



FCC Test Report

According to

47 CFR Part 15 Subpart C

Equipment : Bluetooth Headset
Trade Name : Cal-Comp Electronics (Thailand) Co., Ltd.
Model Name : H390
FCC ID : OHH-H390
Filing Type : Certification
Applicant : Cal-Comp Electronics (Thailand) Co., Ltd.
191/54, 57, 18th FL, Rachadapisek Road., Klongtoey,
Bangkok, Thailand

- The test result refers exclusively to the test presented tested model / sample.
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- The data shown in this test report were carried out on Jul. 25, 2008 at **Sporton International Inc. LAB.**
- Report No.: FR871005, Report Version: Rev.01



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Report Version: Rev.01

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History of This Test Report

Report Issue Date: Aug. 04, 2008

Report No.	Description

1. General Description of Equipment under Test

1.1 Applicant

Cal-Comp Electronics (Thailand) Co., Ltd.

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

1.2 Manufacturer

Cal-Comp Electronics (Thailand) Co., Ltd.

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

1.3 Basic Description of Accessory

AC Adapter 1	Brand Name	MOTOROLA
	Model Name	FMP5334A
	Power Rating	I/P: 100-240Vac, 50-60Hz, 120mA;
	AC Power Cord Type	1.85 meter shielded cable without ferrite core
AC Adapter 2	Brand Name	MOTOROLA
	Model Name	DCH3-050EU-0304
	Power Rating	I/P:100~240V, 50~60Hz, 120mA
	AC Power Cord Type	1.85 meter non-shielded cable without ferrite core
AC Adapter 3	Brand Name	MOTOROLA
	Model Name	FMP5202C
	Power Rating	I/P:100~240V, 50~60Hz, 120mA
	AC Power Cord Type	1.85 meter non-shielded cable without ferrite core
Battery	Brand Name	MOTOROLA
	Model Name	1332T

Remark: Above EUT's information was declared by manufacturer. Please refer to the specifications of manufacturer or User's Manual for more detailed features description.

1.4 Feature of Equipment under Test

Product Feature & Specification				
DUT Type :	Bluetooth Headset			
Trade Name :	Cal-Comp Electronics (Thailand) Co., Ltd.			
Model Name :	H390			
FCC ID :	OHH-H390			
Tx Frequency :	2400 MHz ~ 2483.5 MHz			
Rx Frequency :	2400 MHz ~ 2483.5 MHz			
Number of Channels :	79			
Carrier Frequency of Each Channel :	2402+n*1 MHz; n=0~78			
Channel Spacing :	1 MHz			
Maximum Output Power to Antenna :	Bluetooth: 3.15 dBm (1Mbps) Bluetooth EDR: 4.91dBm (2Mbps) / 5.60dBm (3Mbps)			
Type of Antenna Connector :	N/A			
Antenna Type :	PCB Antenna			
Antenna Gain :	2.50 dBi			
HW Version :	H390-MB-V03			
SW Version :	Carbon BCM2044A1_MP_001.002.029.0234			
Type of Modulation :	Bluetooth (1Mbps) : GFSK Bluetooth EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth EDR (3Mbps) : 8-DPSK			
Function Type :	Transmitter		Transceiver	V
DUT Stage :	Identical Prototype			

2. Test Configuration of Equipment under Test

2.1 Test Manner

- a. 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.
- b. The data rate, 3Mbps, was chosen to being tested, due to the highest RF output power.

Channel	Frequency	Data Rate / Modulation		
		GFSK	$\pi/4$ -DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2400MHz	3.13 dBm	4.49 dBm	5.60 dBm
Ch39	2441MHz	3.14 dBm	4.91 dBm	5.37 dBm
Ch78	2480MHz	3.15 dBm	4.72 dBm	5.13 dBm

Bluetooth uses frequency hopping spread spectrum (FHSS) operation which also facilitates Bluetooth multiple access and coexistence among other types of wireless systems. The basic frequency-hopping pattern is a pseudo-random ordering of 79 channel frequencies in the ISM band and the hopping rate is nominally 1600 hops per second. The EDR modulation format uses one of two types of DPSK ($\pi/4$ -DQPSK or 8-DPSK) in the payload section of the packet. As shown in figure, the EDR packet begins using GFSK modulation during the access code and header portions of the packet but changes to DPSK modulation after the guard time. Changing to a DPSK format allows increased data rates of 2 Mb/s or 3 Mb/s.

- c. The EUT is programmed to transmit signal continuously for all testings.
- d. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 25000 MHz.

2.2 Test Mode

Test Item	Test Mode
Radiated Emission / RF Conducted	Bluetooth Tx
	Mode 1: CH00_2402 MHz
	Mode 2: CH39_2441 MHz
	Mode 3: CH78_2480 MHz
Conducted Emission	Mode 1: Charging Mode + Adapter 1
	Mode 2: Charging Mode + Adapter 2
	Mode 3: Charging Mode + Adapter 3

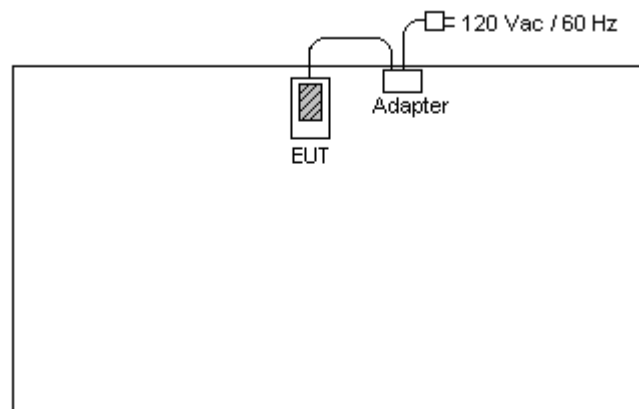
2.3 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	D400	E2K24GBRL	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

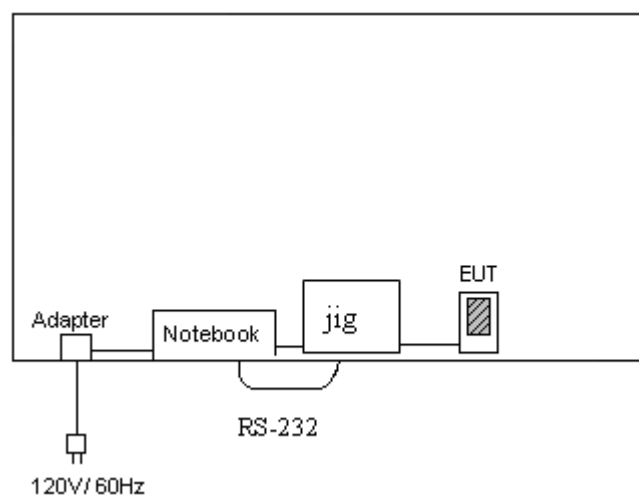
2.4 Connection Diagram of Test System

<Conducted Emission>

EUT with Adapter Mode



<Radiated Emission>



3. RF Utility

The programmed RF Utility," Blue Tool ", is installed in 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 : 886-3-328-4978
Test Site No : CO05-HY, 03CH06-HY
FCC Designation No : TW1022

4.1 Test Voltage

AC 120V / 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test Compliance

47 CFR Part 15 Subpart C

4.4 Frequency Range

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 25000 MHz

4.5 Test Distance

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

5. Test Data and Test Result

5.1 List of Measurements and Examinations

The Emission Mode: Bluetooth

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a)(1)(iii)	Hopping Channel Bandwidth	Pass
15.247(a)(1)	Hopping Channel Separation	Pass
15.247(a)(1)(iii)	Number of Hopping Frequency	Pass
15.247(a)(1)(iii)	Dwell Time of Each Frequency	Pass
15.247(b)(1)	Output Power	Pass
15.247(d)	100 KHz Bandwidth of Frequency Band Edges	Pass
15.209(a) 15.247(d)	Radiated Emission	Pass
15.203 15.247(b)(4)	Antenna Requirement	Pass

5.2 Band Edges Measurement

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 via a low lose cable.
2. Set both RBW and VBW of spectrum analyzer to 100 KHz with suitable frequency span including 100 KHz bandwidth from band edge.
3. The band edges was measured and recorded.

5.2.3 Test Result

- Application Type : Bluetooth
- Temperature : 24~25°C
- Relative Humidity : 49~50%
- Test Engineer : Sam

Test Result in Bluetooth lower band	:	PASS
Test Result in Bluetooth higher band	:	PASS
Test Result in Bluetooth EDR(2Mbps) lower band	:	PASS
Test Result in Bluetooth EDR(2Mbps) higher band	:	PASS
Test Result in Bluetooth EDR(3Mbps) lower band	:	PASS
Test Result in Bluetooth EDR(3Mbps) higher band	:	PASS

5.2.4 Note on Band Edge Emission
➤ Bluetooth(3Mbps)
CH00 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2384.29	47.81	-26.19	74.00	47.71	31.86	3.92	35.68	100	0	Peak
2384.29	32.18	-21.82	54.00	32.10	31.83	3.92	35.68	3.92	355	Average

CH00 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2353.89	45.68	-28.32	74.00	45.58	31.86	3.92	35.68	100	0	Peak
2353.89	30.70	-23.30	54.00	30.71	31.81	3.86	35.67	100	57	Average

CH78 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	63.21	-10.79	74.00	62.88	31.98	4.05	35.70	100	0	Peak
2483.50	38.2963.21	-15.71	54.00	37.96	31.98	4.05	35.70	102	356	Average

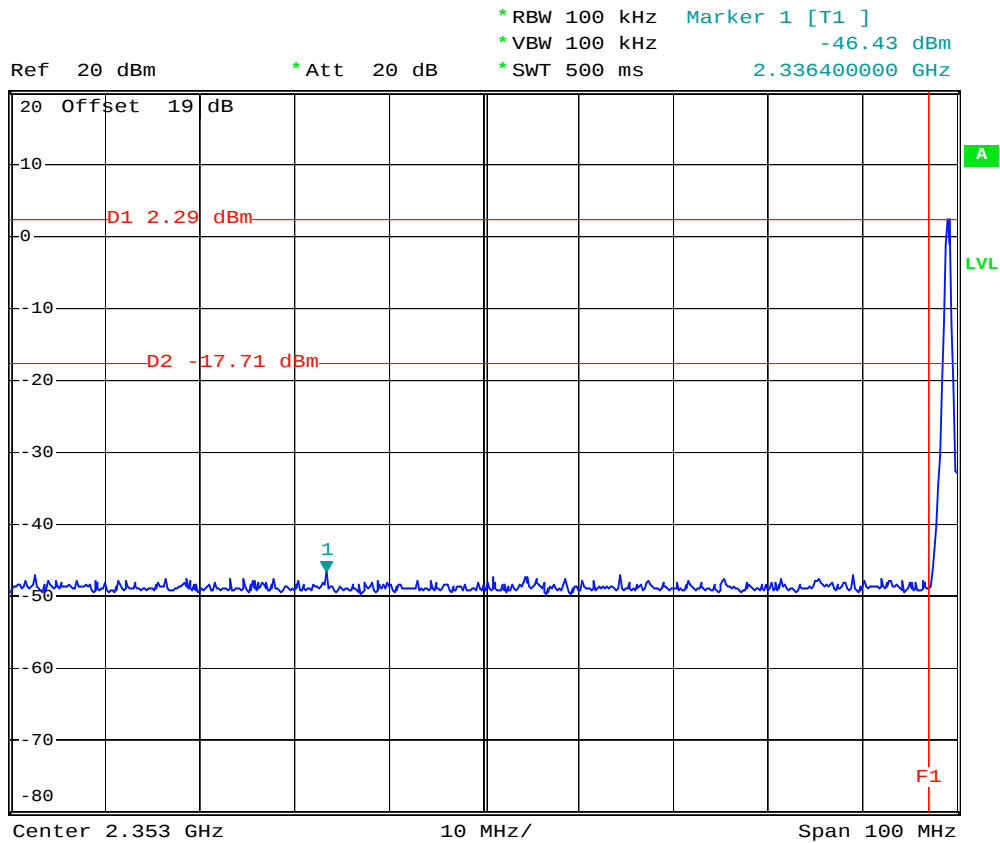
CH78 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	61.99	-12.01	74.00	61.66	31.98	4.05	35.70	100	0	Peak
2483.50	37.35	-16.65	54.00	37.02	31.98	4.05	35.70	100	59	Average

5.2.5 20dB Band Edge

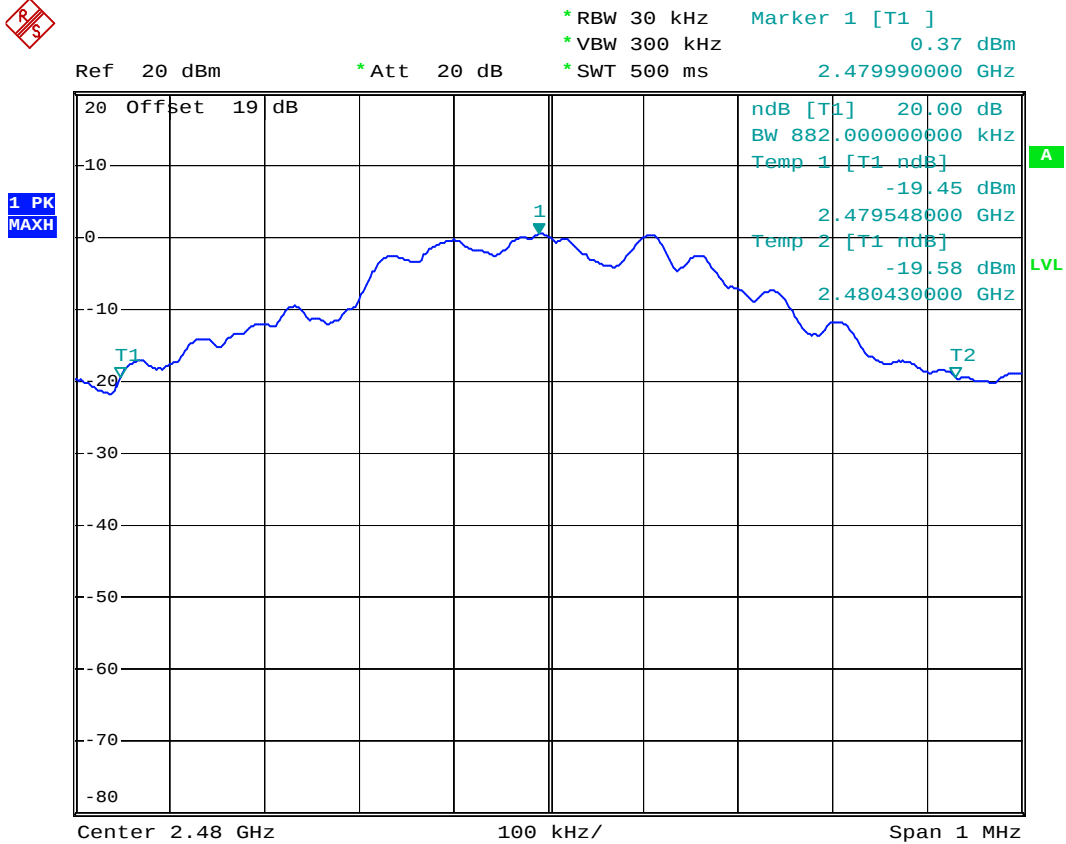
Bluetooth

CH00



Date: 19.JUL.2008 08:08:07

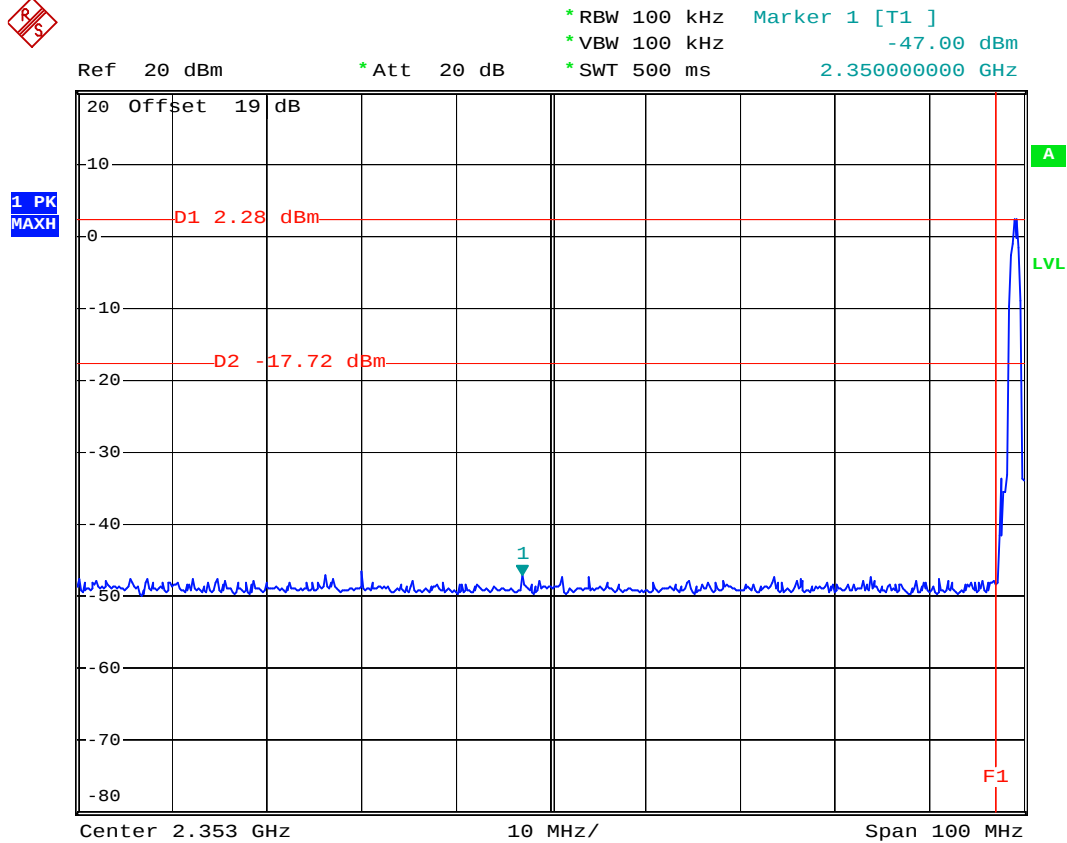
CH78



Date: 19.JUL.2008 08:00:39

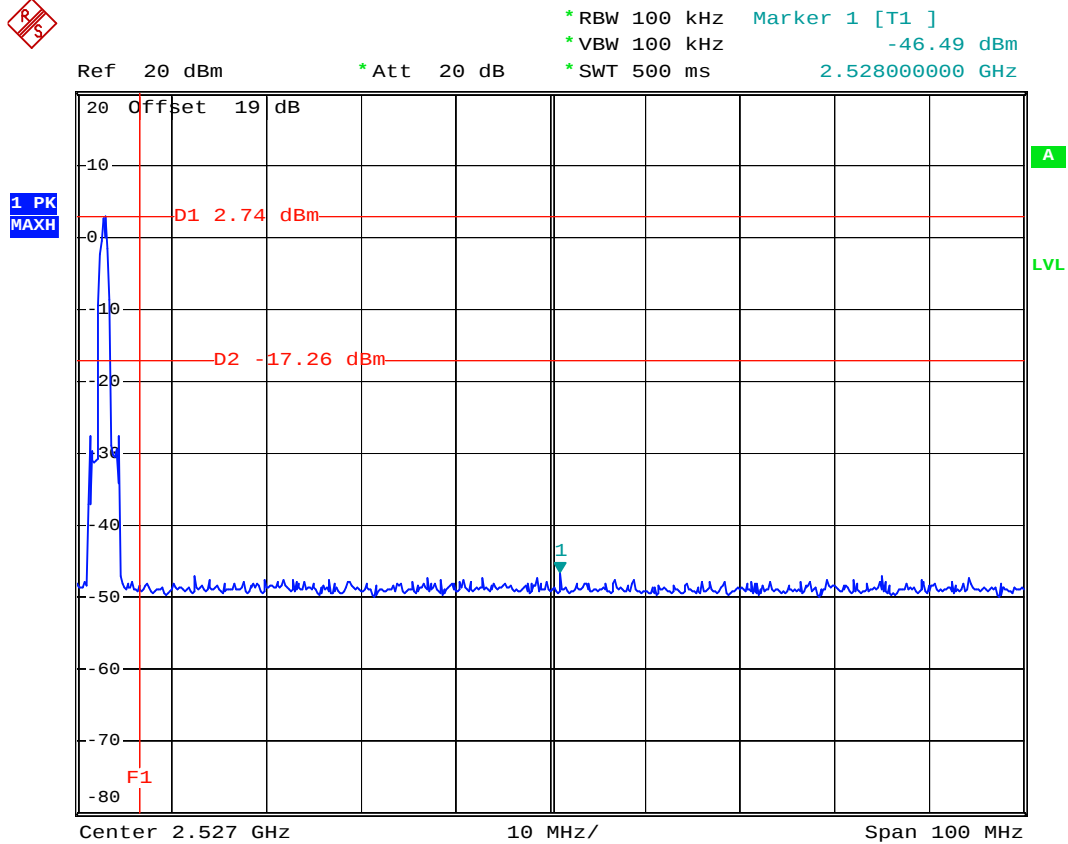
Bluetooth EDR(2Mbps)

CH00



Date: 19.JUL.2008 08:09:03

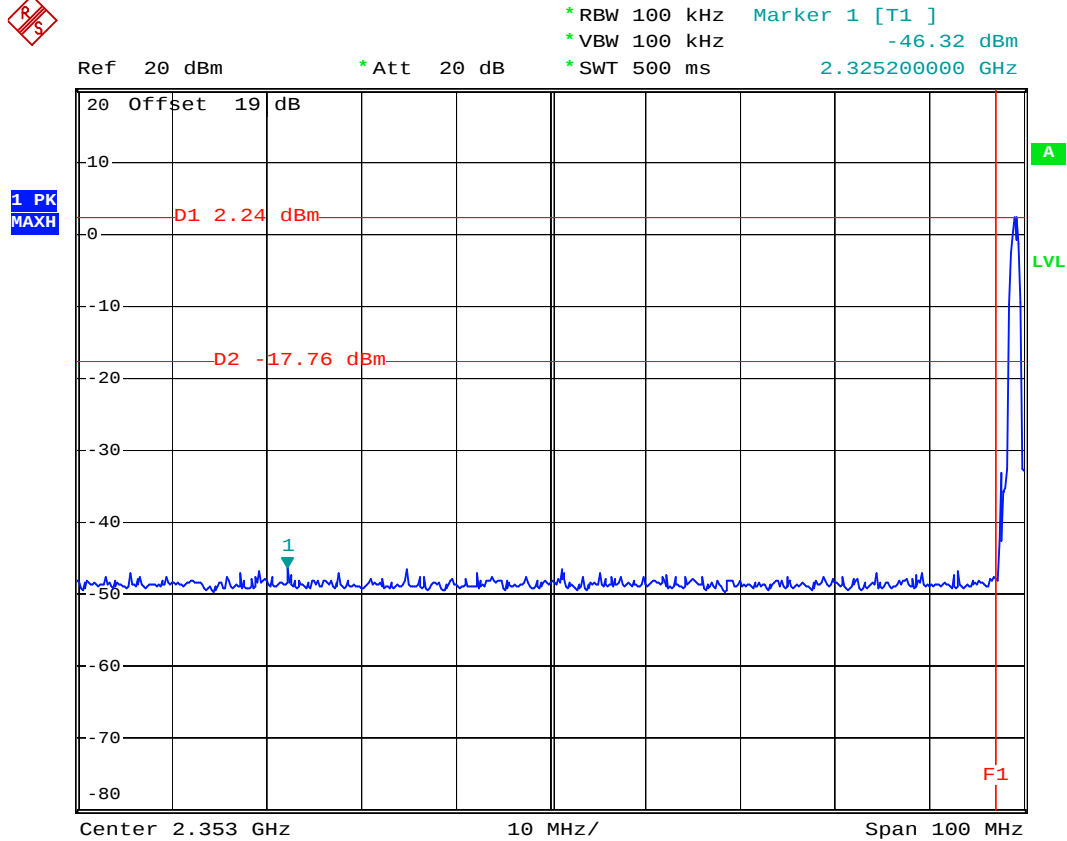
CH78



Date: 19.JUL.2008 08:05:18

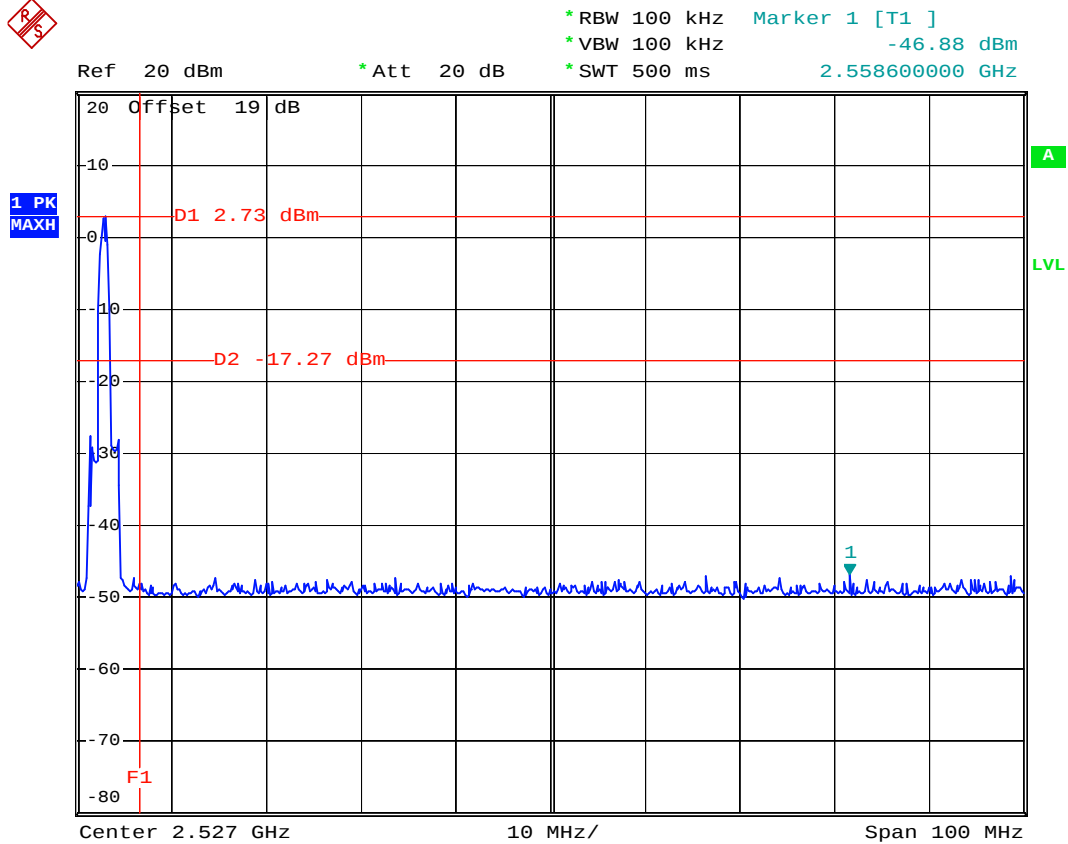
Bluetooth EDR(3Mbps)

CH00



Date: 19.JUL.2008 08:10:48

CH78



Date: 19.JUL.2008 08:04:06

5.3 Hopping Channel Separation

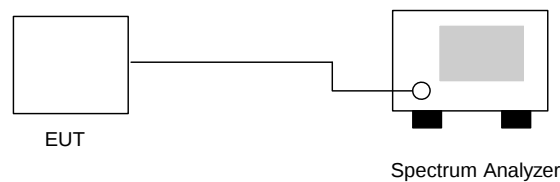
5.3.1 Measuring Instruments

As described in chapter 9 of this test report.

5.3.2 Test Procedure

1. The output of EUT was connected to the spectrum analyzer by a low loss cable..
2. Set RBW of spectrum analyzer to 30 KHz and VBW to 100 KHz.
3. The Hopping Channel Separation is defined as the channel is separated with the next channel.

5.3.3 Test Setup Layout



5.3.4 Test Result : The spectrum analyzer plots are attached as below

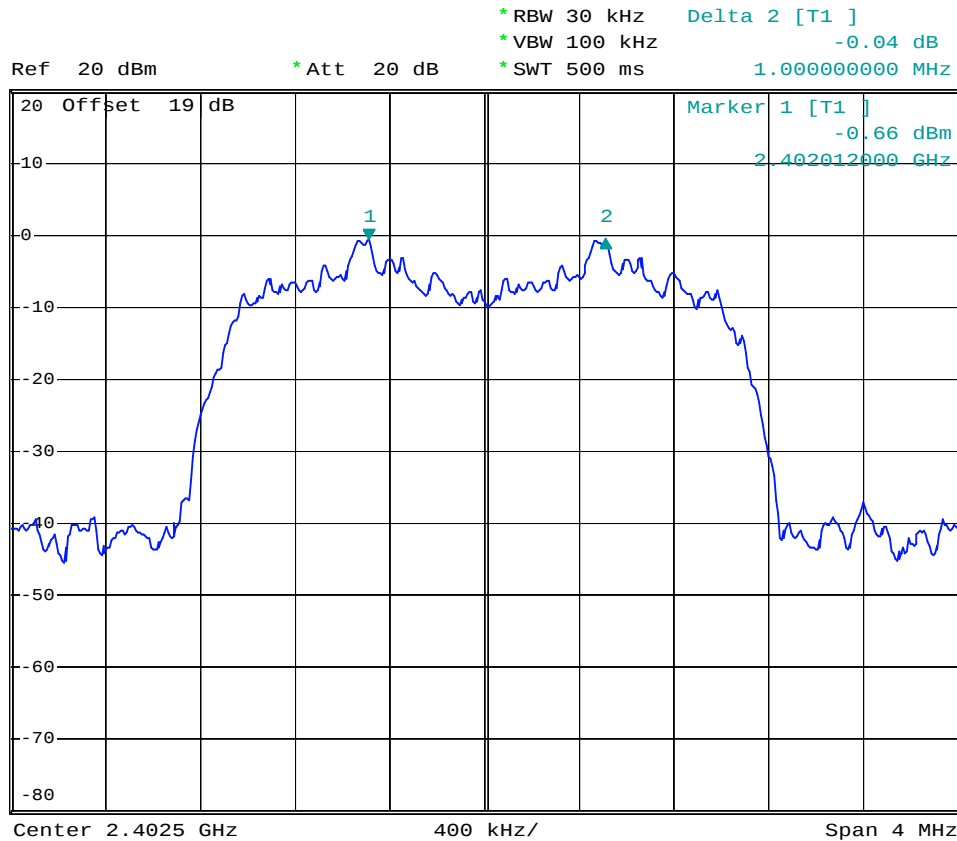
- Application Type : Bluetooth EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 49~50%
- Test Engineer : Sam

Channel	Frequency (MHz)	Carrier Frequency Separation (MHz)	Limits (MHz)	Plot Ref. No.
00	2402	1.000	0.853	Mode 1
39	2441	1.000	0.853	Mode 2
78	2480	1.008	0.851	Mode 3

Remark: Hopping Channel Separation shall be greater 2/3 of 20dB bandwidth.

5.3.5 Hopping Channel Separation

Mode 1



Date: 19.JUL.2008 08:20:55

Mode 2

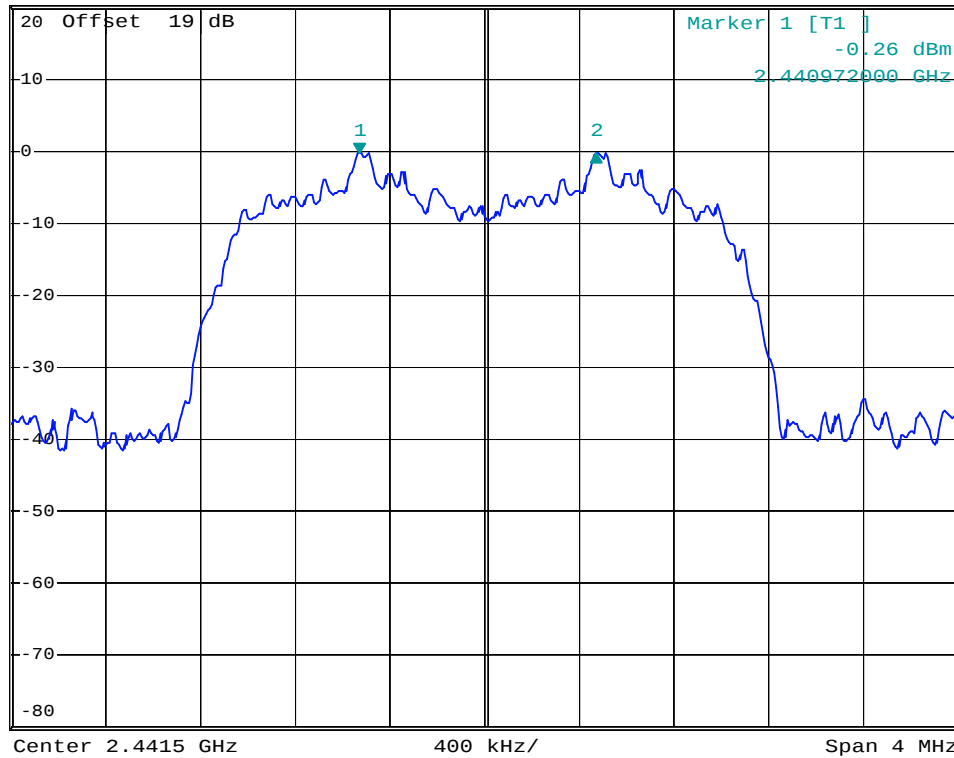


* RBW 30 kHz Delta 2 [T1]
 * VBW 100 kHz -0.07 dB
 * SWT 500 ms 1.000000000 MHz

Ref 20 dBm

* Att 20 dB

1 PK
MAXH

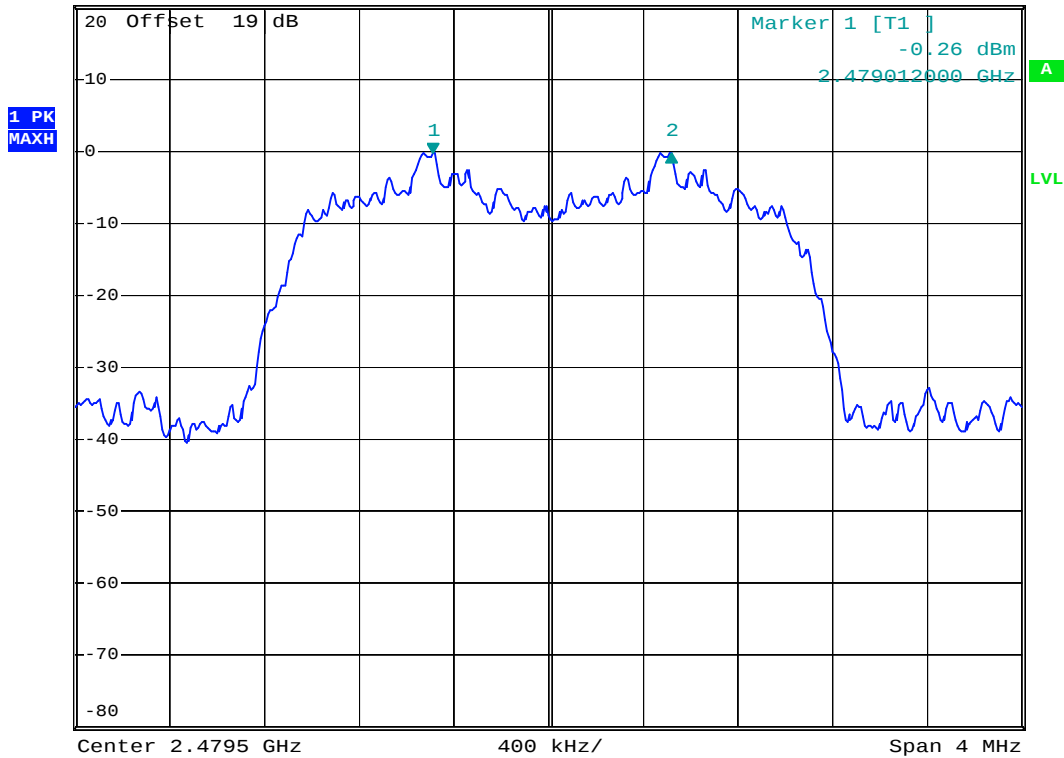


Date: 19.JUL.2008 08:20:15

Mode 3



Ref 20 dBm * Att 20 dB * RBW 30 kHz Delta 2 [T1] -0.05 dB
* VBW 100 kHz * SWT 500 ms 1.008000000 MHz



Date: 19.JUL.2008 08:21:28

5.4 Number of Hopping Frequency

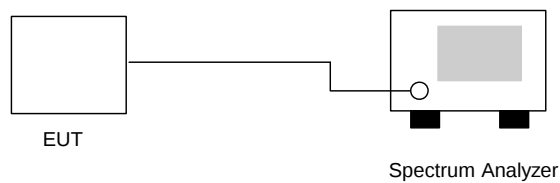
5.4.1 Measuring Instruments

As described in chapter 9 of this test report.

5.4.2 Test Procedure

- a. The output of EUT was connected to the spectrum analyzer by a low loss cable.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW to 100 KHz.
- c. The number of hopping frequency used is defined as the device has the numbers of total channel.

5.4.3 Test Setup Layout



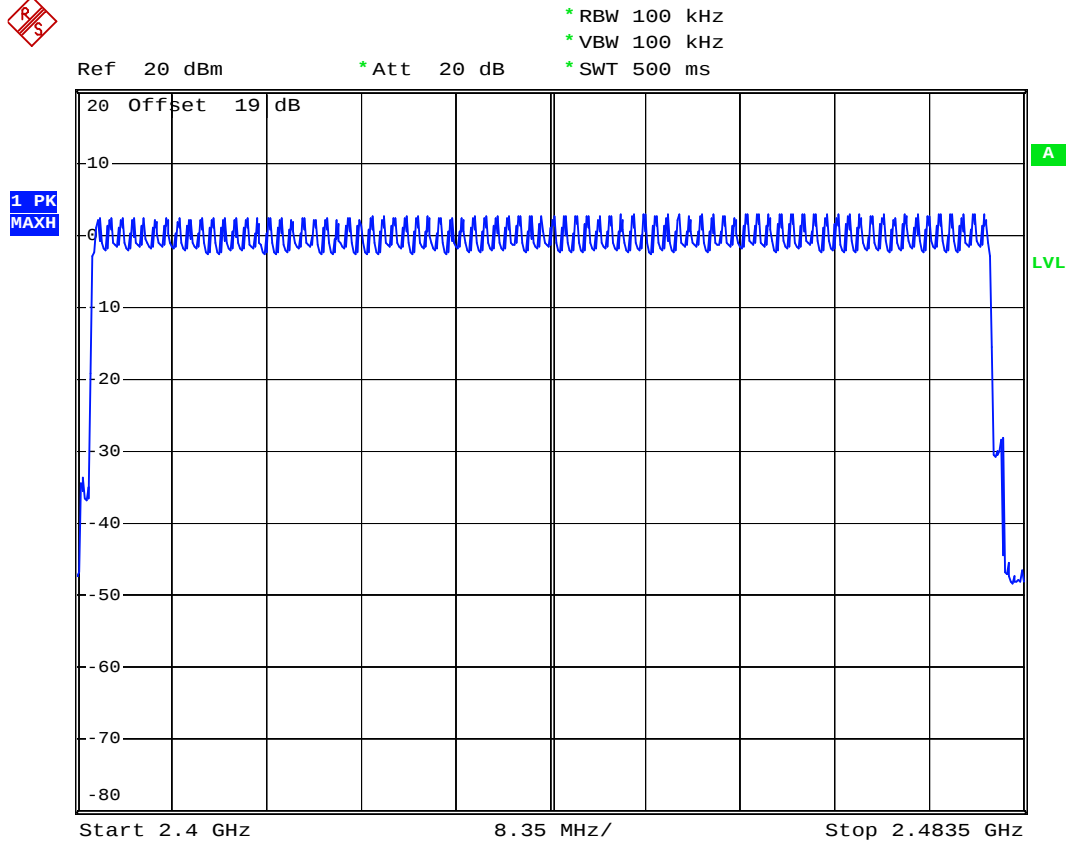
5.4.4 Test Result : See spectrum analyzer plots below

- Application Type : Bluetooth EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 49~50%
- Test Engineer : Sam

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

5.4.5 Number of Hopping Frequency

Bluetooth EDR(3Mbps)



Date: 19.JUL.2008 08:53:57

5.5 Hopping Channel Bandwidth

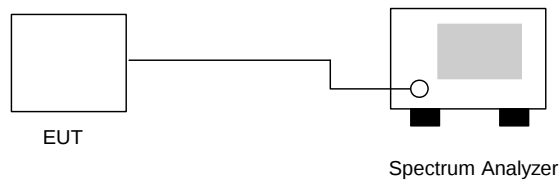
5.5.1 Measuring Instruments

As described in chapter 9 of this test report.

5.5.2 Test Procedure

- a. The transmitter output was connected to the spectrum analyzer by a low loss cable.
- b. Set RBW of spectrum analyzer to 30 KHz and VBW to 300 KHz.
- c. The Hopping Channel bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

5.5.3 Test Setup Layout



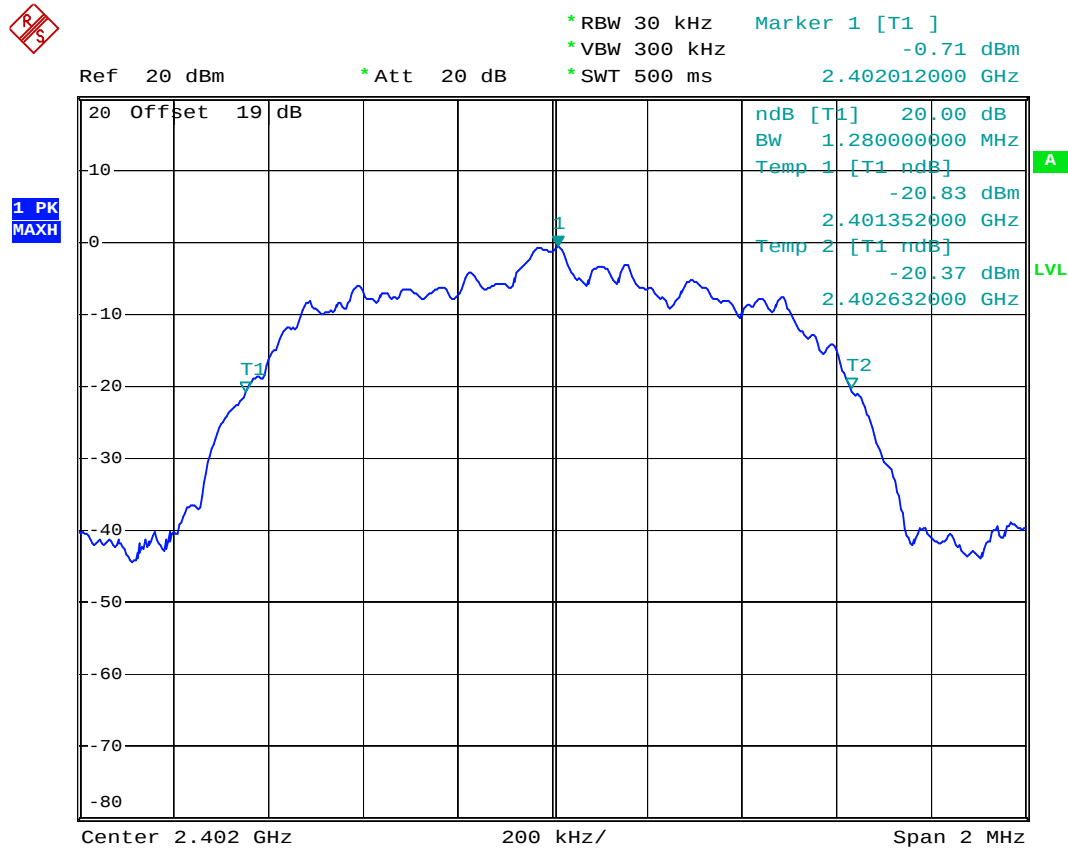
5.5.4 Test Result : See spectrum analyzer plots below

- Application Type : Bluetooth EDR(3Mbps)
- Temperature : 24~25°C
- Relative Humidity : 49~50%
- Test Engineer : Sam

Channel	Frequency (MHz)	Hopping Channel Bandwidth (MHz)	Plot Ref. No.
00	2402	1.280	Mode 1
39	2441	1.280	Mode 2
78	2480	1.276	Mode3

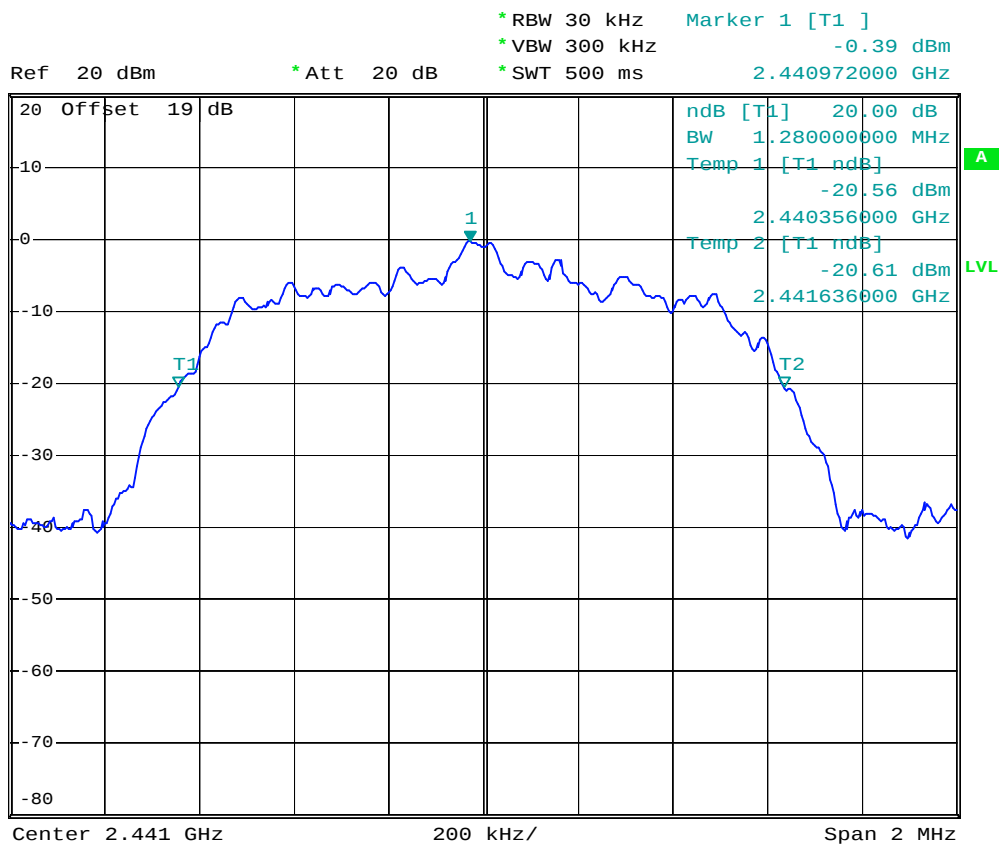
5.5.5 Hopping Channel Bandwidth

Mode 1



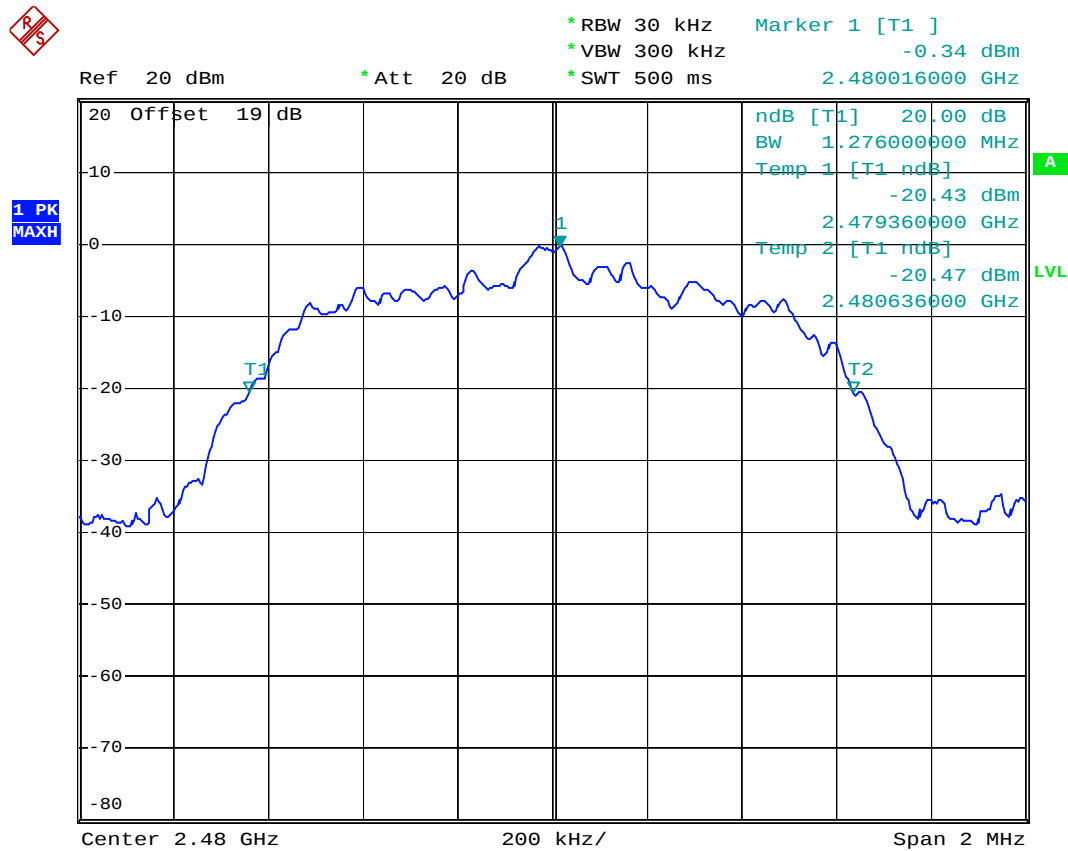
Date: 19.JUL.2008 08:02:23

Mode 2



Date: 19.JUL.2008 08:02:43

Mode 3



Date: 19.JUL.2008 08:03:04

5.6 Dwell Time of Each Frequency

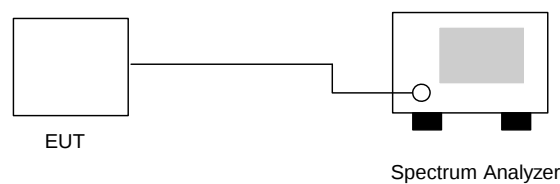
5.6.1 Measuring Instruments

As described in chapter 9 of this test report.

5.6.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer by a low loss cable.
- Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- The calculate $= 79 * 0.4 * (1600/79) * t$ (t = the time duration of one single pulse)

5.6.3 Test Setup Layout



5.6.4 Test Result : See spectrum analyzer plots below

- Application Type : Bluetooth EDR(3Mbps)
- Temperature : 24~25℃
- Relative Humidity : 49~50%
- Test Engineer : Sam

CH39

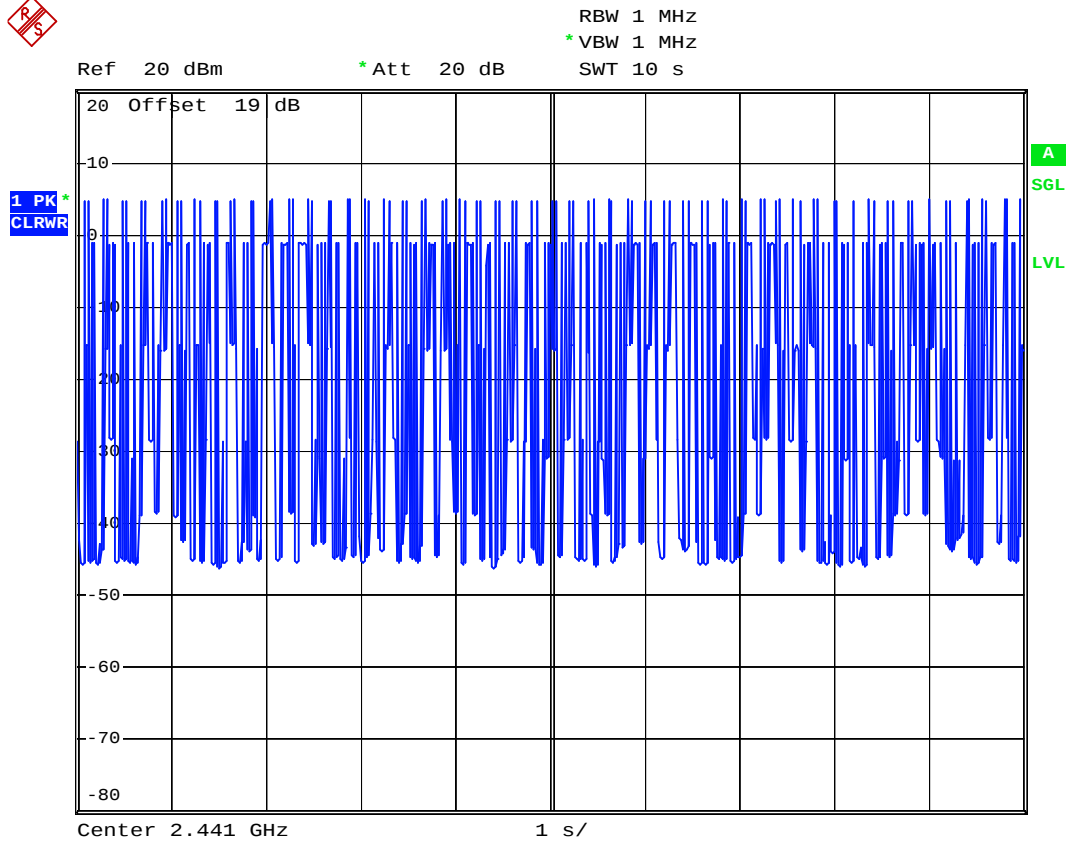
Package Mode	Average Hopping Channel	Package Transfer Time (us)	Dwell Time (s)	Limit (s)
DH1	9.00	416.00	0.1183104	0.4

※ Remark:

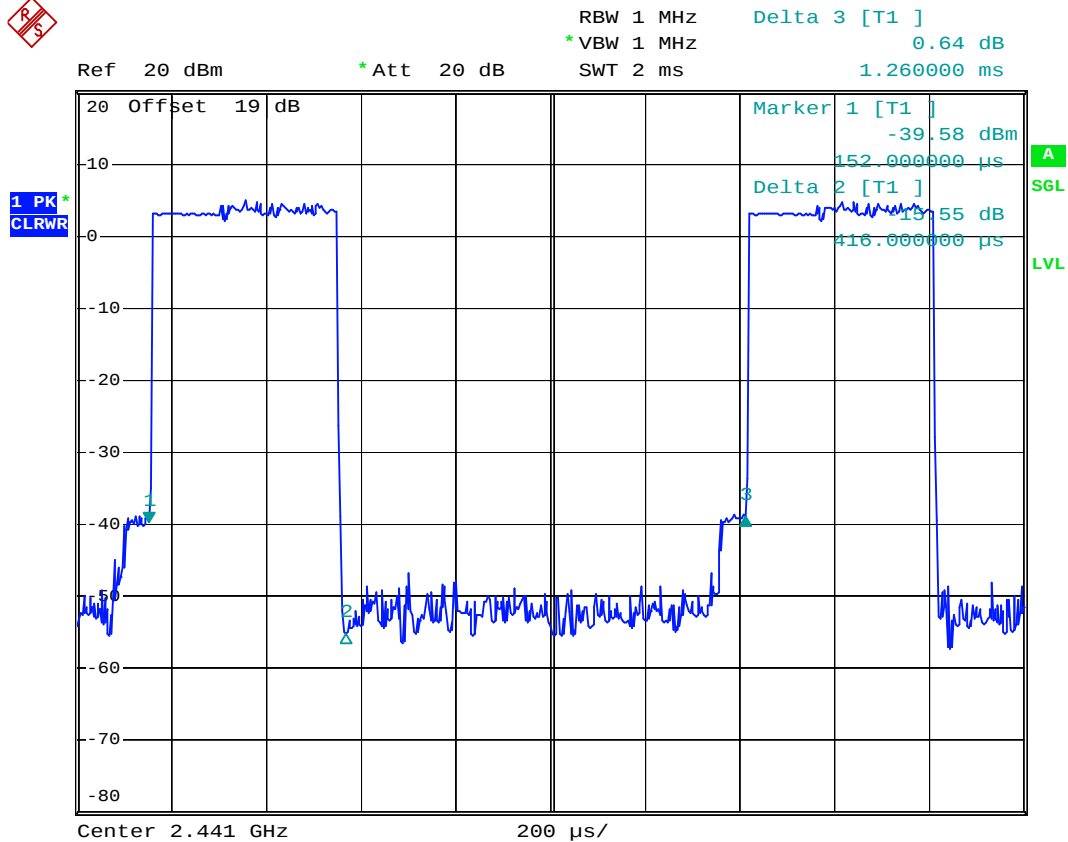
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)
5. The EUT does not support DH3 and DH5.

5.6.5 Dwell Time

3DH1 (CH39)



Date: 19.JUL.2008 08:32:49



Date: 19.JUL.2008 08:32:19

5.7 Peak Output Power Measurement

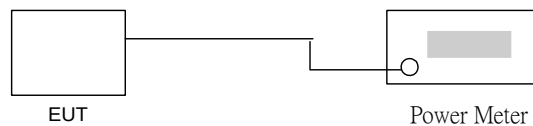
5.7.1 Measuring Instruments

As described in chapter 6 of this test report.

5.7.2 Test Procedure

The antenna port (RF output) of the EUT was connected to the input (RF input) of a spectrum analyzer for Bluetooth measurement. RBW and VBW are set to 3MHz. The cable loss has been offset before testing.

5.7.3 Test Setup Layout



5.7.4 Test Result

- Application Type : Bluetooth
- Temperature : 24~25℃
- Relative Humidity : 49~50%
- Test Engineer : Sam

▪ Bluetooth(1Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	3.13	1W/30 dBm
39	2441	3.14	1W/30 dBm
78	2480	3.15	1W/30 dBm

▪ Bluetooth EDR(2Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	4.49	1W/30 dBm
39	2441	4.91	1W/30 dBm
78	2480	4.72	1W/30 dBm

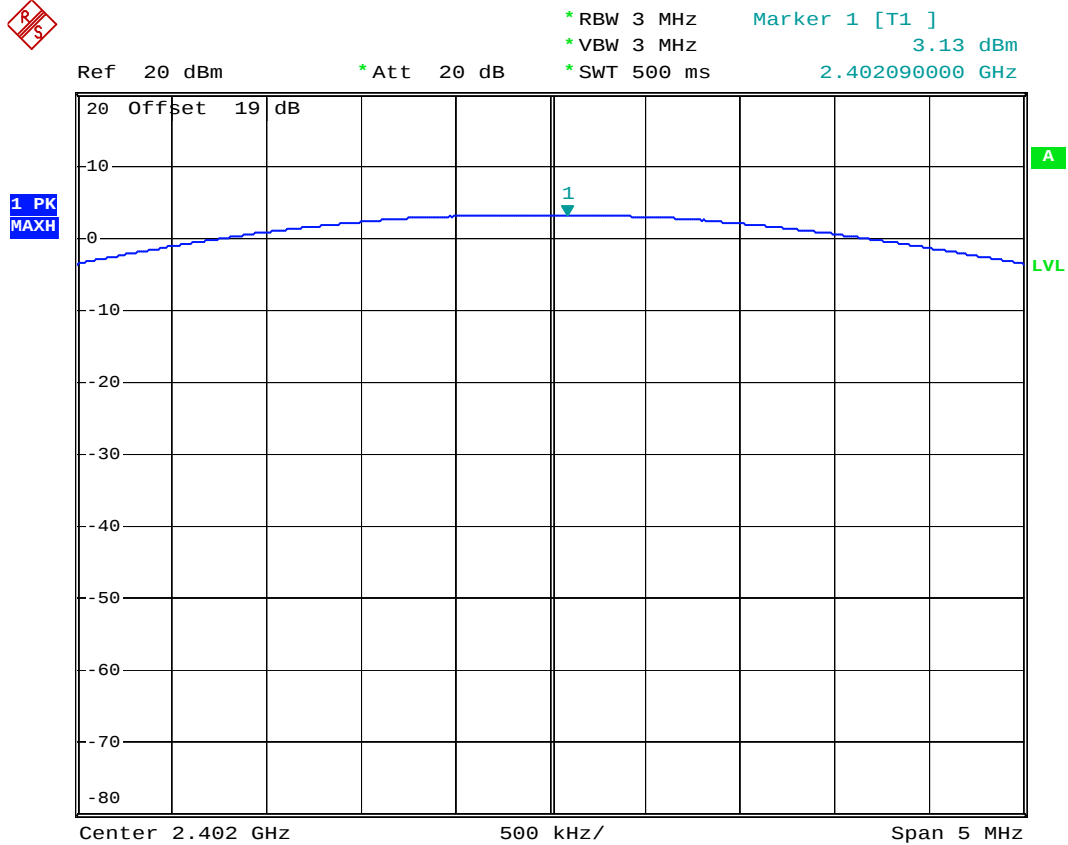
▪ Bluetooth EDR(3Mbps)

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
00	2402	5.60	1W/30 dBm
39	2441	5.37	1W/30 dBm
78	2480	5.13	1W/30 dBm

5.7.5 Output Power

Bluetooth(1Mbps)

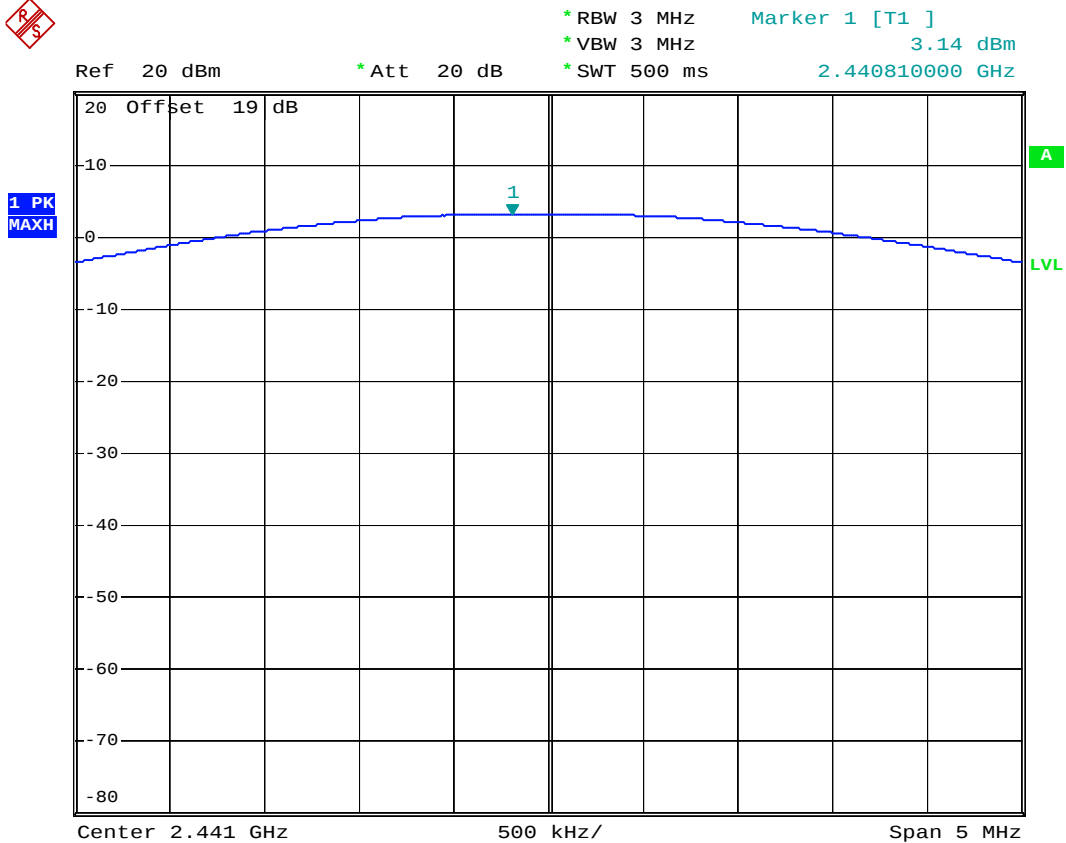
Mode : CH00 (2402MHz)



Date: 19.JUL.2008 07:54:34

Bluetooth(1Mbps)

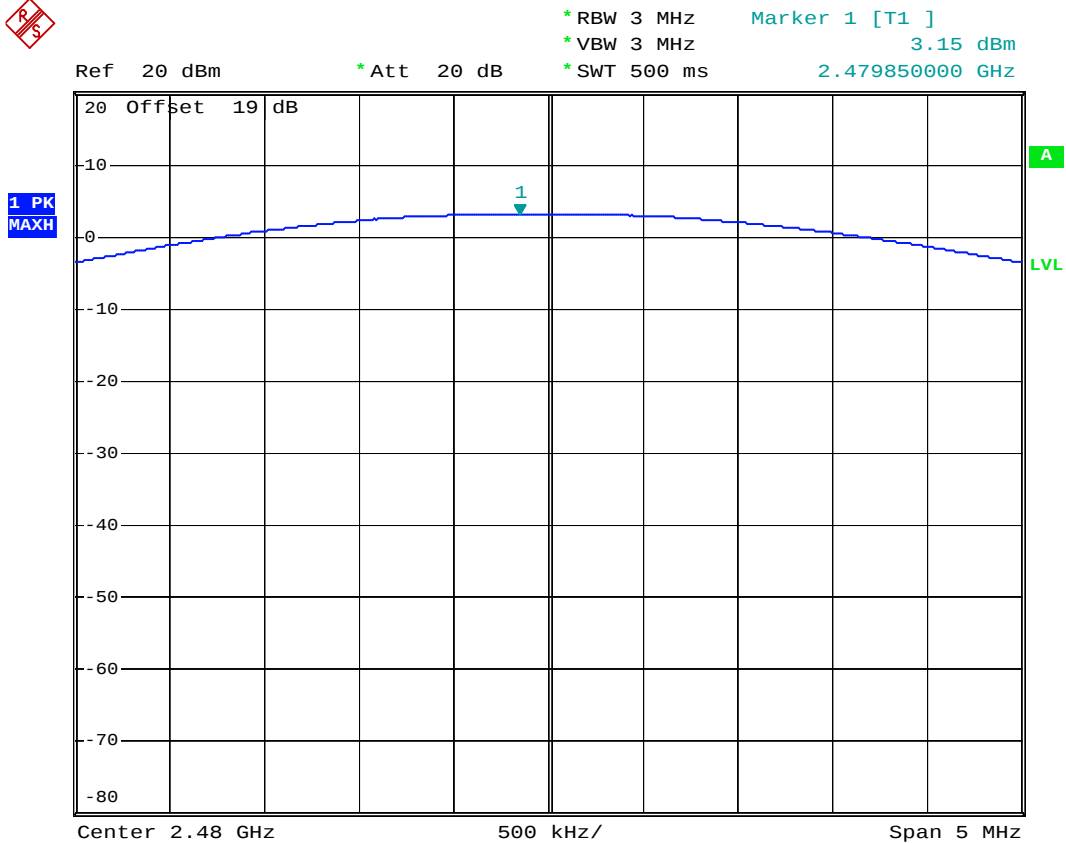
Mode : CH39 (2441MHz)



Date: 19.JUL.2008 07:55:50

Bluetooth(1Mbps)

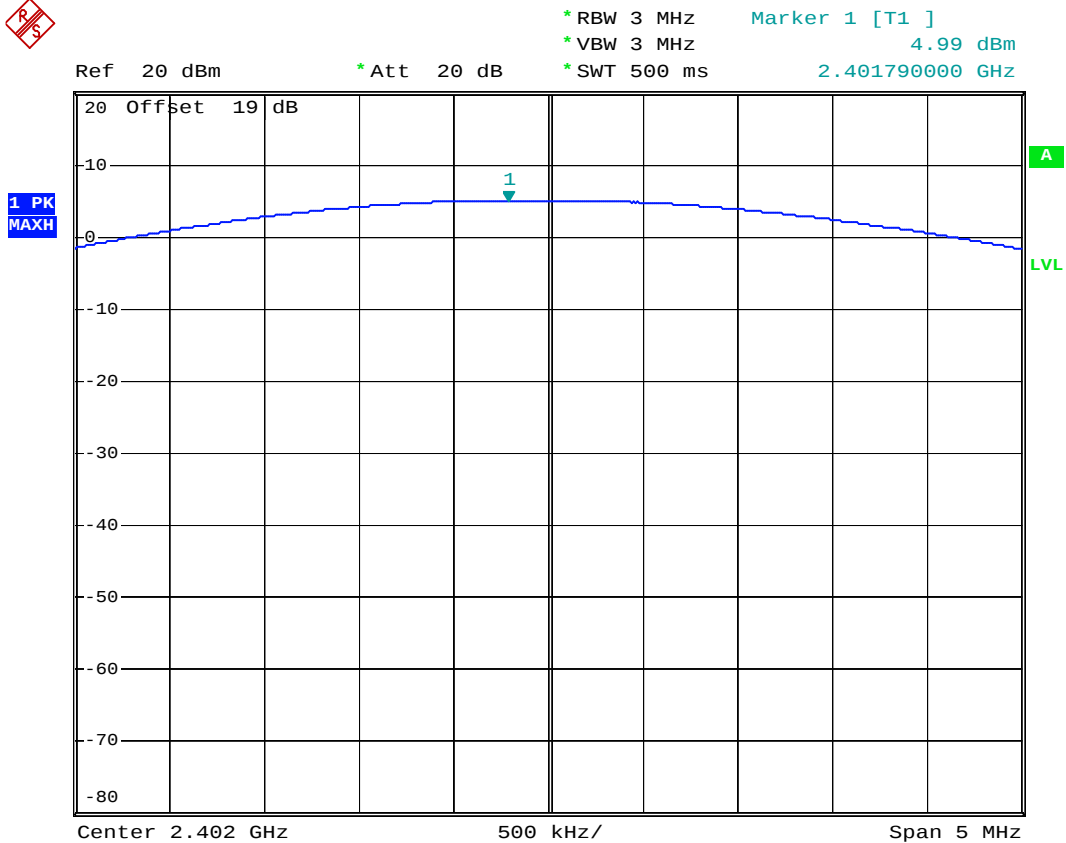
Mode : CH78 (2480MHz)



Date: 19.JUL.2008 07:56:14

Bluetooth(2Mbps)

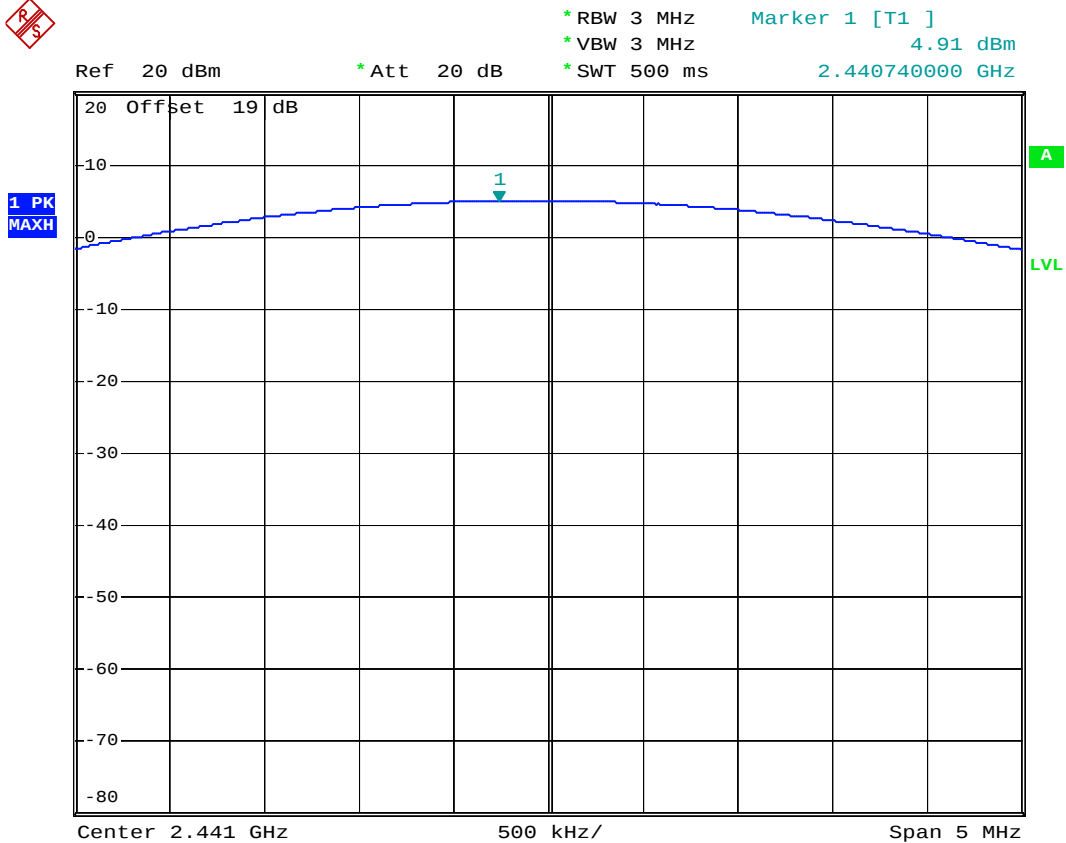
Mode : CH00 (2402MHz)



Date: 19.JUL.2008 07:57:18

Bluetooth(2Mbps)

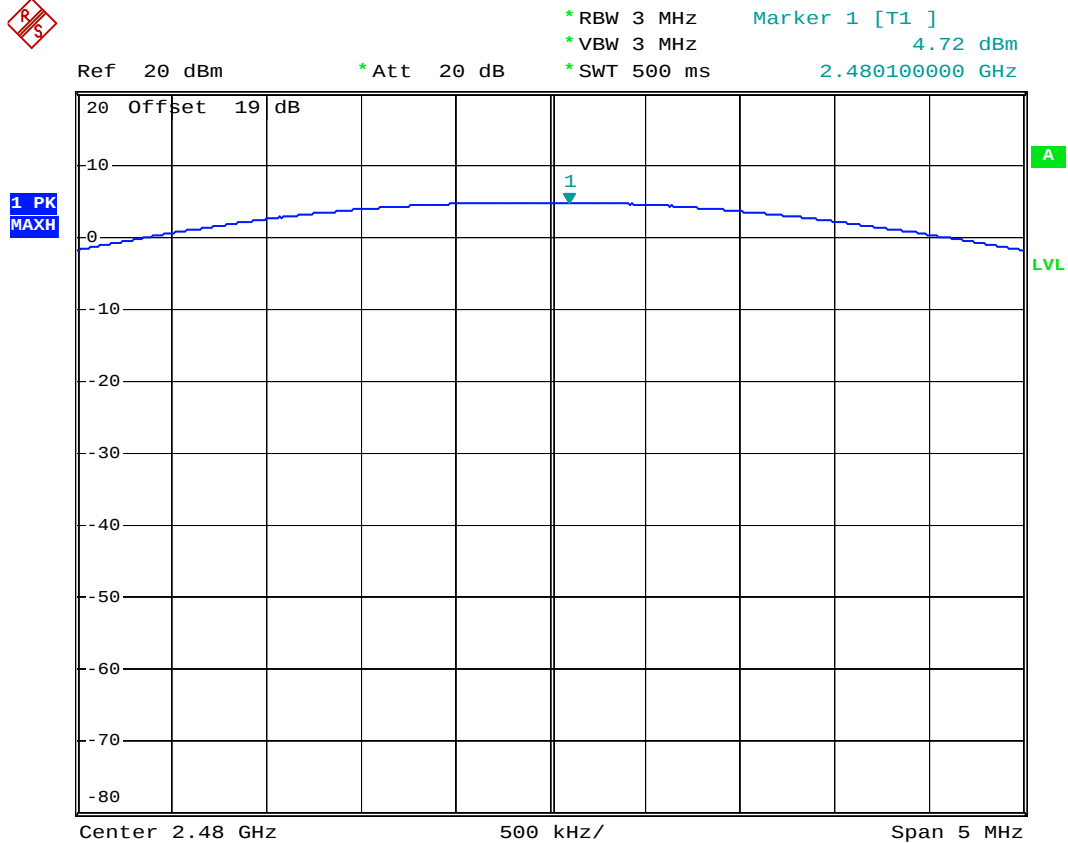
Mode : CH39 (2441MHz)



Date: 19.JUL.2008 07:56:57

Bluetooth(2Mbps)

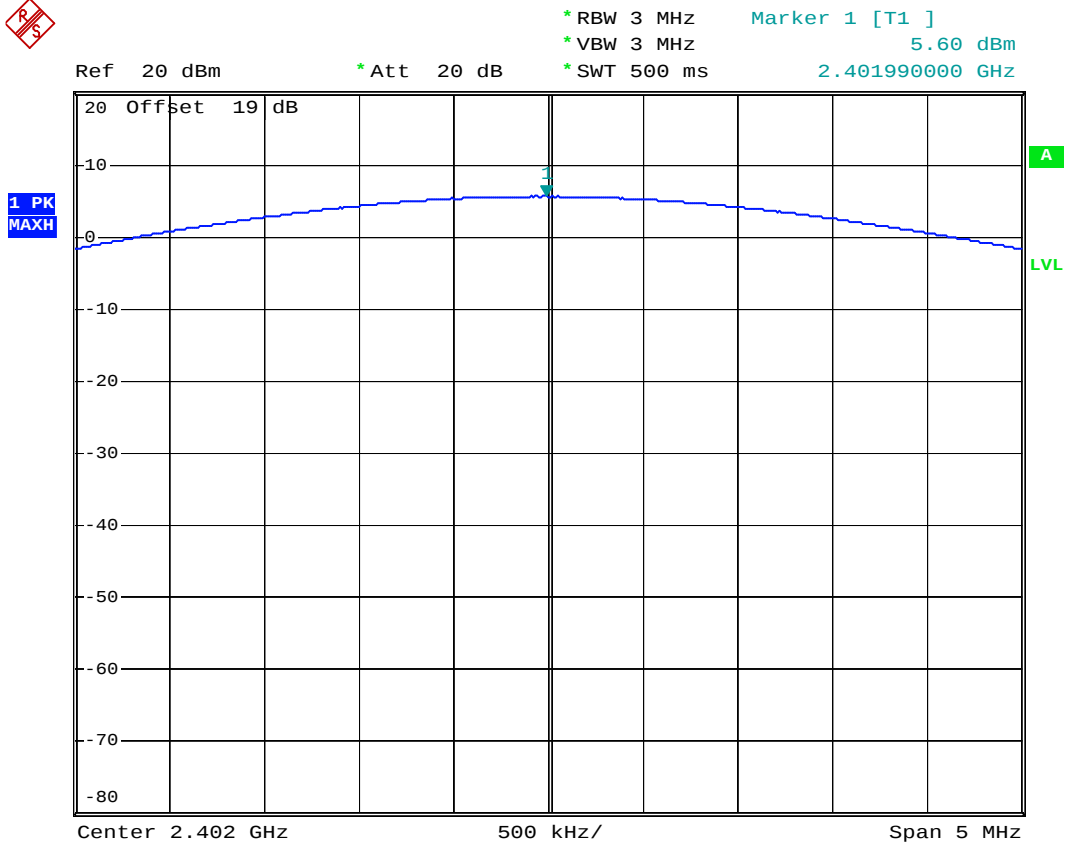
Mode : CH78 (2480MHz)



Date: 19.JUL.2008 07:56:34

Bluetooth(3Mbps)

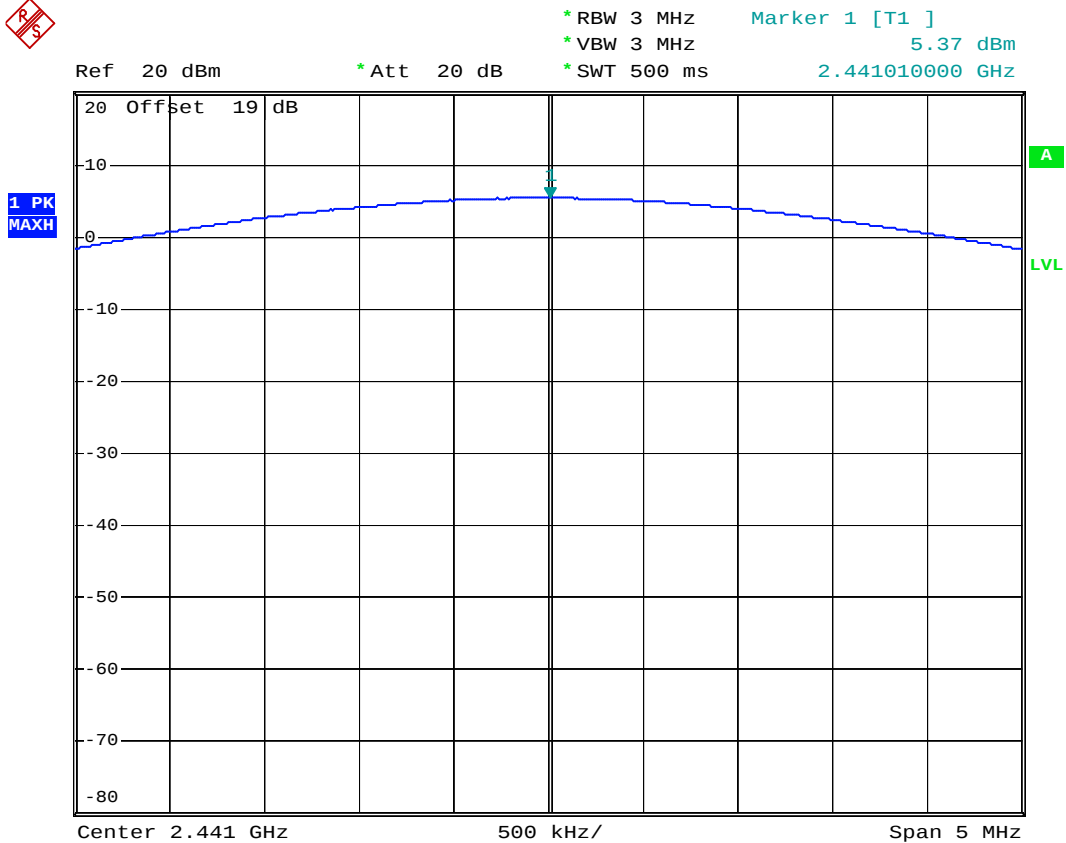
Mode : CH00 (2402MHz)



Date: 19.JUL.2008 07:58:04

Bluetooth(3Mbps)

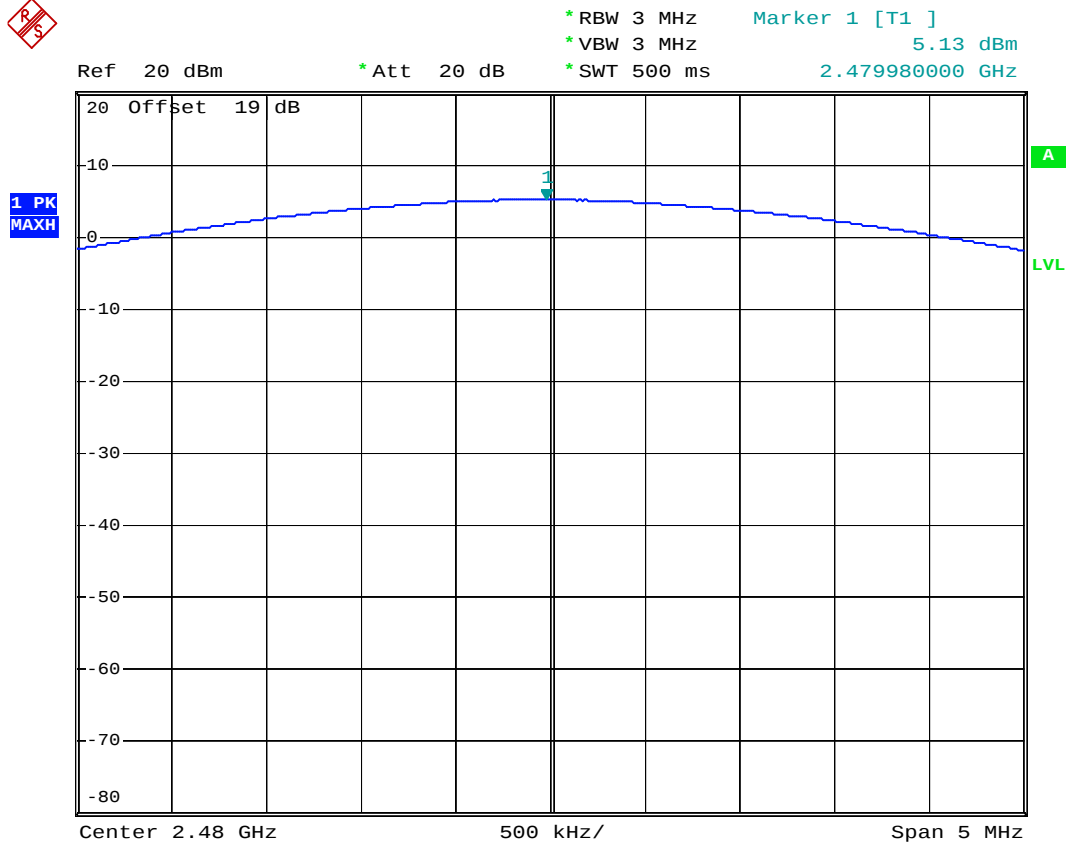
Mode : CH39 (2441MHz)



Date: 19.JUL.2008 07:58:21

Bluetooth(3Mbps)

Mode : CH78 (2480MHz)



Date: 19.JUL.2008 07:58:43

5.8 Conducted Emission

5.8.1 Measuring Instruments

As described in chapter 6 of this test Report.

5.8.2 Test Procedures

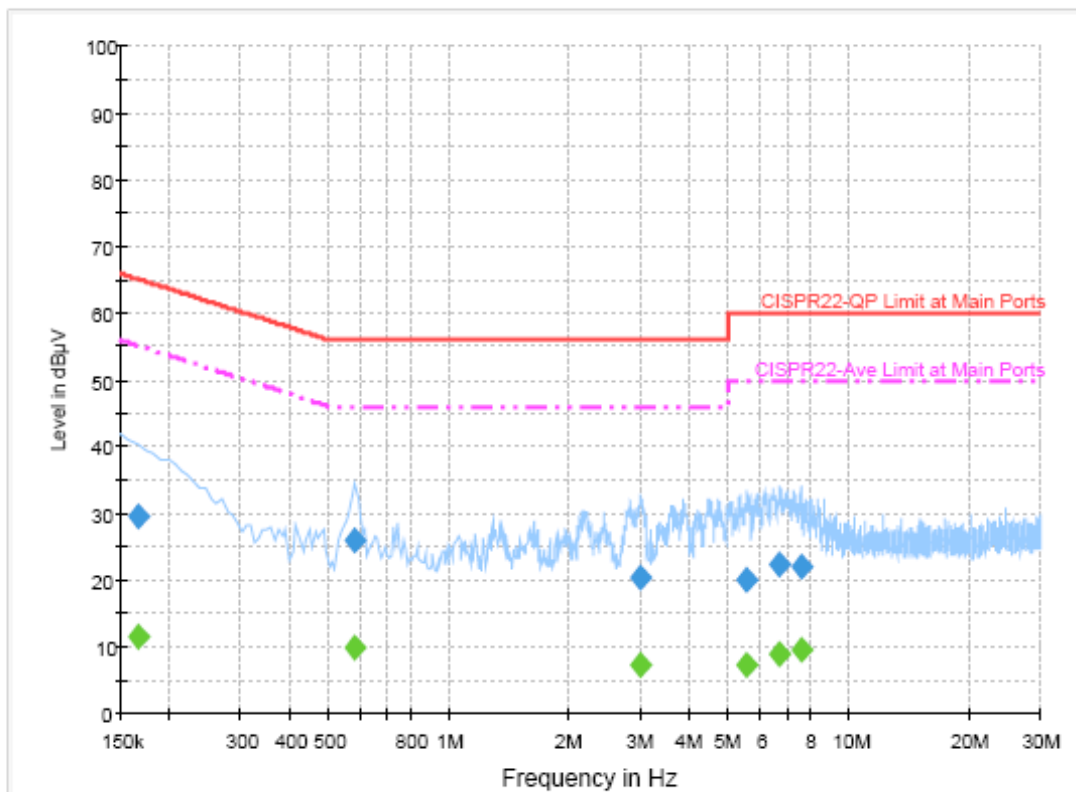
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power port of a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISN.
4. The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

5.8.3 Test Data

- Test Mode : Mode 1
- Temperature : 24~25℃
- Relative Humidity : 49~50%
- Test Engineer: Sam
- Test Condition : Line

■ The test that passed at the minimum margin was marked by a frame in the following data

ENV218 Auto Test



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	29.7	Off	L1	19.3	35.5	65.2
0.582000	25.9	Off	L1	19.3	30.1	56.0
3.006000	20.2	Off	L1	19.5	35.8	56.0
5.518000	20.0	Off	L1	19.5	40.0	60.0
6.678000	22.3	Off	L1	19.5	37.7	60.0
7.550000	21.9	Off	L1	19.5	38.1	60.0

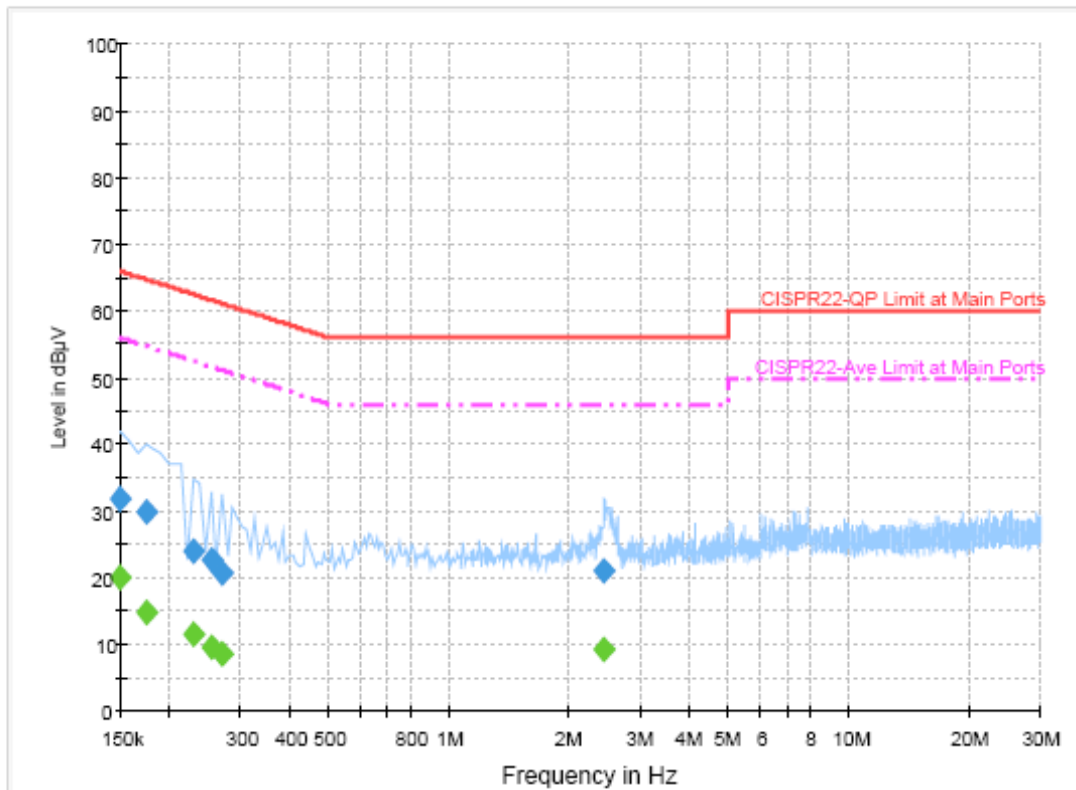
Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	11.5	Off	L1	19.3	43.7	55.2
0.582000	9.7	Off	L1	19.3	36.3	46.0
3.006000	7.2	Off	L1	19.5	38.8	46.0
5.518000	7.2	Off	L1	19.5	42.8	50.0
6.678000	8.7	Off	L1	19.5	41.3	50.0
7.550000	9.4	Off	L1	19.5	40.6	50.0

- Test Condition: Neutral

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

ENV216 Auto Test



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	31.7	Off	N	19.4	34.3	66.0
0.174000	29.9	Off	N	19.3	34.9	64.8
0.230000	24.1	Off	N	19.4	38.3	62.4
0.254000	22.5	Off	N	19.4	39.1	61.6
0.270000	20.8	Off	N	19.3	40.3	61.1
2.438000	21.1	Off	N	19.5	34.9	56.0

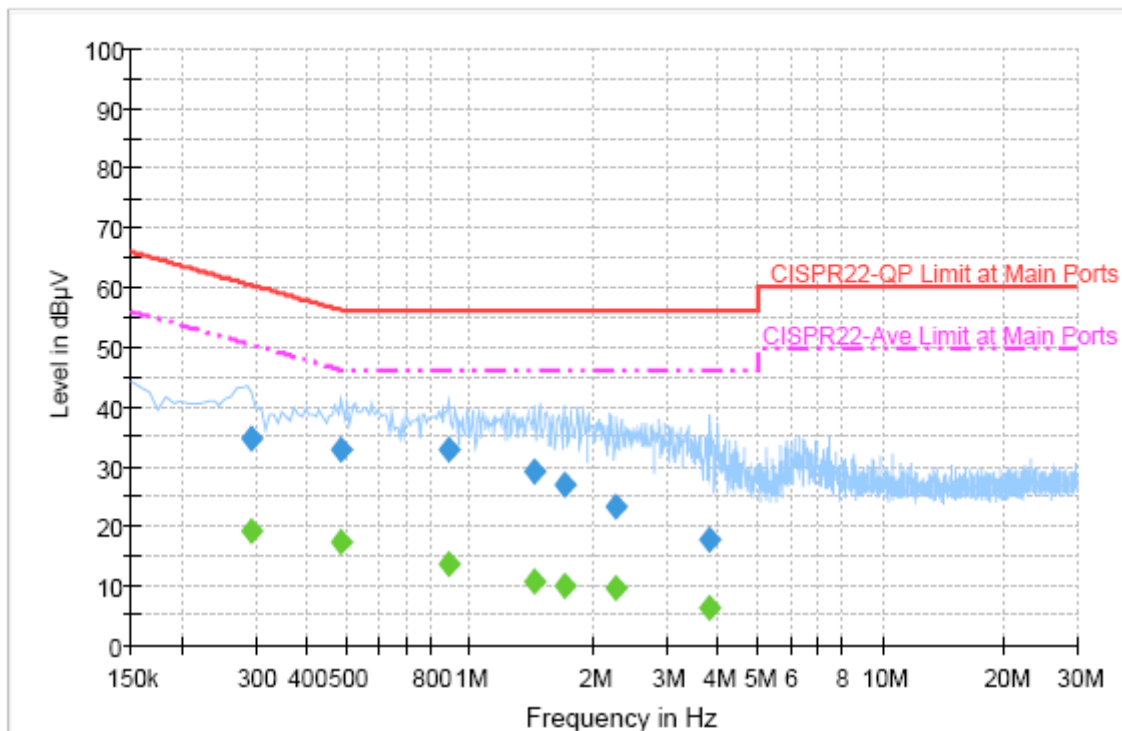
Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	20.1	Off	N	19.4	35.9	56.0
0.174000	14.7	Off	N	19.3	40.1	54.8
0.230000	11.5	Off	N	19.4	40.9	52.4
0.254000	9.6	Off	N	19.4	42.0	51.6
0.270000	8.6	Off	N	19.3	42.5	51.1
2.438000	9.1	Off	N	19.5	36.9	46.0

- Test Mode : Mode 2
- Temperature : 24~25°C
- Relative Humidity : 49~50%
- Test Condition : Line
- Test Engineer: Sam

■ The test that passed at the minimum margin was marked by a frame in the following data

ENV216 Auto Test



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.294000	34.7	Off	L1	19.3	25.7	60.4
0.486000	32.7	Off	L1	19.4	23.5	56.2
0.886000	32.7	Off	L1	19.4	23.3	56.0
1.430000	29.1	Off	L1	19.4	26.9	56.0
1.694000	27.1	Off	L1	19.4	28.9	56.0
2.254000	23.4	Off	L1	19.5	32.6	56.0
3.830000	17.6	Off	L1	19.5	38.4	56.0

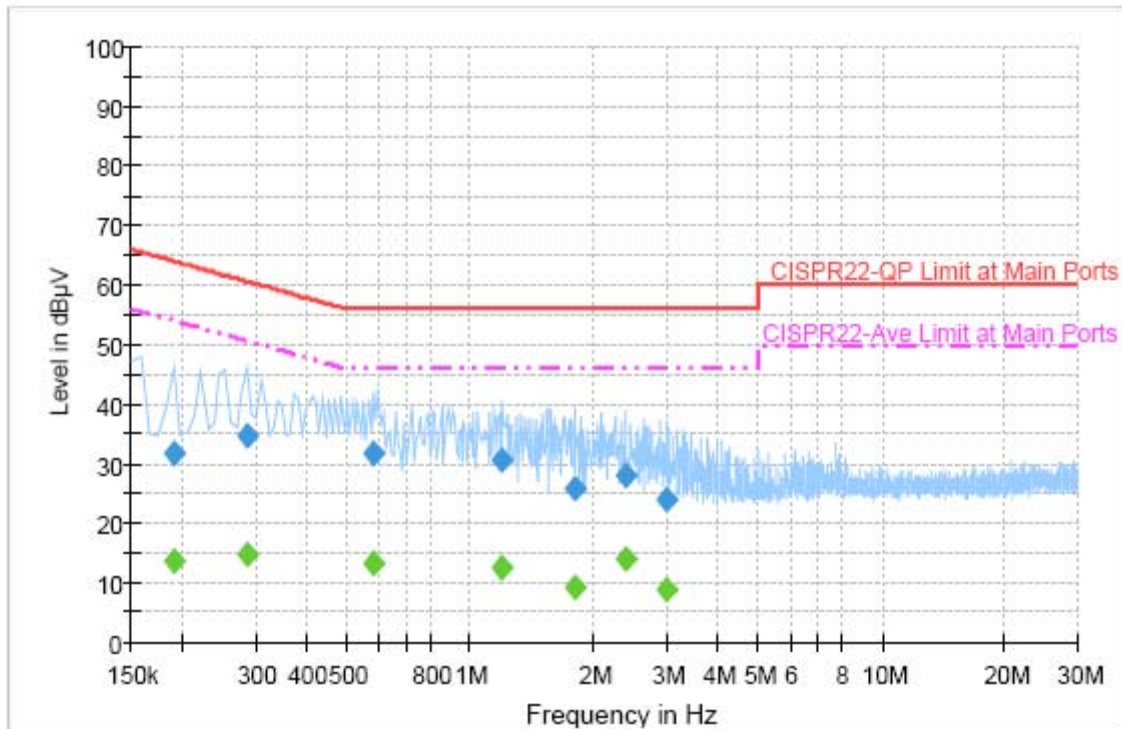
Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.294000	19.3	Off	L1	19.3	31.2	50.4
0.486000	17.2	Off	L1	19.4	29.0	46.2
0.886000	13.8	Off	L1	19.4	32.2	46.0
1.430000	10.7	Off	L1	19.4	35.3	46.0
1.694000	9.9	Off	L1	19.4	36.1	46.0
2.254000	9.4	Off	L1	19.5	36.6	46.0

- Test Condition: Neutral

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

ENV216 Auto Test



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.190000	31.9	Off	N	19.4	32.1	64.0
0.286000	34.6	Off	N	19.3	26.0	60.6
0.582000	31.9	Off	N	19.3	24.1	56.0
1.198000	30.7	Off	N	19.5	25.3	56.0
1.798000	25.9	Off	N	19.5	30.1	56.0
2.390000	27.9	Off	N	19.6	28.1	56.0
3.014000	24.1	Off	N	19.5	31.9	56.0

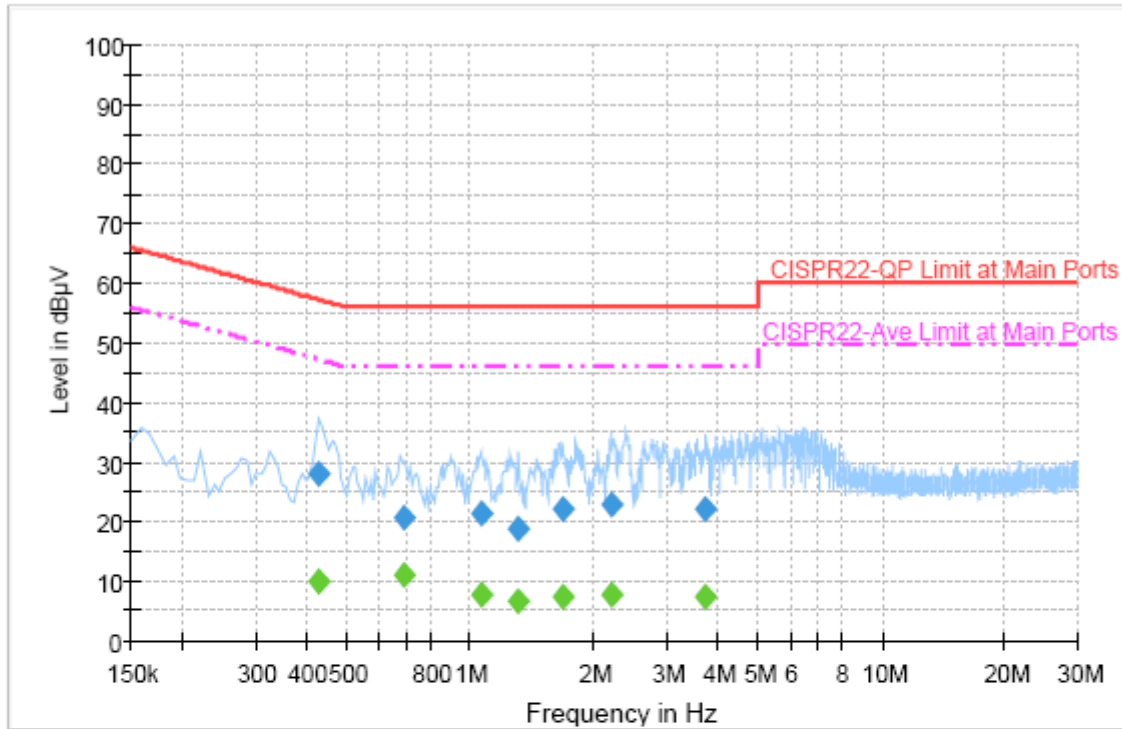
Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.190000	13.7	Off	N	19.4	40.3	54.0
0.286000	14.7	Off	N	19.3	35.9	50.6
0.582000	13.2	Off	N	19.3	32.8	46.0
1.198000	12.7	Off	N	19.5	33.3	46.0
1.798000	9.2	Off	N	19.5	36.8	46.0
2.390000	14.1	Off	N	19.6	31.9	46.0

- Test Mode : Mode 3
- Temperature : 24~25℃
- Relative Humidity : 49~50%
- Test Condition : Line
- Test Engineer: Sam

■ The test that passed at the minimum margin was marked by a frame in the following data

ENV216 Auto Test



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.430000	27.9	Off	L1	19.4	29.4	57.3
0.694000	20.5	Off	L1	19.5	35.5	56.0
1.062000	21.5	Off	L1	19.4	34.5	56.0
1.310000	18.7	Off	L1	19.4	37.3	56.0
1.670000	22.1	Off	L1	19.4	33.9	56.0
2.206000	22.9	Off	L1	19.5	33.1	56.0
3.742000	22.2	Off	L1	19.5	33.8	56.0

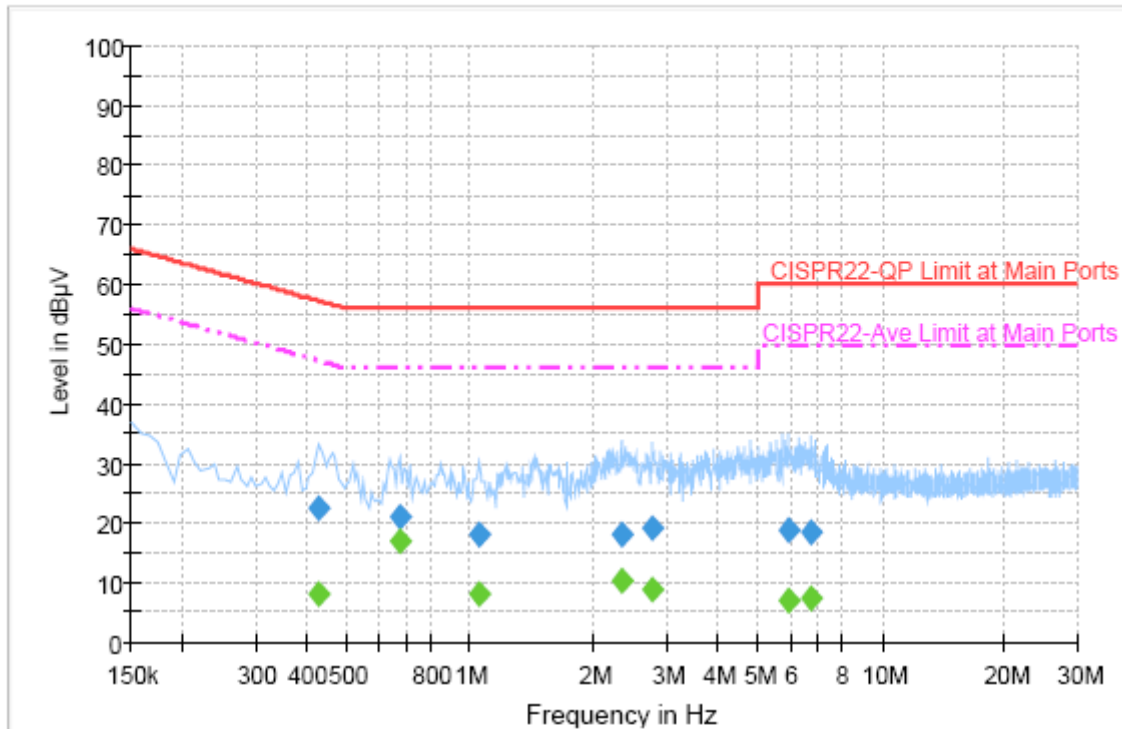
Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.430000	9.9	Off	L1	19.4	37.4	47.3
0.694000	10.9	Off	L1	19.5	35.1	46.0
1.062000	7.8	Off	L1	19.4	38.2	46.0
1.310000	6.6	Off	L1	19.4	39.4	46.0
1.670000	7.4	Off	L1	19.4	38.6	46.0
2.206000	7.8	Off	L1	19.5	38.2	46.0

- Test Condition: Neutral

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

ENV216 Auto Test



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.430000	22.6	Off	N	19.4	34.7	57.3
0.678000	20.9	Off	N	19.5	35.1	56.0
1.054000	18.1	Off	N	19.4	37.9	56.0
2.326000	18.2	Off	N	19.5	37.8	56.0
2.774000	19.3	Off	N	19.5	36.7	56.0
5.974000	18.9	Off	N	19.5	41.1	60.0
6.726000	18.5	Off	N	19.5	41.5	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.430000	8.2	Off	N	19.4	39.1	47.3
0.678000	16.8	Off	N	19.5	29.2	46.0
1.054000	8.3	Off	N	19.4	37.7	46.0
2.326000	10.4	Off	N	19.5	35.6	46.0
2.774000	8.8	Off	N	19.5	37.2	46.0
5.974000	6.9	Off	N	19.5	43.1	50.0

5.9 Radiated Emission Measurement

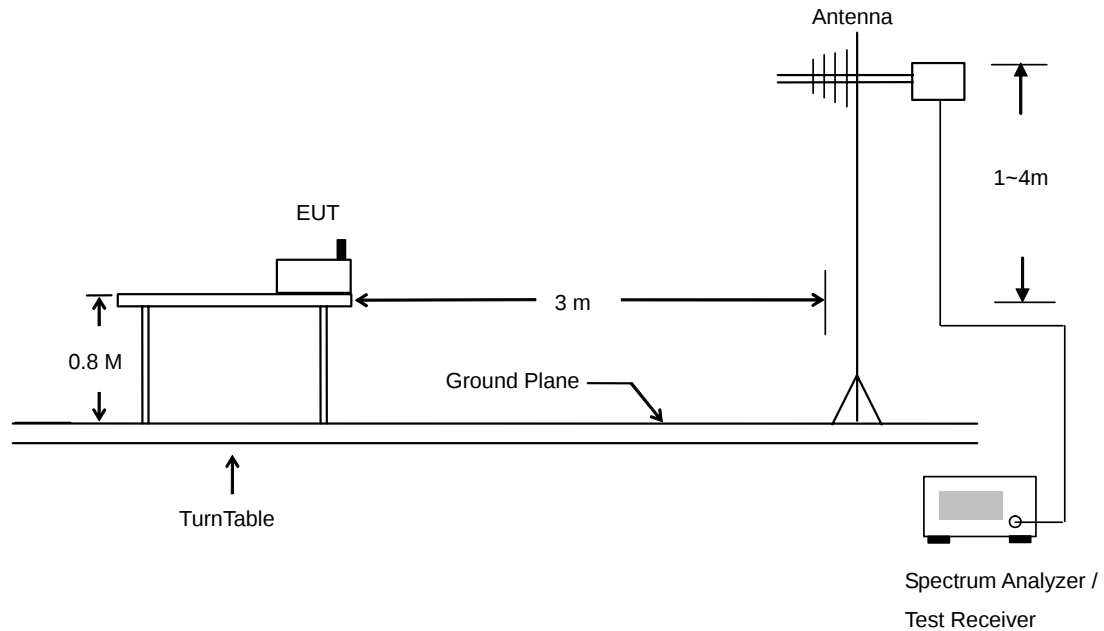
5.9.1 Measuring Instruments

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.

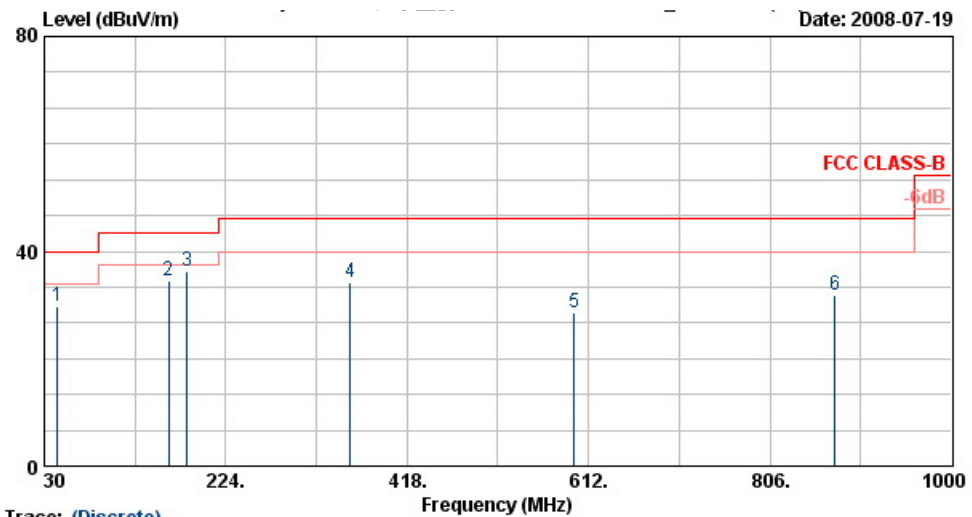
5.9.3 Typical Test Setup Layout of Radiated Emission



5.9.4 Test Data

- Test Mode : Mode 1
- Temperature : 21~26°C
- Relating Humidity : 49~58%
- Test Engineer : Sun
- Polarization : Horizontal (30MHz-1GHz)

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

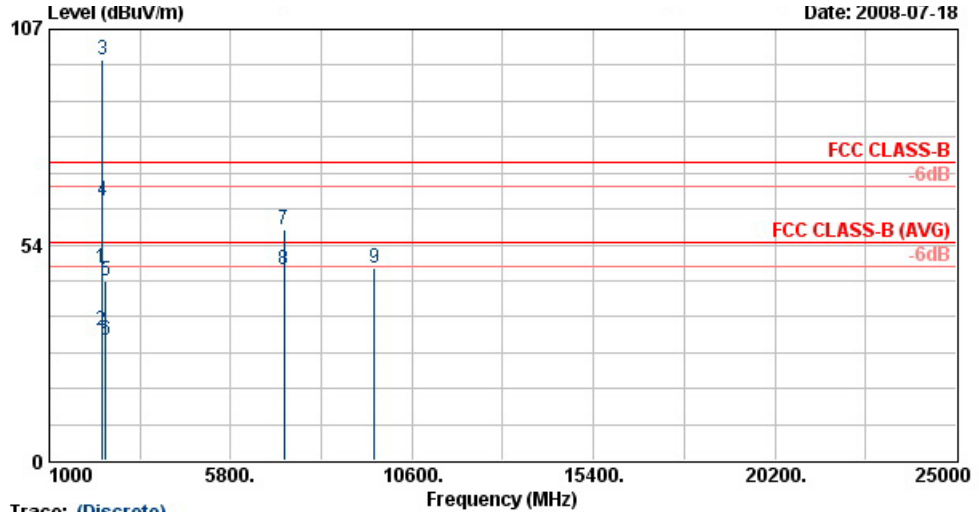


Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m LF-ANT(951121) HORIZONTAL
 EUT : Bluetooth Headset
 Power : From System
 Model : FR 871005
 Memo : Mode 1
 Plane : E2

	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	44.04	29.69	-10.31	40.00	49.59	11.52	0.30	31.71	---	Peak
2	162.84	34.48	-9.02	43.50	55.73	10.07	0.60	31.92	---	Peak
3	182.28	36.32	-7.18	43.50	58.37	9.43	0.60	32.08	100	26 Peak
4	357.40	34.32	-11.68	46.00	50.63	14.70	0.72	31.72	---	Peak
5	596.80	28.55	-17.45	46.00	41.30	18.43	1.00	32.18	---	Peak
6	875.40	31.96	-14.04	46.00	42.33	20.36	1.30	32.02	---	Peak

- Polarization : Horizontal (1GHz-25GHz)

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



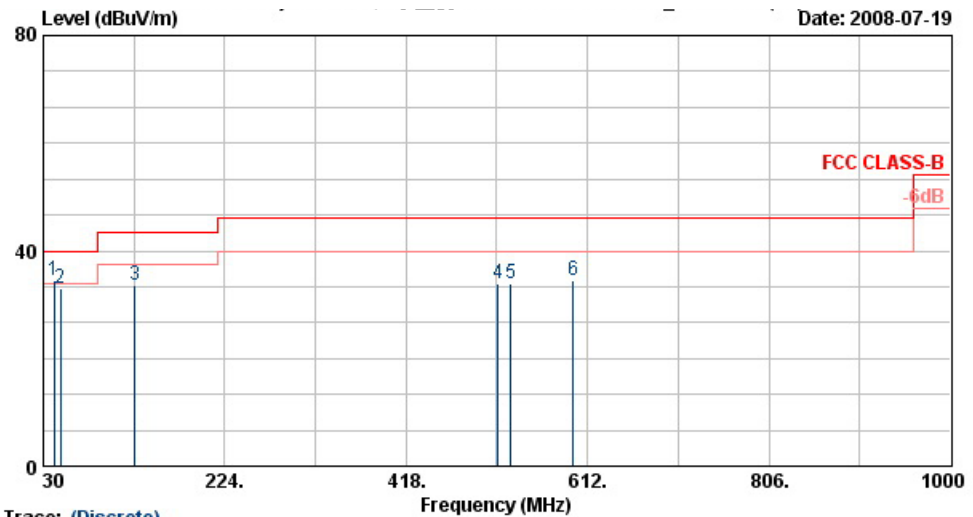
Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
 EUT : Bluetooth Headset
 Power : From System
 Model : FR 871005
 Memo : Mode 1
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2384.29	47.81	-26.19	74.00	47.71	31.86	3.92	35.68	100	0 Peak
2	2384.29	32.18	-21.82	54.00	32.10	31.83	3.92	35.68	130	355 Average
3 @	2402.00	99.49			99.37	31.88	3.92	35.68	100	0 Peak
4 X	2402.00	64.42			64.32	31.86	3.92	35.68	130	355 Average
5	2500.00	44.69	-29.31	74.00	44.34	32.00	4.05	35.70	100	0 Peak
6	2500.00	29.97	-24.03	54.00	29.62	32.00	4.05	35.70	130	355 Average
7	7206.00	57.38	-16.62	74.00	50.57	35.72	7.17	36.08	100	0 Peak
8	7206.00	47.31	-6.69	54.00	40.51	35.72	7.17	36.08	100	91 Average
9	9606.00	47.92	-26.08	74.00	86.87	-10.16	7.93	36.72	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Polarization : Vertical (30MHz-1GHz)

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

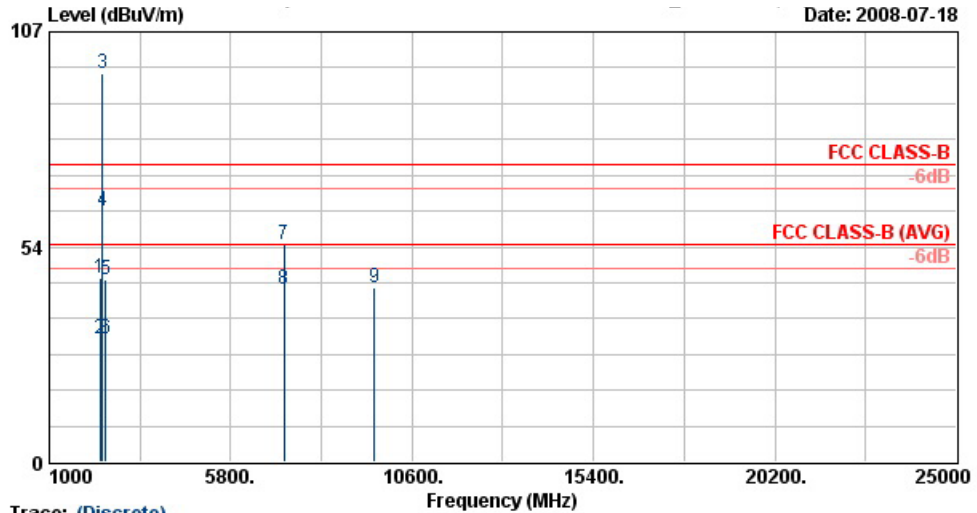


Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m LF-ANT(051121) VERTICAL
 EUT : Bluetooth Headset
 Power : From System
 Model : FR 871005
 Memo : Mode 1
 Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 !	41.34	34.54	-5.46	40.00	53.43	12.51	0.30	31.70	100	156
2	48.09	32.88	-7.12	40.00	55.44	9.06	0.30	31.91	---	---
3	127.74	33.58	-9.92	43.50	52.60	12.18	0.50	31.70	---	---
4	516.30	33.83	-12.17	46.00	47.33	17.59	1.00	32.09	---	---
5	530.30	33.98	-12.02	46.00	47.42	17.74	0.91	32.10	---	---
6	596.80	34.38	-11.62	46.00	47.13	18.43	1.00	32.18	---	---

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

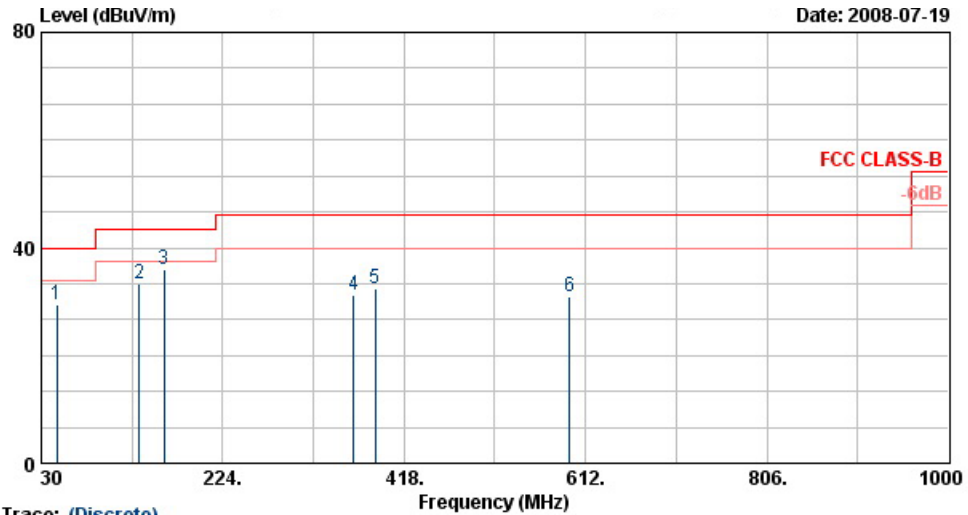
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 1
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2353.89	45.68	-28.32	74.00	45.58	31.86	3.92	35.68	100	0 Peak
2	2353.89	30.70	-23.30	54.00	30.71	31.81	3.86	35.67	100	57 Average
3 @	2402.00	96.61			96.49	31.88	3.92	35.68	100	0 Peak
4 X	2402.00	62.30			62.20	31.86	3.92	35.68	100	57 Average
5	2500.00	45.37	-28.63	74.00	45.02	32.00	4.05	35.70	100	0 Peak
6	2500.00	30.50	-23.50	54.00	30.15	32.00	4.05	35.70	100	57 Average
7	7206.00	53.94	-20.06	74.00	47.13	35.72	7.17	36.08	100	0 Peak
8	7206.00	42.82	-11.18	54.00	36.02	35.72	7.17	36.08	100	305 Average
9	9606.00	43.17	-30.83	74.00	82.12	-10.16	7.93	36.72	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Test Mode : Mode 2
- Temperature : 21~26°C
- Relative Humidity : 49~58%
- Test Engineer: Sun
- Polarization : Horizontal (30MHz-1GHz)

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

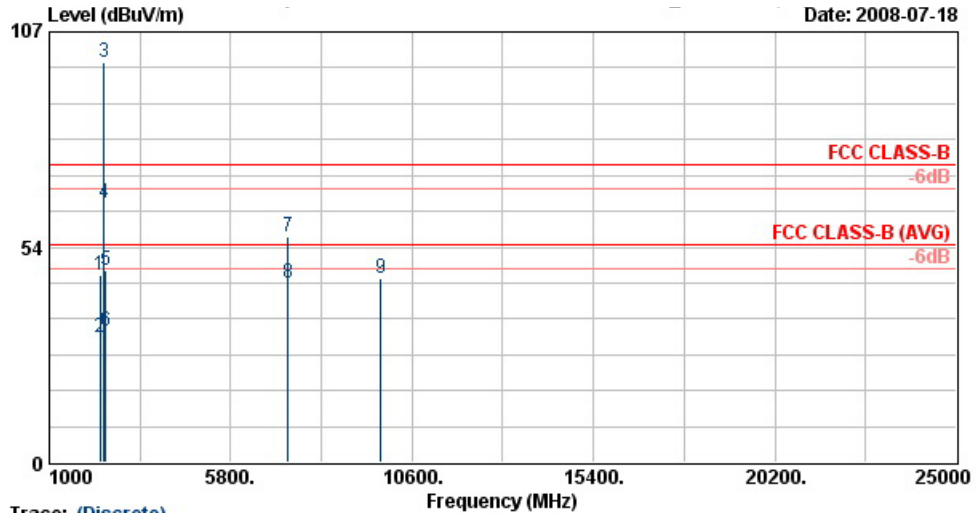


Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m LF-ANT(051121) HORIZONTAL
 EUT : Bluetooth Headset
 Power : From System
 Model : FR 871005
 Memo : Mode 2
 Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	46.74	29.41	-10.59	40.00	50.88	10.04	0.30	31.82	---	---	Peak
2	134.49	33.23	-10.27	43.50	53.38	11.05	0.50	31.71	---	---	Peak
3	161.49	36.11	-7.39	43.50	57.34	10.09	0.60	31.92	100	236	Peak
4	364.40	31.21	-14.79	46.00	47.35	14.87	0.75	31.75	---	---	Peak
5	386.80	32.47	-13.53	46.00	48.04	15.44	0.83	31.84	---	---	Peak
6	595.40	30.99	-15.01	46.00	43.74	18.42	1.00	32.17	---	---	Peak

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

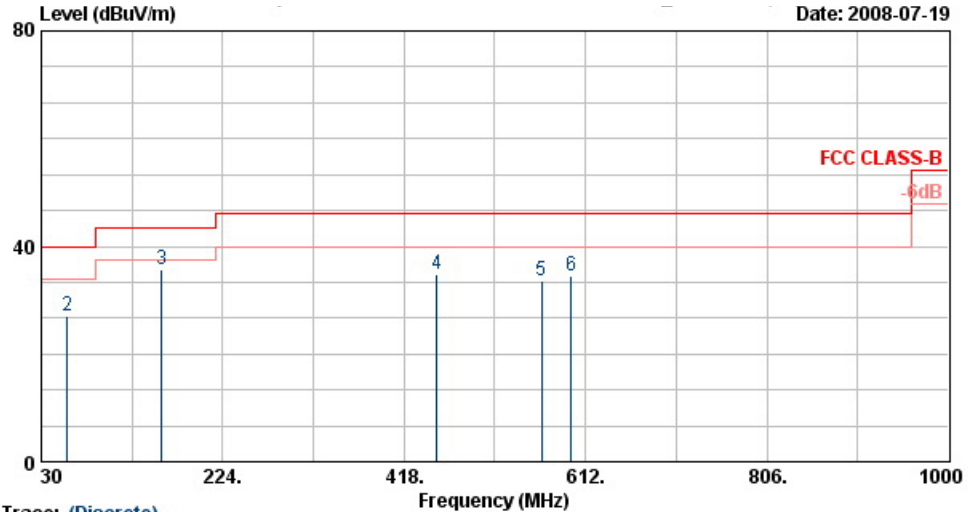
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 2
Plane : E2

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2342.00	46.68	-27.32	74.00	46.71	31.78	3.86	35.67	100	0 Peak
2	2342.00	31.00	-23.00	54.00	31.03	31.78	3.86	35.67	101	6 Average
3 @	2441.00	99.49			99.26	31.93	3.99	35.69	100	0 Peak
4 X	2441.00	64.45			64.23	31.93	3.99	35.69	101	6 Average
5	2492.00	47.73	-26.27	74.00	47.38	32.00	4.05	35.70	100	0 Peak
6	2492.00	32.80	-21.20	54.00	32.45	32.00	4.05	35.70	101	6 Average
7	7326.00	56.10	-17.90	74.00	49.35	35.67	7.21	36.13	100	0 Peak
8	7326.00	44.37	-9.63	54.00	37.62	35.67	7.21	36.13	100	130 Average
9	9762.00	45.67	-28.33	74.00	84.25	-9.83	8.00	36.76	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Polarization : Vertical (30MHz-1GHz)

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

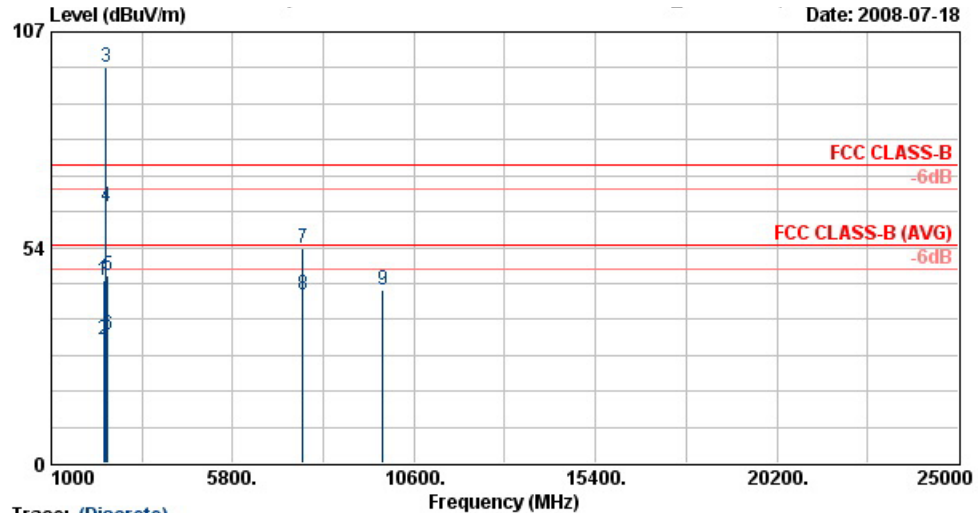


Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(051121) VERTICAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 2
Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos	
					dBuV	dB/m	dB	dB	cm	deg	
1	30.00	26.29	-13.71	40.00	37.89	19.66	0.30	31.56	---	---	Peak
2	58.08	27.02	-12.98	40.00	51.70	6.91	0.40	31.99	---	---	Peak
3	158.79	35.67	-7.83	43.50	56.81	10.16	0.60	31.91	100	154	Peak
4	453.30	34.84	-11.16	46.00	49.37	16.64	0.87	32.04	---	---	Peak
5	565.30	33.72	-12.28	46.00	46.75	18.11	1.00	32.14	---	---	Peak
6	596.80	34.46	-11.54	46.00	47.20	18.43	1.00	32.18	---	---	Peak

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

Site : D3CH06-HY

Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL

EUT : Bluetooth Headset

Power : From System

Model : FR 871005

Memo : Mode 2

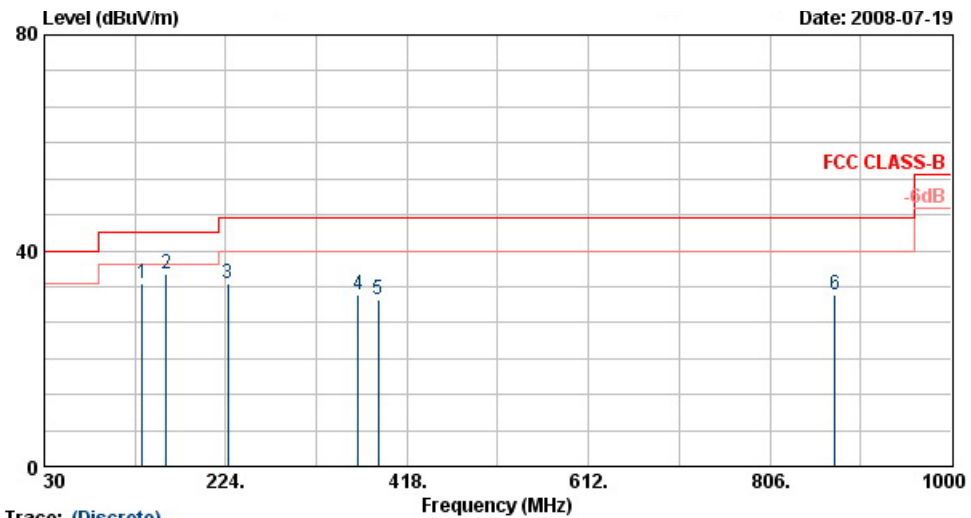
Plane : E2

	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/m	dB	dB	cm	deg
1	2390.00	45.44	-28.56	74.00	45.34	31.86	3.92	35.68	100	0 Peak
2	2390.00	30.61	-23.39	54.00	30.51	31.86	3.92	35.68	101	64 Average
3 @	2441.00	98.20			97.98	31.93	3.99	35.69	100	0 Peak
4 X	2441.00	63.72			63.50	31.93	3.99	35.69	100	64 Average
5	2492.00	46.71	-27.29	74.00	46.36	32.00	4.05	35.70	100	0 Peak
6	2492.00	31.91	-22.09	54.00	31.56	32.00	4.05	35.70	100	64 Average
7	7656.00	53.19	-20.81	74.00	46.45	35.63	7.34	36.23	100	0 Peak
8	7656.00	41.95	-12.05	54.00	35.21	35.63	7.34	36.23	100	281 Average
9	9762.00	42.90	-31.10	74.00	81.49	-9.83	8.00	36.76	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Test Mode : Mode 3
- Temperature : 21~26°C
- Relative Humidity : 49~58%
- Test Engineer: Sun
- Polarization : Horizontal (30MHz-1GHz)

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

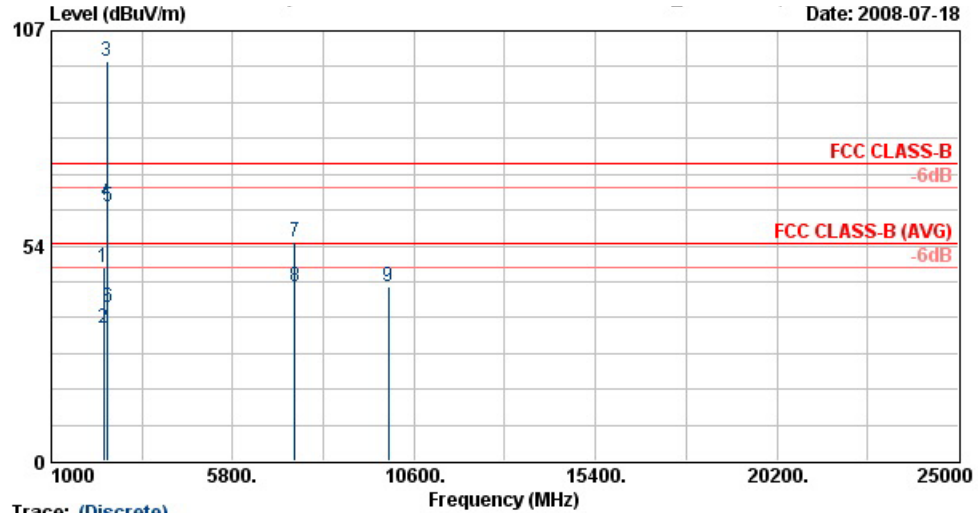


Site : 03CH06-HY
Condition : FCC CLASS-B 3m LP-ANT(951121) HORIZONTAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 3
Plane : E2

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	134.49	33.80	-9.70	43.50	53.95	11.05	0.50	31.71	---	---	Peak
2	160.14	35.73	-7.77	43.50	56.93	10.13	0.60	31.93	100	204	Peak
3	226.29	33.85	-12.15	46.00	54.27	10.84	0.70	31.96	---	---	Peak
4	365.80	31.74	-14.26	46.00	47.84	14.89	0.75	31.75	---	---	Peak
5	386.80	31.00	-15.00	46.00	46.57	15.44	0.83	31.84	---	---	Peak
6	875.40	31.73	-14.27	46.00	42.09	20.36	1.30	32.02	---	---	Peak

- Polarization : Horizontal (1GHz-25GHz)

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



Trace: (Discrete)

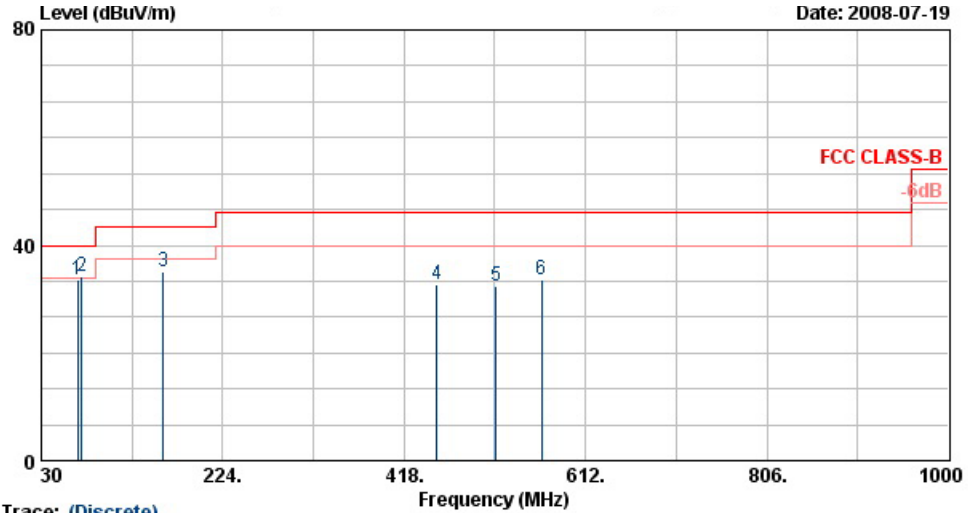
Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 3
Plane : E2

	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/m	dB	dB	cm	deg
1	2382.00	48.00	-26.00	74.00	47.93	31.83	3.92	35.68	100	0 Peak
2	2382.00	33.18	-20.82	54.00	33.10	31.83	3.92	35.68	102	356 Average
3 @	2480.00	99.56			99.23	31.98	4.05	35.70	100	0 Peak
4 X	2480.00	64.60			64.27	31.98	4.05	35.70	102	356 Average
5	2483.50	63.21	-10.79	74.00	62.88	31.98	4.05	35.70	100	0 Peak
6	2483.50	38.29	-15.71	54.00	37.96	31.98	4.05	35.70	102	356 Average
7	7437.00	54.65	-19.35	74.00	47.96	35.62	7.24	36.17	100	0 Peak
8	7437.00	43.50	-10.50	54.00	36.81	35.62	7.24	36.17	100	245 Average
9	9921.00	43.51	-30.49	74.00	81.70	-9.48	8.07	36.79	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

- Polarization : Vertical (30MHz-1GHz)

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



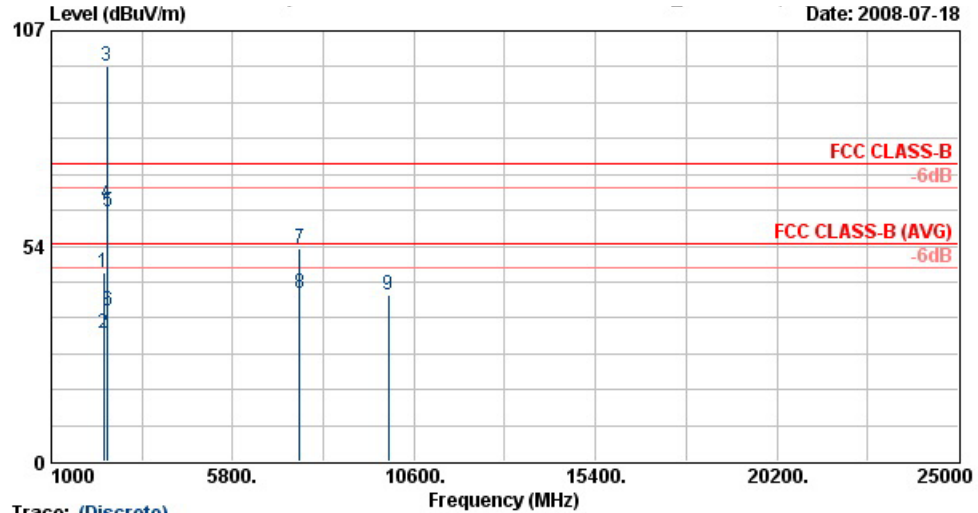
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF-ANT(951121) VERTICAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 3
Plane : E2

	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/m	dB	dB	cm	deg
1	68.88	33.67	-6.33	40.00	58.20	6.86	0.40	31.80	---	Peak
2 !	72.93	34.22	-5.78	40.00	58.54	7.06	0.40	31.79	100	192 Peak
3	160.14	35.01	-8.49	43.50	56.21	10.13	0.60	31.93	---	Peak
4	453.30	32.67	-13.33	46.00	47.20	16.64	0.87	32.04	---	Peak
5	516.30	32.56	-13.44	46.00	46.05	17.59	1.00	32.09	---	Peak
6	565.30	33.69	-12.31	46.00	46.72	18.11	1.00	32.14	---	Peak

- Polarization : Vertical (1GHz-25GHz)

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



Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
EUT : Bluetooth Headset
Power : From System
Model : FR 871005
Memo : Mode 3
Plane : E2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2382.00	46.90	-27.10	74.00	46.82	31.83	3.92	35.68	100	0 Peak
2	2382.00	31.75	-22.25	54.00	31.67	31.83	3.92	35.68	100	59 Average
3 @	2480.00	98.30			97.97	31.98	4.05	35.70	100	0 Peak
4 X	2480.00	63.86			63.53	31.98	4.05	35.70	100	59 Average
5	2483.50	61.99	-12.01	74.00	61.66	31.98	4.05	35.70	100	0 Peak
6	2483.50	37.35	-16.65	54.00	37.02	31.98	4.05	35.70	100	59 Average
7	7572.00	52.95	-21.05	74.00	46.24	35.62	7.31	36.22	100	0 Peak
8	7572.00	41.85	-12.15	54.00	35.14	35.62	7.31	36.22	100	109 Average
9	9921.00	41.56	-32.44	74.00	79.75	-9.48	8.07	36.79	100	0 Peak

Remark: #3 and #4 are Fundamental Signals

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 antennas used in this product is PCB Antenna for Bluetooth and it is considered to meet antenna requirement of FCC.

5.10.3 Antenna Gain

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

6. List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMI Receiver	R&S	ESCS 30	100356	9kHz – 2.75GHz	Aug. 01, 2008	Jul. 31, 2009	Conducted (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9kHz – 30MHz	Dec. 06, 2007	Dec. 05, 2008	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9kHz – 30MHz	Dec. 06, 2007	Dec. 05, 2008	Conduction (CO05-HY)
DC-Lisn	R&S	ESH3-26	1000485	0.1MHz-200MHz	Feb. 04, 2008	Feb. 03, 2009	Conduction (CO05-HY)
DC-Lisn	R&S	ESH3-26	1000484	0.1MHz-200MHz	Feb. 04, 2008	Feb. 03, 2009	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211028	9KHz-26.5GHz	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 01, 2007	Nov. 30, 2008	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00075962	1G~18G	Aug. 29, 2007	Aug. 28, 2008	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-251	14G - 40G	Oct. 17, 2007	Oct. 16, 2008	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 22, 2007	Nov. 21, 2008	Radiation (03CH06-HY)
Pre Amplifier	EMEC	PA303	PA303-SMA-059	100K~3GHz	Nov. 26, 2007	Nov. 25, 2008	Radiation (03CH06-HY)

7. Uncertainty Evaluation

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

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 (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.11	Normal(k=2)	0.06
Antenna factor calibration	0.91	Normal(k=2)	0.46
Cable loss calibration	0.12	Normal(k=2)	0.06
Pre Amplifier Gain calibration	0.15	Normal(k=2)	0.08
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.52	Rectangular	0.88
Mismatch	+0.45/-0.48	U-shaped	0.33
Combined standard uncertainty Uc(y)	1.30		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.60		

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

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 $U_c(y)$	2.36				
Measuring uncertainty for a level of confidence of 95% $U = 2U_c(y)$	4.72				

The measured result is : $y \text{ dBuV} \pm U \text{ dB}$
for a level of confidence of approximately 95% , ($k = 2$)

Appendix A. Photographs of EUT

Please refer to Sporton report number EP871005 as below.