

### GPS Source, Inc. 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                | -12   | Repeater Amp Gain     | 32      | Repeater Ant Gain (Best Case) | 3       | Range in Feet                            | 143    | Repeated Signal Power @ Range In dBm     | -141.20 | Total Signal Power @ Range in Watts | 7.6e-18 |
| GPS Carrier Frequency (MHz)                     | 1575 | Free Space loss with Isotropic Antennas | 69.20 | Total System Gain     | 55      | Range in Miles                | 0.03    | Effective Radiated Power dBm             | -74.15 | Effective Radiated Power (dBW)           | -104.15 | Effective Radiated Power (W)        | 3.8e-11 |
| Avg Receive Power in dBm North America          | -130 | Reference Dipole Gain                   | 2.15  | Transmitted Power (W) | 1.9e-11 | Range in Kilometers           | 0.04    | Effective isotropic Radiated Power (dBm) | -72.00 | Effective Isotropic Radiated Power (dBW) | -102.00 | Effective Radiated Power (W)        | 3.8e-11 |
| Typical value @ L1: -130.0 dBm @ L2: -127.5 dBm |      |   |       |                       |         | Range in Meters               | 43.5864 |  |        |  |         |                                     |         |