

Applicant: RadioShack Corp
File Number: 0224-EX-PL-2009
GPS Repeater Budget Calculator

-140 dBm at 100 feet
from the building to
meet NTIA
regulations

Change the
values in the
yellow

boxes to calculate
required readings

Receive Ant Gain	35	Ant Cable Insertion Loss	-5.3	Repeater Ant Gain (Best Case)	3	Range in Feet	260	Repeated Signal Power @ Range In dBm	-141.69	Total Signal Power @ Range in Watts	6.8e-18
Free space loss with											
Isotropic Antennas											
GPS Carrier Frequency (MHz)	1575	Total System Gain	59.7	Range in Miles	0.05	Effective Radiated Power dBm	-69.45	Effective Radiated Power (dBW)	-99.45		
Effective Isotropic Radiated Power (dBW)											
Avg Receive Power L1 dBm North America	-130	Reference Dipole Gain	2.15	Transmitted Power (W)	5.7e-11	Range in Kilometers	0.08	Effective Isotropic Radiated Power (dBm)	-67.30	Effective Isotropic Radiated Power (dBW)	-97.30
Effective Radiated Power (W)											
Range in Meters											
79,2480											
Effective Radiated Power (ERP) - picowatts:											
22											