FPGA LAB

Experiment- 1

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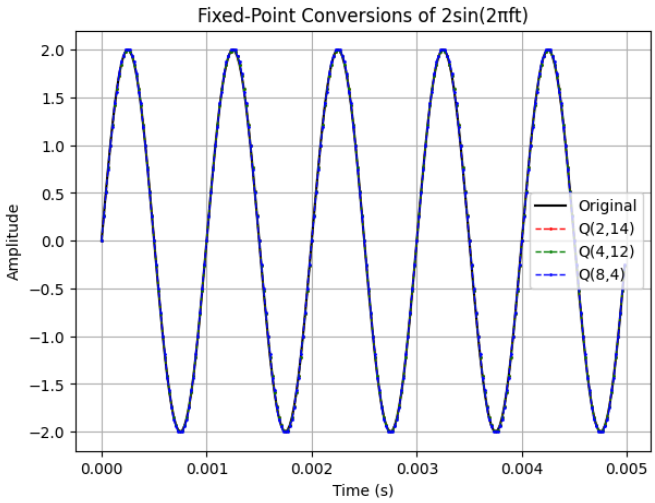
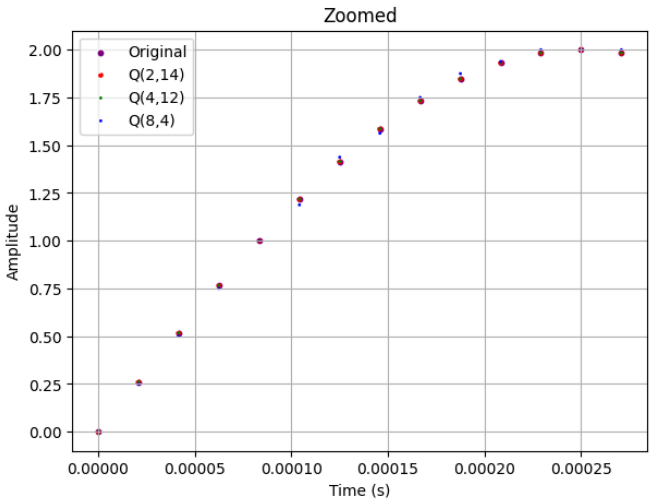
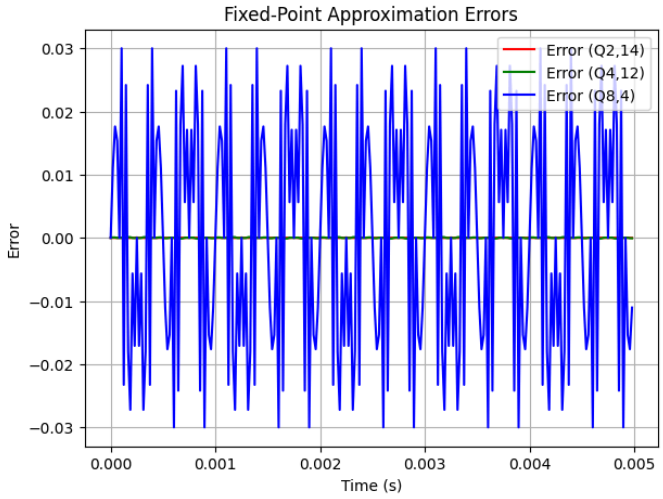
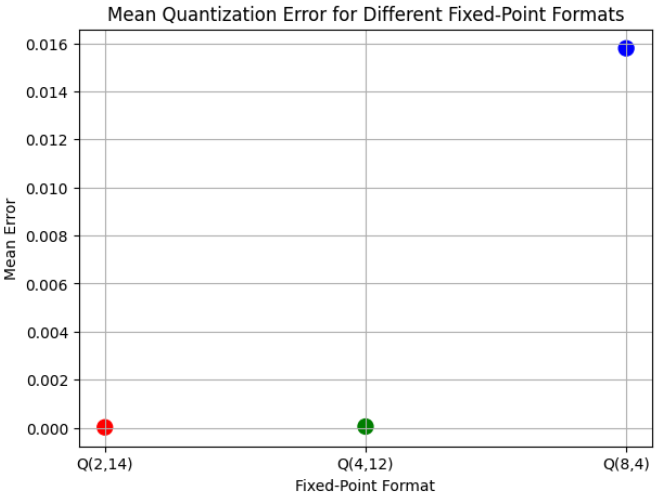
1. Generate and plot samples of x(t)=2sin(2*pi*f*t), f=1kHz, Fs=48kHz for 1 sec duration. (Plot can be done only for 5 cycles)
2. Convert the samples to fixed point formats of Q(2,14), Q(4,12), Q(8,4)
3. Plot the quantized signals vs the original signal





4. Plot the errors in each case





5. Find the SQNR = mean(| x[n] |.^2)/mean(I e[n] |.^2) for each case

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SQNR for Q(2,14): 97.55 dB
SQNR for Q(4,12): 87.36 dB
SQNR for Q(8,4): 37.69 dB
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