



FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : Bluetooth Headset
Trade Name : Cal-Comp
Model No. : BC3100
FCC ID : OHH-BC3100
Filing Type : Certification
Applicant : Cal-Comp Electronics & Communications
Company Limited
3F., No. 99, Sec. 5, Nan King E. Rd., Taipei, Taiwan

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- The data shown in this test report were carried out on Jul. 24, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR671003, Report Version: Rev. 01.

Roy Wu
Deputy Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

Report Version: Rev. 01



Table of Contents

History of this test report.....	ii
1. General Description of Equipment under Test.....	1
1.1.Applicant.....	1
1.2.Manufacturer	1
1.3.Basic Description of Equipment under Test.....	1
1.4.Feature of Equipment under Test	1
2. Test Configuration of Equipment under Test	2
2.1.Test Manner	2
2.2.Test Mode	2
2.3.Ancillary Equipment List.....	2
2.4.Connection Diagram of Test System	3
3. RF Utility	5
4. General Information of Test.....	6
4.1.Test Voltage	6
4.2.Standard for Methods of Measurement.....	6
4.3.Test in Compliance with	6
4.4.Frequency Range Investigated	6
4.5.Test Distance	6
5. Report of Measurements and Examinations	7
5.1.List of Measurements and Examinations	7
5.2.Hopping Channel Separation	8
5.3.Number of Hopping Frequency	12
5.5 Dwell Time of Each Frequency	18
5.6 Output Power	38
5.7 100kHz Bandwidth of Frequency Band Edges	42
5.8 Conducted Emission	46
5.9 Radiated Emission Measurement	51
5.10 Antenna Requirements.....	70
6. List of Measuring Equipments Used	71
7. Uncertainty Evaluation.....	72
Appendix A. External Product Photograph	
Appendix B. Internal Photograph	
Appendix C. Setup Photograph	



History of this test report

Report Issue Date: Jul. 28, 2006

Report No.	Description



1. General Description of Equipment under Test

1.1. Applicant

Cal-Comp Electronics & Communications Company Limited

3F., No. 99, Sec. 5, Nan King E. Rd., Taipei, Taiwan

1.2. Manufacturer

Cal-Comp Electronics & Communications Company Limited

191/54, 57, 18th FL., Rachadapisek Rd., Klongtoey, Bangkok, Thailand

1.3. Basic Description of Equipment under Test

Equipment : Bluetooth Headset
Trade Name : Cal-Comp
Model No. : BC3100
FCC ID : OHH-BC3100
Power Supply Type : Switching
AC Power Cord : AC 120V, Non-shielded, 1.8 meter, 2 pin
Adapter : TECHNICS, TESA5-0500700dV-B
USB Cable : N/A

1.4. Feature of Equipment under Test

Product Feature & Specification			
1. Modulation Type/Data Rate	GFSK		
2. Frequency Range.	2400 MHz ~ 2483.5 MHz		
3. Number of Channels	79		
4. Carrier Frequency of each channel	2402+ n*1 MHz, n= 0~78		
5. Channel Spacing	1 MHz		
6. Maximum Output Power to Antenna (Normal condition)	0.29 dBm		
7. Type of Antenna Connector	N/A		
8. Antenna Type	PCB Antenna		
9. Antenna Gain	0 dBi		
10. Function Type	Transmitter		Transceiver V
11. Power Rating (DC/AC , Voltage)	Battery : DC 3.7V Adapter : AC 100-240V		
12. DUT Stage	Production Unit		



2. Test Configuration of Equipment under Test

2.1. Test Manner

- The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- For spurious emission below 1GHz, only one channel of each application was tested because it is not related to channel selection.
- The EUT is programmed to transmit signal continuously for all testings.
- Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.

2.2. Test Mode

Application	Bluetooth
Radiated Emission and conducted test items	Mode 1: Tx_CH00_2402 MHz Mode 2: Tx_CH39_2441 MHz Mode 3: Tx_CH78_2480 MHz Mode 4: Charging Mode Mode 5: USB Charging Mode
Conducted Emission	Mode 1: Charging Mode Mode 2: USB Charging Mode

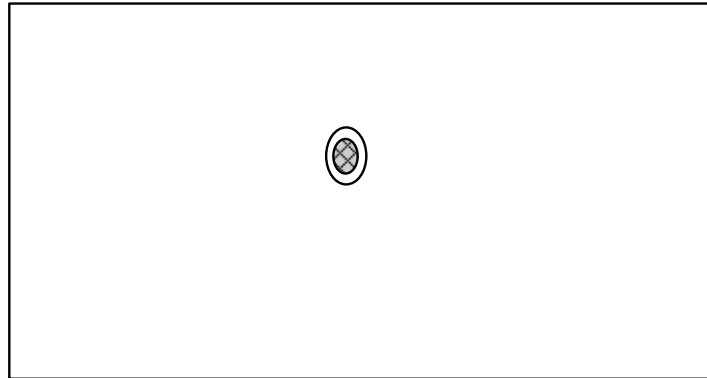
2.3. Ancillary Equipment List

Item	Equipment	Model No.	Power Cord
1.	NOTE BOOK (DELL)	D400	N/A
2.	(USB)MOUSE (Microsoft)	B75-00093	Non-shielded, 1.8m

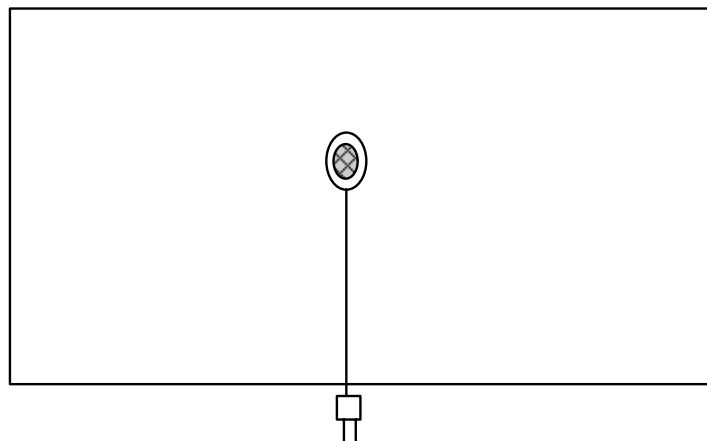
2.4. Connection Diagram of Test System

<Radiation Emission>

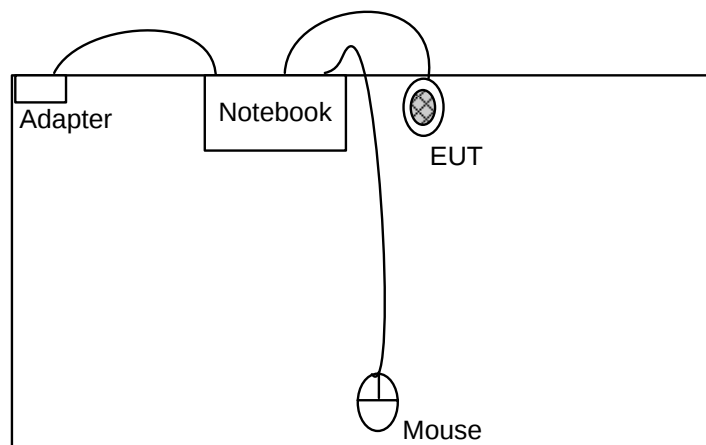
Mode 1~3

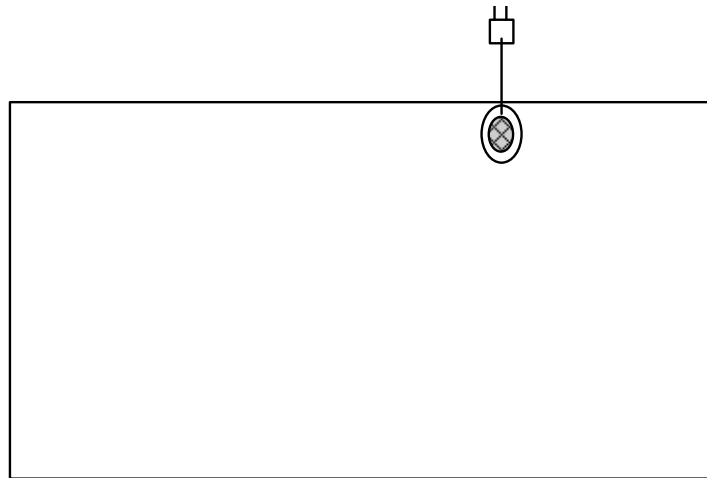
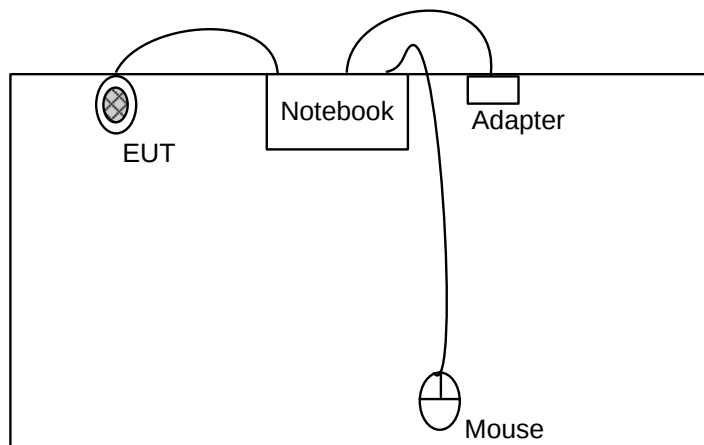


Mode 4



Mode 5



< Conduction Emission >**Mode 1****Mode 2**



3. RF Utility

The programmed RF Utility "BTtest 3" can allow EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testings.



4. General Information of Test

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-318-0055
Test Site No : CO01-HY, 03CH06-HY

4.1. Test Voltage

AC 120V/60Hz

4.2. Standard for Methods of Measurement

ANSI C63.4-2003

4.3. Test in Compliance with

47 CFR Part 15 Subpart C

4.4. Frequency Range Investigated

Conduction: from 150 kHz to 30 MHz

Radiation: from 30 MHz to 25000MHz

4.5. Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.



5. Report of Measurements and Examinations

5.1. List of Measurements and Examinations

FCC Rule	Description of Test	Result	Section
15.247(a)(1)	Hopping Channel Separation	Pass	5.2
15.247(a)(1)(iii)	Number of Hopping Frequency Used	Pass	5.3
15.247(a)(1)	Hopping Channel Bandwidth	Pass	5.4
15.247(a)(1)(iii)	Dwell Time of Each Frequency	Pass	5.5
15.247(b)(1)	Output Power	Pass	5.6
15.247(c)	100kHz Bandwidth of Frequency Band Edges	Pass	5.7
15.207	Conducted Emission	Pass	5.8
15.209	Radiated Emission	Pass	5.9
15.203	Antenna Requirement	Pass	5.10

5.2. Hopping Channel Separation

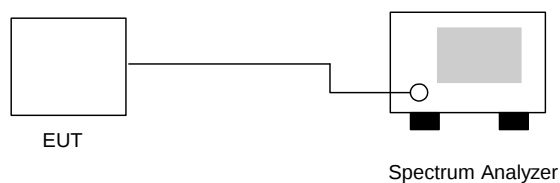
5.2.1. Measuring Instruments :

As described in chapter 6 of this test report.

5.2.2. Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 30kHz and VBW to 100kHz.
3. The Hopping Channel Separation is defined as the channel is separated with the next channel.

5.2.3. Test Setup Layout :



5.2.4. Test Result : The spectrum analyzer plots are attached as below

- Temperature: 26°C
- Relative Humidity: 53%
- Test Engineer : James

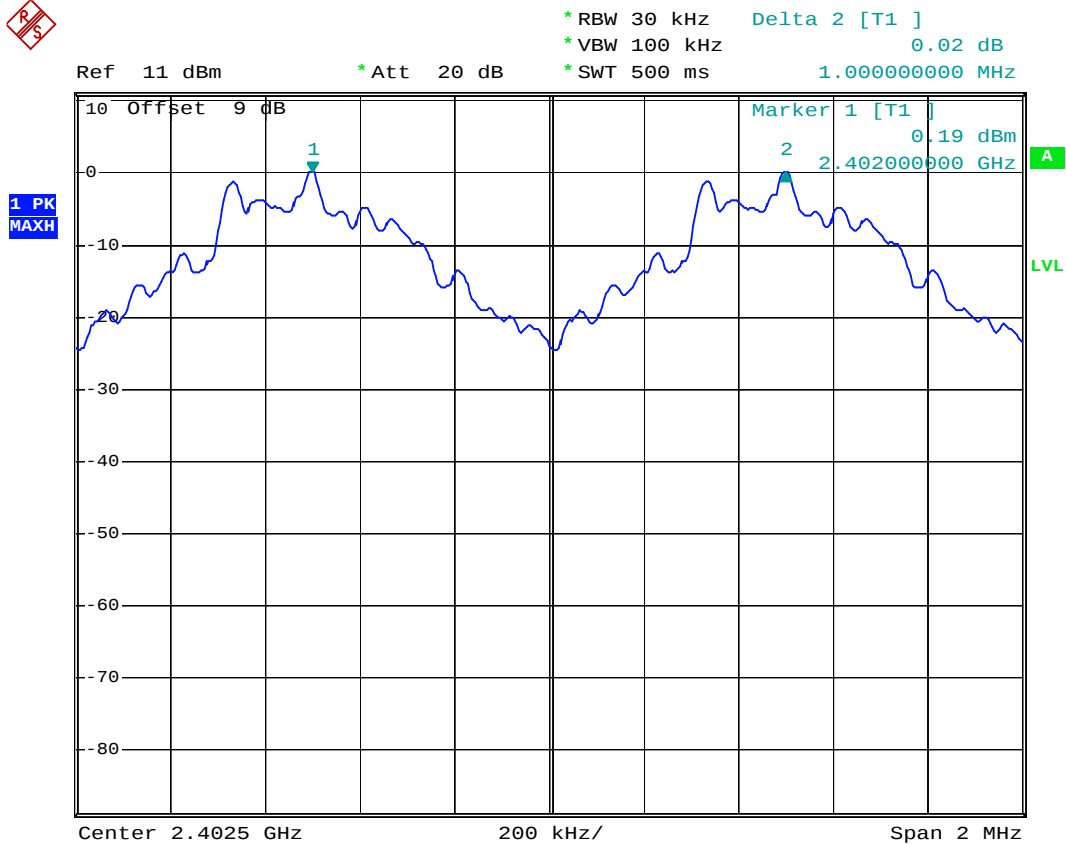
Channel	Frequency (MHz)	Hopping Channel Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.830	Mode 1
39	2441	1.000	0.830	Mode 2
78	2480	1.000	0.824	Mode 3

Remark: Limit is the greater one of 25kHz or the 20dB bandwidth of the hopping channel.



5.2.5 Hopping Channel Separation

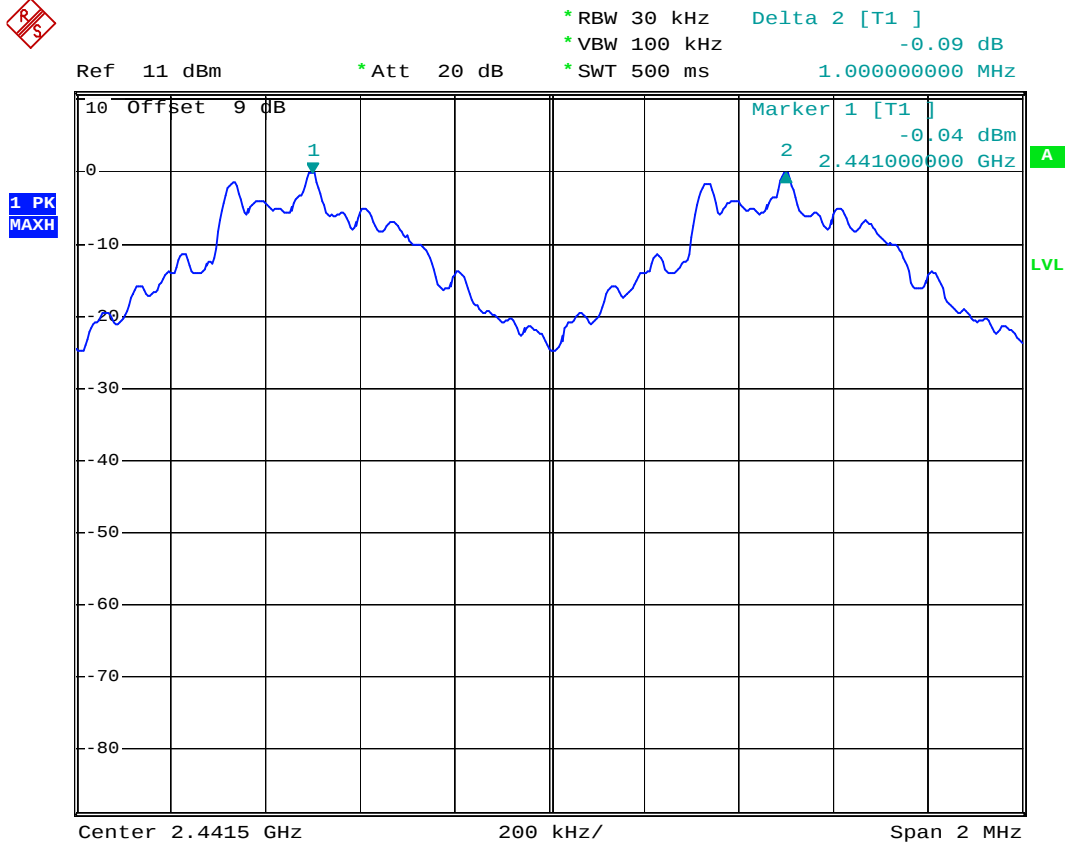
Mode 1: CH00 (2402MHz)



Date: 27.MAY.2006 11:26:15



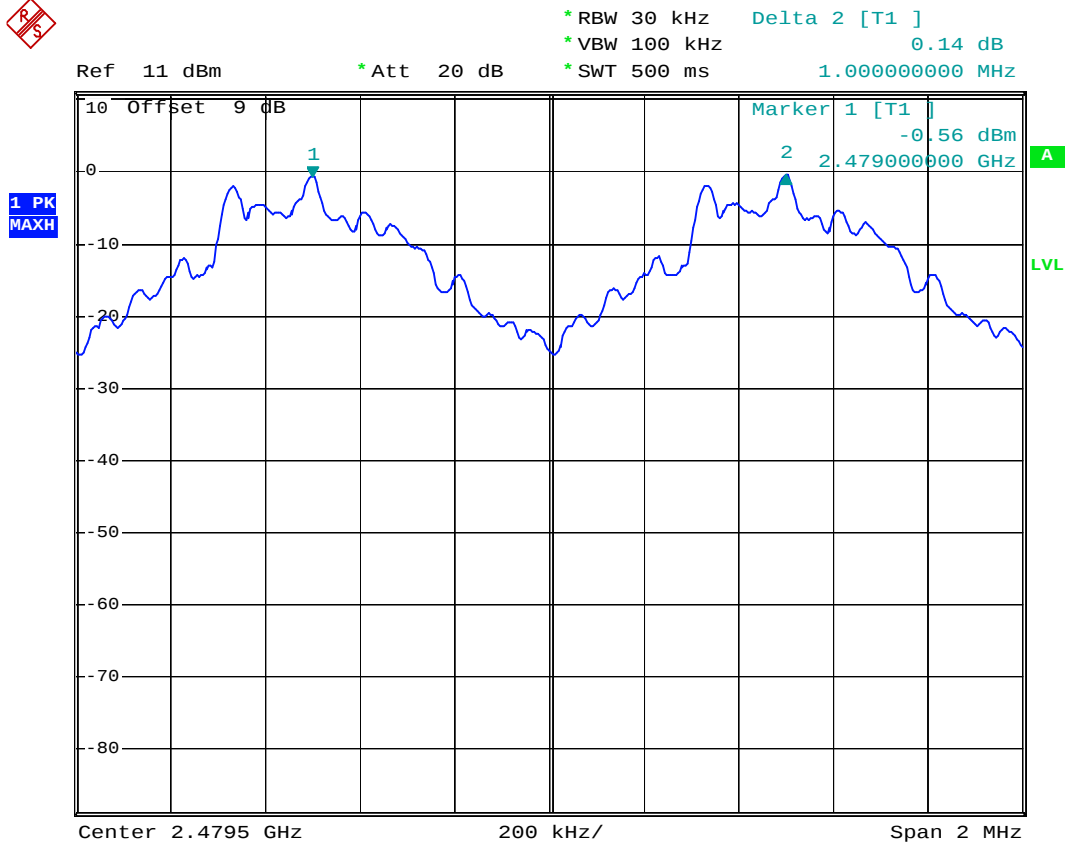
Mode 2: CH39 (2441MHz)



Date: 27.MAY.2006 11:26:56



Mode 3: CH78 (2480MHz)



Date: 27.MAY.2006 11:28:04

5.3. Number of Hopping Frequency

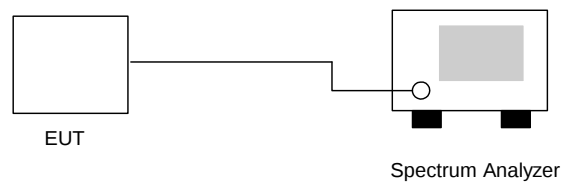
5.3.1. Measuring Instruments :

As described in chapter 6 of this test report.

5.3.2. Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
3. The number of hopping frequency used is defined as the device has the numbers of total channel.

5.3.3. Test Setup Layout :



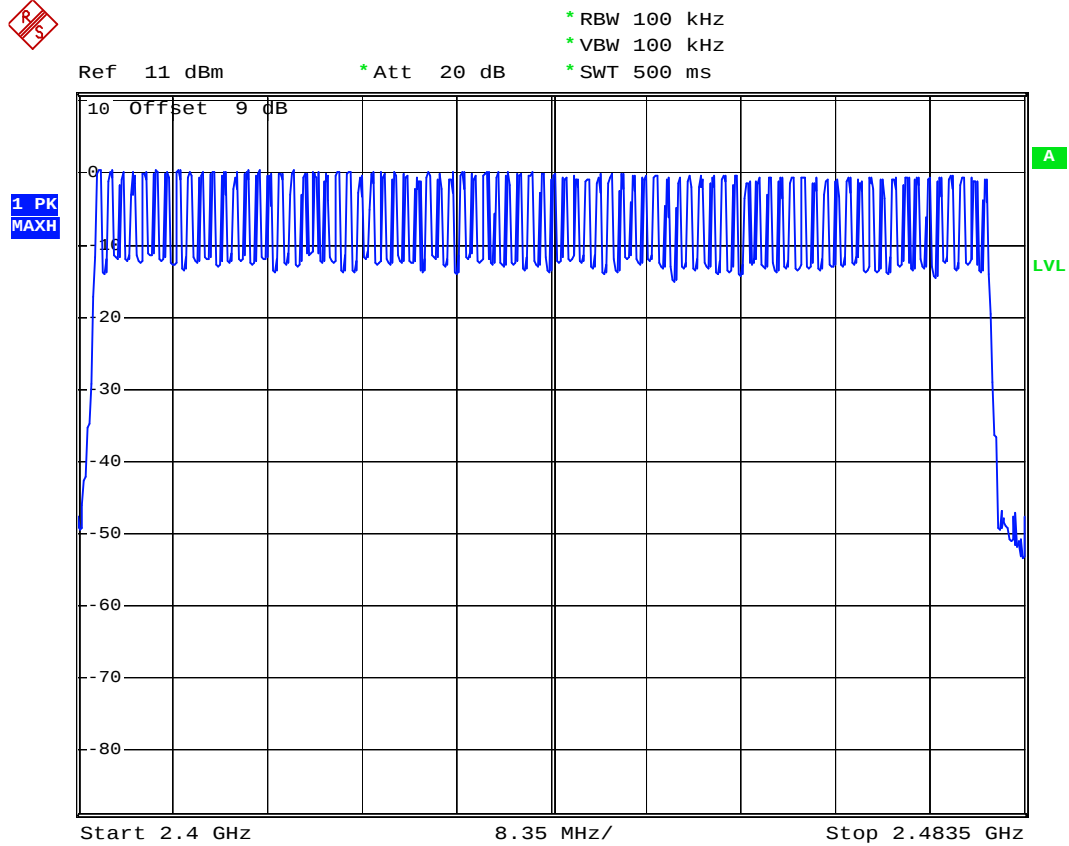
5.3.4. Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 53%
- Test Engineer : James

Number of Hopping Frequency (Channel)	Limits (Channel)
79	15



5.3.5 Number of Hopping Frequency



Date: 27.MAY.2006 11:48:11

5.4 Hopping Channel Bandwidth

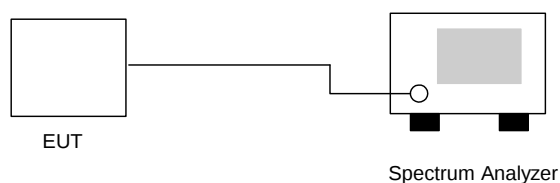
5.4.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.4.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 30kHz and VBW to 300kHz.
3. The Hopping Channel bandwidth is defined as the frequency range where the power is higher than peak power minus 20dB.

5.4.3 Test Setup Layout :



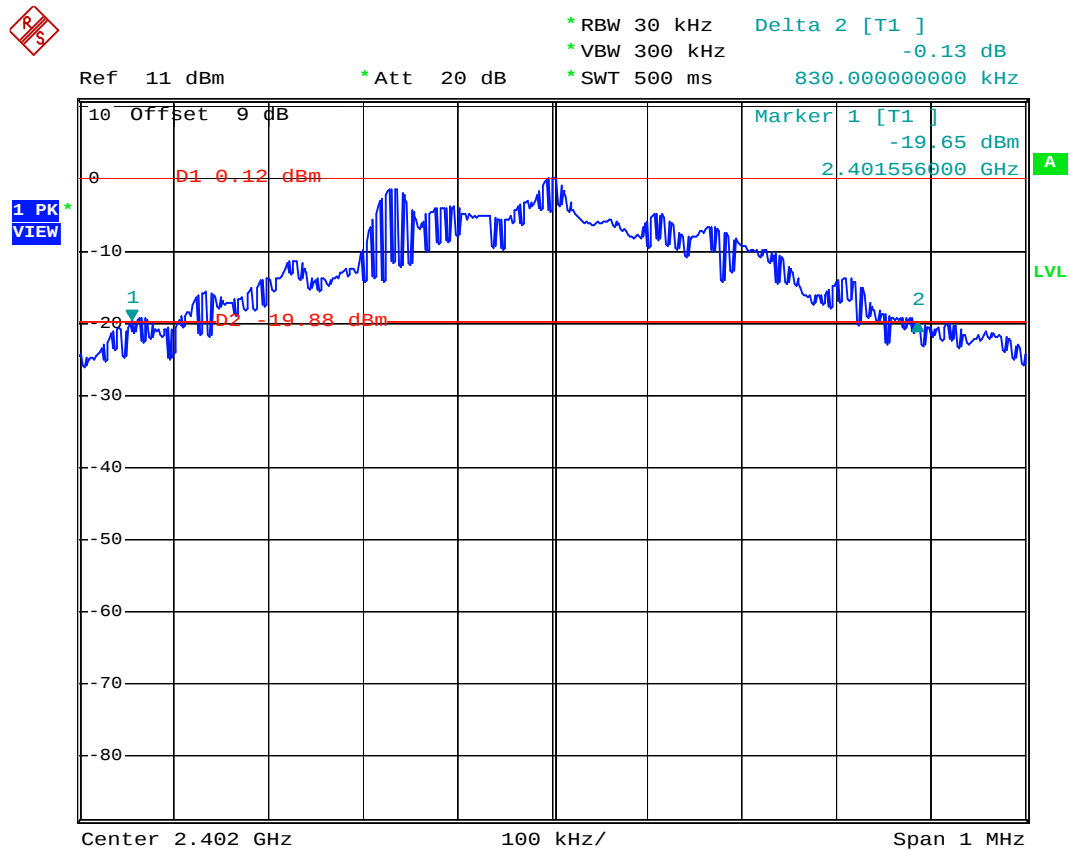
5.4.4 Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 53%
- Test Engineer : James

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	0.830	1.0	Mode 1
39	2441	0.830	1.0	Mode 2
78	2480	0.824	1.0	Mode 3

5.4.5 Hopping Channel Bandwidth

Mode 1: CH00 (2402MHz)



Date: 27.MAY.2006 11:18:49



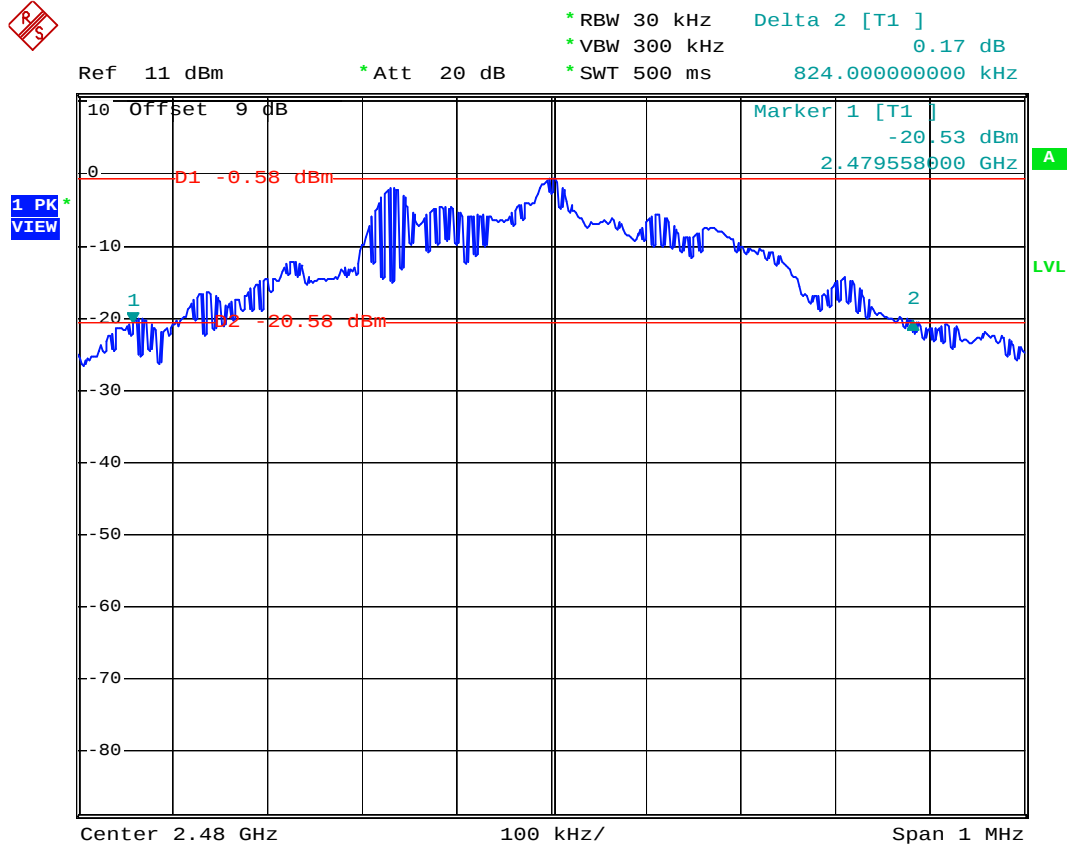
Mode 2: CH39 (2441MHz)



Date: 27.MAY.2006 11:20:06



Mode 3: CH78 (2480MHz)



Date: 27.MAY.2006 11:22:06

5.5 Dwell Time of Each Frequency

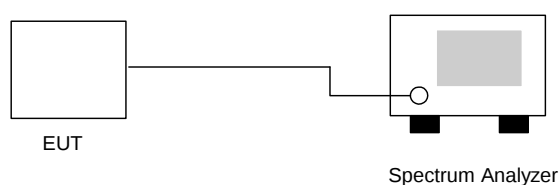
5.5.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.5.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
3. Set the center frequency on any frequency would be measured and set the frequency span to zero span.
4. The equation = $79 \times 0.4 \times (1600/79) \times t$ (t = the time duration of one single pulse)

5.5.3 Test Setup Layout :



5.5.4 Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 53%
- Test Engineer : James

Ch00

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10	556	0.176	0.4
DH3	5	1836	0.290	0.4
DH5	3.6	3096	0.352	0.4

CH39

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10.1	552	0.176	0.4
DH3	5.1	1826	0.294	0.4
DH5	3.5	3116	0.345	0.4

CH78

Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	10	556	0.176	0.4
DH3	5	1816	0.287	0.4
DH5	3.4	3116	0.335	0.4

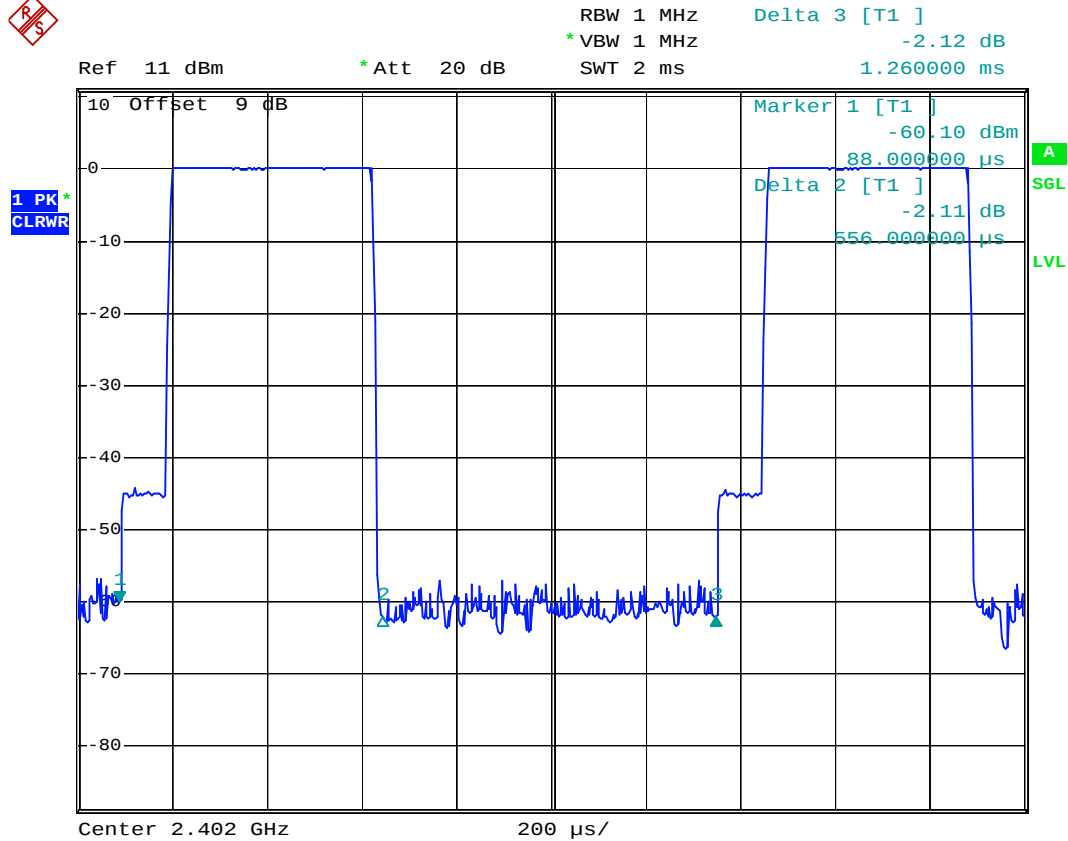
※ Remark:

1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

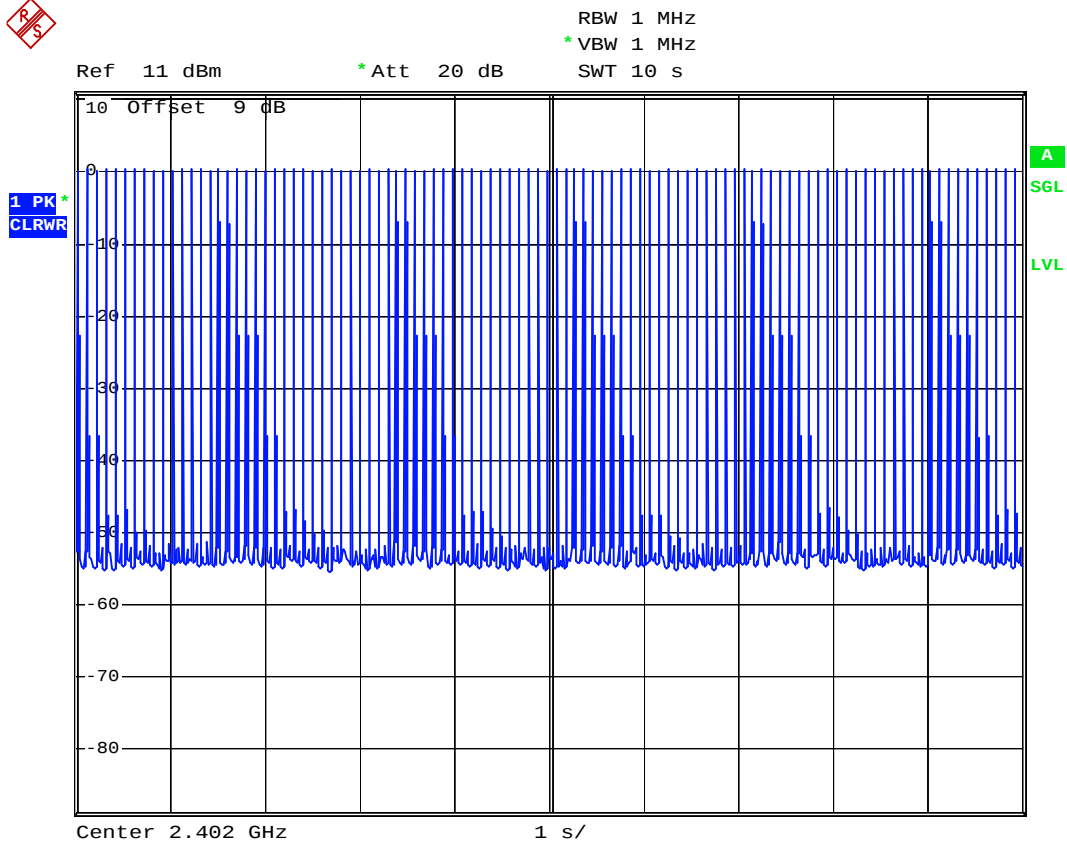


5.5.5 Dwell Time

DH1 (CH00)



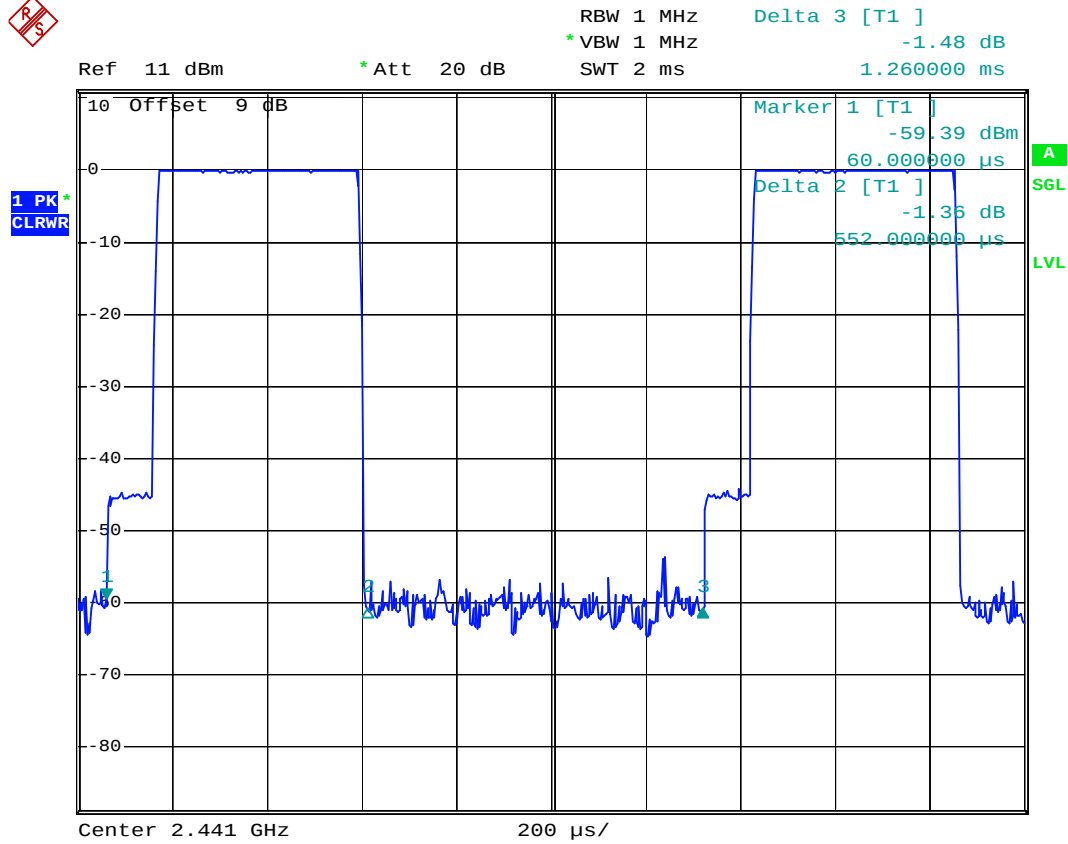
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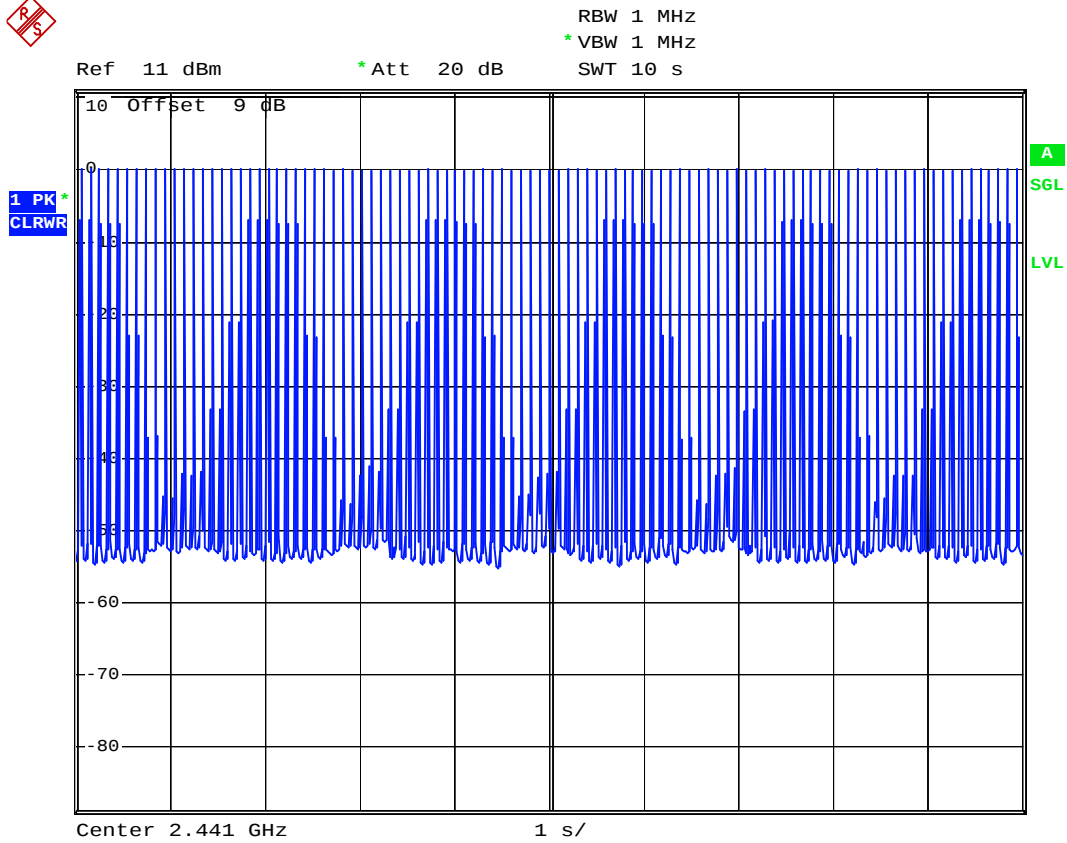
Date: 27.MAY.2006 11:37:56



DH1 (CH39)



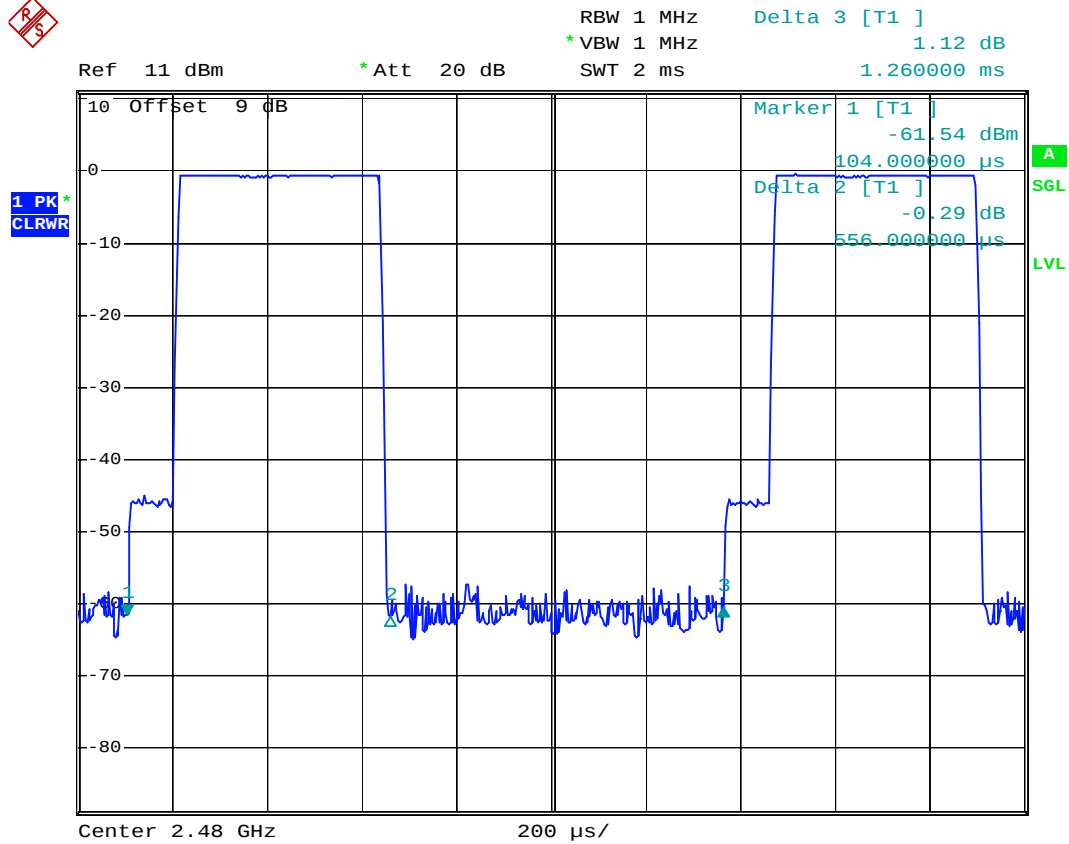
Date: 27.MAY.2006 11:30:30



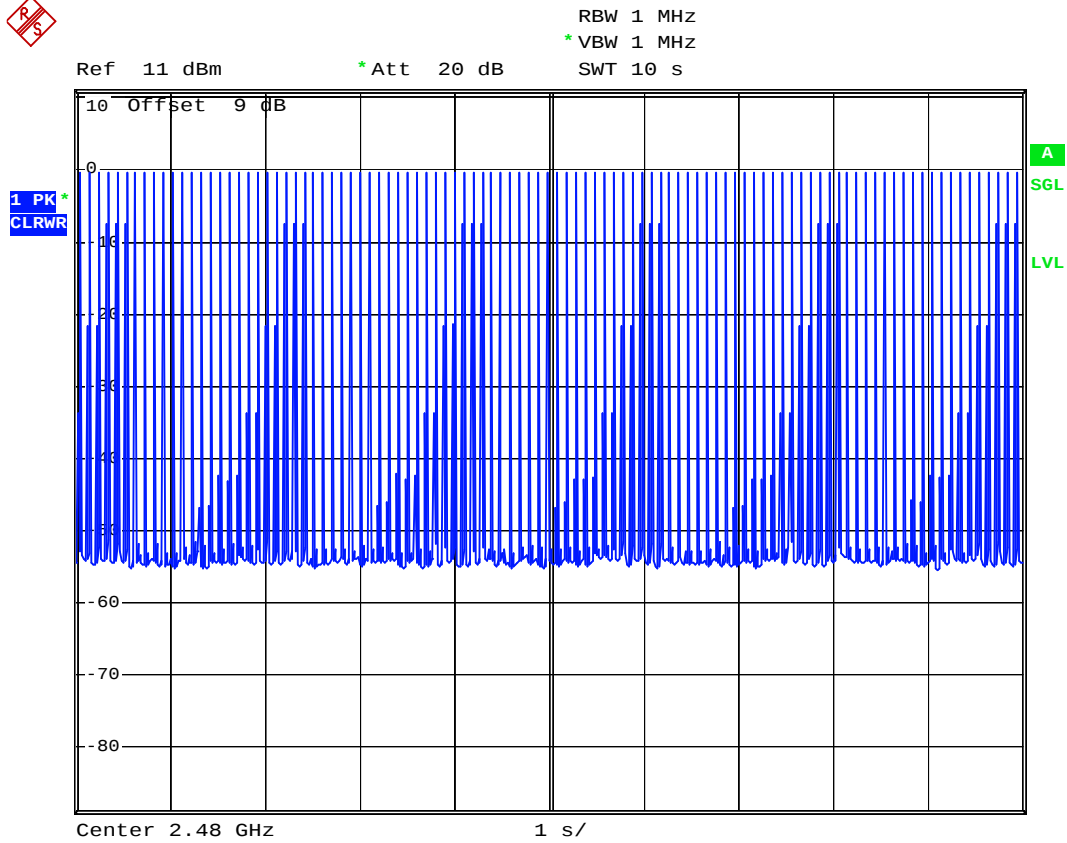
Date: 27.MAY.2006 11:38:26



DH1 (CH78)



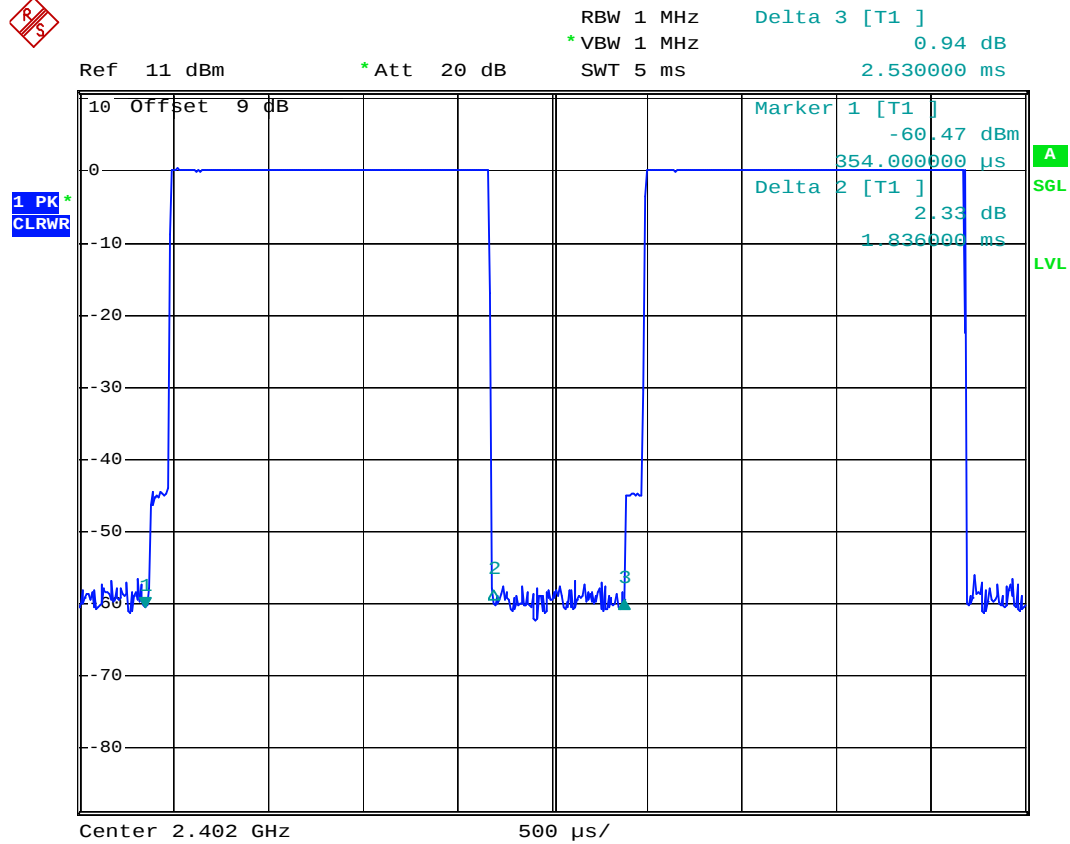
Date: 27.MAY.2006 11:31:00



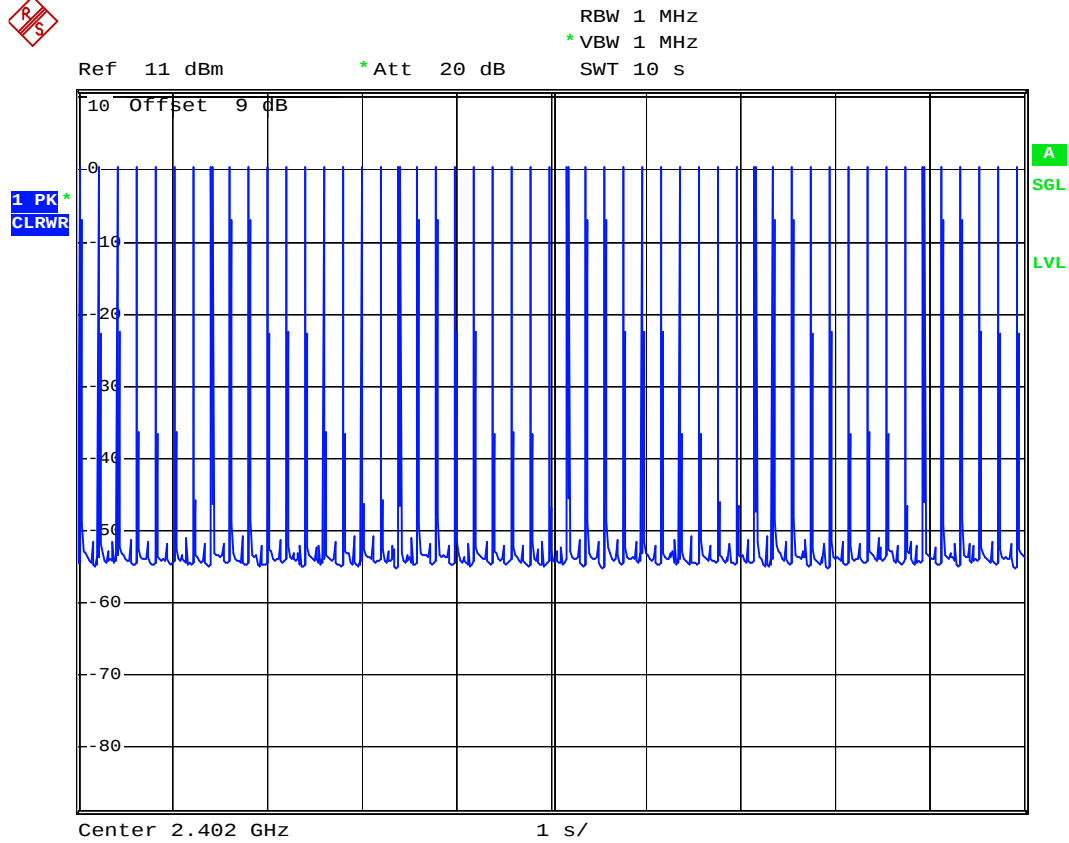
Date: 27.MAY.2006 12:03:14



DH3 (CH00)



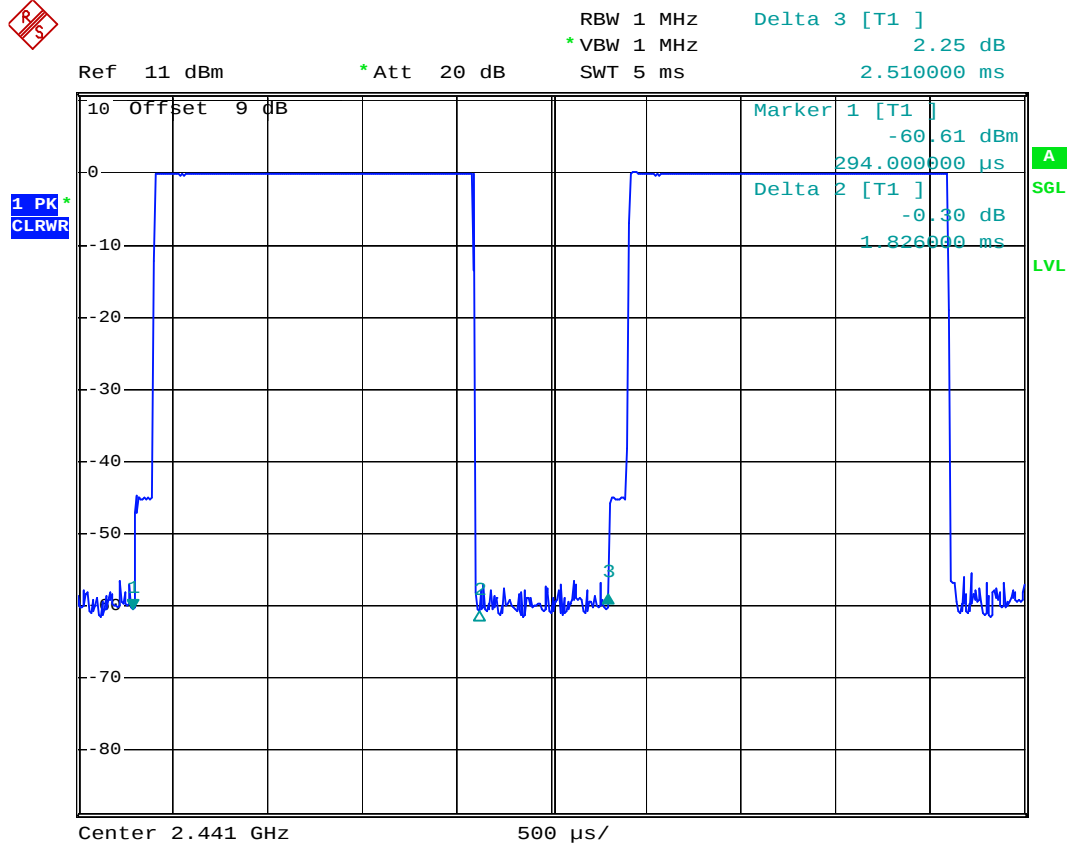
Date: 27.MAY.2006 11:33:09



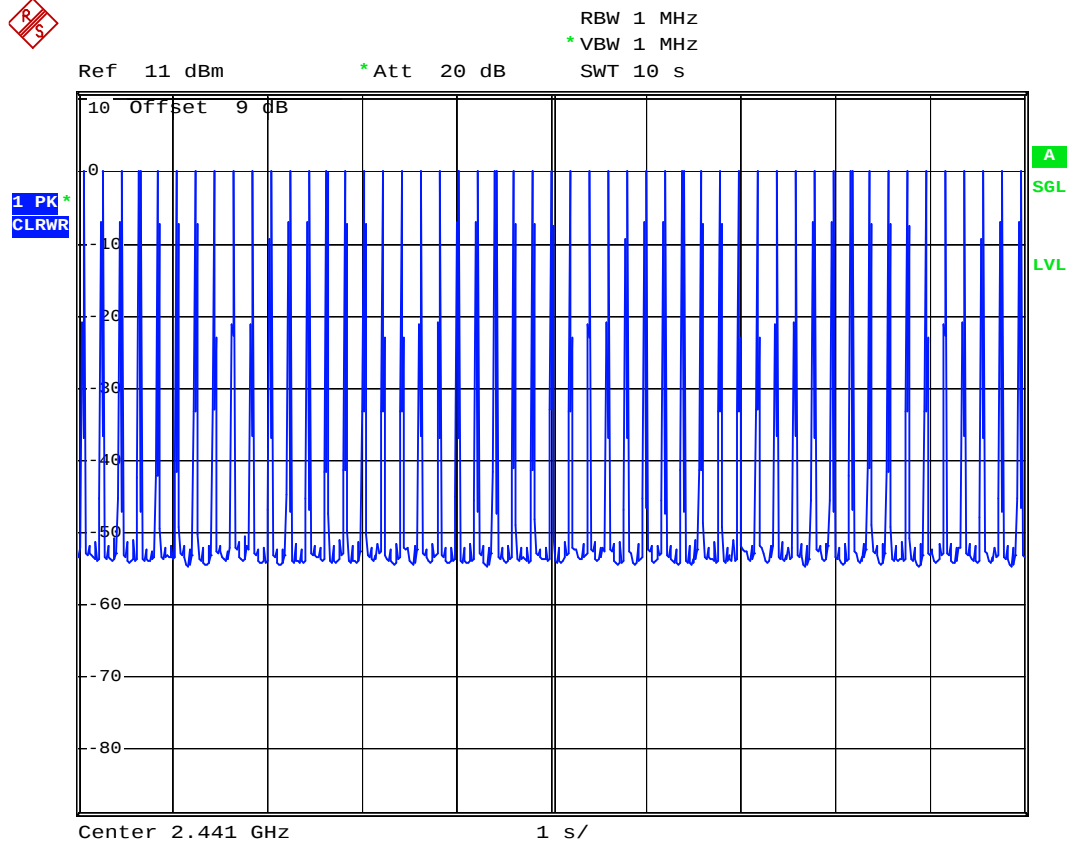
Date: 27.MAY.2006 11:39:58



DH3 (CH39)



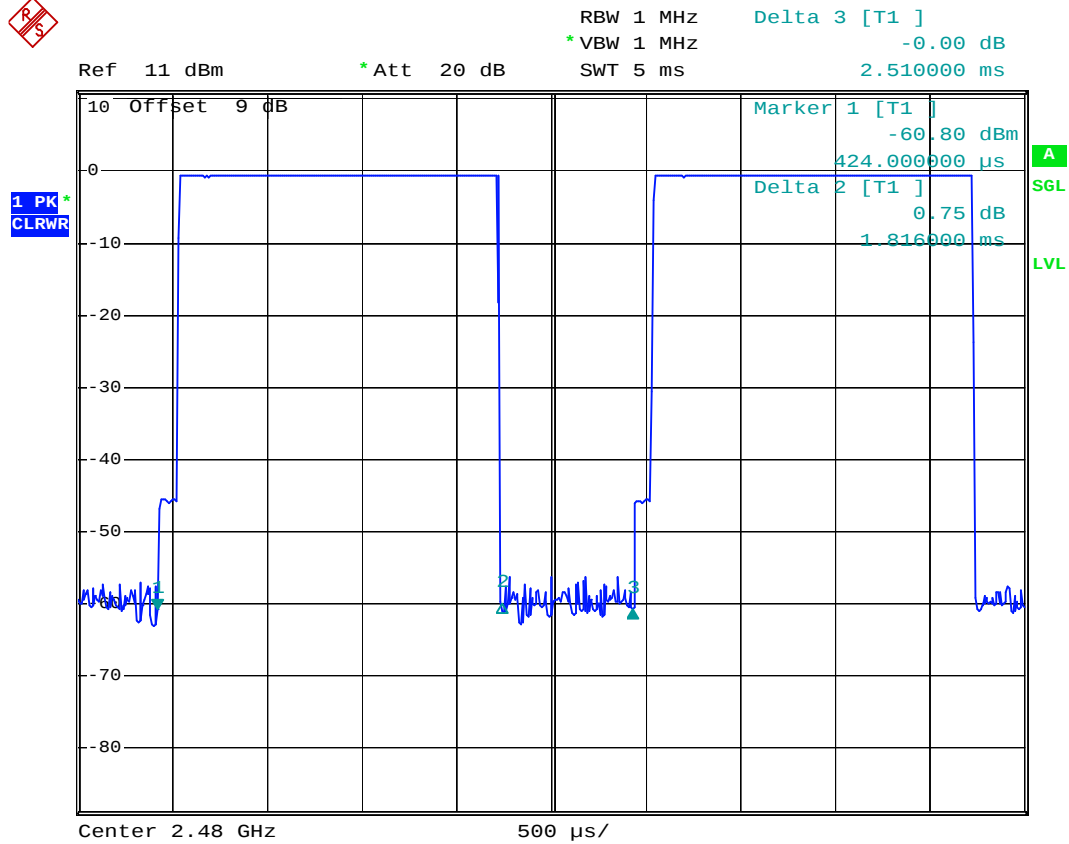
Date: 27.MAY.2006 11:32:41



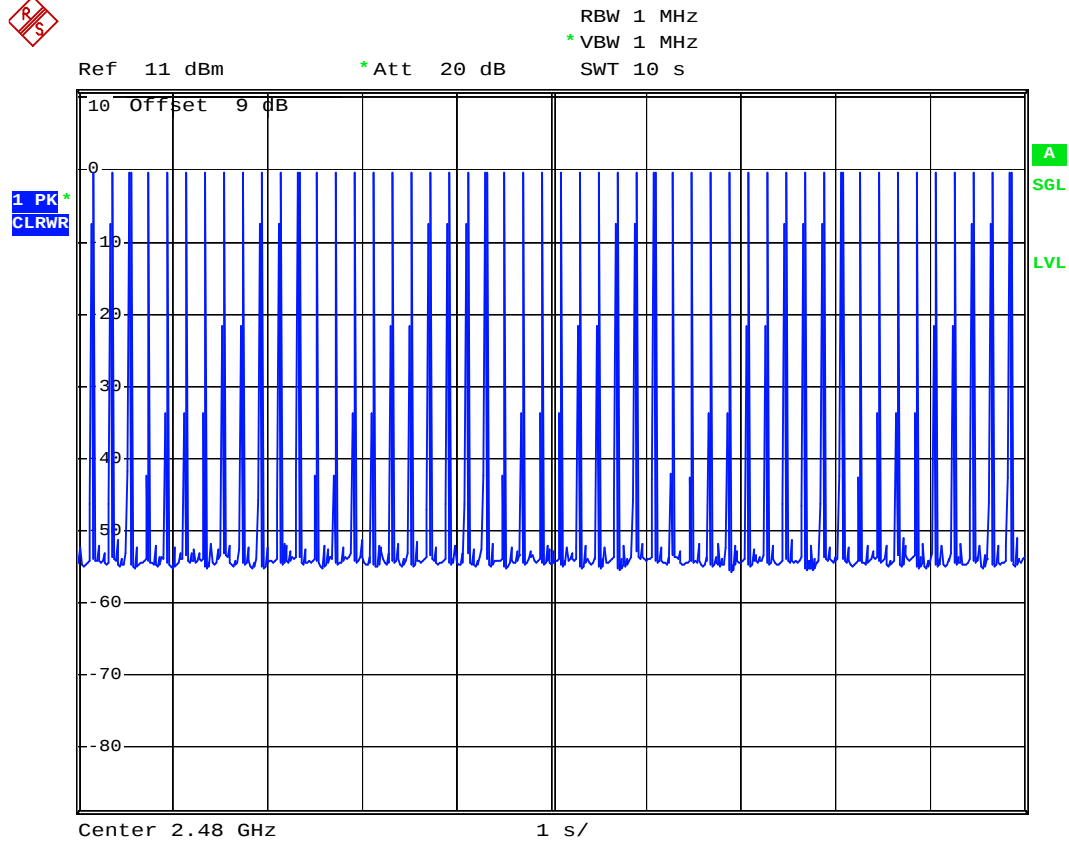
Date: 27.MAY.2006 11:40:20



DH3 (CH78)



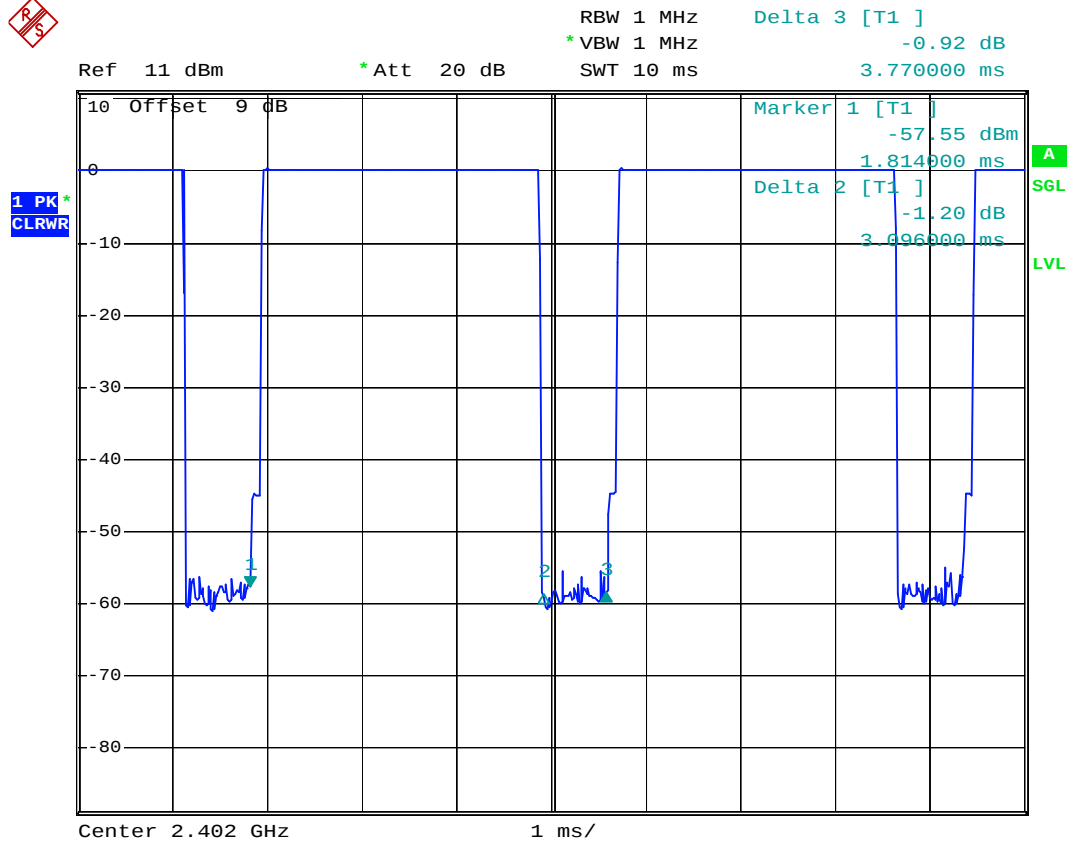
Date: 27.MAY.2006 11:32:00



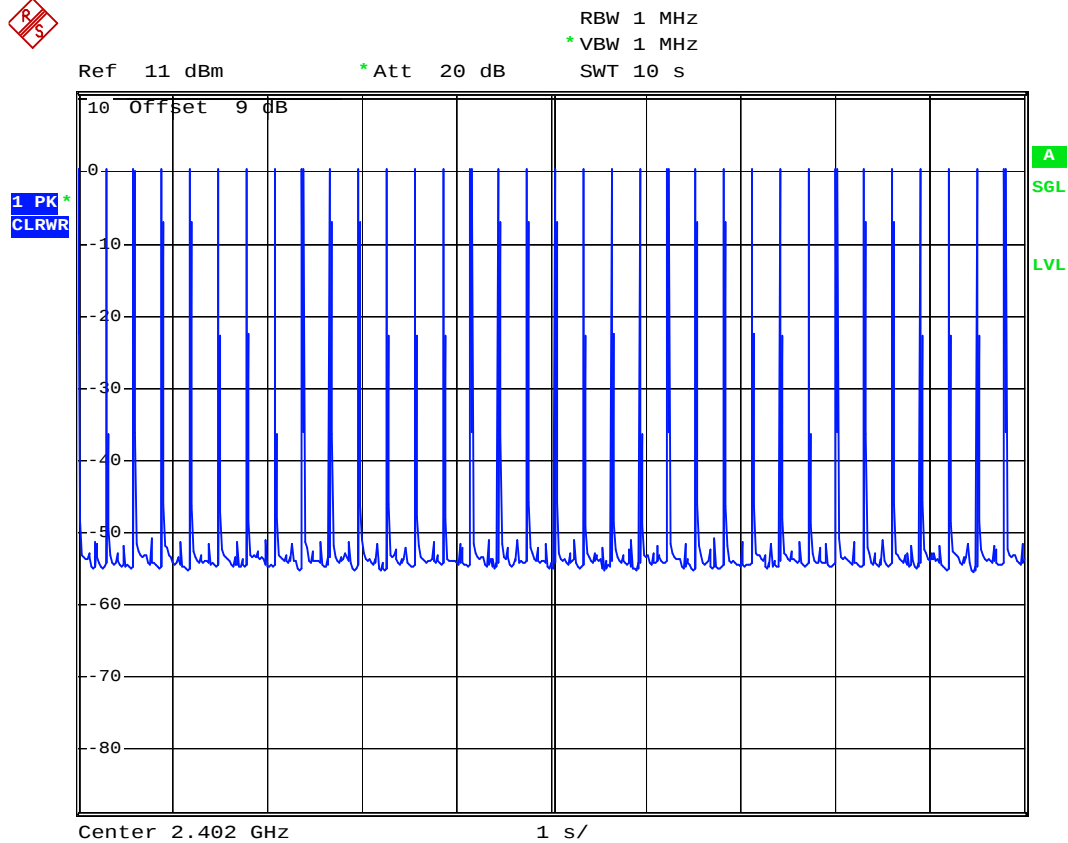
Date: 27.MAY.2006 11:40:41



DH5 (CH00)



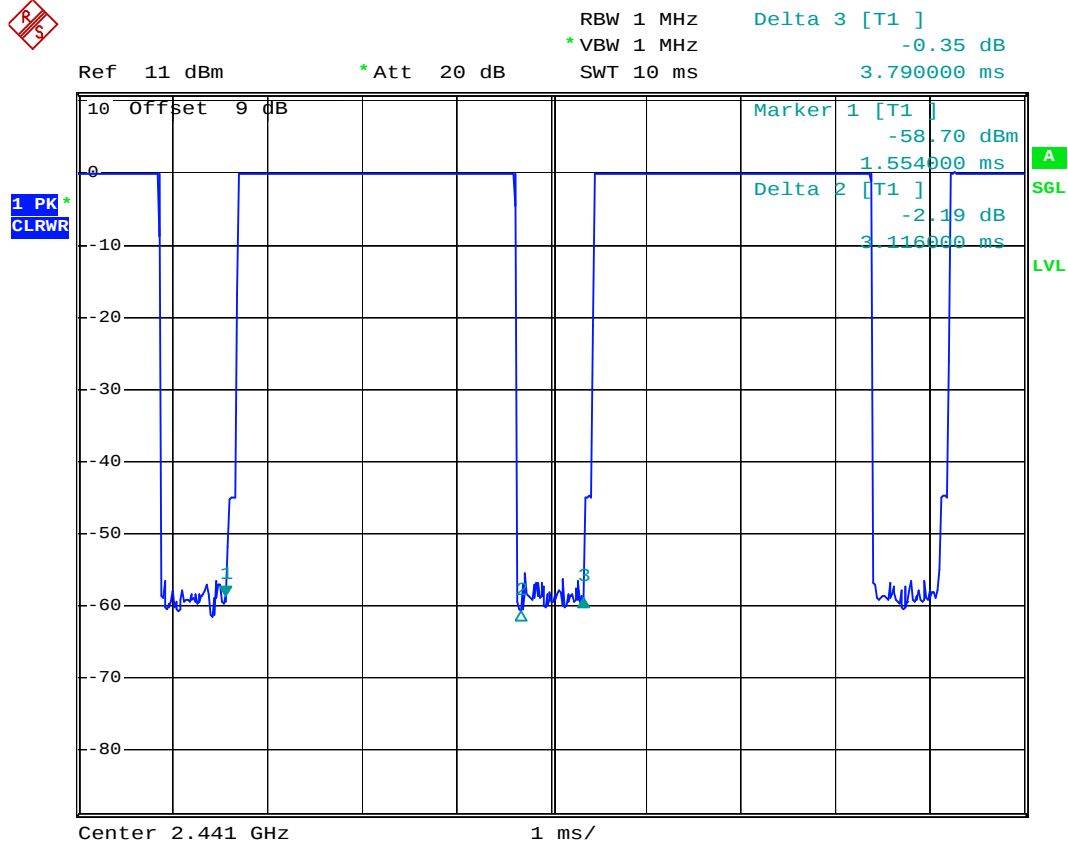
Date: 27.MAY.2006 11:33:58



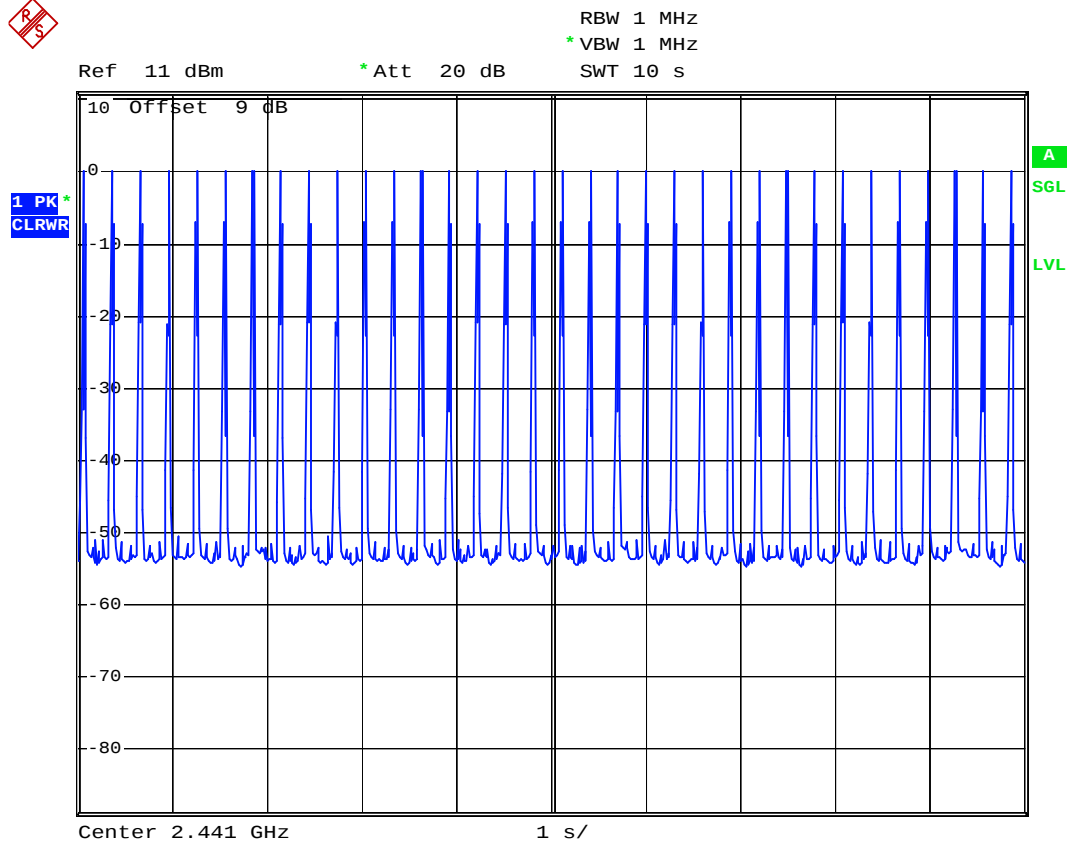
Date: 27.MAY.2006 11:42:11



DH5 (CH39)



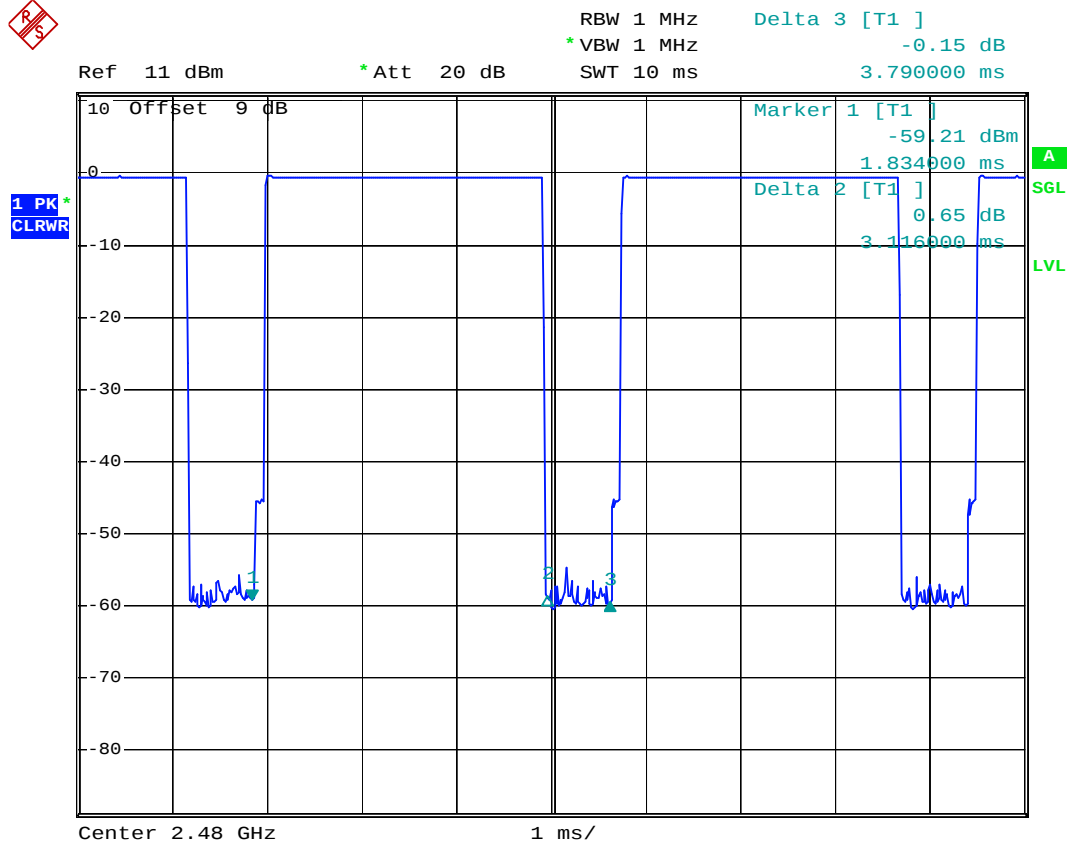
Date: 27.MAY.2006 11:34:34



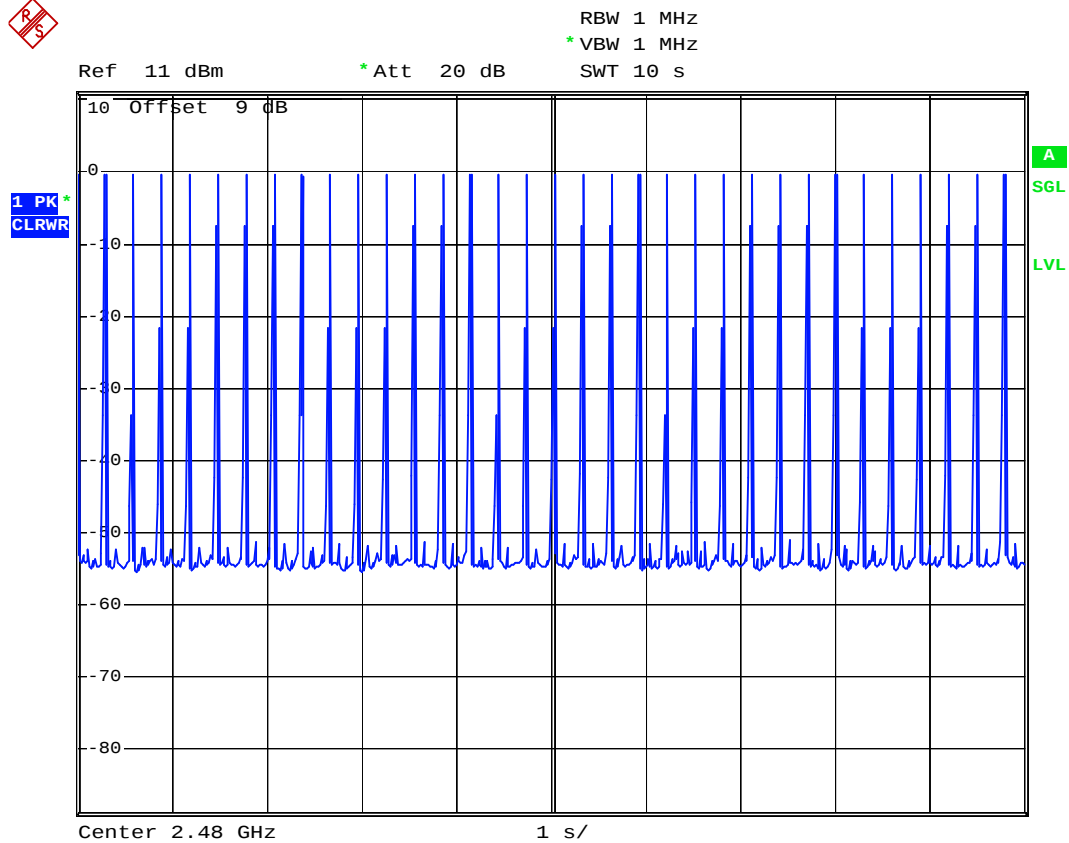
Date: 27.MAY.2006 11:42:57



DH5 (CH78)



Date: 27.MAY.2006 11:35:03



Date: 27.MAY.2006 11:43:27

5.6 Output Power

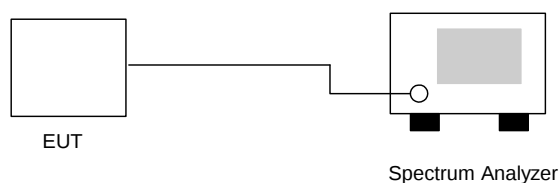
5.6.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.6.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. The center frequency of the spectrum analyzer was set to the fundamental frequency and set RBW to 3MHz and VBW to 3MHz.

5.6.3 Test Setup Layout :



5.6.4 Test Result : See spectrum analyzer plots below

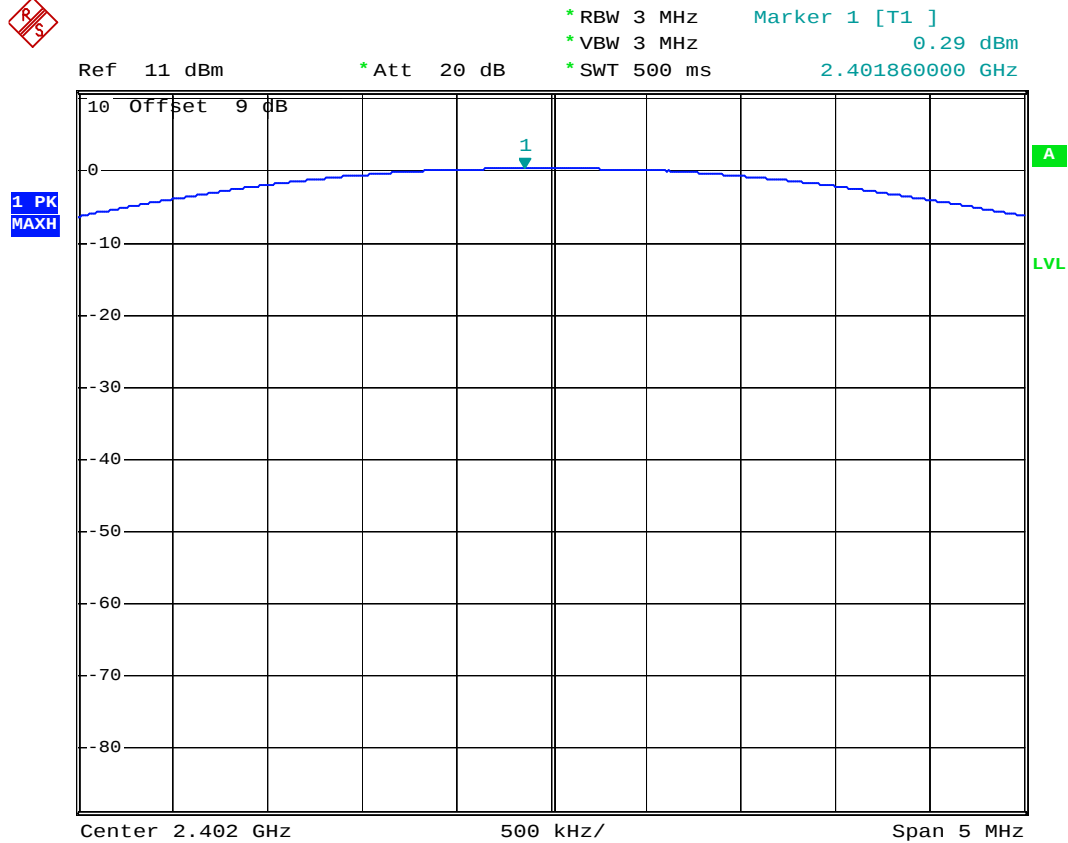
- Temperature: 26°C
- Relative Humidity: 53%
- Test Engineer : James

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)	Plot Ref. No.
00	2402	0.29	1W/30 dBm	Mode 1
39	2441	0.12	1W/30 dBm	Mode 2
78	2480	-0.37	1W/30 dBm	Mode 3



5.6.5 Output Power

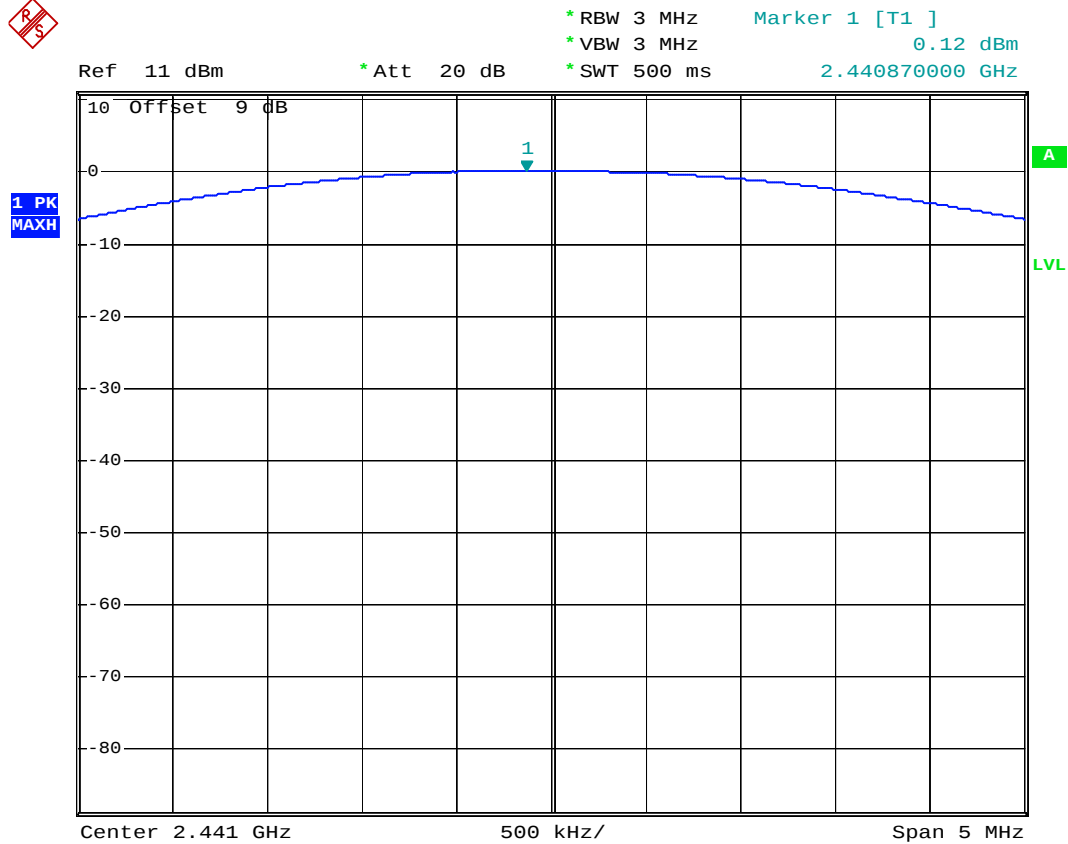
Mode 1: CH00 (2402MHz)



Date: 27.MAY.2006 11:10:34



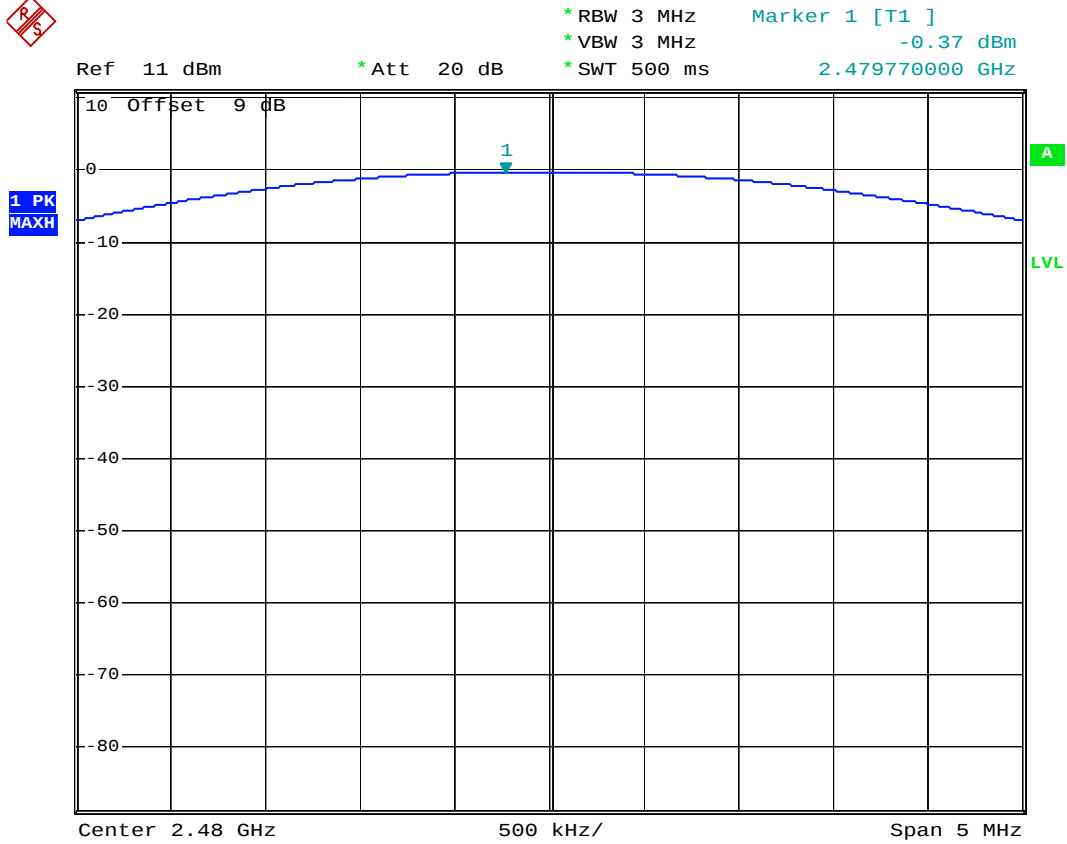
Mode 2: CH39 (2441MHz)



Date: 27.MAY.2006 11:16:46



Mode 3: CH78 (2480MHz)



Date: 27.MAY.2006 11:17:06

5.7 100kHz Bandwidth of Frequency Band Edges

5.7.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.7.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span for the conducted measurement, and RBW/VBW=1MHz/1MHz for peak measurement and RBW/VBW=1MHz/300Hz for average measurement in the radiated measurement.
3. The band edges was measured and recorded.

5.7.3 Test Result :

- Temperature: 26°C
- Relative Humidity: 53%
- Test Engineer : James

Test Result in lower band (Channel 00) : PASS

Test Result in higher band(Channel 78) : PASS

5.7.4 Note on Band edge Emission

CH00 (Horizontal)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
(MHz)	(dBuV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(cm)	(deg)	
2390.00	50.32	-23.68	74.00	51.26	30.26	4.26	35.46	100	360	Peak
2390.00	39.34	-14.66	54.00	40.28	30.26	4.26	35.46	100	168	Average

CH00 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
(MHz)	(dBuV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(cm)	(deg)	
2390.00	49.67	-24.33	74.00	50.60	30.26	4.26	35.46	100	360	Peak
2390.00	39.10	-14.90	54.00	40.04	30.26	4.26	35.46	153	299	Average

**CH78 (Horizontal)**

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	41.02	-12.98	54.00	41.88	30.29	4.36	35.51	107	268	Average
2483.50	57.89	-16.11	74.00	58.75	30.29	4.36	35.51	100	360	Peak

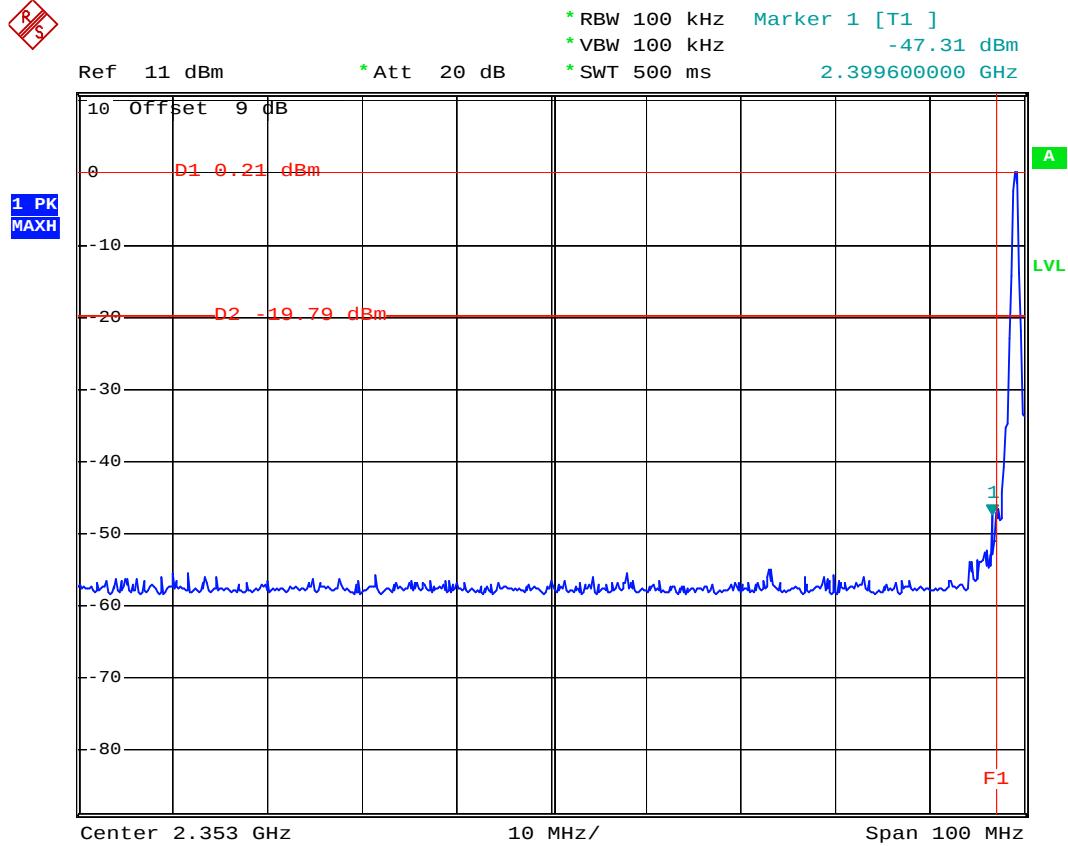
CH78 (Vertical)

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
		Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB)	(dB)	(dB)	(cm)	(deg)	
2483.50	41.65	-12.35	54.00	42.51	30.29	4.36	35.51	109	267	Average
2483.50	66.44	-7.56	74.00	67.30	30.29	4.36	35.51	100	360	Peak



5.7.5 Frequency Band Edge

Mode 1: CH00 (2402 MHz)



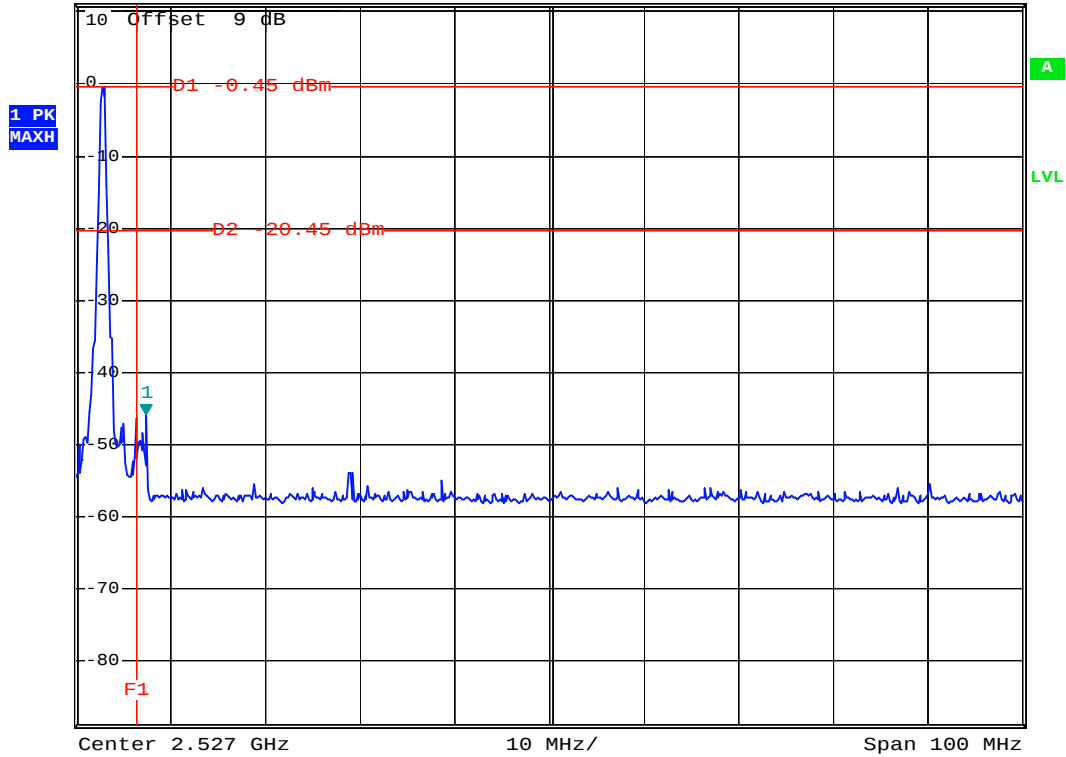
Date: 27.MAY.2006 11:25:13



Mode 3: CH78 (2480 MHz)



Ref 11 dBm * Att 20 dB * RBW 100 kHz Marker 1 [T1]
* VBW 100 kHz -45.86 dBm
* SWT 500 ms 2.484400000 GHz



Date: 27.MAY.2006 11:56:38



5.8 Conducted Emission

5.8.1 Measuring Instruments

As described in chapter 6 of this test Report.

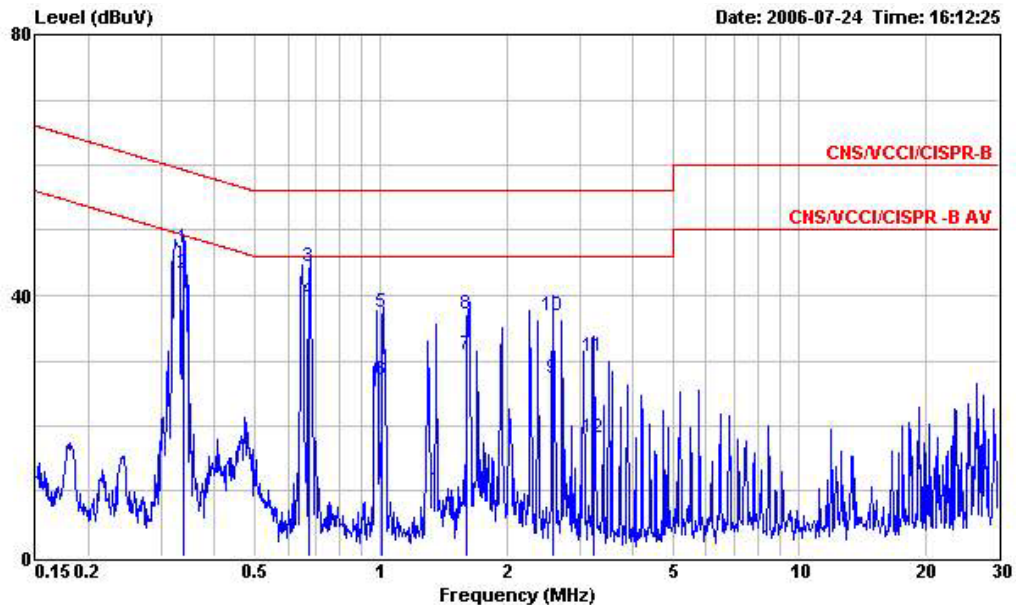
5.8.2 Test Procedures :

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.8.3 Test Data Test Mode 1

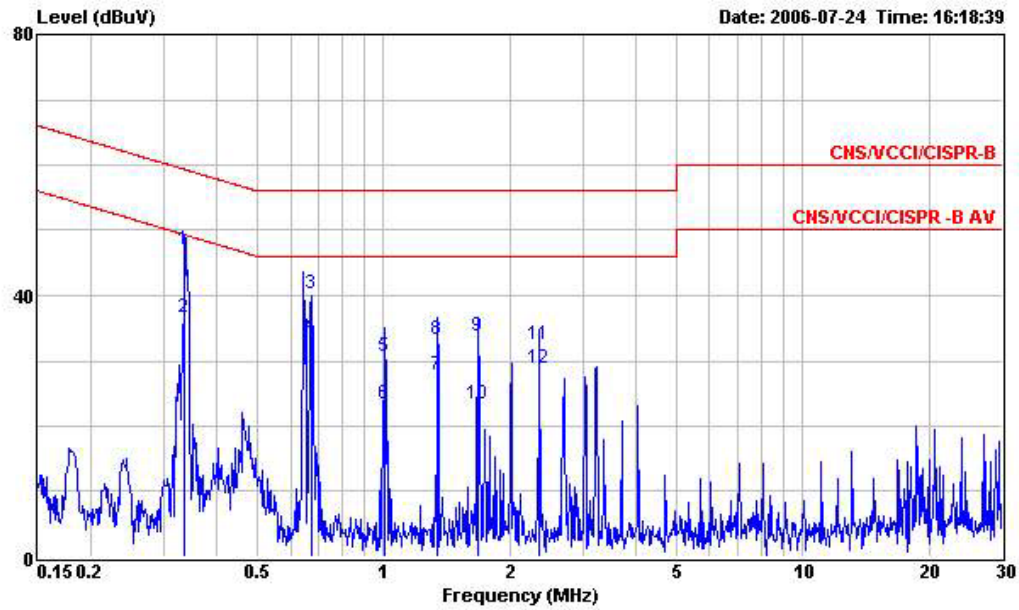
- Temperature: 24°C
- Relative Humidity: 47%
- Test Engineer: James

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
 EUT : Bluetooth Headset
 Power : 120V/60Hz
 Model : FD671003
 Memo : Charging Mode
 Memo :
 Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.338	47.28	-11.98	59.26	47.10	0.10	0.08	QP
2	0.338	43.28	-5.98	49.26	43.10	0.10	0.08	Average
3	0.674	44.41	-11.59	56.00	44.25	0.10	0.06	QP
4	0.674	39.32	-6.68	46.00	39.16	0.10	0.06	Average
5	1.011	37.28	-18.72	56.00	37.14	0.10	0.04	QP
6	1.011	26.92	-19.08	46.00	26.78	0.10	0.04	Average
7	1.610	31.00	-15.00	46.00	30.80	0.10	0.10	Average
8	1.610	37.20	-18.80	56.00	37.00	0.10	0.10	QP
9	2.580	27.26	-18.74	46.00	27.00	0.14	0.12	Average
10	2.581	36.82	-19.18	56.00	36.56	0.14	0.12	QP
11	3.230	30.59	-25.41	56.00	30.30	0.17	0.12	QP
12	3.230	18.19	-27.81	46.00	17.90	0.17	0.12	Average



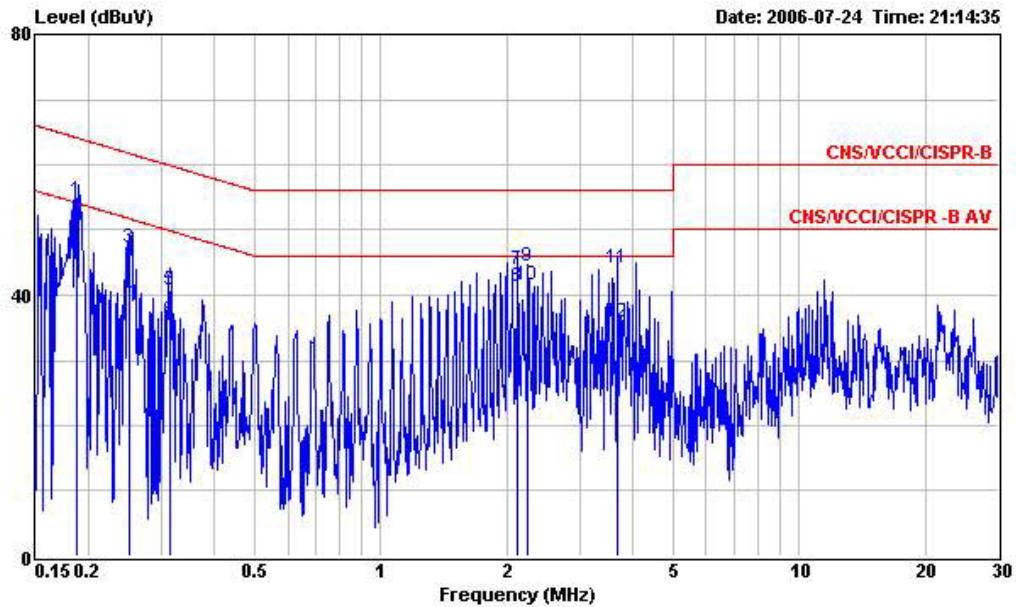
Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : Bluetooth Headset
 Power : 120V/60Hz
 Model : FD671003
 Memo : Charging Mode
 Memo :
 Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.335	46.96	-12.37	59.33	46.79	0.10	0.07	QP
2	0.335	36.68	-12.65	49.33	36.51	0.10	0.07	Average
3	0.672	40.29	-15.71	56.00	40.13	0.10	0.06	QP
4	0.672	33.87	-12.13	46.00	33.71	0.10	0.06	Average
5	1.009	30.70	-25.30	56.00	30.56	0.10	0.04	QP
6	1.009	23.45	-22.55	46.00	23.31	0.10	0.04	Average
7	1.340	27.75	-18.25	46.00	27.58	0.10	0.07	Average
8	1.340	33.35	-22.65	56.00	33.18	0.10	0.07	QP
9	1.680	33.85	-22.15	56.00	33.65	0.10	0.10	QP
10	1.680	23.31	-22.69	46.00	23.11	0.10	0.10	Average
11	2.349	32.35	-23.65	56.00	32.13	0.10	0.12	QP
12	2.349	28.75	-17.25	46.00	28.53	0.10	0.12	Average

5.8.4 Test Data Test Mode 2

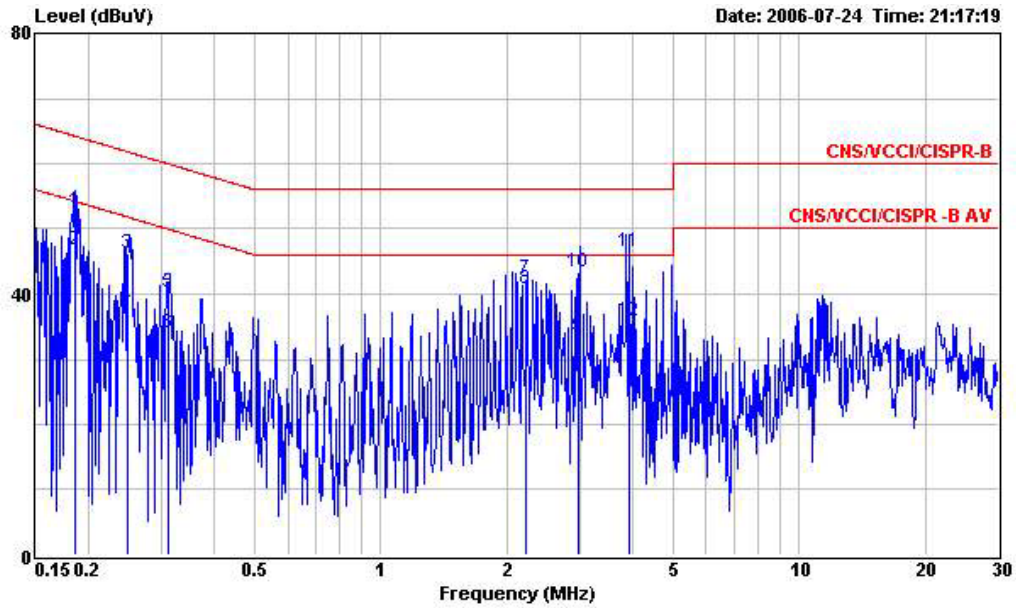
- Temperature: 24°C
- Relative Humidity: 47%
- Test Engineer: James

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 LINE
 EUT : Bluetooth Headset
 Power : 120V/60Hz
 Model : FD671003
 Memo : USB Charging Mode
 Memo :
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.188	54.62	-9.52	64.14	54.46	0.10	0.06	QP
2	0.188	46.84	-7.30	54.14	46.68	0.10	0.06	Average
3	0.249	47.21	-14.57	61.78	47.04	0.10	0.07	QP
4	0.249	39.74	-12.04	51.78	39.57	0.10	0.07	Average
5	0.313	40.86	-19.03	59.89	40.69	0.10	0.07	QP
6	0.313	36.11	-13.78	49.89	35.94	0.10	0.07	Average
7	2.120	43.80	-12.20	56.00	43.57	0.11	0.12	QP
8	2.120	41.18	-4.82	46.00	40.95	0.11	0.12	Average
9	2.240	44.45	-11.55	56.00	44.21	0.12	0.12	QP
10	2.240	41.59	-4.41	46.00	41.35	0.12	0.12	Average
11	3.676	44.25	-11.75	56.00	43.94	0.19	0.12	QP
12	3.676	35.89	-10.11	46.00	35.58	0.19	0.12	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL
 EUT : Bluetooth Headset
 Power : 120V/60Hz
 Model : FD671003
 Memo : USB Charging Mode
 Memo :
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.186	52.83	-11.38	64.21	52.67	0.10	0.06	QP
2	0.186	46.84	-7.37	54.21	46.68	0.10	0.06	Average
3	0.249	46.24	-15.55	61.79	46.07	0.10	0.07	QP
4	0.249	38.10	-13.69	51.79	37.93	0.10	0.07	Average
5	0.310	40.33	-19.63	59.96	40.16	0.10	0.07	QP
6	0.310	33.95	-16.01	49.96	33.78	0.10	0.07	Average
7	2.232	42.42	-13.58	56.00	42.20	0.10	0.12	QP
8	2.232	40.71	-5.29	46.00	40.49	0.10	0.12	Average
9	2.978	33.51	-12.49	46.00	33.29	0.10	0.12	Average
10	2.978	43.47	-12.53	56.00	43.25	0.10	0.12	QP
11	3.909	46.61	-9.39	56.00	46.39	0.10	0.12	QP
12	3.909	35.92	-10.08	46.00	35.70	0.10	0.12	Average

5.9 Radiated Emission Measurement

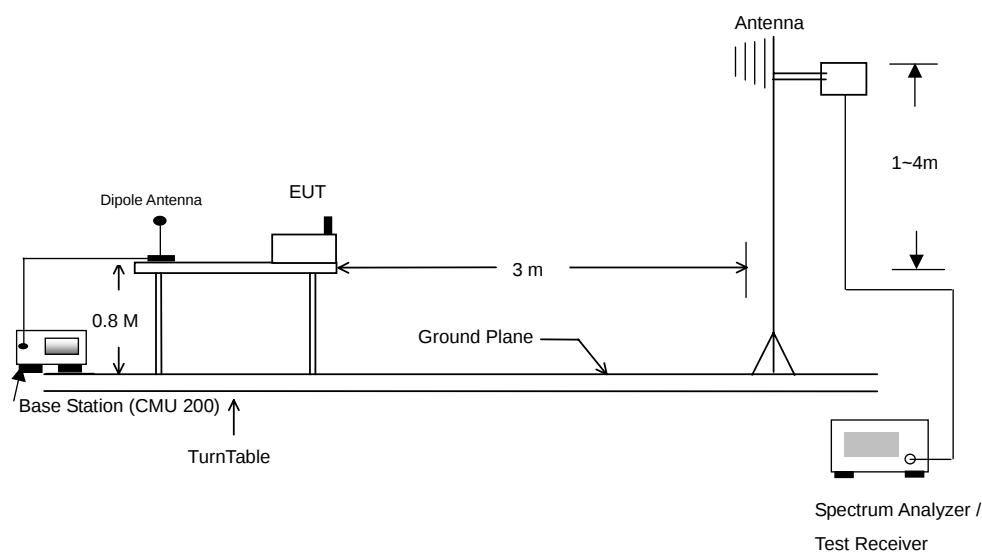
5.9.1 Measuring Instruments

As described in chapter 6 of this Report.

5.9.2 Test Procedures

1. The EUT was placed on a rotatable table top 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
8. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

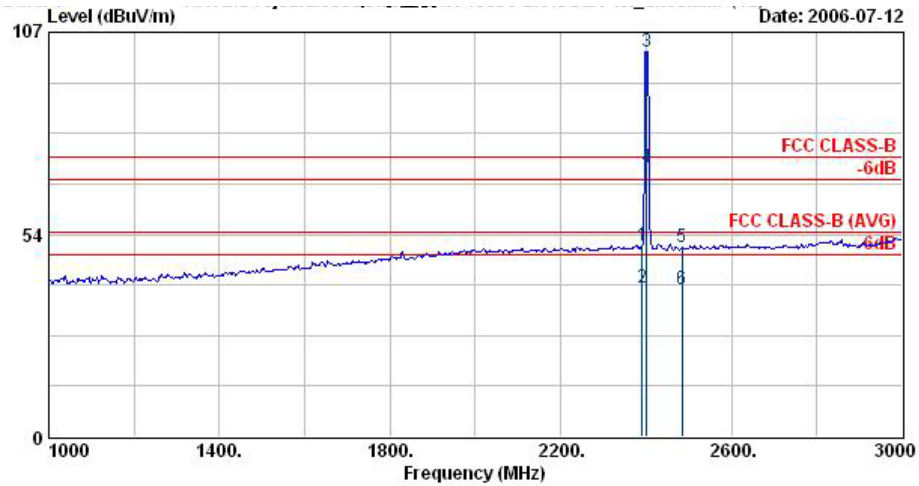
5.9.3 Typical Test Setup Layout of Radiated Emission



5.9.4 Test Data

- Temperature : 26 °C
- Relating Humidity : 53 %
- Test Enginner : Andrew
- Test Mode : Mode 1
- Polarization : Horizontal

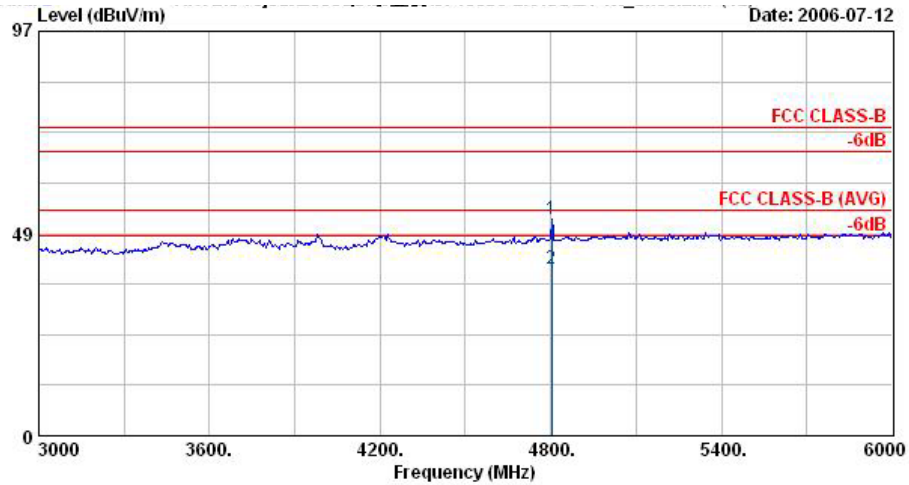
■ The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch00_2402MHz
Memo : DH1

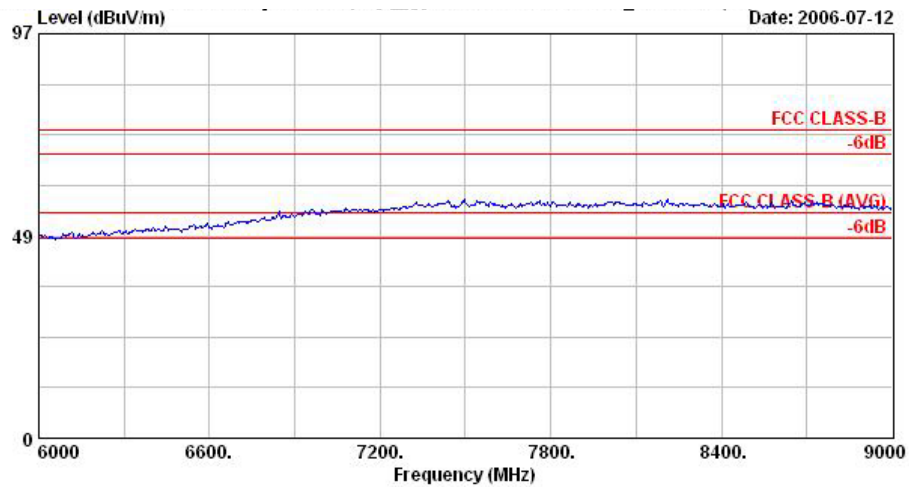
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV			cm	deg	
1 @	2390.00	50.32	-23.68	74.00	51.26	30.26	4.26	35.46	100	360 Peak
2 @	2390.00	39.34	-14.66	54.00	40.28	30.26	4.26	35.46	100	168 Average
3 @	2402.00	101.69			102.63	30.26	4.26	35.46	100	360 Peak
4 @	2402.00	71.32			72.26	30.26	4.26	35.46	100	168 Average
5 @	2483.50	50.02	-23.98	74.00	50.88	30.29	4.36	35.51	100	360 Peak
6 @	2483.50	39.10	-14.90	54.00	39.96	30.29	4.36	35.51	100	168 Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch00,2402MHz
Memo : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	4804.00	51.93	-22.07	74.00	48.93	32.88	6.21	36.10	200	0 Peak
2 @	4804.00	40.00	-14.00	54.00	37.00	32.88	6.21	36.10	100	126 Average

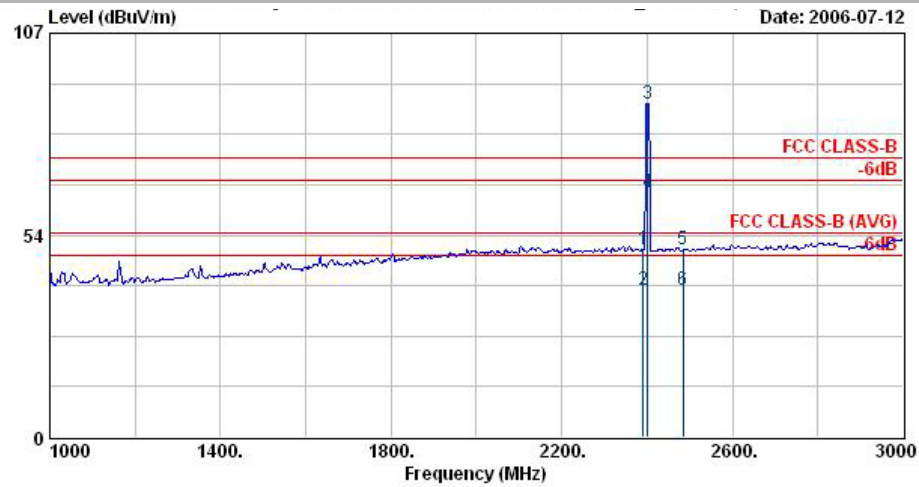


Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch00,2402MHz
Memo : DH1



- Polarization : Vertical

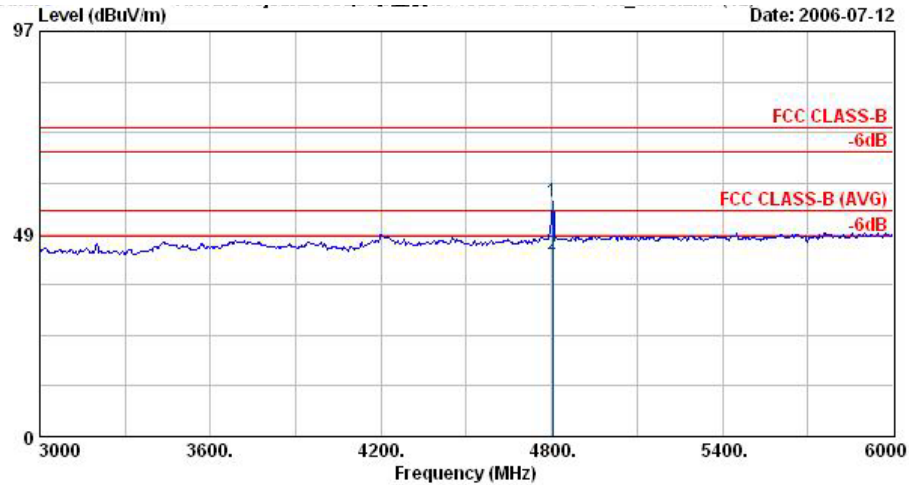
■ The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Bluetooth Headset
 Power : Real Battery(3.7V)
 Model : FR 671003
 Memo : BT TX_Ch00,2402MHz
 Memo : DH1

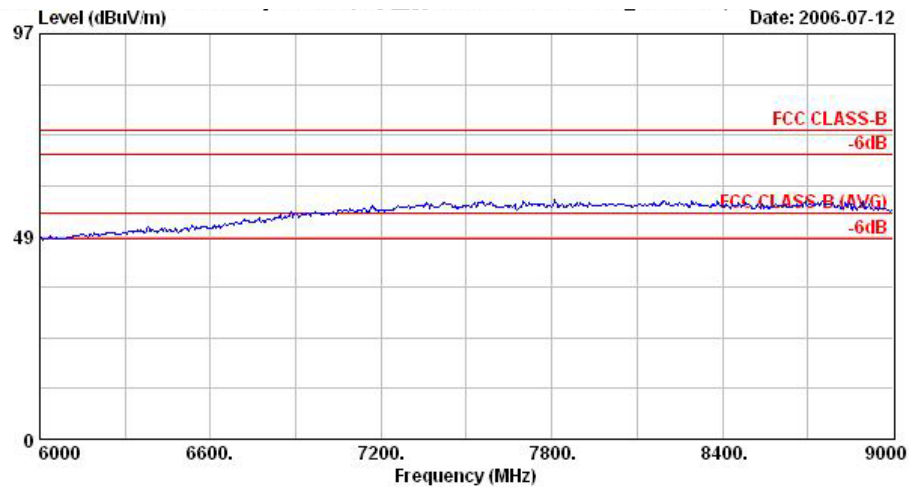
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV		dB		deg	
1 @	2390.00	49.67	-24.33	74.00	50.60	30.26	4.26	35.46	100	360 Peak
2 @	2390.00	39.10	-14.90	54.00	40.04	30.26	4.26	35.46	153	299 Average
3 @	2402.00	88.30			89.23	30.26	4.26	35.46	100	360 Peak
4 @	2402.00	64.86			65.80	30.26	4.26	35.46	153	299 Average
5 @	2483.50	49.53	-24.47	74.00	50.39	30.29	4.36	35.51	100	360 Peak
6 @	2483.50	39.10	-14.90	54.00	39.96	30.29	4.36	35.51	153	299 Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch00,2402MHz
Memo : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	4804.00	56.12	-17.88	74.00	53.13	32.88	6.21	36.10	200	360 Peak
2 @	4804.00	43.76	-10.24	54.00	40.76	32.88	6.21	36.10	100	109 Average



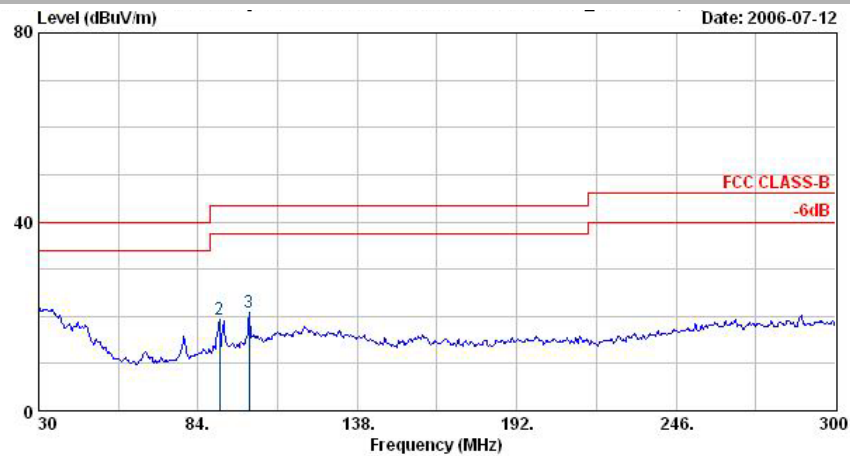
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch00,2402MHz
Memo : DH1

Remark: There is no more obvious spurious emission except the listings above.



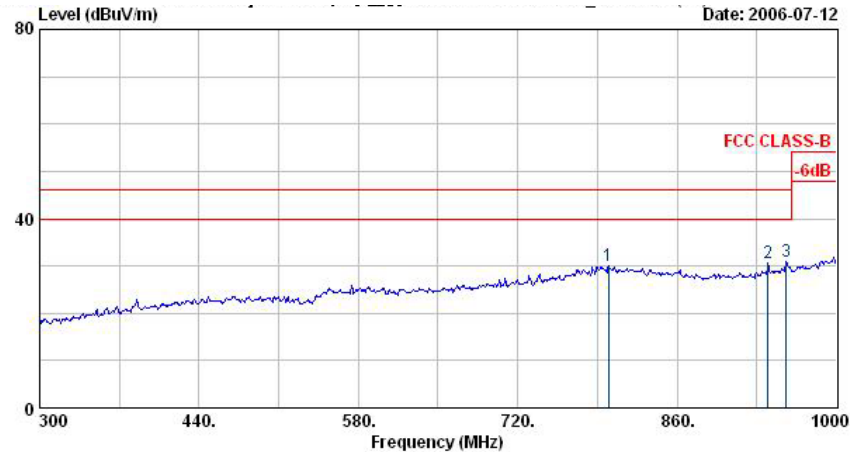
- Test Mode : Mode 2
- Polarization : Horizontal

The test that passed at minimum margin was marked by the frame in the following table.



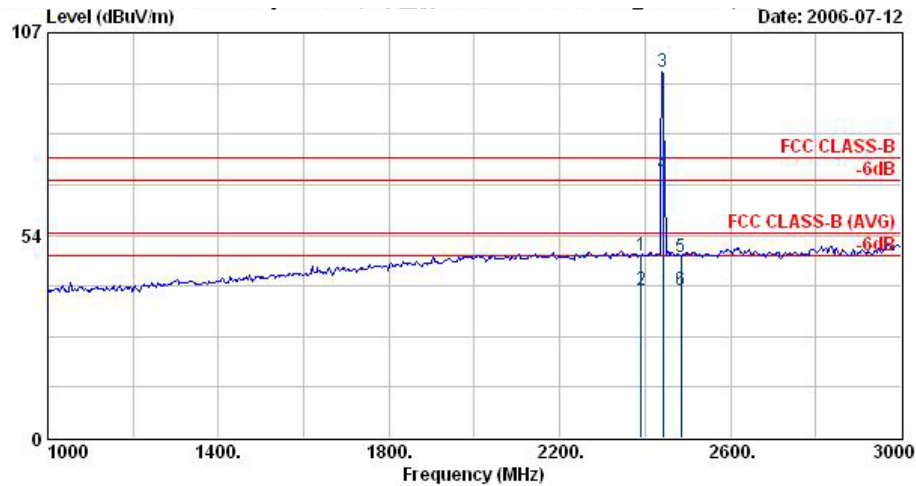
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	30.00	21.97	-18.03	40.00	30.96	18.73	0.90	28.62	400	0 Peak
2 @	91.29	19.24	-24.26	43.50	37.18	9.18	1.68	28.81	400	0 Peak
3 @	101.28	20.79	-22.71	43.50	37.44	10.57	1.65	28.87	400	0 Peak



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

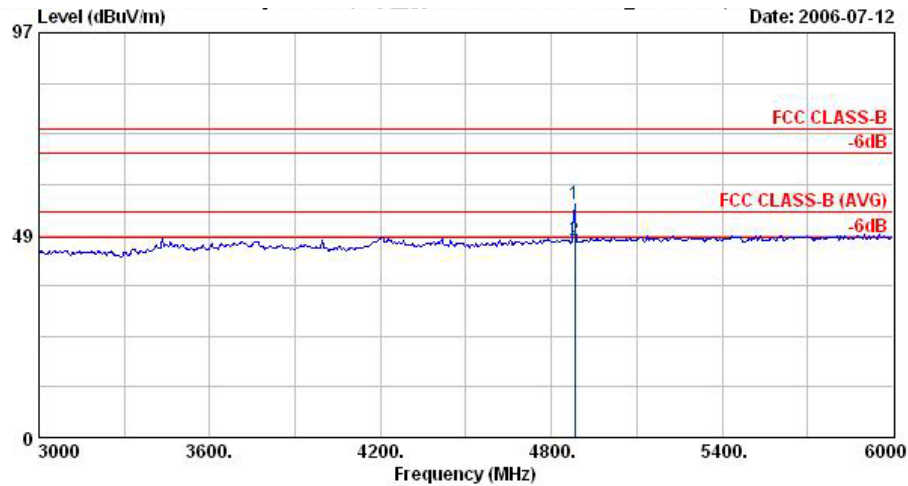
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	799.80	30.07	-15.93	46.00	31.42	21.90	5.62	28.87	100	0 Peak
2 @	939.80	30.51	-15.49	46.00	32.15	21.15	6.06	28.84	100	0 Peak
3 @	955.90	30.91	-15.09	46.00	32.07	21.65	6.07	28.87	100	185 Peak



Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Bluetooth Headset
 Power : Real Battery(3.7V)
 Model : FR 671003
 Memo : BT TX_Ch39,2441MHz
 Memo : DH1

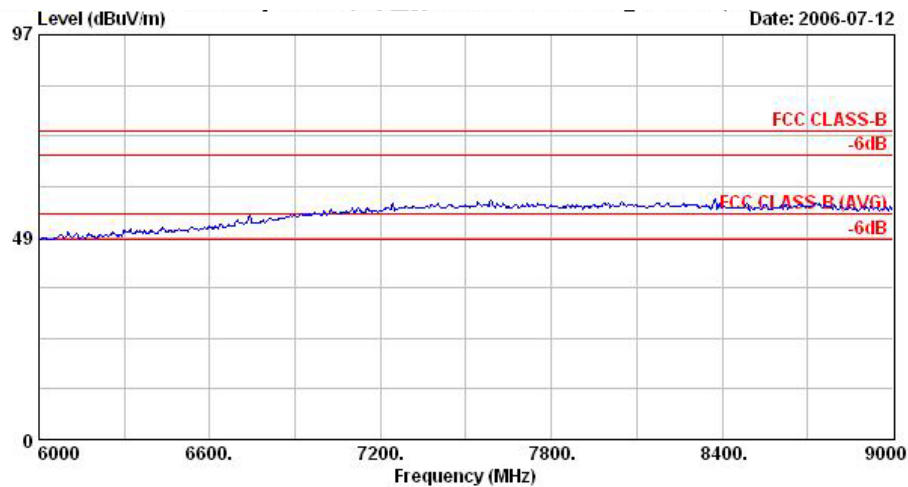
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	48.23	-25.77	74.00	49.16	30.26	4.26	35.46	100	360 Peak
2 @	2390.00	39.16	-14.84	54.00	40.10	30.26	4.26	35.46	130	195 Average
3 @	2441.00	96.80			97.70	30.28	4.29	35.47	100	360 Peak
4 @	2441.00	69.61			70.50	30.28	4.33	35.49	130	195 Average
5 @	2483.50	47.69	-26.31	74.00	48.55	30.29	4.36	35.51	100	360 Peak
6 @	2483.50	39.15	-14.85	54.00	40.01	30.29	4.36	35.51	130	195 Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

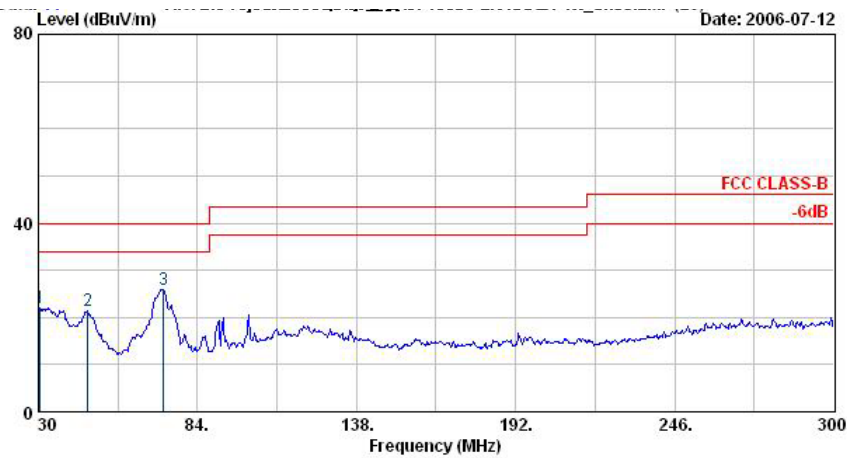
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	4882.00	55.98	-18.02	74.00	52.70	33.14	6.30	36.16	200	0 Peak
2 @	4882.00	47.40	-6.60	54.00	44.12	33.14	6.30	36.16	100	108 Average



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

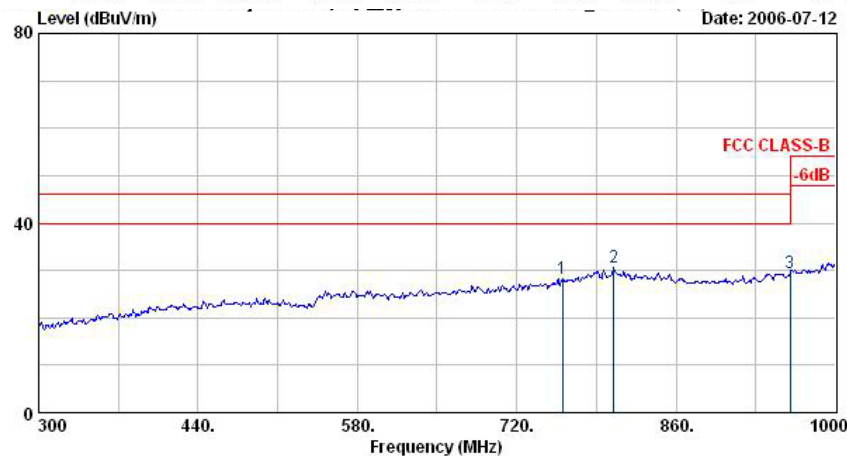
▪ Polarization : Vertical

■ The test that passed at minimum margin was marked by the frame in the following table.



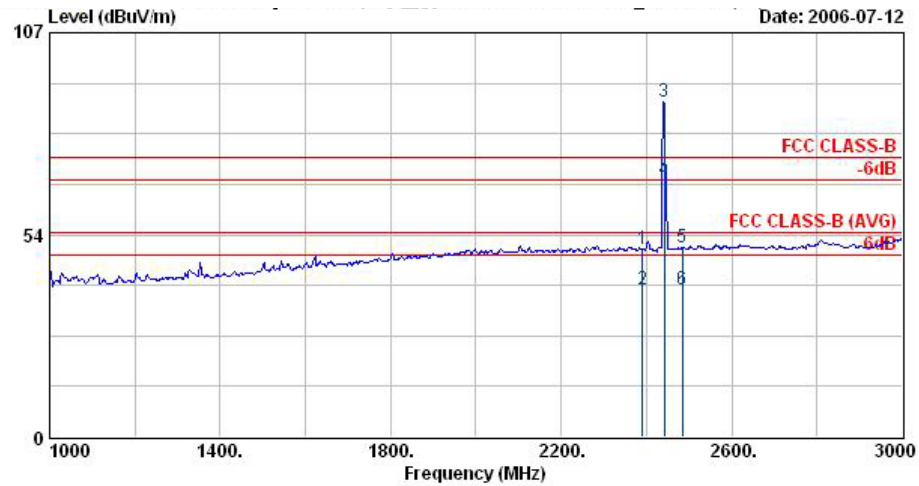
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	30.54	22.15	-17.85	40.00	31.44	18.40	0.93	28.62	400	0 Peak
2 @	46.74	21.36	-18.64	40.00	37.51	11.38	1.09	28.62	400	0 Peak
3 @	72.39	26.01	-13.99	40.00	46.82	6.48	1.41	28.70	400	95 Peak



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

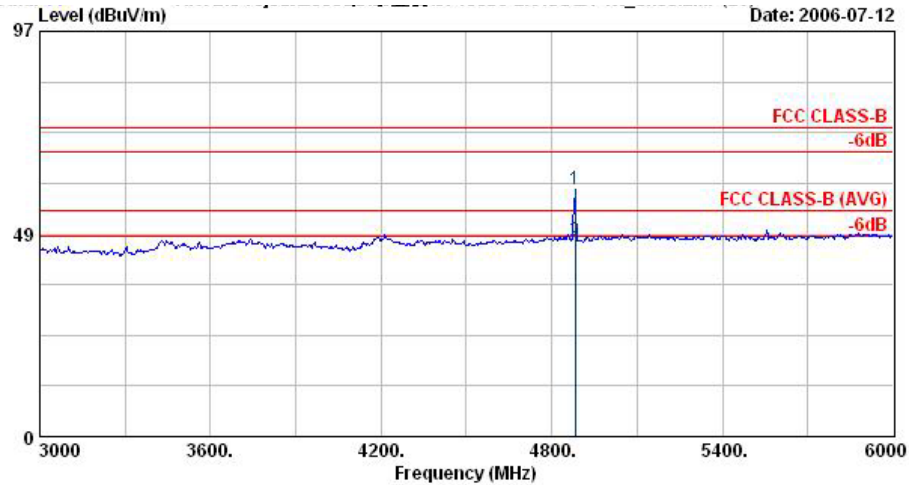
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	759.90	28.14	-17.86	46.00	31.08	20.73	5.28	28.95	100	0 Peak
2 @	805.40	30.58	-15.42	46.00	32.07	21.80	5.60	28.90	100	0 Peak
3 @	960.10	29.47	-24.53	54.00	30.53	21.76	6.04	28.86	100	0 Peak



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Bluetooth Headset
 Power : Real Battery(3.7V)
 Model : FR 671003
 Memo : BT TX_Ck39,2441MHz
 Memo : DH1

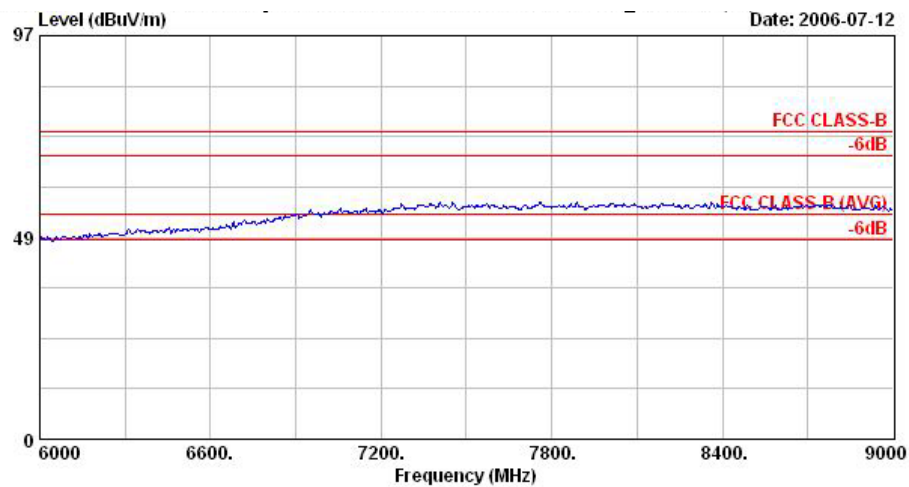
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	2390.00	49.56	-24.44	74.00	50.50	30.26	4.26	35.46	100	0 Peak
2 @	2390.00	39.17	-14.83	54.00	40.11	30.26	4.26	35.46	111	102 Average
3 @	2441.00	88.62			89.52	30.28	4.29	35.47	100	0 Peak
4 @	2441.00	67.82			68.71	30.28	4.33	35.49	111	102 Average
5 @	2483.50	50.31	-23.69	74.00	51.17	30.29	4.36	35.51	100	0 Peak
6 @	2483.50	39.11	-14.89	54.00	39.97	30.29	4.36	35.51	111	102 Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	4882.00	59.08	-14.92	74.00	55.80	33.14	6.30	36.16	200	360
2 @	4882.00	47.03	-6.97	54.00	43.75	33.14	6.30	36.16	100	108
										Peak
										Average

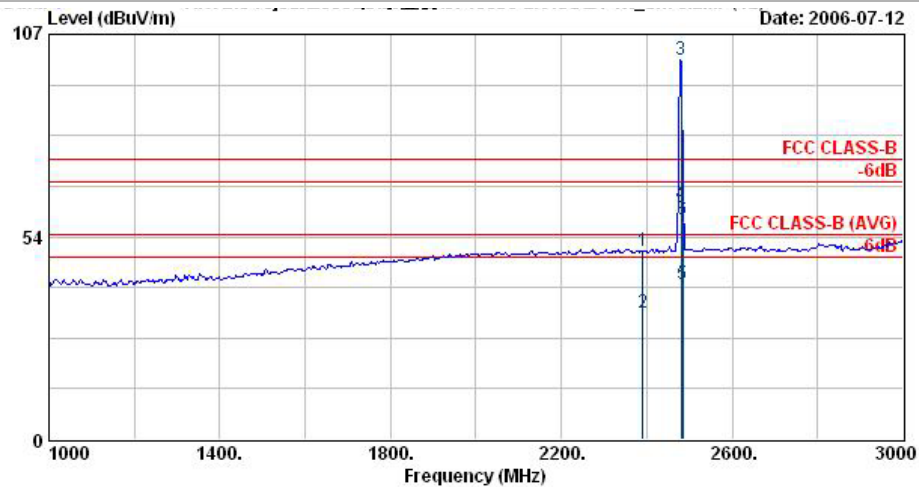


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch39,2441MHz
Memo : DH1

Remark: There is no more obvious spurious emission except the listings above.

- Test Mode : Mode 3
- Polarization : Horizontal

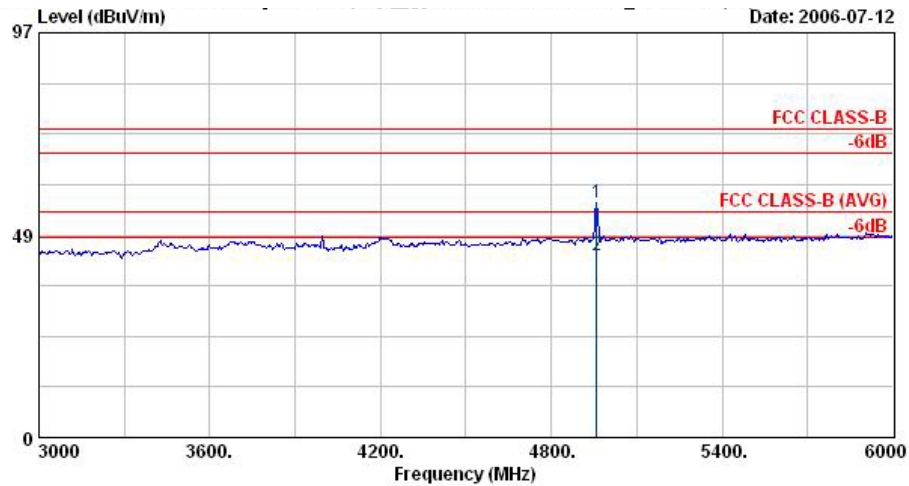
■ The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Bluetooth Headset
 Power : Real Battery(3.7V)
 Model : FR 671003
 Memo : BT TX_Ch78,2480MHz
 Memo : DH1

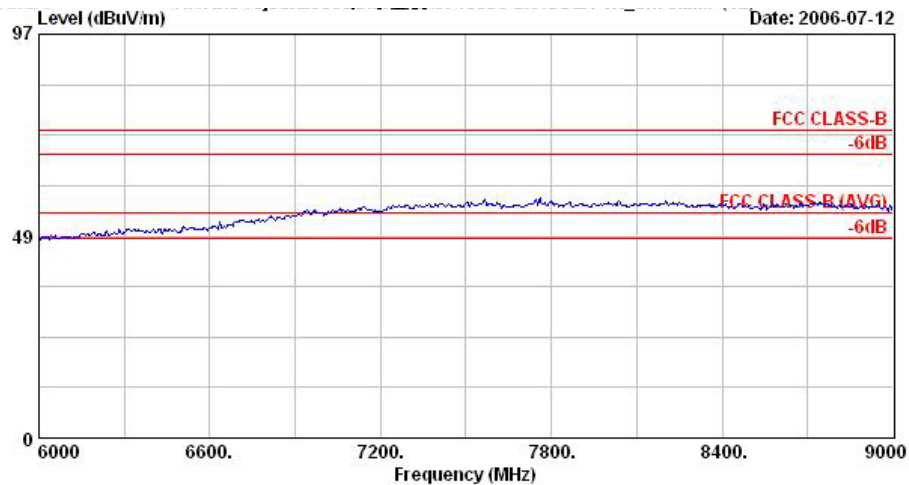
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV		dB		deg	
1 @	2390.00	49.61	-24.39	74.00	50.55	30.26	4.26	35.46	100	360 Peak
2 @	2390.00	33.42	-20.58	54.00	34.36	30.26	4.26	35.46	107	268 Average
3 @	2480.00	100.31			101.17	30.29	4.36	35.51	100	360 Peak
4 @	2480.00	62.19			63.05	30.29	4.36	35.51	107	268 Average
5 @	2483.50	41.02	-12.98	54.00	41.88	30.29	4.36	35.51	107	268 Average
6 @	2483.50	57.89	-16.11	74.00	58.75	30.29	4.36	35.51	100	360 Peak

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch78,2480MHz
Memo : DH1

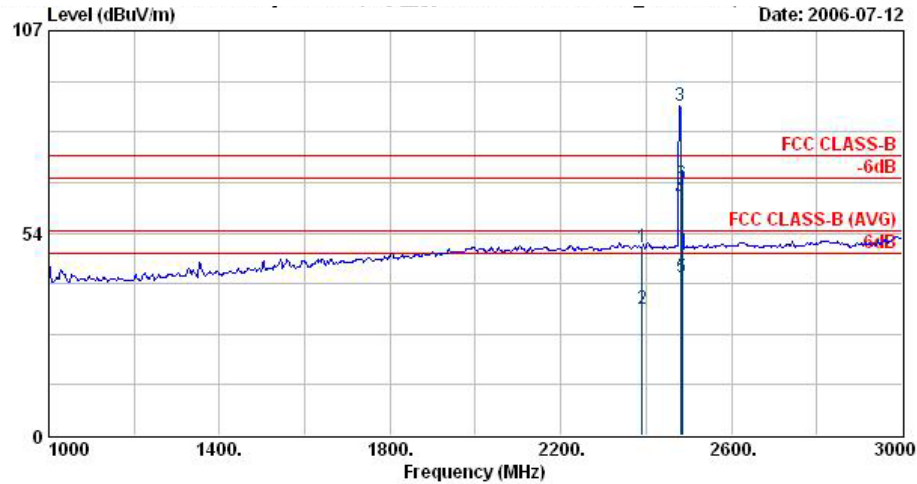
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1 @	4960.00	56.42	-17.58	74.00	52.78	33.47	6.39	36.23	200	0 Peak
2 @	4960.00	43.77	-10.23	54.00	40.14	33.47	6.39	36.23	163	53 Average



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch78,2480MHz
Memo : DH1

- Polarization : Vertical

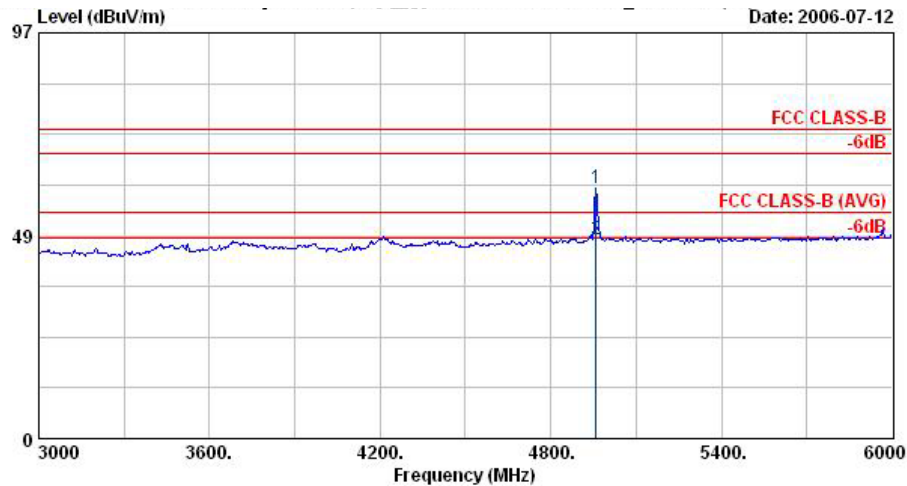
The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Bluetooth Headset
 Power : Real Battery(3.7V)
 Model : FR 671003
 Memo : BT TX_Ch78,2480MHz
 Memo : DH1

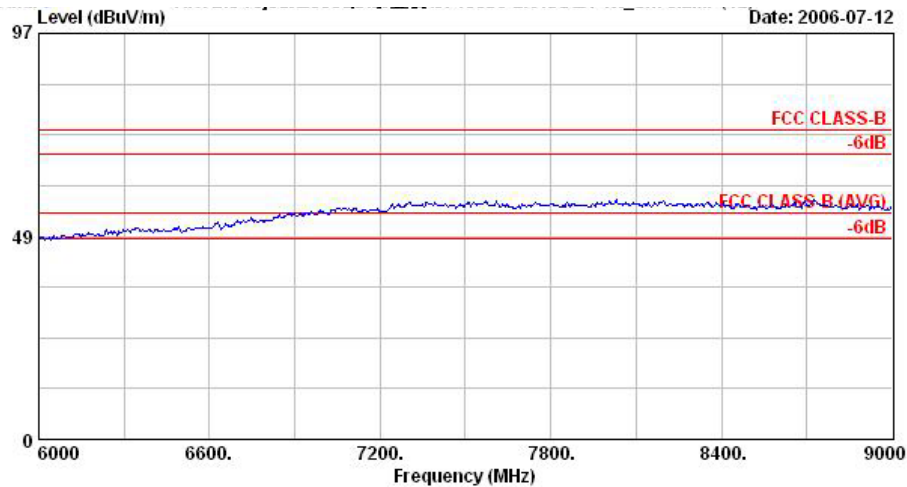
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	2390.00	49.83	-24.17	74.00	50.77	30.26	4.26	35.46	100	360 Peak
2 @	2390.00	33.46	-20.54	54.00	34.40	30.26	4.26	35.46	109	267 Average
3 @	2480.00	87.06			87.92	30.29	4.36	35.51	100	360 Peak
4 @	2480.00	62.55			63.41	30.29	4.36	35.51	109	267 Average
5 @	2483.50	41.65	-12.35	54.00	42.51	30.29	4.36	35.51	109	267 Average
6 @	2483.50	66.44	-7.56	74.00	67.30	30.29	4.36	35.51	100	360 Peak

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch78,2480MHz
Memo : DH1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	4960.00	59.85	-14.15	74.00	56.22	33.47	6.39	36.23	200	360 Peak
2 @	4960.00	47.45	-6.55	54.00	43.82	33.47	6.39	36.23	100	78 Average



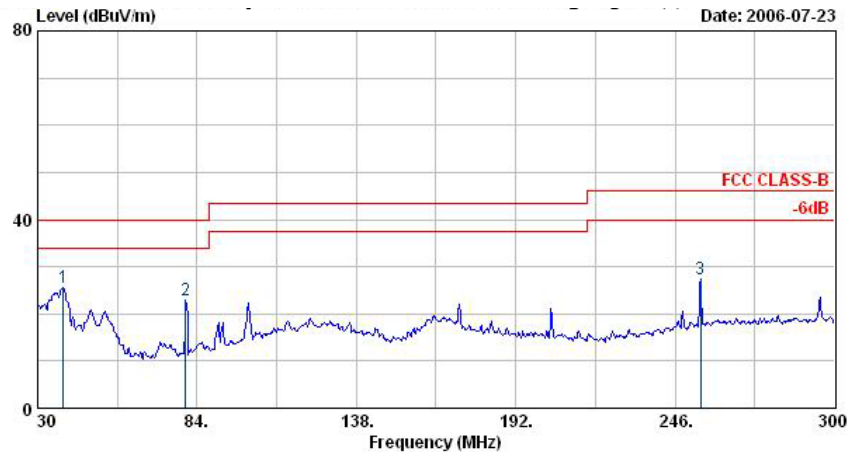
Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Bluetooth Headset
Power : Real Battery(3.7V)
Model : FR 671003
Memo : BT TX_Ch78,2480MHz
Memo : DH1

Remark: There is no more obvious spurious emission except the listings above.



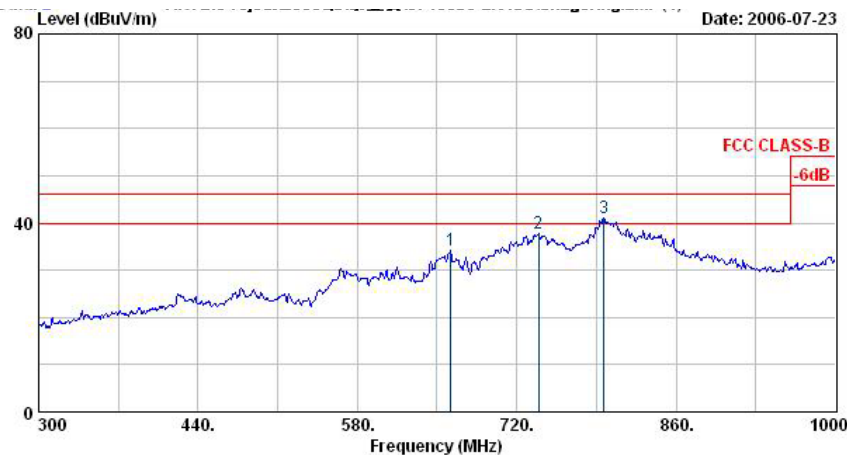
- Test Mode : Mode 4
- Polarization : Horizontal

The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Bluetooth Headset
 Power : 120Vac/60Hz
 Model : FD 671003
 Memo : Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB		deg	
1	38.64	25.67	-14.33	40.00	37.82	15.28	1.23	28.66	400	0 Peak
2	80.22	22.86	-17.14	40.00	42.95	7.07	1.57	28.74	400	0 Peak
3	254.64	27.42	-18.58	46.00	41.17	12.32	2.91	28.97	400	0 Peak



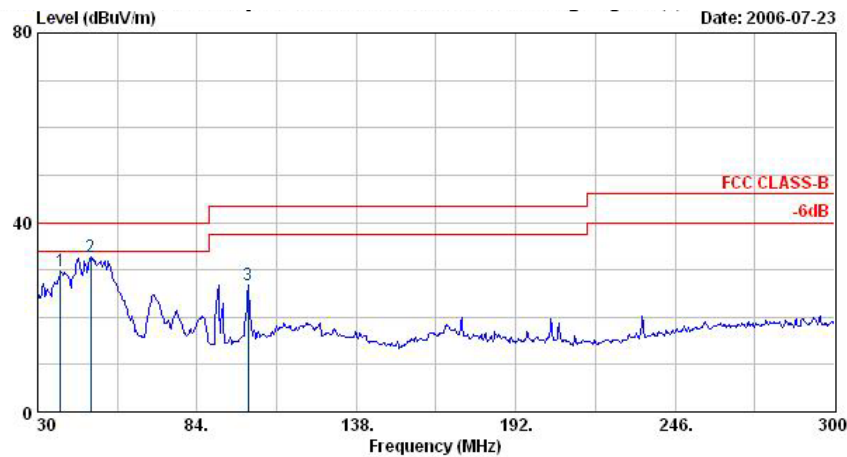
Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Bluetooth Headset
 Power : 120Vac/60Hz
 Model : FD 671003
 Memo : Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Pos	Pos	Remark
					dBuV	dB/m	dB		deg	
1	661.90	34.34	-11.66	46.00	39.90	18.61	4.87	29.04	100	0 Peak
2 @	738.90	37.65	-8.35	46.00	41.16	20.15	5.27	28.93	100	0 Peak
3 @	796.30	40.92	-5.08	46.00	42.43	21.79	5.57	28.87	145	210 Peak



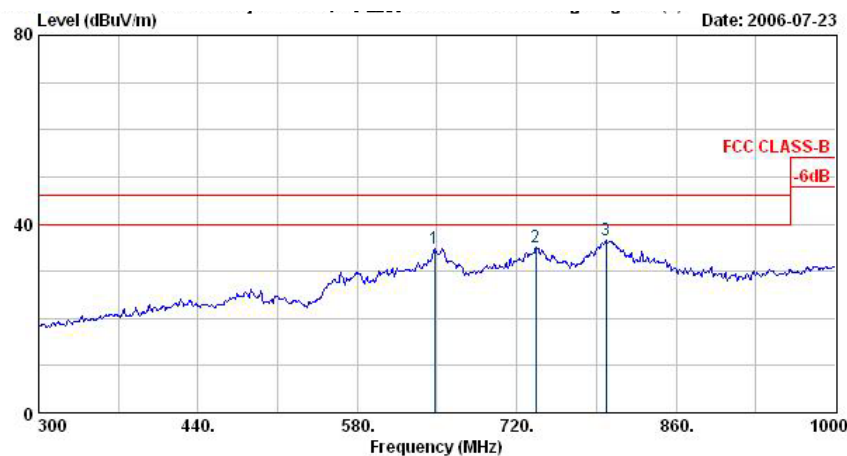
Polarization : Vertical

The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Bluetooth Headset
Power : 120Vac/60Hz
Model : FD 671003
Memo : Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	37.83	29.65	-10.35	40.00	41.39	15.73	1.19	28.66	400	0 Peak
2 @	48.09	32.79	-7.21	40.00	49.68	10.66	1.06	28.61	156	310 Peak
3	101.28	26.88	-16.62	43.50	43.53	10.57	1.65	28.87	400	0 Peak



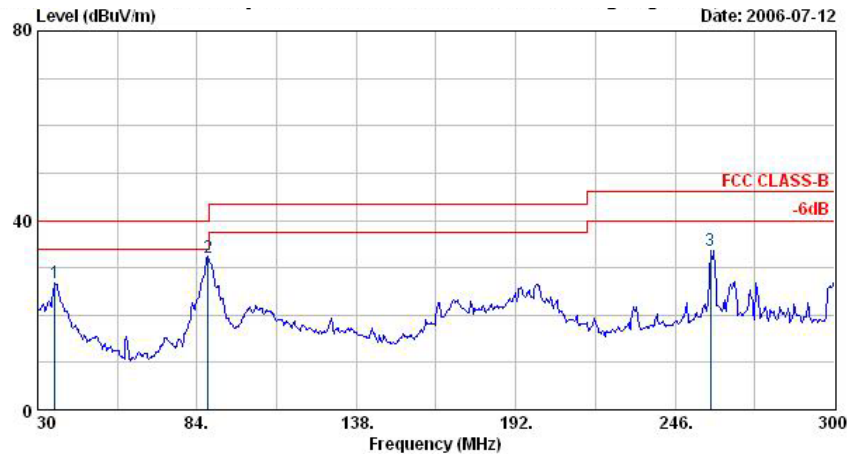
Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : Bluetooth Headset
Power : 120Vac/60Hz
Model : FD 671003
Memo : Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB	dB	cm	deg	
1	647.90	34.88	-11.12	46.00	40.73	18.46	4.83	29.14	100	0 Peak
2	736.80	35.19	-10.81	46.00	38.80	20.10	5.21	28.92	100	0 Peak
3 @	798.40	36.45	-9.55	46.00	37.88	21.84	5.60	28.87	100	0 Peak

Remark: There is no more obvious spurious emission except the listings above.

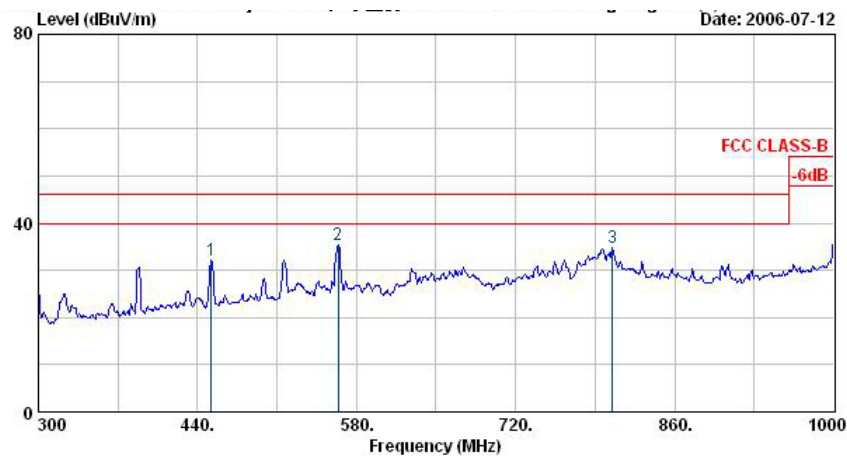
- Test Mode : Mode 5
- Polarization : Horizontal

The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Bluetooth Headset
 Power : 120Vac/60Hz
 Model : FR 671003
 Memo : USB Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	35.94	26.81	-13.19	40.00	37.72	16.62	1.12	28.65	400	0 Peak
2 @	87.78	31.98	-8.02	40.00	50.45	8.65	1.67	28.78	144	89 Peak
3	257.88	33.61	-12.39	46.00	47.03	12.67	2.88	28.97	400	0 Peak

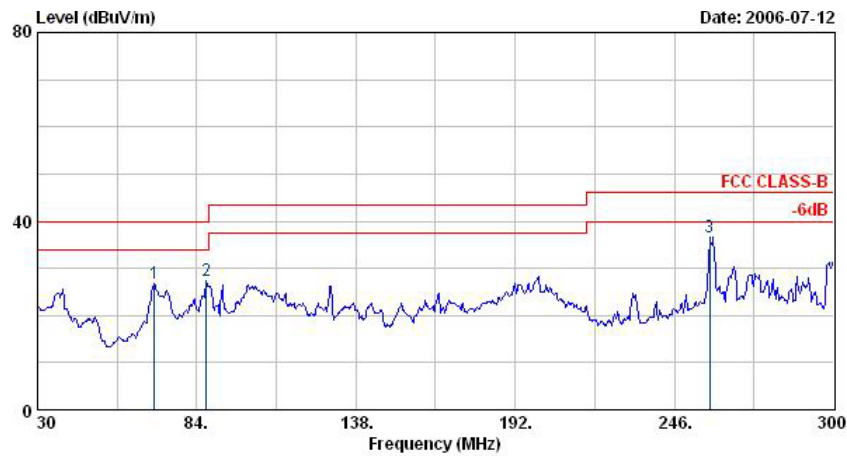


Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Bluetooth Headset
 Power : 120Vac/60Hz
 Model : FR 671003
 Memo : USB Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	451.90	32.23	-13.77	46.00	40.59	16.43	4.02	28.81	100	0 Peak
2	563.90	35.42	-10.58	46.00	41.51	18.49	4.44	29.01	100	0 Peak
3	805.40	34.88	-11.12	46.00	36.37	21.80	5.60	28.90	100	0 Peak

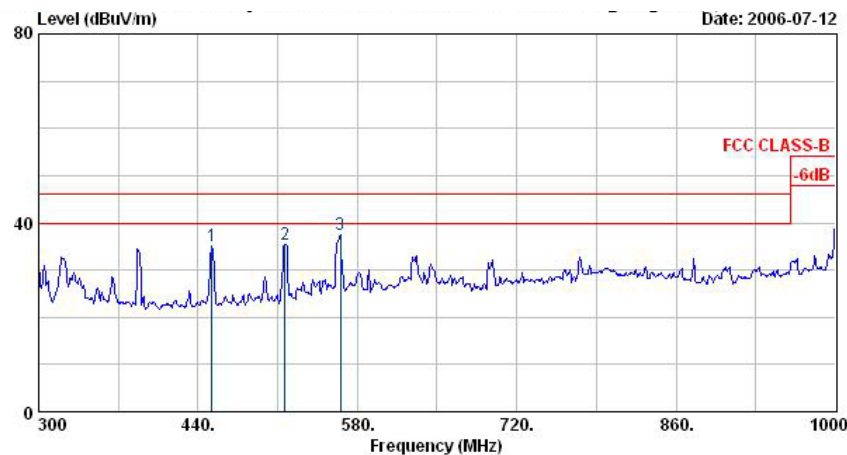
• Polarization : Vertical

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : Bluetooth Headset
 Power : 120Vac/60Hz
 Model : FR 671003
 Memo : USB Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	69.69	26.91	-13.09	40.00	47.98	6.26	1.36	28.68	400	0 Peak
2	87.24	27.32	-12.68	40.00	46.00	8.45	1.65	28.78	400	0 Peak
3	257.88	36.62	-9.38	46.00	50.04	12.67	2.88	28.97	400	0 Peak



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : Bluetooth Headset
 Power : 120Vac/60Hz
 Model : FR 671003
 Memo : USB Charging Mode

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	451.90	35.06	-10.94	46.00	43.42	16.43	4.02	28.81	100	0 Peak
2	516.30	35.43	-10.57	46.00	43.21	16.90	4.24	28.92	100	0 Peak
3 @	565.30	37.38	-8.62	46.00	43.47	18.46	4.45	29.00	165	301 Peak

Remark: There is no more obvious spurious emission except the listings above.



5.10 Antenna Requirements

5.10.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no other antenna except assembled by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

5.10.2 Antenna Connected Construction

The antenna used in this product is a PCB antenna without connector and it is considered to meet antenna requirement of FCC.

5.10.3 Antenna Gain

The antenna gain of EUT is less than 6dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

6. List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 22, 2006	Feb. 22, 2007	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 29, 2006	Mar. 29, 2007	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 19, 2006	Apr. 19, 2007	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 22, 2005	Dec. 22, 2006	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Jul. 25, 2006	Jul. 24, 2007	Radiation (03CH06-HY)
Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jun. 28, 2006	Jun. 27, 2007	Radiation (03CH06-HY)
Controller	CT	SC100	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 22, 2004	Nov. 22, 2006	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 1, 2005	Feb. 1, 2007	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Jul. 21, 2006	Jul. 20, 2007	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F	997165	26G - 40G	Jul. 21, 2006	Jul. 20, 2007	Radiation (03CH06-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)

7. Uncertainty Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	4.72				