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Subject: Digital formats

Posted by [Wayne Parham](#) on Fri, 17 Dec 2004 08:01:49 GMT

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There's a lot to digest about digital formats, compression, streaming and analog-to-digital and digital-to-analog conversions. The issues aren't difficult to understand, but there are a lot of things to examine. First, there is the matter of sampling rate and word size. Then there's the issue of aliasing. And of course there are also things to consider when going back the other way. There's the whole debate of oversampling and interpolating. One might look at what kind of output filters to use. In between, when the information is encoded digitally, there are the myriad of compression options. Some compression algorithms are lossy and others aren't. Lossy algorithms are just that - information is lost and the signal is modified. How much is too much is the matter for debate. As for file formats, most of them have multiple options for sampling rate and compression. So the file format isn't as relevant as the sampling and compression/storage options. Once a signal is stored in a low-res format, it cannot be improved. If you record at 11kHz sampling rate and 8 bit conversion, then store the file using a highly compressed, lossy format, it doesn't matter if you reformat it into a hi-res file type because the signal is already degraded. It's like recording something on a cheap tape deck and then later transferring it to a high-quality media. You might use some EQ to try to make the signal sound a little better, but no matter what you do, distortion is bad and high frequency information is gone and cannot be retrieved.

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