



Test Report

Product Name : TripMate
Model No. : 852
FCC ID. : OUP961900101

Applicant : TRANSYSTEM INC.
Address : No.1-2, Li-Hsin Rd.1, Science-Based Industrial Park,
Hsinchu, Taiwan R.O.C.

Date of Receipt : 2009/01/15
Issued Date : 2009/02/03
Report No. : 091221R-RFUSP06V01
Version : V1.0

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.

Test Report Certification

Issued Date : 2009/02/03

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 Applicant : TRANSYSTEM INC.
 Address : No.1-2, Li-Hsin Rd.1, Science-Based Industrial Park, Hsinchu,
 Taiwan R.O.C.
 Manufacturer : TRANSYSTEM INC.
 Model No. : 852
 FCC ID. : OUP961900101
 Rated Voltage : DC 3V (Power by Battery)
 EUT Voltage : DC 3V (Power by Battery)
 Trade Name : TSI
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247:2007
 Test Result : Complied

The test results relate only to the samples tested.

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Documented By : Carol Tsai

(Carol Tsai / Engineering Adm. Specialist)

Tested By : Sheena Huang

(Sheena Huang / Engineer)

Approved By : Roy Wang

(Roy Wang / Manager)

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1. General Information

1.1. EUT Description

Product Name	TripMate
Trade Name	TSI
Model No.	852
Frequency Range	2402~2480MHz
Channel Number	79
Type of Modulation	FHSS
Channel Control	Auto
Antenna Type	Soldered on PCB
Antenna Gain	0dBi

Component	
USB Cable	Shielded, 0.58m
Battery	2 Pcs

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 TripMate including a 2.4GHz receiving function, and transmitting function.
2. These test results 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 091221R-RFUSP01V02 under Declaration of Conformity.

1.3. Test Mode

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

Pre-Test Mode	
EMI	Mode 1: Transmit
Final Test Mode	
EMI	Mode 1: Transmit

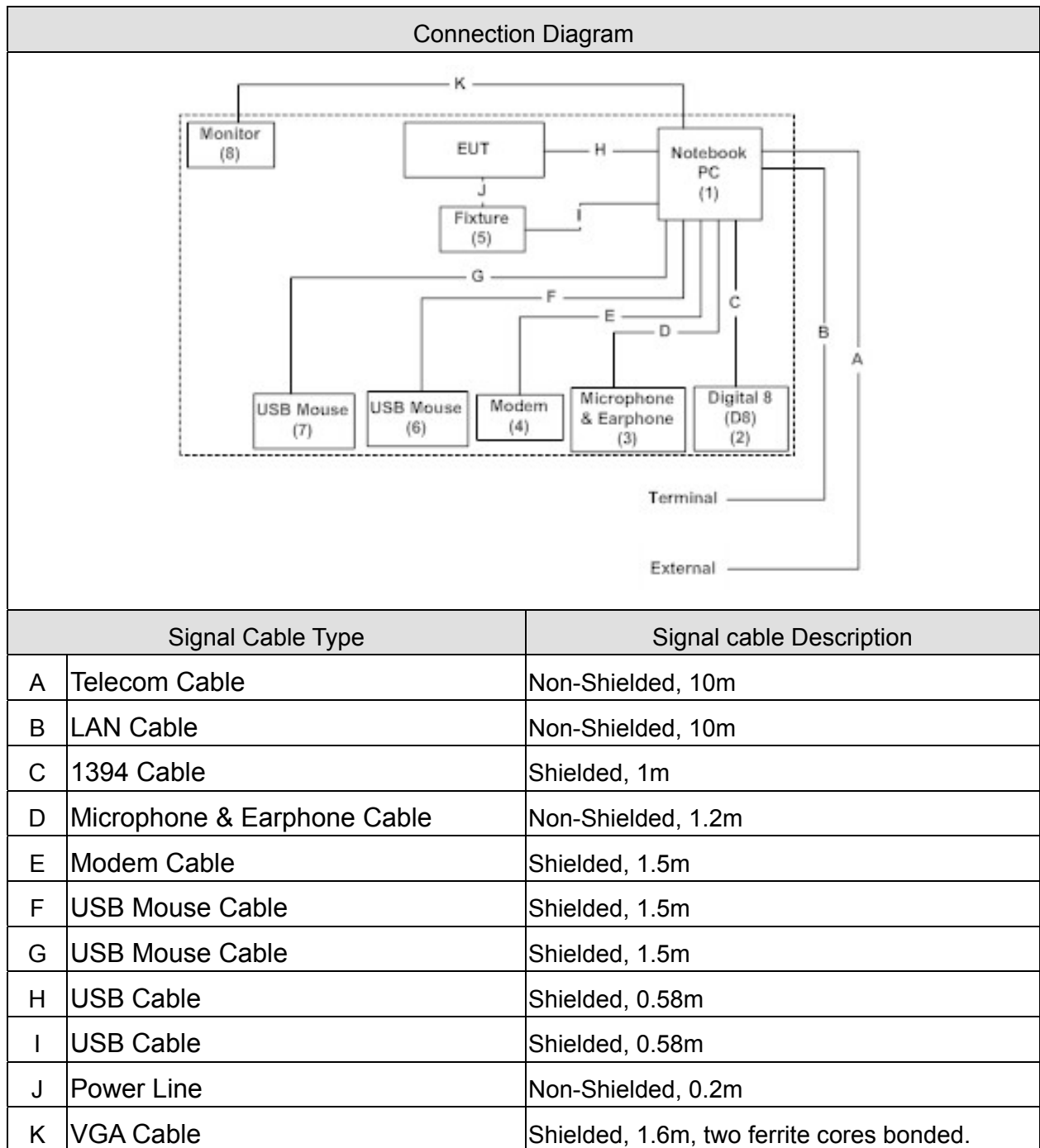
Emission	Mode 1
Conducted Emission	Yes
Peak Power Output	Yes
Radiated Emission	Yes
Band Edge	Yes
Channel of Number	Yes
Channel Separation	Yes
Occupied Bandwidth	Yes
Dwell Time	Yes

1.4. Tested System Details

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

	Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	HP Compaq	NX6320FF	CNU7020BXT	DoC	Non-Shielded, 1.8m
2	Digital 8 (D8)	SONY	DCR-TRV110	P35209	DoC	--
3	Microphone & Earphone	Fujiei	SBZ-38	N/A	DoC	--
4	Modem	ACEEX	DM-1414	0102027545	DoC	Non-Shielded, 1.6m
5	Fixture	TRANSYSTEM	N/A	N/A	DoC	--
6	USB Mouse	Logitech	M-UV83	LZE35006065	DoC	--
7	USB Mouse	Logitech	M-UV83	LZE35006044	DoC	--
8	Monitor	CHI MEI	A170E1-09	3UC120954XA 0131	DoC	Non-Shielded, 1.8m

1.5. Configuration of tested System



1.6. EUT Exercise Software

1	Setup the EUT and Notebook PC as shown on 1.5.
2	Turn on the power of all equipment.
3	Data will be continue transmitting through EUT.
4	Repeat the above procedure (2) to (3)

1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 B 15.107 Conducted Emission	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output (FHSS)	15 - 35	26
Humidity (%RH)		25 - 75	51
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	54
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Channel Of Number (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	53
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Channel Separation (FHSS)	15 - 35	22
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (FHSS)	15 - 35	22
Humidity (%RH)		25 - 75	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Dwell Time (FHSS)	15 - 35	22
Humidity (%RH)		25 - 75	48
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 TAF
Accreditation Number: 1313
Effective through: December 27, 2010



Accredited by NVLAP
NVLAP Lab Code: 200347-0
Effective through: September 30, 2009



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

2. Conducted Emission

2.1. Test Equipment

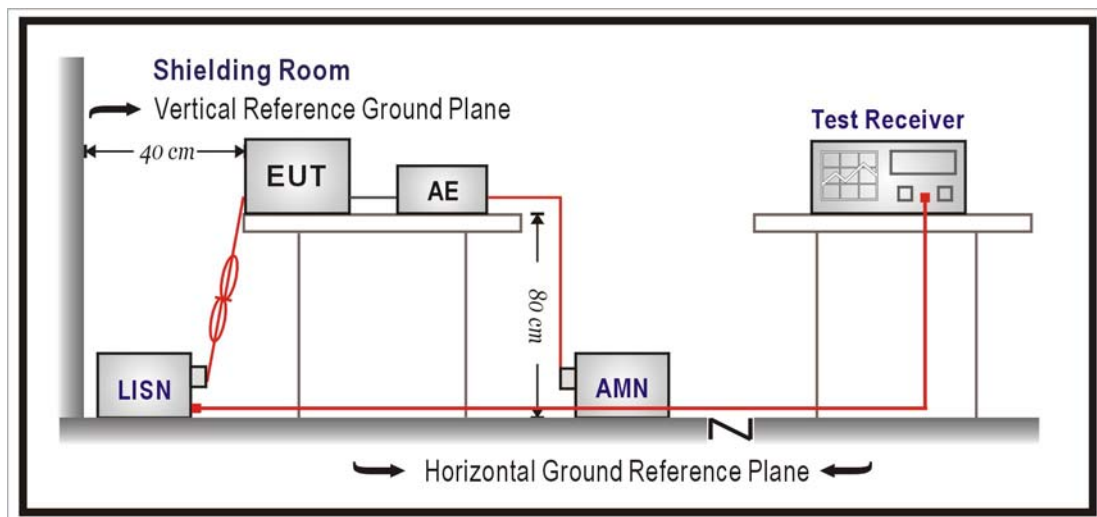
The following test equipment are used during the test:

Conducted Emission / SR2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
4-Wire ISN	R & S	ENY 41	837032/001	2008/04/15
Artificial Mains Network	R & S	ENV4200	848411/010	2008/03/13
Double 2-Wire ISN	R & S	ENY 22	835354/008	2008/04/15
LISN	R & S	ESH3-Z5	825562/002	2008/03/31
Pulse Limiter	R & S	ZSH3Z2	357.8810.54	2008/07/19
Test Receiver	R & S	ESCS 30	100122	2008/02/21

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

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

The EUT was setup and tested according to ANSI C63.4, 2003.

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.

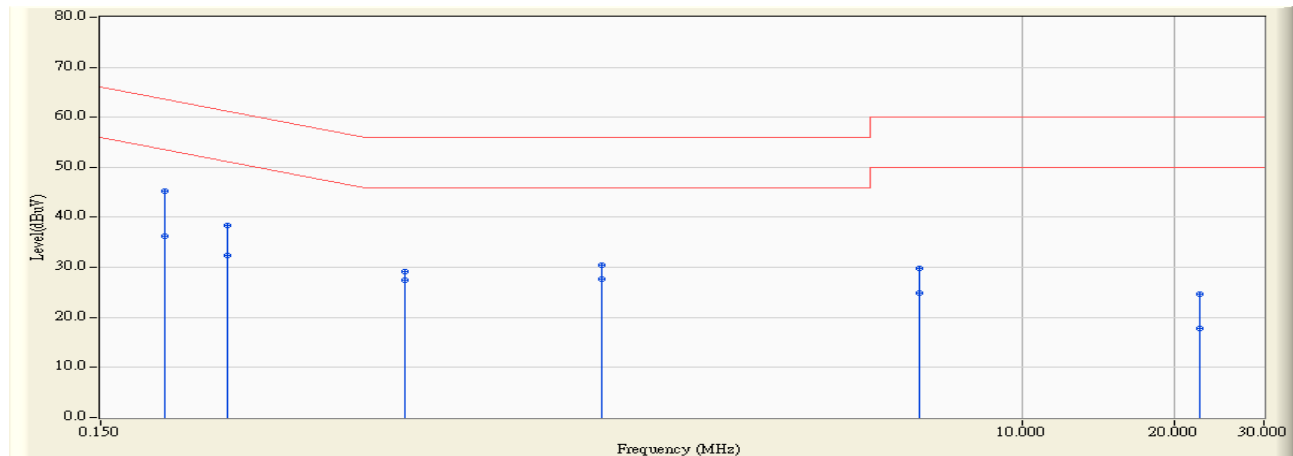
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2007

2.6. Test Result

Site : SR2	Time : 2009/01/17 - 21:34
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-LISN(16A) - Line1	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX

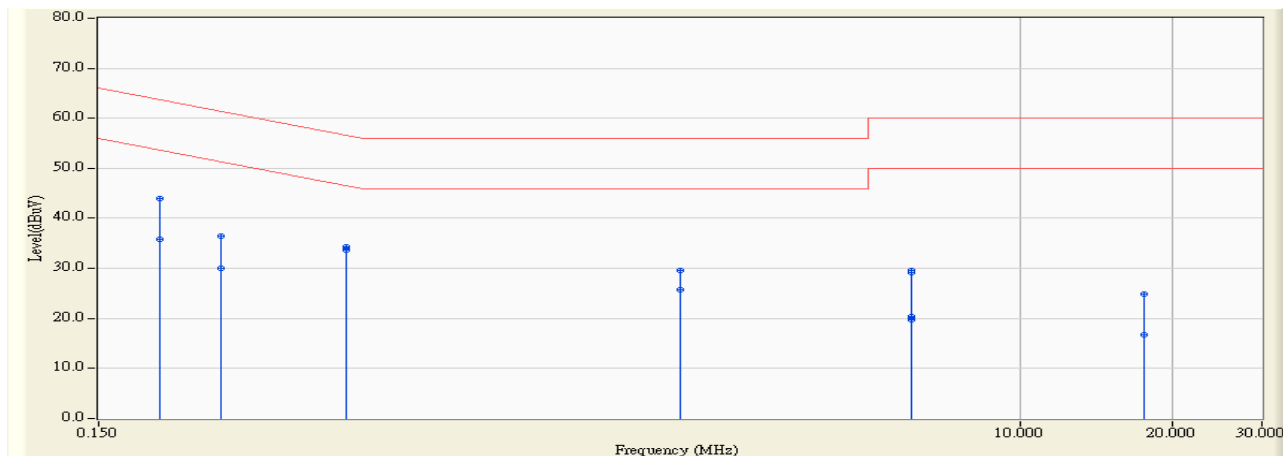


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.201	9.661	35.530	45.191	-18.387	63.578	QUASIPeAK
2	*	0.201	9.661	26.560	36.221	-17.357	53.578	AVERAGE
3		0.267	9.694	28.640	38.334	-22.871	61.205	QUASIPeAK
4		0.267	9.694	22.670	32.364	-18.841	51.205	AVERAGE
5		0.601	9.820	19.360	29.180	-26.820	56.000	QUASIPeAK
6		0.601	9.820	17.600	27.420	-18.580	46.000	AVERAGE
7		1.473	9.815	20.590	30.405	-25.595	56.000	QUASIPeAK
8		1.473	9.815	17.780	27.595	-18.405	46.000	AVERAGE
9		6.239	9.906	19.940	29.846	-30.154	60.000	QUASIPeAK
10		6.239	9.906	15.030	24.936	-25.064	50.000	AVERAGE
11		22.353	10.359	14.220	24.579	-35.421	60.000	QUASIPeAK
12		22.353	10.359	7.410	17.769	-32.231	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 : SR2	Time : 2009/01/17 - 21:43
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR2-LISN(16A) - Line2	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.198	9.689	34.200	43.889	-19.793	63.682	QUASIPeAK
2		0.198	9.689	26.150	35.839	-17.843	53.682	AVERAGE
3		0.262	9.706	26.800	36.505	-24.856	61.362	QUASIPeAK
4		0.262	9.706	20.420	30.125	-21.236	51.362	AVERAGE
5		0.463	9.793	24.520	34.313	-22.326	56.639	QUASIPeAK
6	*	0.463	9.793	23.850	33.643	-12.996	46.639	AVERAGE
7		2.115	9.830	19.850	29.680	-26.320	56.000	QUASIPeAK
8		2.115	9.830	15.980	25.810	-20.190	46.000	AVERAGE
9		6.076	9.904	19.620	29.524	-30.476	60.000	QUASIPeAK
10		6.076	9.904	10.500	20.404	-29.596	50.000	AVERAGE
11		6.076	9.904	19.220	29.124	-30.876	60.000	QUASIPeAK
12		6.076	9.904	9.910	19.814	-30.186	50.000	AVERAGE
13		17.580	10.323	14.530	24.853	-35.147	60.000	QUASIPeAK
14		17.580	10.323	6.320	16.643	-33.357	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

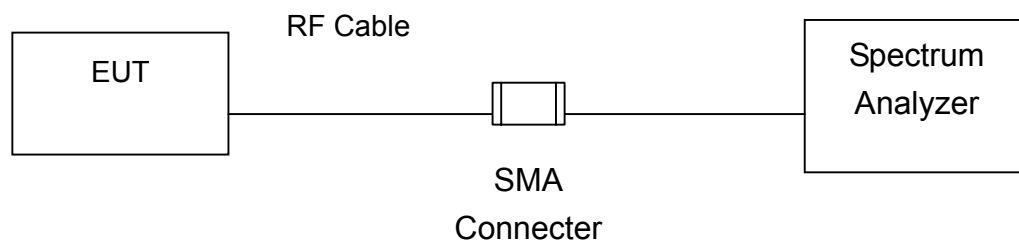
3.1. Test Equipment

The following test equipments are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R&S	FSP/ 100005	Oct., 2008
2	No.1 OATS			Sep., 2008

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

3.2. Test Setup



3.3. 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

3.4. 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.

3.5. Test Specification

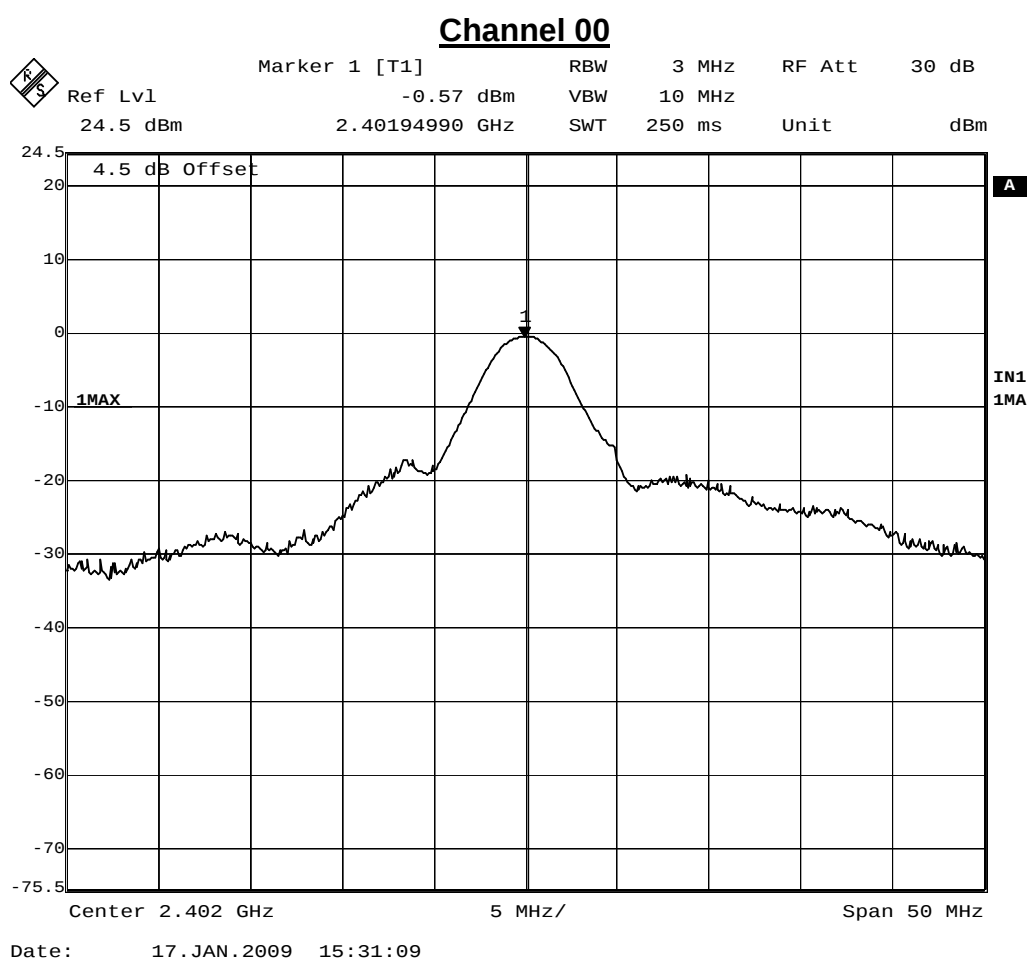
According to FCC Part 15 Subpart C Paragraph 15.207: 2007

3.6. Test Result

Product	TripMate		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

1M-GFSK Modulation, PRBS Packet Type

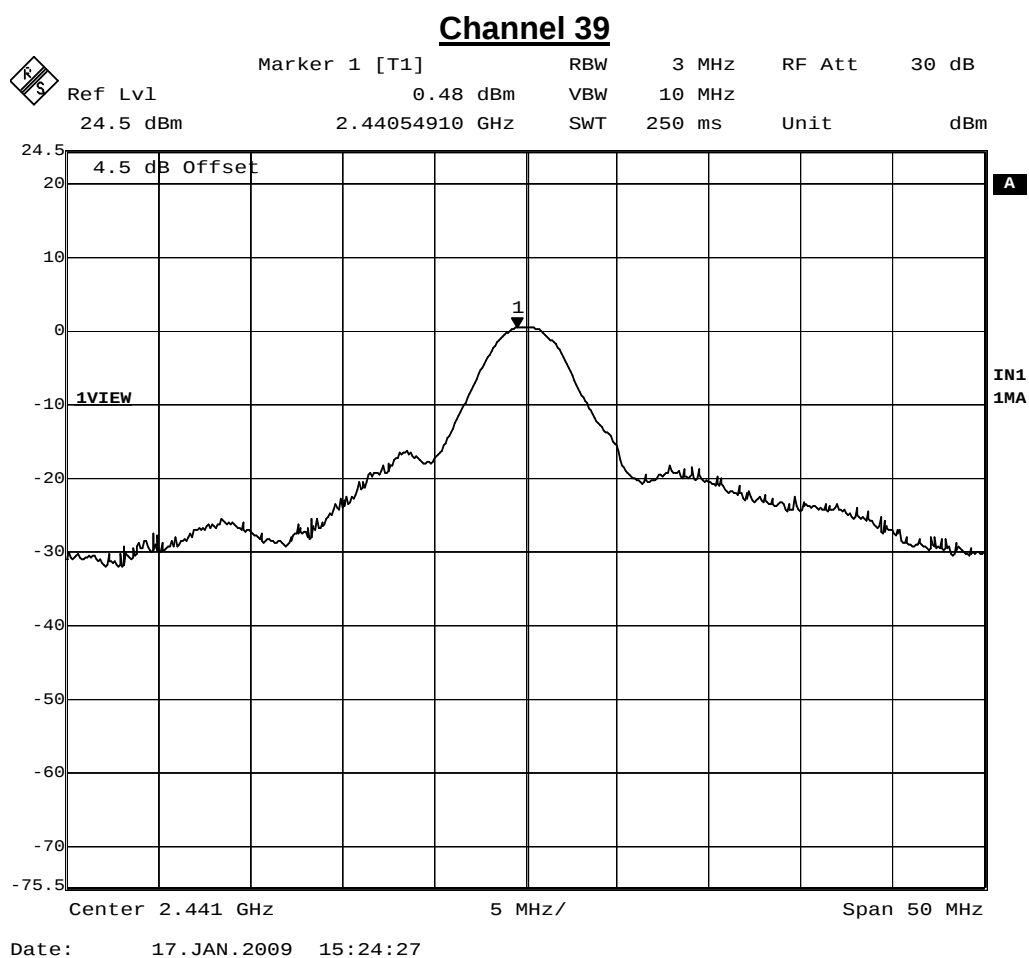
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	-0.57	1Watt= 30 dBm	Pass



Product	TripMate		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

1M-GFSK Modulation, PRBS Packet Type

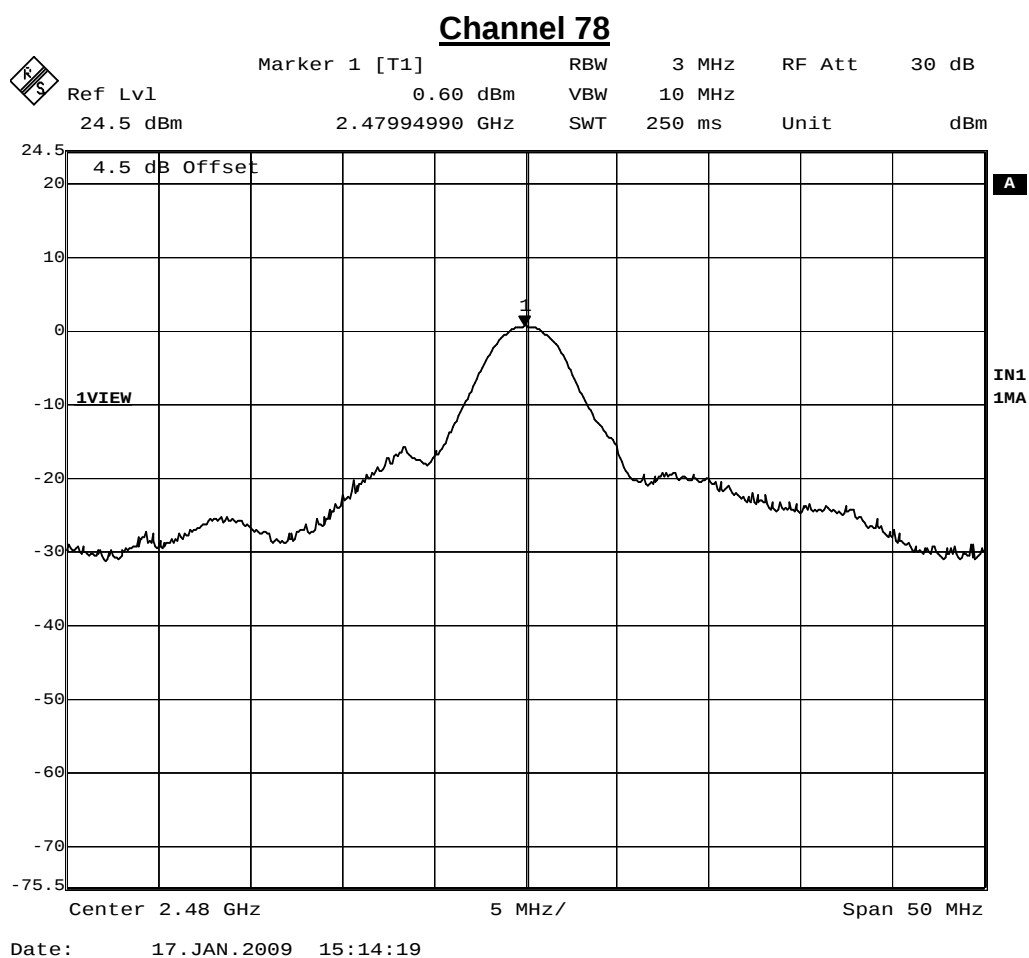
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2441	0.48	1Watt= 30 dBm	Pass



Product	TripMate		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

1M-GFSK Modulation, PRBS Packet Type

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
78	2480	0.60	1Watt= 30 dBm	Pass



4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the test:

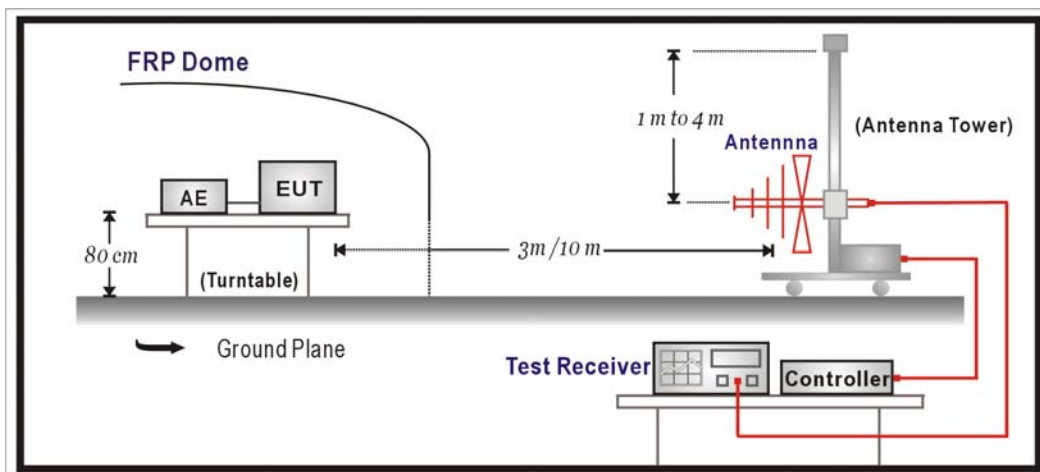
Radiated Emission / Site2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2708	2008/09/03
Horn Antenna	Electro Metrics	EM-6961	103325	2008/03/15
Pre-Amplifier	HP	8449B	3008A01123	2008/11/15
Pre-Amplifier	QuieTek	AP-025C	002	N/A
Spectrum Analyzer	R & S	FSP40	100005	2008/08/25
Spectrum Analyzer	Advantest	R3162	121200166	2008/02/19
Test Receiver	R & S	ESCS 30	836858/023	2008/04/01

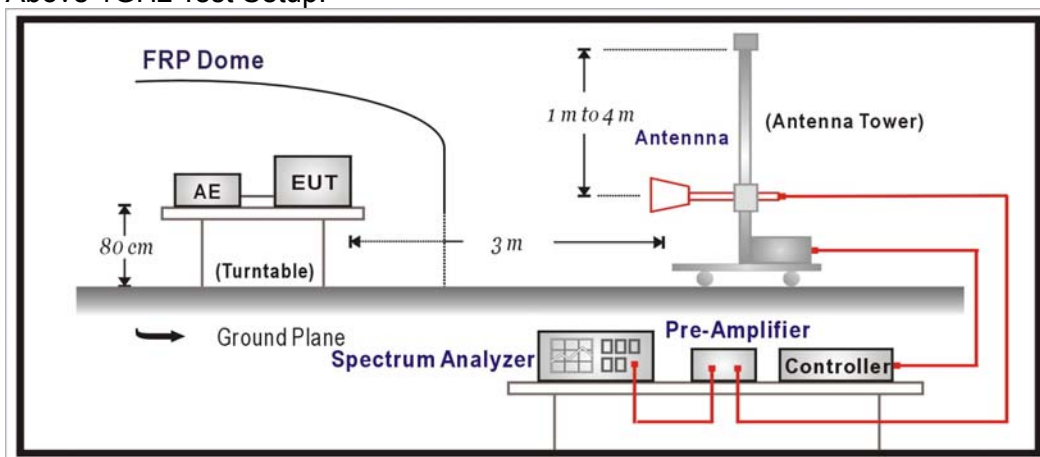
- Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
2. "N/A" Ca1.Date is used to Pre-test, not final test.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT 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 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.

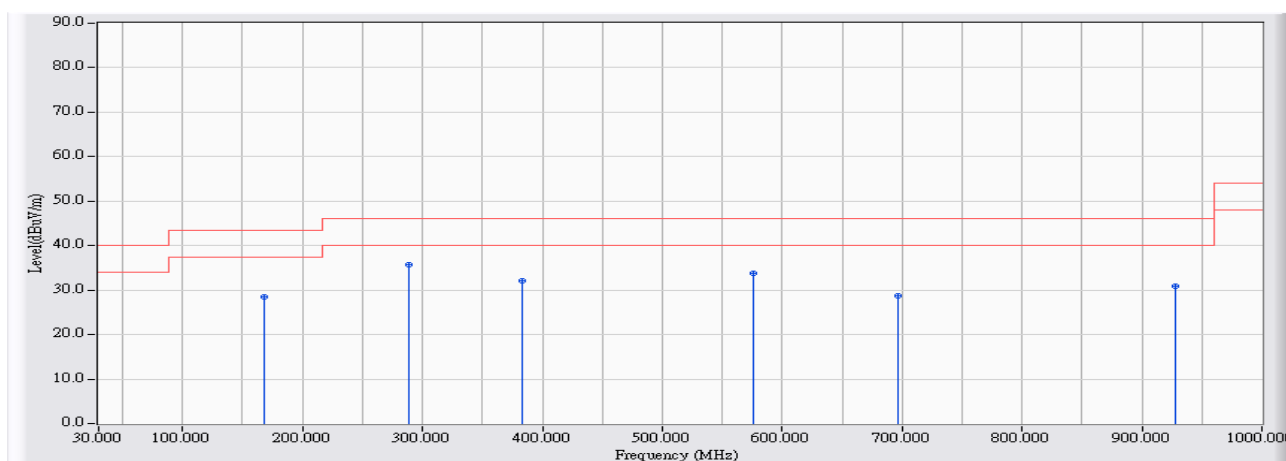
4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2007

4.6. Test Result

30MHz-1GHz Spurious

Site : Site2	Time : 2009/01/20 - 21:55
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : FCC_30-1G(2008-9) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX

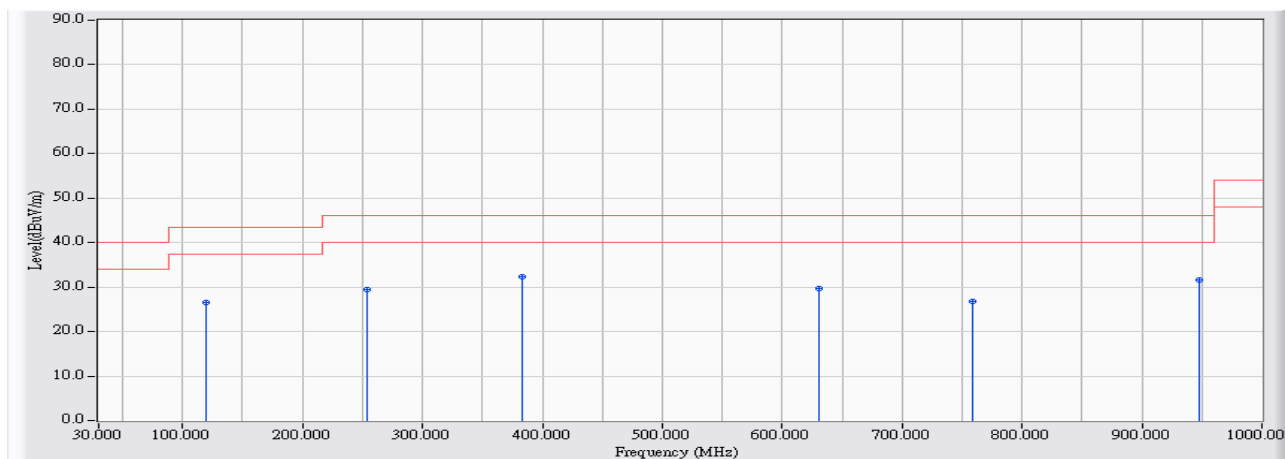


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	168.016	-19.393	47.814	28.421	-15.079	43.500	QUASIPeAK
2	* 288.537	-10.476	46.191	35.714	-10.286	46.000	QUASIPeAK
3	383.788	-9.676	41.765	32.089	-13.911	46.000	QUASIPeAK
4	576.232	-6.001	39.723	33.723	-12.277	46.000	QUASIPeAK
5	696.753	-3.917	32.701	28.784	-17.216	46.000	QUASIPeAK
6	928.076	1.423	29.542	30.965	-15.035	46.000	QUASIPeAK

Note:

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

Site : Site2	Time : 2009/01/20 - 21:56
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : FCC_30-1G(2008-9) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX



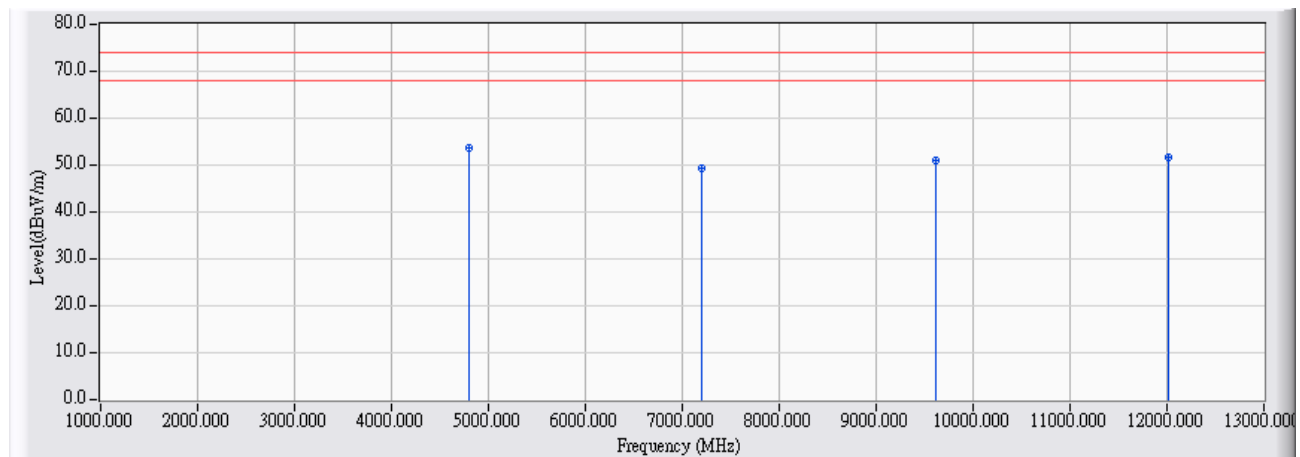
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		119.419	-10.787	37.296	26.509	-16.991	43.500	QUASIPeAK
2		253.547	-14.138	43.665	29.526	-16.474	46.000	QUASIPeAK
3	*	383.788	-9.137	41.446	32.309	-13.691	46.000	QUASIPeAK
4		630.661	-2.981	32.648	29.667	-16.333	46.000	QUASIPeAK
5		758.958	-6.093	32.921	26.828	-19.172	46.000	QUASIPeAK
6		947.515	-1.715	33.360	31.644	-14.356	46.000	QUASIPeAK

Note:

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

Harmonic & Spurious:

Site : Site2	Time : 2009/01/06 - 10:22
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH00

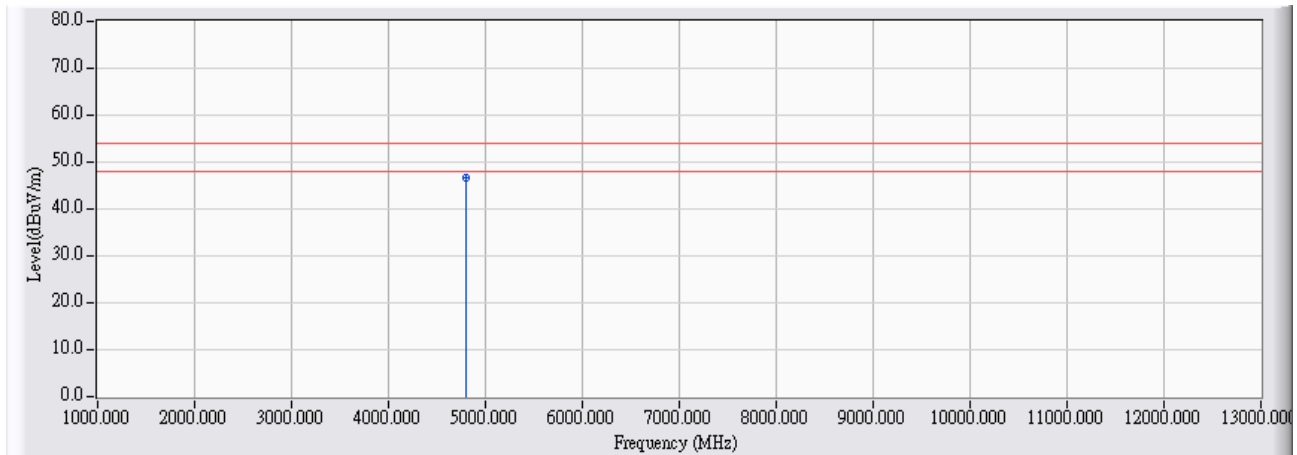


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4804.040	4.358	49.370	53.729	-20.271	74.000	54.00	PEAK
2		7205.860	10.220	39.070	49.291	-24.709	74.000	54.00	PEAK
3		9607.920	13.975	36.860	50.835	-23.165	74.000	54.00	PEAK
4		12010.560	19.932	31.880	51.813	-22.187	74.000	54.00	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.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site2	Time : 2009/01/06 - 10:23
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH00

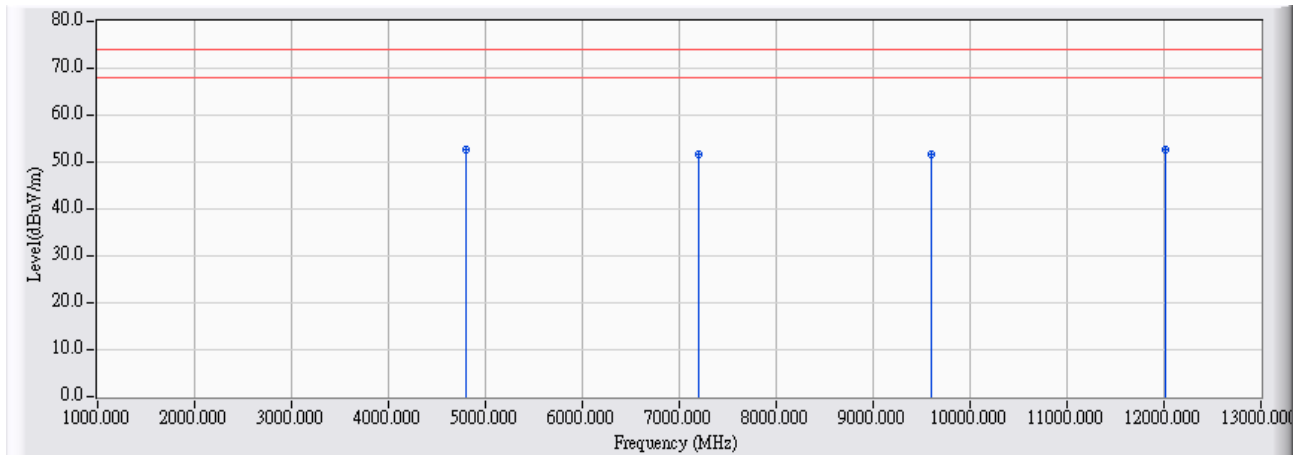


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4804.020	4.358	42.270	46.628	-7.372	74.000	54.00	AVERAGE

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. The Emission above 13GHz were not included is because their levels are too low.

Site : Site2	Time : 2009/01/06 - 10:48
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH00

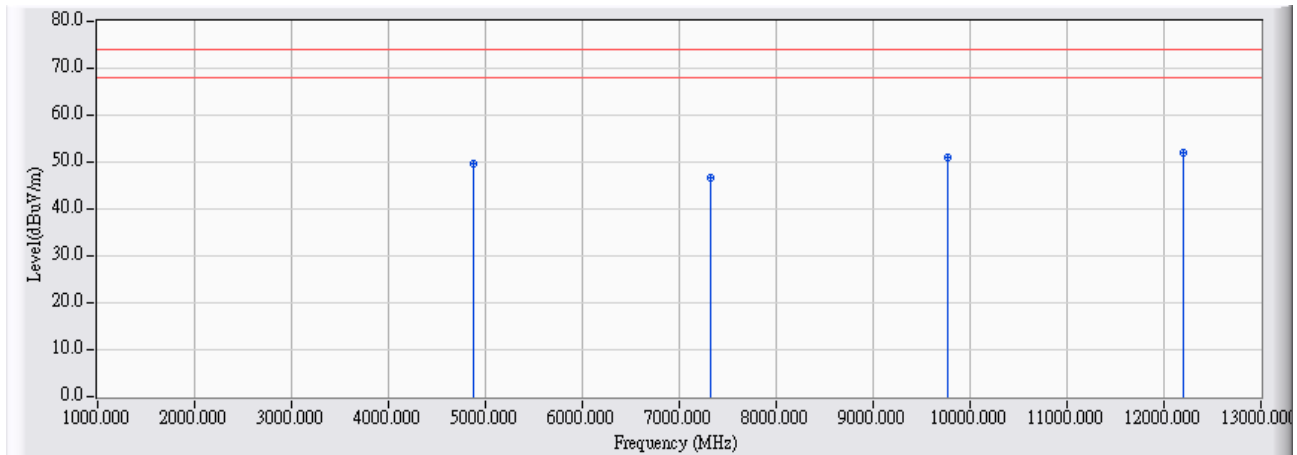


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4803.960	4.236	48.590	52.826	-21.174	74.000	54.00	PEAK
2		7206.140	10.428	41.280	51.708	-22.292	74.000	54.00	PEAK
3		9607.580	14.211	37.480	51.690	-22.310	74.000	54.00	PEAK
4		12010.140	18.822	33.770	52.592	-21.408	74.000	54.00	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.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site2	Time : 2009/01/06 - 11:06
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH39

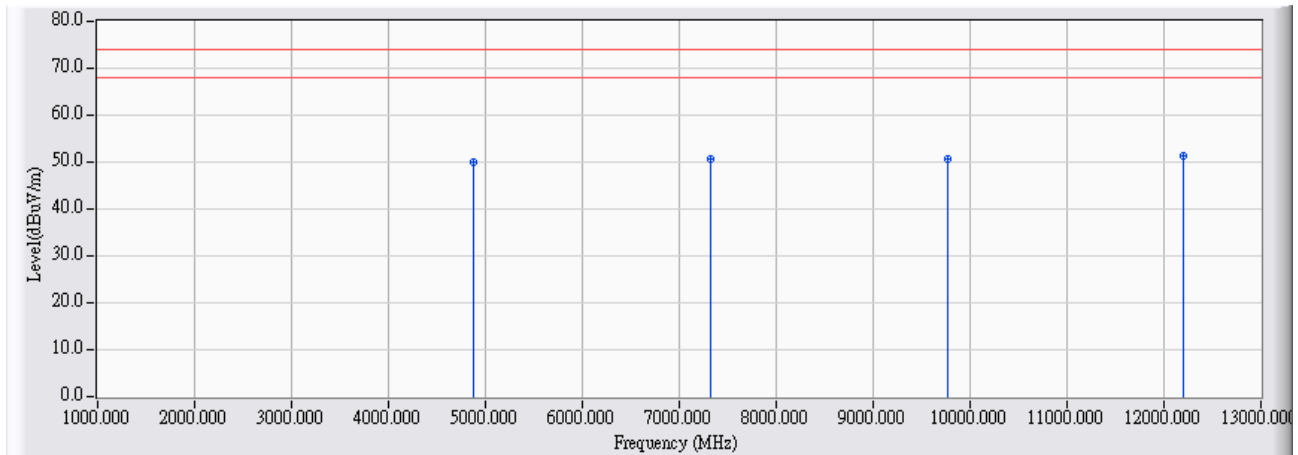


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4881.980	4.597	45.100	49.698	-24.302	74.000	54.00	PEAK
2		7323.040	10.847	35.920	46.768	-27.232	74.000	54.00	PEAK
3		9764.160	14.899	36.170	51.069	-22.931	74.000	54.00	PEAK
4	*	12205.080	19.169	32.720	51.888	-22.112	74.000	54.00	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.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site2	Time : 2009/01/06 - 11:18
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH39

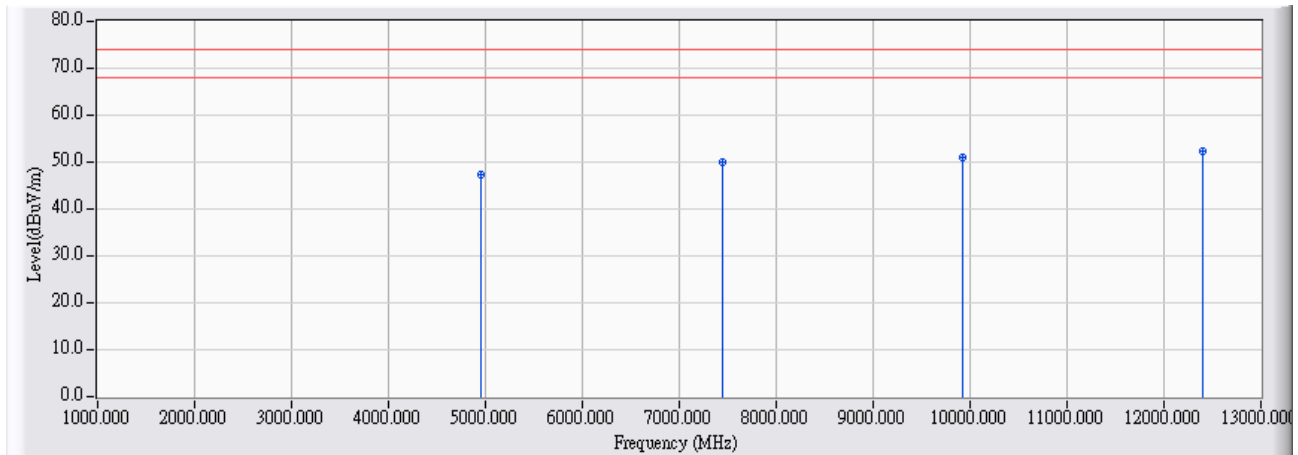


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4882.200	4.567	45.580	50.147	-23.853	74.000	54.00	PEAK
2		7323.540	10.581	40.080	50.661	-23.339	74.000	54.00	PEAK
3		9764.140	15.047	35.680	50.727	-23.273	74.000	54.00	PEAK
4	*	12205.160	18.082	33.280	51.362	-22.638	74.000	54.00	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.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site2	Time : 2009/01/06 - 11:34
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH78

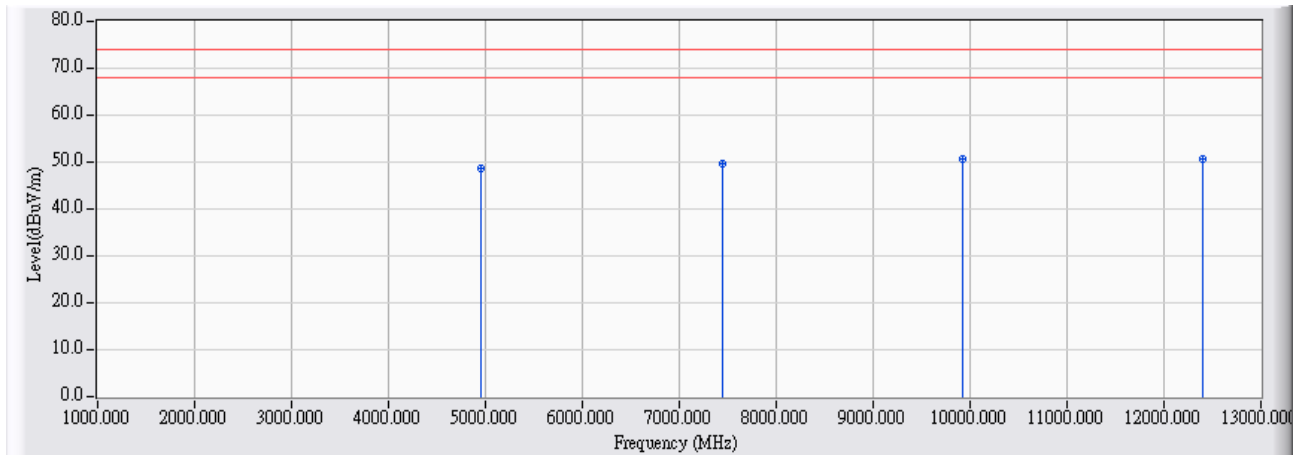


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4960.320	4.848	42.430	47.278	-26.722	74.000	54.00	PEAK
2		7439.720	11.483	38.380	49.862	-24.138	74.000	54.00	PEAK
3		9919.700	15.816	35.220	51.036	-22.964	74.000	54.00	PEAK
4	*	12399.880	18.393	33.870	52.263	-21.737	74.000	54.00	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.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site2	Time : 2009/01/06 - 11:48
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : TX-CH78



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		4959.700	4.894	43.740	48.634	-25.366	74.000	54.00	PEAK
2		7440.180	10.743	38.780	49.523	-24.477	74.000	54.00	PEAK
3		9919.980	15.881	34.660	50.541	-23.459	74.000	54.00	PEAK
4	*	12400.060	17.326	33.490	50.816	-23.184	74.000	54.00	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.
7. The Emission above 13GHz were not included is because their levels are too low.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipments are used during the test:

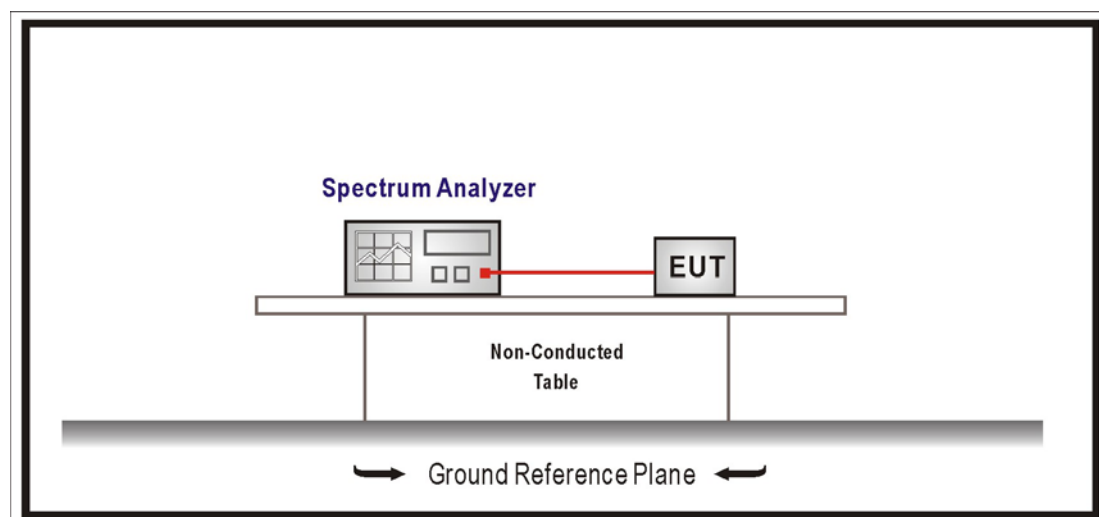
RF Conducted Measurement:				
Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Jan., 2008
2	No.1 OATS			Sep., 2008

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:



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 an RF conducted or 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 = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Test Specification

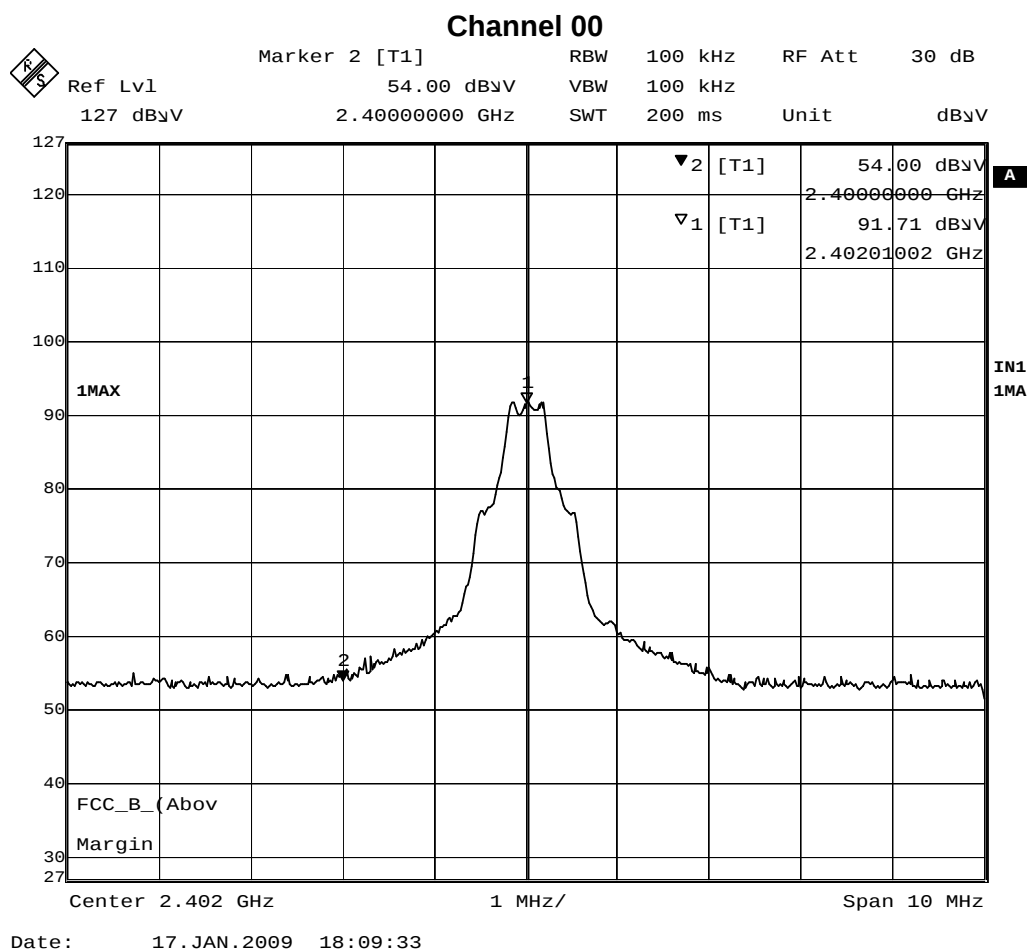
According to FCC Part 15 Subpart C Paragraph 15.207: 2007

5.6. Test Result

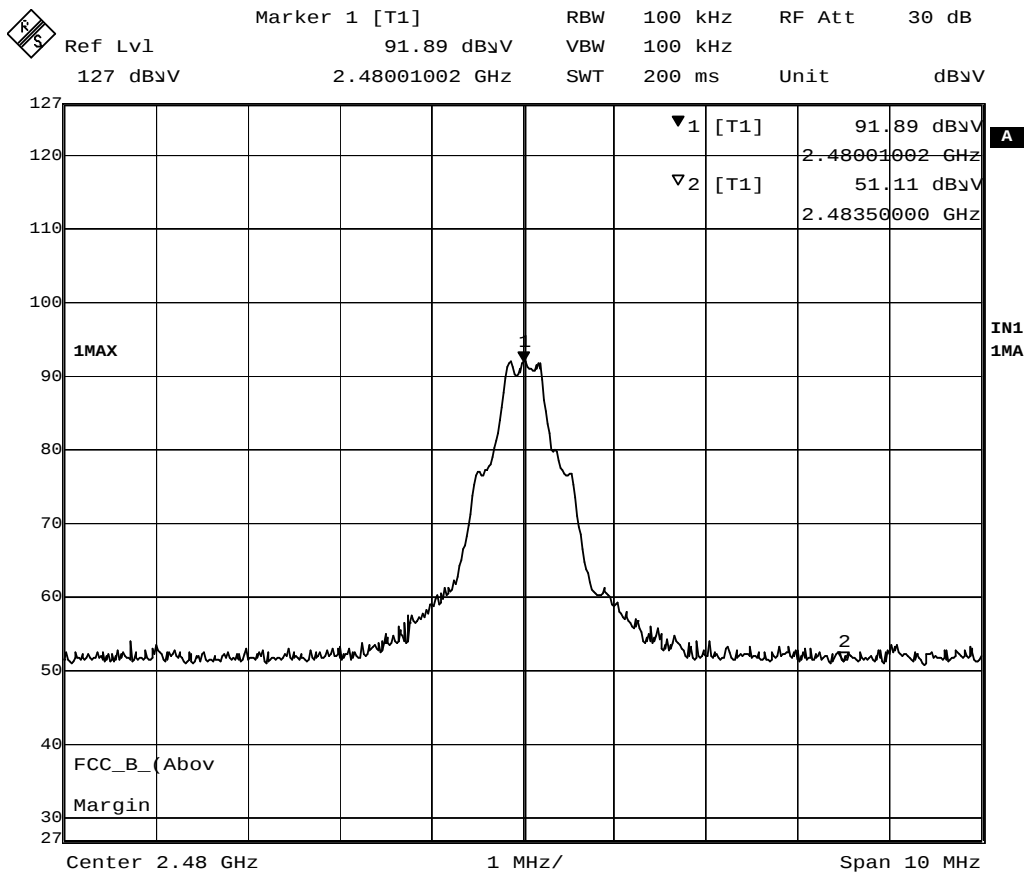
Product	TripMate		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
00	2402	37.71	≥ 20	Pass
78	2480	40.78	≥ 20	Pass

Figure Channel 1:



Channel 78



Date: 17.JAN.2009 18:10:27

(1GHz-2.4GHz)

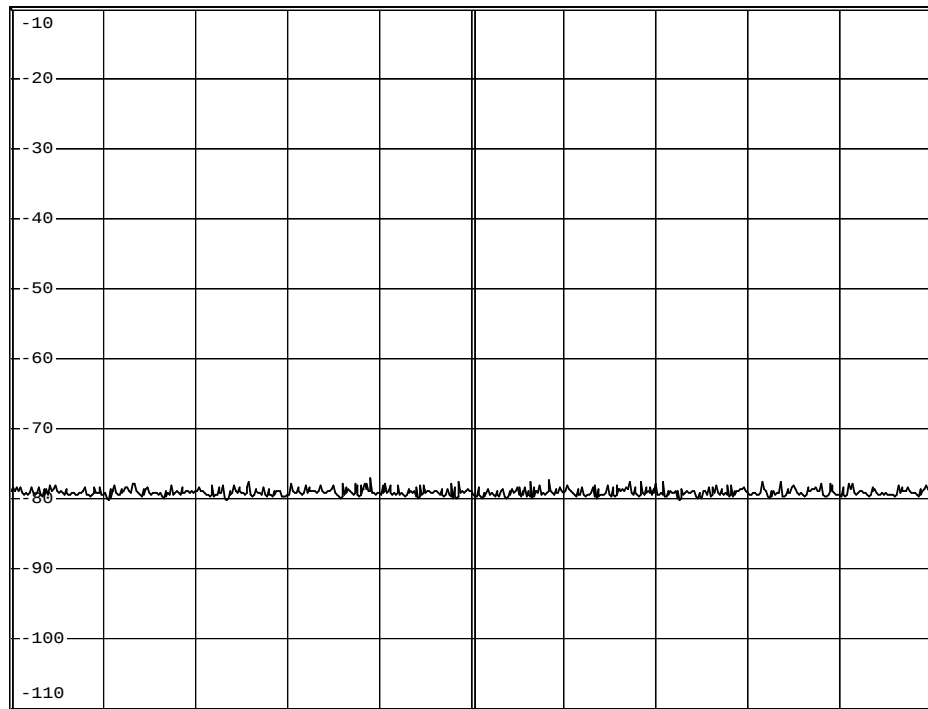


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 1 GHz

140 MHz/

Stop 2.4 GHz

Date: 17.JAN.2009 18:02:14

(2.5GHz~4.5GHz)

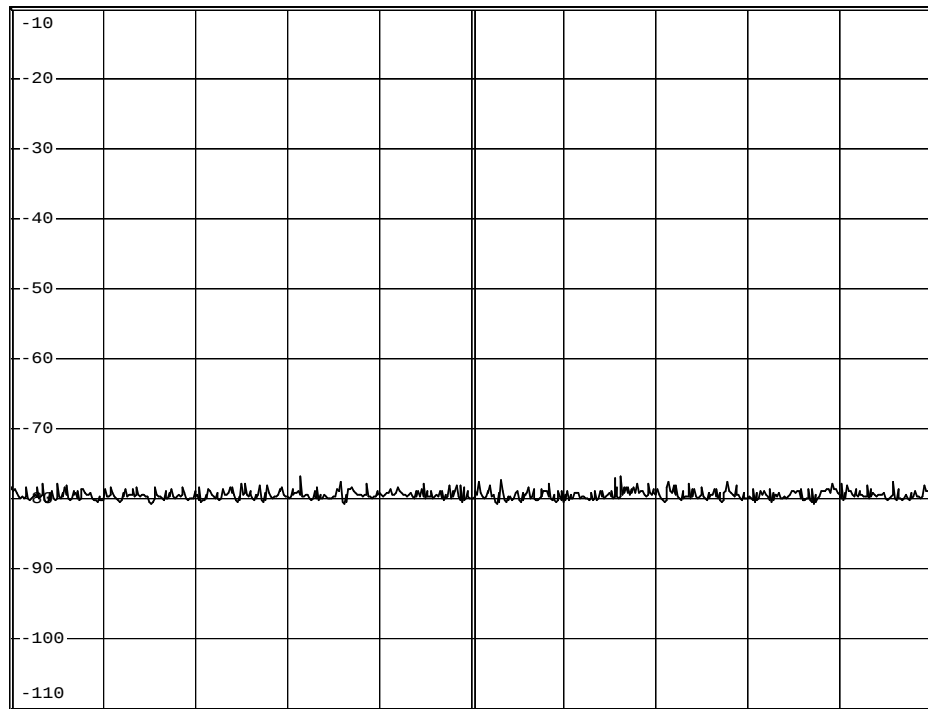


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 2.5 GHz

200 MHz/

Stop 4.5 GHz

Date: 17.JAN.2009 18:30:23

(4.5GHz~6.5GHz)

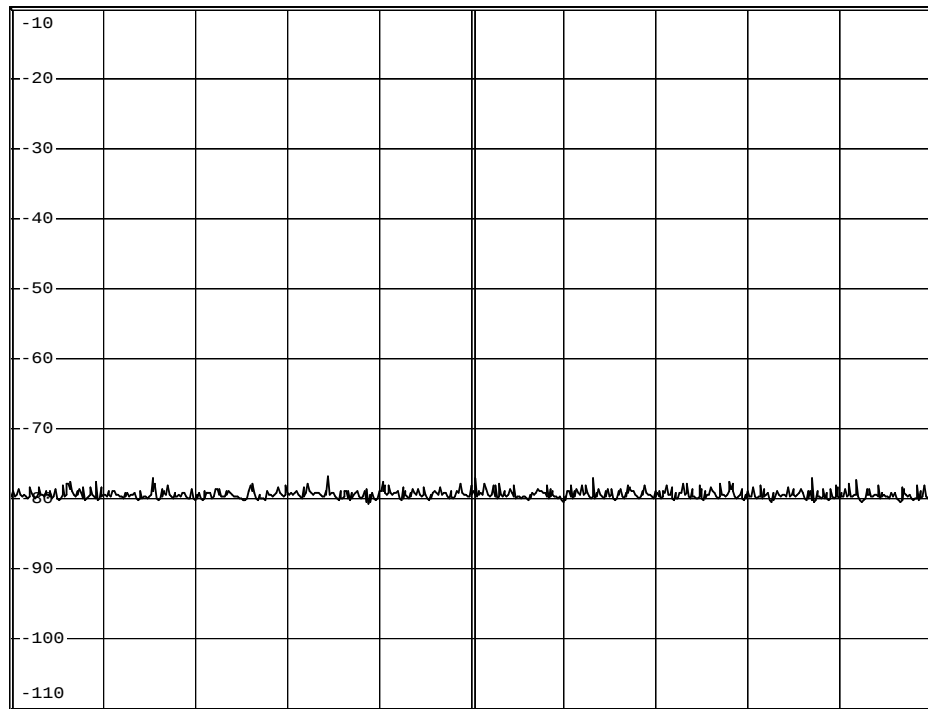


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 4.5 GHz

200 MHz/

Stop 6.5 GHz

Date: 17.JAN.2009 18:31:28

(6.5GHz~8.5GHz)

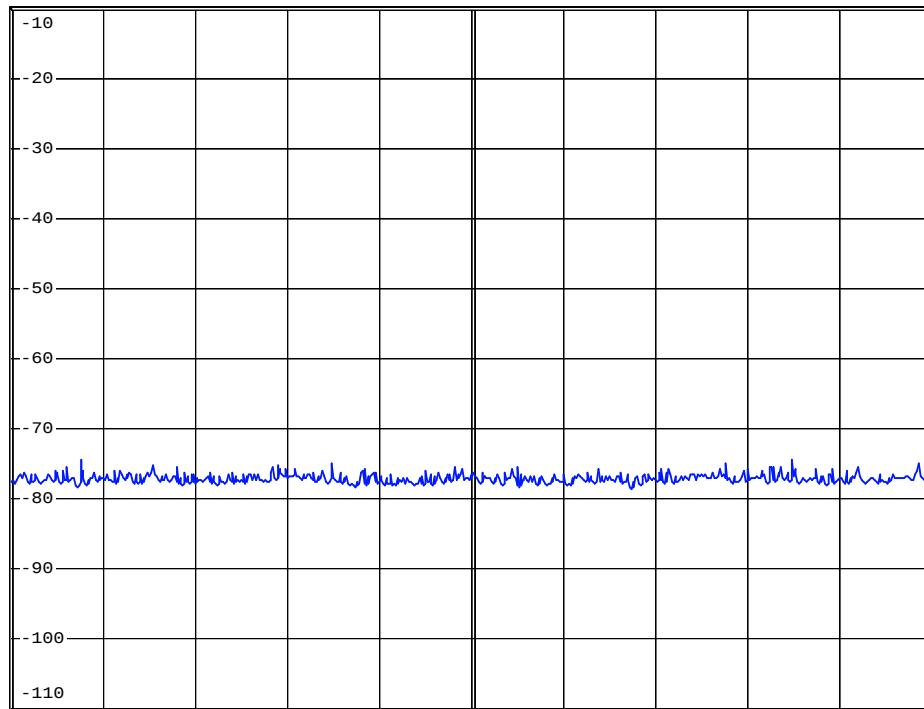


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 6.5 GHz

200 MHz/

Stop 8.5 GHz

Date: 5.FEB.2009 13:56:04

(8.5GHz~10.5GHz)

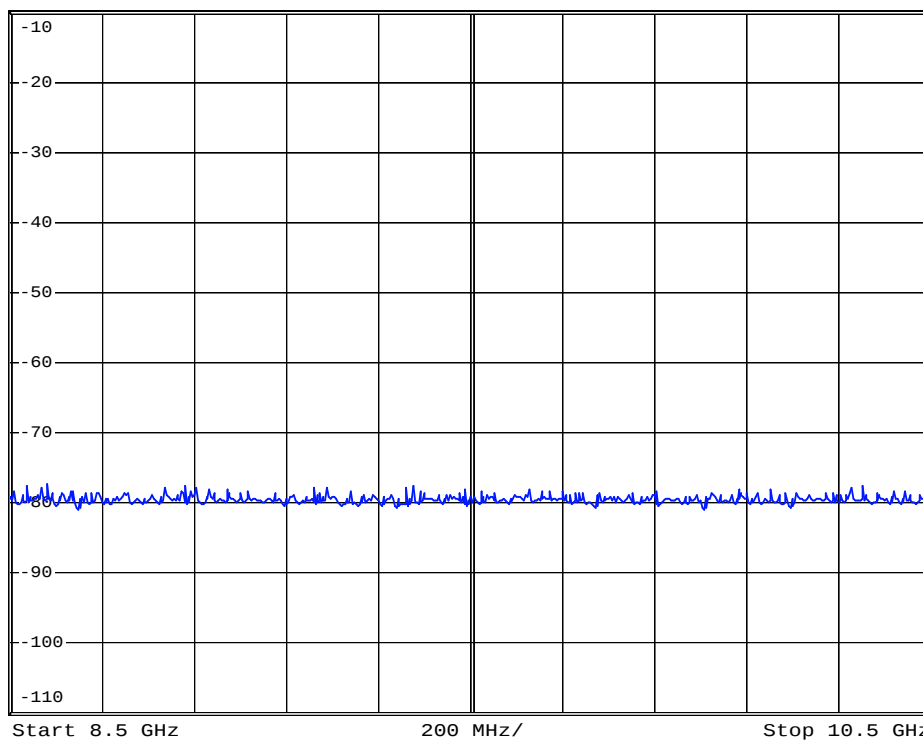


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Date: 21.JAN.2009 19:08:09

(10.5GHz~12.5GHz)

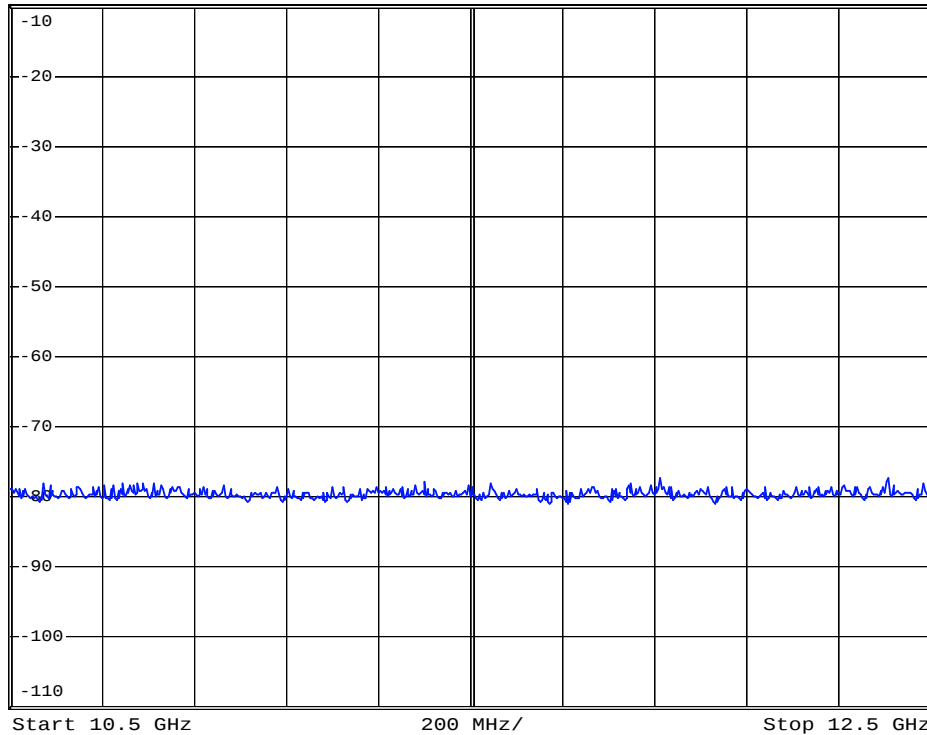


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

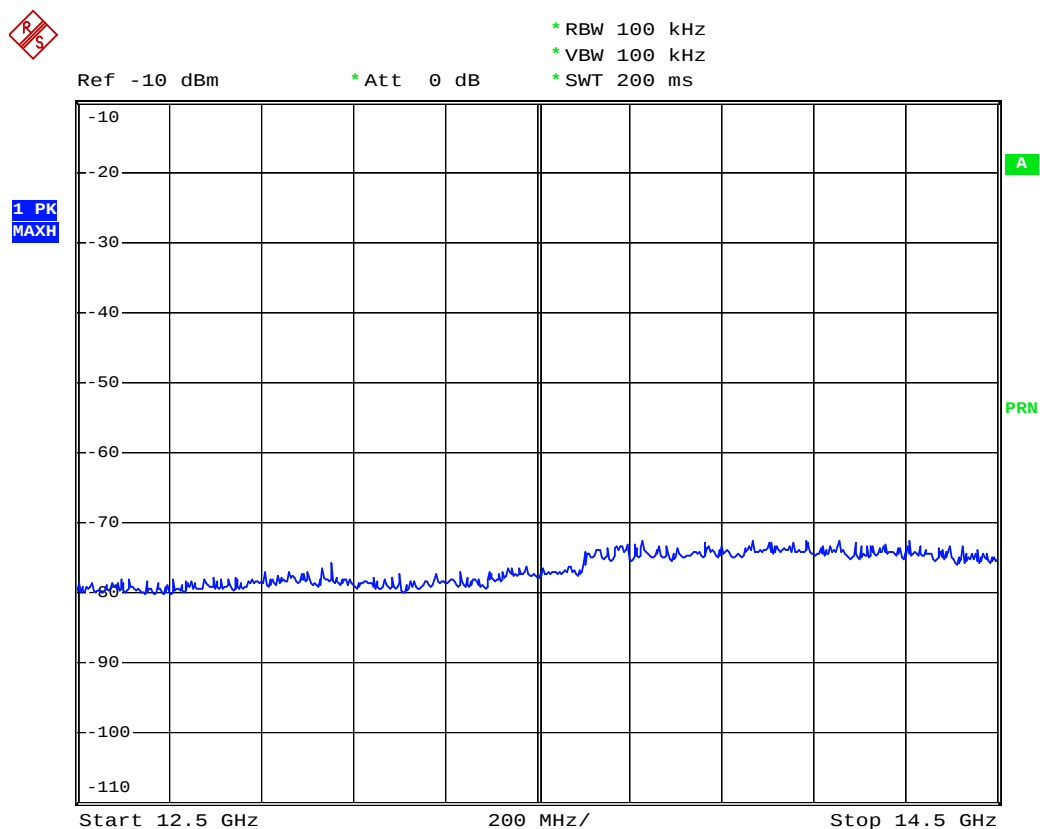
* Att 0 dB

1 PK
MAXH



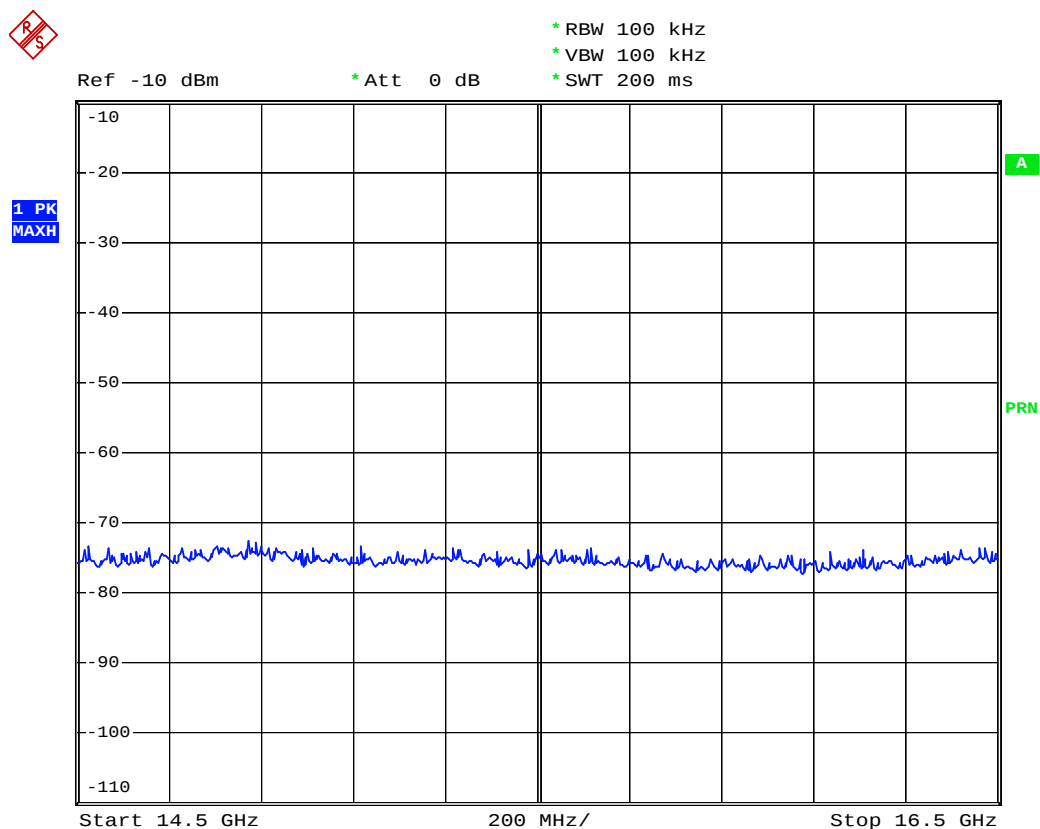
Date: 21.JAN.2009 19:08:50

(12.5GHz~14.5GHz)



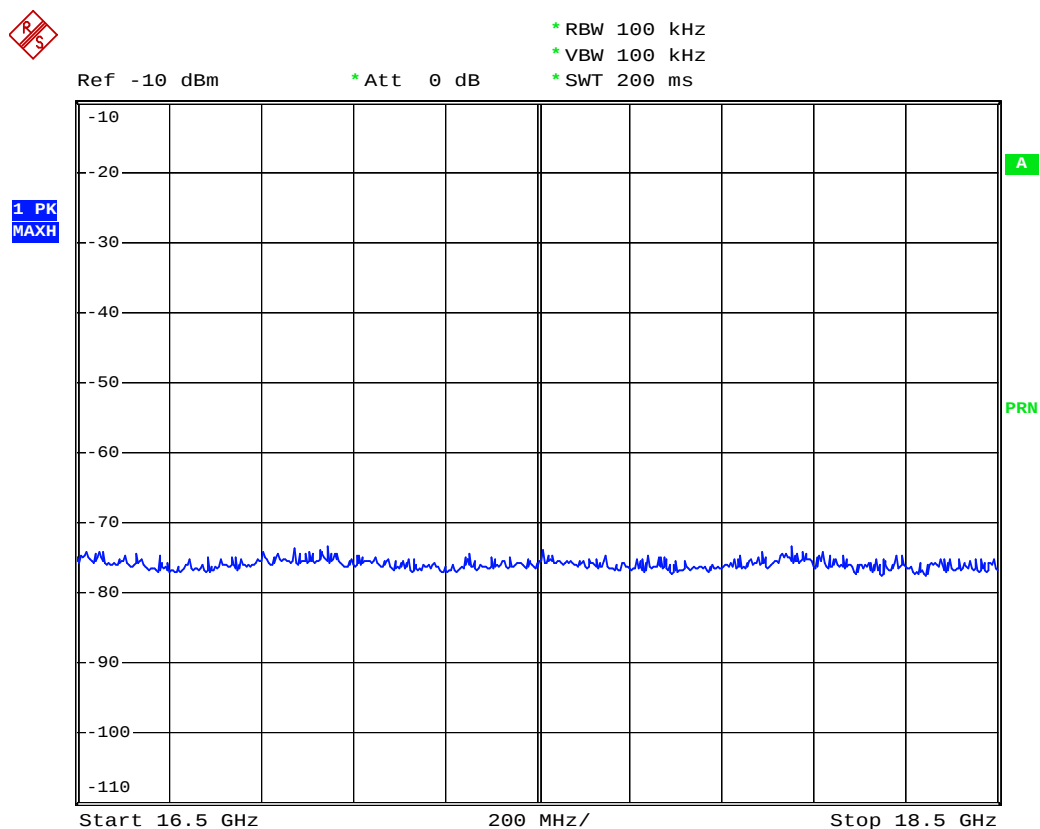
Date: 21.JAN.2009 19:09:25

(14.5GHz~16.5GHz)



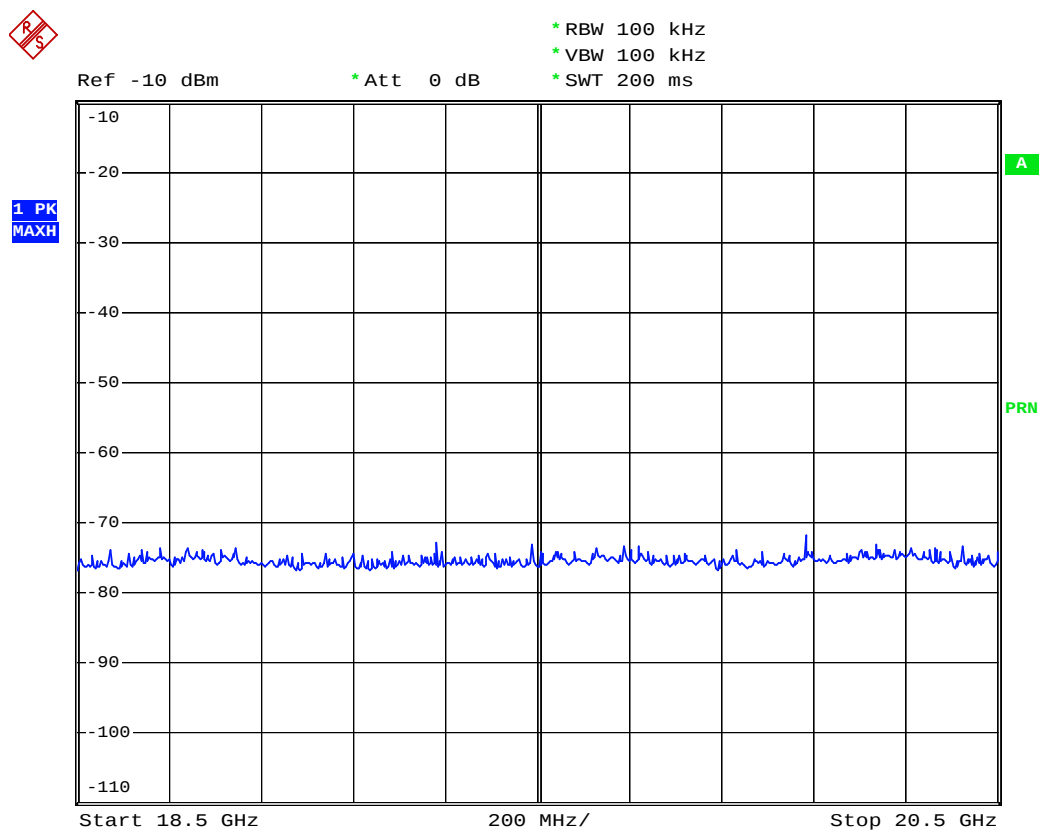
Date: 21.JAN.2009 19:09:59

(16.5GHz~18.5GHz)



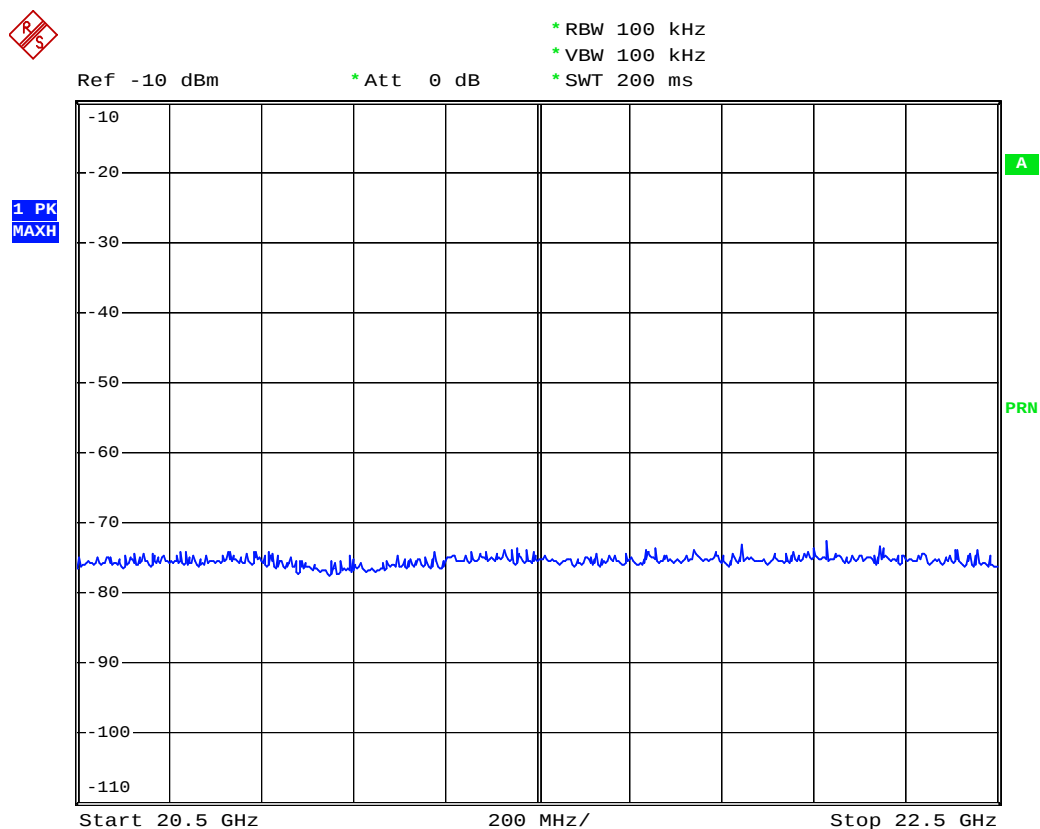
Date: 21.JAN.2009 19:10:38

(18.5GHz~20.5GHz)



Date: 21.JAN.2009 19:11:09

(20.5GHz~22.5GHz)



Date: 21.JAN.2009 19:11:45

(22.5GHz~24.5GHz)

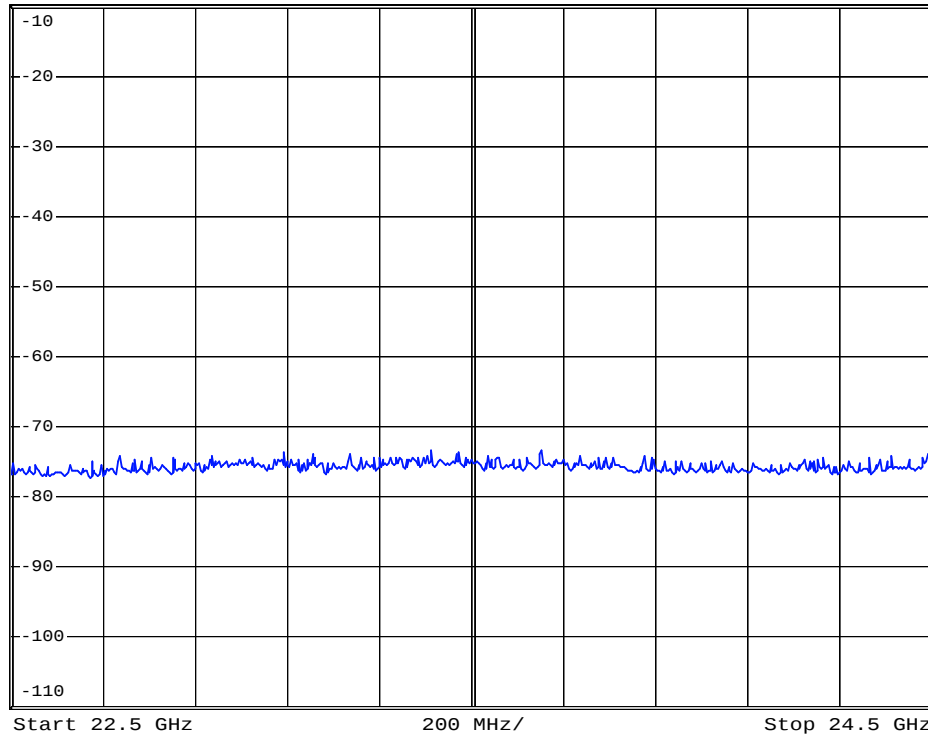


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Date: 21.JAN.2009 19:12:21

(24.5GHz~26.5GHz)

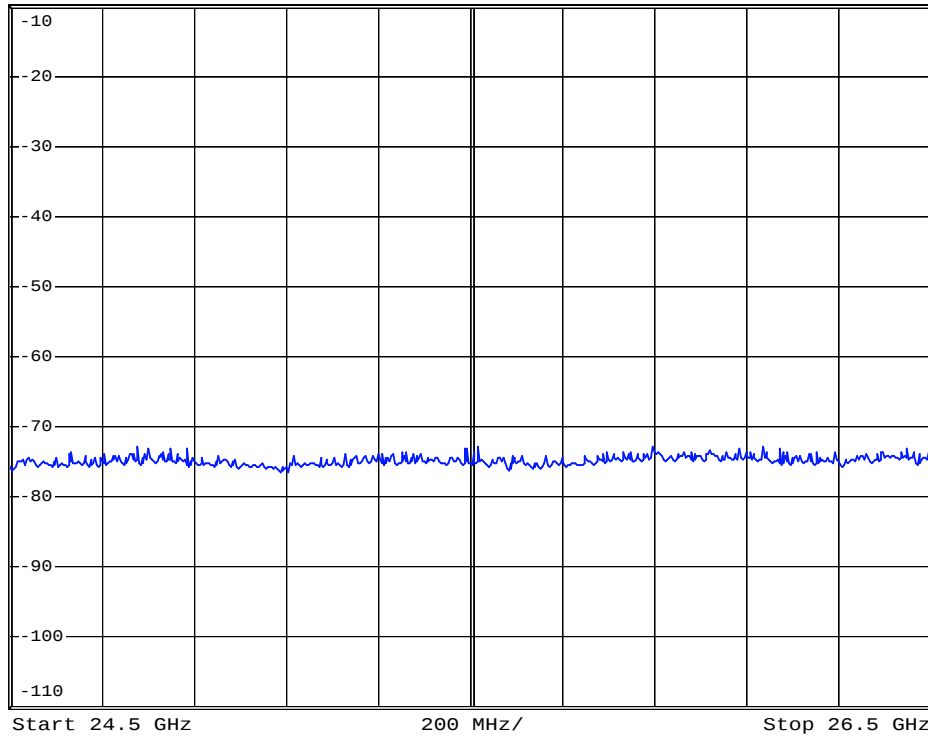


* RBW 100 kHz
* VBW 100 kHz
* SWT 200 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Date: 21.JAN.2009 19:13:01

6. Band Edge

6.1. Test Equipment

The following test equipments are used during the test:

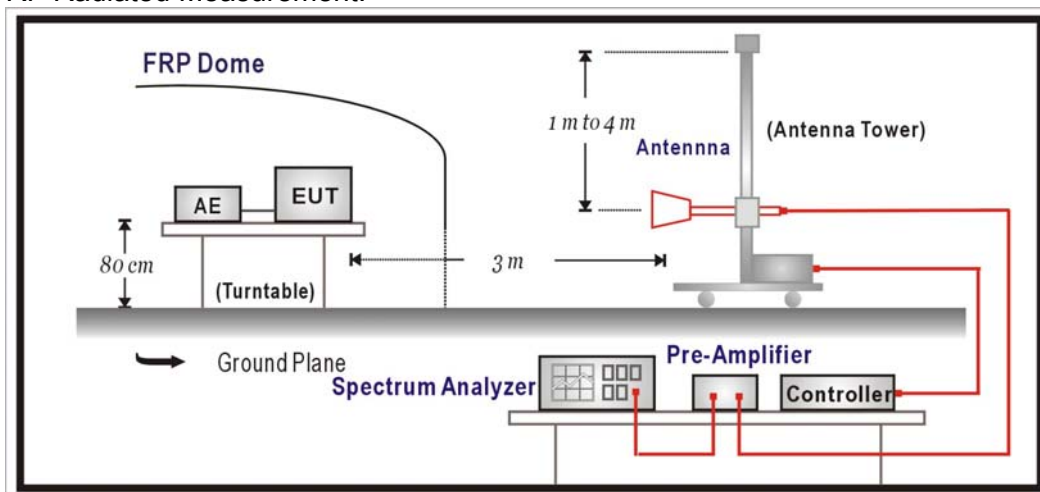
RF Radiated Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2008
2	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2008
3		Loop Antenna	R & S	HFH2-Z2 / 833799/004	Sep., 2008
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2008
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2008
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2008
7	No.1 OATS				Sep., 2008

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.

6.2. Test Setup

RF Radiated Measurement:



6.3. 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.

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 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.

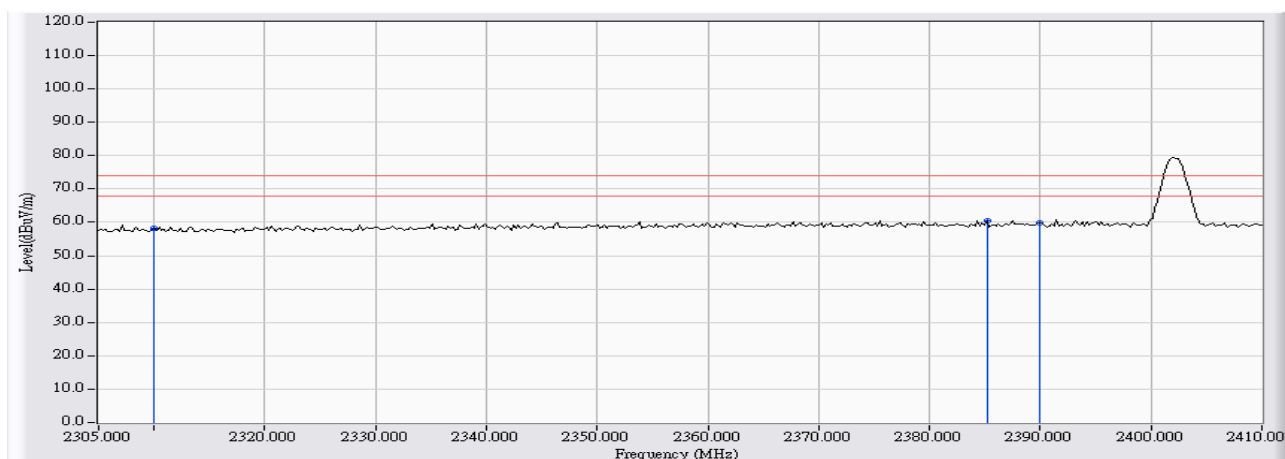
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2007

6.6. Test Result

Site : Site2	Time : 2009/01/19 - 09:43
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2402MHz

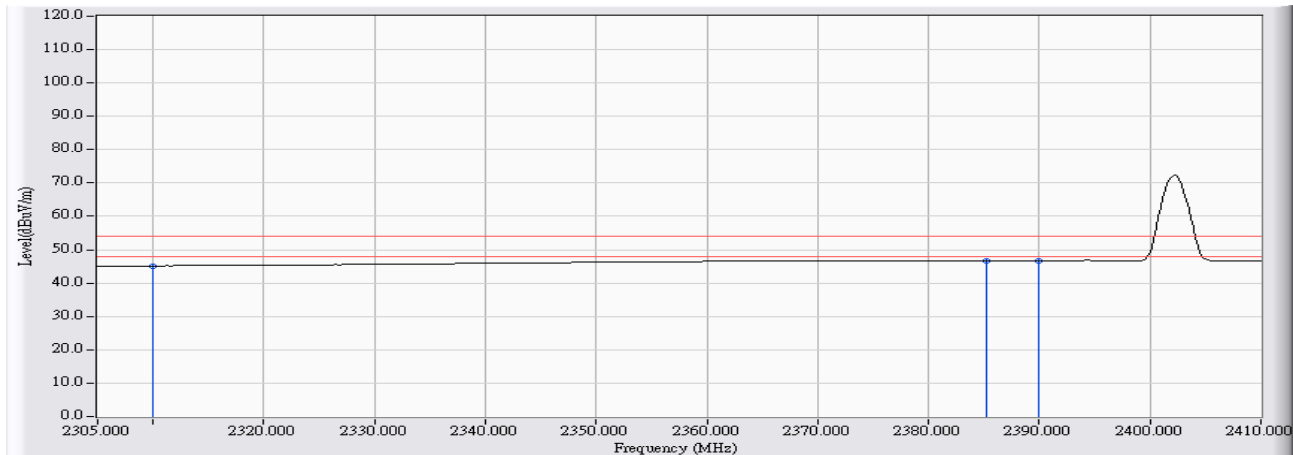


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.919	29.299	58.218	-15.782	74.000	PEAK
2	*	2385.170	29.273	31.146	60.419	-13.581	74.000	PEAK
3		2390.000	29.295	30.591	59.886	-14.114	74.000	PEAK

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 09:45
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2402MHz

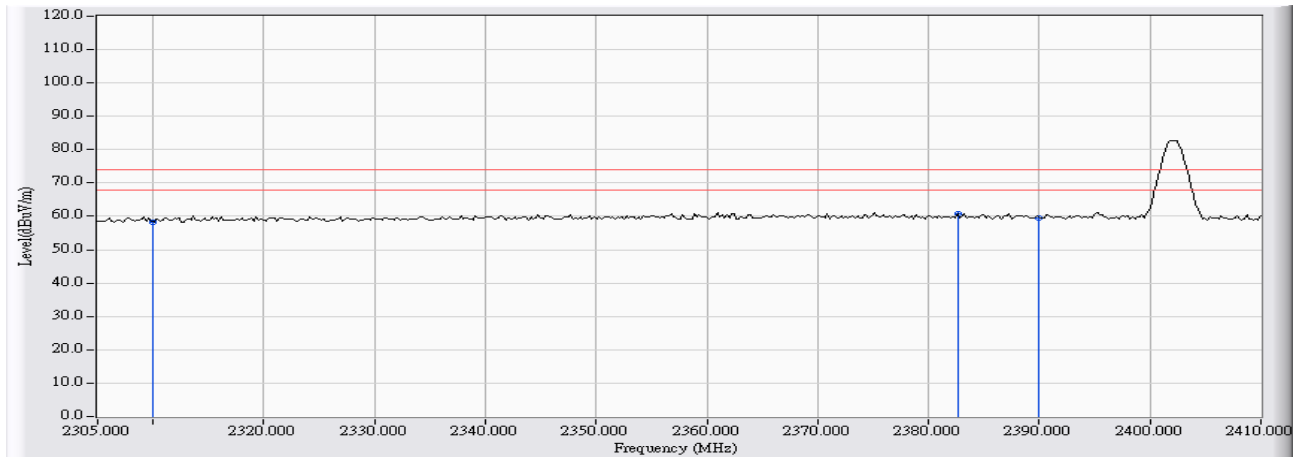


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.919	16.244	45.163	-8.837	54.000	AVERAGE
2	*	2385.170	29.273	17.519	46.792	-7.208	54.000	AVERAGE
3		2390.000	29.295	17.449	46.744	-7.256	54.000	AVERAGE

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 09:50
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2402MHz

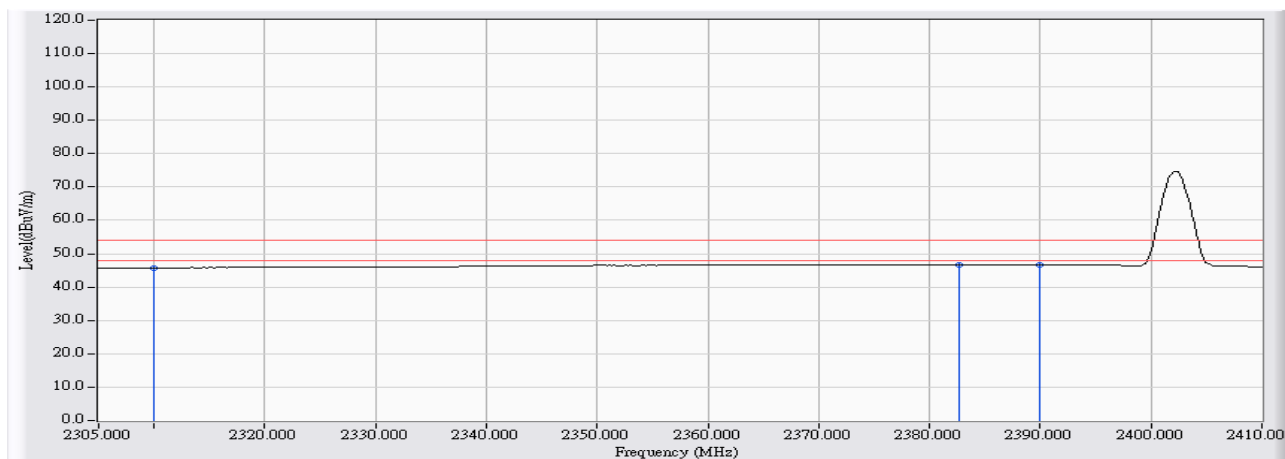


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.545	28.834	58.379	-15.621	74.000	PEAK
2	*	2382.645	29.157	31.743	60.901	-13.099	74.000	PEAK
3		2390.000	29.117	30.389	59.505	-14.495	74.000	PEAK

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 09:52
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2402MHz

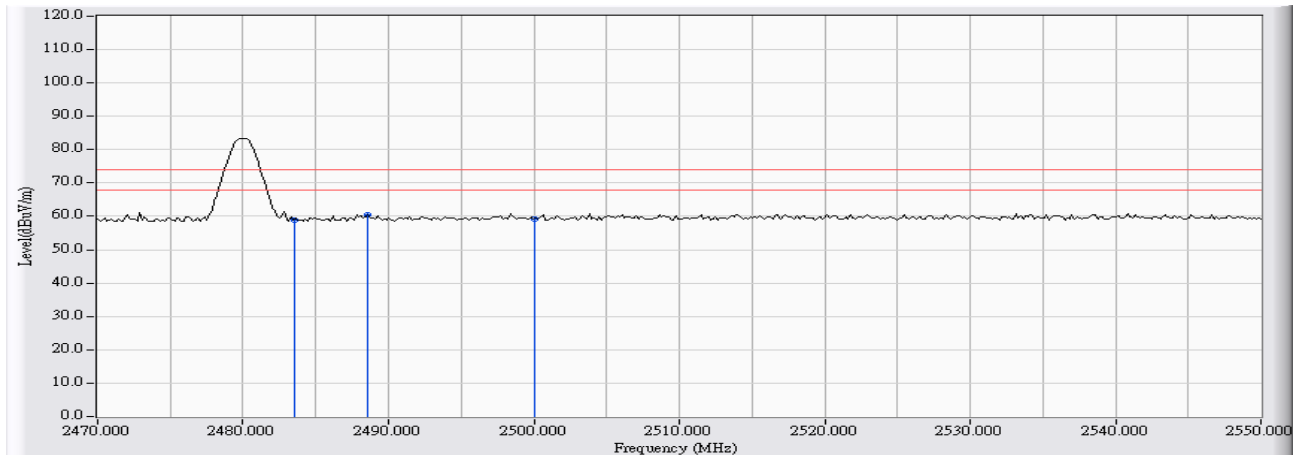


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.545	16.229	45.774	-8.226	54.000	AVERAGE
2	*	2382.640	29.157	17.489	46.647	-7.353	54.000	AVERAGE
3		2390.000	29.117	17.457	46.573	-7.427	54.000	AVERAGE

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 09:59
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2480MHz

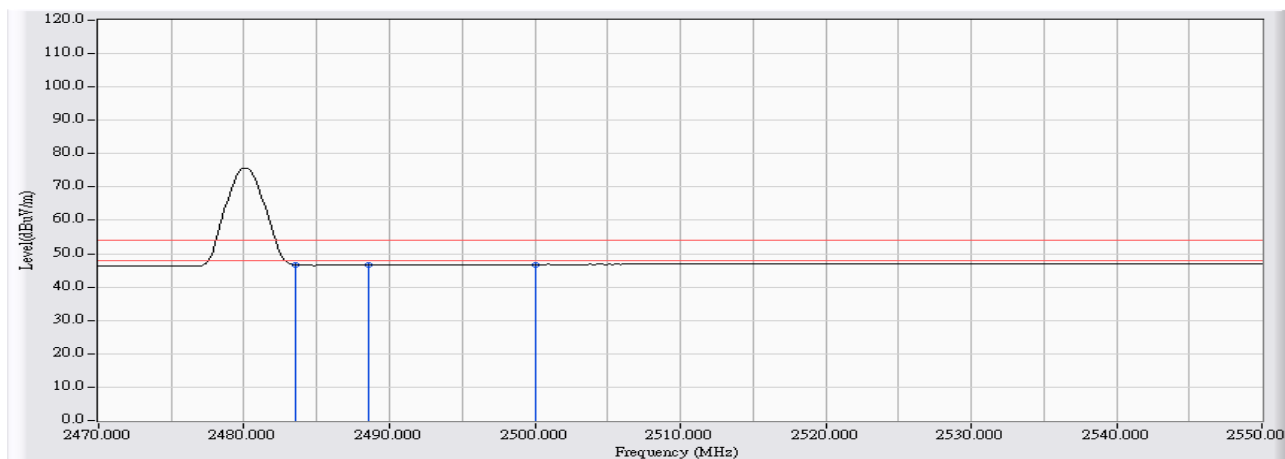


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	29.742	29.225	58.967	-15.033	74.000	PEAK
2	*	2488.597	29.765	30.686	60.450	-13.550	74.000	PEAK
3		2500.000	29.819	29.529	59.348	-14.652	74.000	PEAK

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 10:00
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : FCC_1-18G(2009-01) - HORIZONTAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2480MHz

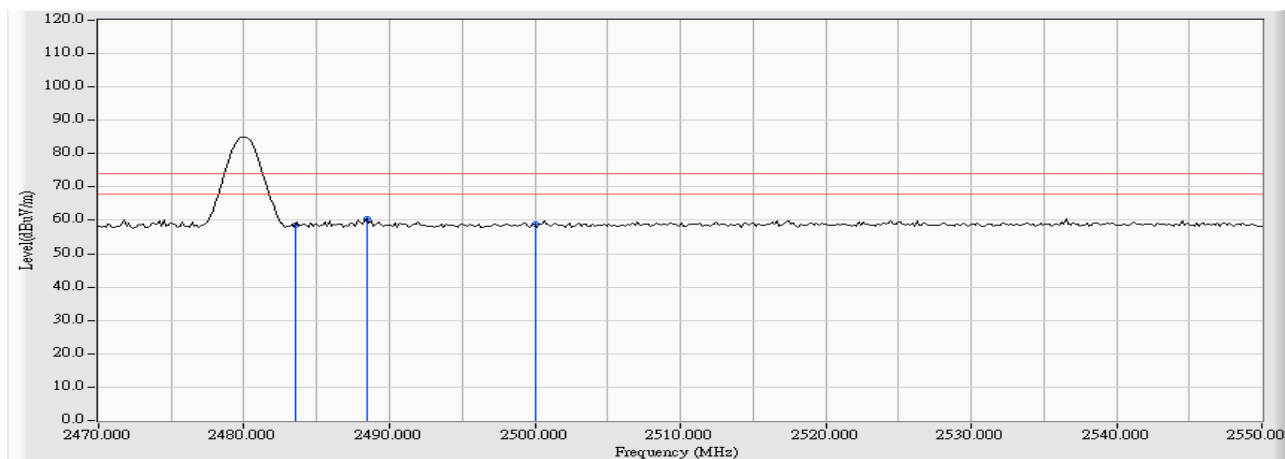


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	29.742	16.813	46.555	-7.445	54.000	AVERAGE
2	*	2488.597	29.765	16.808	46.572	-7.428	54.000	AVERAGE
3		2500.000	29.819	16.937	46.756	-7.244	54.000	AVERAGE

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 10:03
Limit : FCC_15.209(961011)_03M_PK	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2480MHz

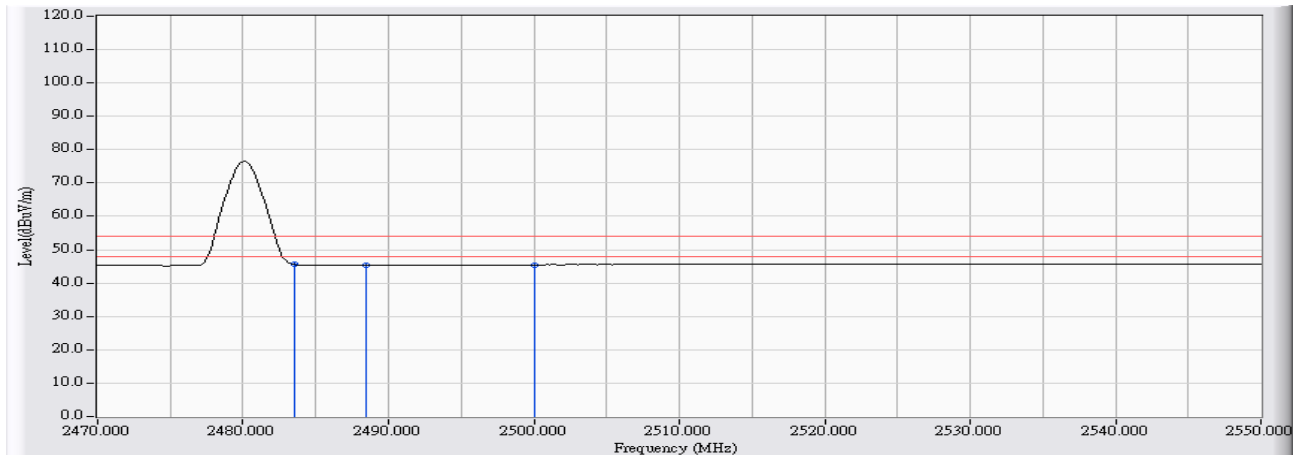


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	28.620	29.936	58.556	-15.444	74.000	PEAK
2	*	2488.437	28.590	31.841	60.430	-13.570	74.000	PEAK
3		2500.000	28.556	30.196	58.751	-15.249	74.000	PEAK

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. If the readings given are average, peak measurement should also be supplied.

Site : Site2	Time : 2009/01/19 - 10:04
Limit : FCC_15.209(961011)_03M_AV	Margin : 6
Probe : FCC_1-18G(2009-01) - VERTICAL	Power : DC 3V (Power by Battery)
EUT : Trip Mate	Note : 2480MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2483.500	28.620	16.949	45.569	-8.431	54.000	AVERAGE
2	*	2488.437	28.590	16.834	45.423	-8.577	54.000	AVERAGE
3		2500.000	28.556	16.940	45.495	-8.505	54.000	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. If the readings given are average, peak measurement should also be supplied.

7. Number of hopping frequency

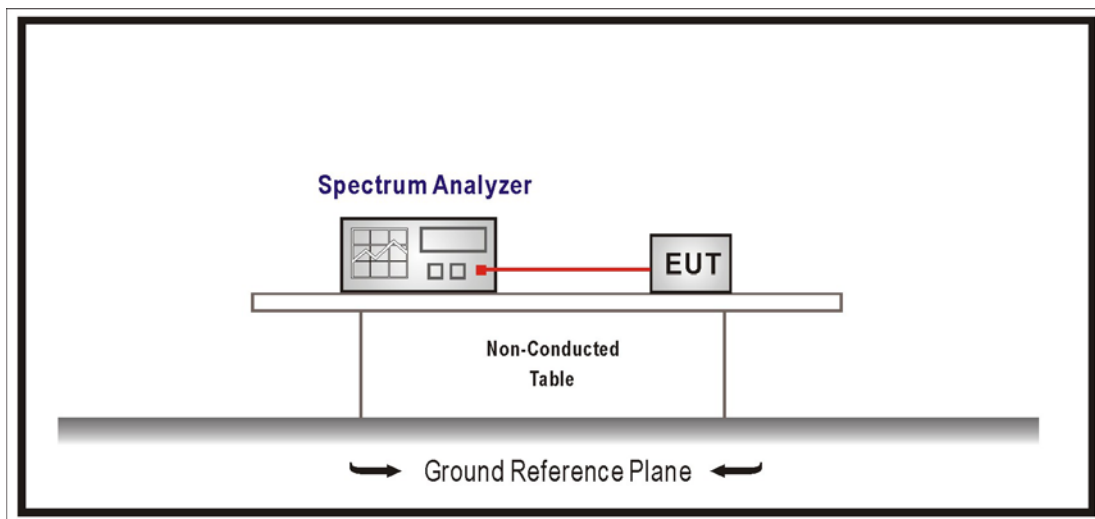
7.1. Test Equipment

The following test equipments are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Jan., 2008
2	No.1 OATS			Sep., 2008

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 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.

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

$RBW \geq 1\%$ of the span , $VBW \geq RBW$

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

7.5. Test Specification

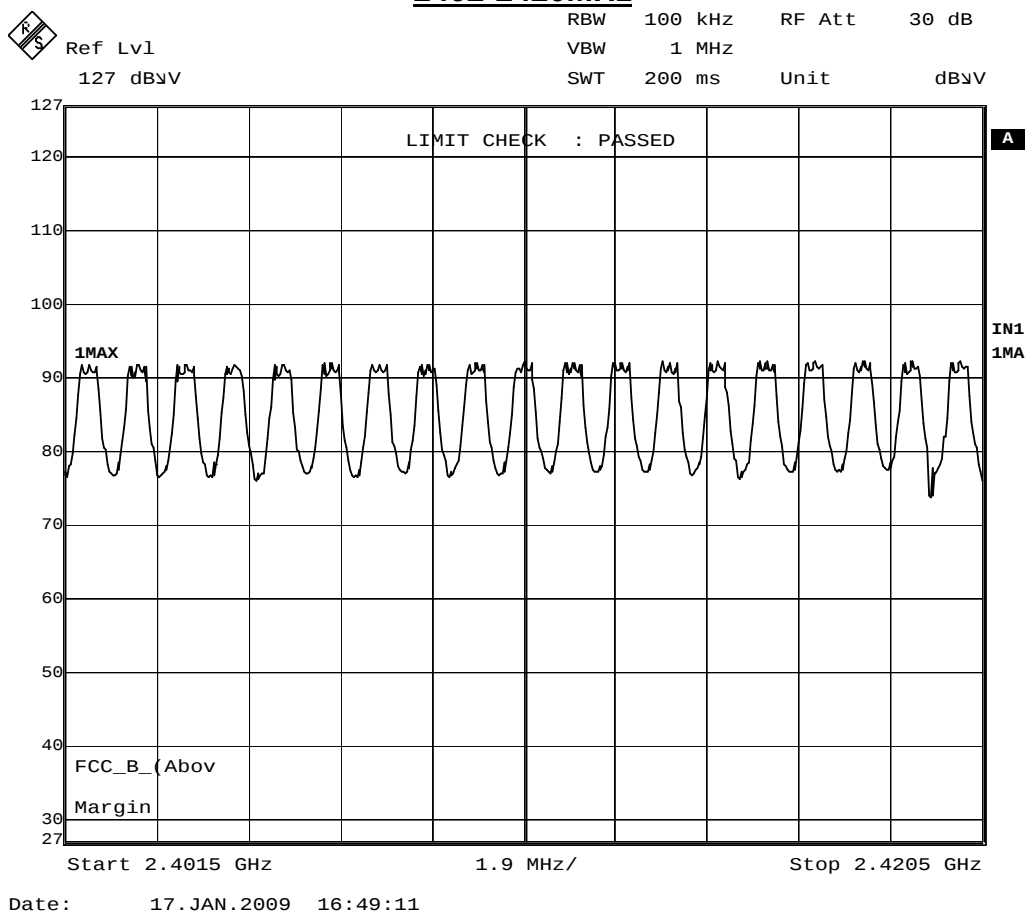
According to FCC Part 15 Subpart C Paragraph 15.207: 2007

7.6. Test Result

Product	TripMate		
Test Item	Number of hopping frequency		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

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

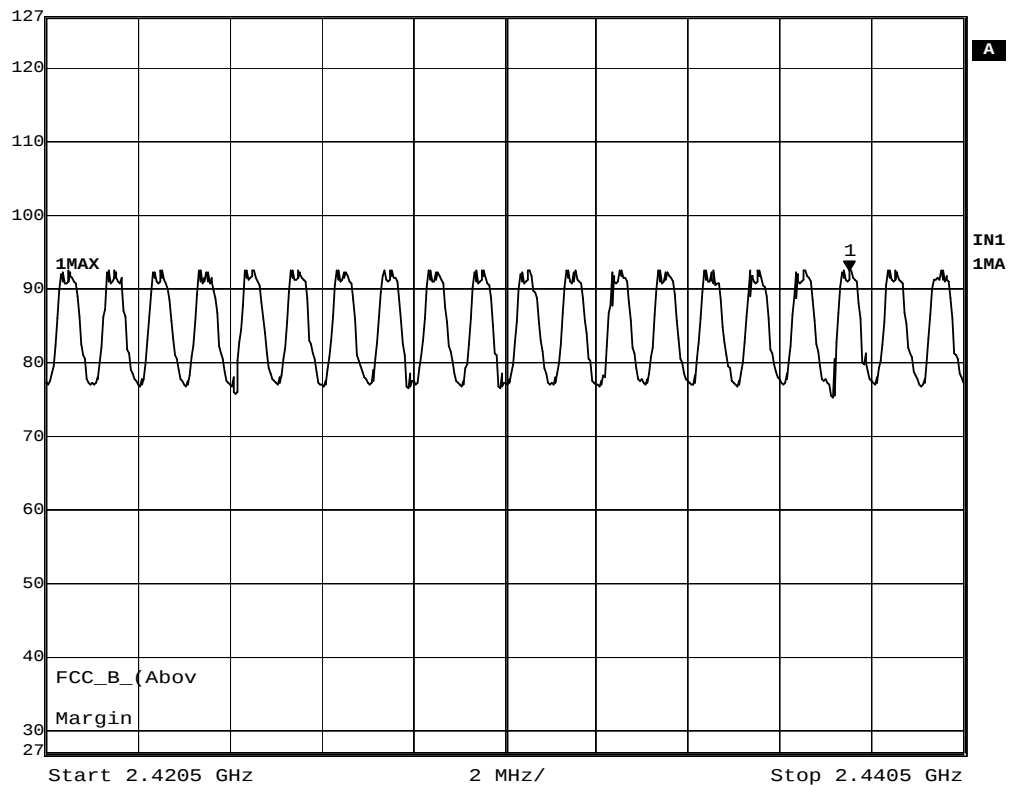
2402-2420MHz



2421-2440MHz



Marker 1 [T1] RBW 100 kHz RF Att 30 dB
 Ref Lvl 92.43 dBμV VBW 1 MHz
 127 dBμV 2.43801503 GHz SWT 200 ms Unit dBμV



Date: 17.JAN.2009 16:59:47

2441-2460MHz



Ref Lvl

127 dBμV

RBW 100 kHz

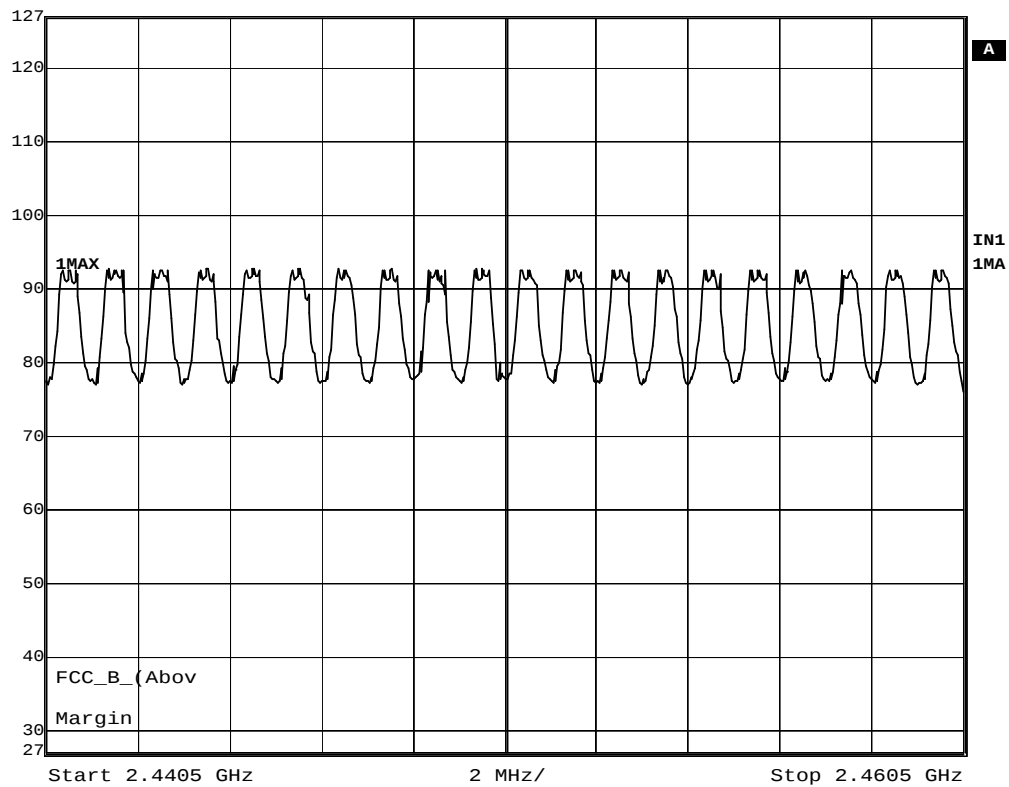
RF Att 30 dB

VBW 1 MHz

SWT 200 ms

Unit

dBμV



Date: 17.JAN.2009 17:11:58

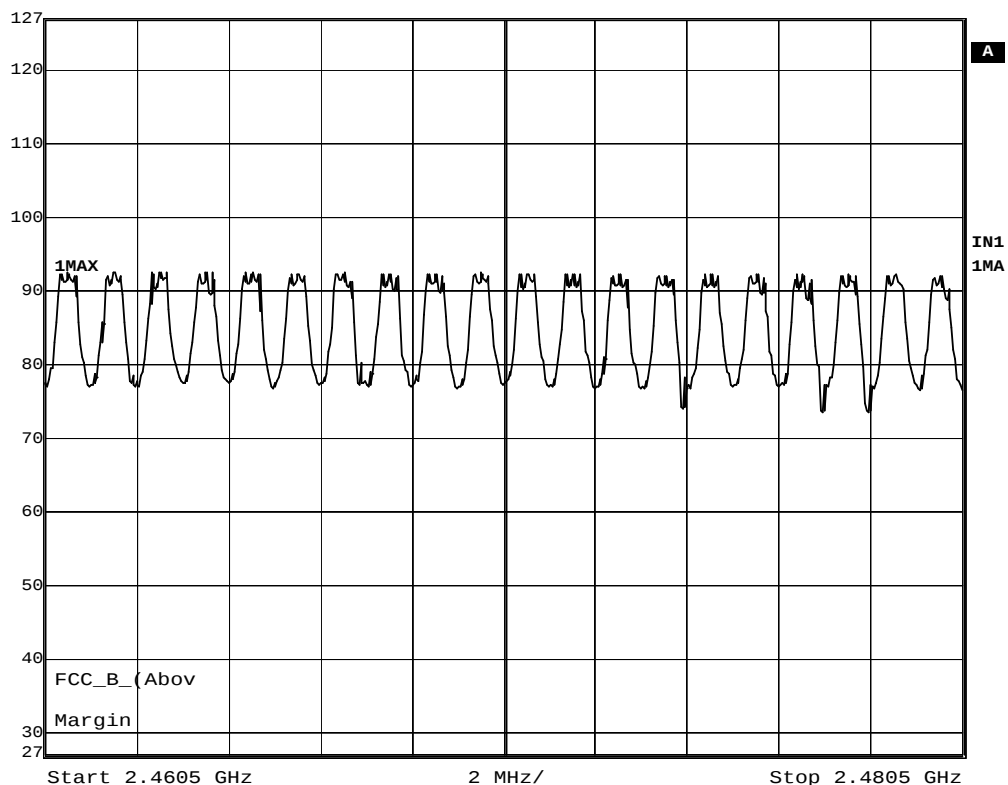
2461-2480MHz



Ref Lvl

127 dBμV

RBW 100 kHz RF Att 30 dB
VBW 1 MHz
SWT 200 ms Unit dBμV



Date: 17.JAN.2009 17:21:58

8. Carrier Frequency Separation

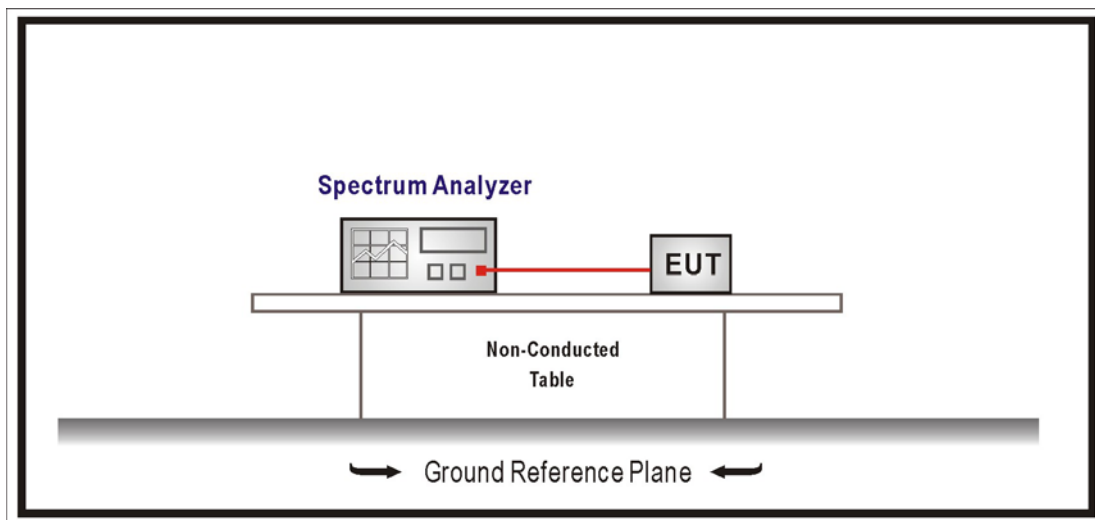
8.1. Test Equipment

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	Jan., 2008
2	No.1 OATS			Sep., 2008

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 shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of 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 = wide enough to capture the peaks of two adjacent channels

Resolution Bandwidth (RBW) $\geq$ 1% of the span, VBW $\geq$ RBW

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

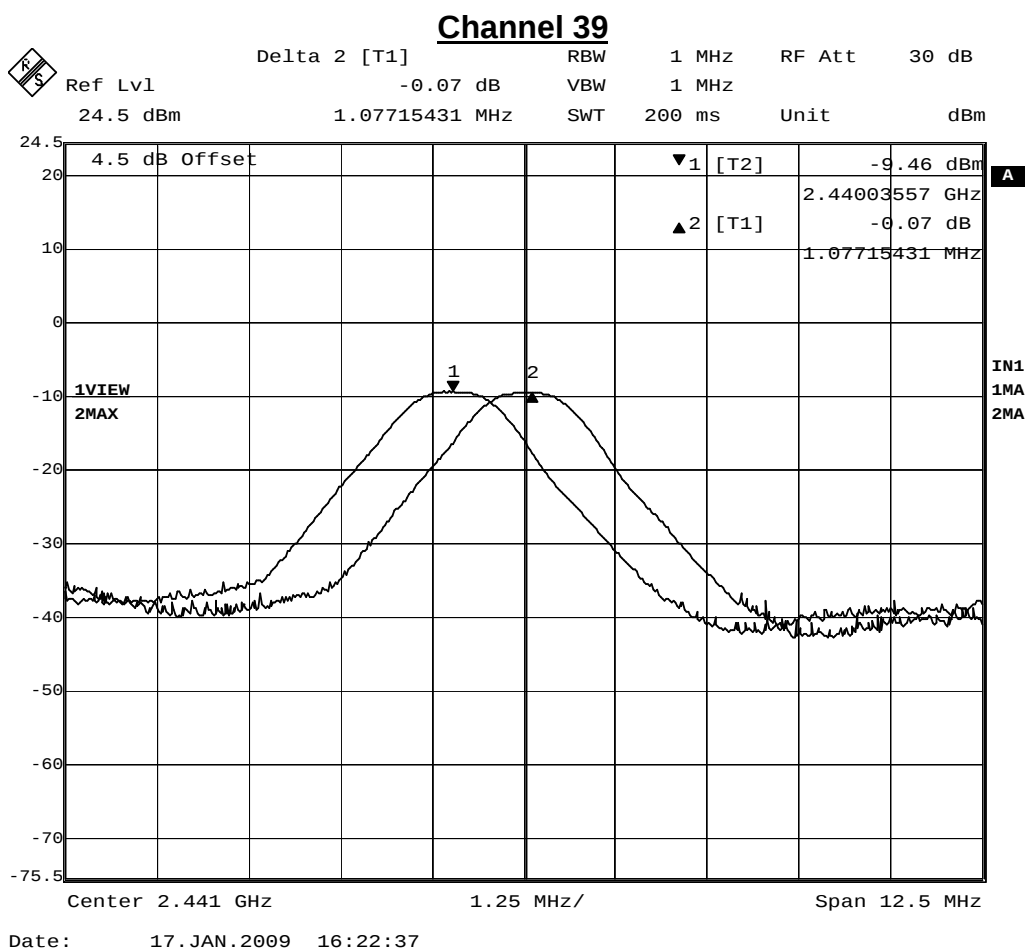
8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2007

8.6. Test Result

Product	TripMate		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
39	2441.00	1077.15	>780.66	Pass



9. Occupied Bandwidth

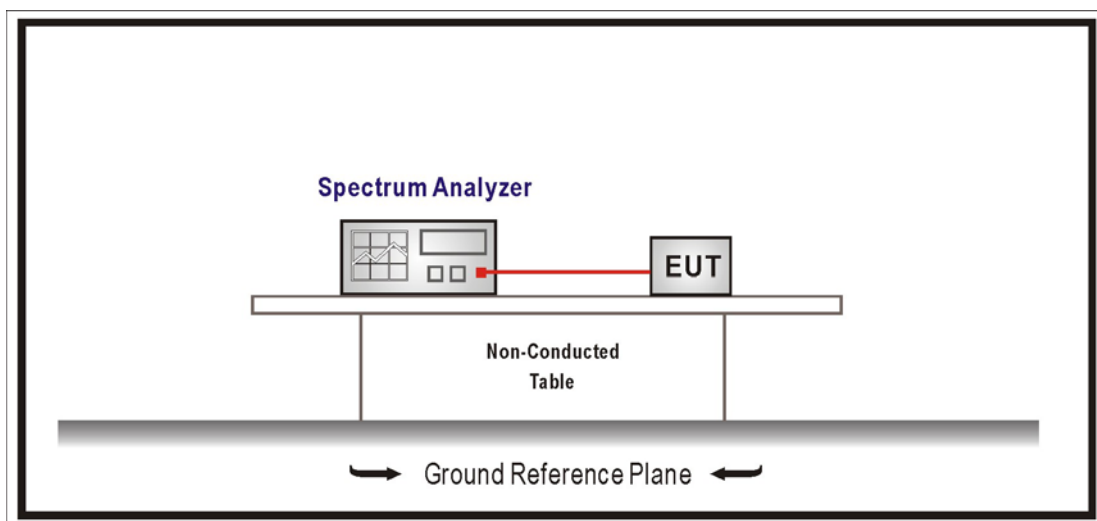
9.1. Test Equipment

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	Jan., 2008
2	No.1 OATS			Sep., 2008

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. 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.

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

Use the following spectrum analyzer settings:

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

RBW $\geq$ 1% of the 20 dB bandwidth, VBW $\geq$ RBW

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

The EUT should be transmitting at its maximum data rate.

9.5. Test Specification

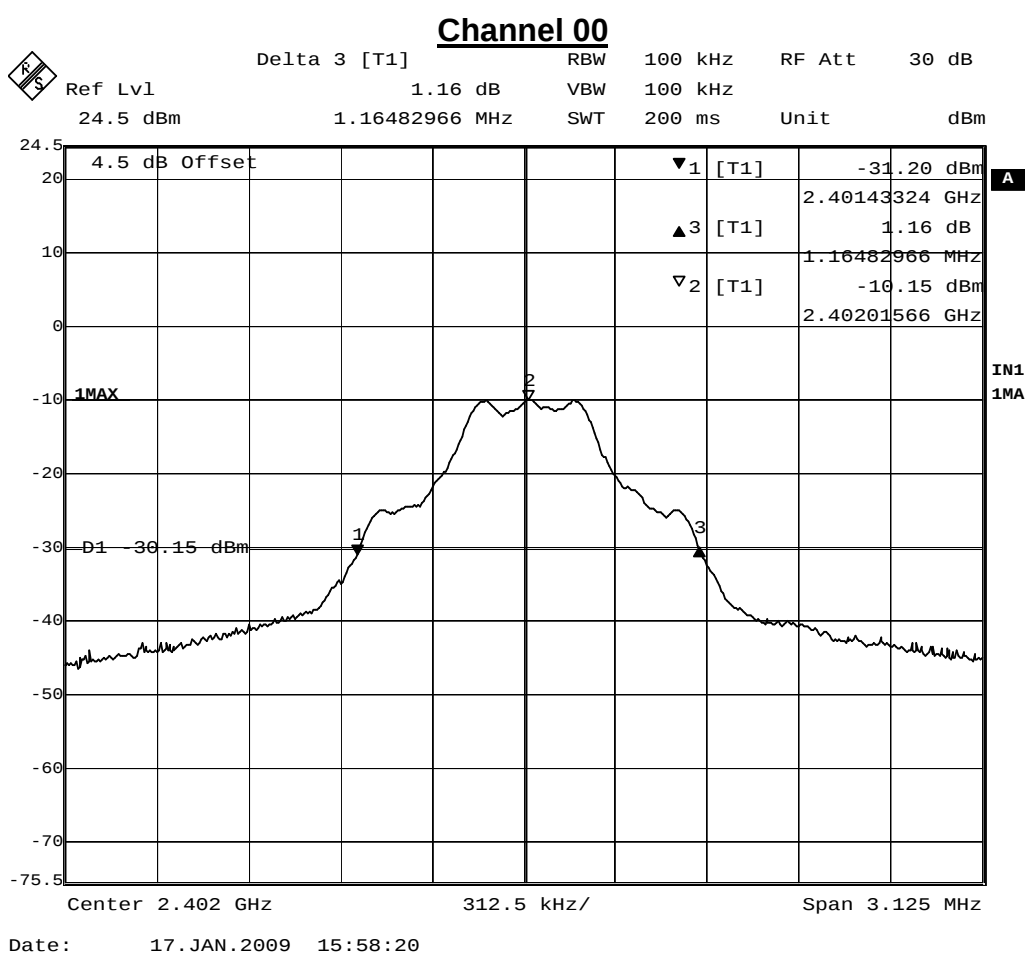
According to FCC Part 15 Subpart C Paragraph 15.207: 2007

9.6. Test Result

Product	TripMate		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

1M-GFSK Modulation, PRBS Packet Type

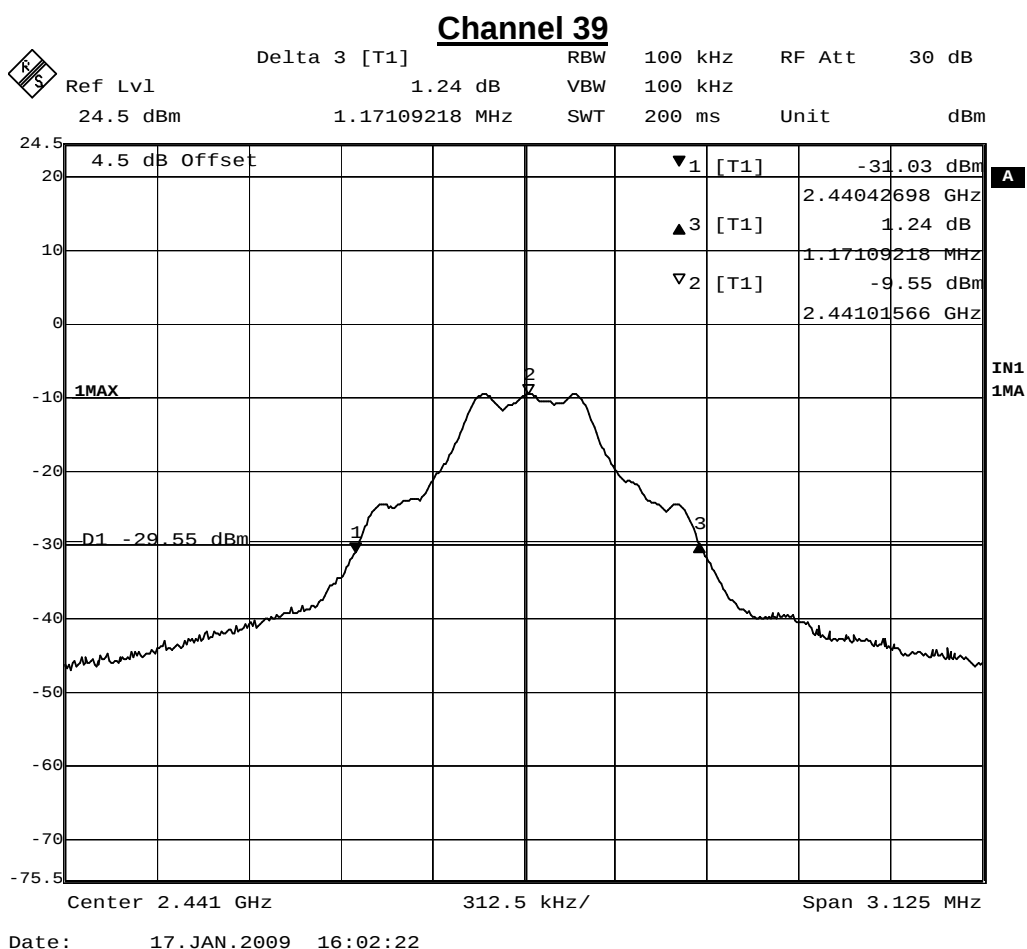
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402.00	1.1648	--	Pass



Product	TripMate		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

1M-GFSK Modulation, PRBS Packet Type

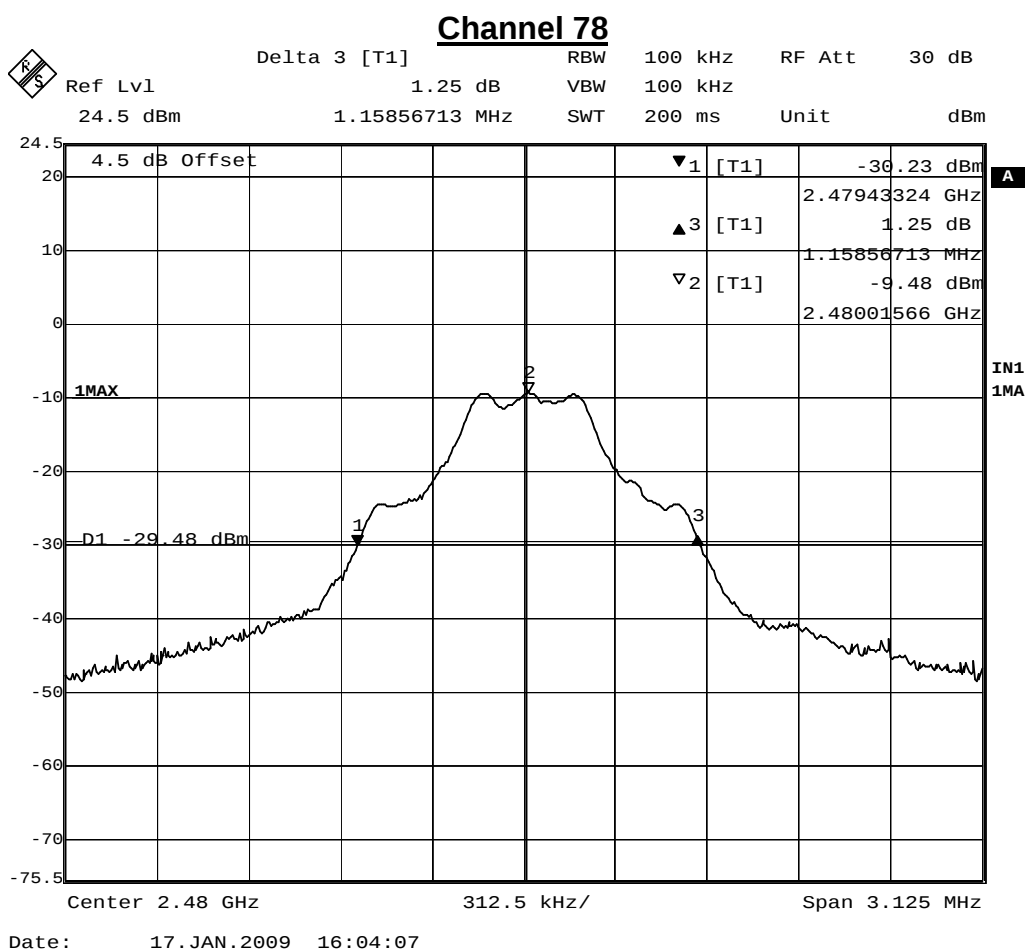
Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
39	2441.00	1.1710	--	Pass



Product	TripMate		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	Test Site	No.1 OATS

1M-GFSK Modulation, PRBS Packet Type

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
78	2480.00	1.1585	--	Pass



10. Dwell Time

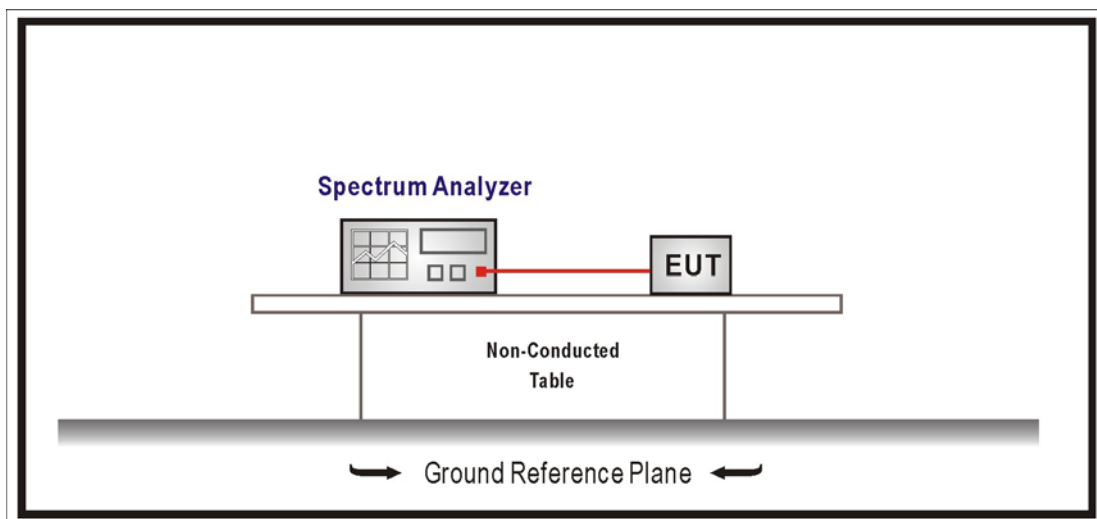
10.1. Test Equipment

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	Jan., 2008
2	No.1 OATS			Sep., 2008

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

10.2. Test Setup



10.3. 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.

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

Span = zero span, centered on a hopping channel

RBW = 1 MHz, VBW $\geq$ RBW

Sweep = as necessary to capture the entire dwell time per hopping channel

Detector function = peak, Trace = max hold

10.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2007

10.6. Test Result

Product	TripMate		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit		
Date of Test	2009/01/17	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: $0.003046 \times (250/79) \times 31.6 = 0.3046\text{sec}$.

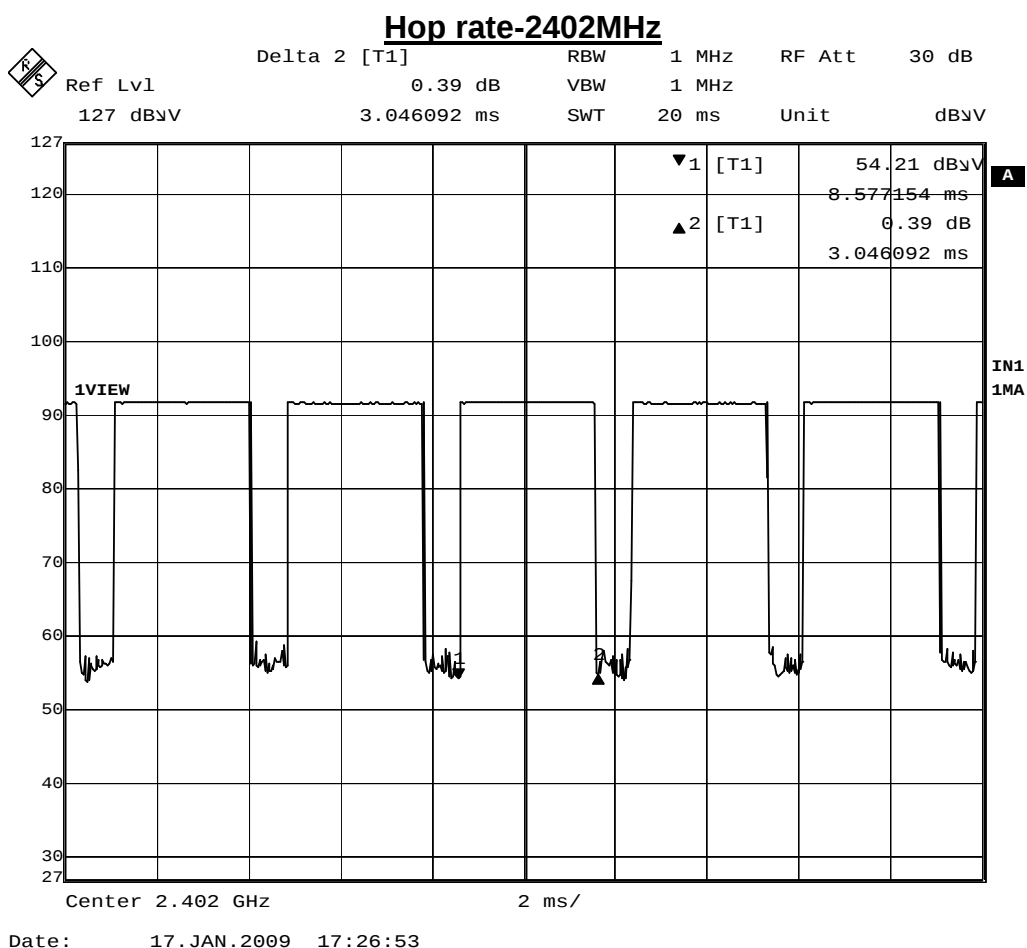
B) 2441MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $5/20\text{msec} = 250 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.003046 \times (250/79) \times 31.6 = 0.3046\text{sec}$.

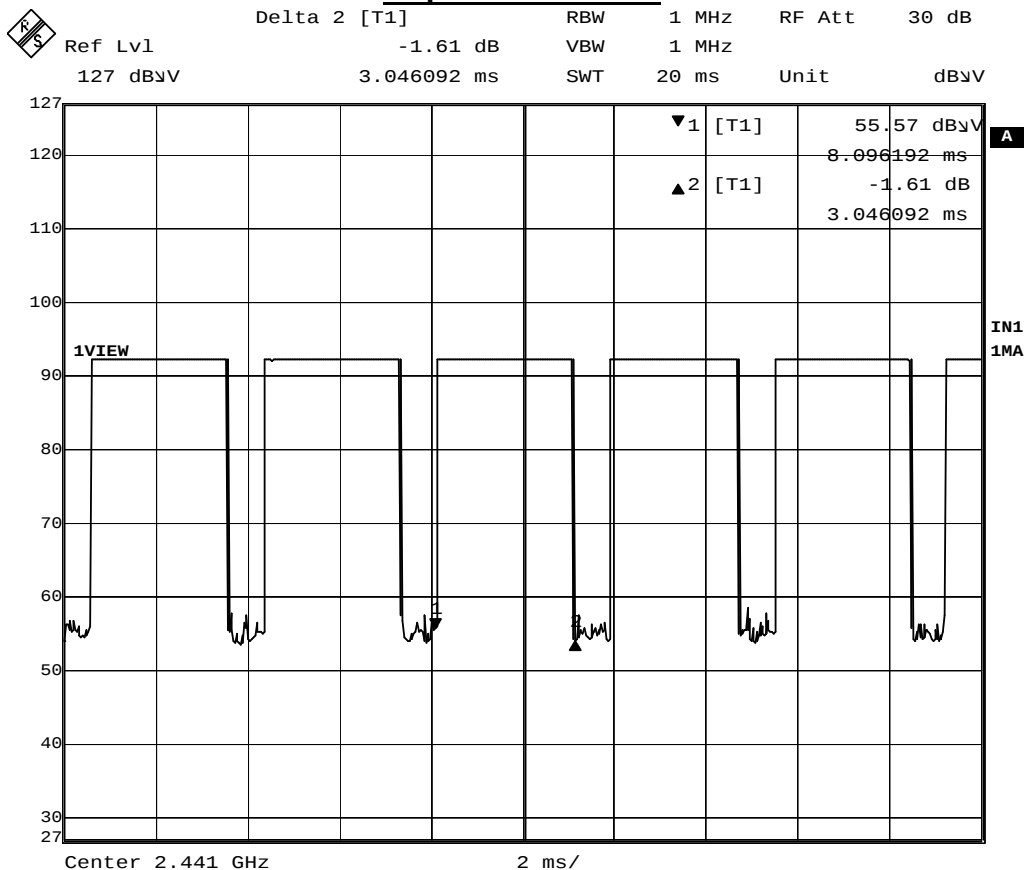
C) 2480MHz Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $5/20\text{msec} = 250 / \text{sec}$

The Maximum Occupancy Time Within 31.6sec: $0.003046 \times (250/79) \times 31.6 = 0.3046\text{sec}$.

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

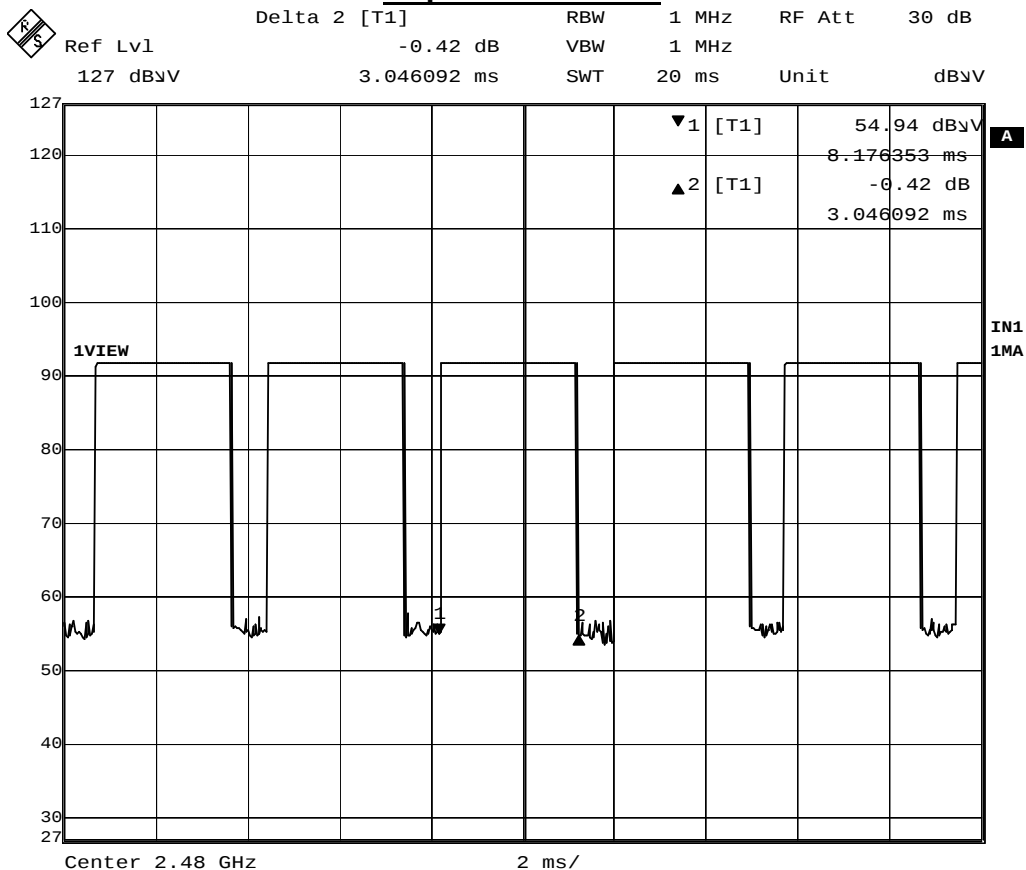


Hop rate-2441MHz



Date: 17.JAN.2009 17:28:19

Hop rate-2480MHz



Date: 17.JAN.2009 17:29:59

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