1. Drawing a template
    - Create a template that shows the AC performance of the AD9446_80_2V ADC model with a 14.56 MHz analog input at -0.5dB amplitude. Include graphical and numerical data in the chart.
    - Hint – Make sure your # of samples, sample rate, and resolution settings are consistent throughout your template. Also, you'll need these blocks:
      Tone Generator
      FFT
      FFT Analysis
      Graph
      ADC Model
      Input Formatter
      Data Router
2. Using noise sources, array math, and scalar math to show effect of noisy input signal.
    - Using the template from Exercise 1, add a Gaussian noise source that has been scaled to 0.1 in the frequency domain. Add this noise to your 14.56MHz tone and show the decreased SNR in the FFT of the ADC data.
    - Hint – watch carefully when you have time domain or frequency domain data. Don't forget the Inverse FFT block in your template! Although not a requirement for this exercise, can you scale the noise in the time domain instead of the frequency domain? Is the SNR different between the two? Why or why not?
3. Using the pattern loader to show an I & Q constellation
    - Use the pattern loader & the provided I & Q data in the vector folder to digitize complex data. Show an FFT & constellation graph for two channels of AD9216 (any speed grade).
    - Hint – Use the Complex Waveform Merger and Complex Waveform Splitter in this template. A similar example is in the User's Guide. Don't forget to include frequency translation as the vector file is at an IF frequency. There is a document in the vector folder describing the WCDMA vector or you can determine the modulation frequency from the FFT. (Remember a WCDMA constellation may consist of multiple users and will not always have a clear constellation.)
4. Measuring noise in a frequency slot
    - Apply a 2 MHz wide notch filter to a Gaussian noise source. Measure the noise within that notch after digitizing the input with the ADC of your choice.
    - Hint – You'll need to go into the FFT Analysis settings to define how to measure the noise. Although not a requirement for this exercise, can you figure out how to actually measure NPR? It is possible!