



## Avatar FM Direct Sampling Test Set – Quick Start Guide

### Hardware and OS minimum requirements

- Windows 7 or Windows 10
- RAM: 4 GB
- CPU 2.5 GHz - 4 Core
- HD: 10 GB free
- Screen 1600x900

### Software installation

1. Download the Avatar setup files here: [Link](#)

You will need Local Admin permissions to your PC in order to successfully complete this installation.

2. Connect the Signal Predator to an USB port of your PC checking on the back panel that the power switch is on. If the computer asks to search and install drivers, confirm it.

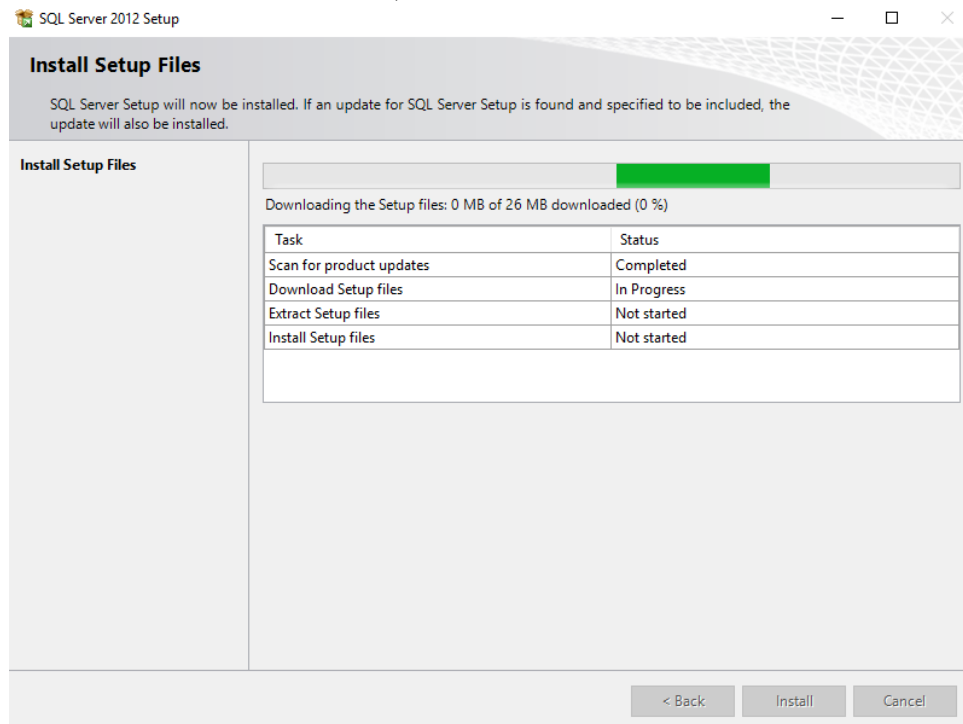


3. Launch the Avatar Setup software. Click Next.

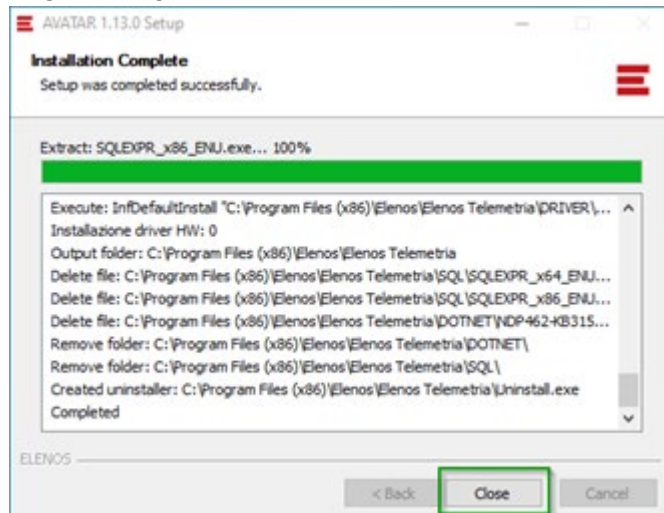


4. Accept the default installation location. Click Install.
5. The installation routine will run through a number of screens, including a SQL Server setup.

6.If you are connected to Internet the software will search for update of the SQL software. If you are not connected to the internet, the installation will continue with the current version.



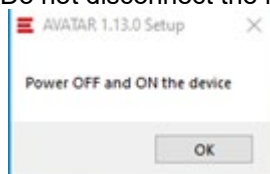
7. Click the Close Button when advised installation is complete.



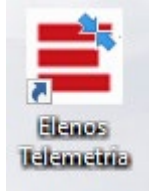
8. The software will now install the drivers for the hardware.



Do not disconnect the hardware even if requested. Click OK

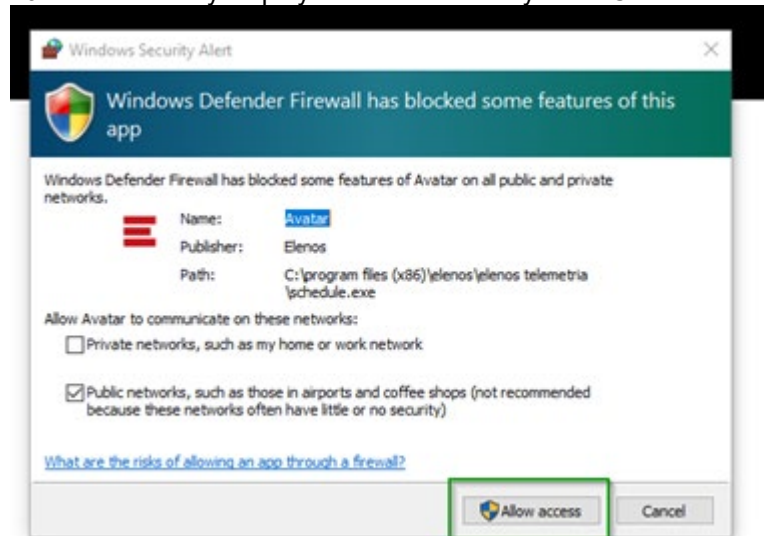


At this stage you will have an icon on the desktop like this:



9. Launch the Software from the desktop icon or from the installation directory (C:\Program Files (x86)\Elenos\Elenos Telemetria\schedule.exe).

10. Windows may display a Firewall Security alert. Click "Allow access".



11. When presented with the “Manutenzione” page, leave all boxes blank and click on “Salva”. Click the wrench icon in the instrument menu bar at the bottom of the screen.

MANUTENZIONE

Timeout (sec)

PASS lev 0

PASS lev 1

PASS lev 2

PASS lev 3

PASS lev 3

SALVA

Strumenti

12. The software will load and display an entry code page. Leave all digits at "0" and click "GO".

+

+

+

+

+

0

0

0

0

0

GO

-

-

-

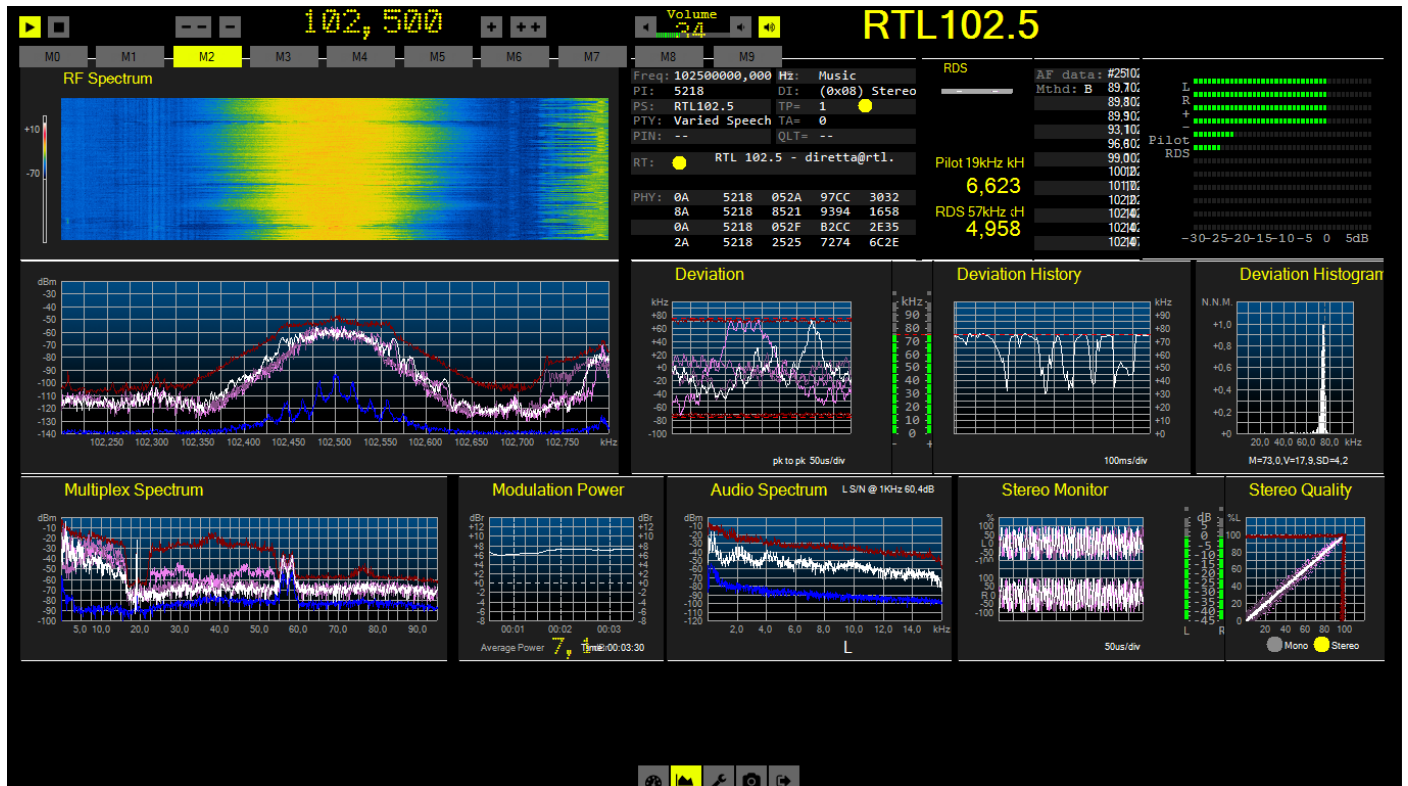
-

-

exit

13. Connect an antenna to the Avatar and you are ready to receive a signal.

14. The interface is very intuitive: simply select your desired frequency from the interface and click the triangular "play" button.



15. You can enter saved presets using the wrench icon.

16. Note that frequencies are entered in Hz (not MHz). Click "SALVA" button to save. Also note that the actual preset button names are offset: e.g., Preset M1 uses button M0. This will be corrected in a future SW release.

17. In the U.S.A, you should set De Emphasis to 75  $\mu$ s. (Wrench icon > Graph tab)



### Main Screen Overview:



You can enlarge each of the instrumentation screens by double-clicking on them. Instrumentation screens may be rearranged by dragging and dropping them into place. Close any instrumentation screen by clicking the “X” button in the upper-right corner.

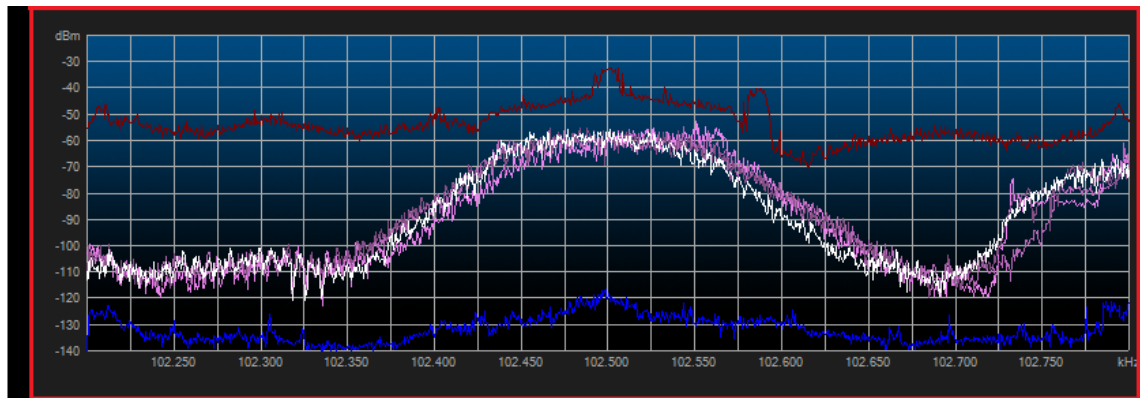
## Instrumentation Screen Details:

### RF Spectrum

The RF input spectrum in dBm , +/- 300 kHz around the center frequency is shown with:

- instantaneous value (white)
- mean value (pink)
- maximum hold value (red)
- minimum hold value (blue)

**RF SPECTRUM**  
(Max - Min - Mean -  
Real Time )

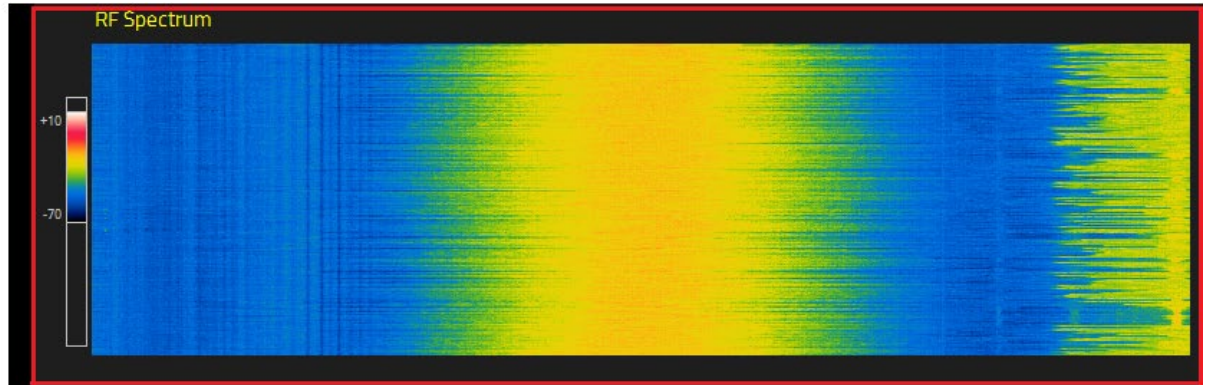




## Spectrogram

Sequentially accumulating slices of the instantaneous RF input spectrum create a waterfall history called Spectrogram, providing information about spectrum occupancy. The amplitude in dBm corresponds with the color bar on the left.

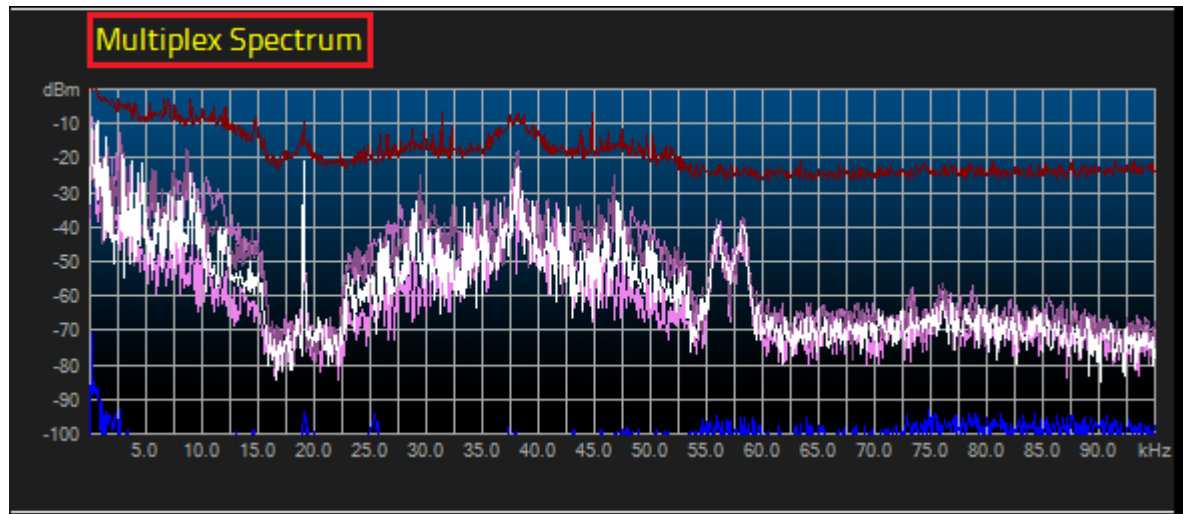
SPECTROGRAM



## Multiplex Spectrum

This screen shows the spectrum in dBm of the FM demodulated signal from 0 to 100 kHz (Composite Multiplex ).

- 0-15 kHz : L+R
- 19KHz : Stereo pilot tone
- 23-53 kHz : L-R
- Around 57 kHz : RDS/RBDS

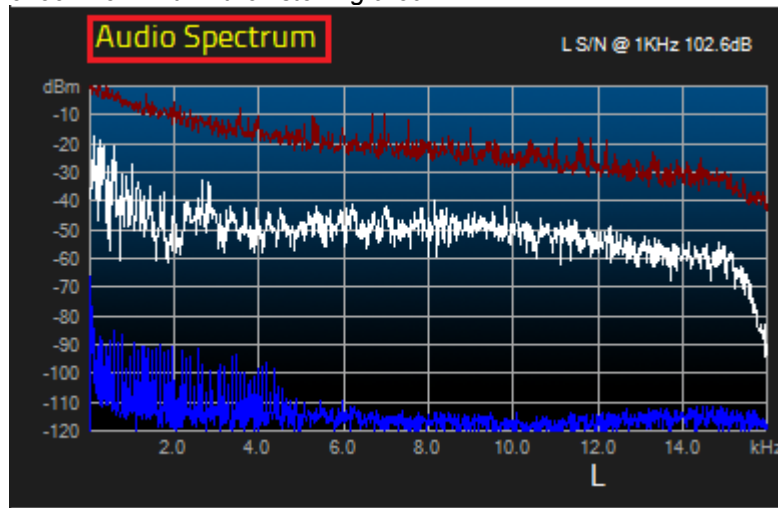


- White: Instantaneous value
- Pink: Mean value
- Red: Maximum hold value
- Blue: Minimum hold value



### Audio Spectrum

This screen shows the 0-15 kHz spectrum of the Audio signal, decoded from the Multiplex. *The seamless measurement of S/N without interruption or insertion of test tones is an exclusive and patented feature of the Avatar FM Direct Sampling Test Kit. It provides a continuous quality check from within the listening area.*

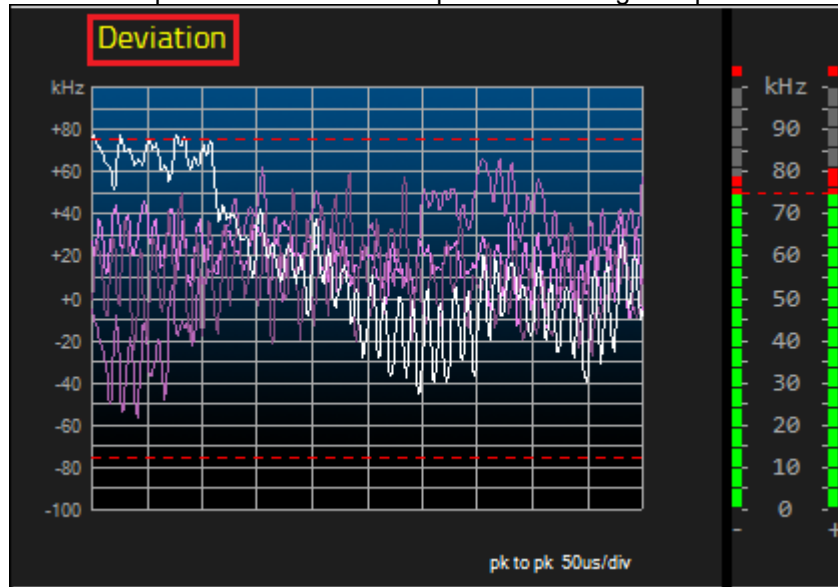


S/N is displayed on the right top of the screen, computed automatically at 1 kHz. Values at different frequencies can be computed from the difference of the red trace (maximum hold) and the blue trace (minimum hold) . The white trace is the instantaneous value.

To select L,R, L+R, or L-R, simply double-click the screen. Measurement will restart with new settings.

### Deviation

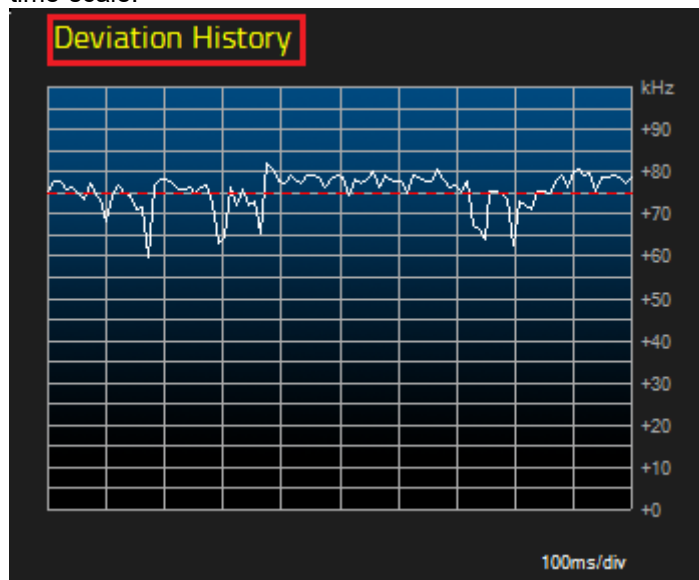
This screen plots the instantaneous positive and negative peak FM Deviation over time.



The two bar graphs display the maximum peaks for easier evaluation.  
Double-click the screen to configure unique measurements.

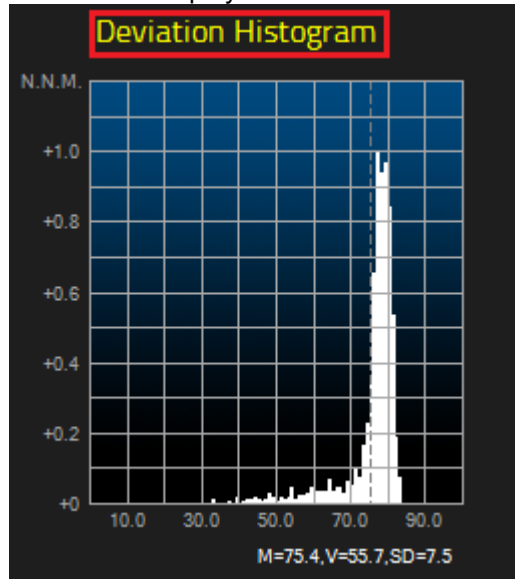
### Deviation History

This screen shows the maximum peak FM Deviation (positive or negative) reached on a longer time-scale.



### Deviation Histogram

This screen displays the statistical distribution of the FM peak deviation

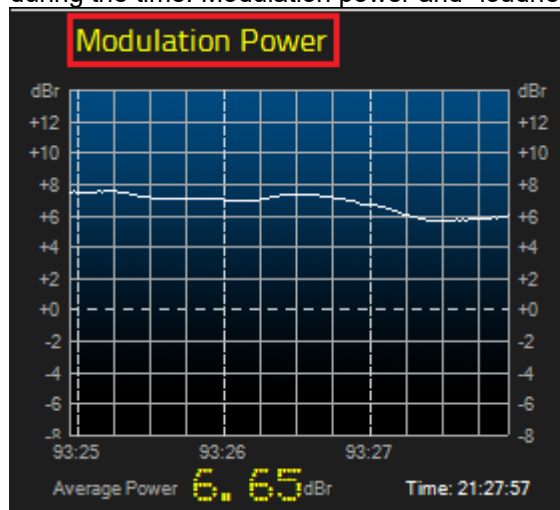


(This sample has been highly compressed to be loud)

- M: mean deviation (kHz)
- SD: standard deviation (kHz)
- V: variance (kHz)

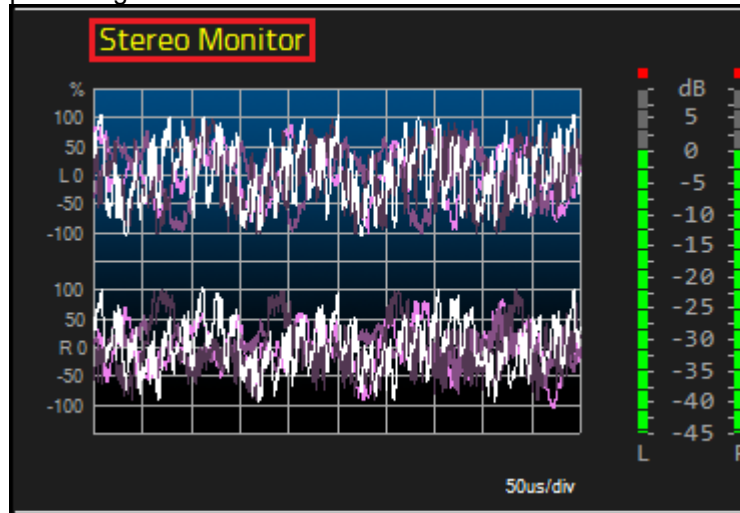
### Modulation Power

This screen shows the modulation power as defined in the ITU-R BS.641 & ITU-R BS.412-9, during the time. Modulation power and "loudness" are correlated.



### Stereo Monitor

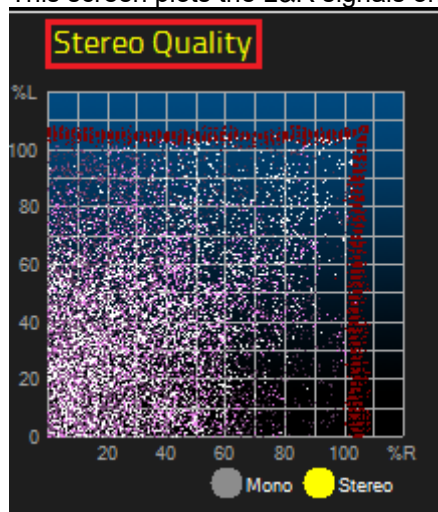
This screen displays the L&R channels over time as a dual trace oscilloscope with the scale in percentage.



Additional traces can be configured by double-clicking on the screen.

### Stereo Quality

This screen plots the L&R signals on the X & Y axis.



Differences between the L&R signals are represented by distances between the points

This sample displays a good quality Stereo image, with its clustered data.

For Mono signals (L always equal to R) you will always see a line at 45°.

The red line is the maximum hold trace.

**END**