

Sirius XM Radio Inc.
File No. 0713-EX-PL-2015

Further Revised ATTACHMENT B

Roger GPS, repeater budget calculator for NTIA regulations

100 Foot Cable



GPS carrier
frequency, use code
L1 or L2

L1
1575 MHz

Values in light blue cells only can be edited

Distance from
Building

100 ft
30.48 m
0.019 mi
0.030 km

Avg Receive Power
North America
Isotropic Antenna

External components						Repeater unit				
Receiver + Antenna		Cable Loss.				Repeater Gain.		Repeater Antenna		Antenna Isotropic vs
Gain		This has to be negative value		Attenuator		Adjusted in the repeater		Gain		Dipole
35.0	dB	-18.0	dB	0.0	dB	33.0	dB	3.0	dB	-2.2
-95.0	dBm	-113.0	dBm	-113.0	dBm	-80.0	dBm	-77.0	dBm	-79.2
0.0										
Attenuator needed to reach allowed output limit										
						Effective Radiated Power				Effective Isotropic Radiated Power

Free Space Loss

-66.1 dB

Level -130.0 dBm

-143.1 dBm
4.9E-18 W

Repeated Signal
Power @
distance

NTIA requires <
-140 dBm
@ 100 ft

50 Foot Cable

L1
1575

MHz



100	ft
30.48	m
0.019	mi
0.030	km

External components						Repeater unit				
Receiver + Antenna		Cable Loss.				Repeater Gain.		Repeater unit		Antenna Isotropic vs
Gain		This has to be negative value		Attenuator		Adjusted in the repeater		Repeater Antenna		Dipole
35.0	dB	-14.0	dB	0.0	dB	29.0	dB	3.0	dB	-2.2
-95.0	dBm	-109.0	dBm	-109.0	dBm	-80.0	dBm	-77.0	dBm	-79.2
0.0										
Attenuator needed to reach allowed output limit										
						Effective Radiated Power				Effective Isotropic Radiated Power

-95.0	dBm	-109.0	dBm	-109.0	dBm
0.0					
Attenuator needed to reach allowed output limit					

Repeater Gain. Adjusted in the repeater		Repeater unit		
		Repeater Antenna Gain		Antenna Isotropic vs Dipole
29.0	dB	3.0	dB	-2.2
-80.0	dBm	-77.0	dBm	-79.2
		Effective Radiated Power		Effective Isotropic Radiated Power

-143.1	dBm
4.9E-18	W

Repeated Signal
Power @
distance

NTIA requires < -140 dBm @ 100 ft