ITS323 – Transmission Media Notes

$$SNR = \frac{\text{signal power}}{\text{noise power}}$$

$S = 502\,mW$

$N = 2\,mW$

$$SNR = \frac{S}{N} = \frac{502\,mW}{2\,mW} = 251$$

$$SNR_{dB} = 10\log_{10}(SNR) = 10\log_{10}(251) = 24\,dB$$

Figure 1: SNR as dB; Lecture 06

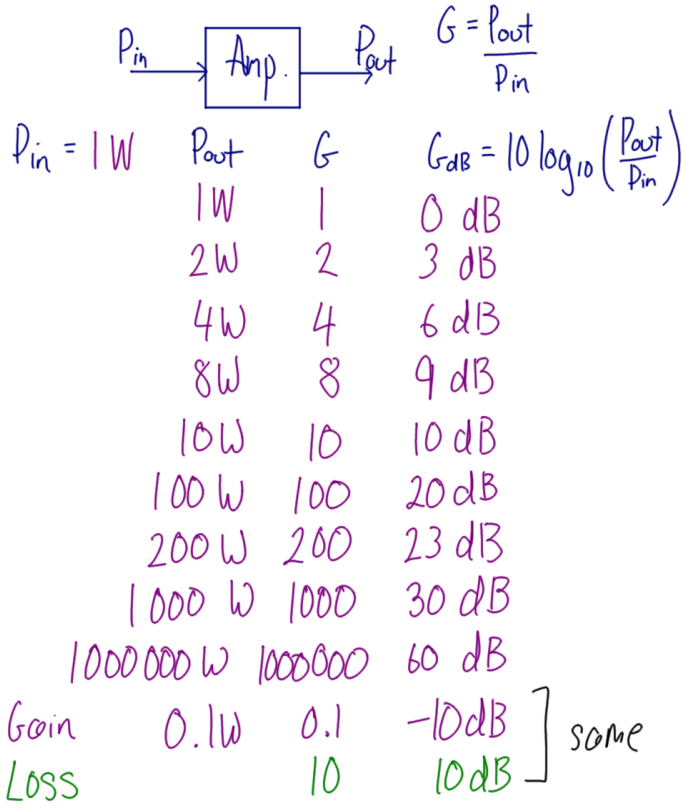

Figure 2: Gain and Loss in dB; Lecture 06

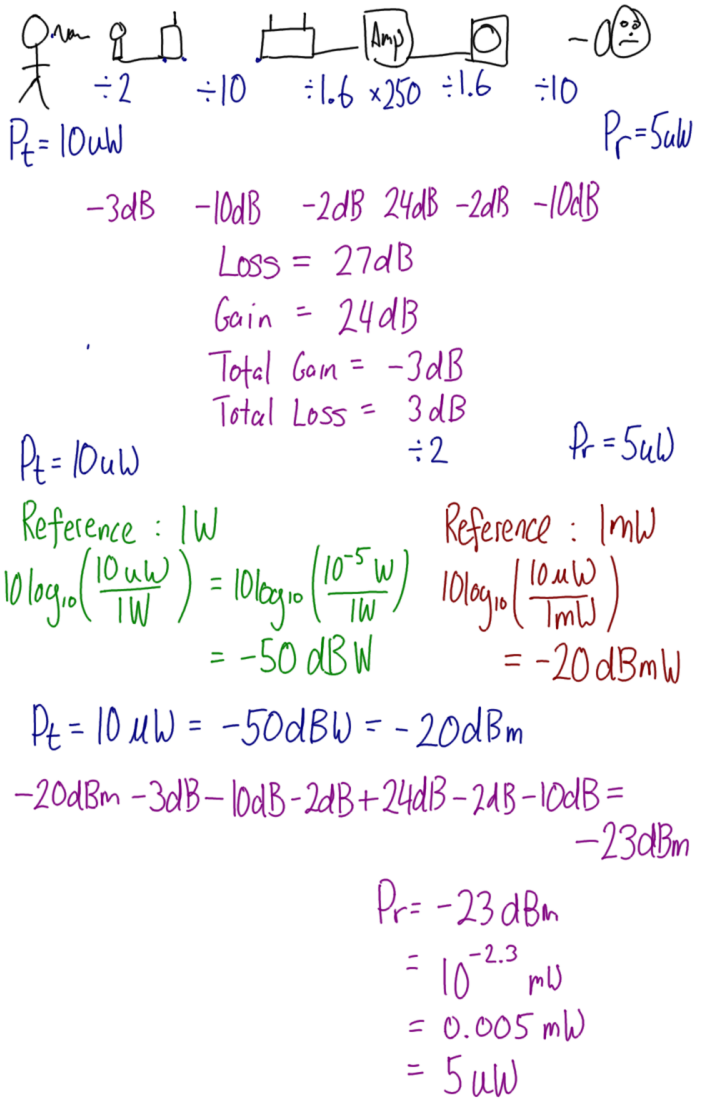

Figure 3: System Gain, dBW and dBm; Lecture 07

P	dBW	dBm
1W	0 dBW	30dBm
10 W	10 dBW	40dBm
100 W	20 dBW	50dBm

Figure 4: dBW and dBm Values; Lecture 07

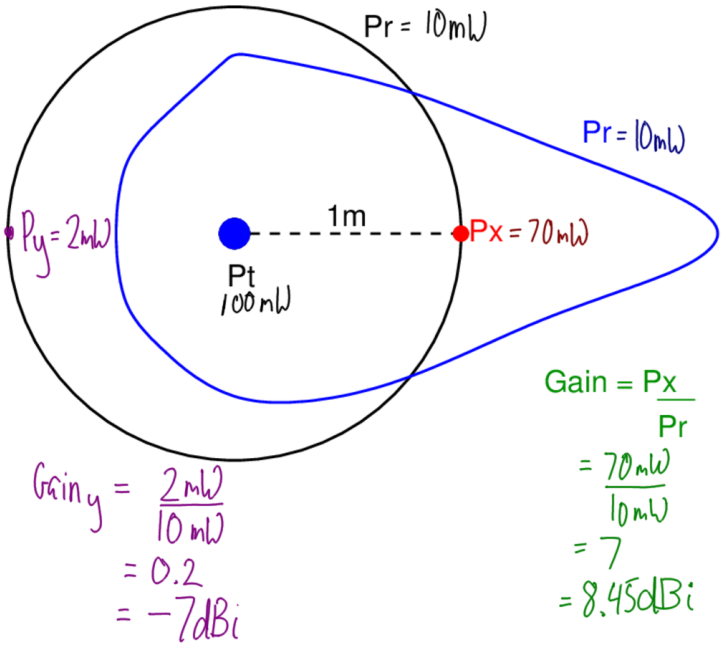

Figure 5: Gain compared to isotropic antenna; Lecture 07

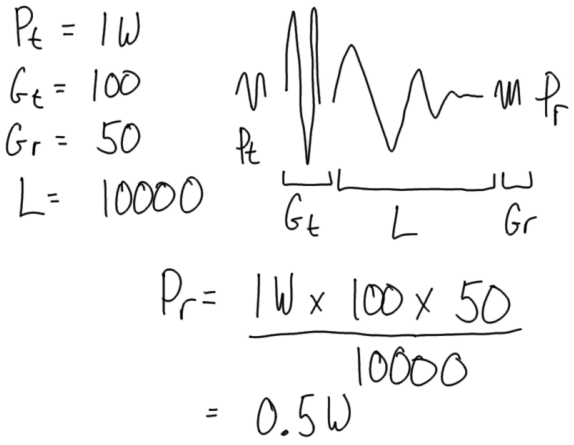

Figure 6: Path Loss Calculation; Lecture 08

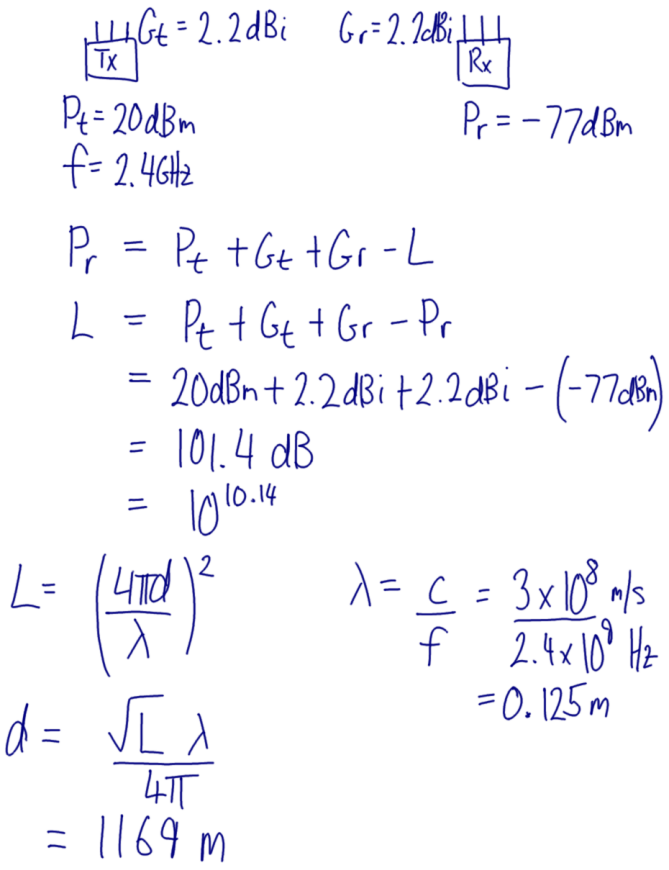

Figure 7: Wifi, Dipole Antenna and Free Space Path Loss; Lecture 08

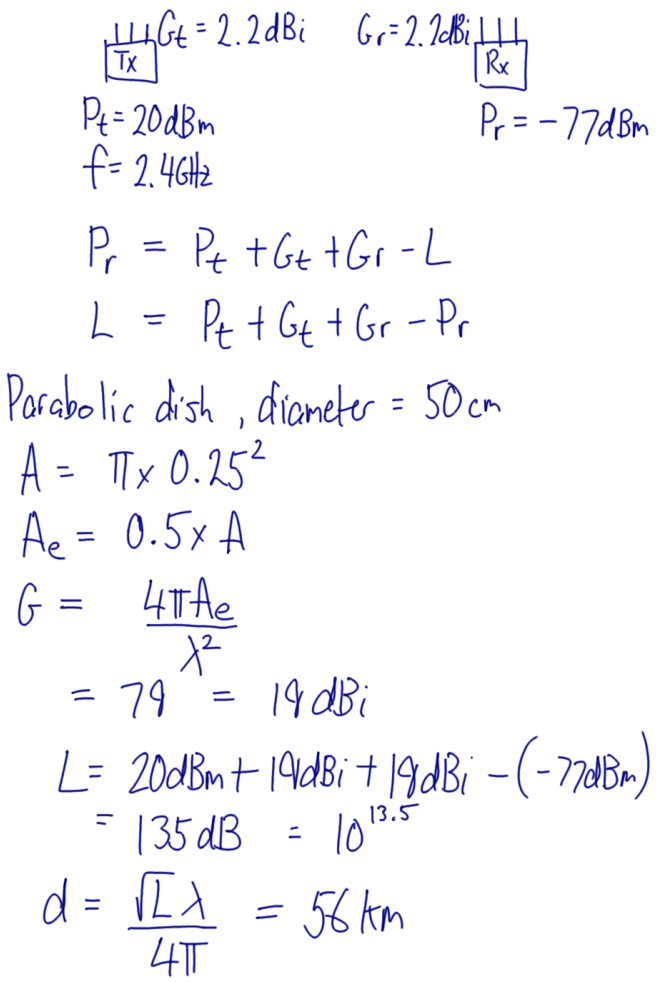

Figure 8: Wifi, Parabolic Antenna and Free Space Path Loss; Lecture 08

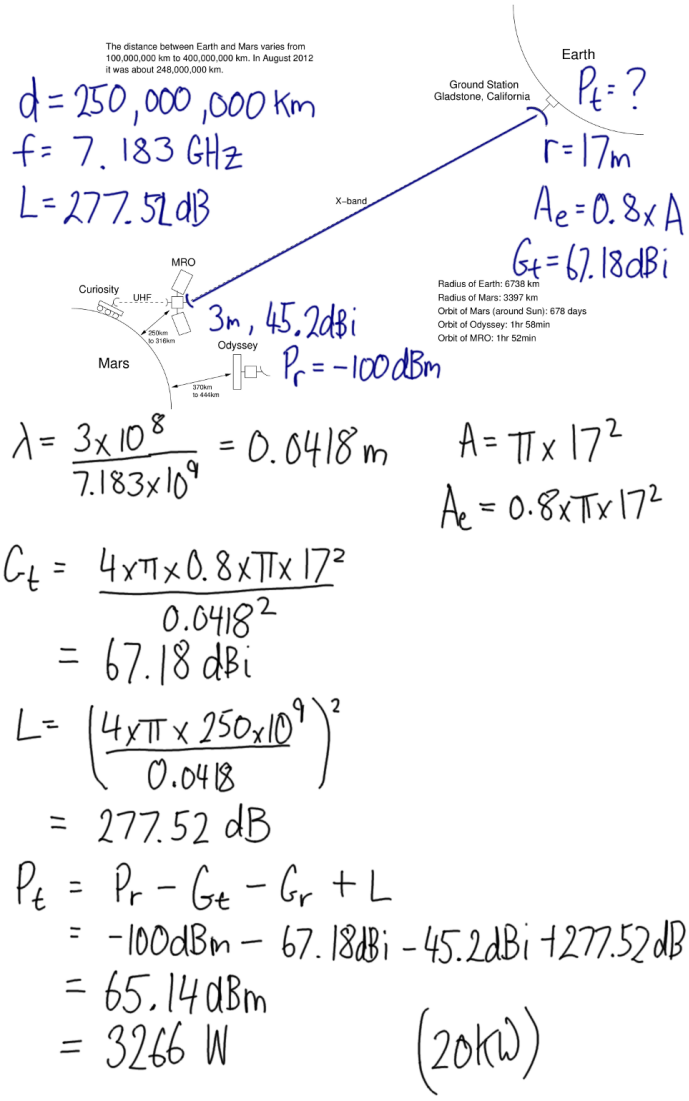

Figure 9: Mars Communications Example; Lecture 09