



SIMON INTERNATIONAL SPECTRUM MONITORING

2025 New Features





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1. New Features

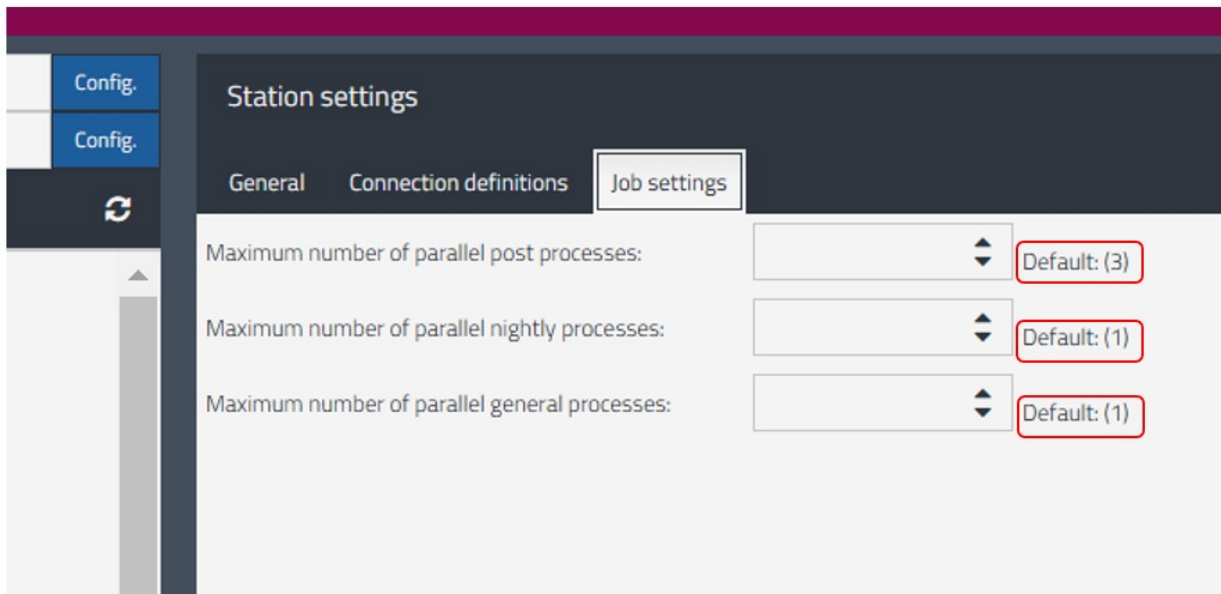
- **Java upgrade:** This release contains the Java upgrade too (upgrade to Java 21). Java 21 is LTS (long-term support) release.

As a result of the Java 21 upgrade:

- More security updates and improvements have been added
- Thanks to the improvements in performance, the java runtime environment is more efficient (e.g., JVM start, garbage collector etc. take less time)
- Libraries used by the application have also been updated
- **Speeding up the post-processing of measurement results:** We have already presented the “Speeding up the post-processing of measurement results (with parallelization)” in the previous version. This version includes that the fields are optional on “Job settings” (Settings -> Station configuration -> Station settings -> Job settings) tab.

If the field is empty, then the default value (to be seen in the parentheses of the text next to the field) will be applied for parallelization.

“Job settings” tab:



Setting	Default Value
Maximum number of parallel post processes:	3
Maximum number of parallel nightly processes:	1
Maximum number of parallel general processes:	1

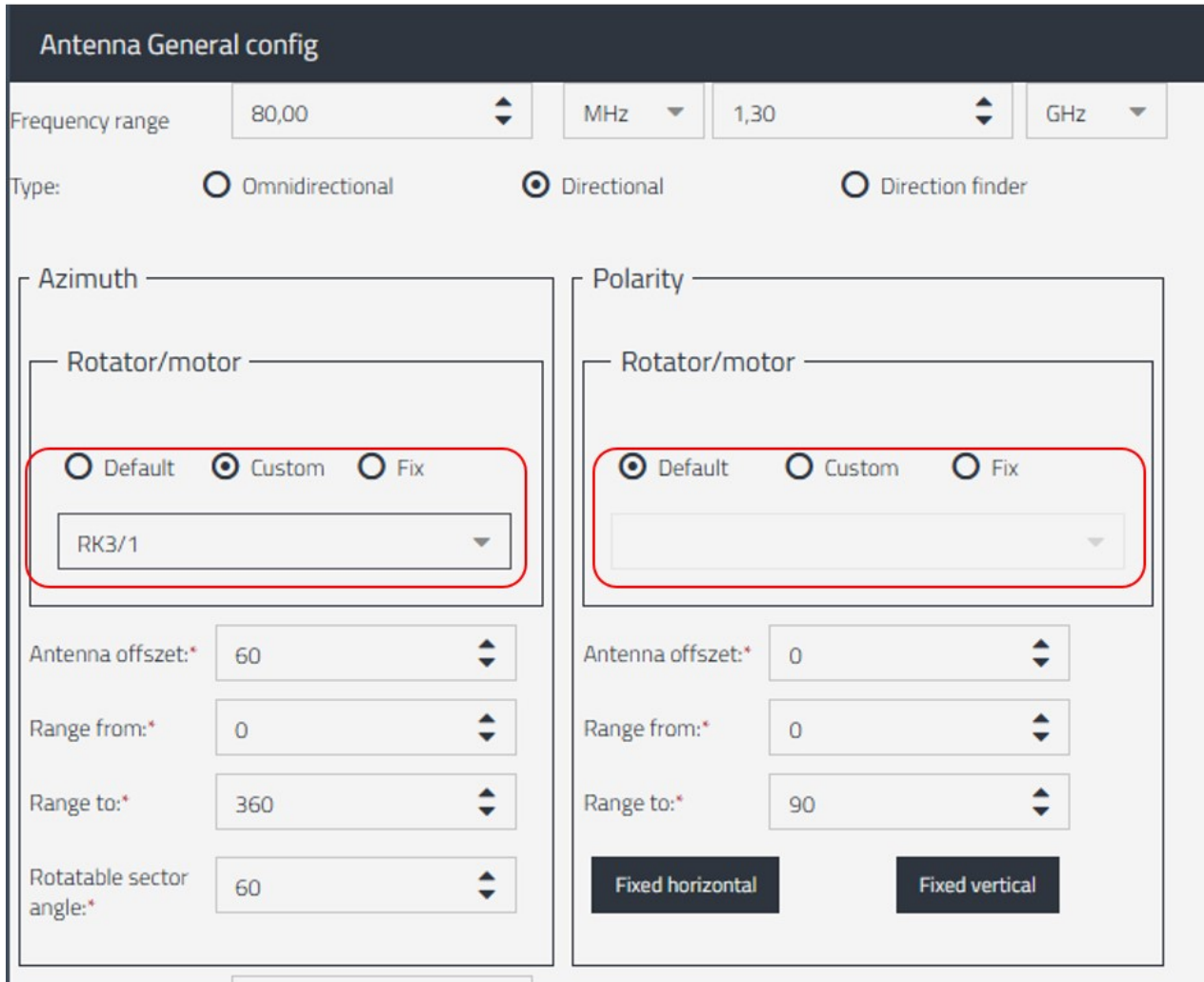
If we modify the value of a field, then the Station has to be restarted (a message warns us to do so) for the set value to be applied for the parallel run. So, tapping the “Save and restart” button is not enough.

- **Multiple rotators in a station:** Thanks to this improvement, it is possible to handle multiple antenna rotators at a measurement station.

In the “Antenna General config” window, we can choose from the following options:

- Default: The rotator + motor identification pair is not explicitly named. The default antenna rotator will be used.

- Custom: From the drop-down list, the rotator + motor identification pair (belonging to the given axis of the given antenna) must be chosen.
- Fix: The antenna is fixed with respect to the given axis.



Antenna General config

Frequency range: 80,00 MHz 1,30 GHz

Type: ☐ Omnidirectional ☒ Directional ☐ Direction finder

Azimuth

Rotator/motor: ☐ Default ☒ Custom ☐ Fix

RK3/1

Antenna offset: 60

Range from: 0

Range to: 360

Rotatable sector angle: 60

Polarity

Rotator/motor: ☒ Default ☐ Custom ☐ Fix

Antenna offset: 0

Range from: 0

Range to: 90

Fixed horizontal Fixed vertical

According to the selected option, the „not necessary” fields become disabled.

When choosing the „Fix” option, the “Range from” field automatically takes over the value of the “Range to” field.

If we change from the „Fix” option to another one (“Default” or “Custom”) then a warning message appears because the values of the “Range from” and “Range to” fields are equal.

Azimuth

Rotator/motor

? Fixed

☒ Default
☐ Custom
☐ Fix

Antenna offset:*

60

Range from:*

360

Range to:*

360

Rotatable sector angle:*

60

Polarity

Rotator/motor

? Fixed vertical

☒ Default
☐ Custom
☐ Fix

Antenna offset:*

0

Range from:*

90

Range to:*

90

Fixed horizontal

Fixed vertical

In the “Topology config” window, the default antenna rotator can be specified from now on:

Config.

Config.

Topology config

General device information

Signal path definitions

Antenna switch

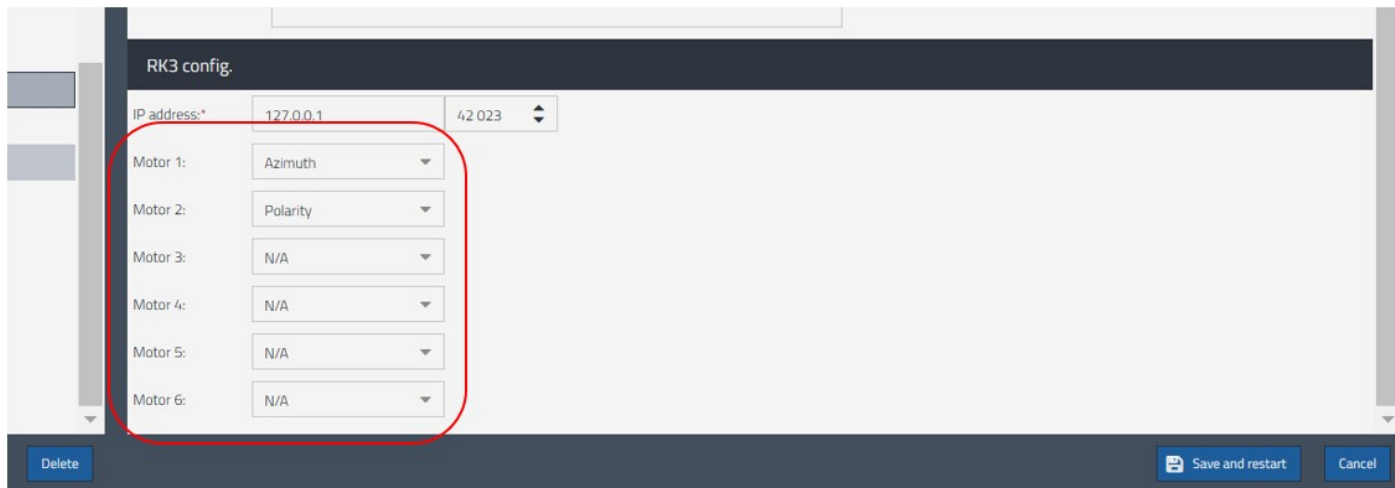
DUMMY-SWITCH

Default antenna rotator

RK3

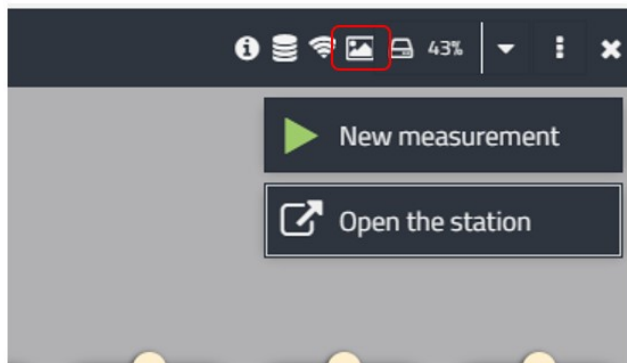
Antenna order:

- **RK3 configuration:** On RK3 configuration interface we can assign the definition (“Azimuth” or “Polarity”) to certain Motor (total: 6 Motors).



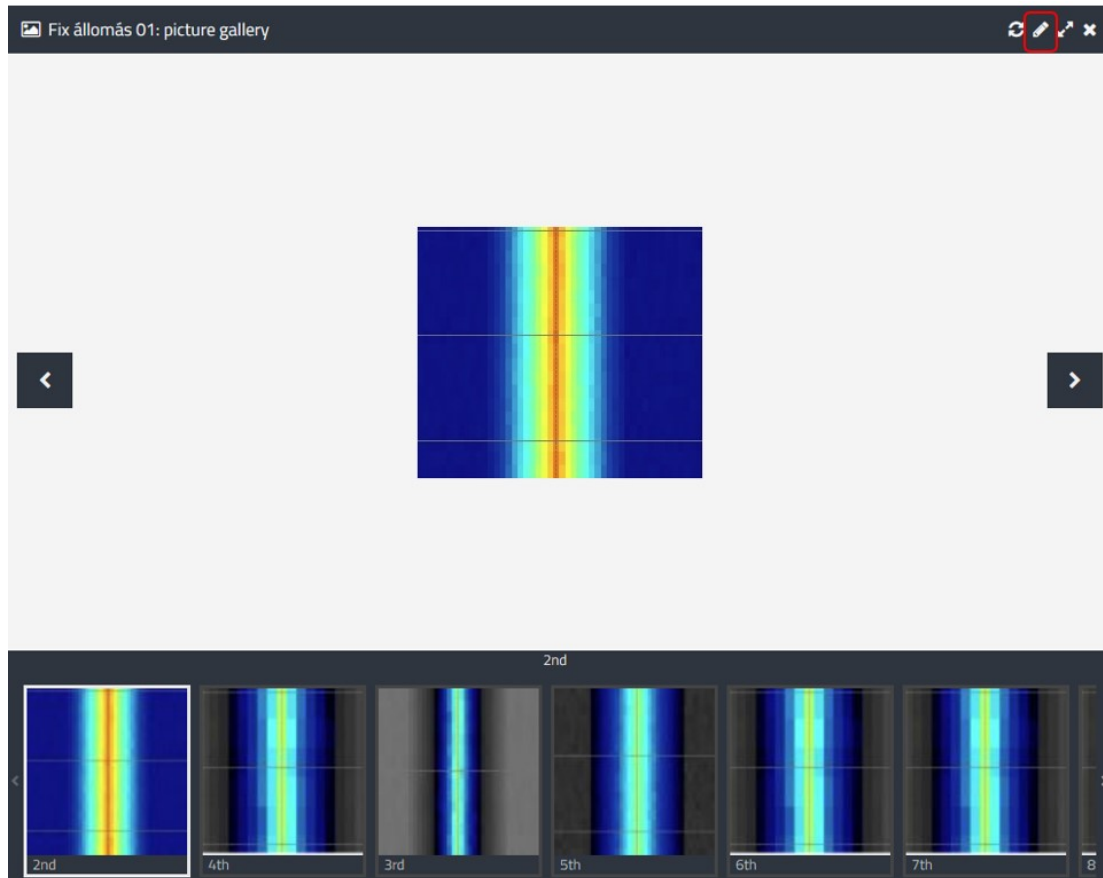
- **Station photos gallery:** Thanks to this improvement, it is possible to upload, browse and view pictures at the measurement station.

The icon opening the “picture gallery” popup:



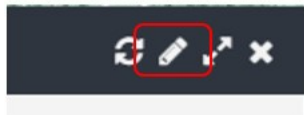
On the display screen, the normal picture will be displayed based on the selected thumbnail image. A thumbnail image can be selected by clicking the mouse (left mouse button) or by moving to the previous/next image (clicking the left/right arrows).

You can switch to the editor mode using the edit icon:



The editor mode is accessible only on the measurement station (not in the Central, there is no icon for editing there):

Header (with edit icon)
at a measurement station:



Header (without edit icon)
at the Central:

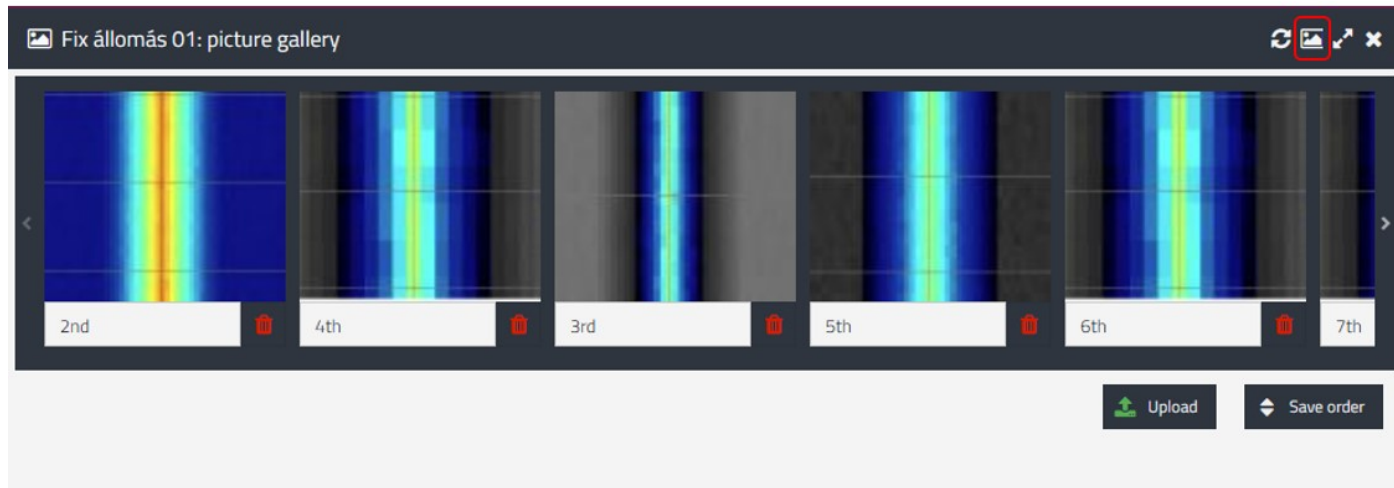


The following actions can be performed on the editor screen:

- Uploading a new picture: To upload, first you have to tap the “Upload” button, then the “Upload photo” popup appears, where the “Picture title” field has to be filled in, and the picture must be selected (both fields are mandatory).
- Modifying the title: It is sufficient to only rewrite the title field, because the modification is automatically saved after leaving the field. A message confirms this: “Title update was success!”
- Modifying the order of the pictures: When you finish reordering the pictures, you must tap the “Save order” button in order to keep the modification after closing the function.
- Deleting a picture: After tapping the Delete icon, a confirmation popup appears (Are you sure you want to delete the ...), and the picture is deleted only after you confirm.

If a picture is damaged (for some reason) and we would like to upload this picture, then we get the following error message: “Thumbnail image from ... file could not be created!”

The following icon helps to return to the browser mode from the editor mode:

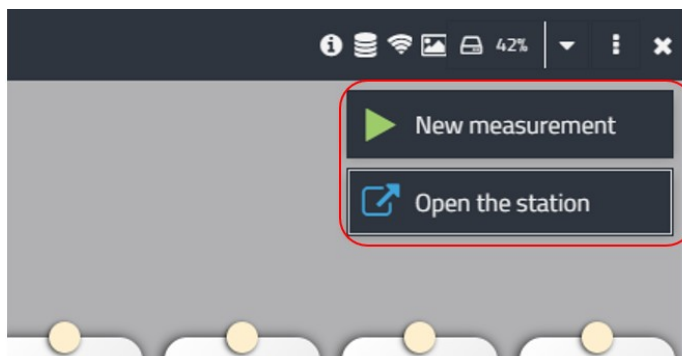


The size of file to be uploaded can be a maximum of 50 MB and its format can be JPG/JPEG or PNG.

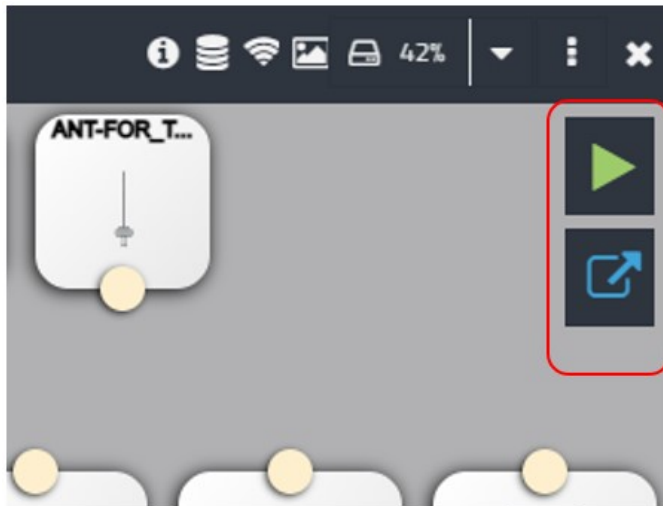
If you want to open the “picture gallery” popup right after restarting the measurement station, then you may get the following error message: “Station Gallery Service has not been initialized!” In this case, it is worth waiting for a few minutes and try again later to open the “picture gallery” popup.

After we have modified something on the editor screen at the measurement station, the change will only be visible later (depending on the network speed, load and picture size) in the Central.

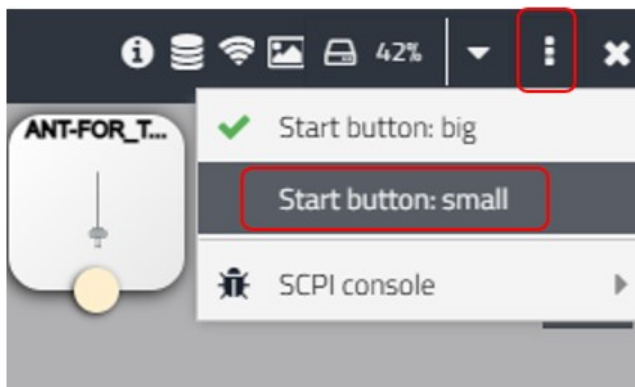
- **More intuitive icons (new measurement & open station interface):** In this task, the “Open the station” and the “New measurement” buttons have been relocated on the signal path popup, as shown in the figure below:



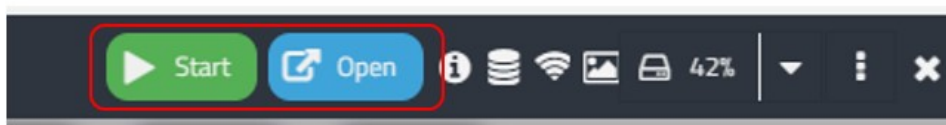
If too many antennas need to be displayed on the signal path popup, then the buttons become smaller so that only the button icon appears (and the text does not):



If you would like to set back the post of buttons (so the buttons appear in header of popup again), then you should choose the following menu item: “Start button: small”



The buttons appear in header (after you selected “Start button: small” menu item):



Moreover, the measurement screen also appears for the new measurement if a Receiver and Antenna are connected with the dashed line and the Receiver icon is double-clicked with the left mouse button.

- **Results - Frequency channel occupancy:** “Bandwidth” and “Time period” fields have been added to the “Calculate occupation” postprocessing part of the result:

Export to CSV +

Cut frequency band +

Calculate occupation -

Noise level: 0,00 dBμV/m

Bandwidth 100 kHz

From frequency 97,800MHz

To frequency 117,800MHz (201 channel)

Time period: None Seconds Minutes Hours

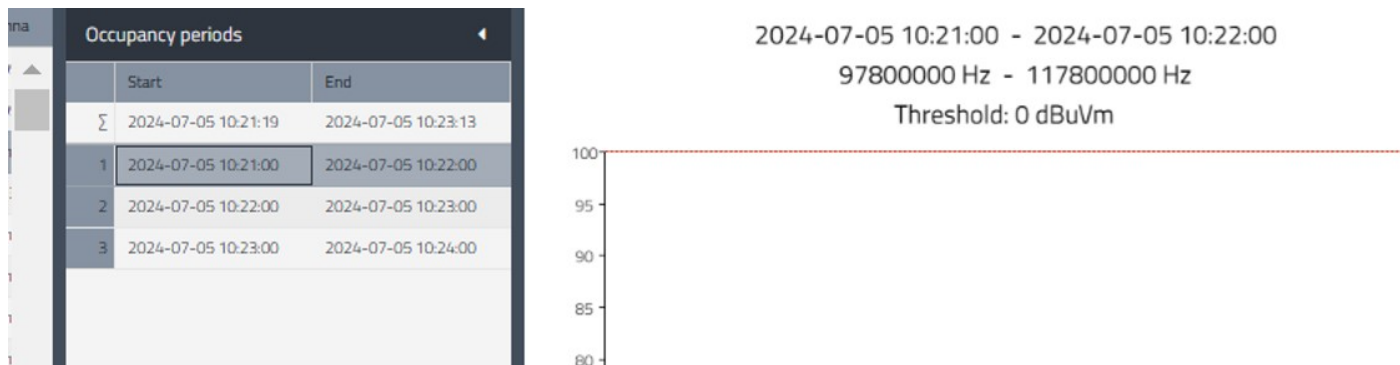
Filter (from): 2024 07 10 17 31 04

Filter (to): 00 00 00

When manually modifying the "Bandwidth" or "From frequency" fields, the value of the "To frequency" field automatically changes to the corresponding default value, and the number of items also changes to the current value. When manually modifying the "To frequency" field, only the value of the number of items changes automatically.

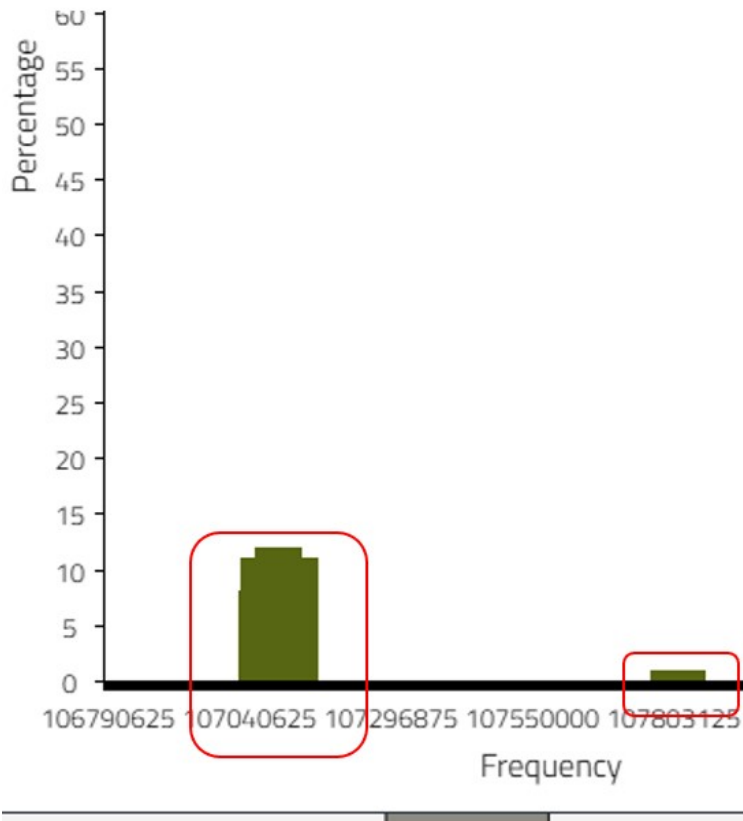
The time period can be specified in hours, minutes or seconds. There will be as many separate Occupation records in the output stream as the period filter and period breakdown require.

During playback, time stamps are offered on a vertical time scale, from which you can choose the time interval for which you want to view the occupancy:



For timestamps, the very first row is a comprehensive row that includes all time intervals. In the case of old data, only the comprehensive row will be there. Also, there will only be comprehensive data (and no periods/timestamps) if no breakdown period was specified for the calculation.

The display of occupancy was changed from line diagram to column diagram:



CSV export of occupancy has also been modified. Thanks to this, on the one hand, it manages the timestampbased storage structure (1 row per timestamp in the CSV file). On the other hand, instead of the previous frequency-row approach, the listing will be carried out in a frequency-column approach. If there is an overview occupancy, the overview occupancy data will also be displayed at the end of the CSV file (as an extra row).

- **ELEMENTARY_DATA_STREAM to the CSV:** This task allows us to specify whether we want to export the Bandwidth value as an extra column when exporting ELEMENTARY_DATA_STREAM to the CSV file.

The export of the Bandwidth value can be enabled or disabled with the checkbox below:

Save Elementary stream between a given time range

Filter (from): [Calendar] [00] [00] [00]

Filter (to): [Calendar] [00] [00] [00]

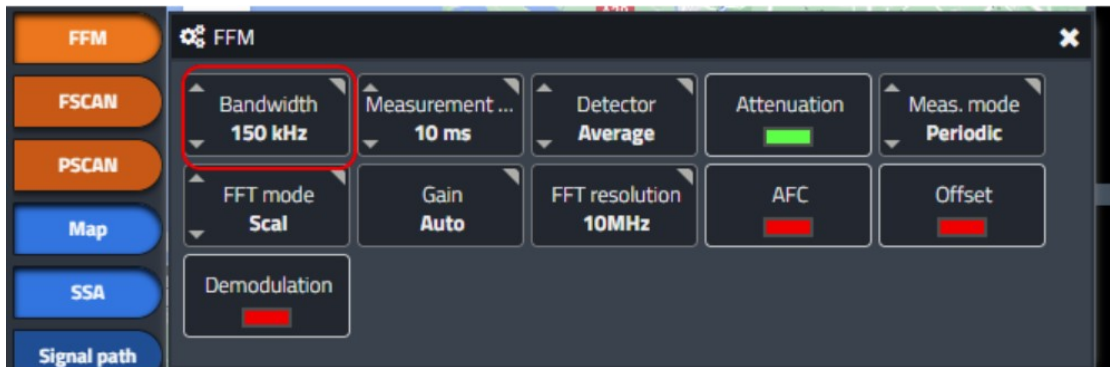
Export device settings as well

Bandwidth: ☒

Starts at: [Any time] [Night] Prioritás: 5 [Process]

Thus, it becomes possible:

1. If you open the Bandwidth selector popup:



2. And you choose one of the Bandwidths:



3. Then the chosen Bandwidth appears in next rows of the exported csv file (ELEMENTARY_DATA_STREAM)

2. Smaller enhancements

- The R&S FU129 device is prone to disconnect from the network connection. Then the driver builds the connection again and again. After this modification, if rebuilding the connection is successful right after losing it, then the driver no longer sends an unnecessary error signal to the GUI.
- The result line and uncertainty arc angle of the direction finding have been extended, and the value of the length can be specified in km (by default, this value is set to 300 km) on the "User preference" popup.



User preferences

Appearance

Clipboard export

Waterfall chart

Confirm dialogs

Measurement

Direction cone length [km]:*

50

Default (300 km)