Test Report

Product Name	Combo WiFi+Bluetooth 2+1
Model No.	WiBlue
FCC ID.	VYXARGTEK-0004

Applicant	ARGtek Communication Inc.
Address	8F-9,NO.4,LANE 609,SEC.5,CHUNG HSIN RD.,SAN CHUNG CITY,TAIPEI HSIEN TAIWAN R.O.C.

Date of Receipt	Apr. 07, 2009
Issued Date	May 22, 2009
Report No.	094159R-RFUSP06V01
Report Version	V1.0

Test Report Certification

Issued Date: May 22, 2009
Report No.: 094159R-RFUSP06V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	Combo WiFi+Bluetooth 2+1
Applicant	ARGtek Communication Inc.
Address	8F-9,NO.4,LANE 609,SEC.5,CHUNG HSIN RD.,SAN CHUNG CITY,TAIPEI HSIEN TAIWAN R.O.C.
Manufacturer	ARGtek Communication Inc.
Model No.	WiBlue
FCC ID.	VYXARGTEK-0004
Rated Voltage	AC 120V/60Hz
Working Voltage	DC 5V(Power by USB)
Trade Name	None
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	Complied

NVLAP Lab Code: 200533-0

The Test Results relate only to the samples tested.
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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Rita Huang
(Engineering Adm. Specialist / Rita Huang)

Tested By : Eason Hung
(Engineer / Eason Hung)

Approved By :
(Manager /Vincent Lin)

Testing Laboratory
0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Combo WiFi+Bluetooth 2+1
Trade Name	None
FCC ID.	VYXARGTEK-0004
Model No.	WiBlue
Frequency Range	2402 – 2480MHz
Channel Number	79
Type of Modulation	GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps)
Antenna Type	Dipole
Type of Antenna joint	Reverse SMA
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	ARISTOTLE	RFA-02-5-C7M3-B70	5.0dBi for 2.4 GHz

Frequency of Each Channel:

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

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 hopsets 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 Combo WiFi+Bluetooth 2+1 with a built-in 2.4GHz BluetoothVer.2.0+EDR transceiver.
2. These tests were conducted on a sample for the purpose of demonstrating compliance of bluetooth transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is a Combo WiFi+Bluetooth 2+1 with built-in 2.4GHz BluetoothVer.2.0+EDR transceiver. The number of the channels is 79 in 2402-2480MHz. The device adapts the frequency hopping spread spectrum modulation.

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

The user can simultaneously use WLAN&BT function under Normal operation.

Test Mode	Mode 1: Transmitter - 1Mbps (GFSK) Mode 2: Transmitter - 3Mbps (8DPSK)

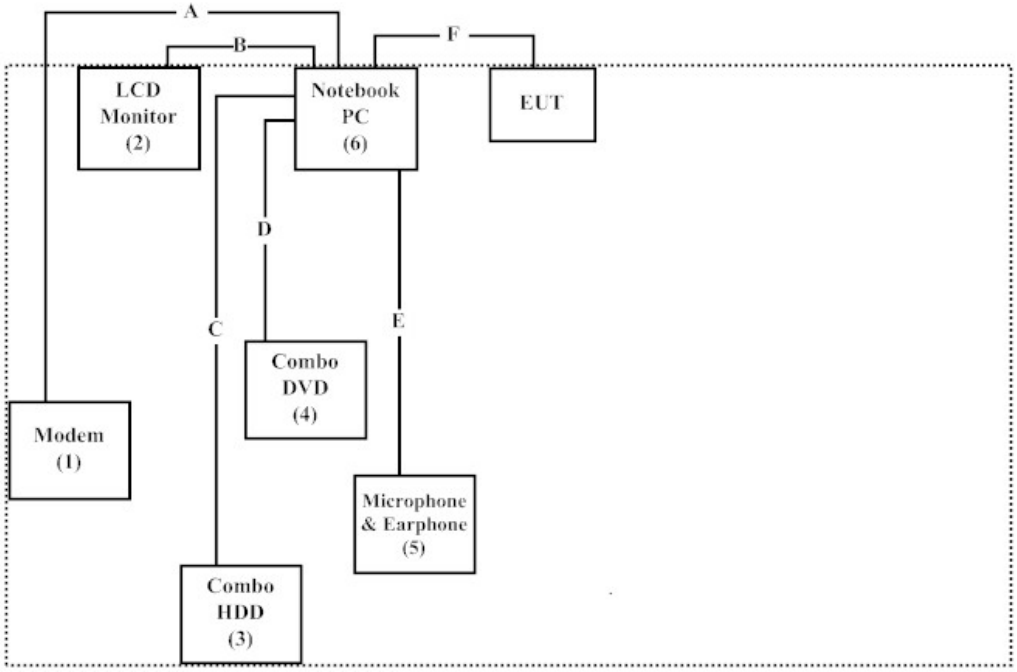
1.3. Tested System Details

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

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1.	Modem	ACEEX	DM-1414	0102027533	Non-Shielded, 1.8m
2.	LCD Monitor	CMV	CT-730D	FNC122F57CA1062	Non-Shielded, 1.8m
3.	Combo HDD	TeraSys	F12-UF	A0100215-63m0031	Non-Shielded 1.8m
4.	Combo DVD	DELL	PD01S	N/A	Non-Shielded, 0.5m
5.	Microphone & Earphone	PCHOME	N/A	N/A	N/A
6.	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

	Signal Cable Type	Signal cable Description
A	RS-232 Cable	Non-Shielded, 1.2m
B	VGA Cable	Non-Shielded, 1.6m with two ferrite cores bonded
C	1394 Cable	Non-Shielded, 1.6m
D	Combo DVD Cable	Non-Shielded, 0.5m
E	Microphone & Earphone Cable	Non-Shielded, 1.2m
F	USB Cable	Shielded, 1.2m with one ferrite core bonded

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute “Bluetooth test.exe” Ver 08.11.03.11 on the EUT.

(3) Configure the test mode, the test channel, and the data rate.

(4) Press “OK” to start the continuous Transmit and Receive

(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

Site Description:

File on
Federal Communications Commission
Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

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

FCC Accreditation Number: TW1014

Testing Laboratory
0914

2. Conducted Emission

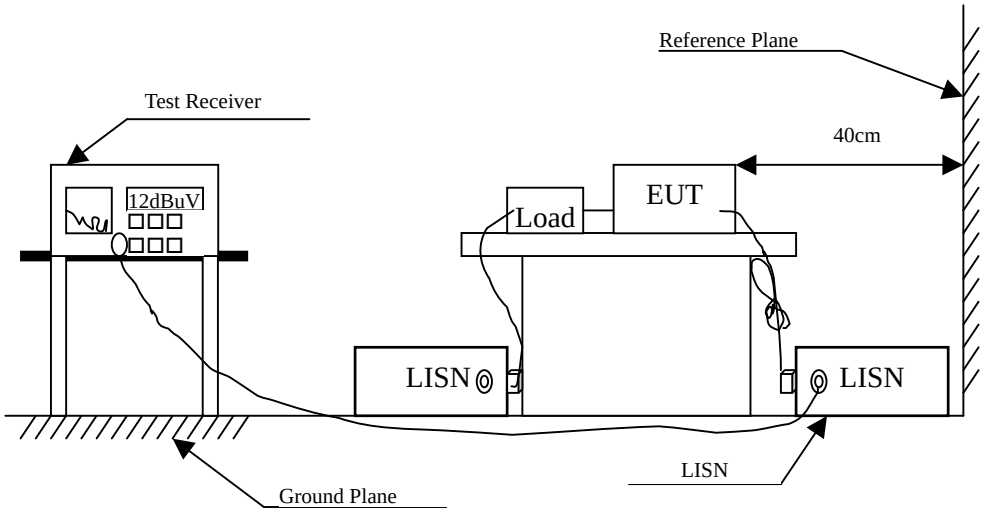
2.1. Test Equipment

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

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/014	Feb., 2009	
2	L.I.S.N.	R & S	ESH3-Z5/825562/002	Feb., 2009	EUT
3	L.I.S.N.	R & S	ENV4200/848411/010	Feb., 2009	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2/100410	July, 2008	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

The EUT 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 refer 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 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.

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Combo WiFi+Bluetooth 2+1
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.170	9.740	36.890	46.630	-18.799	65.429
0.224	9.690	32.170	41.860	-22.026	63.886
0.283	9.656	27.850	37.506	-24.694	62.200
0.564	9.640	25.040	34.680	-21.320	56.000
1.689	9.680	28.080	37.760	-18.240	56.000
3.380	9.690	31.560	41.250	-14.750	56.000
Average					
0.170	9.740	30.820	40.560	-14.869	55.429
0.224	9.690	26.620	36.310	-17.576	53.886
0.283	9.656	24.190	33.846	-18.354	52.200
0.564	9.640	19.370	29.010	-16.990	46.000
1.689	9.680	23.090	32.770	-13.230	46.000
3.380	9.690	18.260	27.950	-18.050	46.000

Note:

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

Product : Combo WiFi+Bluetooth 2+1
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.170	9.743	37.230	46.973	-18.456	65.429
0.228	9.698	31.320	41.018	-22.753	63.771
0.396	9.650	24.300	33.950	-25.021	58.971
0.896	9.670	19.990	29.660	-26.340	56.000
1.806	9.680	29.380	39.060	-16.940	56.000
3.611	9.700	33.030	42.730	-13.270	56.000
Average					
0.170	9.743	30.980	40.723	-14.706	55.429
0.228	9.698	25.420	35.118	-18.653	53.771
0.396	9.650	20.290	29.940	-19.031	48.971
0.896	9.670	11.940	21.610	-24.390	46.000
1.806	9.680	22.480	32.160	-13.840	46.000
3.611	9.700	19.880	29.580	-16.420	46.000

Note:

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

Product : Combo WiFi+Bluetooth 2+1
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.170	9.740	37.030	46.770	-18.659	65.429
0.224	9.690	32.250	41.940	-21.946	63.886
0.338	9.650	28.740	38.390	-22.239	60.629
1.412	9.670	25.430	35.100	-20.900	56.000
1.974	9.680	27.690	37.370	-18.630	56.000
3.498	9.693	31.570	41.263	-14.737	56.000
Average					
0.170	9.740	30.900	40.640	-14.789	55.429
0.224	9.690	26.620	36.310	-17.576	53.886
0.338	9.650	24.260	33.910	-16.719	50.629
1.412	9.670	19.370	29.040	-16.960	46.000
1.974	9.680	21.180	30.860	-15.140	46.000
3.498	9.693	17.880	27.573	-18.427	46.000

Note:

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

Product : Combo WiFi+Bluetooth 2+1
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.170	9.743	37.230	46.973	-18.456	65.429
0.279	9.667	26.870	36.537	-25.777	62.314
0.677	9.650	23.330	32.980	-23.020	56.000
1.584	9.680	27.420	37.100	-18.900	56.000
2.146	9.680	27.080	36.760	-19.240	56.000
3.619	9.700	34.880	44.580	-11.420	56.000
Average					
0.170	9.743	31.140	40.883	-14.546	55.429
0.279	9.667	23.750	33.417	-18.897	52.314
0.677	9.650	16.980	26.630	-19.370	46.000
1.584	9.680	19.840	29.520	-16.480	46.000
2.146	9.680	20.130	29.810	-16.190	46.000
3.619	9.700	20.910	30.610	-15.390	46.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

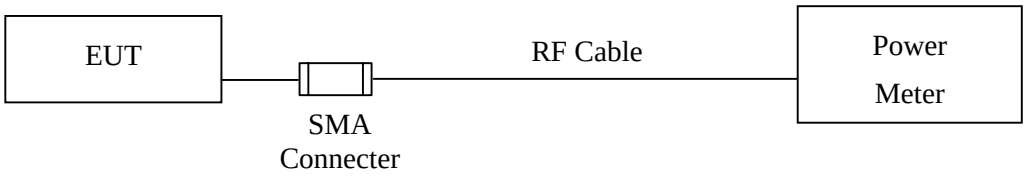
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2009
X	Power Sensor	Anritsu	MA2491A/034457	May, 2009

Note: 1. All equipments are calibrated every one year.

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

3.2. Test Setup



3.3. Limit

The maximum peak power shall be less 1Watt.

3.4. Test Procedure

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

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Combo WiFi+Bluetooth 2+1
Test Item : Peak Power Output
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

Cable loss: 0.5dB				
Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402.00	-4.57	1 Watt= 30 dBm	Pass
Channel 39	2441.00	-5.00	1 Watt= 30 dBm	Pass
Channel 78	2480.00	-5.07	1 Watt= 30 dBm	Pass

Note: Measurement Level = Reading Level + Cable Loss

Product : Combo WiFi+Bluetooth 2+1
Test Item : Peak Power Output
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

Cable loss: 0.5dB				
Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402.00	-5.08	1 Watt= 30 dBm	Pass
Channel 39	2441.00	-4.61	1 Watt= 30 dBm	Pass
Channel 78	2480.00	-5.10	1 Watt= 30 dBm	Pass

Note: Measurement Level = Reading Level + Cable Loss

4. Radiated Emission

4.1. Test Equipment

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

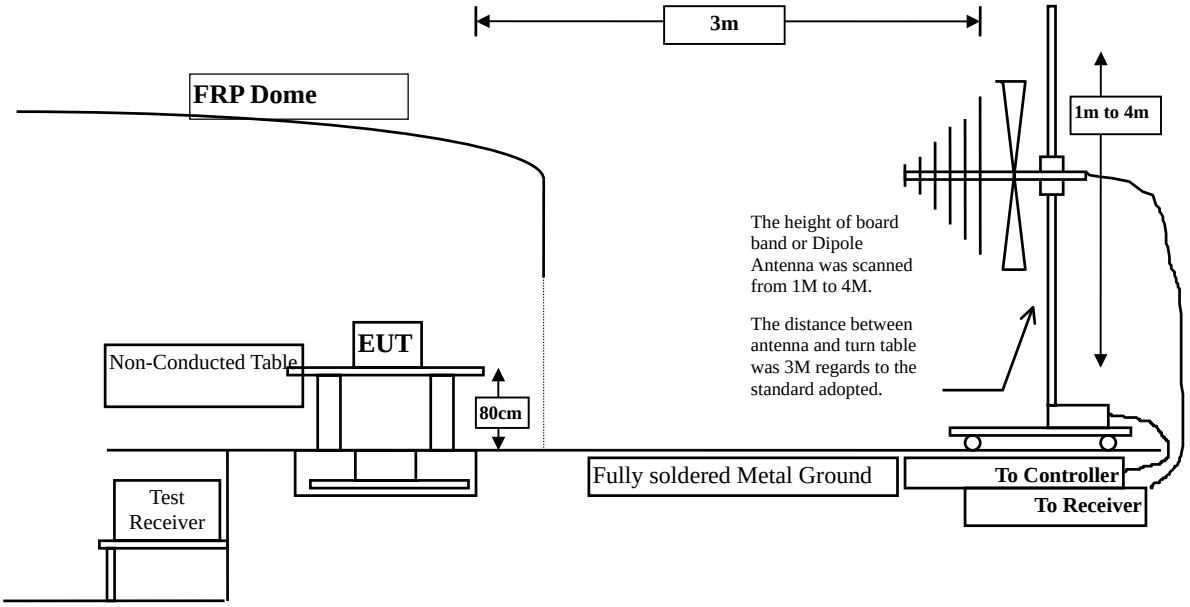
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Pre-Amplifier	HP	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	HP	E4407B / US39440758	May, 2009
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated every one year.

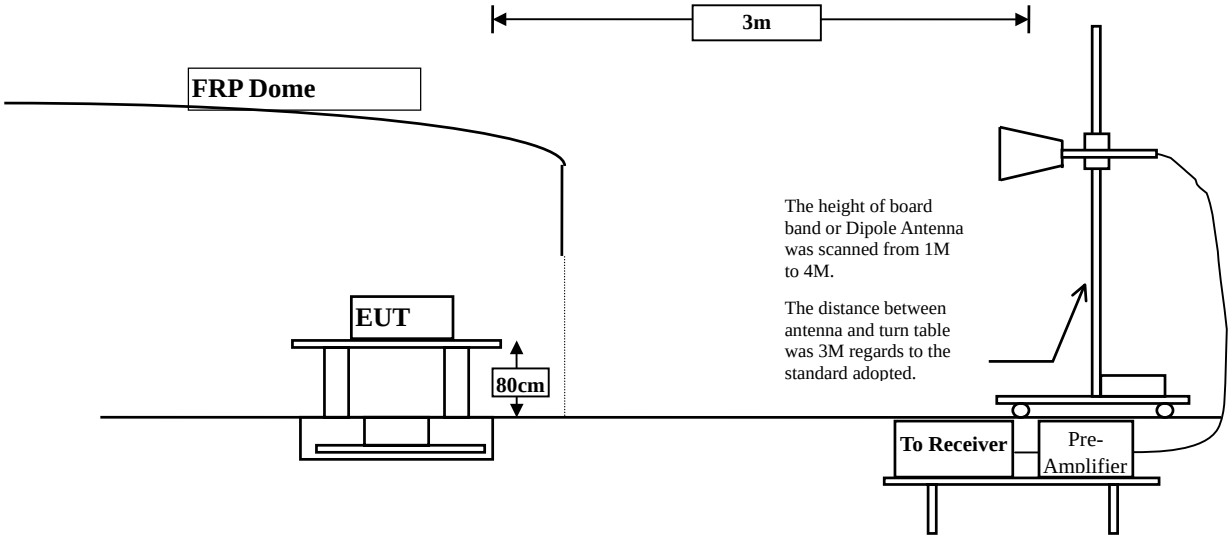
2. The test instruments marked by "X" are used to measure the final test results.

4.2. Test Setup

Below 1GHz



Above 1GHz



4.3. Limits

➢ **General Radiated Emission Limits**

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

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: 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 is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

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

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

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The measurement frequency range form 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Combo WiFi+Bluetooth 2+1
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2402MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	3.623	45.710	49.334	-24.666	74.000
7206.000	8.080	42.840	50.920	-23.080	74.000
9608.000	13.049	40.050	53.098	-20.902	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4804.000	3.585	43.580	47.166	-26.834	74.000
7206.000	9.078	42.370	51.448	-22.552	74.000
9608.000	13.678	40.230	53.907	-20.093	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Correct Factor.
5. 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. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4882.000	3.072	46.160	49.232	-24.768	74.000
7323.000	7.263	41.470	48.732	-25.268	74.000
9764.000	13.376	39.980	53.356	-20.644	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4882.000	37.827	43.920	47.528	-26.472	74.000
7323.000	43.290	41.840	49.892	-24.108	74.000
9764.000	47.673	40.210	53.631	-20.369	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Correct Factor.
5. 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. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2480MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4960.000	3.752	45.490	49.242	-24.758	74.000
7440.000	7.163	40.370	47.533	-26.467	74.000
9920.000	13.634	39.490	53.125	-20.875	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4960.000	4.883	44.050	48.933	-25.067	74.000
7440.000	7.691	40.590	48.282	-25.718	74.000
9920.000	13.703	39.700	53.403	-20.597	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Correct Factor.
5. 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. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)(2402MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	3.623	45.190	48.814	-25.186	74.000
7206.000	8.080	41.830	49.910	-24.090	74.000
9608.000	13.049	40.270	53.318	-20.682	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	3.585	43.180	46.766	-27.234	74.000
7206.000	9.078	41.690	50.768	-23.232	74.000
9608.000	13.678	39.950	53.627	-20.373	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Correct Factor.
5. 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. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4882.000	3.072	45.760	48.832	-25.168	74.000
7323.000	7.263	41.170	48.432	-25.568	74.000
9764.000	13.376	40.460	53.836	-20.164	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4882.000	3.608	44.460	48.068	-25.932	74.000
7323.000	8.052	41.200	49.252	-24.748	74.000
9764.000	13.421	39.680	53.101	-20.899	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Correct Factor.
5. 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. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : Harmonic Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2480MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4960.000	3.752	45.600	49.352	-24.648	74.000
7440.000	7.163	40.410	47.573	-26.427	74.000
9920.000	13.634	39.170	52.805	-21.195	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4960.000	4.883	44.130	49.013	-24.987	74.000
7440.000	7.691	40.090	47.782	-26.218	74.000
9920.000	13.703	39.080	52.783	-21.217	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz。
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz。
4. Emission Level = Reading Level + Correct Factor.
5. 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. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
130.880	-7.387	38.836	31.448	-12.052	43.500
191.020	-9.901	40.511	30.610	-12.890	43.500
396.660	0.573	38.690	39.262	-6.738	46.000
565.440	1.727	31.867	33.594	-12.406	46.000
720.640	3.666	32.025	35.692	-10.308	46.000
1000.000	9.421	27.816	37.237	-16.763	54.000
Vertical					
268.620	-6.357	39.171	32.814	-13.186	46.000
509.180	0.594	29.744	30.338	-15.662	46.000
610.060	1.864	30.327	32.191	-13.809	46.000
778.840	2.458	29.427	31.885	-14.115	46.000
961.200	3.094	30.364	33.458	-20.542	54.000
1000.000	-1.309	30.328	29.019	-24.981	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
30.000	-0.228	28.700	28.472	-11.528	40.000
130.880	-7.387	39.150	31.762	-11.738	43.500
402.480	0.770	38.574	39.344	-6.656	46.000
600.360	3.235	31.086	34.321	-11.679	46.000
716.760	3.656	32.702	36.359	-9.641	46.000
1000.000	9.421	27.485	36.906	-17.094	54.000
Vertical					
45.520	-10.733	39.157	28.424	-11.576	40.000
239.520	-6.189	43.043	36.855	-9.145	46.000
346.220	-0.549	37.646	37.097	-8.903	46.000
538.280	1.774	29.941	31.715	-14.285	46.000
683.780	1.888	29.524	31.412	-14.588	46.000
963.140	3.370	29.471	32.841	-21.159	54.000

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

5. RF Antenna Conducted Test

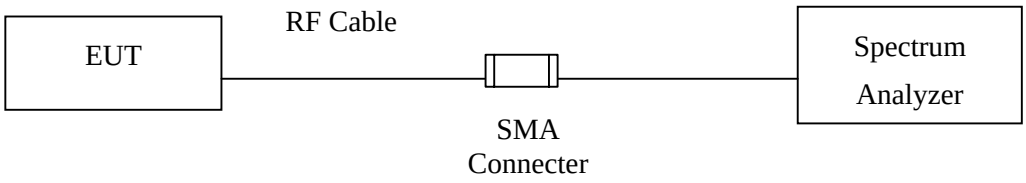
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R & S	FSP40 / 100170	Nov, 2008
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009
X	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2008

Note: 1. All equipments are calibrated every one year.

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

5.2. Test Setup



5.3. Limits

According to FCC Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

5.4. Test Procedure

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

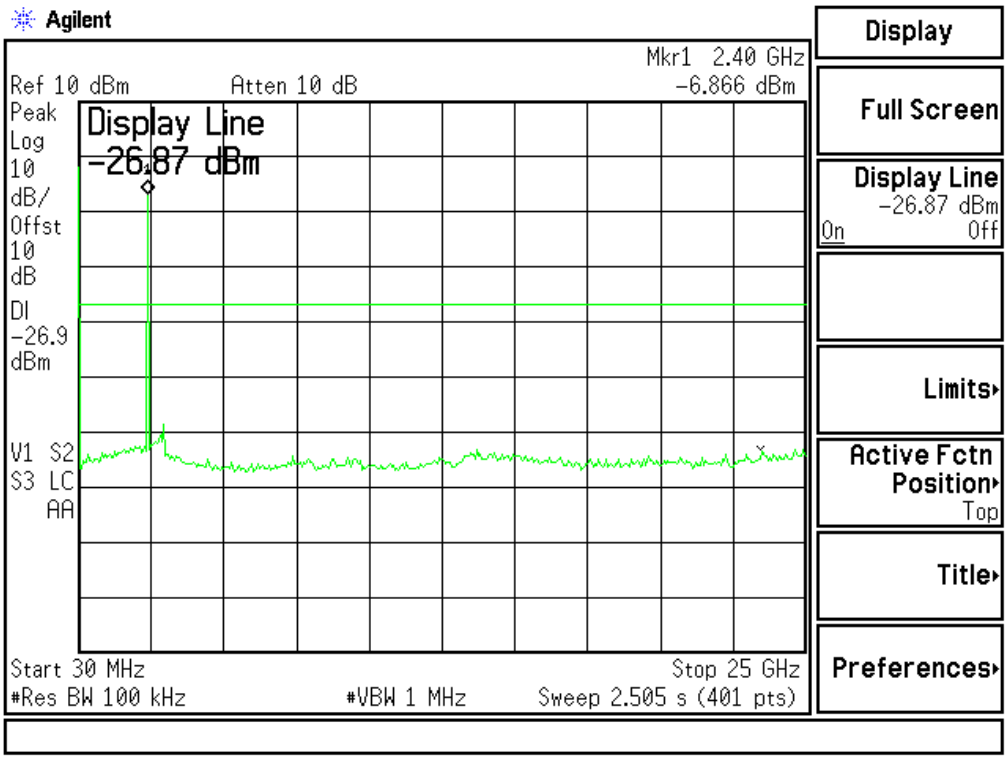
5.5. Uncertainty

± 150Hz

5.6. Test Result of RF Antenna Conducted Test

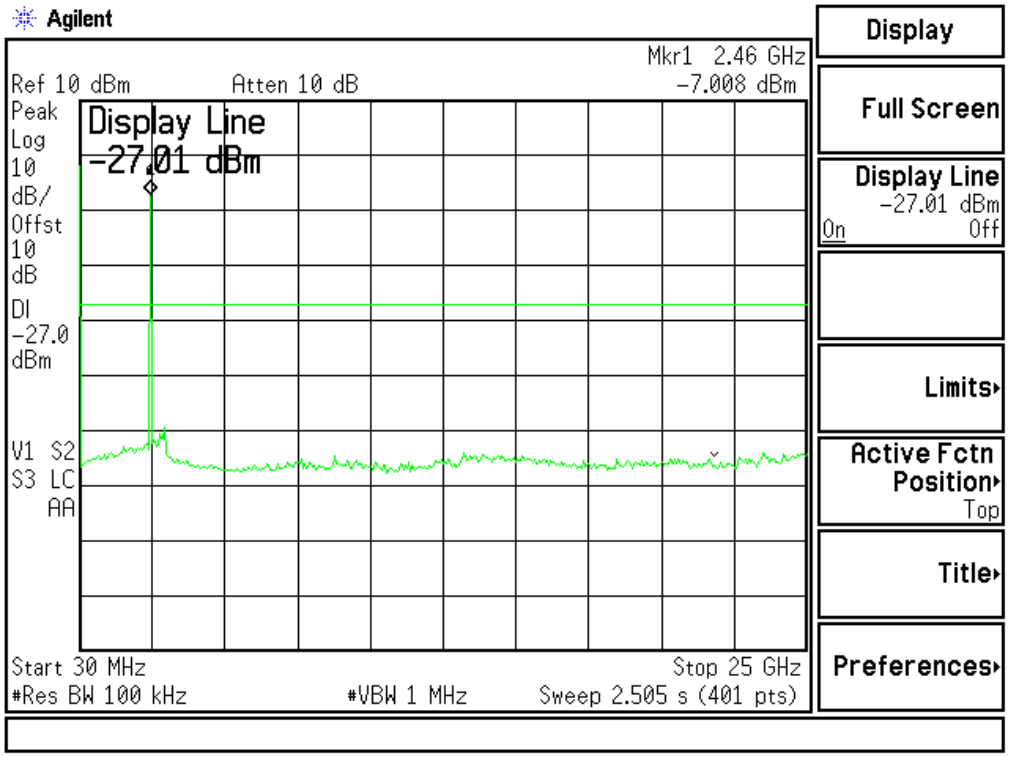
Product : Combo WiFi+Bluetooth 2+1
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

Figure Channel 00: 30MHz-25GHz



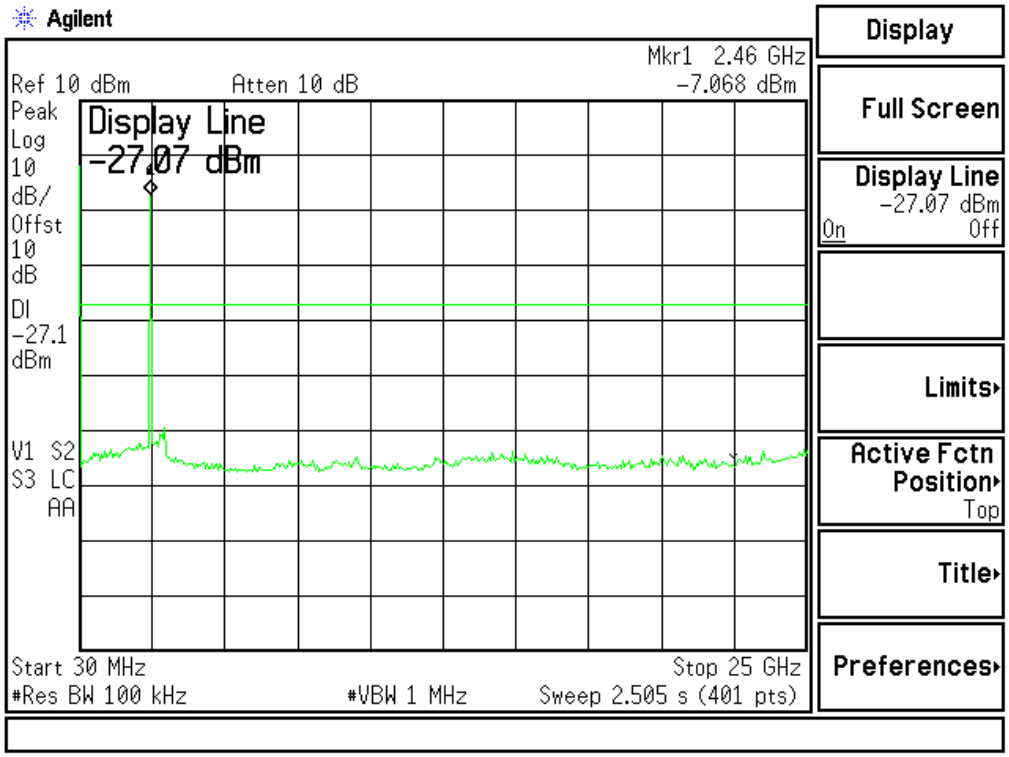
Product : Combo WiFi+Bluetooth 2+1
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

Figure Channel 39: 30MHz-25GHz



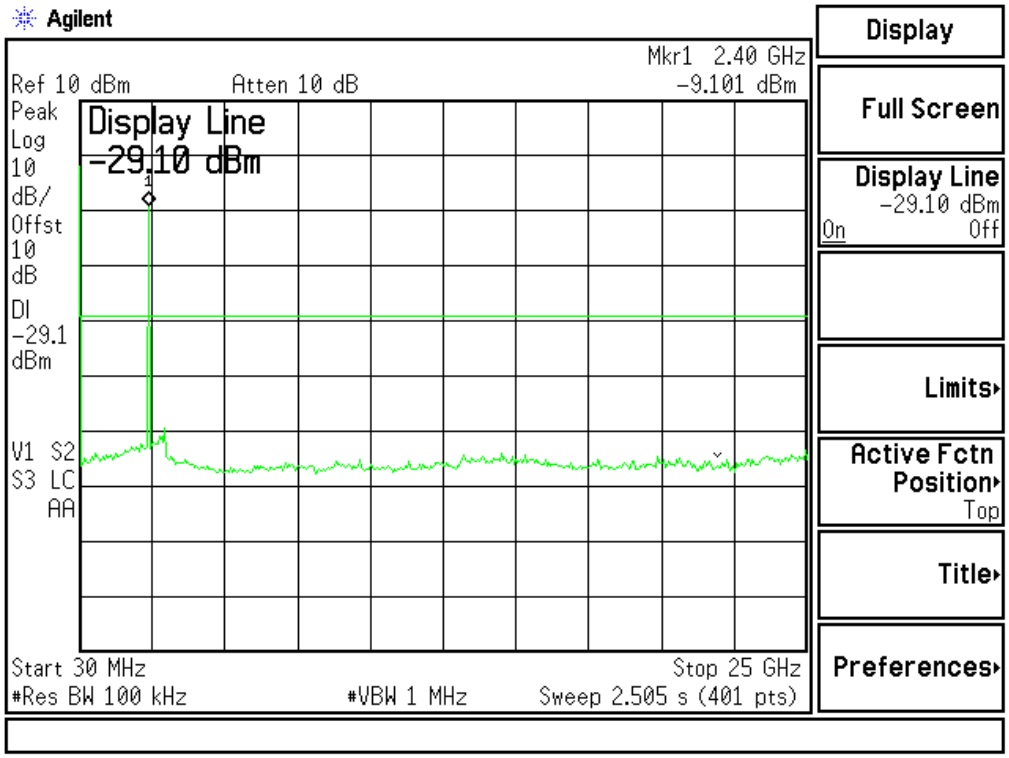
Product : Combo WiFi+Bluetooth 2+1
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

Figure Channel 78: 30MHz-25GHz



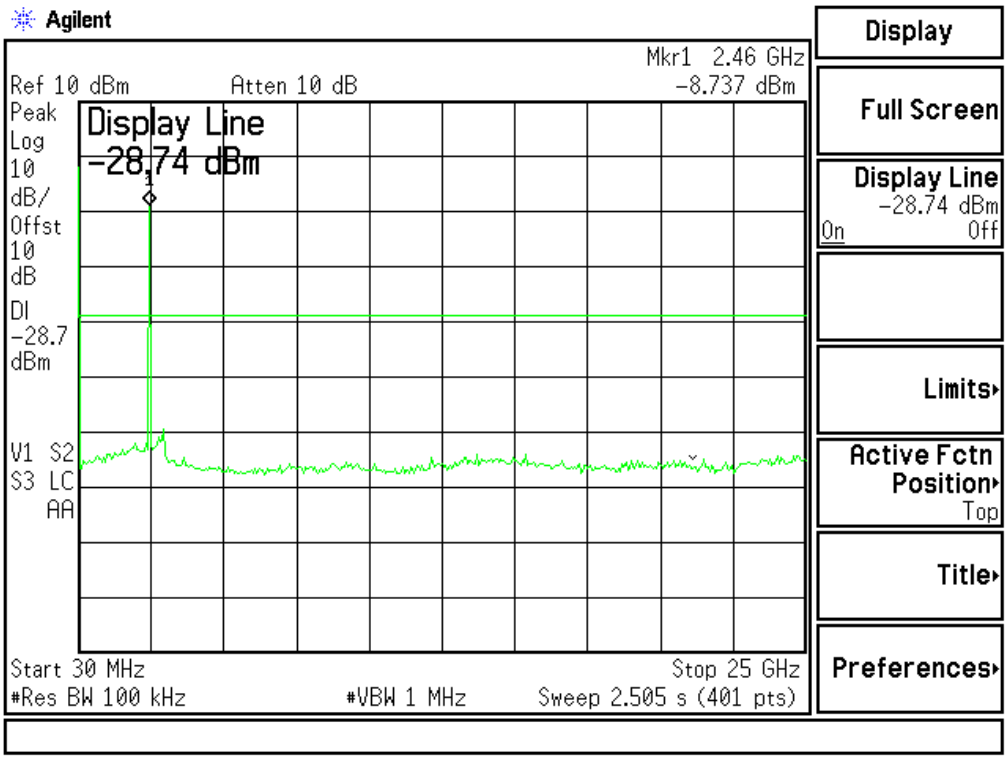
Product : Combo WiFi+Bluetooth 2+1
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

Figure Channel 00: 30MHz-25GHz



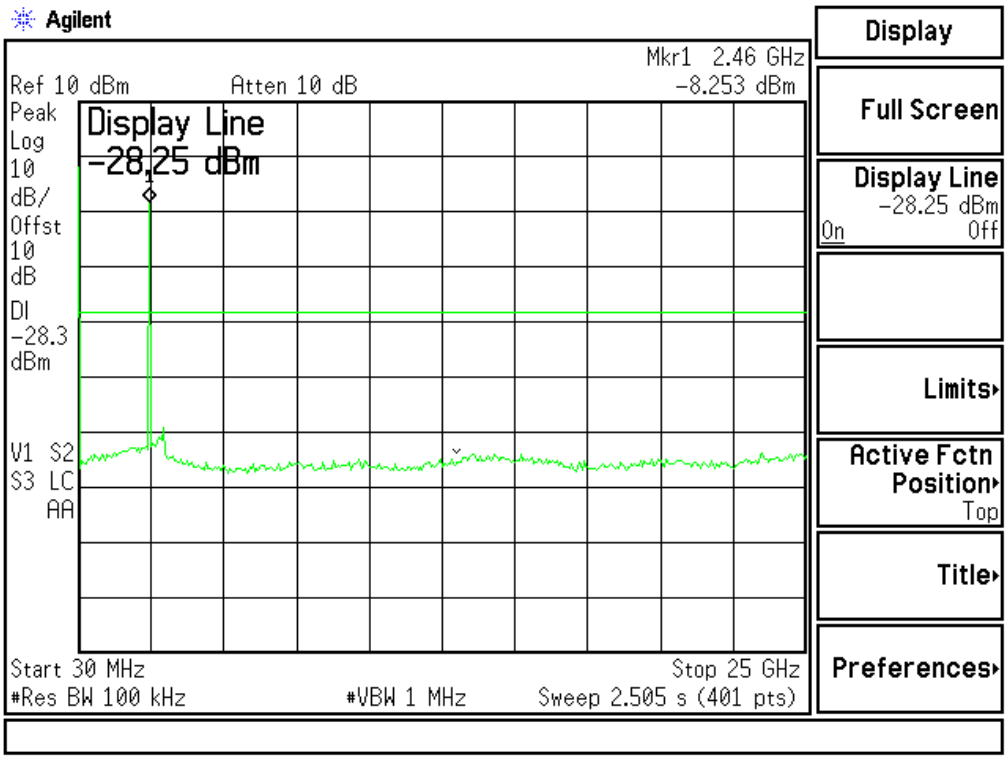
Product : Combo WiFi+Bluetooth 2+1
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

Figure Channel 39: 30MHz-25GHz



Product : Combo WiFi+Bluetooth 2+1
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

Figure Channel 78: 30MHz-25GHz



6. Band Edge

6.1. Test Equipment

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

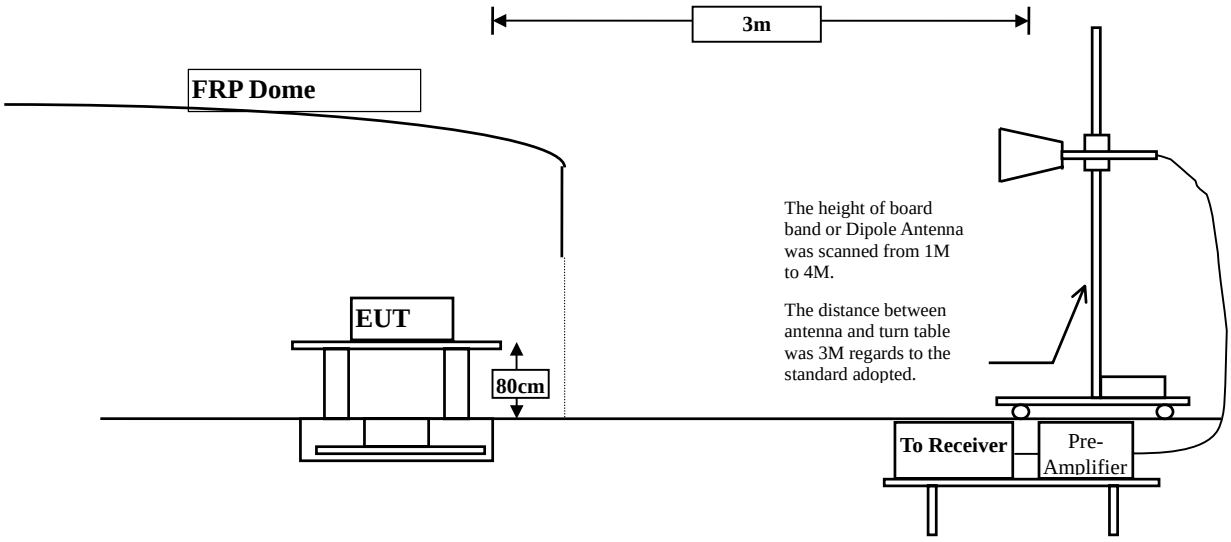
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Pre-Amplifier	HP	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2009
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated every one year.

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

6.2. Test Setup

RF Radiated Measurement:



6.3. Limit

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

6.4. 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.
The EUT was setup to ANSI C63.4, 2003; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

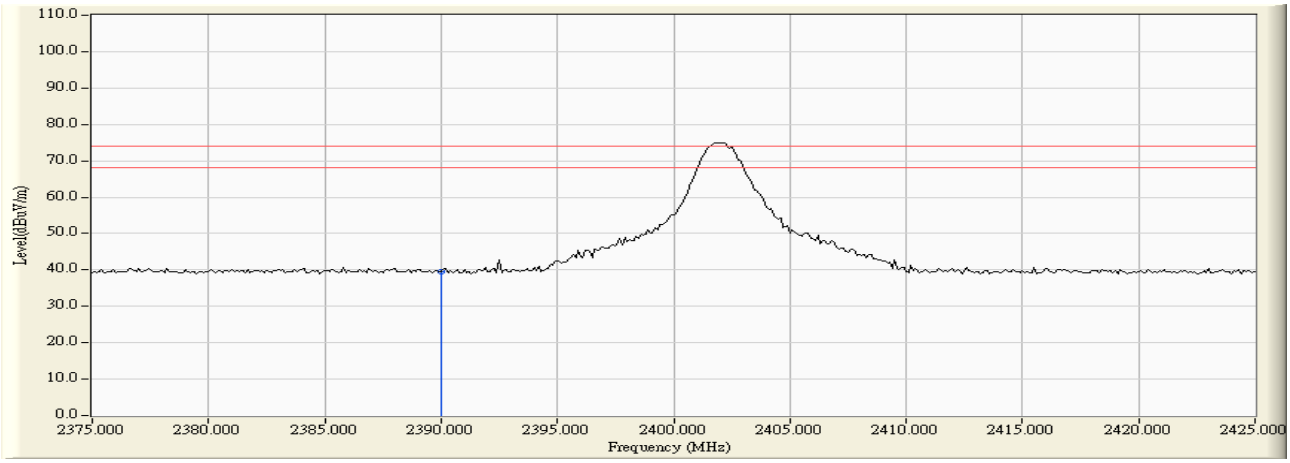
6.6. Test Result of Band Edge

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
00 (Peak)	2390.000	-6.742	46.126	39.385	74.00	54.00	Pass

Figure Channel 00: Horizontal (Peak)



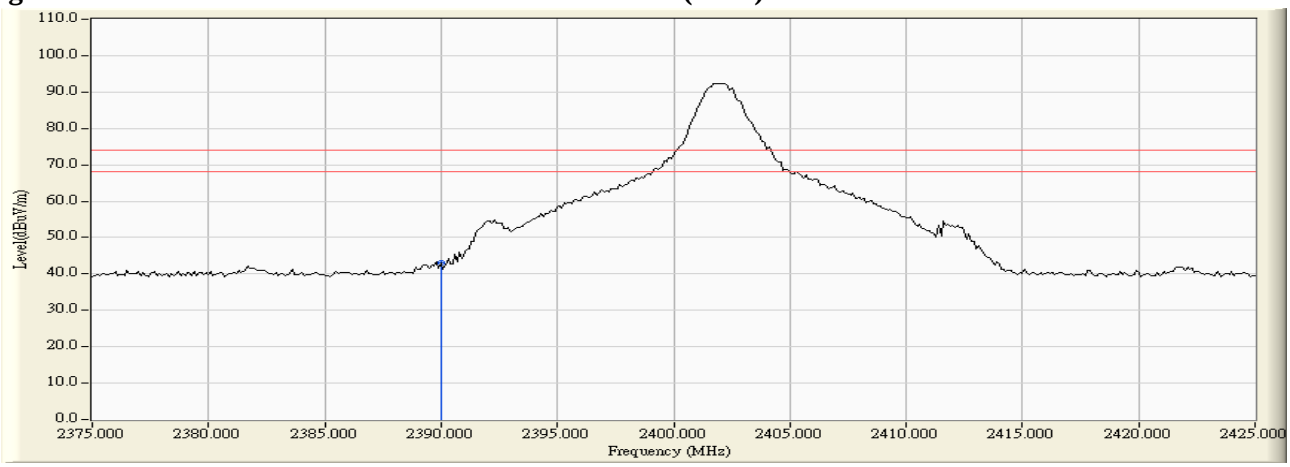
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
00 (Peak)	2390.000	-6.742	49.852	43.111	74.00	54.00	Pass

Figure Channel 00: Vertical (Peak)



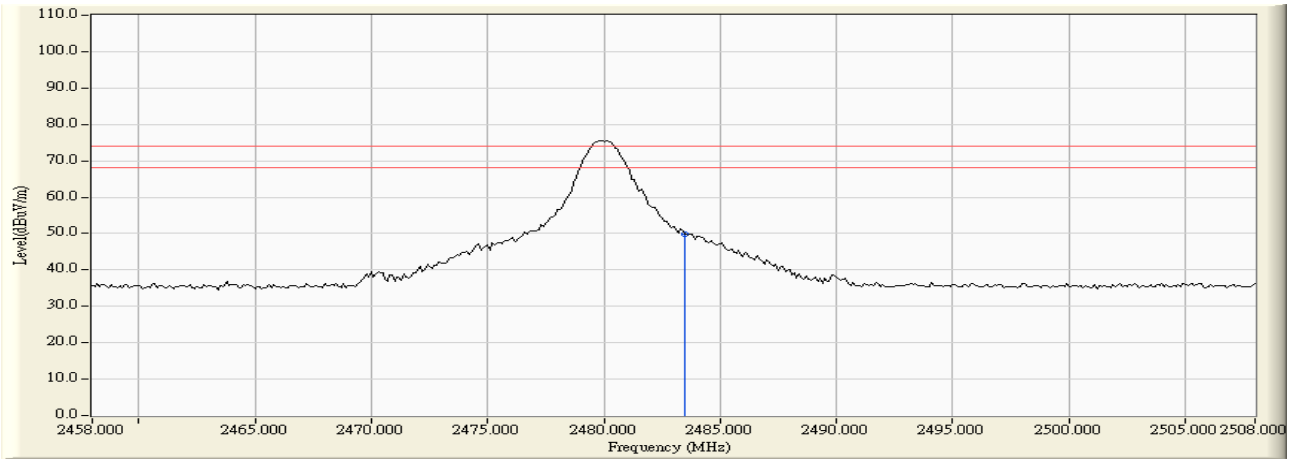
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
78 (Peak)	2483.500	30.023	56.172	49.753	74.00	54.00	Pass

Figure Channel 78: Horizontal (Peak)



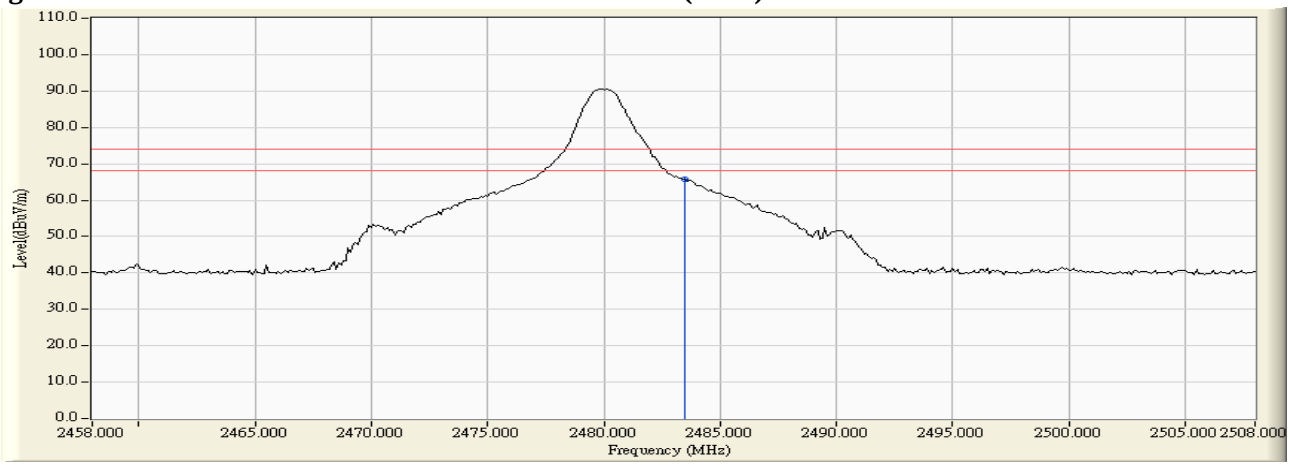
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

RF Radiated Measurement (Vertical):

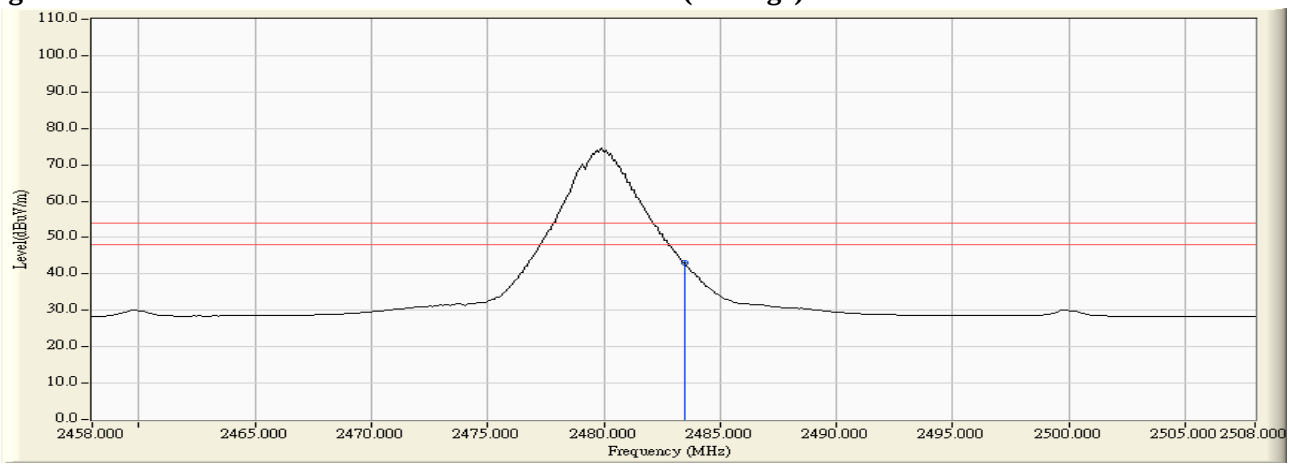
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
78 (Peak)	2483.500	-6.419	72.043	65.624	74.00	54.00	Pass
78 (Average)	2483.500	-6.419	49.343	42.924	74.00	54.00	Pass

Figure Channel 78: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 78: Vertical (Average)



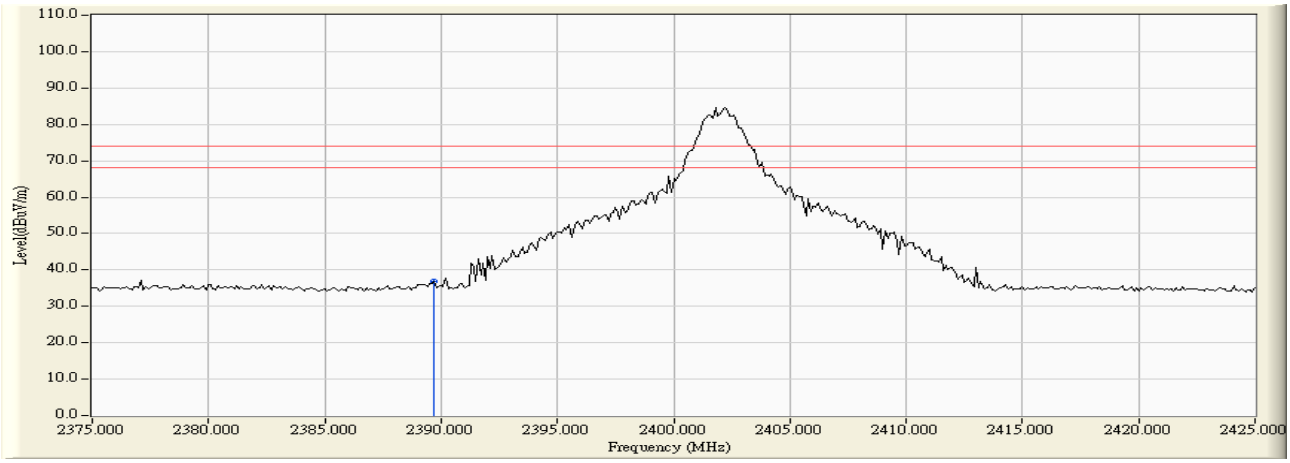
Note: RBW=1MHz, VBW=10Hz, Sweep=5S

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
00 (Peak)	2389.700	-6.742	43.691	36.949	74.00	54.00	Pass

Figure Channel 00: Horizontal (Peak)



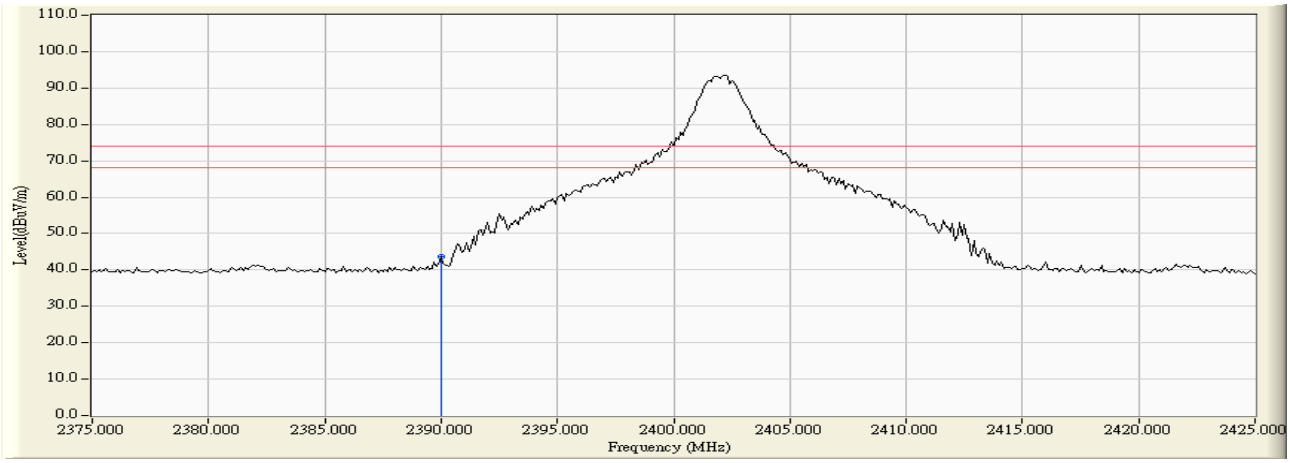
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
00 (Peak)	2390.000	-6.742	50.502	43.761	74.00	54.00	Pass

Figure Channel 00: Vertical (Peak)



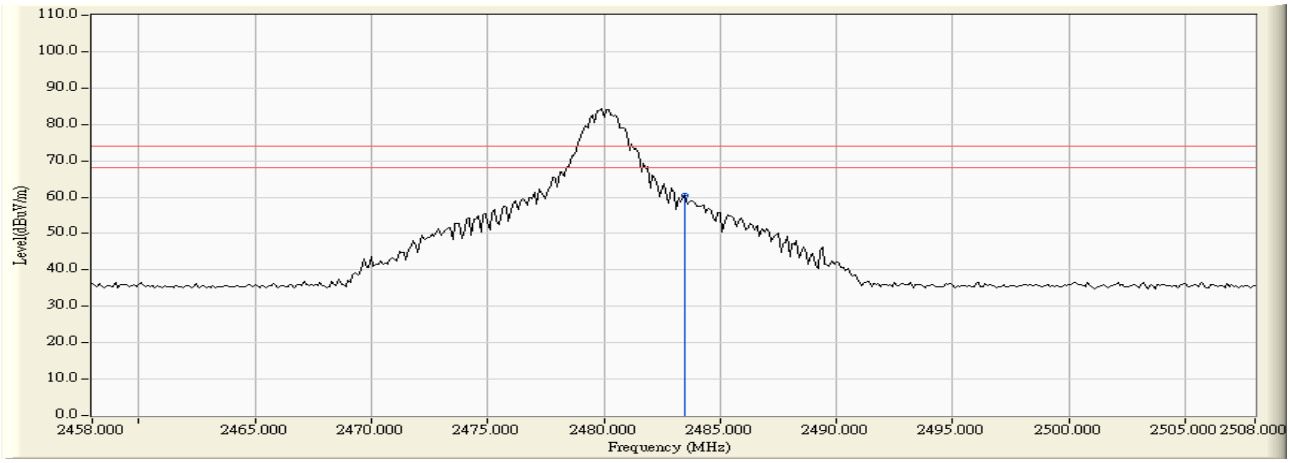
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

RF Radiated Measurement (Horizontal):

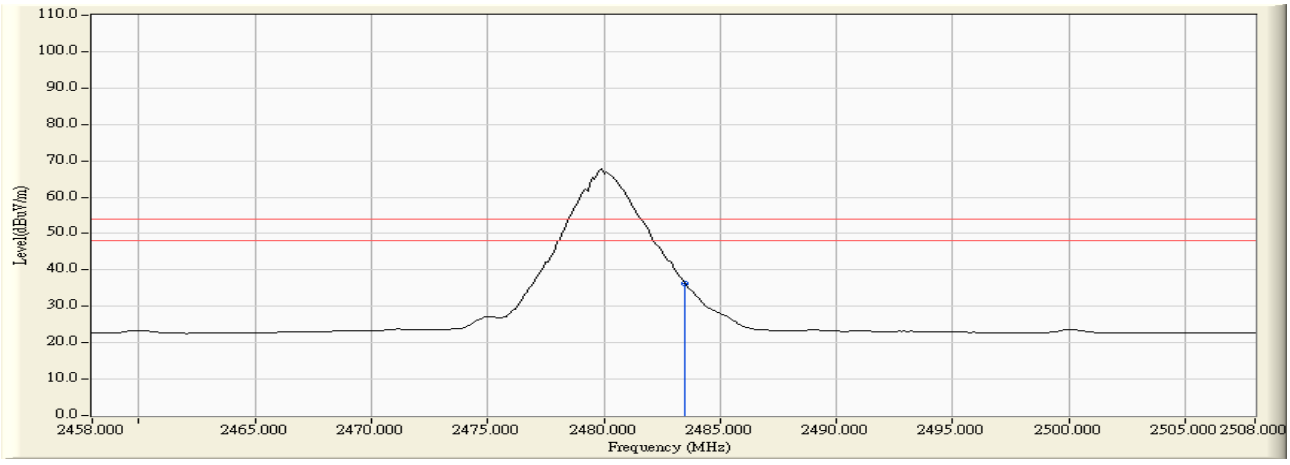
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
78 (Peak)	2483.500	-6.419	66.812	60.393	74.00	54.00	Pass
78 (Average)	2483.500	-6.419	42.811	36.392	74.00	54.00	Pass

Figure Channel 78: Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 78: Horizontal (Average)



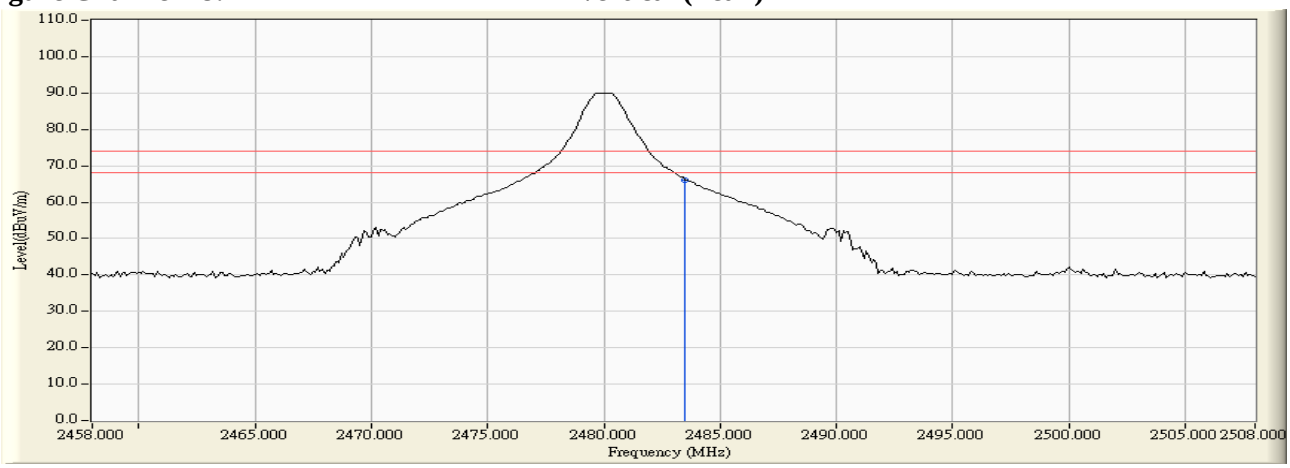
Note: RBW=1MHz, VBW=10Hz, Sweep=5S

Product : Combo WiFi+Bluetooth 2+1
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

RF Radiated Measurement (Vertical):

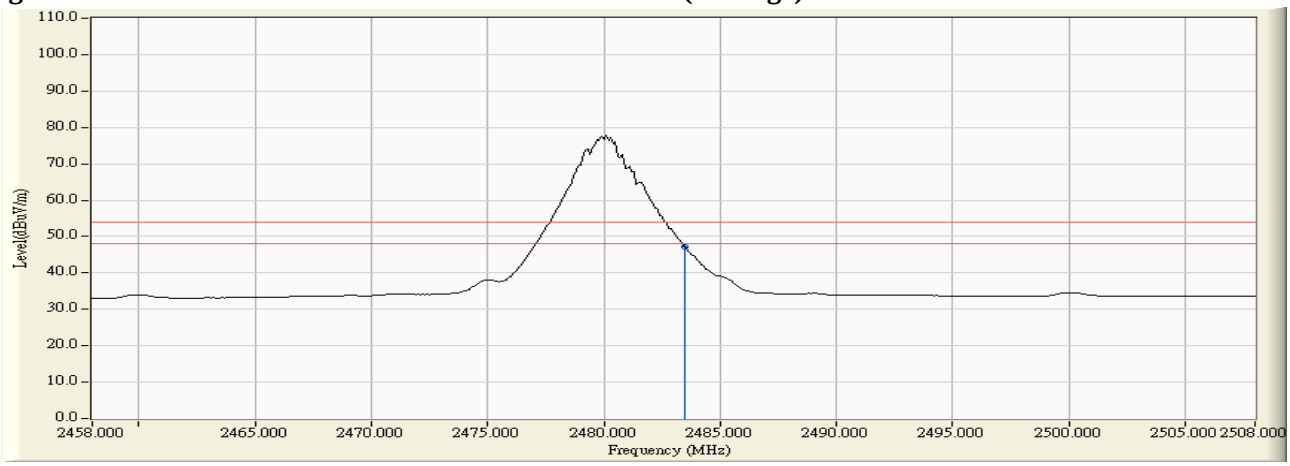
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
78 (Peak)	2483.500	-6.419	72.577	66.158	74.00	54.00	Pass
78 (Average)	2483.500	-1.312	48.614	47.302	74.00	54.00	Pass

Figure Channel 78: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 78: Vertical (Average)



Note: RBW=1MHz, VBW=10Hz, Sweep=5S

7. Channel Number

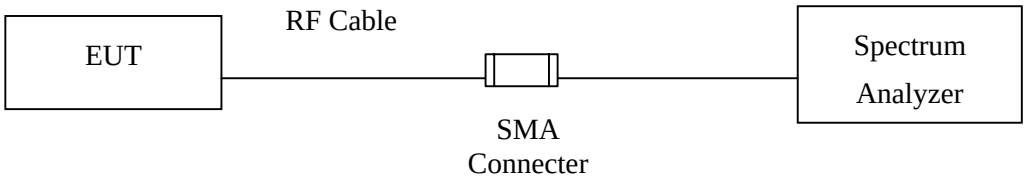
7.1. Test Equipment

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100339	Jun, 2008
X	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2008
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

7.4. Test Procedure

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

7.5. Uncertainty

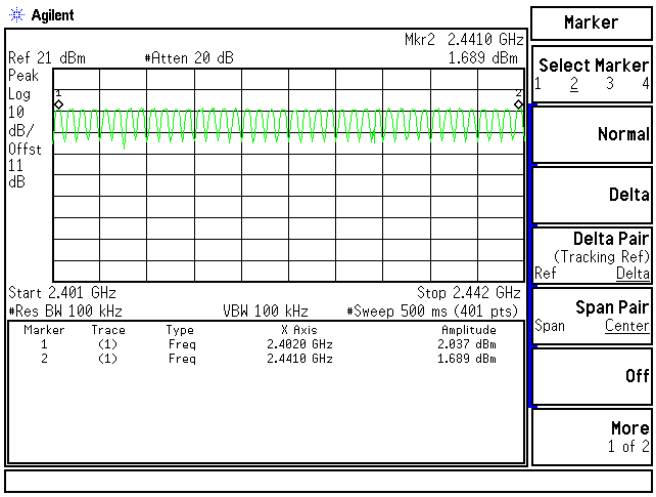
N/A

7.6. Test Result of Channel Number

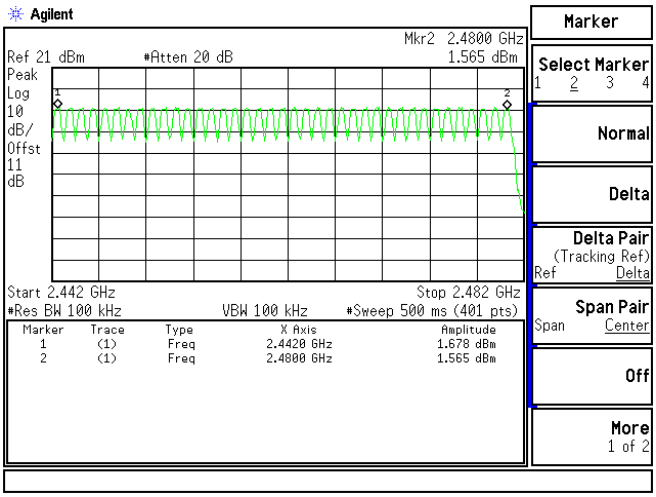
Product : Combo WiFi+Bluetooth 2+1
Test Item : Channel Number
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

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

2402-2441MHz



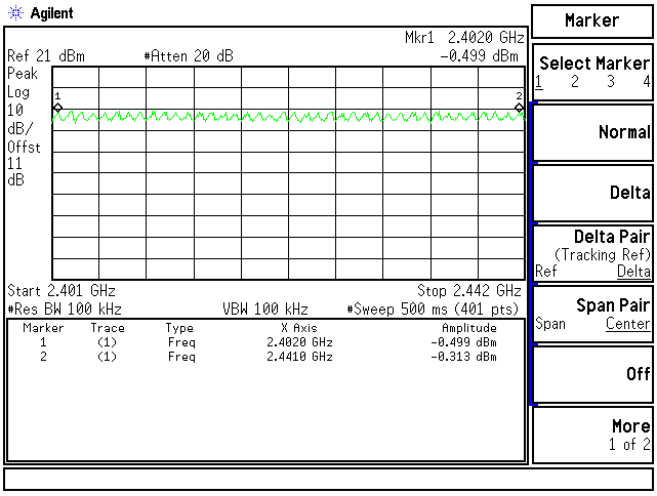
2442-2480MHz



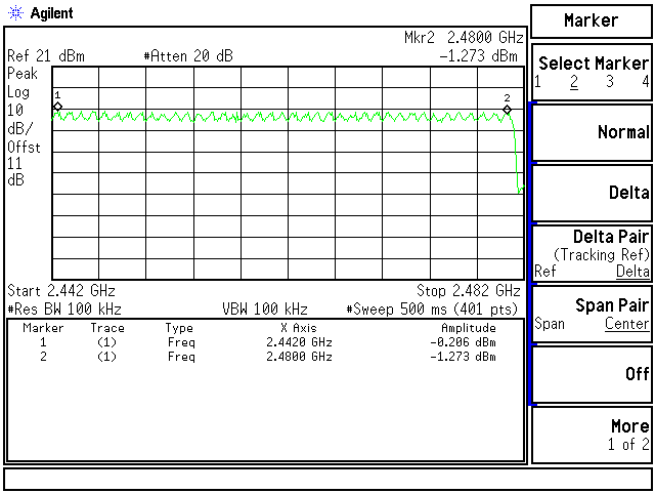
Product : Combo WiFi+Bluetooth 2+1
Test Item : Channel Number
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

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

2402-2441MHz



2442-2480MHz



8. Channel Separation

8.1. Test Equipment

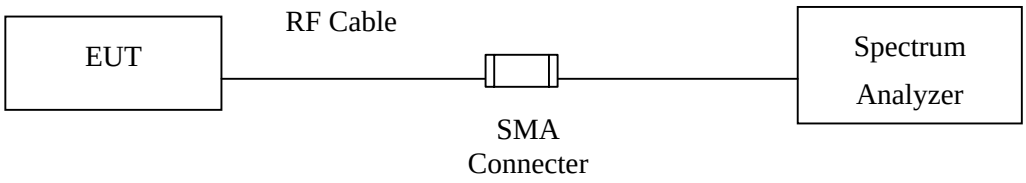
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100339	Jun, 2008
X	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2008
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All equipments are calibrated every one year.

2. The test instruments mark by "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limit

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

8.4. Test Procedure

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

8.5. Uncertainty

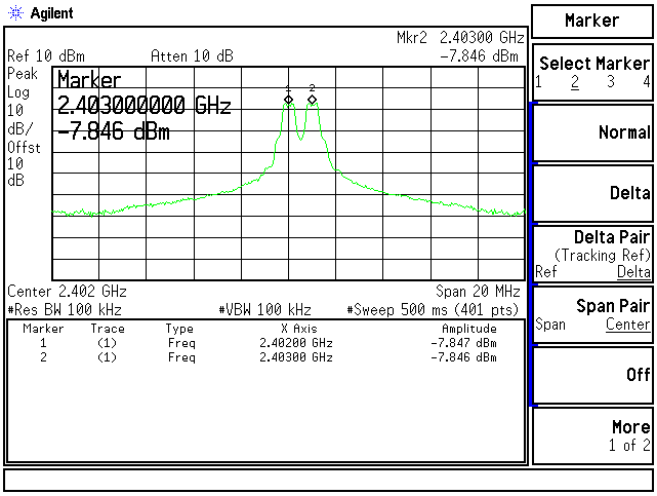
± 150Hz

8.6. Test Result of Channel Separation

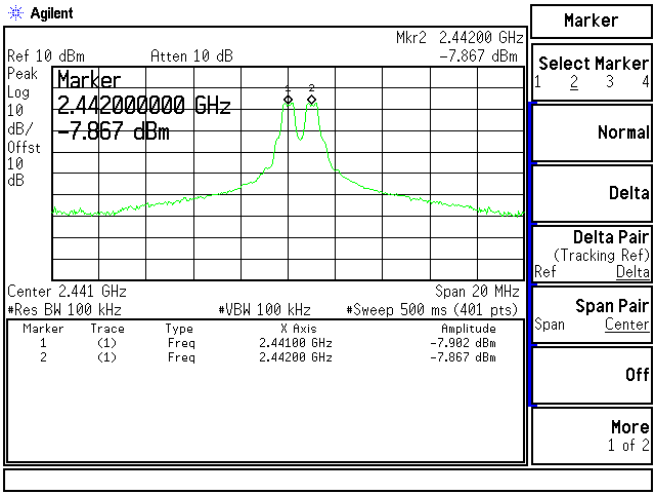
Product : Combo WiFi+Bluetooth 2+1
Test Item : Channel Separation
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	346.8	Pass
39	2441	1000	>25 kHz	346.8	Pass
78	2480	1000	>25 kHz	346.8	Pass

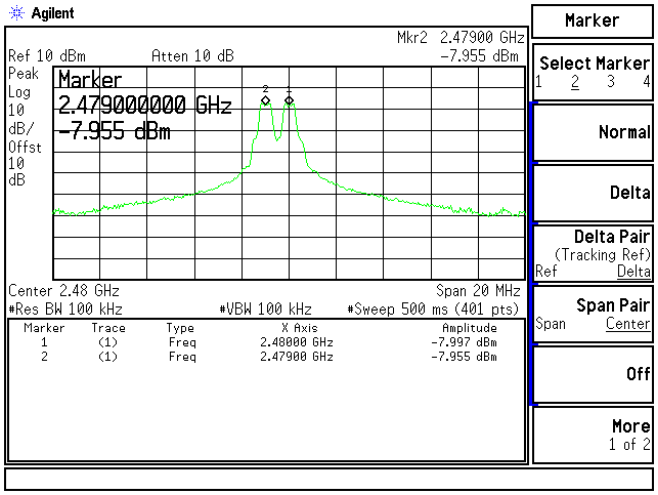
Channel 00 2402MHz



Channel 39 2441MHz



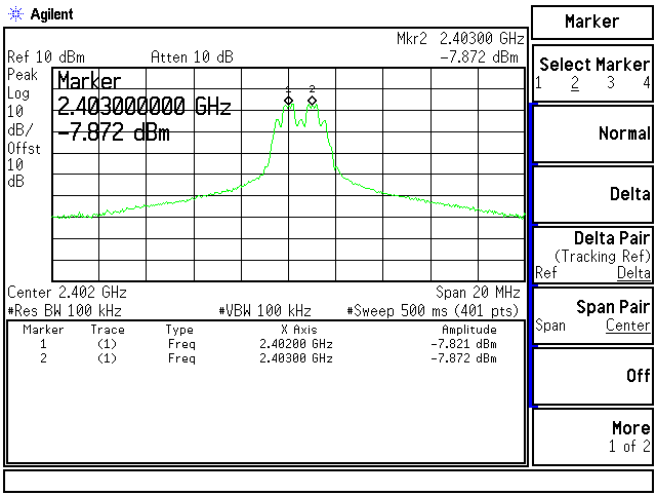
Channel 78 2480 MHz



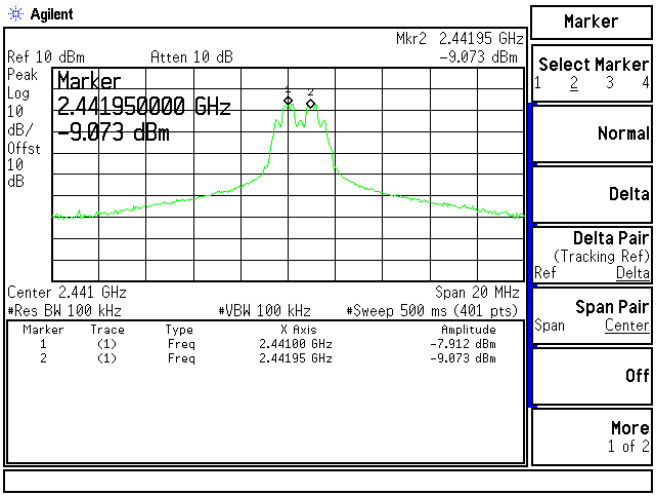
Product : Combo WiFi+Bluetooth 2+1
Test Item : Channel Separation
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Limit (kHz)	Limit of (2/3)*20dB Bandwidth (kHz)	Result
00	2402	1000	>25 kHz	697	Pass
39	2441	1000	>25 kHz	697	Pass
78	2480	1000	>25 kHz	697	Pass

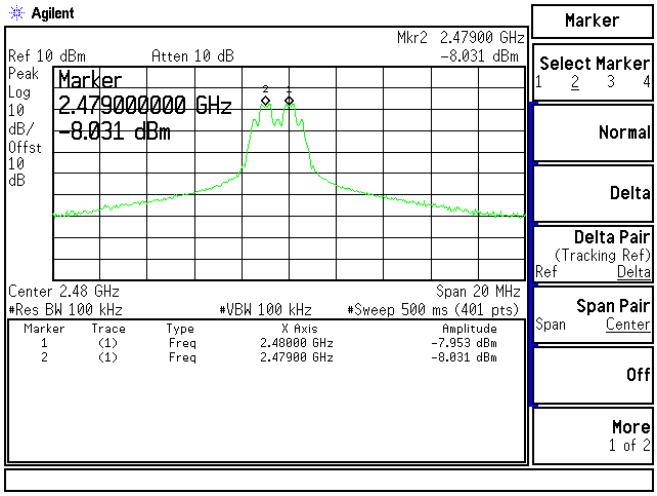
Channel 00 2402MHz



Channel 39 2441MHz



Channel 78 2480 MHz



9. Dwell Time

9.1. Test Equipment

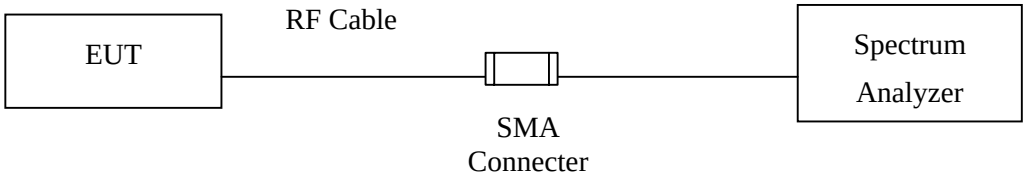
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100339	Jun, 2008
X	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2008
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All equipments are calibrated every one year.

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

9.2. Test Setup



9.3. Limit

The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

9.4. Test Procedure

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

9.5. Uncertainty

± 25msec

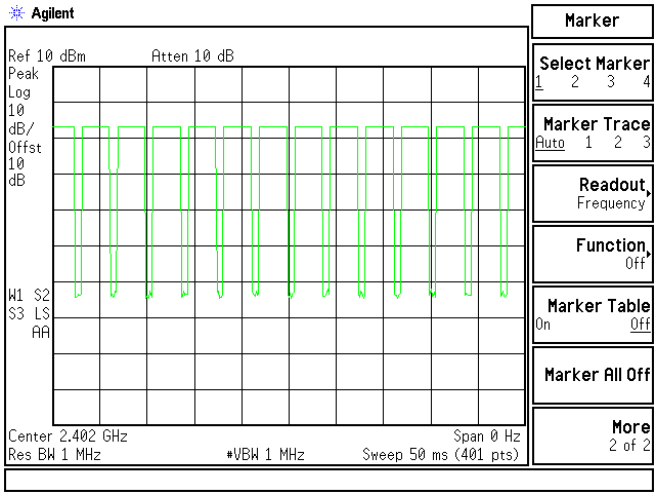
9.6. Test Result of Dwell Time

Product : Combo WiFi+Bluetooth 2+1
Test Item : Dwell Time
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(DH5)

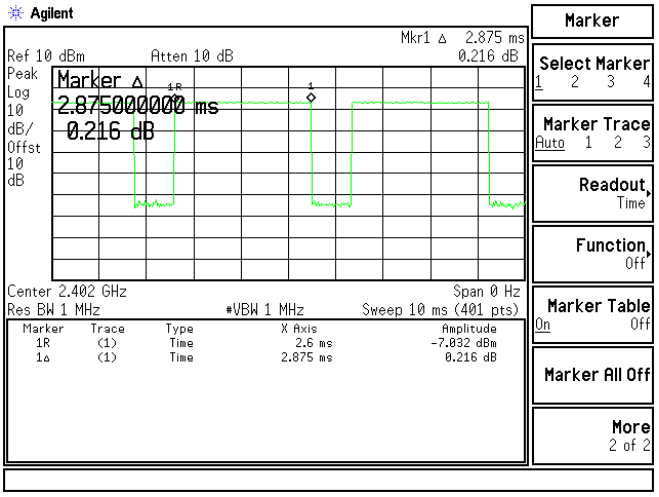
Channel No.	Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
00	2402	2.875	13	50	0.75	0.299	0.4	Pass
39	2441	2.875	13	50	0.75	0.299	0.4	Pass
78	2480	2.875	13	50	0.75	0.299	0.4	Pass

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

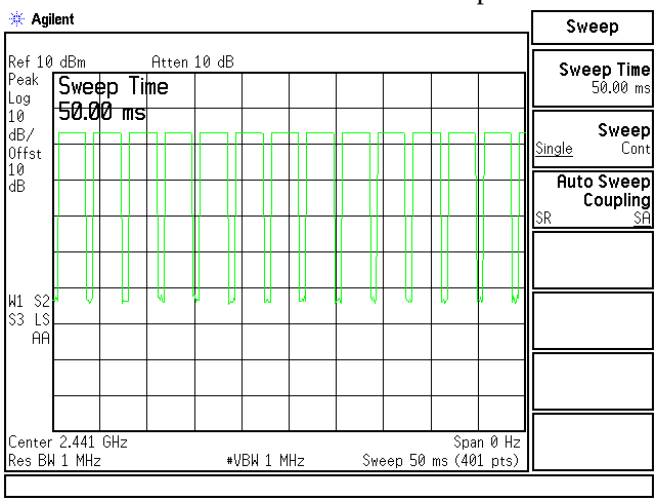
CH 2402MHz Time Interval between hops



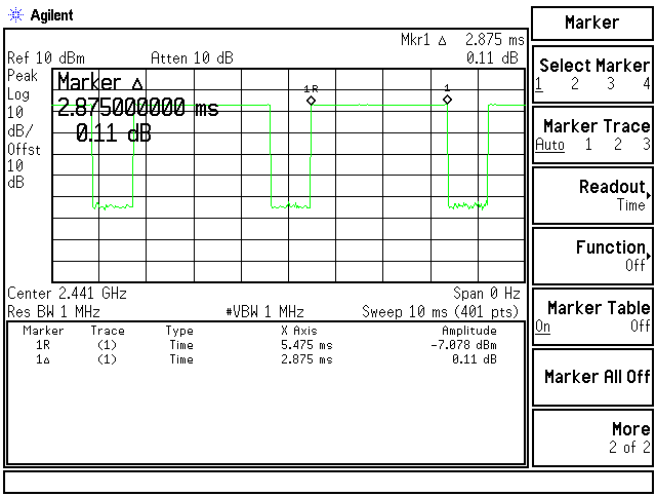
Transmission Time



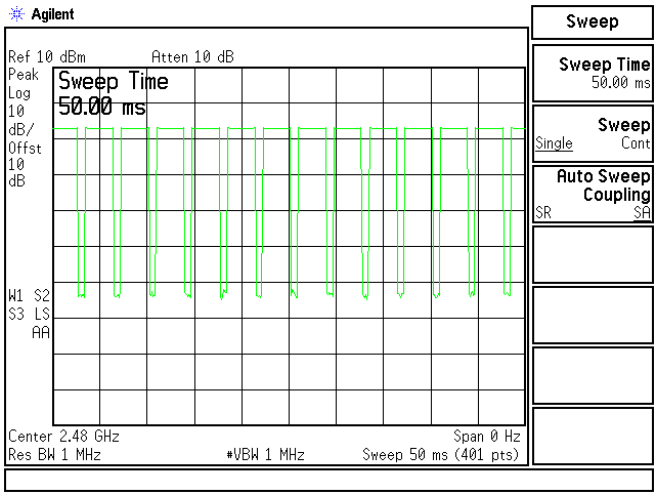
CH 2441MHz Time Interval between hops



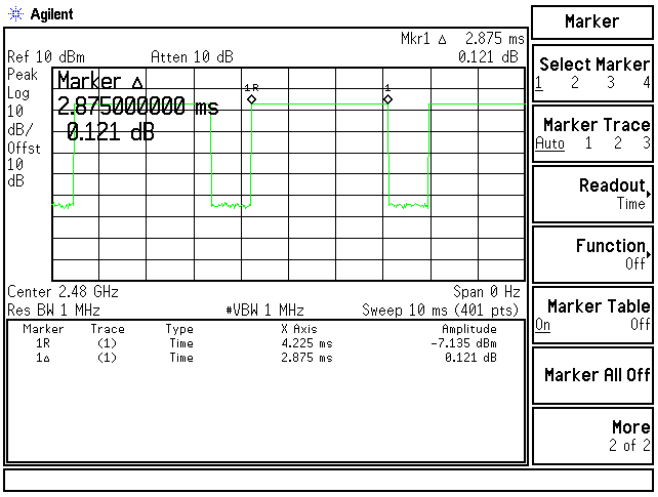
Transmission Time



CH 2480MHz Time Interval between hops



Transmission Time



Note:

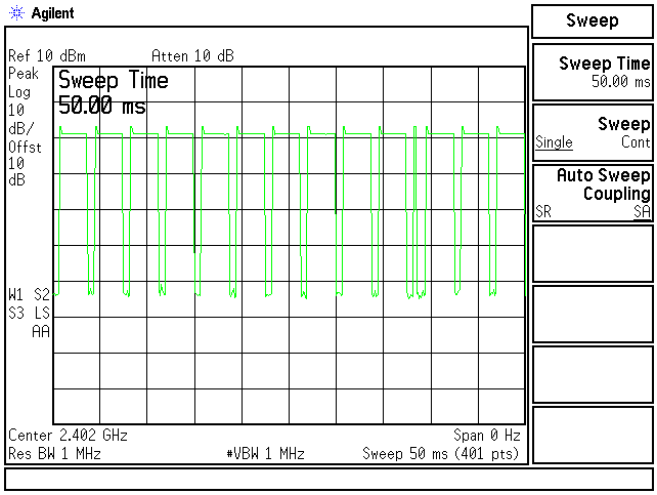
The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

Product : Combo WiFi+Bluetooth 2+1
Test Item : Dwell Time
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)(DH5)

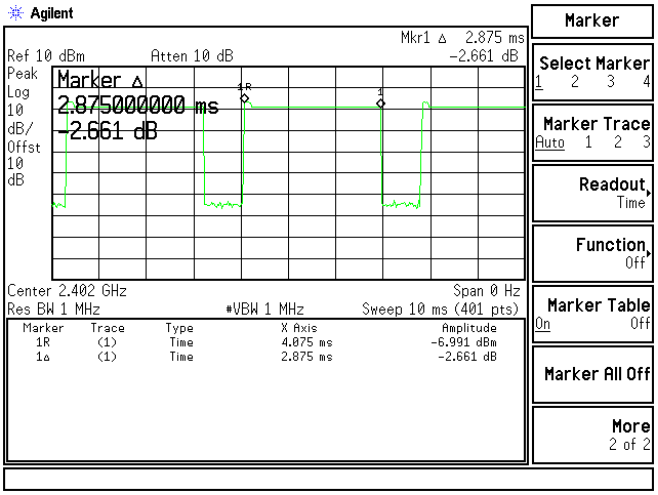
Channel No.	Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
00	2402	2.875	13	50	0.75	0.299	0.4	Pass
39	2441	2.875	13	50	0.75	0.299	0.4	Pass
78	2480	2.875	13	50	0.75	0.299	0.4	Pass

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

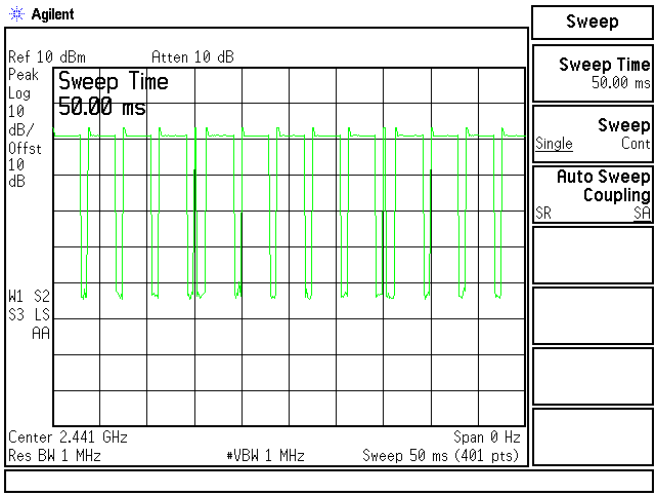
CH 2402MHz Time Interval between hops



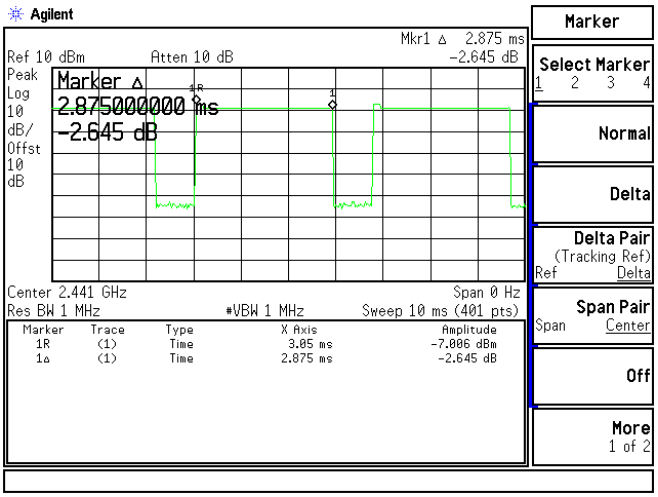
Transmission Time



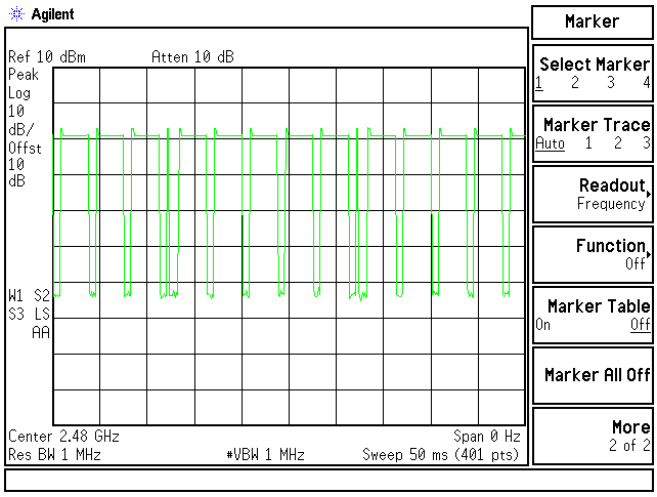
CH 2441MHz Time Interval between hops



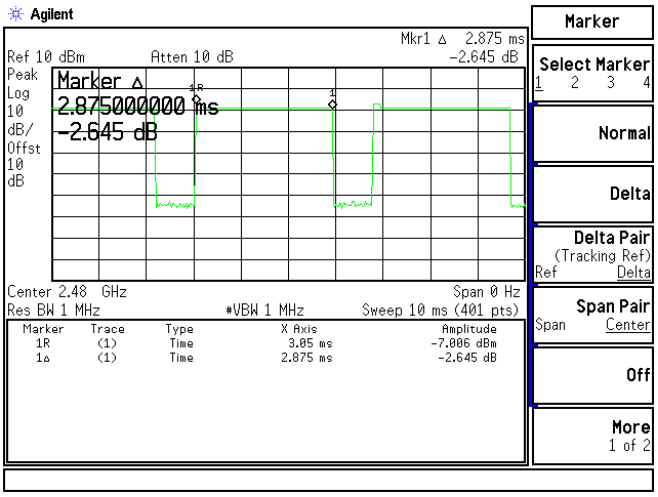
Transmission Time



CH 2480MHz Time Interval between hops



Transmission Time



Note:

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

10. Occupied Bandwidth

10.1. Test Equipment

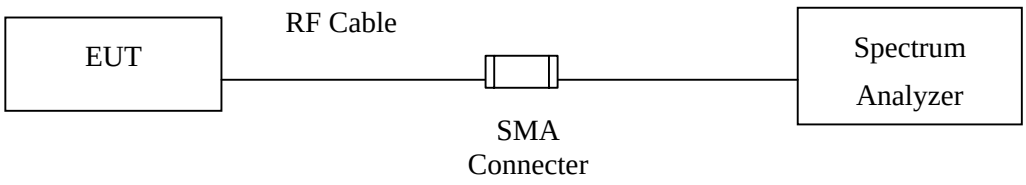
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100339	Jun, 2008
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2008
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

Note: 1. All equipments are calibrated every one year.

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

10.2. Test Setup



10.3. Limits

N/A

10.4. Test Procedure

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

10.5. Uncertainty

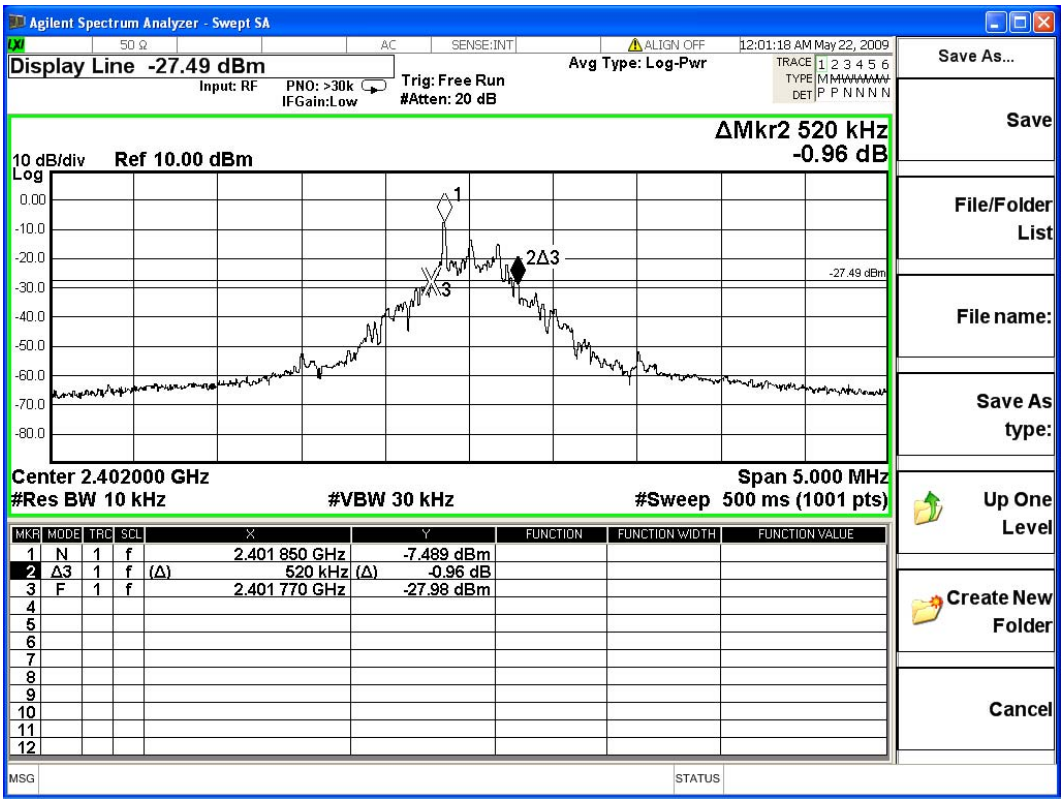
± 150Hz

10.6. Test Result of Occupied Bandwidth

Product : Combo WiFi+Bluetooth 2+1
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	520	--	NA

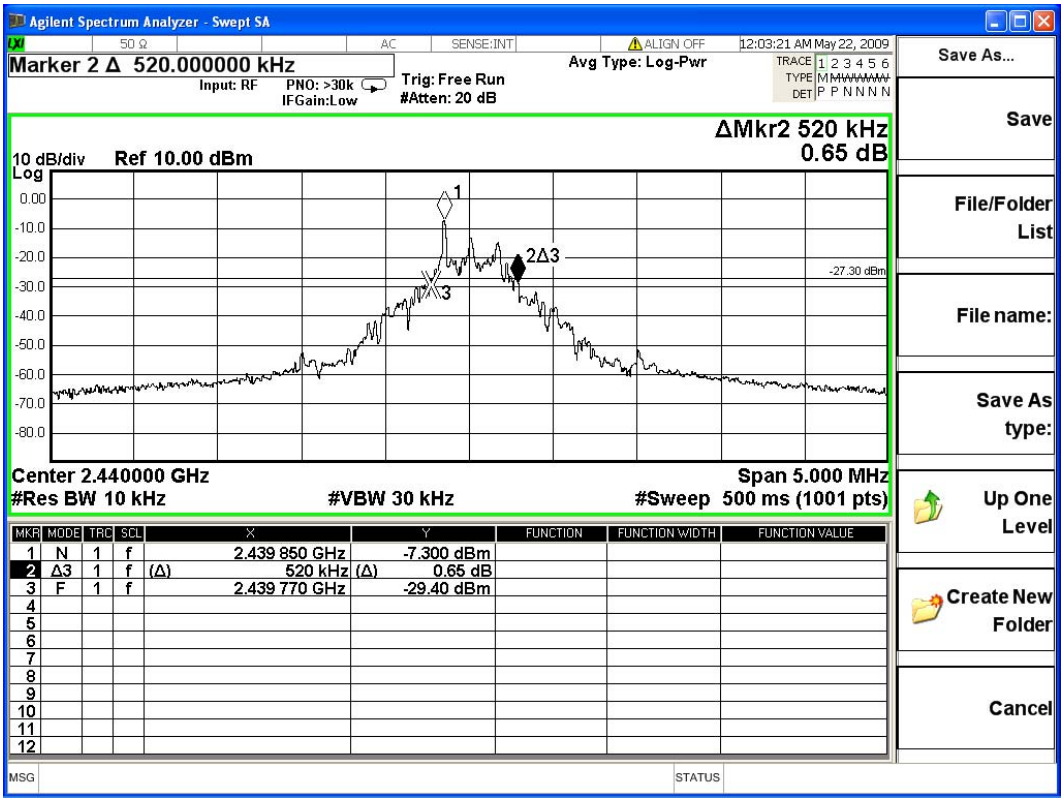
Figure Channel 00:



Product : Combo WiFi+Bluetooth 2+1
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	520	--	NA

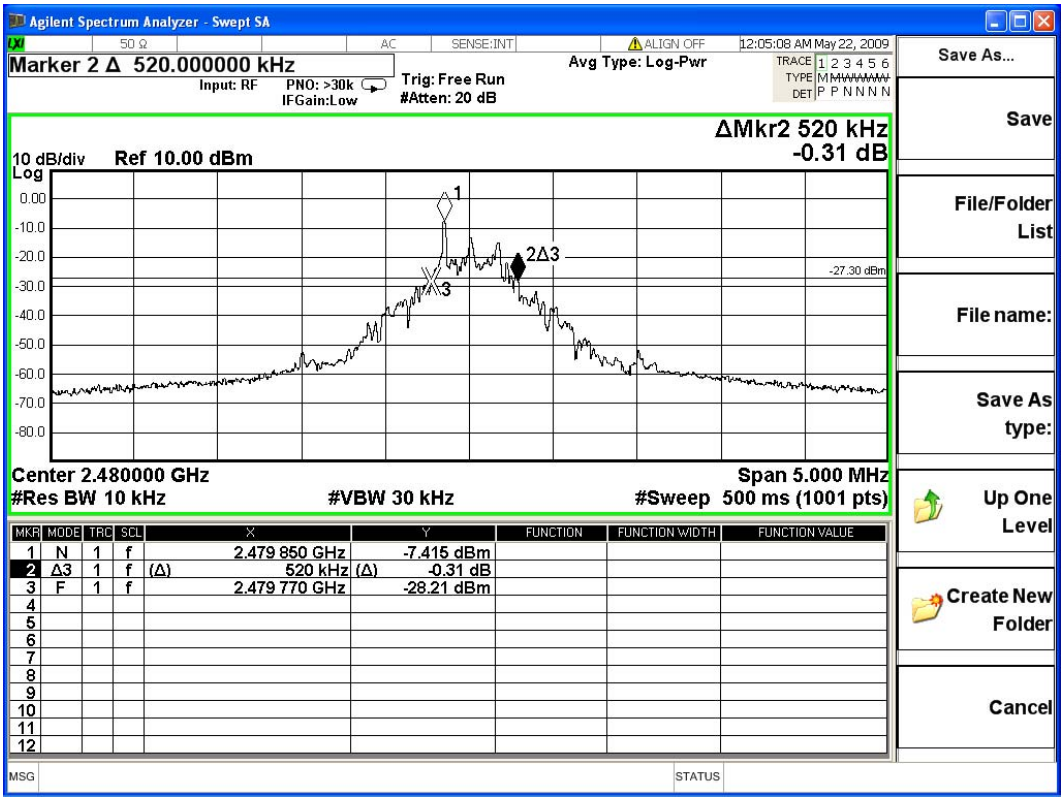
Figure Channel 39:



Product : Combo WiFi+Bluetooth 2+1
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter - 1Mbps (GFSK)(2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	520	--	NA

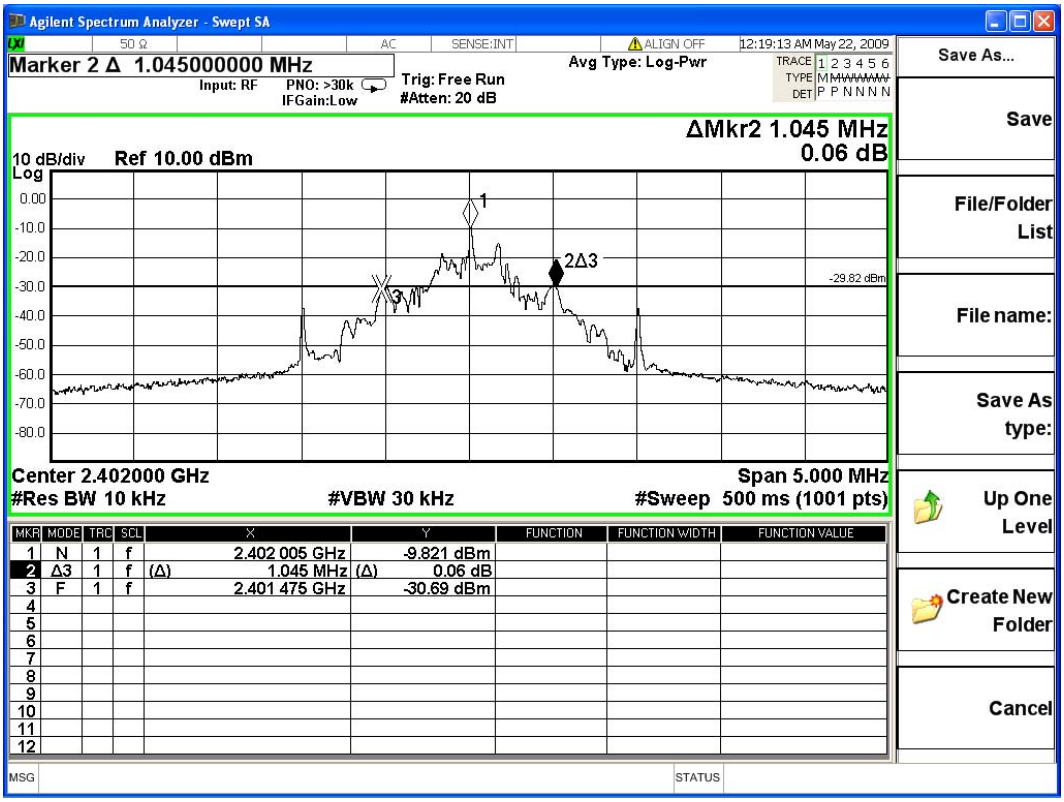
Figure Channel 78:



Product : Combo WiFi+Bluetooth 2+1
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1045	--	NA

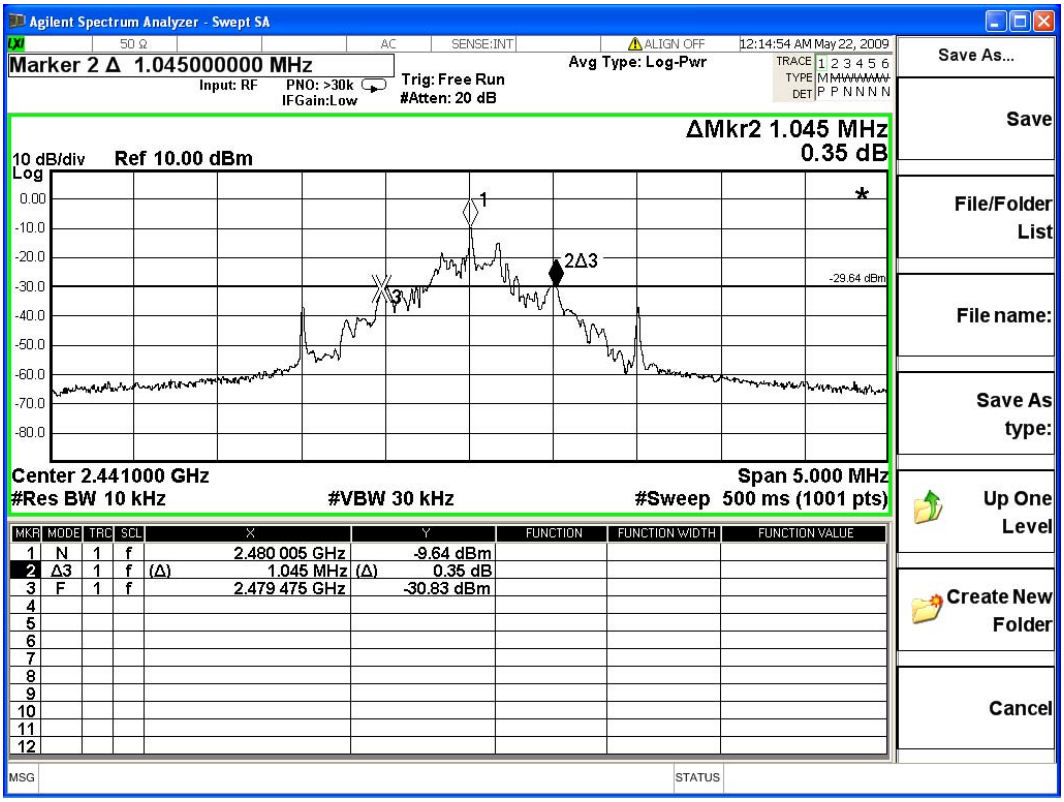
Figure Channel 00:



Product : Combo WiFi+Bluetooth 2+1
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK) (2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2441	1045	--	NA

Figure Channel 39:



Product : Combo WiFi+Bluetooth 2+1
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter - 3Mbps (8DPSK)(2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
78	2480	1045	--	NA

Figure Channel 78:

11. EMI Reduction Method During Compliance Testing

No modification was made during testing.