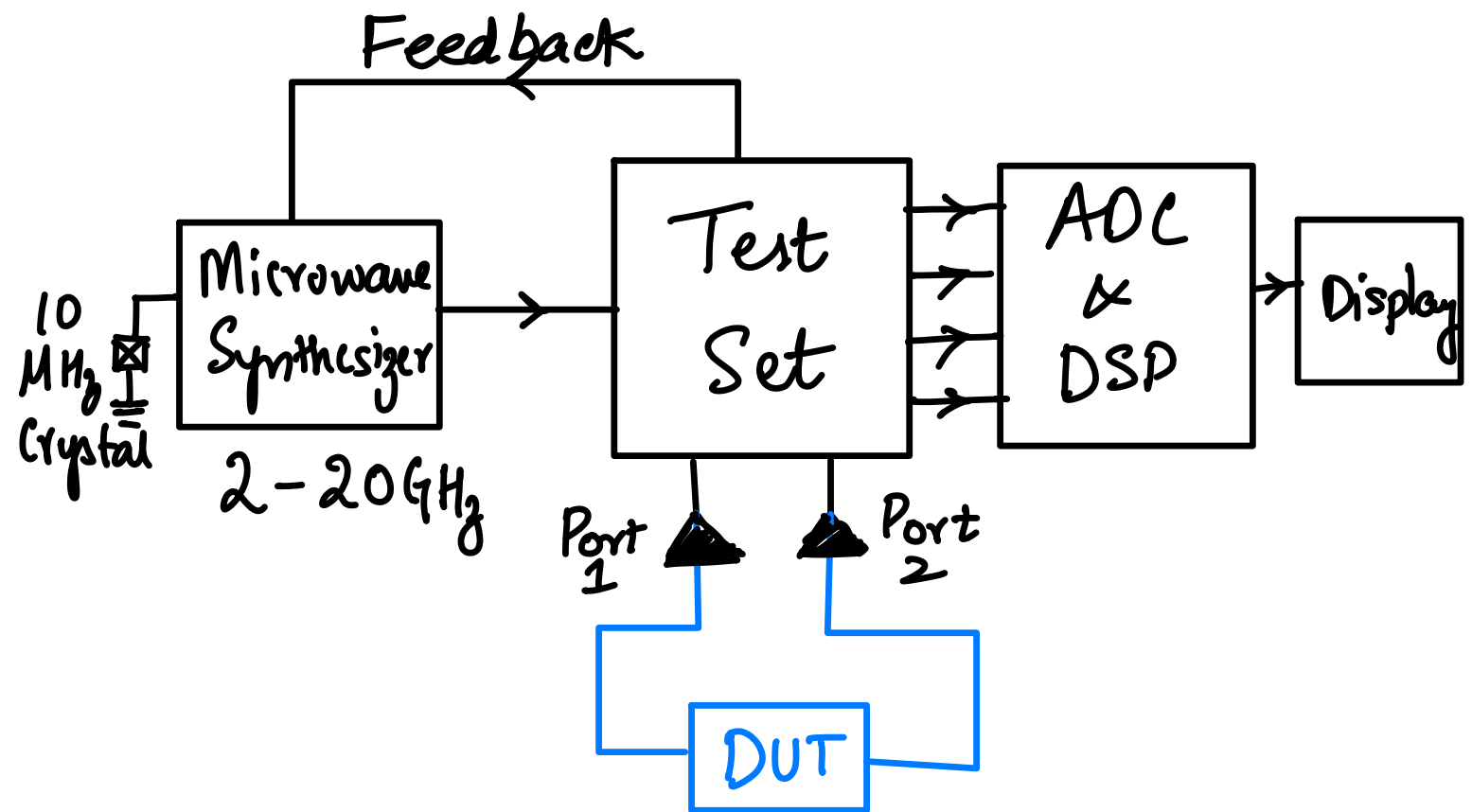
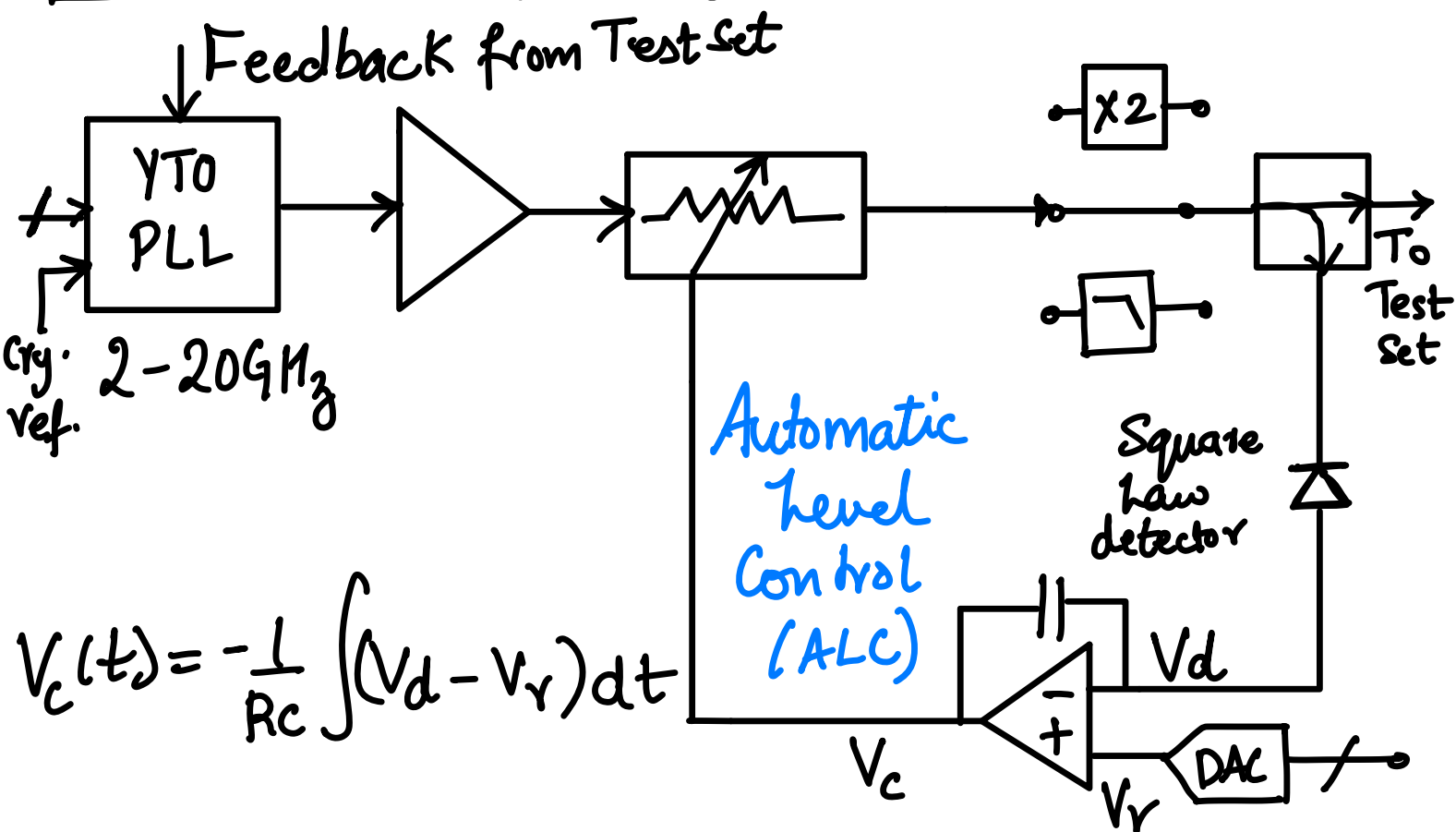




# Vector Network Analyzers



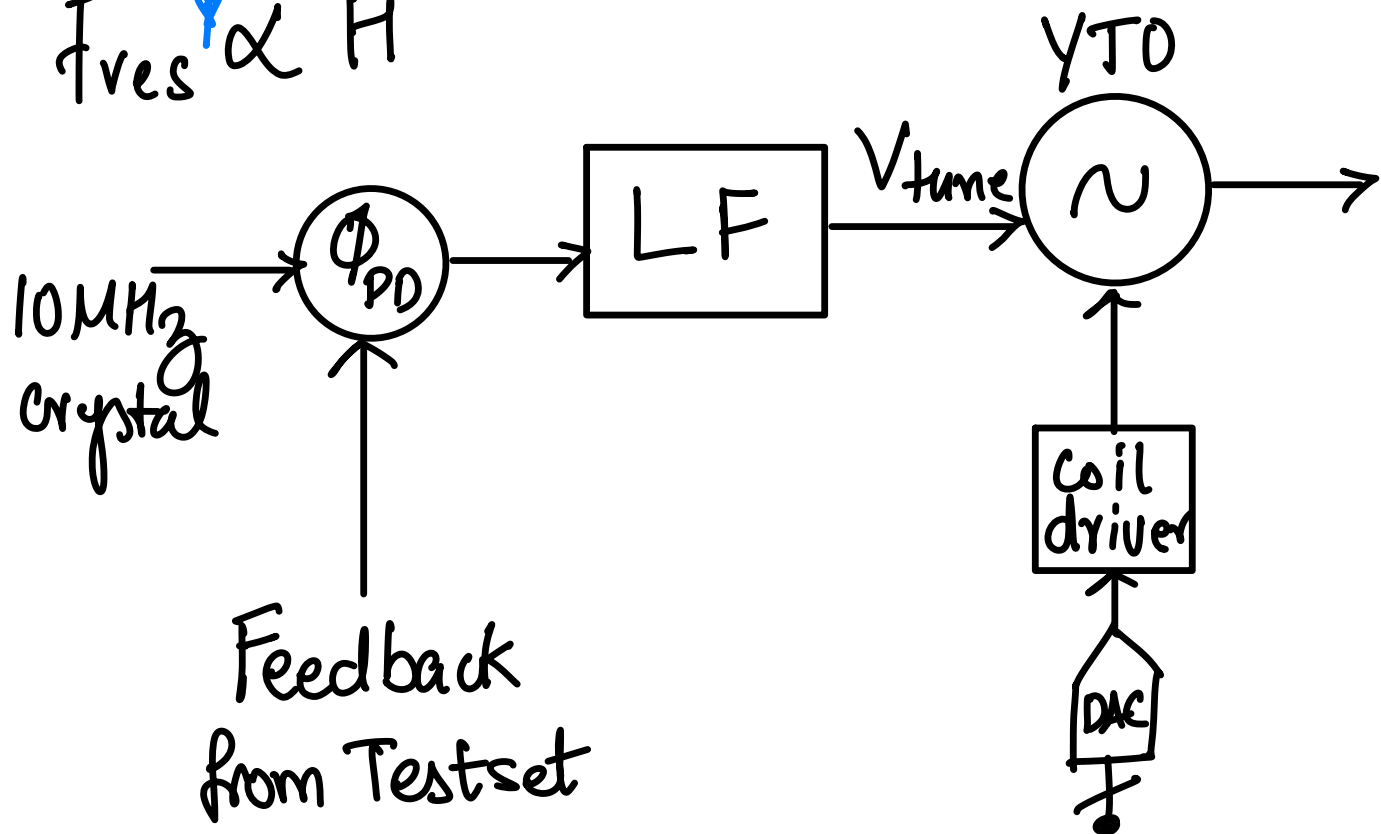
## Microwave Synthesizer



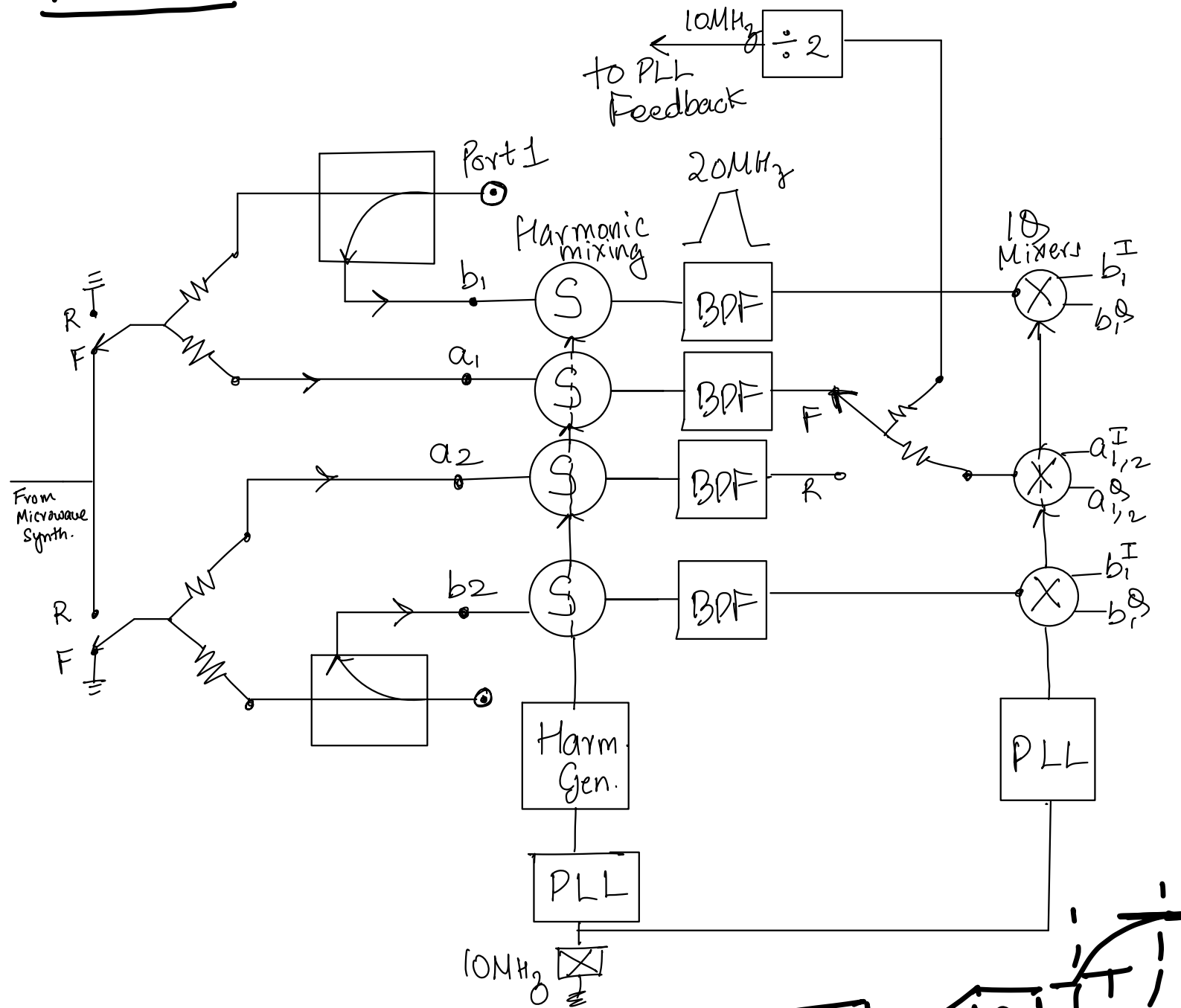
# YTO PLL (YIG Tuned oscillator Phase Locked loops)

YIG  $\rightarrow$  Yttrium Iron Garnet

  $\rightarrow$  resonator driven by an H-coil.  
 $f_{\text{res}} \propto H$



# Test set



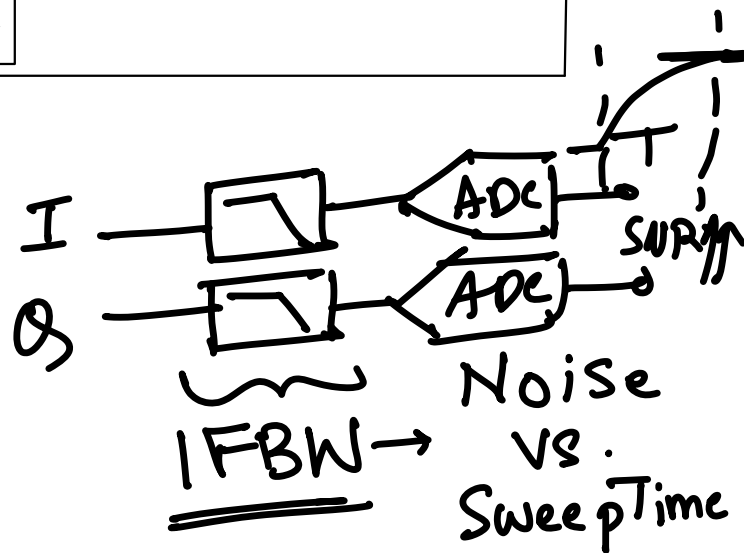
## Harmonic Sampling

RF: 2 - 20 GHz

IF: 20 MHz

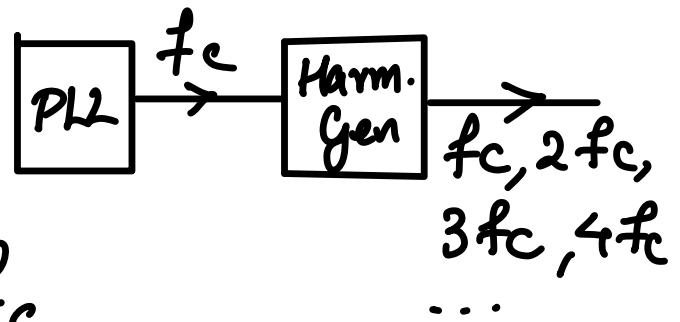
LO: 1.98 - 19.98 GHz → Huge range

Solution: Harmonic Sampling.



$$f_{RF} = 2 \rightarrow 20 \text{ GHz}$$

$$f_{IF} = 20 \text{ MHz}$$



$$f_{LO} = f_{RF} - f_{IF} = n f_c$$

