



GPS Networking Link Budget Calculator

The following spreadsheet calculates the effective radiated power for a GPS Networking reradiating system as well as the effective signal power at given range in dBm. Enter the components for the strongest repeating path in your system into the section with the red border. NTIA regulations require that the repeated signal be weaker than -140 dBm when measured 100 FT outside of the reradiated structure. Please feel free to reach out to GPS Networking if you need assistance.

Receive Ant Gain	Ant Cable Insertion Loss	Repeater Amp Gain	Repeater Ant Gain Best Case
38	-3	30	-4
GPS Carrier Frequency MHz	1575		Total System Gain
Avg Receive Power L1 dBm North America	-130		61
Free Space loss with Isotropic Antennas	-64.15		

Helpful Links:

- Get an FCC Registration Number: <https://apps.fcc.gov/coresWeb/publicHome.do>
- FCC Experimental Broadcast Form 442: <https://apps.fcc.gov/oetcf/els/forms/442Entry.cfm>
- Cable Loss Calculator: <https://www.timesmicrowave.com/Calculator>
- GPS Networking Store: <https://www.gpsnetworking.com/store>
- Tim's Email Address (if you need help): <mailto:tim@gpsnetworking.com>



Building Length (Feet)	Repeated Signal Power @ End of Building In dBm	Repeated Signal Power @ 100' Outside of Building In dBm
80	-133.15	-140.1983828
Range in Miles	Total Signal Power @ Range in Watts	
0.02	48.4E-18	
Range in Meters	Radiated Power dBm	
24.93	-69	
Range in Kilometers	Transmitted Power (W)	
0.02	63.1E-12	
	Effective Radiated Power (W)	
	125.9E-12	
	Effective Radiated Power (dBW)	
	-99	

System Diagram

