WAVERONNE Interference Scout
Interference Hunting Tool

User Manual



Model IS-045

November 2026

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1 Introduction

1.1 About Interference Scout

WAVERONNE Interference Scout is a compact, ultra-portable instrument engineered for fast, real-time RF interference detection and spectrum analysis. Designed for telecom engineers, regulators and field technicians, it gives instant insight into signal behavior and interference sources. The stand-alone device fits in your hands: you control it and review the measurements directly on its touch screen, with no external host required.

It covers 100 MHz to 5 GHz and shows the spectrum live as a trace, as a 2D waterfall, or both at once. Use it to:

- spot interfering signals on the live spectrum and the waterfall;
- catch short or intermittent bursts with the max hold and min hold traces;
- read exact frequencies and levels with up to four markers;
- track a signal to its source with the directional antenna, the map, GPS and the compass;
- take snapshots and record sessions with the time, position and heading of every reading;
- export reports as CSV, PDF or KML files and download them to a phone or laptop over Wi-Fi.

Key features

- Real-time spectrum analysis
- Wideband coverage: 100 MHz to 5 GHz
- Fast scanning: 10 GHz/s
- Spectrum and 2D waterfall views
- Live, max hold and min hold traces
- Up to four advanced markers
- Friendly touch-screen interface
- Directional antenna provided
- Map with GPS position and heading
- Built-in compass
- Snapshots with GPS and compass data
- Session recording with PDF, CSV and KML reports
- Wi-Fi remote access and browser downloads
- Handheld stand-alone device with IP65 protection

Applications

- Interference hunting for mobile networks
- Spectrum monitoring for regulators
- Site surveys and network troubleshooting
- Documenting field findings with location, direction and time

1.2 About this manual

This manual starts with the hardware: what is in the package and how to get the device ready. It then follows the screens of the device in the order you will use them: the spectrum views, waterfall diagram and markers, snapshots, compass and the location tools, recording and reports, and the settings. The last chapters cover troubleshooting, a glossary and the specifications.

1.3 Safety precautions

1. Use only the original charger and accessories supplied with the device.
2. Do not open or disassemble the device. Have it serviced only by WAVERONNE or its local service centers
3. Do not connect the RF input directly to a transmitter output or any high-power source.
4. Connect and disconnect the antenna with care, and do not over-tighten the SMA connector.
5. Keep the device away from explosive materials.
6. The device is IP65 protected against dust and water jets. Do not immerse it in water.
7. Operate the device within its rated temperature range of −20 to 50 °C.
8. Before first use, charge the battery fully.

2 Getting started

2.1 Check the package

Unpack the device and make sure you have received all the parts, without damage. The package contains:

Item	Description
Interference Scout device	Handheld, stand-alone real-time spectrum analyzer with touch screen
Directional antenna	For tracking interference sources
AC/DC charger	Charges the built-in battery through the DC input
Carrying strap	Keeps the device secure for hands-free use in the field
Carrying case	Protects the kit during transport and storage
User guide	Setup and operating instructions



Figure 1: Interference Scout with the directional antenna

If anything is missing or damaged, contact your WAVERONNE agent or write to **sales@waveronne.com**.

2.2 Interfaces

Part	Use
Touch screen	Shows the measurements and controls the device
DC input	Connection for the AC/DC charger
RF input (SMA connector)	Connection for the directional antenna

2.3 Preparations

1. Charge the battery fully with the supplied AC/DC charger. A full charge gives about 3 hours of operation.
2. Connect the directional antenna to the RF input (SMA connector).
3. Switch the device on and wait for the spectrum screen to appear.

2.4 The spectrum screen

The spectrum screen is where you spend most of your time. The bar at the top holds the view, trace and marker controls, the row below it shows the marker readouts, and the plot shows the signal level in dBm against frequency in MHz.



Figure 2: The spectrum screen

Element	What it does
View button (top left)	Switches between Trace (spectrum), Fall (2D waterfall) and Both. See section 3.1.
LIVE, MAX, MIN	Show or hide the live, max hold and min hold traces. See section 3.2.
+ (top right)	Adds a marker. See section 3.3.
Camera (top right)	Takes a snapshot of the current view. See section 4.1.
⋮ menu (top right)	Display options: fit or reset the scale, color scheme, clear markers. See section 3.5.
Marker readouts	Frequency and levels of each marker (M1 to M4). Tap a readout to open the marker options.

2.5 The side bar

The bar on the left of the screen shows the state of the device and opens the main pages:

Item	What it does
Heading and GPS symbol	Current compass heading in degrees (for example 81°) and GPS status
Wi-Fi symbol and battery	Wi-Fi connection and battery charge in percent
Back arrow	Returns to the previous page
Config. (line icon)	Opens the configuration page: frequency range, scales and colors. See section 3.6.
2D Spectrum (waterfall icon)	Opens the spectrum screen
Map	Opens the map with your position and heading. See section 4.2.
Settings (gear)	Opens the settings, snapshots, GPS, compass and the Record & Reports page. See chapter 6.

3 Spectrum analysis

3.1 Spectrum, waterfall or both

Tap the view button at the top left to switch between three views:

- **Trace:** the spectrum analyzer view, with the signal level in dBm against frequency.
- **Fall:** the 2D waterfall diagram. Each new sweep is added as a line, so the picture shows how the band changes over time. The color shows the level, as given by the color bar on the right.
- **Both:** the spectrum on top and the waterfall below, at the same time.



Figure 3: Trace view

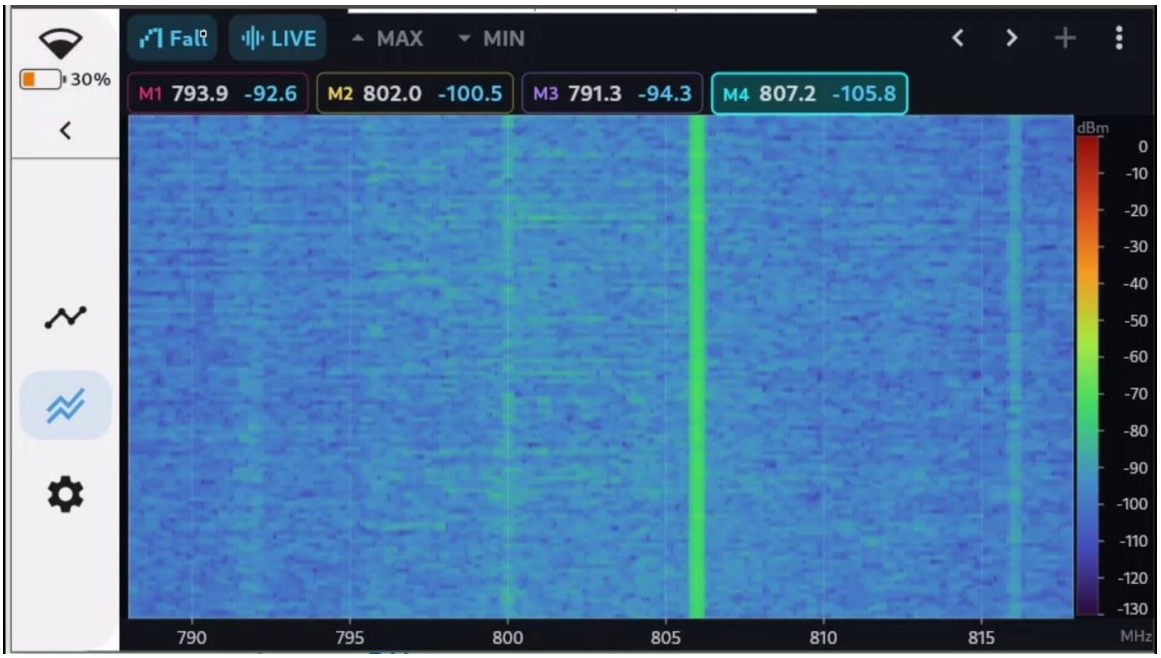


Figure 4: Fall (waterfall) view



Figure 5: Both views at the same time

Tip: The waterfall is the best view for intermittent, hopping or bursty interference: a signal that comes and goes leaves a broken line or dashes, while a constant signal leaves a solid vertical line.

3.2 Live, max hold and min hold traces

Tap **LIVE**, **MAX** and **MIN** in the top bar to show or hide each trace. You can show one trace, any two, or all three at the same time. A short message confirms the change, for example “Max hold enabled” or “Max hold reset”.

Trace	What it shows	Use it to
Live (blue)	The latest sweep	See what is on the air right now
Max hold (green)	The highest level measured at each frequency since max hold was enabled or reset	Catch short bursts that would otherwise disappear between sweeps
Min hold (orange)	The lowest level measured at each frequency	See the noise floor and the signals that are always present



Figure 6: Live, max hold and min hold traces, with one marker showing all three levels

3.3 Markers

Markers read the exact frequency and level at a point of the spectrum. You can place up to four markers, M1 to M4, at once.

- **Add a marker:** tap **+** at the top right, or tap the plot at the frequency you want and choose **Add marker at … MHz** from the menu that opens. The same menu offers **Clear markers**.
- **Move a marker:** select it and move it to the right or to the left.
- **Read a marker:** its readout at the top shows the frequency in MHz and the level in dBm. When the max hold and min hold traces are shown, each marker shows three values at the same time: live, max hold and min hold.

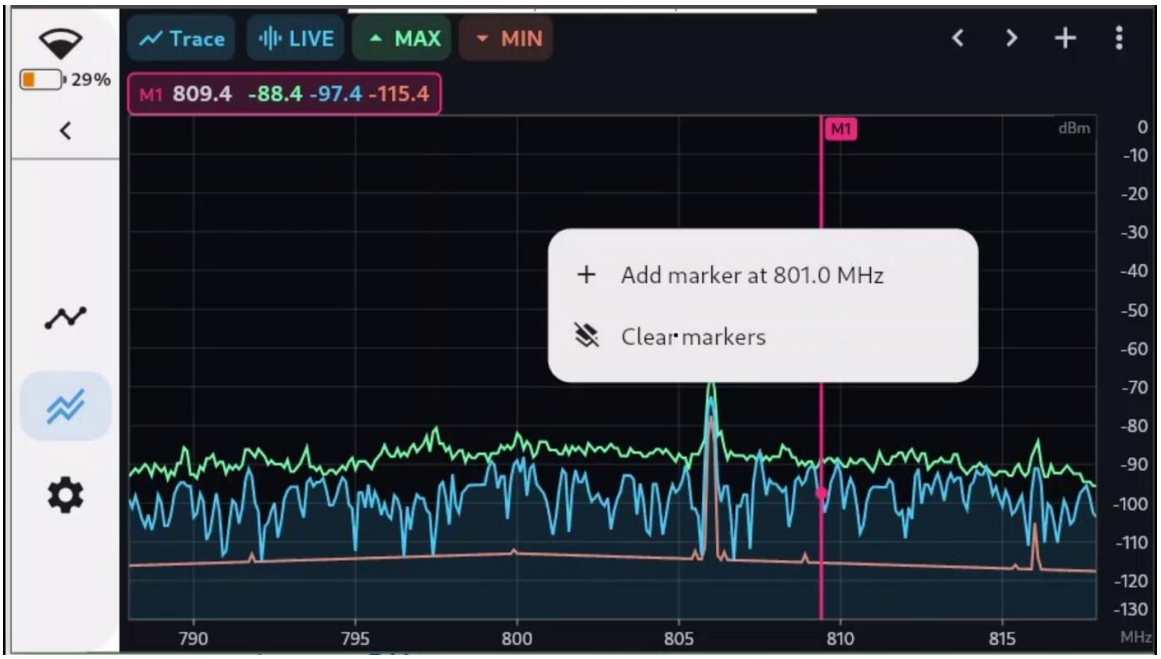


Figure 7: Adding a marker by tapping the plot



Figure 8: Four markers, each showing its live, max hold and min hold levels

3.4 Advanced marker options

Tap a marker's readout at the top of the screen to open its options. They let you place the marker automatically on the highest or lowest value of any trace, and keep it there.

Option	Choices	Effect
Target	FREE, MIN, MAX	FREE lets you place the marker anywhere. MIN moves it to the lowest value, MAX to the highest value.
Snap	INSTANT, STICK	INSTANT moves the marker once. STICK keeps it on the minimum or maximum continuously, following the signal as it changes.
Trace	LIVE, MIN, MAX	Selects the trace the Target looks at: the live trace, the min hold trace or the max hold trace.
Set frequency…		Places the marker on an exact frequency that you type in.
Delete		Removes the marker.

The Snap and Trace rows appear when Target is set to MIN or MAX. In FREE mode, the menu shows only Target, Set frequency and Delete.



Figure 9: Marker M3 sticking to the minimum of the live trace



Figure 10: Marker M3 moved once to the maximum of the max hold trace

For example, set Target to **MAX**, Trace to **LIVE** and Snap to **STICK** to make the marker follow the strongest live signal, or set Trace to **MAX** to find the highest level ever reached by an intermittent interferer.

3.5 Display options

Tap the ⋮ menu at the top right for the display options:

Option	What it does
Fit scale to signal	Adjusts the dBm scale to the signals on screen. A message shows the new range.
Reset scale	Returns the scales to their default values.
Turbo, Viridis, Plasma, Hot, Grayscale	Color scheme of the waterfall.
Clear markers	Removes all markers.

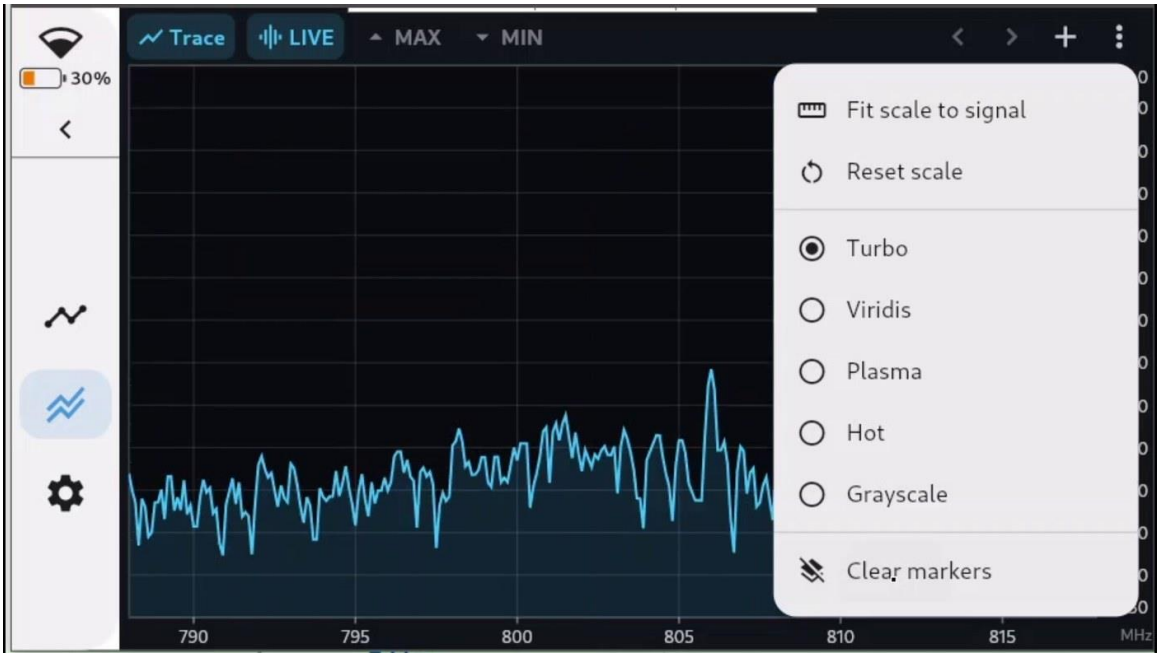


Figure 11: The display options menu

3.6 Configuration

Tap **Config.** in the side bar to set the frequency range and the scales you want to observe:

- **Frequency configuration:** the start and stop frequencies in MHz.
- **Display scales:** the minimum and maximum levels in dBm of the spectrum scale and of the waterfall scale.
- **Color scheme:** the colors of the waterfall diagram.

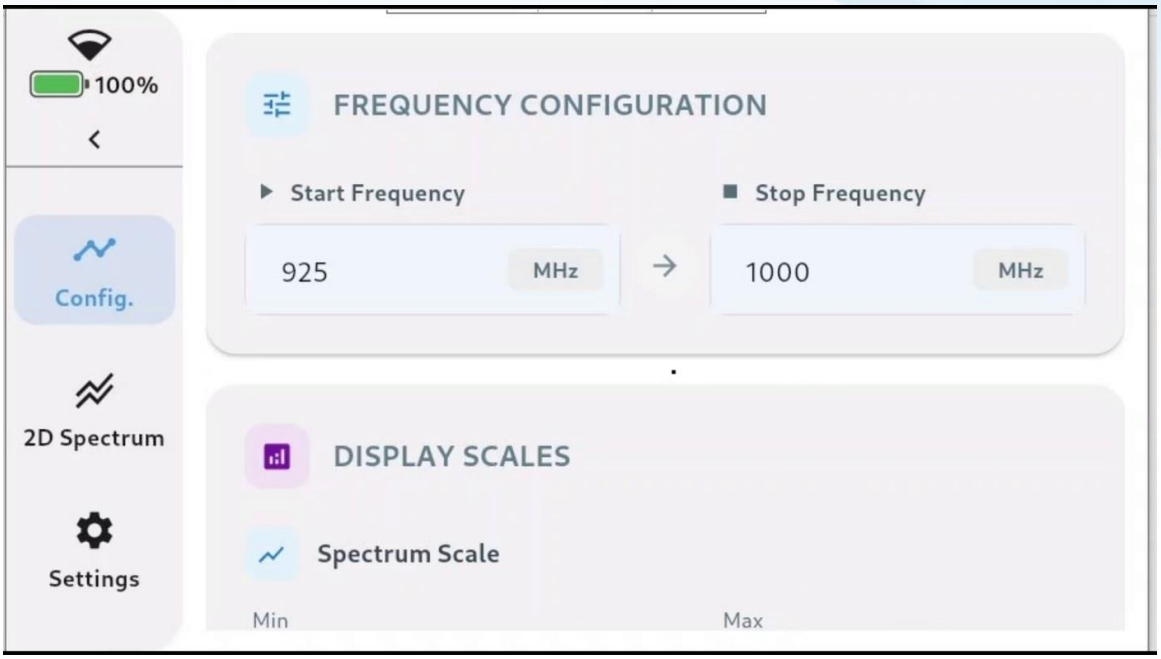


Figure 12: Frequency configuration and display scales

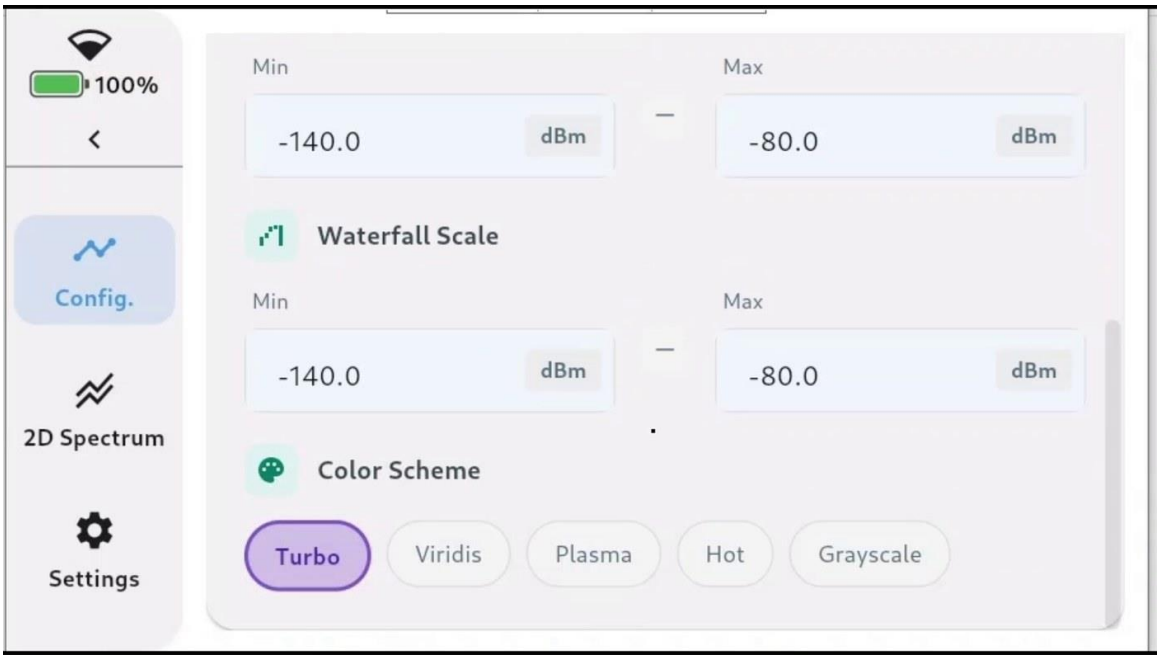


Figure 13: Waterfall scale and color scheme

4 Snapshots, map and direction

4.1 Snapshots

Tap the camera icon at the top right to take a snapshot of the spectrum or the 2D waterfall. A message confirms the file name: the snapshot is saved as an image together with its own PDF.



Figure 14: A snapshot has been saved

Viewing snapshots

Open **Settings > Snapshots** to see all the snapshots you have taken, newest first, each with its date and time. Tap a snapshot to open it. Under the picture you find the GPS coordinates and the heading, the date and time, the frequency range and the serial number of the device. Use **Delete** to remove the snapshot, or **Close** to go back.

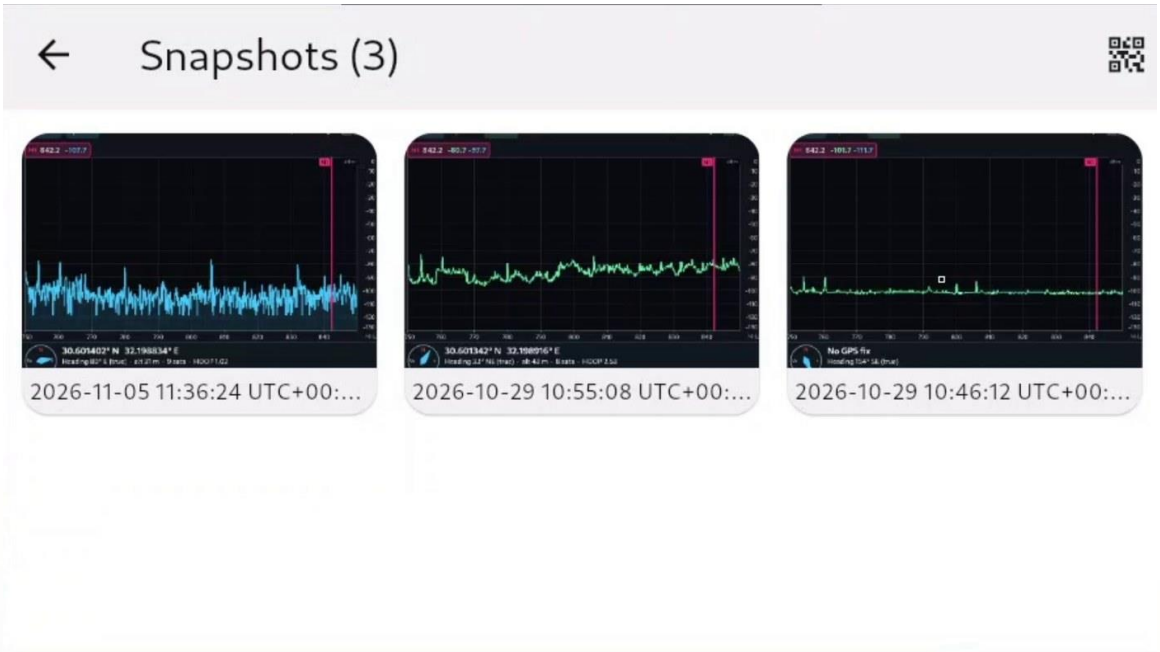


Figure 15: The snapshots page



Figure 16: A snapshot with its position, heading, time and frequency range

Downloading snapshots to a phone or laptop

Tap the QR code icon at the top right of the snapshots page. Scan the QR code with your phone, or type the address shown under it into a web browser, to open and download the snapshots.

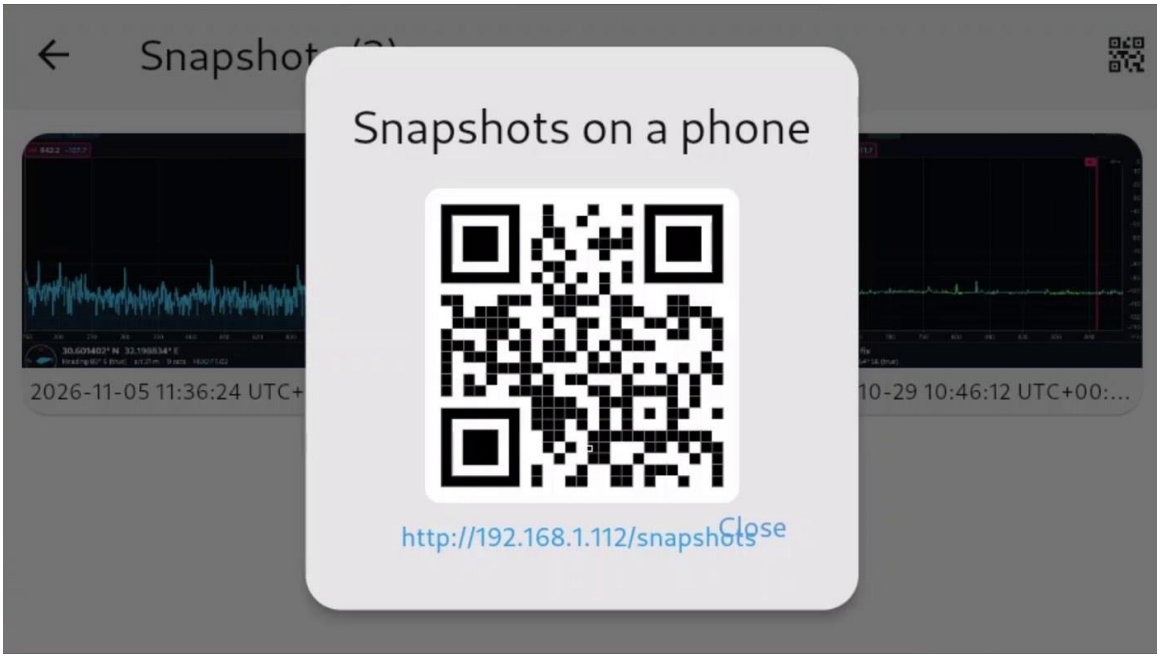


Figure 17: Opening the snapshots on a phone

> **Note:** The phone or laptop must be connected to the same Wi-Fi network as the device. See section 6.1.

4.2 Map

Tap **Map** in the side bar to see where you are. The blue dot shows your position and the blue cone shows the direction you are facing. The box at the top shows the GPS coordinates with their accuracy and the heading with its accuracy.

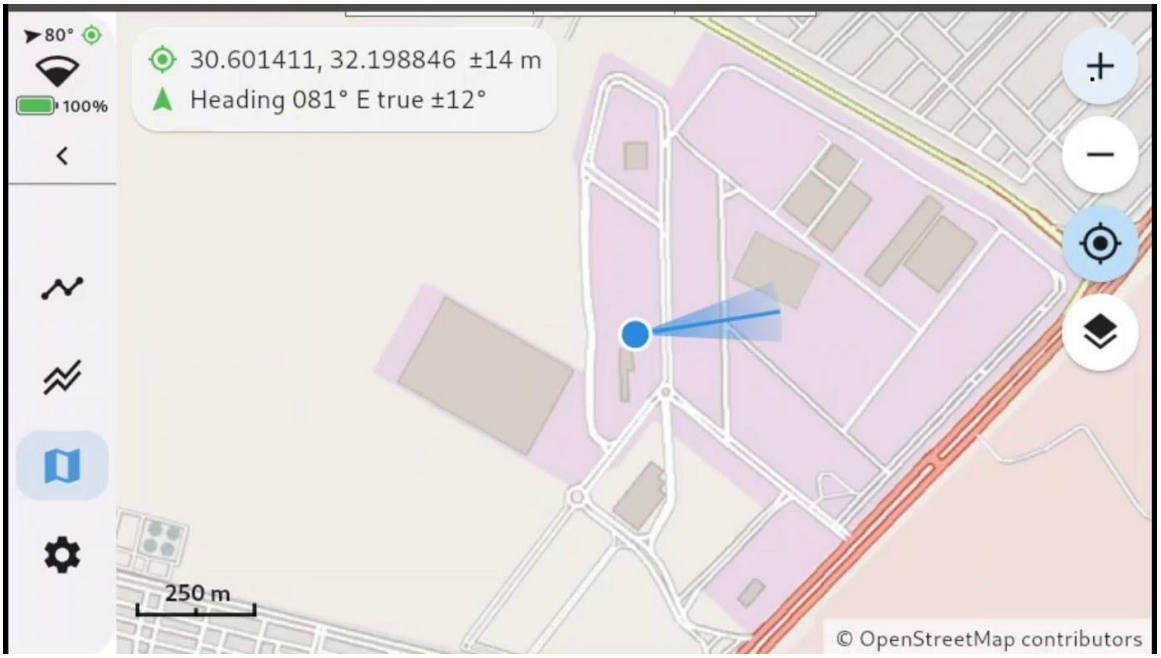


Figure 18: The map with position and heading

Button	What it does
+ and −	Zoom in and out
Target symbol	Centers the map on your position
Layers	Changes the map layers

4.3 GPS

Open **Settings > GPS** to check the GNSS lock and your position. The page shows whether the GPS has a fix, followed by the latitude and longitude.

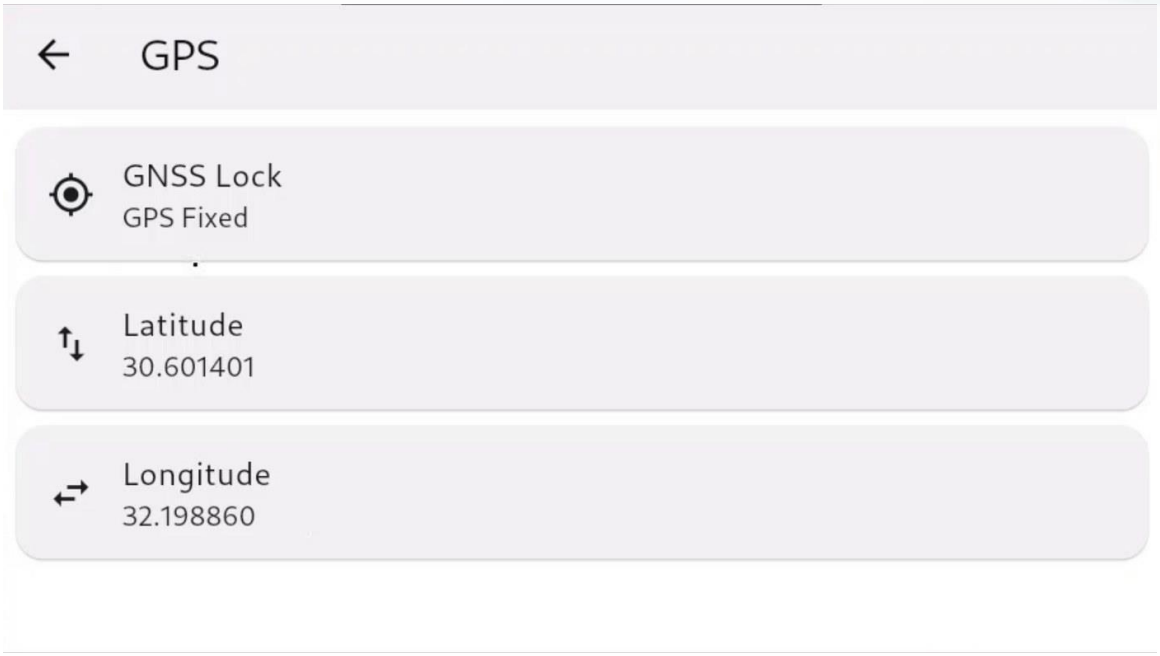


Figure 19: The GPS page

> **Note:** GPS needs a clear view of the sky. Indoors or between tall buildings, the first position fix can take longer or may not be available.

4.4 Compass

Open **Settings > Compass Configuration** to see the direction you are facing, in degrees and as a compass point, for example 81° E. Use the **Smoothing** slider to steady the reading: more smoothing gives a calmer but slower heading. The heading is saved with every snapshot and with every sample of a recording.

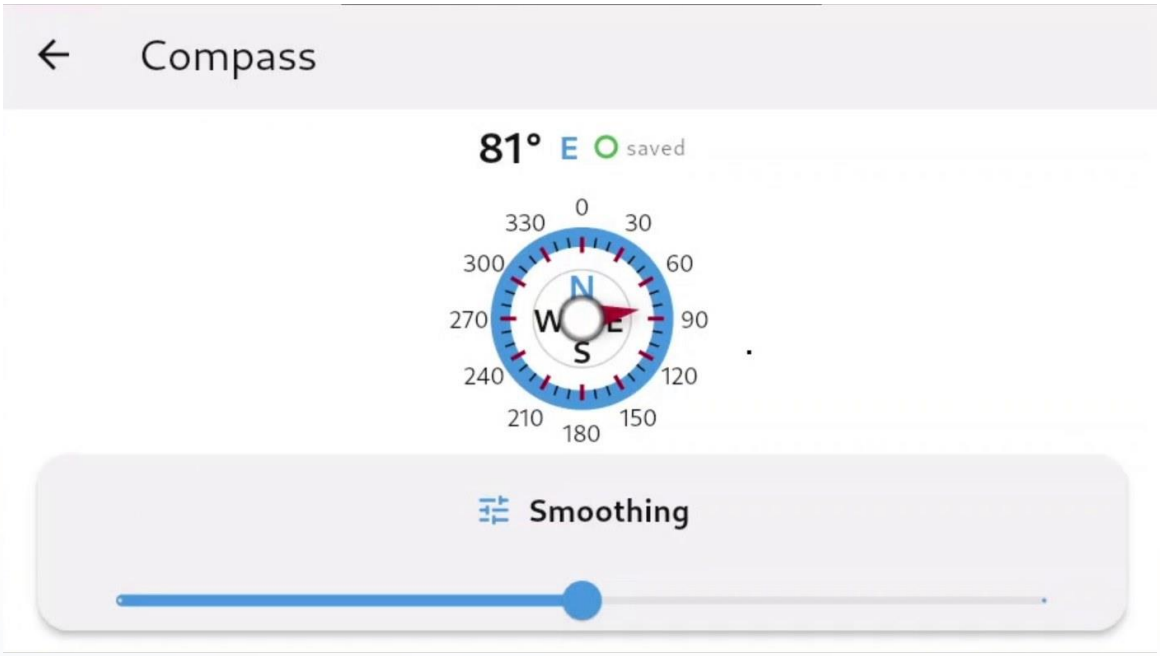


Figure 20: The compass page

5 Recording and reports

Open **Settings > Record & Reports** to record spectrum sessions and export them as CSV, PDF and KML reports.

5.1 The Record & Reports page



Figure 21: The Record & Reports page, ready to record

Section	What it shows
Status	Idle, or Recording with the elapsed time and the number of samples, sweeps and detections so far. When idle, it shows a summary of the last session.
Settings	Fetching rate
Storage	Space used by recorded sessions and exported reports, and the free space. Tap the refresh symbol to update it.
Session reports	Export, download or delete recorded sessions. See section 5.4.
Legacy recordings	CSV files from the previous recorder
Download from a browser	A QR code and address to open the reports on any device connected to the same Wi-Fi. See section 5.3.

5.2 Recording a session

1. Set the sample interval with the slider.
2. Tap **Start recording**.
3. Type a name for the session if you want one, then tap **Start**. The name is optional; it is added to the report file names.
4. The status changes to Recording. The device now captures data at the sample interval you have set.
5. Tap **Stop recording** when you have finished. A message confirms that the recording has been saved, with its number of samples.

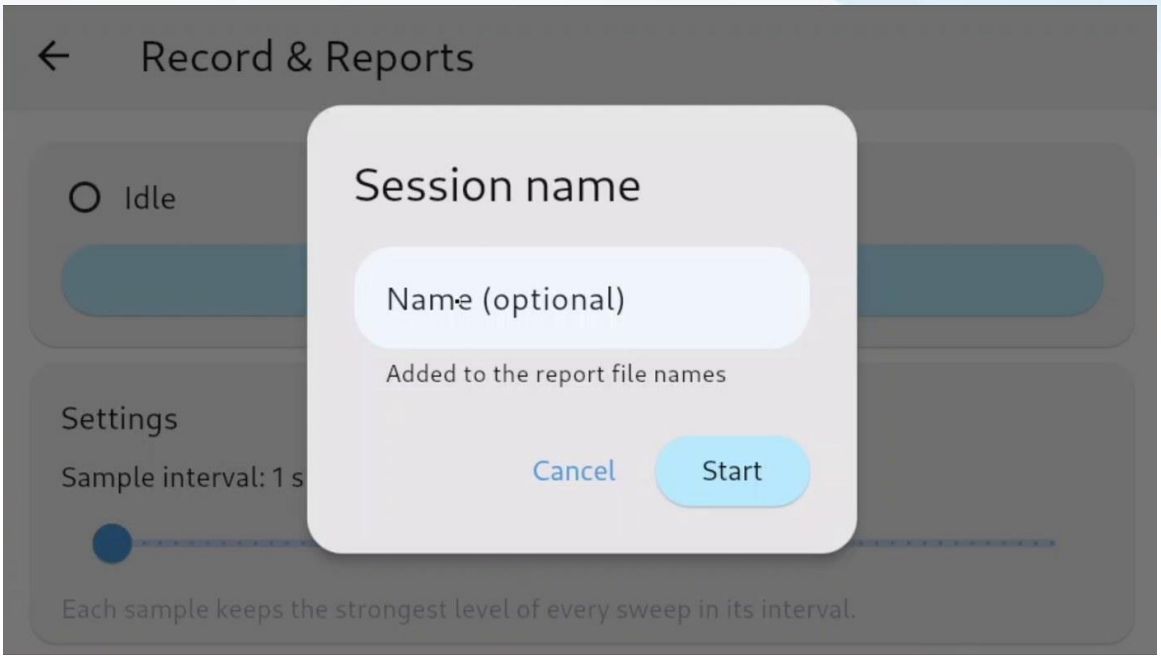


Figure 22: Naming the session



Figure 23: A session being recorded

5.3 Downloading from a browser

Scroll down the Record & Reports page to **Download from a browser**. Scan the QR code with your phone, or type the address shown under it into a web browser on a laptop, to open and download all the reports you have captured.



Figure 24: Download from a browser

> **Note:** The phone or laptop must be connected to the same Wi-Fi network as the device.

5.4 Session reports and exporting

Tap **Session reports** to see the recorded sessions. Each one shows its name, start and end time, duration, number of samples and number of detections. Use the search box to find a session by name or number, the calendar to filter by date, and the arrow to change the order.

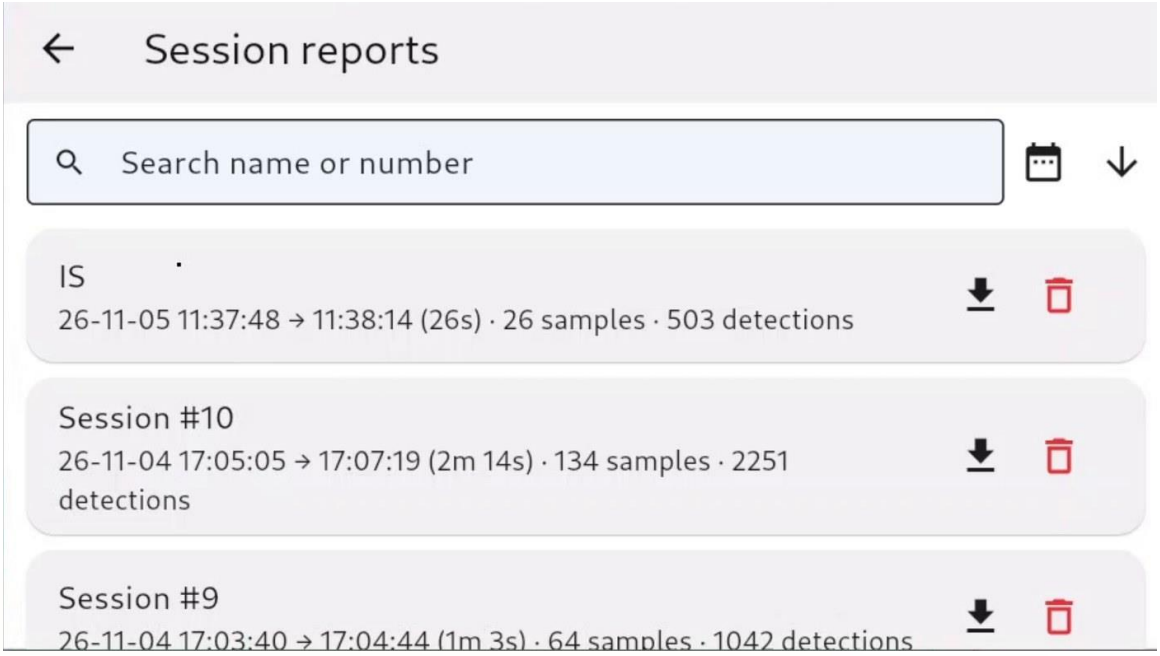


Figure 25: Session reports

To export a session, tap its download icon and choose the type of report:

Report	Contents
Spectrum CSV	One row per sample, one column per frequency (dBm)
Peaks CSV	One row per detected signal, with time and position
PDF report	Summary, spectrum plot, waterfall, signal and occupancy tables, and the snapshots taken while recording
KML track	GPS track with detections, for Google Earth

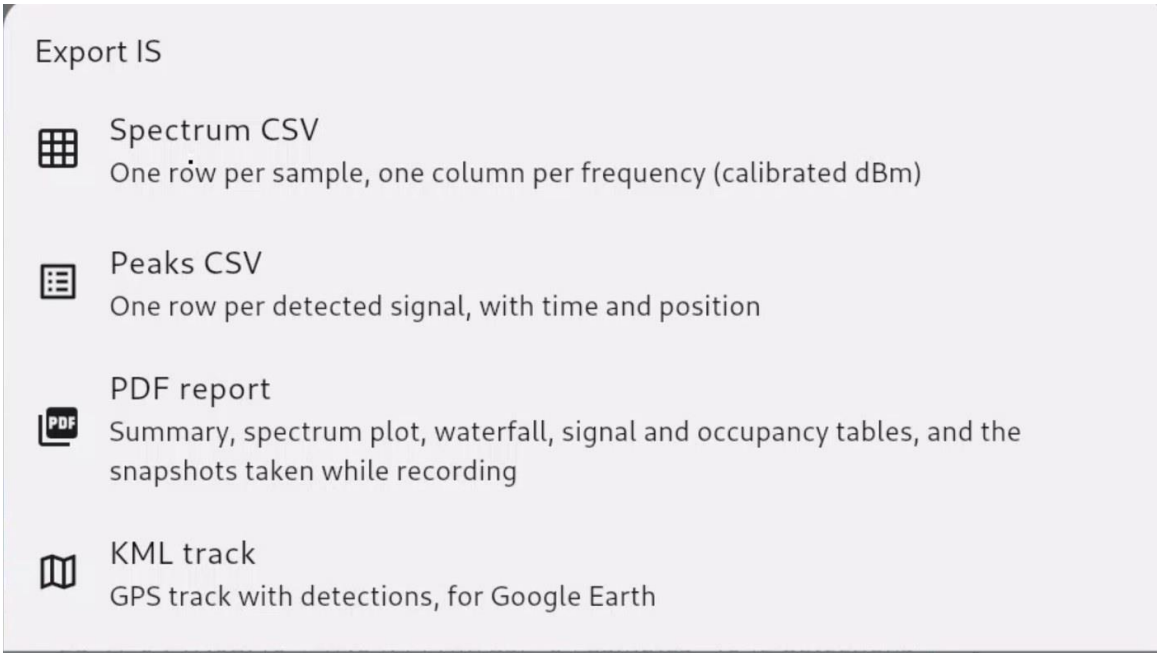


Figure 26: Choosing the type of report

When the report is ready, a window shows its file name and size, a QR code and a download link. Scan the QR code or open the link on a phone or laptop on the same Wi-Fi to download the file. The bin icon next to a session deletes that session.

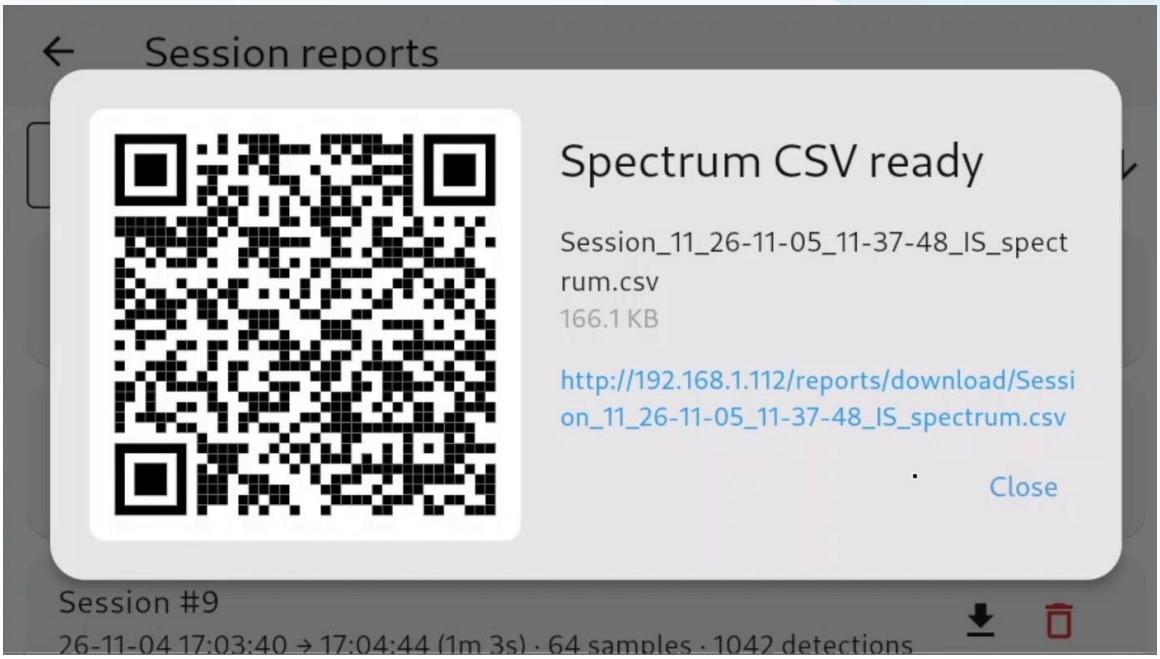


Figure 27: A report ready to download

5.5 Deleting exported reports

Exported report files take space on the device. To free it, tap **Delete exported reports** in the Storage section and confirm with **Delete**. Every exported report file is deleted from the unit, but the recorded sessions are kept, and any report can be exported again.

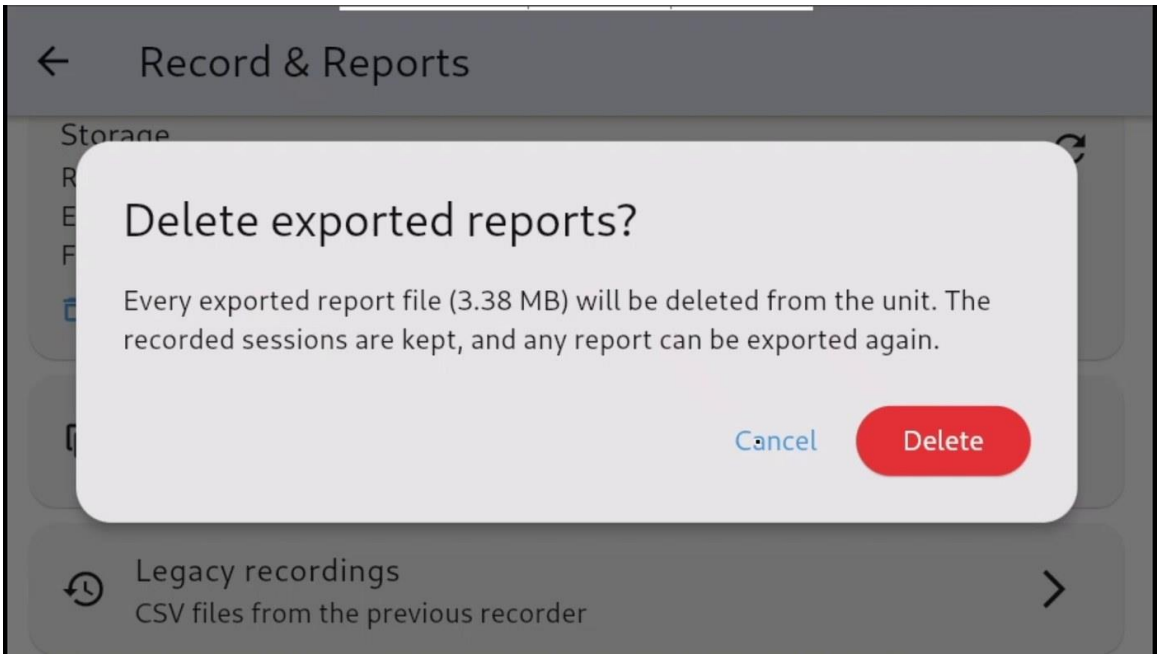


Figure 28: Deleting exported reports

5.6 What the reports contain

Spectrum CSV

The file starts with the details of the session: hardware and software version, start and end time, time zone, sample interval, frequency range and number of samples. Then each row is one sample with its time, latitude, longitude, altitude, heading, battery level, noise floor, peak level and peak frequency, followed by the level at every frequency of the range.

Peaks CSV

The file starts with the same session details, plus the number of detections. Then each row is one detected signal with its time, latitude, longitude, heading, type, frequency, level, bandwidth, low and high frequency, noise floor, azimuth and elevation.

PDF report

The PDF report is ready to share. It contains:

- **Summary:** session name and ID, device serial number, hardware and software version, start and end time, duration, frequency range, sample interval, number of samples, GPS fixes, compass heading and battery.
- **Key figures:** strongest signal, number of signals found, busiest channel and duration.
- **Spectrum:** the max hold and average levels over the session, with each detected signal labelled with its frequency and the compass heading of its strongest detection, plus the GPS position and compass heading.
- **Waterfall:** the spectrum over the whole session.
- **Signals:** a table of every signal with its frequency, maximum and average level, bandwidth, how often it was seen, when it was first and last seen, where it was strongest and its heading.
- **Channel occupancy and busiest channels:** how busy each channel was during the session.
- **GPS:** the fixes, start and end position, and a sketch of the track.
- The snapshots taken while recording.



Figure 29: PDF report: summary and spectrum

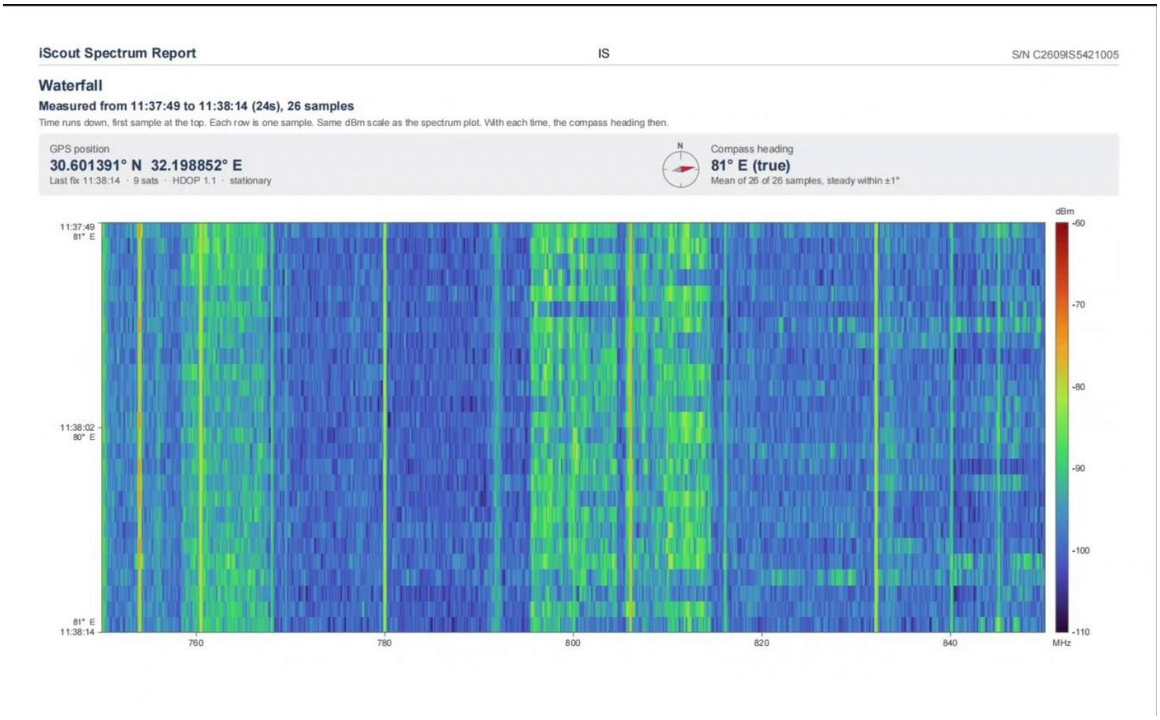


Figure 30: PDF report: waterfall



iScout Spectrum Report — IS — S/N C2609IS5421005

#	Frequency (MHz)	Max (dBm)	Avg (dBm)	BW (MHz)	Seen	Seen (%)	First seen	Last seen	Strongest at	Heading
35	764.9	-86.6	-87.5	0.4	4	15.4%	11:37:54	11:38:14	30.60139, 32.19885	80° E
36	840.8	-86.6	-86.6	0.1	1	3.8%	11:37:55	11:37:55	30.60139, 32.19885	81° E
37	847.8	-86.6	-86.6	0.1	1	3.8%	11:38:10	11:38:10	30.60139, 32.19885	81° E
38	841.5	-86.6	-86.6	0.1	1	3.8%	11:38:10	11:38:10	30.60139, 32.19885	81° E
39	841.9	-86.6	-86.6	0.1	1	3.8%	11:38:10	11:38:10	30.60139, 32.19885	81° E
40	847.1	-86.6	-86.6	0.2	2	7.7%	11:37:55	11:38:10	30.60139, 32.19885	81° E
41	842.9	-86.6	-86.6	0.2	1	3.8%	11:37:55	11:37:55	30.60139, 32.19885	81° E
42	758.6	-86.6	-86.6	0.2	1	3.8%	11:37:51	11:37:51	30.60139, 32.19885	81° E
43	846.8	-87.6	-87.6	0.2	1	3.8%	11:38:14	11:38:14	30.60139, 32.19885	81° E
44	803.8	-87.8	-87.8	0.1	1	3.8%	11:37:57	11:37:57	30.60139, 32.19885	81° E
45	803.5	-87.8	-87.8	0.2	1	3.8%	11:37:57	11:37:57	30.60139, 32.19885	81° E

Channel occupancy

Share of samples in which any bin of a 10 MHz channel stood clear of that sample's noise floor (frequency channel occupancy, as in ITU-R SM.1880), counting only the samples that measured the channel.

100% 75% 50% 25% 0%

760 780 800 820 840 MHz

Busiest channels

#	Channel (MHz)	Occupancy	Max (dBm)	Avg (dBm)
1	750.0 - 760.0	100.0%	-72.0	-89.7
2	800.0 - 810.0	100.0%	-73.9	-89.3
3	830.0 - 840.0	100.0%	-78.3	-93.6
4	760.0 - 770.0	100.0%	-78.4	-90.4
5	780.0 - 790.0	100.0%	-79.6	-96.9
6	770.0 - 780.0	100.0%	-81.6	-97.8
7	790.0 - 800.0	96.2%	-80.2	-92.2
8	810.0 - 820.0	84.6%	-80.2	-91.8
9	840.0 - 850.0	69.2%	-82.6	-95.4

Figure 31: PDF report: channel occupancy and busiest channels

KML track

Open the KML file in Google Earth to see the path of the recording on the map, with the detections along it.

6 Settings

Tap the gear icon in the side bar to open the settings.

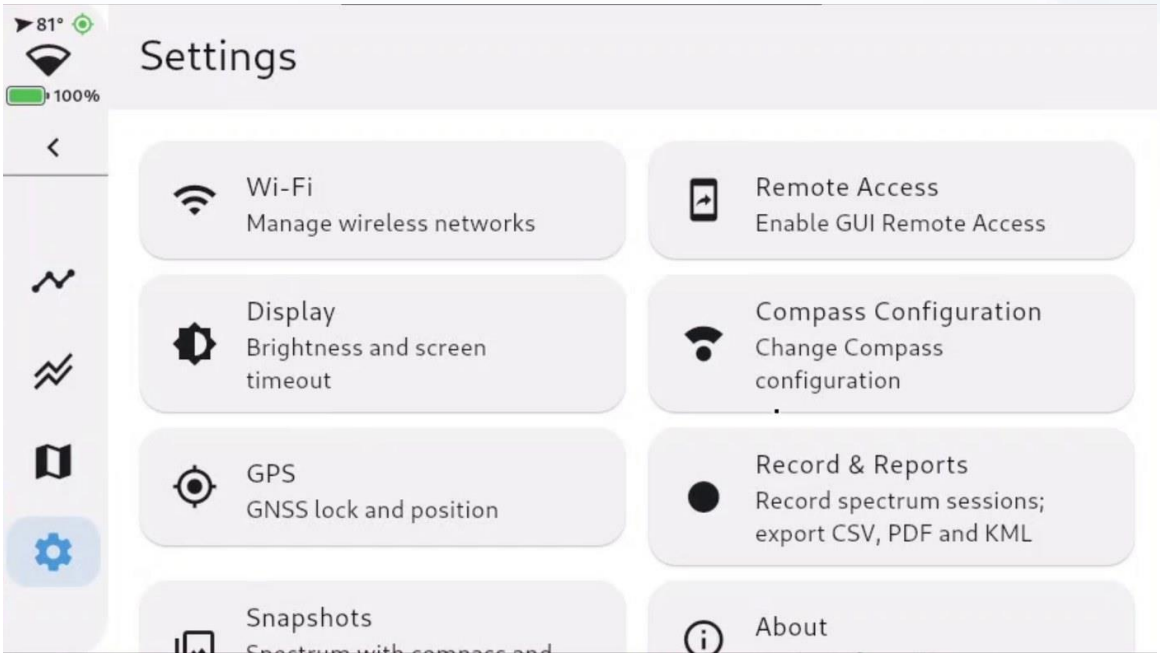


Figure 32: The settings page

Setting	What it does
Wi-Fi	Manage the wireless networks the device connects to. See section 6.1.
Remote Access	Enable GUI remote access. See section 6.2.
Display	Brightness and screen timeout. See section 6.3.
Compass Configuration	Compass heading and smoothing. See section 4.4.
GPS	GNSS lock and position. See section 4.3.
Record & Reports	Record spectrum sessions and export CSV, PDF and KML reports. See chapter 5.
Snapshots	The snapshots, with compass and GPS data as taken. See section 4.1.
About	Device information. See section 6.4.

6.1 Wi-Fi

Manage the wireless networks the device connects to. A Wi-Fi connection is needed to reach the device from a phone or laptop: for remote access and for downloading snapshots and reports. The phone or laptop must be on the same network.

6.2 Remote Access

Enable GUI remote access to view and control the device interface from another screen via VNC viewer.

6.3 Display

Set the screen brightness and the standby time, and choose whether to keep the screen always on. The current settings are summarized at the bottom of the page.

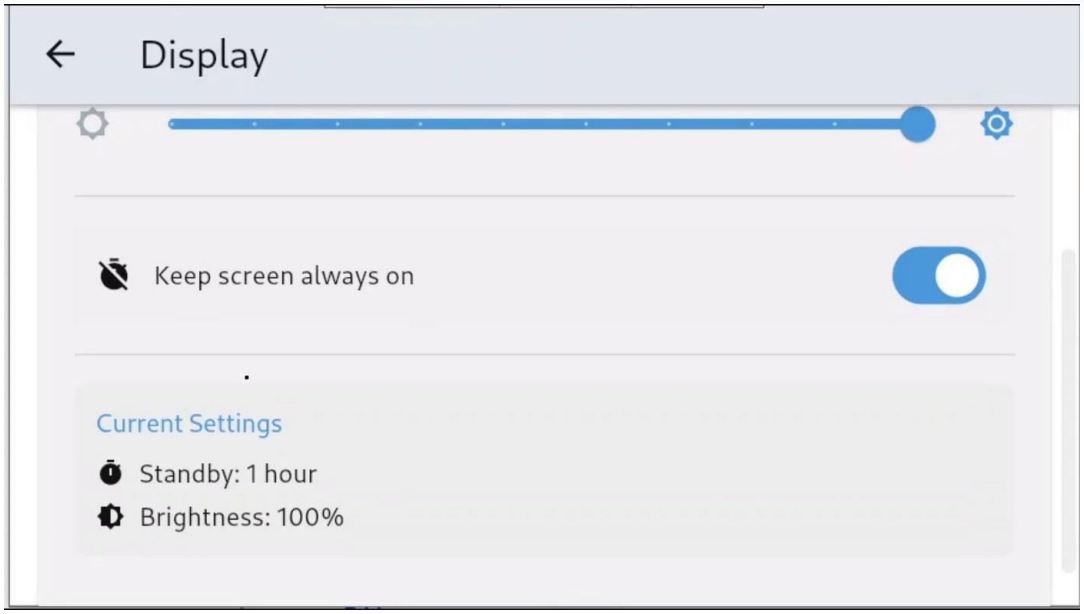


Figure 33: Display settings

> **Note:** Keeping the screen always on at full brightness shortens the battery time.

6.4 About

Shows the device information: manufactured date, serial number, hardware version and software version. Have these at hand when you contact WAVERONNE for support.



Figure 34: Device information

7 Troubleshooting

Problem	What to do
The device does not switch on	Connect the supplied charger, let the battery charge for a while and try again.
The trace is flat or no signals appear	Check that the antenna is firmly connected to the RF input. Check that the start and stop frequencies cover the band you are looking for. Tap ⋮ and Fit scale to signal.
Signals are cut off at the top or bottom of the plot	Tap ⋮ and Fit scale to signal, or set the display scales on the configuration page.
Short bursts disappear before you can read them	Switch on the MAX trace and use the waterfall view.
A marker keeps jumping	Its Snap option is set to STICK. Set it to INSTANT, or set Target to FREE.
No GPS position, or “No GPS fix” on snapshots	Go outdoors with a clear view of the sky and wait for the position fix.
The compass heading looks wrong	Keep the device away from vehicles, large metal objects and magnets.
The QR code or IP address does not open	Check that the device is connected to Wi-Fi (Settings > Wi-Fi) and that your phone or laptop is on the same network. Type the IP address into the browser by hand.
The sample interval cannot be changed	Settings cannot be changed while a session is recording. Stop the recording first.
Storage is running out	In Record & Reports, tap Delete exported reports. The recorded sessions are kept and can be exported again.

If the problem persists, contact WAVERONNE at **sales@waveronne.com** with the serial number and software version from Settings > About.

8 Glossary

Term	Meaning
dBm	Power level in decibels relative to 1 milliwatt
Span	The width of the frequency range shown, from start to stop frequency
RBW	Resolution bandwidth: the frequency resolution of the measurement
Noise floor	The level of the background noise when no signal is present
Live trace	The latest sweep of the spectrum
Max hold	Trace that keeps the highest level measured at each frequency
Min hold	Trace that keeps the lowest level measured at each frequency
Waterfall	View that shows the spectrum over time, with the level shown as color
Marker	A point on the spectrum that reads the exact frequency and level
Heading	The direction the device and antenna are facing, in degrees from north
Sample interval	The time between two samples of a recording
Sweep	One pass of the analyzer across the frequency range
Detection	A signal found above the noise floor during a recording
GNSS	Global navigation satellite systems, such as GPS
HDOP	Horizontal dilution of precision: a lower value means a more accurate position
CSV	Comma-separated values: a table file that opens in any spreadsheet
KML	A map file format that opens in Google Earth
SMA	The type of RF connector used for the antenna
IP65	Protection rating: dust-tight and protected against water jets

9 Specifications

Specification	Value
Technology	Real-time spectrum analyzer
Frequency band	100 to 5000 MHz
Representation	Spectrum and 2D waterfall visualization
Span settings	10 MHz to 1500 MHz
Sensitivity	−100 dBm @ 100 kHz RBW
Scanning speed	10 GHz/s
RBW	100 kHz
Instantaneous bandwidth	10 MHz
UI aids	Markers, peak search
User control	Touch screen
Battery operation	About 3 hours
Weight	Under 2 kg
Protection	IP65
Operating temperature	−20 to 50 °C
Relative humidity	<80% @ 0 to 35 °C and >70% @ 36 to 50 °C
Interfaces	DC input power; RF input: SMA connector
Connectivity and sensors	Wi-Fi with remote access; GPS; compass

10 Further help

For help with your Interference Scout, or to order accessories, contact WAVERONNE:

Email	sales@waveronne.com
Website	www.waveronne.com