



Test Report

Product Name : Wireless GPS Logger

Model No. : M-241xx

FCC ID. : RJIM-241XX

Applicant : Holux Technology, Inc.

Address : 1F, No.30, R&D Rd. II, Hsinchu City 300, Taiwan (R.O.C.)

Date of Receipt : 2007/10/26

Issued Date : 2007/11/23

Report No. : 07B026R-RFUSP06V01

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date : 2007/11/23

Report No. : 07B026R-RFUSP06V01



Product Name : Wireless GPS Logger
 Applicant : Holux Technology, Inc.
 Address : 1F, No.30, R&D Rd. II, Hsinchu City 300, Taiwan (R.O.C.)
 Manufacturer : Holux Technology, Inc.
 Model No. : M-241xx
 FCC ID. : RJIM-241XX
 Rated Voltage : AC 120 V / 60 Hz
 EUT Voltage : Mode 1: DC 5V(Power by PC)
 Mode 2: DC 5V (Power by Battery)
 Trade Name : **HOLUX**
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247:2006
 Test Result : Complied

The test results relate only to the samples tested.

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Documented By : Carol Tsai

(Carol Tsai / Adm. Specialist)

Tested By : Sheena Huang

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Approved By : Roy Wang

(Roy Wang / Manager)

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1. General Information

1.1. EUT Description

Product Name	Wireless GPS Logger
Trade Name	HOLUX
Model No.	M-241xx
Frequency Range	2402~2480MHz
Channel Number	79
Type of Modulation	GFSK
Channel Control	Auto
Antenna Type	Soldered on PCB
Antenna Gain	0dBi

Component	
Car Charger	Chentai Technology Enterprise Co., Ltd, CC-0103 I/P: 12V-24V O/P: DC 5.0V / 850mA
USB Cable	Shielded, 1.42m

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00	2402 MHz	Channel 20	2422 MHz	Channel 40	2442 MHz	Channel 60	2462 MHz
Channel 01	2403 MHz	Channel 21	2423 MHz	Channel 41	2443 MHz	Channel 61	2463 MHz
Channel 02	2404 MHz	Channel 22	2424 MHz	Channel 42	2444 MHz	Channel 62	2464 MHz
Channel 03	2405 MHz	Channel 23	2425 MHz	Channel 43	2445 MHz	Channel 63	2465 MHz
Channel 04	2406 MHz	Channel 24	2426 MHz	Channel 44	2446 MHz	Channel 64	2466 MHz
Channel 05	2407 MHz	Channel 25	2427 MHz	Channel 45	2447 MHz	Channel 65	2467 MHz
Channel 06	2408 MHz	Channel 26	2428 MHz	Channel 46	2448 MHz	Channel 66	2468 MHz
Channel 07	2409 MHz	Channel 27	2429 MHz	Channel 47	2449 MHz	Channel 67	2469 MHz
Channel 08	2410 MHz	Channel 28	2430 MHz	Channel 48	2450 MHz	Channel 68	2470 MHz
Channel 09	2411 MHz	Channel 29	2431 MHz	Channel 49	2451 MHz	Channel 69	2471 MHz
Channel 10	2412 MHz	Channel 30	2432 MHz	Channel 50	2452 MHz	Channel 70	2472 MHz
Channel 11	2413 MHz	Channel 31	2433 MHz	Channel 51	2453 MHz	Channel 71	2473 MHz
Channel 12	2414 MHz	Channel 32	2434 MHz	Channel 52	2454 MHz	Channel 72	2474 MHz
Channel 13	2415 MHz	Channel 33	2435 MHz	Channel 53	2455 MHz	Channel 73	2475 MHz
Channel 14	2416 MHz	Channel 34	2436 MHz	Channel 54	2456 MHz	Channel 74	2476 MHz
Channel 15	2417 MHz	Channel 35	2437 MHz	Channel 55	2457 MHz	Channel 75	2477 MHz
Channel 16	2418 MHz	Channel 36	2438 MHz	Channel 56	2458 MHz	Channel 76	2478 MHz
Channel 17	2419 MHz	Channel 37	2439 MHz	Channel 57	2459 MHz	Channel 77	2479 MHz
Channel 18	2420 MHz	Channel 38	2440 MHz	Channel 58	2460 MHz	Channel 78	2480 MHz
Channel 19	2421 MHz	Channel 39	2441 MHz	Channel 59	2461 MHz		

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals. Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. The transmitter is presented with a continuous data stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its 79 channels and over the minimum number of hopping channels (75 channels).

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Note:

1. This device is a Wireless GPS Logger included a 2.4GHz receiving function, and 2.4GHz transmitting function.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regards to the frequency band operation; the lowest, middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 07B026R-RFUSP01V02 under Declaration of Conformity.

1.3. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-Test Mode	
EMI	Mode 1: Transmit (USB) Mode 2: Transmit (Car Charger)
Final Test Mode	
EMI	Mode 1: Transmit (USB) Mode 2: Transmit (Car Charger)

Emission	Mode 1	Mode 2
Conducted Emission	Yes	No
Peak Power Output	Yes	No
Radiated Emission	Yes	Yes
Band Edge	Yes	No
Channel of Number	Yes	No
Channel Separation	Yes	No
Occupied Bandwidth	Yes	No
Dwell Time	Yes	No

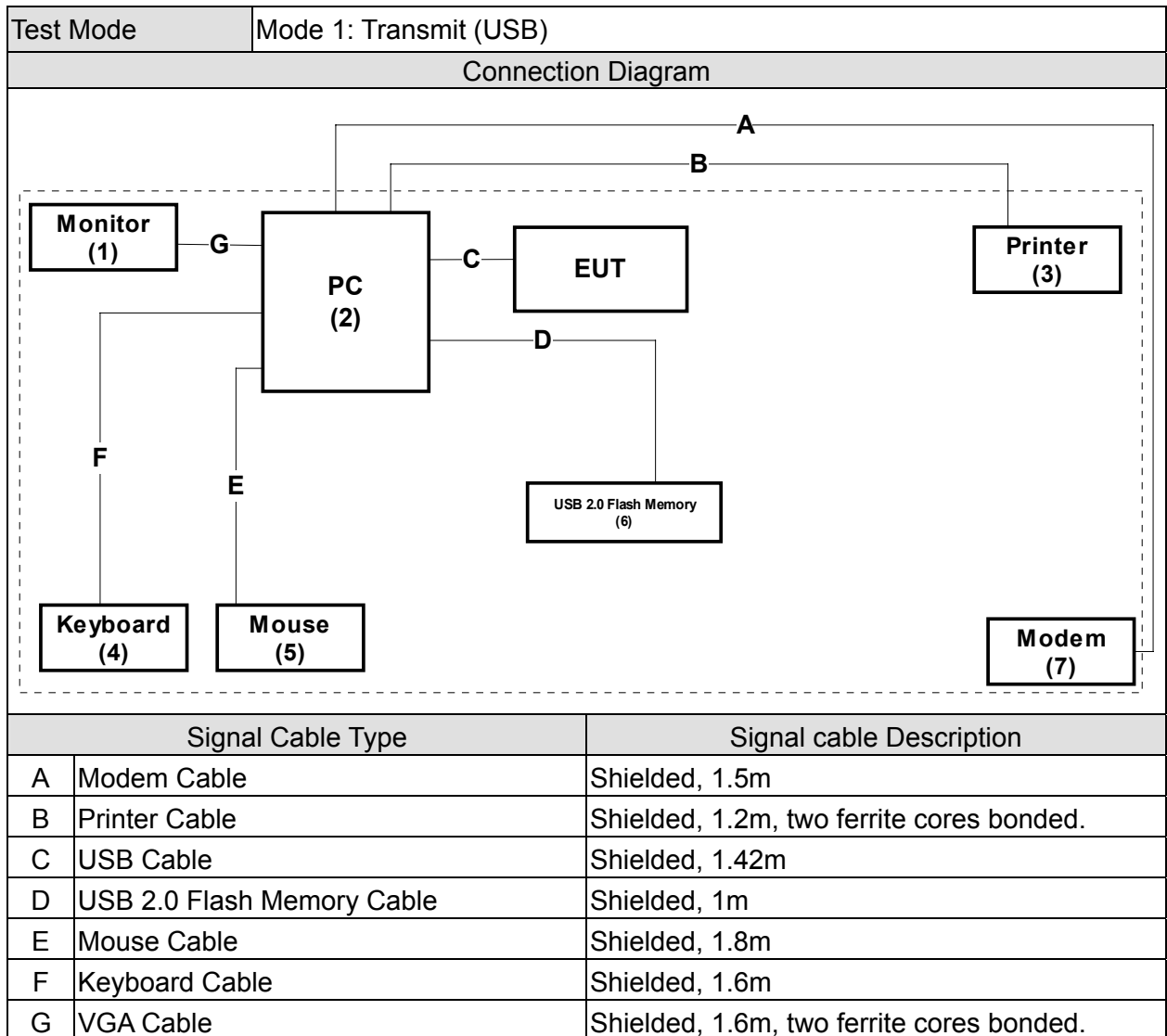
1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Test Mode		Mode 1: Transmit (USB)				
Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Monitor	CHI MEI	A170E1-09	3UC120954HA0063	DoC	Non-Shielded, 1.8m
2	PC	IBM	6282-93	960E411	DoC	Non-Shielded, 1.8m
3	Printer	HP	C2642A	TH86M1M34W	DoC	Non-Shielded, 0.7m
4	Keyboard	Logitech	Y-SM46	SY525U18099	DoC	--
5	Mouse	Logitech	M-SBF83	HCA52200076	DoC	--
6	USB 2.0 Flash Memory	Sony	USM2GJX	N/A	DoC	--
7	Modem	ACEEX	DM-1414	0102027544	DoC	Non-Shielded, 1.6m

Test Mode		Mode 2: Transmit (Car Charger)				
Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Car Charger	Chentai Technology Enterprise Co., Ltd	CC-0103	N/A	DoC	-
2	Battery	ACDelco	S70D23L	N/A	DoC	-

1.5. Configuration of tested System



Test Mode		Mode 2: Transmit (Car Charger)	
Connection Diagram			
<pre> graph TD CC["Car Charger (1)"] --- A --- EUT["EUT"] CC --- B1["B"] CC --- B2["B"] B1 --- B["Battery (2)"] B2 --- B </pre>			
Signal Cable Type		Signal cable Description	
A	USB Cable	Shielded, 1.42m	
B	Power Line	Non-Shielded, 1m, 2 Pcs.	

1.6. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	The EUT will play the function from GPS program and Bluetooth program.
4	Verify the model operation.
5	Repeat the above procedure (3) to (4).

1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 B 15.107 Conducted Emission	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	58
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	54
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Channel Of Number (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	53
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Channel Separation (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	54
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	57
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Dwell Time (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	58
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description:

January 24, 2005 File on
Federal Communications Commission
Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 365520



Accredited by CNLA
Accreditation Number: 1313
Effective through: December 27, 2007



1313
ILAC MRA

Accredited by NVLAP
NVLAP Lab Code: 200347-0
Effective through: September 30, 2008



Site Name: Quietek Corporation

Site Address: No.75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
TEL : 886-3-592-8858 / FAX : 886-3-592-8859
E-Mail : service@quietek.com

2. Conducted Emission

2.1. Test Equipment

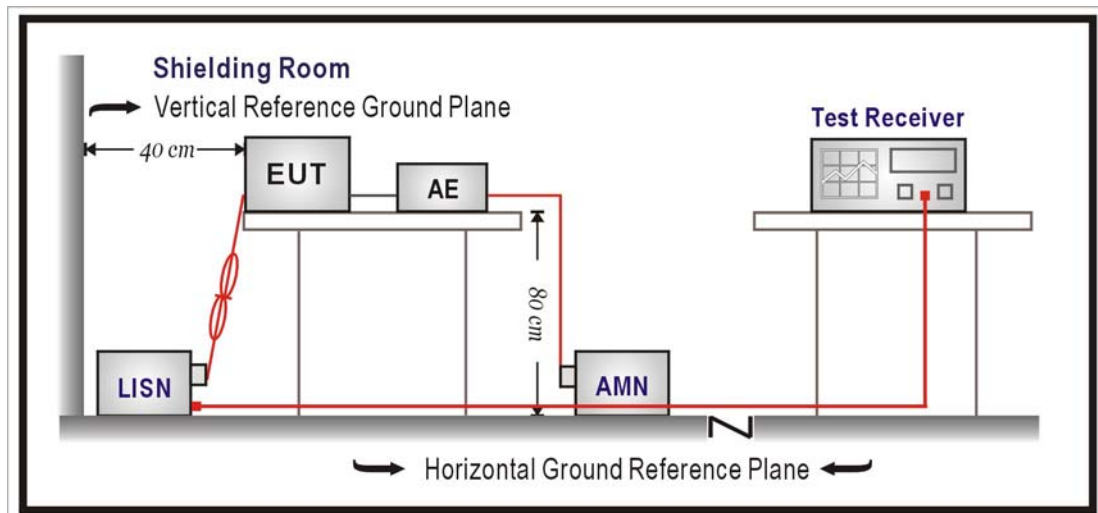
The following test equipment are used during the test:

Conducted Emission / SR2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
4-Wire ISN	R & S	ENY 41	837032/001	2007/04/15
Artificial Mains Network	R & S	ENV4200	848411/010	2007/03/13
Double 2-Wire ISN	R & S	ENY 22	835354/008	2007/04/15
LISN	R & S	ESH3-Z5	825562/002	2007/03/31
Pulse Limiter	R & S	ZSH3Z2	357.8810.54	2007/07/19
Test Receiver	R & S	ESCS 30	100122	2007/02/21

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

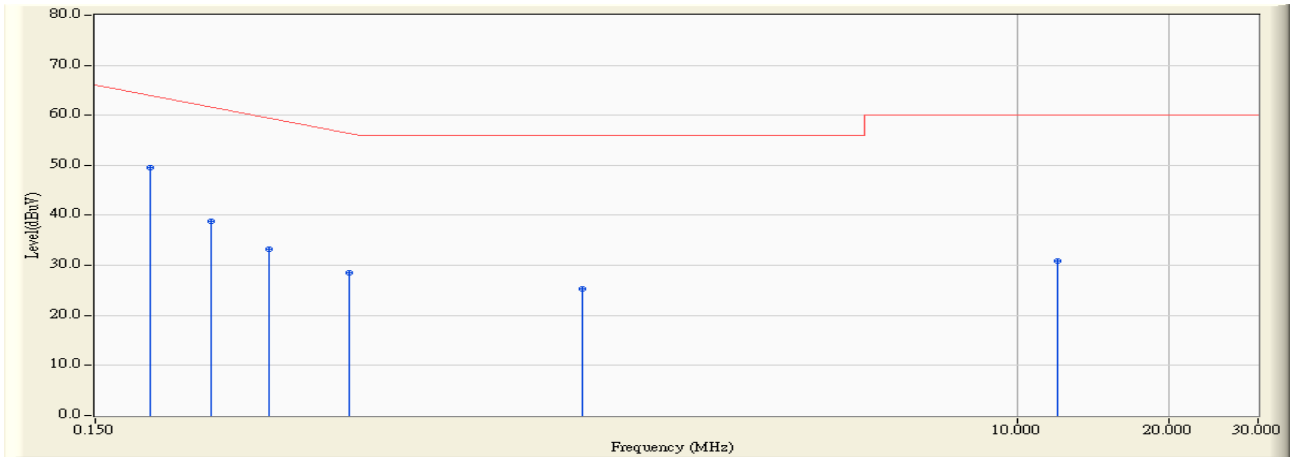
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2006

2.6. Test Result

Site : QuieTek ShieldingRoom2	Time : 2007/11/20 - 16:11
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Wireless GPS Logger	Probe : SR3_LISN(16A) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)

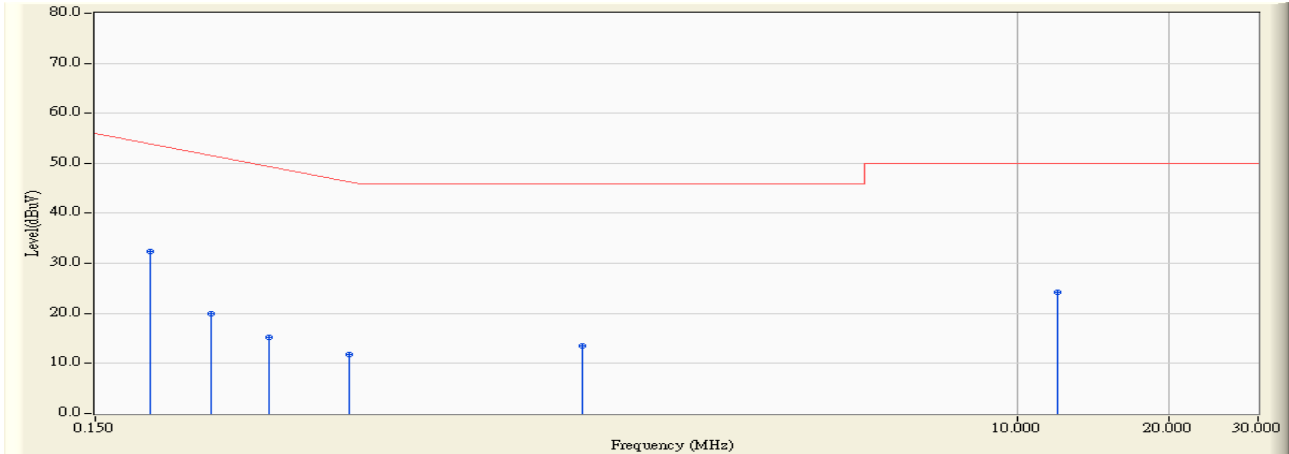


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.193	0.151	49.400	49.551	-15.220	64.771	QUASIPeAK
2		0.255	0.162	38.660	38.822	-24.178	63.000	QUASIPeAK
3		0.330	0.187	32.950	33.137	-27.720	60.857	QUASIPeAK
4		0.478	0.206	28.270	28.476	-28.153	56.629	QUASIPeAK
5		1.379	0.290	25.040	25.330	-30.670	56.000	QUASIPeAK
6		12.033	0.780	30.190	30.970	-29.030	60.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : QuieTek ShieldingRoom2	Time : 2007/11/20 - 16:11
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Wireless GPS Logger	Probe : SR3_LISN(16A) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)

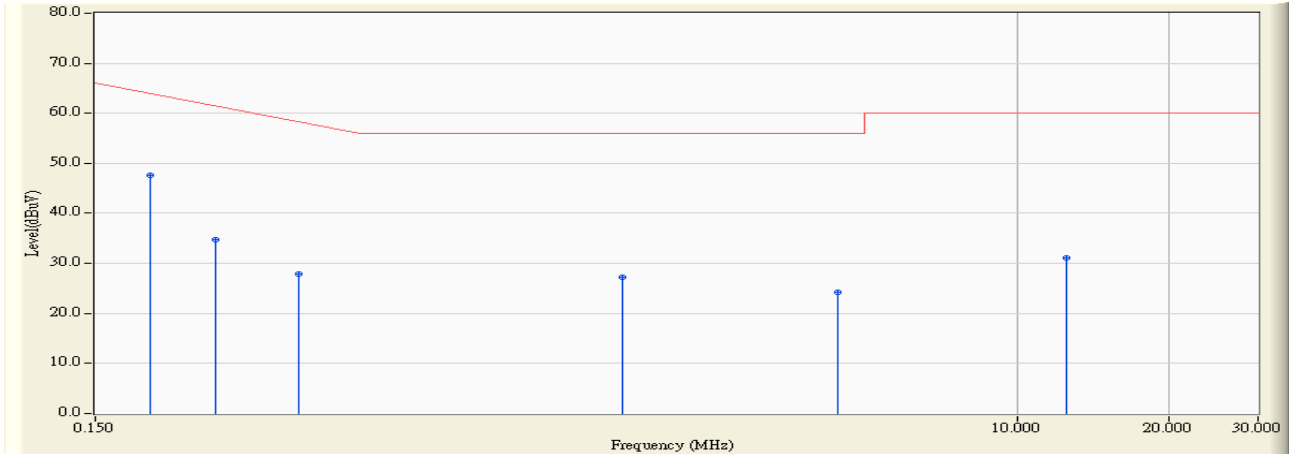


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.193	0.151	32.200	32.351	-22.420	54.771	AVERAGE
2		0.255	0.162	19.760	19.922	-33.078	53.000	AVERAGE
3		0.330	0.187	15.080	15.267	-35.590	50.857	AVERAGE
4		0.478	0.206	11.590	11.796	-34.833	46.629	AVERAGE
5		1.379	0.290	13.320	13.610	-32.390	46.000	AVERAGE
6		12.033	0.780	23.410	24.190	-25.810	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : Quietek ShieldingRoom2	Time : 2007/11/20 - 16:16
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Wireless GPS Logger	Probe : SR3_LISN(16A) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)

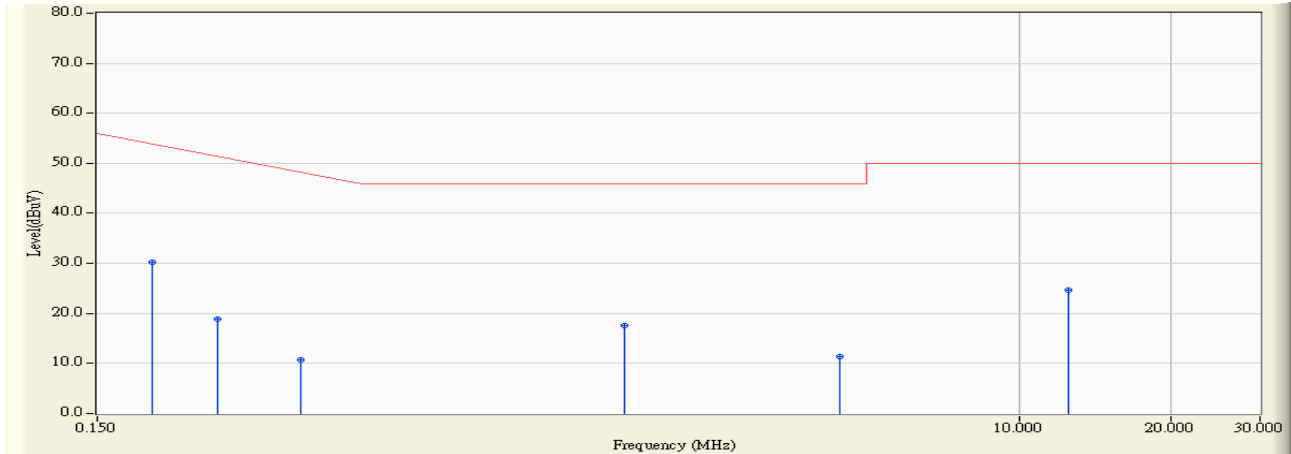


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.193	0.151	47.450	47.601	-17.170	64.771	QUASIPeAK
2		0.259	0.163	34.520	34.683	-28.203	62.886	QUASIPeAK
3		0.380	0.194	-3.050	-2.856	-62.285	59.429	QUASIPeAK
4		0.380	0.194	27.620	27.814	-31.615	59.429	QUASIPeAK
5		1.654	0.333	26.980	27.313	-28.687	56.000	QUASIPeAK
6		4.408	0.450	23.840	24.290	-31.710	56.000	QUASIPeAK
7		12.568	0.740	30.380	31.120	-28.880	60.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : Quietek ShieldingRoom2	Time : 2007/11/20 - 16:16
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Wireless GPS Logger	Probe : SR3_LISN(16A) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.193	0.151	30.140	30.291	-24.480	54.771	AVERAGE
2		0.259	0.163	18.750	18.913	-33.973	52.886	AVERAGE
3		0.380	0.194	-6.430	-6.236	-55.665	49.429	AVERAGE
4		0.380	0.194	10.600	10.794	-38.635	49.429	AVERAGE
5		1.654	0.333	17.150	17.483	-28.517	46.000	AVERAGE
6		4.408	0.450	11.020	11.470	-34.530	46.000	AVERAGE
7		12.568	0.740	23.950	24.690	-25.310	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3. Peak Power Output

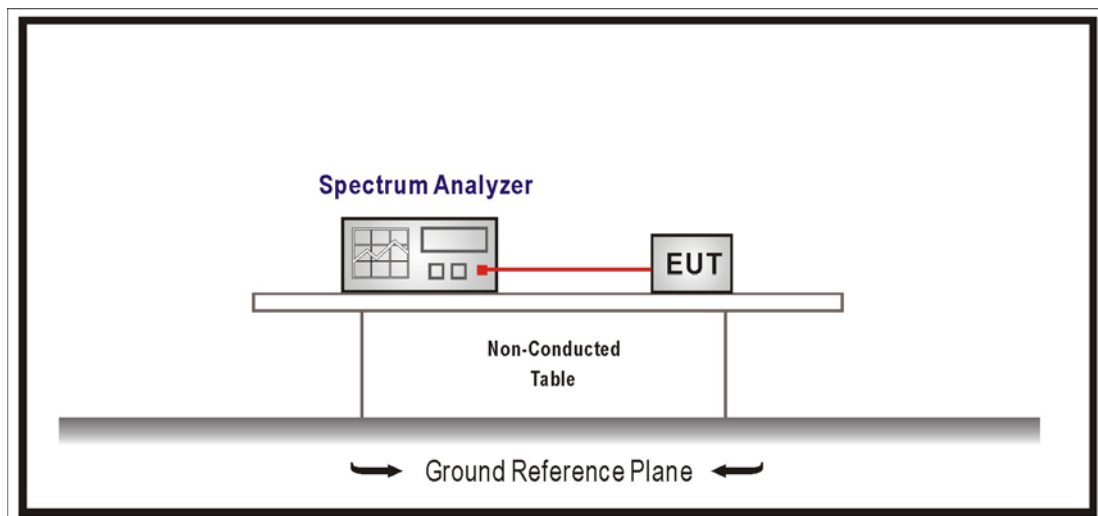
3.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R&S	FSP/ 100005	Oct., 2007
2	No.1 OATS			Sep., 2007

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: 1 Watt for systems employing at least 50 hopping channels; and, 0.25 Watts for systems employing less than 50 hopping channels.

For frequency hopping systems in the 2400-2483.5 MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1Watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watt.

3.4. Test Specification

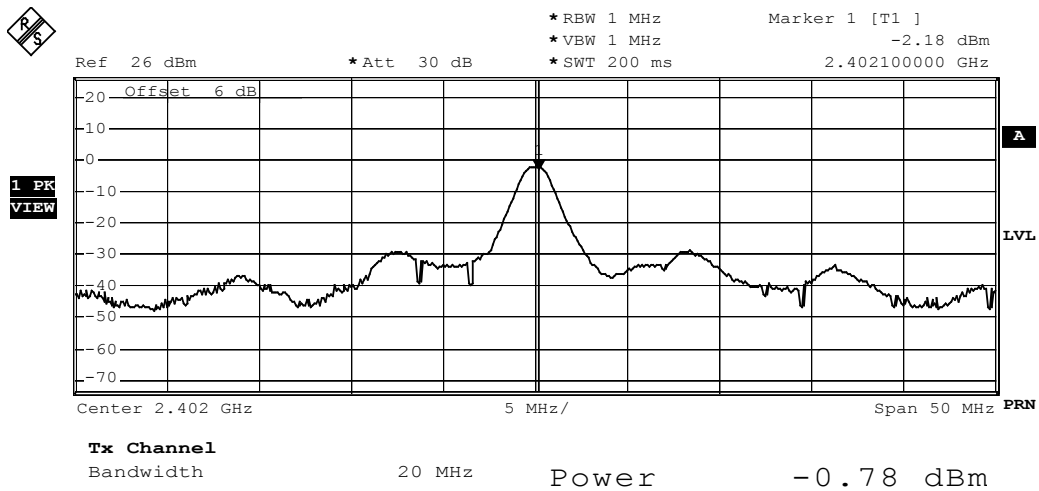
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

3.5. Test Result

Product	Wireless GPS Logger		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/19	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402.00	-0.78	1Watt= 30 dBm	Pass

Channel 00

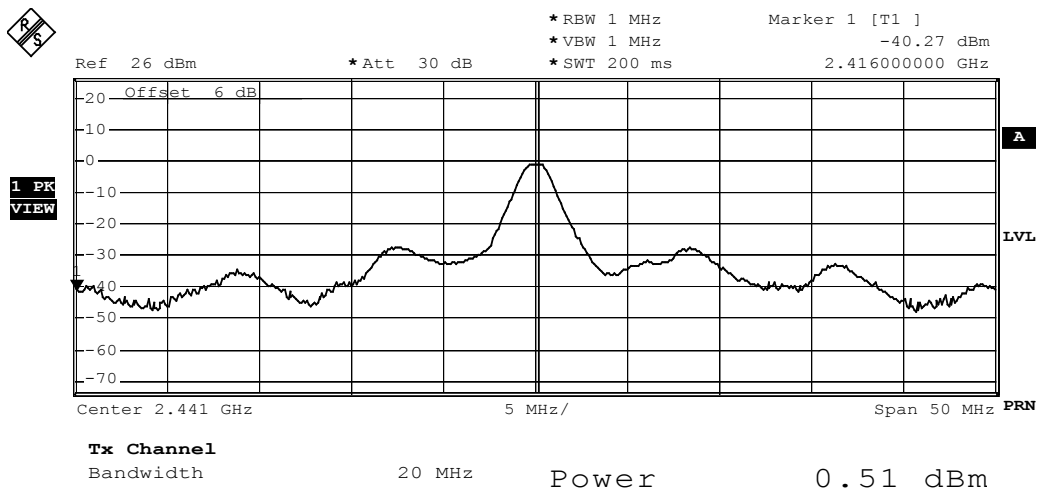


Date: 19.NOV.2007 21:16:11

Product	Wireless GPS Logger		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/19	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2441.00	0.51	1Watt= 30 dBm	Pass

Channel 39

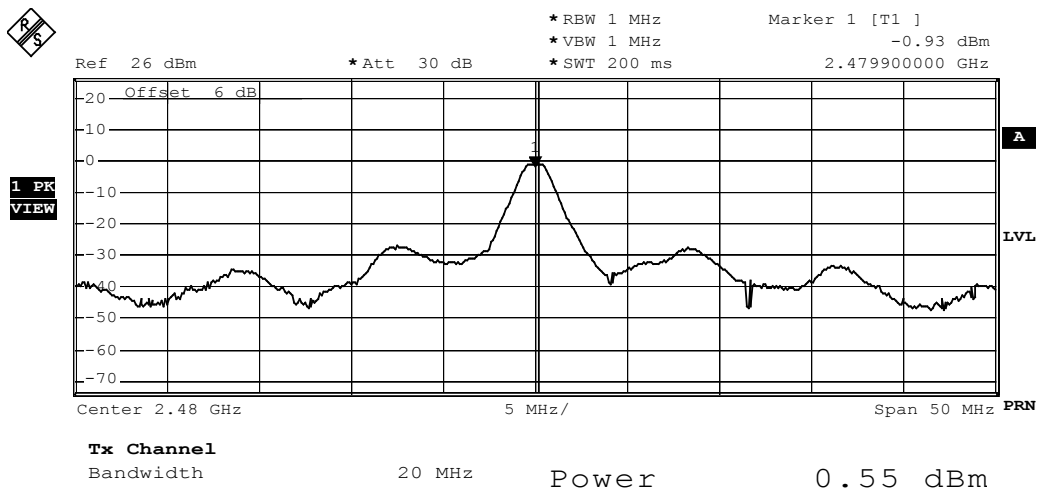


Date: 19.NOV.2007 21:17:16

Product	Wireless GPS Logger		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/19	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
78	2480.00	0.55	1Watt= 30 dBm	Pass

Channel 78



Date: 19.NOV.2007 21:18:10

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the test:

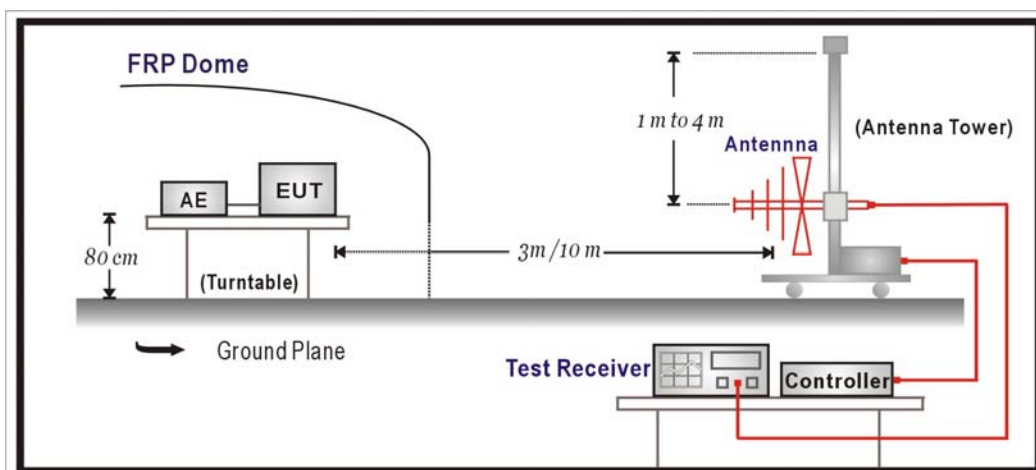
Radiated Emission / Site1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2895	2007/09/03
Horn Antenna	Electro Metrics	EM-6961	103325	2007/03/15
Pre-Amplifier	HP	8449B	3008A01123	2007/11/15
Pre-Amplifier	Quietek	AP-025C	N/A	N/A
Spectrum Analyzer	R & S	FSP40	100005	2007/08/25
Spectrum Analyzer	Advantest	R3162	120300649	2006/11/24
Test Receiver	R & S	ESCS 30	825442/017	2007/02/13

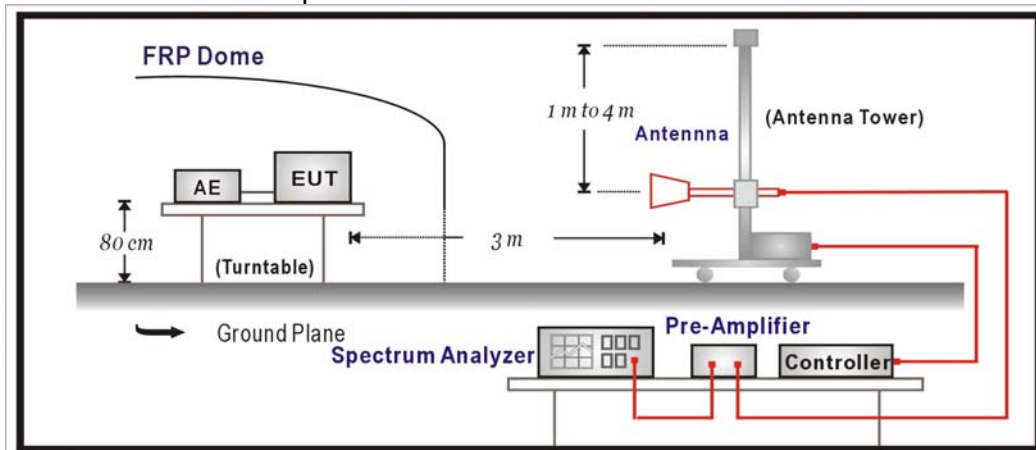
- Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
 2. "N/A" Ca1.Date is used to Pre-test, not final test.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m	dBuV/m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

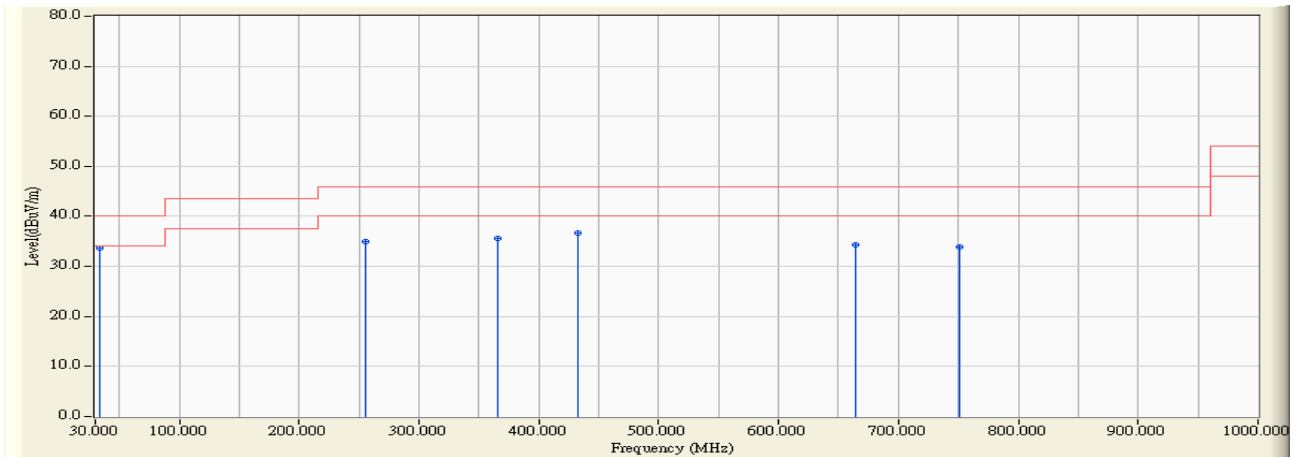
4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2006

4.6. Test Result

30MHz-1GHz Spurious:

Site : Site 1	Time : 2007/11/19 - 17:03
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_30-1G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)

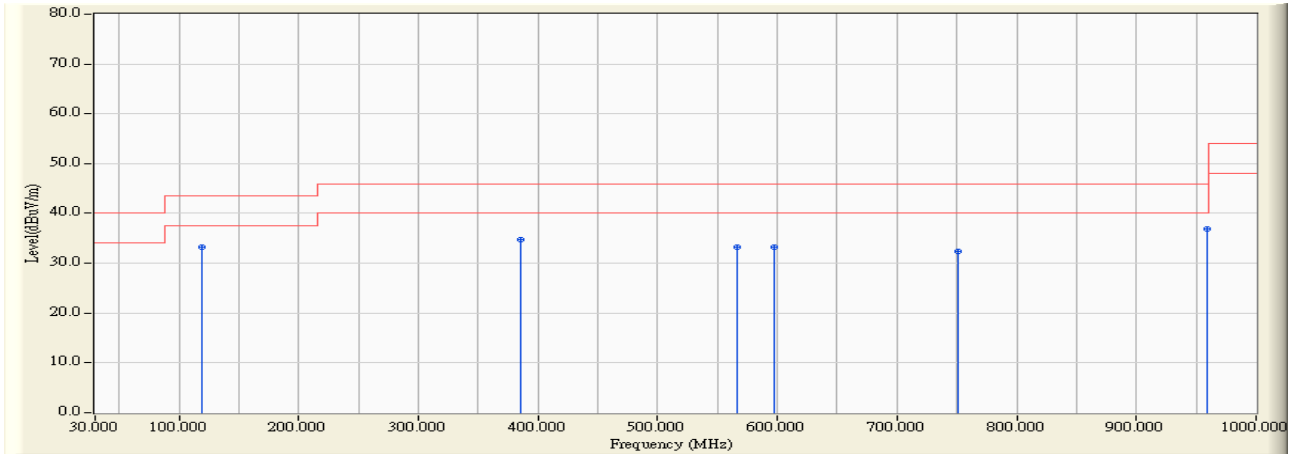


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	33.888	-30.928	64.655	33.727	-6.273	40.000	QUASIPeAK
2		255.491	-37.354	72.219	34.865	-11.135	46.000	QUASIPeAK
3		366.293	-34.103	69.673	35.570	-10.430	46.000	QUASIPeAK
4		432.385	-27.568	64.241	36.673	-9.327	46.000	QUASIPeAK
5		663.707	-28.367	62.659	34.292	-11.708	46.000	QUASIPeAK
6		751.182	-25.979	59.891	33.912	-12.088	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : Site 1	Time : 2007/11/19 - 17:10
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_30-1G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)

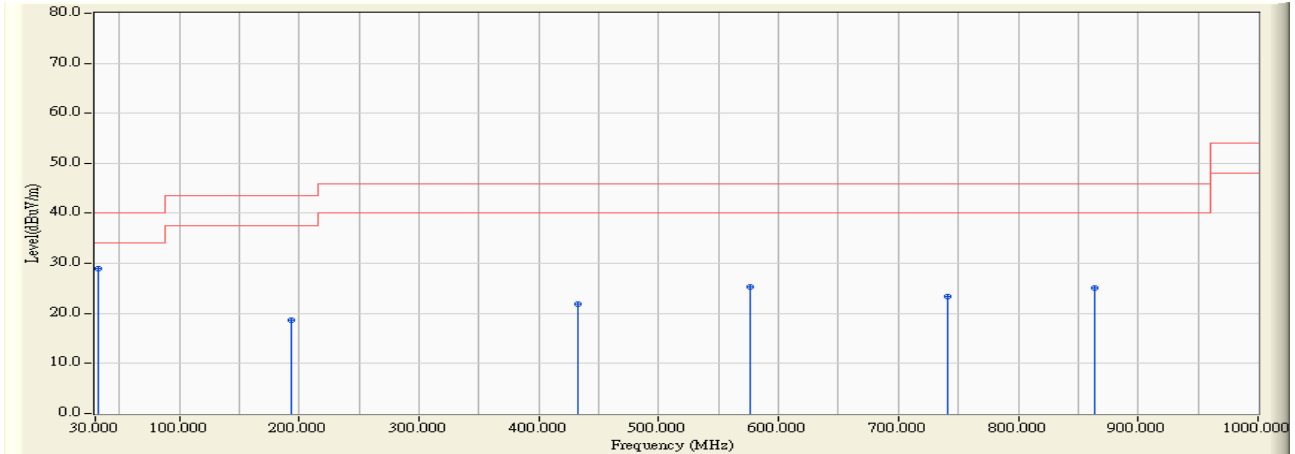


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	119.419	-33.520	66.711	33.191	-10.309	43.500	QUASIPeAK
2	385.731	-29.855	64.594	34.739	-11.261	46.000	QUASIPeAK
3	566.513	-26.288	59.510	33.222	-12.778	46.000	QUASIPeAK
4	597.615	-27.023	60.167	33.144	-12.856	46.000	QUASIPeAK
5	751.182	-27.560	59.882	32.322	-13.678	46.000	QUASIPeAK
6	* 959.178	-22.994	59.900	36.906	-9.094	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : Site 1	Time : 2007/11/22 - 14:05
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_30-1G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit (Car Charger)

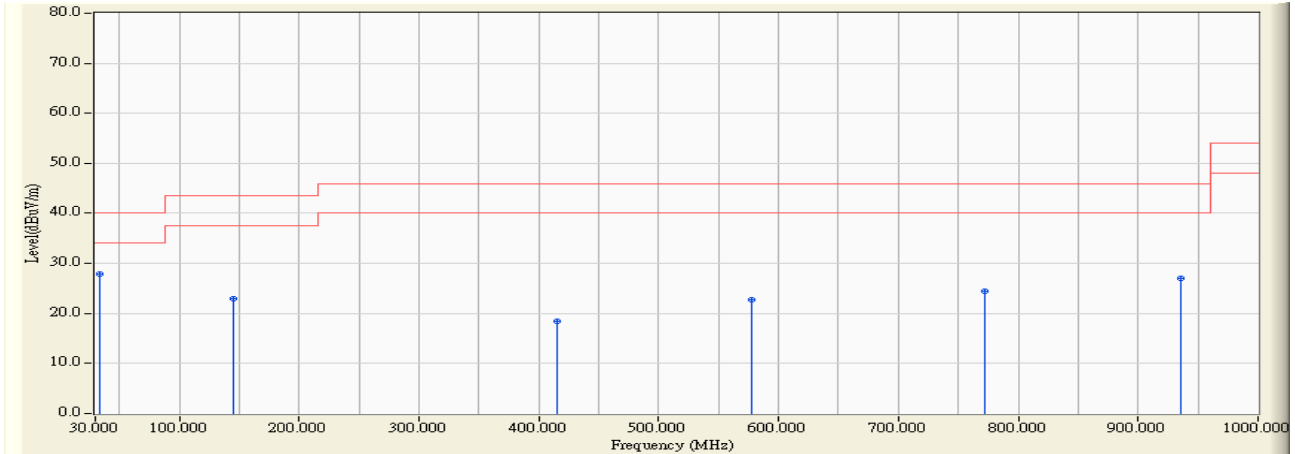


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	31.944	-27.157	56.200	29.043	-10.957	40.000	QUASIPeAK
2		193.287	-44.667	63.283	18.616	-24.884	43.500	QUASIPeAK
3		432.385	-27.568	49.529	21.961	-24.039	46.000	QUASIPeAK
4		576.232	-24.470	49.791	25.321	-20.679	46.000	QUASIPeAK
5		741.463	-24.892	48.188	23.296	-22.704	46.000	QUASIPeAK
6		863.928	-25.161	50.259	25.098	-20.902	46.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : Site 1	Time : 2007/11/22 - 14:08
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_30-1G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit (Car Charger)



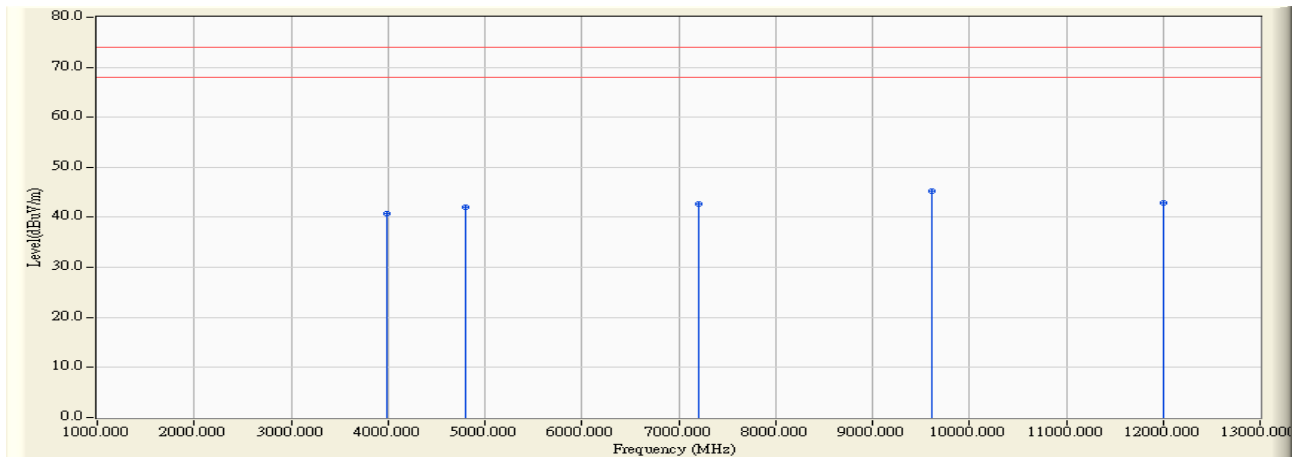
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	33.888	-32.171	60.154	27.983	-12.017	40.000	QUASPEAK
2		144.689	-34.234	57.082	22.848	-20.652	43.500	QUASPEAK
3		414.890	-29.484	47.970	18.486	-27.514	46.000	QUASPEAK
4		578.176	-25.374	48.108	22.734	-23.266	46.000	QUASPEAK
5		772.565	-23.840	48.375	24.535	-21.465	46.000	QUASPEAK
6		935.852	-21.860	48.918	27.059	-18.941	46.000	QUASPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Harmonic & Spurious:

Site : Site 1	Time : 2007/10/30 - 16:25
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)-2402 MHz

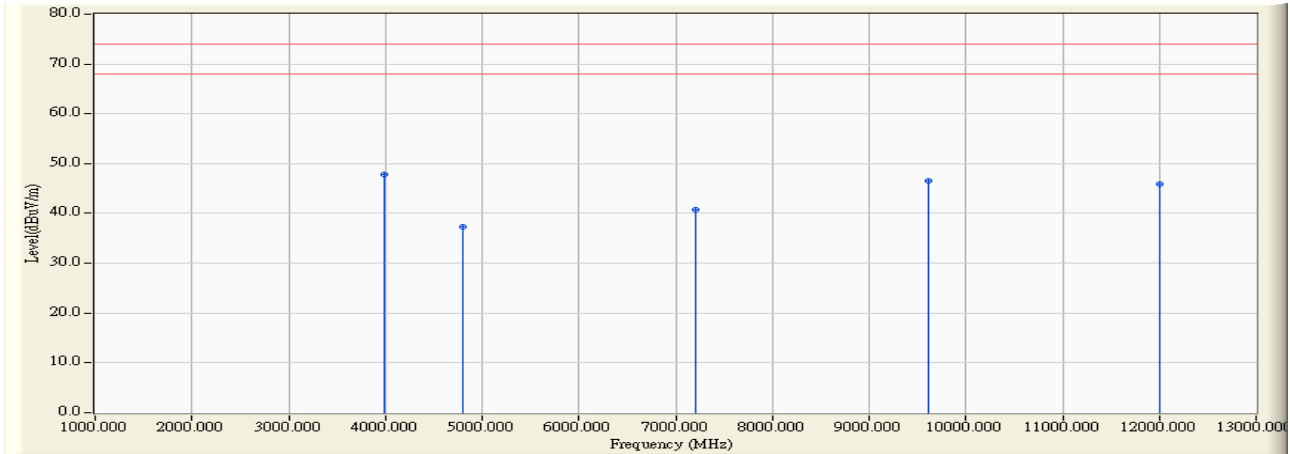


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	3989.120	-1.927	42.720	40.793	-33.207	74.000	54.00	PEAK
2	4804.020	-0.273	42.300	42.027	-31.973	74.000	54.00	PEAK
3	7206.120	5.741	37.040	42.781	-31.219	74.000	54.00	PEAK
4	* 9608.130	8.720	36.440	45.160	-28.840	74.000	54.00	PEAK
5	12010.010	6.485	36.370	42.854	-31.146	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/10/30 - 16:40
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)-2402 MHz

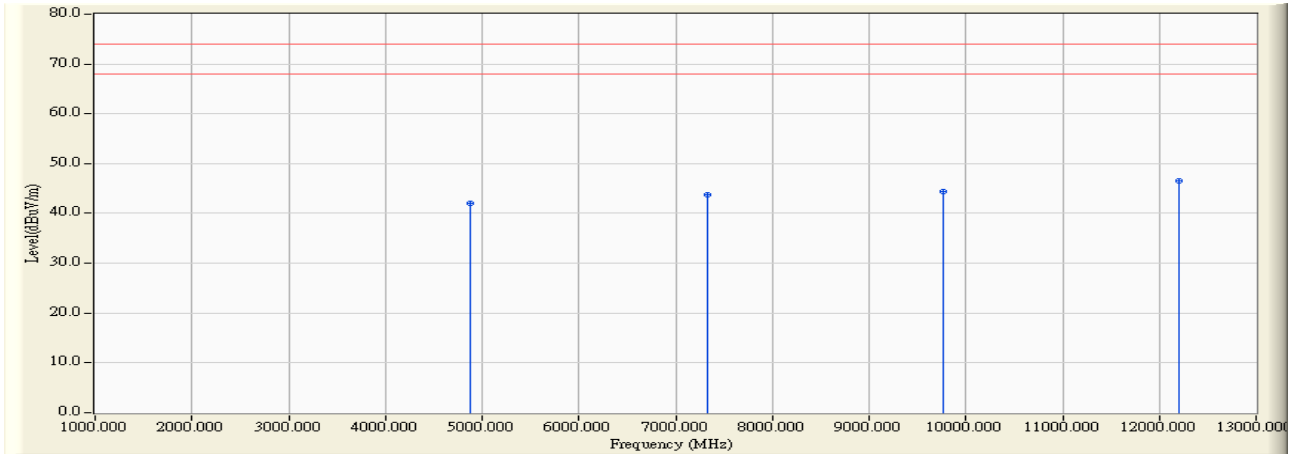


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	3989.120	-3.613	51.450	47.837	-26.163	74.000	54.00	PEAK
2		4804.010	-2.056	39.430	37.374	-36.626	74.000	54.00	PEAK
3		7206.200	5.685	35.000	40.686	-33.314	74.000	54.00	PEAK
4		9608.010	10.707	35.900	46.607	-27.393	74.000	54.00	PEAK
5		12010.020	12.066	33.790	45.855	-28.145	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/10/30 - 17:07
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)-2441 MHz

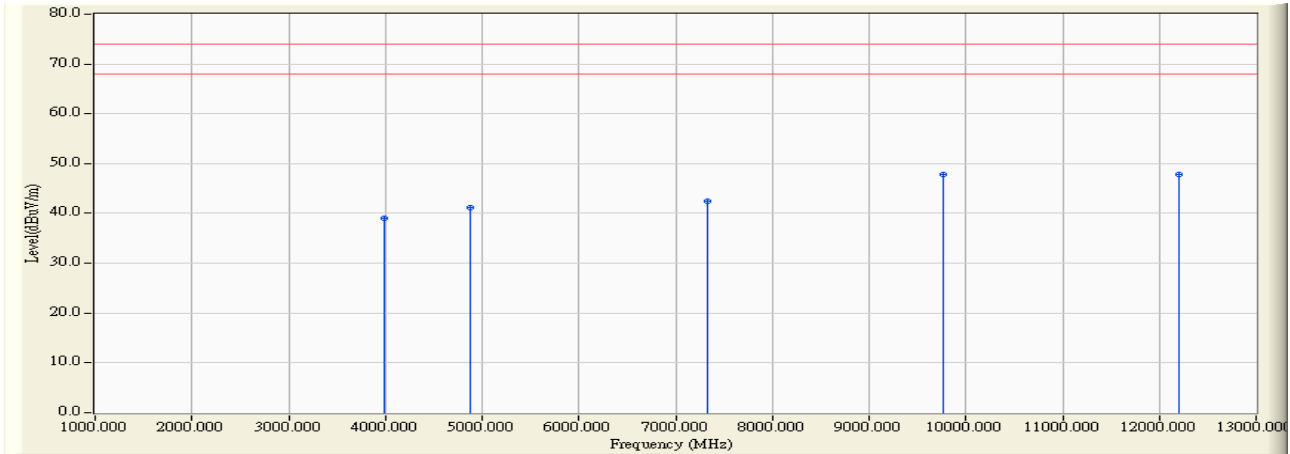


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	4882.020	0.219	41.870	42.089	-31.911	74.000	54.00	PEAK
2	7323.100	5.859	37.850	43.709	-30.291	74.000	54.00	PEAK
3	9764.020	9.243	35.160	44.402	-29.598	74.000	54.00	PEAK
4	* 12205.100	13.024	33.600	46.624	-27.376	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/10/30 - 17:15
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)-2441 MHz

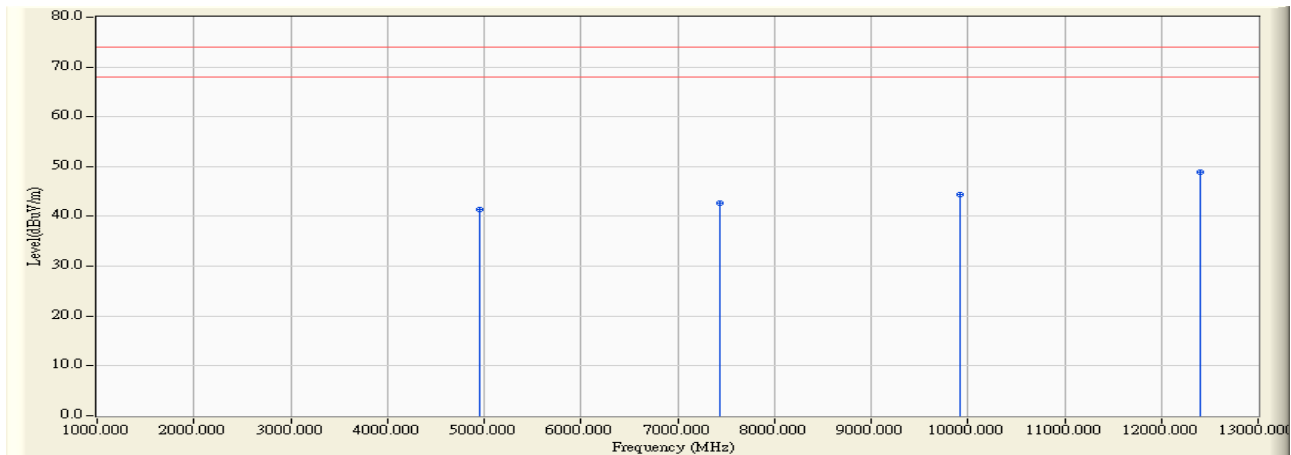


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	3989.120	-3.613	42.610	38.997	-35.003	74.000	54.00	PEAK
2	4882.030	-1.421	42.610	41.190	-32.810	74.000	54.00	PEAK
3	7323.020	5.859	36.510	42.369	-31.631	74.000	54.00	PEAK
4	9764.200	11.243	36.590	47.833	-26.167	74.000	54.00	PEAK
5	* 12205.100	14.493	33.380	47.873	-26.127	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/10/30 - 17:33
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)-2480 MHz

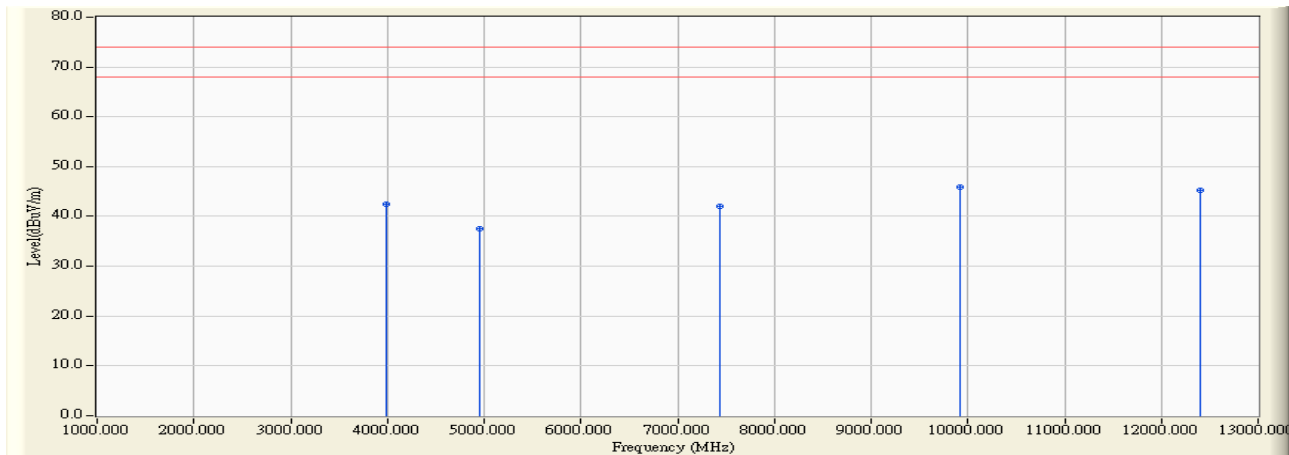


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	4960.010	0.420	41.050	41.471	-32.529	74.000	54.00	PEAK
2	7440.012	5.835	36.880	42.715	-31.285	74.000	54.00	PEAK
3	9920.140	10.371	33.990	44.360	-29.640	74.000	54.00	PEAK
4	* 12400.400	15.236	33.573	48.808	-25.192	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/10/30 - 17:38
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (USB)-2480 MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	3989.110	-3.613	46.120	42.507	-31.493	74.000	54.00	PEAK
2	4960.030	-1.062	38.650	37.589	-36.411	74.000	54.00	PEAK
3	7440.010	5.835	36.140	41.975	-32.025	74.000	54.00	PEAK
4	* 9920.040	11.168	34.730	45.899	-28.101	74.000	54.00	PEAK
5	12400.010	10.704	34.560	45.264	-28.736	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

5. Band Edge

5.1. Test Equipment

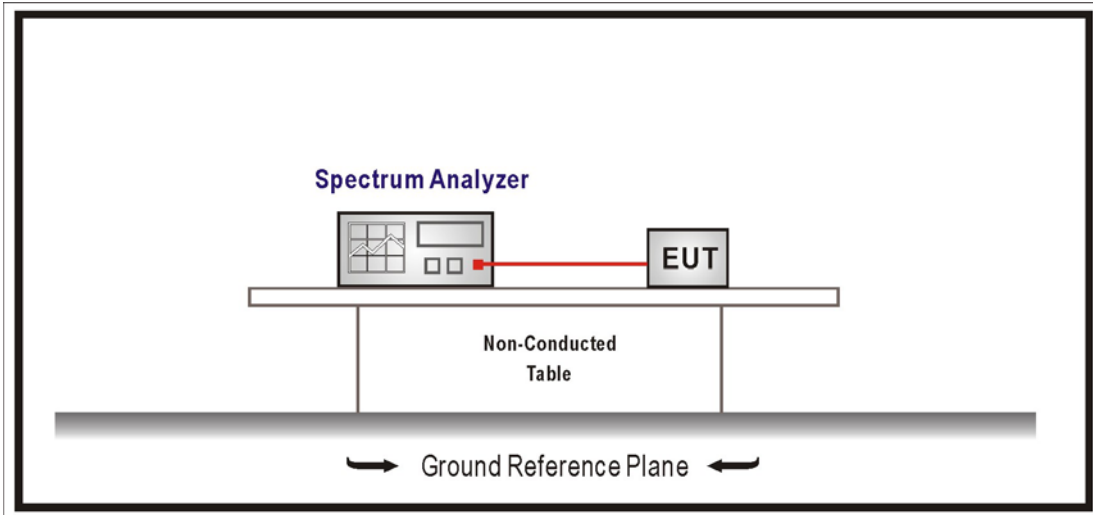
The following test equipment are used during the test:

RF Conducted Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer		R & S	FSP / 100561	Mar., 2007
2	No.1 OATS				Sep., 2007
RF Radiated Measurement:					
Item		Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2007
2	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2007
3		Loop Antenna	R & S	HFH2-Z2 / 833799/004	Sep., 2007
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2007
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2007
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2007
7	No.1 OATS				Sep., 2007

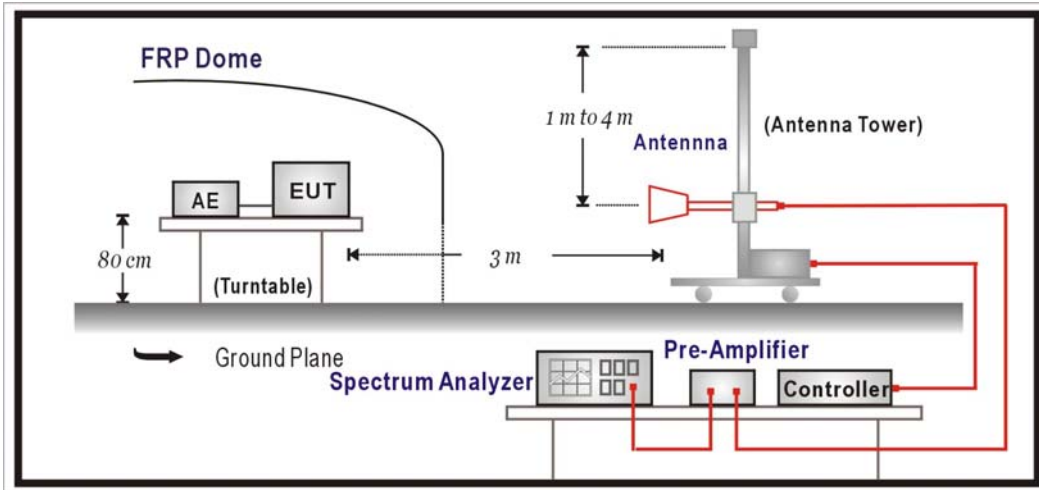
- Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

5.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

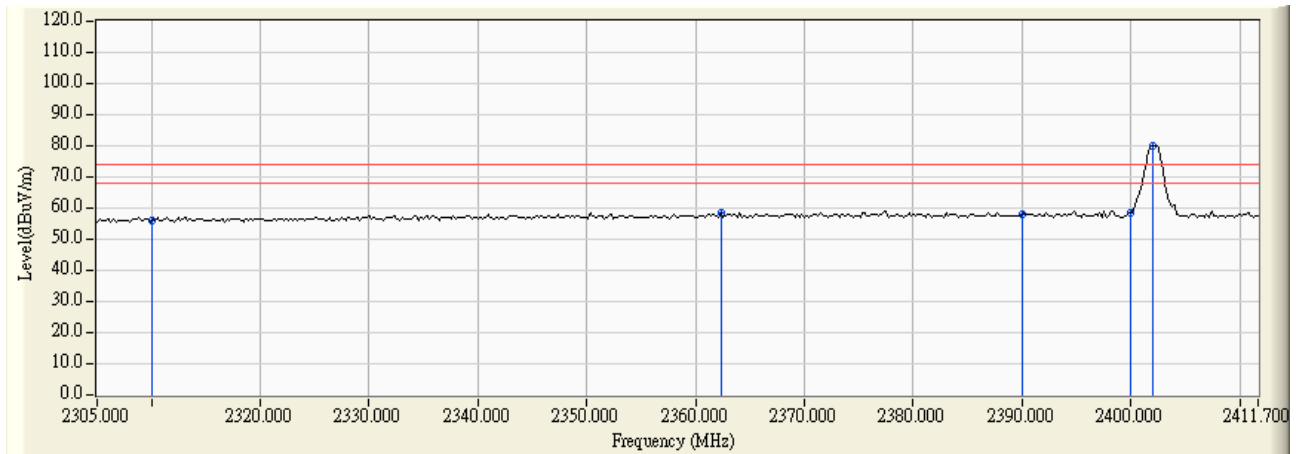
The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2006

5.6. Test Result

Site : Site 1	Time : 2007/11/20 - 14:13
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : 2402 MHz

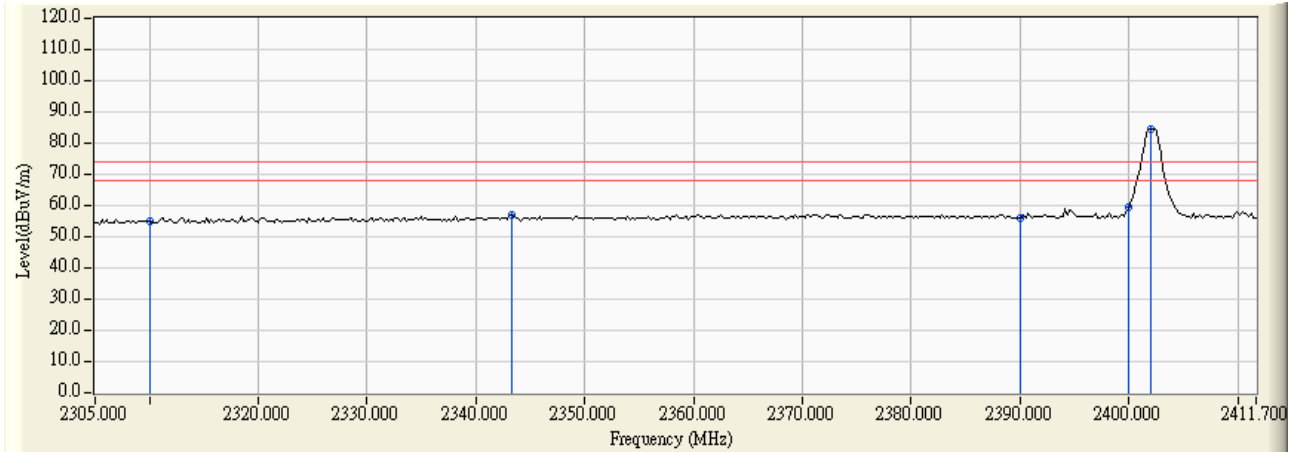


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.674	27.251	55.925	-18.075	74.000	PEAK
2	* 2362.306	28.878	29.744	58.622	-15.378	74.000	PEAK
3	2390.000	28.984	29.105	58.089	-15.911	74.000	PEAK
4	2400.000	29.022	29.425	58.446	-15.554	74.000	PEAK
5	2402.078	29.029	50.917	79.946	5.946	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:42
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : 2402 MHz

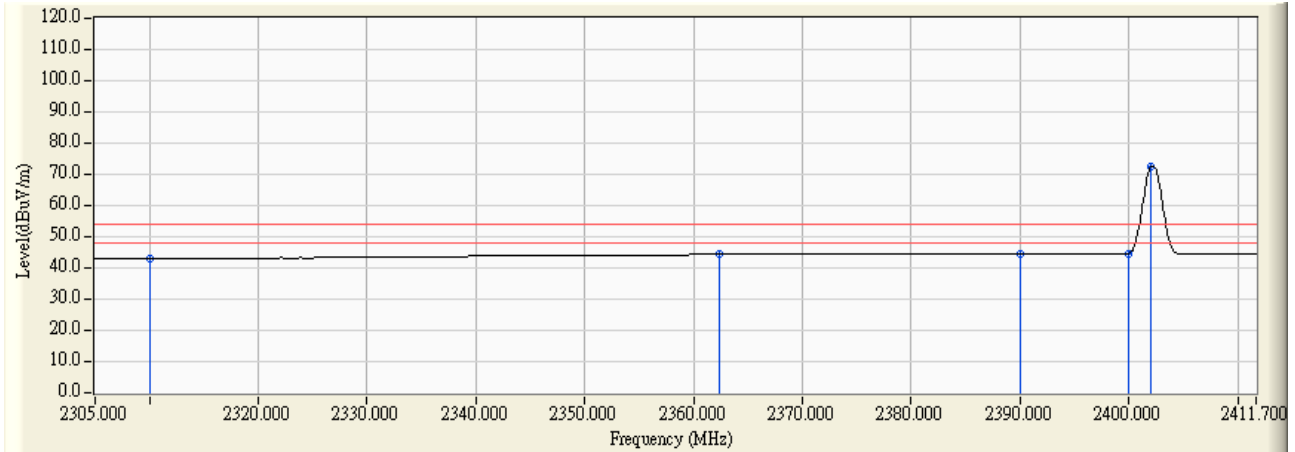


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	27.074	27.812	54.886	-19.114	74.000	PEAK
2	* 2343.275	27.201	29.919	57.120	-16.88	74.000	PEAK
3	2390.000	27.384	28.676	56.060	-17.94	74.000	PEAK
4	2400.000	27.422	32.009	59.430	-14.57	74.000	PEAK
5	2402.078	27.429	57.230	84.659	10.659	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:34
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : 2402 MHz

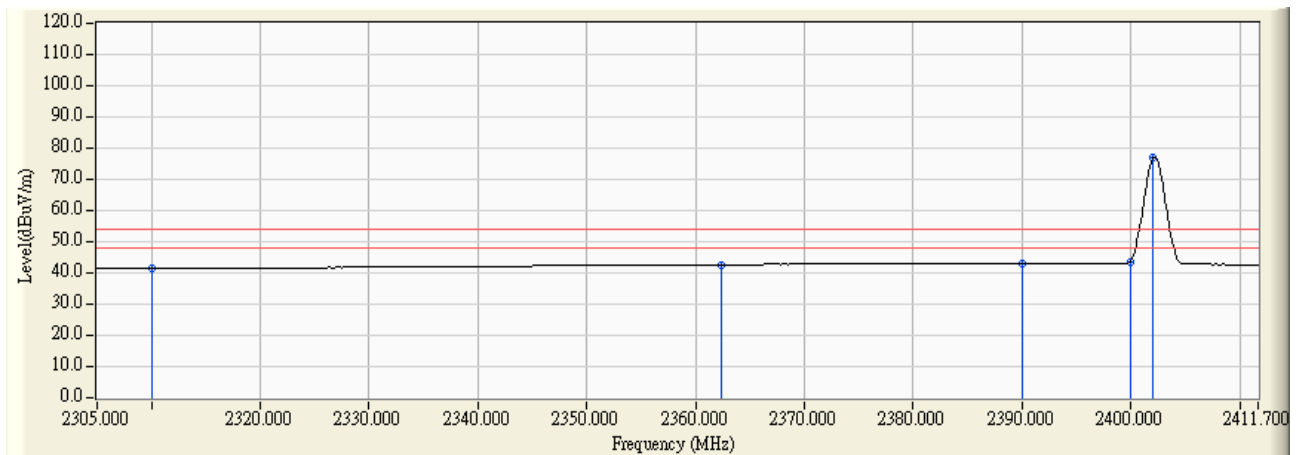


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.674	14.330	43.004	-10.996	54.000	AVERAGE
2	* 2362.306	28.878	15.402	44.280	-9.72	54.000	AVERAGE
3	2390.000	28.984	15.507	44.491	-9.509	54.000	AVERAGE
4	2400.000	29.022	15.542	44.563	-9.437	54.000	AVERAGE
5	2402.078	29.029	43.530	72.559	18.559	54.000	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:44
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : 2402 MHz

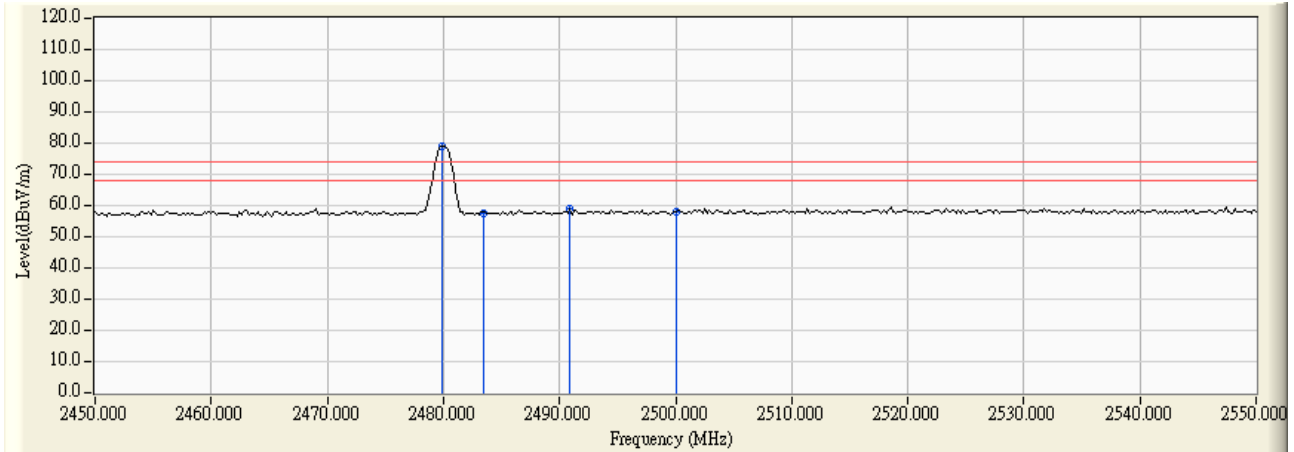


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	27.074	14.334	41.408	-12.592	54.000	AVERAGE
2	* 2362.306	27.278	15.453	42.731	-11.269	54.000	AVERAGE
3	2390.000	27.384	15.531	42.915	-11.085	54.000	AVERAGE
4	2400.000	27.422	16.137	43.558	-10.442	54.000	AVERAGE
5	2402.078	27.429	49.404	76.833	22.833	54.000	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:56
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : 2480 MHz

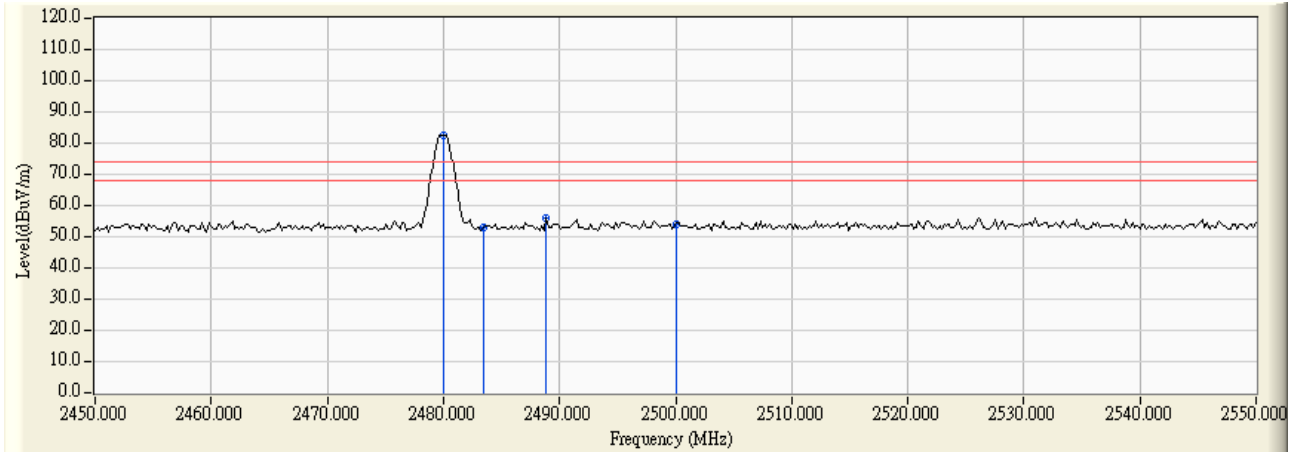


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2479.860	29.283	49.595	78.878	4.878	74.000	PEAK
2	2483.500	29.294	28.434	57.727	-16.273	74.000	PEAK
3	* 2490.882	29.315	29.628	58.943	-15.057	74.000	PEAK
4	2500.000	29.344	28.632	57.976	-16.024	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:48
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : 2480 MHz

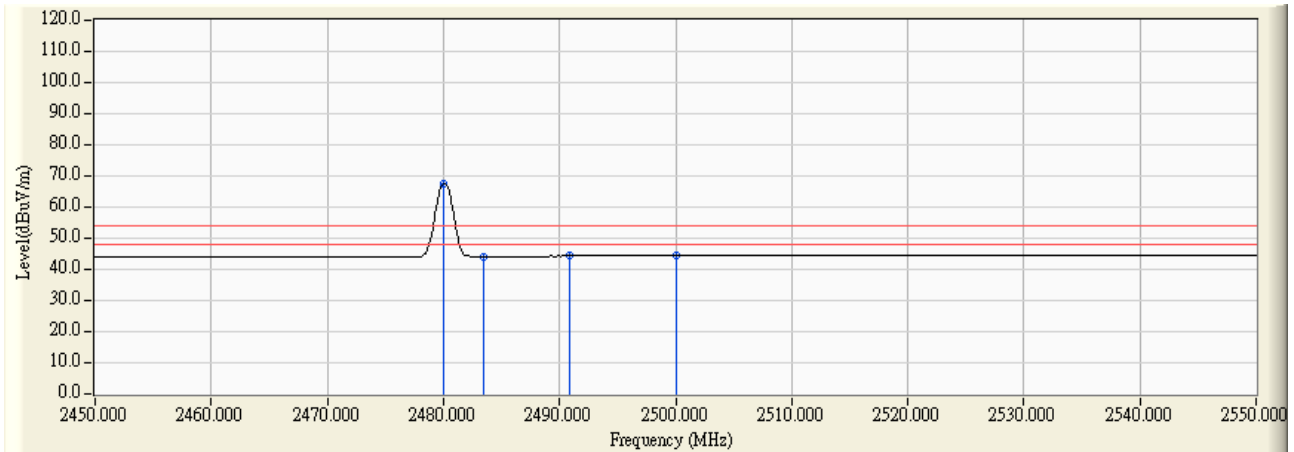


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2480.060	27.683	55.018	82.701	8.701	74.000	PEAK
2	2483.500	27.694	25.379	53.072	-20.928	74.000	PEAK
3	* 2488.878	27.709	28.243	55.952	-18.048	74.000	PEAK
4	2500.000	27.744	26.307	54.051	-19.949	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:59
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - HORIZONTAL
Power : AC 120V/60Hz	Note : 2480 MHz

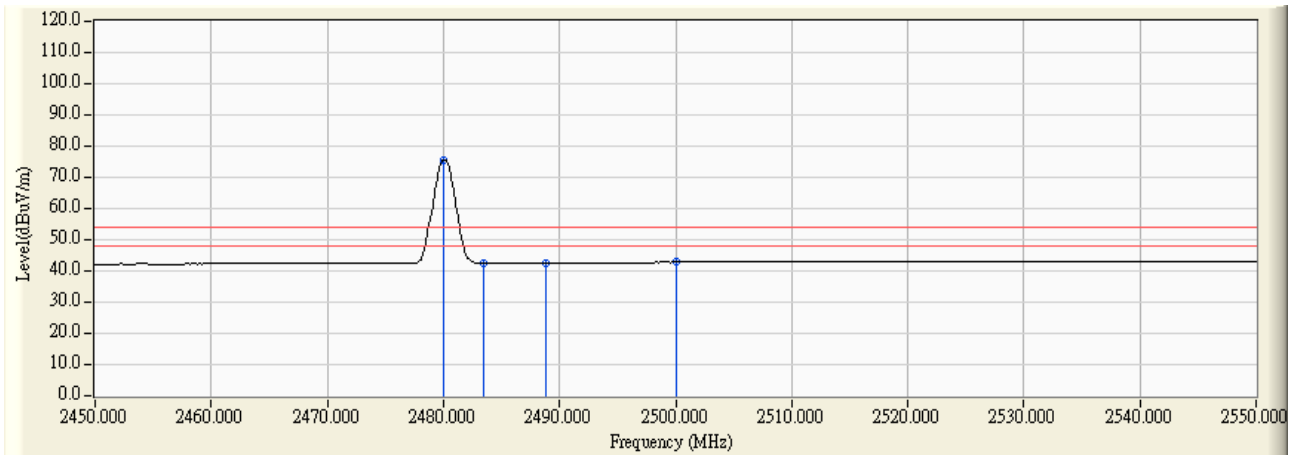


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2480.060	29.283	38.229	67.512	13.512	54.000	AVERAGE
2	2483.500	29.294	14.823	44.116	-9.884	54.000	AVERAGE
3	* 2490.882	29.315	14.957	44.272	-9.728	54.000	AVERAGE
4	2500.000	29.344	15.034	44.378	-9.622	54.000	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/11/20 - 14:51
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : Wireless GPS Logger	Probe : FCC_RF_1G-18G(2007) - VERTICAL
Power : AC 120V/60Hz	Note : 2480 MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2480.060	27.683	47.920	75.603	21.603	54.000	AVERAGE
2	2483.500	27.694	14.844	42.537	-11.463	54.000	AVERAGE
3	* 2488.878	27.709	14.920	42.629	-11.371	54.000	AVERAGE
4	2500.000	27.744	15.019	42.763	-11.237	54.000	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

6. Channel of Number

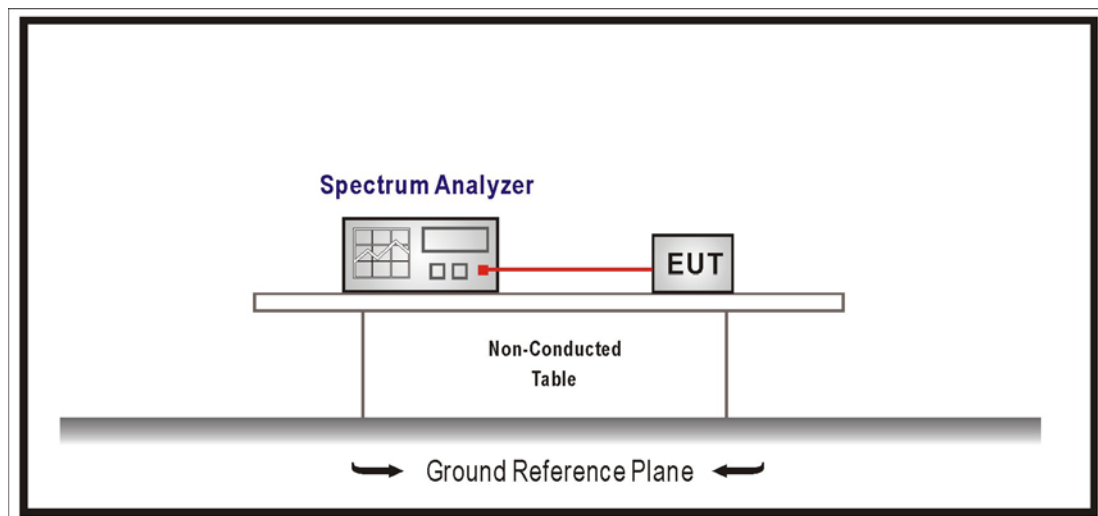
6.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2007
2	No.1 OATS			Sep., 2007

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup



6.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

For frequency hopping systems operating in the 2400-2483.5 MHz bands, which use fewer than 75 hopping frequencies, may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels are used.

For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

6.4. Test Specification

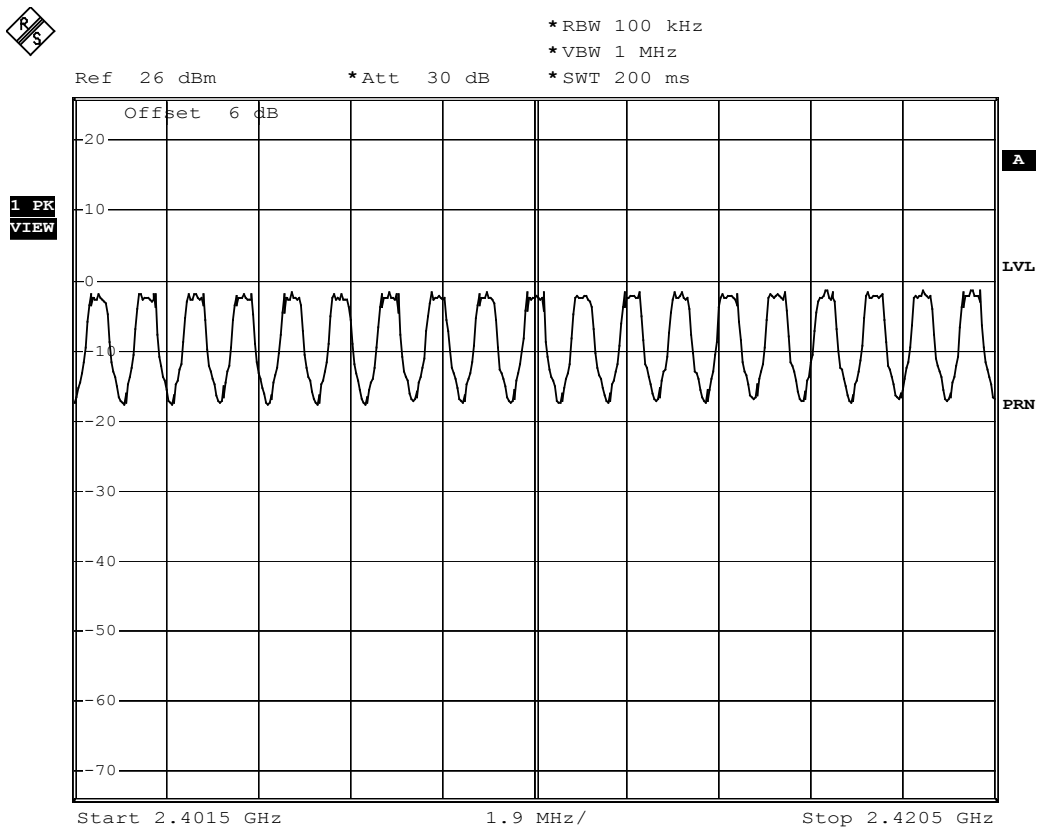
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

6.5. Test Result

Product	Wireless GPS Logger		
Test Item	Channel of Number		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/19	Test Site	No.1 OATS

Frequency Range (MHz)	Measure Level (Hopping Channel)	Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

2402-2420MHz



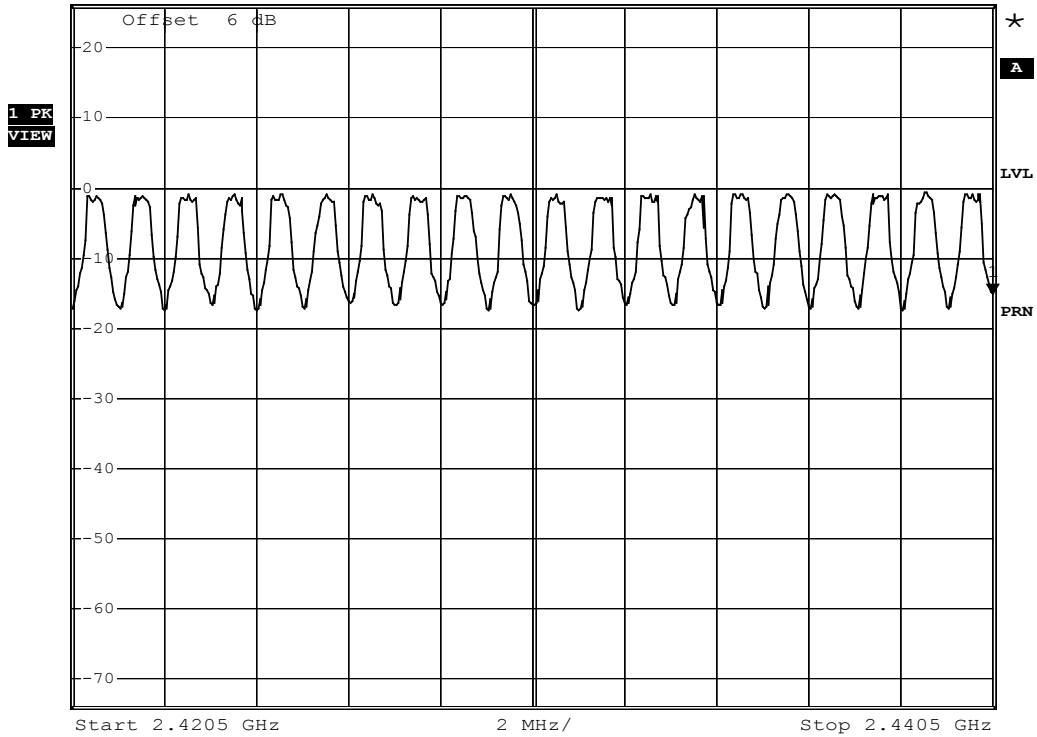
Date: 19.NOV.2007 21:57:16

2421-2440MHz



*RBW 100 kHz Marker 1 [T1]
*VBW 1 MHz -15.07 dBm
*SWT 200 ms 2.440500000 GHz

Ref 26 dBm *Att 30 dB



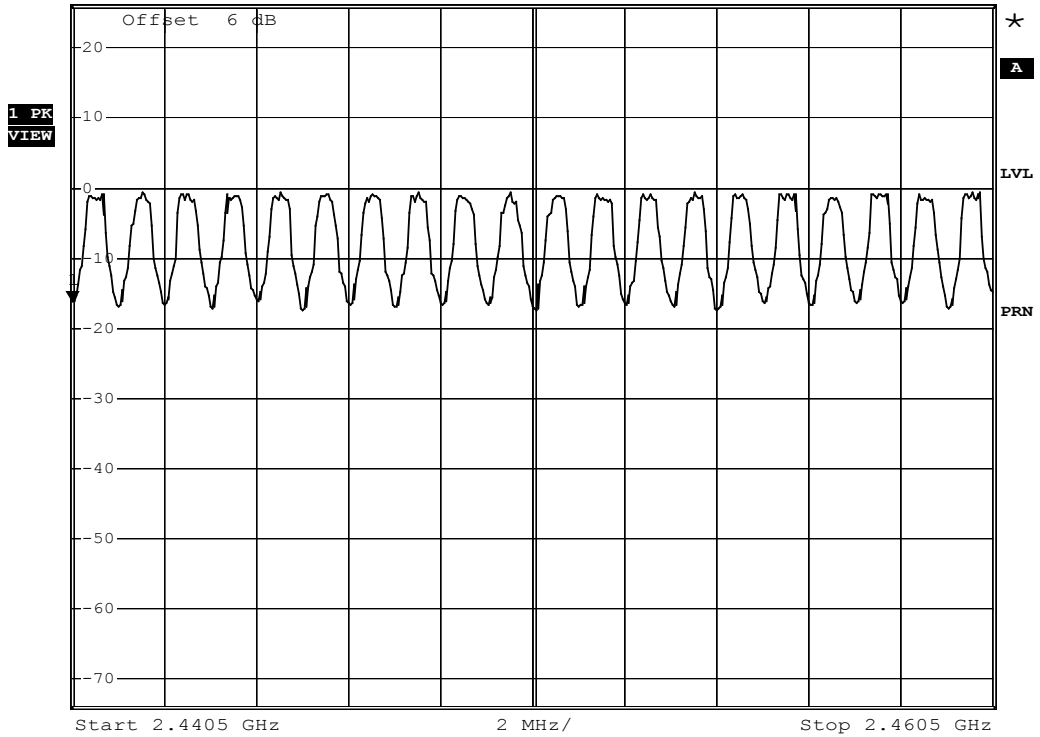
Date: 19.NOV.2007 22:08:44

2441-2460MHz



*RBW 100 kHz Marker 1 [T1]
*VBW 1 MHz -16.24 dBm
*SWT 200 ms 2.440500000 GHz

Ref 26 dBm *Att 30 dB



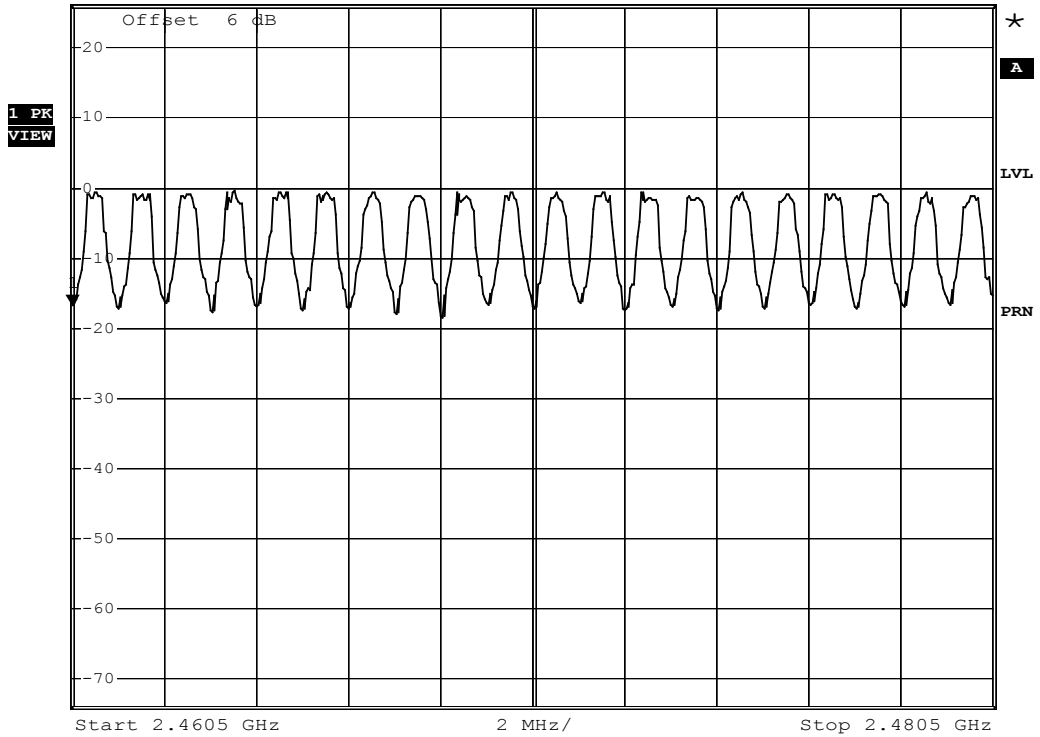
Date: 19.NOV.2007 22:13:23

2461-2480MHz



*RBW 100 kHz Marker 1 [T1]
*VBW 1 MHz -16.65 dBm
*SWT 200 ms 2.460500000 GHz

Ref 26 dBm *Att 30 dB



Date: 19.NOV.2007 22:17:09

7. Channel Separation

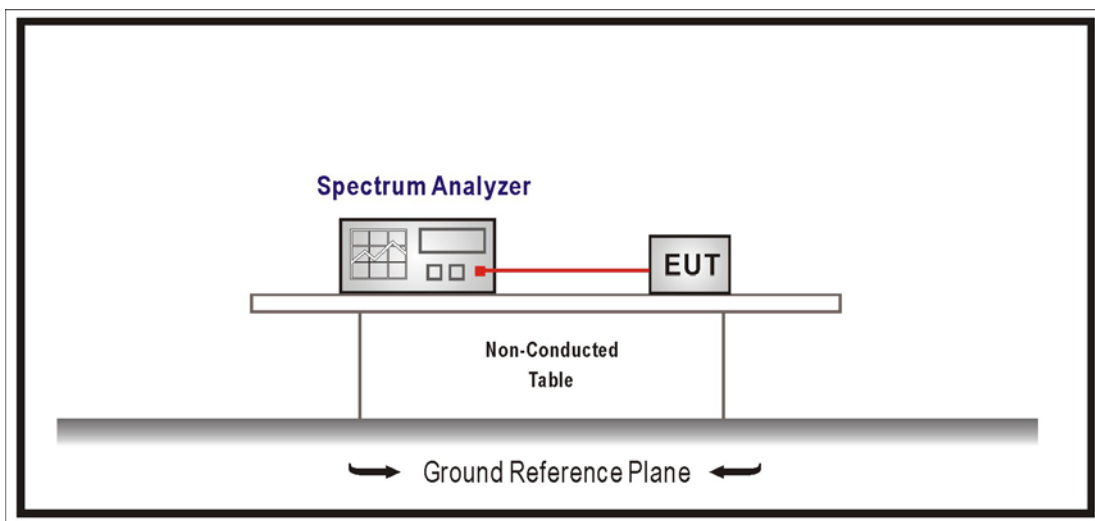
7.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2007
2	No.1 OATS			Sep., 2007

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

For frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

7.4. Test Specification

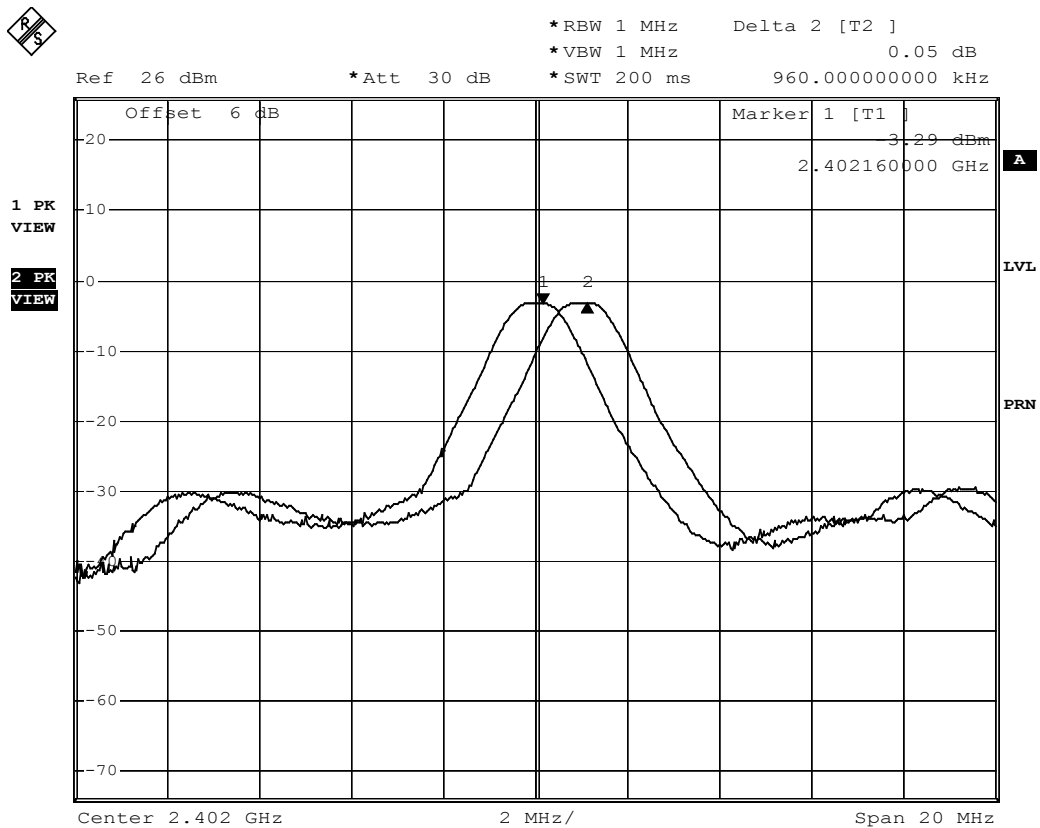
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

7.5. Test Result

Product	Wireless GPS Logger		
Test Item	Channel Separation		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
00	2402.00	960	>830	Pass

Channel 00

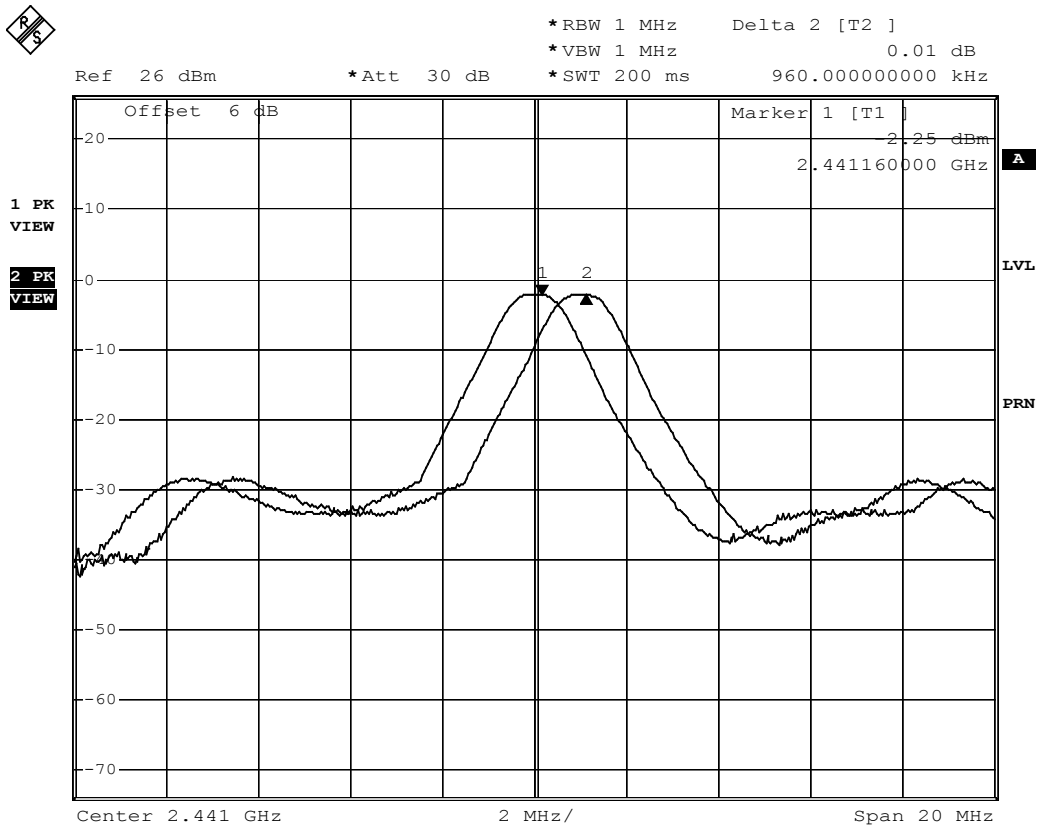


Date: 21.NOV.2007 12:25:15

Product	Wireless GPS Logger		
Test Item	Channel Separation		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
39	2441.00	960	>830	Pass

Channel 39

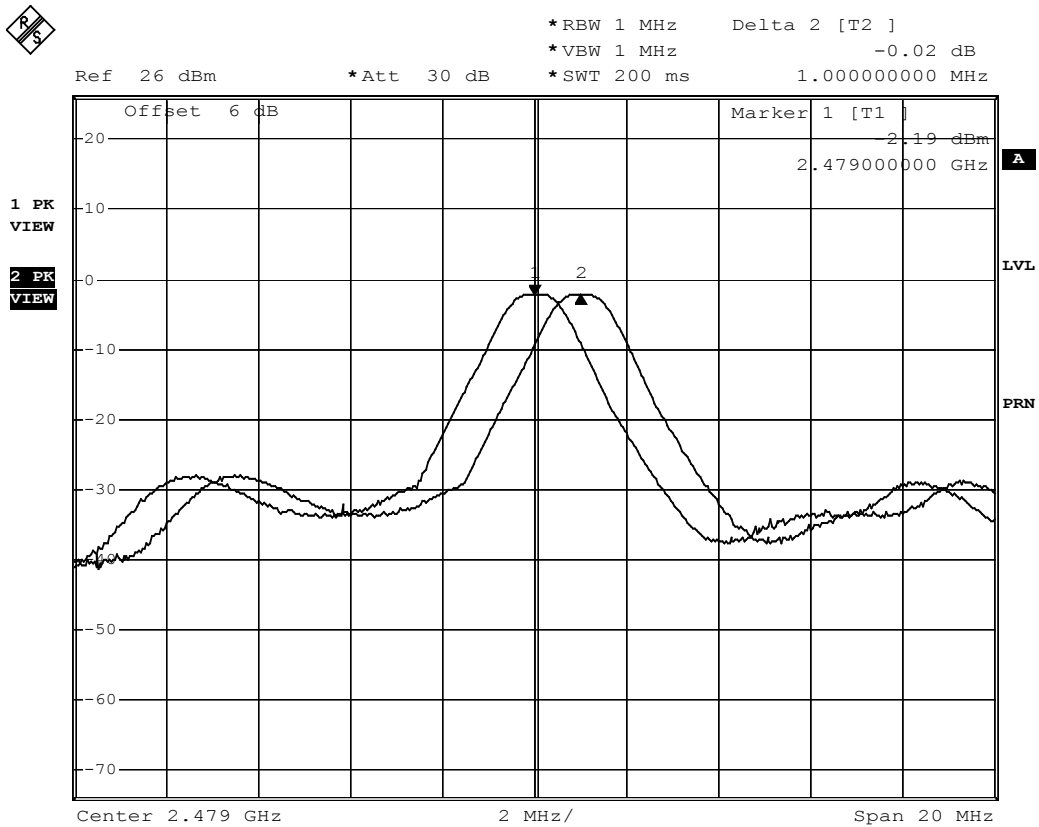


Date: 21.NOV.2007 12:05:17

Product	Wireless GPS Logger		
Test Item	Channel Separation		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/21	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
78	2480.00	1000	>820	Pass

Channel 78



Date: 21.NOV.2007 12:21:45

8. Occupied Bandwidth

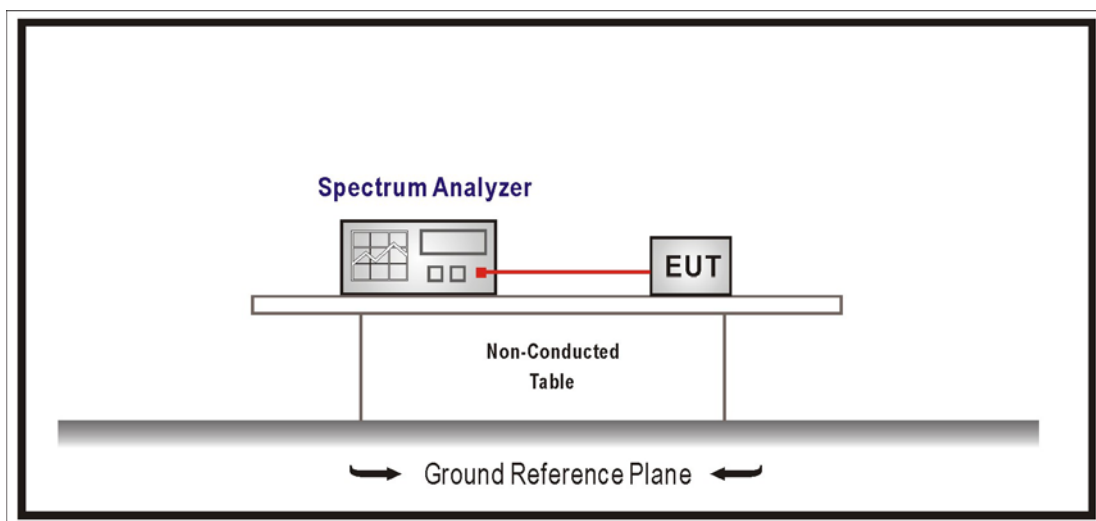
8.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2007
2	No.1 OATS			Sep., 2007

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup



8.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

For frequency hopping systems operating in the 5725-5850 MHz bands. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

For frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

8.4. Test Specification

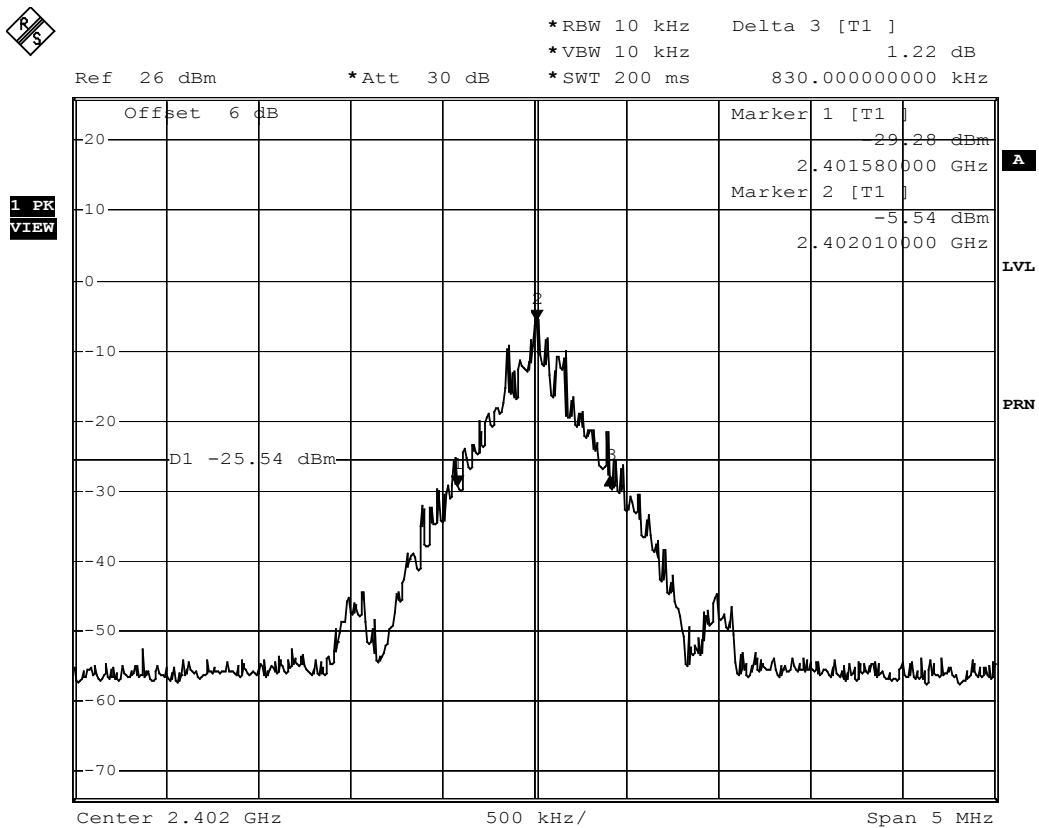
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

8.5. Test Result

Product	Wireless GPS Logger		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/19	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402.00	0.83	1	Pass

Channel 00

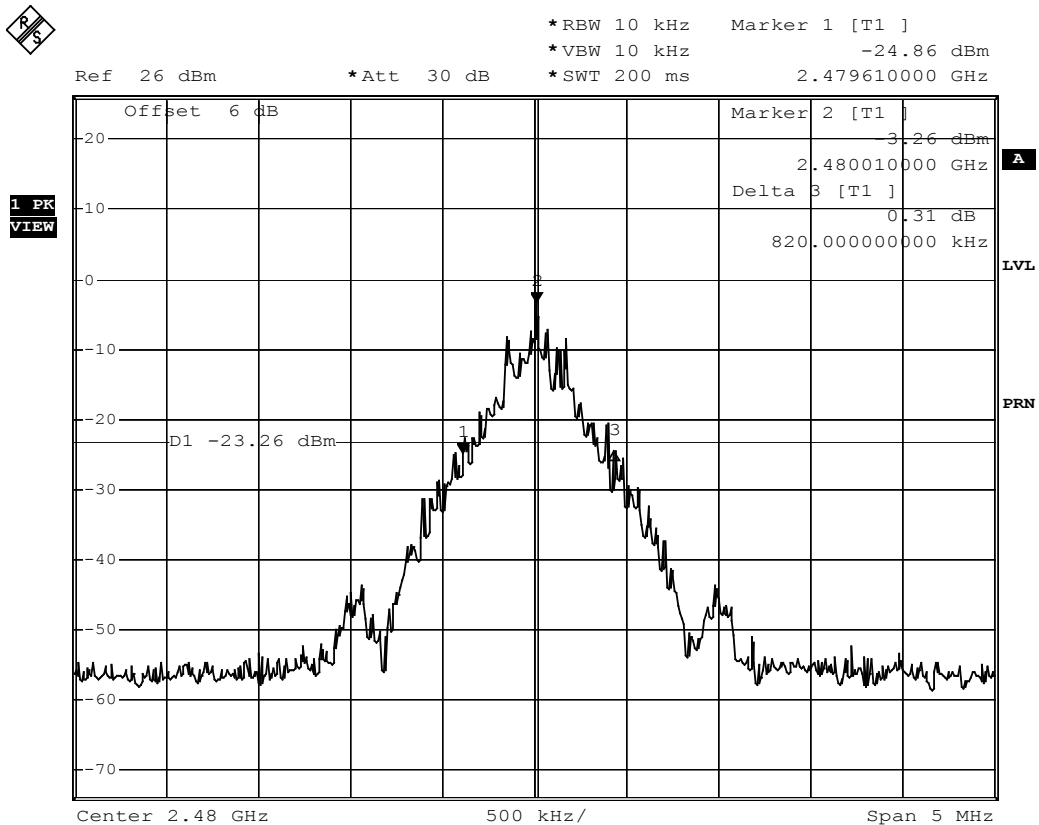


Date: 19.NOV.2007 21:43:23

Product	Wireless GPS Logger		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/19	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
78	2480.00	0.82	1	Pass

Channel 78



Date: 19.NOV.2007 21:41:43

9. Dwell Time

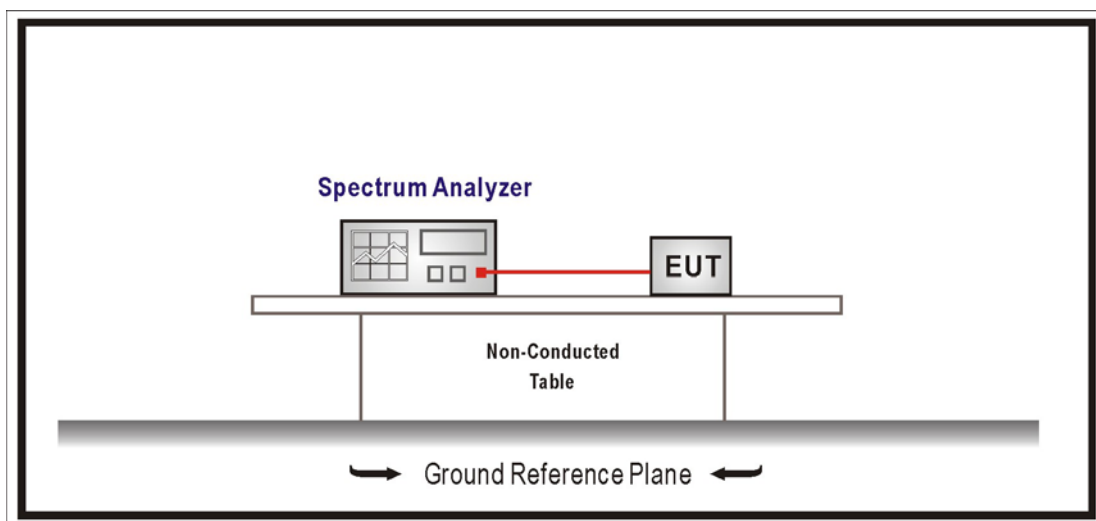
9.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar., 2007
2	No.1 OATS			Sep., 2007

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

9.2. Test Setup



9.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. For frequency hopping systems operating in the 2400-2483.5 MHz bands. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 5725-5850 MHz bands. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

9.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2006

9.5. Test Result

Product	Wireless GPS Logger		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/21	Test Site	No.1 OATS

Occupancy Time of Frequency Hopping System-DH 1

A) 2402MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $16/20\text{msec} = 800 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.000444 \times (800/79) \times 31.6 = 0.14208\text{sec}$.

B) 2441MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $16/20\text{msec} = 800 / \text{sec}$

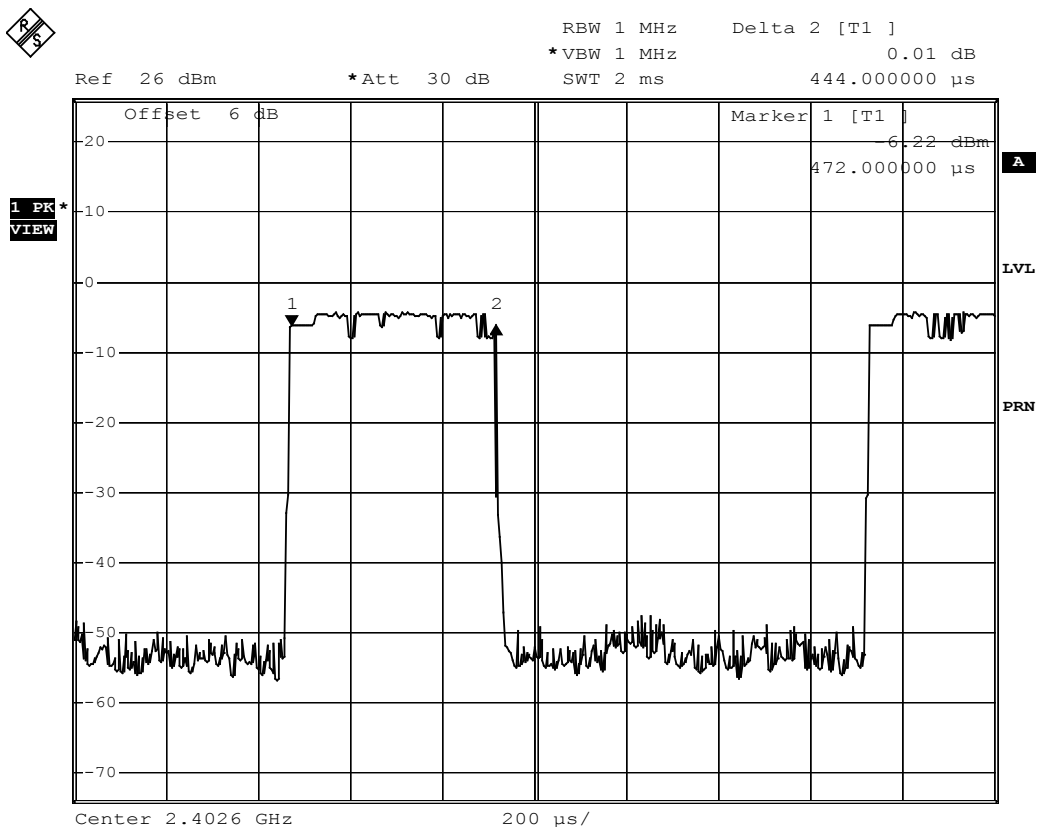
The Maximum Occupancy Time Within 31.6sec: $0.000448 \times (800/79) \times 31.6 = 0.14336\text{sec}$.

C) 2480MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $16/20\text{msec} = 800 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.000448 \times (800/79) \times 31.6 = 0.14336\text{sec}$.

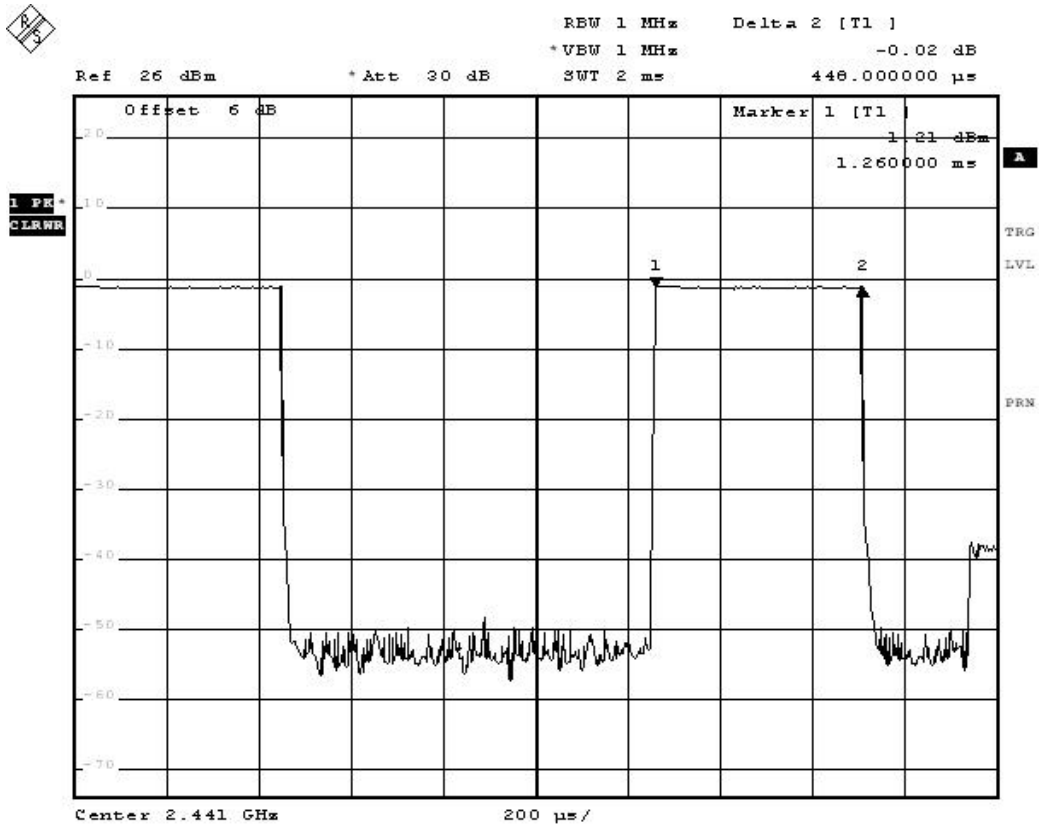
Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard .

Hop rate-2402MHz



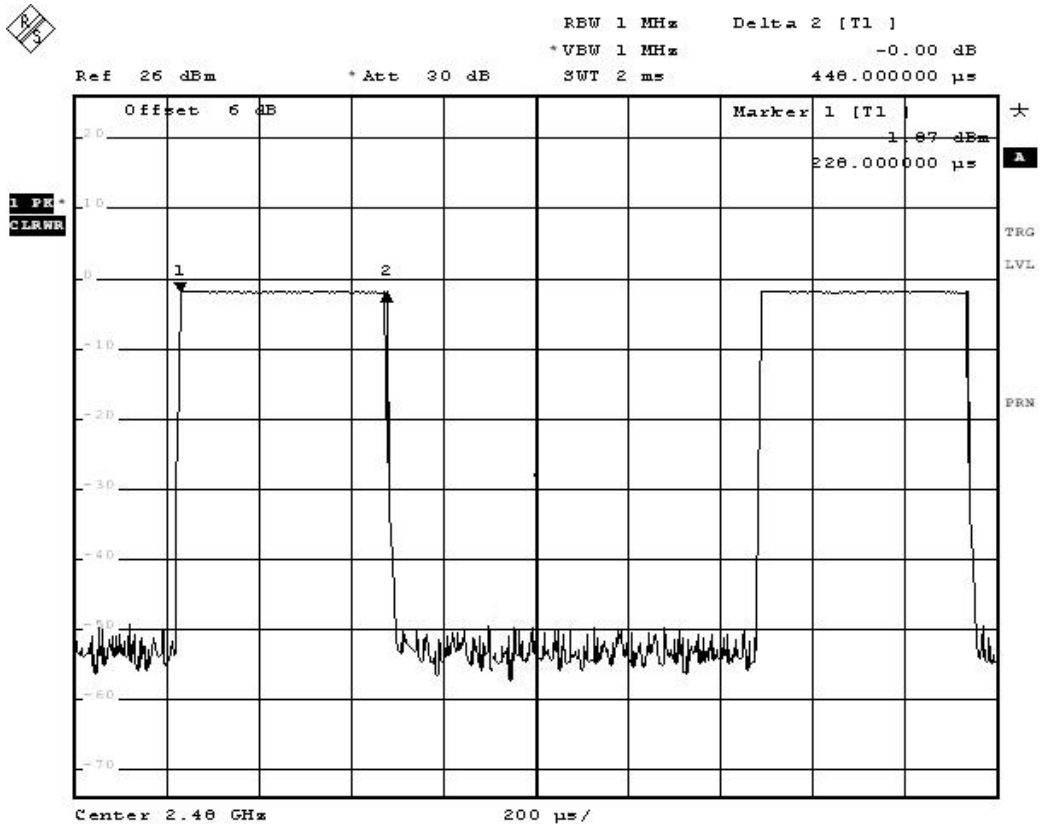
Date: 20.NOV.2007 12:06:01

Hop rate-2441MHz



Date: 20.NOV.2007 12:20:35

Hop rate-2480MHz



Date: 21.NOV.2007 10:00:56

Note: Dwell time = time slot length * hop rate / number of hopping channels * period

Product	Wireless GPS Logger		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/21	Test Site	No.1 OATS

Occupancy Time of Frequency Hopping System-DH 3

A) 2402MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $8/20\text{msec} = 400 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.00172 \times (400/79) \times 31.6 = 0.2752\text{sec}$ ◦

B) 2441MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $8/20\text{msec} = 400 / \text{sec}$

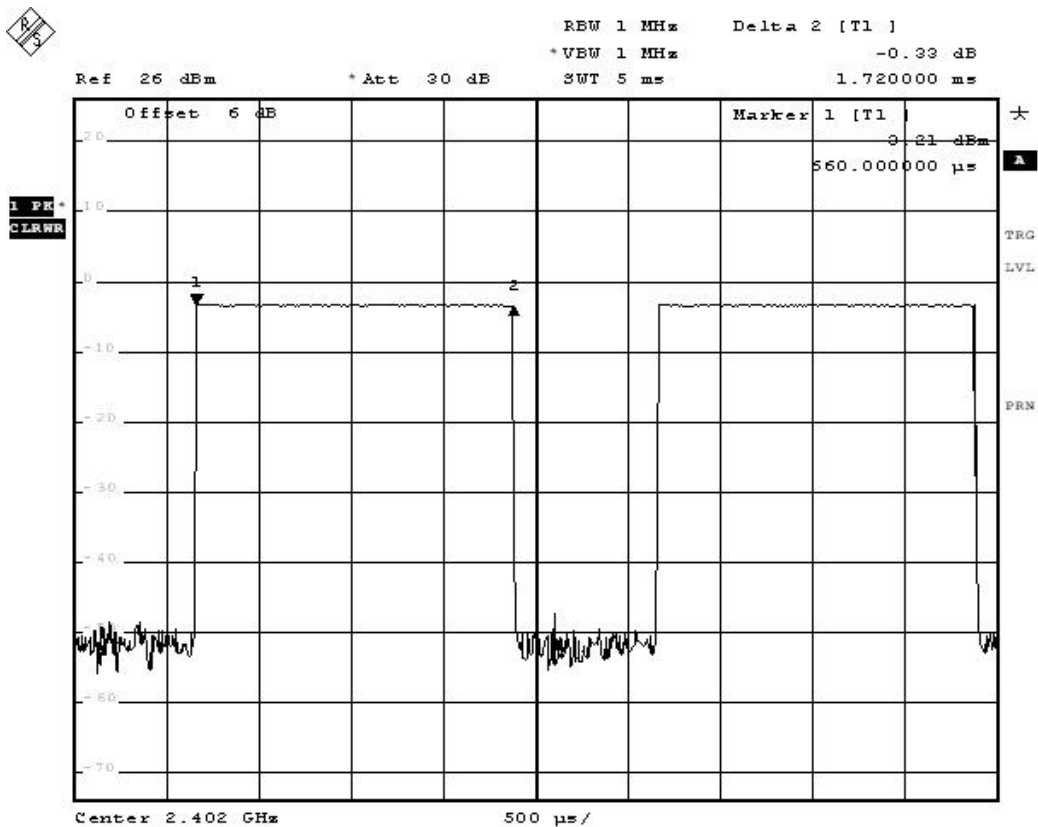
The Maximum Occupancy Time Within 31.6sec: $0.00171 \times (400/79) \times 31.6 = 0.2736\text{sec}$ ◦

C) 2480MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $8/20\text{msec} = 400 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.00172 \times (400/79) \times 31.6 = 0.2752\text{sec}$ ◦

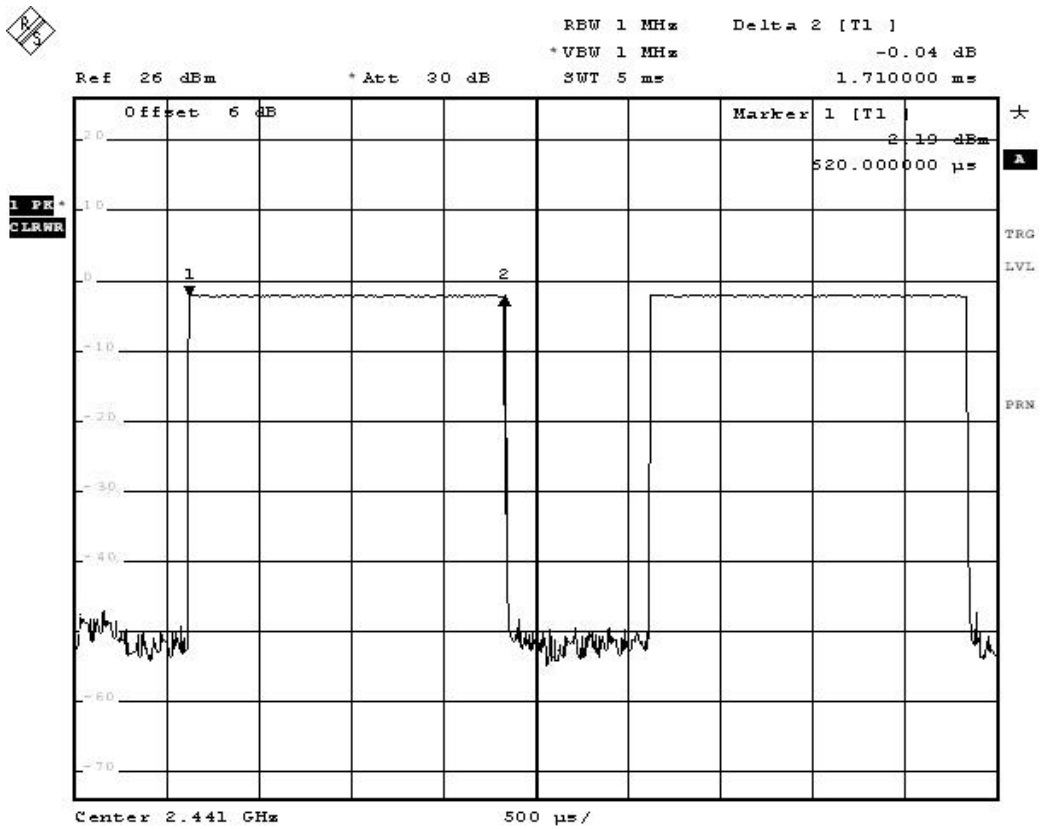
Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard ◦

Hop rate-2402MHz



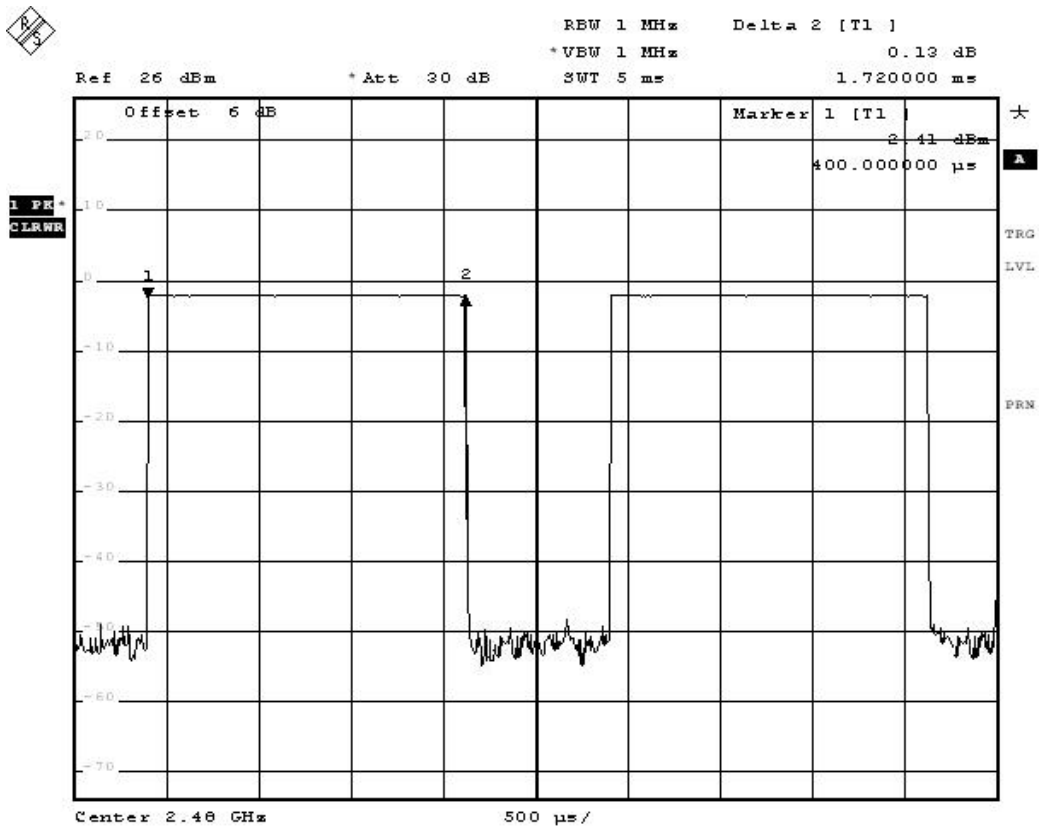
Date: 21.NOV.2007 11:12:06

Hop rate-2441MHz



Date: 21.NOV.2007 11:14:27

Hop rate-2480MHz



Date: 21.NOV.2007 11:17:34

Note: Dwell time = time slot length * hop rate / number of hopping channels * period

Product	Wireless GPS Logger		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit (USB)		
Date of Test	2007/11/21	Test Site	No.1 OATS

Occupancy Time of Frequency Hopping System-DH 5

A) 2402MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $5/20\text{msec} = 250 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.00295 \times (250/79) \times 31.6 = 0.295\text{sec}$ ◦

B) 2441MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $5/20\text{msec} = 250 / \text{sec}$

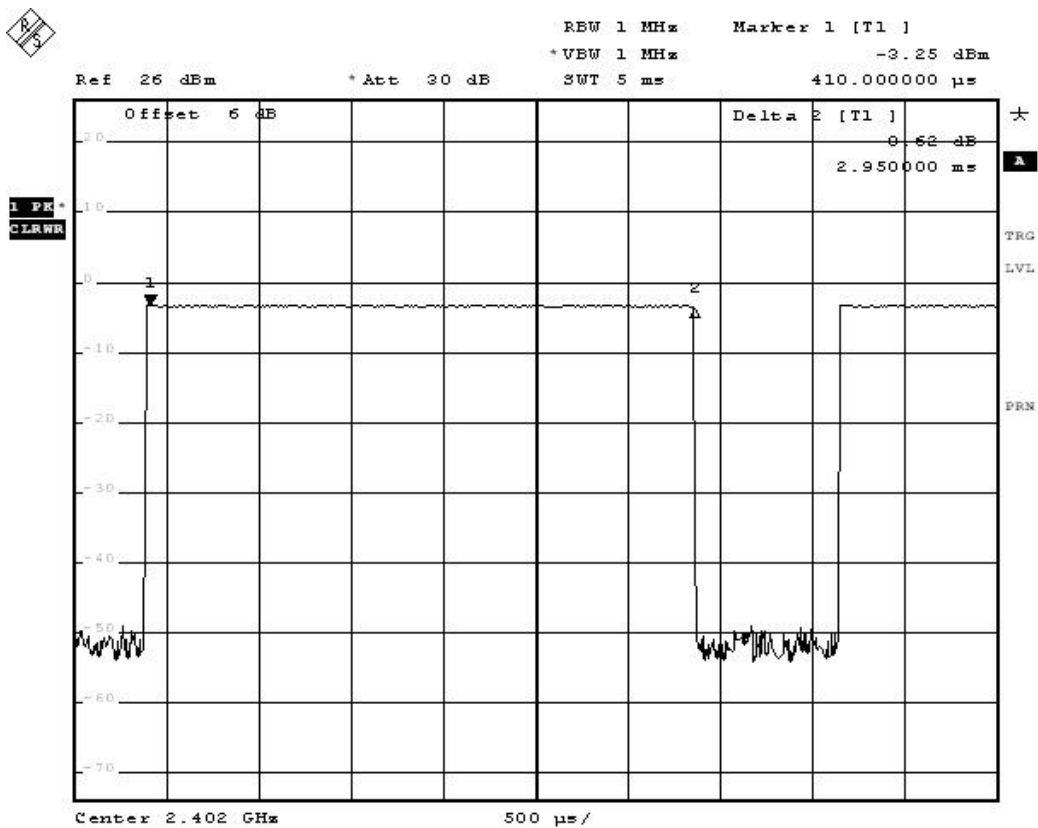
The Maximum Occupancy Time Within 31.6sec: $0.00295 \times (250/79) \times 31.6 = 0.295\text{sec}$ ◦

C) 2480MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $5/20\text{msec} = 250 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.00295 \times (250/79) \times 31.6 = 0.295\text{sec}$ ◦

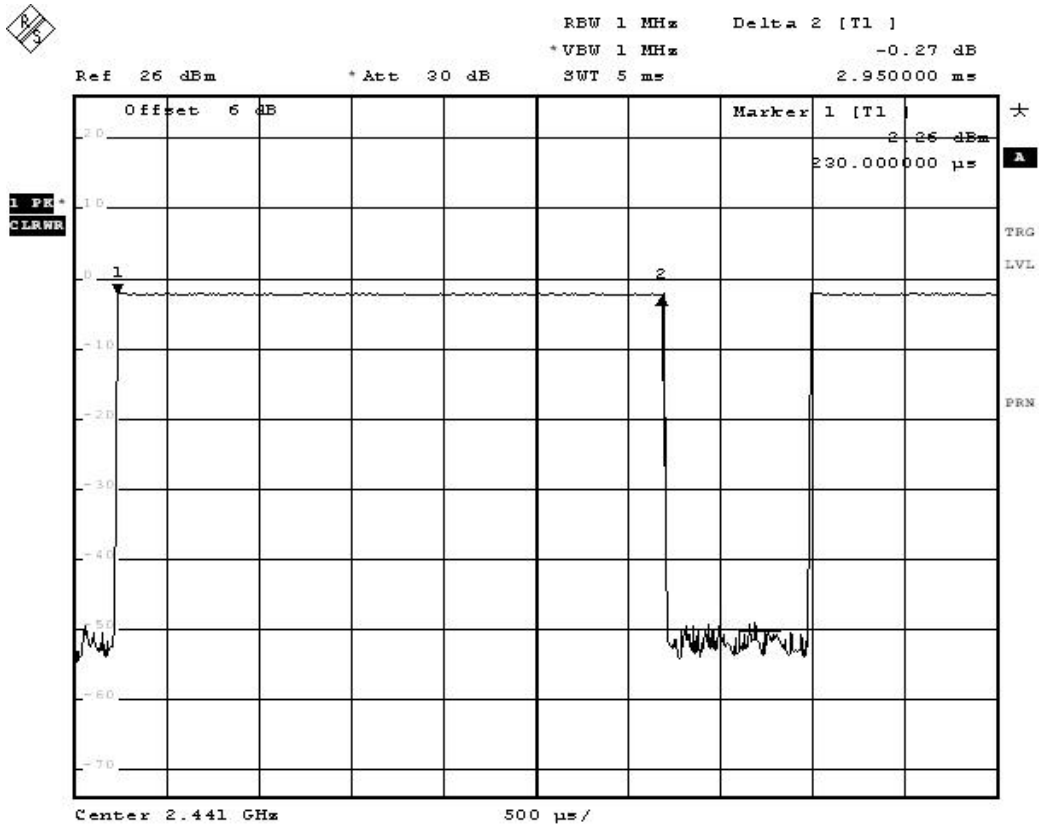
Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard ◦

Hop rate-2402MHz



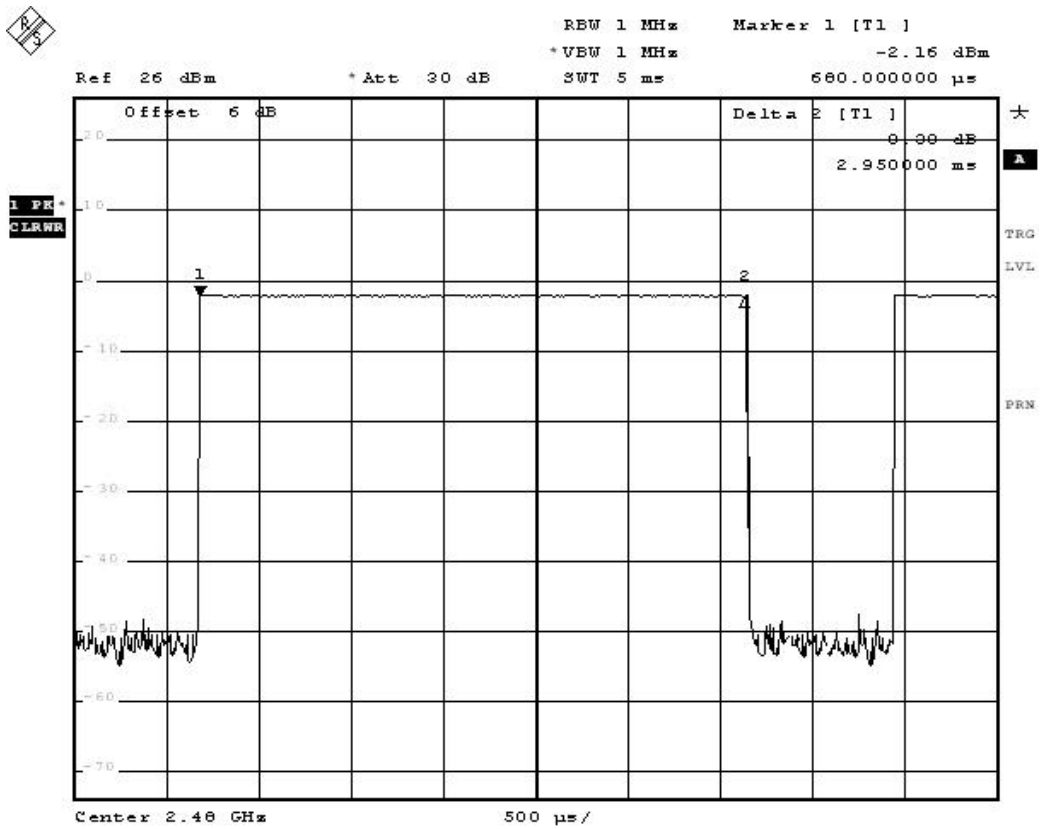
Date: 21.NOV.2007 11:28:19

Hop rate-2441MHz



Date: 21.NOV.2007 11:35:03

Hop rate-2480MHz



Date: 21.NOV.2007 11:38:57

Note: Dwell time = time slot length * hop rate / number of hopping channels * period