Sampling Rates and Block Sizes

The following table shows Sampling Rates and filter Corner Frequencies for each spectrum bandwidth setting in the app. The bandwidth is the highest frequency displayed on a spectrum graph. Because the graph always shows all frequencies between 0 and the highest frequency (except when zoomed in), it is called Bandwidth.

Spectrum Bandwidth (app setting)	Sampling rate after resampling	Filter corner frequency
200	512	256
500	1280	640
1000	2560	1280
2000	5120	2560
5000	12800	6400
10000	25600	12800
20000	48000 (no resampling)	no filter

The Spectrum Lines setting defines the resolution of the spectrum. More lines means higher resolution. Higher resolution requires more acquisition time, especially at low sampling rates. The table below shows Block Sizes in respect to the Spectrum Lines.

Spectrum lines (app setting)	Block size after resampling
400	1024
800	2048
1600	4096
3200	8192
6400	16384

One of the results of resampling is that the Block size gets proportionally smaller. That means that depending on the required sampling rate and block size the number of samples that have to be acquired from the device will vary. The formula is as follows:

ABS = BS*ASR/SR

Where ABS – Block Size for acquisition

BS – Block Size required by the app

ASR – acquisition sampling rate (48000 in our case)

SR – sampling rate required by the app