

John Kennedy

From: Thomas J Fagan [tjfagan@raytheon.com]
Sent: Tuesday, November 22, 2005 12:34 AM
To: John Kennedy
Cc: Michele__F__Brown" <mfbrown@raytheon.com/@mck.us.ray.com"@ds02t00.directory.ray.com
Subject: RE: FCC license 0143-PL-EX-2004

John,

You are correct, I was looking at the wrong value. The PEP power is 0.0000753 picowatts Peak ERP for 1575.42 MHz, a very small signal indeed.

Tom
 Thomas J. Fagan
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 E3 & Spectrum Management
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 Tucson Arizona 85734-1337
 520 794-0227
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tjfagan@raytheon.com

-----"John Kennedy" <John.Kennedy@fcc.gov> wrote: -----

To: "Thomas J Fagan" <tjfagan@raytheon.com>
 From: "John Kennedy" <John.Kennedy@fcc.gov>
 Date: 11/21/2005 10:47AM
 cc: "Michele F Brown" <mfbrown@raytheon.com>
 Subject: RE: FCC license 0143-PL-EX-2004

Mr. Fagan,
 Based upon the table below, it appears that the PEP power is 0.0000753 picowatts Peak ERP for 1575.42 MHz . Correct?

John W. Kennedy
 Federal Communications Commission
 Office of Engineering and Technology
 Experimental Licensing Branch
 (202) 418-2484

*** Non-Public: For Internal Use Only ***

-----Original Message-----

From: Thomas J Fagan [mailto:tjfagan@raytheon.com]
Sent: Monday, November 21, 2005 10:34 AM
To: John Kennedy
Cc: Michele F Brown
Subject: FCC license 0143-PL-EX-2004

John

11/22/2005

Here is the calculations you requested for 1575.42 MHz.

Looks like the PEP power will be .000124 picowatts 1227.75 MHz and .000123 picowatts for 1575.42 MHz

GPS Signal Analysis

Frequency	1575.42 MHz	Signal Level		
Wavelength	0.190425 meters	dBm	Watts	picoW
GPS Input Signal Level	-130 dBm	-130	1E-16	0.000124
GPS Receive Antenna amplifier gain	38 dB	-92	6.3E-13	
GPS RF Amplifier gain	23 dB	-69	1.3E-10	1.3E-10
GPS RF Attenuator	-20 dB	-89	1.3E-12	
LMR400 Coax loss per foot	-0.067 dB			
Coax Length	100 feet			
Total Coax Loss	-6.7 dB	-95.7	2.7E-13	
GPS Transmitting Antenna Gain	3 dB	-92.7	5.4E-13	
Distance from transmit antenna	1 meters			
Distance from transmit antenna	3.28084 feet			
Pathloss to unit under test	-36.3897 dB	-129.1	1.2E-16	0.000123
Signal level at unit under test ERIP to ERP		-131.2	7.5E-17	7.5E-17
Distance from transmit antenna	30.48 meters			
Distance from transmit antenna	100 feet			
Pathloss to 100 ft	-66.07 dB	-158.8	1.3E-19	1.3E-19
Signal level at 100 ft ERP		-160.9	8.1E-20	8.1E-20

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GPS Signal Analysis

Frequency	1575.42 MHz	Signal Level		
Wavelength	0.190425 meters	dBm	Watts	picoWatts
GPS Input Signal Level	-130 dBm	-130	1E-16	0.0001
GPS Receive Antenna amplifier gain	38 dB	-92	6.3E-13	0.63
GPS RF Amplifier gain	23 dB	-69	1.3E-10	125.89
GPS RF Attenuator	-20 dB	-89	1.3E-12	1.26
LMR400 Coax loss per foot	-0.067 dB			
Coax Length	100 feet			
Total Coax Loss	-6.7 dB	-95.7	2.7E-13	0.269
GPS Transmitting Antenna Gain	3 dB	-92.7	5.4E-13	0.537
Distance from transmit antenna	1 meters			
Distance from transmit antenna	3.28084 feet			
Pathloss to unit under test	-36.3897 dB	-129.1	1.2E-16	0.000123
Signal level at unit under test ERIP to ERP		-131.2	7.5E-17	7.53E-05
Distance from transmit antenna	30.48 meters			
Distance from transmit antenna	100 feet			
Pathloss to 100 ft	-66.07 dB	-158.8	1.3E-19	1.33E-07
Signal level at 100 ft ERP		-160.9	8.1E-20	8.11E-08

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