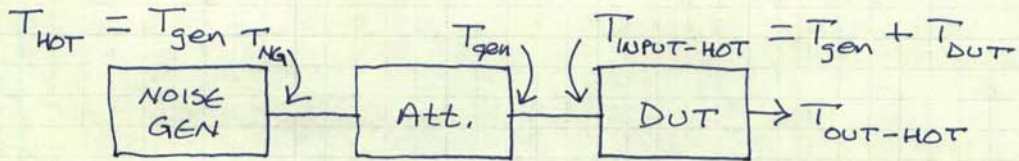
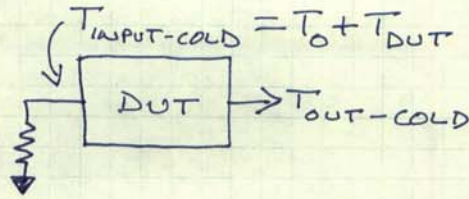


NF TESTS

9/21/13

Dane Typinski

$$T_{COLD} = T_0 = 290K$$



$$T_{gen} = \frac{T_{NG}}{L_{ATT}} + T_0 \left(1 - \frac{1}{L_{ATT}}\right)$$

$$Y = \frac{T_{OUT-HOT}}{T_{OUT-COLD}}$$

$$T_{INPUT-HOT} = Y(T_0 + T_{DUT})$$

$$= \underbrace{YT_0 + (Y-1)T_{DUT}}_{T_{gen}} + \underbrace{T_{DUT}}_{DUT \text{ self-noise}}$$

$$T_{gen} = YT_0 + (Y-1)T_{DUT}$$

$$T_{gen} - YT_0 = (Y-1)T_{DUT}$$

$$T_{DUT} = \frac{T_{gen} - YT_0}{Y-1}$$

$$F_{DUT} = \frac{T_{DUT}}{T_0} + 1$$

$$NF_{DUT} = 10 \log(F_{DUT})$$