Test Report

Product Name	Bluetooth GPS Receiver
Model No.	RCD-1100
FCC ID.	RCCCD

Applicant	RoyalTek Company Ltd.
Address	1071 Chung Cheng RD., Suite 9F-1 Tao Yuan City, Taiwan, R.O.C

Date of Receipt	Dec. 28, 2007
Issued Date	Jan. 29, 2008
Report No.	081039R-RFUSP06V01

Test Report Certification

Issued Date: Jan. 29, 2008
Report No.: 081039R-RFUSP06V01

Product Name	Bluetooth GPS Receiver
Applicant	RoyalTek Company Ltd.
Address	1071 Chung Cheng RD., Suite 9F-1 Tao Yuan City, Taiwan, R.O.C
Manufacturer	RoyalTek Company Ltd.
Model No.	RCD-1100
FCC ID.	RCCCD
Rated Voltage	AC 120V/60Hz
Working Voltage	AC 120V/60Hz for AC Charger DC 12V for Car Charger
Trade Name	RoyalTek
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C ANSI C63.4: 2003
Test Result	Complied

NVLAP Lab Code: 200533-0

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.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Genie Chang
(Adm. Specialist / Genie Chang)

Tested By : Molin huang
(Engineer /Molin Huang)

Approved By :
(Deputy Manager /Vincent Lin)

Testing Laboratory
0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Bluetooth GPS Receiver
Trade Name	RoyalTek
FCC ID.	RCCCD
Model No.	RCD-1100
Frequency Range	2402 - 2480MHz
Channel Number	79
Type of Modulation	GFSK(1Mbps)/ π/4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna type	Soldered on PCB
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
Car charger (1)	MFR: LEN CHENG, M/N: SP-5010M Input: 12V-24V, 16A max Output: 5V-1A
Car charger (2)	MFR: LEN CHENG, M/N: CSU-03 Input: 12V-24V, 16A max Output: 5V-1A
Car charger (3)	MFR: PINE-TUM, M/N: PT-002X Input: 12V-24V, 16A max Output: 5V-1A

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	WAVEFAR	WTE86002	0.5 dBi for 2.4 GHz

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		

Note:

1. This device is a Bluetooth GPS Receiver with a built-in 2.4GHz Bluetooth 2.0+EDR(Enhanced Data Rate) transceiver.
2. These tests were conducted on a sample for the purpose of demonstrating compliance of bluetooth transmitter with Part 15 Subpart C Paragraph 15.247 for Frequency hopping spread spectrum devices.
3. Regarding to the operation frequency, the lowest, middle and highest frequency channel are selected to be tested.
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is an Bluetooth GPS Receiver with a built-in 2.4GHz Bluetooth 2.0+EDR(Enhanced Data Rate) transceiver. The number of the channels is 79 in 2402-2480MHz. The device adapts the frequency hopping spread spectrum modulation. The antenna is connector-type and provides diversity function to improve the receiving function.

This device provides wireless technology that revolutionizes personal connectivity. It is the solution for the seamless integration of Bluetooth technology into personal computer enabling short-range wireless connections between desktop/laptop computers, Bluetooth-enabled peripherals, and portable handheld devices.

Test Mode	Mode 1: USB Charger - 1Mbps (GFSK)
	Mode 2: Car Charger (1) - 1Mbps (GFSK)
	Mode 3: Car Charger (2) - 1Mbps (GFSK)
	Mode 4: Car Charger (3) - 1Mbps (GFSK)
	Mode 5: USB Charger - 3Mbps (8DPSK)
	Mode 6: Car Charger (1) - 3Mbps (8DPSK)
	Mode 7: Car Charger (2) - 3Mbps (8DPSK)
	Mode 8: Car Charger (3) - 3Mbps (8DPSK)

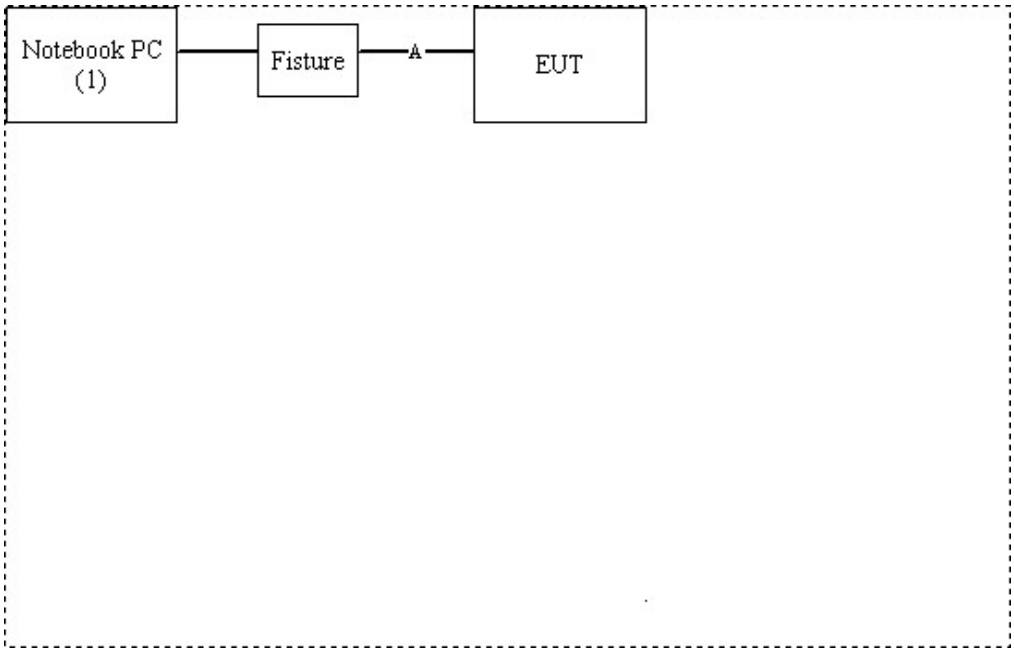
1.3. Tested System Details

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

	Product	Manufacturer	Model No.	Serial No.	Power Cord
(1)	Notebook PC	DELL	PP18L	42649348672	Shielded, 1.8m with one ferrite core bonded.

Signal Cable Type		Signal cable Description
A.	USB Cable	Non-Shielded, 1.6m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1.	Setup the EUT as shown in section 1.4.
2.	Execute Bluetest.exe on the notebook.
3.	Configure the test channel and the packet type.
4.	Press “OK” to start the continuous transmission.
5.	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	30-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

Testing Laboratory
0914

2. Conducted Emission

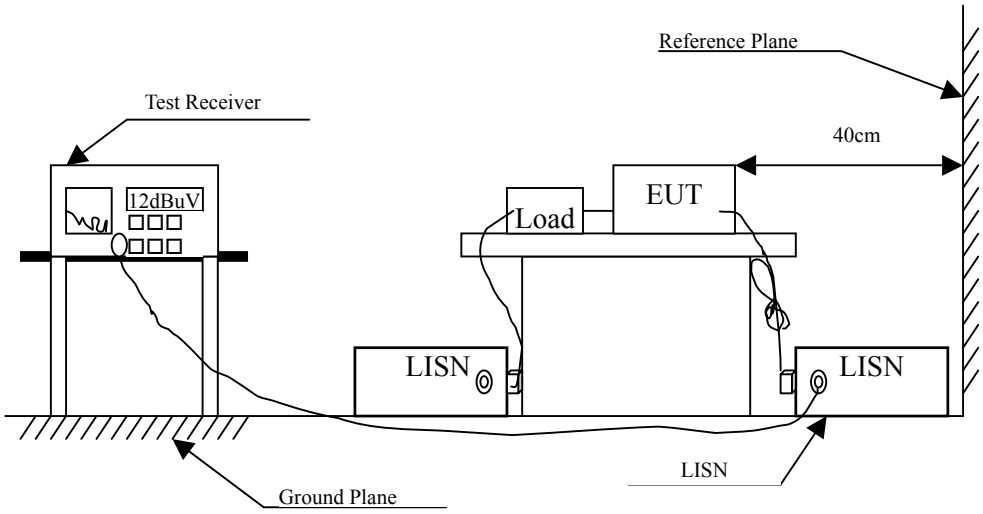
2.1. Test Equipment

The following test equipments are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2007	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2007	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2007	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2007	
5	No.1 Shielded Room			N/A	

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	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 was setup according to ANSI C63.4, 2003 and tested according to FCC Public Notice DA 00-705.

The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Bluetooth GPS Receiver
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.166	0.556	50.530	51.086	-14.457	65.543
0.396	0.300	40.200	40.500	-18.471	58.971
0.771	0.310	35.060	35.370	-20.630	56.000
3.423	0.380	18.900	19.280	-36.720	56.000
7.966	0.530	20.760	21.290	-38.710	60.000
23.127	1.160	24.860	26.020	-33.980	60.000
Average					
0.166	0.556	44.030	44.586	-10.957	55.543
0.396	0.300	26.650	26.950	-22.021	48.971
0.771	0.310	28.040	28.350	-17.650	46.000
3.423	0.380	12.820	13.200	-32.800	46.000
7.966	0.530	15.620	16.150	-33.850	50.000
23.127	1.160	22.080	23.240	-26.760	50.000

Note:

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

Product : Bluetooth GPS Receiver
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.166	0.300	55.690	55.990	-9.553	65.543
0.326	0.300	40.200	40.500	-20.471	60.971
0.646	0.310	34.830	35.140	-20.860	56.000
0.982	0.320	33.570	33.890	-22.110	56.000
3.630	0.390	21.770	22.160	-33.840	56.000
8.849	0.480	21.200	21.680	-38.320	60.000
Average					
0.166	0.300	46.740	47.040	-8.503	55.543
0.326	0.300	27.930	28.230	-22.741	50.971
0.646	0.310	23.940	24.250	-21.750	46.000
0.982	0.320	26.410	26.730	-19.270	46.000
3.630	0.390	12.820	13.210	-32.790	46.000
8.849	0.480	15.680	16.160	-33.840	50.000

Note:

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

Product : Bluetooth GPS Receiver
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.166	0.556	50.530	51.086	-14.457	65.543
0.396	0.300	40.200	40.500	-18.471	58.971
0.771	0.310	35.060	35.370	-20.630	56.000
3.423	0.380	18.900	19.280	-36.720	56.000
7.966	0.530	20.760	21.290	-38.710	60.000
23.127	1.160	24.860	26.020	-33.980	60.000
Average					
0.166	0.556	44.030	44.586	-10.957	55.543
0.396	0.300	26.650	26.950	-22.021	48.971
0.771	0.310	28.040	28.350	-17.650	46.000
3.423	0.380	12.820	13.200	-32.800	46.000
7.966	0.530	15.620	16.150	-33.850	50.000
23.127	1.160	22.080	23.240	-26.760	50.000

Note:

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

Product : Bluetooth GPS Receiver
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.166	0.300	55.690	55.990	-9.553	65.543
0.326	0.300	40.200	40.500	-20.471	60.971
0.646	0.310	34.830	35.140	-20.860	56.000
0.982	0.320	33.570	33.890	-22.110	56.000
3.630	0.390	21.770	22.160	-33.840	56.000
8.849	0.480	21.200	21.680	-38.320	60.000
Average					
0.166	0.300	46.740	47.040	-8.503	55.543
0.326	0.300	27.930	28.230	-22.741	50.971
0.646	0.310	23.940	24.250	-21.750	46.000
0.982	0.320	26.410	26.730	-19.270	46.000
3.630	0.390	12.820	13.210	-32.790	46.000
8.849	0.480	15.680	16.160	-33.840	50.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

The following test equipments are used during the radiated emission tests:

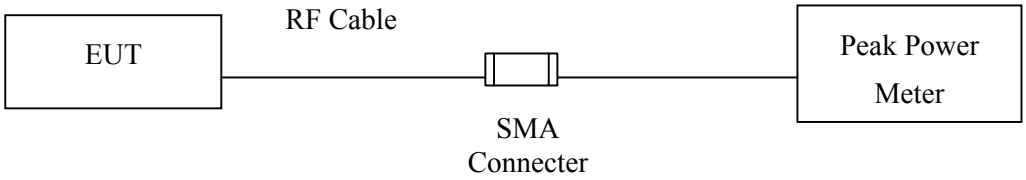
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2007
X	Power Sensor	Anritsu	MA2491A/034457	May, 2007

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

Conducted Measurement



3.3. Test procedures

The EUT was setup according to ANSI C63.4, 2003 for compliance to FCC 47CFR 15.247 requirements

3.4. Limit

For frequency hopping systems in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1Watt.

For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watt.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Bluetooth GPS Receiver
Test Item : Peak Power Output
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Cable loss (dB)	Peak Power Output (dBm)	Limit (dBm)	Result
Channel 00	2402.00	0.5	3.37	30	Pass
Channel 39	2441.00	0.5	3.11	30	Pass
Channel 78	2480.00	0.5	2.73	30	Pass

Note: Peak Power Output =Reading value on peak power meter + cable loss

Product : Bluetooth GPS Receiver
Test Item : Peak Power Output
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Cable loss (dB)	Peak Power Output (dBm)	Limit (dBm)	Result
Channel 00	2402.00	0.5	1.23	30	Pass
Channel 39	2441.00	0.5	0.85	30	Pass
Channel 78	2480.00	0.5	0.05	30	Pass

Note: Peak Power Output =Reading value on peak power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

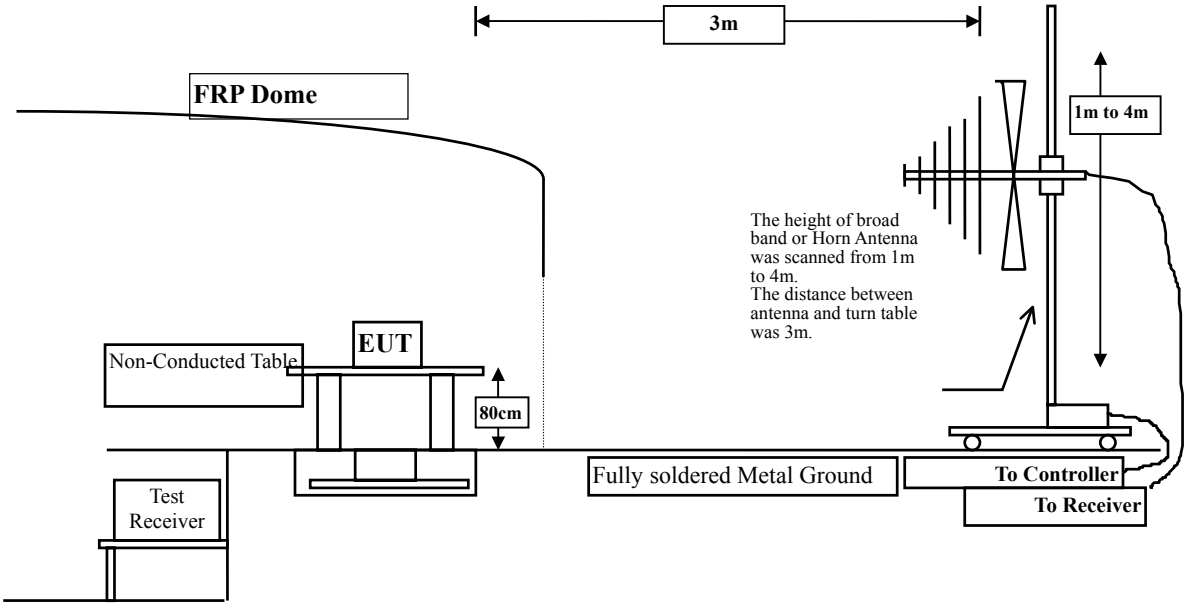
The following test equipments are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☐Site # 1	Test Receiver	R & S	ESVS 10 / 834468/003	May, 2007
	Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2007
	Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2007
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2007
☐Site # 2	Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2007
	Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2007
	Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2007
	Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2007
	Horn Antenna	ETS	3115 / 0005-6160	Sep., 2007
	Pre-Amplifier	QTK	QTK-AMP-01/ 0001	May, 2007
☒Site # 3	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2007
	Spectrum Analyzer	HP	E4407B / US39440758	May, 2007
	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2007
	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2007
	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2007
	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
	Pre-Amplifier	HP	8449B / 3008A01123	July, 2007

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

4.2. 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 @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

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

The frequency range from 30MHz to 10th harminics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Bluetooth GPS Receiver
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2402MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	-0.205	48.060	47.855	-26.145	74.000
7206.000	3.294	40.310	43.604	-30.396	74.000
9608.000	5.696	38.190	43.886	-30.114	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	-0.205	47.360	47.155	-26.845	74.000
7206.000	3.294	40.640	43.934	-30.066	74.000
9608.000	5.696	37.700	43.396	-30.604	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4882.000	-0.276	48.190	47.914	-26.086	74.000
7323.000	3.330	40.230	43.559	-30.441	74.000
9764.000	6.262	38.780	45.043	-28.957	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4882.000	-0.276	51.330	51.054	-22.946	74.000
7323.000	3.330	42.240	45.569	-28.431	74.000
9764.000	6.262	41.870	48.133	-25.867	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2480MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4960.000	0.591	50.630	51.221	-22.779	74.000
7440.000	3.924	41.750	45.674	-28.326	74.000
9920.000	6.468	38.430	44.898	-29.102	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4960.000	0.591	50.870	51.461	-22.539	74.000
7440.000	3.924	41.160	45.084	-28.916	74.000
9920.000	6.468	40.080	46.548	-27.452	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK) (2402MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	-0.205	47.080	46.875	-27.125	74.000
7206.000	3.294	42.810	46.104	-27.896	74.000
9608.000	5.696	42.460	48.156	-25.844	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	-0.205	43.250	43.045	-30.955	74.000
7206.000	3.294	41.400	44.694	-29.306	74.000
9608.000	5.696	39.970	45.666	-28.334	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4882.000	-0.276	41.390	41.114	-32.886	74.000
7323.000	3.330	40.410	43.739	-30.261	74.000
9764.000	6.262	39.920	46.183	-27.817	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4882.000	-0.276	42.020	41.744	-32.256	74.000
7323.000	3.330	40.140	43.469	-30.531	74.000
9764.000	6.262	39.010	45.273	-28.727	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK) (2480MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4960.000	0.591	41.010	41.601	-32.399	74.000
7440.000	3.924	40.300	44.224	-29.776	74.000
9920.000	6.468	39.900	46.368	-27.632	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4960.000	0.591	42.840	43.431	-30.569	74.000
7440.000	3.924	38.920	42.844	-31.156	74.000
9920.000	6.468	40.030	46.498	-27.502	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
286.080	11.881	21.601	33.482	-12.518	46.000
441.280	15.708	16.453	32.161	-13.839	46.000
520.820	16.516	16.427	32.943	-13.057	46.000
623.640	18.488	14.488	32.976	-13.024	46.000
703.180	18.217	10.519	28.736	-17.264	46.000
858.380	19.717	13.278	32.995	-13.005	46.000
Vertical					
338.460	12.754	16.026	28.780	-17.220	46.000
441.280	16.972	15.903	32.875	-13.125	46.000
532.460	17.169	11.491	28.660	-17.340	46.000
629.460	18.535	8.425	26.960	-19.040	46.000
728.000	20.275	8.675	28.950	-17.050	46.000
858.380	19.151	6.468	25.619	-20.381	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Car Charger (1) - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
353.980	13.396	16.669	30.065	-15.935	46.000
458.740	16.584	11.849	28.433	-17.567	46.000
515.200	16.869	14.631	31.500	-14.500	46.000
652.740	18.565	4.088	22.653	-23.347	46.000
831.220	19.287	8.937	28.224	-17.776	46.000
901.060	19.305	9.017	28.322	-17.678	46.000
Vertical					
344.280	12.821	16.117	28.938	-17.062	46.000
485.900	16.478	17.097	33.575	-12.425	46.000
544.100	18.488	8.332	26.820	-19.180	46.000
629.460	18.535	8.374	26.909	-19.091	46.000
716.760	19.197	11.191	30.388	-15.612	46.000
967.020	20.068	8.478	28.546	-25.454	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 3: Car Charger (2) - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	13.933	11.701	25.634	-20.366	46.000
485.900	16.478	5.915	22.393	-23.607	46.000
559.620	17.306	5.291	22.597	-23.403	46.000
703.180	18.217	4.527	22.744	-23.256	46.000
809.880	19.019	7.523	26.542	-19.458	46.000
895.240	19.569	5.130	24.699	-21.301	46.000
Vertical					
263.678	13.058	8.235	21.293	-24.707	46.000
355.925	14.086	13.103	27.189	-18.811	46.000
518.880	16.736	8.970	25.706	-20.294	46.000
598.420	19.424	13.090	32.514	-13.486	46.000
677.960	17.721	5.060	22.781	-23.219	46.000
802.120	19.160	5.033	24.193	-21.807	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 4: Car Charger (3) - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	13.933	16.190	30.123	-15.877	46.000
544.100	17.901	7.892	25.793	-20.207	46.000
602.300	17.862	8.766	26.628	-19.372	46.000
703.180	18.217	14.583	32.800	-13.200	46.000
829.280	19.274	8.888	28.162	-17.838	46.000
955.380	19.921	2.564	22.485	-23.515	46.000
Vertical					
241.460	11.057	17.063	28.120	-17.880	46.000
400.540	16.453	5.813	22.266	-23.734	46.000
480.080	16.403	12.325	28.728	-17.272	46.000
633.340	18.463	9.030	27.493	-18.507	46.000
728.400	20.275	7.850	28.125	-17.875	46.000
806.000	19.185	12.341	31.526	-14.474	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	13.933	16.190	30.123	-15.877	46.000
544.100	17.901	7.892	25.793	-20.207	46.000
602.300	17.862	8.766	26.628	-19.372	46.000
703.180	18.217	14.583	32.800	-13.200	46.000
829.280	19.274	8.888	28.162	-17.838	46.000
955.380	19.921	2.564	22.485	-23.515	46.000
Vertical					
241.460	11.057	17.063	28.120	-17.880	46.000
400.540	16.453	5.813	22.266	-23.734	46.000
480.080	16.403	12.325	28.728	-17.272	46.000
633.340	18.463	9.030	27.493	-18.507	46.000
728.400	20.275	7.850	28.125	-17.875	46.000
806.000	19.185	12.341	31.526	-14.474	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 6: Car Charger (1) - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	13.933	11.701	25.634	-20.366	46.000
485.900	16.478	5.915	22.393	-23.607	46.000
559.620	17.306	5.291	22.597	-23.403	46.000
703.180	18.217	4.527	22.744	-23.256	46.000
809.880	19.019	7.523	26.542	-19.458	46.000
895.240	19.569	5.130	24.699	-21.301	46.000
Vertical					
365.620	14.643	19.676	34.319	-11.681	46.000
485.900	16.478	18.488	34.966	-11.034	46.000
573.200	19.231	12.645	31.876	-14.124	46.000
658.560	17.564	13.500	31.064	-14.936	46.000
753.620	20.463	9.922	30.385	-15.615	46.000
831.220	18.825	6.922	25.747	-20.253	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 7: Car Charger (2) - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	13.933	11.701	25.634	-20.366	46.000
485.900	16.478	9.915	26.393	-19.607	46.000
559.620	17.306	7.288	24.594	-21.406	46.000
703.180	18.217	7.527	25.744	-20.256	46.000
809.880	19.019	7.233	26.252	-19.748	46.000
895.240	19.569	5.100	24.669	-21.331	46.000
Vertical					
355.920	14.086	13.633	27.719	-18.281	46.000
518.880	16.736	8.970	25.706	-20.294	46.000
598.420	19.424	13.090	32.514	-13.486	46.000
677.960	17.721	3.150	20.871	-25.129	46.000
802.120	19.160	5.033	24.193	-21.807	46.000
860.320	19.259	1.468	20.727	-25.273	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : Bluetooth GPS Receiver
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 8: Car Charger (3) - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
363.680	13.933	21.190	35.123	-10.877	46.000
544.100	17.901	5.895	23.796	-22.204	46.000
602.300	17.862	8.766	26.628	-19.372	46.000
703.180	18.217	14.586	32.803	-13.197	46.000
829.280	19.274	2.888	22.162	-23.838	46.000
955.385	19.922	2.928	22.850	-23.150	46.000
Vertical					
241.460	11.057	21.063	32.120	-13.880	46.000
400.540	16.453	11.833	28.286	-17.714	46.000
480.080	16.403	12.325	28.728	-17.272	46.000
633.340	18.463	4.030	22.493	-23.507	46.000
728.400	20.275	5.875	26.150	-19.850	46.000
806.000	19.185	7.446	26.631	-19.369	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak Value
2. " " means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

5. Spurious RF Conducted Emissions

5.1. Test Equipment

The following test equipments are used during the band edge tests:

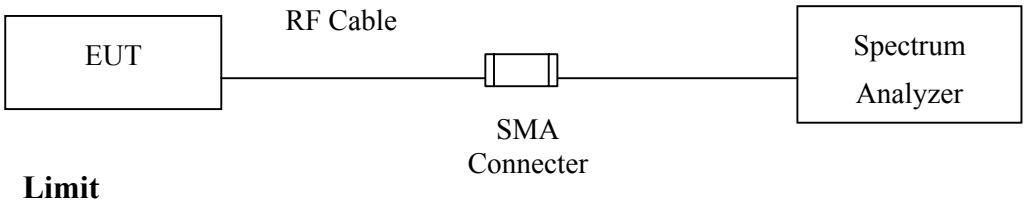
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
Test Site		Site 3		

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

Spurious RF Conducted Measurement



5.3. Limit

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 was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

Set RBW=100KHz, VBW ≥ RBW, Sweep = auto, Detector function = peak

Trace = max hold

5.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

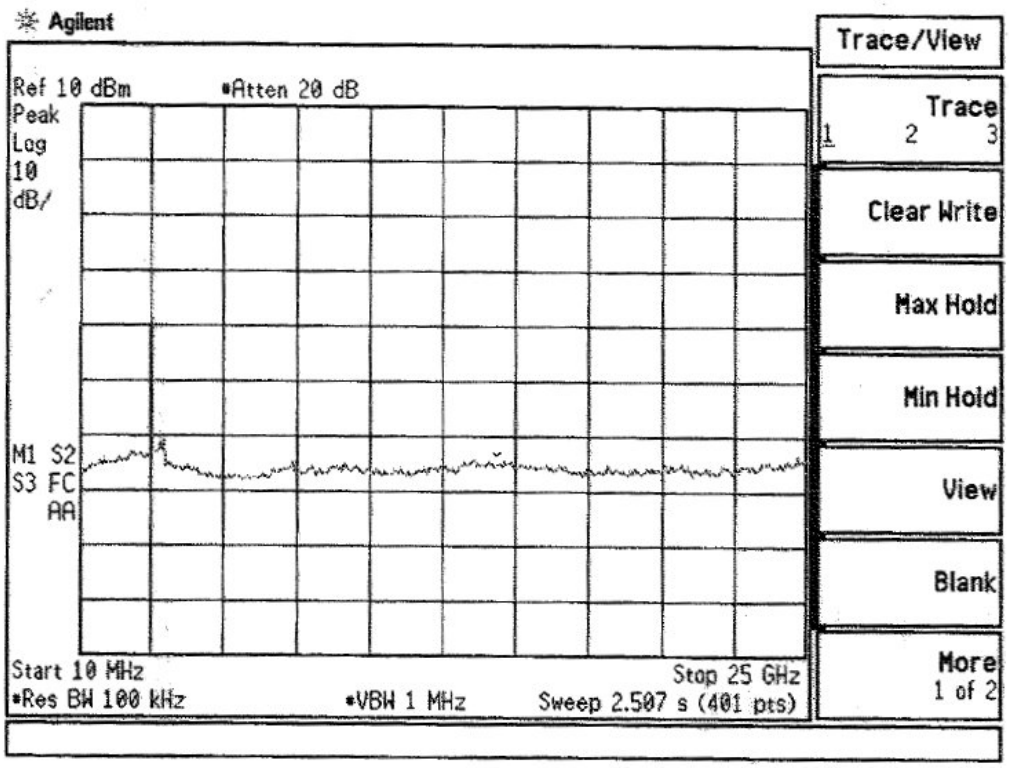
5.6. Test Result of Spurious RF Conducted Emissions

Product : Bluetooth GPS Receiver
Test Item : Spurious RF Conducted Emissions
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	2402	>20dB	Pass

Figure Channel 00: 10MHz-25GHz

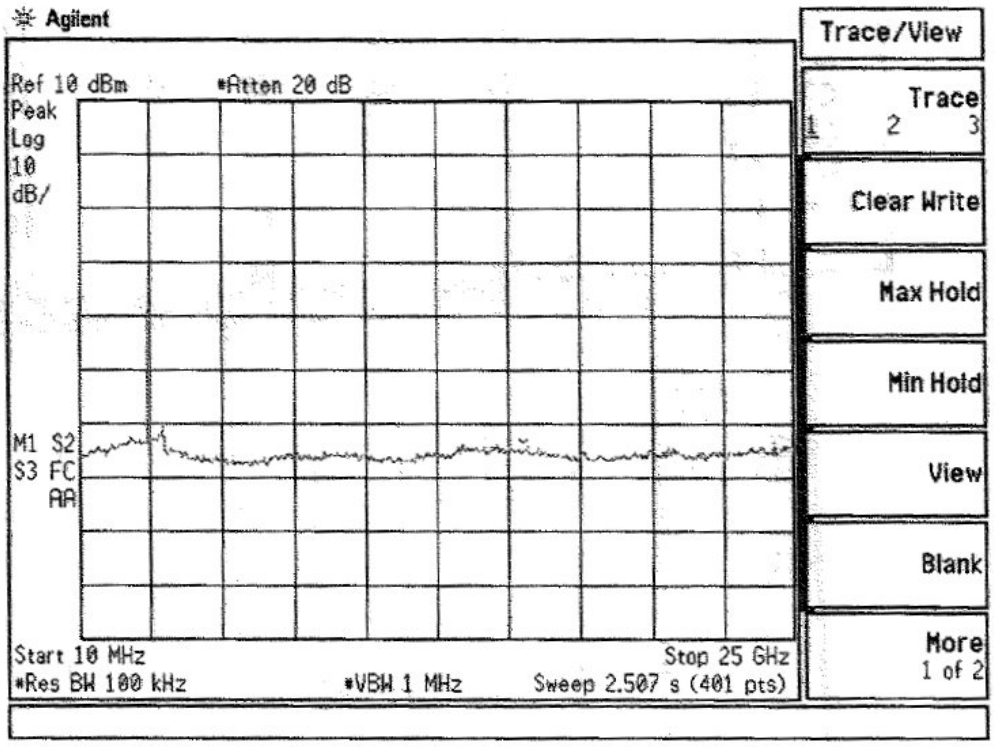


Product : Bluetooth GPS Receiver
Test Item : Spurious RF Conducted Emissions
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
39	2441	>20dB	Pass

Figure Channel 39: 10MHz-25GHz

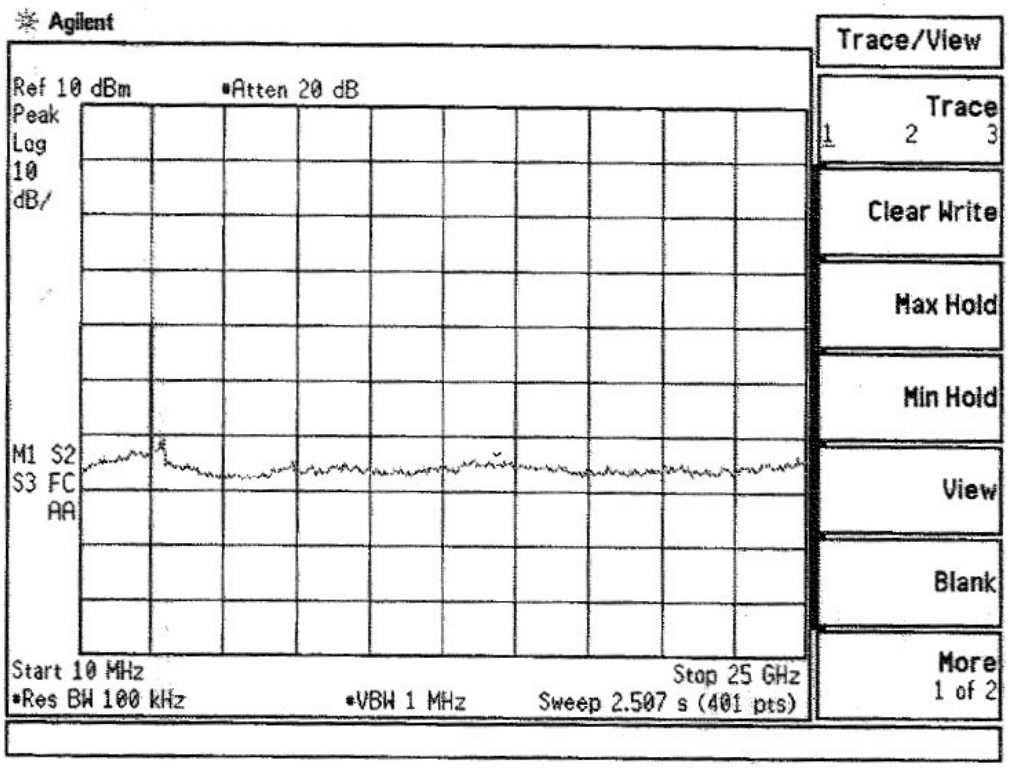


Product : Bluetooth GPS Receiver
Test Item : Spurious RF Conducted Emissions
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	2480	>20dB	Pass

Figure Channel 78: 10MHz-25GHz

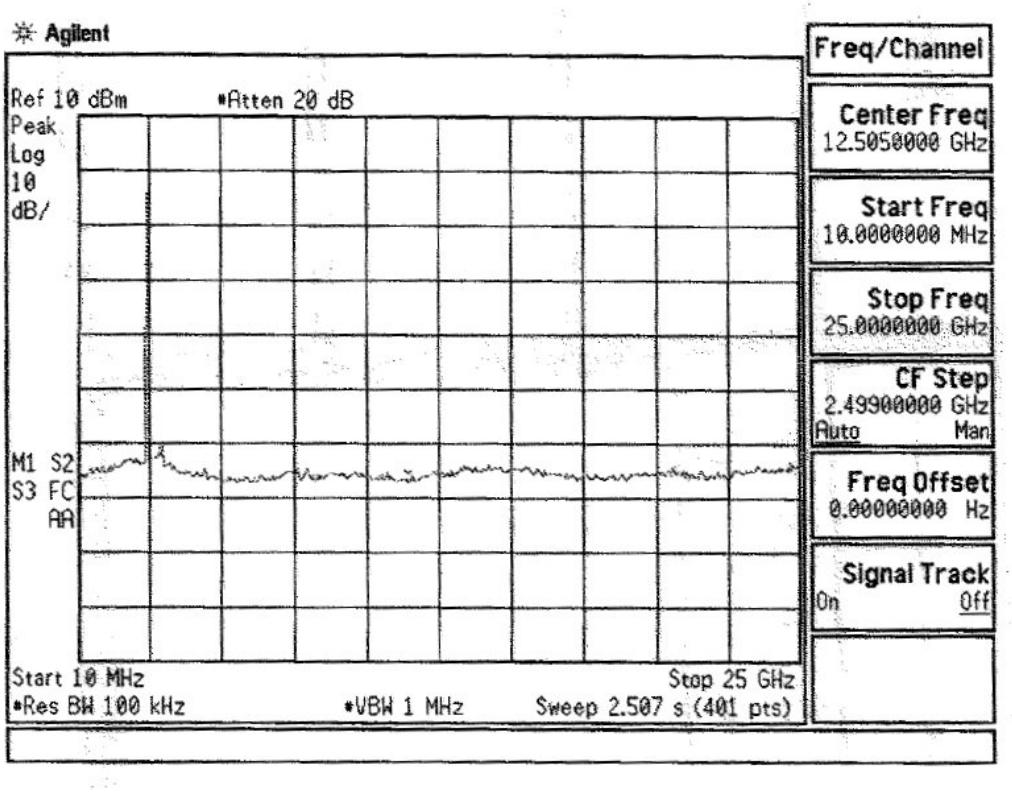


Product : Bluetooth GPS Receiver
Test Item : Spurious RF Conducted Emissions
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	2402	>20dB	Pass

Figure Channel 00: 10MHz-25GHz

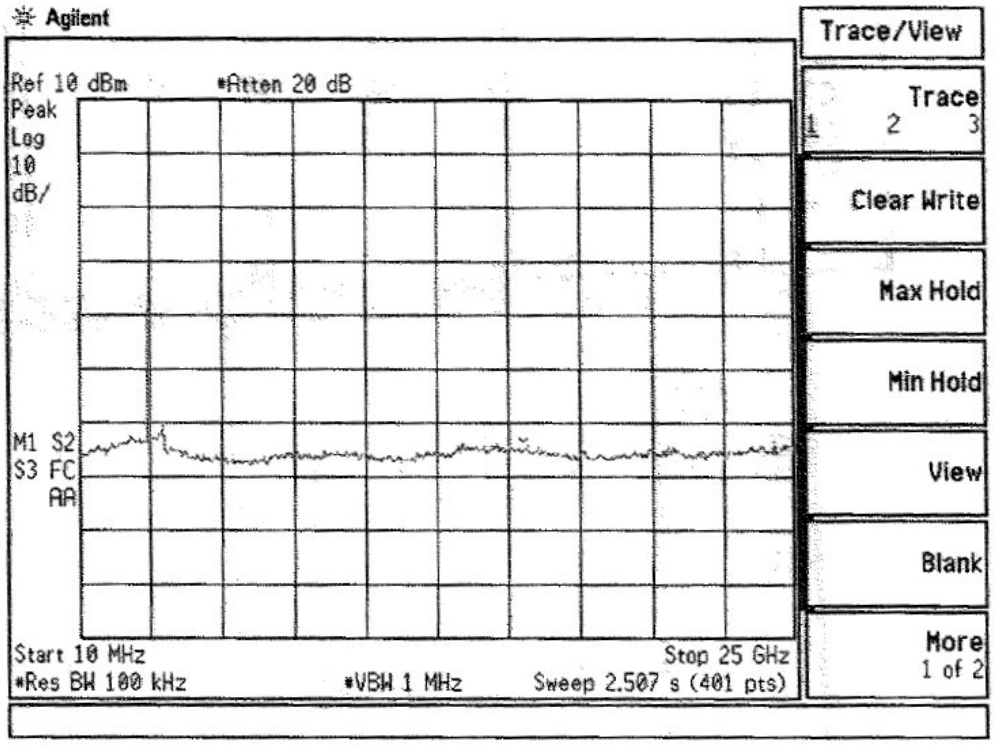


Product : Bluetooth GPS Receiver
Test Item : Spurious RF Conducted Emissions
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
39	2441	>20dB	Pass

Figure Channel 39: 10MHz-25GHz

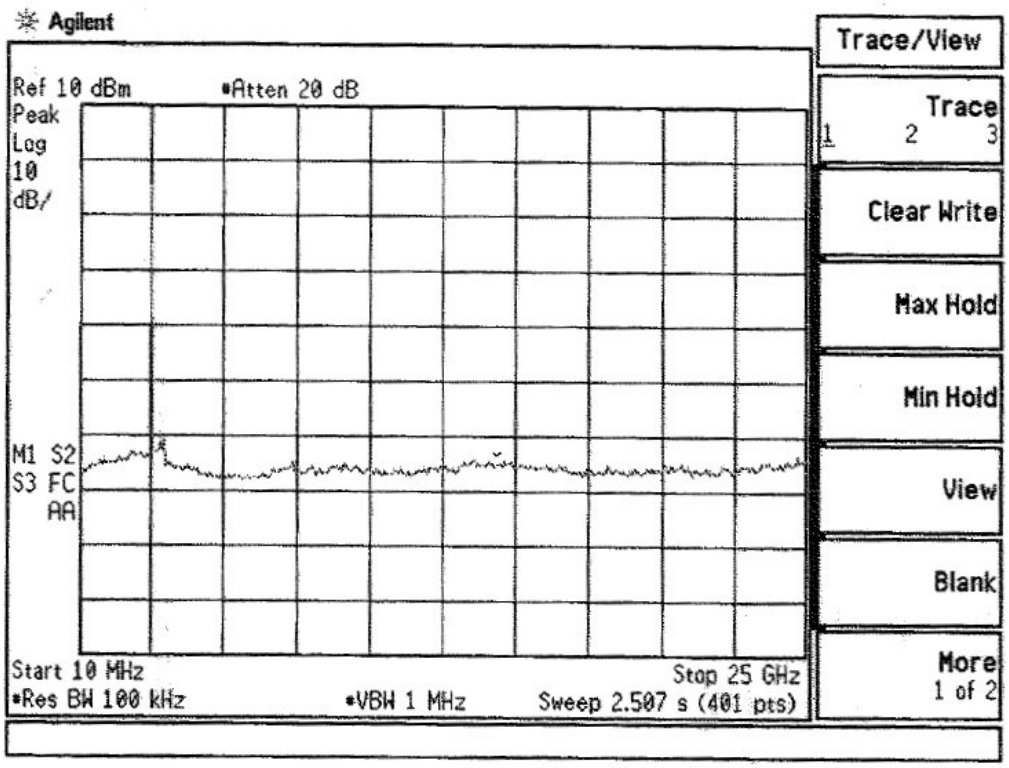


Product : Bluetooth GPS Receiver
Test Item : Spurious RF Conducted Emissions
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Spurious RF Conducted Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	2480	>20dB	Pass

Figure Channel 78: 10MHz-25GHz



6. Radiated Emission Band Edge

6.1. Test Equipment

The following test equipments are used during the band edge tests:

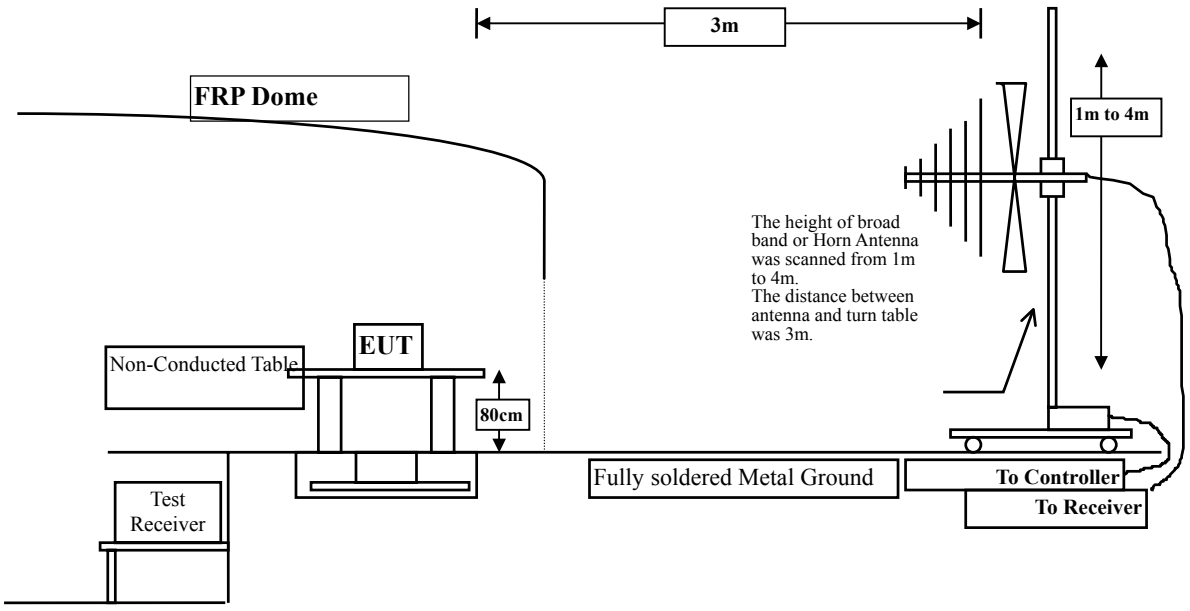
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2007
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2007
X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2007
X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2007
X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
X	Pre-Amplifier	Agilent	8449B / 3008A01123	July, 2007
Test Site		Site 3		

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limit

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.

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

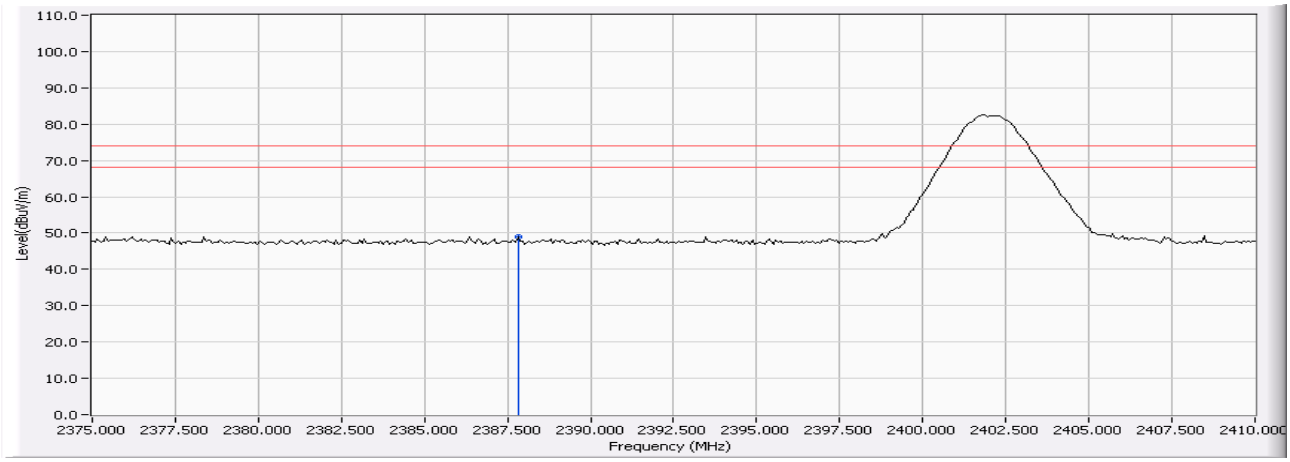
6.6. Test Result of Band Edge

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2402MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2387.810	29.586	55.677	48.903	74.00	54.00	Pass

Figure Channel 00: (Horizontal) (Peak)



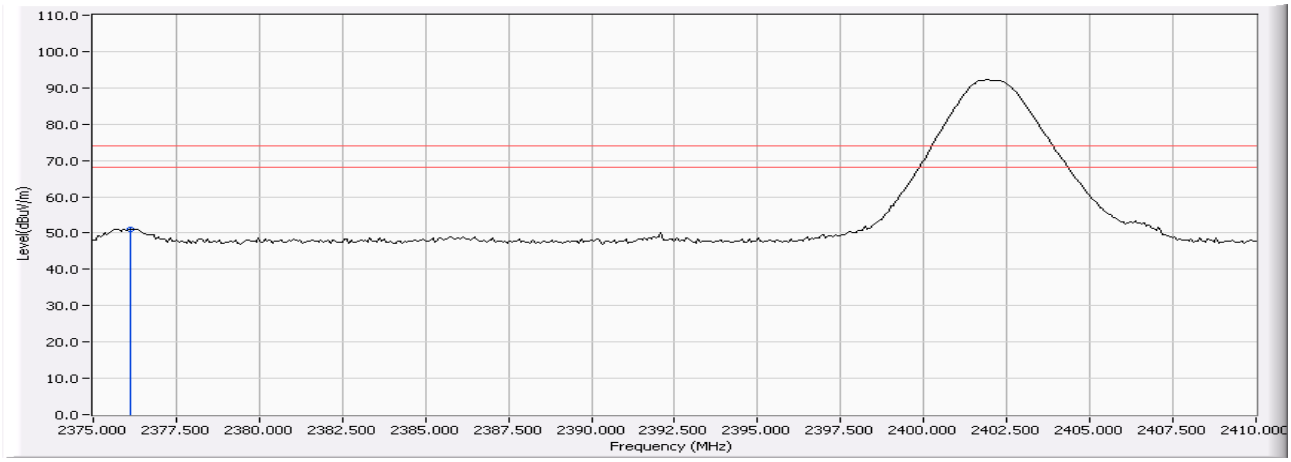
Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2402MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2376.120	-6.823	57.830	51.007	74.00	54.00	Pass

Figure Channel 00: (Vertical) (Peak)



Note:

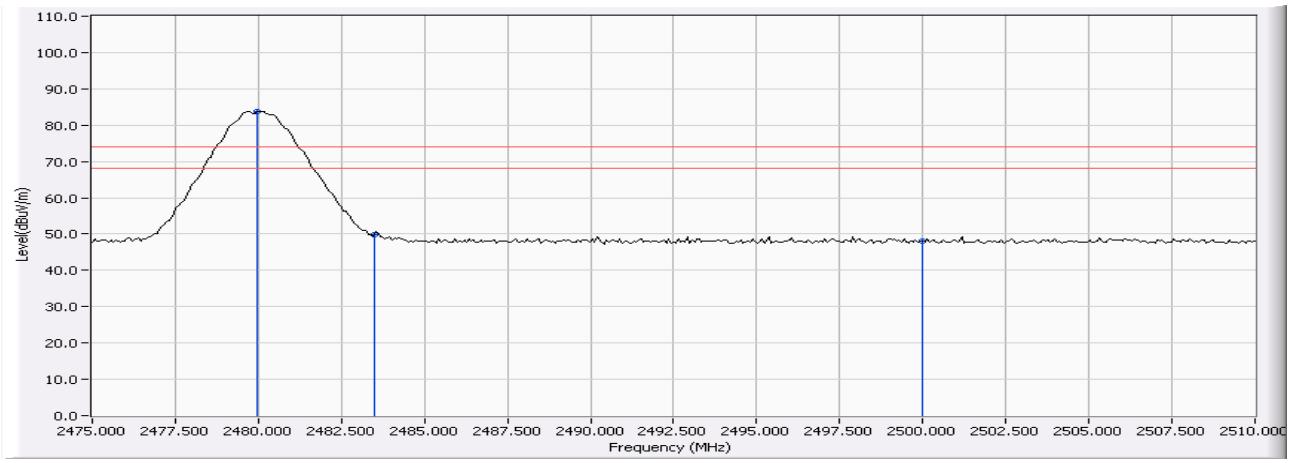
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2480MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	56.324	49.856	74.00	54.00	Pass

Figure Channel 78: (Horizontal) (Peak)



Note:

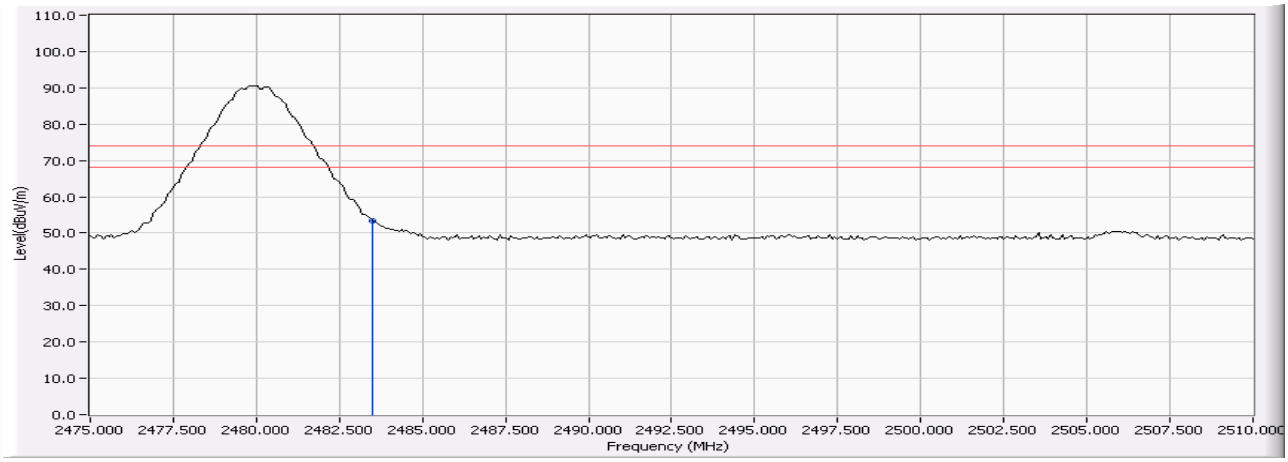
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(2480MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	59.932	53.464	74.00	54.00	Pass

Figure Channel 78: (Vertical) (Peak)



Note:

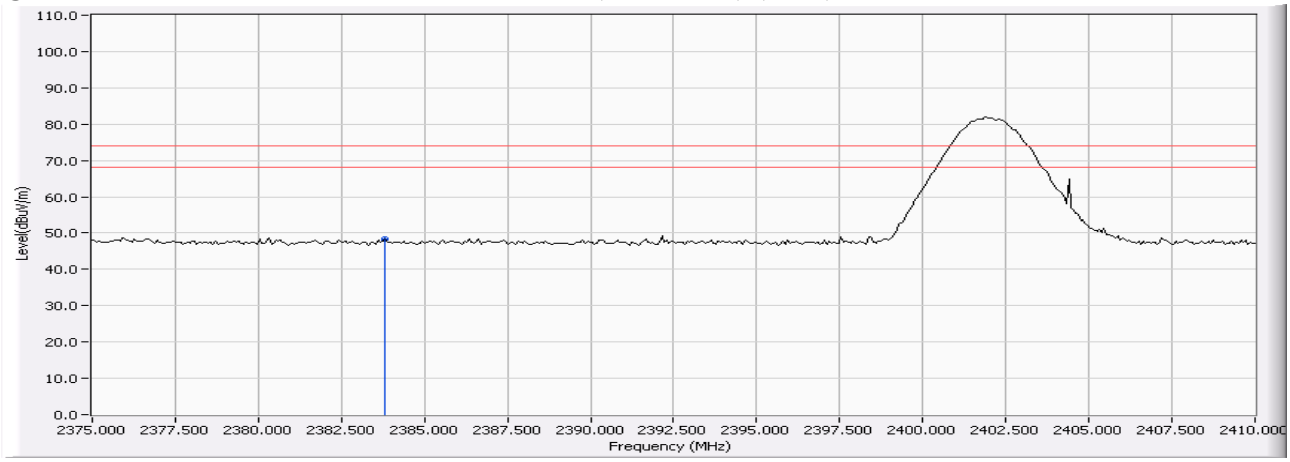
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)(2402MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2383.820	-6.787	55.141	48.354	74.00	54.00	Pass

Figure Channel 00: (Horizontal) (Peak)



Note:

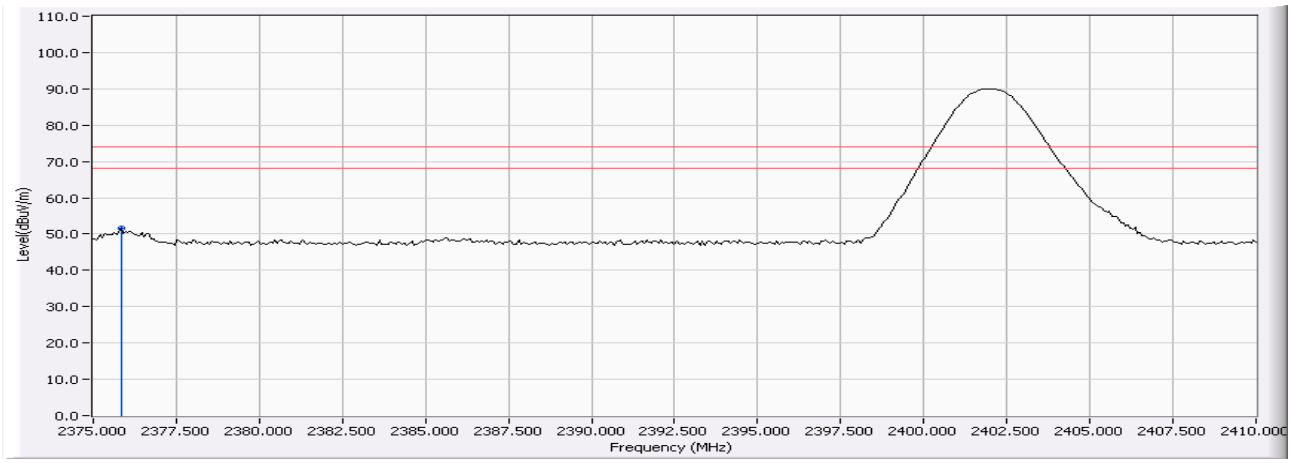
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)(2402MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2375.840	-6.824	58.417	51.593	74.00	54.00	Pass

Figure Channel 00: (Vertical) (Peak)



Note:

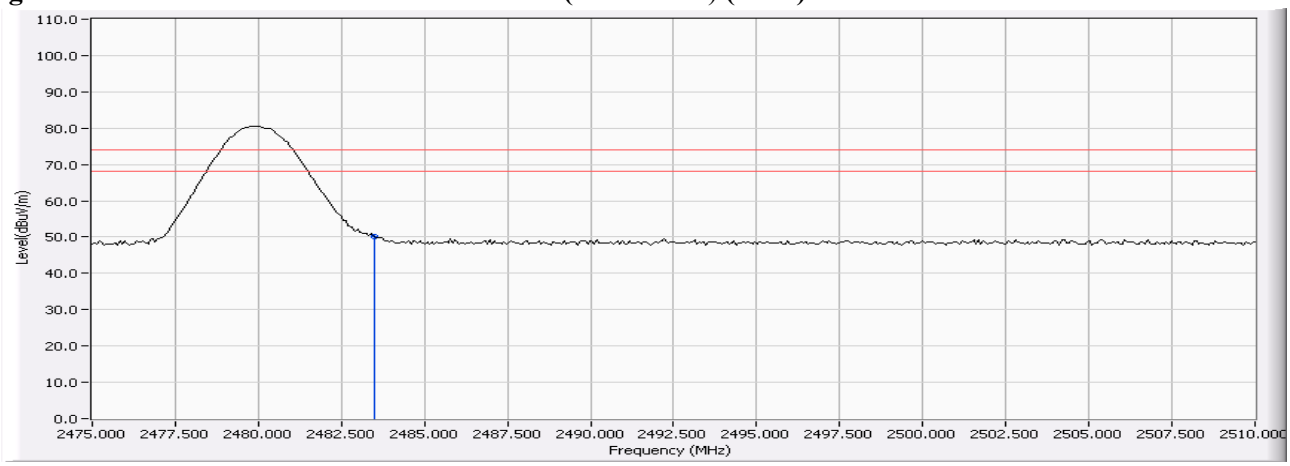
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)(2480MHz)

RF Radiated Measurement (Horizontal):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	56.586	50.118	74.00	54.00	Pass

Figure Channel 78: (Horizontal) (Peak)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Bluetooth GPS Receiver
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)(2480MHz)

RF Radiated Measurement (Vertical):

Channel	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	-6.469	61.146	54.678	74.00	54.00	Pass
78(Average)	2483.500	-6.469	53.145	46.677	74.00	54.00	Pass

Figure Channel 78: (Vertical) (Peak)

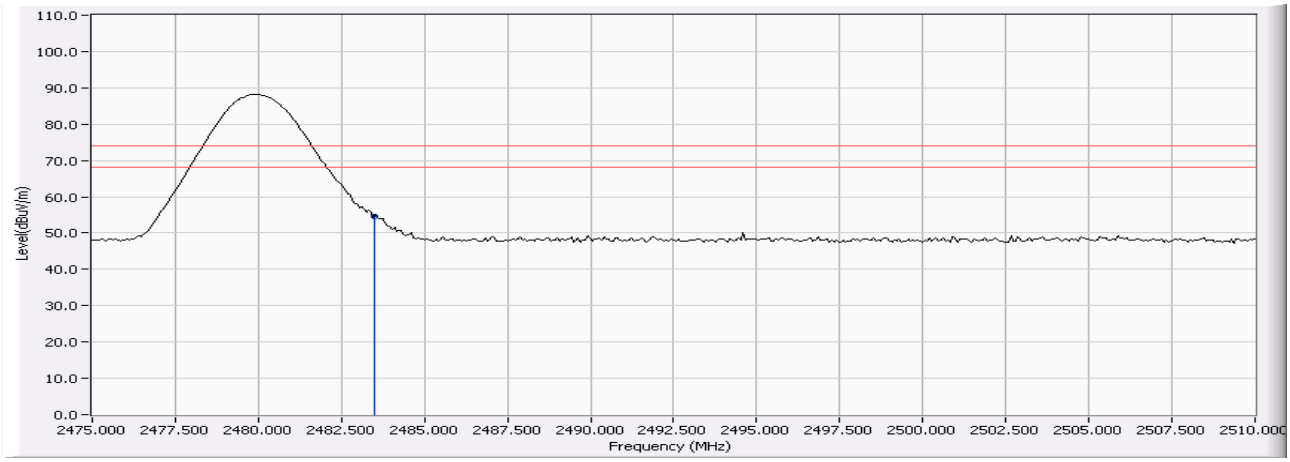
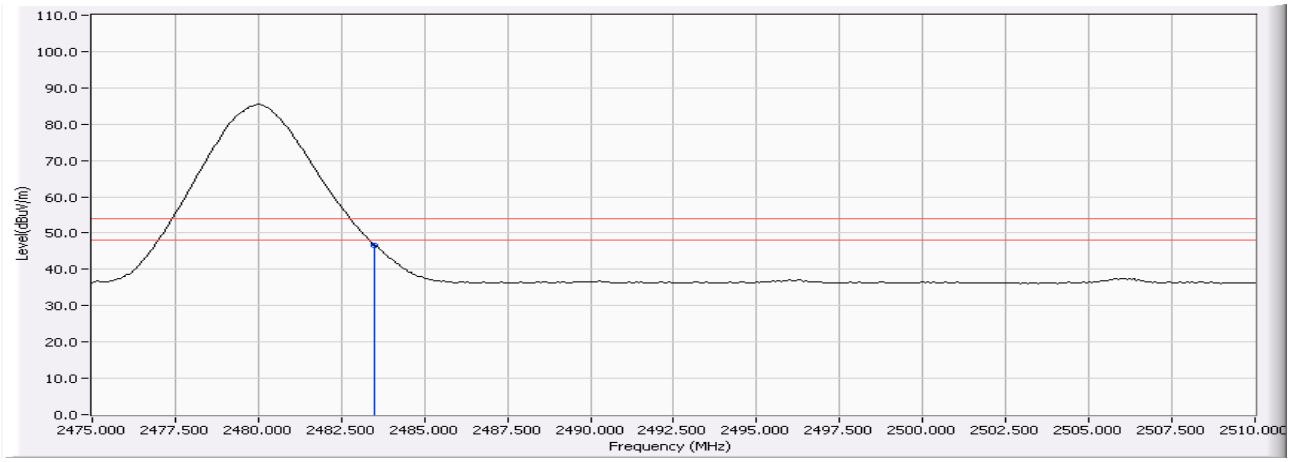


Figure Channel 78: (Vertical) (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection..

7. Channel Number

7.1. Test Equipment

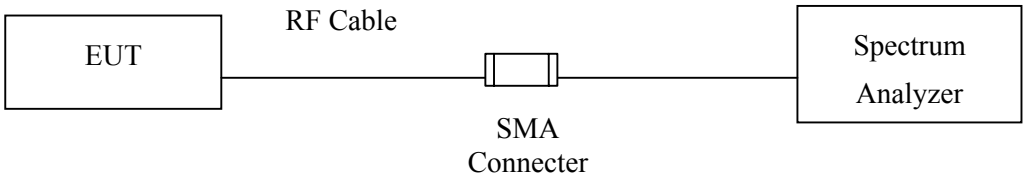
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R & S	FSP40 / 100170	Nov, 2007

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limit

Number of hopping frequencies ≧75

7.4. Test Procedures

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Span = the frequency band of operation

RBW ≥ 1% of the span , VBW ≥ RBW

Sweep = auto, Detector function = peak, Trace = max hold

7.5. Uncertainty

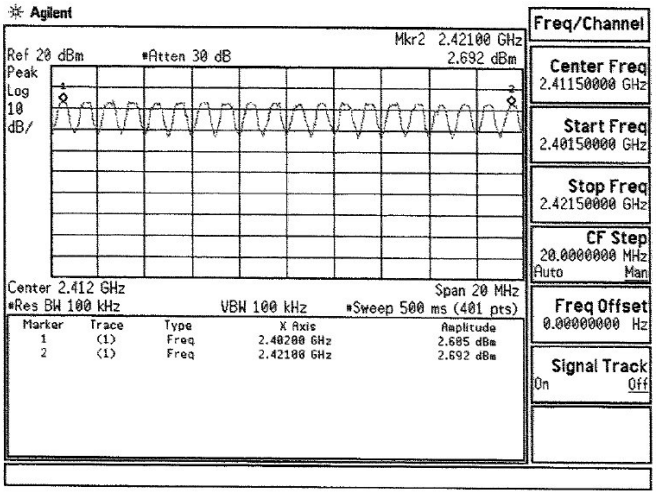
N/A

7.6. Test Result of Channel Number

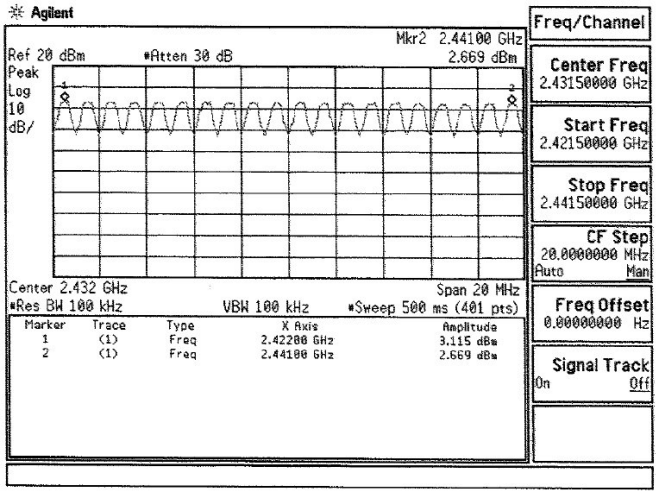
Product : Bluetooth GPS Receiver
Test Item : Channel Number
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

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

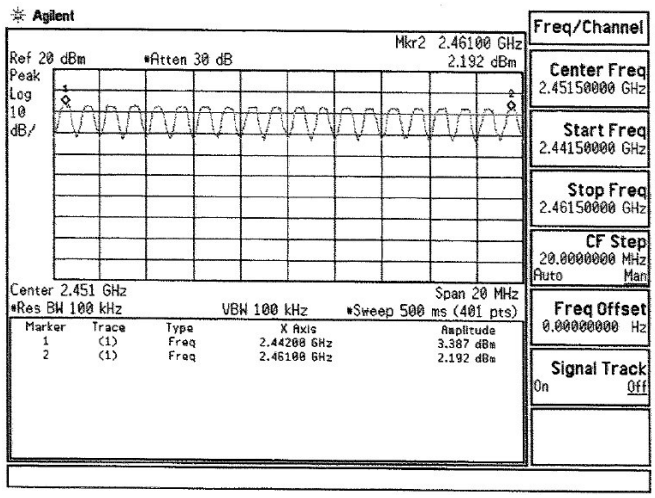
2402-2421MHz



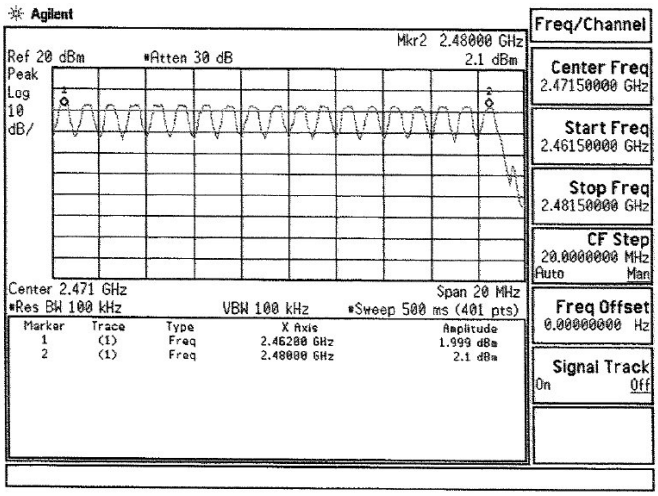
2422-2441MHz



2442-2461MHz



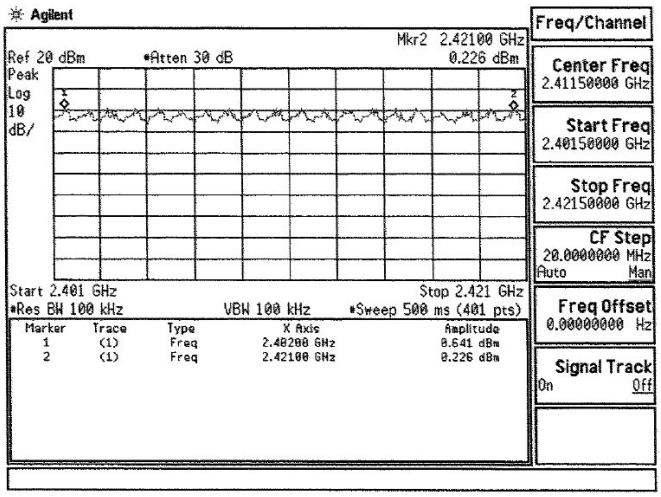
2462-2480MHz



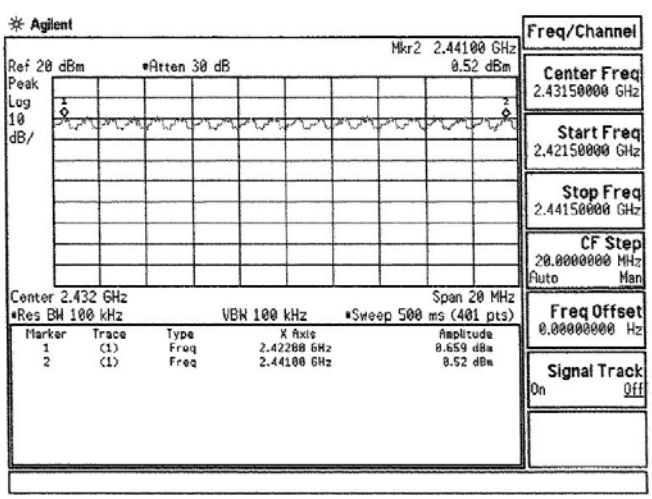
Product : Bluetooth GPS Receiver
Test Item : Channel Number
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

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

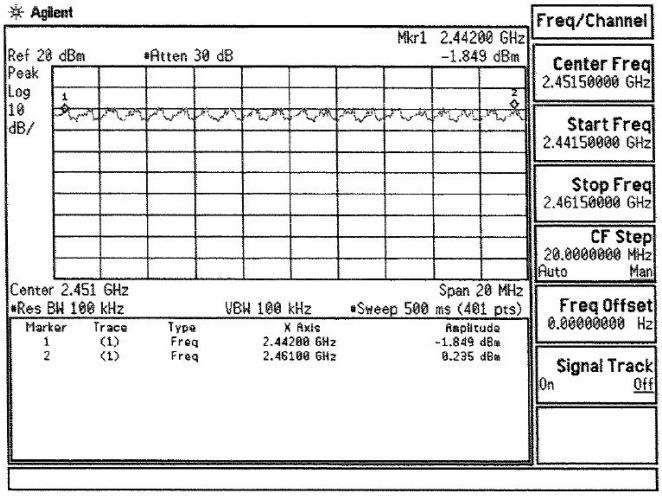
2402-2421MHz



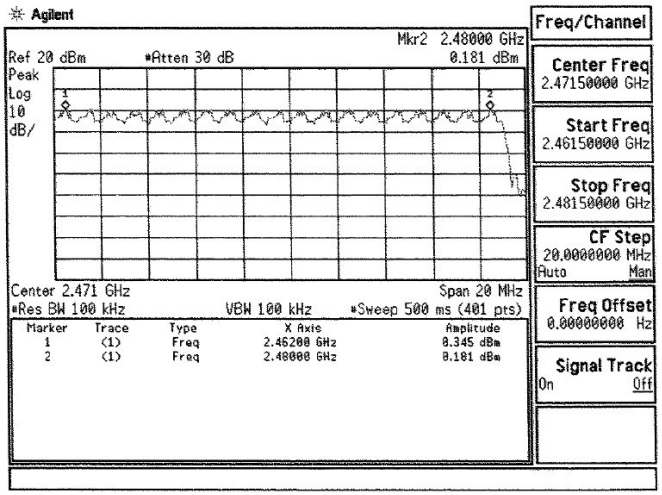
2422-2441MHz



2442-2461MHz



2462-2480MHz



8. Channel Separation

8.1. Test Equipment

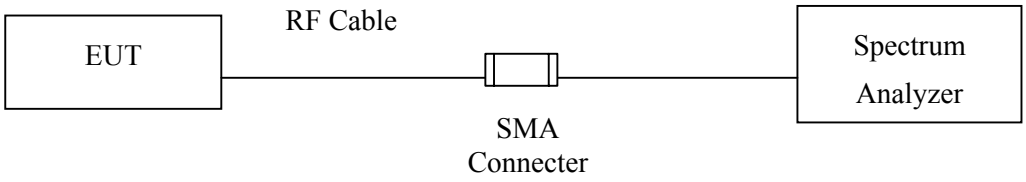
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R & S	FSP40 / 100170	Nov, 2007

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limit

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 Procedures

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Span = Capture the peaks of two adjacent channels

Resolution Bandwidth (RBW) ≥ 1% of the span, VBW ≥ RBW

Sweep = auto, Detector function = peak, Trace = max hold

8.5. Uncertainty

± 150Hz

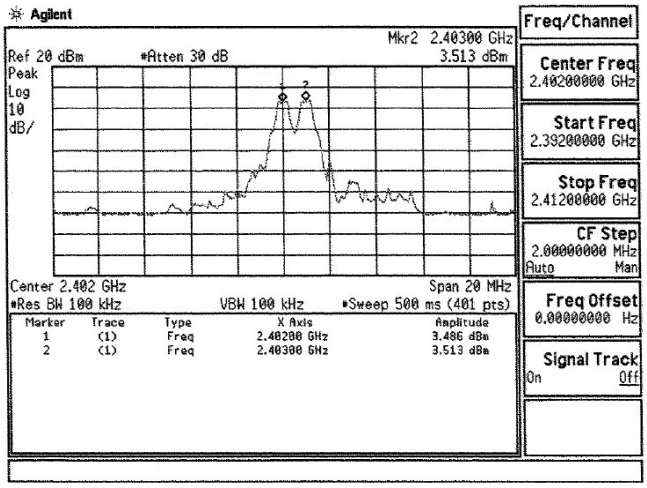
8.6. Test Result of Channel Separation

Product : Bluetooth GPS Receiver
Test Item : Channel Separation
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

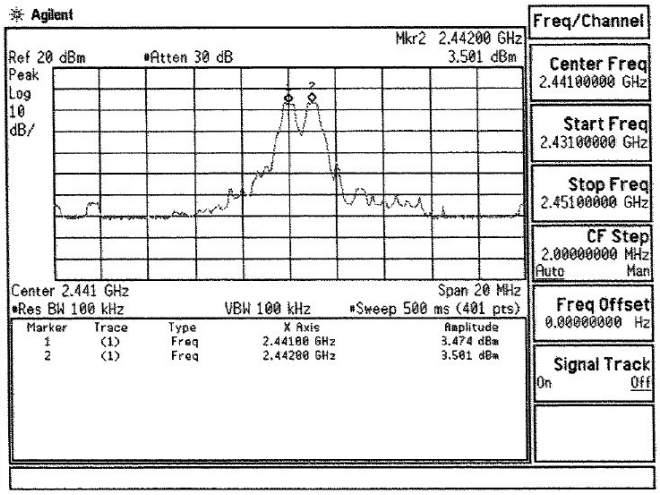
Measured Result (MHz)	Required Limit	Result
1.00	>25 kHz or 2/3 * 20 dB BW	Pass

Hopping on, Carrier frequency separation of channel 39(2441MHz) and channel 40(2442MHz)

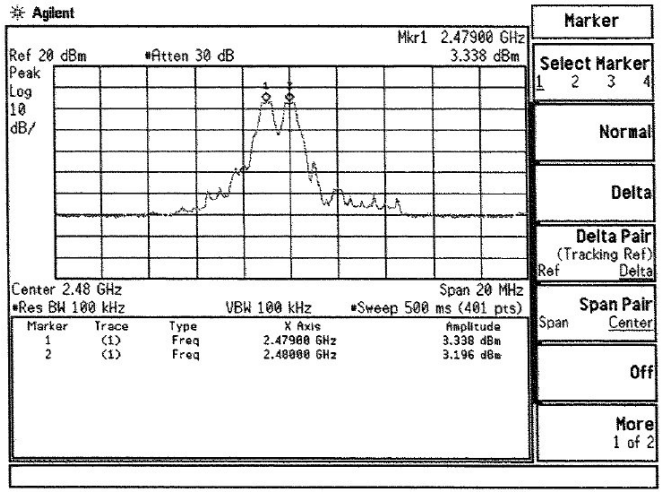
Channel 00 2402MHz



Channel 39 2441MHz



Channel 78 2480 MHz

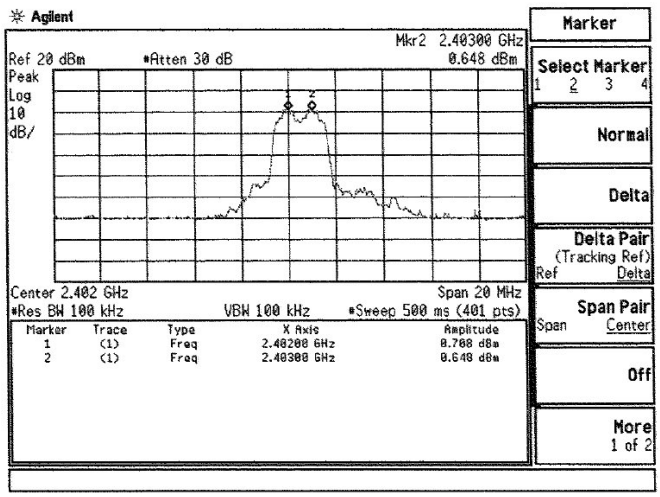


Product : Bluetooth GPS Receiver
Test Item : Channel Separation
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

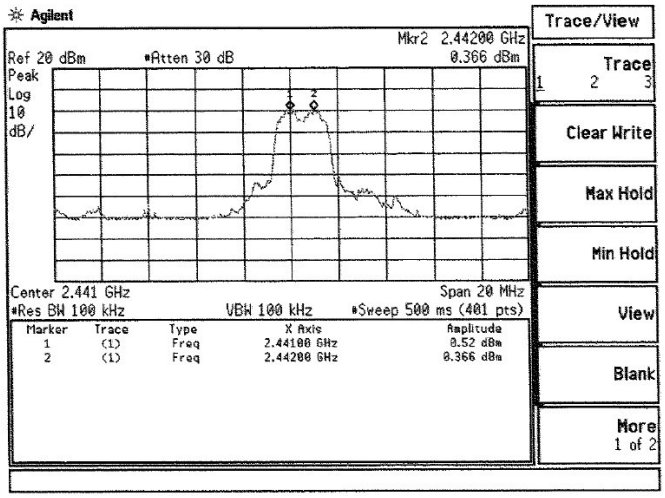
Measured Result (MHz)	Required Limit	Result
1.00	>25 kHz or 2/3 * 20 dB BW	Pass

Hopping on, Carrier frequency separation of channel 39(2441MHz) and channel 40(2442MHz)

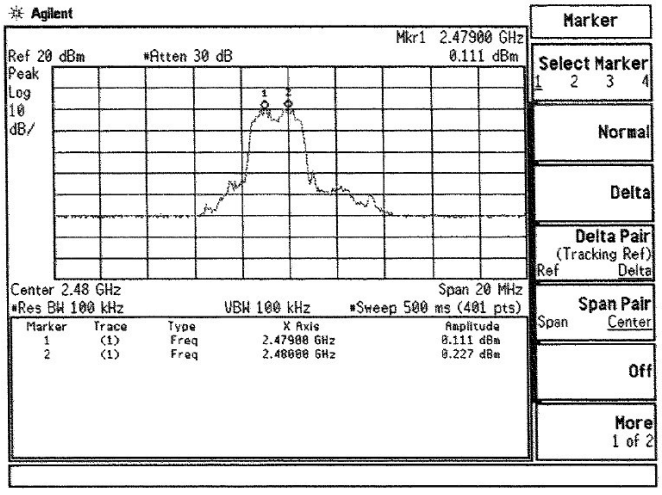
Channel 00 2402MHz



Channel 39 2441MHz



Channel 78 2480 MHz



9. Dwell Time

9.1. Test Equipment

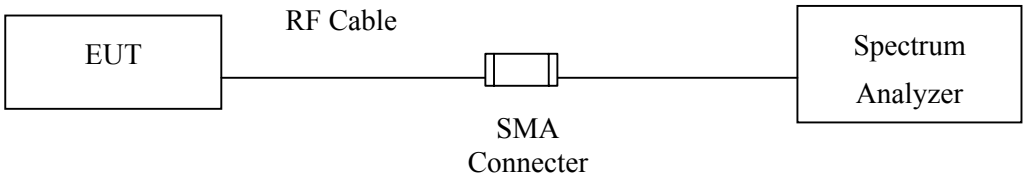
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

9.2. Test Setup



9.3. Limit

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.

9.4. Test Procedures

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

The hopping function of the EUT is enabled.

Span = zero span, centered on a hopping channel

RBW = 1 MHz, VBW ≥ RBW

Sweep =Capture the entire dwell time per hopping channel

Detector function = peak, Trace = max hold

9.5. Uncertainty

± 25msec

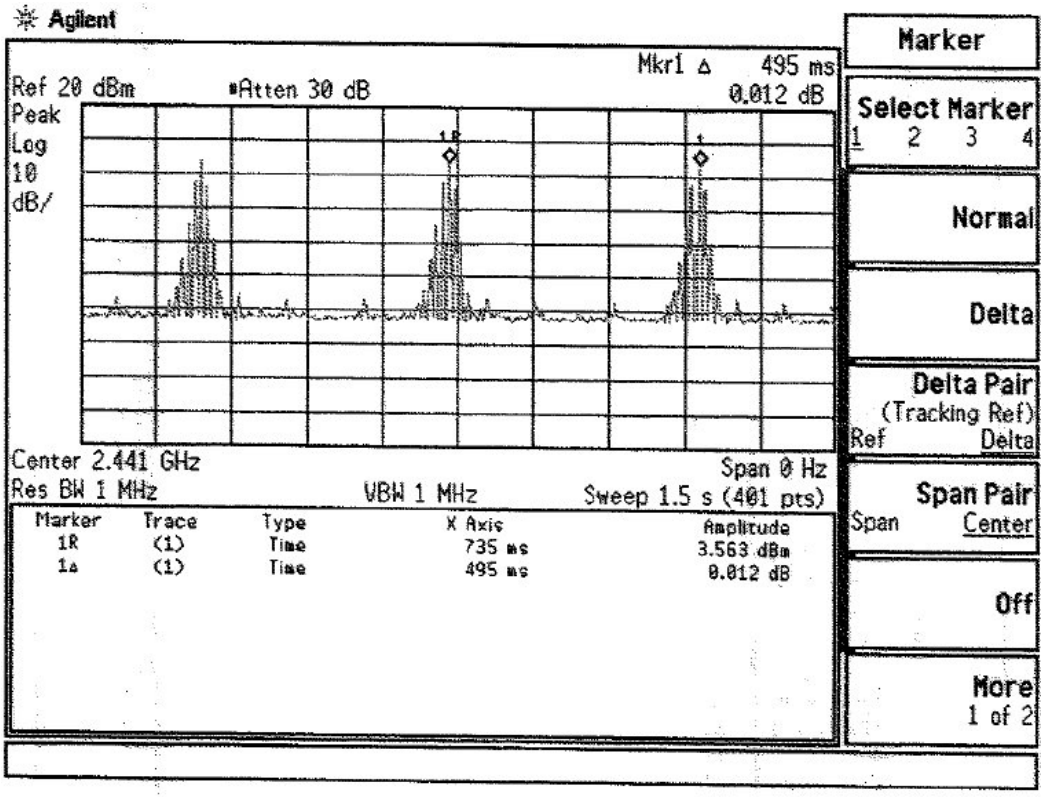
9.6. Test Result of Dwell Time

Product : Bluetooth GPS Receiver
Test Item : Dwell Time
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)(DH5)

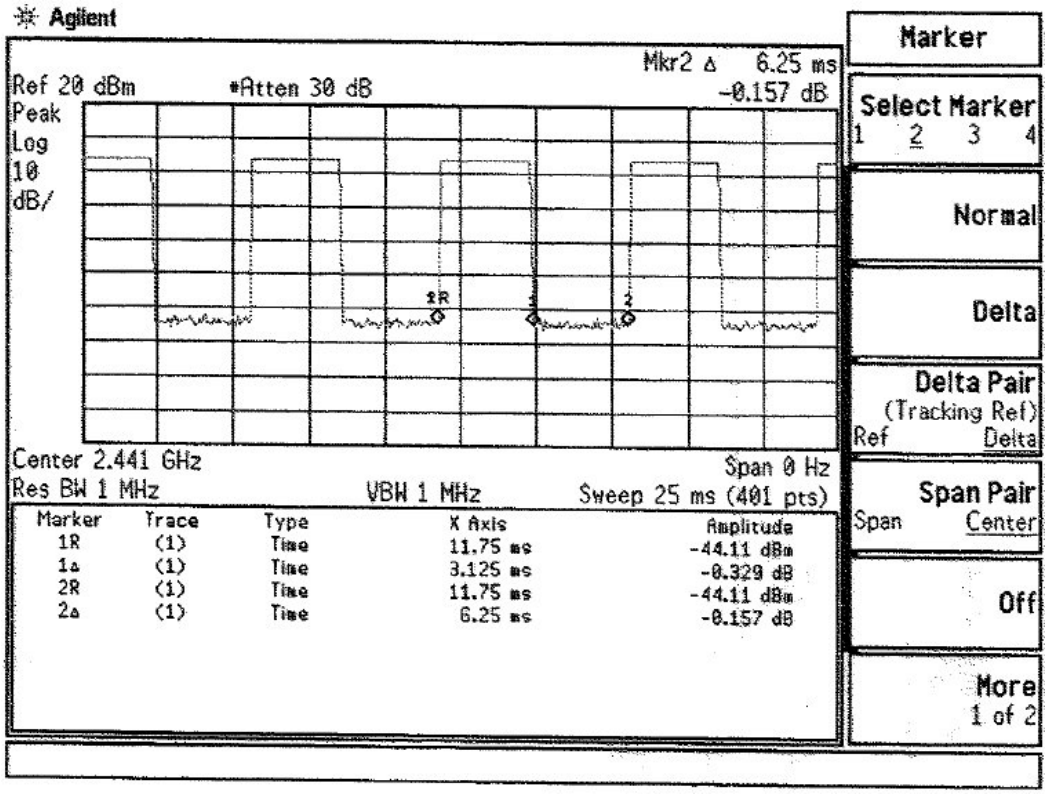
Channel No.	Frequency (MHz)	Time Interval between hops (ms)	Transmission Time (us)	Dwell Time (ms)	Limit (ms)	Result
39	2441	495	3125	199.4949495	400	Pass

Note: Dwell Time = 79 * 400 / Time Interval Between Hops * Transmission Time / 1000

CH39 Time Interval between hops



CH39 Transmission Time



Note:

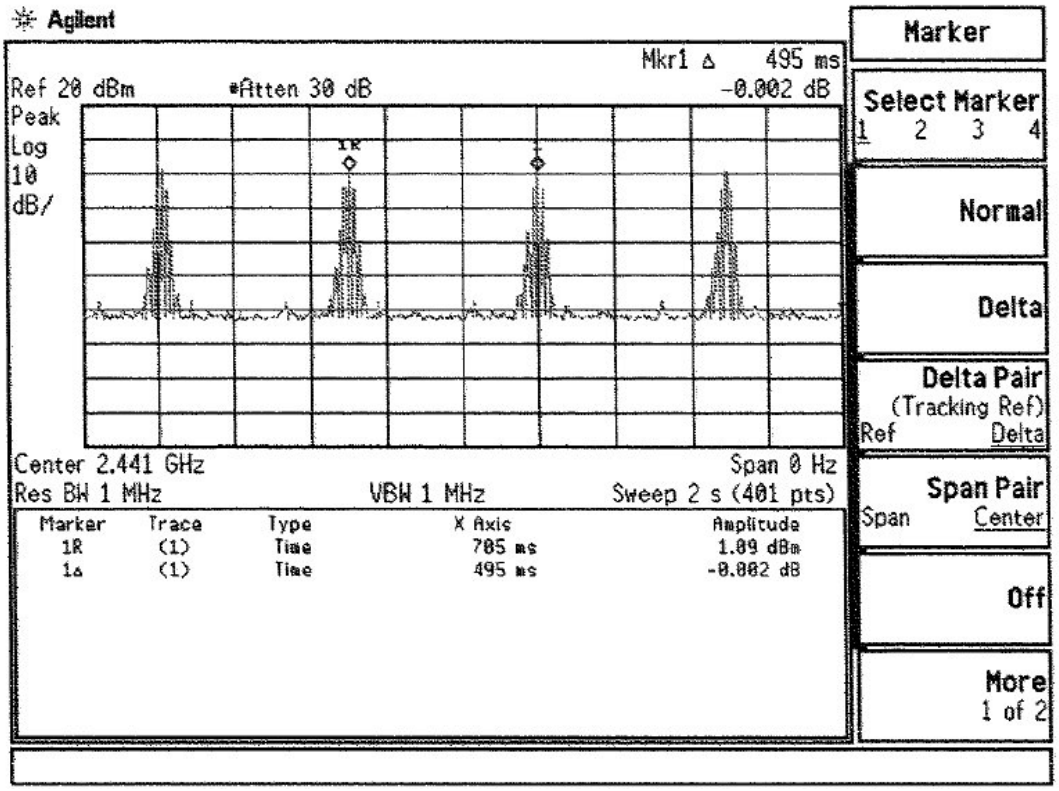
The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case DH5 is shown on the report.

Product : Bluetooth GPS Receiver
Test Item : Dwell Time
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)(DH5)

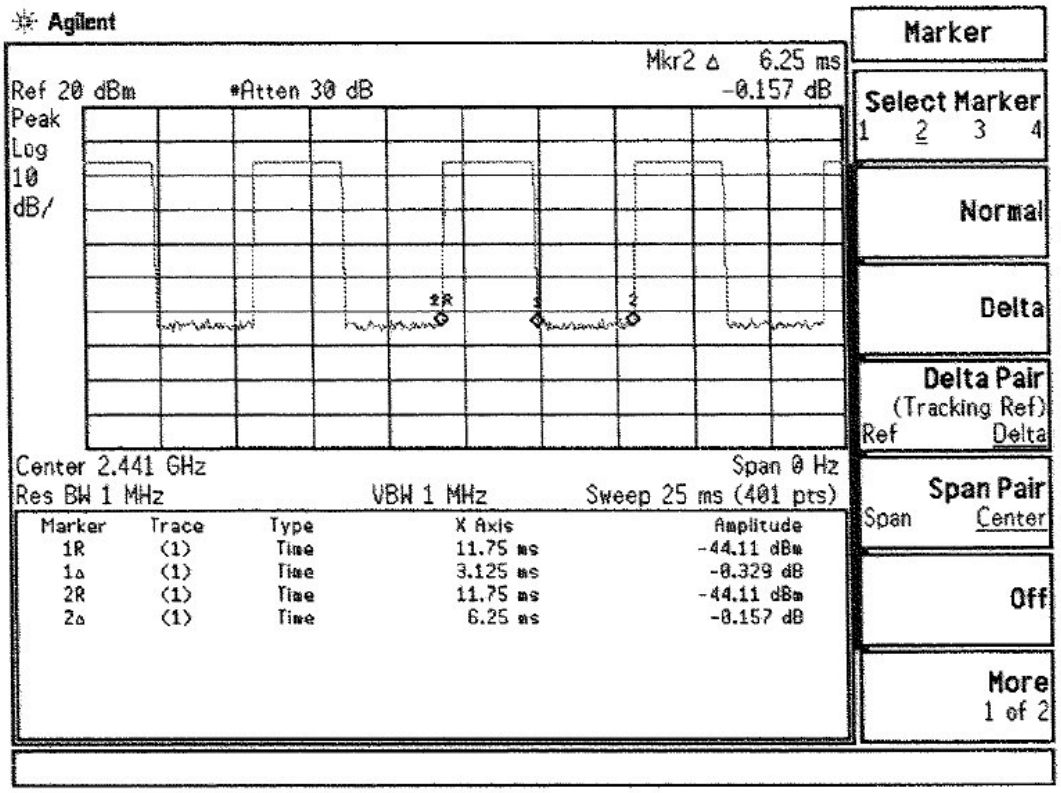
Channel No.	Frequency (MHz)	Time Interval between hops (ms)	Transmission Time (us)	Dwell Time (ms)	Limit (ms)	Result
39	2441	495	3125	199.4949495	400	Pass

Note: Dwell Time = 79 * 400 / Time Interval Between Hops * Transmission Time / 1000

CH39 Time Interval between hops



CH39 Transmission Time



Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case DH5 is shown on the report.

10. Occupied Bandwidth

10.1. Test Equipment

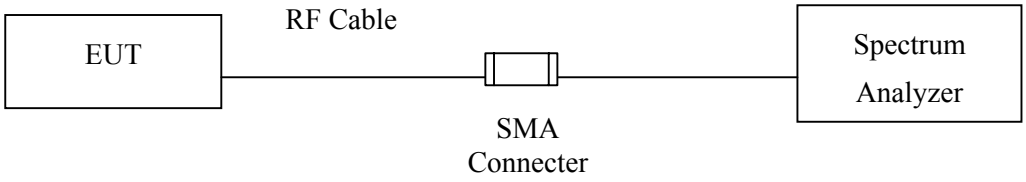
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R & S	FSP40 / 100170	Nov, 2007

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

10.2. Test Setup



10.3. Limits

N/A

10.4. Test Procedures

The EUT was setup according to ANSI C63.4, 2003 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ RBW

Sweep = auto, Detector function = peak, Trace = max hold

The EUT should be transmitting at its maximum data rate.

10.5. Uncertainty

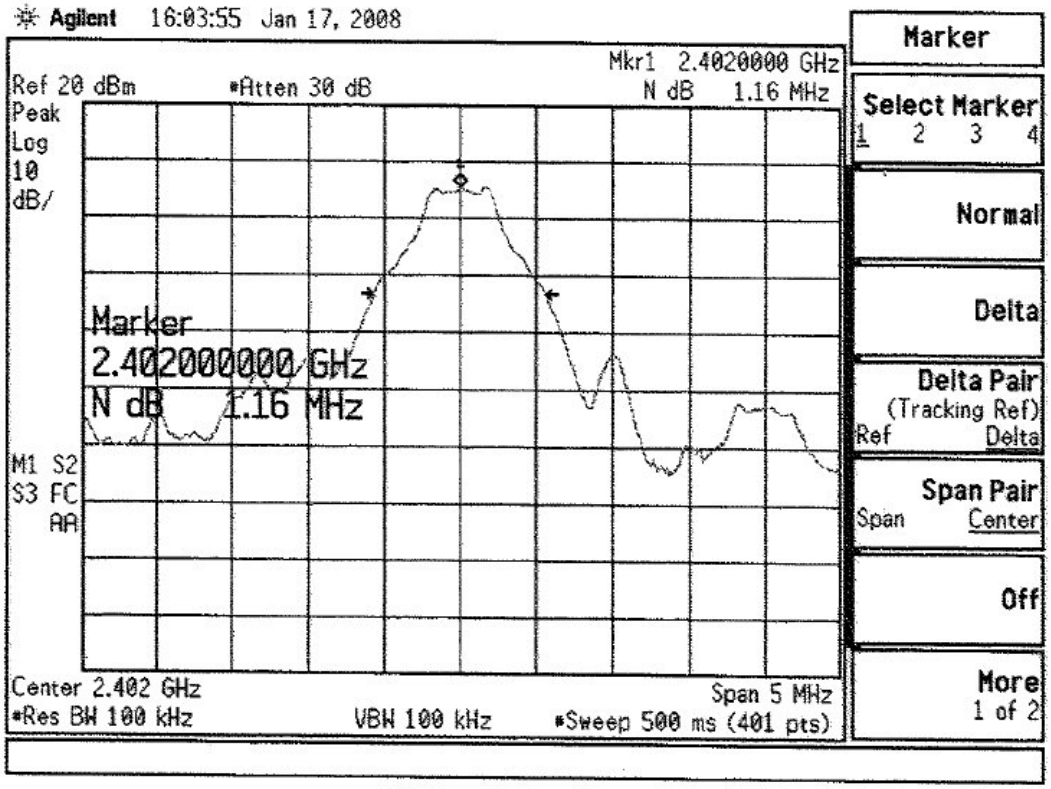
± 150Hz

10.6. Test Result of Occupied Bandwidth

Product : Bluetooth GPS Receiver
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	20 dB bandwidth (kHz)	Required Limit (kHz)	Result
00	2402	11600	NA	NA

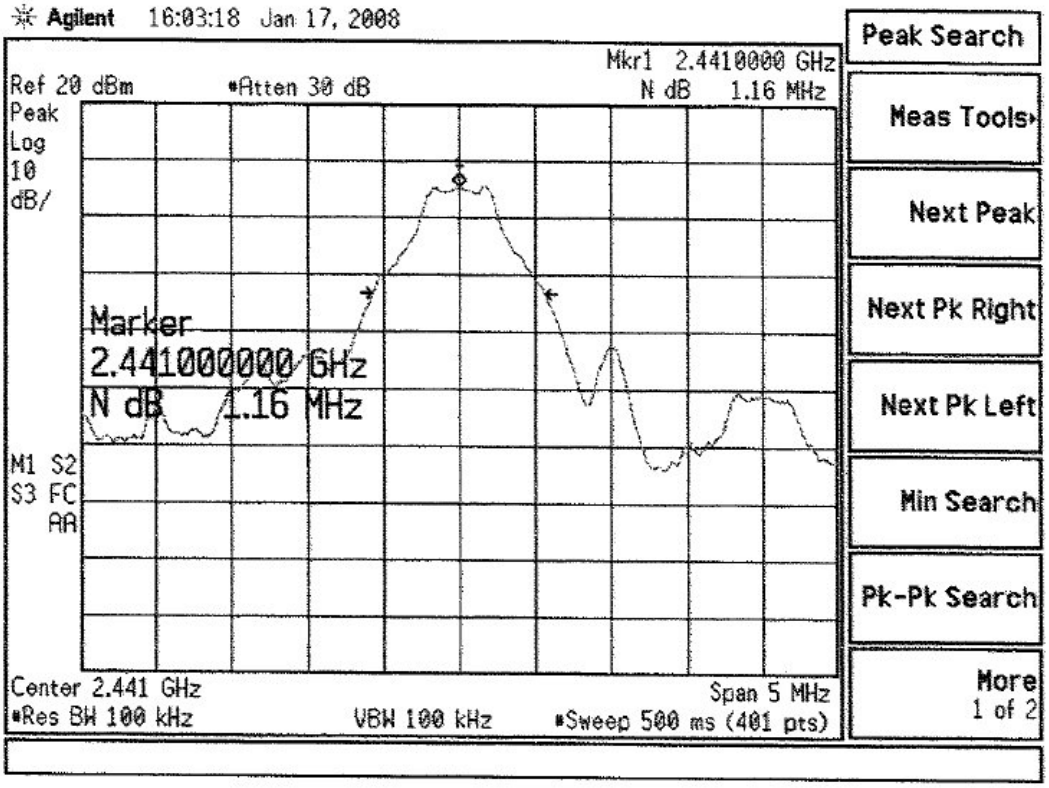
Figure Channel 00:



Product : Bluetooth GPS Receiver
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
39	2441	11600	NA	NA

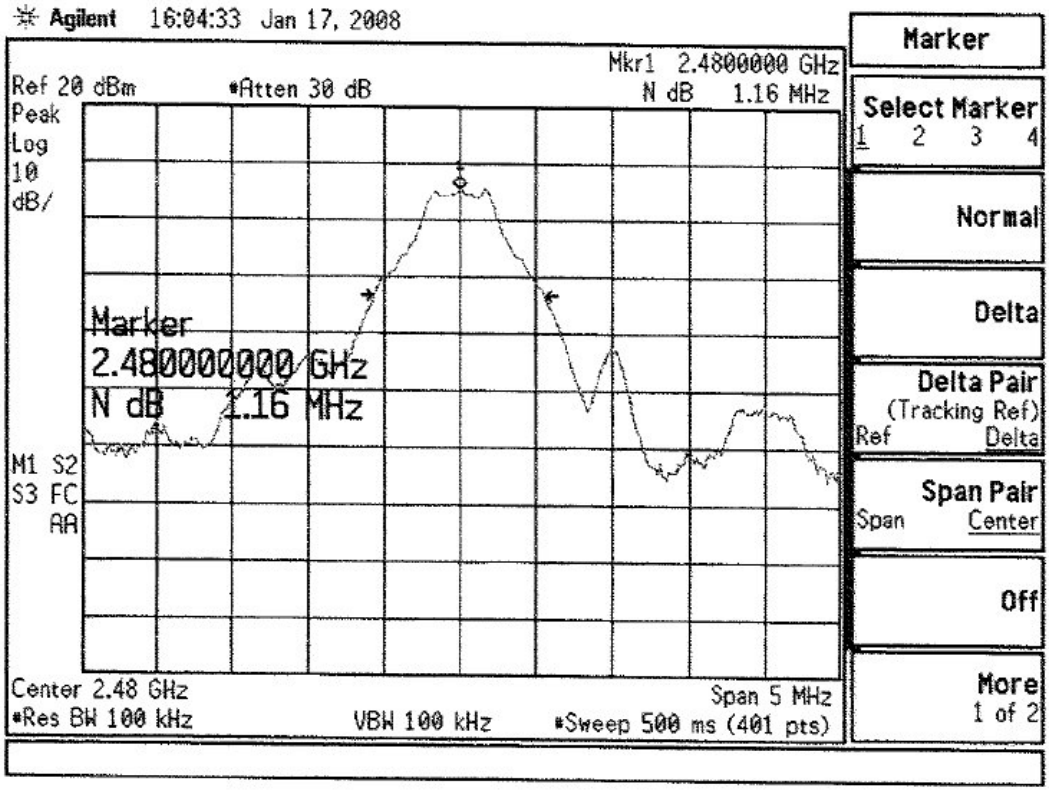
Figure Channel 39:



Product : Bluetooth GPS Receiver
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: USB Charger - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
78	2480	11600	NA	NA

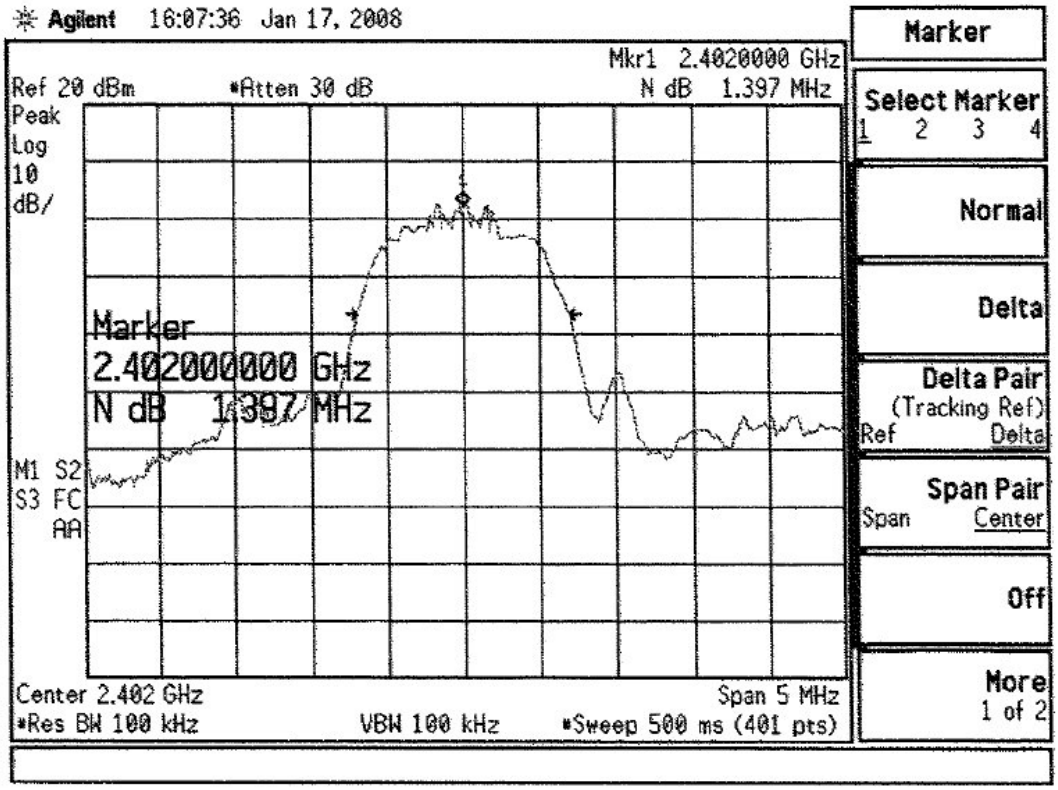
Figure Channel 78:



Product : Bluetooth GPS Receiver
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	20 dB bandwidth (kHz)	Required Limit (kHz)	Result
00	2402	11600	NA	NA

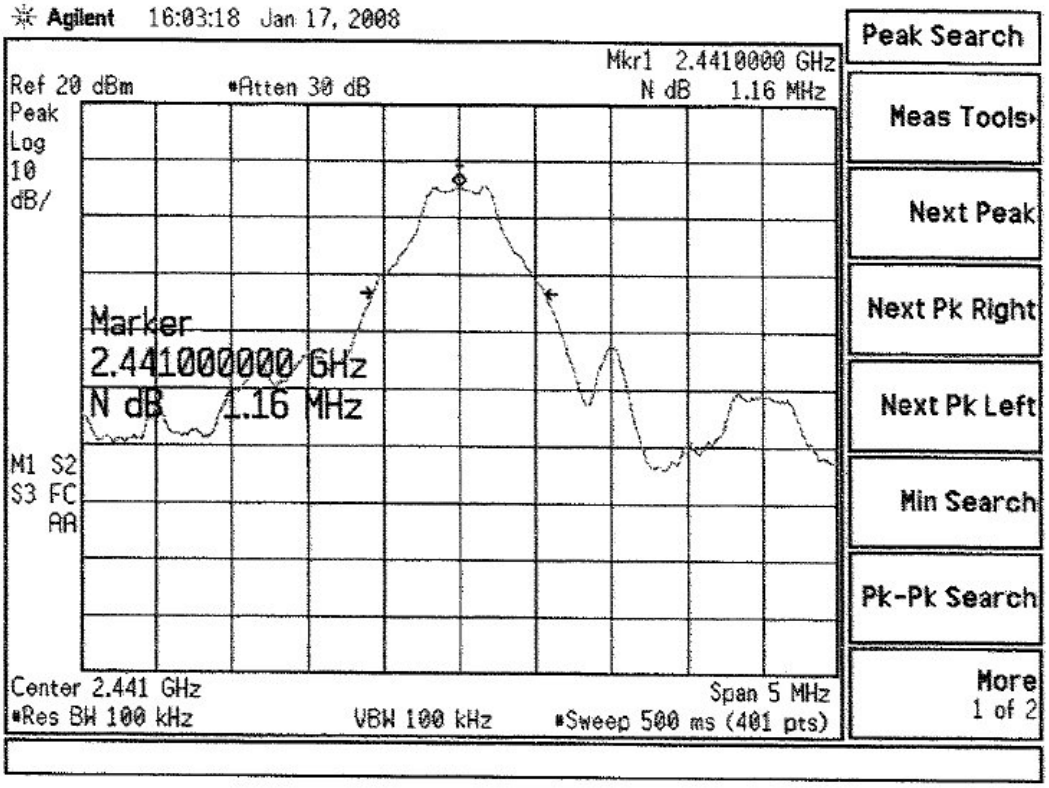
Figure Channel 00:



Product : Bluetooth GPS Receiver
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
39	2441	11600	NA	NA

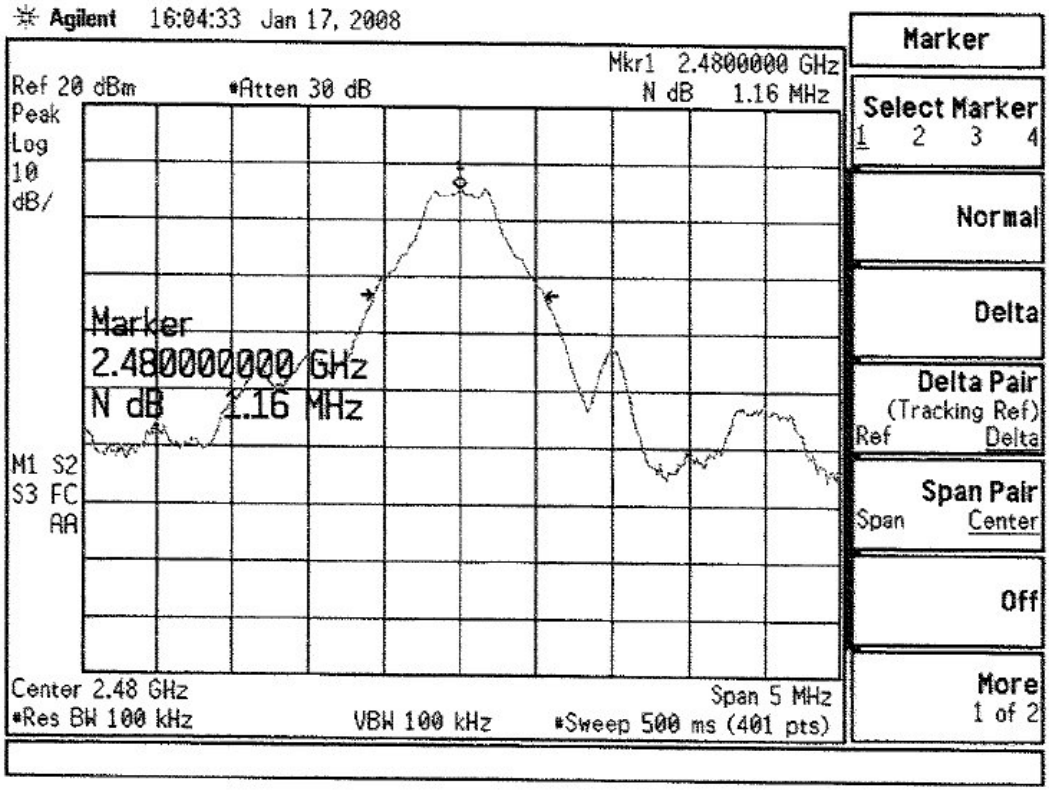
Figure Channel 39:



Product : Bluetooth GPS Receiver
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: USB Charger - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	20dB bandwidth (kHz)	Required Limit (kHz)	Result
78	2480	11600	NA	NA

Figure Channel 78:



11. RF Exposure Statement

11.1. Standard Applicable

According to 1.1307 (b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a portable/mobile device.

11.2. Measurement Result:

This is a portable/mobile device and the max peak output power is 3.37 dBm (0.00217 W).

Lower than the low threshold 60/f MHz = (24.19 mW), distance <2.5 cm general population category.

The SAR/MPE measurement is not necessary.

12. EMI Reduction Method During Compliance Testing

No modification was made during testing.