

Test Report

Product Name : Bluetooth Multi-mode AV Adapter

Model No. : BTAV201

FCC ID : TQ6BTAV201

Applicant : Shanghai Flaircomm Technologies Inc.

Address : No.5, Bibo Road, Keyuan Building 4F, Zhangjiang
Hi-Tech Park, Shanghai 201203 P.R.China

Date of Receipt : 2007/09/10

Issued Date : 2008/01/23

Report No. : 079S037-RF-US-P06V01

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNLA, NVLAP, NIST or any agency of the Government.

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Test Report Certification

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Manufacturer : Shanghai Flaircomm Technologies Inc.

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FCC ID : TQ6BTAV201

Rated Voltage : AC 120 V / 60 Hz

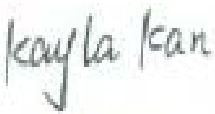
EUT Voltage : DC 3.7V

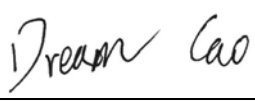
Trade Name : Flaircomm

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2007
ANSI C63.4: 2003

Test Result : Complied

Performed Location : SuZhou EMC laboratory
No.99 Hongye Rd., Suzhou Industrial Park Loufeng
Hi-Tech Development Zone., SuZhou, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392

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Laboratory Information

We , **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	: BSMI, DGT, CNLA
Germany	: TÜV Rheinland
Norway	: Nemko, DNV
USA	: FCC, NVLAP
Japan	: VCCI

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/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com



TABLE OF CONTENTS

Description	Page
1. General Information	6
1.1. EUT Description	6
1.2. Mode of Operation.....	8
1.3. Tested System Details	9
1.4. Configuration of Tested System.....	10
1.5. EUT Exercise Software.....	11
2. Technical Test	12
2.1. Summary of Test Result.....	12
2.2. Test Environment.....	13
3. Conducted Emission	14
3.1. Test Equipment.....	14
3.2. Test Setup	14
3.3. Limit.....	15
3.4. Test Procedure	15
3.5. Uncertainty	15
3.6. Test Result.....	16
3.7. Test Photograph	22
4. Radiated Emission.....	23
4.1. Test Equipment.....	23
4.2. Test Setup	23
4.3. Limit.....	24
4.4. Test Procedure	25
4.5. Uncertainty	25
4.6. Test Result.....	26
4.7. Test Photograph	46
5. Peak Power Output.....	48
5.1. Test Equipment.....	48
5.2. Test Setup	48
5.3. Limit.....	48
5.4. Test Procedure	49
5.5. Uncertainty	49
5.6. Test Result.....	50
6. Occupied Bandwidth	52
6.1. Test Equipment.....	52
6.2. Test Setup	52
6.3. Limit.....	52

6.4.	Test Procedure	53
6.5.	Uncertainty	53
6.6.	Test Result.....	54
7.	Band Edge	56
7.1.	Test Equipment.....	56
7.2.	Test Setup	56
7.3.	Limit.....	57
7.4.	Test Procedure	57
7.5.	Uncertainty	58
7.6.	Test Result.....	59
8.	Channel Number.....	63
8.1.	Test Equipment.....	63
8.2.	Test Setup	63
8.3.	Limit.....	63
8.4.	Test Procedure	64
8.5.	Uncertainty	64
8.6.	Test Result.....	65
9.	Channel Separation	68
9.1.	Test Equipment.....	68
9.2.	Test Setup	68
9.3.	Limit.....	68
9.4.	Test Procedure	69
9.5.	Uncertainty	69
9.6.	Test Result.....	70
10.	Dwell Time	72
10.1.	Test Equipment.....	72
10.2.	Test Setup	72
10.3.	Limit.....	72
10.4.	Test Procedure	73
10.5.	Uncertainty	73
10.6.	Test Result.....	74

1. General Information

1.1. EUT Description

Product Name	Bluetooth Multi-mode AV Adapter
Trade Name	Flaircomm
Model No.	BTAV201
FCC ID	TQ6BTAV201
Working Voltage	DC 3.7V
Frequency Range	2402 - 2480MHz
Channel Number	79
Type of Modulation	Frequency Hopping Spread Spectrum
Data Rate	723 kbps
Channel Control	Auto
Antenna type	Printed on PCB
Antenna Gain	-3.5dBi

Component	
I.T.E. Power Supply	M/N: IPCA-050050V S/N: TC0705000673 Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 5V, 500mA

Bluetooth Working Frequency of Each Channel:

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

1.2. Mode of Operation

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

Test Mode
Mode 1: Transmit

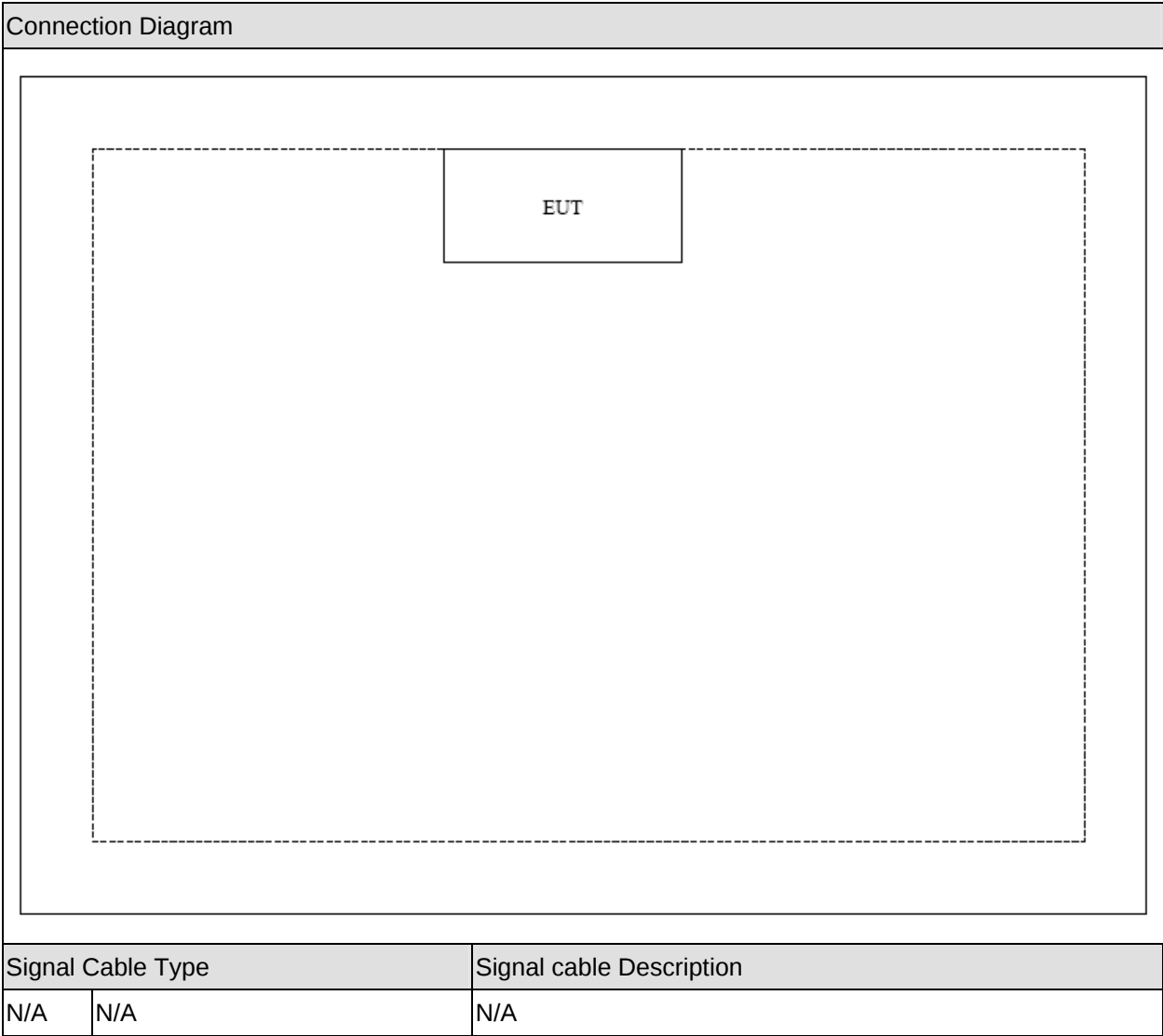
Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

1.3. 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.	Power Cord
N/A	N/A	N/A	N/A	N/A	N/A

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of EUT and then set the EUT working at the continuously transmission mode.
3	Test then respectively.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
- ☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.209	Yes	No
Peak Power Output	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.247(b)(1)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.247(a)(1)	Yes	No
Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.215(c), 15.247(d)	Yes	No
Channel Number	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.247(a)(1)(iii)	Yes	No
Channel Separation	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.247(a)(1)	Yes	No
Dwell Time	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.247(a)(1)(iii)	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

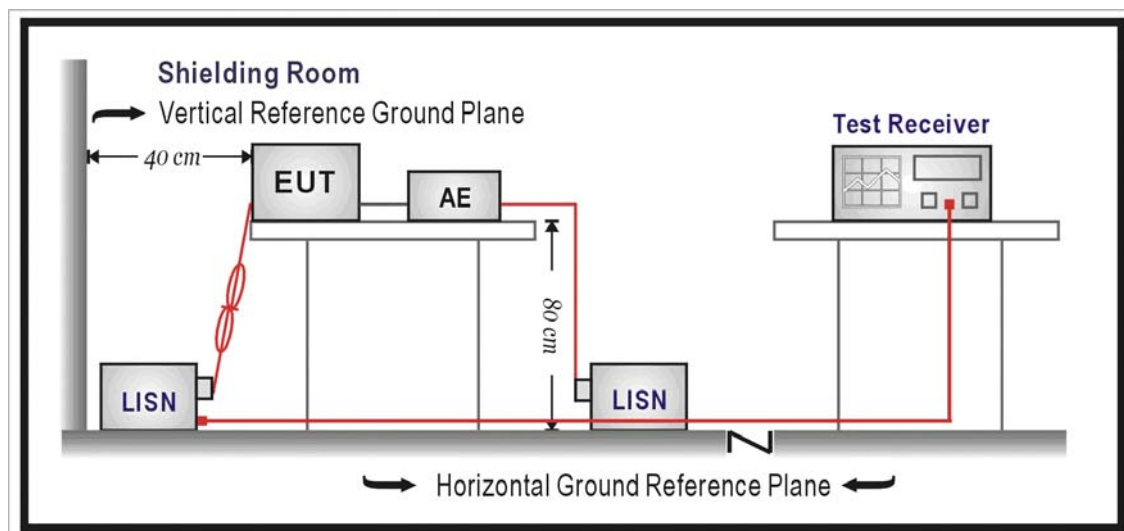
3. Conducted Emission

3.1. Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCI	100176	2007/11/15
Two-Line V-Network	R&S	ENV216	100013	2007/11/15
Two-Line V-Network	R&S	ENV216	100014	2007/11/15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2007/11/25
50ohm Termination	SHX	TF2	07081401	2007/10/19
Coaxial Cable	Luthi	RG214	519358	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH004	2007/03/31

3.2. Test Setup



3.3. Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
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.

3.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.

(Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

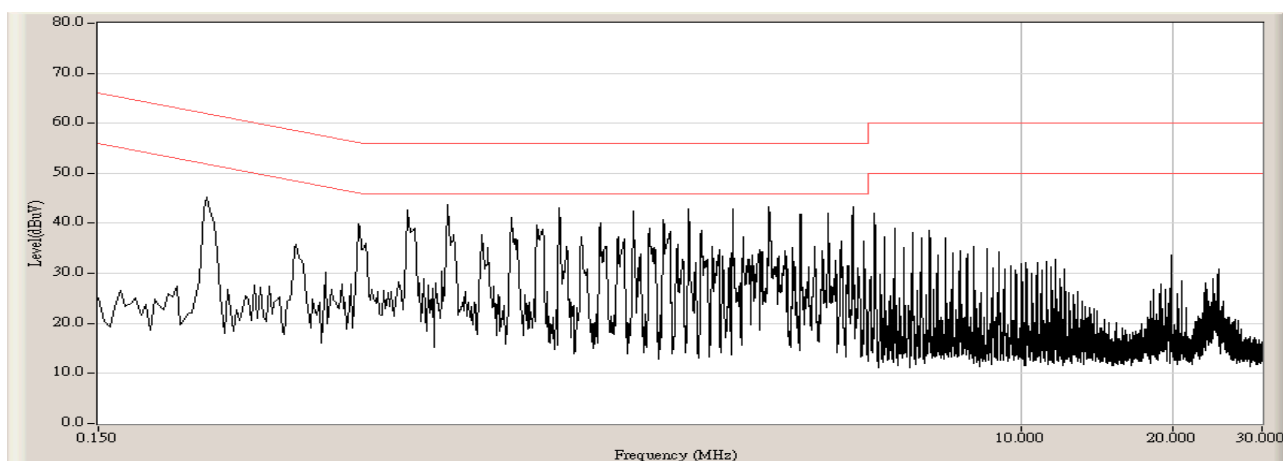
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Uncertainty

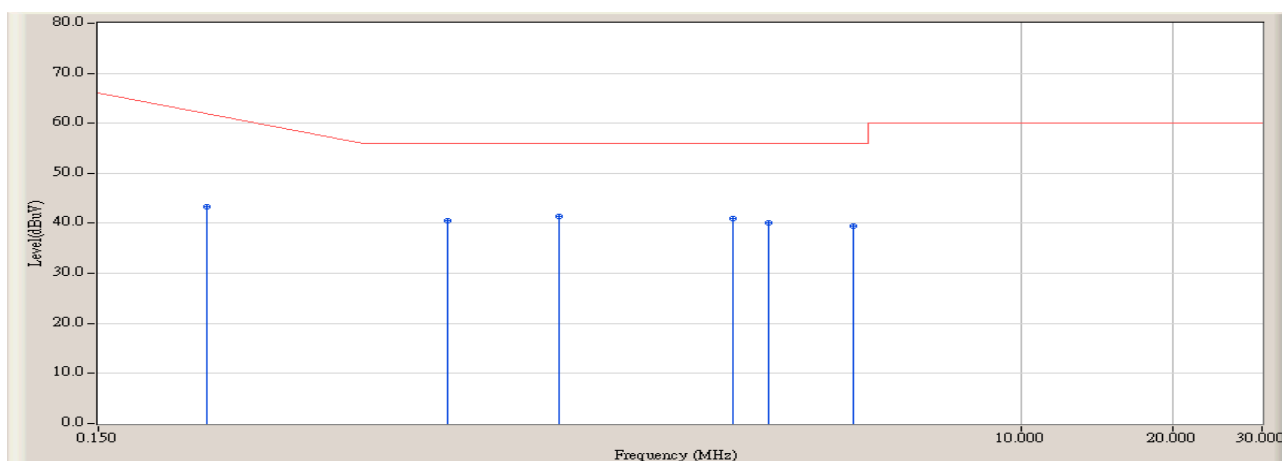
The measurement uncertainty is defined as ± 2.02 dB

3.6. Test Result

Engineer : Marlin	
Site : SR-1 (Conducted Emission)	Time : 2007/09/17 - 22:04
Limit : FCC_Part15.207_B_00M_QP	Margin : 10
EUT : Bluetooth Multi-mode AV Adapter	Probe : ENV216 - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit



Engineer : Marlin	
Site : SR-1 (Conducted Emission)	Time : 2007/09/17 - 22:06
Limit : FCC_Part15.207_B_00M_QP	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : ENV216 - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit

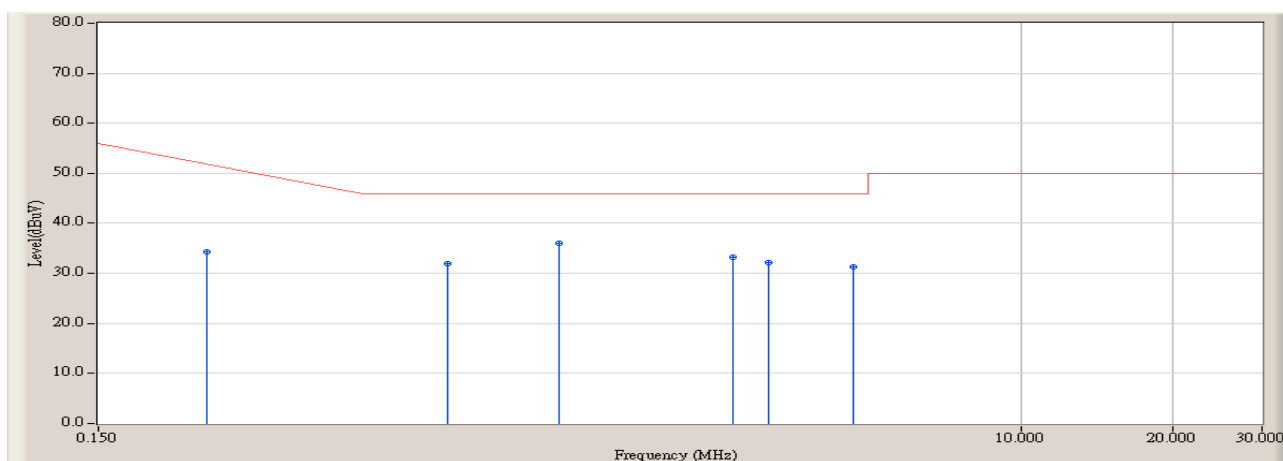


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.246	9.413	34.000	43.413	-19.844	63.257	QUASIPeAK
2		0.738	9.734	30.800	40.534	-15.466	56.000	QUASIPeAK
3	*	1.226	9.697	31.800	41.497	-14.503	56.000	QUASIPeAK
4		2.694	9.831	31.200	41.031	-14.969	56.000	QUASIPeAK
5		3.182	9.821	30.200	40.021	-15.979	56.000	QUASIPeAK
6		4.654	9.776	29.600	39.376	-16.624	56.000	QUASIPeAK

Note:

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

Engineer : Marlin	
Site : SR-1 (Conducted Emission)	Time : 2007/09/17 - 22:06
Limit : FCC_Part15.207_B_00M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : ENV216 - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit

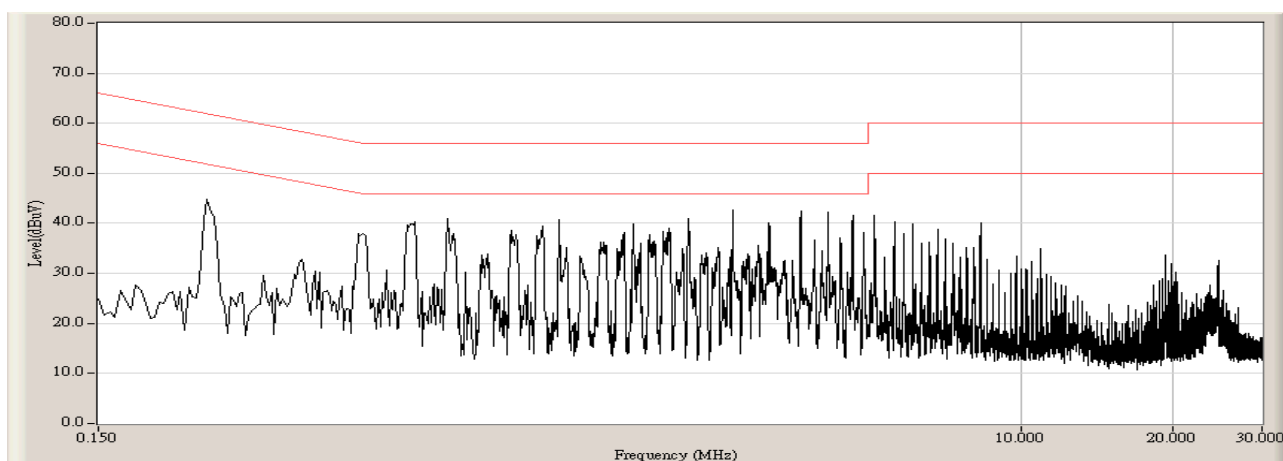


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.246	9.413	24.900	34.313	-18.944	53.257	AVERAGE
2		0.738	9.734	22.200	31.934	-14.066	46.000	AVERAGE
3	*	1.226	9.697	26.300	35.997	-10.003	46.000	AVERAGE
4		2.694	9.831	23.500	33.331	-12.669	46.000	AVERAGE
5		3.182	9.821	22.300	32.121	-13.879	46.000	AVERAGE
6		4.654	9.776	21.500	31.276	-14.724	46.000	AVERAGE

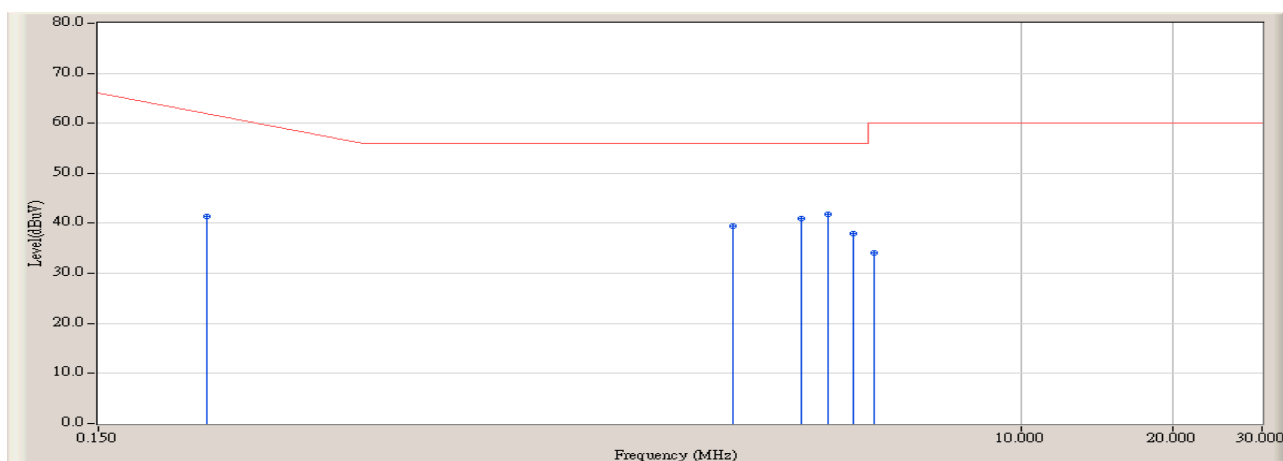
Note:

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

Engineer : Marlin	
Site : SR-1 (Conducted Emission)	Time : 2007/09/17 - 22:08
Limit : FCC_Part15.207_B_00M_QP	Margin : 10
EUT : Bluetooth Multi-mode AV Adapter	Probe : ENV216 - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit



Engineer : Marlin	
Site : SR-1 (Conducted Emission)	Time : 2007/09/17 - 22:09
Limit : FCC_Part15.207_B_00M_QP	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : ENV216 - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit

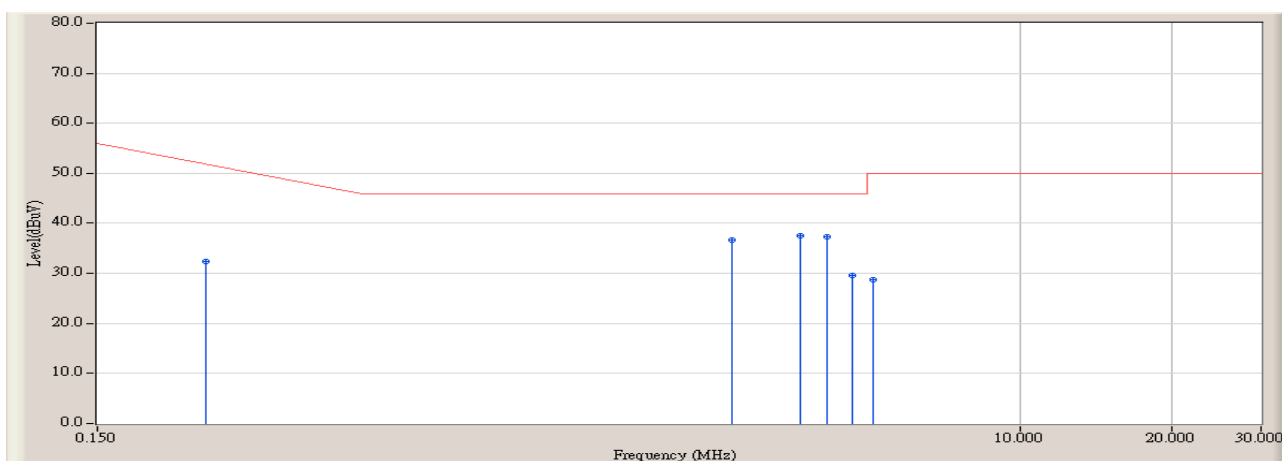


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.246	9.534	31.900	41.434	-21.823	63.257	QUASIPeAK
2		2.694	9.776	29.600	39.376	-16.624	56.000	QUASIPeAK
3		3.674	9.736	31.200	40.936	-15.064	56.000	QUASIPeAK
4	*	4.162	9.721	32.200	41.921	-14.079	56.000	QUASIPeAK
5		4.654	9.706	28.300	38.006	-17.994	56.000	QUASIPeAK
6		5.134	9.690	24.500	34.190	-25.810	60.000	QUASIPeAK

Note:

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

Engineer : Marlin	
Site : SR-1 (Conducted Emission)	Time : 2007/09/17 - 22:09
Limit : FCC_Part15.207_B_00M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : ENV216 - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.246	9.534	22.900	32.434	-20.823	53.257	AVERAGE
2		2.694	9.776	26.900	36.676	-9.324	46.000	AVERAGE
3	*	3.694	9.736	27.800	37.536	-8.464	46.000	AVERAGE
4		4.162	9.721	27.500	37.221	-8.779	46.000	AVERAGE
5		4.654	9.706	19.900	29.606	-16.394	46.000	AVERAGE
6		5.134	9.690	19.000	28.690	-21.310	50.000	AVERAGE

Note:

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

3.7. Test Photograph

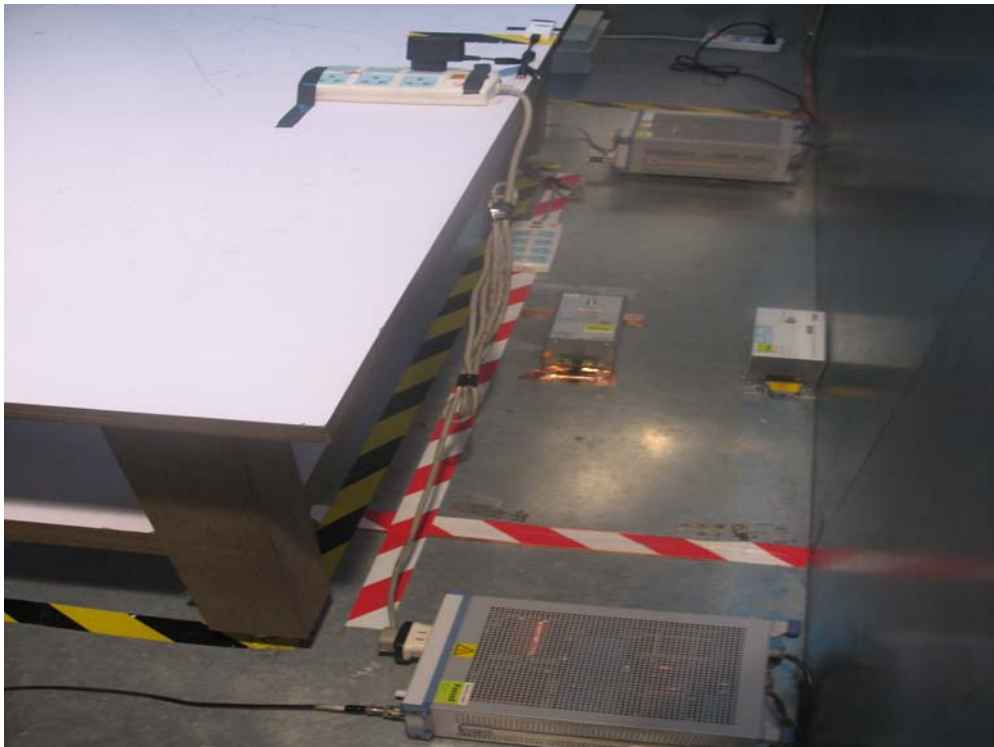
Test Mode: Mode 1: Transmit

Description: Front View of Conducted Test



Test Mode: Mode 1: Transmit

Description: Back View of Conducted Test



4. Radiated Emission

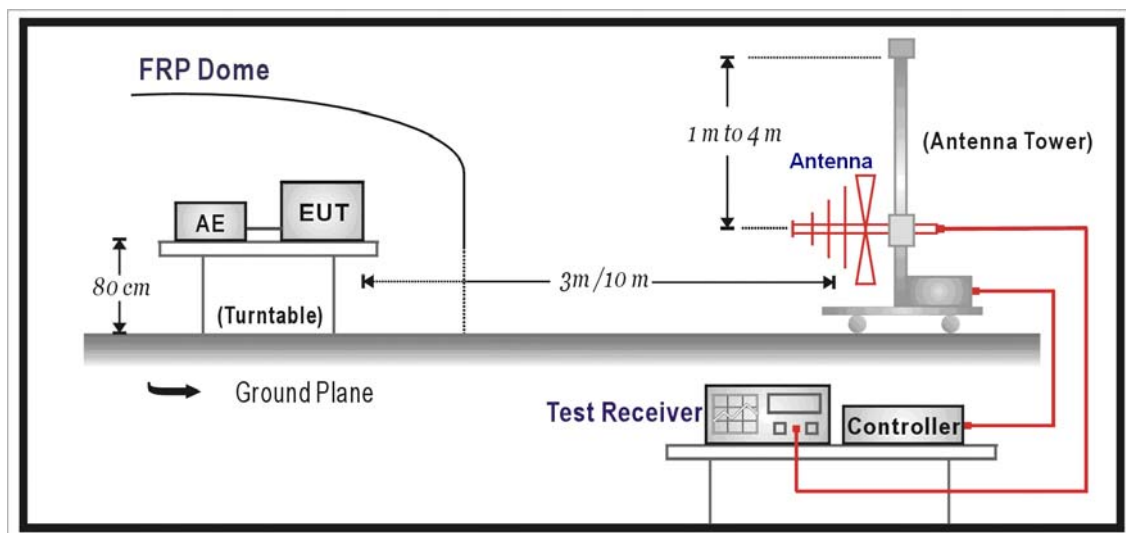
4.1. Test Equipment

Radiated Emission / AC-2

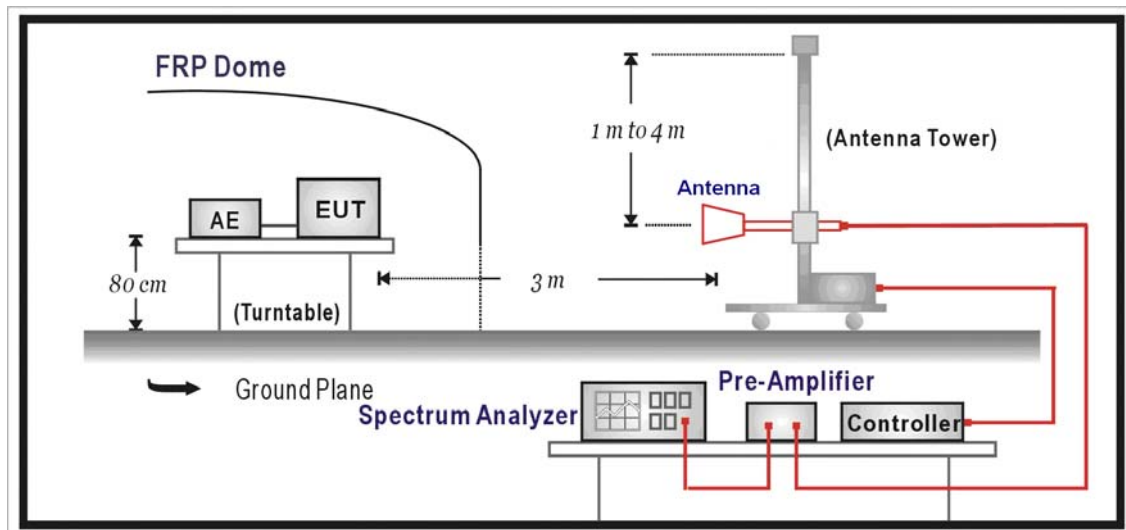
Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2007/11/12
EMI Test Receiver	R&S	ESCI	100573	2007/05/23
Preamplifier	Quietek	AP-025C	QT-AP003	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112B	2932	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2007/11/25
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2007/11/25
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2007/11/25
Coaxial Cable	Huber+Suhner	AC2-C	04	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2007/03/31

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209 Limits (dBuV/m)		
Frequency (MHz)	Distance (m)	dBuV/m
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. $RF \text{ Voltage (dBuV/m)} = 20 \log RF \text{ Voltage (uV/m)}$

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level and 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 on radiated measurement.

The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCI) is 120 kHz and above 1GHz is 1MHz.

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

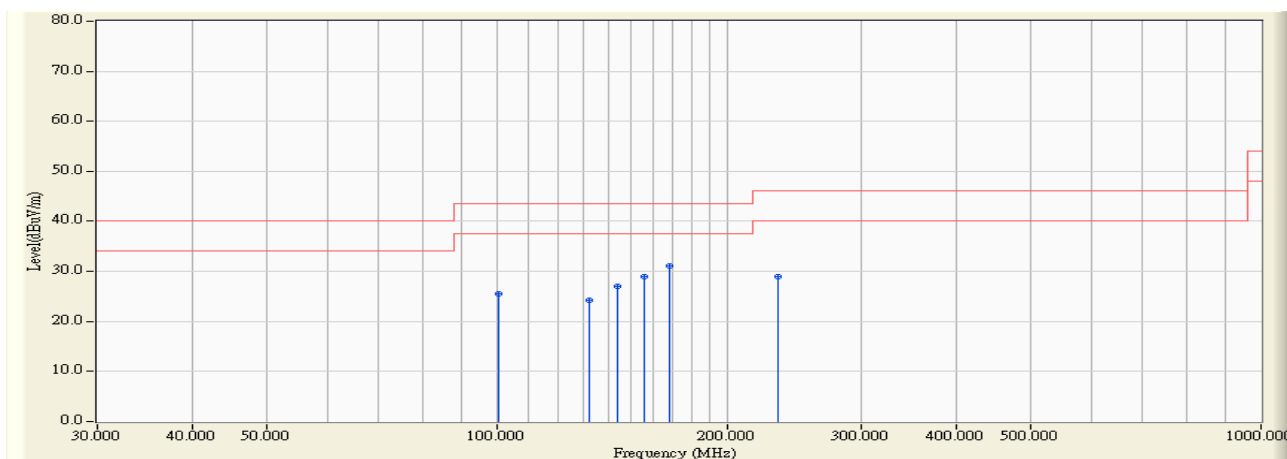
4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

under 1G is defined as ± 3.8 dB

4.6. Test Result

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 16:07
Limit : FCC_SpartC_15.209_03M_QP	Margin : 6
EUT : Bluetooth Multi-mode AV Adapter	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2402MHz)

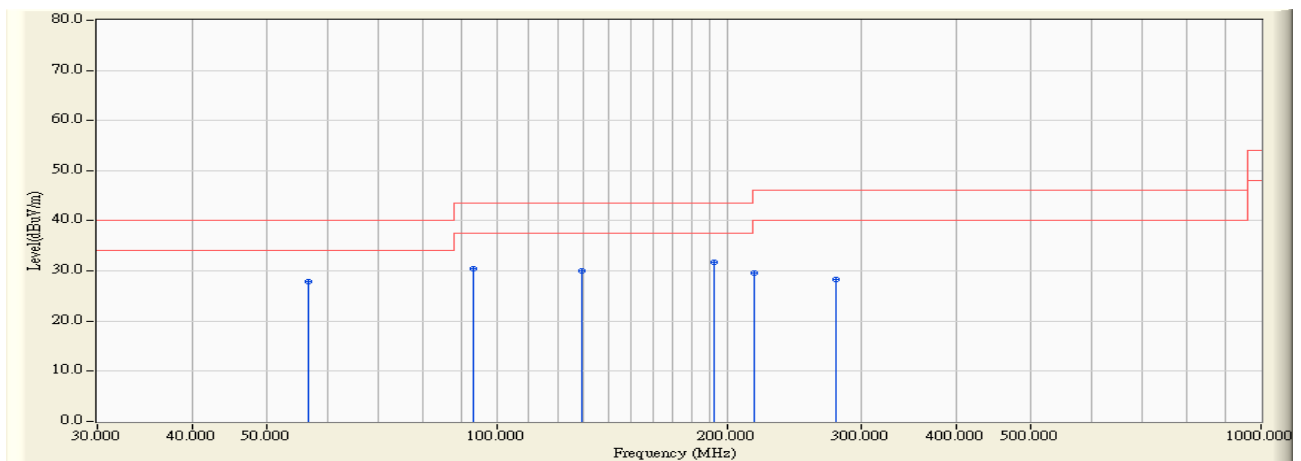


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		100.325	-10.389	35.845	25.456	-18.064	43.520	QUASIPeAK
2		131.850	-9.275	33.502	24.227	-19.293	43.520	QUASIPeAK
3		143.975	-10.027	36.965	26.938	-16.582	43.520	QUASIPeAK
4		156.100	-10.941	39.984	29.043	-14.477	43.520	QUASIPeAK
5	*	168.225	-11.328	42.476	31.148	-12.372	43.520	QUASIPeAK
6		233.700	-10.112	39.060	28.948	-17.072	46.020	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 16:07
Limit : FCC_SpartC_15.209_03M_QP	Margin : 6
EUT : Bluetooth Multi-mode AV Adapter	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2402MHz)

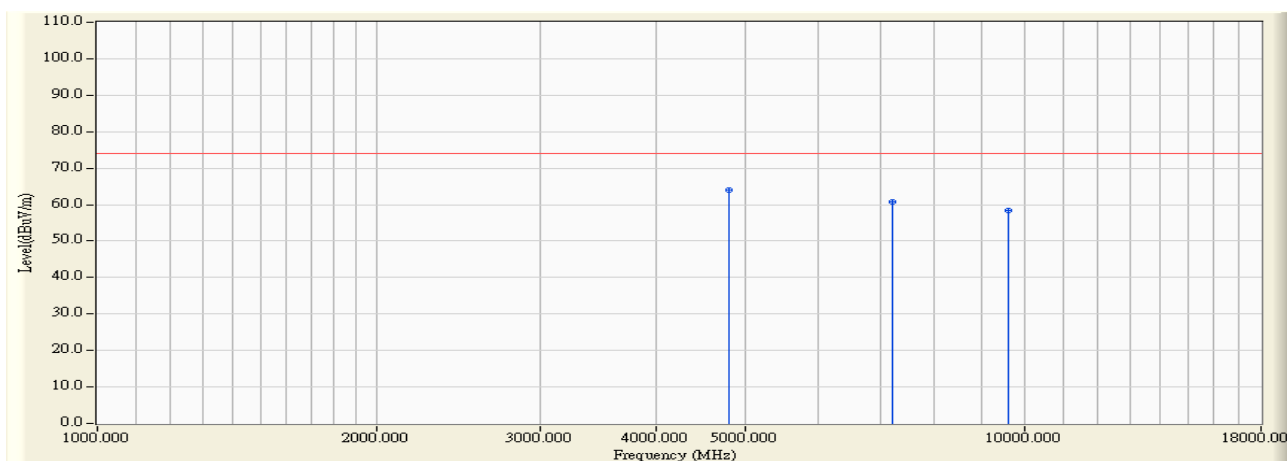


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		56.675	-15.488	43.302	27.814	-12.186	40.000	QUASIPeAK
2		93.050	-11.548	42.001	30.453	-13.067	43.520	QUASIPeAK
3		129.425	-9.133	39.182	30.049	-13.471	43.520	QUASIPeAK
4	*	192.475	-11.907	43.628	31.721	-11.799	43.520	QUASIPeAK
5		216.725	-11.964	41.558	29.594	-16.426	46.020	QUASIPeAK
6		277.350	-7.459	35.876	28.417	-17.603	46.020	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:18
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2402MHz)

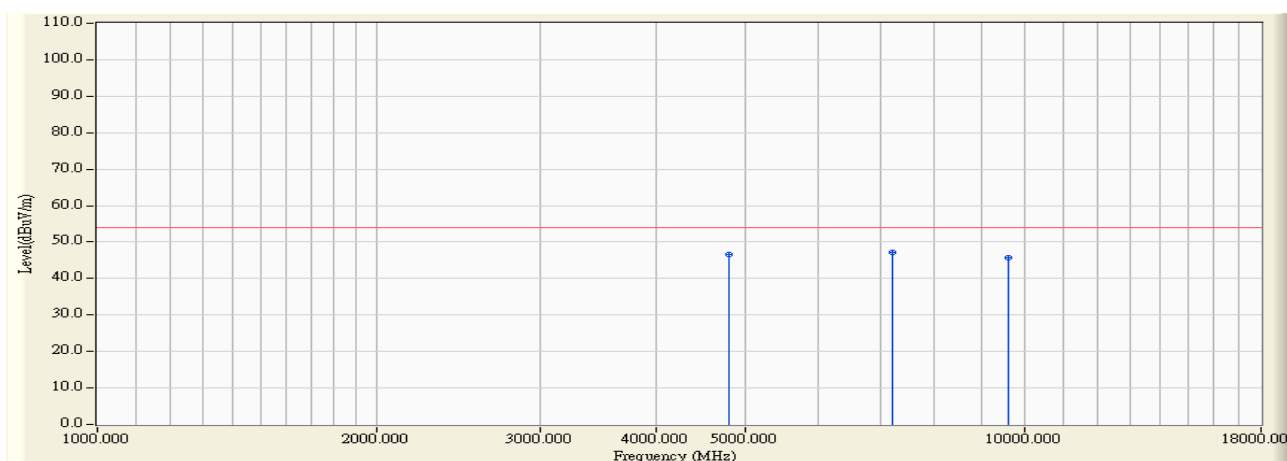


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4804.000	4.849	59.054	63.903	-10.067	73.970	PEAK
2		7206.000	13.859	46.916	60.775	-13.195	73.970	PEAK
3		9608.000	13.888	44.360	58.247	-15.723	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:18
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2402MHz)

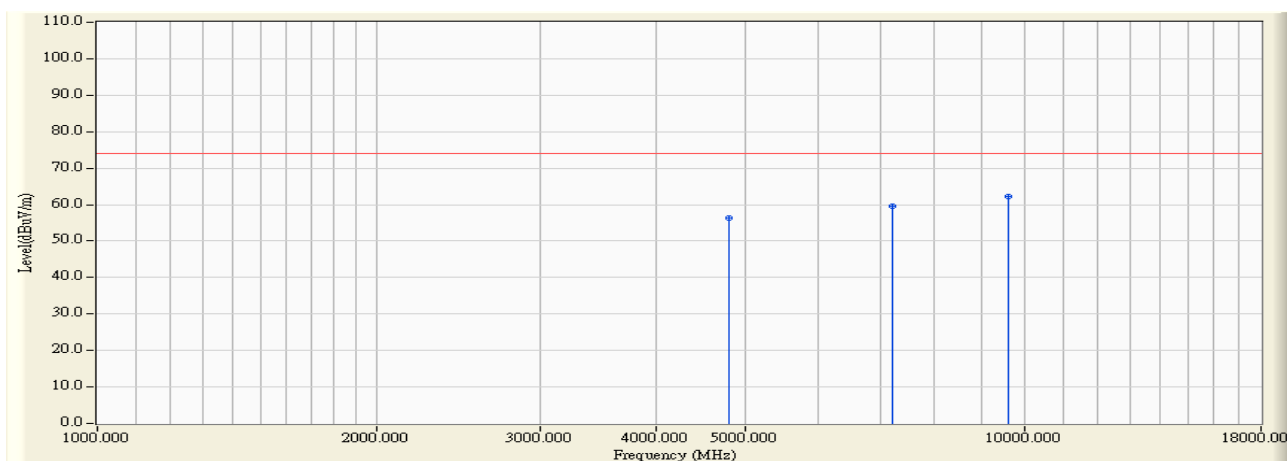


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.000	4.849	41.690	46.539	-7.431	53.970	AVERAGE
2	*	7206.000	13.859	33.200	47.059	-6.911	53.970	AVERAGE
3		9608.000	13.888	31.960	45.847	-8.123	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:14
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2402MHz)

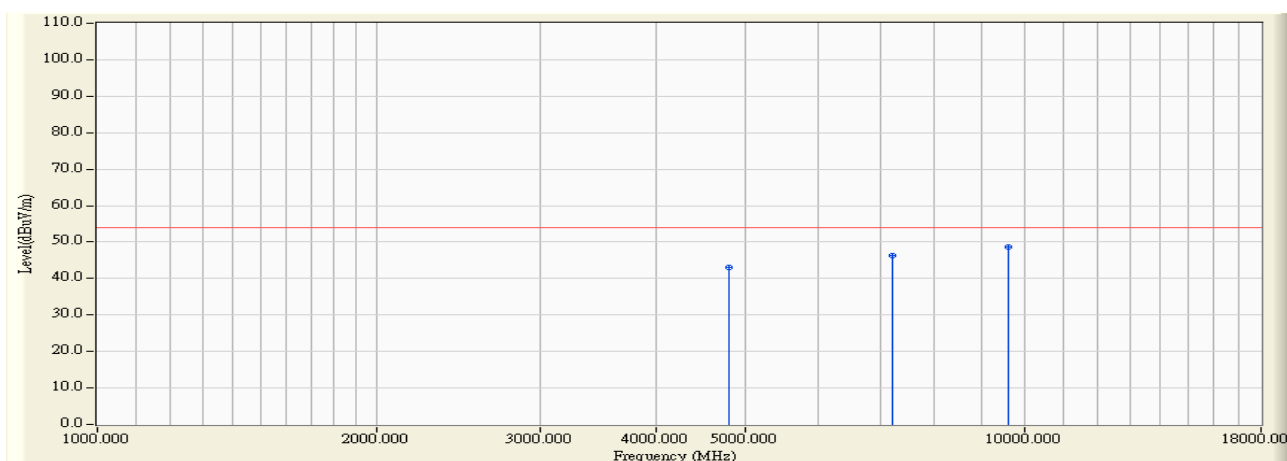


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.000	4.849	51.596	56.445	-17.525	73.970	PEAK
2		7206.000	13.859	45.594	59.453	-14.517	73.970	PEAK
3	*	9608.000	13.888	48.421	62.308	-11.662	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:14
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2402MHz)

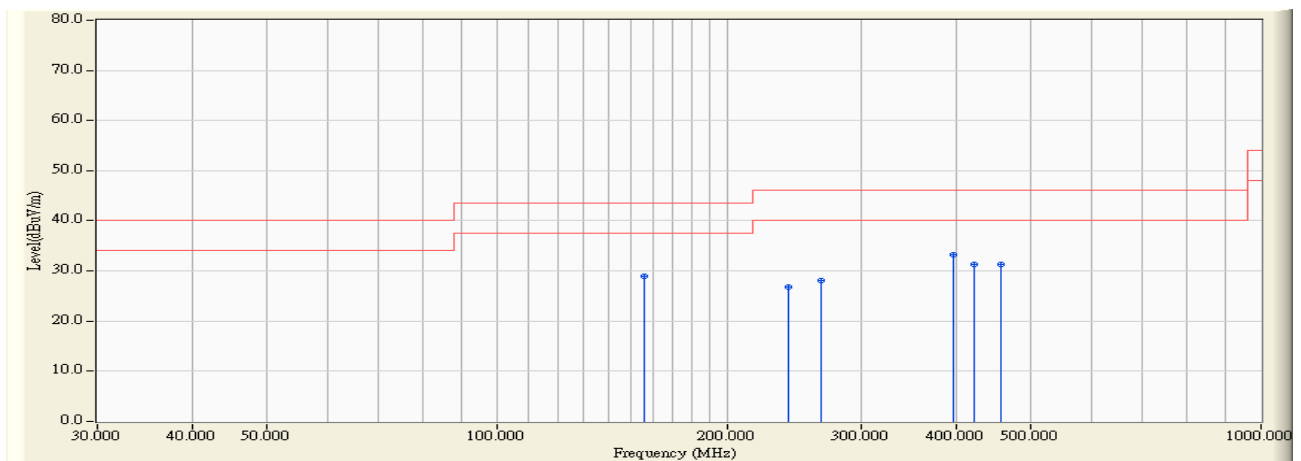


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.000	4.849	38.250	43.099	-10.871	53.970	AVERAGE
2		7206.000	13.859	32.460	46.319	-7.651	53.970	AVERAGE
3	*	9608.000	13.888	34.890	48.777	-5.193	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 16:08
Limit : FCC_SpartC_15.209_03M_QP	Margin : 6
EUT : Bluetooth Multi-mode AV Adapter	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2441MHz)

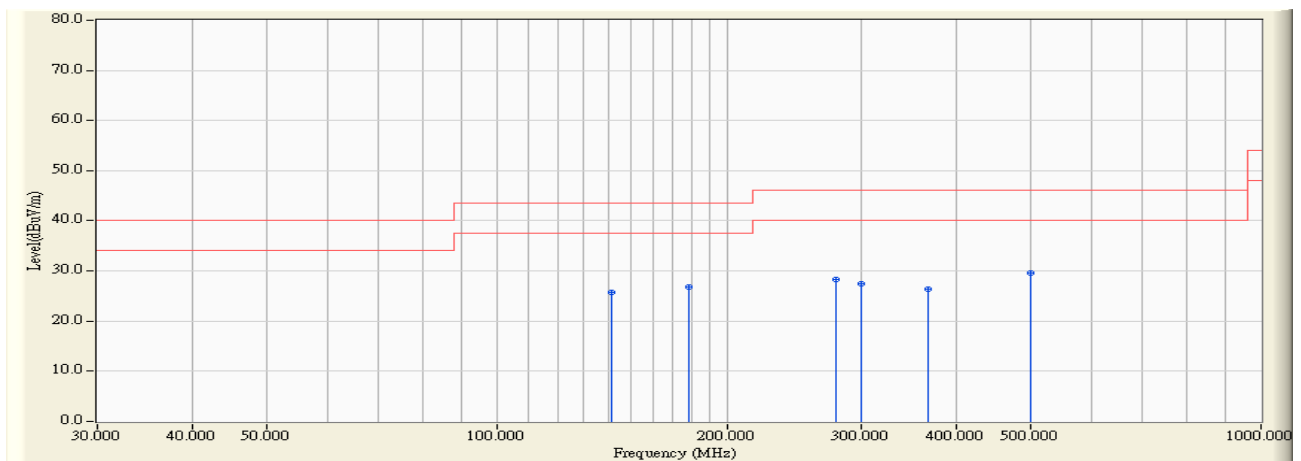


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		156.100	-10.941	39.984	29.043	-14.477	43.520	QUASIPeAK
2		240.975	-9.100	35.960	26.860	-19.160	46.020	QUASIPeAK
3		265.225	-7.159	35.274	28.115	-17.905	46.020	QUASIPeAK
4	*	396.175	-3.647	36.899	33.252	-12.768	46.020	QUASIPeAK
5		420.425	-2.632	33.864	31.232	-14.788	46.020	QUASIPeAK
6		456.800	-2.564	33.932	31.368	-14.652	46.020	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 16:08
Limit : FCC_SpartC_15.209_03M_QP	Margin : 6
EUT : Bluetooth Multi-mode AV Adapter	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2441MHz)

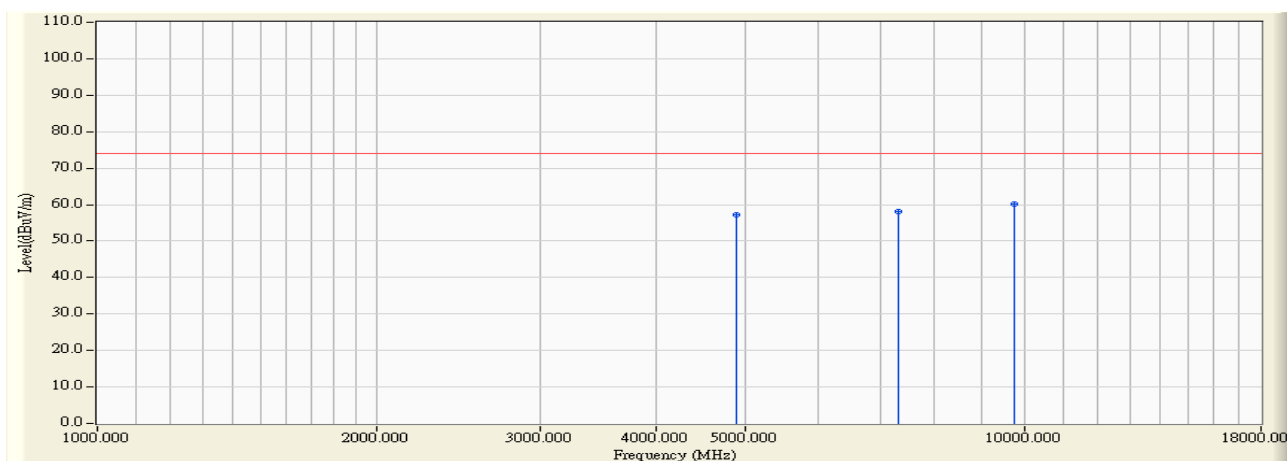


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		141.550	-9.864	35.638	25.774	-17.746	43.520	QUASIPeAK
2		177.925	-12.026	38.868	26.842	-16.678	43.520	QUASIPeAK
3		277.350	-7.459	35.876	28.417	-17.603	46.020	QUASIPeAK
4		299.175	-6.760	34.194	27.434	-18.586	46.020	QUASIPeAK
5		367.075	-4.523	30.915	26.392	-19.628	46.020	QUASIPeAK
6	*	500.450	-1.696	31.376	29.680	-16.340	46.020	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:31
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2441MHz)

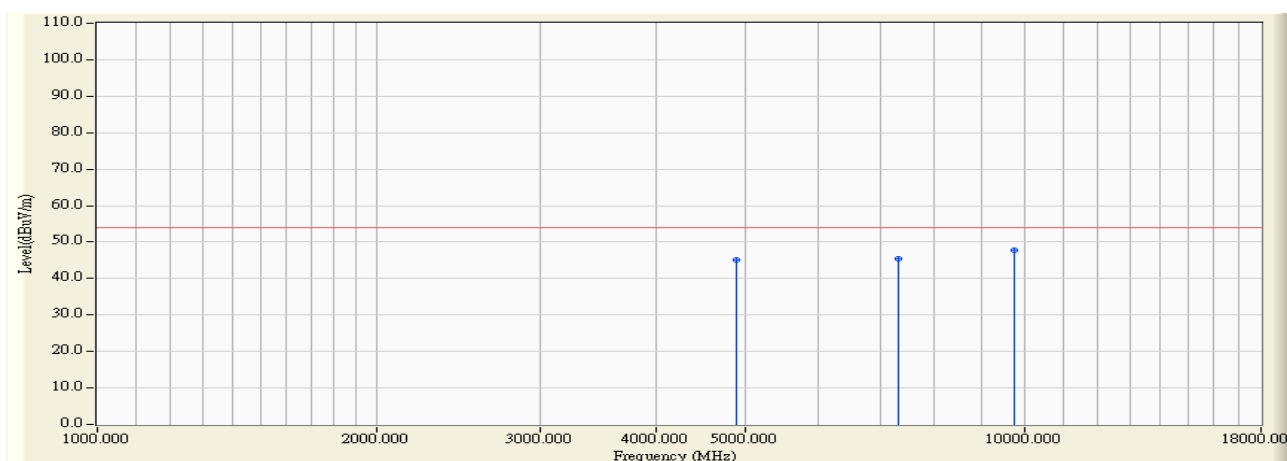


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4882.000	5.580	51.591	57.171	-16.799	73.970	PEAK
2		7323.000	13.622	44.620	58.242	-15.728	73.970	PEAK
3	*	9764.000	15.546	44.520	60.065	-13.905	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:31
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2441MHz)

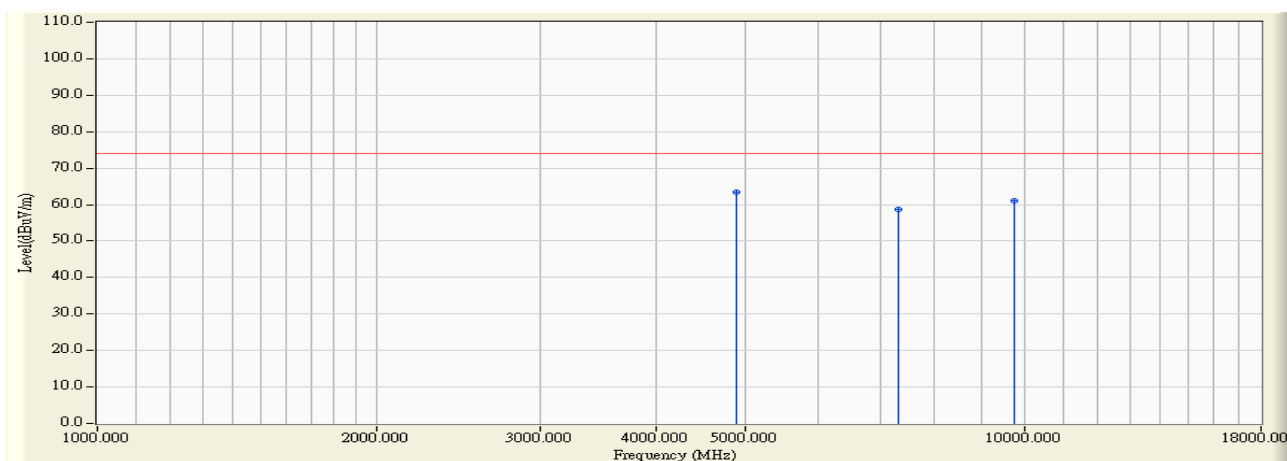


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4882.000	5.580	39.500	45.080	-8.890	53.970	AVERAGE
2		7323.000	13.622	31.900	45.522	-8.448	53.970	AVERAGE
3	*	9764.000	15.546	32.200	47.745	-6.225	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:29
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2441MHz)

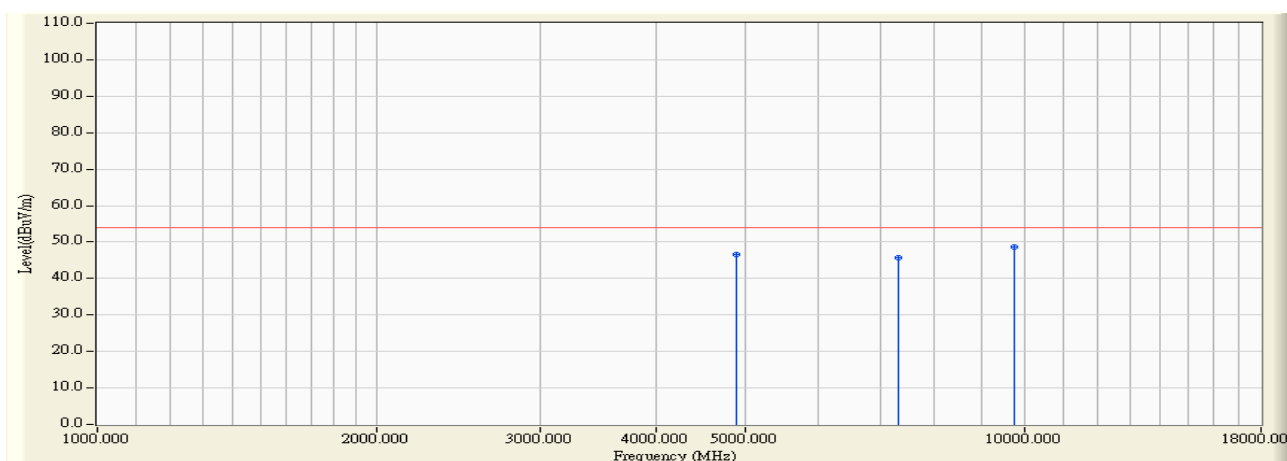


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4882.000	5.580	57.762	63.342	-10.628	73.970	PEAK
2		7323.000	13.622	44.924	58.546	-15.424	73.970	PEAK
3		9764.000	15.546	45.360	60.905	-13.065	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:29
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2441MHz)

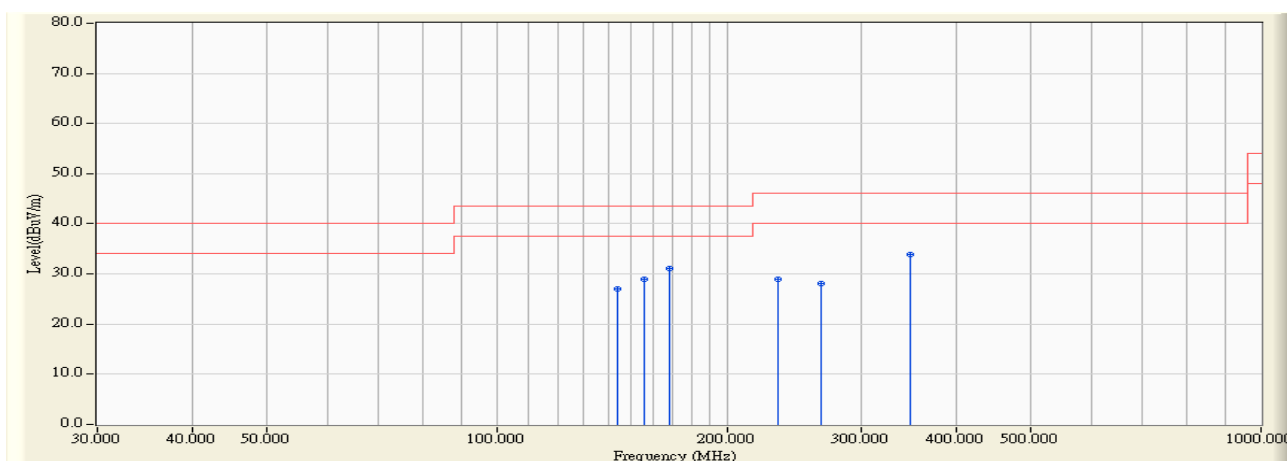


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4882.000	5.580	41.060	46.640	-7.330	53.970	AVERAGE
2		7323.000	13.622	32.200	45.822	-8.148	53.970	AVERAGE
3	*	9764.000	15.546	33.100	48.645	-5.325	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 16:11
Limit : FCC_SpartC_15.209_03M_QP	Margin : 6
EUT : Bluetooth Multi-mode AV Adapter	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2480MHz)

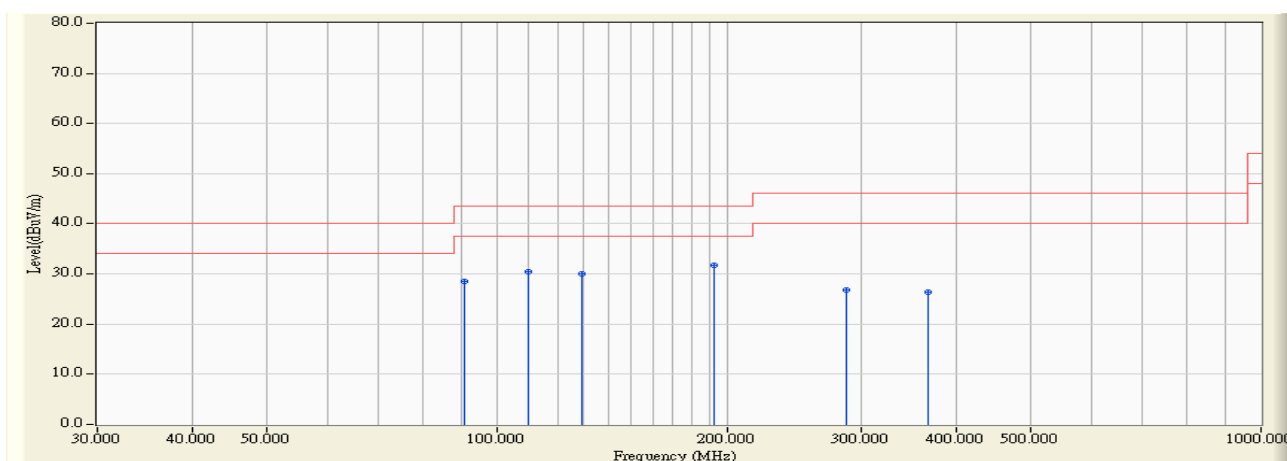


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		143.975	-10.027	36.965	26.938	-16.582	43.520	QUASIPeAK
2		156.100	-10.941	39.984	29.043	-14.477	43.520	QUASIPeAK
3		168.225	-11.328	42.476	31.148	-12.372	43.520	QUASIPeAK
4		233.700	-10.112	39.060	28.948	-17.072	46.020	QUASIPeAK
5		265.225	-7.159	35.274	28.115	-17.905	46.020	QUASIPeAK
6	*	347.675	-5.164	39.069	33.905	-12.115	46.020	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 16:11
Limit : FCC_SpartC_15.209_03M_QP	Margin : 6
EUT : Bluetooth Multi-mode AV Adapter	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2480MHz)

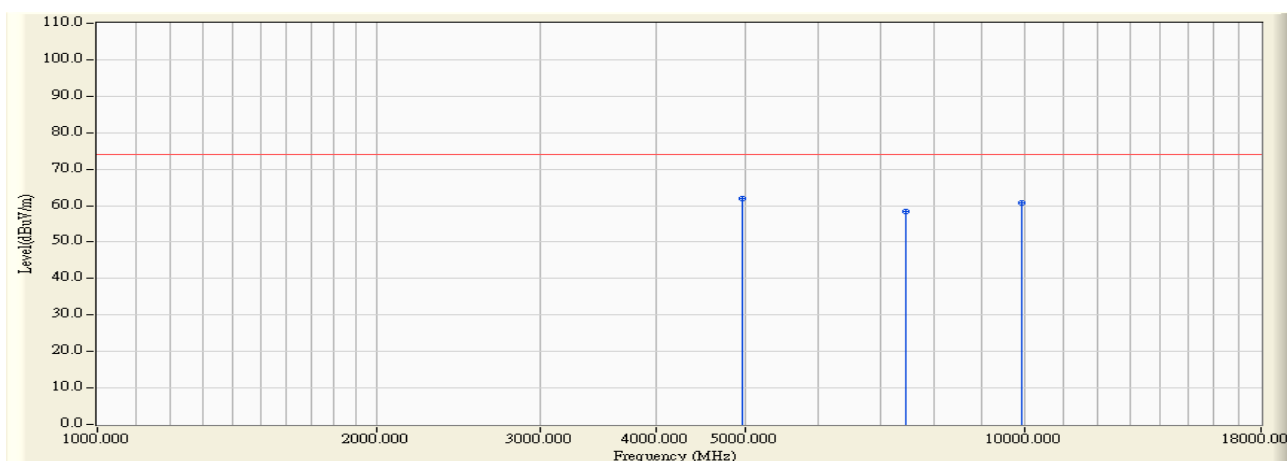


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		90.625	-12.078	40.625	28.547	-14.973	43.520	QUASIPeAK
2		110.025	-9.540	40.076	30.536	-12.984	43.520	QUASIPeAK
3		129.425	-9.133	39.182	30.049	-13.471	43.520	QUASIPeAK
4	*	192.475	-11.907	43.628	31.721	-11.799	43.520	QUASIPeAK
5		287.050	-7.161	33.938	26.777	-19.243	46.020	QUASIPeAK
6		367.075	-4.523	30.915	26.392	-19.628	46.020	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:42
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2480MHz)

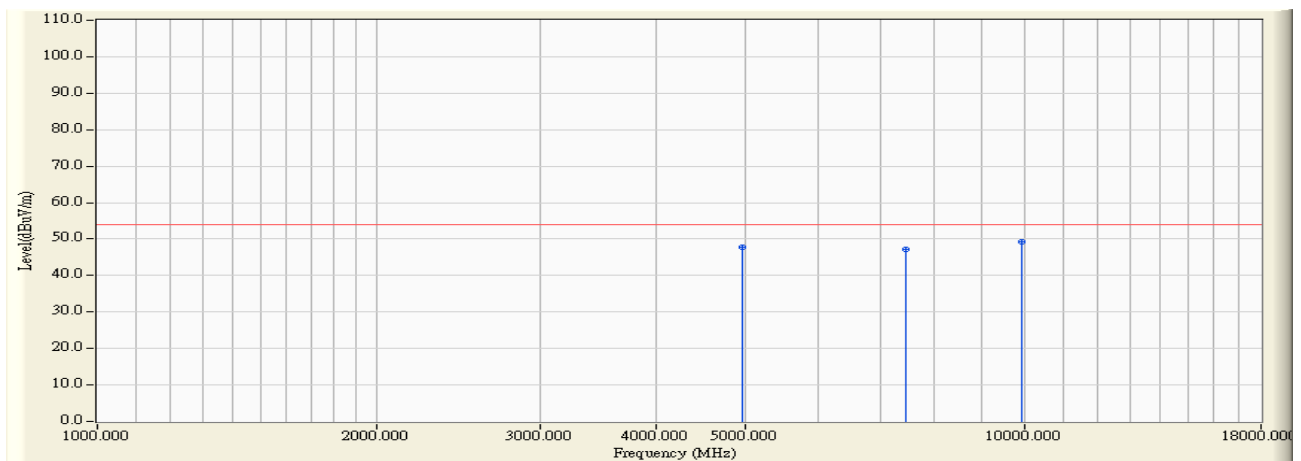


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4960.000	6.075	55.714	61.789	-12.181	73.970	PEAK
2		7440.000	13.925	44.319	58.244	-15.726	73.970	PEAK
3		9920.000	17.026	43.695	60.721	-13.249	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:42
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2480MHz)

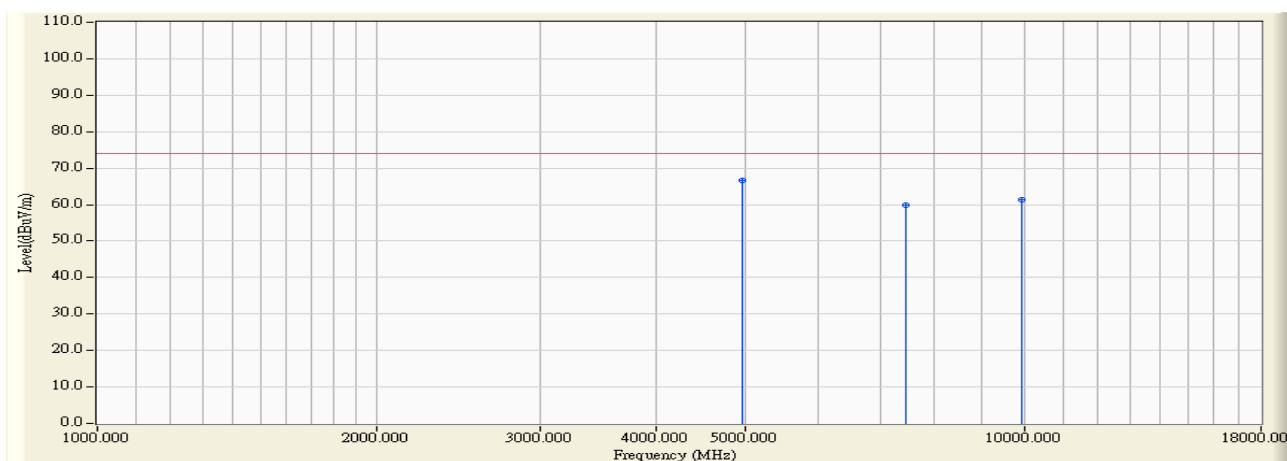


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4960.000	6.075	41.620	47.695	-6.275	53.970	AVERAGE
2		7440.000	13.925	33.210	47.135	-6.835	53.970	AVERAGE
3	*	9920.000	17.026	32.120	49.146	-4.824	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:40
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2480MHz)

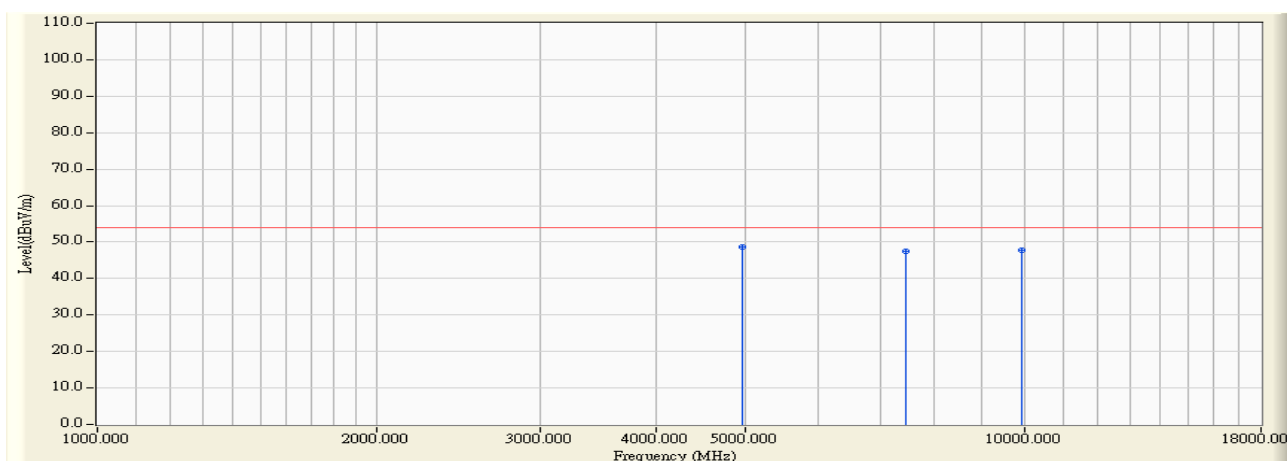


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4960.000	6.075	60.602	66.677	-7.293	73.970	PEAK
2		7440.000	13.925	46.038	59.963	-14.007	73.970	PEAK
3		9920.000	17.026	44.230	61.256	-12.714	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Marlin	
Site : AC-2 (Radiated Emission)	Time : 2007/09/18 - 15:40
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : Bluetooth Multi-mode AV Adapter	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : DC 3.7V	Note : Mode 1: Transmit (Channel: 2480MHz)

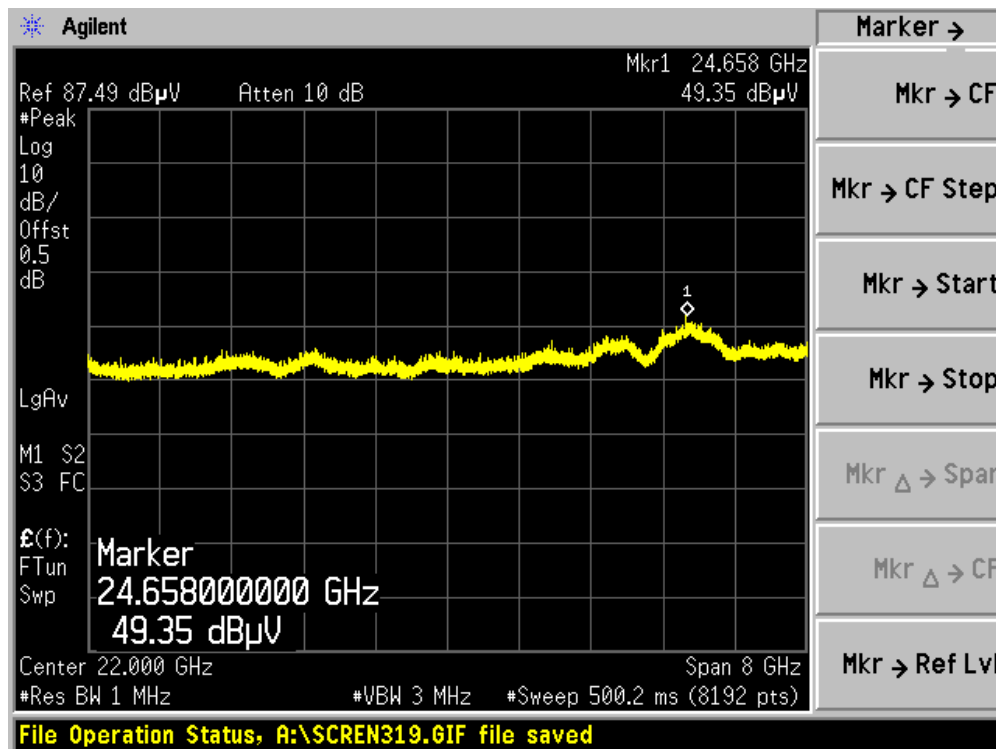


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4960.000	6.075	42.500	48.575	-5.395	53.970	AVERAGE
2		7440.000	13.925	33.600	47.525	-6.445	53.970	AVERAGE
3		9920.000	17.026	30.860	47.886	-6.084	53.970	AVERAGE

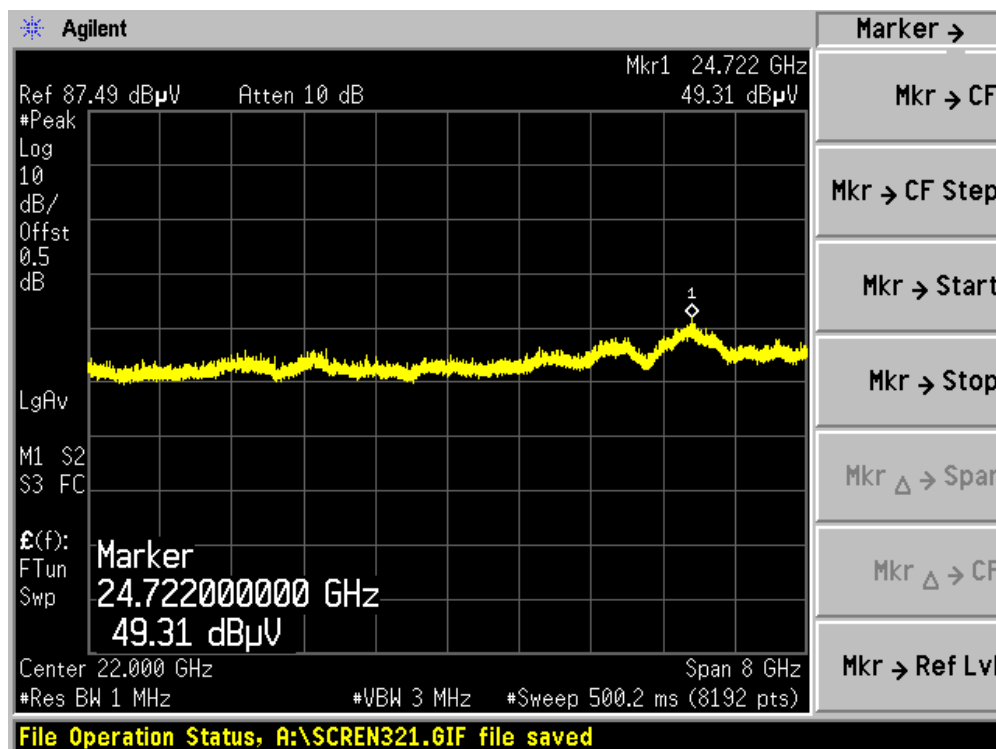
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

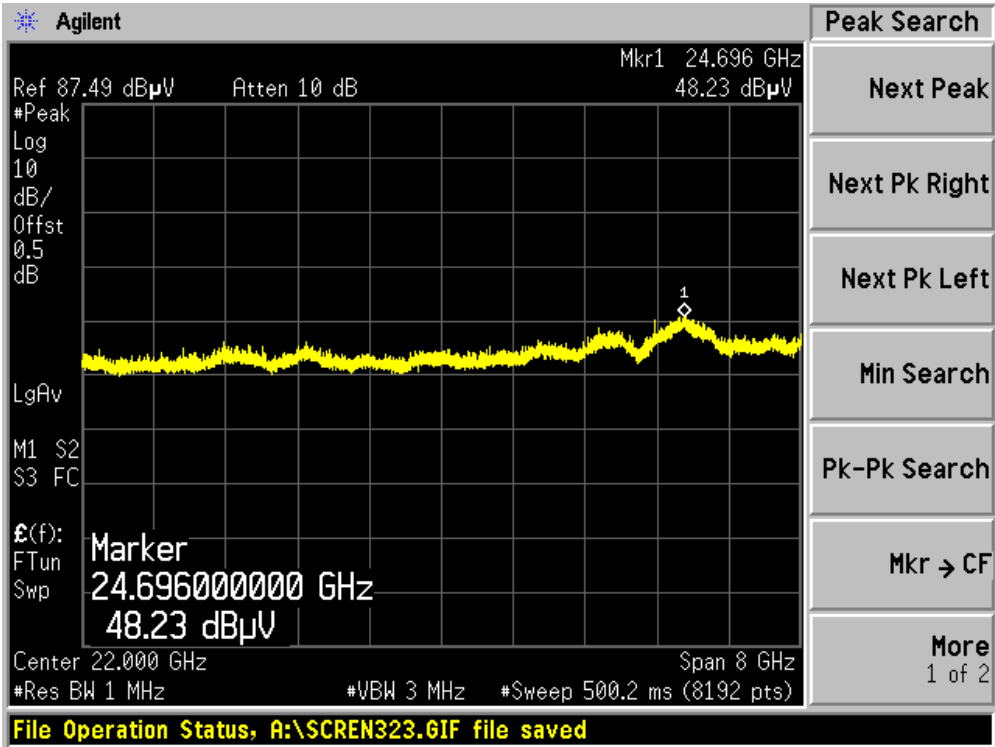
Conducted Spurious - Channel 00 (2402MHz)



Conducted Spurious - Channel 39 (2441MHz)



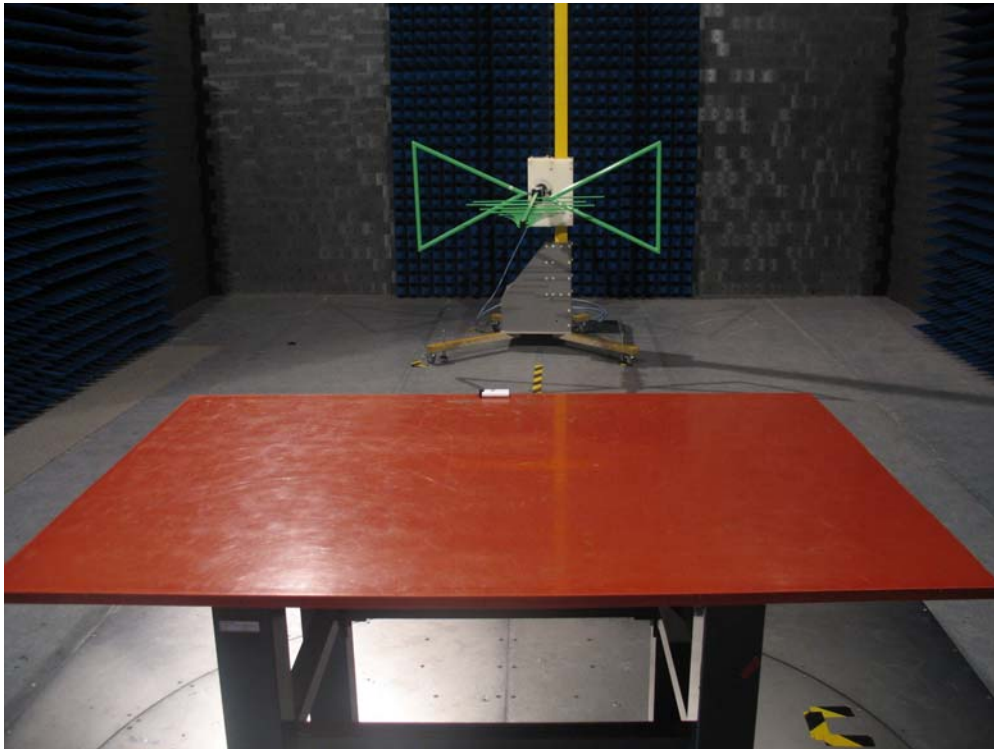
Conducted Spurious - Channel 78 (2480MHz)



4.7. Test Photograph

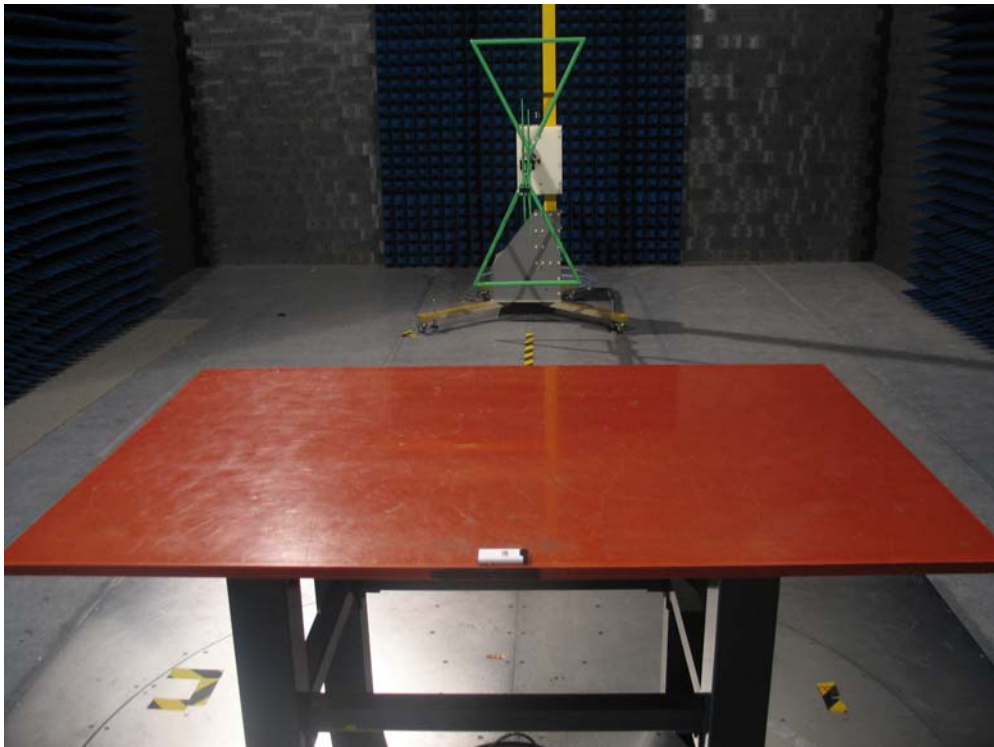
Test Mode: Mode 1: Transmit

Description: Front View of Radiated Test for Under 1GHz



Test Mode: Mode 1: Transmit

Description: Back View of Radiated Test for Under 1GHz



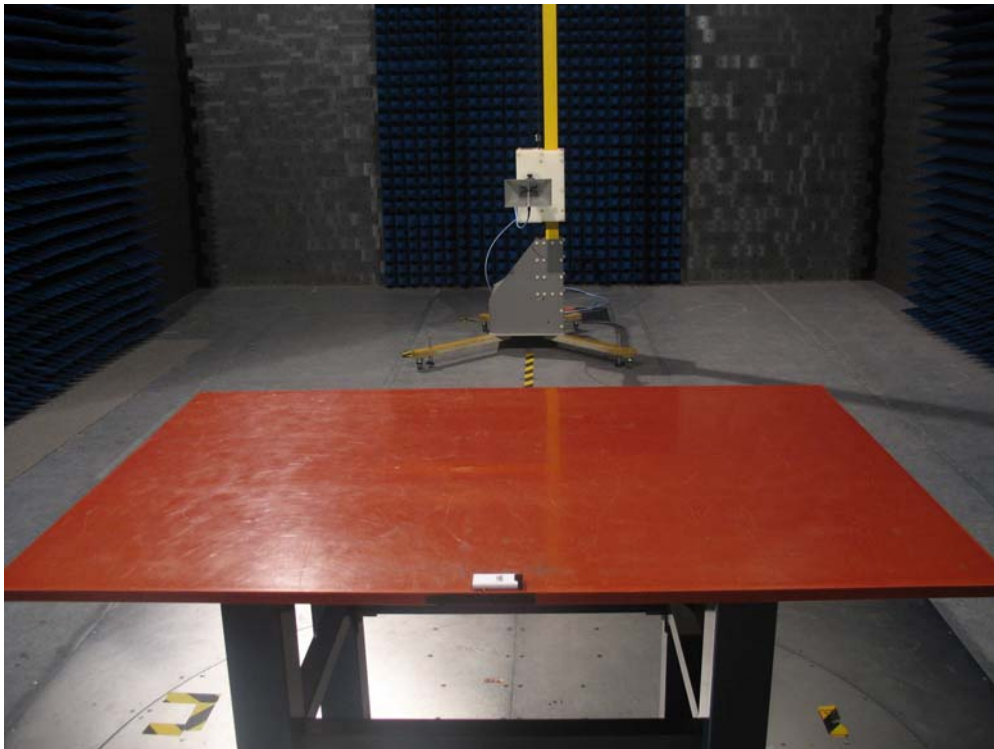
Test Mode: Mode 1: Transmit

Description: Front View of Radiated Test for Above 1GHz



Test Mode: Mode 1: Transmit

Description: Back View of Radiated Test for Above 1GHz



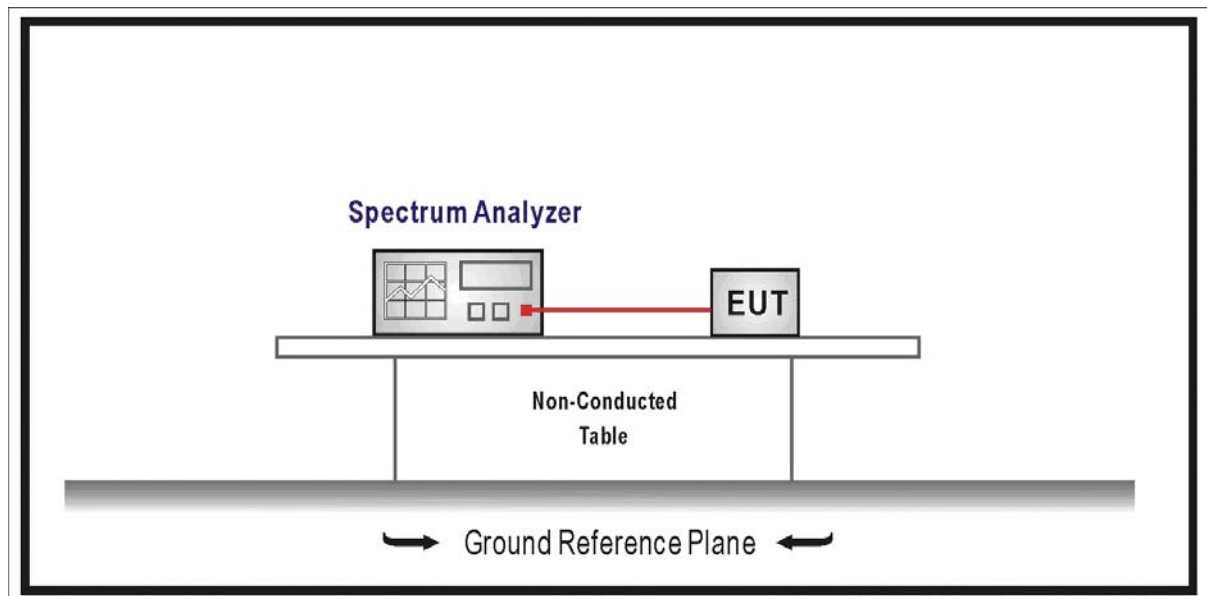
5. Peak Power Output

5.1. Test Equipment

Peak Power Output / AC-4

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2007/11/12
Coaxial Cable	Huber+Suhner	AC4-RF-W	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2007/11/30

5.2. Test Setup



5.3. Limit

The maximum peak power shall be less 1Watt (30dBm).

The conducted output power limit is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of standard FCC part 15.247, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, by the amount in dB that the directional gain of the antenna exceeds dBi.

5.4. Test Procedure

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer.
- c) Add a correction factor to the display, and then test.

5.5. Uncertainty

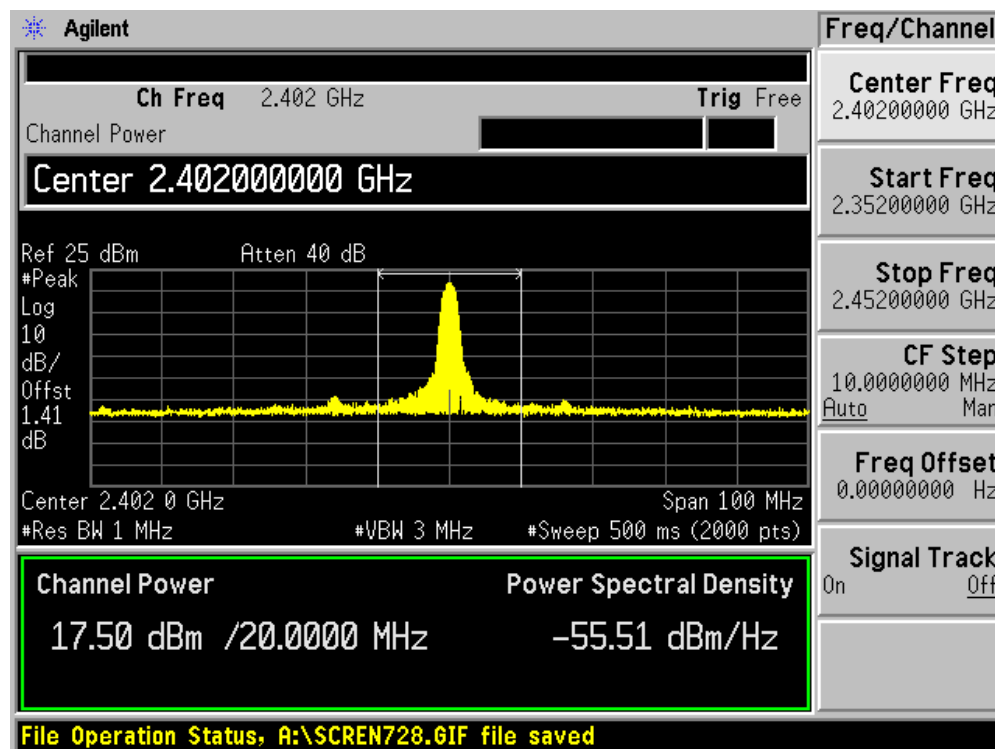
The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

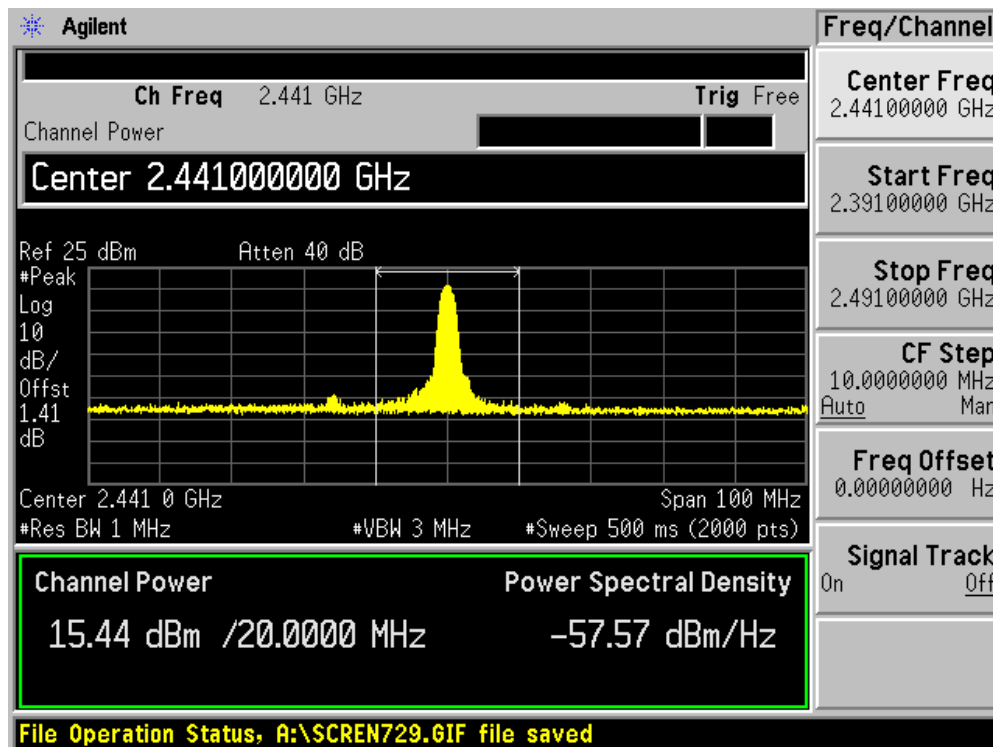
Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Peak Power Output
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmit

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit (dBm)	Result
00	2402.00	17.50	1 Watt= 30 dBm	Pass
39	2441.00	15.44	1 Watt= 30 dBm	Pass
78	2480.00	12.76	1 Watt= 30 dBm	Pass

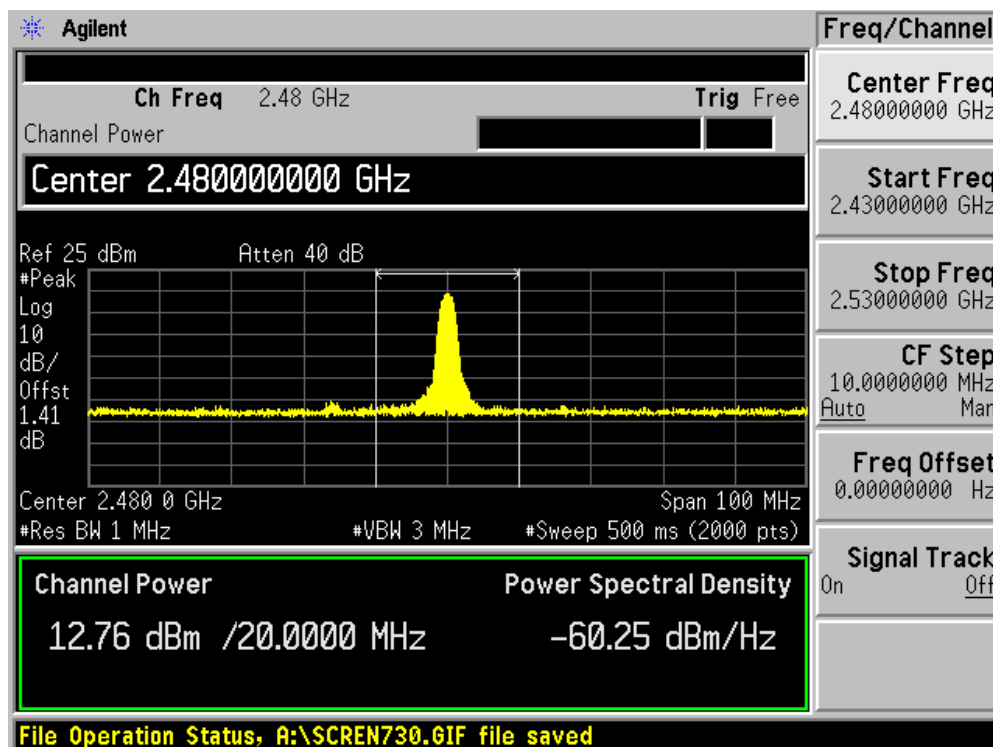
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



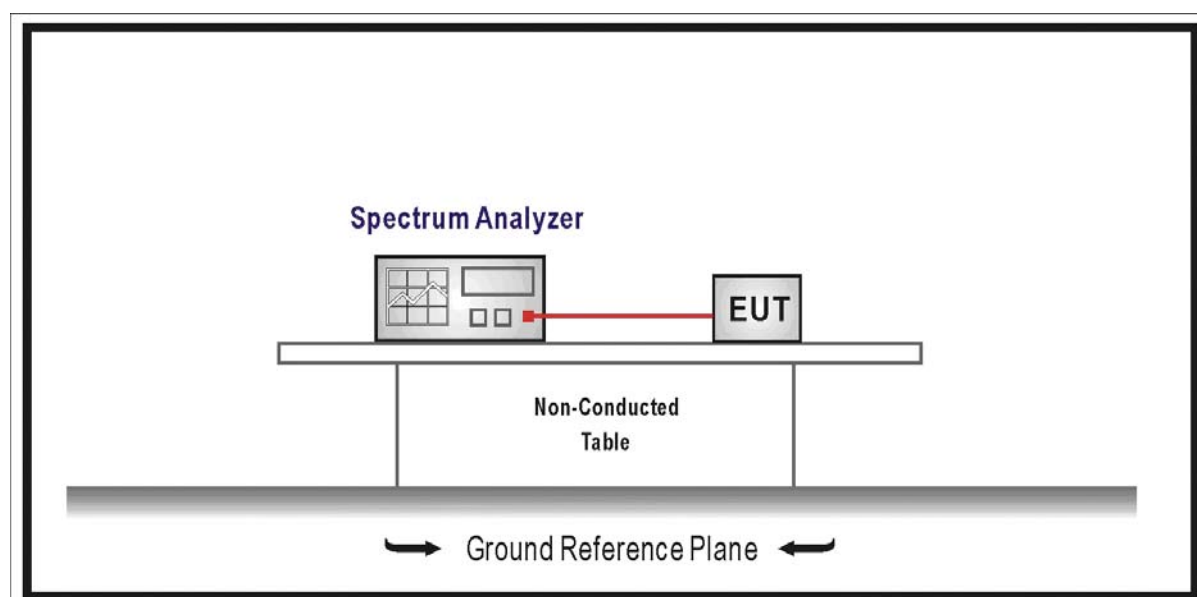
6. Occupied Bandwidth

6.1. Test Equipment

Occupied Bandwidth / AC-4

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2007/11/12
Coaxial Cable	Huber+Suhner	AC4-RF-W	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2007/11/30

6.2. Test Setup



6.3. Limit

N/A

6.4. Test Procedure

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer.
- c) Add a correction factor to the display, and then test.

6.5. Uncertainty

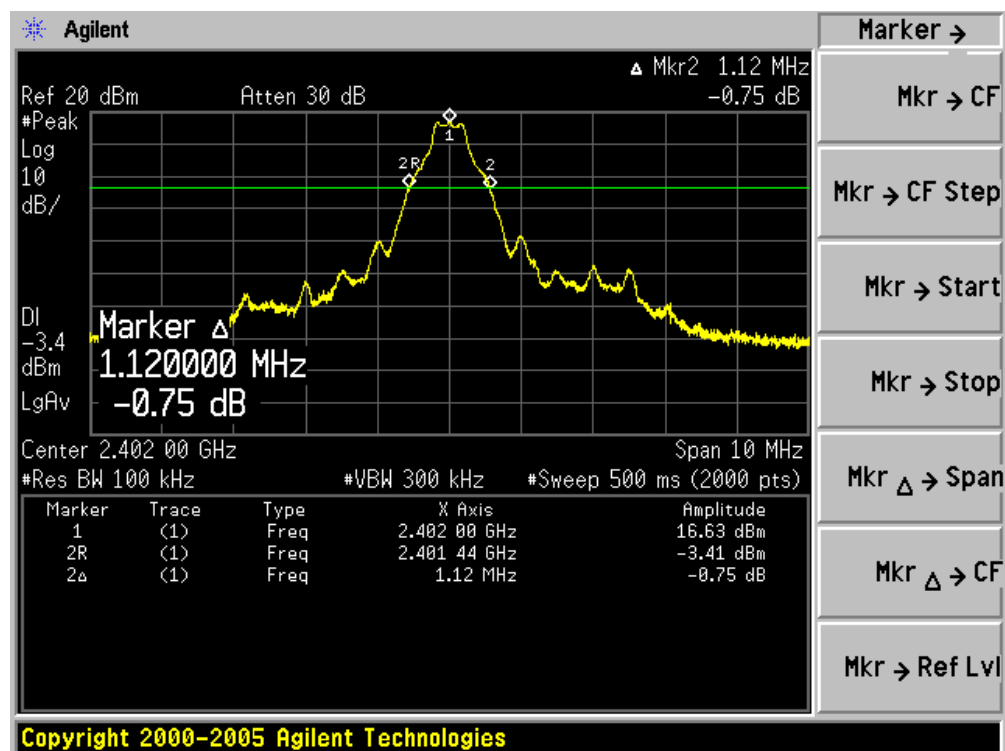
The measurement uncertainty is defined as ± 100 Hz

6.6. Test Result

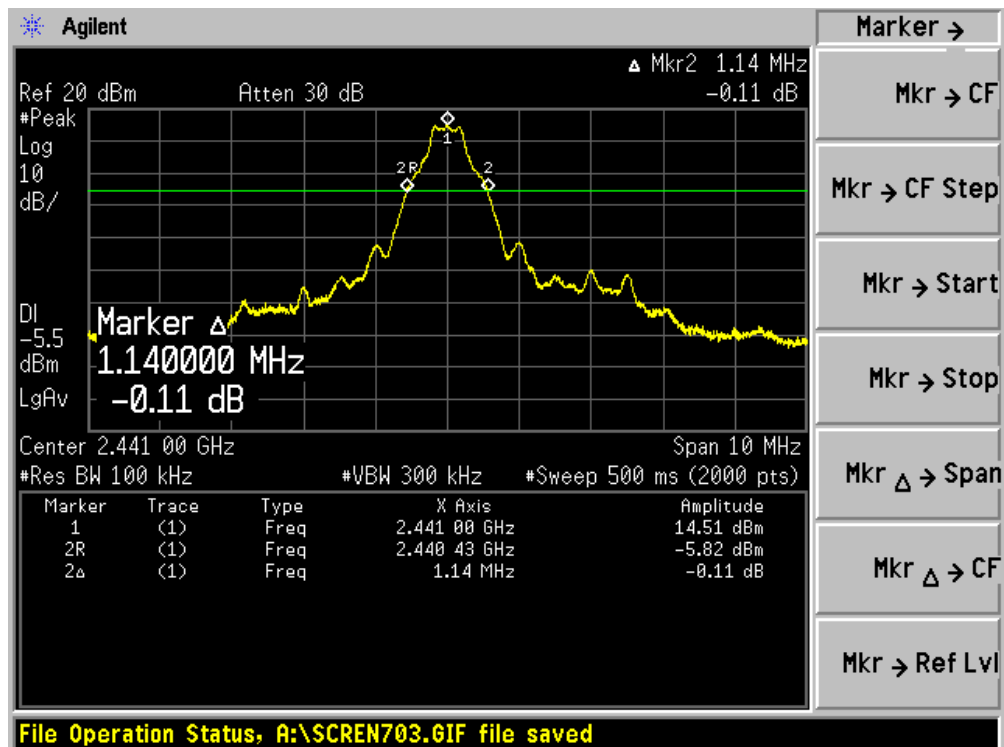
Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Occupied Bandwidth
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmit

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1120	N/A	Pass
39	2441	1140	N/A	Pass
78	2480	1130	N/A	Pass

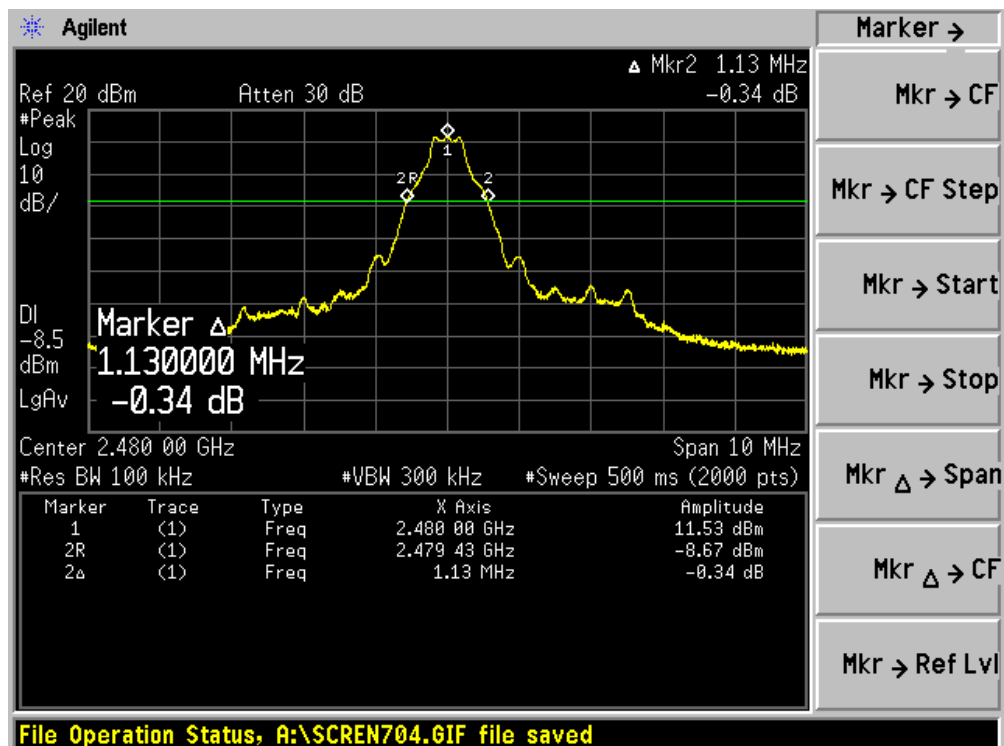
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



7. Band Edge

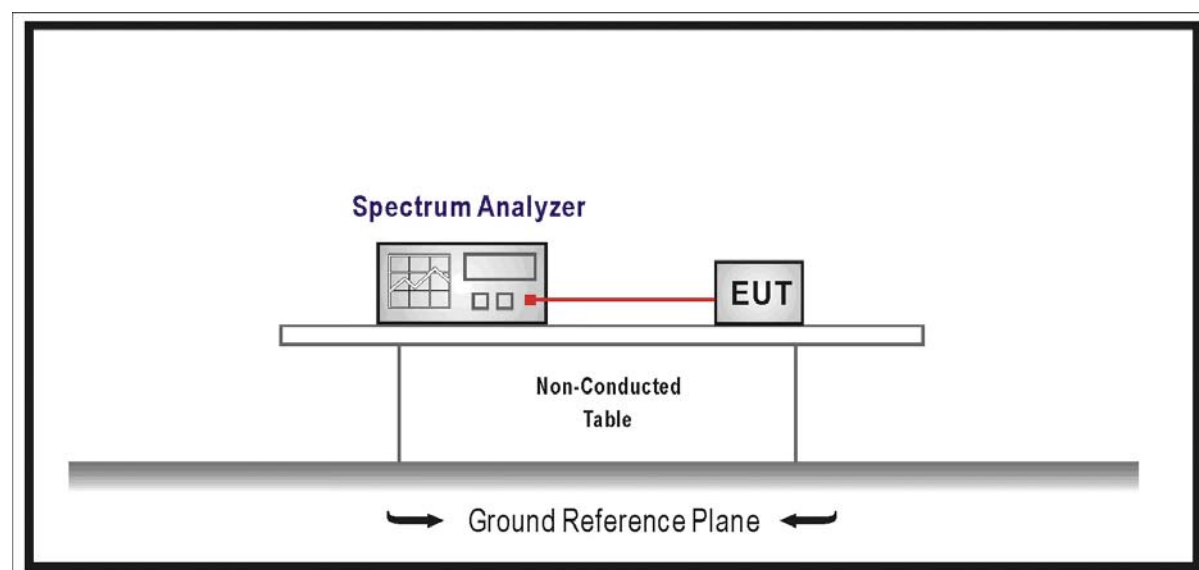
7.1. Test Equipment

Band Edge / AC-2

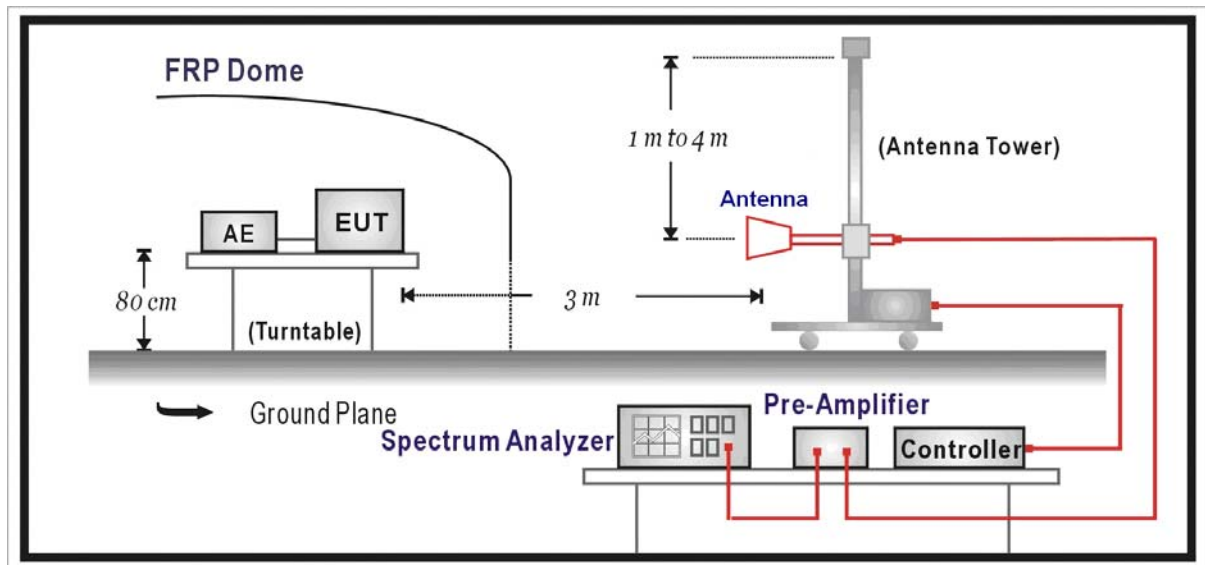
Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2007/11/12
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112B	2932	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2007/11/25
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2007/11/25
Coaxial Cable	Huber+Suhner	AC2-C	04	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2007/03/31

7.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement



7.3. Limit

For 15.215(C) requirement:

Intentional radiators operating under the alternative provisions to the general emission limits as contained in 15.217 through 15.257 and in Subpart E of FCC part 15, must be designed to ensure that 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

For 15.247(d) requirement:

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)).

7.4. Test Procedure

For RF Conducted Measurement:

- Place the EUT on a bench and set it in transmitting mode.
- Connect a low loss RF cable from the antenna port to a spectrum analyzer.

c) Add a correction factor to the display, and then test.

For RF Radiated Measurement:

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 and 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 on radiated measurement.

The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCI) is 120 kHz and above 1GHz is 1MHz.

7.5. Uncertainty

For RF Conducted Measurement:

The measurement uncertainty is defined as ± 1.27 dB

For RF Radiated Measurement:

The measurement uncertainty above 1G is defined as ± 3.9 dB

under 1G is defined as ± 3.8 dB

7.6. Test Result

Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmit

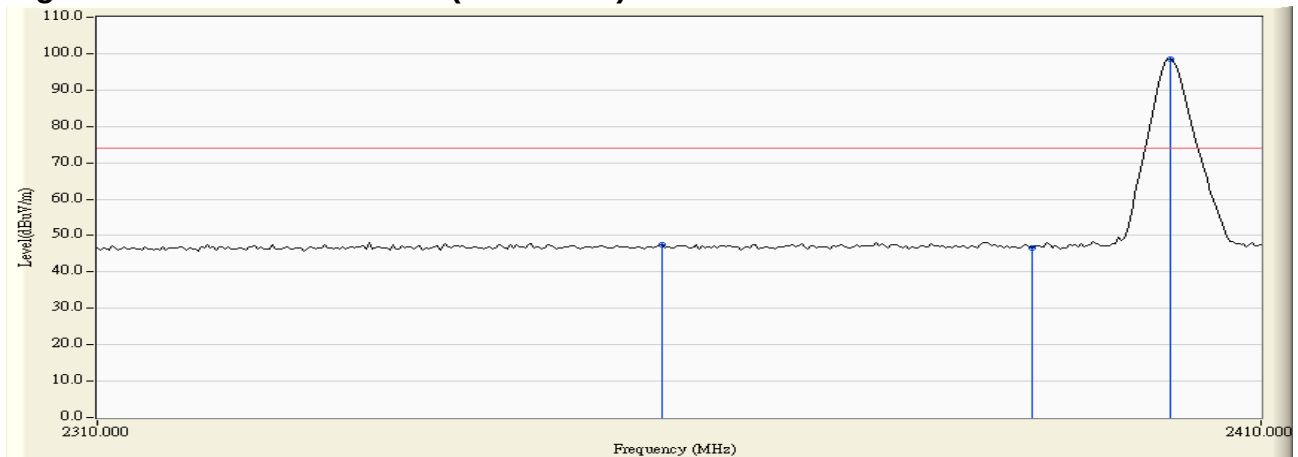
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2390.000	48.846	46.698	74.00	N/A	Pass
00 (Average)	2390.000	N/A	N/A	N/A	54.00	Pass

Figure Channel 00: 2402MHz (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: 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.

Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmit

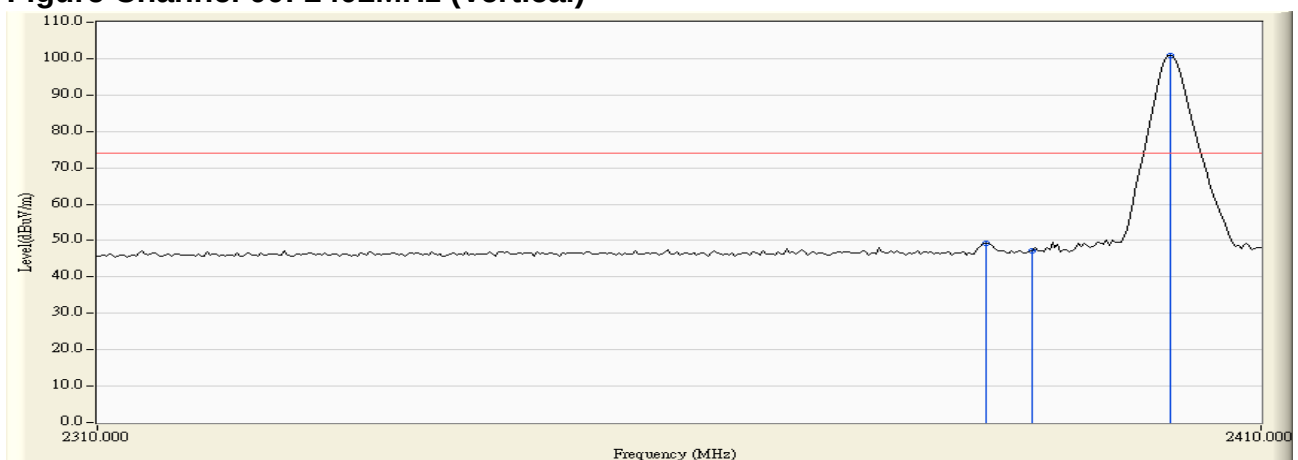
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
00	<2400	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2390.000	49.392	47.244	74.00	N/A	Pass
00 (Average)	2390.000	N/A	N/A	N/A	54.00	Pass

Figure Channel 00: 2402MHz (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: 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.

Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmit

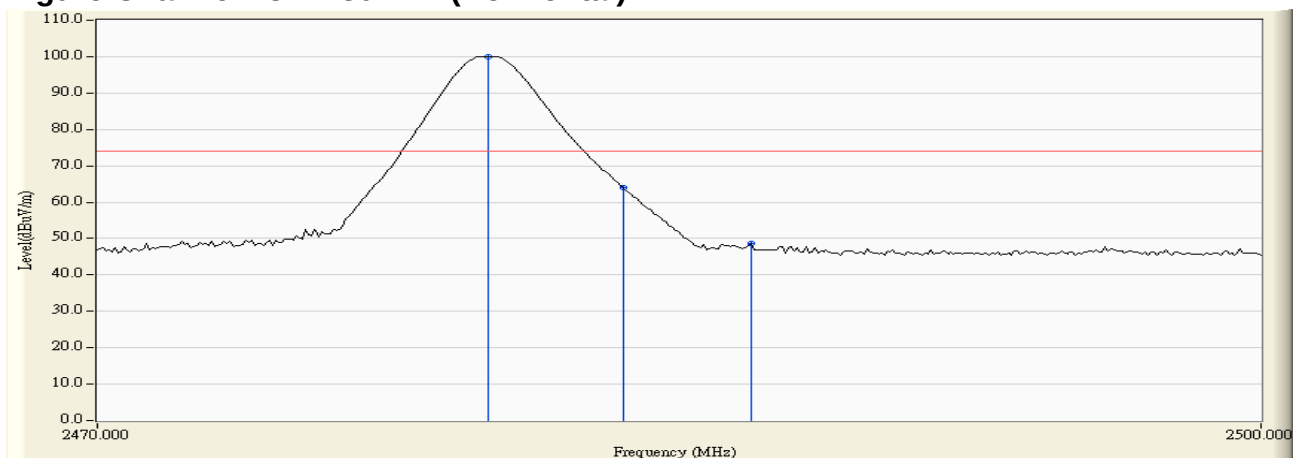
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	66.139	63.986	74.00	N/A	Pass
78(Average)	2483.500	48.343	46.190	N/A	54.00	Pass

Figure Channel 78: 2480MHz (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: 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.

Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmit

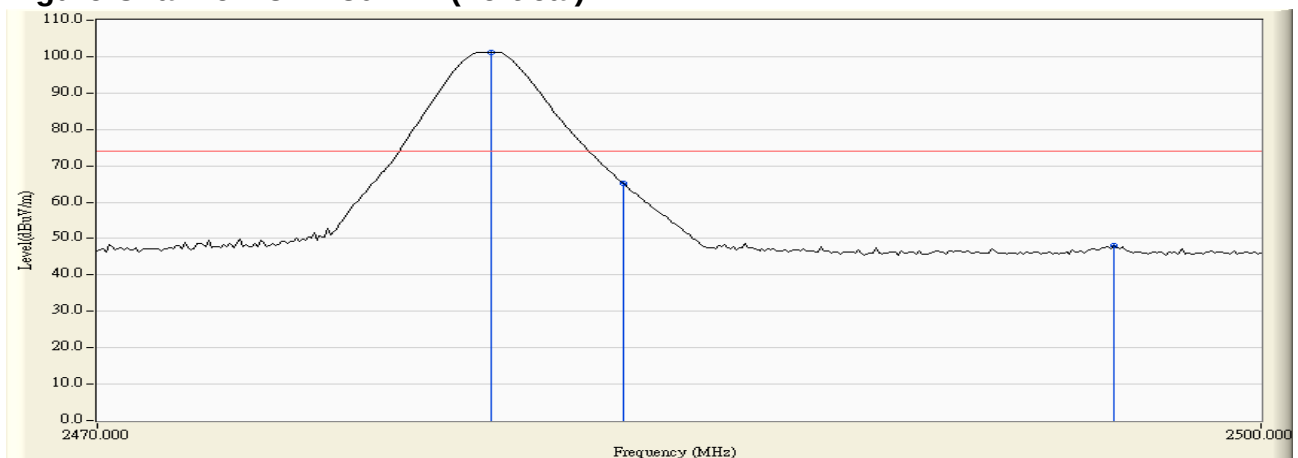
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
78	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
78(Peak)	2483.500	67.465	65.312	74.00	N/A	Pass
78(Average)	2483.500	49.455	47.302	N/A	54.00	Pass

Figure Channel 78: 2480MHz (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: 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.

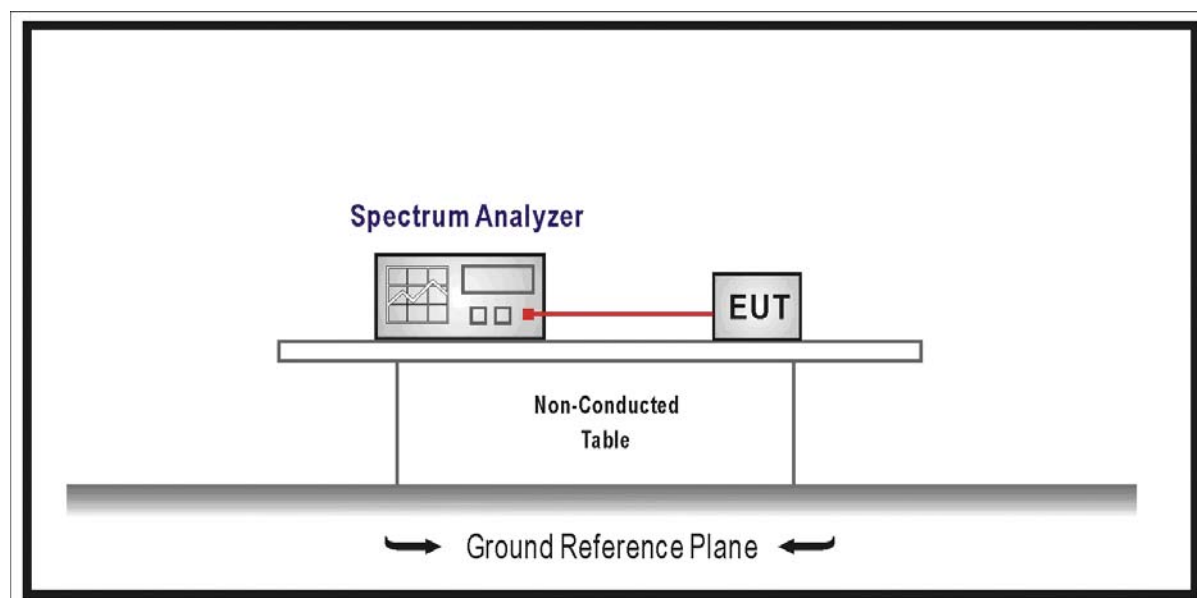
8. Channel Number

8.1. Test Equipment

Channel Number / AC-4

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2007/06/11
Coaxial Cable	Huber+Suhner	AC4-RF-W	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2007/11/30

8.2. Test Setup



8.3. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 15 hopping frequencies.

8.4. Test Procedure

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer.
- c) Add a correction factor to the display, and then test.

8.5. Uncertainty

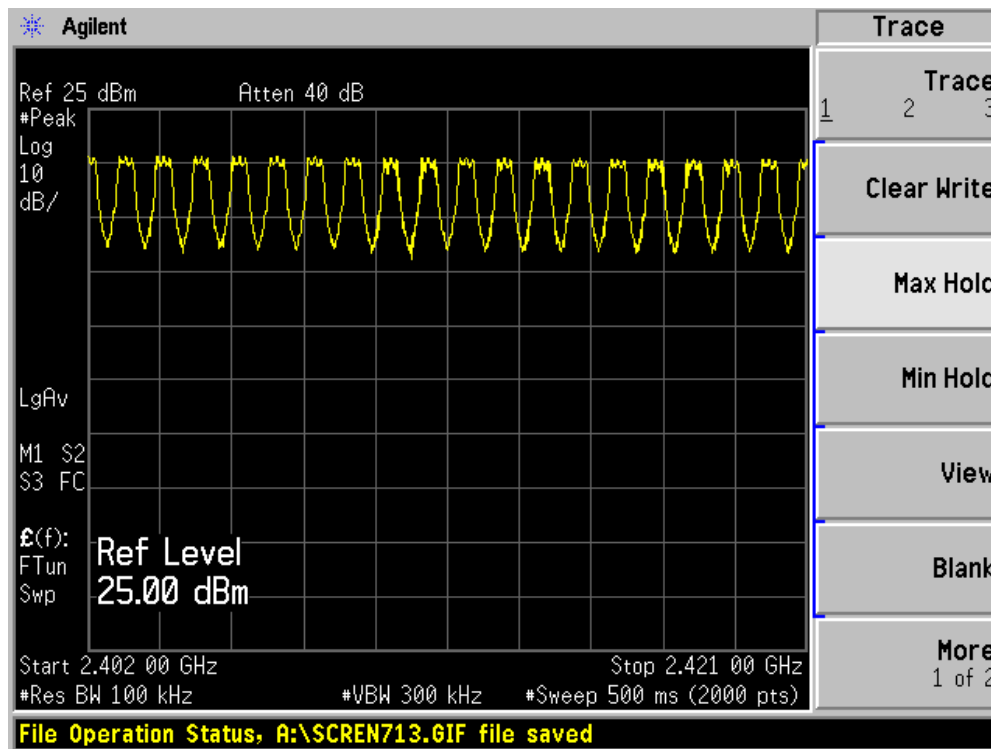
The measurement uncertainty is defined as ± 200 kHz

8.6. Test Result

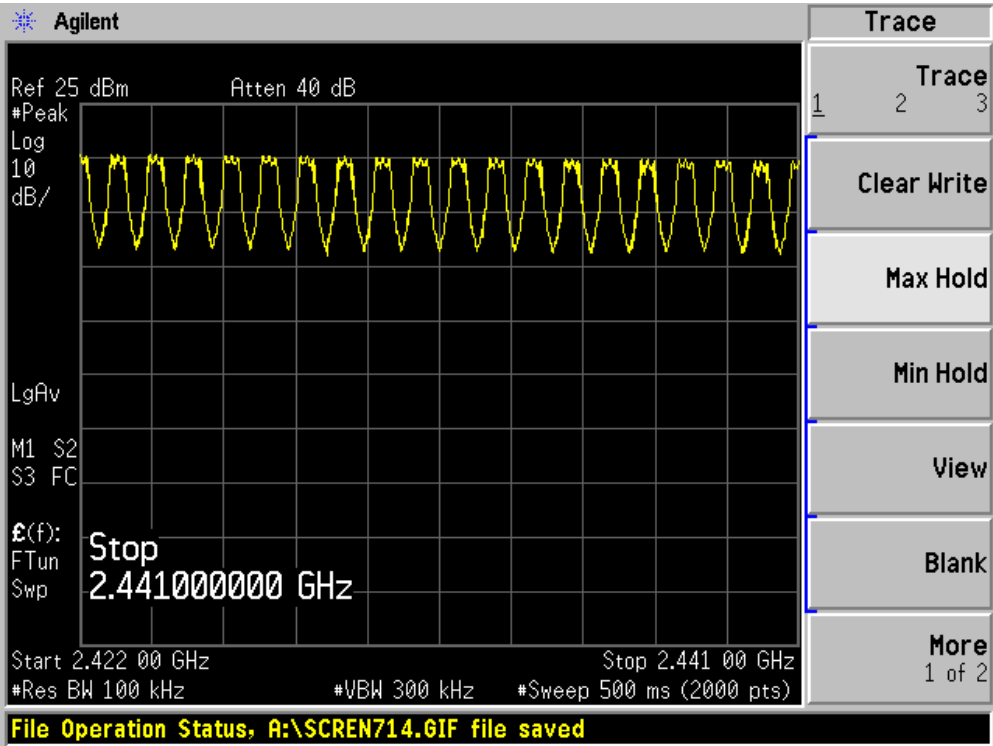
Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Channel Number
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmit

Frequency Range (MHz)	Measurement (Hopping Channel)	Required Limit (Hopping Channel)	Result
2402 ~ 2480	79	>15	Pass

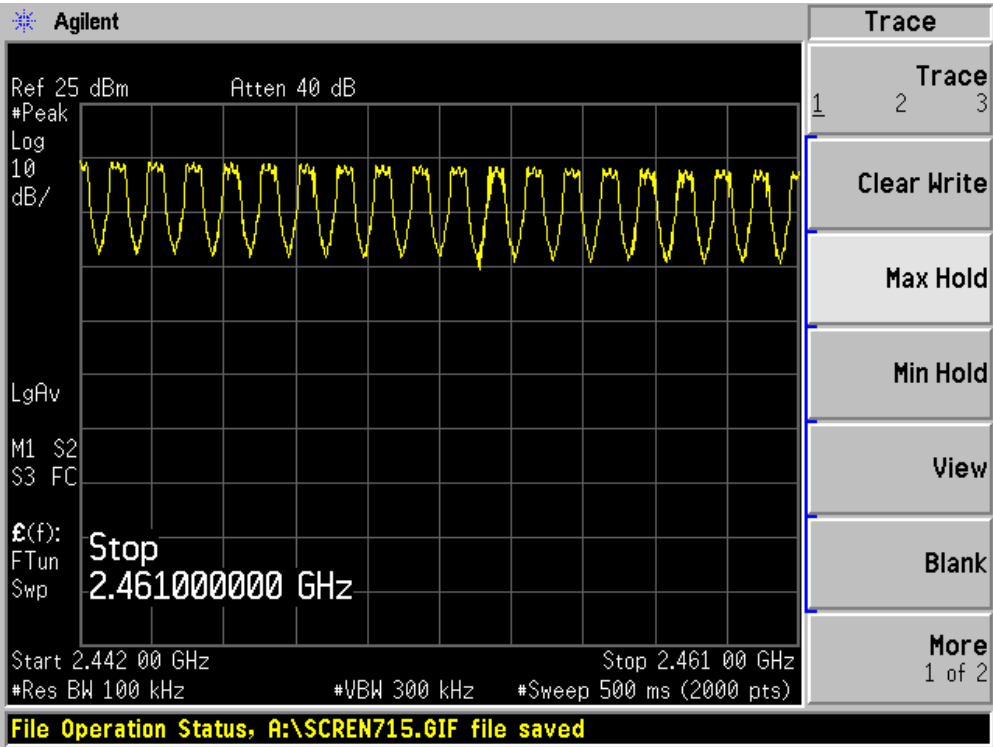
Frequency Range (2402~2421MHz)



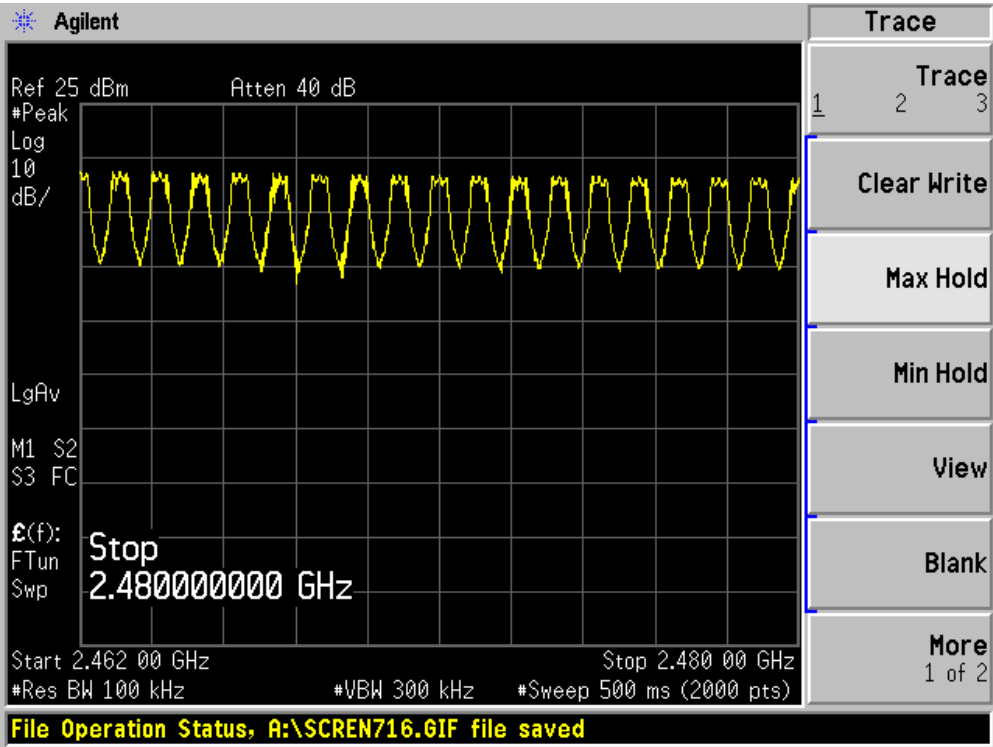
Frequency Range (2422~2441MHz)



Frequency Range (2442~2461MHz)



Frequency Range (2462~2480MHz)



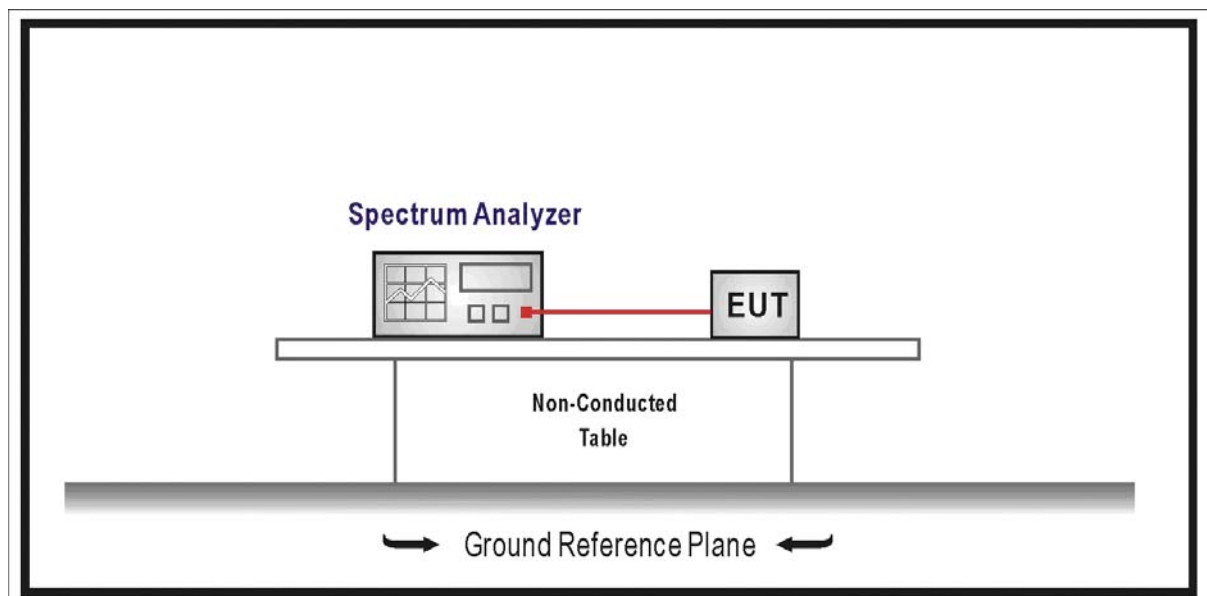
9. Channel Separation

9.1. Test Equipment

Channel Separation / AC-4

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2007/06/11
Coaxial Cable	Huber+Suhner	AC4-RF-W	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2007/11/30

9.2. Test Setup



9.3. 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. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 KHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

9.4. Test Procedure

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer.
- c) Add a correction factor to the display, and then test.

9.5. Uncertainty

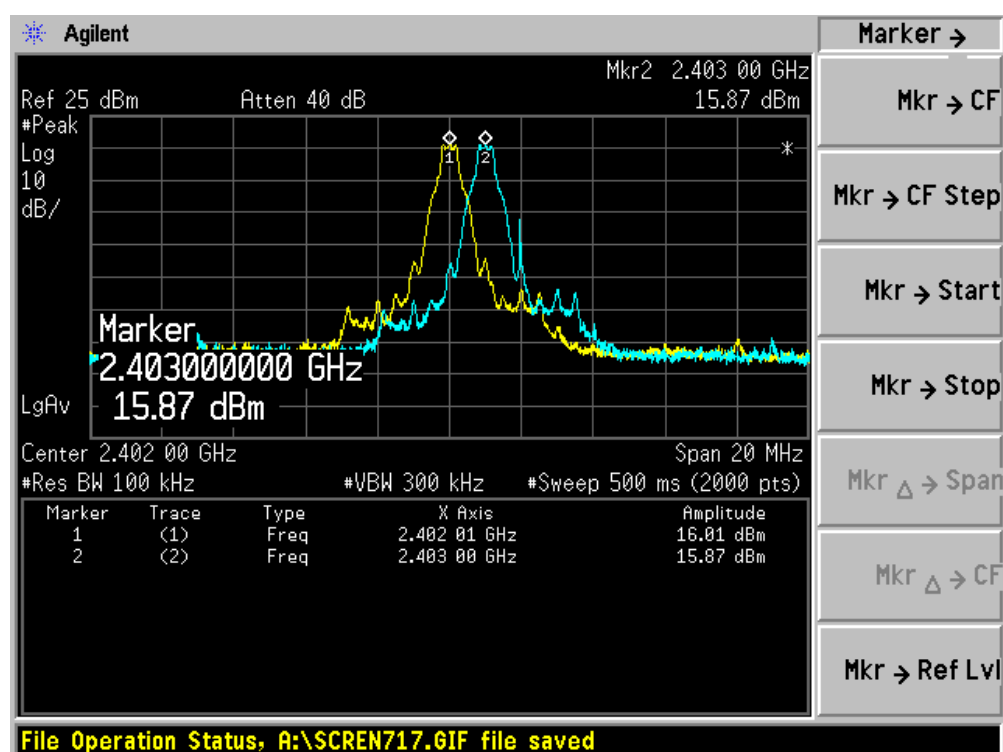
The measurement uncertainty is defined as ± 150 kHz

9.6. Test Result

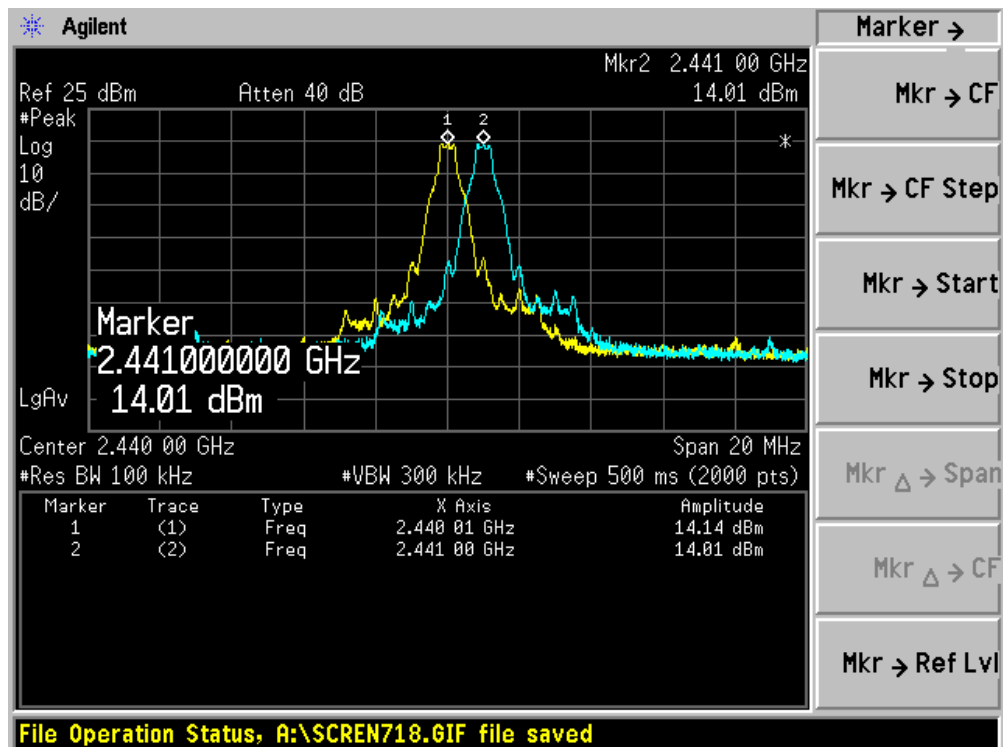
Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Channel Separation
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmit

Frequency (MHz)	Measurement Level (MHz)	Required Limit	Result
2402	1.00	>25 kHz or 2/3 * 20 dB BW	Pass
2441	1.00	>25 kHz or 2/3 * 20 dB BW	Pass
2480	1.00	>25 kHz or 2/3 * 20 dB BW	Pass

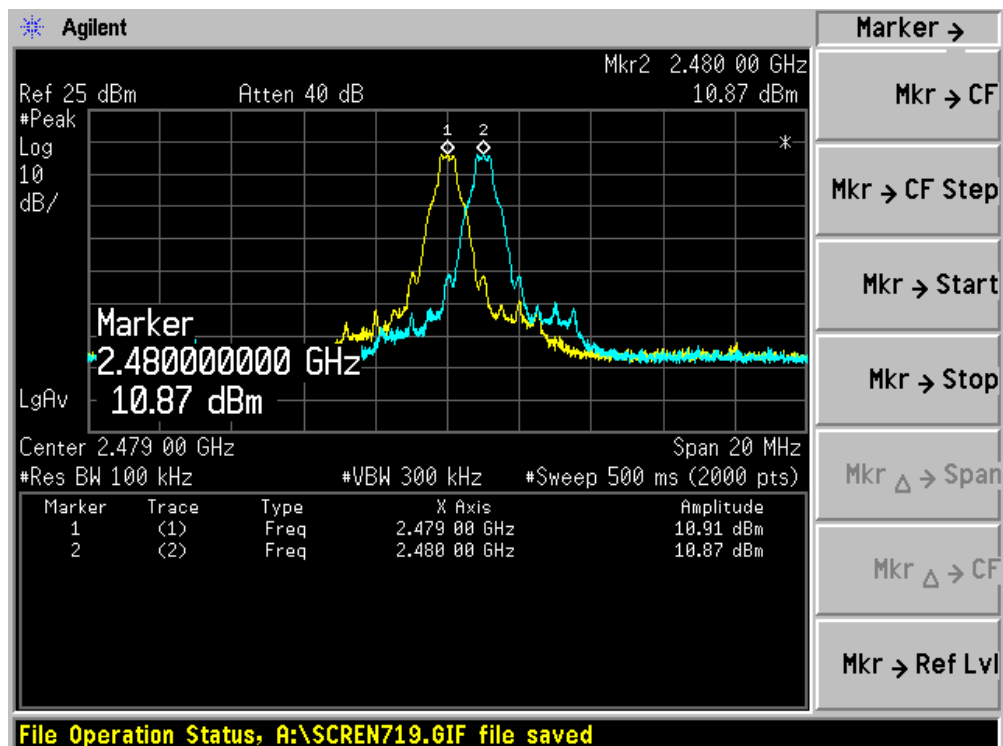
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



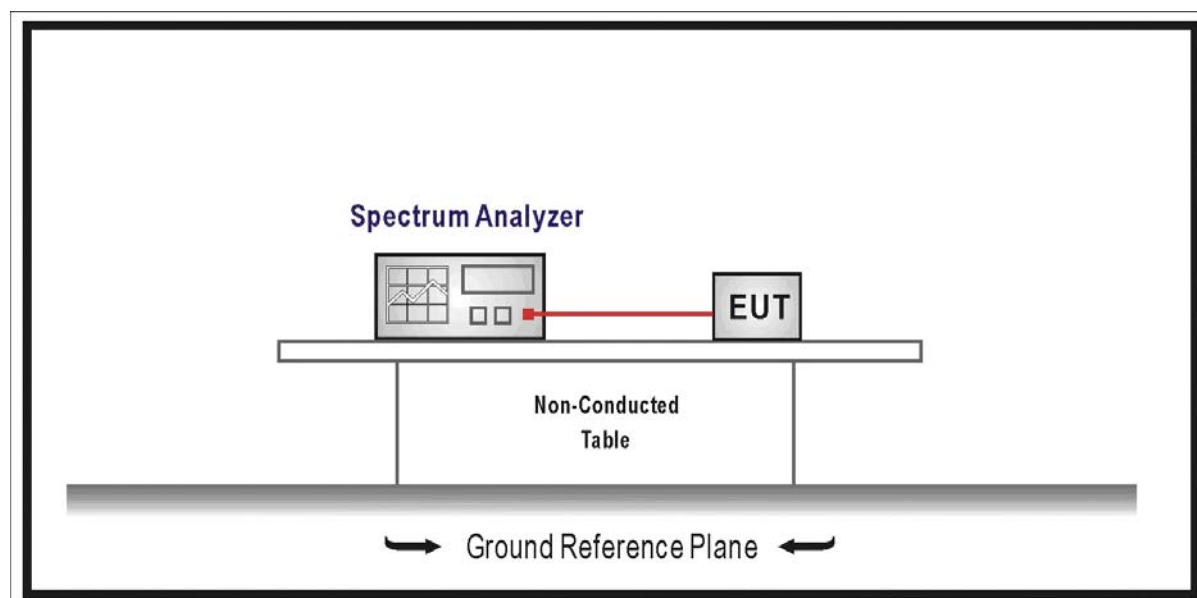
10. Dwell Time

10.1. Test Equipment

Dwell Time / AC-4

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2007/06/11
Coaxial Cable	Huber+Suhner	AC4-RF-W	08	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2007/11/30

10.2. Test Setup



10.3. Limit

The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

10.4. Test Procedure

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer.
- c) Add a correction factor to the display, and then test.

10.5. Uncertainty

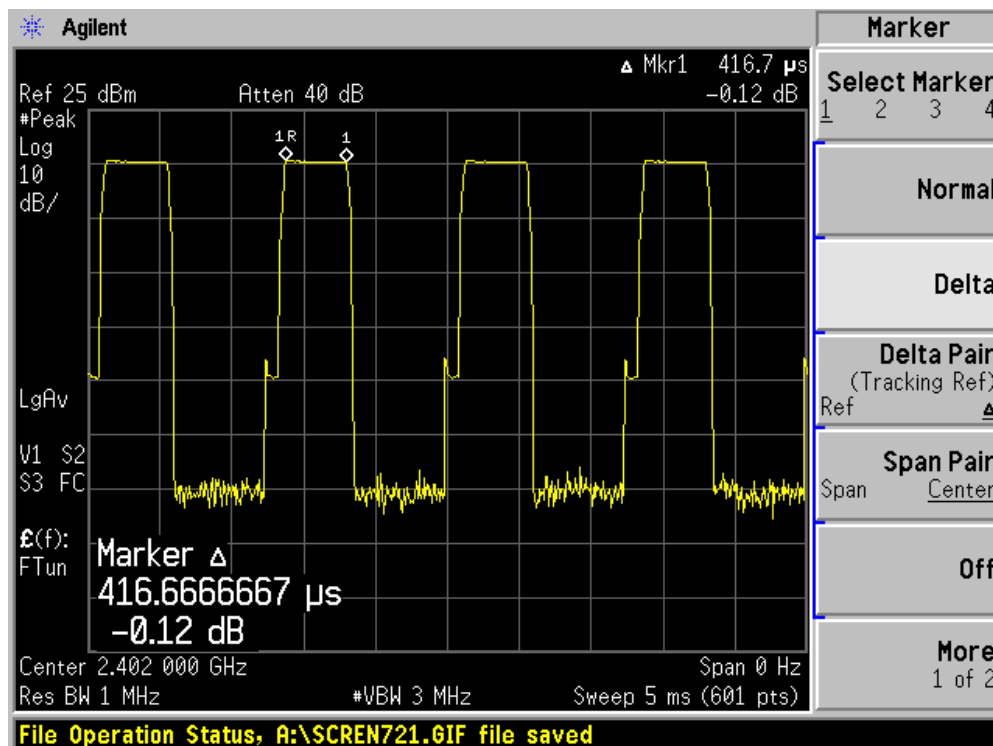
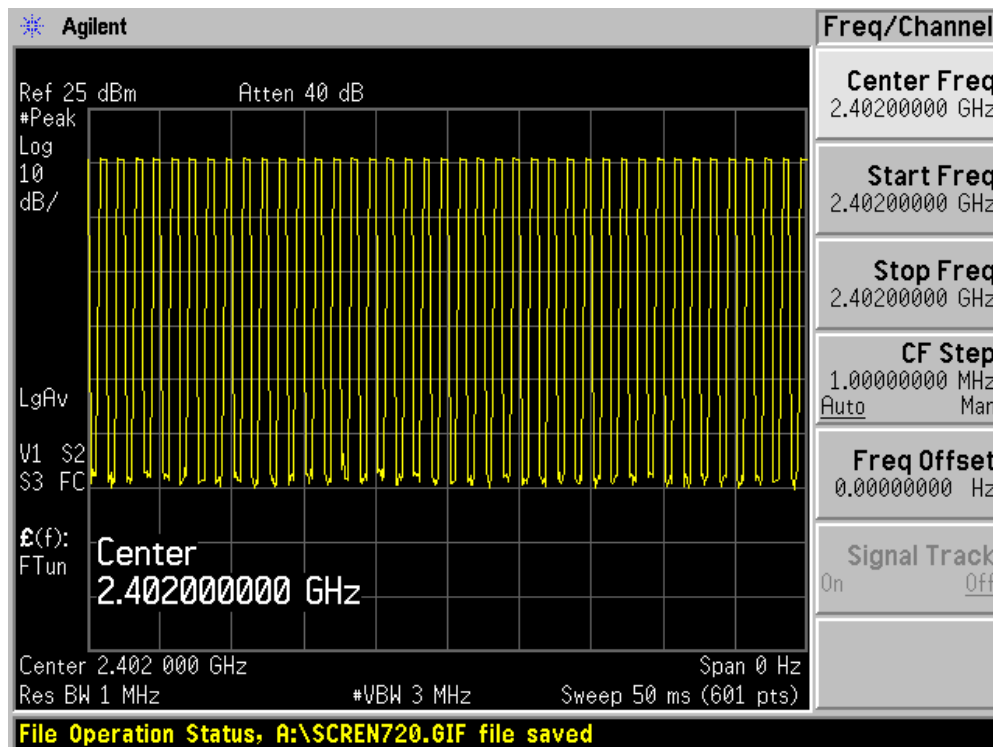
The measurement uncertainty is defined as ± 25 ms

10.6. Test Result

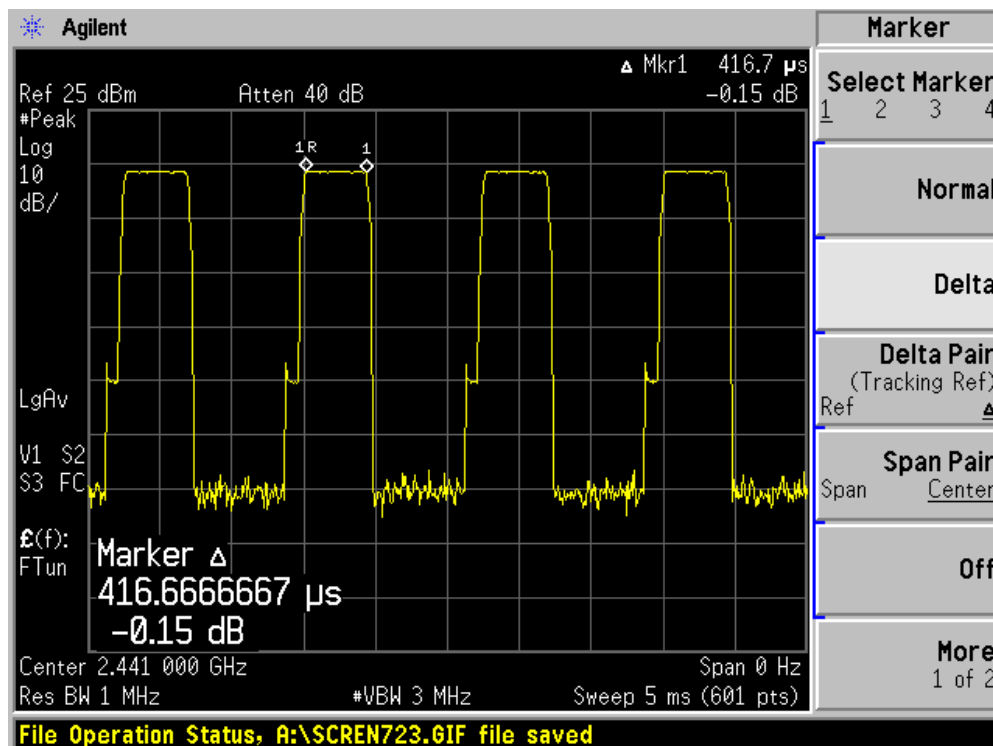
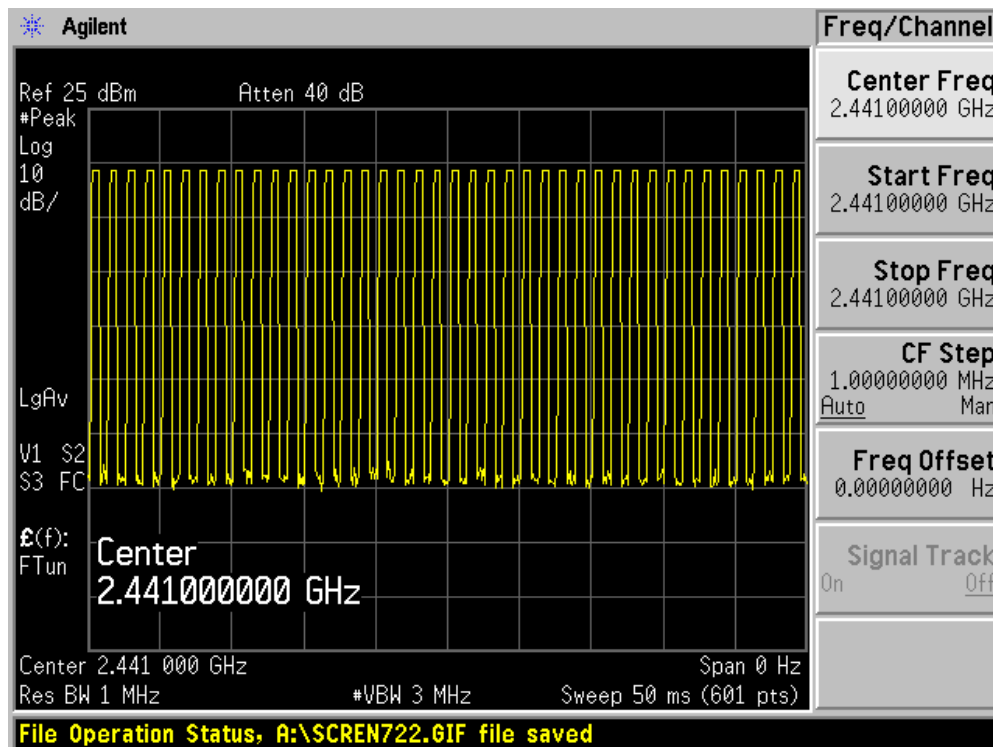
Product	:	Bluetooth Multi-mode AV Adapter
Test Item	:	Dwell Time
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmit

Frequency (MHz)	Measurement Level (ms)	Required Limit (sec.)	Result
2402	133.344	< 0.4	Pass
2441	133.344	< 0.4	Pass
2480	133.344	< 0.4	Pass

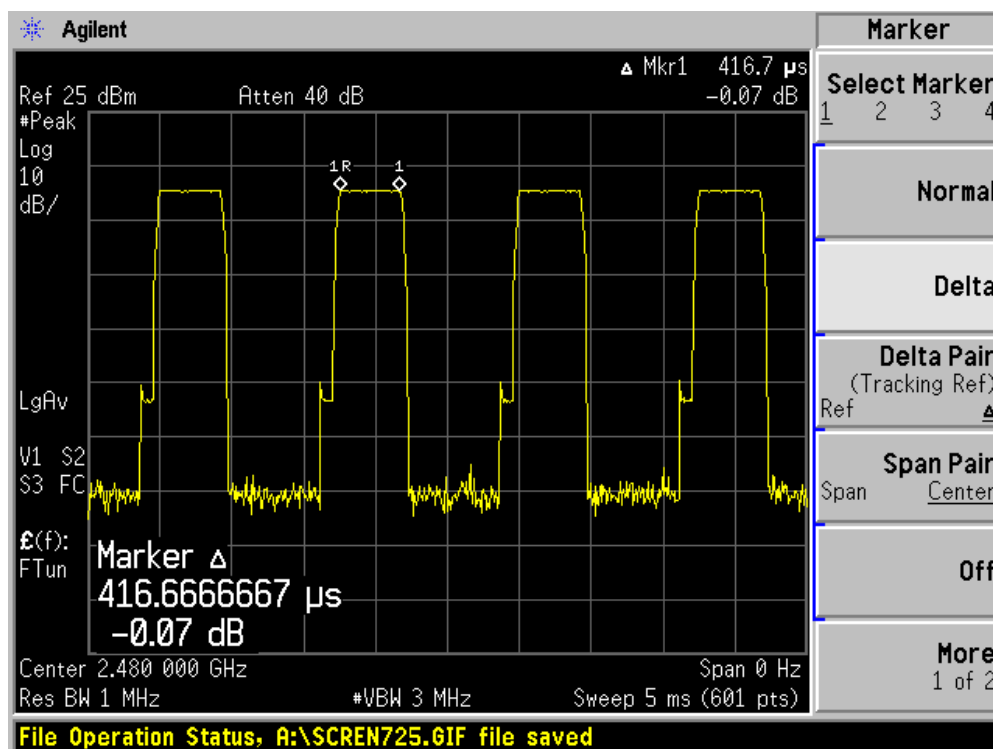
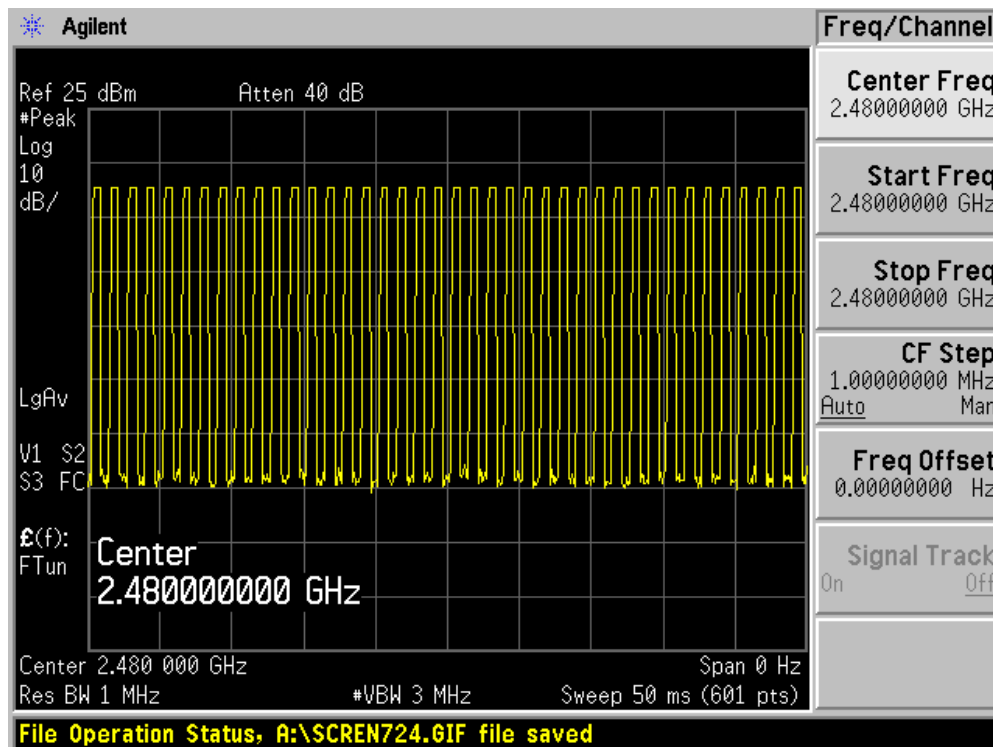
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



Occupancy Time of Frequency Hopping System

Test Time Period: $0.4 \times 79 = 31.6\text{sec}$, Hopping Times Within 1sec: $40/50\text{msec} = 800\text{ hops/sec}$.

A) 2402MHz The Maximum Occupancy Time Within 31.6sec: $0.4167\text{msec} \times (800/79) \times 31.6 = 133.344\text{msec}$

B) 2441MHz The Maximum Occupancy Time Within 31.6sec: $0.4167\text{msec} \times (800/79) \times 31.6 = 133.344\text{msec}$

C) 2480MHz The Maximum Occupancy Time Within 31.6sec: $0.4167\text{msec} \times (800/79) \times 31.6 = 133.344\text{msec}$

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

PS: (1) From Bluetooth Specification , It Hops 1640 Times in 1sec ° The Average Occupancy Time of Each 79 Channels is $1640/79$ Times , Therefore , We Calculate The Maximum Occupancy Time (worse cars)As Below:

A) 2402Mhz The Occupancy Time of Each Pulse is 0.4msec , The Maximum Occupancy Time within 31.6sec is $0.4\text{msec} \times 1640/79 \times 31.6 = 289.056\text{msec}$

B) 2441MHz The Occupancy Time of Each Pulse is 0.4msec , The Maximum Occupancy Time within 31.6sec is $0.4\text{msec} \times 1640/79 \times 31.6 = 289.056\text{msec}$

C) 2480MHz The Occupancy Time of Each Pulse is 0.4msec , The Maximum Occupancy Time within 31.6sec is $0.4\text{msec} \times 1640/79 \times 31.6 = 289.056\text{msec}$

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