



Test Report

Product Name : GPSmile55 Car Navigator
Model No. : NAV-55XX
FCC ID. : RJINAV-55XX

Applicant : Holux Technology, Inc.

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

Date of Receipt : 2007/07/12
Issued Date : 2007/08/07
Report No. : 077196R-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 : 2007/08/07

Report No. : 077196R-RFUSP06V01

QuieTek

Product Name : GP Smile55 Car Navigator
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. : NAV-55XX
FCC ID. : RJINAV-55XX
Rated Voltage : AC 120 V / 60 Hz
EUT Voltage : AC 120 V / 60 Hz
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.

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

Documented By : *Demi Chang*
(Demi Chang / Engineering Adm. Specialist)

Tested By : *Louis Hsu*
(Louis Hsu / Assistant Engineer)

Approved By : *Roy Wang*
(Roy Wang / Manager)

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1. General Information

1.1. EUT Description

Product Name	GPSmile55 Car Navigator
Trade Name	HOLUX
Model No.	NAV-55XX
Frequency Range	2402~2480MHz
Channel Number	79
Type of Modulation	GFSK
Channel Control	Auto
Antenna Type	Soldered on PCB
Antenna Gain	0dBi

Component	
Gooseneck	HERBERT RICHTER GmbH & Co., 1561/60/70
Cradle	Holux, 95052-00N
Car Charger	SEMDICAR TECHNOLOGY CORPORATION, IC-HOL01-GPS-G Shielded, 1.8m
FM Antenna	WAVEFAR, GTHB5005, Shielded, 1.4m
GPS Antenna	Starsnav, Starsnav str-3, Shielded, 1.9m
Power Adapter	DVE, DSA-15P-05 US 050100 I/P: 100-240V, 0.5A, 50/60Hz O/P: +5V/2A Cable Out: Non-Shielded, 1.4m

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 GPSmile55 Car Navigator 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 077196R-RFUSP01V02 under Declaration of Conformity.

1.2. Operational Description

The EUT is a GPsmile 55 Portable Automobile Navigation System. When we power on GPsmile 55, the GPS function is enable, then we turn on the Bluetooth function to self-test before a connection is established. A Bluetooth link can now be established between the EUT and the Bluetooth device of notebook PC.

The setting function gives you the ability to adjust the basic system options, including time settings, volume control, screen calibration, startup message, backlight setting, version info, and GPS reset etc. You can modify the settings according to personal preferences.

The EUT can be used in car navigation, security systems, cartography, and other applications such as surveying and agriculture etc. The basic requirement for its use is to “have a clear view of the sky”. It relies on Bluetooth transmission technology, or other compatible interface to communicate with other electronic devices. The built-in rechargeable battery saves satellite information such as the status of the satellite signal, the last location, and the date and time last used.

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 (Power by Adapter) Mode 2: Transmit (Power by Car Charger)
Final Test Mode	
EMI	Mode 1: Transmit (Power by Adapter) Mode 2: Transmit (Power by Car Charger)

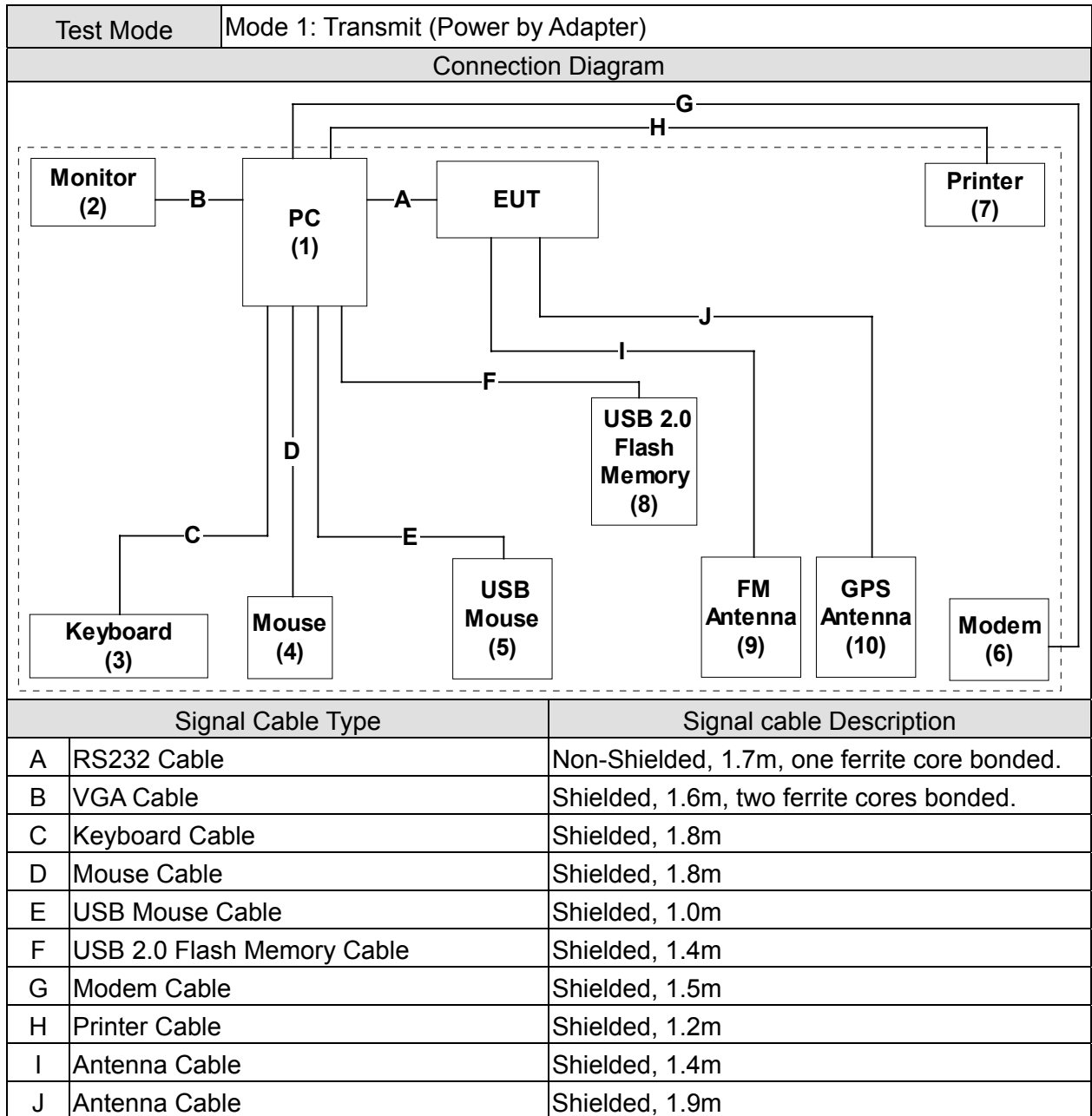
1.4. Tested System Details

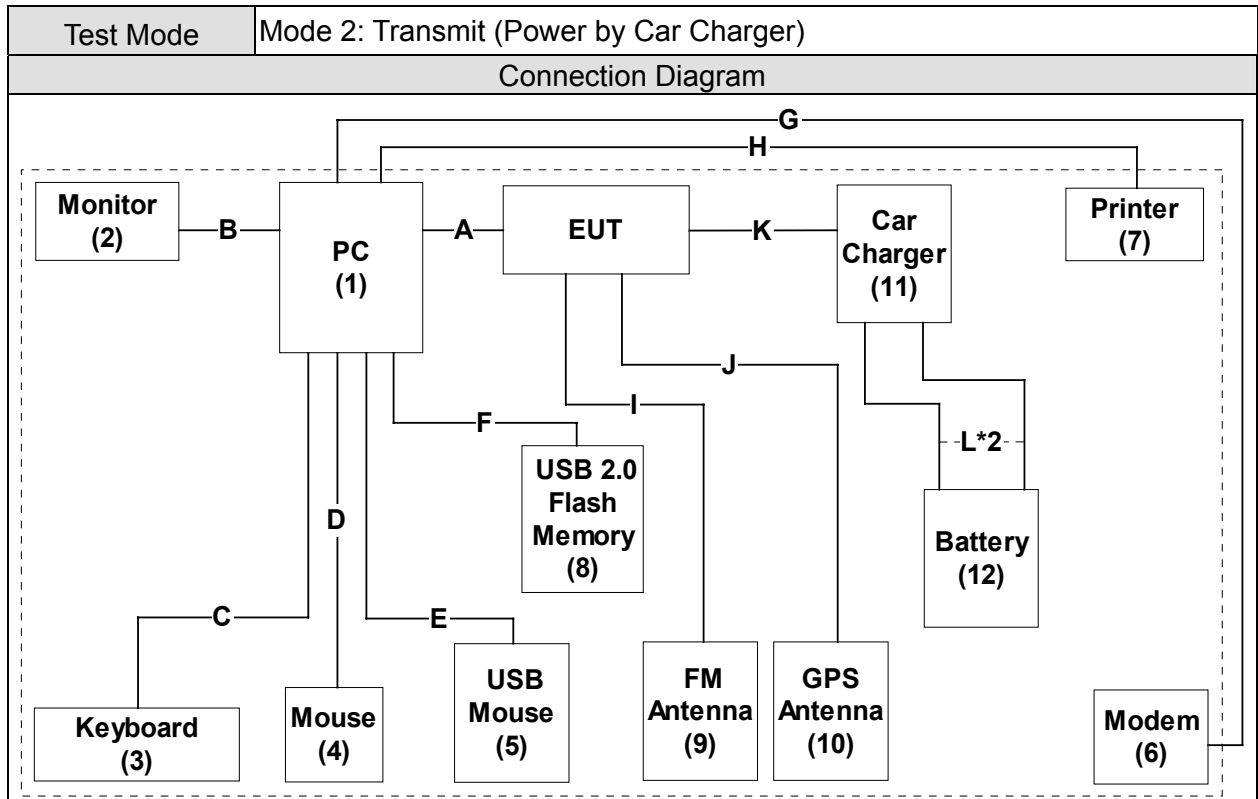
The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Test Mode		Mode 1: Transmit (Power by Adapter)			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	PC	HP	DTPC27	SG21200950	Non-Shielded, 1.8m
2	Monitor	CHI MEI	A170E1-09	3UC120955CA0088	Non-Shielded, 1.8m
3	Keyboard	Logitech	Y-SM46	SY525U18000	--
4	Mouse	Logitech	M-SBF83	HCA52200185	--
5	USB Mouse	Logitech	M-UV83	LZE35005948	--
6	Modem	ACEEX	DM-1414	960011397	Non-Shielded, 1.6m
7	Printer	HP	C2642A	MY75N1D2BC	Non-Shielded, 0.7m
8	USB 2.0 Flash Memory	Sony	USM2GJX	N/A	--
9	FM Antenna	WAVEFAR	GTHB5005	N/A	Shielded, 1.4m
10	GPS Antenna	Starsnav	Starsnav str-3	N/A	Shielded, 1.9m

Test Mode		Mode 2: Transmit (Power by Car Charger)			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	PC	HP	DTPC27	SG21200950	Non-Shielded, 1.8m
2	Monitor	CHI MEI	A170E1-09	3UC120955CA0088	Non-Shielded, 1.8m
3	Keyboard	Logitech	Y-SM46	SY525U18000	--
4	Mouse	Logitech	M-SBF83	HCA52200185	--
5	USB Mouse	Logitech	M-UV83	LZE35005948	--
6	Modem	ACEEX	DM-1414	960011397	Non-Shielded, 1.6m
7	Printer	HP	C2642A	MY75N1D2BC	Non-Shielded, 0.7m
8	USB 2.0 Flash Memory	Sony	USM2GJX	N/A	--
9	FM Antenna	WAVEFAR	GTHB5005	N/A	Shielded, 1.4m
10	GPS Antenna	Starsnav	Starsnav str-3	N/A	Shielded, 1.9m
11	Car Charger	HOLUX	IC-NAV	N/A	Shielded, 1.8m
12	Battery	ACDelco	S55B24RS	N/A	--

1.5. Configuration of tested System





	Signal Cable Type	Signal cable Description
A	RS232 Cable	Non-Shielded, 1.7m, one ferrite core bonded.
B	VGA Cable	Shielded, 1.6m, two ferrite cores bonded.
C	Keyboard Cable	Shielded, 1.8m
D	Mouse Cable	Shielded, 1.8m
E	USB Mouse Cable	Shielded, 1.0m
F	USB 2.0 Flash Memory Cable	Shielded, 1.4m
G	Modem Cable	Shielded, 1.5m
H	Printer Cable	Shielded, 1.2m
I	Antenna Cable	Shielded, 1.4m
J	Antenna Cable	Shielded, 1.9m
K	Power Line	Shielded, 1m
L	Power Line	Shielded, 1m, 2PCS

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 MP3 Player.
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 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	58
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
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	59
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	65
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: September 27, 2007



1313
ILAC MRA

Accredited by NVLAP
NVLAP Lab Code: 200347-0
Effective through: September 30, 2007



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

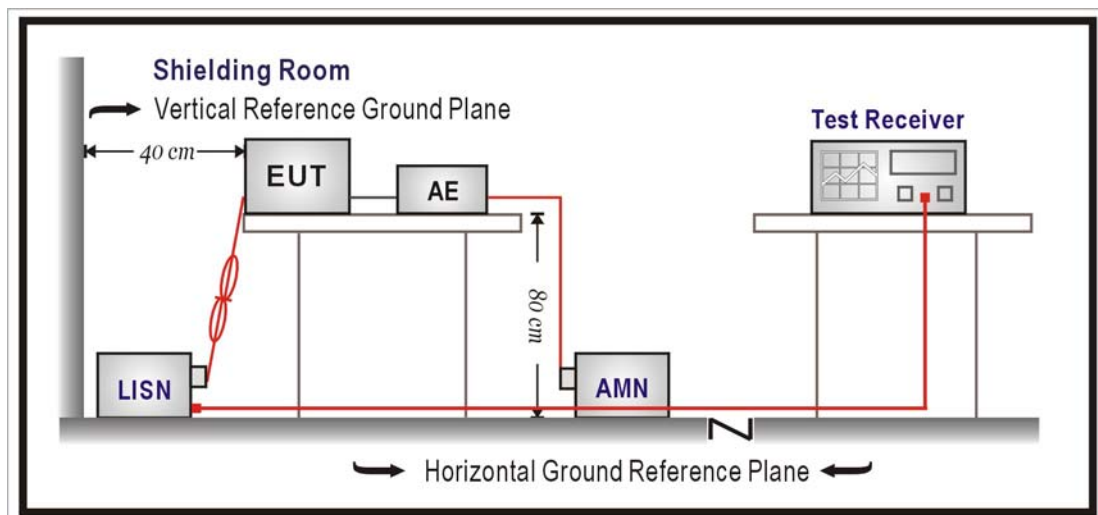
The following test equipment are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
4-Wire ISN	R & S	ENY 41	837032/001	2007/04/15
Double 2-Wire ISN	R & S	ENY 22	835354/008	2007/04/15
LISN	R & S	ESH3-Z5	836679/022	2007/06/17
LISN	R & S	ESH3-Z5	836679/013	2006/12/30
Pulse Limiter	R & S	ESH3-Z2	100411	2006/11/16
Test Receiver	R & S	ESCS 30	100149	2006/11/15

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

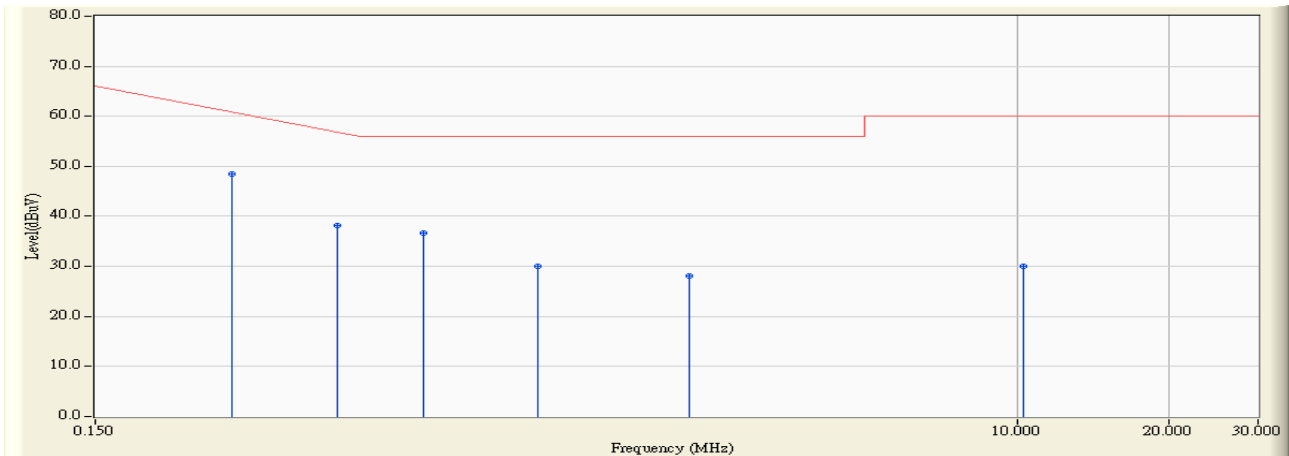
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling 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 : ShieldingRoom3	Time : 2007/07/24 - 11:22
Limit : CISPR_B_00M_QP	Margin : 0
EUT : GPSmile55 Car Navigator	Probe : SR3_LISN(16A) - Line1
Power : AC 120V/60Hz	Note : TX

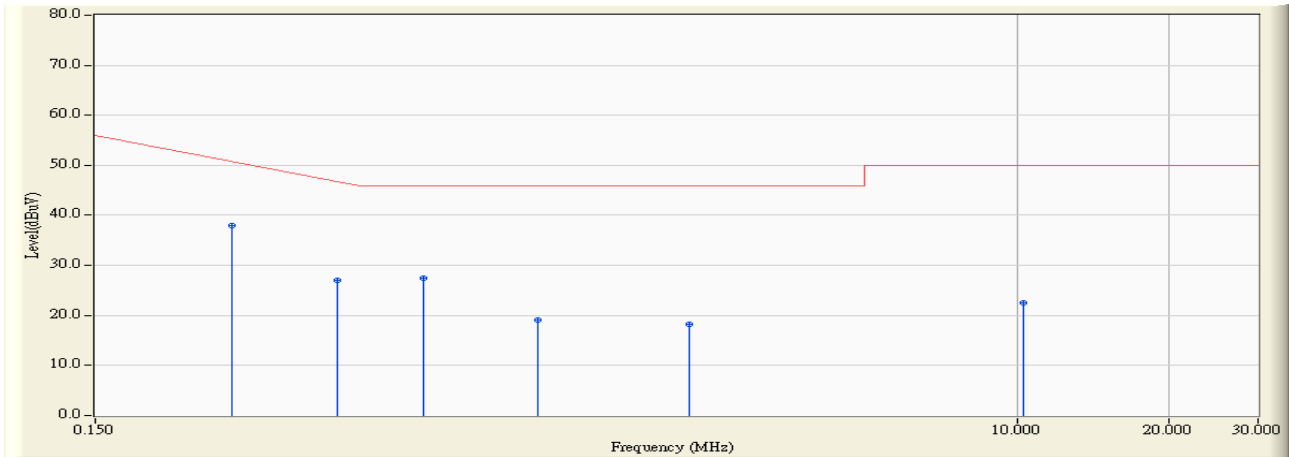


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.279	0.170	48.250	48.420	-13.894	62.314	QUASPEAK
2		0.451	0.200	37.970	38.170	-19.230	57.400	QUASPEAK
3		0.670	0.220	36.450	36.670	-19.330	56.000	QUASPEAK
4		1.127	0.250	29.860	30.110	-25.890	56.000	QUASPEAK
5		2.240	0.400	27.780	28.180	-27.820	56.000	QUASPEAK
6		10.322	0.730	29.380	30.110	-29.890	60.000	QUASPEAK

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 : ShieldingRoom3	Time : 2007/07/24 - 11:22
Limit : CISPR_B_00M_AV	Margin : 0
EUT : GPSmile55 Car Navigator	Probe : SR3_LISN(16A) - Line1
Power : AC 120V/60Hz	Note : TX

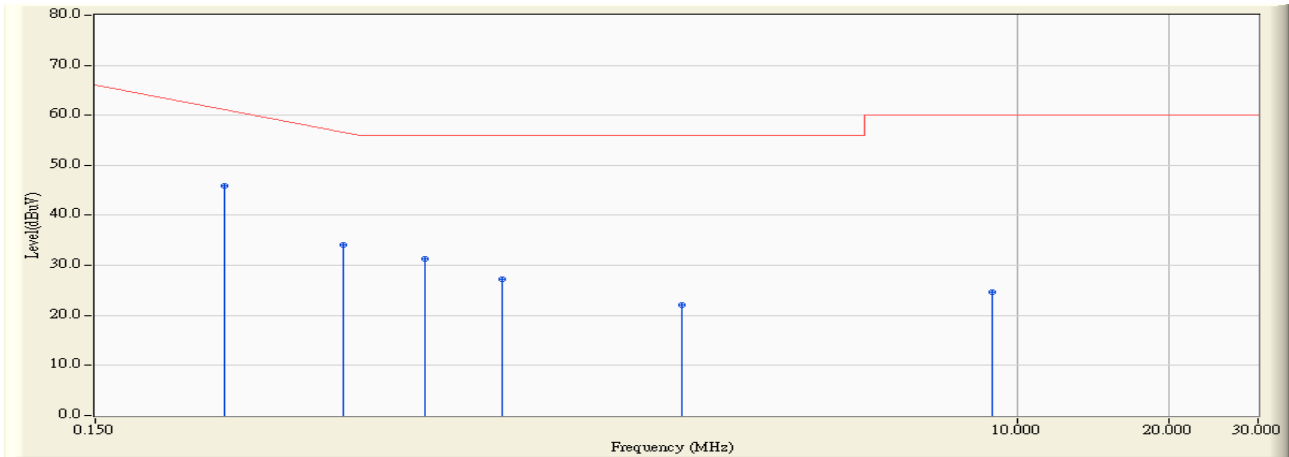


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.279	0.170	37.880	38.050	-14.264	52.314	AVERAGE
2		0.451	0.200	26.830	27.030	-20.370	47.400	AVERAGE
3		0.670	0.220	27.150	27.370	-18.630	46.000	AVERAGE
4		1.127	0.250	18.920	19.170	-26.830	46.000	AVERAGE
5		2.240	0.400	17.890	18.290	-27.710	46.000	AVERAGE
6		10.322	0.730	21.890	22.620	-27.380	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 : ShieldingRoom3	Time : 2007/07/24 - 11:26
Limit : CISPR_B_00M_QP	Margin : 0
EUT : GPSmile55 Car Navigator	Probe : SR3_LISN(16A) - Line2
Power : AC 120V/60Hz	Note : TX

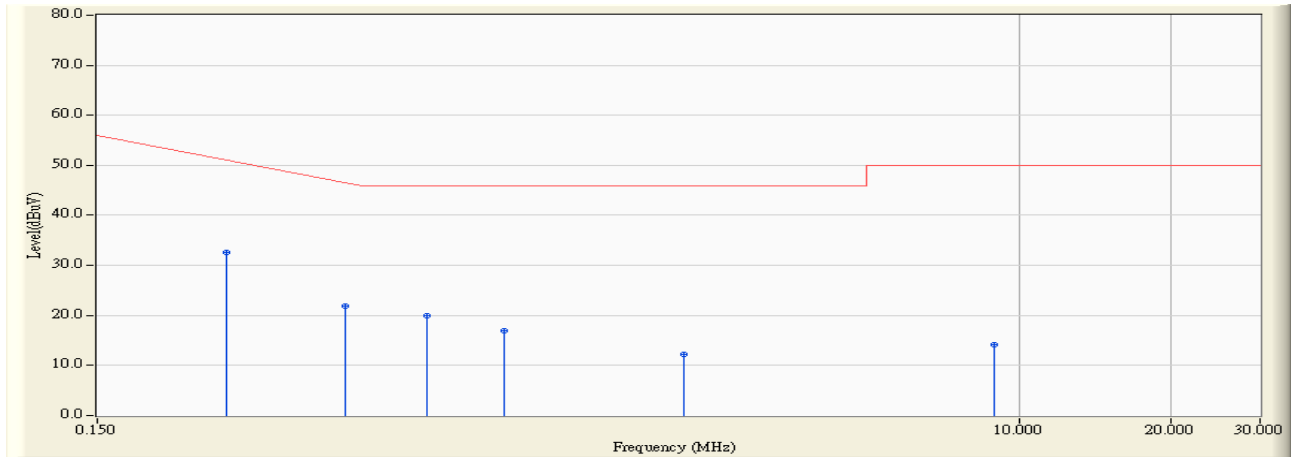


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.271	0.167	45.760	45.927	-16.616	62.543	QUASIPeAK
2		0.463	0.201	33.850	34.051	-23.006	57.057	QUASIPeAK
3		0.673	0.220	31.200	31.420	-24.580	56.000	QUASIPeAK
4		0.959	0.230	26.940	27.170	-28.830	56.000	QUASIPeAK
5		2.166	0.400	21.710	22.110	-33.890	56.000	QUASIPeAK
6		8.920	0.590	24.010	24.600	-35.400	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 : ShieldingRoom3	Time : 2007/07/24 - 11:26
Limit : CISPR_B_00M_AV	Margin : 0
EUT : GPSmile55 Car Navigator	Probe : SR3_LISN(16A) - Line2
Power : AC 120V/60Hz	Note : TX



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.271	0.167	32.410	32.577	-19.966	52.543	AVERAGE
2		0.463	0.201	21.730	21.931	-25.126	47.057	AVERAGE
3		0.673	0.220	19.810	20.030	-25.970	46.000	AVERAGE
4		0.959	0.230	16.650	16.880	-29.120	46.000	AVERAGE
5		2.166	0.400	11.800	12.200	-33.800	46.000	AVERAGE
6		8.920	0.590	13.460	14.050	-35.950	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

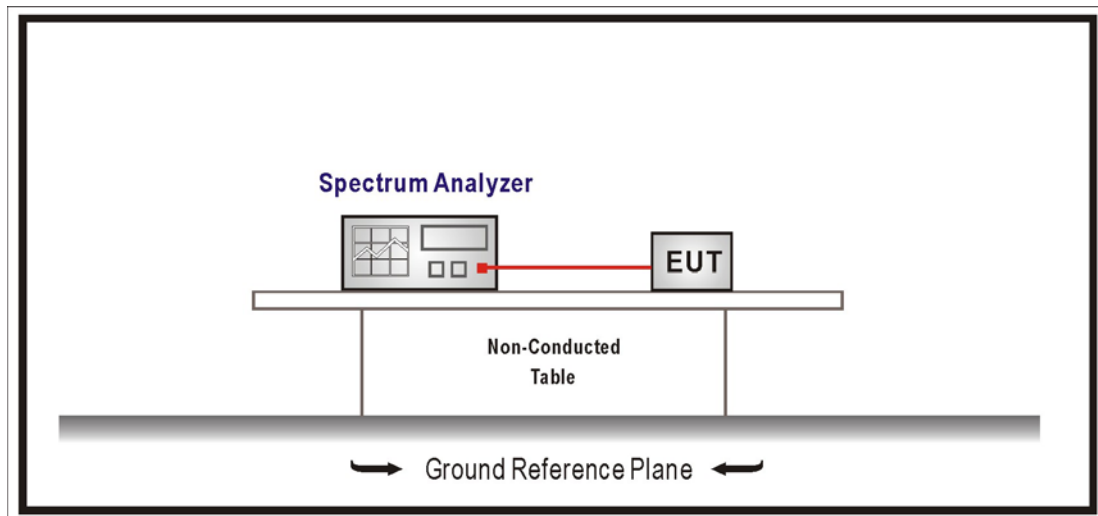
3.1. Test Equipment

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., 2006
2	No.1 OATS			Sep., 2006

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.

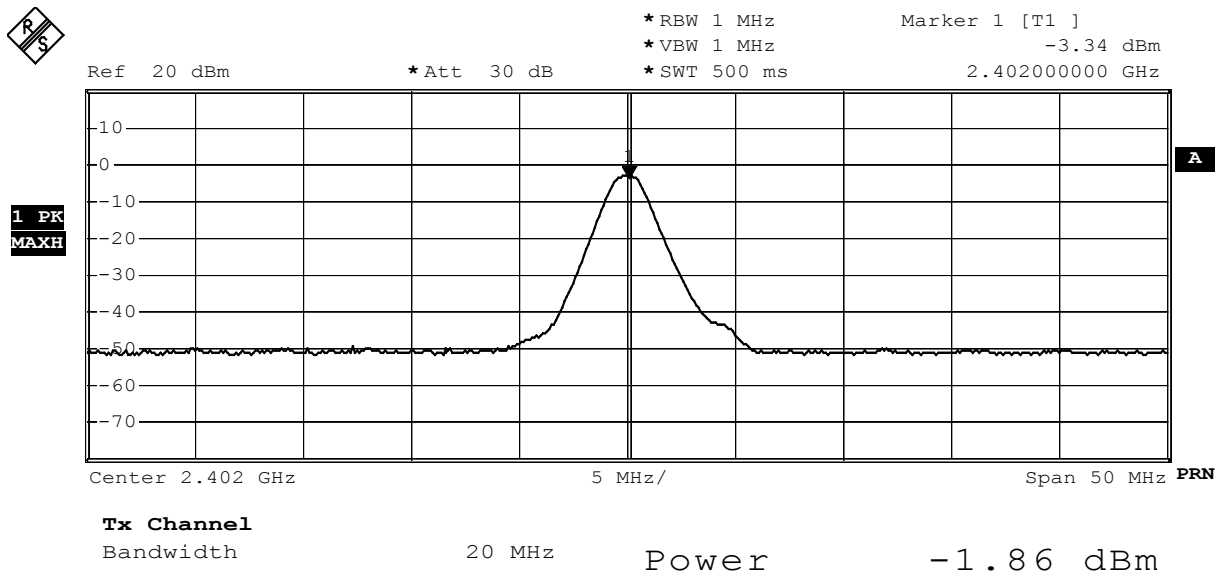
3.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2006

3.5. Test Result

Product	GPSmile55 Car Navigator		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402.00	-1.86	1Watt= 30 dBm	Pass
39	2441.00	-2.09	1Watt= 30 dBm	Pass
78	2480.00	-2.32	1Watt= 30 dBm	Pass



Date: 25.JUL.2007 17:43:49

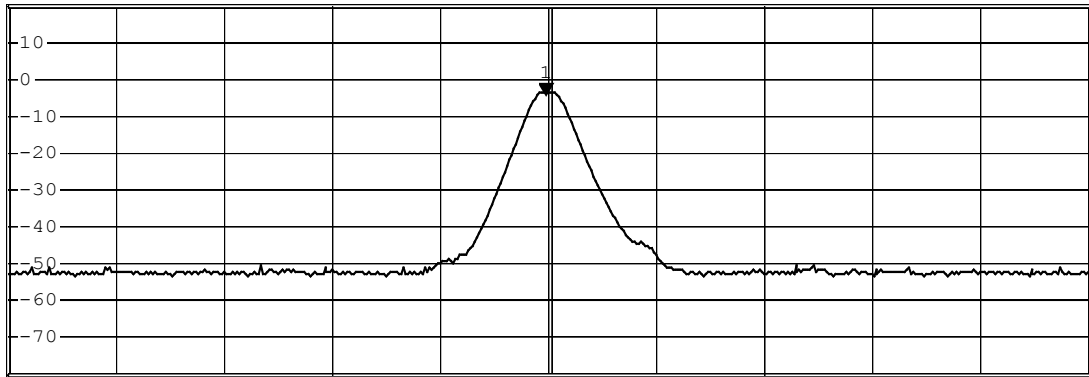


*RBW 1 MHz Marker 1 [T1]
*VBW 1 MHz -3.55 dBm
*SWT 500 ms 2.440800000 GHz

Ref 20 dBm

*Att 30 dB

1 PK
VIEW



Center 2.441 GHz 5 MHz/ Span 50 MHz PRN

Tx Channel

Bandwidth 20 MHz Power -2.09 dBm

Date: 25.JUL.2007 18:33:47

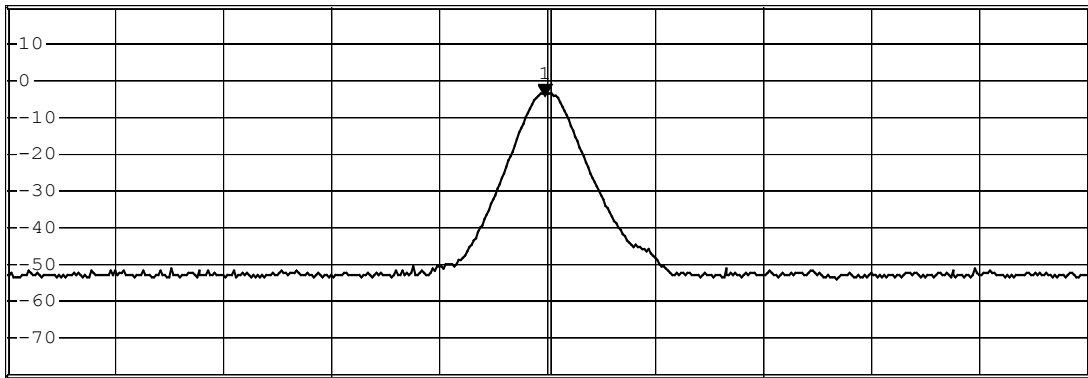


*REW 1 MHz
*VBW 1 MHz
*SWT 500 ms
Marker 1 [T1]
-3.78 dBm
2.479800000 GHz

Ref 20 dBm

*Att 30 dB

1 PK
VIEW



Center 2.48 GHz

5 MHz/

Span 50 MHz PRN

Tx Channel

Bandwidth

20 MHz

Power

-2.32 dBm

Date: 25.JUL.2007 18:27:19

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the test:

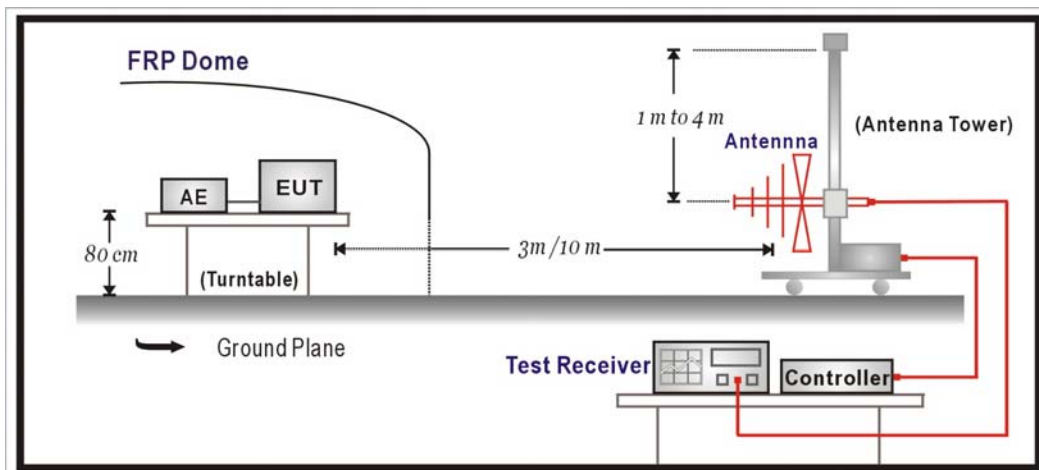
Radiated Emission / Site1

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

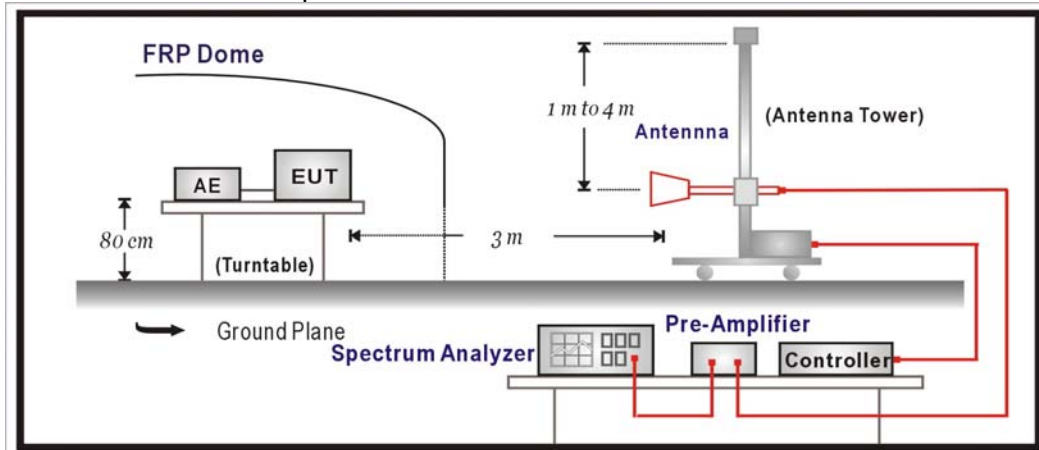
- Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

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.

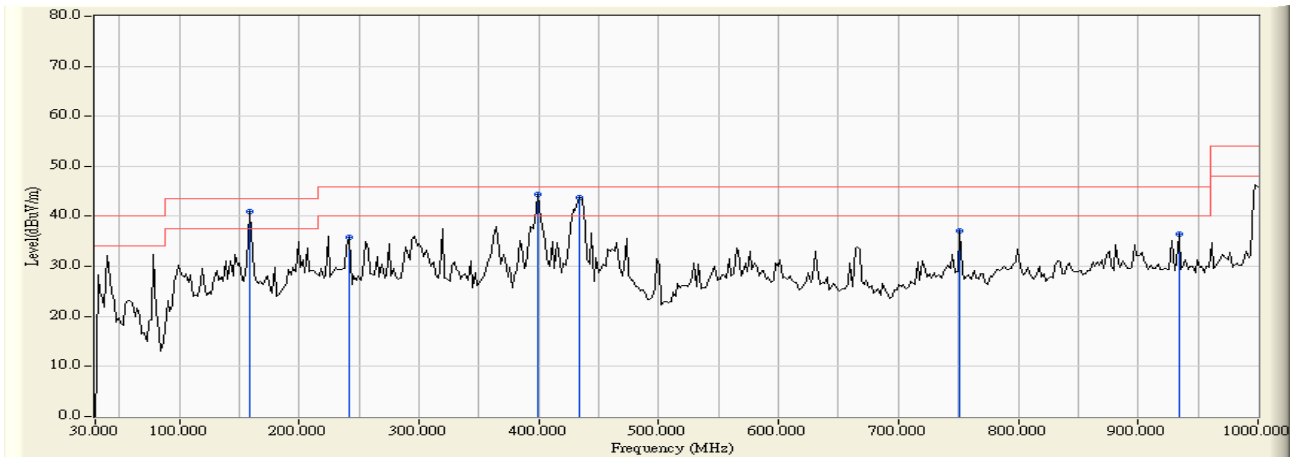
4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2006

4.6. Test Result

30MHz-1GHz Spurious:

Site : Site 1	Time : 2007/08/03 - 21:39
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : GPS mile55 Car Navigator	Probe : FCC_RF_30-1G(200605) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (Power by Adapter)

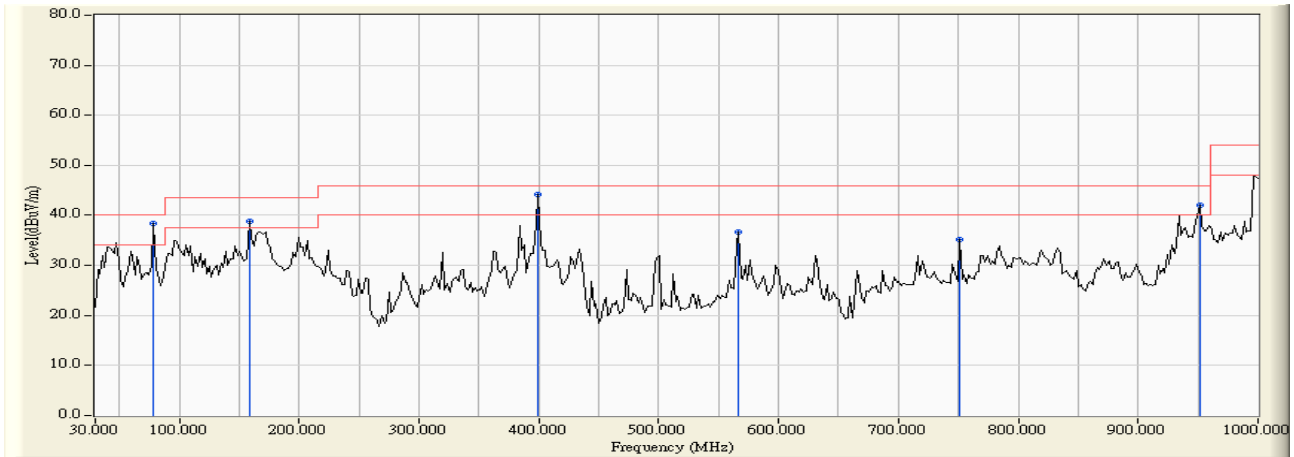


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	158.297	-13.419	54.429	41.010	-2.490	43.500	PEAK
2	241.884	-9.906	45.742	35.836	-10.164	46.000	PEAK
3	* 399.339	1.121	43.264	44.385	-1.615	46.000	PEAK
4	434.329	2.532	41.318	43.850	-2.150	46.000	PEAK
5	751.182	3.516	33.546	37.062	-8.938	46.000	PEAK
6	933.908	3.903	32.628	36.531	-9.469	46.000	PEAK

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 : 2007/08/03 - 21:39
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : GPS mile55 Car Navigator	Probe : FCC_RF_30-1G(200605) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit (Power by Adapter)

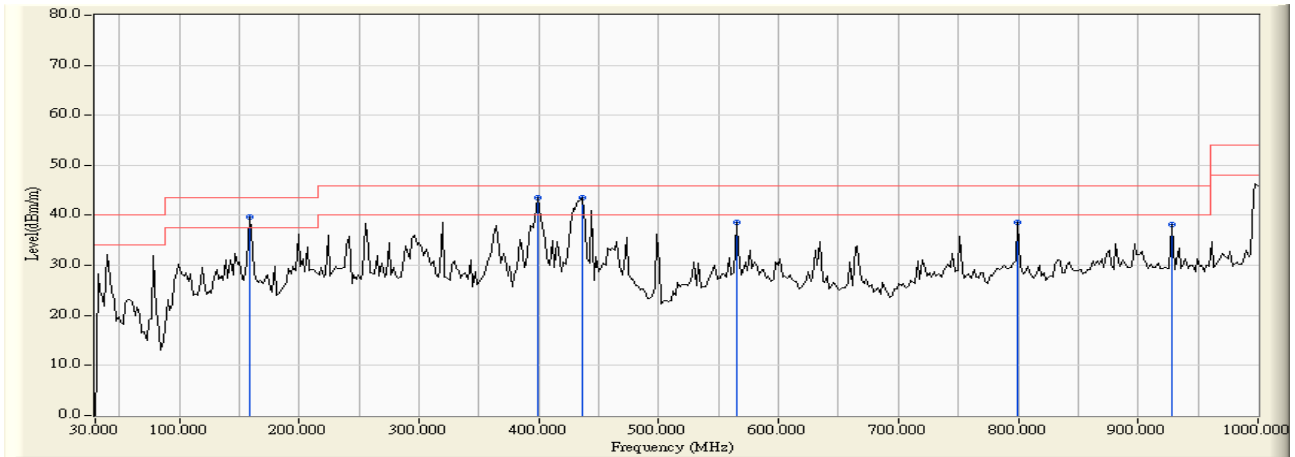


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	78.597	-7.783	46.163	38.380	-1.620	40.000	PEAK
2		158.297	-4.988	43.838	38.849	-4.651	43.500	PEAK
3		399.339	-0.493	44.769	44.277	-1.723	46.000	PEAK
4		566.513	3.254	33.387	36.641	-9.359	46.000	PEAK
5		751.182	1.935	33.173	35.108	-10.892	46.000	PEAK
6		951.403	7.605	34.444	42.049	-3.951	46.000	PEAK

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 : 2007/08/06 - 23:13
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : GPS mile55 Car Navigator	Probe : FCC_RF_30-1G(200605) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit (Power by Car Charger)

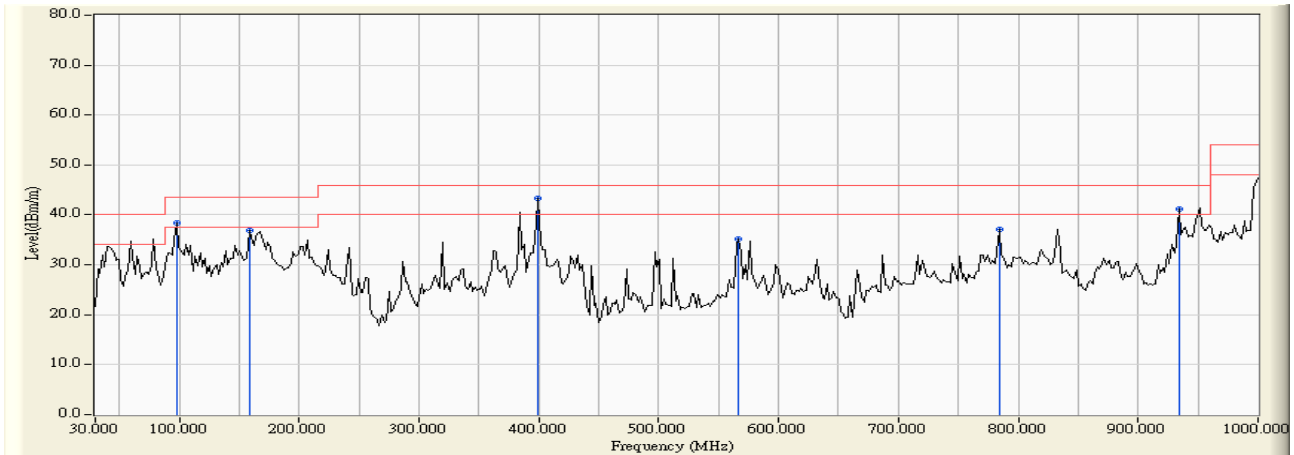


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Detector Type
1	158.297	-13.419	53.129	39.710	-3.790	43.500	PEAK
2	* 399.339	1.121	42.464	43.585	-2.415	46.000	PEAK
3	436.273	1.089	42.447	43.536	-2.464	46.000	PEAK
4	564.569	4.060	34.647	38.707	-7.293	46.000	PEAK
5	799.780	3.500	35.082	38.583	-7.417	46.000	PEAK
6	928.076	4.021	34.166	38.187	-7.813	46.000	PEAK

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 : 2007/08/06 - 23:14
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : GPS mile55 Car Navigator	Probe : FCC_RF_30-1G(200605) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit (Power by Car Charger)



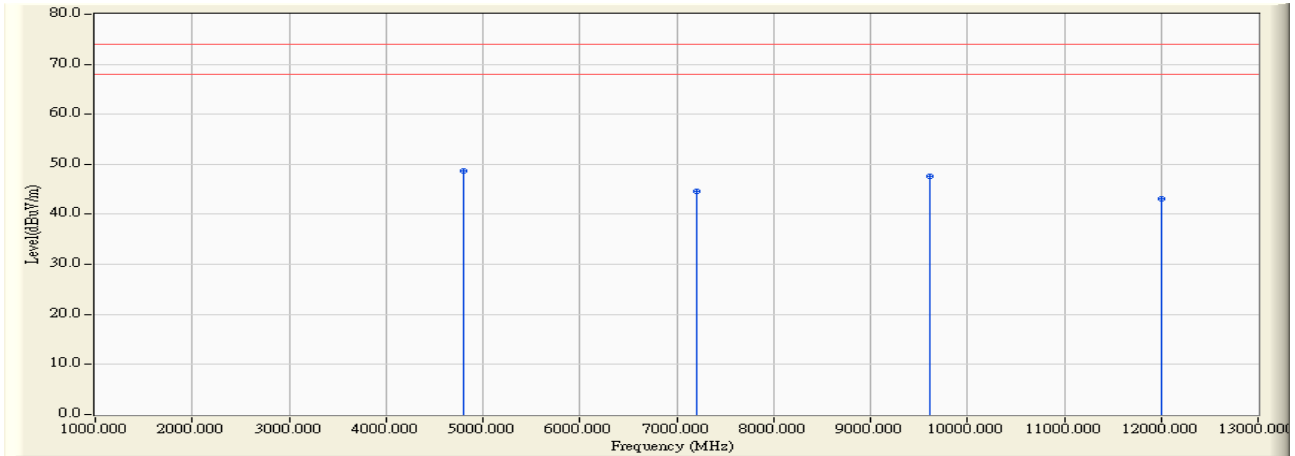
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Detector Type
1	98.036	-1.073	39.395	38.321	-5.179	43.500	PEAK
2	158.297	-4.988	41.838	36.849	-6.651	43.500	PEAK
3	* 399.339	-0.493	43.769	43.277	-2.723	46.000	PEAK
4	566.513	3.254	31.887	35.141	-10.859	46.000	PEAK
5	784.228	5.488	31.589	37.077	-8.923	46.000	PEAK
6	933.908	7.251	34.002	41.253	-4.747	46.000	PEAK

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 : 2007/07/21 - 18:32
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2402

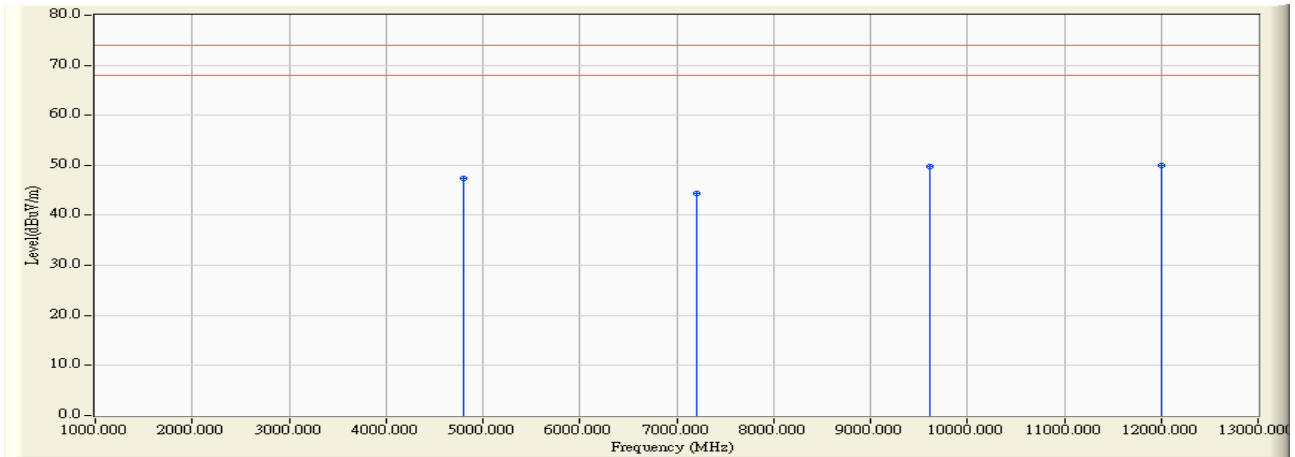


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4804.210	3.596	45.020	48.615	-25.385	74.000	PEAK
2		7206.010	8.691	35.860	44.551	-29.449	74.000	PEAK
3		9608.200	12.690	34.880	47.570	-26.430	74.000	PEAK
4		12010.020	11.027	32.130	43.157	-30.843	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 : 2007/07/21 - 18:38
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2402

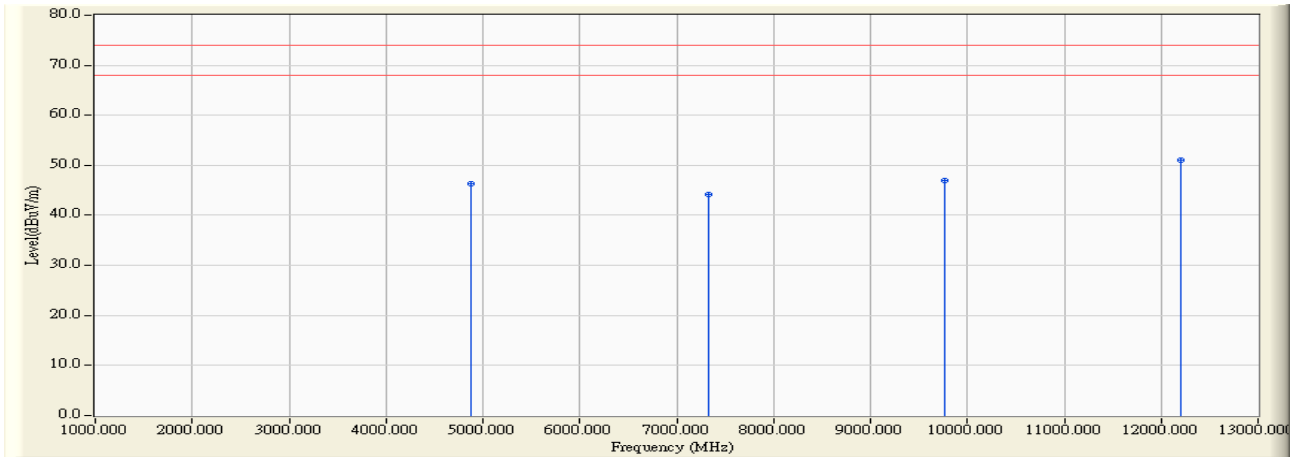


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	4804.010	1.812	45.550	47.362	-26.638	74.000	PEAK
2	7206.100	8.635	35.670	44.305	-29.695	74.000	PEAK
3	9608.040	14.677	35.020	49.697	-24.303	74.000	PEAK
4	* 12010.030	16.608	33.460	50.068	-23.932	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 : 2007/07/21 - 20:28
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2441

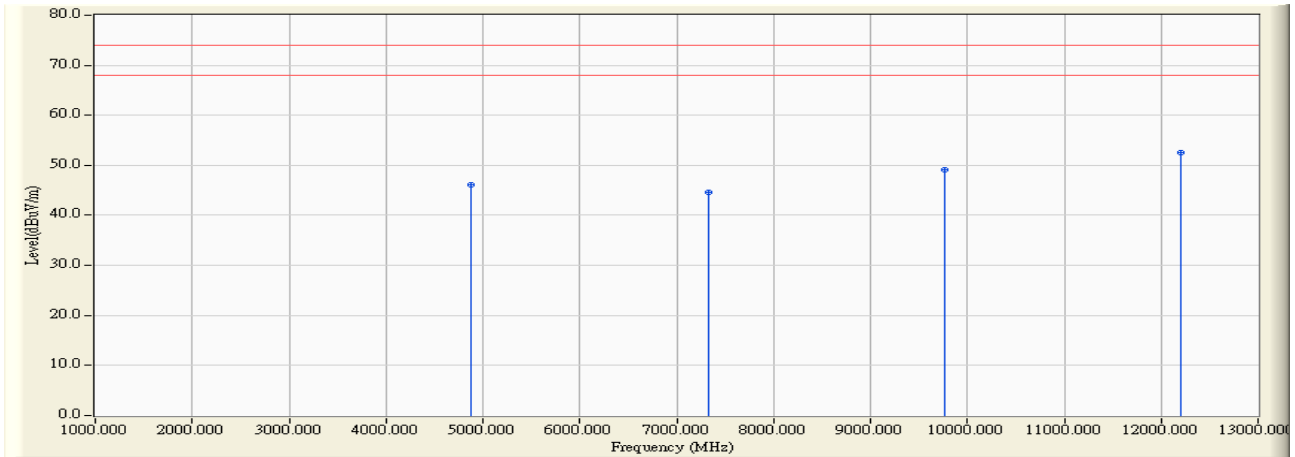


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	4882.020	4.143	42.180	46.322	-27.678	74.000	PEAK
2	7323.050	8.859	35.390	44.249	-29.751	74.000	PEAK
3	9764.100	13.218	33.680	46.898	-27.102	74.000	PEAK
4	* 12205.200	18.086	32.930	51.016	-22.984	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 : 2007/07/21 - 20:32
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2441

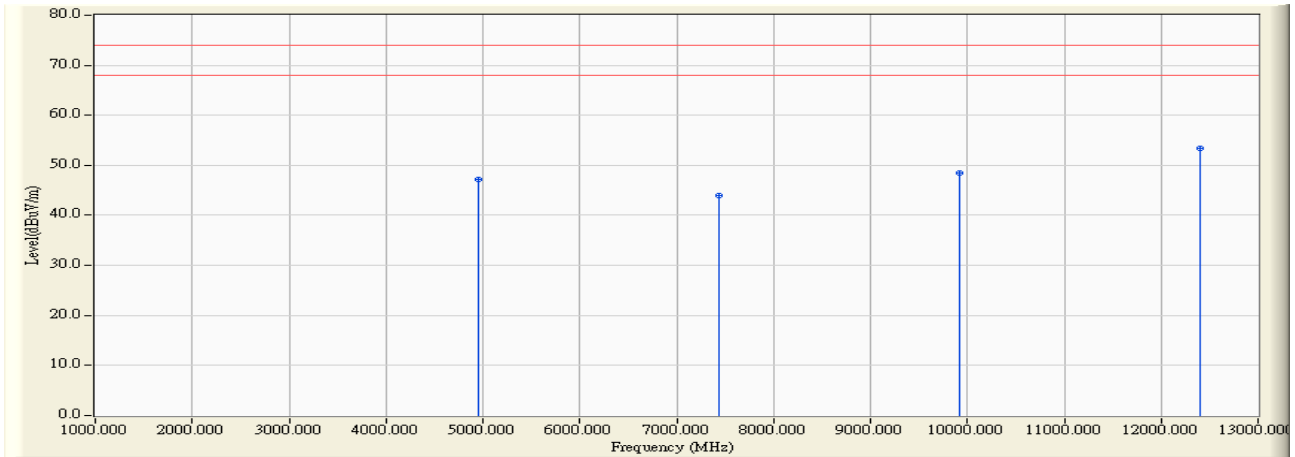


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	4882.120	2.505	43.570	46.074	-27.926	74.000	PEAK
2	7323.010	8.859	35.670	44.529	-29.471	74.000	PEAK
3	9764.200	15.218	33.870	49.089	-24.911	74.000	PEAK
4	* 12205.030	19.567	32.890	52.457	-21.543	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 : 2007/07/21 - 20:41
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2480

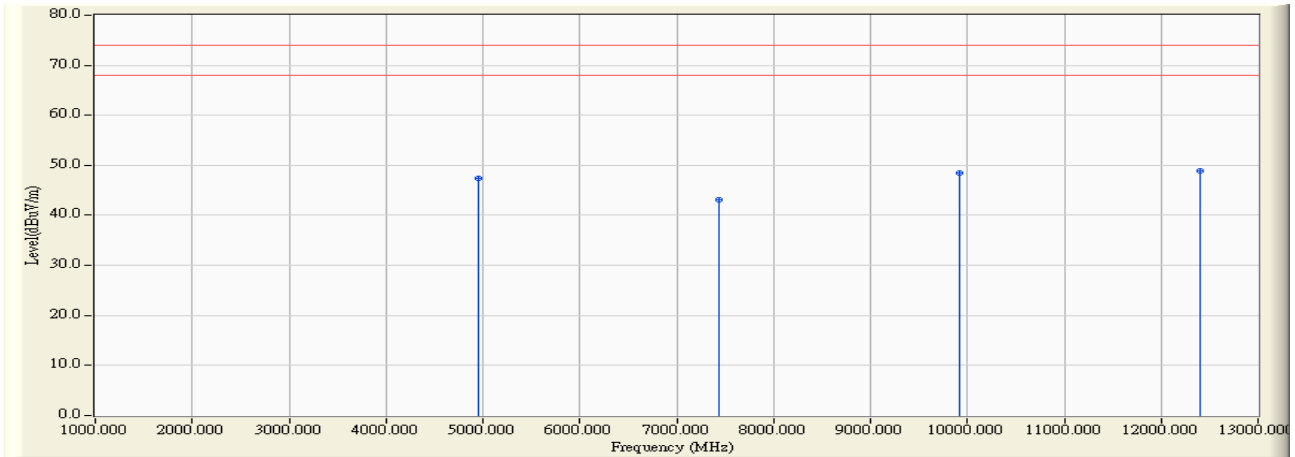


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	4960.100	4.399	42.870	47.270	-26.730	74.000	PEAK
2	7440.020	9.016	34.980	43.996	-30.004	74.000	PEAK
3	9920.100	14.541	33.870	48.411	-25.589	74.000	PEAK
4	* 12400.040	20.666	32.730	53.396	-20.604	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 : 2007/07/21 - 20:45
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2480



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	4960.030	2.917	44.560	47.478	-26.522	74.000	PEAK
2	7440.020	9.016	34.120	43.136	-30.864	74.000	PEAK
3	9920.010	15.340	33.120	48.460	-25.540	74.000	PEAK
4	* 12400.000	16.166	32.840	49.006	-24.994	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.

5. Band Edge

5.1. Test Equipment

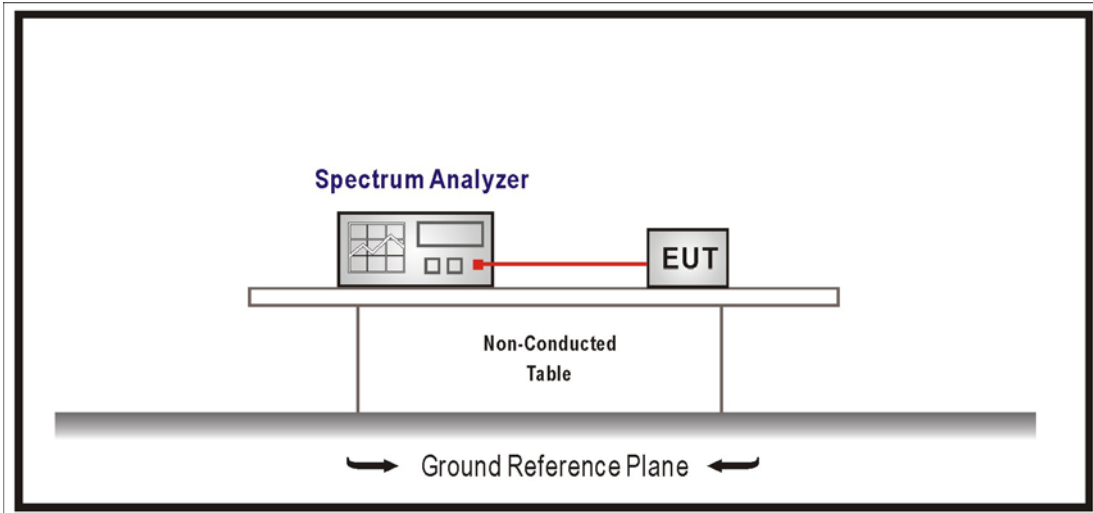
The following test equipment are used during the test:

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., 2006
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., 2006
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2006
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2006
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2006
7	No.1 OATS				Sep., 2006

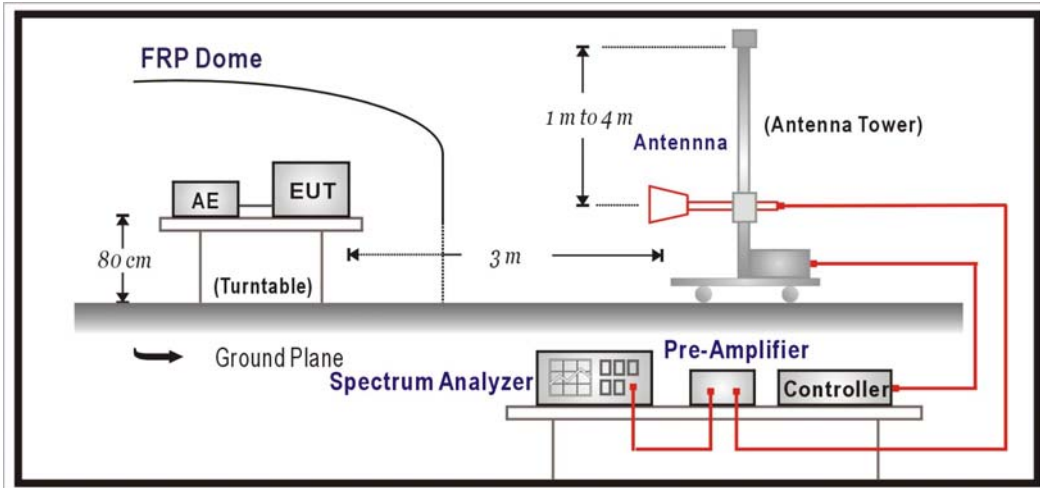
- Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

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.

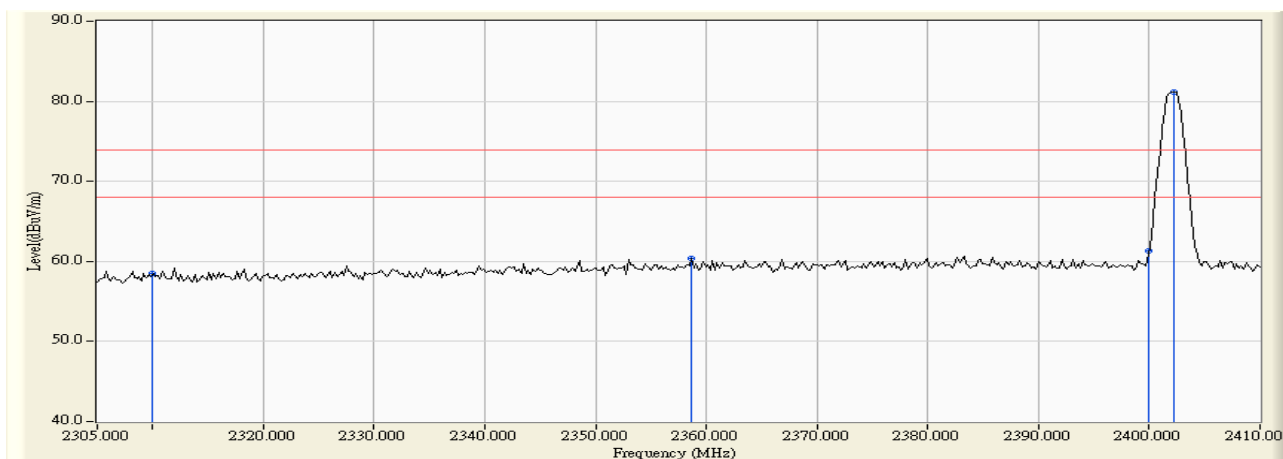
The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2006

5.6. Test Result

Site : Site 1	Time : 2007/07/22 - 17:17
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2402

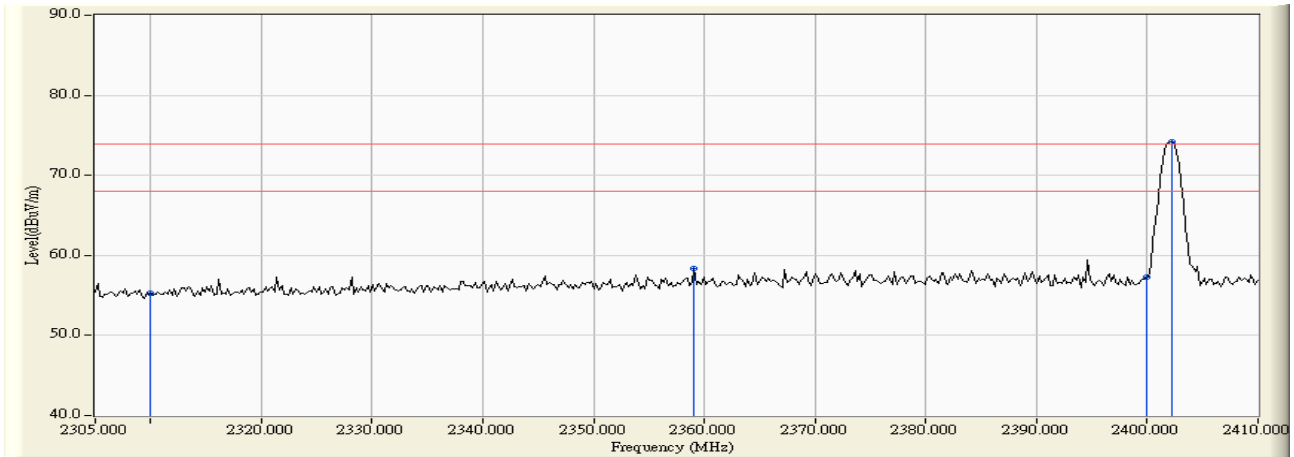


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.674	29.770	58.444	-15.526	73.970	PEAK
2	2358.657	28.864	31.449	60.313	-13.657	73.970	PEAK
3	2400.000	29.022	32.290	61.311	-12.659	73.970	PEAK
4	* 2402.214	29.029	52.123	81.152	7.182	73.970	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 : 2007/07/22 - 17:29
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2402

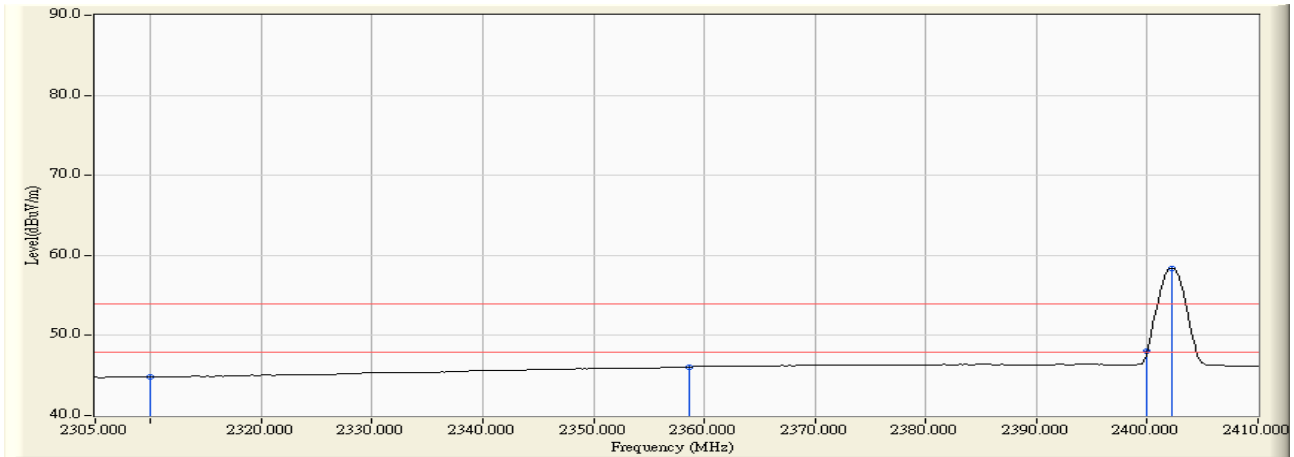


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	27.074	28.165	55.239	-18.731	73.970	PEAK
2	2359.078	27.266	31.131	58.397	-15.573	73.970	PEAK
3	2400.000	27.422	29.805	57.226	-16.744	73.970	PEAK
4	* 2402.214	27.429	46.701	74.130	0.160	73.970	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 : 2007/07/22 - 17:21
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2402

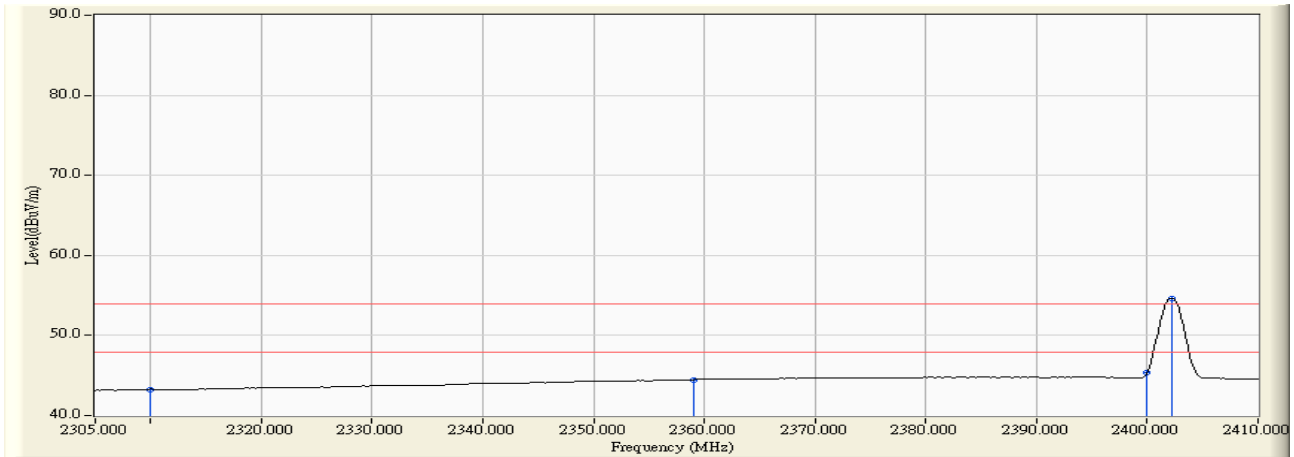


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	28.674	16.178	44.852	-9.118	53.970	AVERAGE
2	2358.657	28.864	17.200	46.064	-7.906	53.970	AVERAGE
3	2400.000	29.022	19.003	48.024	-5.946	53.970	AVERAGE
4	* 2402.214	29.029	29.396	58.425	4.455	53.970	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 : 2007/07/22 - 17:31
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2402

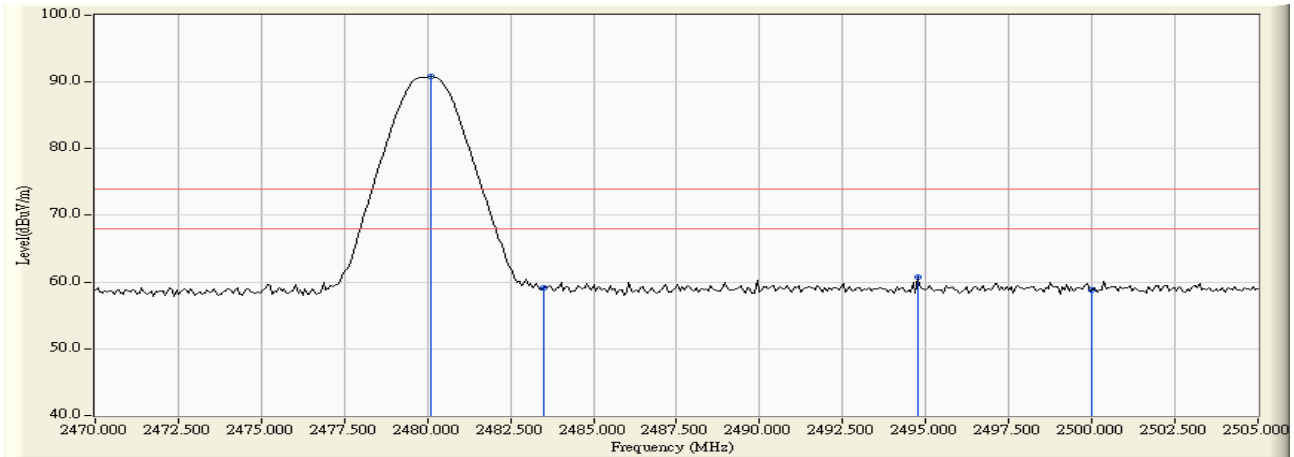


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	27.074	16.210	43.284	-10.686	53.970	AVERAGE
2	2359.078	27.266	17.222	44.488	-9.482	53.970	AVERAGE
3	2400.000	27.422	17.908	45.329	-8.641	53.970	AVERAGE
4	* 2402.214	27.429	27.222	54.651	0.681	53.970	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 : 2007/07/22 - 17:51
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2480

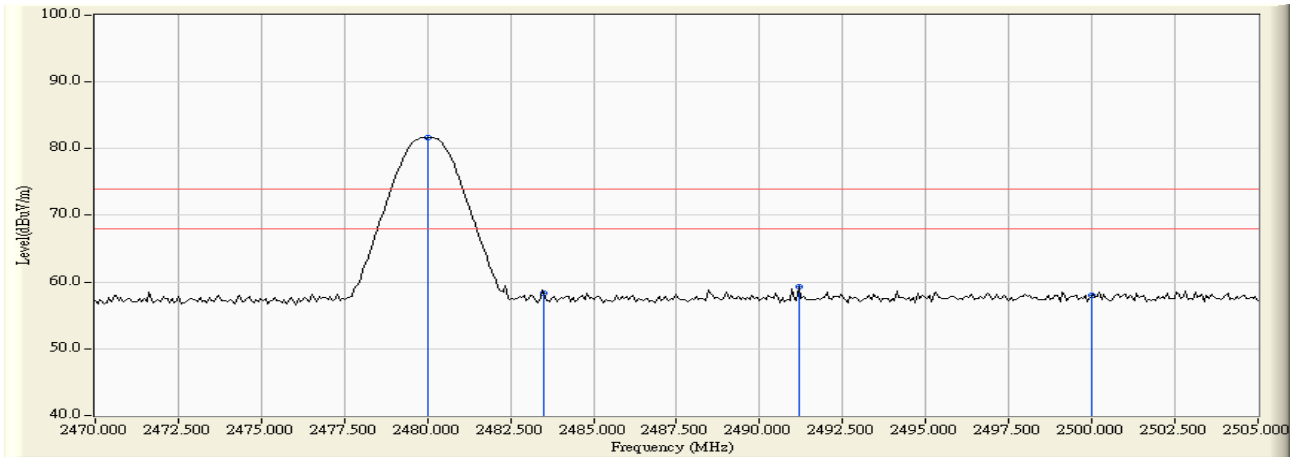


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.100	29.284	61.473	90.756	16.786	73.970	PEAK
2		2483.500	29.294	29.774	59.067	-14.903	73.970	PEAK
3		2494.760	29.326	31.479	60.805	-13.165	73.970	PEAK
4		2500.000	29.344	29.419	58.763	-15.207	73.970	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 : 2007/07/22 - 17:58
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2480

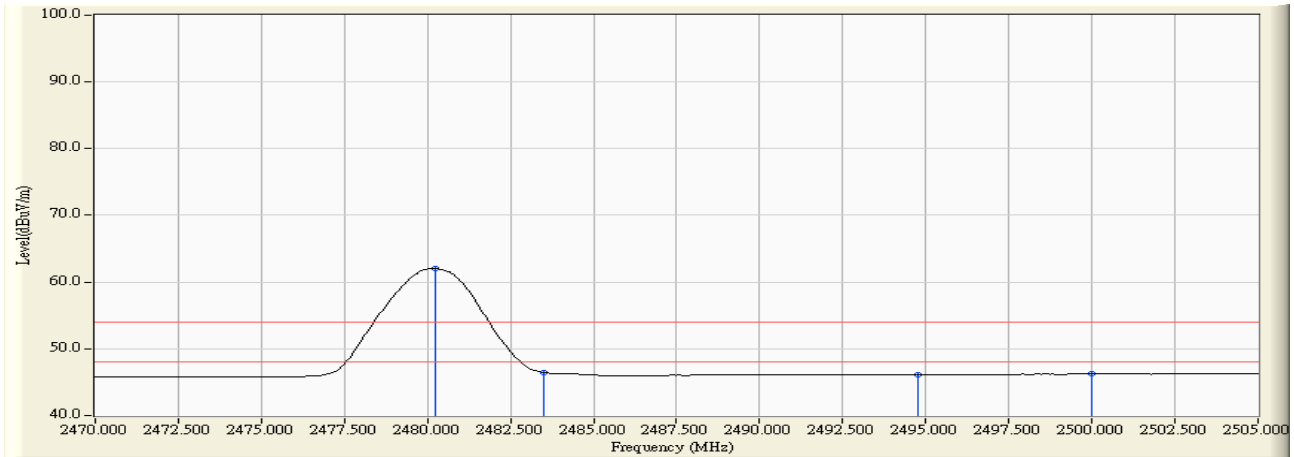


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.030	27.683	53.966	81.649	7.679	73.970	PEAK
2		2483.500	27.694	30.703	58.396	-15.574	73.970	PEAK
3		2491.182	27.716	31.619	59.335	-14.635	73.970	PEAK
4		2500.000	27.744	30.304	58.048	-15.922	73.970	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 : 2007/07/22 - 17:54
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : AC 120V/60Hz	Note : TX-2480

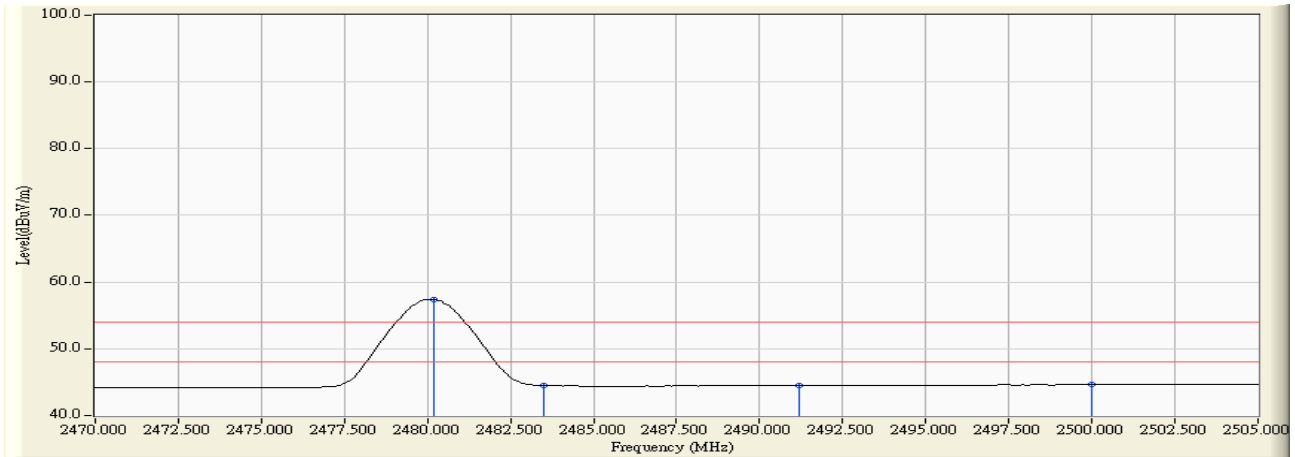


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.240	29.284	32.772	62.056	8.086	53.970	PEAK
2		2483.500	29.294	17.169	46.462	-7.508	53.970	PEAK
3		2494.760	29.326	16.806	46.132	-7.838	53.970	PEAK
4		2500.000	29.344	16.903	46.247	-7.723	53.970	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 : 2007/07/22 - 18:07
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : GPSmile55 Car Navigator	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : AC 120V/60Hz	Note : TX-2480



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.170	27.684	29.746	57.429	3.459	53.970	AVERAGE
2		2483.500	27.694	16.771	44.464	-9.506	53.970	AVERAGE
3		2491.182	27.716	16.803	44.519	-9.451	53.970	AVERAGE
4		2500.000	27.744	16.864	44.608	-9.362	53.970	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

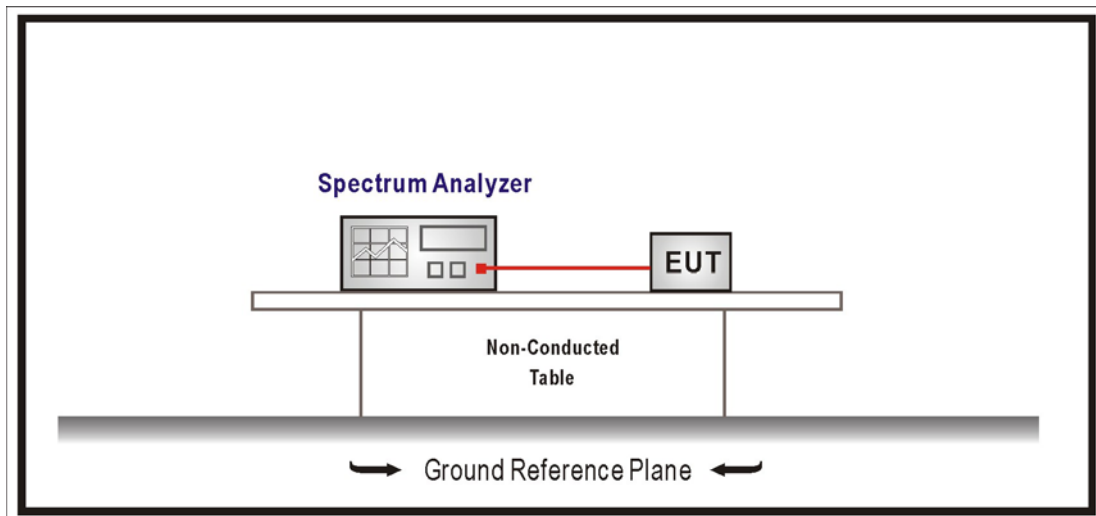
6.1. Test Equipment

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., 2006

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

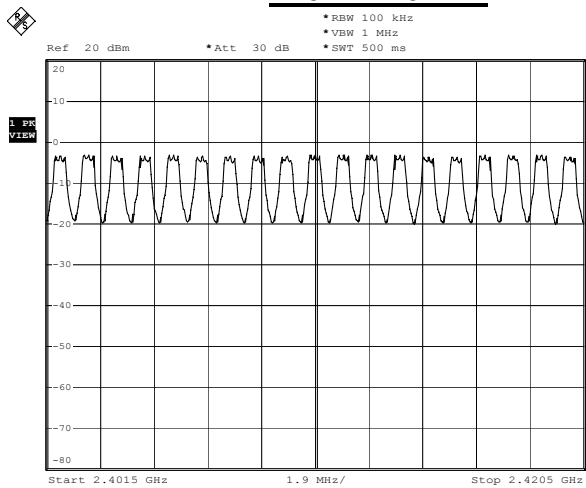
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

6.5. Test Result

Product	GPSmile55 Car Navigator		
Test Item	Channel of Number		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	Test Site	No.1 OATS

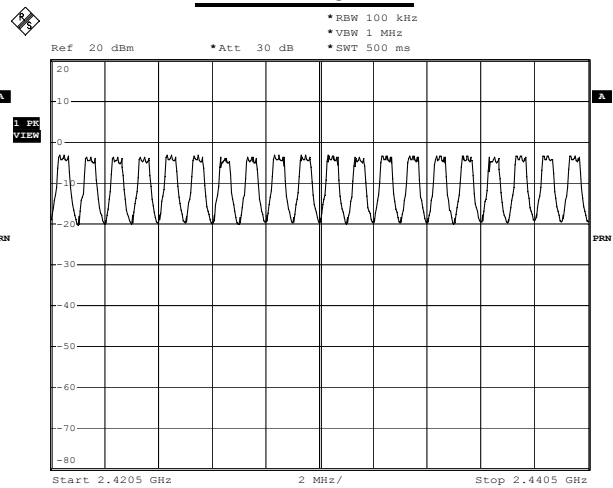
Frequency Range (MHz)	Measure Level (Hopping Channel)	Limit (Hopping Channel)	Result
2402 ~ 2480	79	>75	Pass

2402-2420MHz



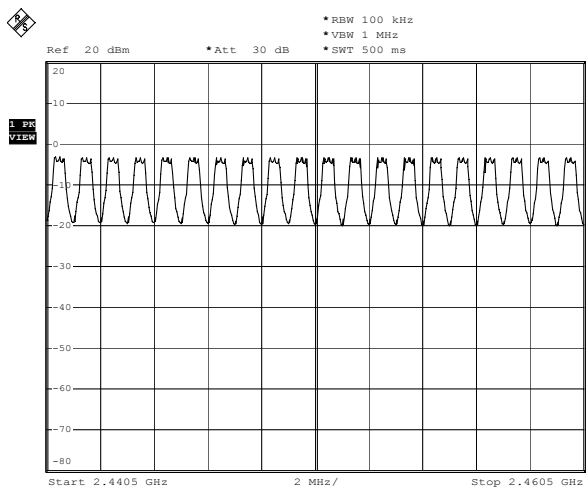
Date: 25.JUL.2007 20:28:38

2421-2440MHz



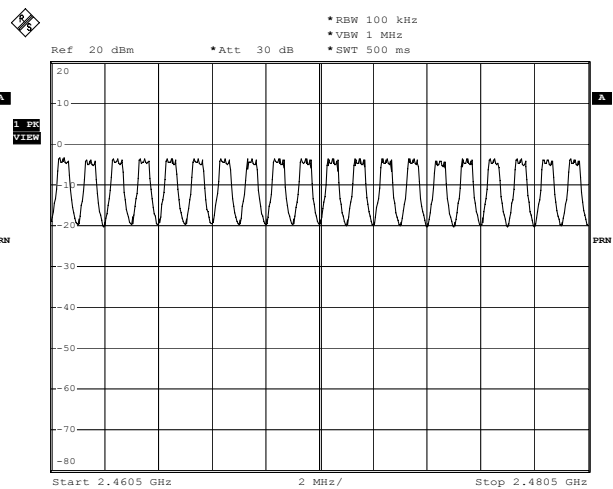
Date: 25.JUL.2007 20:45:30

2441-2460MHz



Date: 25.JUL.2007 21:23:52

2461-2480MHz



Date: 25.JUL.2007 21:27:11

7. Channel Separation

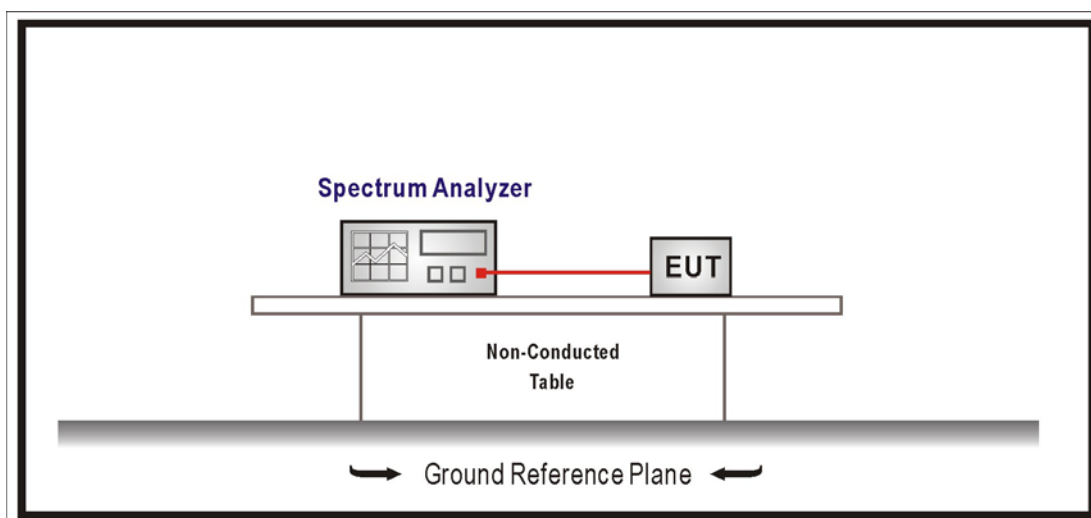
7.1. Test Equipment

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., 2006

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

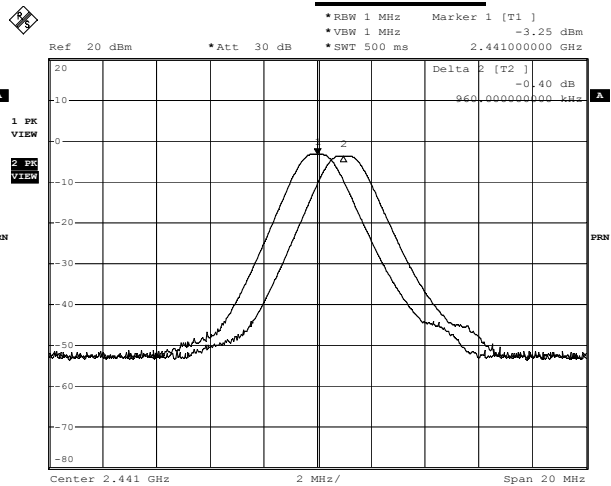
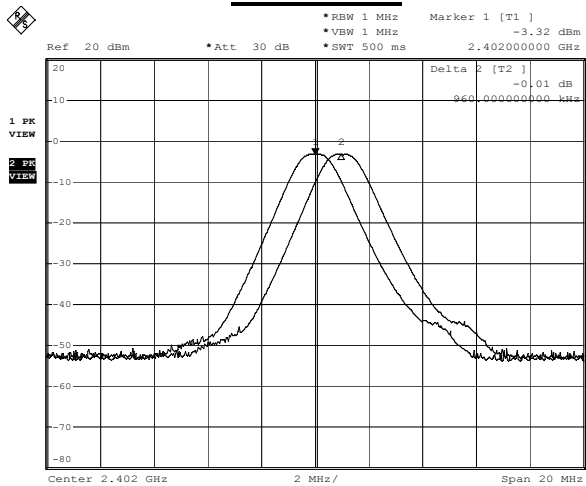
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

7.5. Test Result

Product	GPSmile55 Car Navigator		
Test Item	Channel Separation		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
00	2402.00	960	>830	Pass
39	2441.00	960	>820	Pass
78	2480.00	960	?830	Pass

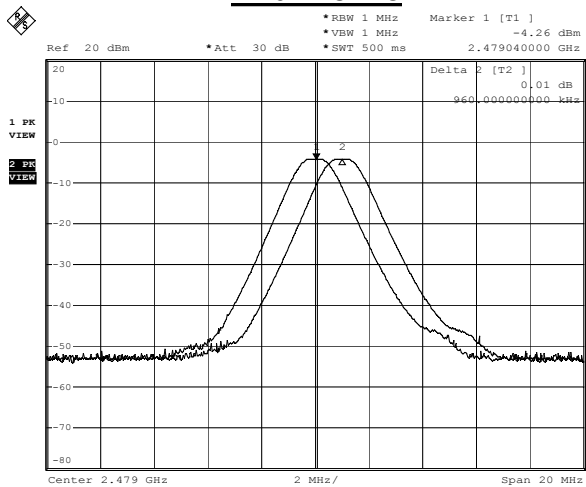
Channel 00



Date: 25.JUL.2007 19:07:29

Date: 25.JUL.2007 19:09:51

Channel 78



Date: 25.JUL.2007 19:12:03

8. Occupied Bandwidth

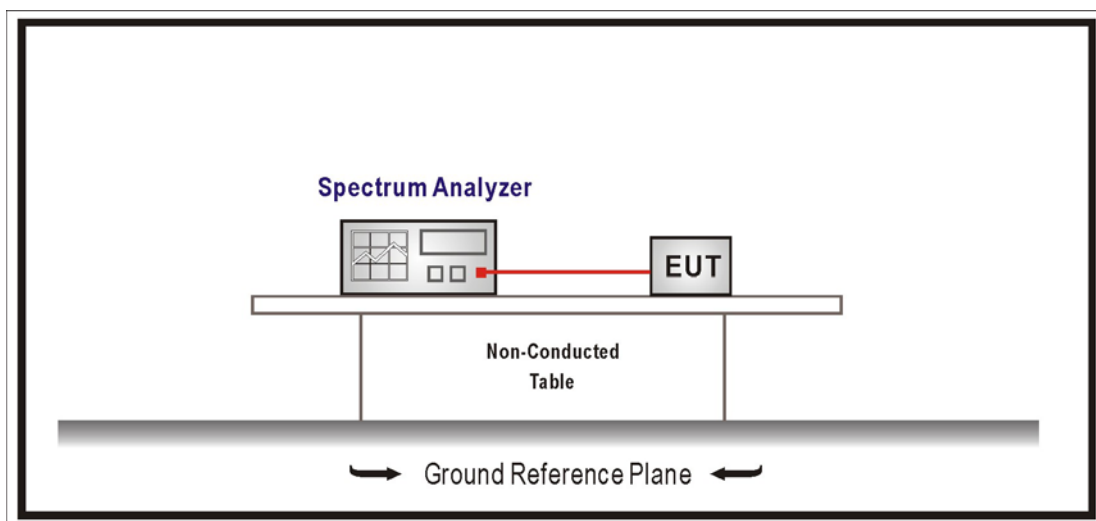
8.1. Test Equipment

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., 2006

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

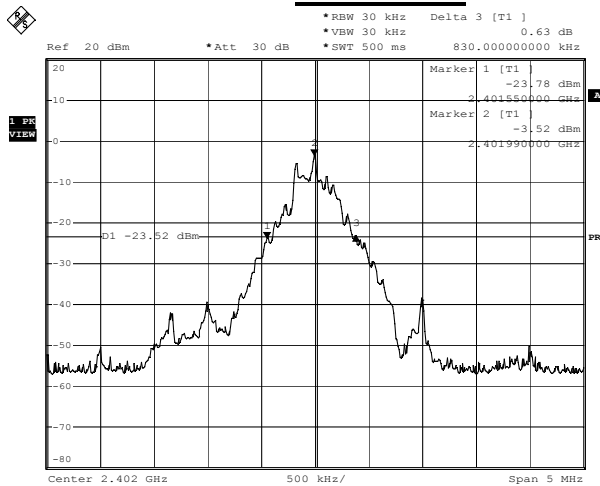
According to FCC Part 15 Subpart C Paragraph 15.247: 2006

8.5. Test Result

Product	GPSmile55 Car Navigator		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	Test Site	No.1 OATS

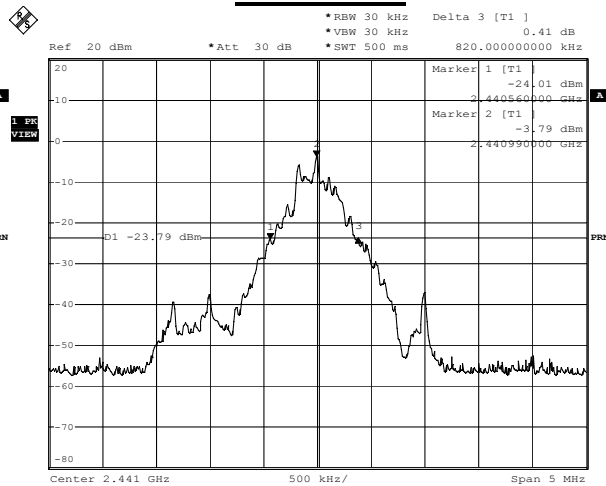
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402.00	0.83	1	Pass
39	2441.00	0.82	1	Pass
78	2480.00	0.83	1	Pass

Channel 00



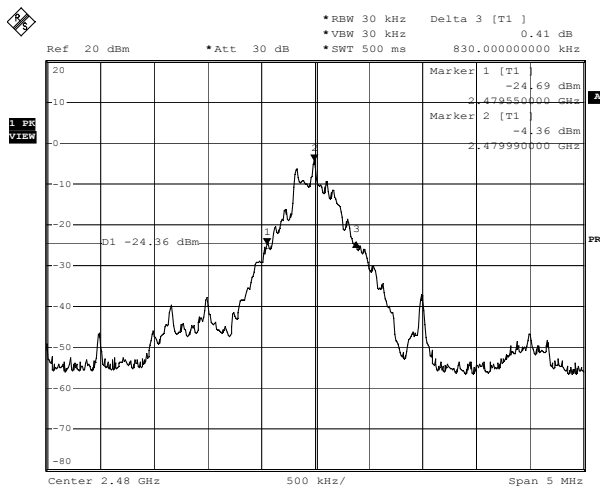
Date: 25.JUL.2007 18:59:19

Channel 39



Date: 25.JUL.2007 18:56:42

Channel 78



Date: 25.JUL.2007 18:48:52

9. Dwell Time

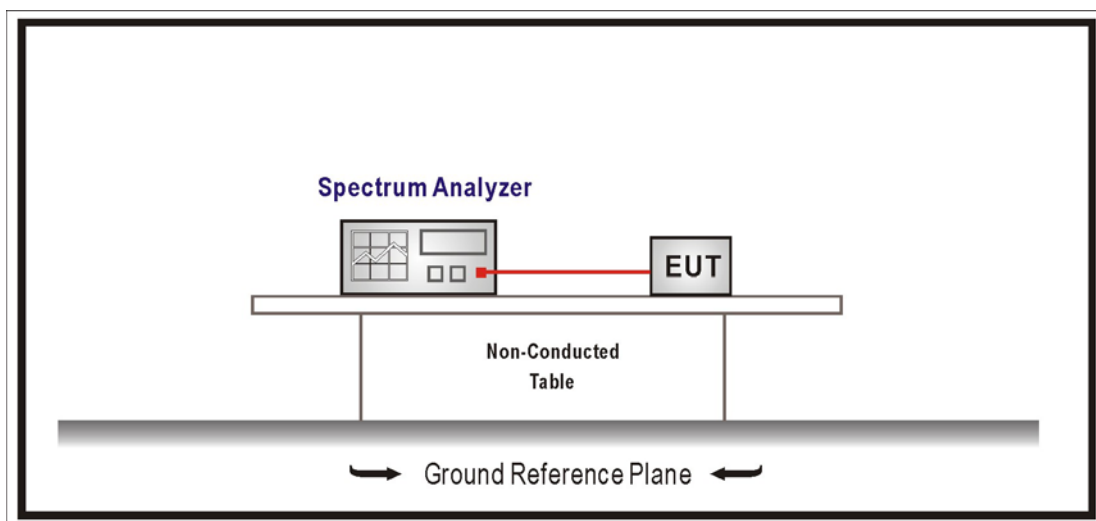
9.1. Test Equipment

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., 2006

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	Bluetooth		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	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: $0.00064 \times (800/79) \times 31.6 = 0.2048\text{sec}$.

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

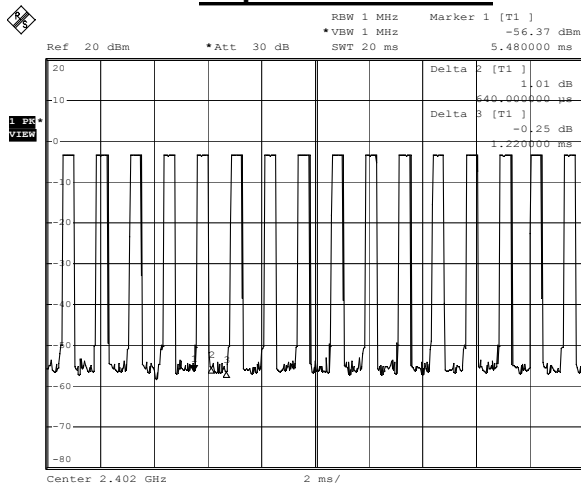
The Maximum Occupancy Time Within 31.6sec: $0.00072 \times (800/79) \times 31.6 = 0.2304\text{sec}$.

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: $0.00064 \times (800/79) \times 31.6 = 0.2048\text{sec}$.

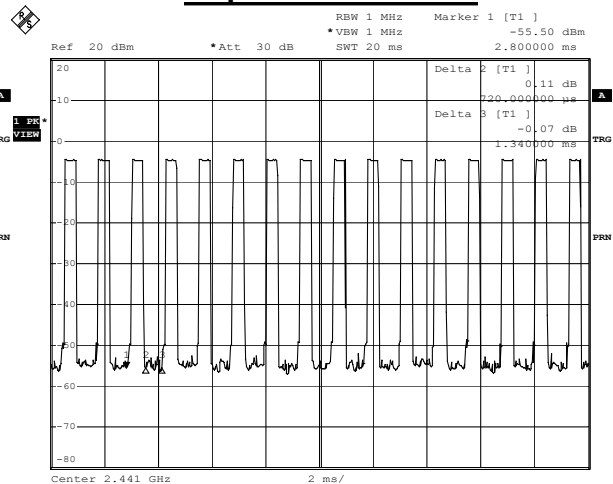
Test Result: The Average Occupancy Time of Each Highest , Middle and Lowest Channel Is Less Than 0.4sec , And Corresponds to The Standard .

Hop rate-2402MHz



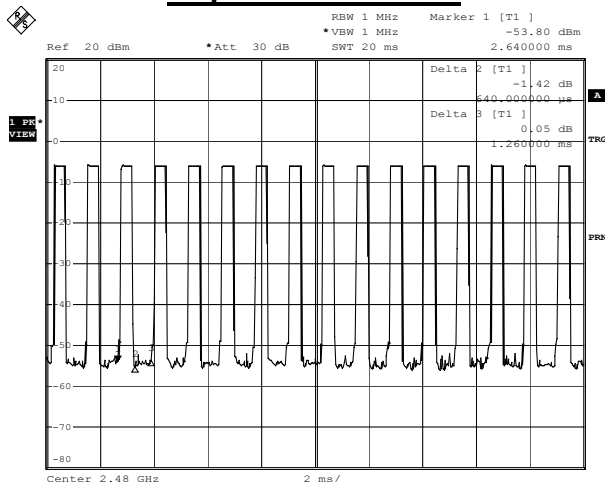
Date: 27.JUL.2007 12:54:23

Hop rate-2441MHz



Date: 27.JUL.2007 12:52:19

Hop rate-2480MHz



Date: 27.JUL.2007 12:50:04

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

Product	GPSmile55 Car Navigator		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	Test Site	No.1 OATS

Occupancy Time of Frequency Hopping System-DH 3

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

The Maximum Occupancy Time Within 31.6sec: $0.00188 * (400/79) * 31.6 = 0.3008\text{sec}$ ◦

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

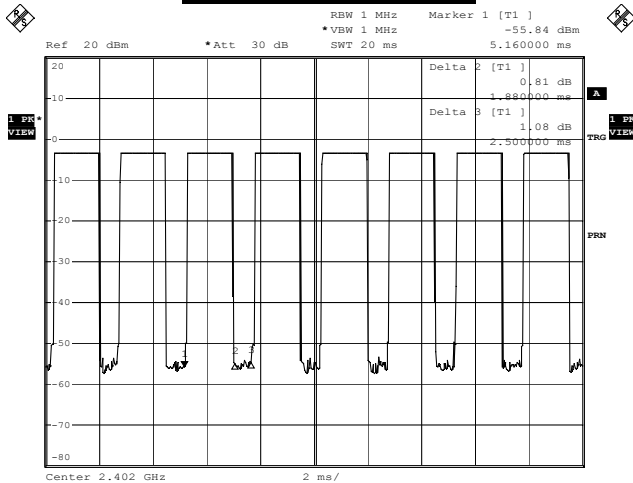
The Maximum Occupancy Time Within 31.6sec: $0.00192 * (400/79) * 31.6 = 0.3072\text{sec}$ ◦

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

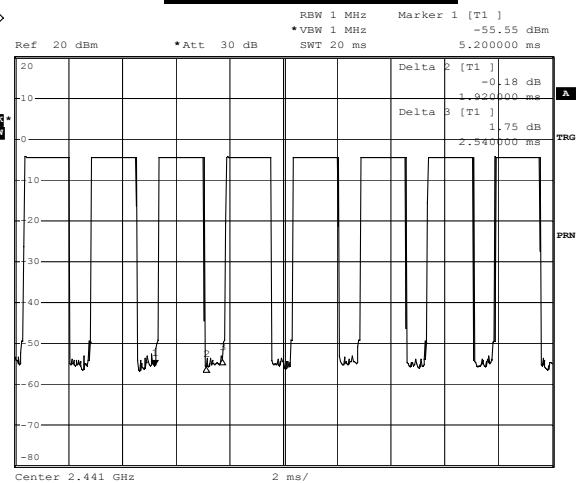
The Maximum Occupancy Time Within 31.6sec: $0.00188 * (400/79) * 31.6 = 0.3008\text{sec}$ ◦

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



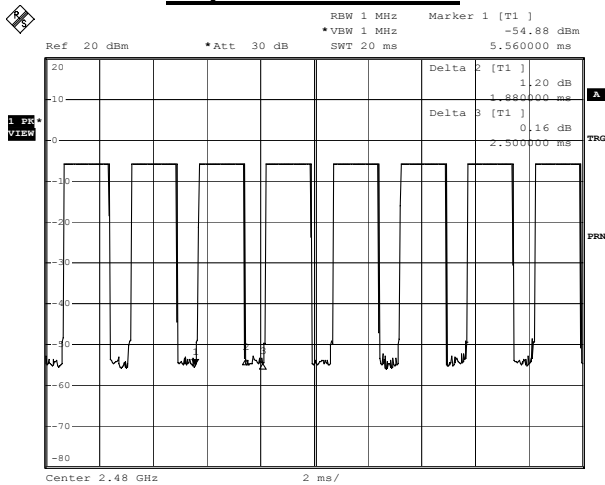
Hop rate-2441MHz



Date: 27.JUL.2007 12:58:43

Date: 27.JUL.2007 13:00:33

Hop rate-2480MHz



Date: 27.JUL.2007 13:01:58

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

Product	GPSmile55 Car Navigator		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit (Power by Adapter)		
Date of Test	2007/07/25	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: $0.00316 \times (250/79) \times 31.6 = 0.316\text{sec}$ ◦

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

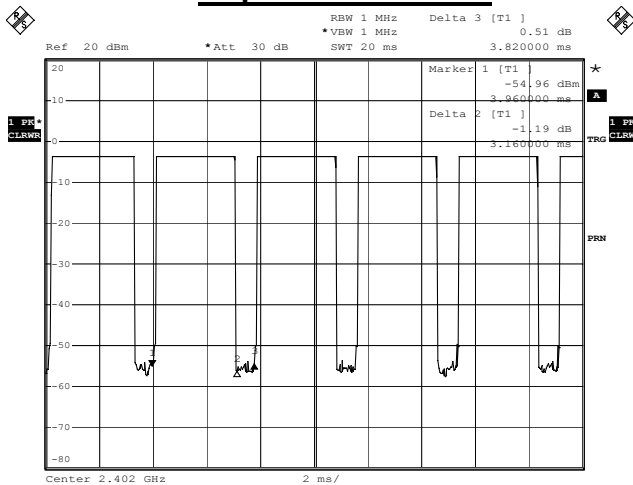
The Maximum Occupancy Time Within 31.6sec: $0.00324 \times (250/79) \times 31.6 = 0.324\text{sec}$ ◦

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

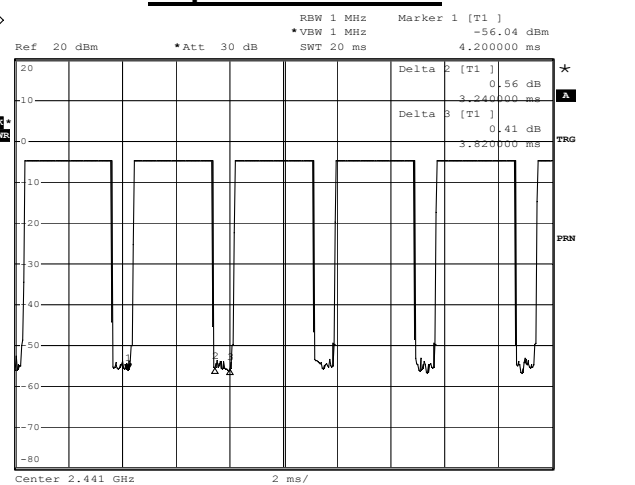
The Maximum Occupancy Time Within 31.6sec: $0.00316 \times (250/79) \times 31.6 = 0.316\text{sec}$ ◦

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



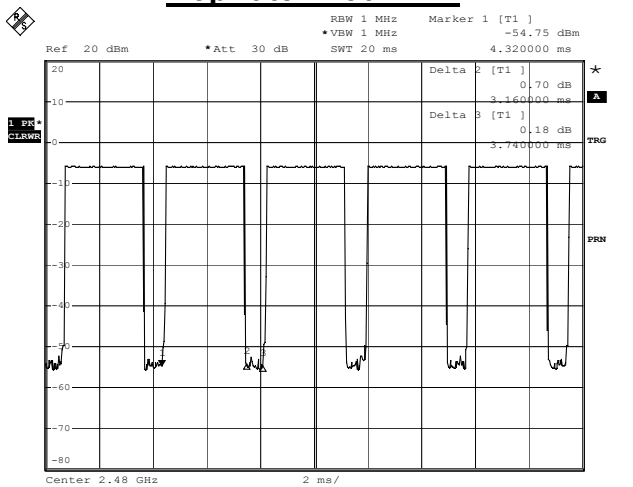
Hop rate-2441MHz



Date: 27.JUL.2007 13:21:44

Date: 27.JUL.2007 13:16:33

Hop rate-2480MHz



Date: 27.JUL.2007 13:14:12

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