

# Scanner Metrics

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## *User's Guide*

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### Introduction

The SDR# Frequency Manager + Scanner's **Scanner Metrics** application (called SM in the rest of this guide) is a free plugin designed for use within the SDR# software application, as an accessory to the Frequency Manager + Scanner plugin. It provides a means of recording scanner frequency activity to a database and later performing analysis on that information; the goal being to make it easier for you to determine which of the millions of frequencies you can receive actually are worth spending time on.

### Features Summary

SM adds the following features to SDR#:

- A panel containing the recording and reporting controls.
- Reports that analyze the recorded metrics and produce charts about frequency activity.
- A small dedicated database for the collection of metrics.

### System Requirements

Basically, if you can run SDR# and the Frequency Manager + Scanner from the Frequency Manager Suite, you can use the Scanner Metrics plugin. As with any software, the more capable your hardware the better the software will run. You must have:

- **SDR#:** Revision 1893 or newer.
- **FMSuite:** version 2.3 or newer.

### Important Note

SDR# is an application created by other people and I am not involved in it. I have no control over changes made to SDR#. I am completely at their mercy as to how their changes affect SM. They are under no obligation to inform me of changes; I won't know if their changes will break my plugins until the plugins are run with the new version of SDR# and you tell me there is a problem. As a result, there will be a period after they make a breaking change in which my plugins may not work. Please be assured I will make any necessary changes, and release updates, as soon as practical after SDR# is changed and I have identified the issue.

## Using Scanner Metrics

### The Scanner Metrics Panel

The SM panel displays three group boxes, each containing a functional group of controls.

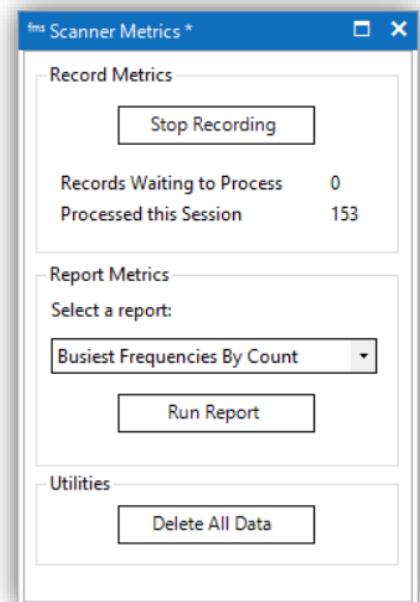
#### Functions in the Record Metrics Group

##### *Start Recording*

This button displays starts and stops the activity recording function. The button's caption changes to *Stop Recording* when clicked. Click the button again to stop recording.

There are two lines of information in this group:

- *Records Waiting to Process* displays the number of records waiting in a queue to be written to the database. This indicator exists because the database is updated on 5-second intervals in order to reduce performance impact on SDR#; we want you to be aware of records not yet written to the database.
- *Processed this Session* displays the number of records written to the database in this recording session.



#### Functions in the Report Metrics Group

##### *Select a Report*

This dropdown contains the list of available reports.

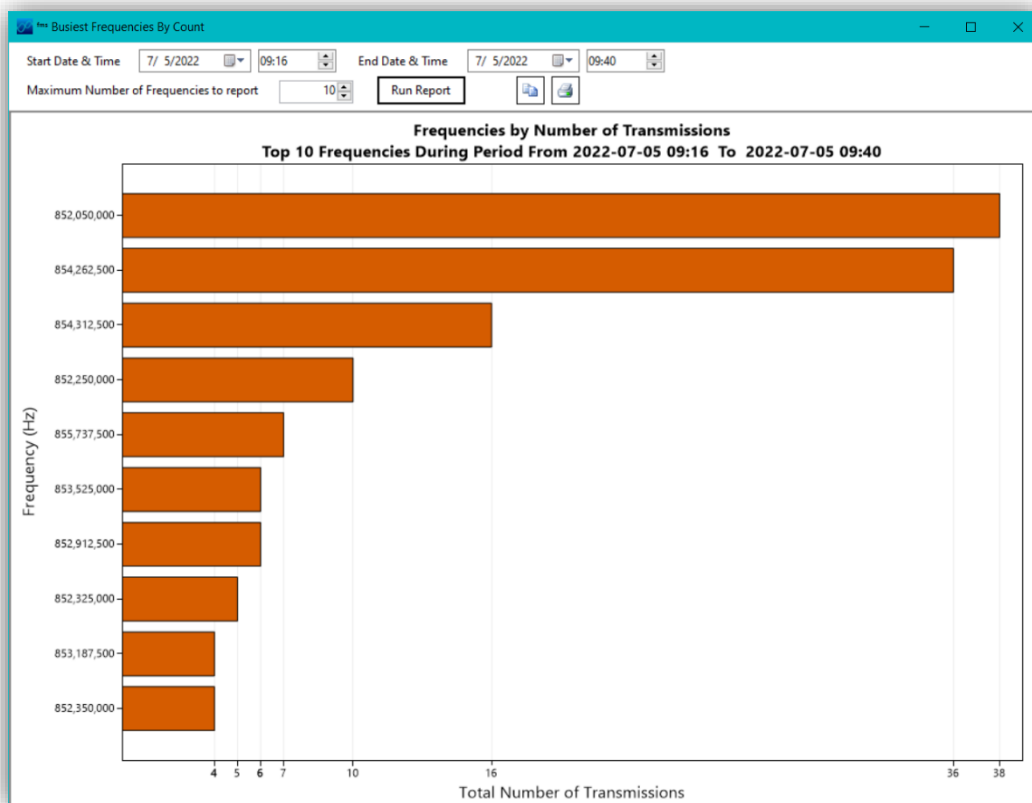
- **Busiest Frequencies by Count** produces a bar chart of the most active frequencies in the database for a specified period of time, giving a total count of transmissions in the period for each frequency.
- **Busiest Frequencies by Duration** produces a bar chart of the most active frequencies in the database for a specified period of time, giving a total number of seconds transmitted in the period for each frequency.
- **Busiest Times for A Frequency** produces a line chart that shows activity for a specific frequency over a period of time. This permits you to visualize that (for example) a given frequency is busiest on weekday nights at 11PM; so, you may not want to spend a lot of time scanning it at 6 in the evening.

## Run Report

This button launches the selected report in a standalone window. Each color blindness-friendly report can be run and displayed while SDR#, the Frequency Manager + Scanner, and the Scanner Metrics recording function are all active.

Each report has:

- A parameter pane that allows you to define the parameters of the report. Be aware that there is no validation for reasonableness on your parameters; if you define parameters that are illogical or which don't have corresponding metrics in the database, your report will be empty (no data found).
- Start and end dates and times. The Start Date & Time default to the start of the recording session and the End Date and Time default to the current date and time.



Following are details on each report, how to execute it, and what you can expect as results.

### Busiest Frequencies by Count

This report describes which are the busiest frequencies based on how many transmissions there were in a given period. It has a parameter pane into which you define the period of time to examine, the number of frequencies to report, and buttons to copy the report and print the report.

*Start Date* and *End Date* are calendar dropdowns. *Start Time* and *End Time* are time up/down controls. You can type directly into these four controls, use the dropdown and the spinners, or select a value and use the keyboard up and down cursors to change the values. These controls default to the current date and time.

*Maximum Number of Frequencies to Report* limits the scope of the report to the top *N* records, and defaults to 10.

The *Run Report* button performs the analysis and displays the chart under the parameter pane.

To the right of the *Run Report* button are two more buttons:

- Copy the report to the clipboard
- Print the report

The top *N* frequencies are shown in descending order of activity.

### Busiest Frequencies by Duration

This report describes which are the busiest frequencies based on how many total seconds the frequencies were transmitting in a given period. It has a parameter pane which behaves just like the Busiest Frequencies by Count report's parameter pane, and it produces a similar report.

### Busiest Times for a Frequency

This report produces a line graph that shows the ups and downs of activity for a specific frequency, in the specified period. Its parameter pane is a little different:

The *Date* and *Time* controls, the *Run Report* button, and the *Clipboard* and *Print* buttons behave as with the other reports. The two remaining controls are as follows:

- *Minutes of Resolution* defines the major X-axis divisions and controls how much detail is displayed. At the default of 60 minutes, the total number of transmissions in each 60-minute block is reported. A lower number will result in more data points being displayed. The minimum value is 1 minute, the maximum is 60 minutes.
- *Frequency to report* defines the one frequency that will be analyzed. The frequency must be entered in Hertz with no separators.

### Functions in the Utilities Group

In this version there's only one function – Delete All Data, which does exactly what it says. Clicking this button will display a confirmation prompt; if you agree to the prompt all metrics data in the database will be deleted.

## Troubleshooting

I wish I could say that there will never be any challenges, but in reality, stuff happens. Please try the following remedies if you have problems.

Problem	Potential Solution(s)
A popup appears with the message "An error occurred. The error was:" followed by some technical information.	<ul style="list-style-type: none"><li>• This is rare and usually happens when there is a problem with the database. Stop and close SDR#. Make sure no other processes are using the database – for example a backup or database editor. Restart your computer if necessary to be sure. If that doesn't fix the problem, ensure that you have sufficient Windows permissions to alter the database and the folder that contains it. If the problem continues, please send an email which includes all of the text in the popup plus the steps you took to get to this point, to the address on the 1<sup>st</sup> page of this document.</li><li>• SM unavoidably must access the internals of SDR# and the Frequency Manager + Scanner. It is possible that a new release of SDR# has changed the architecture to a point where SM cannot access its internals. SM may appear to load correctly but may not work correctly. In this situation, please send an email which includes all of the text in the popup to the address on the 1<sup>st</sup> page of this document. Include the Revision number of SDR# that you are using, and</li></ul>

Problem	Potential Solution(s)
	I will advise you on steps you can take to fix the problem or will make changes and publish a new version as soon as possible.
A popup appears with the message <i>"The Scanner Metrics database exists but it is damaged. Do you want to delete it and create a new database?"</i>	<p>During startup SM detected that the database exists but appears to be corrupt. Your options:</p> <ul style="list-style-type: none"> <li>• Click Yes to continue and replace the damaged database with an empty one. You will have to rebuild your data.</li> <li>• Click No, exit SDR#, and restore the database from a backup.</li> </ul>

## Notices

- "SDR#", "SDR#", and the SDR# software are Copyright © Youssef TOUIL 2012-2022.
- "FreqMgr", "Frequency Manager + Scanner", "Frequency Manager Suite" and software distributed with the Frequency Manager Suite are Copyright © 2013-2022 Jeff Knapp.