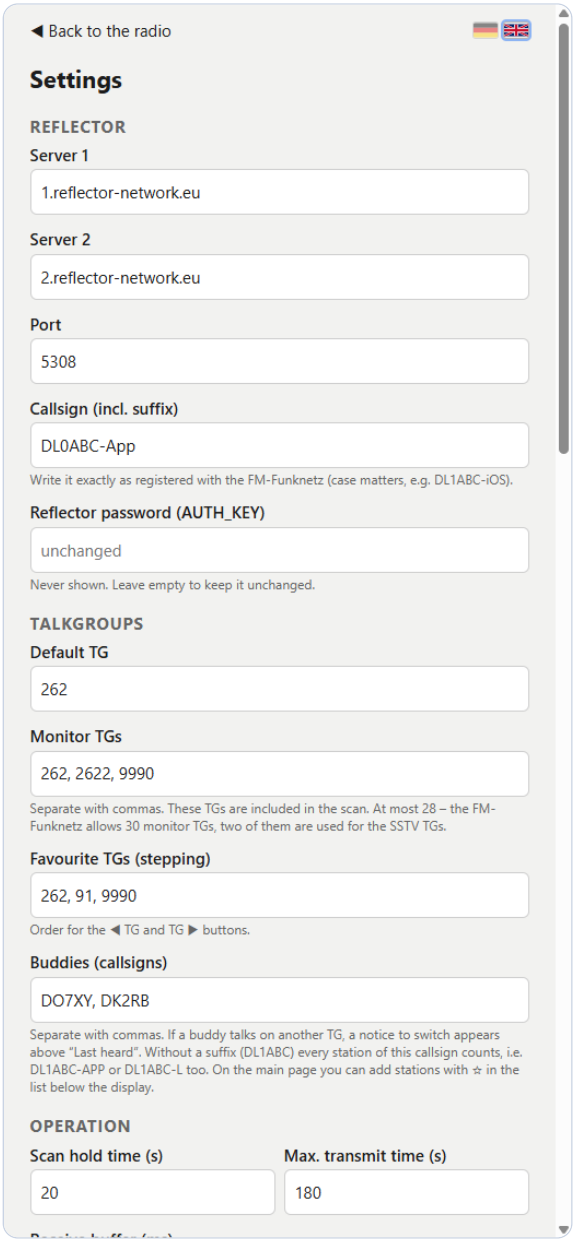
- Enable APRS position reports: off by default. When enabled, FMNetWeb regularly reports your position to APRS-IS.
- APRS callsign: the default is your callsign without suffix plus -10. App suffixes such as -iOS are not valid APRS SSIDs.
- Interval (minutes), Comment and Symbol: how often, and with which text and symbol, the position is reported.
- The APRS passcode is calculated automatically.

Web interface

- Web port (HTTPS): port of the interface (default 443).
- Web password (optional): empty = interface without login. With a password, the interface asks for it. Without a web password, anyone on your home network who can open the page can transmit under your callsign and change the settings. If other people also use your network (e.g. a guest Wi-Fi that is not separated), set a password in the settings.

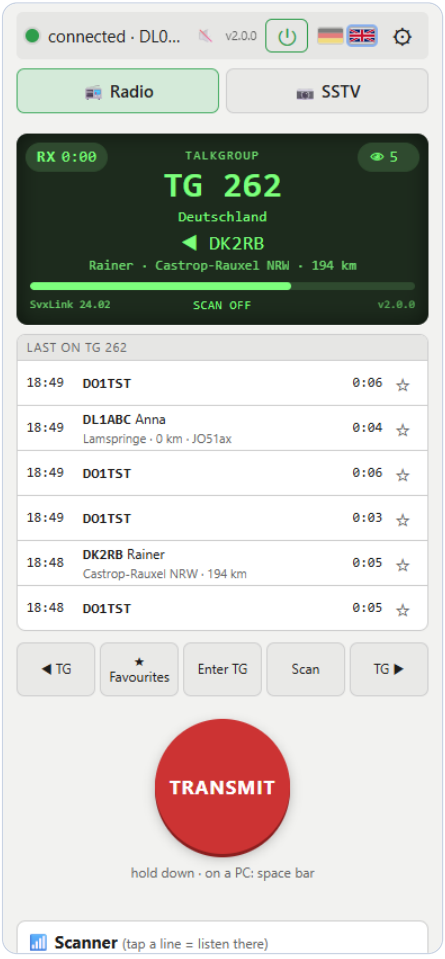
Experts (normally do not change): certificate port, APRS server and the FM-Funknetz servers: MQTT server (the official MQTT of the FM-Funknetz for “Active now”, “Last heard” and the eye, default mqtt.fm-funknetz.de:1883) and dashboard (TG names only, default https://dashboard.fm-funknetz.de). Changes take effect immediately after saving.

At the bottom of the page: “Save”, “Test connection” and “Echo test (TG 9990)”.



Settings (excerpt). The reflector password is never displayed.

7. Operation



Main page on a phone.

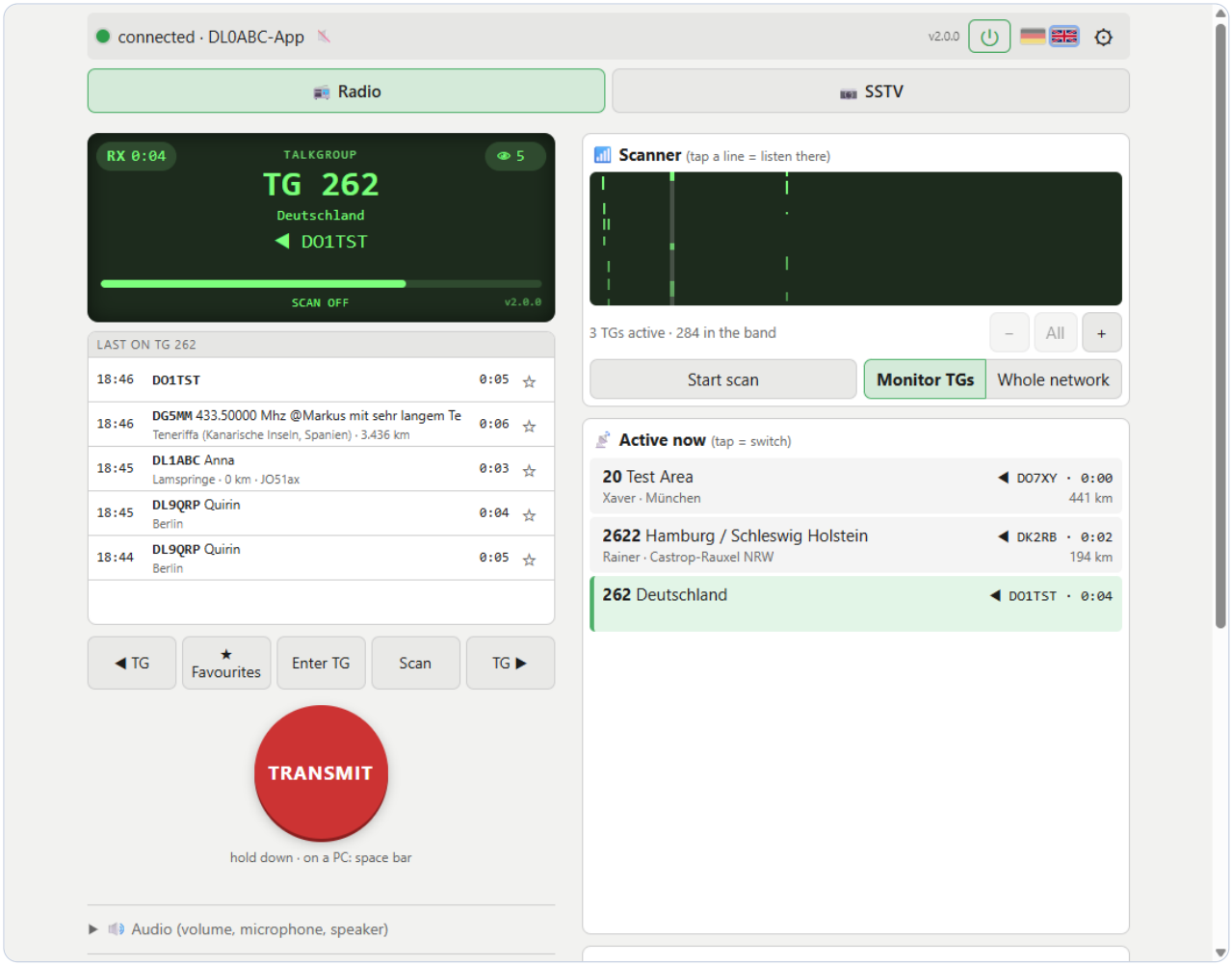
On a phone, from top to bottom:

1. Display with status, the current TG and whoever is talking right now. At the top right of the display, an eye shows the number of stations currently set to your TG. At the top left, “RX” is shown while receiving and “TX” while transmitting, each with the duration of the transmission. At the bottom left, while receiving, the display shows which program the other station is transmitting with (e.g. SvxLink or an app), if it reports this to the network. At the bottom right of the display, and in the header next to the on/off button, you see the FMNetWeb version number; in the header it includes the build number (e.g. “v1.10.0 · build 28”).
2. History: the last 6 transmissions on your TG with time, callsign, name, location, distance, locator and duration. Tap ☆ to add a station to your buddy list.
3. TG buttons: ◀ TG, ★ Favourites, Enter TG, Scan, TG ▶.
4. TRANSMIT.
5. "Scanner": a waterfall across all talkgroups of the FM-Funknetz, sorted by number from left to right. A new line is added at the top every second, so you see the last minute. Wherever someone is talking, a bright line runs down; when the transmission

ends, the line stops. The column of your current TG is slightly highlighted. Tap to switch to that TG; the nearest line within a finger's width counts, so you do not have to hit it exactly. With the mouse, the line below shows TG, name and speaker. “−”, “All” and “+” zoom the waterfall; when zoomed in, it can be scrolled sideways. The history starts when you open the page. Below it: “Start scan”/“Stop scan” and the choice of what the scan covers: “Monitor TGs” or “Whole network” (every TG where someone is talking right now, except TG 26599). The choice is remembered.

6. “Active now”: who is currently talking on which TG. The list has a fixed height and scrolls. Tap an entry to switch to that TG.
7. “Audio (volume, microphone, speaker)”: collapsed. Here you set the volume and choose the microphone and speaker. The device names only appear after “Show devices (allow microphone)”. Choosing the speaker does not work in every browser (not on the iPhone and not in Firefox).
8. “RC-28 rotary encoder”: only on a PC in Chrome, Edge, Opera and Vivaldi (see below).
9. Monitor.
10. Buddy notice: only appears when a buddy is talking on another TG.
11. Last heard.

On a PC, the same elements are arranged in two columns.

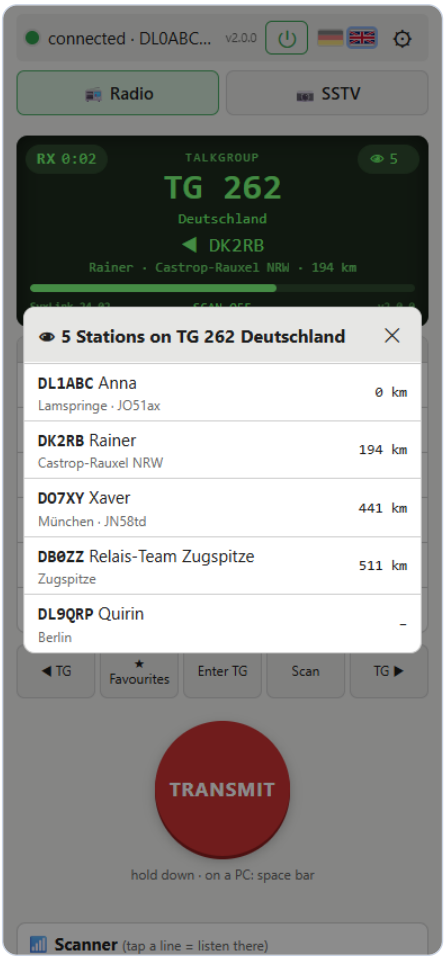


On a PC: the radio on the left; on the right “Active now”, the buddy notice and “Last heard”.

Buttons and functions

- On/off button (⏻) at the top right next to the gear icon: disconnects from the network and reconnects. Green means connected, red means switched off; the status line then shows “Connection switched off”. A transmission in progress is ended. The switch applies to all open browsers. After a restart of the service or the Pi, FMNetWeb reconnects by itself.
- ◀ TG and TG ▶ step through your favourites.
- ★ Favourites: shows your favourite TGs with names; tap one to switch directly.
- Buddies: in the history below the display, there is a ☆ next to every other station. Tapping it adds the callsign to your buddy list (★), tapping again removes it. When a buddy is talking anywhere on the network, the notice “★ DL1ABC spricht on TG … switch ›” (spricht = is talking) appears above “Last heard”; tap it to switch to that TG, × hides the notice for this transmission. In “Active now”, buddies are marked with ★.
- Enter TG: choose any TG number directly.

- Eye (□) in the display: shows all stations currently set to your TG with name, location, locator and distance, nearest first. On a PC, simply hover the mouse over the eye. Stations that only monitor the TG are not counted. The list comes from the official MQTT of the FM-Funknetz and is updated continuously.
- History below the display: only counts transmissions you heard on your selected TG, not during a scan. Each TG has its own history; after a restart of the service it is empty.
- Scan: steps through the monitor TGs or, with “Whole network” in the scanner, through all active TGs. It stays on each TG for the set hold time, counted from the switch; after that it moves to the next active TG as soon as nobody is talking on the current one. An ongoing QSO does not extend the hold time.
- TRANSMIT: press and hold while you talk, release to end the transmission. The first time, the browser asks for access to the microphone.
- On a PC: holding the space bar works like TRANSMIT (not while you are typing in a text field).



The eye shows who is currently set to your TG.

Icom RC-28 (USB encoder)

On a PC, you can connect the Icom RC-28 as a control unit. This works in Chrome, Edge, Opera and Vivaldi. Firefox, Safari and the iPhone do not support it. The RC-28 is plugged into the PC you are sitting at, not into the Pi.

1. Plug in the RC-28 via USB and open FMNetWeb in the browser.
2. Click once on the page (to enable audio and microphone).
3. Expand “RC-28 rotary encoder”, press “Connect RC-28” and select “Icom RC-28”. This is only needed once per browser; after that it connects by itself when plugged in.

- TRANSMIT: press and hold to transmit, like the TRANSMIT button on the page.
- Rotary knob: steps through the favourite TGs. The selected TG flashes in the display.
- F-1: switches to the flashing TG. Without F-1, the display returns after 4 seconds.
- F-2: scan on/off.
- LEDs: TX lights up while transmitting, F-1 when a TG is preselected, F-2 while scanning, LINK as long as the connection to the reflector is up.

Under “Rotary knob” you set how far you have to turn for one TG (fine, medium, coarse). If the RC-28 is in use by another program (for example RS-BA1), close that program first. If the browser cannot find the RC-28, plug it directly into the PC instead of a USB hub; some hubs do not report it correctly.

Linux PC: Chrome may only use the RC-28 after a permission rule has been added. Set this up once, then plug the RC-28 in again:

```
echo 'SUBSYSTEM=="hidraw", ATTRS{idVendor}=="0c26", ATTRS{idProduct}=="001e",
TAG+="uaccess"' | sudo tee /etc/udev/rules.d/70-icom-rc28.rules
sudo udevadm control --reload-rules
```

Sending and receiving SSTV pictures

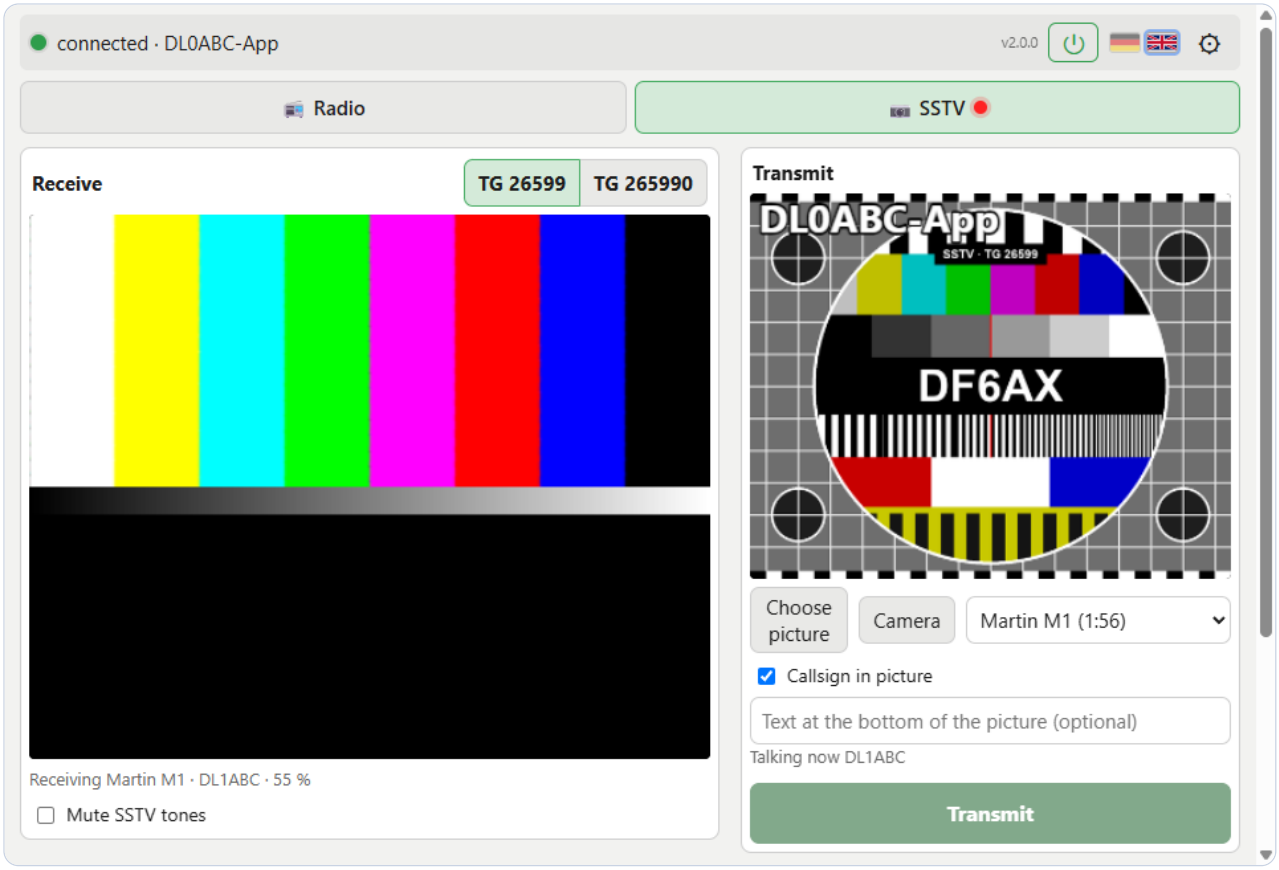
At the top there are two tabs: “Radio” and “SSTV”. SSTV runs on the two SSTV TGs 26599 and 265990.

- When you open "SSTV", FMNetWeb switches to the selected SSTV TG (26599 the first time) and pauses the scan. When you go back to “Radio”, it returns to the previous TG, and a scan that was running before starts again. This also applies when you close the page.
- Two TGs: at the top of the receive card you switch between TG 26599 and TG 265990. The selected TG applies to receiving and transmitting. If someone transmits on the other TG, a notice with a button to switch appears; FMNetWeb does not jump automatically.
- A red, pulsing dot on the "SSTV" tab shows that someone is currently transmitting on one of the two SSTV TGs, even if you are on another TG. Hover the mouse over it to see the callsign. The SSTV TGs do not appear in “Active now”.

- Receiving: when someone sends a picture on the selected TG, it builds up line by line on the left (at the top on a phone). If you are in the radio view on an SSTV TG, a notice appears; tap it to open the SSTV view. FMNetWeb detects the mode itself from the VIS header (with 16-bit VIS for MP), so you do not need to set anything. To reply, the mode selection for transmitting switches automatically to the received mode (not while you are transmitting yourself, and not if the mode is too long for your maximum transmit time). If you tune in halfway through a picture, the rest is still built up in the right place; the missed upper part stays black. This works for all modes, also for the second picture in the same transmission and when the sender changes mode in the middle of a picture; if the position is unknown, the rest is placed at the bottom of the picture at the end. If individual lines are lost through packet loss, the gaps in the picture are filled in. If someone sends a mode that FMNetWeb cannot handle, the text below the picture says, for example, “Mode not supported: Martin M3 (VIS 32)”.
- “Mute SSTV tones” (below the received picture): mutes the speaker only while an SSTV signal is running, from the VIS header to the end of the picture. Speech on the SSTV TGs remains audible, and the picture is still received. The setting applies to this device and is remembered.
- Transmitting: press “Choose picture”, choose a mode and press “Transmit”. The mode list is grouped by family (table below) and your choice is remembered on this device; the default is Martin M1 at just under 2 minutes, Robot36 takes 37 seconds. The preview shows exactly the picture that will be sent: cropped to the right format and, if enabled, with your callsign at the top left. In the text field below you can also enter a short text (up to 40 characters, e.g. "73 de DL1ABC · JO51"); it appears at the bottom centre of the picture and is kept for the next transmission. A picture is only sent when nobody is talking on the selected TG. “Cancel” ends the transmission immediately.
- Camera: next to “Choose picture” there is “Camera”. It shows a live image in the transmit preview; “Capture” freezes it, and from then on it works like a chosen picture (callsign, text). If the device has several cameras, you can choose one; the choice is remembered. It is the camera of the device the browser runs on, and the browser asks for your permission first. The camera is released again after “Capture”, “Cancel”, when you leave the view and when transmission starts. “Cancel” ends the live preview without taking a picture. Possible messages: “Camera not allowed” (permission missing), “No camera found”, “Camera not available” (e.g. in use by another program).
- Keep the screen on and the page open while transmitting.
- Gallery: the last 20 pictures, received ones and your own (“sent”). Each picture carries the TG it arrived on, also in the file name. Tap to view the picture large; “Save” downloads it as a PNG. The gallery only exists in this browser on this device.
- If the maximum transmit time in the settings is shorter than a picture, that mode is locked. The durations in the table include the VIS header.
- EasyPal (digital picture transmission): see “EasyPal (HamDRM)” further below.

Supported modes (receive and transmit, analogue; for EasyPal see below):

Family	Mode	Resolution	Duration
Robot	Robot36	320×240	37 s
Robot	Robot72	320×240	1 min 13 s
Robot	Robot24	160×120	25 s
Black and white	B/W 8	160×120	9 s
Black and white	B/W 12	160×120	13 s
Martin	Martin M1	320×256	1 min 55 s
Martin	Martin M2	320×256	59 s
Scottie	Scottie S1	320×256	1 min 51 s
Scottie	Scottie S2	320×256	1 min 12 s
Scottie	Scottie DX	320×256	4 min 30 s
PD	PD50	320×256	51 s
PD	PD90	320×256	1 min 31 s
PD	PD120	640×496	2 min 07 s
PD	PD160	512×400	2 min 42 s
PD	PD180	640×496	3 min 08 s
PD	PD240	640×496	4 min 09 s
PD	PD290	800×616	4 min 50 s
Pasokon	Pasokon P3	640×496	3 min 24 s
Pasokon	Pasokon P5	640×496	5 min 05 s
Pasokon	Pasokon P7	640×496	6 min 47 s
MP	MP73	320×256	1 min 14 s
MP	MP115	320×256	1 min 57 s
MP	MP140	320×256	2 min 21 s
MP	MP175	320×256	2 min 57 s



SSTV view: on the left, receiving with the TG switch while a picture is building up; on the right, transmitting with preview, “Choose picture”, “Camera” and the mode list.

EasyPal (HamDRM)

EasyPal does not transmit a picture as audio lines but as a file in a digital signal (HamDRM). FMNetWeb receives and sends it only on the SSTV TGs 26599 and 265990, just like the analogue modes; on other TGs, EasyPal is neither sent nor received. It is designed to work with EasyPal, QSSTV and the FM-Funknetz app (testing is still pending, see “Known limitations”).

- Receiving: runs automatically, you do not need to set anything. When FMNetWeb detects an EasyPal signal, the “EasyPal” card appears instead of the analogue picture. It shows the callsign, the profile of the other station (e.g. “B · 2,5 kHz · 16-QAM”), the signal quality in dB and the progress as “Segments x/N”. The finished picture goes into the gallery. To reply, transmitting switches automatically to EasyPal with the mode and QAM of the other station; the error protection (RS) is not carried in the signal, so it stays as set. If you are in the radio view on an SSTV TG, the picture is received as well, and a notice “EasyPal picture von … arriving – tap to view” (von = from) appears; tap it to open the SSTV view.
- Late entry: if you tune in in the middle of a transmission, FMNetWeb collects the segments from that point on. If the other station sent with error protection (RS1 to RS4), the picture is still completed as long as not too much is missing (with RS2, up to about a fifth of the segments). Without error protection, all segments are needed. If

that is not enough, the status line shows “EasyPal picture incomplete (x/N segments)”; no partial picture is shown and there is no gallery entry. A picture that has already been received is reported in the status line with “picture already received”.

- Picture formats when receiving: JPEG and JPEG 2000 (JP2 and J2K).
- Transmitting: in the mode list, the entry “EasyPal” is listed under the group “Digital”. Below it, a small profile panel appears:
  - Mode (A, B, E), QAM (“4-QAM (robust)”, 16-QAM, 64-QAM) and error protection (none, RS1 to RS4). Default: B · 2,5 kHz · 16-QAM · High · long · RS2. Bandwidth 2.5 kHz, protection High and the long interleaver are fixed.
  - Picture: 320×240 (default) or 640×496.
  - Target duration: 60, 90, 120 or 180 s, default 90 s. FMNetWeb chooses the JPEG quality so that the transmission does not take longer. The target duration applies at most up to the station's maximum transmit time minus 5 seconds.
  - The status line shows profile, duration and file size, e.g. “EasyPal · B · 16-QAM · RS2 · ~1:30 · 15,3 kB”. If the picture does not fit into the target duration, the reason is shown there and “Transmit” stays locked.
  - After “Transmit”, FMNetWeb first encodes the picture (status “Kodiere EasyPal (…) …”, i.e. encoding EasyPal), and only then does the transmission start.
  - Your choice is remembered on this device. Callsign, text and camera work as with the analogue modes.
  - Tip: on weak paths, choose 4-QAM (robust) with a target duration of 180 s. The audio is encoded by SvxLink with its default settings; whether 16- and 64-QAM get through reliably is still being tested. If in doubt, choose 4-QAM.
- “Mute SSTV tones” also applies to EasyPal while an EasyPal signal is being received.

Known limitations of EasyPal

- No BSR (request for missing segments) and no “FIX” resending.
- No hybrid mode (picture via an internet server). The status line reports such transmissions with “EasyPal hybrid is not supported”.
- No partial picture if too few segments have arrived.
- Whether genuine EasyPal and QSSTV can read our transmissions, and vice versa, has not yet been confirmed. The joint test is still pending (checklist `docs/EASYPAL-PRUEFUNG.md` in the project's source code).
- On slow phones, encoding before transmitting can take a few seconds.

For experts: raw recording (`sstv_capture`)

For troubleshooting, the station can record everything it receives on the SSTV TGs as a WAV file (16 kHz, mono). There is no switch for this in the interface. Add `"sstv_capture": true` to `/etc/fmnetweb/config.json` and restart the service (`sudo systemctl restart fmnetweb`); the value is only read at start-up. The files are stored in `/var/lib/fmnetweb/`

`capture/`, one per transmission, at most 20 files and 200 MB; the oldest is deleted first. Only reception is recorded, nothing is transmitted. To switch it off, enter `false` again and restart.

Echo test: always test on TG 9990 (echo test) or TG 20 (test area), never on TG 262. On TG 9990 you talk briefly and your transmission is played back to you. In the settings there is also the button “Echo test (TG 9990)” for this.

When transmitting, please observe the rules of the network and the terms of your amateur radio licence.

8. Troubleshooting

“Connection switched off”
Someone has disconnected using the on/off button (⏻) next to the gear icon. Tap the button once and FMNetWeb logs in again.

“Login rejected”
The callsign or the reflector password (AUTH_KEY) is wrong. Check them in the settings, mind upper and lower case and enter the callsign with its suffix.

“SvxLink is not installed”
SvxLink is missing or the build failed. Run the installer again (`sudo bash install.sh`) and check `/var/log/fmnetweb-svxlink-build.log` if errors occur.

“Callsign is already logged in”
The callsign is currently being used by another device or hotspot. Use a callsign with its own suffix (for example -App) that is not running anywhere else. After the other device has disconnected, it sometimes takes a minute until the callsign is free again.

Microphone blocked
The browser has denied access to the microphone. Tap the padlock in the address bar, set the microphone to "Allow" and reload the page. On the iPhone: Settings, Safari, Microphone. The microphone only works over https.

No audio
If [Lautsprecher-Symbol] is shown in the header, tap once on the page. In Chrome or Edge, the site setting "Sound: Allow" helps. Check the volume in the “Audio” section and on the device, and mind the mute switch on the iPhone.

Choppy audio
Increase the receive buffer in the settings (for example to 300 to 500 ms). Check the Wi-Fi: the Pi should have good reception, or better still be connected by LAN cable.

Port in use
If another program is already running on port 443, the installer falls back to 8443 or asks. To choose a specific port:

```
sudo bash install.sh --port 8443
```

APRS login does not work
Use an APRS callsign with a valid SSID (-1 to -15), not the app suffix.

Viewing the logs

```
journalctl -u fmnetweb -f
```

The SvxLink messages appear there too, prefixed with “svxlink:”.

Restart the service: `sudo systemctl restart fmnetweb`

9. Updates and uninstalling

Update check: FMNetWeb checks with df6ax.de when the device starts and then once a day whether a new version is available. Nothing is installed during the check.

Installing an update: when a new version is available, the main page shows a small dot on the gear icon. Under **Settings → About FMNetWeb** you will then see “Update available: …”. Clicking **Install update** and confirming in the dialog downloads the package, verifies its checksum and installs it. The service restarts in the process and active connections are briefly interrupted; afterwards the page reloads by itself. **Check for update** lets you check immediately at any time.

The first update to version 2 builds SvxLink once (20 to 40 minutes on a Pi); the old version keeps running until then. The program and the server certificate are renewed; your settings and the certificate of the certificate authority are kept (iPhones do not need to download the profile again). If an update fails (e.g. wrong checksum), the old version keeps running and the page shows the error. Details are in `/var/log/fmnetweb-update.log`.

What is transmitted: during the update check, FMNetWeb sends the software version, an anonymous device ID (a checksum from which the device cannot be identified) and – unless switched off – the callsign to df6ax.de. This is only used to get an overview of how many installations are running which version. Sending the callsign can be switched off under **Settings → About FMNetWeb** with “Send callsign with the update check”.

Manual update: alternatively, run the installer again – it also fetches the latest version:

```
wget https://df6ax.de/fmnetweb/install.sh
sudo bash install.sh
```

Uninstalling: removes the service, update check, program, settings and certificates:

```
sudo bash install.sh --uninstall
```

Installed system packages are kept.

10. Licence and author

FMNetWeb was written by Frank, DF6AX (Lamspringe). Website: https://df6ax.de, project download: https://df6ax.de/fmnetweb/install.sh

Copyright (C) 2026 Frank, DF6AX (https://df6ax.de)

FMNetWeb is free software. It may be freely copied, distributed and modified under the terms of the GNU General Public License version 2 or (at your option) any later version. Anyone who distributes a modified version must also distribute it under this licence and with its source code. The software is provided without any warranty.

The full licence text is included in the LICENSE file in the program package and on the “Licence text” page in the settings of the web interface.

Amateur radio notice: transmitting via the FM-Funknetz is only permitted with a valid amateur radio licence and your own access.

The connection to the FM-Funknetz is maintained by the unmodified SvxLink by Tobias Blomberg, SM0SVX (https://github.com/sm0svx/svxlink, GPL). FMNetWeb starts it as a separate process.