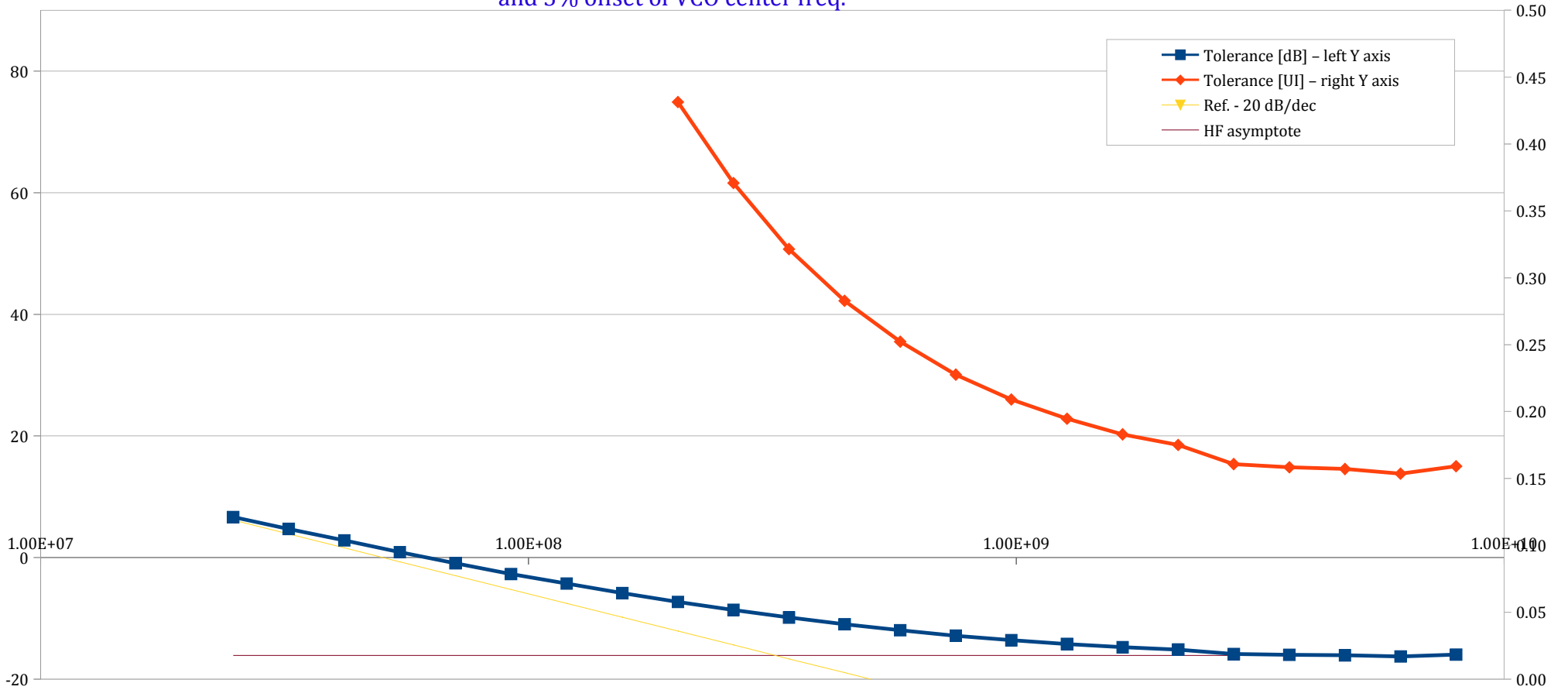


# Jitter Tolerance of a 1 - 1 CDR

with a bang-bang ternary detector  
and 5% offset of VCO center freq.



$\omega_p$  [rad/sec] = **6.28E+10**  
 $f_p$  [Hz] = **1.00E+10**  
 $\omega_p - \omega_{fr}$  [ppm] = **5000**  
 $G = 5.97E+08$   
**LEO [rad] = 1.80**

$G\phi$  [rad/rad] = **1.99E-02**  
 Comparator range [rad] = **3.142**  
 $G_f$  = Filter gain [V/rad] = **1.000**  
 $G_{VCO}$  = VCO Gain = **3.00E+10**  
 Filter (linear) range [+/- V] = **0.050**  
 VCO drive range [volt] = **-0.050**    **0.050**

Transit. Dens. ( 0 to 1 ) : **12.5%**  
 1<sup>st</sup> type1 sampl. err. [rad] = **-5.26E-01**  
 $f_{bb}$  [Hz] = **2.39E+08**  
 $f_p / f_{bb}$  = **41.89**  
 $(\omega_{max} - \omega_{min})/2$  [ppm] = **2.39E+04**