

## 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	Building Length (Feet)	Signal Power @ End of Building	Signal Power @ 100' Outside of Building In dBm
40	-27.95128	30	4	50	-144.02	-153.5660379
GPS Carrier Frequency MHz			Total System Gain	Range in Miles	Total Signal Power @ Range in Watts	
1575			46.04872	0.01	4.0E-18	
Avg Receive Power L1 dBm North Ame	rica					
-130				Range in Meters	Radiated Power dBm	
Free Space loss with Isotropic Antenna	ıs			15.24	-83.95128	
-60.07						
				Range in Kilometers	Transmitted Power (W)	
				0.02	2.0E-12	
Helpful Links:						
Get an FCC Registration Number: https://apps.fcc.gov/coresWeb/publicHome.do				Effective Radiated Power (W)		
FCC Experimental Broadcast Form 44	https://apps.fcc	.gov/oetcf/els/t	orms/442Entry.cfm		4.0E-12	
Cable Loss Calculator	https://www.time	esmicrowave.c	om/Calculator			

https://www.gpsnetworking.com/store

Tim's Email Address (if you need help mailto:tim@gpsnetworking.com

Effective Radiated Power (dBW)

-113.95128

System Receive Antenna		Cable Runs					
			Loss Per 100 Feet (RG-58A/U) @ 1500MHz = -28.4				
Part Number	Gain/Loss (dB)	Cable Type	dB	Feet of Cable	Cable Losses		
L1GGPSA	40	RG-58A/U	-28.4	98	3.42	-27.95128	
						0	
						0	
Passive Components (Cause	(2201 a					0	
	Gain/Loss (dB)					0	
	Juli, 2000 (42)					0	
						0	
						0	
Amplified Components (Cause Gain)						0	
	Gain/Loss (dB)						
HNRRKAMP	30						
Repeating Antennas							
Part Number	Gain/Loss (dB)						
L1GRRKPA	4						

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