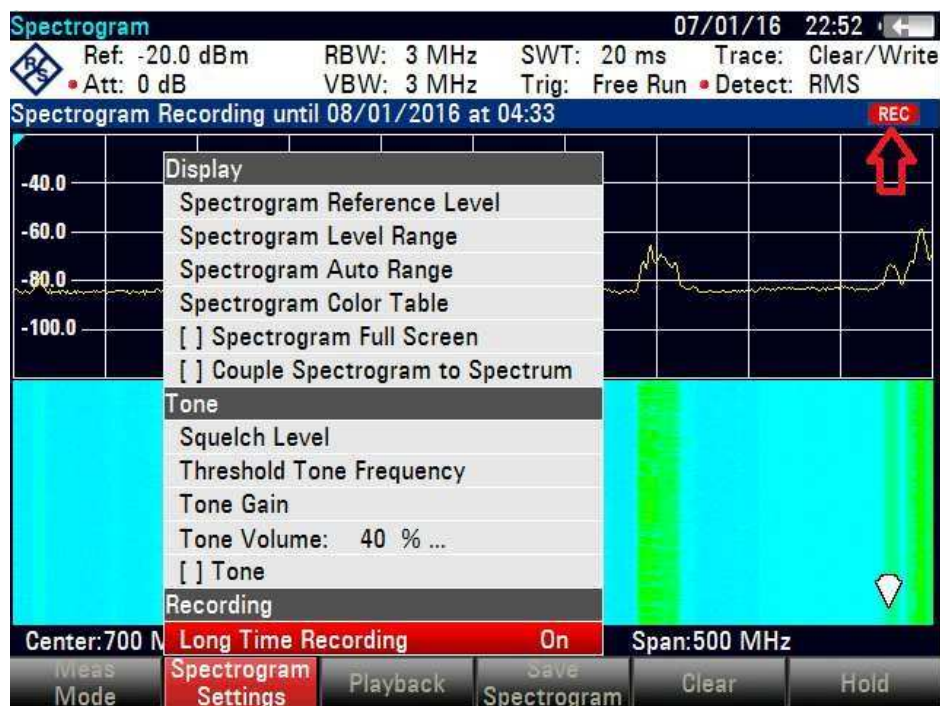# R&S®FSH - Spectrogram recording up to 999hrs and other new features

NEW - Long Time Recording features

Contents

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1   Firmware release – v2.70

The FSH firmware v2.70 has been released and is now available in the sales web and Rohde & Schwarz web page. The new firmware extends the spectrogram recording features in FSH-K14 & FSH-K15 to **999 hours** and supports the new power sensor. In addition, for customers who want to use FSH-Z14 with USB adaptor (FSH-Z144) is also now feasible. Another highlight is the tone function is now available not only in map display but also available in the spectrum and spectrogram display.

1.1   Spectrogram long time recording features in FSH-K14 & FSH-K15

This feature – long time recording (up to 999 hours) is only available with either FSH-K14 or FSH-K15 option installed. User is able to capture and replay the Spectrogram to look for intermittent signal/interferer. The benefit of using this feature is allowing user to leave the device at a location to record for many days (up to 41.5 days), thereafter using FSH4 View to easily glance through for irregularities.

R&S®FSH has the **longest** spectrogram time in the market and a unique post-processing capability with the FSH4View. Competitors recording is limit at 72 hours.

Competitor comparison:

	Rohde & Schwarz FSH	Anritsu Spectrum Master & Cell Master	Viavi (JDSU) CellAdvisor
Recording duration	**999 hours**	72 hours	72 hours

1.1.1   On Device – FSH4/FSH8/FSH13/FSH20

In the Spectrum-Spectrogram mode, under the Spectrogram Settings, click the Long Time Recording to "On" state, the recording will begin. There are three conditions defining the start and stop of the recording,

1) Manual activate the start/stop

2) Predefine the start/stop date and time in the measurement setup menu

3) Start when limit line violation is detected / stop when battery is low.

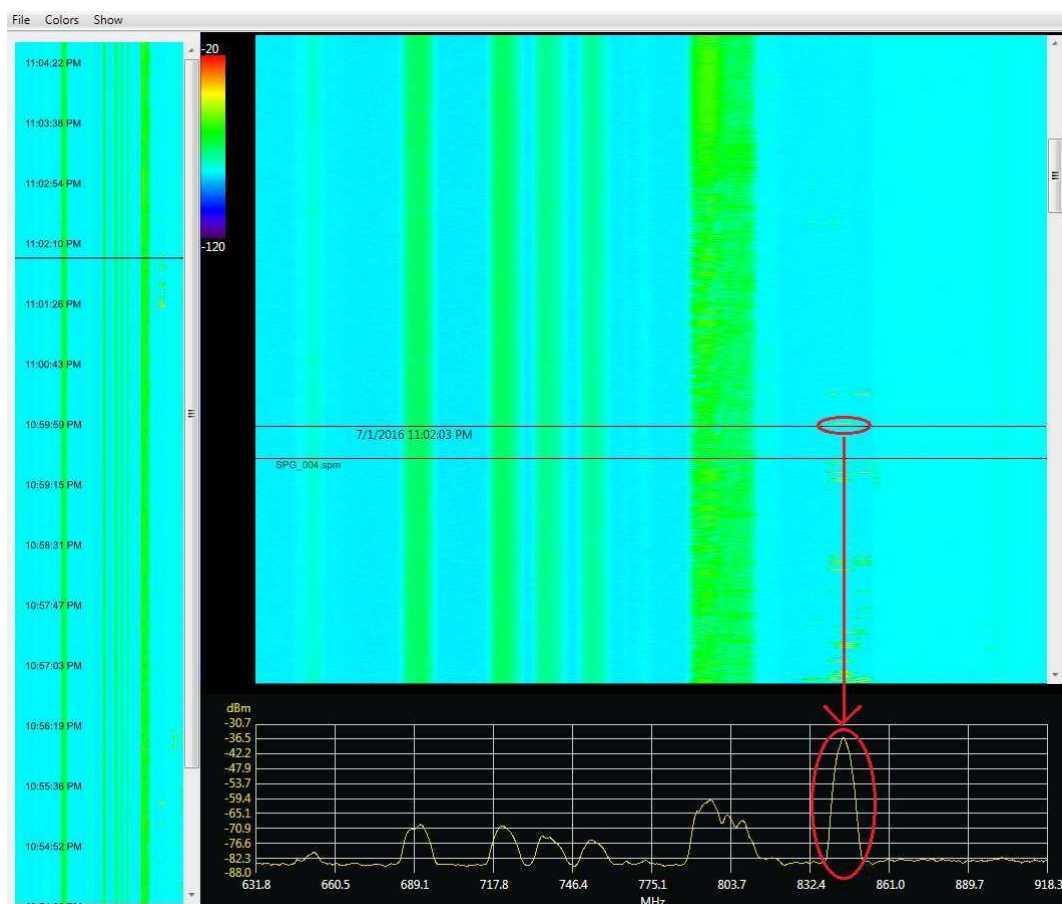The recording duration is depending on the recording interval. Example:

recording interval (sec)	recording duration (sec)	recording duration (hr)
0.1	102297.6	28.42
0.333	340651.008	94.63
1	1022976	284.16
3.5	3580416	994.56

Recording interval above 3.6 sec will have a maximum recording duration of 999 hours. The maximum capacity storage to handle 999 hours of recording is only 1.3GB.

1.1.2 On Software – FSH4 View (latest software version 2.70)

After recording the files can be loaded to FSH4 View. The left panel window gives a compressed view of the complete recorded information. Click on the signal of interest and detail analysis can be done using markers to measure the pulse duration and zoom-in on both spectrogram and spectrum panel to get a better view of the signal. Define your own color range or use auto range to optimize the spectrogram presentation for your recording which makes identifying anomalies much easier. Intensively analyzing days of recording in search for anomalies has now been reduced to a few simple mouse clicks.

1.2 Power sensor support

The new firmware now supports the new power sensor; NRP8S / NRP18S / NRP33S. Using the USB interface cable (NRP-ZKU), it can be directly connected to FSH.

1.3   Other new features

In response to some customer requests and feedbacks, we have also implemented the following in firmware version 2.70 as well.

- Support FSH-Z14 with USB adapter FSH-Z144

- Added tone feature to the spectrogram and spectrum analyzer mode.

Should you have further enquires on the latest firmware version 2.70, please see the release note in the sales web. The new firmware can be downloaded from both Rohde & Schwarz internet and sales web.

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