



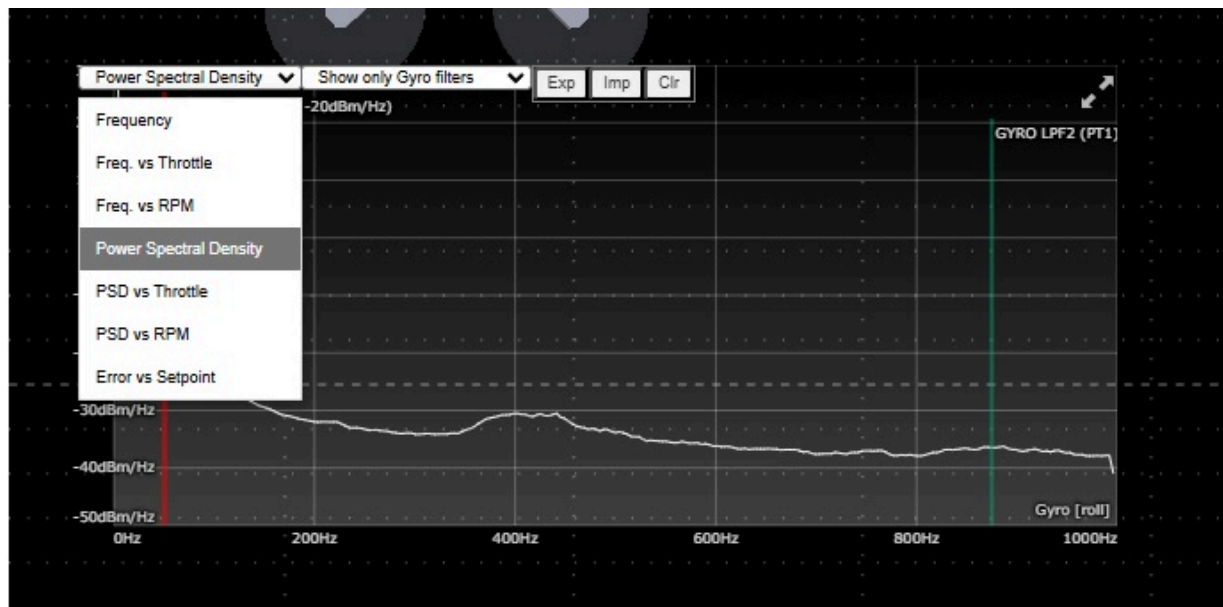
Guides

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Blackbox Explorer Power spectral density charts

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The Blackbox Explorers spectrum analyser can show power spectral density (PSD) charts

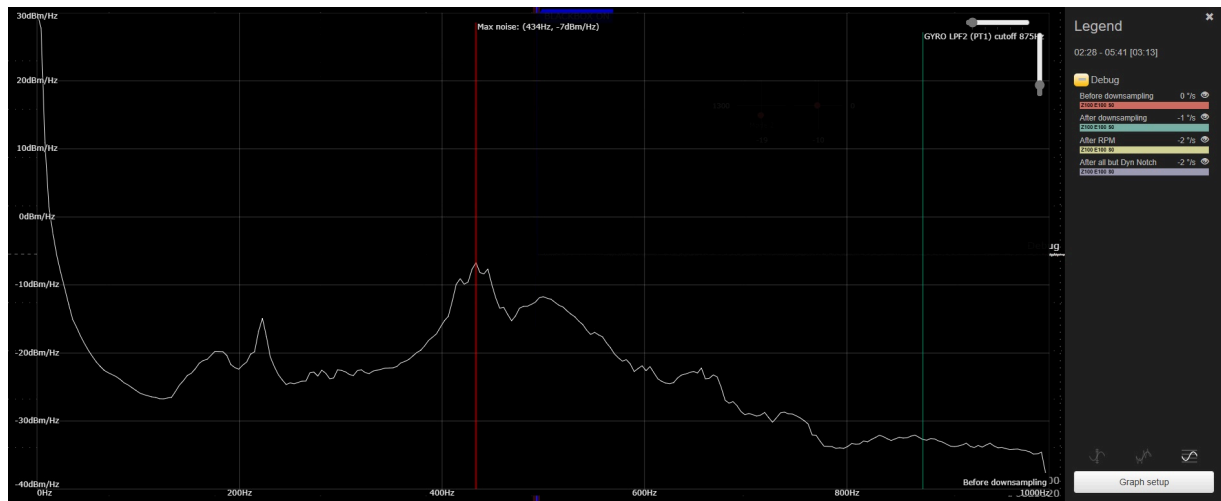


The power spectral density charts show the noises level in standard dBm/Hz units. For example:

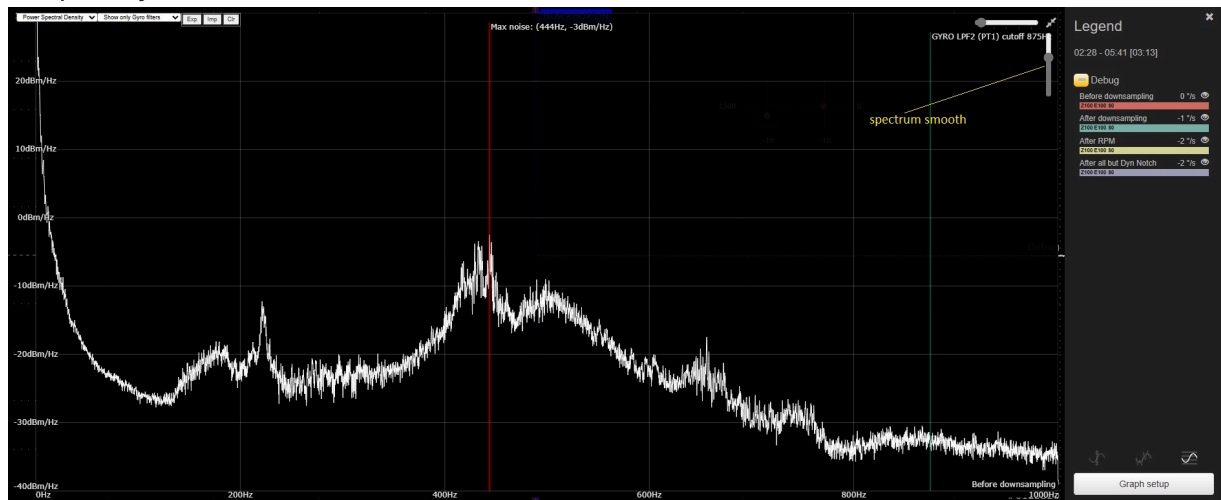
- every 10dBm values difference mean the noise power relation as 10, 20dBm as 100, 30dBm as 1000
- every 20dBm values difference mean the noise amplitude relation as 10, 40dBm as 100, 80dBm as 1000

The "Power spectral density" spectrum chart

It shows the noises power spectral density by frequency.



The vertical slider can change curves smooth. The less smooth curve has more frequency resolution.

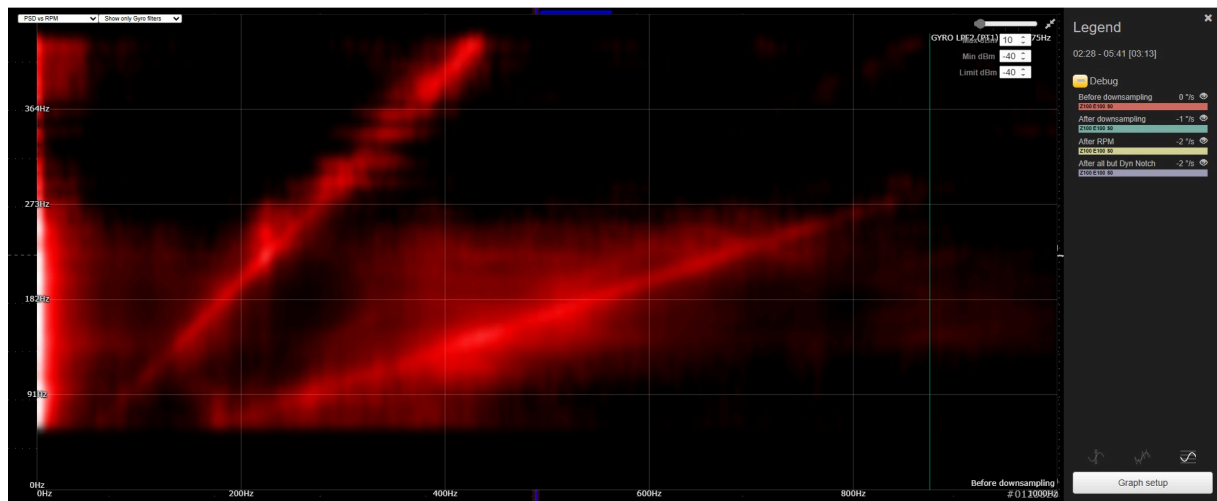


The mouse cursor shows current power values by pressing Shift key



The power spectral density by RPM heat map diagram ("PSD vs RPM")

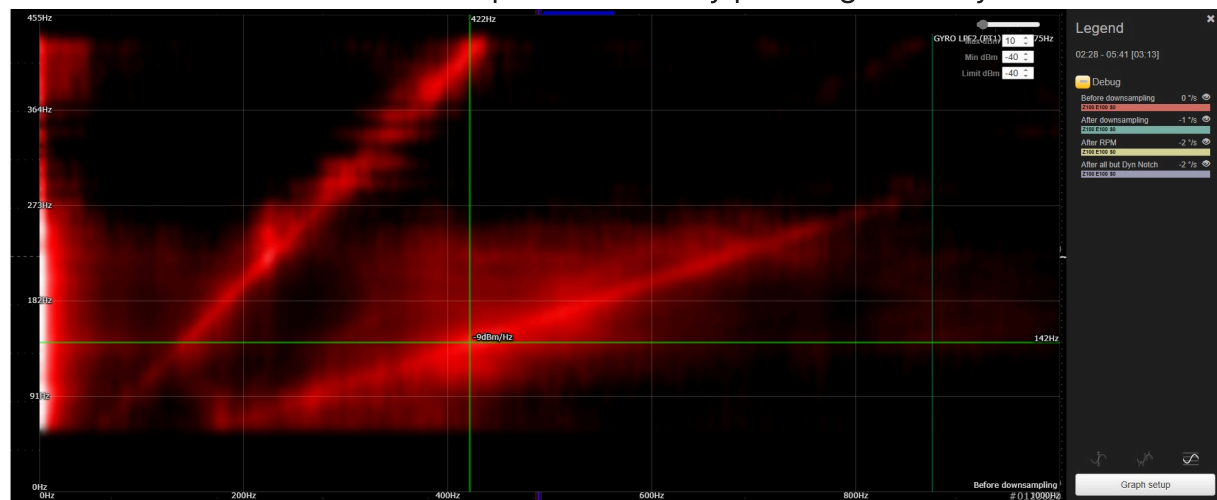
It shows the noise power spectral density by frequency and RPM.



It has the next settings by using the three number input fields in the right-up charts corner:

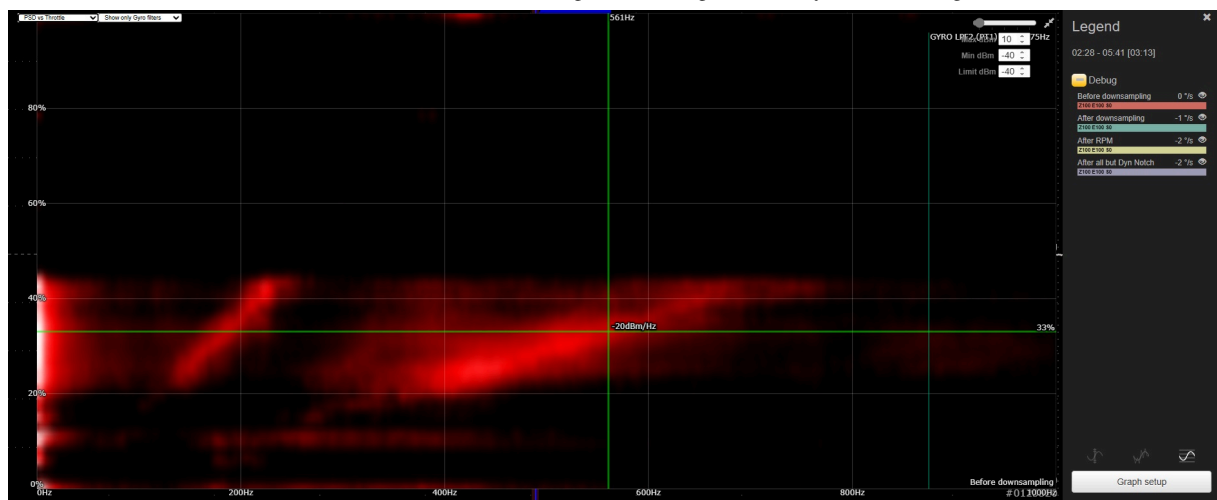
- "Max dBm" - to set maximum power level what is showed as white color at the chart
- "Min dBm" - to set minimum power level what is showed as black color at the chart
- "Limit dBm" - the power values what are less this limit are showed as black

The mouse cursor shows current power values by pressing Shift key



The power spectral density by throttle heat map diagram ("PSD vs Throttle")

It shows the noises power spectral density by frequency and throttle. It looks like power spectral density by RPM. But the power spectral density by RPM is more helpfull, when the RPM filter works.

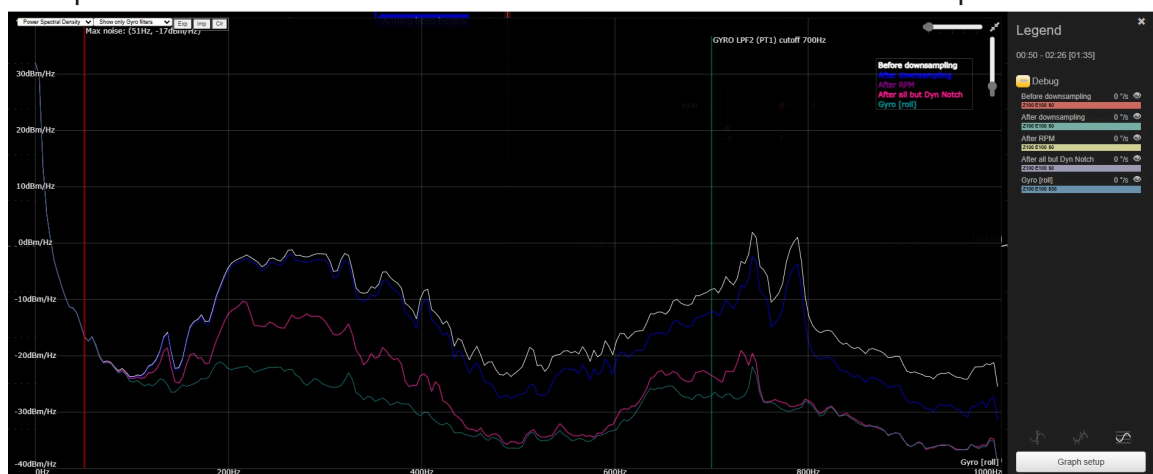


Blackbox Explorer Power spectral density curves comparison

It possible to compare several spectrums by using of power spectral density spectrum chart. It possible to compare up to 6 spectrums.

To compare PSD spectrums for one log file curves:

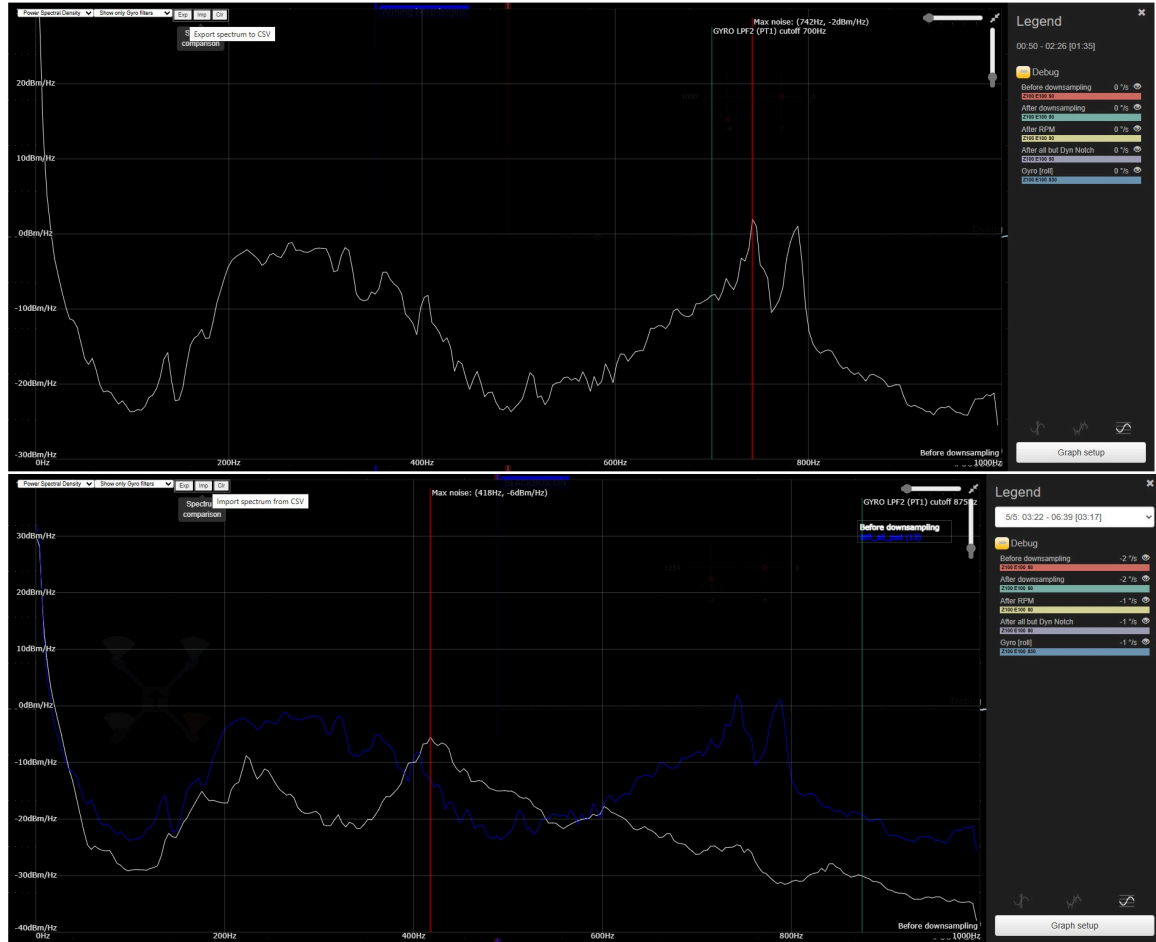
- to show "Power spectral density" chart for curve
- to select several curves by Ctrl + Mouse click at the curves legend
- to analyse spectrums difference
- to press "Clr" button to remove the all compared curves
- to repeate Ctr + Mouse click at some curve to remove it from comparison



To compare PSD spectrums for different log file curves:

- to show "Power spectral density" for the first log file curve
- to press "Exp" (Export) button. The spectrum data will exported to .CSV file
- to export spectrums from some log files what you need for comparison
- to show "Power spectral density" to compare some curve with other

- to press "Imp" (Import) button. To select several exported curves log files for comparison by using Open file dialog
- the sepctrums will showed at one chart for analyses



The legends width and position can set in User settings dialog box

The screenshot shows the Advanced User Settings dialog box. The Legend Settings section is highlighted with a red box, showing options for Units, Position, and Size.

Section	Setting	Value
Mixer Settings	Custom	<input type="radio"/> Select custom craft display.
	Stick Settings	<input type="radio"/> Display actual units on stick display.
	Stick Trails	<input type="radio"/> Show stick trails.
Stick Settings	Invert Yaw	<input type="radio"/> Invert Yaw in Stick Display
	Mode	Mode 1, Mode 2, Mode 3, Mode 4
	Position	Top: 20%, Left: 75%, Size: 30%
Legend Settings	Units	<input checked="" type="radio"/> Display actual units on legend.
	Measurement System	Speed: m/s, kph, mph; Altitude: meters, feet
Craft Settings	Position	Top: 48%, Left: 15%, Size: 40%
	Analyser Settings	Hanning: <input checked="" type="radio"/> Use Hanning Window for Analyser
	Position	Top: 60%, Left: 2%, Size: 35%
Legend Settings	Position	Top: 10%, Left: 80%, Width: 15%
	Map Settings	ACT: <input type="radio"/> Use Altitude Colored Trail (slower at loading/changing logs)
	Position	Top: 5%, Left: 2%, Size: 35%
Watermark Settings	Watermark	<input type="radio"/> Show the watermark.
	Lap Timer Settings	Lap Timer: <input type="radio"/> Show the lap timer.
Graph Style Settings	Gradient	<input type="radio"/> Show the gradient background.
	TimeBar	<input checked="" type="radio"/> Show the vertical timebar.

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made with  by **VitroidFPV** and **un!t**