**In log-scale:**

$$P\_{noise\_{-20dBFS}}=NSD\left(\frac{dBFS}{Hz}\right)+Bandwidth (dBHz)$$

$$P\_{noise\_{-20dBFS}}=NSD \left(\frac{dBFS}{Hz}\right)+10log\_{10}\left(\frac{1.5GSPS}{2}-60MHz\right)$$

$$P\_{noise\_{-20dBFS}}=-157.8\left(\frac{dBFS}{Hz}\right)+88.388 (dBHz)$$

$$P\_{noise\_{-20dBFS}}= -69.41dBFS$$

$$P\_{signal}=-20dBFS\rightarrow SNR\_{dB}=P\_{signal}-P\_{noise\_{-20dBFS}}=-20dBFS-\left(-69.47dBFS\right)=49.41dB$$

**In linear-scale:**

$$P\_{noise-lin}=10^{NSD \left(\frac{dBFS}{Hz}\right)/10}\*Bandwidth (Hz)$$

$$P\_{noise-lin}=10^{- \frac{157.8}{10}} \left(\frac{FS^{2}}{Hz}\right)\*690e6 \left(Hz\right)=P\_{noise-lin}=1.14511497\*10^{-7} (FS^{2})$$

$$P\_{noise}=10log10\left(1.14511497\*10^{-7}\right)=-69.41dBFS$$

$$P\_{signal}=-20dBFS\rightarrow SNR\_{dB}=P\_{signal}-P\_{noise}=-20dBFS-\left(-69.41dBFS\right)=49.41dB$$