

From: Thomas Fagan

To: John Kennedy

Date: October 31, 2006

Subject:

FCC File # 0069-EX-ML-2006

Message:

GPS Signal Analysis

Frequency 1227.6 MHz Signal Level

Wavelength 0.244379277 meters dBm Watts picoWatts

GPS Input Signal Level -130 dBm -130 1E-16 0.0001

GPS Receive Antenna amplifier gain 38 dB -92 6.30957E-13 0.63

GPS RF Amplifier gain 23 dB -69 1.25893E-10 125.89

GPS RF Attenuator -20 dB -89 1.25893E-12 1.26

LMR400 Coax loss per foot -0.067 dB

Coax Length 100 feet

Total Coax Loss -6.7 dB -95.7 2.69153E-13 0.269

GPS Transmitting Antenna Gain 3 dB -92.7 5.37032E-13 0.537

Distance from transmit antenna 1 meters

Distance from transmit antenna 3.2808399 feet

Pathloss to unit under test -34.22290244 dB -126.9229024 2.031E-16 0.0002031

Signal level at unit under test ERIP to ERP -129.0629024 1.24082E-16 0.000124082

Distance from transmit antenna 30.48 meters

Distance from transmit antenna 100.0000002 feet

Pathloss to 100 ft -63.9032017 dB -156.6032017 2.18615E-19 2.18615E-07

Signal level at 100 ft ERP -158.7432017 1.33561E-19 1.33561E-07

GPS Signal Analysis

Frequency 1575.42 MHz Signal Level

Wavelength 0.19042541 meters dBm Watts picoWatts

GPS Input Signal Level -130 dBm -130 1E-16 0.0001

GPS Receive Antenna amplifier gain 38 dB -92 6.30957E-13 0.63

GPS RF Amplifier gain 23 dB -69 1.25893E-10 125.89

GPS RF Attenuator -20 dB -89 1.25893E-12 1.26

LMR400 Coax loss per foot -0.067 dB

Coax Length 100 feet

Total Coax Loss -6.7 dB -95.7 2.69153E-13 0.269

GPS Transmitting Antenna Gain 3 dB -92.7 5.37032E-13 0.537

Distance from transmit antenna 1 meters

Distance from transmit antenna 3.2808399 feet

Pathloss to unit under test -36.38969194 dB -129.0896919 1.23319E-16 0.000123319

Signal level at unit under test ERIP to ERP -131.2296919 7.53409E-17 7.53409E-05

Distance from transmit antenna 30.48 meters

Distance from transmit antenna 100.0000002 feet

Pathloss to 100 ft -66.06999119 dB -158.7699912 1.3274E-19 1.3274E-07

Signal level at 100 ft ERP -160.9099912 8.10963E-20 8.10963E-08