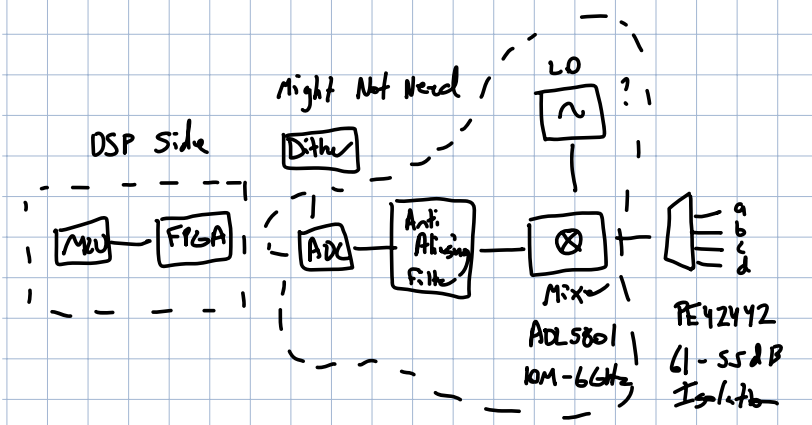
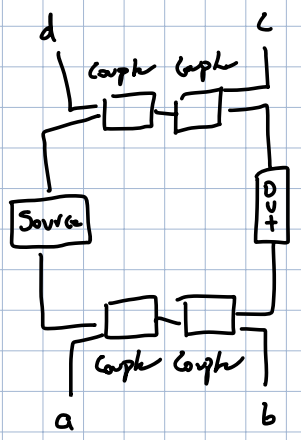
Per Nyquist Theorem we need at least a 2GSPS Adc to achieve 1 GHz. ADCs capable of that are $1,200+

∴ We need IF mixing for Frequency Translation to a low





	Ti		
$85	ADL3564	14-Bit	125MSPS
$45	AD9236 Analog	12-Bit	80 MSPS

Resolution? Sampling Rate? Price?

- Dithering removes quantization noise and increases effective number of bits but can add noise (obv) and complexity
  - Channel noise might be enough
- Antialising Filter needs to have a cutoff lower than the max input frequency of the ADC (Nyquist)
  (Half Sampling)
  Low pass should cut it to just remove unwanted HF
- Choosing an IF LO frequency needs to be high enough to reduce noise but low enought for good ADC digitization
- Mixer needs to be low noise with good linearity