

Test Report

Product Name : Bluetooth handsfree speaker

Model No. : BTHF205

FCC ID : TQ6BTHF205

Applicant : Shanghai Flaircomm Technologies

Address : No211 North Urumqi Road, Suite 616, Shanghai
200040 P.R.China

Date of Receipt : 2007/02/02

Issued Date : 2007/03/05

Report No. : 072S006-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

Issued Date : 2007/03/05

Report No. : 072S006-RF-US-P06V01



Product Name : Bluetooth handsfree speaker
 Applicant : Shanghai Flaircomm Technologies
 Address : No211 North Urumqi Road, Suite 616, Shanghai 200040
 P.R. China
 Manufacturer : Shanghai Flaircomm Technologies
 Model No. : BTHF205
 FCC ID : TQ6BTHF205
 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: 2006
 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	: TUV 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/>

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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.....	15
4. Radiated Emission.....	16
4.1. Test Equipment.....	16
4.2. Test Setup.....	16
4.3. Limit... ..	17
4.4. Test Procedure	18
4.5. Uncertainty	18
4.6. Test Result.....	19
4.7. Test Photograph	35
5. Peak Power Output.....	37
5.1. Test Equipment.....	37
5.2. Test Setup.....	37
5.3. Limit... ..	37
5.4. Test Procedure	38
5.5. Uncertainty	38
5.6. Test Result.....	39
6. Occupied Bandwidth	41
6.1. Test Equipment.....	41
6.2. Test Setup.....	41
6.3. Limit... ..	41
6.4. Test Procedure	42

6.5.	Uncertainty	42
6.6.	Test Result.....	43
7.	Band Edge	45
7.1.	Test Equipment.....	45
7.2.	Test Setup.....	45
7.3.	Limit... ..	46
7.4.	Test Procedure	47
7.5.	Uncertainty	47
7.6.	Test Result.....	48
8.	Channel Number.....	52
8.1.	Test Equipment.....	52
8.2.	Test Setup.....	52
8.3.	Limit... ..	52
8.4.	Test Procedure	53
8.5.	Uncertainty	53
8.6.	Test Result.....	54
9.	Channel Separation	57
9.1.	Test Equipment.....	57
9.2.	Test Setup.....	57
9.3.	Limit... ..	57
9.4.	Test Procedure	58
9.5.	Uncertainty	58
9.6.	Test Result.....	59
10.	Dwell Time.....	61
10.1.	Test Equipment.....	61
10.2.	Test Setup	61
10.3.	Limit... ..	61
10.4.	Test Procedure	62
10.5.	Uncertainty	62
10.6.	Test Result.....	63
11.	Attachment	68
	EUT Photograph.....	68

1. General Information

1.1. EUT Description

Product Name	Bluetooth handsfree speaker
Trade Name	Flaircomm
Model No.	BTHF205
FCC ID	TQ6BTHF205
Working Voltage	DC 3.7V
Frequency Range	2400 - 2483.5MHz
Channel Number	79
Type of Modulation	Frequency Hopping Spread Spectrum
Channel Control	Auto
Antenna type	Printed PCB
Antenna Gain	-3.5dBi

Component	
Vehicular Adapter	Manufacturer: Shanghai Fant Industrial Trading Co.,Ltd M/N: TTX-06500 Input: DC12~24V, 0.3A Max Output: DC5V±5%
USB Cable	Shielded, 1.6m

Frequency of Each Channel:

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

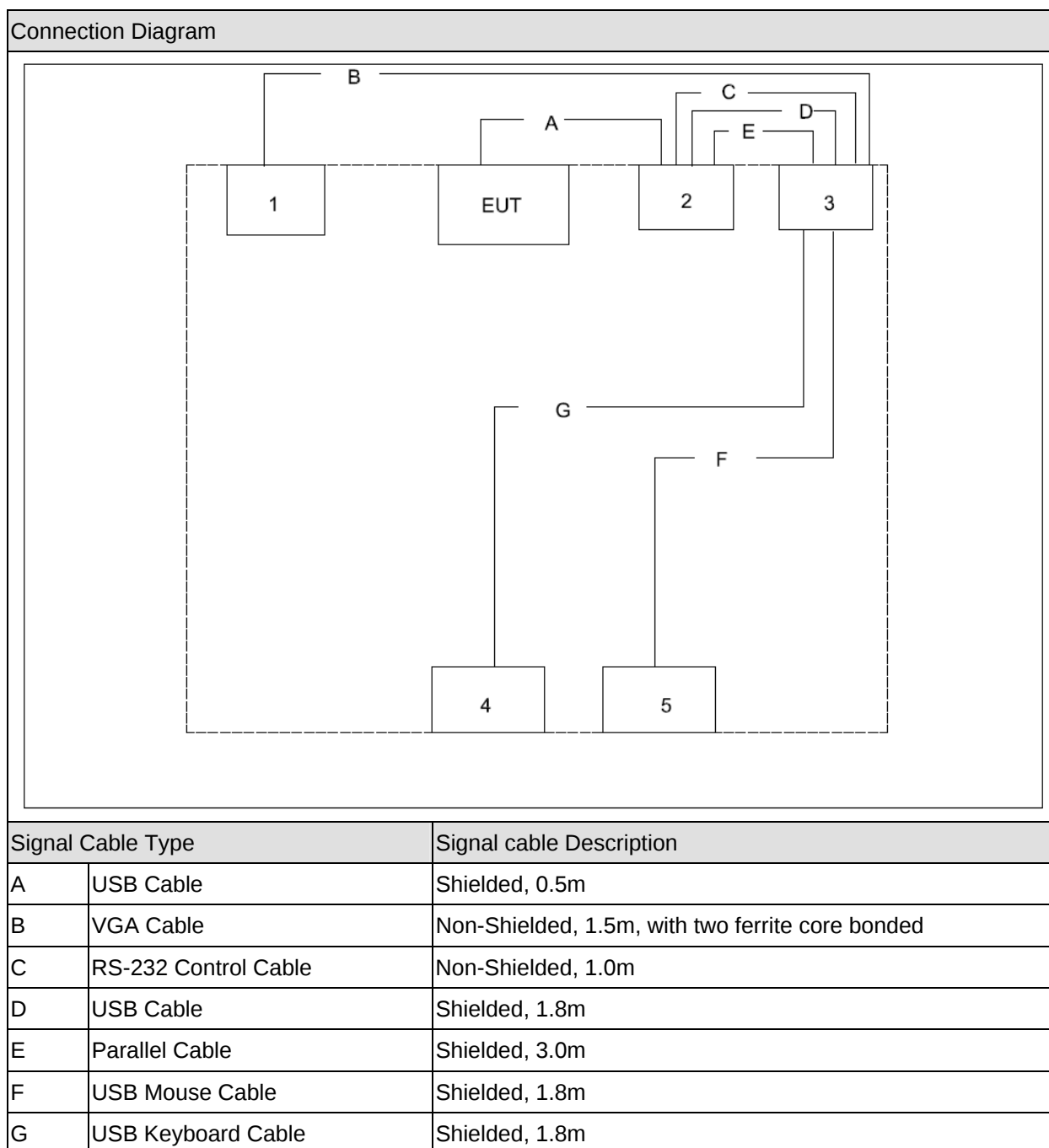
- Note: 1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 072S006-RF-US-P01V02, certified under Declaration of Conformity.

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
1	LCD Monitor	cmv	A170E1-03	36C112338M41164	Non-Shielded, 1.8m
2	Control Board	Flaircomm	N/A	N/A	N/A
3	PC	HP	DC7600 CMT	CNG5460DC6	Non-Shielded, 1.8m
4	USB Keyboard	DELL	L100	N/A	Power by PC
5	Mouse	MSI	MSM-201TG	0412056646	Power by PC

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Connect the EUT to PC via a control board and a RS232 cable.
3	Execute the Blue Test program on the PC.
4	Setup the test channel and the test mode press ok to start the Continue Transmit.

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: 2006 Section 15.207	No	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2006 Section 15.209	Yes	No
Peak Power Output	FCC CFR Title 47 Part 15 Subpart C: 2006 Section 15.247(b)(1)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2006 Section 15.247(a)(1)	Yes	No
Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2006 Section 15.247(d)	Yes	No
Channel Number	FCC CFR Title 47 Part 15 Subpart C: 2006 Section 15.247(a)(1)(iii)	Yes	No
Channel Separation	FCC CFR Title 47 Part 15 Subpart C: 2006 Section 15.247(a)(1)	Yes	No
Dwell Time	FCC CFR Title 47 Part 15 Subpart C: 2006 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

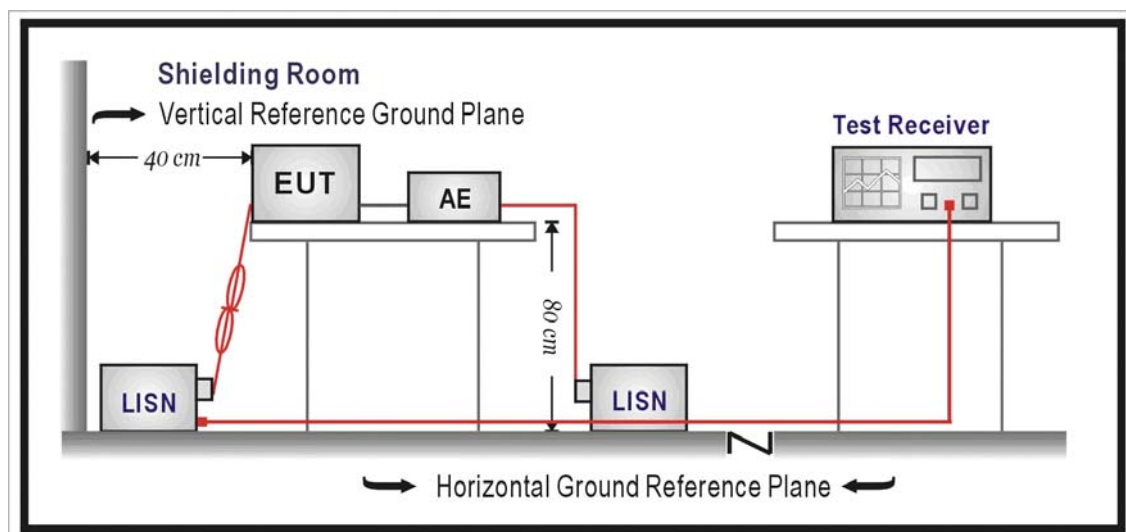
3. Conducted Emission

3.1. Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCI	100175	2006/11/20
Two-Line V-Network	R&S	ENV216	100013	2006/11/20
Two-Line V-Network	R&S	ENV216	100014	2006/11/20
V-Network	R&S	ESH3-Z6	100248	2006/11/20
V-Network	R&S	ESH3-Z6	100249	2006/11/20
ISN	Schaffner	ISN T400	21648	2006/11/20
Current Probe	R&S	EZ-17	100252	2006/04/18
50ohm Coaxial Switch	ANRITSU	MP59B	6200447305	2006/11/25
50ohm Impedance	SHX	50ohmI	QT-IM001	2006/03/20
Matching network	SHX	TZ25	06062901	N/A
Matching network	SHX	TZ25	06062902	N/A
Matching network	SHX	TZ25	06062903	N/A
Combining network	SHX	N-50KKK	N/A	N/A
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH004	2006/03/30

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

EUT is a DC (3.7V) power device, so the test item is not necessary performed.

4. Radiated Emission

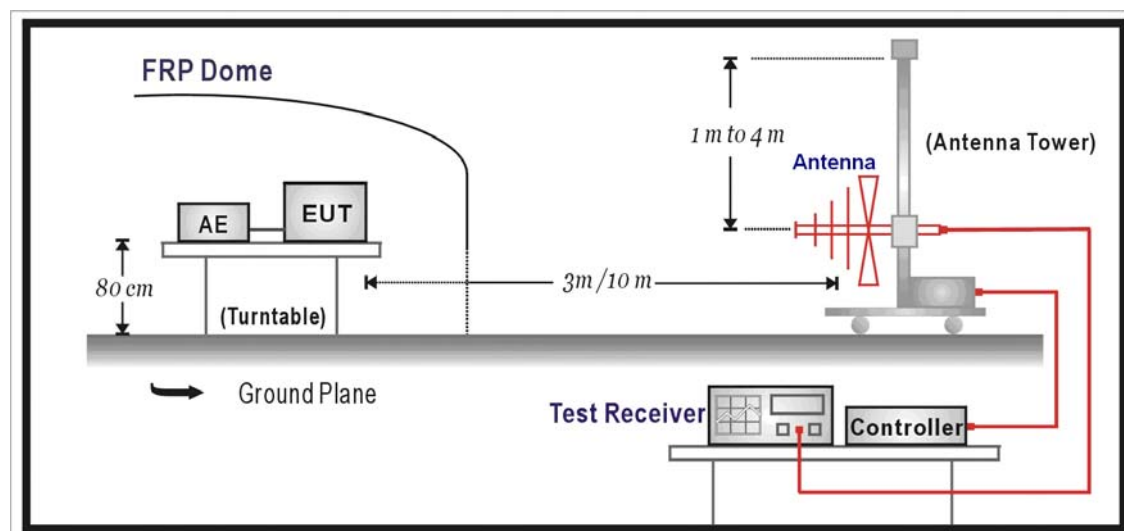
4.1. Test Equipment

Radiated Emission / AC-2

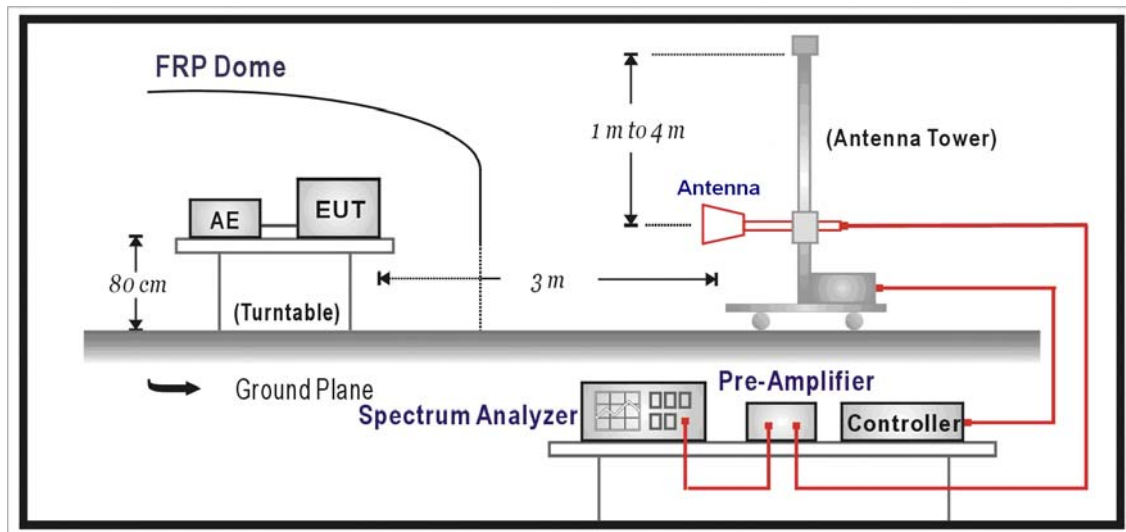
Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2006/11/20
EMI Test Receiver	R&S	ESCI	100175	2006/11/25
Preamplifier	Quietek	AP-025C	QT-AP003	2006/11/25
Preamplifier	Quietek	AP-180C	CHM-0602013	2006/03/20
Bilog Type Antenna	Schaffner	CBL6112B	2932	2006/10/26
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2006/11/30
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2006/11/30
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2006/03/30

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. $\text{RF Voltage (dBuV/m)} = 20 \log \text{RF Voltage (uV/m)}$

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.

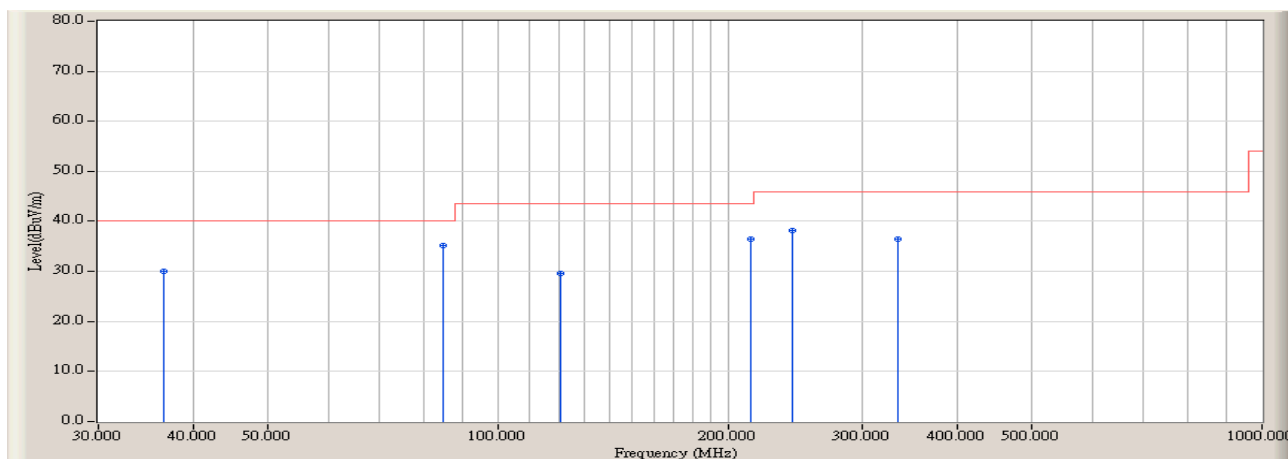
The frequency range from 30MHz to 10th harmonic is checked.

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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 13:28
Limit : FCC_CLASS_C_03M_QP	Margin : 0
EUT : BTHF205	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2402MHz)

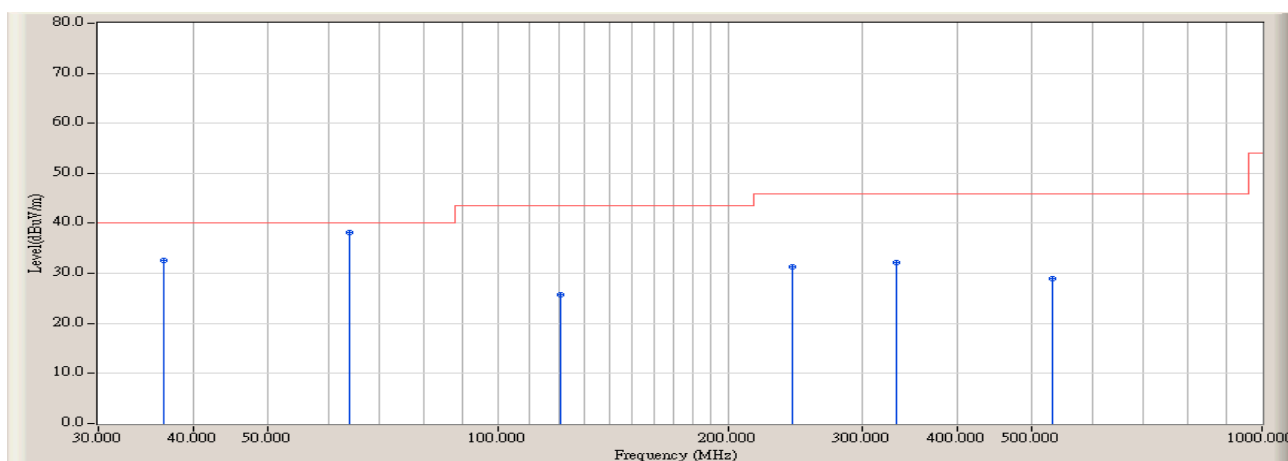


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		36.467	-4.518	34.577	30.059	-9.941	40.000	QUASIPeAK
2	*	84.967	-15.792	51.069	35.277	-4.723	40.000	QUASIPeAK
3		120.533	-12.561	42.173	29.612	-13.888	43.500	QUASIPeAK
4		214.300	-12.038	48.577	36.539	-6.961	43.500	QUASIPeAK
5		243.400	-11.454	49.535	38.081	-7.919	46.000	QUASIPeAK
6		333.933	-8.796	45.231	36.435	-9.565	46.000	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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 13:45
Limit : FCC_CLASS_C_03M_QP	Margin : 0
EUT : BTHF205	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2402MHz)

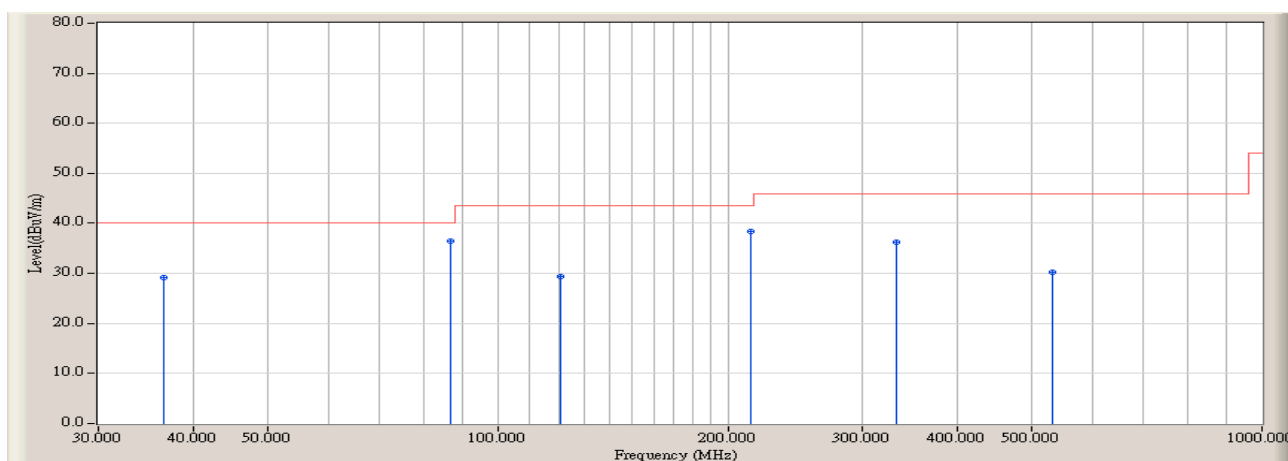


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		36.467	-4.518	37.042	32.524	-7.476	40.000	QUASIPeAK
2	*	63.950	-16.399	54.604	38.205	-1.795	40.000	QUASIPeAK
3		120.533	-12.561	38.232	25.671	-17.829	43.500	QUASIPeAK
4		243.400	-11.454	42.762	31.308	-14.692	46.000	QUASIPeAK
5		332.317	-8.840	41.046	32.206	-13.794	46.000	QUASIPeAK
6		532.783	-5.321	34.347	29.026	-16.974	46.000	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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 13:48
Limit : FCC_CLASS_C_03M_QP	Margin : 0
EUT : BTHF205	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2441MHz)

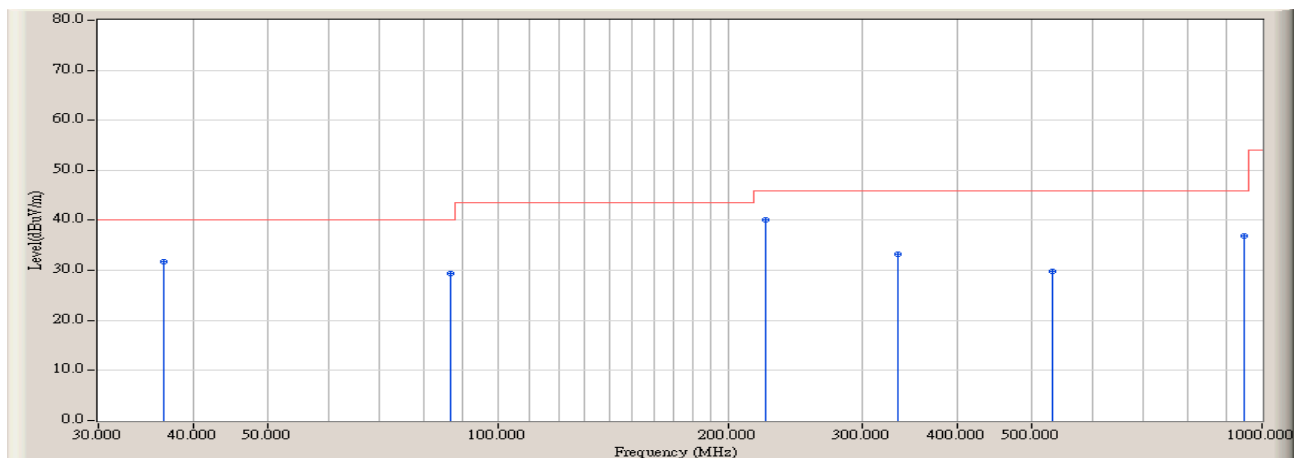


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		36.467	-4.518	33.616	29.098	-10.902	40.000	QUASIPeAK
2	*	86.583	-15.616	51.987	36.371	-3.629	40.000	QUASIPeAK
3		120.533	-12.561	41.948	29.387	-14.113	43.500	QUASIPeAK
4		214.300	-12.038	50.366	38.328	-5.172	43.500	QUASIPeAK
5		332.317	-8.840	45.157	36.317	-9.683	46.000	QUASIPeAK
6		532.783	-5.321	35.573	30.252	-15.748	46.000	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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 13:52
Limit : FCC_CLASS_C_03M_QP	Margin : 0
EUT : BTHF205	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2441MHz)

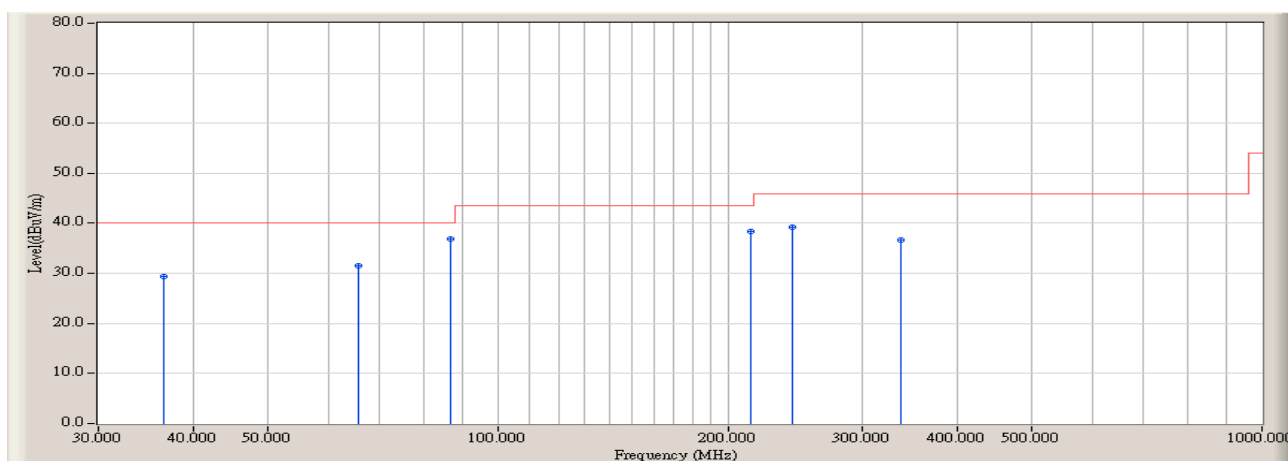


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		36.467	-4.518	36.334	31.816	-8.184	40.000	QUASIPeAK
2		86.583	-15.616	45.007	29.391	-10.609	40.000	QUASIPeAK
3	*	224.000	-10.928	51.052	40.124	-5.876	46.000	QUASIPeAK
4		333.933	-8.796	42.124	33.328	-12.672	46.000	QUASIPeAK
5		532.783	-5.321	35.055	29.734	-16.266	46.000	QUASIPeAK
6		948.267	1.321	35.537	36.857	-9.143	46.000	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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 13:54
Limit : FCC_CLASS_C_03M_QP	Margin : 0
EUT : BTHF205	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2480MHz)

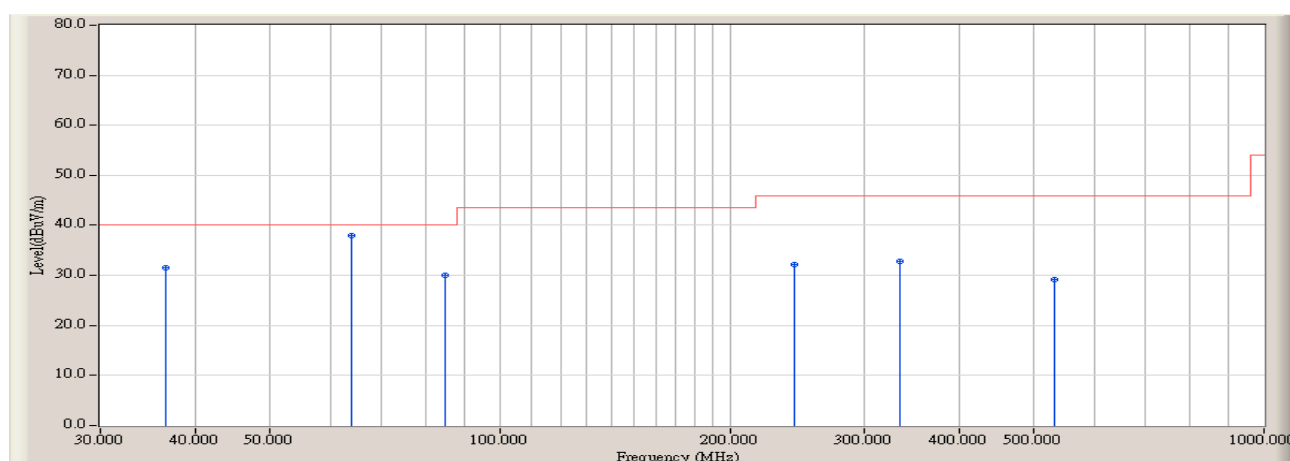


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		36.467	-4.518	33.799	29.281	-10.719	40.000	QUASIPeAK
2		65.567	-16.689	48.246	31.556	-8.444	40.000	QUASIPeAK
3	*	86.583	-15.616	52.553	36.937	-3.063	40.000	QUASIPeAK
4		214.300	-12.038	50.433	38.395	-5.105	43.500	QUASIPeAK
5		243.400	-11.454	50.732	39.278	-6.722	46.000	QUASIPeAK
6		337.167	-8.687	45.265	36.578	-9.422	46.000	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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 13:56
Limit : FCC_CLASS_C_03M_QP	Margin : 0
EUT : BTHF205	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2480MHz)

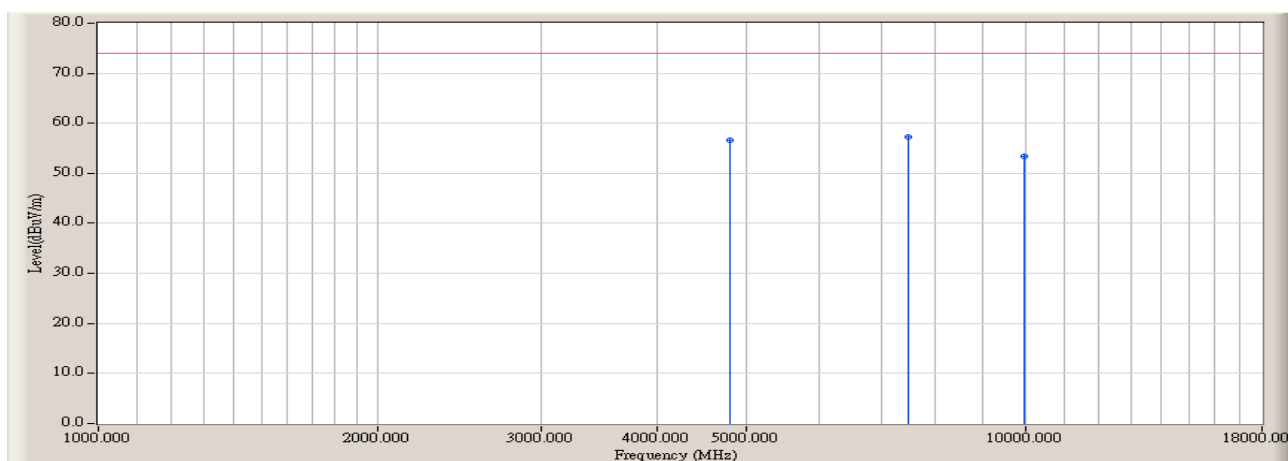


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		36.467	-4.518	35.988	31.470	-8.530	40.000	QUASIPeAK
2	*	63.950	-16.399	54.421	38.022	-1.978	40.000	QUASIPeAK
3		84.967	-15.792	45.717	29.925	-10.075	40.000	QUASIPeAK
4		243.400	-11.454	43.658	32.204	-13.796	46.000	QUASIPeAK
5		333.933	-8.796	41.606	32.810	-13.190	46.000	QUASIPeAK
6		532.783	-5.321	34.595	29.274	-16.726	46.000	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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 09:58
Limit : FCC_C_(Above_1G)_3M_PK	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 1: Transmit(2402MHz)

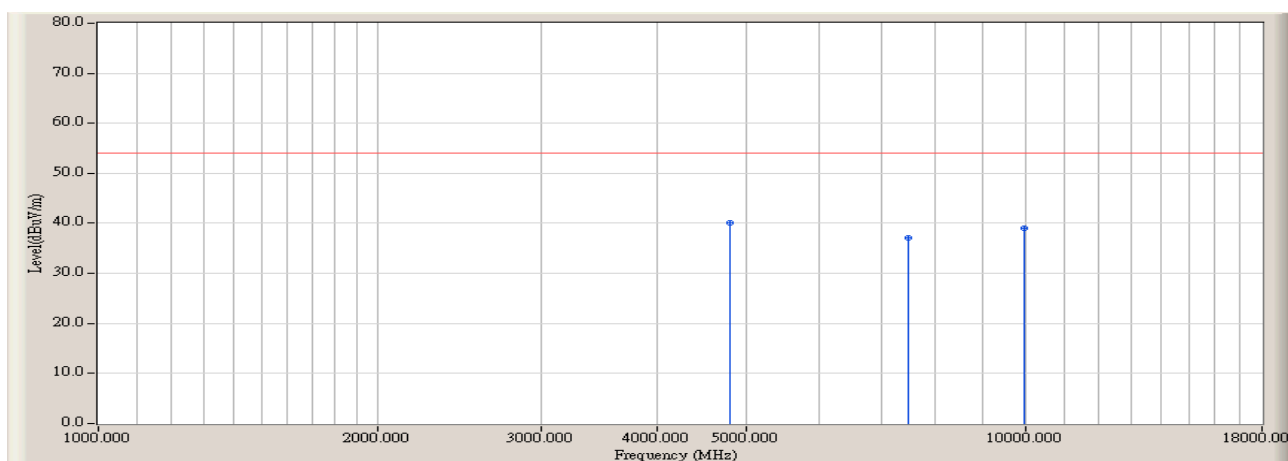


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4796.667	4.834	51.805	56.638	-17.362	74.000	PEAK
2	*	7488.333	15.017	42.164	57.181	-16.819	74.000	PEAK
3		9953.333	18.049	35.248	53.298	-20.702	74.000	PEAK

Note:

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

Engineer : Johnwang	
Site : AC-2	Time : 2007/02/28 - 09:58
Limit : FCC_C_(Above_1G)_3M_AV	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2402MHz)

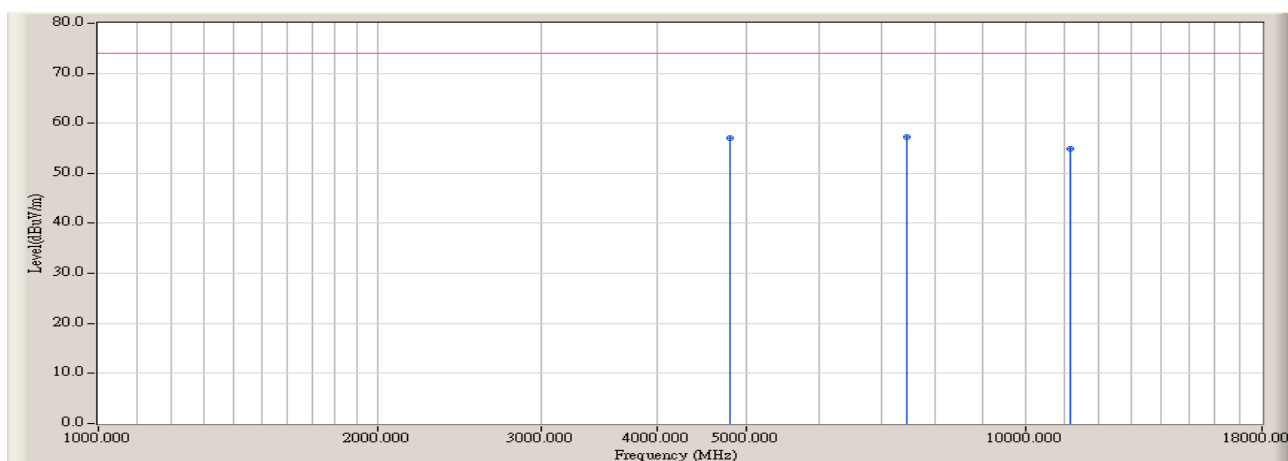


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4796.000	4.832	35.260	40.092	-13.908	54.000	AVERAGE
2		7488.333	15.017	22.190	37.207	-16.793	54.000	AVERAGE
3		9953.333	18.049	21.058	39.108	-14.892	54.000	AVERAGE

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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 10:03
Limit : FCC_C_(Above_1G)_3M_PK	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2402MHz)

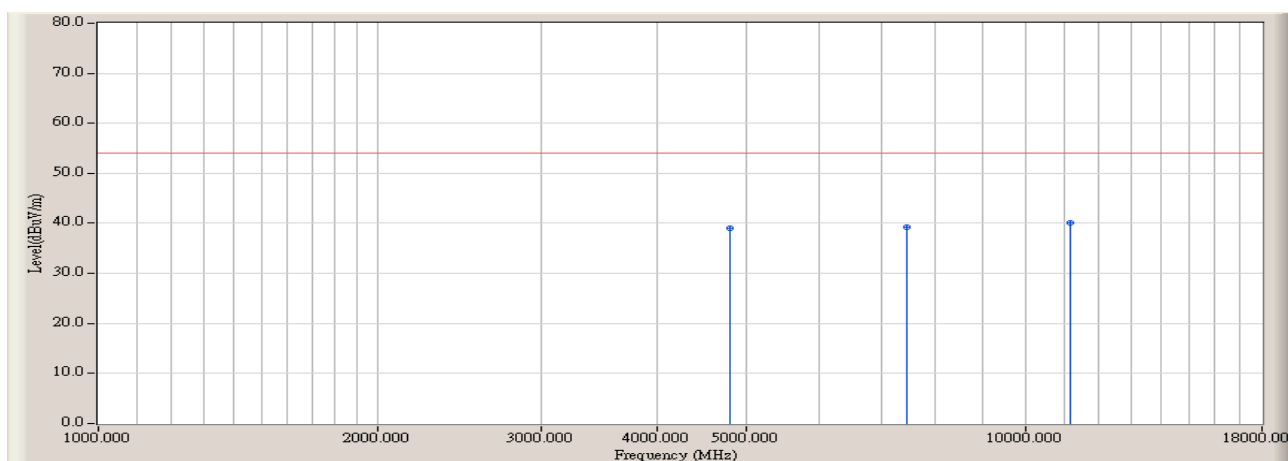


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4796.667	4.834	52.165	56.998	-17.002	74.000	PEAK
2	*	7460.000	15.090	42.272	57.362	-16.638	74.000	PEAK
3		11171.667	20.000	35.001	55.001	-18.999	74.000	PEAK

Note:

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

Engineer : Johnwang	
Site : AC-2	Time : 2007/02/28 - 10:03
Limit : FCC_C_(Above_1G)_3M_AV	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2402MHz)

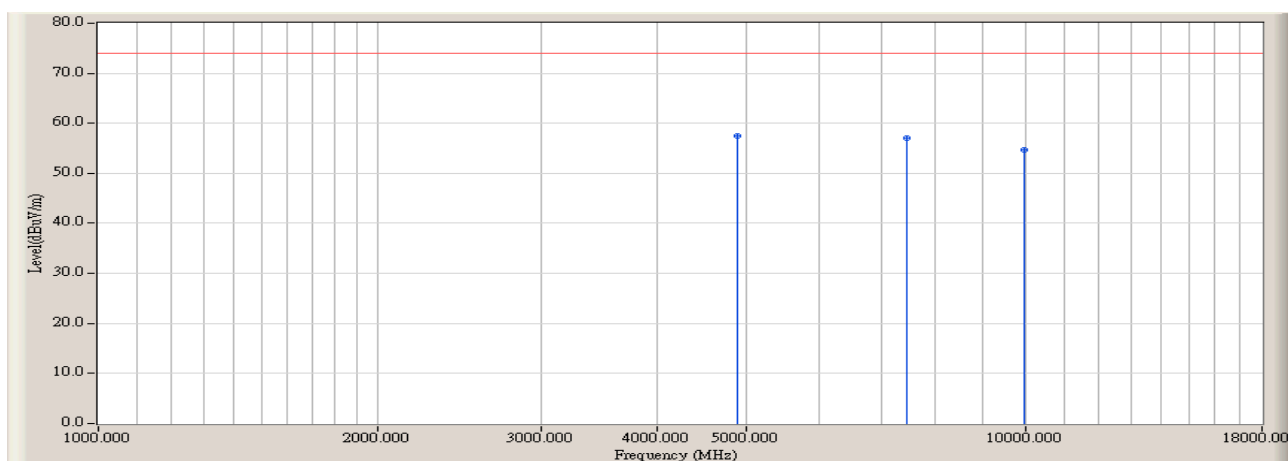


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4796.667	4.834	34.186	39.019	-14.981	54.000	AVERAGE
2		7460.000	15.090	24.068	39.158	-14.842	54.000	AVERAGE
3	*	11171.667	20.000	20.135	40.135	-13.865	54.000	AVERAGE

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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 10:08
Limit : FCC_C_(Above_1G)_3M_PK	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2441MHz)

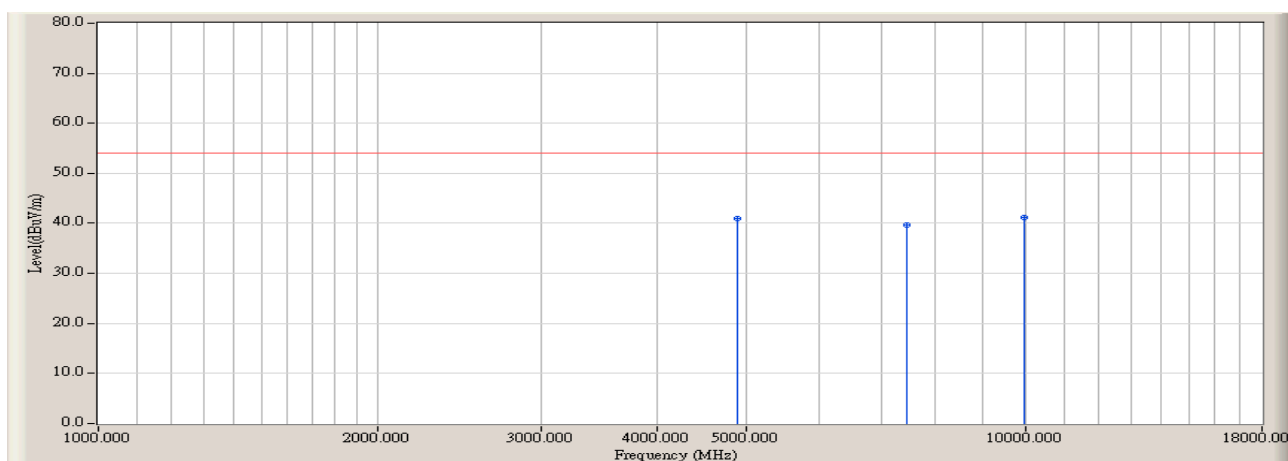


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4881.667	5.034	52.454	57.487	-16.513	74.000	PEAK
2		7460.000	15.090	41.909	56.999	-17.001	74.000	PEAK
3		9981.667	18.120	36.515	54.635	-19.365	74.000	PEAK

Note:

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

Engineer : Johnwang	
Site : AC-2	Time : 2007/02/28 - 10:08
Limit : FCC_C_(Above_1G)_3M_AV	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2441MHz)

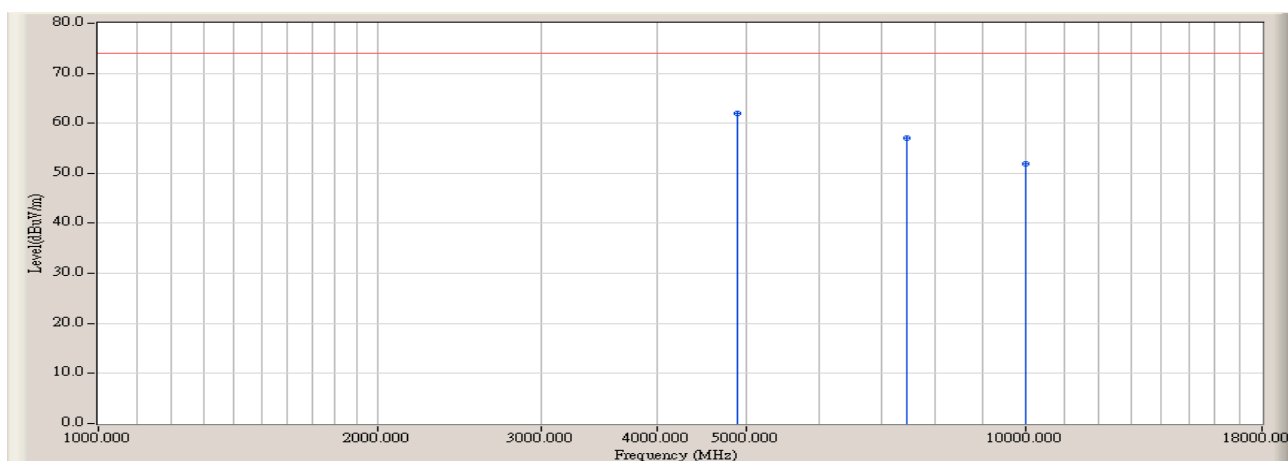


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4881.667	5.034	36.028	41.061	-12.939	54.000	AVERAGE
2		7460.000	15.090	24.628	39.718	-14.282	54.000	AVERAGE
3	*	9981.667	18.120	23.068	41.188	-12.812	54.000	AVERAGE

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 : Johnwang	
Site : AC-2	Time : 2007/02/28 - 10:11
Limit : FCC_C_(Above_1G)_3M_PK	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2441MHz)

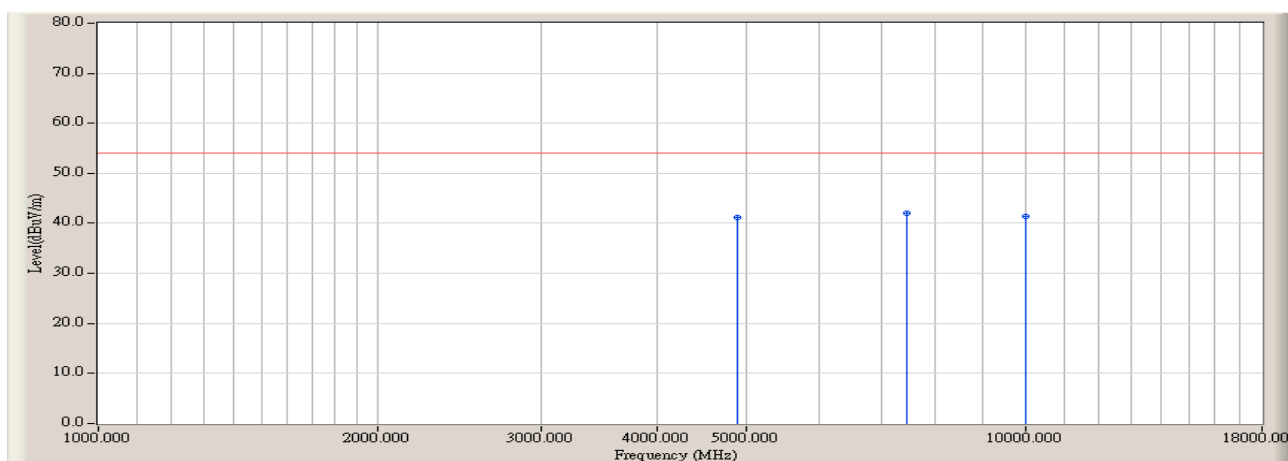


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4881.667	5.034	56.887	61.920	-12.080	74.000	PEAK
2		7460.000	15.090	41.901	56.991	-17.009	74.000	PEAK
3		10010.000	18.180	33.660	51.840	-22.160	74.000	PEAK

Note:

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

Engineer : Johnwang	
Site : AC-2	Time : 2007/02/28 - 10:11
Limit : FCC_C_(Above_1G)_3M_AV	Margin : 0
EUT : BTHF205	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 230V/50Hz	Note : Mode1:Transmit(2441MHz)

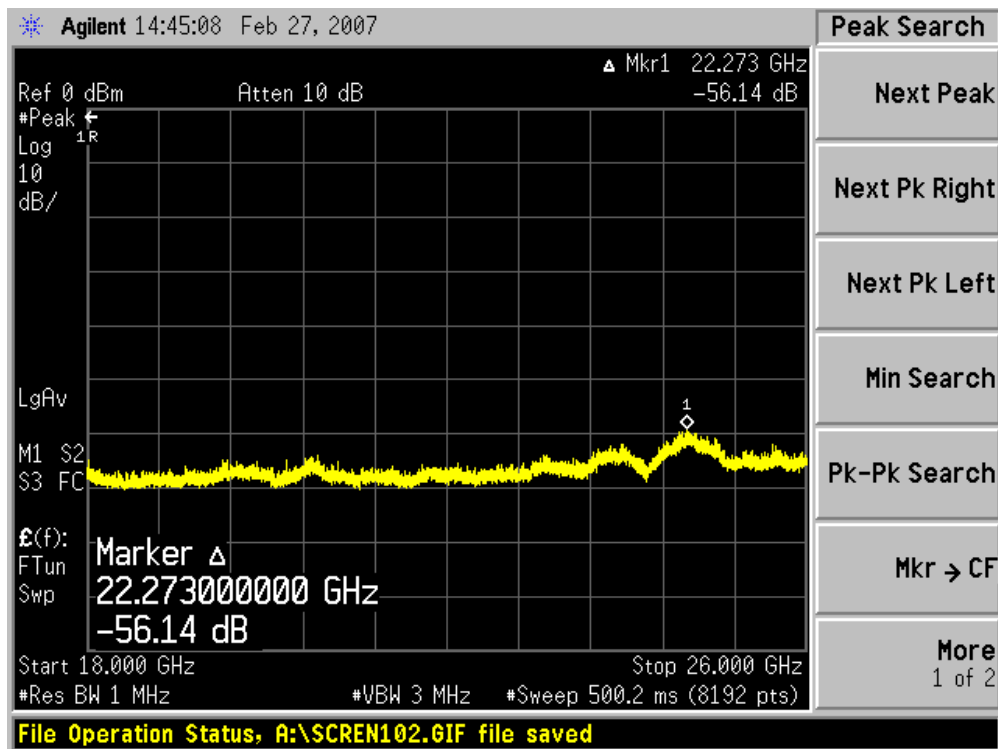


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4881.667	5.034	36.098	41.131	-12.869	54.000	AVERAGE
2	*	7460.000	15.090	26.875	41.965	-12.035	54.000	AVERAGE
3		10010.000	18.180	23.108	41.288	-12.712	54.000	AVERAGE

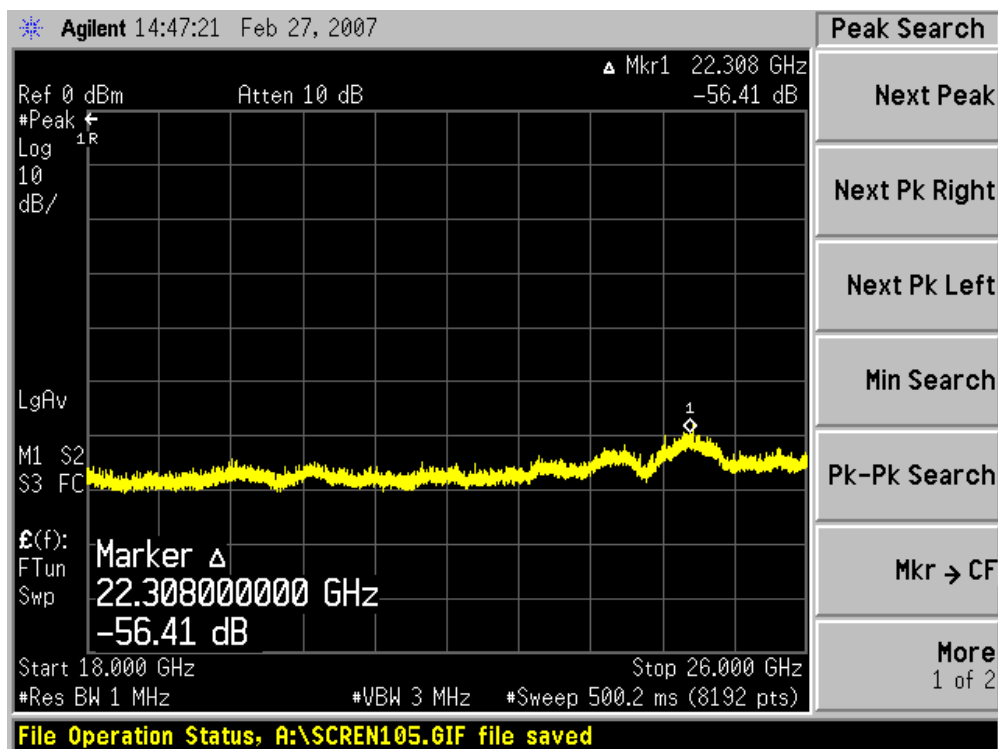
Note:

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

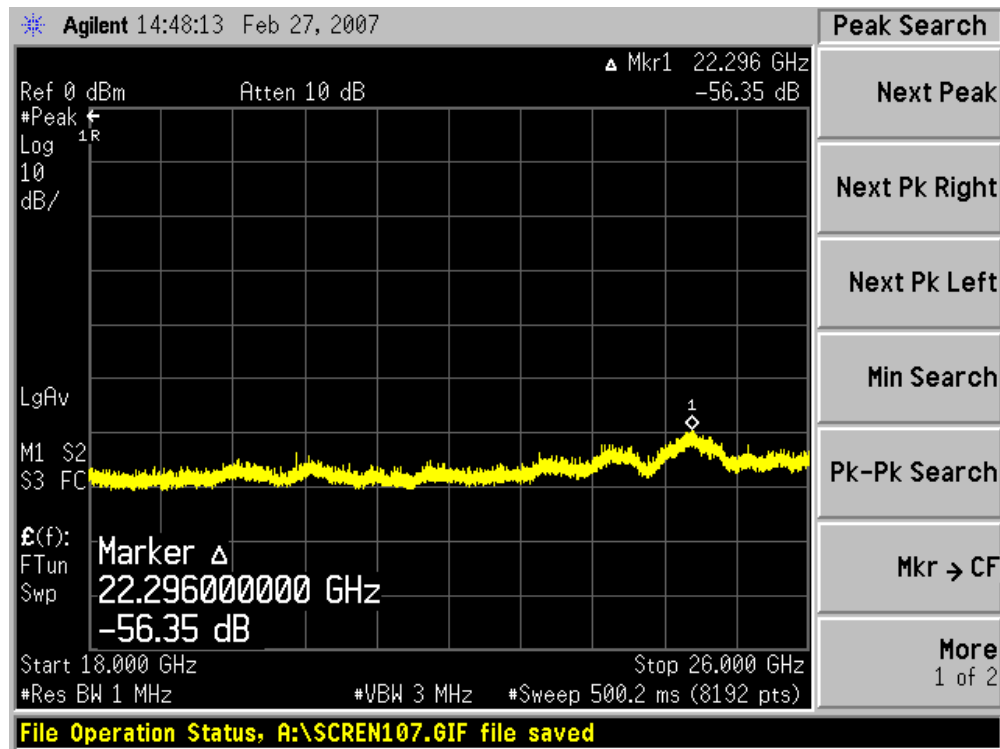
Conducted Spurious - Channel 00 (2402MHz)



Conducted Spurious - Channel 39 (2441MHz)



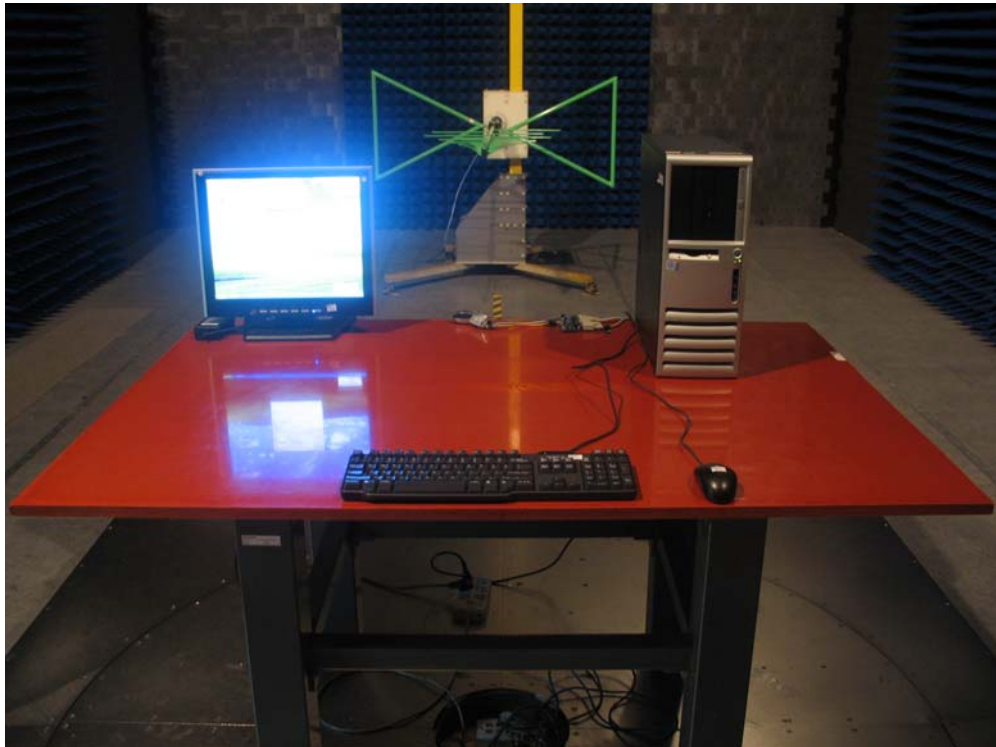
Conducted Spurious - Channel 78 (2480MHz)



4.7. Test Photograph

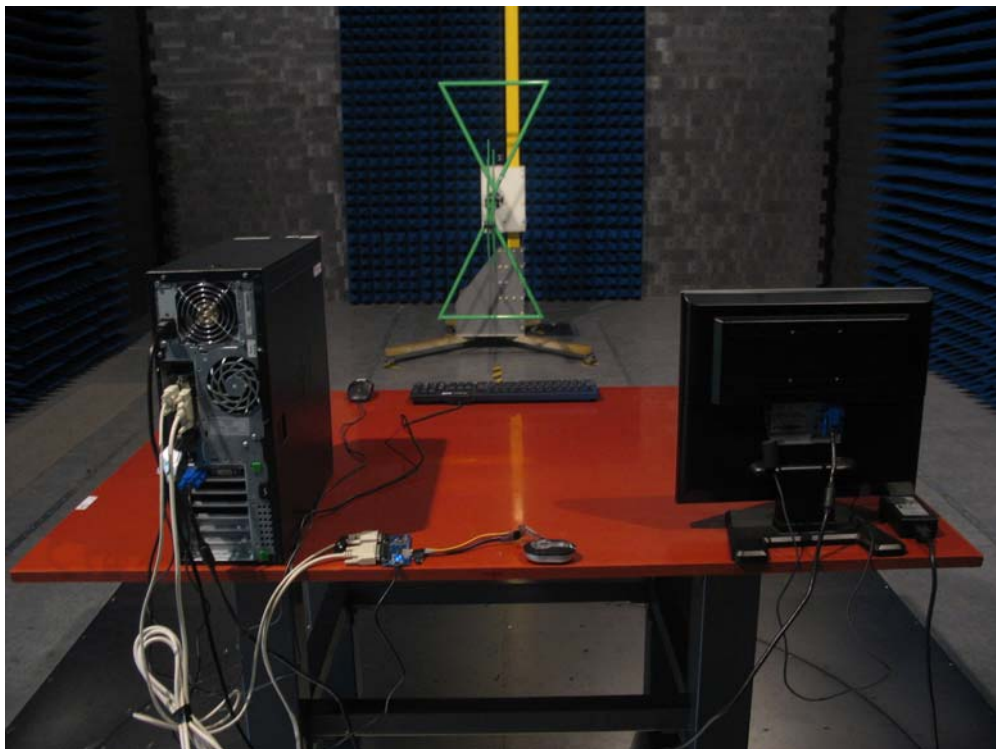
Test Mode: Mode 1: Transmit

Description: Front View of Radiated Test for Under 1GHz



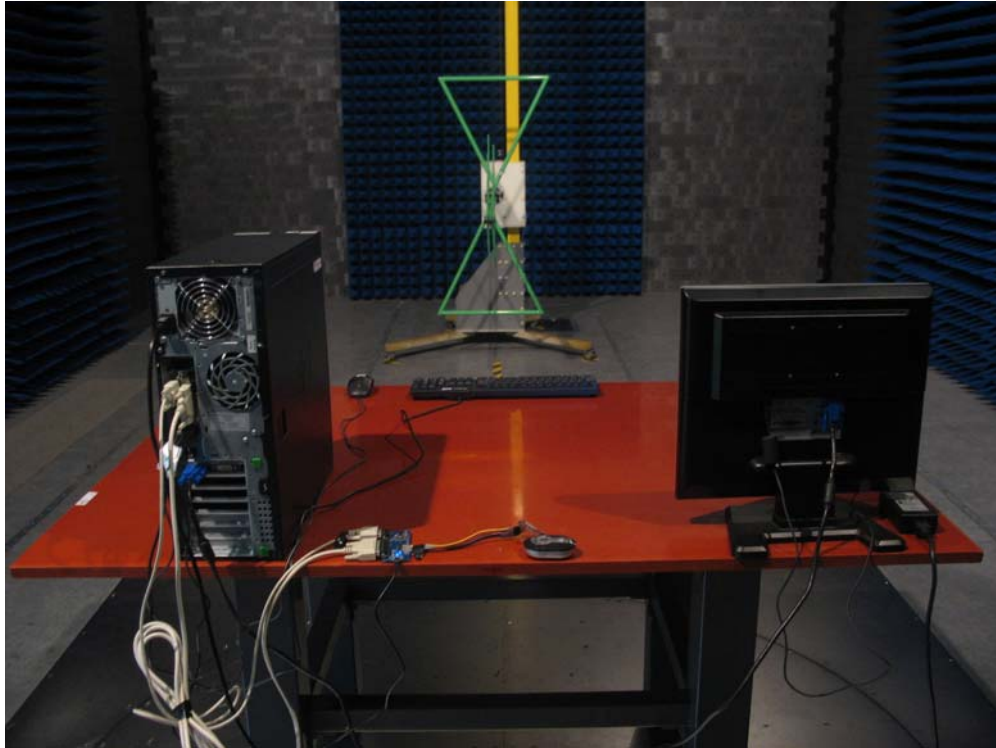
Test Mode: Mode 1: Transmit

Description: Back View of Radiated Test for Under 1GHz



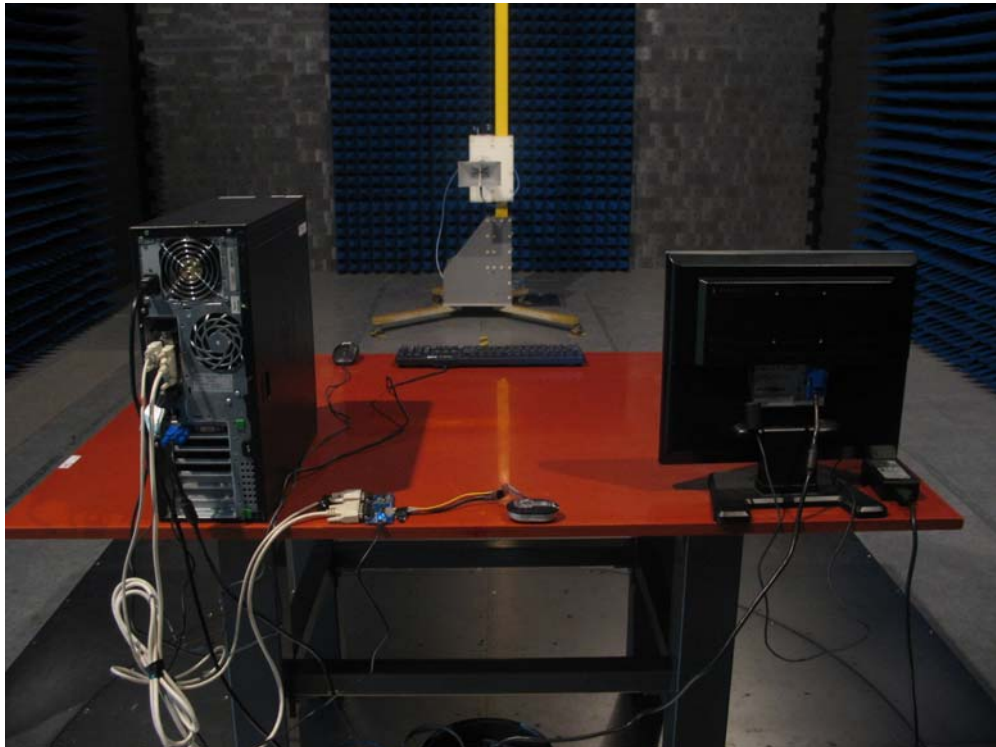
Test Mode: Mode 1: Transmit

Description: Front View of Radiated Test for Above 1GHz



Test Mode: Mode 1: Transmit

Description: Back View of Radiated Test for Above 1GHz



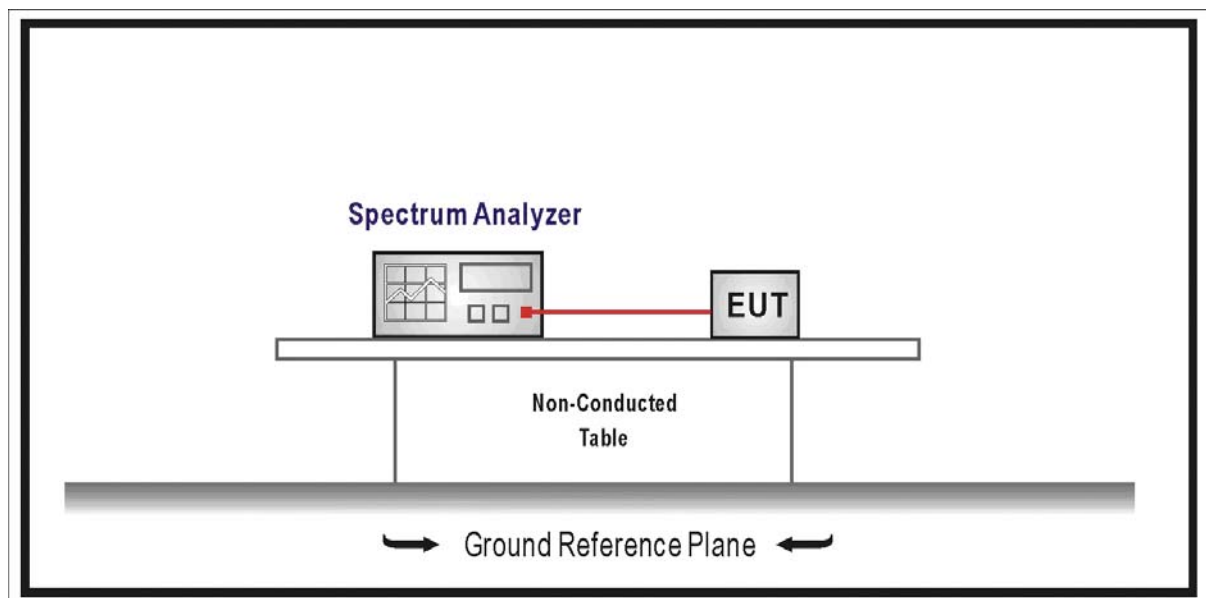
5. Peak Power Output

5.1. Test Equipment

Peak Power Output / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/23
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

5.2. Test Setup



5.3. Limit

The maximum peak power shall be less 1Watt.

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

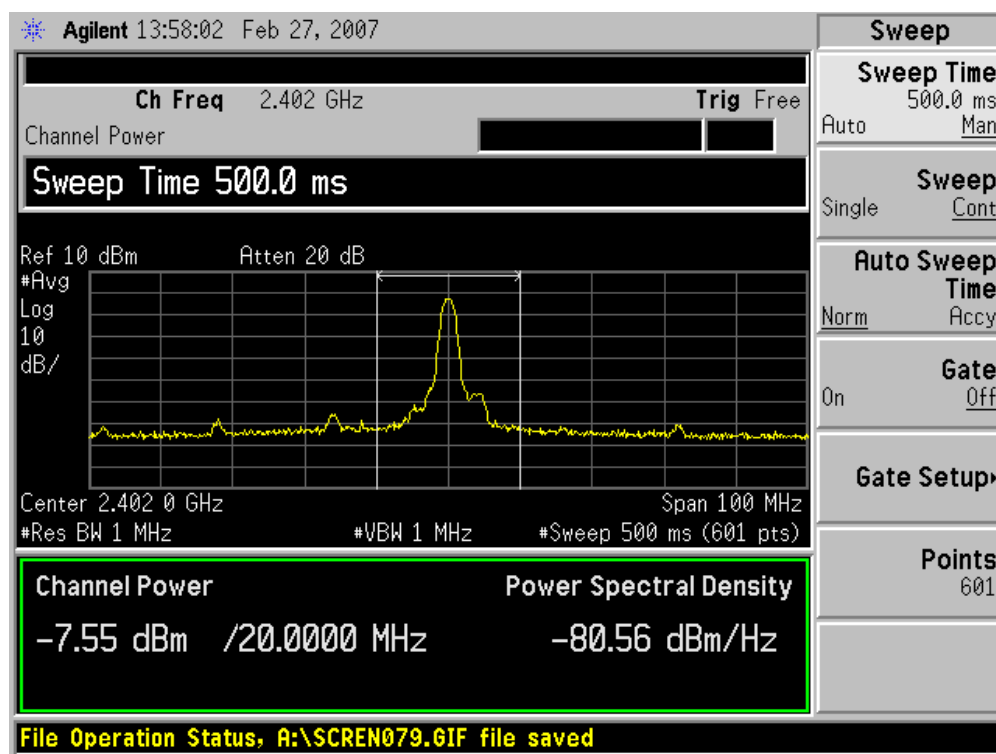
The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

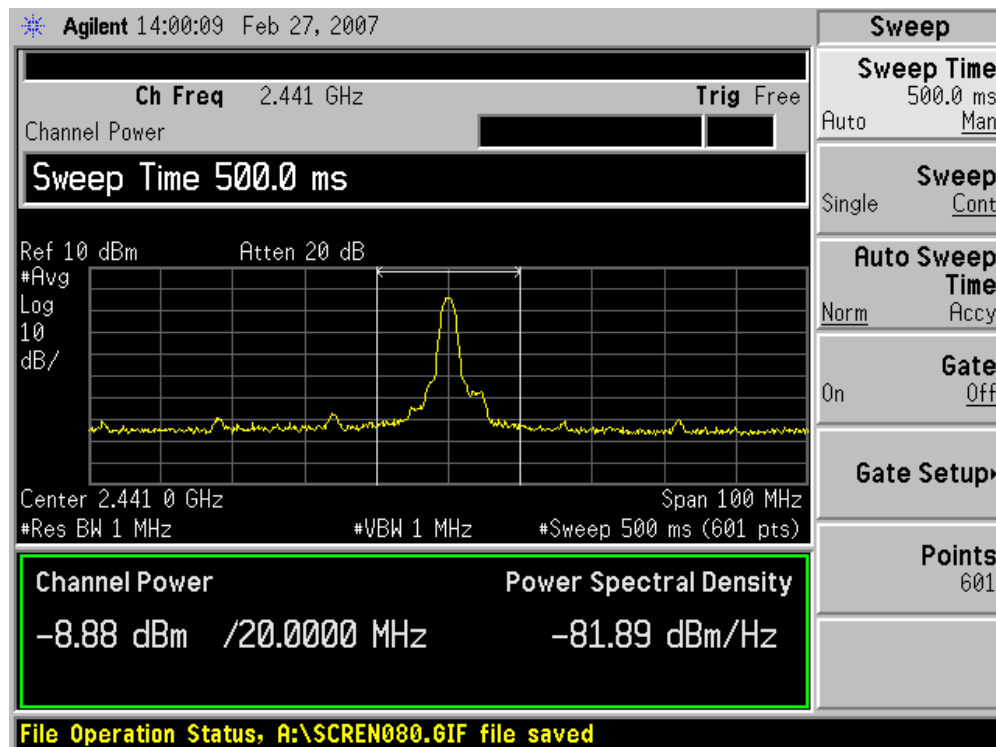
Product	:	Bluetooth Stereo handsets
Test Item	:	Peak Power Output
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit (dBm)	Result
Channel 00	2402.00	-7.55	1 Watt= 30 dBm	Pass
Channel 39	2441.00	-8.88	1 Watt= 30 dBm	Pass
Channel 78	2480.00	-8.91	1 Watt= 30 dBm	Pass

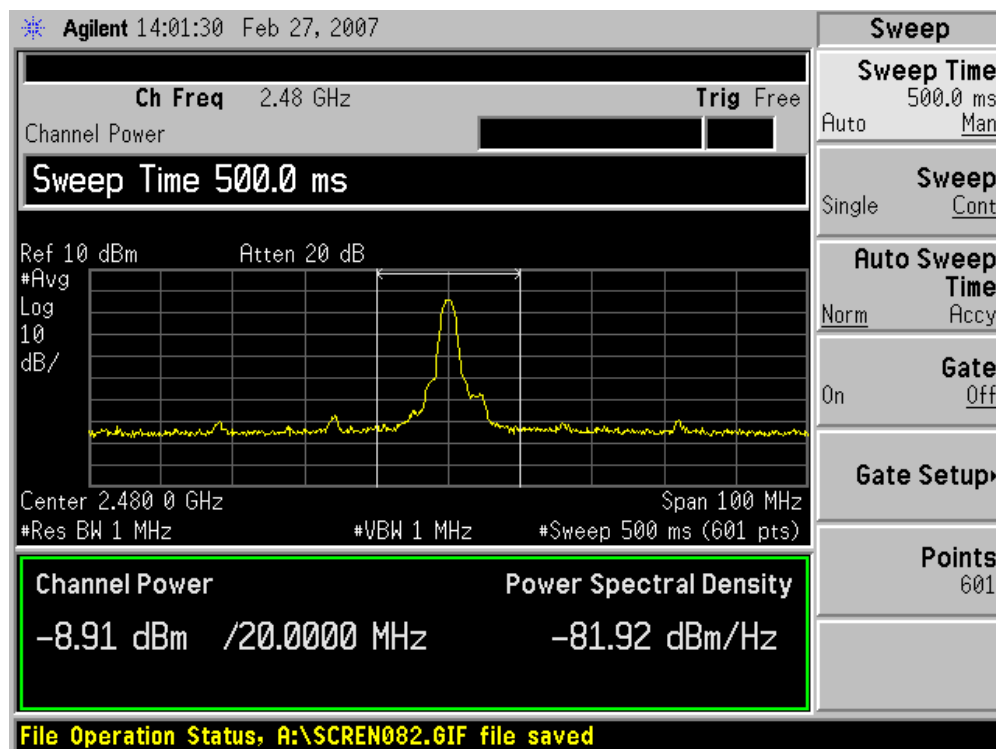
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



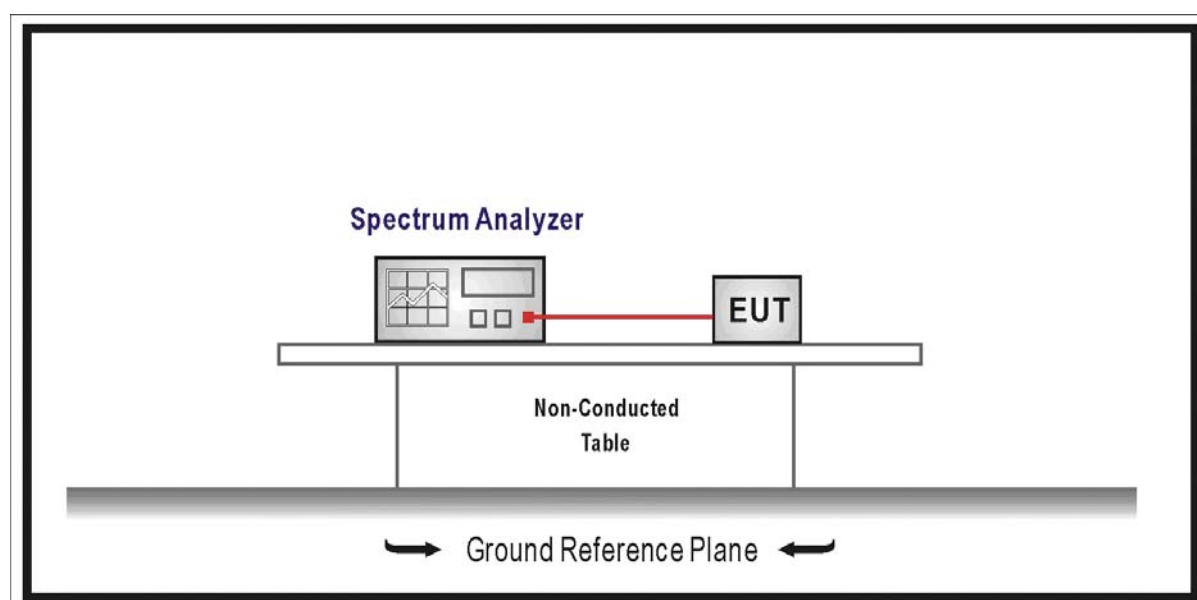
6. Occupied Bandwidth

6.1. Test Equipment

Occupied Bandwidth / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/23
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

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

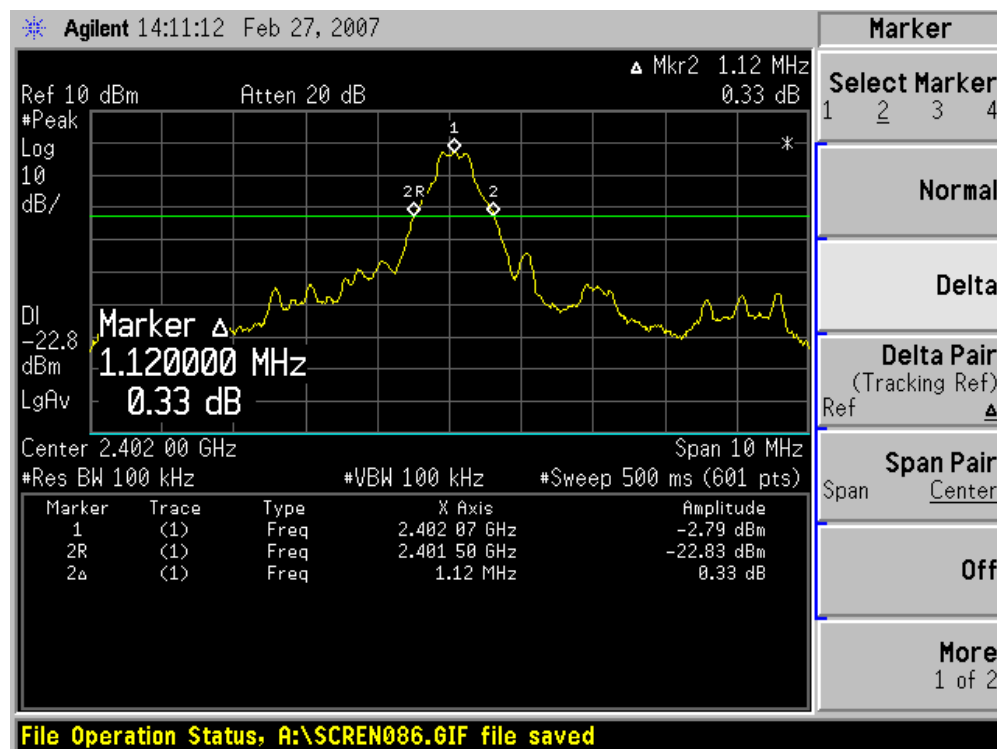
The measurement uncertainty is defined as ± 100 Hz

6.6. Test Result

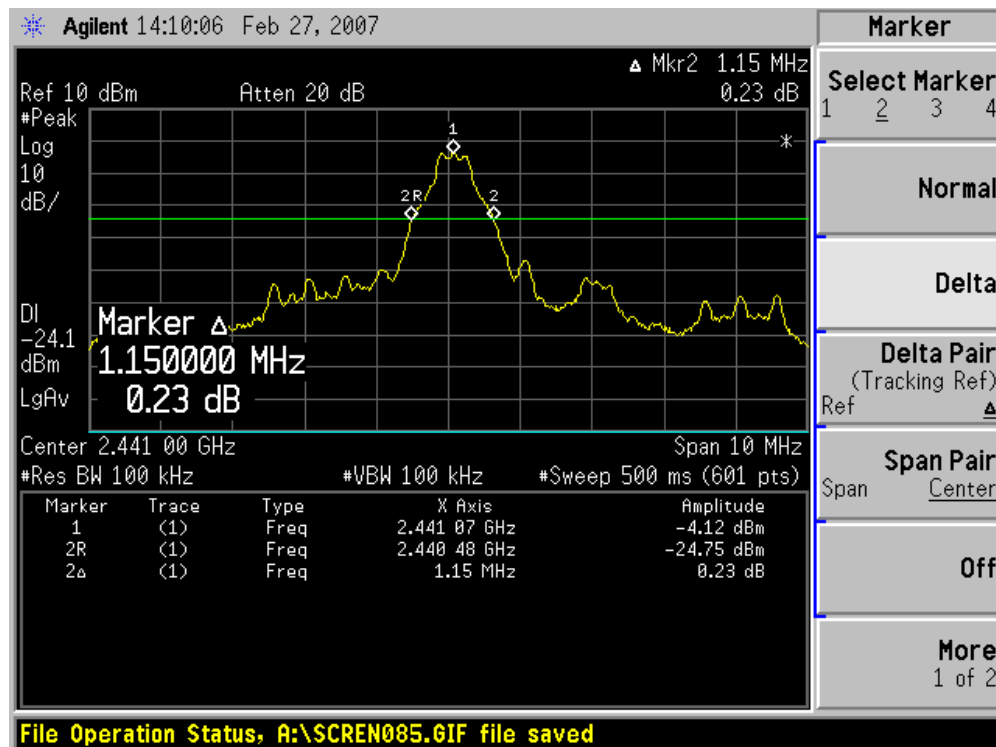
Product	:	Bluetooth Stereo handsets
Test Item	:	Occupied Bandwidth
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1120	N/A	Pass
39	2441	1150	N/A	Pass
78	2480	1130	N/A	Pass

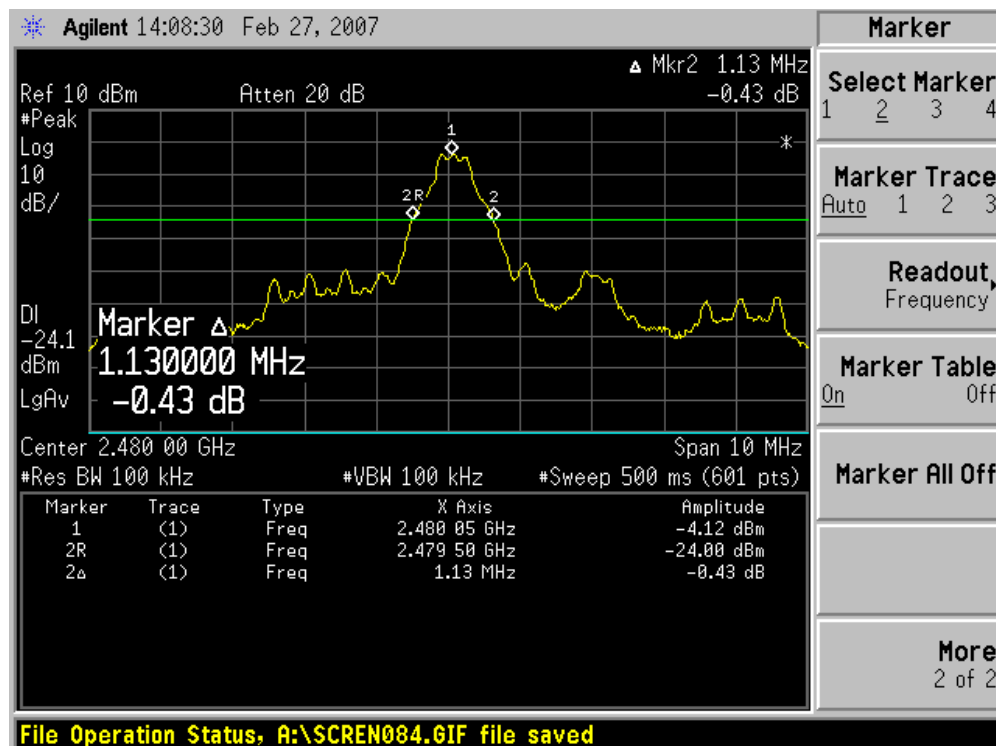
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



7. Band Edge

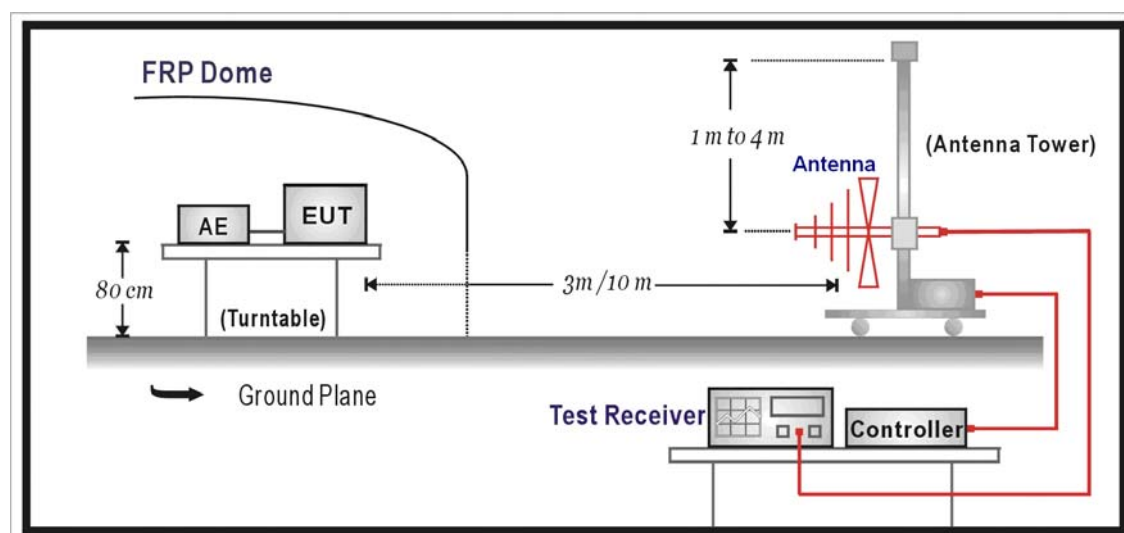
7.1. Test Equipment

Band Edge / AC-2

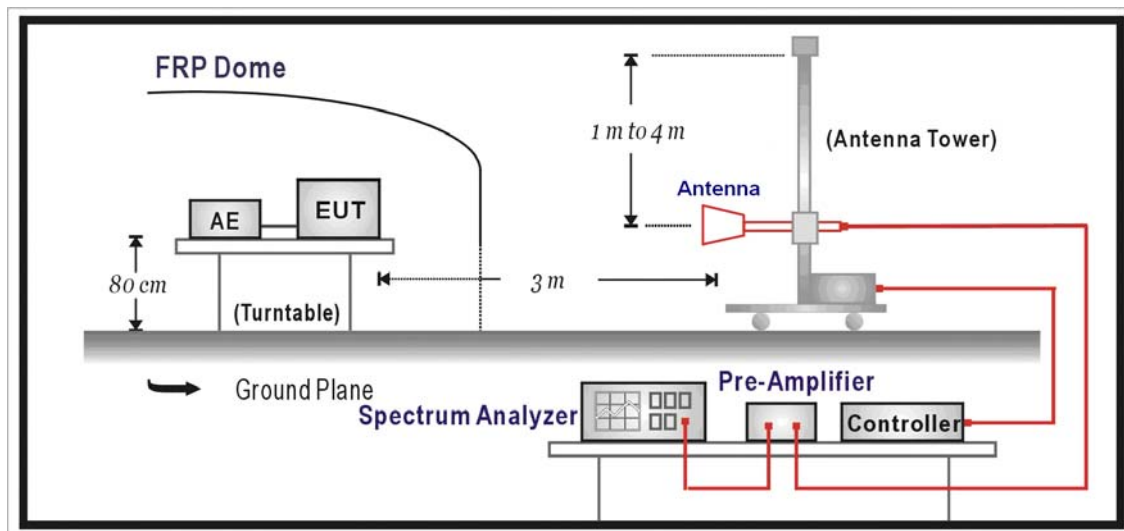
Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2006/11/20
EMI Test Receiver	R&S	ESCI	100175	2006/11/25
Preamplifier	Quietek	AP-025C	QT-AP003	2006/11/25
Preamplifier	Quietek	AP-180C	CHM-0602013	2006/03/20
Bilog Type Antenna	Schaffner	CBL6112B	2932	2006/10/26
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2006/11/30
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2006/11/30
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2006/03/30

7.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



7.3. 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)).

7.4. 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.

7.5. Uncertainty

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 Stereo handsets
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmitter (2402MHz)

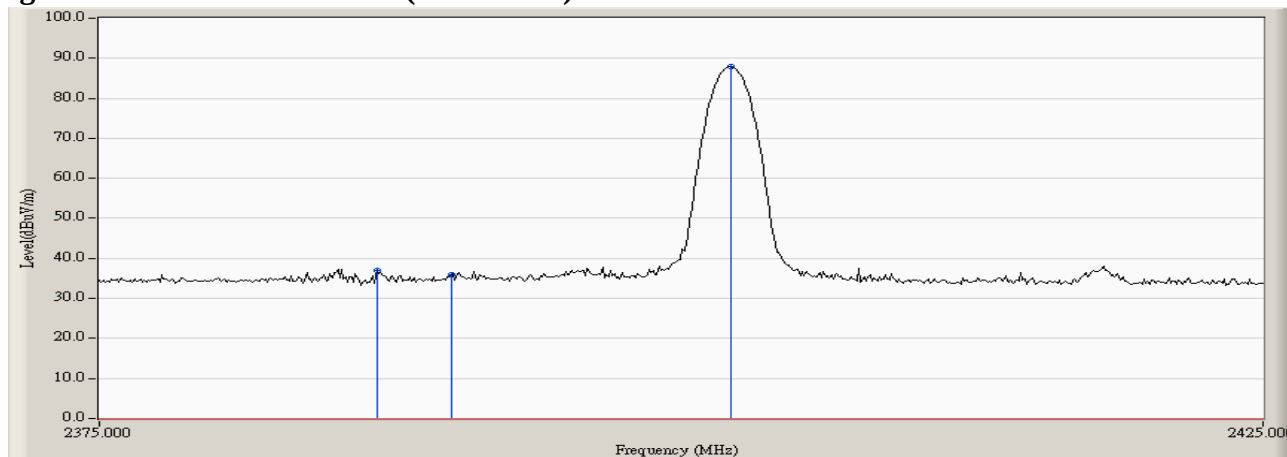
RF Radiated Measurement:

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)	2386.833	40.733	37.000	74.00	54.00	Pass
00 (Average)	--	--	--	74.00	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 Stereo handsets
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmitter (2402MHz)

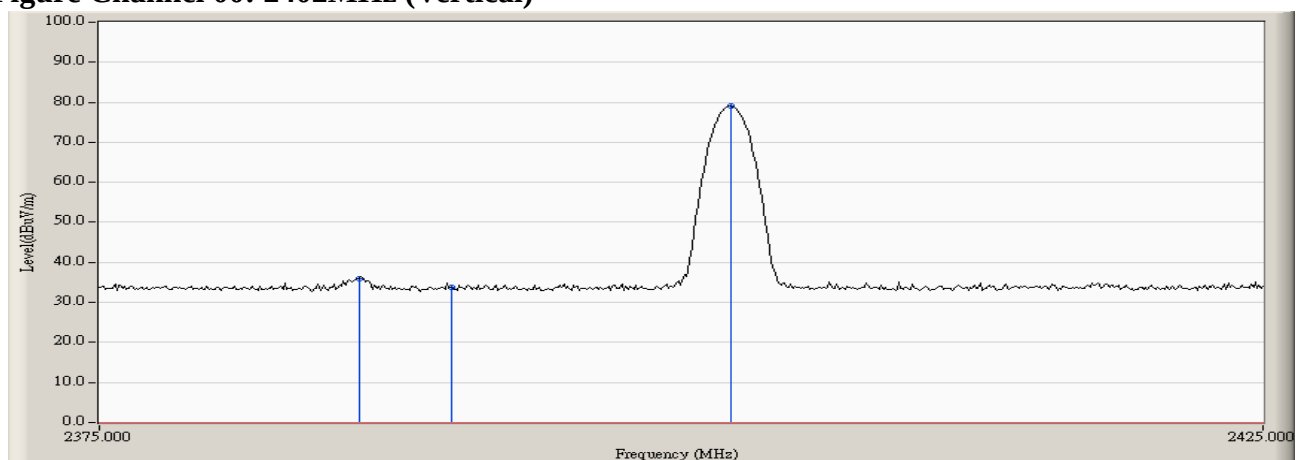
RF Radiated Measurement:

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)	2386.083	39.700	35.969	74.00	54.00	Pass
00 (Average)	--	--	--	74.00	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 Stereo handsets
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmitter (2480MHz)

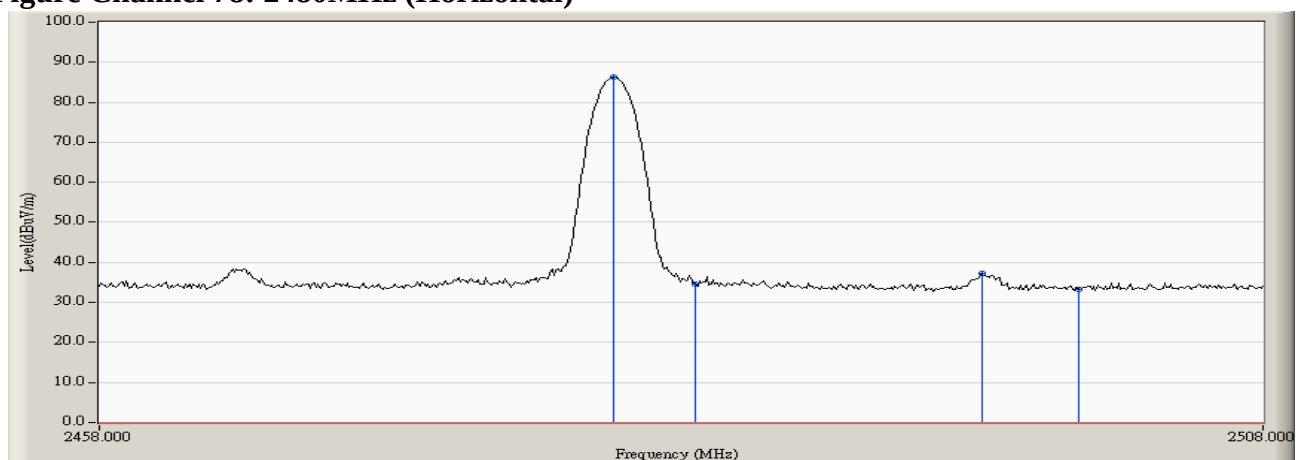
RF Radiated Measurement:

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)	2495.833	41.025	37.185	74.00	54.00	Pass
78(Average)	--	--	--	74.00	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 Stereo handsets
Test Item	:	Band Edge
Test Site	:	AC-2
Test Mode	:	Mode 1: Transmitter (2480MHz)

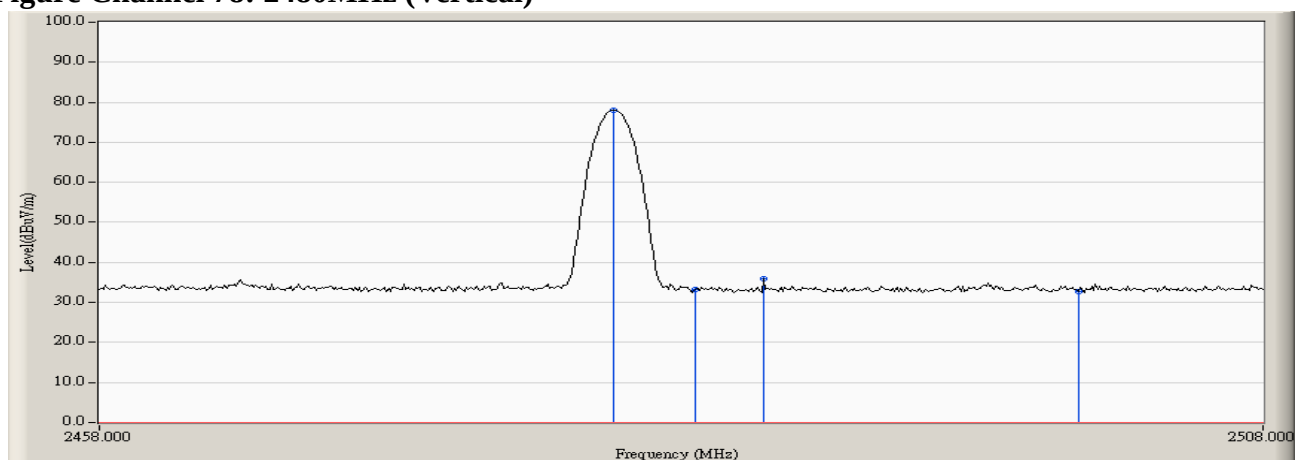
RF Radiated Measurement:

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)	2486.417	39.841	36.012	74.00	54.00	Pass
78(Average)	--	--	--	74.00	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.

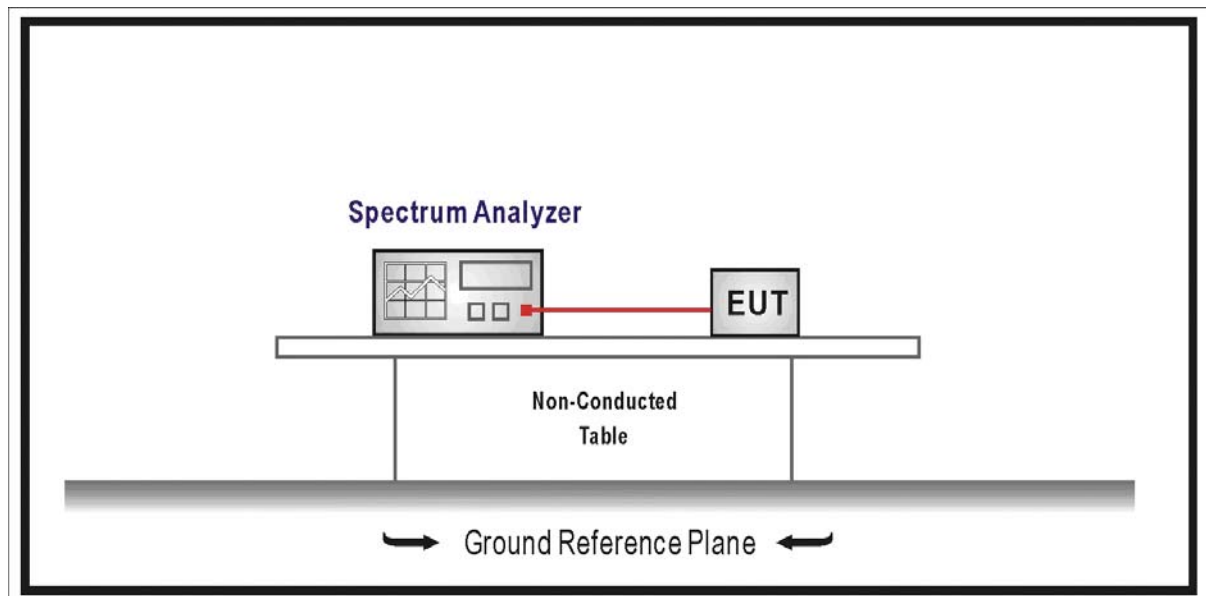
8. Channel Number

8.1. Test Equipment

Channel Number / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/23
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

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

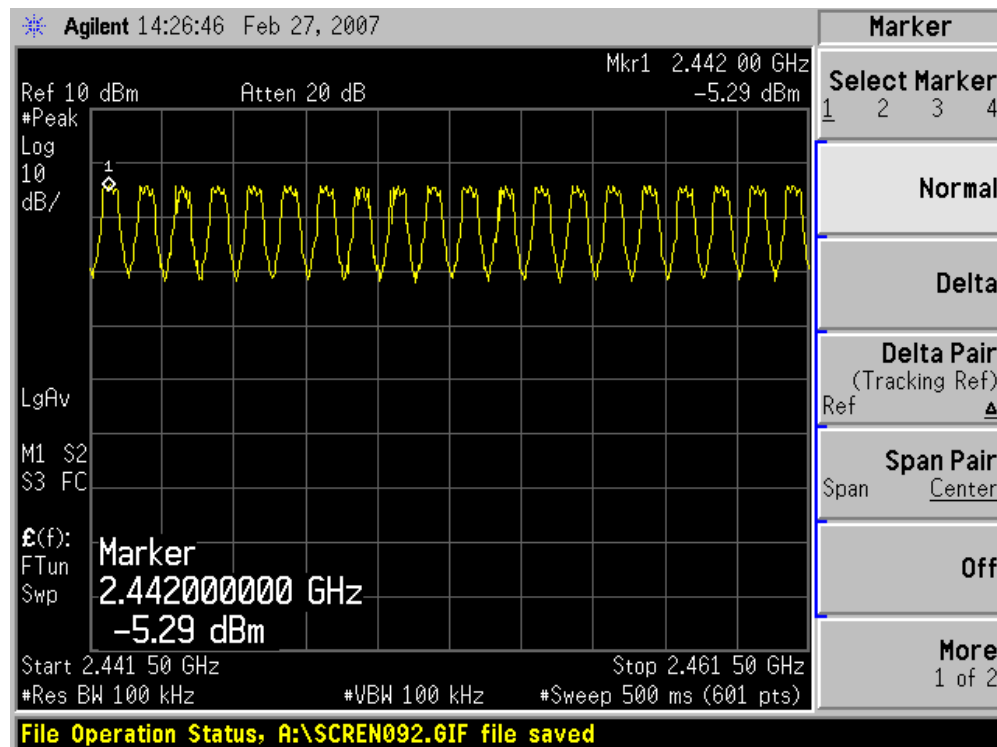
The measurement uncertainty is defined as ± 200 kHz

8.6. Test Result

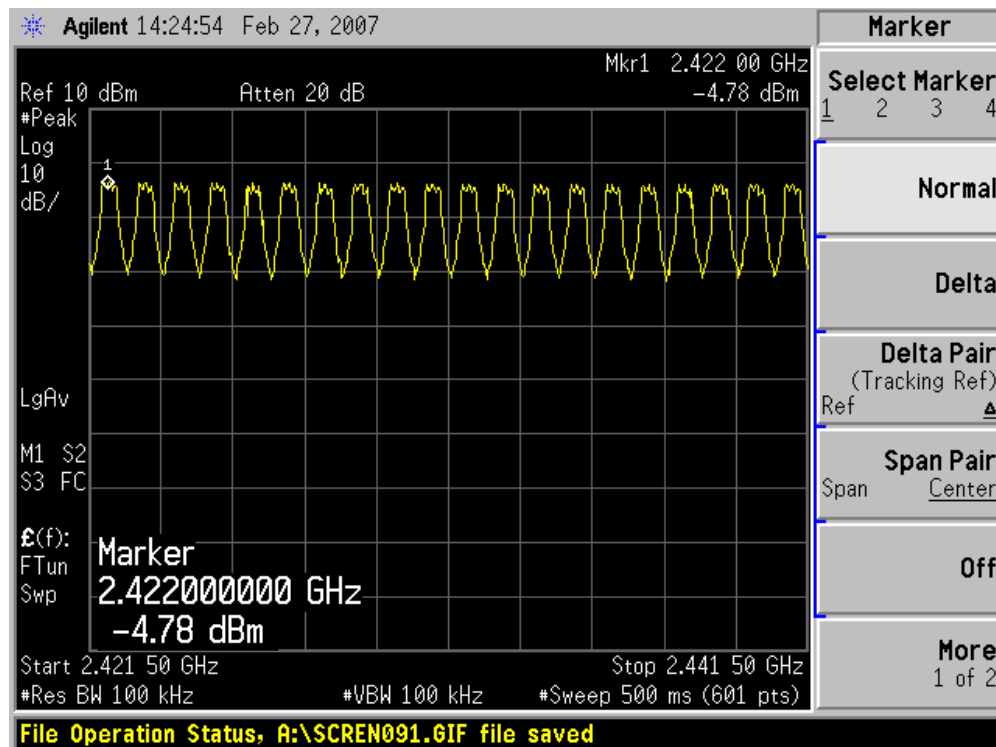
Product	:	Bluetooth Stereo handsets
Test Item	:	Channel Number
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter

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

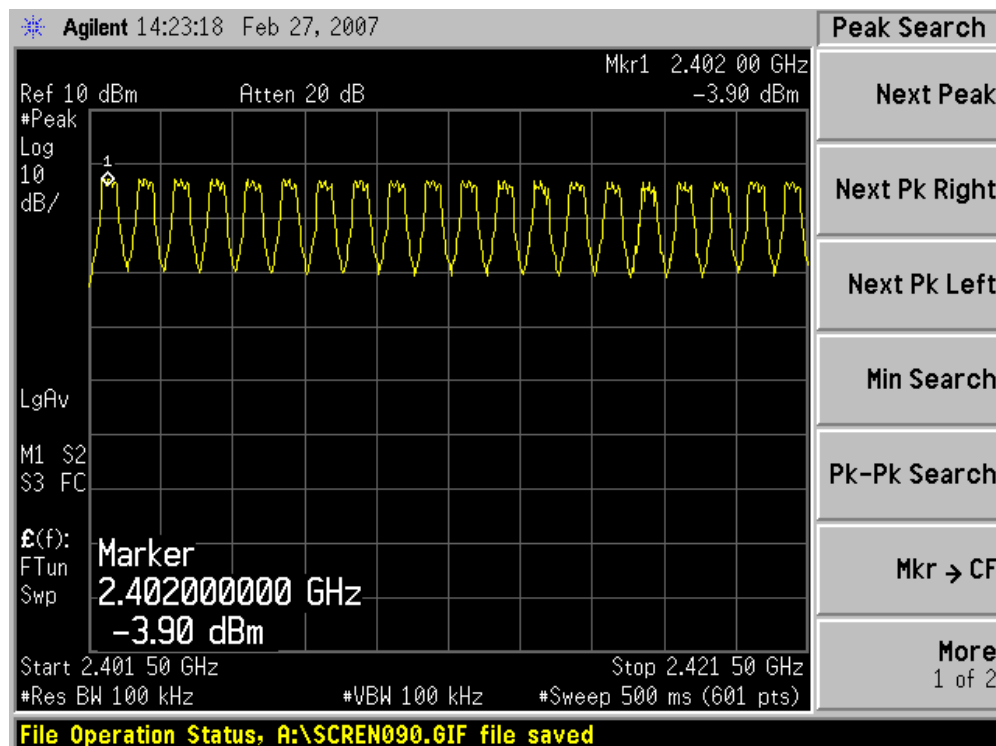
Frequency Range (2402~2421MHz)



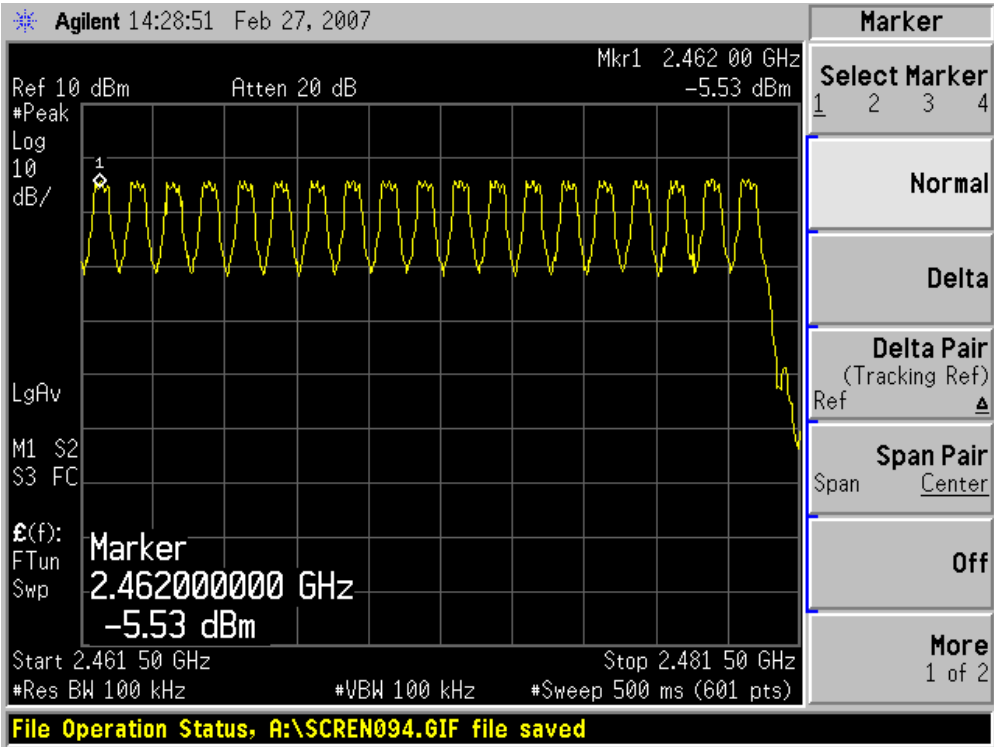
Frequency Range (2422~2441MHz)



Frequency Range (2442~2461MHz)



Frequency Range (2462~2480MHz)



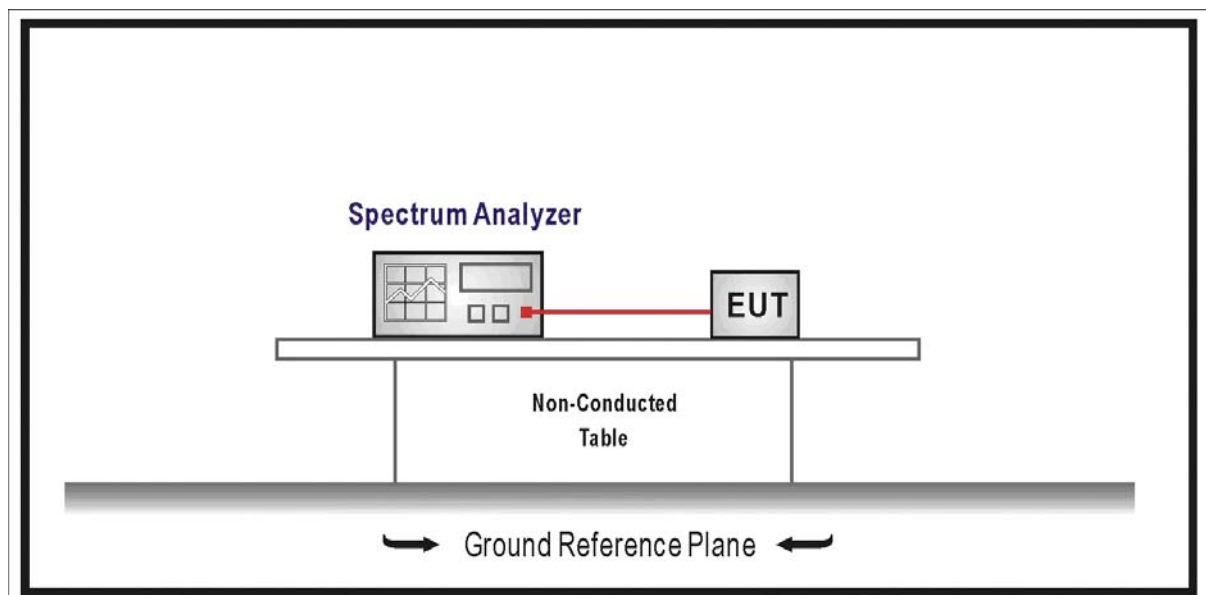
9. Channel Separation

9.1. Test Equipment

Channel Separation / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/23
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

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

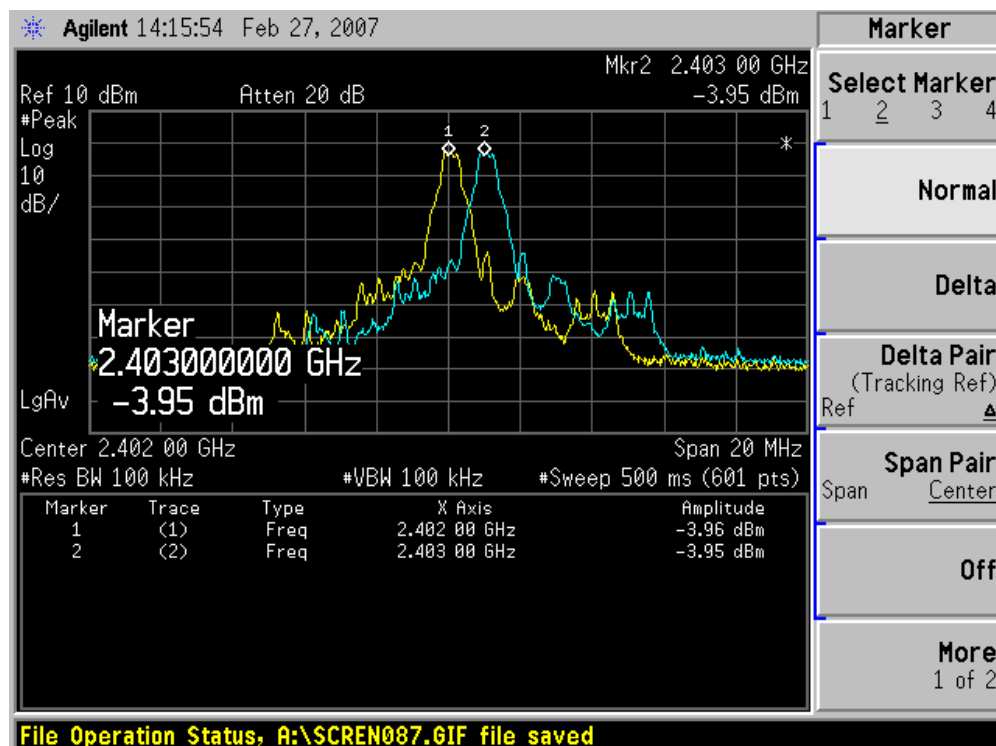
The measurement uncertainty is defined as ± 150 kHz

9.6. Test Result

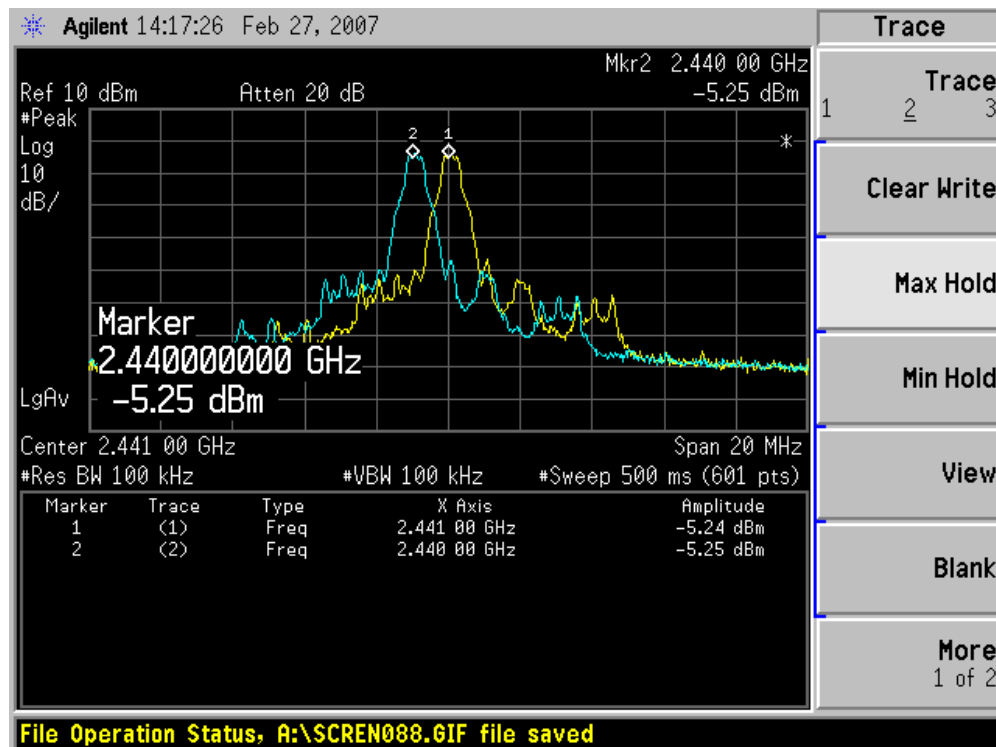
Product	:	Bluetooth Stereo handsets
Test Item	:	Channel Separation
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter

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

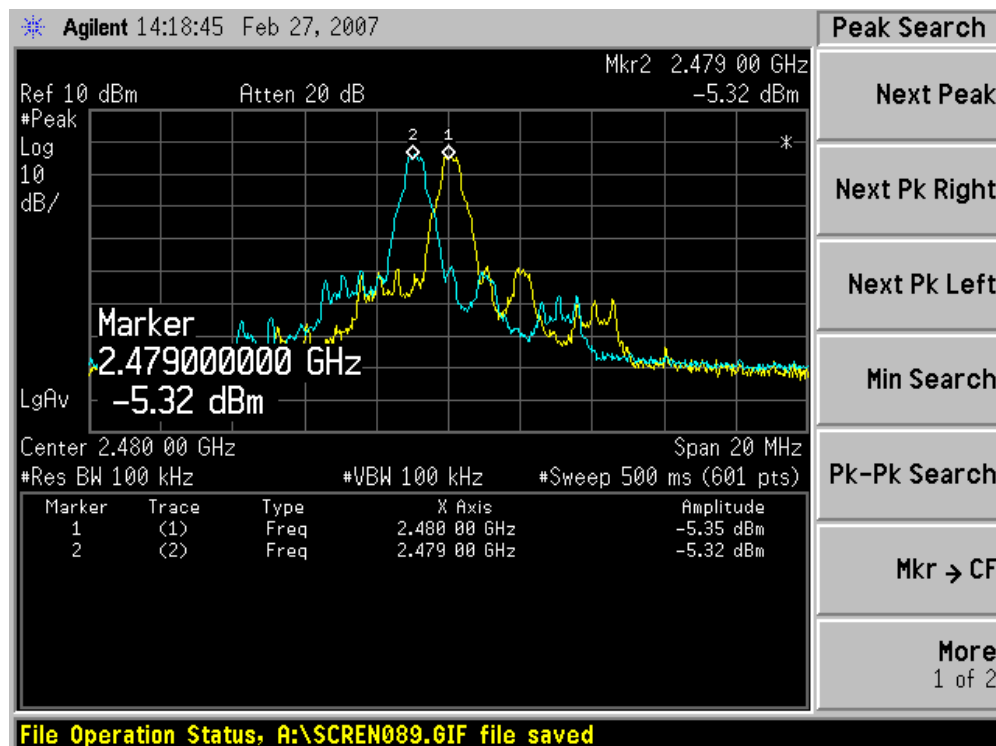
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



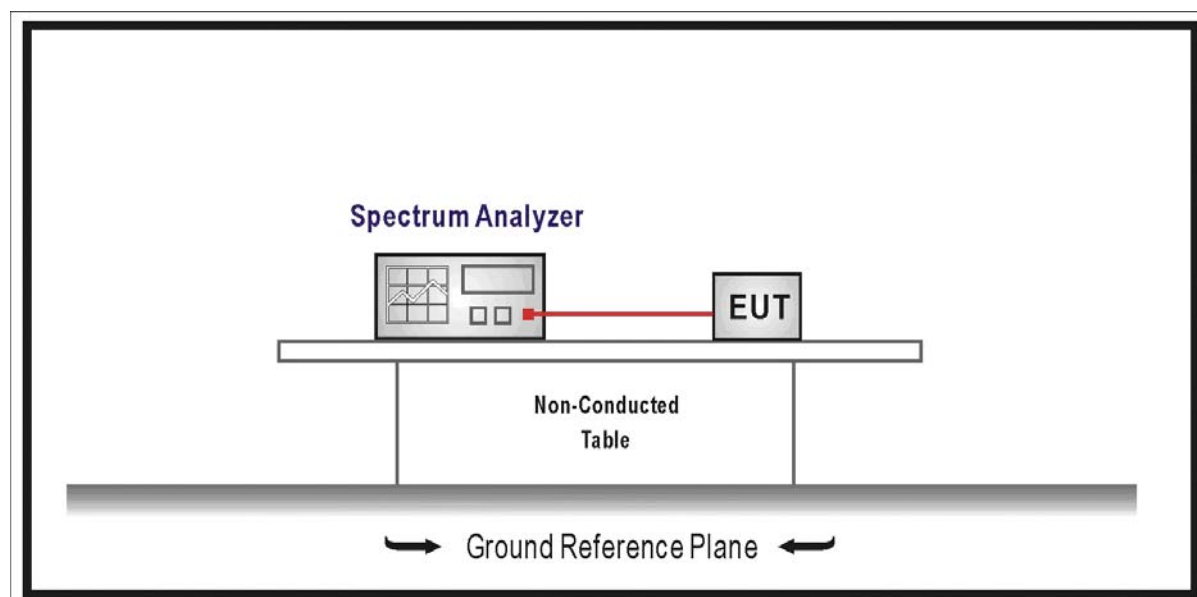
10. Dwell Time

10.1. Test Equipment

Dwell Time / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/23
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

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

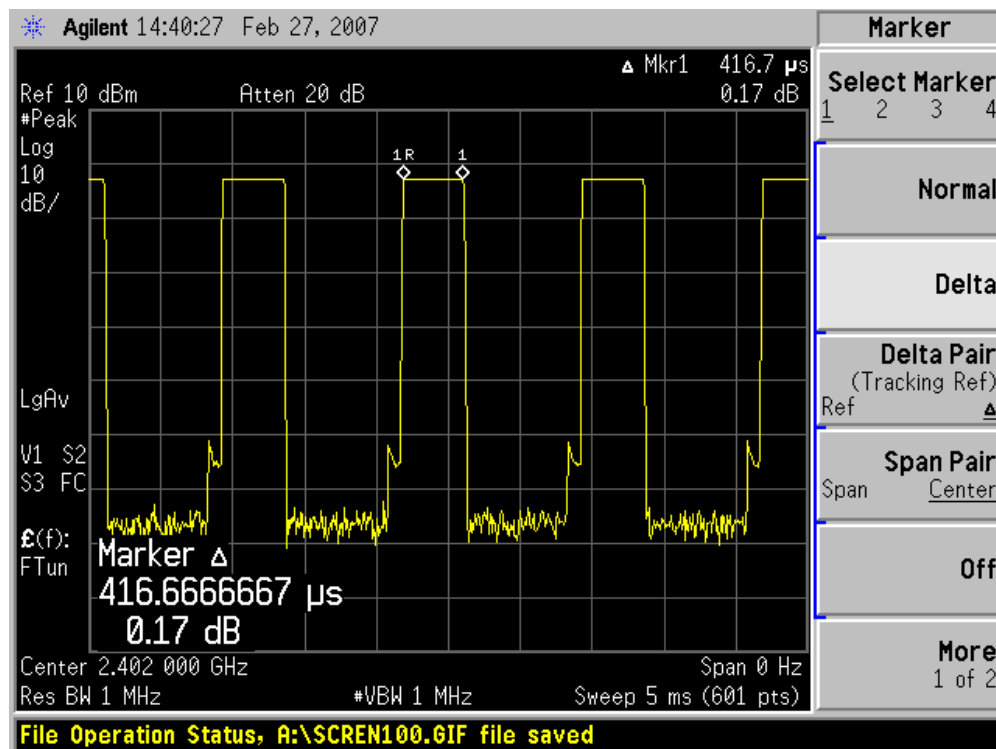
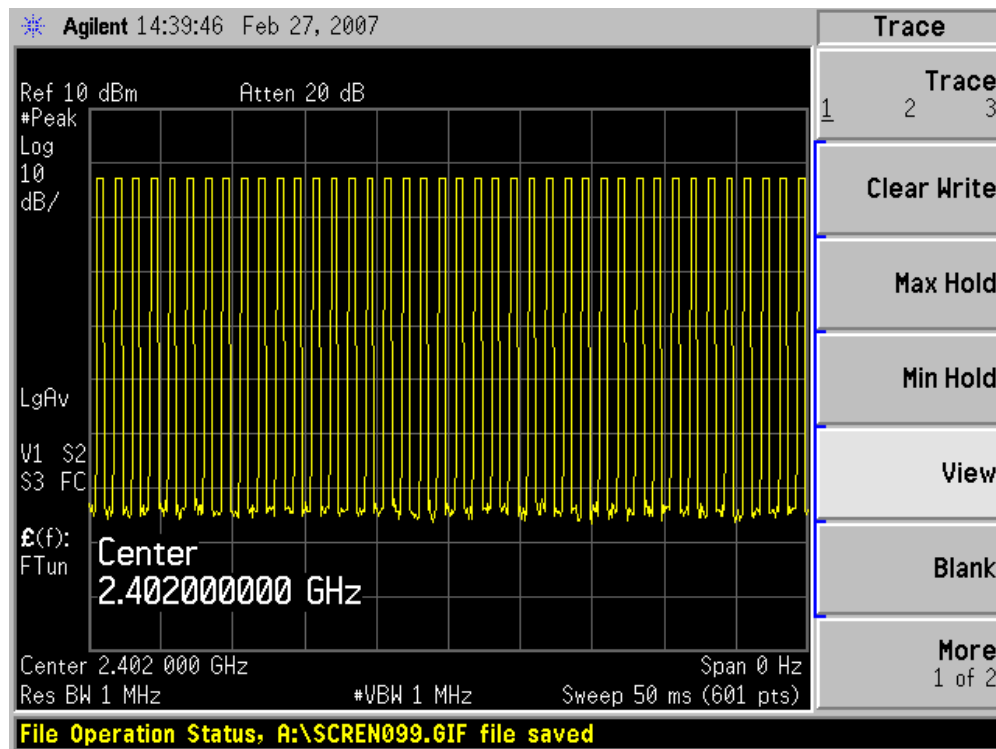
The measurement uncertainty is defined as ± 25 ms

10.6. Test Result

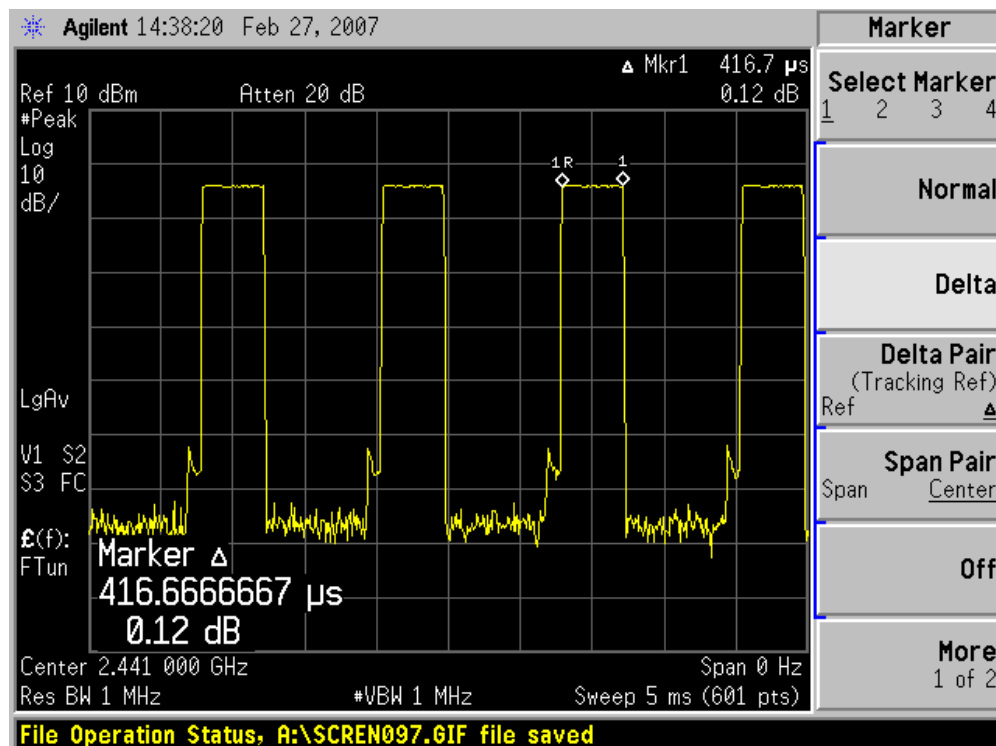
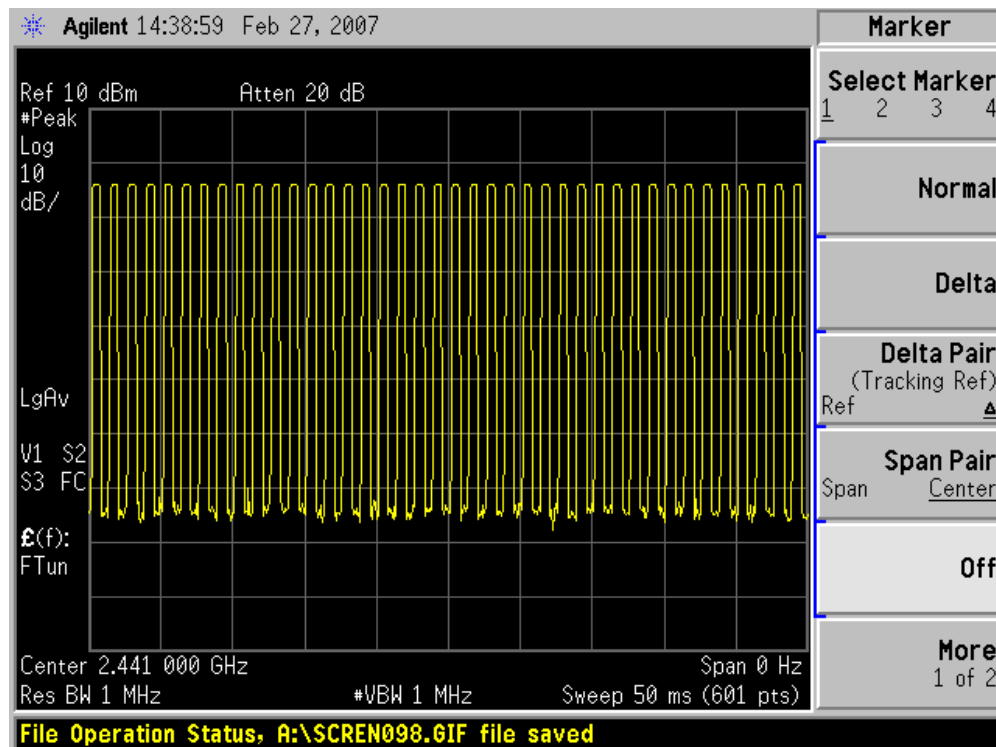
Product	:	Bluetooth Stereo handsets
Test Item	:	Dwell Time
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter

Channel (MHz)	Measurement Level (ms)	Required Limit (sec.)	Result
CH 00 (2402)	133.54	< 0.4	Pass
CH 39 (2441)	133.54	< 0.4	Pass
CH 78 (2480)	117.51	< 0.4	Pass

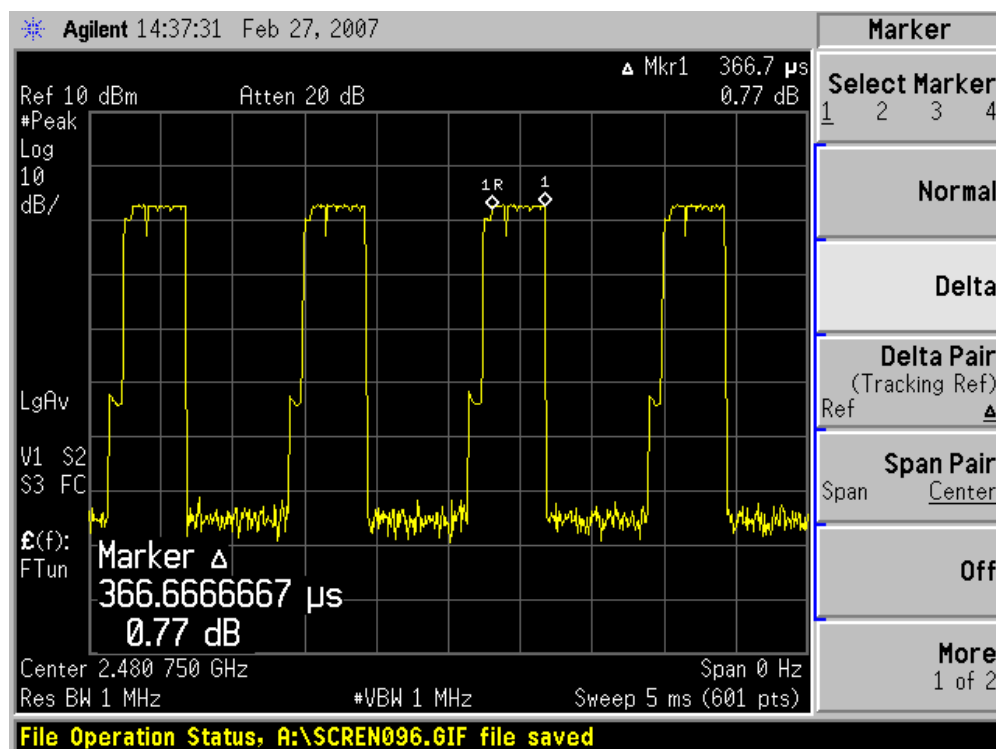
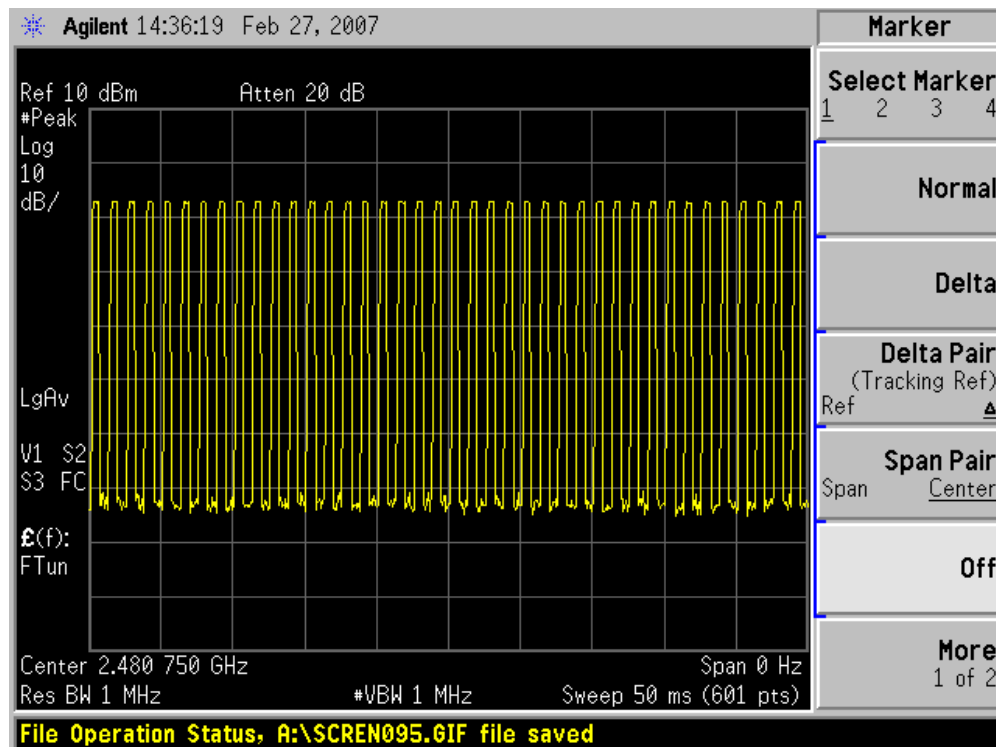
Channel 00 (2402MHz)



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: $(416.7 \mu\text{s} \times 800) / (79 \times 31.6) = 133.54\text{msec}$

B) 2441MHz The Maximum Occupancy Time Within 31.6sec: $(416.7 \mu\text{s} \times 800) / (79 \times 31.6) = 133.54\text{msec}$

C) 2480MHz The Maximum Occupancy Time Within 31.6sec: $(366.7 \mu\text{s} \times 800) / (79 \times 31.6) = 117.51\text{msec}$

**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**

11. Attachment

➤ EUT Photograph

(1) EUT Photo



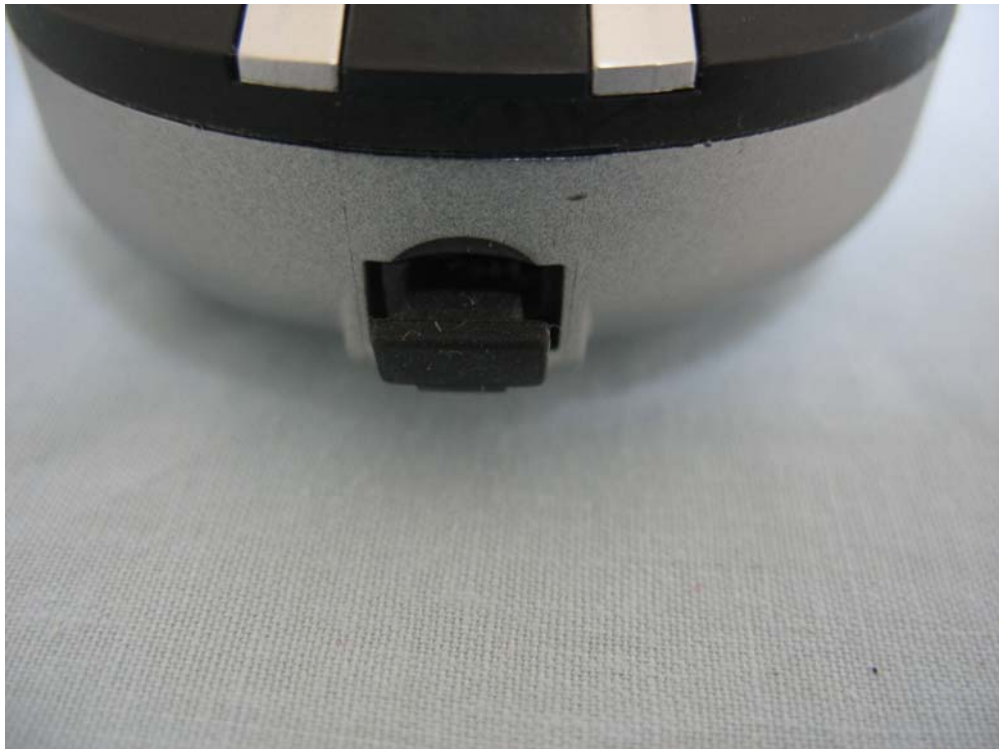
(2) EUT Photo



(3) EUT Photo



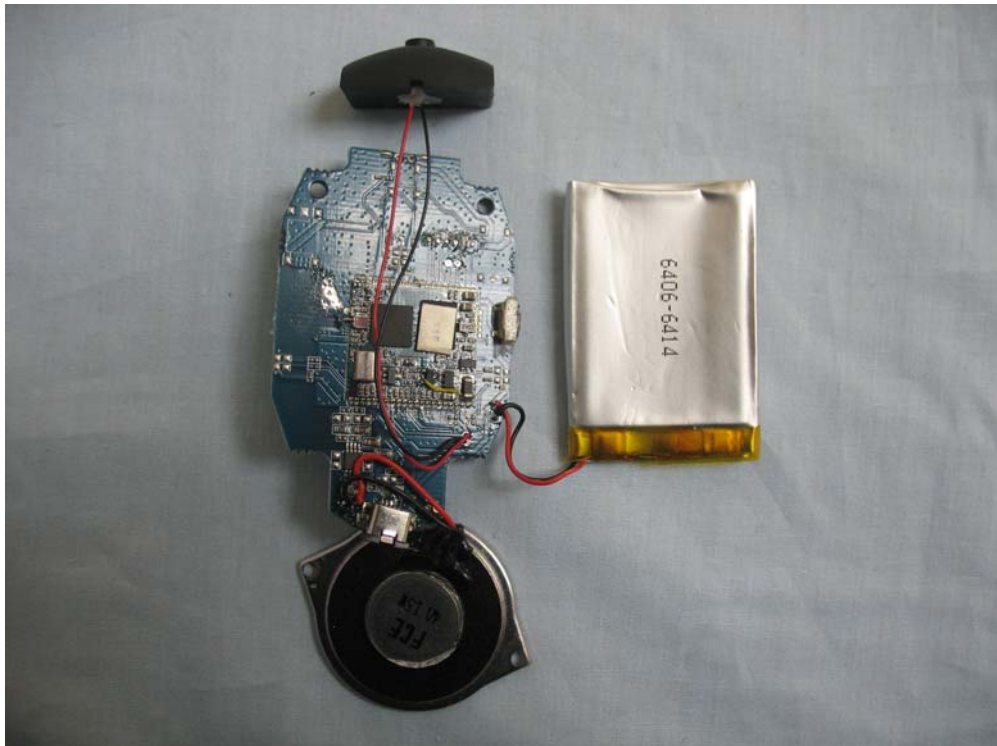
(4) EUT Photo



(5)EUT Photo



(6) EUT Photo



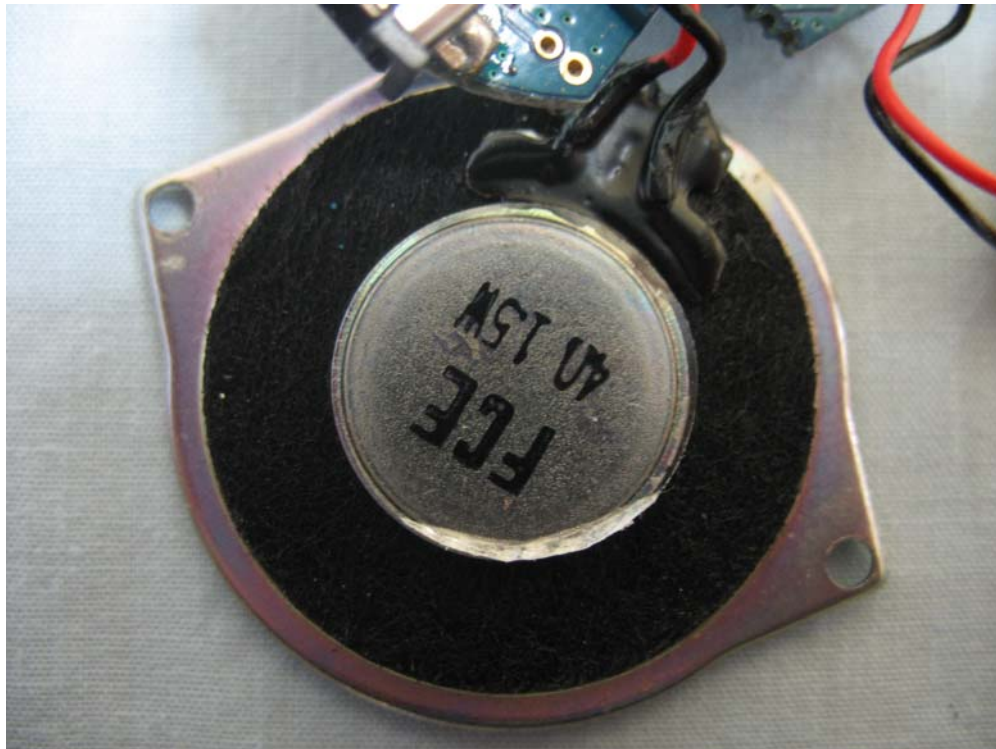
The image shows a custom-built portable music player PCB. The board is blue and populated with various electronic components. Key features include:

- Buttons:** Three red push-buttons are mounted on the left side. The top button is labeled "play/pause", the middle one "TX", and the bottom one "RX".
- Display:** A small LCD screen is located in the center of the board.
- Connectors:** There are several connectors, including a "GND MIC" connector at the bottom right and a "SPEAKER" connector at the top right.
- Wiring:** Red and black wires are connected to the board, likely for power and ground. A multi-colored ribbon cable is connected to the "SPEAKER" connector.
- Components:** The board is populated with numerous integrated circuits, resistors, capacitors, and other electronic components.

(9) EUT Photo



(10) EUT Photo



(11)EUT Photo



(12)EUT Photo



(13)EUT Photo



(14)EUT Photo

