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GPS Networking Link Budget Calc

Customer:

The following spreadsheet calculates the effective radiated power for a GPS Networking reradiating system as well as the effective signal pow system into the section with the red border. NTIA regulations require that the repeated signal be weaker than -140 dBm when measured 100 F need assistance.

Receive Ant Gain	Ant Cable Insertion Loss	Repeater Amp Gain	Repeater Ant Gain Best Case
33	-3	30	3

GPS Carrier Frequency MHz
1575

Avg Receive Power L1 dBm North America
-130

Free Space loss with Isotropic Antennas
-68.03

Total System Gain
63

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

System Receive Antenna

Part Number	Gain/Loss (dB)

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L1GPSA-N	33

Passive Components (Cause Loss)

Part Number	Gain/Loss (dB)

Amplified Components (Cause Gain)

Part Number	Gain/Loss (dB)
LA30RPDC	30

Repeating Antennas

Part Number	Gain/Loss (dB)
L1PRRKA-S	3

Cable Runs

Cable Type	Loss Per 100 Feet (LMR400) = -6	Feet of Cable	Cable Losses
LMR400	-6	50	-3
			0
			0
			0

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0
0
0
0
0
0
0

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ulator

er at given range in dBm. Enter the components for the strongest repeating path in your
:T outside of the reradiated structure. Please feel free to reach out to GPS Networking if you

Building Length (Feet)	Repeated Signal Power @ End of Building In dBm
125	**-135.03**

Range in Miles
0.02

Range in Meters
38.96

Range in Kilometers
0.04

Total Signal Power @ Range in Watts
31.4E-18

Radiated Power dBm
-67

Transmitted Power (W)
100.0E-12

Effective Radiated Power (W)
199.5E-12

Effective Radiated Power (dBW)
-97

System Diagram

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Repeated Signal Power @ 100' Outside of Building In dBm

-140.1365831