

GPS Repeater Link Budget Calculator

NTIA regulations require that the repeated signal be weaker than -140 dBm when measured 100 FT outside of the reradiated structure.

<i>Receiving Antenna Gain</i>	<i>Antenna Cable Insertion Loss</i>	<i>System Gain</i>	<i>Nominal Antenna Gain Best Case</i>	<i>Distance to Nearest External Wall (FT)</i>	<i>Signal Power at Nearest External Wall Building</i>	<i>Signal Power at 100' Outside of Nearest External Wall In dBm</i>
38	-18.44	22.5	4	35	-140.92	-152.64
GPS Carrier Frequency MHz			Total System Gain	Range in Miles	Total Signal Power @ Range in Watts	
L1: 1575.42			46.057	0.01	8.1E-18	
Avg Receive Power dBm North America				Range in Meters	Radiated Power dBm	
-130				10.67	-83.943	
Free Space loss with Isotropic Antennas				Range in Kilometers	Power (pW)	
-56.98				0.01	2.02	
					Effective Radiated Power (pW)	
					4.03	
					Effective Radiated Power (dBW)	
					-113.943	

Distance to External Wall (FT): 35 ft

System Receive Antenna

Part Number	Gain/Loss (dB)
Active Rx Antenna L1GPSA-N	38

Passive Components (Cause Loss)

Part Number	Gain/Loss (dB)
LDCBS1X2	-3
5x BNC Mates (-0.1 dB ea.)	-0.5

Amplified Components (Cause Gain)

Part Number	Gain/Loss (dB)
Amplifier HNRRKAMP	26

Repeating Antennas

Part Number	Gain/Loss (dB)
Antenna L1GRRKPA-S	4

Cable Runs

[illegible]