

The files in this directory present sample calculations to supplement the material in chapter 15, "DSP and Software Radios". The .mcd files were generated with Mathcad 7 and the .pdf files are Adobe Acrobat versions of those files.

exp_decay.mcd exp_decay.pdf
Compares the exponential decay generated by a digital and an analog circuit.

fourier_conv.mcd fourier_conv.pdf
Demonstrates how to convolve sine waves with a signal to determine its frequency content. This is the same basic method used by the Fourier transform.

quant_rand.mcd quant_rand.pdf
Quantizing a random signal results in quantization noise.

quant_sine.mcd quant_sine.pdf
Quantizing a periodic signal results in quantization spurs. The spurs can be reduced by dithering.

sampling.mcd sampling.pdf
Sampling in the time domain results in periodicity in the frequency domain (alias frequencies).

sinc.mcd sinc.pdf
Linear and dB plots of the sinc function.

sine_aprox.mcd sine_aprox.pdf
Generating a sine wave using a fifth-order curve fit.

windowing.mcd windowing.pdf
Demonstration of the windowing method of calculating FIR filter coefficients.